

F00484

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. NRT3-10-02-01
Registry No. F00484

LOCALITY

State CALIFORNIA
General Locality LOS ANGELES AND LONG BEACH
Sublocality PORTS OF LOS ANGELES AND LONG BEACH

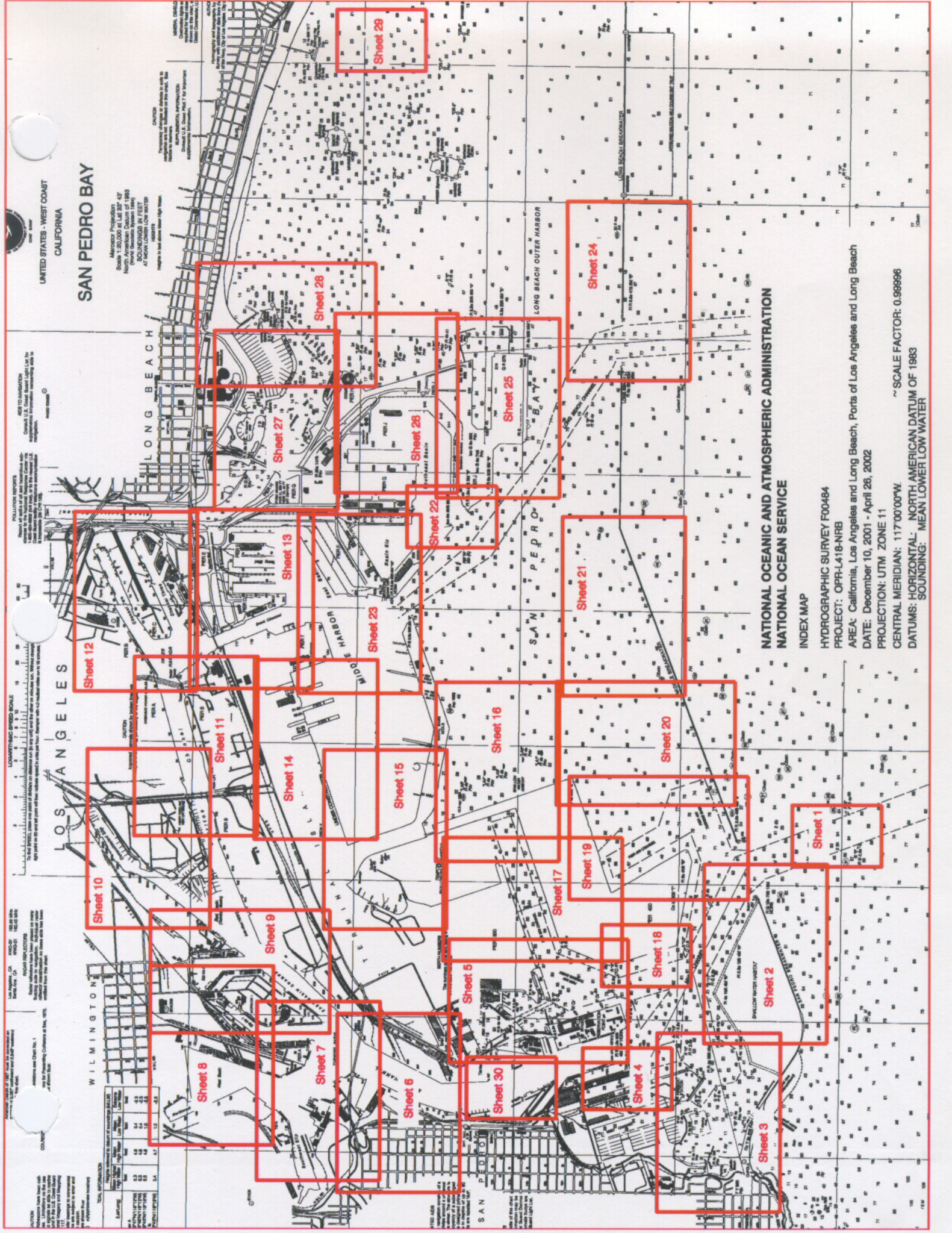
2001-2002

CHIEF OF PARTY
Kathryn Simmons

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO. F00484
HYDROGRAPHIC TITLE SHEET		FIELD NO. NRT3-10-02-01
INSTRUCTIONS The hydrographic sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the office.		
State <u>California</u>		
General Locality <u>Los Angeles and Long Beach</u>		
Sublocality <u>Ports of Los Angeles and Long Beach</u>		
Scale <u>1:5,000</u>		Date of Survey <u>12/10/01 - 4/26/02</u>
Instructions Dat <u>Jan. 7, 2001</u>		Project No. <u>OPR-L418-NRB</u>
Vessel <u>Launch 1212</u>		
Chief of Party <u>Kathryn Simmons</u>		
Surveyed by <u>K. Simmons, K. Brown, E. Wernicke</u>		
Soundings taken by echo sounder, hand lead, pole <u>Innerspace 448, EG&G 272-T SSS</u>		
Graphic record scaled by <u>NRT3 personnel</u>		
Graphic record checked by <u>NRT3 personnel</u>		
Evaluation by <u>R. Davies</u>		Automated plot by <u>HP Designjet1050c</u>
Verification by <u>R. Davies</u>		
Soundings in <u>Feet</u> at <u>MLLW</u>		
REMARKS: <u>Time in UTC.</u>		
Revisions and annotations appearing as endnotes were generated during office processing.		
All depths listed in this report are referenced to mean lower low water unless otherwise noted.		



UNITED STATES - WEST COAST
CALIFORNIA

SAN PEDRO BAY

Magnetic Variation
10.0000 East 1987
North American Datum of 1983
(and Successive Years 1984)
AT MEAN LOW WATER
HEIGHTS TO MEAN HIGH WATER

CAUTION
This chart is based on the latest available information. It is subject to change without notice. For the latest information, consult the U.S. Coast Pilot 7 for information on the latest changes.

LONG BEACH
SAN PEDRO HARBOR
LONG BEACH OUTER HARBOR

LOS ANGELES

WILMINGTON

Sheet 1
Sheet 2
Sheet 3
Sheet 4
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
INDEX MAP

HYDROGRAPHIC SURVEY F00484
PROJECT: OPR-L418-NRB
AREA: California, Los Angeles and Long Beach, Ports of Los Angeles and Long Beach
DATE: December 10, 2001 - April 26, 2002
PROJECTION: UTM ZONE 11
CENTRAL MERIDIAN: 117°00'00"W
DATUMS: HORIZONTAL: NORTH AMERICAN DATUM OF 1983
~ SCALE FACTOR: 0.99996
SOUNDING: MEAN LOWER LOW WATER

