

8724

Diag. Cht. No. 1222-3.

Form 504	
U. S. DEPARTMENT OF COMMERCE	
COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	HYDROGRAPHIC
Field No.	SDP-10-1-62
Office No.	H-8724
LOCALITY	
State	VIRGINIA
General locality	COAST OF VIRGINIA
Locality	LYNNHAVEN, BROAD & LINKHORN BAYS
1963	
CHIEF OF PARTY	
H.E. McCall	
LIBRARY & ARCHIVES	
DATE	AUG 27 1964

COMM-DC 61300

8724

FATHOMETER REPORT

Hydrographic Survey

H - 8672 to H - 8676

New Jersey Coast

Beach Haven to Ocean City

1962

F.J. TUCKER JR., Comdg.

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. H-8724

Field No. SDP 10-1-62 & 10-2-62

State VIRGINIA
General locality LYNNHAVEN INLET
Locality LYNNHAVEN, BROAD, LINKHORN BAYS & RUDEE INLET
Scale 1:10,000 Date of survey 2/18/63 to 5/28/63
Instructions dated 12/13/62 & 1/15/63
Vessel STORM DAMAGE PARTY
Chief of party H.E. McCALL
Surveyed by S.R. PETERSON & W.C. PAGE
Soundings taken by ~~XXXXXX~~ graphic recorder, ~~XXXXXXXXXX~~ POLE
Fathograms scaled by FIELD PARTY
Fathograms checked by FIELD PARTY
Protracted by R.D. LYNN & A.G. ATWILL (NORFOLK PROCESSING UNIT)
Soundings penciled by A.G. ATWILL " " "
Soundings in ~~XXXXXX~~ feet at MLW ~~XXXXXX~~

REMARKS: _____

Handwritten signature

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

(Field No. SDP 10 - 1 - 62)

A. Project:

Project Number: SP 1962

Date of original instructions: 13 December, 1962

Date of supplemental instructions No. 1; 15 January 1963

B. Area Surveyed

The area surveyed is located on the Virginia Coast between Norfolk and Virginia Beach Virginia. The project area includes Lynnhaven, Broad, Linkhorn Bays, and Crystal Lake to the head of navigation. Limits outside Lesner Bridge in Lynnhaven Inlet are marked by shoreline on the south; on the east by Long. 76-04'-50''; on the north by a line extending from Long. 76 - 04' - 50'' Lat. 36 - 55' - 05'', then running south to Long, 76 - 06' - 00'' Lat. 36 - 54' - 55'' and then running west on Lat. 36 - 54' - 55'' until it intersects the shore. Survey operations were started on 18 February, 1963 and concluded on 28 May, 1963. Satisfactory junction was made with H - 7089 (1; 10,000 Scale 1946)

C. Sounding Vessel:

The vessels used were all skiffs. A 26' wooden skiff (Skiff 770 - blue day letter) was used for all fathometer soundings. Two 16' aluminum skiffs (Skiff - outboard I brown letter day and Skiff outboard II purple day letter) were used for pole soundings.

D. Sounding Equipment:

A Raytheon Echo Sounder 723 (serial No. 531) was used in depths of primarily six feet or more. Two sixteen foot and one eight foot sounding poles were used in most shoal areas. Echo sounder corrections were determined by bar checks. Each sounding pole was calibrated and the calibrations listed in the front of volume I.

After it was found that the fathometer was not sounding correctly under five feet, previous barchecks were used to draw up a correction curve, for velocity corrections.

These corrections were applied to all depths applicable for the entire project. Corrections used were:

Sounding	0-2.4 ft.	Correction	-1.5
	2.4-3.4 ft.		-1.0

The corrections were used on all depths on the boat sheet.

D. Sounding Equipment (Continued) :

The Echo sounder would sometimes give several bottoms. Moisture would sometimes collect over night and get on the plug to the power supply and perhaps arching would cause double or triple bottoms.

The sounding units were located abeam of each other, about one and a half feet apart. They were situated in the boat in wooden boxes on top of the bottom planking. Air was able to get under the units and vibrations of the planking were causes which could have produced the double bottoms.

E. Smooth Sheet:

To be written by smooth plotter.

F. Control:

visual control was used throughout the sheet. Advance manuscripts used were T-11704 through T-11709. All signals were photo-hydro signals.

G. Shoreline:

Shoreline details were obtained from T - sheets noted in " F ". Shoreline detail changed by hydrographer is noted on boat sheet in red.

H. Crosslines:

Crosslines were run at prescribed ten percent of the regular system of lines. Any discrepancy noted in crossings is due to changes in predicted tides.

I. Junctions

Satisfactory junction was made with H - 7089 (1:10,000 scale, 1946).

J. Comparason With Prior Surveys

Pre - survey item #1: Shoreline of long Creek and Broad Bay as shown on boat sheet is complete and adequate for charting.

Pre - survey item #2: Water way north of Crystal Lake and shoreline in southern prongs of Linkhorn Bay and in Narrows between Broad and Linkhorn Bays as shown on boat sheet is complete and adequate for charting. New dredged depths are shown on boat sheet. At Narrows least depth was found to be five feet where as it was charted as $\frac{1}{2}$ feet on C & G S chart 3335. Controlling depth in new waterway, north of Crystal Lake, is 3 feet.

Pre - survey item #3: The five objects not charted on C&Gs #3335 and charted on C&GS #481 have been located by the photogrammetist. These objects are duck blinds and they were used as photo - hydro signals. The location of these duck blinds can be obtained from manuscript T - 11704 or from boat sheet.

Controlling depths for any bay, waterway, canal, channel, etc. can be obtained from boat sheet.

All piling, platforms, ruins, wrecks, etc. have been located and noted on the boat sheet.

In many portions of project area there were numerous pilings, posts, and sticks in the water. The ones, most dangerous to navigation, were located. It is recommended that only ~~one~~ piling be put on chart to outline area of numerous piling. All wrecks located on boat sheet should be put on chart.

No prior surveys of the project area have been done by the C&GS. Prior charted soundings inside Lynnhaven Inlet came from a 1945 - 1947 U. S. Army corps of Engineers survey. These are not available for comparison. Therefore, charted soundings are the only comparison. (See part K).

