

FE203

Diagrams 1236-2, 1278, 1279,
1280, 1282-2, & 1283

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey .. Wire Drag
Field No. OPR-450
Office No..... FE-203WD (1965)

LOCALITY

State Texas, Louisiana, & North Carolina
General Locality .. Gulf of Mexico
Locality Texas Coast, Louisiana Coast, Cape
Fear & Core Sound, N.C.

19 65

CHIEF OF PARTY
D.R. Tibbit

LIBRARY & ARCHIVES

DATE March 1966

☆ U.S. GOV. PRINTING OFFICE: 1976-669-441

NOTE: A new system for registering Field Examinations (FE's) was established in 1980. All FE's are now consecutively numbered as shown heron. The date shown in the new format is the actual date of survey. This material was previously registered as;

FE No.1 1966WD

FE203

F E No. 1

1966

WIRE DRAG

*History
applied 11/66
off Jan 15, 68
on Dec 27, 68*

Diag. Cht. Nos. 1236-2, 1278, 1279,
1280, 1282-2 and 1283.

FORM C&GS-504

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

DESCRIPTIVE REPORT

Type of Survey Wire Drag

Field No. QPR-450 Office No. F.E.No.1-1966
W.D.

LOCALITY

State Texas, Louisiana & North Carolina

General locality Gulf of Mexico

Locality Texas Coast, Louisiana Coast,
Cape Fear and Core Sound, N. C.

1965

CHIEF OF PARTY

D. R. Tibbit

LIBRARY & ARCHIVES

DATE March 1966

USCOMM-DC 97022-P66

*Note:
Eight (8) chart sections
accompany this report.*

F E No. 1 1966

WIRE DRAG

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER No. F.E.No. 1-1966 W.D.

Field No. OPR-450

State Texas, Louisiana and North Carolina

General locality Gulf of Mexico, ATLANTIC OCEAN

Locality Texas Coast, Louisiana Coast, Cape Fear and Core Sound, N.C.

Scale 1:40,000 & 1:80,000 Date of survey 4/30/65 - 10/30/65

Instructions dated

Vessel WAINWRIGHT & HILGARD

Chief of party D. R. Tibbit

Surveyed by SHIPS OFFICERS

Soundings taken by fathometer, graphic recorder, hand lead, wire

Fathograms scaled by

Fathograms checked by

Protracted by

Soundings penciled by

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

REMARKS:

.....
.....
.....
.....
.....

DESCRIPTIVE REPORT

to
Accompany

Wire Drag Investigations

PROJECT OPR-450

1965

USC&GS Ships WAINWRIGHT & HILGARD

Donald R. Tibbit - Commanding

A. PROJECT

Project OPR-450 - Original REVISED INSTRUCTIONS dated February 2, 1965; SUPPLEMENTAL INSTRUCTIONS dated February 26, 1965 and August 24, 1965; and a letter from Chief, Operations Division, dated March 17, 1965, serve as authority for all work performed on this project. ✓

B. AREA SURVEYED

Areas surveyed include coastal areas in the Gulf of Mexico from Freeport, Texas to Cameron, Louisiana; and coastal areas off North Carolina near Southport in the Atlantic. Inclusive dates for operations on OPR-450 range from 17 March 1965 to 30 October 1965. Wire drag investigations in the project area were concerned with specific items and did not include any extensive area coverage. In the majority of cases a mile radius area around the items was covered with the drag. ✓

C. VESSELS AND EQUIPMENT

The Ships WAINWRIGHT & HILGARD acted as guide and end launch respectively. The HILGARD's skiff, equipped with a Raytheon DE-119B portable fathometer, and the WAINWRIGHT's skiff were used alternately as drag tender and diving tender. Standard wire drag equipment was used throughout. ✓

John
1/24/67

D. SMOOTH SHEET

In accordance with instructions, the largest scale charts of the respective areas were used as smooth sheets. This report is to serve for the entire project which includes work on the following 1:80,000 charts: 1283, 1282, 1280, 1279, 1278; and the following 1:40,000 charts: 419, 886, 426. ✓

E. DRAG TESTS

Tests to determine the effective depth of the wire drag followed the method outlined in the manual. In some cases, tests were not made due to various circumstances, mostly rough weather conditions. When tests could not be made, a ~~two~~ ^{ONE} foot lift was assumed.

F. CONTROL

Both visual and electronic control procedures were utilized in different areas of the project. Visual control utilized the standard three point sextant fix method. Standard dual vessel control methods were used where visual control was available. Cuts to the end buoy and to the opposite vessel were taken immediately after the fix. The cuts were labeled plus (+) if the object was to the right of the signal used, and minus (-) if the object was to the left. Length of the towline recorded was from the center of the wheelhouse to the end buoy in each case. ✓

When visual control was not available, the Decca-Alpine Ranging System of electronic control was used. Single vessel control was used on investigations requiring electronic control. The position of the end launch was determined by a radar range and gyro bearing from the guide launch. Cuts to the end buoys were taken using the opposite vessel as a signal. See attached report on the PRRS for additional information.

A listing of all signals (visual and electronic) used is attached to this report.

G. COMPARISON WITH CHART

See LIST OF INVESTIGATIONS attached to this report. ✓

H. ADEQUACY OF THE SURVEY

This survey is considered adequate within the limits of the investigated items.

In trying to locate or disprove some of the reported items, it was impossible to maintain an effective depth with the drag within two feet of the bottom. This, however, was attempted to the extent possible. The results of each investigation with recommendations are discussed in the LIST OF INVESTIGATIONS attached to this report. ✓

A few items were not dragged close enough to the bottom to disprove the feature. See Review. DW

Respectfully submitted:

Charles H. Tibbit
for Donald R. Tibbit, LCDR, C&GS

APPROVAL SHEET

This statement is to serve as a general approval of all wire drag records pertaining to the 1965 work on OPR-450. Boat sheets and other records were examined daily and found to be satisfactory. From the examination of these records, it is believed that each examination is complete and adequate to supercede prior surveys. ✓

To date, the smooth plotting is not complete and final recommendations pertaining to each investigation will have to be delayed until such completion. These specific recommendations will be included in the Descriptive Report.

Recommendations
now in
Descriptive
Report.

DW

Charles H. Pylton
for Donald R. Tibbit
Chief of Party

LIST OF ATTACHMENTS

1. Statistics
2. Tide Note
3. List of Signals
4. Abstract of Corrections
5. List of Investigations
6. Hang and Clear Date
7. Decca-Alpine Precise Radar Ranging System

STATISTICS

Total Number of Positions	968
Total Lineal Miles (Statute)	100.0
Total Square Nautical Miles	63.46
Total Number of Investigations	27

TIDE NOTE

Tidal data was furnished by the Washington Office for the Standard Tide gage at Pier 21, Galveston, Texas. (90° w. meridian)

The following corrections were applied from Table 2 of the Tide Tables to the indicated investigations:

1. San Luis Pass, HW 0.86 ratio -0^h09^m , LW 0.86 ratio -0^h09^m ; Items Nos. 5a, 5;
2. No correction Additional Item #4.
3. Pleasure Pier, Galveston, HW ratio 1.50, -1^h06^m , LW ratio 1.50, -1^h06^m ; item nos. 5n, 5b, additional 1, 2 and 3.
4. Sabine Pass Jetty, HW ratio 1.79 +0.3', -1^h26^m , LW ratio 1.79 +0.3', -1^h31^m ; item nos. 16, 17, 17A, 18, 19, 23, 24, 25, 29, 30, 31, 34, 5j & 5p.

Exceptions are as follows:

1. "EA", "FA" & "GA" days hourly heights computed by Washington Office.