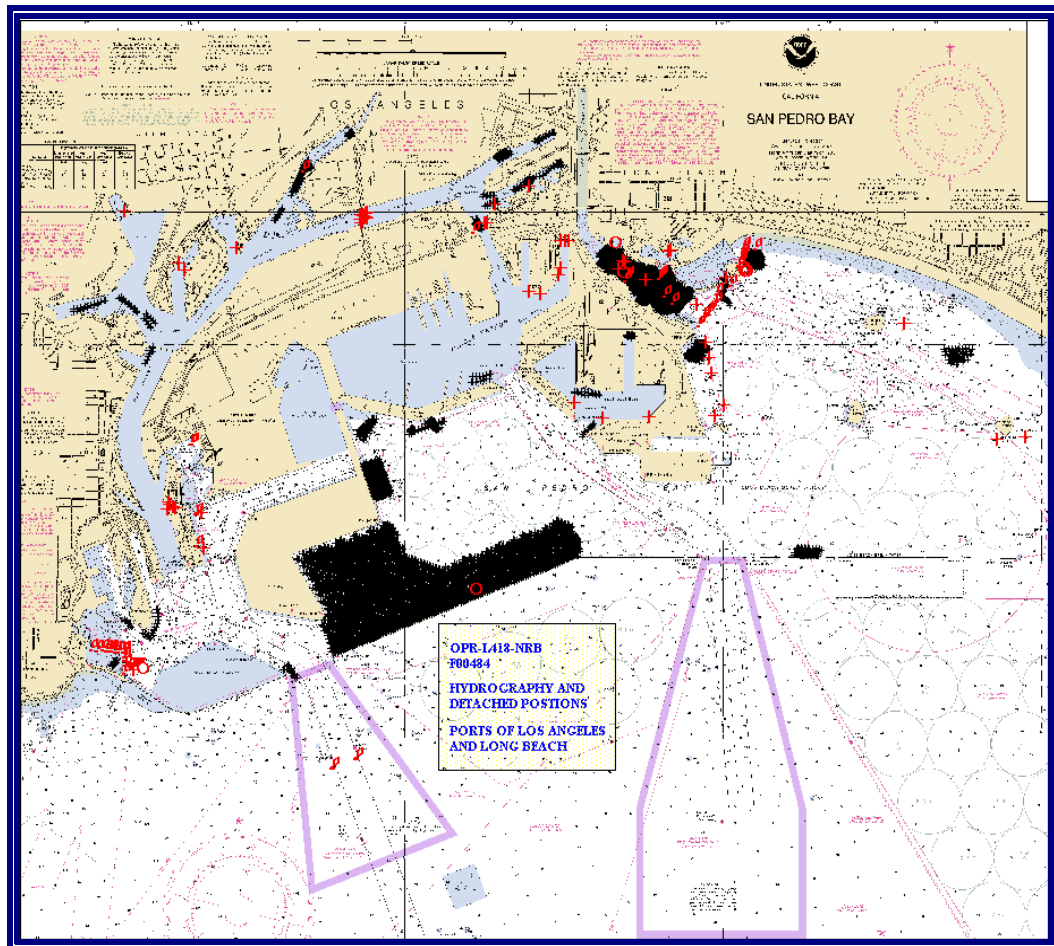
Descriptive Report to Accompany F00484

OPR-L418-NRB 2001-2002 Navigation Response Team 3

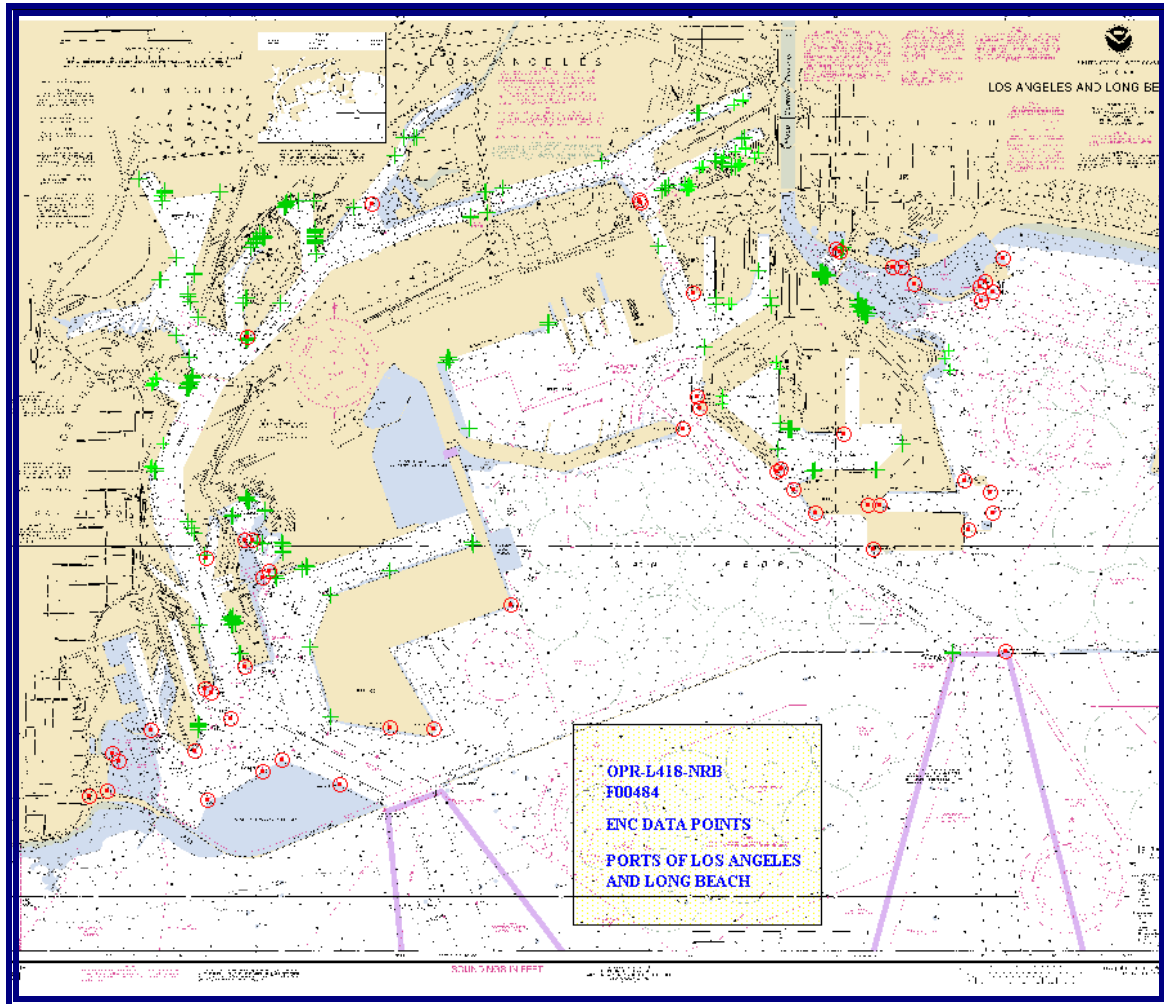
A. AREA SURVEYED

This field examination was conducted in accordance with Port Instructions OPR-L418-NRB, Chart Investigations: Ports of Los Angeles and Long Beach, California. F00484 includes hydrographic data, vector data for S57 products; i.e., electronic navigation charts (ENC), and detached positions.

Areas of hydrography and detached positions are shown below.¹



DGPS data points collected on structures and fixed aids are shown below.



Data acquisition was conducted from December 10, 2001 (*DN 344*) through April 26, 2002 (*DN 116*).

B. DATA ACQUISITION AND PROCESSING

B1. Equipment and Vessels

NOAA Launch 1212, a 27-foot SeaArk, was used for the majority of point data collection, and collection of all hydrography and detached positions. The 4.5-ton launch is eight feet wide, has a static draft of 0.4 meters and is powered by two 150-hp outboards. No changes to the standard

vessel sounding configuration were necessary. The launch is equipped with a Dell Pentium II PC. Sounding data were collected using an Innerspace 448 echosounder, SN 263.

Side scan sonar (SSS) data were collected using the following equipment:

Type	Serial Number
EG&G 272-T Towfish	015598
EG&G 260 Recorder	015602

Differential GPS data were collected using the following equipment:

Equipment Location	Type Receiver/Antenna	Receiver Serial No.	Antenna Serial No.
VN 1212	Trimble DSM212L 27207	0220164491	0220166460
Backpack	Trimble TSC1	224011684	220187539

Corrections for speed of sound through the water column were computed with data obtained from Seacat conductivity, temperature and depth recorder, SN 1892. NOAA's VELOCWIN software was used to download and process the sound velocity data.

Coastal Oceanographic's Hypack software, version 5.0, was used for hydrographic data collection. NOAA's HPTools (version 10.9.1) and HPS were used for hydrographic data processing.

Trimble TSC1 data logger and Asset Surveyor software version 5.00 were used for vector data collection. Pathfinder Office 2.51 and Mapinfo (version 6.5) were used for processing.²

B2. Quality Control

Because all hydrographic areas were small, no crosslines were run; however, side scan lines were oriented orthogonally whenever possible as well as at angles to the mainscheme. In addition, splits were usually run on different days than mainscheme. Agreement is good and no systematic error is apparent.³

Point data and line data were evaluated by examining horizontal precision and standard deviation calculated with Pathfinder software as well as by comparison to the chart, to IKONOS satellite imagery, to photographs and to engineering drawings provided by the Ports. Where multipathing is known to occur; i.e., under bridges or other obstruction, points were examined with more rigorous attention. Positions significantly inconsistent with the above sources were deleted.⁴

B3. Corrections to Echo Soundings

Occasional problems with misdigitization or bottom tracking were encountered during this

survey. Where the echogram was unambiguous, the digital record was corrected to reflect the paper trace. Where the echogram trace was discontinuous, the selected soundings were deselected or rejected. Gaps in the sounding interval greater than 6mm at the scale of the survey were resurveyed.⁵

Leadline Comparisons

Periodic leadline comparisons, annotated on the echogram, confirm proper digitization of the echosounder depths.

Static Draft

Static draft for VN 1212 was determined on January 29, 2001 (*DN 029*) . First, the depth of the transducer face from a reference mark on the hull was measured. Next, with the launch in the water, fuel tanks half full and two persons aboard, the depth from this reference mark to the waterline was measured. Combining the two measurements, a static draft of 0.4 meters was calculated.

Dynamic Draft

Settlement and squat measurements were conducted for VN 1212 on January 30, 2001 (*DN 030*). All measurements were performed in San Diego Bay. Field records are included in Appendix V.⁶

Transducer and antenna offsets, static draft, and settlement and squat correctors were entered into Offset Table 1.⁷ Correctors were applied during processing in HPS using the Reapply Vertical Correctors Utility.

C. VERTICAL AND HORIZONTAL CONTROL

Tides and Water Levels

Port Instructions define two tide zones within the project area. Tide corrector values, referenced to the primary tide station at Los Angeles, CA (*941-0660*), are provided in the zoning file “L418NRT32001CORP” which is included on the project CD.

Preliminary, six-minute real tides recorded at this station were downloaded from the NOAA, NOS, CO OPS web site (<http://www.opsd.nos.noaa.gov/cgi-bin/prelimqry.pl>). Using the HPTools utility, the tides were imported into HPS Tide Table 1. Zone Utilities computed the appropriate zone for each sounding; time and height adjustments were computed; and corrected tides were applied to sounding data.⁸

Horizontal Datum

The horizontal control datum for this project is North American Datum of 1983 (NAD83).

Position Control

For vector data collection, differential correctors were provided by Racal Landstar via the Trimble receiver. For detached positions, differential GPS (DGPS) provided control. The U.S. Coast Guard beacon at Point Blunt, CA (302 kHz) was used.

Velocity of Sound

Four velocity casts were conducted for the project as shown in the table below:

Cast No/Day	Latitude/Longitude	Depth(m)	Location
1 /345	33°42'39"N / 118°15'03"W	32.9	Port of Long Beach
2/010	33°43'30"N / 118°11'10"W	22.5	Port of Long Beach
3 /036	33°43'36"N / 118°11'00"W	30.4	Port of Long Beach
4/091	38°43'46"N / 118°11'08"W	32.0	Port of Long Beach

Corrections for speed of sound through the water column were computed from data obtained with a Seacat conductivity, temperature and depth recorder. Sea-Bird Electronics Model SBE-19, S/N 1892, was used for all casts. NOAA VELOCWIN software was used to initialize the recorder as well as to process all casts.

Appendix E ⁹ contains the calibration report for Seacat instrument S/N 1892.

D. RESULTS AND RECOMMENDATIONS

D1. Chart Comparison

Comparison will be limited to the largest scale chart covering the survey area which is represented on the following charts:

Chart No.	Date	Edition	Scale
18749	December 1, 2001	38 th	1:20,000
18751	December 1, 2001	42 nd	1:12,000

DGPS Point Data and Detached Positions

Detached positions were used primarily to position buoys, private aids and features not deemed critical to navigation, or for points where the radio link required for a high accuracy vector position was blocked by overhead structures. They were also used for disproofs of various shoreline features. These are plotted on Mapinfo layer Featr01; see remarks label for purpose of the detached position. ¹⁰

DGPS data were collected on items throughout the Ports of Long Beach and Los Angeles. Some items were new features; others were inaccurately depicted on the chart. Three categories were defined for positioned items: Of these, two were established for Point data: 1) Fixed Aids, and 2) Structures. The third category, Line Features, was used for all line data.

Positions on point features (Fixed Aids and Structures) were acquired by placing the antenna over the feature and recording DGPS positions for a period of time, typically one minute. For Fixed Aids the collection period was extended to three minutes.

Line data were acquired on curved and/or complex structures where multiple points would have been confusing. DGPS positions were collected at one-second intervals while walking the outside edges of the feature. On bridges where walking was impractical, a line was obtained while driving a vehicle across the bridge (antenna positioned outside the passenger side window). An offset to the edge of the bridge was entered in the collection process to accurately depict the structure.

In some cases where shoreline changes were obvious, line data served to delineate the approximate changes. In these cases the data were collected at MLLW while walking along the waterline. These shoreline changes are depicted with dashed red lines on the shapes layer.¹¹

Line data collected while driving ranges also served as a tool for evaluating charted range lines.

All items were assigned position numbers based on the day number and order of collection in the format DDD.###, where DDD is the day number and ### is incremented with each data point, e.g., 301.001, 301.002, etc.