Several coves in project area were too short for lines to be run and therefore D.P.'s were taken in the coves with an average depth for cove recorded.

K. Comparison With the Chart:

A comparison of the survey with the largest scale chart of the area, C&GS No. 3335, print date 4/2/62, (discontinued now) shows the following:

There is general agreement of the survey with the chart except dredged out channels as noted in section " J ". Shoals outside and inside Lynngaven Inlet Bridge are constantly shifting and therefore position of these shoals have changed from the chart position. The new Chesapeake Bay Bridge, just west of the project area, has caused considerable shifting of the shoals.

L. Adequacy of Survey

The survey is complete and adequate to supersede prior surveys for charting.

M. Aids to Navigation:

Due to constant changing of shoals, approach buoys leading through Lynnhaven Inlet are frequently moved to locate the changing channel. Approach Lighted Buoy " 2 " was located at Lat. $36^{\circ} 55.1'$ Long. $76^{\circ} 05.4'$ during the survey. This compares with its location in 1962 Light List and on C&GS chart #3335 of Lat. $36^{\circ} 55.1'$ Long. $76^{\circ} 05.1'$. All approach buoys were located 3/1/63, Pos. 59 - 74f, Vol. II. Since the survey the approach buoys could possibly have been moved.

Day beacons in Long Creek, Broad Bay, and Linkhorn were located by field inspection on T - sheets (T-11704, T-11705, T-11706). Delete Day beacons #6 & #9 Long Creek, #7 & #9 in Broad Bay - Linkhorn Bay and add #5, #10, #11, #12, #14, and #15.

For clearances of long Creek Bridge and Lynnhaven Inlet Bridge see Vol. XXI page 59 and Vol. XXIII page 62 respectively.

N. Statistics:

	No. of <u>Pos.</u>	Naut. Miles <u>Sdg. Line</u>
Skiff 770	3071	240.2
Skiff-outboard I	2121	79.0
Skiff-outboard II	1492	56.4

Total Area of Sheet = $6.75 \text{ (Naut. mi)}^2$

Tide Stations operated = 7
Tide Staffs operated = 2
Bottom Samples = 65

O. Miscellaneous:

To be filled in by Smooth Plotter

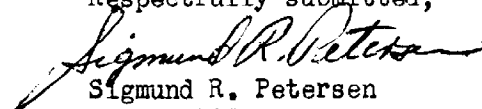
P. Recommendations:

Shoal areas outside Lynnhaven Inlet Bridge are constantly changing, making the channel change quite often. The Corps of Engineers is doing a lot of dredging in the project area and it is recommended that close liaison be kept with them to keep charted waters up to date.

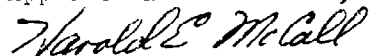
Q. References to Reports:

To be filled in by smooth plotter.

Respectfully submitted,


Sigmund R. Petersen
LTJG, C&GS

Approved and forwarded,


Harold E. McCall
LT, C&GS

TIDE NOTE

Seven portable tide gages and one tide staff were installed for this hydrographic survey. Time corrections were not applied to any of the gages of staffs. All times are on the 75th meridian. The locations and corresponding height of mean low water were as follows:

GAGE	POSITION	MLW On staff (ft.)
Bayville	36-53-38 76-06-17	2.4
Lynnhaven Inlet	36-54-25 76-05-20	4.3
Kempsville	36-51-44 76-06-57	4.4
Linkhorn Bay	36-52-06 76-00-19	4.8
Long Creek	36-53-45 76-04-12	5.4
Broad Bay	36-54-21 76-02-30	3.4
Crystal Lake Tide Staff	36-52-55 75-59-38	0.9
Brown Cove	36-52-29 76-02-42	3.4

Tide Zones for the above gages were furnished by the Washington Office and are shown on the enclosed chart section. Also enclosed is the list of the dates and positions for which each gage applies.

Tide Zone for Special Project 19-62

(Skiff - outboard 770)

Date	Day Letter	Positions	Tidegags
2/18	a	all	Lynnhaven Inlet
2/20	b	all	Lynnhaven Inlet
2/21	c	all	Lynnhaven Inlet
2/25	d	all	Lynnhaven Inlet
2/28	e	1-21,41-43	Lynnhaven Inlet
2/28	e	23-40	Bayville
3/1	f	all	Lynnhaven Inlet
3/4	g	83-141,1-52	Lynnhaven Inlet
3/4	g	55-83	Brown Cove
3/5	h	1-19	Lynnhaven Inlet
3/5	h	19-31,37-59	Bayville
3/7	j	1-97	Lynnhaven Inlet
3/7	j	98-126	Bayville
3/8	k	all	Broad Bay
3/11	l	1-5,33-42	Bayville
3/11	l	5-33	Kempsville
3/11	l	43-48	Broad Bay
3/12	m	1-11	Lynnhaven Inlet
3/12	m	12-39	Bayville
3/13	n	1-27,145-232	Bayville
3/13	n	27-145	Kempsville
3/14	p	1-42,83-85	Long Creek
3/14	p	43-82	Broad Bay
3/15	q	all	Broad Bay
3/18	r	all	Broad Bay
3/21	s	1-31	Broad Bay
3/21	s	31-49	Long Creek
3/25	t	1-61	Lynnhaven Inlet
3/25	t	62-73,126-134	Bayville
3/25	t	74-125	Kempsville
3/26	u	1-64	Bayville
3/26	u	64-110	Brown Cove
3/26	u	111-149	Broad Bay
3/27	v	1-26	Broad Bay
3/27	v	34-44	Long Creek

Tide Zone for Special Project 19-62

(Skiff - outboard 770)

Date	Day Letter	Positions	Tidegage
3/28	w	1-3	Lynnhaven Inlet
3/28	w	4-12	Bayville
3/28	w	12-161	Brown Cove
3/29	x	all	Brown Cove
4/2	y	1-122	Linkhorn
4/2	y	123-138	Broad Bay
4/3	z	all	Linkhorn
4/4	aa	all	Linkhorn
4/8	ab	1-148	Brown Cove
4/8	ab	149-153	Bayville
4/9	ac	all	Lynnhaven Inlet
4/10	ad	1-38,45-59	Brown Cove
4/11	ae	1-5,26	Lynnhaven Inlet
4/11	ae	6-24	Brown Cove
4/22	af	all	Linkhorn
4/23	ag	1-22,45-58,82	Bayville
4/23	ag	22-45,59-81,83-124	Brown Cove
4/23	ag	125-180	Crystal Lake
5/3	ah	1-76	Linkhorn
5/3	ah	76-89	Linkhorn