LIST OF SIGNALS

	<u>Name</u>	<u>Source</u>
Chart 1283	ART	Freeport North Jetty Light No. 12 (Charted Lat. 28°55'41" Long. 95°17' 18".)
	*KEG	KEG, 1934
	*WILL	WILL, 1933
Chart 1282	ANK	Galveston Municipal Water Tank, 1954
	BUC	BUCCANEER, 1933
	ENT	ICW Entrance Light No. 26 Port Bolivar (Charted Lat. 29°22'29" Long. 94°47' 00")
	GAL	Houston Ship Channel Front Range Light (Charted Lat. 29°20'44" Long. 94°47'28")
	HOT	Highest Point of Hotel (Charted Lat. 29°17'25" Long. 94°47'15") & from Boat Sheet OPR-428, ECFP. 20-1-62, Reg. No. (H-8751)
	LIG	South Jetty Light, 1933 (Lat. 29°19' 39.258 Long. 94°41'32.887)
	NOR	North Jetty Light (Charted Lat. 29° 20.7' Long. 94°40.8')
	RED	Water Tank (Charted Lat. 29°16.01' Long. 94°50.57')
	USE	Bolivar Point Lighthouse, USE 1900
Chart 1280	*GIL	GILCHRIST 2, 1963
	*GREEN	GREEN, 1962
	HORN	Mobil 135 (Offshore oil platform) Lat. 29°33'52" Long. 94°00'19"
	PLAT	Std. of Texas 102-2 (offshore oil platform) Lat. 29°26'56", Long. 94°09'28"
	*REBECCA	REBECCA 2, 1934
	TAN	Center of three tanks (see Vol #1, Page #1 for diagram)
	TED	Std. of Texas 104-3 (offshore Oil Platform) Lat. 29°16'03", Long. 94° 20'24"
Chart 1279	BANK	Sabine Bank Light, Lat. 29°28'20.211", Long 93°43'20.518"

Attachment No. 3 (continued)

FORM General AM 101-13 (offshore oil platform) Lat. 29°38'59", Long. 93°35'36"
 *HOLL Hollynd, 1955 (tower offset 30 ft. south of sta.)
 *LITE Sabine Pass East Jetty Light, Lat. 29°38'39.79", Long. 93°49'21.55"
 SHOR Wood 101 (offshore oil platform) Lat. 29°39'32", Long. 93°58'35"

Chart 1278

MAS Channel Light (Charted Lat. 29°42'36", Long. 93°20'00")
 RAD Superior 110 (offshore oil platform) Lat. 29°34'35", Long. 93°09'15"
 *SELL Sells 2, 1964 (tower with transponder #113 on top, offset from mark by 131.2 feet, bearing 147° magnetic from mark.)

Chart 426

CAS Fort Caswell Water Tank (Charted Lat. 33°53'36", Long. 78°01'10")
 OAK Oak Island L. H. (Charted Lat. 33°53'33", Long. 78°02'07")
 TAN Southport Water Tank (Charted Lat. 33°55'17", Long. 78°01'13").
 TOW Abandoned L.H. (Charted Lat. 33°52'24", Long. 78°00'02").

*Denotes electronic control stations.

In all cases latitude is given first, followed by longitude.

Attachment No. 4

ABSTRACT
of
CORRECTIONS
to
DISTANCE MEASUREMENTS

All ranges to all transponders in all locations are to be corrected by the subtraction of 160 meters.

All ranges to all passive targets (oil, platforms and end vessel) in all locations are to be corrected by the addition of 40 meters.

These corrections apply to ranges determined with the Decca-Alpine Precise Radar Ranging System.

HANG & CLEAR DATA

<u>Presurvey Review Item</u>	<u>Chart No.</u>	<u>Position & Day Letter</u>	<u>Latitude & Longitude</u>	<u>Grounding Effective Depth</u>	<u>Sounding</u>	<u>Cleared Effective Depth</u>	<u>Remarks</u>
✓ 17	1278	39CA	29°44'20" ✓ 93°15'50" ✓	17' 0	16' 0	4' 0 17' 0	Investigated by divers. Leadline sdg. Set of ship's bits embedded in bottom ✓
✓ 23	1279	9N	29°40' ^{30"} 27" ✓ 93°36'11" ✓	19' 5	19' 7	17' 0	Pipe embedded in bottom, leadline sdg. (diver invest.) ✓
✓ 5p	1278	25Z	29°36' ^{06"} 10" ✓ 93°17' ^{48"} 50" ✓	38' 0	31' 0	--	Fath. stg. hang in mud - not cleared by wire drag ✓ <i>Hand</i>
✓ Add #1	1282	17A	29°17'26" ✓ 94°38'55" ✓	30' 5	21' 0	--	Drydock - buoyed leadline sdg. - diver invest. ✓ <i>by L-427(66)</i>
✓ 5b	1282	29R	29°20'10" ✓ 94°36'51" ✓	36' 0	35' 0	32' 5	Hang in mud - diver invest. ✓
✓ Add #5	426	23EA	33°49'17" ✓ 78°05'46" ✓	36' 0	34' 0	--	Large anchor, leadline sdg. ✓
✓ Add #6	426	25EA	33°48'58" ✓ 78°06'17" ✓	36' 5	32' 0	32' 1	Large anchor, leadline sdg. ✓
✓ Add #7	426	35EA	33°51'07" ✓ 78°06'48" ✓	36' 0	32' 5	30' 0	Diver investigation, leadline sdg. section of wooden drydock ✓
✓ Add #8	426	17FA	33°50'06" ✓ 78°05'14" ✓	36' 5	34' 5	31' 5	Diver investigated, leadline sdg. unexploded 16" artillery shell ✓

<u>Presurvey Review Item</u>	<u>Chart No.</u>	<u>Position & Day Letter</u>	<u>Latitude & Longitude</u>	<u>Grounding Effective Depth</u>	<u>Sounding</u>	<u>Cleared Effective Depth</u>	<u>Remarks</u>
✓ Add #9	426	44GA	33°50'44" ² 78°06'49" ³⁴	3 ⁴ 5.0	31.5 ^{32'}	30' ⁰	Diver investigated, leadline sdg., section of wooden drydock ✓✓

LIST OF INVESTIGATIONS

P. R. No. 16: ✓

#423 From NM 14 (1955)

✓ 591
✓ 18' The sunken wreck of the "M/V West Beaufort", charted in Latitude 29°44'N, Longitude 93°14.5 W was not found. The area was wire dragged for a 1-mile Radius from the charted position. It was cleared with a ~~16.5'~~ effective depth drag, or greater. (day letter CA). It is recommended that the present charted symbol be deleted. See also NM 16 (1955)

AWOIS #423 CONCUR

NEW

7 P. R. No. 17: ✓

✓ 591
✓ The sunken wreck (PA) of the "F/V Linda", charted in Latitude 29°44'N, Longitude 93°17'W was not found. The area was wire dragged for a 1-mile radius from the charted position. It was cleared with a ~~15.0'~~ 18' effective depth, or greater. (day letter DA). It is recommended that the present charted symbol be deleted.

NM 4 (1958) CONCUR NEW Deleted WK 7174 L-1798/65 1278 191-

✓ A set of ship's bits was found to be located by wire drag (CA day) in Latitude 29°44'20"N, Longitude 93°15'50"W. A lead line investigation by divers determined the least depth to be 16.0' MLW, and the object to be 2.0' above the general bottom. The position was cleared by wire drag with ~~15.0'~~ 14' effective depth. (DA day). It is recommended that an obstruction with a least depth of 16' MLW be charted in this position.

changed PA 10 15' Obstr on 1278 14' 651x ✓

CHART [14]

#6995

1061 WK or Obstr

x P. R. No. 17A: ✓

✓ 591
✓ The sunken wreck (PA) of the "F/V Bella", charted in Latitude 29°42.6'N, Longitude 93°19.8'W, was not found. It was cleared with a ~~21.0'~~ 20' effective depth drag, or greater. (day letter BA) Sunken piles along channel edge and aids to navigation prevented clearing a 1-mile radius, however, it is recommended that the present charted symbol be deleted.

from NM 30 (1960)

Chart 1278 191- CONCUR. NEW

Symbol deleted 591 ✓ from Wreck List Hbk 700

P. R. No. 18: ✓

#412

✓ 1278
1051 ✓ The sunken wreck of a fishing vessel charted in Latitude 29°35.7'N, Longitude 93°18.6'W was not found. The area was wire dragged for a 1/2 mile radius from the charted position. It was cleared with a ~~34.5'~~ 33' effective depth drag, or greater. (day letter Z). It is recommended that the present charted symbol be deleted.

CONCUR.