The data were imported into Mapinfo tables created for each day and category; e.g., structures03jul.tab, fixedaids04feb.tab, etc. A single table for each category was created and the daily data were accumulated into its respective table; e.g., Structures.tab includes all point data collected in that category. The hydrographer's final representation of each feature as it should be charted was drawn in red onto a separate layer; the drawing is based on the data points and line data, supplemented by field drawings, IKONOS imagery and digital photos. This layer was saved as Shapes.tab.¹²

The Shapes table also contains drawings in blue which are derived from file POLA.dxf, the source of which is 1999 photogrammetry acquired by the Port of Los Angeles. The entire file is included on a CD obtained from the Port, a copy of which accompanies this report.¹³ In some cases the shape of a feature from the CAD drawing is used but shifted to match DGPS data points collected on the feature. Where this occurs the item is shown in red.¹⁴

The IndexedNotes table was created to clarify the Shapes table where necessary. The table includes columns for Reference Number and Remarks and is displayed in Mapinfo with a yellow dot. The reference numbers are displayed on the page plots submitted with this survey.¹⁵ A text file of Indexed Notes is included in Appendix V.¹⁶ A number of these notes refer to information provided by the Ports of Los Angeles and Long Beach. At the beginning of the project, NRT3 met with the Port Pilots, representatives from the Engineering Division of the Port of Los Angeles and with representatives from the Survey Department of the Port of Long Beach. Information provided by these sources accompanies this report in the form of annotations on chartlets, digital data, as-built drawings, and correspondence. See Appendix V.¹⁷

Field Notes were recorded in HYPACK during data collection and serve as additional clarification; these notes are included in FieldNotes.tab. Photographs were embedded into a separate Mapinfo Table: Photos.tab¹⁸

Chart 18751 - Los Angeles and Long Beach Harbors

Pilots moving ships between the ports of Los Angeles and Long Beach travel through the anchorage area east of pier 400 inside the breakwater rather than outside the breakwater in order to minimize pilotage fees. At the request of the Los Angeles pilots, this area was surveyed with 200% side scan coverage and fifty-meter mainscheme hydrography. A number of contacts were observed and all were developed. Two obstructions and several soundings, significantly shoaler than charted depths were reported as dangers to navigation (see Appendix I).¹⁹ Otherwise, soundings are in general agreement with the chart. Chart current hydrography.²⁰

Hydrography (25-meter line spacing and development) was acquired in Queensway Bay from the entrance to approximately 300 meters beyond the fixed bridge at position latitude 33°45'34.8"N, longitude 118°11'57.4"W. The hydrography was performed at the request of Doug Parsons, Superintendent, Marine Bureau, City of Long Beach, who was concerned about reports of silting in the channel. Revisions to charted contours are most evident west of the bridge. The east side of the basin is shoaler than charted and the exposed shoal centered at latitude 33°45'40.9"N, longitude 118°12'03.7"W has expanded 50 meters into the channel and 100 meters to the northwest. In other areas the hydrography is in general agreement with the chart. Chart current hydrography.²¹

The Port of Los Angeles requested that depths be charted inside the three areas designated "Shallow Water Habitat." Survey data for two of these areas were collected by POLA and the files have been forwarded to Marine Chart Division. Current hydrography was acquired for the third area centered at latitude 33°43'58.5"N, longitude 118° 4'15.96"W.²²

A number of submerged features were investigated with 200% side scan sonar; see Indexed Notes for charting recommendations on these items.²³

An uncharted restricted area whose limits are defined by buoys marked "no motorized vessels" (*Fixes 149 - 162, DN 345*) is centered at latitude 33°42'38.9"N, longitude 118°16'48.9"W. Chart as depicted on the shapes layer.²⁴

Two bait barges located at latitude 33°42'34.5"N, longitude 118°16'34.3"W, and latitude 33°42'36.9"N, longitude 118°16'30.4"W (*Fixes 165 and 166, DN 345*) should be charted in place of the single barge charted at latitude 33°42'36.0"N, longitude 118°16'38.9"W. ²⁵

Areas of planned or proposed construction identified by the Port of Los Angeles or the Port of Long Beach are indicated with a dashed red line and annotated in the Indexed Notes Table. A new cruise ship terminal is under construction in the Port of Long Beach adjacent to the Queen Mary berth. ²⁶ Preliminary drawings for the terminal are included in Appendix V. ²⁷

All of the hydrographer's recommended changes to the high water line are shown on the shapes layer with explanations of each change given on the Indexed Notes layer. ²⁸

Chart 18749 - San Pedro Bay

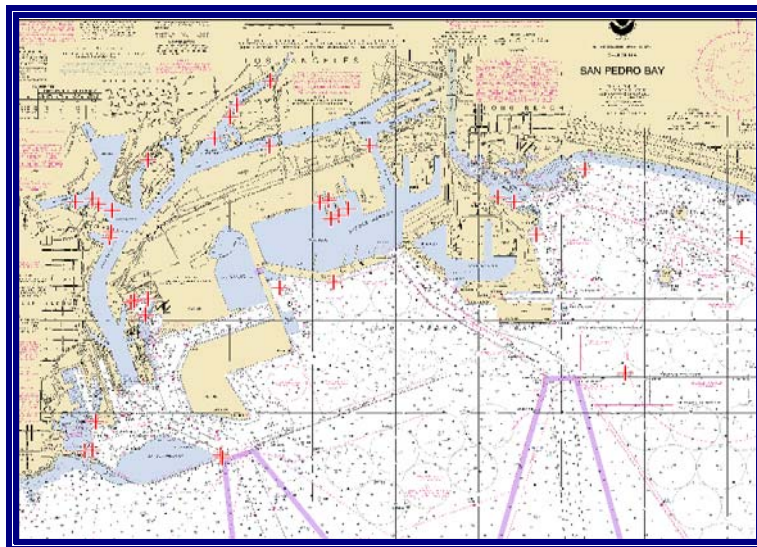
Two mooring buoys were disproved (Detached positions 8551 and 8552, DN 079). Remove from the chart. ²⁹

Dangers to Navigation

Three Danger to Navigation Reports were issued; see attached reports.

AWOIS Items

Thirty-six assigned AWOIS items located in the Ports of Los Angeles and Long Beach area are shown in the graphic below. Investigation results were recorded in the database L418awois.mdb which accompanies this report. Hard copies of the reports along with supporting data are included with this report. ³⁰



D2. Additional Results

Aids to Navigation³¹

Fixed aids to navigation positioned with the Trimble DGPS receiver are shown in the Mapinfo FixedAids table.³² A listing of these aids has been forwarded to the US Coast Guard and to NOAA's Marine Charting Division. A copy is included in Appendix V.³³ Selected buoys and private aids were positioned with detached positions and are plotted on Featr01.tab. A list of features is included in Appendix V.³⁴

Bridges, Cables, Pipelines

Revised positions were obtained on the Henry Ford Avenue railroad lift bridge and its fenders charted at latitude 33°45'57.9"N, longitude 118°14'24.9"W. Chart according to shapes layer.³⁵

Revised positions were obtained on the Heim lift bridge charted at latitude 33°45'58.3"N, longitude 118°14'22.9"W. Chart according to shapes layer.³⁶

Chart a submerged pipeline extending from latitude 33°45'36.476"N, longitude 118°16'07.663"W (*Detached Position 7535, DN 051*) to latitude 33°45'33.530"N, longitude 118°16'04.587"W. (*Detached Position 7535, DN 051*)³⁷

All other bridges, cables and pipelines are charted correctly.³⁸

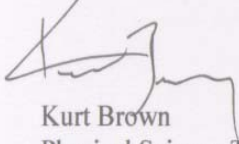
E. APPROVAL SHEET

Standard field surveying and processing procedures were followed³⁹ in producing this survey in accordance with the Navigation Response Branch Operations Manual, the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and NOS Hydrographic Surveys Specifications and Deliverables.

The data were reviewed daily during acquisition and processing.

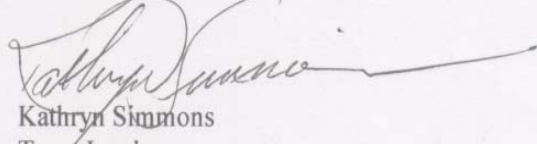
The digital data and supporting records have been reviewed by me, Kathryn Simmons, and are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.⁴⁰

Submitted by,



Kurt Brown
Physical Science Technician
Navigation Response Team 3

Approved and forwarded,



Kathryn Simmons
Team Leader
Navigation Response Team 3

1. PHB Revision -Thirty page size plots (11"x16" and 8.5"x 11") have been generated during office processing. Together they comprise the smooth sheet. See index sheet attached to the descriptive report behind the title sheet.
2. PHB Revision - Office processing was accomplished with HPS, HPTools, MapInfo and MicroStation 95 software programs.
3. PHB Revision - Do not concur. Crosslines were not run according to hydrographic specifications. Adjacent lines of hydrography were compared throughout the survey area and reflect good agreement. Development lines, splits, are not a replacement for crosslines, they are used for the development of critical areas. The evaluator feels that the data is consistent for the depth and positional accuracy and adequate to supersede prior information in the common area.
4. PHB Revision - Concur
5. PHB Revision - Concur
6. PHB Revision - Filed with the hydrographic data.
7. PHB Revision - Filed with the hydrographic data.
8. PHB Revision - Soundings and elevations have been reduced to Mean Lower Low Water (MLLW) or Mean High Water (MHW) as appropriate with verified tide correctors obtained from NOAA/NOS CO-OPS website. The correctors are zoned direct from, Los Angeles, CA, gage number 941-0660. Approved Tide Note, dated July 11, 2002, is attached.
9. PHB Revision - Filed with the hydrographic data.
10. PHB Revision - Detached positions were analyzed during office processing and shown on the smooth sheet as warranted.
11. PHB Revision - There are no contemporary photogrammetric source data available for this survey. The shoreline in brown on the smooth sheets is for orientation only, and originates with chart 18751, 42nd Edition, December 1 2001. The shoreline was digitized in MicroStation during the compilation of the smooth sheet. There are numerous revisions to the MHW. These changes are depicted with a solid red line on the smooth sheet and are adequate to supersede prior photogrammetric shoreline maps. Other changes, depicted with a dashed red line, originate with IKONOS satellite imagery and digital photos. The dashed red line denotes an approximate location of the MHWL. The quality of the hydrographic positioning was frequently inadequate to depict the shoreline changes with a solid red line. In many instances, the positioning failed to provide sufficient information to tie the newly located shoreline to existing charted shoreline. The cartographer utilized the IKONOS imagery as a guide to fill in these voids. The result of combining the hydrography and photogrammetric information is a usable cartographic depiction of conditions at the time of the survey. The quality of the MHW depicted with a dashed line is unknown. While it is contemporary with the date of the photography and is believed to be reasonably complete it is a simple digitization of raster imagery without proper photogrammetric controls. Use of this information to update nautical charts should only be considered if no other later or better quality source exists.