Tide Zone for Special Project 19-62

(Skiff - outboard I)

Date	Day Letter	Positions	Tidegage
2/21	a	all	Lynnhaven Inlet
2/25	b	1-2	Lynnhaven Inlet
2/25	b	3-41	Bayville
2/28	c	1-18	Bayville
2/28	c	19-41	Brown Cove
3/1	d	1-5	Lynnhaven Inlet
3/1	d	6-end (37)	Bayville
3/4	e	1-10	Lynnhaven Inlet
3/4	e	11-47	Brown Cove
3/5	f	all	Brown Cove
3/11	g	all	Bayville
3/12	h	all	Bayville
3/13	j	all	Kempsville
3/14	k	all	Kempsville
3/18	l	all	Kempsville
3/20	m	all	Bayville
3/25	n	all	Kempsville
3/26	p	all	Kempsville
3/27	q	all	Kempsville
3/28	r	1-65	Kempsville
3/28	r	65-87	Bayville
4/2	s	15-28	Kempsville 1-5
4/2	s	6-14	Bayville
4/3	t	all	Broad Bay
4/4	u	1	Broad Bay
4/4	u	2-end	Linkhorn
4/8	v	1-6	Kempsville
4/9	w	all	Bayville
4/10	x	all	Bayville
4/11	y	all	Brown cove
4/15	z	all	Lynnhaven Inlet
4/16	aa	1-11	Bayville
4/16	aa	12-104	Brown Cove
4/18	ab	all	Broad Bay
4/19	ac	all	Broad Bay
4/23	ad	1-48, 71	Lynnhaven Inlet
4/23	ad	49-70	Bayville
4/23	ad	72-78	Brown Cove
4/23	ad	83-127	Broad Bay
4/25	ae	all	Brown Cove
5/3	af	1-37	Broad Bay
5/3	af	38-56	Linkhorn
5/7	ag	1-41	Broad Bay 100-104
5/7	ag	42-100	Linkhorn

Tide Zone for Special Project 19-62

(Skiff - outboard I)

Date	Day Letter	Letter	Positions	Tidegage
5/8	ah		all	Brown Cove
5/9	aj		1-45	Brown Cove
5/9	aj		46-82	Linkhorn
5/10	ak		1-18	Brown Cove
5/10	ak		19-31	Linkhorn
5/13	al		all	Linkhorn

Tide Zone for Soecial Project 19-62

(Skiff - outboard II)

Date	Day Letter	Positions	Tidegage
4/16	a	1-27	Lynnhaven Inlet
4/16	a	34-109	Long Creek
4/18	b	1-10	Lynnhaven Inlet
4/18	b	11-20	Long Creek
4/18	b	21-86	Broad Bay
4/19	c	1-5,68-73	Lynnhaven Inlet
4/19	c	50-60	Brown Cove
4/19	c	6-39	Broad Bay
4/19	c	61-68	Bayville
4/19	c	40-49	Long Creek
4/25	d	1-22,85-87	Lynnhaven Inlet
4/25	d	30-84	Brown Cove
4/25	d	26-29	Bayville
4/25	d	88-176	Crystal Lake
4/29	e	1-9,27-37	Lynnhaven Inlet
4/29	e	10-26	Bayville
4/30	f	all	Bayville
5/1	g	all	Lynnhaven Inlet
5/6	h	all	Lynnhaven Inlet
5/7	j	1-5	Long Creek
5/7	j	6-79	Broad Bay
5/8	k	all	Brown Cove
5/9	l	all	Brown Cove
5/10	m	all	Brown Cove
5/13	n	1-8	Long Creek
5/13	n	9-39	Broad Bay
5/13	n	40-48	Brown Cove
5/14	p	all	Linkhorn
5/15	q	1-2	Broad Bay
5/15	q	3-end	Linkhorn
5/22	r	all	Brown Cove
5/23	s	all	Broad Bay
5/24	t	all	Linkhorn
5/25	u	all	Linkhorn
5/28	v	all	Linkhorn

Abstract of Velocity Corrections

Sheet SDP - 10-1-62 (Skiff 770, fathometer No. 531)

Depth Applicable (feet)	Correction (feet)
1.3 to 1.9	-1.0
2.0 to 2.7	-0.8
2.8 to 3.5	-0.6
3.6 to 4.7	-0.4
4.8 to 6.5	-0.2
6.6 to 12.1	-0.0
12.2 to 19.5	-0.2
19.6 to limit	-0.4

:

LIST OF SIGNALS

SHEET SDP-10-1-62

SP-19-62

TRIANGULATION:

<u>Name</u>	<u>Origin</u>	<u>Manuscript</u>
ABE	Hygeia Inn, 1929	T-11704
MIN - Photo Hydro Sta	Coast Guard Radio Tower, 1962	T-11709

THEODOLITE CUTS:

<u>Name</u>	<u>Manuscript</u>
AIM	T-11704
FOE	T-11704
GOB	T-11704
LED	T-11704
PIX	T-11704

PHOTO-HYDRO SIGNALS:

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
ACE	T-11704	ALL	T-11705
ACT	T-11704	ALP	T-11704
ADA	T-11705	ALT	T-11707
ADD	T-11707	AMP	T-11704
ADO	T-11707	AMY	T-11704
AGE	T-11705	ANA	T-11704
AGO	T-11704	AND	T-11708
AHA	T-11707	ANN	T-11704
AID	T-11708	ANT	T-11704
AIR	T-11705	APT	T-11708
ALA	T-11705	ARE	T-11705
ALE	T-11705	ARK	T-11704

LIST OF SIGNALS

SHEET SDP-10-1-62

SP-19-62

PHOTO-HYDRO SIGNALS:

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
ARM	T-11704	CAB	T-11704
ARN	T-11708	CAL	T-11705
ART	T-11704	CAM	T-11704
ARY	T-11706	CAP	T-11705
ASK	T-11704	CAR	T-11704
AVE ASH	T-11704 T-11706	CAT	T-11704
AWE	T-11705	CAW	T-11704
AXE	T-11704	CHE	T-11709
AZO	T-11704	CHI	T-11704
		COB	T-11705
BAG	T-11704	COD	T-11704
BAH	T-11704	CON	T-11707
BAL	T-11705	COO	T-11704
BAN	T-11708	COP	T-11704
BAR	T-11705	COR	T-11705
BAS	T-11705	COT	T-11708
BAT	T-11707	COV	T-11704
BAY	T-11705	CRY	T-11707
BED	T-11707	CUD	T-11708
BEE	T-11705	CUE	T-11704
BEM	T-11705	CUM	T-11704
BEN	T-11705	CUR	T-11704
BIB	T-11704	CUT	T-11704
BIG	T-11704		
BIT	T-11705	DAL	T-11708
BLU	T-11705	DAN	T-11705
BOA	T-11704	DAR	T-11704
BOB	T-11704	DAW	T-11704
BOE	T-11709	DAY	T-11704
BON	T-11704	DEB	T-11707
BOO	T-11704	DEE	T-11704
BOR	T-11705	DEF	T-11705
BOT	T-11708	DEP	T-11705
BOW	T-11704	DEX	T-11708
BOX	T-11704	DIC	T-11708
BUM	T-11707	DIE	T-11708
BUS	T-11704	DIF	T-11704
BUT	T-11704	DIG	T-11704

LIST OF SIGNALS

SHEET SDP-10-1-62

SP-19-62

PHOTO-HYDRO SIGNALS:

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
DIP	T-11707	FAB	T-11704
DIS	T-11705	FAD	T-11705
DIX	T-11704	FAP	T-11708
DOC	T-11704	FAR	T-11704
DOE	T-11705	FAT	T-11704
DOG	T-11704	FAY	T-11708
DOM	T-11705	FEB	T-11705
DON	T-11704	FED	T-11704
DOT	T-11704	FEE	T-11705
DRO	T-11709	FEW	T-11707
DUB	T-11705	FEZ	T-11704
DUC	T-11704	FIB	T-11705
DUD	T-11707	FIG	T-11704
DUF	T-11707	FIN	T-11704
DUM	T-11705	FIR	T-11705
DUN	T-11704	FIT	T-11707
DUO	T-11704	FIX	T-11707
DUZ	T-11705	FLU	T-11708
DYE	T-11705	FLY	T-11704
		FOG	T-11704
EAR	T-11704	FOP	T-11707
EAT	T-11704	FOR	T-11704
EBB	T-11707	FOT	T-11708
EDD	T-11708	FOX	T-11704
EDE	T-11707	FRO	T-11704
EEL	T-11707	FRY	T-11704
EGG	T-11704	FUL	T-11704
EGO	T-11704	FUN	T-11704
ELF	T-11704	FUR	T-11704
ELL	T-11705	FUZ	T-11705
ELM	T-11704		
EMO	T-11707	GAB	T-11704
END	T-11704	GAD	T-11704
EON	T-11704	GAG	T-11704
ERA	T-11704	GAL	T-11707
ERE	T-11705	GAM	T-11704
ERG	T-11704	GAR	T-11708
ERP	T-11705	GAS	T-11704
EST	T-11704	GAY	T-11708
EVA	T-11704	GEE	T-11705
EVE	T-11705	GEM	T-11704
EYE	T-11705	GEO	T-11704

LIST OF SIGNALS

SHEET SDP-10-1-62
SP-19-62

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
GER	T-11704	ICE	T-11704
GET	T-11707	IDA	T-11704
GIG	T-11704	ILL	T-11707
GIN	T-11707	INK	T-11709
GNU	T-11709	INN	T-11704
GOT	T-11704	ION	T-11704
GRO	T-11705	IRK	T-11707
GUM	T-11707	ITS	T-11707
GUN	T-11705	IVY	T-11704
GUT	T-11704		
GUY	T-11704	JAC	T-11709
		JAE	T-11708
HAG	T-11704	JAG	T-11705
HAM	T-11705	JAM	T-11705
HAN	T-11705	JAN	T-11705
HAP	T-11709	JAP	T-11704
HAR	T-11709	JAR	T-11704
HAS	T-11705	JAW	T-11707
HAT	T-11704	JAY	T-11707
HEM	T-11707	JEF	T-11708
HEN	T-11704	JEZ	T-11709
HER	T-11704	JIB	T-11704
HEW	T-11705	JIM	T-11704
HEX	T-11707	JOB	T-11704
HIC	T-11705	JOB (2)	T-11705
HID	T-11704	JOE	T-11704
HID (2)	T-11708	JOT	T-11707
HIP	T-11705	JOY	T-11704
HIS	T-11704	JUG	T-11704
HOD	T-11704	JUT	T-11704
HOE	T-11704		
HOM	T-11707	KAP	T-11709
HON	T-11704	KAY	T-11704
HOP	T-11707	KED	T-11704
HOT	T-11704	KEL	T-11709
HOW	T-11704	KEN	T-11704
HUB	T-11704	KEY	T-11707
HUE	T-11708	KID	T-11704
HUG	T-11704	KIN	T-11704
HUM	T-11704	KIP	T-11709
HUT	T-11704	KIS	T-11708
		KIT	T-11704
		KUR	T-11704

LIST OF SIGNALS
SHEET SDP-10-1-62
SP-19-62

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
LAB	T-11709	MAN	T-11707
LAC	9	MAP	5
LAD	4	MAR	4
LAM	4	MAR (2)	9
LAN	5	MAS	5
LAP	5	MAT	5
LAX	7	MAW	4
LAY	4	MAX	7
LEO	4	MAY	4
LES	5	MED	4
LET	4	MEG	5
LEV	8	MEN	8
LIB	9	MEP	7
LIC	9	MET	4
LID	8	MIC	5
LIE	5	MID	8
LIF	8	MIN	9
LIK	5	MIS	5
LIL	9	MIT	5
LIM	4	MIX	9
LIP	4	MOE	5
LIZ	7	MOM	9
LOB	5	MOO	4
LOC	8	MOP	4
LOG	4	MOT	9
LOP	4	MUG	4
LOT	6	MUM	4
LOW	7	MUT	5
LOX	5		
LUB	6	NAB	6
LUE	6	NAL	6
LUG	4	NAT	4
LUX	4	NAY	4
LYE	7	NAY (2)	5
LYN	7	NED	4
		NEL	7
MAC	4	NEO	4
MAD	4	NET	6
MAG	4	NEW	7
MAL	4	NIC	6