NEW

The 33-50 sounding

P. R. No. 19: ✓

#410

The sunken wreck of the vessel "Leo Huff", charted in Latitude 29°35'N, Longitude 93°14'W was not found. The area was wire-dragged for a $\frac{1}{2}$ -mile radius from the charted position. It was cleared with a ~~34.5'~~ effective depth drag, ~~or greater~~. (day letters AA & BA). It is recommended that the present charted symbol be deleted.

from wreck list item 8725

Always #410

CONCUR

REW

10514

1278 ✓

P. R. No. 23: ✓

#7023

The obstruction charted in Latitude 29°40.5'N, Longitude 93°36.3'W was found by wire drag (H, J & ~~K~~ day letter) to be located in Latitude 29°40'27"N, Longitude 93°36'11"W. A leadline and visual inspection by divers determined the obstruction to be a pipe covered by 19.7' MLW. The position was cleared by wire drag in opposite directions with 17.0' effective depth. It is recommended that the obstruction be charted as cleared by wire drag to 17.0' MLW.

from NM 30 (1957)

Chart as 117 Obstr

1279 ✓

P. R. No. 24: ✓

#424

The sunken wreck of the trawler "WA-WA", charted in Latitude 29°44'N, Longitude 93°42'W was not found. The area was wire dragged for a $\frac{1}{2}$ mile radius from the charted position. It was cleared with a ~~5.0'~~ effective depth drag, ~~or greater~~. (L day letter). It is recommended that the present charted symbol be deleted.

from NM 40 (1954)

REW

1279 ✓

CONCUR

CHART

1 1/2

ON CHART 1116

1279 ✓

P. R. No. 25: ✓

The visible wreck (PA) of the "F/V Edna V.", charted in Latitude 29°43'N, Longitude 93°45'W was not located. The area was wire dragged for a 1 mile radius from the charted position. (except shoreward because of shoal water). It was cleared with 2.5' to 13.5' effective depths. (day letter N). It is recommended that the present charted symbol be deleted.

retain until after review - per Carstens 01/19/67

CHART AS SUNKEN WRECK PA

*517 ✓
1279 ✓
HC*

only cleared by 3 ft in 11 ft leaving 8 ft under drag. EMB. P-23-66

P. R. No. 29: ✓

#7015

The sunken wreck of the "F/V Miss Behave", charted in Latitude 29°33.5'N, Longitude 93°53.9'W was not located. The area was wire dragged for an 0.8 mile radius from the charted position. It was cleared with a ~~26.0'~~ effective depth, ~~or greater~~. (B & C day letters). It is recommended that the present charted symbol be deleted.

from NM 5K (1960)

*1279 /
3/5/68
NR*

*1279 ✓
HC*

Retain until after review - per Carstens

Drag depths over this item not close enough to bottom to adequately disprove the wreck. Retain sunken wreck symbol until additional work can be done. REW

P. R. No. 30: ✓

from Ch L 603 (1944)

1280 ✓

✓ The sunken wreck charted in Latitude 29°40.4'N, Longitude 93°57.45'W was not located. A "Sea Seonar" (sonar) search was made from offshore, but shoal water prevented a more intensive search. It is recommended that this item be retained as charted.

517 ✓
CONCUR
DEW

P. R. No. 31: ✓

retained on Ch 1280 11/30/66 CBS

from NM 28 (1958)

1280 ✓

✓ The sunken wreck of the tug "San Saba" charted in Latitude 29°40'N, Longitude 93°59.9'W was located as charted. A leadline investigation by divers determined the least depth to be 2.0' MLW. (M day). The wreck is marked by a red nun buoy "WR2". It is recommended that this item be retained as charted.

Chart
2: WK
DEW

P. R. No. 34: ✓

(1st rep) changed to 2: Wreck on Ch 1280 CBS 11/30/66

changed thru NM 42/67 3/5/68 NP

1280

Retain until after review 11/9/67

✓ The sunken wreck (masts, PA) of the sailboat "Bacherra", charted in Latitude 29°26'N, Longitude 94°03'W was not located. The area was wire dragged for a 1 mile radius from the charted position. (E & F day letters). It was cleared with a 33.0' effective depth or greater. It is recommended that the present charted symbol be deleted.

2:90 ✓
Retain
PA
DEW
See Review

Item 5a*: ✓

Waste removed PA wk PA claimed Ch 1280 CBS 11/30/66 check reviewer's recommendation (5), add on 1117 (wreck chart) MR

✓ The sunken wreck (PA) of the "F/V Kokomo", charted in Latitude 28°49.5'N, Longitude 95°11.5'W was not located. The area was wire dragged for a 1 mile radius from the charted position. It was cleared with a 61.0' effective depth, ~~or greater~~. (W & X day letters). It is recommended that the present charted symbol be deleted.

1283- Deleted from and Prof No 28. 10/10/66 DEW

1283 ✓

X Item 5b*: ✓

1117 added on 1117 (wreck chart) Deleted 1007 3/6/68 MR

✓ The cabin cruiser "Triesta" reported burned and sunk in Latitude 29°19.6'N, Longitude 94°37.9'W was not found. The area was wire dragged for a 1 mile radius from the reported position. It was cleared with a ~~24.0'~~ effective depth, ~~or greater~~. (Q, R & S day letters). A hang in ~~33 ft.~~ Latitude 29°20'10"N, Longitude 94°36'51"W at 35.0' effective depth was found by divers to be below general bottom in mud. The hang was cleared by wire drag with

Deleted 518 1282 5015 1117 10/15/62

518 ✓

Item 42 ✓

41 added on 1117 (wreck chart) in former report of "Triesta"

The charted position of the F/V "D3", not cleared on F.E. #1, 1965 was cleared by 33 ft. on this field examination. The sunken wreck symbol PD charted in Lat: 29°19.5, Long. 94°37.6 should be deleted from the chart.

50-152 1282 517 ✓

DEW

CONCUR DEW

✓ 32.5' effective depth. (S day letter). It is recommended that the present charted symbol be deleted.

Item 5i*: ✓

chart 1283 - omitted from aid Prog. no. 28 10/20/66 HP

✓ 1283 ✓ The "F/V Laura E", (PA) reported burned and sunk in Latitude 28°50'N, Longitude 95°21'W was not found. The area was wire dragged for a 1 mile radius from the charted position. It was cleared with a ~~20.0~~ 24 ft. effective depth, or greater. (X & Y day letters). It is recommended that the present charted symbol be deleted.

CONCUR DEW

34, add in 1117 (ok chart)

Item 5j*: ✓

✓ 1280 ✓ The obstruction reported to be a 4-foot diameter pipe embedded in bottom, covered by 14 feet of water, was located as charted in Latitude 29°33.6'N, Longitude 94°06.2'W. A temporary hang and clear (D day letter) was noted, but no effort was made to hang in opposite direction as this item was thoroughly investigated during the 1964 field season. (See P. R. Item Number 32, Descriptive Report). It is recommended this item be retained as charted.

CONCUR. DEW

See F.E. #1, 1965 for final location of 14 ft. obstruction.

Item 5n*: ✓

✓ 1282 ✓ The 19-foot boat (PA) reported burned and sunk in Latitude 29°16'N, Longitude 94°39'W was not located. The area was wire dragged for a 1-mile radius from the charted position. It was cleared with a ~~31.0~~ effective depth or greater. (P & Q day letters). It is recommended that the present charted symbol be deleted.

not on 1116 1117

CONCUR

DEW

32 added in 1117 (ok chart)

X Item 5p*: ✓

✓ 1278 ✓ The charted wreck in Latitude 29°35.53'N, Longitude 93°17.7'W, shown covered by 38 feet MLW, was not located. The charted position was cleared with a ~~35.0~~ effective depth drag. (Z day letter). It is recommended that the present charted symbol be deleted.

CONCUR

DEW

1051 ✓ 38'

note, wreck,

36.10

17.80

32 sand A hang in Latitude 29°36'10"N, Longitude 93°17'50"W at ~~35.0~~ effective depth was found by divers to be in the edge of the dredged channel in mud. A fathometer sounding of 31.0' MLW was obtained. Since dredging operations are being carried out by U. S. Corps of Engineers in this channel, no definite recommendations

CHART 31 Ft. Sounding #6991 DEW

(*All items marked by *(asterisk) are from Revised Instructions, dated 2/2/65)

1051 ✓ 1116 ✓

can be made for charting this item.

Additional Item #1: ✓

✓ The drydock reported sunk in (PA) Latitude 29° 18'N, Longitude 94°38'17" W, was found by wire drag (A day letter) to be located in Latitude 29°17'26"N, Longitude 94°38'55"W. A leadline and visual inspection by divers determined the obstruction to be a wooden drydock covered by 21.0' MLW. The obstruction is marked by a lighted buoy "NR1", and subsequent investigation in the latter part of the 1965 field season revealed parts of the drydock to be showing above the surface of the water at all tide stages. Recommend the item be charted as a dangerous wreck, located in Latitude 29° 17'26"N, Longitude 94°38'55"W. Wreck was not cleared by wire drag.

This information superseded by N.M. #19/66 May 7, 1966. No Corr Dew later from Dew #2 May 5 1966

CONCUR Dew (see note above)

Additional Item #2: ✓

✓ A sunken wreck (fishing vessel) with masts uncovered 10.0' MLW was located in Latitude ~~29°40'57"N~~ 29°40'60"N, Longitude ~~94°00'13"W~~ 94°00'13"W, by sextant angles from shore. (Volume #1, page #56). It is recommended that this item be charted as a wreck with masts visible.

1280 ✓
94°00'13 W
on 11/6

This item from charted H-8795 O.K. Dew

12/1/66 CBS HWB
H-8795 wreck position charted on 1280

Wreck replotted on chart 1280. Original plot in error.