12. PHB Revision - Detached positions were analyzed during office processing and shown on the smooth sheet as warranted.
13. PHB Revision - This file was forwarded to Marine Chart Division.
14. PHB Revision - Drawn in red on the smooth sheet.
15. PHB Revision - Page plots filed with the hydrographic data.
16. PHB Revision - Filed with the hydrographic data.
17. PHB Revision - Filed with the hydrographic data.
18. PHB Revision - Filed with the hydrographic records.
19. PHB Revision - attached to this report
20. PHB Revision - Concur, chart according to this survey.
21. PHB Revision - Concur, chart according to this survey.
22. PHB Revision - Concur, chart according to this survey. The sounding data which the Port of LA collected was received at MCD but the current status of this data is unknown.
23. PHB Revision - chart areas and items according to this survey. The following charted items have been disproved either by a visual search , 200%side scan sonar, sounding development, or an authoritative source.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Ruins	33/43/34.26	118/16/9.68
Ruins	33/43/34.13	118/16/8.62
Ruins	33/43/12.66	118/16/16.65
<i>Subm dol</i>	33/43/15.02	118/16/15.76
Ruins	33/43/15.72	118/16/16.16
Dol	33/43/18.44	118/16/17.03
<i>Wk PA</i>	33/43/51.21	118/15/48.29
<i>Wk</i>	33/43/51.13	118/15/52.23
<i>Floating pier</i>	33/43/59.27	118/15/49.49
Ruins	33/44/13.16	118/16/11.91
<i>Subm piles</i>	33/44/57.95	118/16/25.14

<i>Floating pier</i>	33/45/20.77	118/17/00.78
<i>Dols</i>	33/45/11.35	118/16/25.32
<i>Ruins/subm dols</i>	33/45/46.34	118/15/28.53
<i>Dol</i>	33/45/10.30	118/16/03.03

The following item should be retained as charted because of an inadequate investigation with side scan sonar and sounding development.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
<i>7 Wk</i>	33/42/46.97	118/14/19.25

24. PHB Revision - The area is defined on the smooth sheet by buoys, it is recommended that this restricted area be charted if a source can be found to delimited the exact limits of the area.
25. PHB Revision - chart according to the smooth sheet.
26. PHB Revision - Several areas on the smooth sheet which were identified by the hydrographer as areas of construction. These areas are drawn with a dashed black limit line and are labeled as under construction. It is recommended that these areas be charted as under construction until a source for completed construction is received.
27. PHB Revision - Filed with the hydrographic data.
28. PHB Revision - chart according to this survey
29. PHB Revision - Concur
30. PHB Revision - Concur
31. PHB Revision - The following charted aids to navigation were found at a new position and are recommended to be charted at the revised position below.

<u>Name</u>	<u>Light Light Number</u>	<u>Lattude(N)</u>	<u>Longitude(W)</u>
Long Beach Harbor Downtown	2900	33/45/30.35	118/10/58.71
Marina Entrance Light East			
Long Beach Downtown	2905	33/45/28.55	118/11/0.64
Marina Entrance Light West			
Shoreline Marina Entrance Light East	2915	33/45/35.47	118/11/32.66
Shoreline Marina Entrance Light West	2920	33/45/35.32	118/11/36.68
San Pedro West Channel Light 4	3279	33/42/49.62	118/16/24.15

32. PHB Revision - Fixed and floating aids to navigation which fall within the survey areas are plotted on the smooth sheets

33.
PHB Revision - Filed with the hydrographic data.
34.
PHB Revision - Filed with the hydrographic data.
35.
PHB Revision - Concur, chart according to this survey
36.
PHB Revision - Concur, chart according to this survey
37.
PHB Revision - Concur
38.
PHB Revision - Concur
39.
PHB Revision - Standard field surveying and processing procedures were followed with the exception of crosslines. Crosslines were not run according to hydrographic specifications. See endnote 3
40.
PHB Revision - Concur

RECRD
 VESSLTERMS
 CHART
 AREA

 CARTOCODE
 SENDINGCODE
 DEPTH

LAT83
 LONG83
 NATIVDATUM

 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
 INIT
 ASSIGNED

 TECHNIQ

 Techniqnote

History

Fieldnote

Proprietary

YEARSUNK
 NIMANUM

RECRD
 VESSLTERMS
 CHART
 AREA

 CARTOCODE
 SNDINGCODE
 DEPTH

LAT83	<input type="text" value="33/45/15.6"/>	LONG83	<input type="text" value="118/16/34.8"/>	NATIVDATUM	<input type="text" value="31"/>
LATDEC:	<input type="text" value="33.754333333333"/>	LONDEC:	<input type="text" value="118.276333333333"/>	GPQUALITY	<input type="text" value="Low"/>
				GPSOURCE	<input type="text" value="Scaled"/>

PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
 INIT
 ASSIGNED

 TECNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK
 NIMANUM

RECRD
 VESSLTERMS
 CHART
 AREA

 CARTOCODE
 SENDINGCODE
 DEPTH

LAT83
 LONG83
 NATIVDATUM

 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
 INIT
 ASSIGNED

 TECHNIQ

 Techniqnote

History

 SURVEY REQUIREMENTS
 NOT ASSIGNED

Fieldnote

 DATE(S): 12 / 10 / 01 (DN:344)

 HYDROGRAPHIC SURVEY NUMBER: OPR-L418-NRB, F 00484

 VN: 1212 TIME: see SSS tmes

 INVESTIGATION METHODS USED: 200% Side Scan Sonar (Fixes 84-93); visual inspection

 SURVEYED POSITION: LAT. LON.

 POSITION DETERMINED BY: DIFFERENTIAL GPS

 INVESTIGATION SUMMARY: No dols were visible at the charted location nor on the sonargram.

 CHARTING RECOMMENDATION (HYDROGRAPHER): Delete dols charted at the above location.

 EVALUATOR COMMENTS: Concur

Proprietary

YEARSUNK
 NIMANUM

RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
 GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECHNIQ
 Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM

11

11

11

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14

7

9

11

AWOIS 52864

14

4

5

"B"

Fl 4s

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22

14

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14

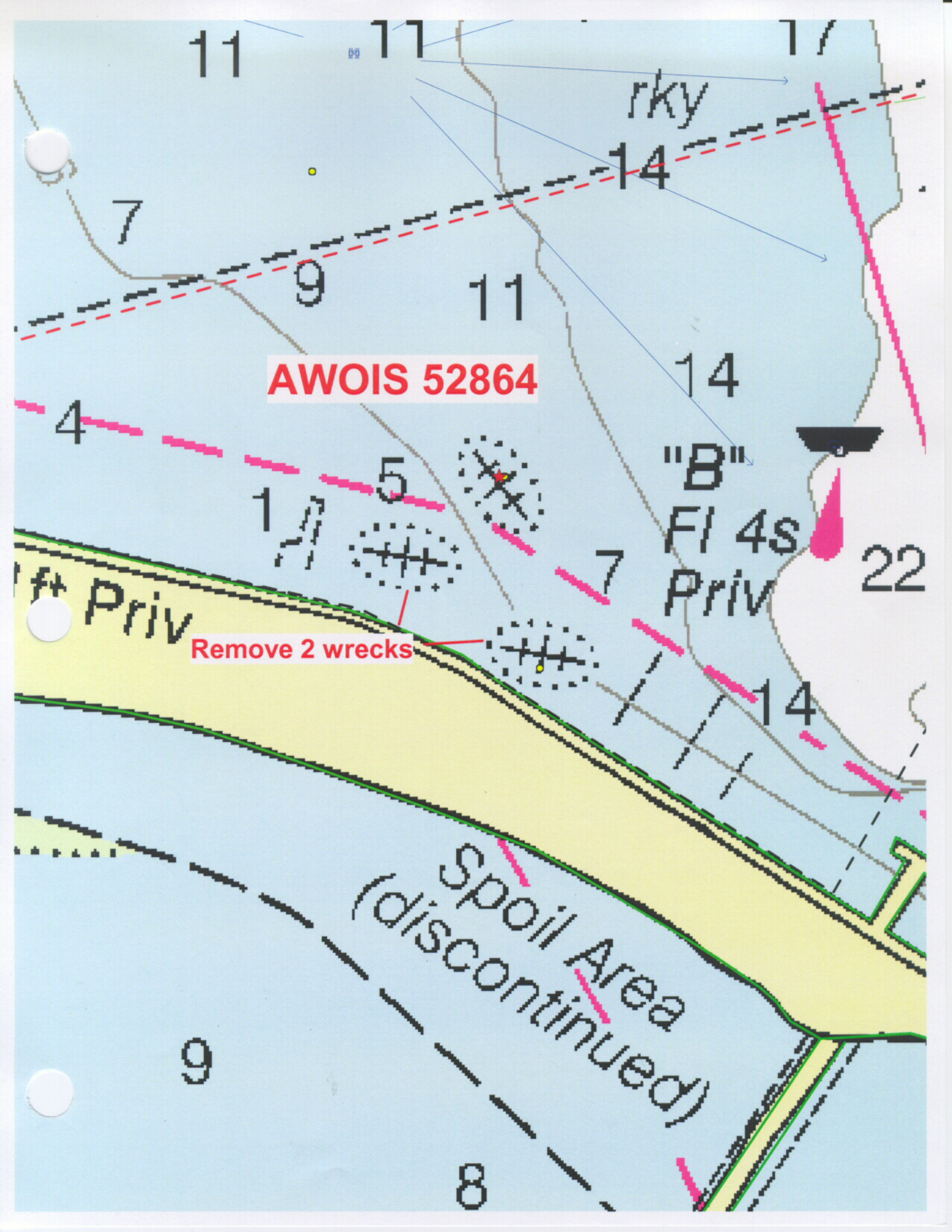
ft Priv

Remove 2 wrecks

Spoil Area
(discontinued)

9

8



RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
RADIUS INIT ASSIGNED
TECNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM

RECRD
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 AREA

 CARTOCODE
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 LATDEC:
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 GPQUALITY

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PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
 INIT
 ASSIGNED

 TECNIQ

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History

Fieldnote

Proprietary

YEARSUNK
 NIMANUM

RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
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TECNIQ

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History

Fieldnote

Proprietary

YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
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TECNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM

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 LATDEC:
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 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
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 ASSIGNED

 TECNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK
 NIMANUM

RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
 GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
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Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
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PROJECT ITEMSTATUS SEARCHTYPE
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History

Fieldnote

Proprietary

YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
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History

Fieldnote

Proprietary

YEARSUNK
 NIMANUM

RECRD VESSLTERMS CHART AREA
CARTOCODE SENDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
RADIUS INIT ASSIGNED
TECNIQ
Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM

46

45

45

42

Subm piling

36

AWOIS 52875

41

Dol

19

16

15

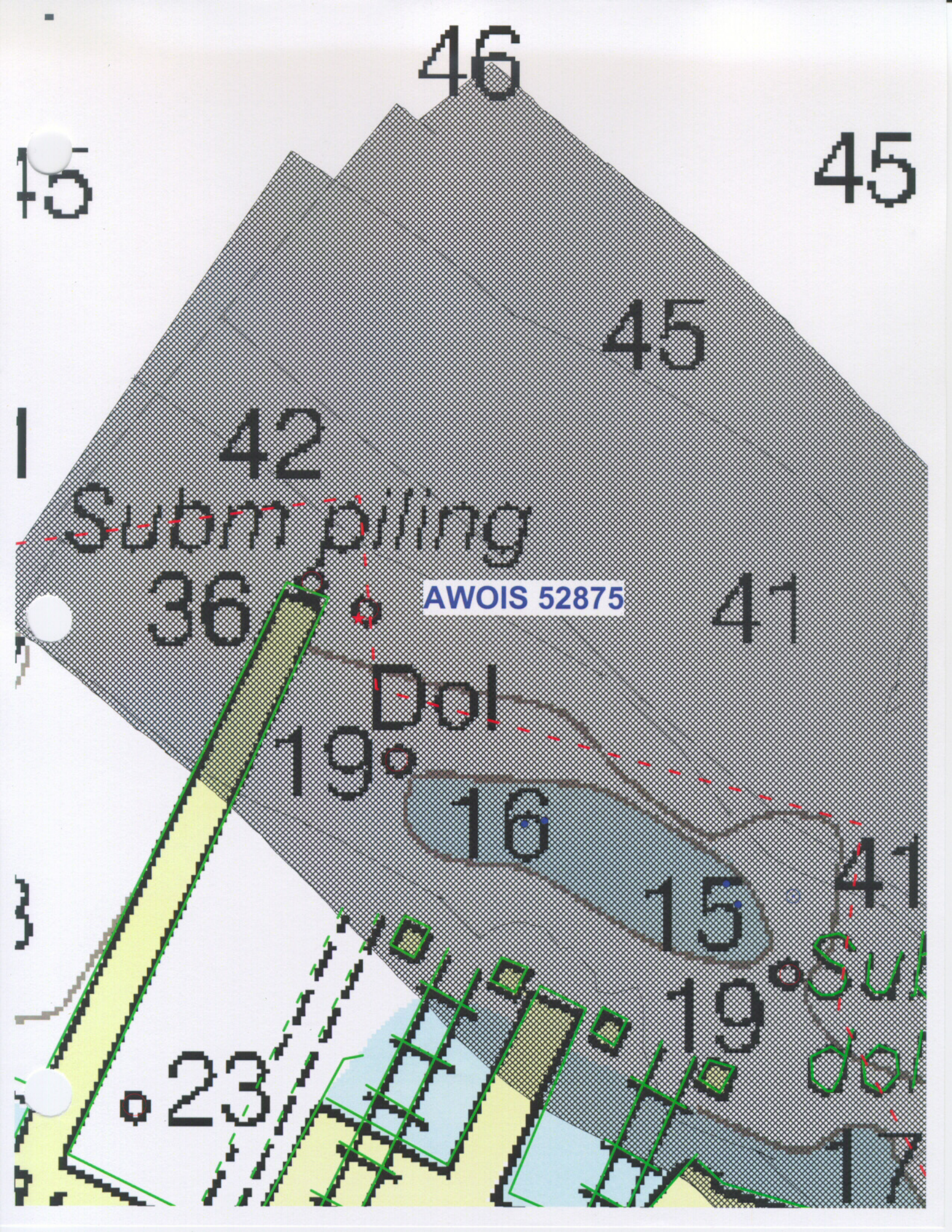
41

SUL
dol

19

23

17



RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

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Proprietary
YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
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YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
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GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
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YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
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LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
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History

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Proprietary YEARSUNK NIMANUM

RECRD
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 LATDEC:
 LONDEC:
 GPQUALITY

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Techniqnote

History

Fieldnote
 EVALUATOR COMMENTS: Concur, see smooth sheet for approximate shoreline and soundings."/>

Proprietary

YEARSUNK
 NIMANUM

RECRD
 VESSLTERMS
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 SNDINGCODE
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LAT83
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 LATDEC:
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 GPQUALITY

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History

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Proprietary

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 LATDEC:
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RECRD VESSLTERMS CHART AREA
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LAT83 LONG83 NATIVDATUM
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History

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Proprietary

YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
 GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ
 Techniqnote

History

Fieldnote
 (562-590-4171) P. O. Box 570, Long Beach, CA 90802
 SURVEYED POSITION: NA
 POSITION DETERMINED BY: DIFFERENTIAL GPS
 INVESTIGATION SUMMARY: Pier T and the West Basin are part of a construction project scheduled for completion in 2002.
 Piers 1, 2 and 3 along with the charted dols will be removed in conjunction with this project.
 CHARTING RECOMMENDATION (HYDROGRAPHER): Retain as charted until details of new construction are received from
 Port of Long Beach.
 EVALUATOR COMMENTS: Concur"/>

Proprietary

YEARSUNK NIMANUM

RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
RADIUS INIT ASSIGNED
TECNIQ
Techniqnote

History

Fieldnote (562-590-4171) P. O. Box 570, Long Beach, CA 90802
SURVEYED POSITION: NA
POSITION DETERMINED BY: DIFFERENTIAL GPS
INVESTIGATION SUMMARY: Pier T and the West Basin are part of a construction project scheduled for completion in 2002.
Piers 1, 2 and 3 along with the charted dols will be removed in conjunction with this project.
CHARTING RECOMMENDATION (HYDROGRAPHER): Retain as charted until details of new construction are received from
Port of Long Beach.
EVALUATOR COMMENTS: Concur"/>

Proprietary

YEARSUNK NIMANUM

RECRD
 VESSLTERMS
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 AREA

 CARTOCODE
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 DEPTH

LAT83
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 NATIVDATUM

 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

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 RADIUS
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 TECHNIQ

 Techniqnote

History

Fieldnote
 EVALUATOR COMMENTS: Concur, chart 16 Rk at latitude 33/44/25.29N, longitude 118/13/45.38W"/>

Proprietary

YEARSUNK
 NIMANUM

RECRD
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History

Fieldnote

 DATE(S)

 HYDROGRAPHIC SURVEY NUMBER:

 VN: TIME:

 INVESTIGATION METHODS USED:

 SURVEYED POSITION:

 POSITION DETERMINED BY:

 INVESTIGATION SUMMARY:

 CHARTING RECOMMENDATION (HYDROGRAPHER):

 EVALUATOR COMMENTS:

Proprietary

YEARSUNK
 NIMANUM

RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
RADIUS INIT ASSIGNED
TECNIQ
Techniqnote

History
TP00393/78: 2 DOLPHINS SHOWN ON TOPO MAP AT THE SOUTH END OF PIER 3 IN THE FOLLOWING POSITIONS LAT 33-45-06.30N, LONG 118-13-47.13W, AND LAT 33-45-06.00N, LONG 118-13-03.40W (NAD 83). (ENTERED 11/01, BY PSH)

Fieldnote
DATE(S): 01/22/02 (DN 022)
HYDROGRAPHIC SURVEY NUMBER: OPR-L418-NRB, F 00484
VN: NA TIME: NA
INVESTIGATION METHODS USED: Interview, local source: Edmund S. "Moe" Miller, Jr., Chief Surveyor, Port of Long Beach, (562-590-4171) P. O. Box 570, Long Beach, CA 90802
SURVEYED POSITION: NA
POSITION DETERMINED BY: NA
INVESTIGATION SUMMARY: Pier T and the West Basin are part of a construction project scheduled for completion in 2002. Piers 1, 2 and 3, along with the charted dols, will be removed in conjunction with this project.
CHARTING RECOMMENDATION (HYDROGRAPHER): Retain as charted until details of new construction are received from Port of Long Beach.
EVALUATOR COMMENTS: Concur

Proprietary

YEARSUNK NIMANUM

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LAT83
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 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
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 RADIUS
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 TECNIQ

Techniqnote

History

HISTORY

LNM33/80--7/23/80, 11TH CGD: A BLACK BOUY WITH A QUICK FLASHING GREEN LIGHT HAS BEEN ESTABLISHED TO MARK A SUBMERGED 31 FOOT CABIN CRUISER LOCATED AT LAT 33-45-24.00N, LONG 118-11-30.00W (NAD 27). THE BUOY IS LOCATED 045° TRUE 10 YARDS FROM THE VESSEL.
(ENTERED 11/01, BY PSH)

LNM40/80--9/15/80, 11TH CGD: THE 31 FOOT CABIN CRUISER REPORTED SUBMERGED IN LOCAL NOTICE TO MARINERS 33/80 DATED 23 JULY 1980 HAS SHIFTED AND IS NOW SUNK. THE BLACK LIGHTED BUOY HAS BEEN RELOCATED TO LAT 33-45-17N, LONG 118-11-31W (NAD 27) TO BETTER MARK THE VESSEL.

LNM18/81--4/22/81, 11TH CGD; THE 31 FOOT CABIN CRUISER SUNK AT LAT 33-45--17.00N, LONG118-11-32.00W (NAD 27) IN JULY 1980 CAN NO LONGER BE LOCATED. THE LIGHTED BLACK BUOY ESTABLISHED TO MARK THE VESSEL HAS BEEN DISCONTINUED.
(ENTERED 11/01, BY PSH)

Fieldnote

INVESTIGATION

DATE(S): 01 /24 /02 (DN: 24)

HYDROGRAPHIC SURVEY NUMBER: OPR-L418-NRB, F00484

VN: 1212 TIME: NA

INVESTIGATION METHODS USED: Visual inspection. Echosounder development at ten-meter line spacing in orthogonal directions on DN 024 (Fixes 5388-5604). Additional development hydrography at one-to-two-meter line spacing was acquired on DN 043 (Fixes 7024-7052).

SURVEYED POSITION: NA

POSITION DETERMINED BY: DIFFERENTIAL GPS

INVESTIGATION SUMMARY: The wreck is charted in depths ranging from six to twenty-eight feet. Hydrography over the search radius revealed no indication of a submerged wreck or other submerged object. Nothing was visible at low tide.

CHARTING RECOMMENDATION (HYDROGRAPHER): Delete the charted submerged wreck; chart the soundings from this survey.

EVALUATOR COMMENTS: Concur

Proprietary

YEARSUNK
 NIMANUM

[Print Record](#)

RECRD VESSLTERMS CHART AREA
CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
LATDEC: LONDEC: GPQUALITY
GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
RADIUS INIT ASSIGNED
TECNIQ
Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM

RECRD
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 AREA

 CARTOCODE
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LAT83
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 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
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Techniqnote

History

 CL32/84--6/11/84, USPS: SUNKEN VESSEL WITH ABOUT 3 TO 4 FEET OF THE BOW ABOVE THE WATER. THE VESSEL IS IN THE ANCHORAGE AREA JUST SOUTH OF THE QUEEN MARY AND DOME. THE SUNKEN VESSEL COULD BE HAZERDOUS TO VESSELS ATTEMPTING TO ANCHOR DURING DARKNESS. IT IS LOCATED AT APPROXIMATLEY LAT 33-44-56.00N, LONG 118-11-15.00W (NAD 27). NOTE ON REPORT STATES THAT VESSEL IS 100 YDS EAST OF SHORE AND 300 YDS SOUTH OF DOME.