LIST OF SIGNALS
SHEET SDP-10-1-62
SP-19-62

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
NIG	T-11704	PAG	T-11705
NIL	4	PAD	4
NIN	6	PAL	7
NIP	7	PAM	5
NIT	7	PAN	4
NIX	8	PAR	7
NOC	6	PAS	4
NOD	4	PAT	5
NON	4	PAW	4
NOR	4	PEA	5
NOT	6	PEG	7
NOW	4	PEN	5
NUB	4	PEP	4
NUL	4	PER	5
NUM	6	PET	5
NUT	4	PEW	5
NUX	4	PIE	4
		PIL	6
OAF	8	PIN	7
OAK	4	PIP	9
OAR	8	PLA	8
OAT	8	POI	4
OBA	8	POP	4
OBI	7	POT	4
OBO	8	POW	5
OCT	7	POX	5
ODD	4	PRO	4
ODE	8	PRY	5
OFF	4	PUG	4
OFT	8	PUN	8
OHM	4	PUP	4
OID	9	PUT	4
OIL	7		
OLD	4		
OLE	5	QUE	4
OOZ	4	QUO	4
ORA	8		
ORB	4	RAD	4
OUR	5	RAG	4
OUT	4.	RAH	8
OWL	4	RAK	7

LIST OF SIGNALS

SHEET-SDP-10-1-62

SP-19-62



<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
TAB (2)	T-11705	UDO	T-11705
TAB	8	UGH	8
TAC	5	ULE	8
TAG	5	UNI	8
TAN	4	URN	8
TAP	7	USE	4
TAR	5		
TAT	7	VAO	5
TAW	6	VAG	6
TAX	2	VAL	4
TEA	7	VAN	7
TEC	9	VAR	8
TED	5	VAS	5
TES	7	VAT	8
TEX	5	VEL	8
THY	4	VET	7
TIC	8	VEX	7
TIE	4	VIA	4
TIF	6	VIC	5
TIL	8	VIE	5
TIM	5	VIG	9
TIN	5	VIM	4
TIP	8	VIT	6
TOC	8	VIX	8
TOM	7	VOL	8
TON	5	VOO	6
TOO	5		
TOP	4	WAD	4
TOR	6	WAG	7
TOT	8	WAN	4
TOW	4	WAR	4
TOY	7	WAS	7
TRU	8	WAX	4
TRY	4	WEB	5
TUB	4	WED	4
TYE	8	WEE	4

.

LIST OF SIGNALS

SHEET SDP-10-1-62

SP-19-62

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
WEN	T-11705	YIN	T-11708
WES	8	YIP	8
WET	7	YOU	5
WHA	8	YOW	8
WHO	4		
WHY	4	ZAG	4
WIG	4	ZAX	8
WIN	4	ZED	5
WIP	7	ZEE	5
WIT	7	ZEF	8
WOO	4	ZEN	8
WYE	4	ZEP	7
		ZER	7
YAK	4	ZIB	8
YAM	7	ZIG	7
YAP	8	ZIL	5
YEA	4	ZIM	8
YEL	8	ZIP	8
YEN	8	ZOO	4
YEO	8	ZOT	5
YES	4		
YET	7		

HYDROGRAPHIC SIGNALS:

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
COW	T-11704	PLY	T-11704
DIM	4	SED (West Lynnhaven)	7
GUS	4	(River)	
KIM	7	SOY	4
LEG	7	TIT	4
PIT	4	WIL	4

:

APPROVAL SHEET

The boat sheet and all accompanying records were examined and found to be complete and adequate. Records were examined periodically as the project progressed and the boat sheet was examined daily.

This survey is considered to be complete and adequate for charting.



Harold E. McCall
LT, C&GS
Officer in Charge

NORFOLK RECORDS PROCESSING UNIT
 FLOATING AIDS TO NAVIGATION
 H-8724

<u>BUOY</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>DEPTH</u>	<u>POS.NO.</u>	<u>DATE</u>
<u>LYNNHAVEN INLET</u>					
Appr. Ltd. Buoy 2	36-54.04 ⁵ '	76-05.42 ⁰ '	20.6	65f(b1)	3/1/63
Approach Buoy 3	36-54.98	76-05.39	10.2	64f	"
" " 4	54.97	05.42	7.4	66f	"
" " 5	54.82	05.47	5.6	63f	"
" " 6	54.91	05.48	5.8	67f	"
" " 7	54.68	05.46	5.6	62f	"
" " 8	54.68	05.50	6.0	68f	"
" " 9*	54.61	05.50	4.8	61f	"
" " 10	54.60	05.58	8.8	69f	"
" " 11	54.57	05.55	5.8	60f	"
" " 13	54.52	05.57	9.0	59f	"
Buoy 2	54.36	05.56	10.8	70f	"
Buoy 4	54.33	05.51	13.6	71f	"
Buoy 6	54.39	05.49	4.8	72f	"

LONG CREEK

Junction Buoy	54.40	05.44	15.2	73f	"
Buoy 2	54.40	05.40	5.6	74f	"

*Not in Light List

NORFOLK RECORDS PROCESSING UNIT
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8724 (SDP 10-1-62 & 10-2-62)

GENERAL

Survey SDP 10-2-62 was plotted as an insert on the smooth sheet for H-8724 in compliance with the letter of Chief, Operations Division, dated July 25, 1963.

This appears to be a very good basic survey. Soundings are in agreement and development was done to the extent that the scale would allow. Some problems were encountered during the smooth plot because of erratic skiff courses and times in areas of strong current and irregular bottom. Also, the frequent use of weak fixes and the confusion resulting from having 640 signals on one survey, created problems for the smooth plotter that required a considerable amount of time and effort to resolve.

The whole area is foul with small obstructions, particularly in the coves. Many of these have been located, even small sticks used for marking small channels which are probably insignificant for charting purposes.