Additional Item #3: ✓

✓ A tank reported (N.M. #23, 1965) sunk in Latitude 29°22'N, Longitude 94°32'W was not found. The area was wire dragged for a 1-mile radius from the reported position. (T & U day letters). It was cleared with a 32.0' effective depth, or greater. It is recommended that the present charted symbol be deleted.

1280 ✓
35' →

CONCUR Dew

Hand Corr. omitted on chrt 1280 11/30/66 CBS
34 by Austin - English 4/2/66 41

Additional Item #4: ✓

✓ A piling charted in Latitude 29°21.75'N, Longitude 94°47.22'W (Bolivar Roads), was not found. The reported position was cleared by wire drag with a 23.5' effective depth. (V day letter). Further coverage was not possible because the shoal shown to the west of this item has extended much further to the eastward than is shown on C&GS Chart 886. It is recommended that the present charted symbol be deleted.

518 ✓

Not on 518
152 596
886
CONCUR Dew

(Additional items designated by Commanding Officer)

X Additional Item #5: ✓

✓
426 ✓
1236 ✓
An obstruction was found by wire drag to be located in Latitude $33^{\circ}49'17''$, Longitude $78^{\circ}05'46''$ W. A lead-line and visual investigation by divers determined the obstruction to be a large ship's stock anchor imbedded in the bottom and covered by 34.0' MLW. (EA day letter). The obstruction was not cleared by wire drag. It is recommended the item be charted as an obstruction covered 34.0' MLW.

CONCUR
New

X Additional Item #6: ✓

prev appd 426 ✓
prev appd 1236 ✓
An obstruction was found by wire drag to be located in Latitude $33^{\circ}48'58''$ N, Longitude $78^{\circ}06'17''$ W. A lead-line and visual investigation by divers determined the obstruction to be a large ship's stock anchor imbedded in the bottom and covered by 32.0' MLW. (EA day letter) The item was not cleared by wire drag. It is recommended the item be charted as an obstruction covered 32.0' MLW. ~~cleared by wire drag~~

CONCUR
New
cleared by

X Additional Item #7: ✓

prev appd 426 ✓
prev appd 1236 ✓
An obstruction was found by wire drag to be located in Latitude $33^{\circ}51'07''$ N, Longitude $78^{\circ}06'48''$ W. A leadline and visual investigation by divers determined the obstruction to be a section of a wooden drydock covered by 32.5' MLW. (EA day letter). The obstruction was cleared by wire drag with a 30.0' effective depth. (GA day letter). It is recommended the item be charted as an obstruction cleared to 30.0' by wire drag.

CONCUR
New

X Additional Item #8: ✓

prev appd 426 ✓
prev appd 1236 ✓
An obstruction was found by wire drag to be located in Latitude $33^{\circ}50'06''$ N, Longitude $78^{\circ}05'14''$ W. A lead-line and visual investigation by divers determined the obstruction to be an unexploded 16 inch artillery shell covered by 34.35' MLW. (FA day letter). The obstruction was cleared by wire drag with an effective depth of 31.5'. (FA day letter). It is recommended the item be charted as unexploded shell cleared to 31.5' by wire drag.

CONCUR
New

X Additional Item #9: ✓

appd 426 ✓
1236 ✓
An obstruction was found by wire drag to be located in Latitude $33^{\circ}50'44''$ N, Longitude $78^{\circ}06'49''$ W. A lead-line and visual investigation by divers determined the

32'
✓ obstruction to be a wooden drydock section covered
by 31.5' MLW. (GA day letter). The area was cleared
by wire drag with an effective depth of 30.0'. (GA
day letter). It is recommended the item be charted
as an ~~obstruction~~ ^{WRECK} cleared to 30.0' by wire drag.

CONCUR
DEW

Additional Item #10: ✓

CLEARED THROUGH
L-1708 (65)
M/N 6/65

✓ A daybeacon (WAINWRIGHT) reported destroyed in
Latitude $34^{\circ}58'37''$ N, Longitude $76^{\circ}13'30''$ W was not
found. A wire sweep between tow skiffs was carried
out to cover (Approx.) a 200 yard radius of the
reported position. Since there was inadequate con-
trol in the area, no records were kept concerning
this operation. It was, however, possible to locate
an anchor with a float attached in the (approx.)
reported position and a 300 foot radial wire sweep
was accomplished in addition to the previous method
mentioned. Since the daybeacon was reported to be a
wooden piling, it may be assumed that it was struck
by a vessel and has floated clear of the area. It is
recommended the symbol be removed from the chart.

419
1231

NO SURV

CONCUR,

DEW

This investigation not
smooth plotted. Notes can
be found concerning the
investigation in End Launch
(HILGARD) Vol. 6

DEW

THE
DECCA-ALPINE PRECISE RADAR RANGING SYSTEM
FOR CONTROL OF WIRE DRAG SURVEYS
OPR - 450 --- 1965
USC&GS Ships WAINWRIGHT & HILGARD
D. R. Tibbit - Commanding

GENERAL

The Decca-Alpine Precise Radar Ranging System (PRRS) is a range/range position location by the intersection of two or more distance arcs from known control points. The system used was adapted for use with the Decca 404 radar and used the standard ten foot slotted wave guide scanner as the ship's antenna system. The ship's radar receiver was modified to operate as either a standard radar or a precise radar ranging unit.

The shore stations transmitters (transponders) were unmanned, portable battery powered units. They were normally mounted and raised on standard Tabet towers for increased range.

Transponders and the radar ranging unit operate on a frequency of about 600 mc off the standard Decca radar frequency of 10,000 mc. This permits identification of the transponder pulses on the PPI scope by tuning out the shoreline return.

Precise ranges may also be measured to passive targets. In survey work, these targets have to be accurately located and easily identified. The numerous offshore oil platforms in some of the working areas met these qualifications and were used extensively during the season. Due to excessive distortion of targets on the radar screen during the precise ranging operation, it was not practical to use passive targets along the shoreline.

CALIBRATION

Mylar sheets (at 1:20,000 scale) were used as calibration sheets. The location of visual control points, transponder stations, and passive targets were accurately plotted on the sheets. Several visual fixes and transponder fixes were taken simultaneously. The visual fixes were carefully plotted and the distance scaled from each fix to the respective positions of the transponder stations. These scaled distances were compared with the corresponding PRRS ranges to the transponders and corrections determined. The same procedure was used to determine corrections for measured distances to passive targets (e.g. off-shore oil platforms and the "end" vessel).

Due to the limitations of visual control in some areas, it was not possible to calibrate the system throughout all ranges. It was assumed that the correction was constant throughout all ranges.

It was found that the average correction to all transponders in all locations were the same, within the limits of accuracy (± 40 feet) of the system. Because of this fact, a constant correction of minus (-) 160 meters was applied to all distances measured to transponders, in all locations. The correction applied to all measured distances to all passive targets (oil platforms and the "end" vessel) was plus (+) 40 meters.

Although we found these corrections to be constant during the season, it is noted that they are different from the corrections used during the prior year. This difference is attributed to the various modifications made on the system at the factory prior to the beginning of the 1965 field season.

PLOTTING

In complement with the PRRS, a gyro compass (Sperry MK22, Mod. 1) was used to convert relative radar bearings to true bearings. The gyro was frequently checked by running channel ranges in the project area. The gyro error was zero within the reading accuracy of this model.

The PRRS of control for wire drag was done on the largest scale (1:80,000 and 1:40,000) charts of the

project area. The basic procedure was to accurately plot on these charts the positions of the selected transponder sites and passive targets. From these points, arcs at convenient intervals were drawn to cover those wire drag areas within range. An Oddey protractor was then used to plot positions determined from the intersection of two range arcs. The method of plotting was similar to that of Raydist or Shoran.

Single vessel control was used. Both the PRRS and the gyro were installed in the guide vessel. Immediately following the range/range determination (using two transponder locations) for the guide vessel fix, the PRRS was shifted to standard radar frequency and a range (in meters) and radar bearing to the end vessel was obtained. The gyro head was marked simultaneously with the radar bearing to determine the true direction from the guide to the end vessel. Time synchronized sextant cuts were also taken by the guide and end vessels at the time of each fix. These cuts were from the opposite vessel to the nearest end buoy and served to ultimately plot the end buoy positions and define the drag strip.

As previously stated, passive targets were sometimes used for control. These could be used exclusively for control or in conjunction with one range to a transponder. The position determination procedure would vary only slightly in that the PRRS would be switched to standard frequency after one range determination. In the cases where two passive targets were used for control, the PRRS would stay on standard frequency.