 CL353/86--1/27/86, USPS: WRECK AS NOTED ON CHART IS NO LONGER VISABLE. APPROXIMATE POSITION IS LAT 33-44-56.00N, LONG 118-11-15.00W (NAD 27).

 (ENTERED 11/01, BY PSH)

Fieldnote

 DATE(S): 04/04/01, 04/05/02, 04/23/02 (DN: 094, 095, 113)

 HYDROGRAPHIC SURVEY NUMBER: OPR-L418-NRB, F00484

 VN: 1212 TIME:

 INVESTIGATION METHODS USED: Side scan sonar, echosounder, dive investigation

 SURVEYED POSITION: NA

 POSITION DETERMINED BY: DIFFERENTIAL GPS

 INVESTIGATION SUMMARY: Side scan investigation was conducted in conjunction with CARIS training and several contacts were located. Although the CARIS data were not retained, the contacts were plotted and developed at three-to-five-meter line spacing. No significant obstruction was located. Divers selected the target nearest the charted wreck for further investigation. They located a small obstruction described as cylindrical and approximately 1.5 meters in diameter and 1.0 meter long - but not a wreck (see dive report, attached).

 The City of Long Beach is in the process of building a new cruise ship terminal in the vicinity of the charted wreck (see preliminary construction plans, attached). Dredge operations already under way in conjunction with this project may involve removal of the charted obstruction.

 CHARTING RECOMMENDATION (HYDROGRAPHER): Retain the submerged wreck as charted.

 EVALUATOR COMMENTS: Do not concur. Remove charted submerged wreck PA. Chart submerged obstruction PA at the AWOIS position. The obstruction was not shown on the smooth sheet as no detached position was taken by the hydrographer.

Proprietary

YEARSUNK
 NIMANUM

AW015
52891

NRT 3

Dive Plan/Investigation Form

Date: 4/23/02 DN: 113 Survey: F00484

Location: LONG BEACH MAR

Latitude: 118° 18' 40" Longitude: 33° 44' 50" Divemaster: WERNICKE

Diver in Charge: BROWN Launch: 1212 Coxswain: SIMMONS

Tenders: SIMMONS Equipment Used: SCUBA

Dive Plan: DROP MARKER BUOY ON TARGET, DIVE
DOWN BUOY LINE, DETERMINE LEAST DEPTH &
IDENTIFY

Weather: Wind: 0 (Kts/dir)
Seas: 0 (ft)
Swell: 0 (ft)

Diver	Surface Interval	Rep Group	P _{in}	T _{in} GMT	P _{out}	T _{out} GMT	Bottom Time	Max Depth	Group
Wernicke			2000	1648	1652	1500			
Brown			2200	1648	1652	1000			
				1656	1702				
				1656	1702				

Current: 0 Visibility: 1 Bottom Type: MUD

Description & Dimensions: AW015 52891. OBJECT FOUND WAS
CYLINDRICAL APPROX 1.5 m DIAMETER
BY 1 m LONG, DID NOT APPEAR TO BE
A BOAT WRECK.

Diver Gauge Information

P_{in}: 1480 P_{LD}: 25.15 P_{out}: _____

Time of Least Depth Measurement: 468 1700

PREDICTED TIDE 0.819 LD 7.99

RECRD
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 AREA

 CARTOCODE
 SNDINGCODE
 DEPTH

LAT83
 LONG83
 NATIVDATUM

 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
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 SEARCHTYPE

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 ASSIGNED

 TECNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK
 NIMANUM

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 VESSLTERMS
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 AREA

 CARTOCODE
 SNDINGCODE
 DEPTH

LAT83
 LONG83
 NATIVDATUM

 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
 INIT
 ASSIGNED

 TECNIQ

 Techniqnote

History

Fieldnote
 (562-590-4171) P. O. Box 570, Long Beach, CA 90802
 SURVEYED POSITION: NA
 POSITION DETERMINED BY: NA
 INVESTIGATION SUMMARY: Pier T and the West Basin are currently part of a construction project scheduled for completion in
 2002. Piers 1, 2 and 3 will be demolished. These submerged dols have already been removed as part of area revision.
 CHARTING RECOMMENDATION (HYDROGRAPHER): Delete charted submerged dolphins
 EVALUATOR COMMENTS: Concur"/>

Proprietary

 YEARSUNK
 NIMANUM

RECRD
 VESSLTERMS
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 CARTOCODE
 SNDINGCODE
 DEPTH

LAT83
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 NATIVDATUM

 LATDEC:
 LONDEC:
 GPQUALITY

 GPSOURCE

PROJECT
 ITEMSTATUS
 SEARCHTYPE

 RADIUS
 INIT
 ASSIGNED

 TECNIQ

 Techniqnote

History

Fieldnote
 SURVEYED POSITION: NA
 POSITION DETERMINED BY: NA
 INVESTIGATION SUMMARY: Pier T and the West Basin are currently part of a construction project scheduled for completion in 2002. Piers 1, 2 and 3 will be demolished. The submerged dols have already been removed.
 CHARTING RECOMMENDATION (HYDROGRAPHER): Delete charted submerged dolphins
 EVALUATOR COMMENTS: Concur"/>

Proprietary

YEARSUNK
 NIMANUM

RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
 GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECHNIQ
 Techniqnote

History

Fieldnote
 EVALUATOR COMMENTS: Concur, chart 40 Obstr at the above position."/>

Proprietary

YEARSUNK NIMANUM

51

52

M

52

52

52

52

30 ft rep PA

49

8

7

4

LONG BEACH BREAKW

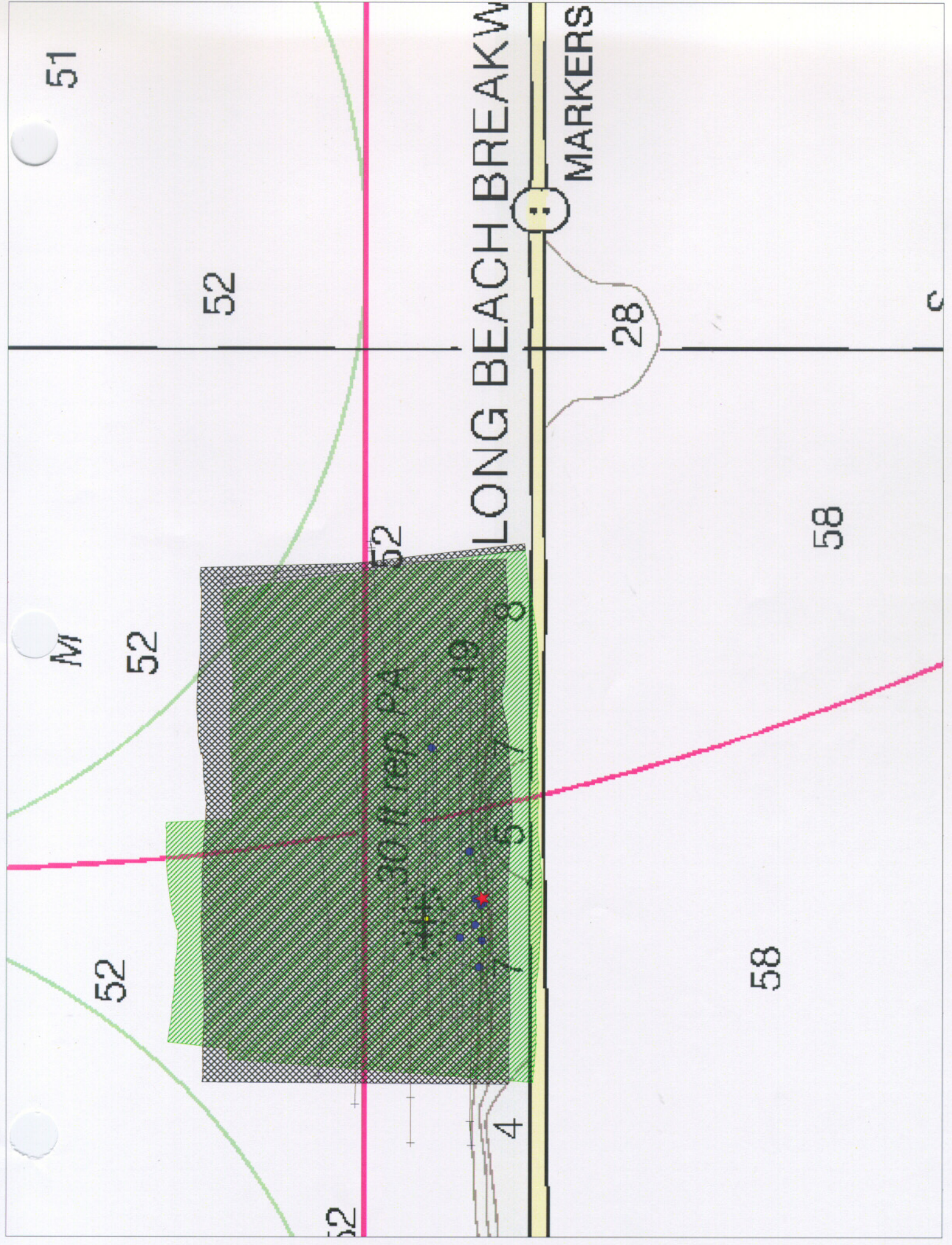
MARKERS

28

58

58

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RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

LAT83 LONG83 NATIVDATUM
 LATDEC: LONDEC: GPQUALITY
 GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ

Techniqnote

History
 HISTORY
 CL1096/84--8/29/84, COE: SUBMERGED WRECK HAS BEEN LOCATED APPROXIMATELY 950 YARDS FROM BELMONT PIER IN LONG BEACH, CALIFORNIA. THE POSITION OF THE WRECK AS FOUND IS LAT 33-44-53.70N, LONG 118-08-46.7W (NAD 27), IN 28 FEET OF WATER. THE MOST SHOAL PORTION OF THE WRECK IS COVERED BY 16 FEET OF WATER AT M.L.L.W. THE WRECK IS STEEL, VERY RUSTY, AND THERE ARE SEVERAL LARGE HOLES IN THE HULL. THE WRECK IS LYING KEEL UP ON A BEARING OF NORTH 15° EAST. IT IS 110 FEET LONG AND ABOUT 20 FEET WIDE.
 NM40/66, COE: THE CORPS OF ENGINEERS REPORTS THE WRECK, PREVIOUSLY REPORTED IN A POSITION ABOUT 950 YARDS 178° FROM THE OUTER END OF BELMONT PIER LAT 33-45-24.00N, LONG 118-08-54.00W (NAD 27), HAS BEEN RELOCATED IN LAT 33-44-53.70N, LONG 118-08-46.7W (NAD 27) AND IS COVERED 16 FEET AT M.L.L.W.
 CL1096/84--CP FIELD INSPECTION8/17/84, OBSERVER STATES NO EVIDENCE OF THE WRECK LOCATED AT LAT 33-44-53.70N, LONG 118-08-46.7W (NAD 27).
 (ENTERED 11/01, BY PSH)