PHOTO-HYDRO STATIONS

The cronaflex prints listed below were used to transfer all photo-hydro stations. They are being forwarded with this survey.

T-11704, T-11705, T-11706, T-11707, T-11708 & T-11709

Respectfully submitted,


Hugh L. Proffitt
Cartographer

Norfolk, Va.
Aug. 18, 1964

:

CORRECTIONS FOR ECHO SOUNDINGS

Special Project 19-62

15 January 1963-30 May 1963

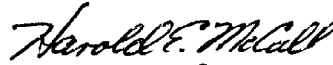
EQUIPMENT:

DE-723 echo sounder, number 531, and skiff 770 was used for all echo sounding on SDP-10-1-62. DE 723 echo sounder, number 546, and launch 1176 was used for all echo sounding on SDP-10-2-62.

CORRECTIONS:

Bar checks were taken twice daily when sea conditions permitted. Abstracts of these bar checks are included. Bar check correction vs. echo sounder depth curves were plotted and the velocity correction abstracted. The curves and abstracts of velocity corrections are included.

No temperature and salinity observations were taken since the majority of the depths in the project area are less than twenty feet.



Harold E. McCall
LT, C&GS, O in C

Abstract of Bay Checks for SDP 10 - 1 - 62

<u>Depts</u>	1.0	2.0	3.0	4.0	5.0	10.0	15.0	20.0
<u>Day-pg.</u>								
<u>Vol.</u>								
c-p.19					5.6	10.2	15.6	20.6
Vol.-I					5.2	10.4	15.4	20.4
d-P.28					5.6	10.2	15.4	20.6
Vol.-I					5.4	10.1	15.6	20.6
d-P.47					5.6	10.2	15.4	20.6
Vol.-I					5.4	10.0	15.4	
e-P.54					5.3	10.0	15.0	20.2
Vol.-I					5.2	10.0	15.1	20.1
f-P. 3					5.4	10.2	15.3	20.2
Vol-II					5.2	10.2	15.2	20.3
f-P.46					(5.8)R	10.3	15.2	20.5
Vol-II					5.0	(10.6) RR	15.2	20.4
g-P.48					5.6	10.2	15.0	20.4
Vol-II					5.0	10.0	15.2	20.2
g-P.17					5.4	10.2	15.4	20.4
Vol-III					5.2		15.0	
j-P.36					5.0	10.0	15.0	19.0
Vol-III					5.0	10.0	15.0	(19.8) RR
L-P.46					5.4	10.4	15.6	
Vol-IV			(3.8)R	(4.6)R	5.4	10.4	15.4	
L-F.46		3.0	3.6	4.4	5.4	10.4		
Vol-IV	2.2	(3.2) RR	3.6	4.6	5.4	10.4		
m-P. 3	(2.8)R	2.8	3.6	4.4	5.2	10.0	15.2	20.2
Vol.-V	2.0	2.8	3.6	4.4	5.2	10.2	15.2	
n-P.16	1.8	2.8	3.4	4.4	5.0	10.0		
Vol.-V	1.8	2.8	(3.8) RR	4.4	5.2	10.0		
p-P. 3	2.2	3.0	3.6	4.4	5.4	5.0	15.4	
Vol-VI	(2.6)R	2.8	3.6	4.4	5.2		15.0	

Abstract of Bay Checks for SDP 10 - 1 - 62

<u>Depts</u>	1.0	2.0	3.0	4.0	5.0	10.0	15.0	20.0
<u>Day-pg.</u>								
<u>Vol.</u>								
p-P.24	1.8	2.8	3.6	4.4	5.2			
Vol-VI	1.8	2.8	3.4	4.4	5.2			
q-P.26	1.8	2.8	3.6	4.4	5.2	10.0		
Vol-VI	1.8	2.6	3.4	4.4	5.2	10.0		
r-P. 3	1.8	2.8	3.6	4.4	5.2			
Vol-VII	1.6	2.8	3.6	4.4	5.2			
t-P.39	2.2	2.8	3.6	4.6	5.-	10.-	15.-	
Vol-VII	2.-	2.6	3.4	4.4	5.0	10.-	15.-	
t-P.71	1.8	2.8	3.6	4.8	5.6	10.4	15.2	
Vol-VII	2.0	3.0	3.6	4.6	5.4	10.2	15.2	
u-p. 2	1.8	2.8	3.6	4.4	5.0	9.8		
Vol-VII	1.8	3.0	3.6	4.4	5.2	9.8		
u-P.33	2.2	3.0	3.6	4.6	5.4	10.0		
Vol-VII	1.8	2.6	3.6	4.2	5.2	10.0		
w-F.56	(1.2) R	3.0	3.8	4.8	5.4			
Vol-VIII	1.4	(2.4) R	3.8	4.6	5.4			
x-P.58	1.6	2.6	3.4	4.2	5.0			
Vol-VIII	1.6	2.4	3.2	4.2	5.0			
y-P.24	1.4	2.6	3.6	4.0	5.0	9.8		
Vol-IX	1.4	2.4	3.4	4.0	5.0	9.8		
y-P.54	2.0	2.8	3.6	4.6	5.4			
Vol-IX	2.0	2.8	3.6	4.4	5.4			
z-P.56	2.0	2.8	3.6	4.2	5.2			
Vol-IX	1.8	2.4	3.2	4.4	5.0			
aa-F. 3	1.8	2.8	3.4	4.2	5.0	9.8		
Vol- X	1.8	2.8	3.2	4.2	5.0	9.8		
q-P.70	(2.4) R	3.0	3.4	4.4	5.4	10.0		
Vol-VI		3.0	(3.7) R	4.2	5.0	10.0		

Abstract of Bay Checks for SDF 10 - 1 - 62

<u>Depts</u>	1.0	2.0	3.0	4.0	5.0	10.0	15.0	20.0
<u>Day-pg.</u>								
<u>Vol.</u>								
ab-P.20	1.8	2.4	3.2	4.2	5.0	9.8		
Vol.- X	1.4	2.6	3.2	4.0	5.	9.8		
ac-P.56	2.0	2.6	3.4	4.2	5.0	9.8	14.8	20.0
Vol.- X	1.8	2.4	3.2	4.2	5.0	9.8	15.0	20.0
ag-P.47	1.8	2.4	3.4	4.4	5.-	10.-		
Vol.-XI		2.2	3.5	4.4	5.-	9.8		
ah-P.28	1.8	3.0	3.8	4.4	5.-	9.8		
Vol. XII	1.8	2.6	3.0	4.0	5.-	10.0		
Total	68.4	118.0	154.0	192.2	328.2	492.7	456.4	385.4
Average	1.87	2.74	3.50	4.37	5.21	10.05	15.21	20.28