DISADVANTAGES OF SYSTEM

One of the main disadvantages of the PRRS is its limited range of about 20 miles. The accuracy of the system (+ 40 feet), while suitable for some projects at a small scale, limits its usefulness for hydrography, especially at larger scales.

The reliability of the system when using passive targets was very good. But, the transponders were very unreliable during the entire season. Since, in most areas, there are no satisfactory passive targets

Attachment No. 7 - continued

(isolated masses away from the general land mass), this is a decided handicap. It is strongly recommended that additional work and/or study be performed in order that the transponders be made more reliable.

Charles H. Tibbit
for Donald R. Tibbit

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 24, 1967

Nautical Chart Division: R.H. Carstens

Plane of reference approved in
13 volumes of sounding records for

HYDROGRAPHIC SHEET Wire Drag F.E. No. 1 1966

Locality: Texas and Louisiana coast

Chief of Party: D.R. Tibbit (1965)

Plane of reference is mean low water

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

Galveston (Pier 21), Texas

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

San Luis Pass	1.2 feet
Galveston (Pleasure Pier)	2.1 "
Galveston (Pier 21)	1.4 "
Sabine Pass Jetty	2.5 "

Remarks

Tide reducers for the following positions have been revised
in red and verified.

<u>Vol.</u>	<u>Position</u>
1	B1 - B21; G1 - G26
2	L23 - L43; N1 - N19; P1 - P53; Q25 - Q50
4	Z1 - Z39

*Volumes & drag strips
corrected accordingly. Dlw*

J. M. Seymour
Chief, Tides and Currents Branch

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. F.E.No.1-1966 W.D.

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		7	BOAT SHEETS			
DESCRIPTIVE REPORT		1	OVERLAYS			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						1
CAHIERS						
VOLUMES						
BOXES						

~~TO SHEET PRINTS (List)~~

1-Calibration Sheet

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				968
POSITIONS CHECKED		220		220
POSITIONS REVISED		147*		147
DEPTH SOUNDINGS REVISED				
DEPTH SOUNDINGS ERRONEOUSLY SPACED <i>Rights of drag adjusted</i>		17		17
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS				
SPECIAL ADJUSTMENTS		20 hrs.*		
ALL OTHER WORK		64 hrs.	34 hrs	
TOTALS		84 hrs.	34.0 hrs	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Dale E. Westbrock</i>	9/6/67		9/20/67	
REVIEW BY <i>Dale E. Westbrock</i>	9/29/67		11/15/67	

* Several drag strips were replotted

REVIEW
FIELD EXAMINATION NO. 1, 1966 W.D.
WRECK INVESTIGATIONS
GULF OF MEXICO
CAPE FEAR AND CORE SOUND, N.C.

1. The wire-drag field examination was made in compliance with instructions for Project OPR-450.
2. The purpose of the examination was to investigate and verify or disprove the existence of numerous wrecks and reported obstructions described in the Pre-Survey Review for OPR-450 and supplemental instructions.
3. The results of the investigations are shown on the accompanying sections of Charts 426, 886, 1278, 1279, 1280, 1282, and 1283.
4. A comparison between the field examination and the charts of the areas in which work was done indicates that advance information was used for charting in several instances. Therefore, certain revisions to the charts are necessary to reflect the final results of the investigations.

Attention is directed to the following:

CHART 426, 6th ED., August 21, 1967
CHART 1236, 5th ED., June 19, 1967

- A. (Ad. Item #9) The wreck cleared by 30-ft. charted in latitude $33^{\circ}50'43''$, longitude $78^{\circ}06'49''$, a wooden drydock reported in N. to M. No. 19 of 1965, was repositioned during verification. It should be deleted from its present charted position and moved to latitude $33^{\circ}50'42''$, longitude $78^{\circ}06'34''$. N.P.C.
- B. (Ad. Item #5) The 34-ft. obstr charted in latitude $33^{\circ}49'17''$, longitude $78^{\circ}05'46''$, a ship's anchor located during the present field examination, was repositioned slightly during verification and should be moved to latitude $33^{\circ}49'14''$, longitude $78^{\circ}05'44''$.
- C. (Ad. Item #6) The 32-ft Obstr charted in latitude $33^{\circ}48'57''$, longitude $78^{\circ}06'16''$ should be shown as having been cleared by 32-ft. (Obstr). v

CHART 1278, 7th ED., February 20, 1967

- A. (P.R. #17) The Obstr cleared by 15-ft. charted in latitude $29^{\circ}44.36'$, longitude $93^{\circ}15.81'$ was revised during verification and should be changed to Obstr cleared by 14-ft. This obstruction is a set of ship's bits, probably from the F/V LINDA reported sunk in N. to M. #4 of 1958. # #6995

CHART 1279, 9th ED., October 24, 1966

#7015

A. (P.R. #29) The cleared by 26-ft. Wk PA charted in latitude $29^{\circ}33.5$, longitude $93^{\circ}53.9$ was originally reported in N. to M. No. 51 of 1960 as the 65-ft. F/V MISS BEHAVE. This position of the wreck was only cleared to 29-ft. in 36-ft. of water and is not considered adequately disproved. The sunken wreck symbol should be reinstated on the chart in its original reported position (latitude $29^{\circ}33.5$, longitude $93^{\circ}53.8$). ✓

CHART 1280, 7th ED., March 13, 1967

A. (P.R. #34) The sunken wreck, masts, PA charted in latitude $29^{\circ}26'$, longitude $94^{\circ}03'$, in 43-ft. depths, was cleared to only 33-ft. on this field examination. This effective drag depth is not considered sufficiently close to the bottom to verify or disprove the wreck, originally reported in N. to M. No. 2 of 1962 as the 40-ft. auxiliary sailboat BACHERRA.

The wreck symbol PA should be retained as charted, pending future additional work. The note "masts", however, should be removed from the chart. N.P.

CHART 1282, 26th ED., August 14, 1967

A. (P.R. #42) The sunken wreck PD charted in latitude $29^{\circ}19.5$, longitude $94^{\circ}37.6$ was reported in N. to M. No. 2 of 1959 as the F/V "D3". It is considered adequately disproved, and should be removed from the chart.

WRECK CHART 1116, 16th ED., June 12, 1967

A. The cleared by 5-1/4-fm. charted in latitude $29^{\circ}22'$, longitude $94^{\circ}32'$ should be revised to a cleared by 5-3/4-fm. ✓

B. The sunken wreck PD charted in latitude $29^{\circ}19.5$, longitude $94^{\circ}37.6$ should be deleted and replaced by a cleared by 5-1/2-fm. ✓

C. The cleared by 4-1/4-fm. charted in latitude $29^{\circ}33.5$, longitude $93^{\circ}53.8$ should be deleted and replaced by a sunken wreck symbol. *miss behave*

D. The cleared by 5-1/2-fm. charted in latitude $29^{\circ}26'$, longitude $94^{\circ}03'$ should be deleted and replaced with a sunken wreck symbol PA. ✓

E. The cleared by 4-fm. charted in latitude $29^{\circ}19.6$, longitude $94^{\circ}37.9$ should be revised to a cleared by 5-1/2-fm. ✓

- F. The cleared by 5-fm. charted in latitude 29°16'0, longitude 94°39'0 should be revised to a cleared by 6-fm.
- G. The Obstr charted in latitude 29°44'4, longitude 93°15'8 should be charted as Obstr. cleared by 2-1/4-fm. #6995
- H. The cleared by 3-1/2-fm. charted in latitude 29°42'7, longitude 93°19'4 should be revised to a cleared by 3-1/4-fm.

WRECK CHART 1117, 8th ED., February 27, 1967

A. The cleared by 3 1/4-fm. charted in latitude 28°50', longitude 95°21' should be revised to a cleared by 4-fm.

5. All Pre-Survey Review Items investigated were satisfactorily accomplished except Items 29 and 34, reported wrecks. The upright settings on the drag were not set close enough to the bottom during the investigation of these items, thereby preventing adequate verification or disproof of the wrecks. These features have been recommended for retention on the charts pending future additional work.

6. The Descriptive Report adequately covers all other matters pertinent to this examination. No further discussion is considered necessary.