Fieldnote
 INVESTIGATION
 DATE(S): 01/29/02, 02/04/02, 03/11/02 (DN 029, 035, 070)
 HYDROGRAPHIC SURVEY NUMBER: OPR-L418-NRB, F00484
 VN: 1212 TIME: 18:24:48 UTC (fix 5929, DN035)
 INVESTIGATION METHODS USED: Side Scan Sonar, Echosounder Development, Dive investigation
 SURVEYED POSITION: Latitude 33:44:54.2501 Longitude 118:08:49.71444
 POSITION DETERMINED BY: DIFFERENTIAL GPS
 INVESTIGATION SUMMARY: The wreck was visible on the sonargram. Divers reported a wreck upside down and mostly collapsed near the bottom except for the bow which rose to a depth of 16 feet as calculated with the divers least depth gauge. This confirmed the depth acquired with echosounder on DN 035 at the above position. (See Danger to Navigation Report.)
 CHARTING RECOMMENDATION (HYDROGRAPHER): Delete ED notation. Retain charted wreck; chart depth of 16 feet.
 EVALUATOR COMMENTS: Do not concur, chart 16 Wk at survey position, delete charted submerged wreck ED.

Proprietary

YEARSUNK NIMANUM

[Print Record](#)

DANGER TO NAVIGATION REPORT
DGR-02-02-NRT3

FIELD EXAMINATION NUMBER: F00484
STATE: California
GENERAL LOCALITY: Los Angeles and Long Beach
SUBLOCALITY: Chart Investigations for the
Ports of Los Angeles and Long Beach
PROJECT NUMBER: OPR-L418-NRB
SURVEY DATES: January 8, 2002 - February 13, 2002

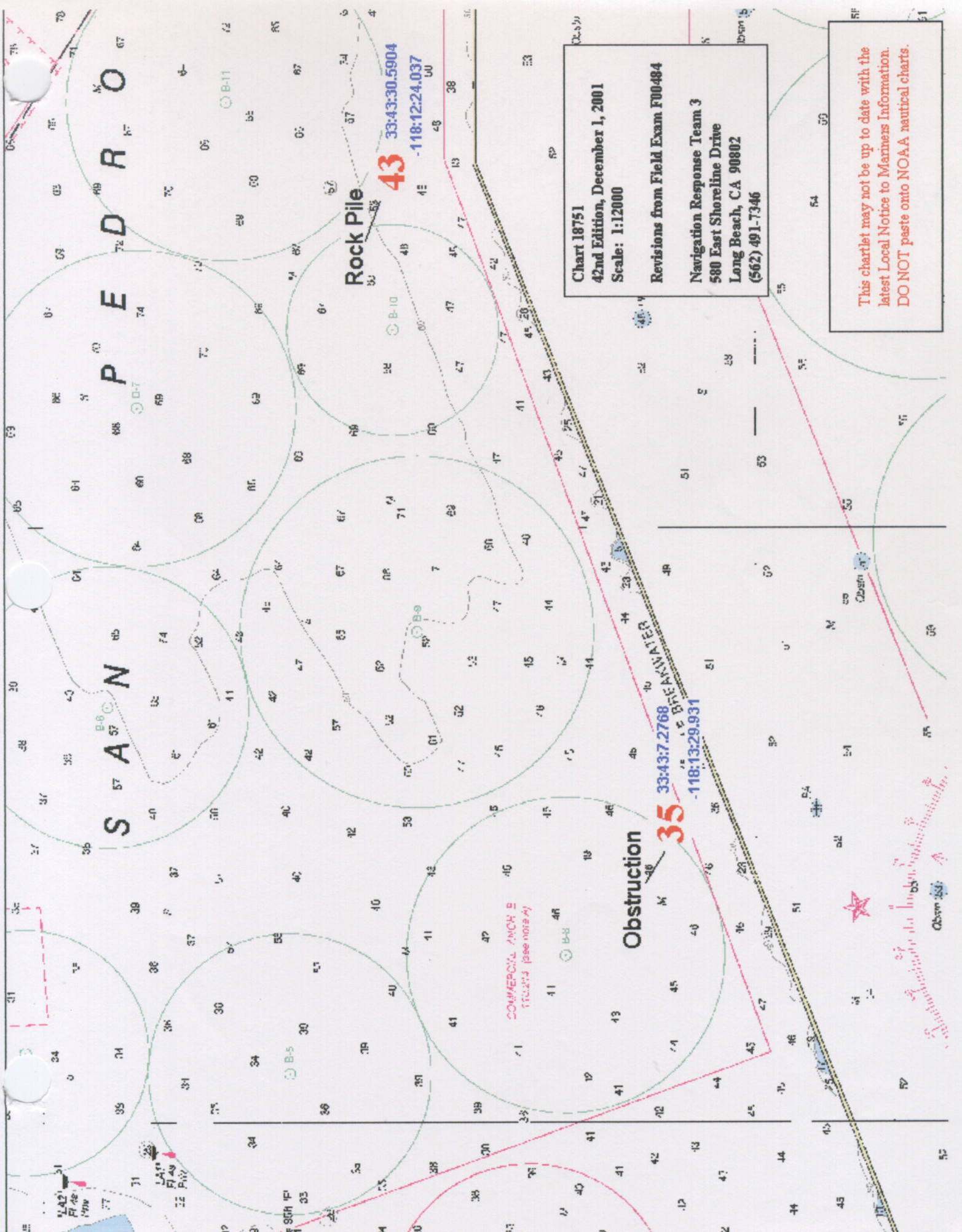
Features are reduced to Mean Lower Low Water using preliminary, six-minute, real tides downloaded from the Los Angeles tide station (941-0660) via the NOAA, NOS, CO-OPS web site. Tide zoning and corrector values provided with project instructions were applied.

Charts Affected: 18751, 42nd Edition, December 1, 2001, Scale: 1:12000
18749, 38th Edition, December 1, 2001, Scale: 1:20000

Feature	Depth Feet	Latitude	Longitude
Metal Obstruction	35	33:43:07.2768N	118:13:29.931W
Rock Pile	43	33:43:30.590N	118:12:24.037W

The metal obstruction was observed on side scan sonargram. Divers located wreckage of some sort consisting of large steel blocks with twelve-inch steel pipes rising from the blocks to approximately twelve feet off the bottom. See Dive Investigation Report attached. The depth of 35 feet was obtained with a Diver Least Depth Gauge.

Least depth on the rock pile was obtained with echosounder development.



Rock Pile

43
 33-43:30.5904
 -118:12:24.037

Chart 18751
 42nd Edition, December 1, 2001
 Scale: 1:12000
 Revisions from Field Exam F00484
 Navigation Response Team 3
 580 East Shoreline Drive
 Long Beach, CA 90802
 (562) 491-7346

This chartlet may not be up to date with the latest Local Notice to Mariners Information. DO NOT paste onto NOAA nautical charts.

Obstruction

35
 33-43:27.2768
 -118:13:29.931

COMMERCIAL ANCH B (110-27.2 (see note A))

Obstruction
 33-43:27.2768
 -118:13:29.931

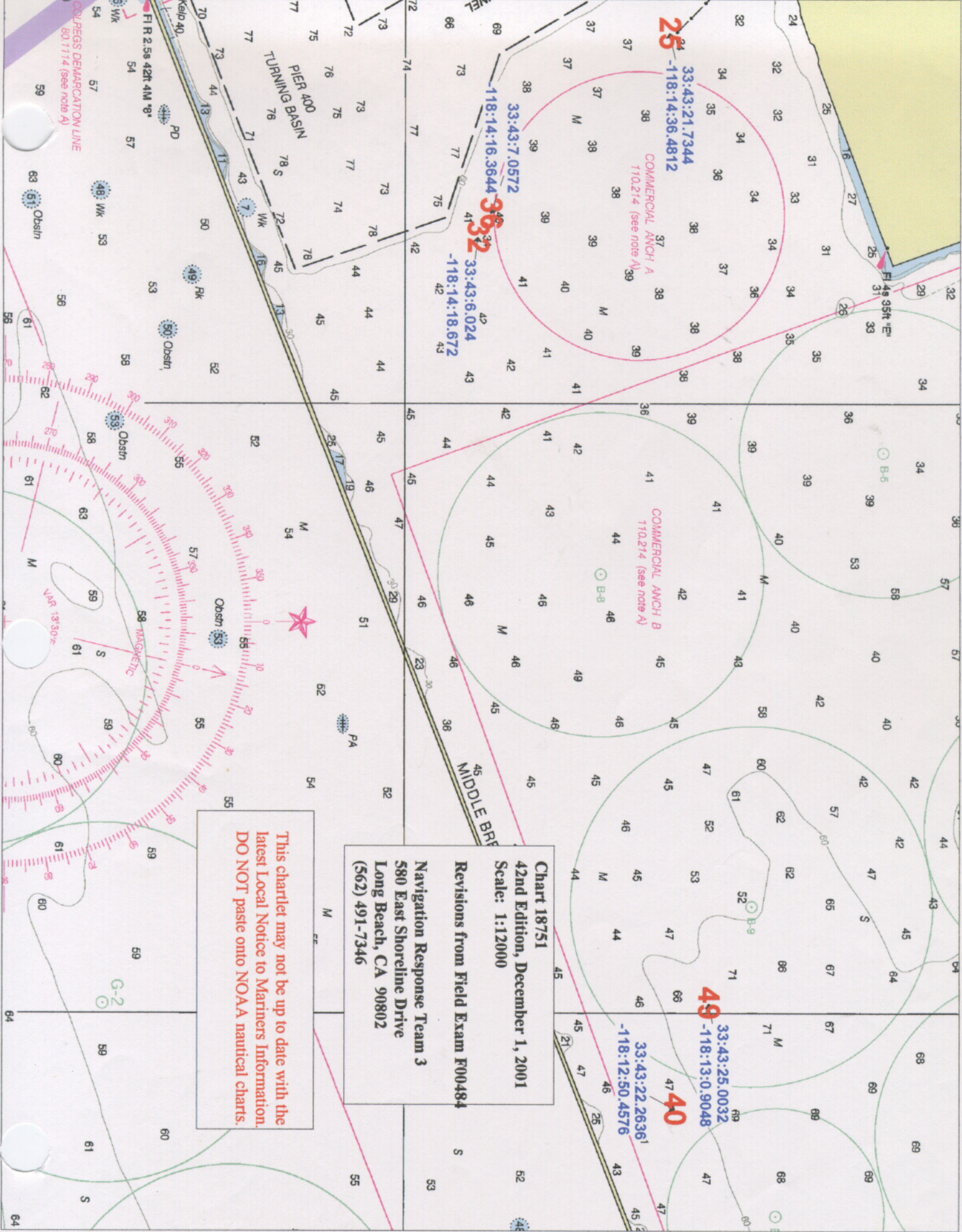
**DANGER TO NAVIGATION REPORT
DGR-01-02-NRT3**

FIELD EXAMINATION NUMBER: F00484
STATE: California
GENERAL LOCALITY: Los Angeles and Long Beach
SUBLOCALITY: Chart Investigations for the
Ports of Los Angeles and Long Beach
PROJECT NUMBER: OPR-L418-NRB
SURVEY DATES: January 8, 2002 - January 17, 2002

Features are reduced to Mean Lower Low Water using preliminary, six-minute, real tides downloaded from the Los Angeles tide station (941-0660) via the NOAA, NOS, CO-OPS web site. Tide zoning and corrector values provided with project instructions were applied.