:

Abstract of Velocity Corrections

Sheet SDP - 10-1-62 (Skiff 770, fathometer No. 531)

Depth Applicable (feet) Correction (feet)

1.3 to 1.9	-1.0
2.0 to 2.7	-0.8
2.8 to 3.5	-0.6
3.6 to 4.7	-0.4
4.8 to 6.5	-0.2
6.6 to 12.1	-0.0
12.2 to 19.5	-0.2
19.6 to limit	-0.4

FORM C&GS-946
(REV. 11-65)
(PRESC. BY
HYDROGRAPHIC
MANUAL 20-2,
6-64, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8724 (SDP-10-1-62 & 10-2-62)

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		3	
DESCRIPTIVE REPORT		1	OVERLAYS			
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES	10					
CAHIERS						
VOLUMES		29				
BOXES						

T-SHEET PRINTS (LIST) T-11704-05-06-07-08 & 09

SPECIAL REPORTS (LIST)
Control Report, Photogrammetric

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				6940
POSITIONS CHECKED		655		
POSITIONS REVISED		10		
DEPTH SOUNDINGS REVISED		20		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		0		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		32		
JUNCTIONS		2		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		20		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		272		
TOTALS		326		
PRE-VERIFICATION BY		BEGINNING DATE	ENDING DATE	
VERIFICATION BY <i>Bernie Davis</i> Bernie Davis		BEGINNING DATE 11-2-71	ENDING DATE 4-26-72	
REVIEW BY		BEGINNING DATE	ENDING DATE	

FORM C&GS-946A
(REV. 11-65)
(PRES. BY HYDROGRAPHIC
MANUAL, 6-94)

U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H-8724 (SDP-10-1 & 10-2-62)

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	X		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED. This survey superseded H-7089</p>	X	
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	X		<p>Part IV - VOLUMES</p> <p>11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>	X	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	X				
<p>Part II - SHORELINE AND SIGNALS</p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys</p> <p>a. Give earliest and latest dates of photographs 1962 b. Field inspection date 1962 c. Field Edit date 1963 d. Reviewed-Unreviewed</p>	T-11704 T-11705 T-11706 T-11707 T-11708 T-11709		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>	X	
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	X				
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	X				
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still under way. PRY Lat. 36°54.45' Long. 76°02.28'</p>	X		<p>Part V - PROTRACTING</p> <p>13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	X	
<p>Part III - JUNCTIONS This survey superseded H-7089</p> <p>Note: Make a cursory comparison preliminary to inking soundings in area of overlap.</p>	X		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	X	
<p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and original curves were made identical. Remarks Required: -- None</p>					
<p>9. The notation in slanted lettering "JOINS H---- (12)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>	X		<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	X	

Fig. 20 (cont'd)
Form 946 A (back of form)

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable reploting or adjustments.	X		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	X	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number. 10-71 plastic	X		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	X	
Part VI - SOUNDINGS			Part IX - BOATSHEET		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	X		28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	X	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	X		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	X	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X		Part X - GENERAL		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X		30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	X	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	X		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
Part VII - CURVES			32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	X	
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected. WWP	X		33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	X		Part XI - NOTES TO THE REVIEWER		
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	X		34. Unresolved discrepancies and questionable soundings.	X	
			35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	X	
			36. Supplemental information.	X	
Verified by Bernie Davis			Date 4-24-72		

GEOGRAPHIC NAMES

Survey No. H-8724

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
Broad Bay												1
Broad Bay Canal												2
Crystal Lake												3
Eastern Branch												4
Long Creek												5
Lynnhaven Bay												6
Lynnhaven Inlet												7
Lynnhaven Shores												8
Narrows, The												9
Pleasure House Cove												10
Rainey Gut												11
Rudee Inlet												12
Western Branch												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25
												26
												27

Approved
10-8-64

R. J. Wright

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H (Field No. SDP 10-2-62)

A. Project:

Project No. : SP 19-62
Date of Original Instructions: 13 December, 1962
Date of Supplemental Instructions No. 1: 15 January, 1963.

B. Area Surveyed:

Area surveyed is located on Virginia Coast immediately south of Cape Henry. Project area includes approaches to Rudee Inlet, Lake Rudee, and Lake Wesley and extends to the head of navigation. Project limits extend out from beach along Lat. 36 49' 32" to Long. 75 57' 46"; run parallel to beach to Lat. 36 49' 58", Long. 75 57' 56" and then extend in to beach along Lat. 36 49' 58".

Survey operations were started on 14 May, 1963, and concluded on 22 May, 1963. Satisfactory junction was made with H-7703 (1:10,000 scale, 1948). Shoaling in Rudee Inlet seems to be about two to three feet inshore and about one foot offshore.

C. Sounding Vessel:

A 30 foot motor launch (C & GS 1176), ^{GREEN} (blue day letters) was used in Rudee Inlet while a 16 foot aluminum skiff (skiff-outboard-I-^{red} brown day letters) using pole soundings was used inside Rudee Inlet and Lake Wesley. A 723 Raytheon Fathometer was used for soundings on the motor launch.

D. Sounding Equipment:

A Raytheon Echo Sounder 723 (Serial No. 546) was used on Launch 1176 in the exposed waters of Rudee Inlet.

A 16 foot and an 8 foot sounding pole was used on the skiff in the shoaler areas of Rudee Inlet, Lake Rudee, and Lake Wesley.

In depths greater than 16 feet a leadline was used and its calibration checked out OK.

Echo sounder corrections were determined by bar checks.

The sounding units in the launch are bilge mounts.

E. Smooth Sheet:

To be written by Smooth Plotter.

F. Controls:

Visual control was used throughout the sheet. Advance manuscript used was T-11709. All signals were photo-hyde signals.

G. Shoreline:

Shoreline details were obtained from shoreline manuscripts noted in "F". Shoreline detail changed by hydrographer is noted on boat sheet by red.