Reviewed by : Dale E. Westbrook
November 15, 1967

Inspected by : *R. H. Carstens*
R. H. Carstens
May 10, 1968

Approved:

John O. Boyer
John O. Boyer
Captain, USESSA
Chief, Marine
Chart Division

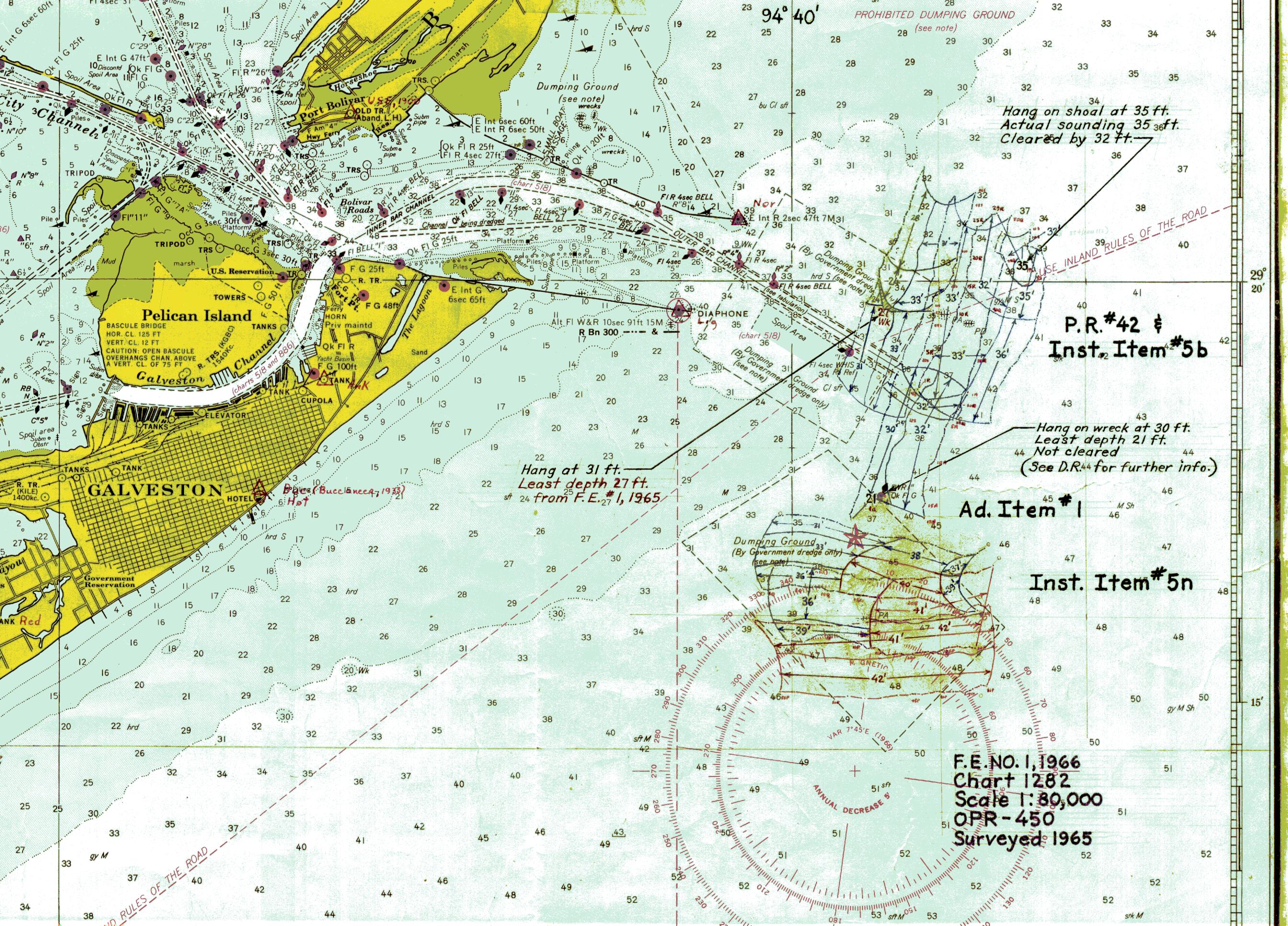
Note:

Xerox copy used
since original
had inadequate
left margin.

Dew

F.E.No1-1966 see diag. Charts Nos:

1236-2
1278
1279
1280
1282-2
1282



94° 40'
PROHIBITED DUMPING GROUND
(see note)
Hang on shoal at 35 ft.
Actual sounding 35³⁶ ft.
Cleared by 32 ft.

USE INLAND RULES OF THE ROAD

P.R.#42 &
Inst. Item #5b

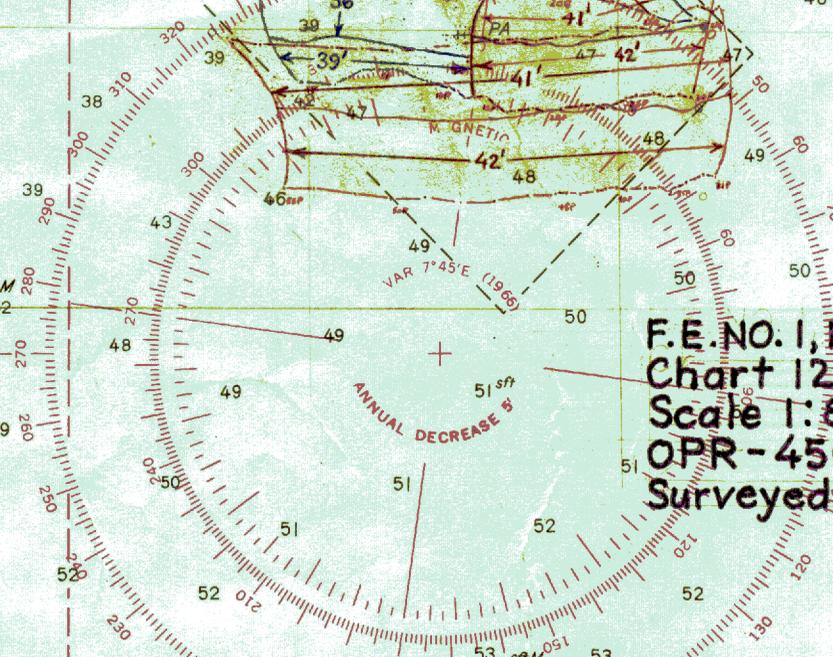
Hang on wreck at 30 ft.
Least depth 21 ft.
Not cleared
(See D.R.44 for further info.)