Charts Affected: 18751, 42nd Edition, December 1, 2001, Scale: 1:12000
18749, 38th Edition, December 1, 2001, Scale: 1:20000

Feature	Depth Feet	Latitude	Longitude
Sewer Line	25	33:43:21.7344N	118:14:36.4812W
Shoal	32	33:43:06.0240N	118:14:16.3644W
Shoal	36	33:43:07.0572N	118:14:18.6720W
Shoal	40	33:43:22.2636N	118:12:50.4576W
Shoal	49	33:43:25.0032N	118:13:00.9048W



25
 33:43:21.7344
 -118:14:36.4812

COMMERCIAL ANCHOR A
 110.214 (see note A)

33:43:7.0572
 -118:14:16.3644
36
 33:43:6.024
 -118:14:18.672

COMMERCIAL ANCHOR B
 110.214 (see note A)

49
 33:43:25.0032
 -118:13:0.9048

33:43:22.26361
 -118:12:50.4576
40

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Chart 18751
 42nd Edition, December 1, 2001
 Scale: 1:12000
 Revisions from Field Exam F00484
 Navigation Response Team 3
 580 East Shoreline Drive
 Long Beach, CA 90802
 (562) 491-7346

DANGER TO NAVIGATION REPORT
DGR-02-03-NRT3

FIELD EXAMINATION NUMBER: F00484
STATE: California
GENERAL LOCALITY: Los Angeles and Long Beach
SUBLOCALITY: Chart Investigations for the
Ports of Los Angeles and Long Beach
PROJECT NUMBER: OPR-L418-NRB
SURVEY DATES: January 29, 2002 - March 11, 2002

Features are reduced to Mean Lower Low Water using preliminary, six-minute, real tides downloaded from the Los Angeles tide station (941-0660) via the NOAA, NOS, CO-OPS web site. Tide zoning and corrector values provided with project instructions were applied.

Charts Affected: 18749, 38th Edition, December 1, 2001, Scale: 1:20000

Feature	Depth Feet	Latitude	Longitude
Submerged Wreck	16	33:44:54.250N	118:08:49.714W

The submerged wreck which is charted "ED" was located with side scan sonar, developed with echosounder and investigated by divers. Divers located a deteriorating metal vessel lying keel up consistent with the AWOIS description. The wreck is oriented at 45 degrees with the high point at its NE end. The high point is located at the above location and was measured at 16 feet with the Divers Least Depth Gauge. See Dive Investigation Report attached.

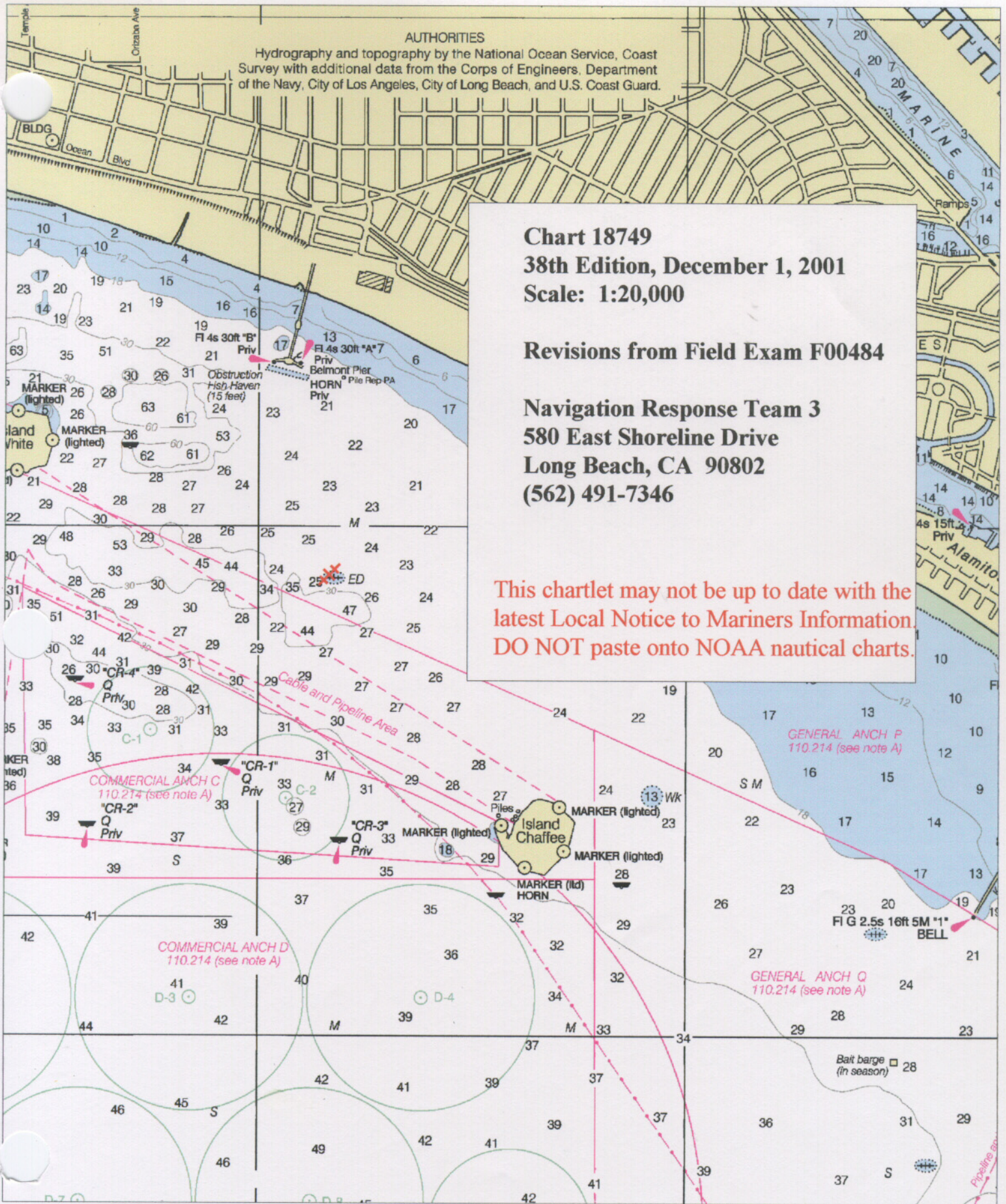
AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey with additional data from the Corps of Engineers, Department of the Navy, City of Los Angeles, City of Long Beach, and U.S. Coast Guard.

Chart 18749
38th Edition, December 1, 2001
Scale: 1:20,000

Revisions from Field Exam F00484

Navigation Response Team 3
580 East Shoreline Drive
Long Beach, CA 90802
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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 11, 2002

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-L418-NRB-2002
HYDROGRAPHIC SHEET: F00484

LOCALITY: Ports of Los Angeles & Long Beach, CA
TIME PERIOD: December 10, 2001 - April 23, 2002

TIDE STATION USED: 941-0660 Los Angeles, CA
Lat. $33^{\circ} 43.2'N$ Lon. $118^{\circ} 16.3'W$
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.770 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PAC9, PAC9A

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units
(meters), relative to MLLW and on Greenwich Mean Time.

Thomas V. New 7/15/02

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final tide zone node point locations for OPR-L418-NRB-2002, Sheet FOO484.

Format: Tide Station (in recommended order of use)
 Average Time Correction (in minutes)
 Range Correction
 Longitude in decimal degrees (negative value denotes
 Longitude West),
 Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone PAC9	941-0660	0	0.97
-117.716297 33.471876			
-118.135425 33.06997			
-118.45971 33.325204			
-118.459051 33.420469			
-118.583747 33.465047			
-119.124506 33.731415			
-118.865577 34.10373			
-118.807523 34.006245			
-118.403128 33.768284			
-118.286227 33.710519			
-118.267982 33.703109			
-118.206473 33.722893			
-118.124186 33.722927			
-118.099448 33.73543			
-117.769904 33.537592			
-117.716297 33.471876			
Zone PAC9A	941-0660	0	1.00
-118.206473 33.722893			
-118.267982 33.703109			
-118.286227 33.710519			
-118.298313 33.774032			
-118.164556 33.802737			
-118.092936 33.755965			
-118.099448 33.73543			
-118.124186 33.722927			
-118.206473 33.722893			

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET			SMOOTH OVERLAYS: POS., ARC, EXCESS			
DESCRIPTIVE REPORT			FIELD SHEETS AND OTHER OVERLAYS			
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS	
ACCORDION FILES						
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

- SHORELINE MAPS (List):
- PHOTOBATHYMETRIC MAPS (List):
- NOTES TO THE HYDROGRAPHER (List):
- SPECIAL REPORTS (List):
- NAUTICAL CHARTS (List):

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET			
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT			
GEOGRAPHIC NAMES			
OTHER (Chart Compilation)			
USE OTHER SIDE OF FORM FOR REMARKS	TOTALS		

Pre-processing Examination by	Beginning Date	Ending Date
Verification of Field Data by	Time (Hours)	Ending Date
Verification Check by	Time (Hours)	Ending Date
Evaluation and Analysis by	Time (Hours)	Ending Date
Inspection by	Time (Hours)	Ending Date

APPROVAL SHEET
F00484

Initial Approvals:

The survey and associated records have been inspected with regard to survey coverage, delineation of the depths curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

Bruce A. Obmatala
Dennis Hill
Chief, Cartographic Team
Pacific Hydrographic Branch

Date: 11/26/2003

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.

John E. Lowell, Jr.
John E. Lowell, Jr.
Commander, NOAA
Chief, Pacific Hydrographic Branch

Date: JAN 21 2004

AWS/SURF MUR 4/18/04