Ad. Item #1

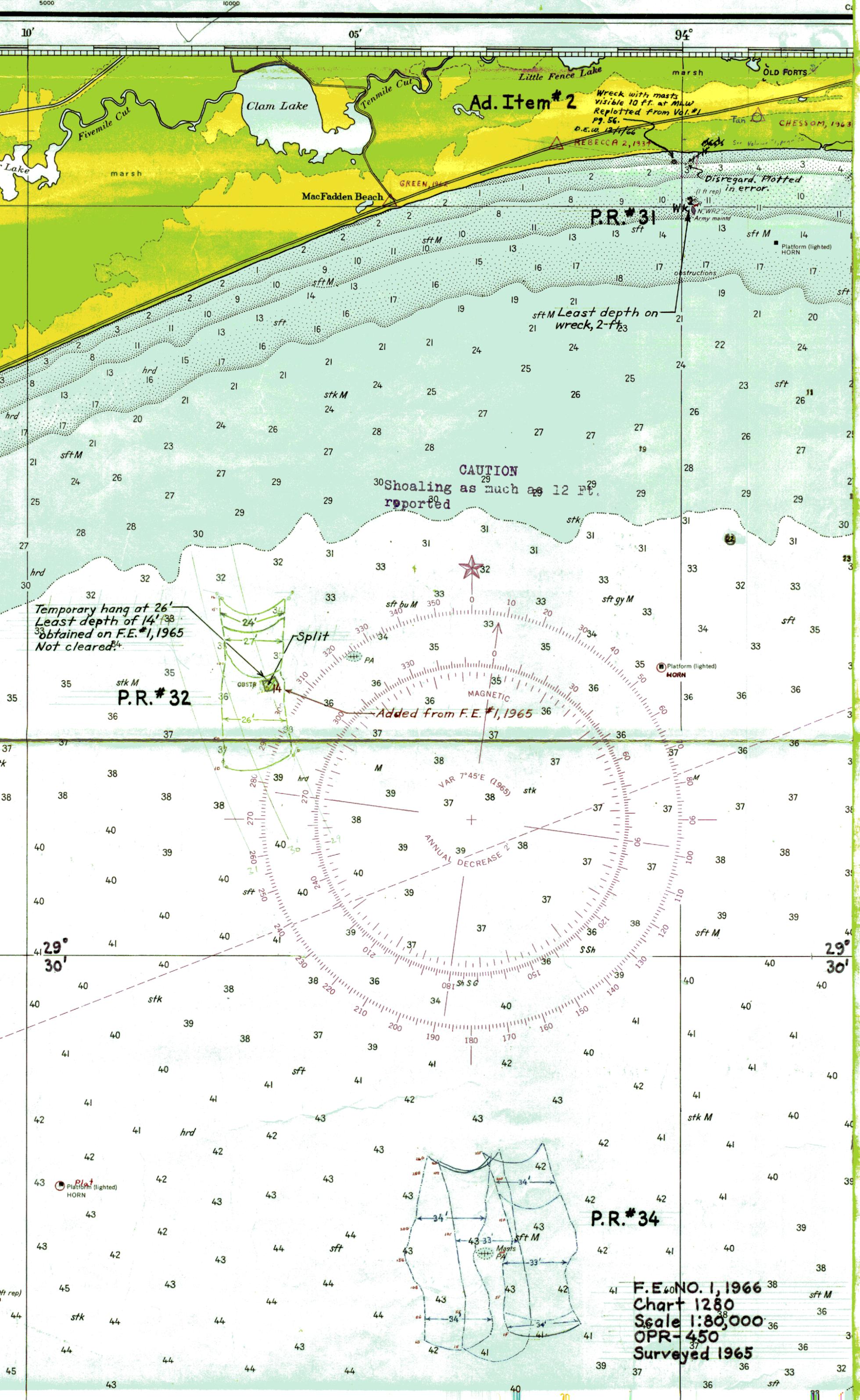
Inst. Item #5n

Hang at 31 ft.
Least depth 27 ft.
from F.E.#1, 1965

F.E. NO. 1, 1966
Chart 1282
Scale 1:80,000
OPR-450
Surveyed 1965



INLAND RULES OF THE ROAD



Ad. Item #2

Wreck with masts visible 10 ft. at MLW
Replotted from Vol. #1
Pg. 56.
d.s.w. 12/1/66
REBECCA 2, 1937

P.R. #31

sft M Least depth on wreck, 2'-23

CAUTION
Shoaling as much as 12 ft. reported

Temporary hang at 26'
Least depth of 14'
obtained on F.E. #1, 1965
Not cleared.

P.R. #32

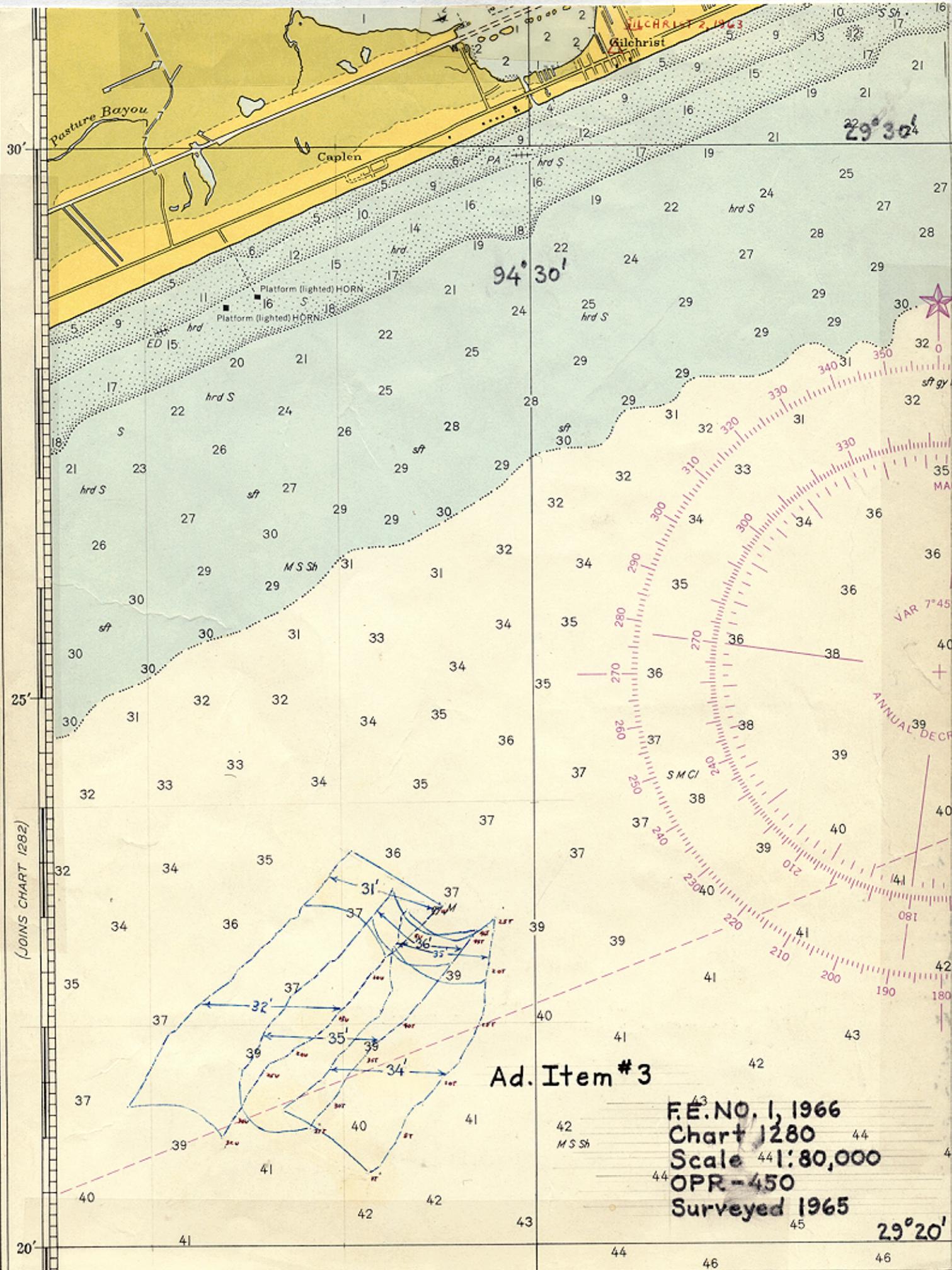
Added from F.E. #1, 1965

MAGNETIC
VAR 7°45'E (1965)

ANNUAL DECREASE 2

P.R. #34

F.E. NO. 1, 1966
Chart 1280
Scale 1:80,000
OPR-450
Surveyed 1965

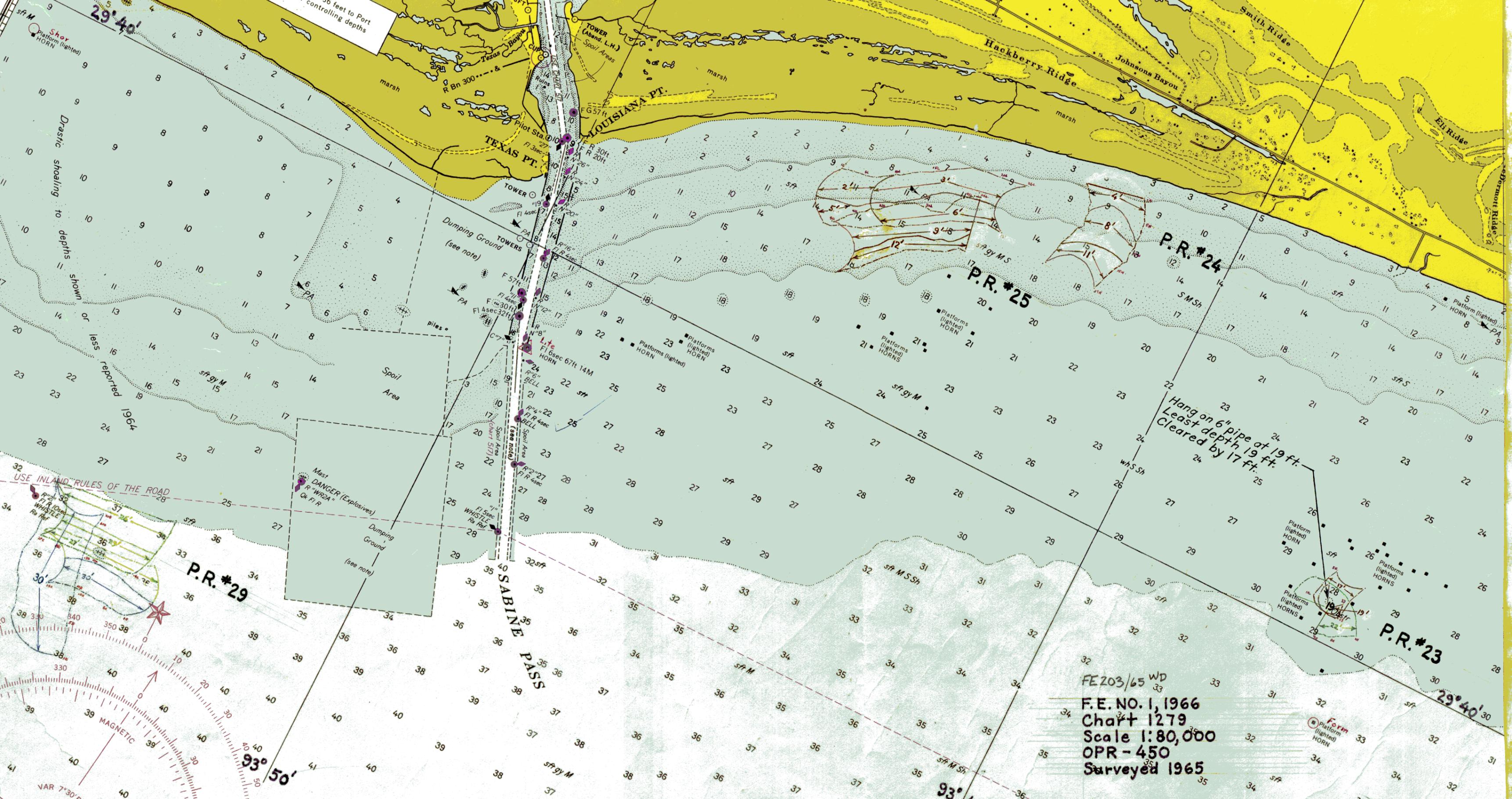


(JOINS CHART 1282)

Ad. Item #3

F.E. NO. 1, 1966
 Chart 1280
 Scale 1:80,000
 OPR-450
 Surveyed 1965

29°20'



50 feet to Port controlling depths

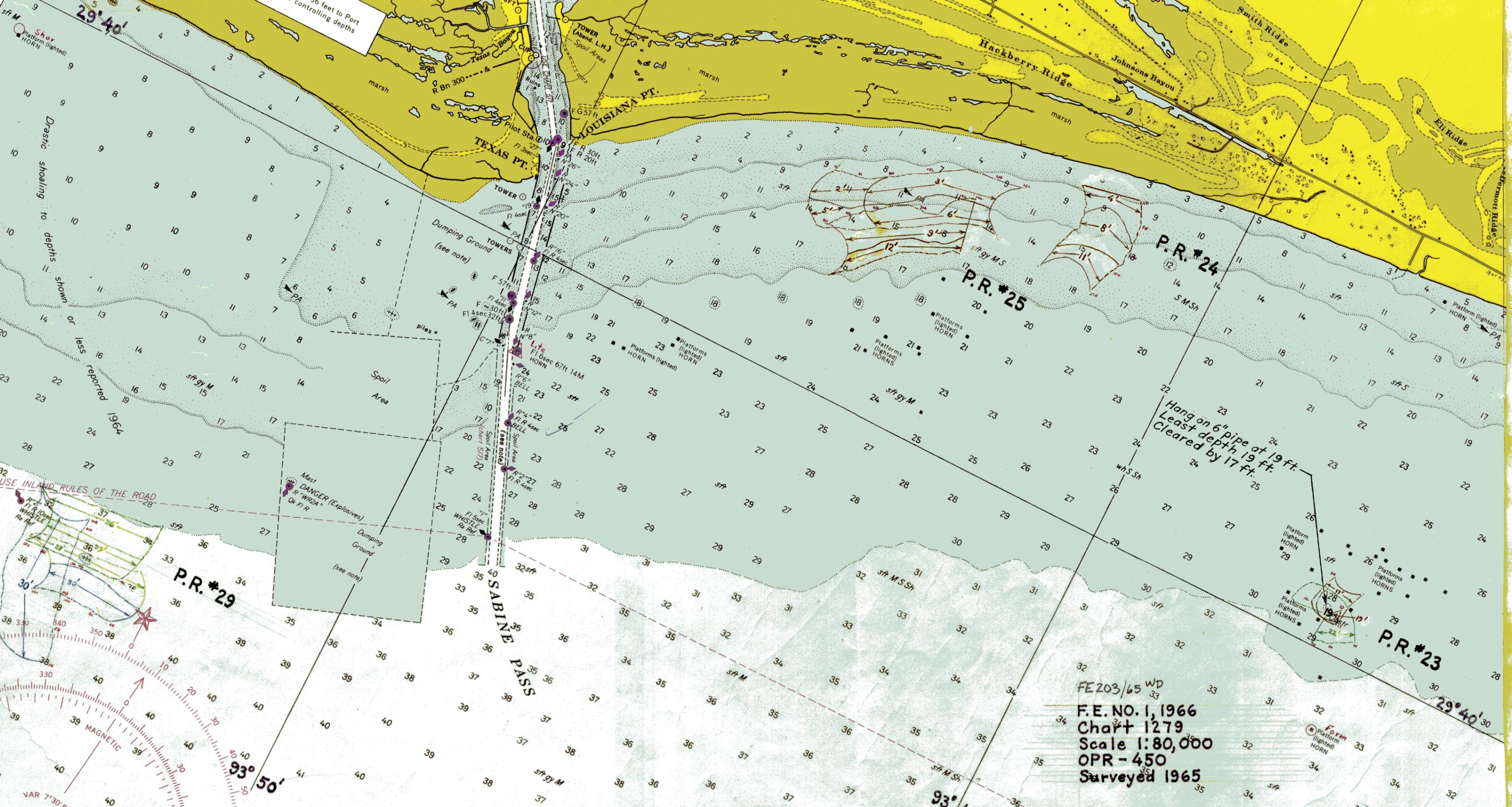
Drastic shoaling to depths or less reported 1964

USE INLAND RULES OF THE ROAD

MAGNETIC
VAR 7°30' E

FE203/65 WD
F.E. NO. 1, 1966
Chart 1279
Scale 1:80,000
OPR-450
Surveyed 1965

Hang on 6" pipe at 19 ft.
Least depth 19 ft.
Cleared by 17 ft.



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F.E.No.1-1966 W.D.

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
✓ 1236	4/24/67	O. Srenidson/mx	Full Part Before After Verification Review Inspection Signed Via Drawing No. Add cleared depths over two sunken drydock sections, one cleared depth over damaged shell and two Obols.
✓ 1116	11/21/67	John P. Wain	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully Applied before inspection.
✓ 1051	3/7/68	Helen Quimby	Fully applied before inspection.
✓ 1117	3/5/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully applied before inspection.
✓ 1518	3/5/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. 6 - applied 2 q's cleared edge 33, erased wreck PD
✓ 1282	3/5/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. 43 - applied 3 edge cleared 2- 33, and 1- 36. erased wreck PD.
✓ 152	3/5/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. 5 - applied 2 cleared edge 33, erased wreck PD.
✓ 651	3/6/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. 2 applied 1 cleared edge 19.
✓ 1280	3/5/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully applied before inspection
✓ 1279	3/5/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully applied before inspection.
✓ 1278	3/6/68	Helen Quimby	Full Part Before After Verification Review Inspection Signed Via Drawing No. Fully applied before inspection
✓ 1283	3/6/68	Helen Quimby	Fully applied before inspection
✓ 517	3/6/68	Helen Quimby	Fully applied before inspection
✓ 1007	3/6/68	Helen Quimby	Fully applied before inspection, removed work outside 10 fm curve, Item 5a*
✓ 1001	3/6/68	Helen Quimby	Examined, no correction
✓ 419	3/7/68	Helen Quimby	Examined, no correction thru NM 6/65
✓ 1231			
✓ 1226	3/7/68	Helen Quimby	Fully applied before inspection
✓ 1236		"	"

Chart 1110 - part applied before V&R 8/2/66 WAW/MR

Chart 1272 - part app'd before V & R 8/2/66 FSP

Chart 1279 - part applied before V & R 8/5/66 JPS

Chart 1116 - Part app'd before V & R 10/5/66 JPS

Chart 1283 - Part applied before V & R 10/10/66 HQ

✓ Chart 1278 Part app. before V & R 11/3/66 WAW

Chart 578 Part before Ver & Par 6/10/66 End Bridge

Chart 886 Part before Ver & Par 11/21/66 H (Free 578)

Chart 1117 - Part App'd before V&R 11/28/66 TAW

Chart 1280 - App'd before V & R 12/1/66 CBS

Chart 577 - Part App'd before V&R 10/5/66 TAW

Chart 1231, Additional item #10 - No Corr, fully app'd before V&R
12-21-66 GRT

Chart 591 Part applied 1/10/67

Chart 152 applied after received 2/5/75

Chart 152 - Fully Applied after inspection 2/5/75 DW.

Chart 578 - Fully Applied after inspection 2/5/75 DW.

Chart 1282 - Fully Applied after inspection 2/5/75 DW.

Chart 1116 - Fully Applied after inspection 2/5/75 DW.

Chart 1117 - Fully Applied after inspection 2/5/75 DW.