H. Crosslines:

Crosslines were run at prescribed 10% of regular system of lines. Any discrepancies noted in crossings are due to changes in predicted tides.

I. Junctions:

Satisfactory junction was made with H-7703 (1:10,000 scale, 1948).

J. Comparison With Prior Surveys:

No prior surveys of this area have been done by the Coast Survey. No depths were furnished this party for comparison of soundings.

Exposed waters of Rudee Inlet were compared with soundings from survey H-7703 (1948). A shoaling was indicated as noted in "B".

Inside Rudee Inlet, in Lake Rudee and in Lake Wesley considerable dredging has been done and is presently still in progress.

Several notes are to be found in sounding volume, for skiff-outboard I, describing changes in shoreline and bottom configuration.

K. Comparison With the Chart:

The largest scale chart including Rudee Inlet, Lake Rudee, and Lake Wesley is C & GS 3335 and it shows no depths with which a comparison can be made.

L. Adequacy of Survey:

The survey is complete and adequate to supersede prior surveys for charting. However, close liaison should be kept with the City of Virginia Beach as to depth changes taking place due to future dredging.

M. Aids To Navigation:

There are no aids to navigation in the project area.

Notes describing and giving clearances of Rudee Inlet Bridge and an overhead pipe line across Rudee Inlet can be found in Vol. II, page 25 and 26 respectively.

N. Statistics:

	No. of Pos.	Nautical miles sounding line
Launch 1176	111	9.0
Skiff-outboard I	145	5.2

N. Statistics (Cont.):

Total area of sheet = 0.3 (nautical miles)²

- 1 Tide Gage operated
- 1 Tide Staff
- 4 Bottom Samples

O. Miscellaneous:

To be filled in by Smooth Plotter

P. Recommendations:

Considerable dredging is going on in Rudee Inlet, Lake Rudee, and Lake Wesley by the City of Virginia Beach. There is also talk of building a marina inside Rudee Inlet.

Because of these items it is recommended that close liaison be kept with the City of Virginia Beach in order to **Keep** charting data up-to-date.

Q. References to Reports:

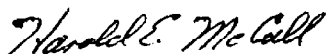
To be filled in by smooth plotter.

Respectfully submitted,



Sigmund R. Petersen
LTJG, C&GS

Approved and forwarded,



Harold E. McCall
LT, C&GS

TIDE NOTE

A portable tide gage was installed inside Rudee Inlet at Lat. 36-49-51 N., Long. 75-58-21 W. and a tide staff was installed inside Lake Rudee at Lat. 36-49.8'N. , Long. 75-58.6'W. The gage was used for all hydrography outside Rudee Inlet, in Rudee Inlet and in Lake Wesley. Readings were taken every thirty minutes on the tide staff in Lake Rudee and these heights were used for all hydrography in Lake Rudee.

No time corrections were applied to the observed heights. Mean Low Water corresponded to 2.8 feet on the Rudee Inlet gage and 0.3 feet on the Lake Rudee tide staff. Time on 75th meridian.

Abstract of Velocity Corrections

Sheet SDP - 10-2-62 (Launch 1176, fathometer 546)

Depth Applicable (feet)	Correction (feet)
-------------------------	-------------------

0.0 to 3.2	+1.2
3.4 to limit	+1.0

LIST OF SIGNALS
SHEET SDP-10-2-62
SP-19-62



TRIANGULATION:

<u>Name</u>	<u>Origin</u>	<u>Manuscript</u>
MIN Photo Hydro Sta.	Coast Guard Radio Tower, 1962	T-11709

PHOTO-HYDRO SIGNALS:

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
AMY	T-11709	MAG	T-11709
ANN	9	MEG	9
DEB	9	NAT	9
DEE	9	NEL	9
DOS	9	NIC	9
EDE	9	NOR	9
EVE	9	PAM	9
FAY	9	PAT	9
GIG	9	PEG	9
GIN	9	OLE	9
IDA	9	ORA	9
JAN	9	SAN	9
JIL	9	SOU	9
KAY	9	SUE	9
KIM	9	TES	9
KIT	9	WED	9
LIZ	9		
LOU	9		
LYN	9		

APPROVAL SHEET

The boat sheet and all accompanying records were examined and found to be complete and adequate. Records were examined periodically as the project progressed and the boat sheet was examined daily.

This survey is considered to be complete and adequate for charting.

Harold E. McCall

**Harold E. McCall
LT, C&GS
Officer in Charge**

DIST OF SIGNALS
 SHEET SDP-10-1-62
 SP-19-62

<u>Name</u>	<u>Manuscript</u>	<u>Name</u>	<u>Manuscript</u>
RAM	T-11707	SAT	T-11707
RAN	5	SAW	4
RAP	4	SAX	4
RAT	7	SAY	8
RAY	9	SEA	5
REC	8	SED (Crystal Lake)	6
RED	4	SEE	5
REE	8	SET	4
REM	5	SEX	5
REO	5	SHE	4
REP	5	SHU	6
RET	6	SIC	7
REV	7	SID	8
RIC	8	SIG	4
RIF	6	SIL	8
RIG	4	SIN	5
RIM	4	SIP	4
RIO	4	SIR	4
RIP	4	SIS	4
RON	5	SIT	5
ROO	9	SKI	4
ROT	4	SKY	4
ROW	4	SLO	4
ROY	4	SLY	4
RUB	4	SOB	5
RUE	4	SOL	5
RUG	8	SON	4
RUM	4	SOP	4
RUN	5	SOT	7
RUP	5	SOW	4
RUT	5	SOX	4
RYE	8	SPA	8
SAD	4	STY	4
SAG	7	SUB	4
SAL	7	SUE	4
SAM	4	SUG	5
SAN	8	SUM	8
SAP	8	SUP	4

ABSTRACT OF BAR CHECKS FOR SDP-10-2-62

Depth	-	4.0	-	5.0	-	10.0	-	15.0	-	20.0	-	25.0
Day-pg.	-			4.0		9.0		14.0		19.0		
Vol.	-			4.4		9.2		14.0		18.6		
a - 3	-			4.0		9.0		14.0				
Vol. I	-	2.8		4.0		8.8		14.0				
	-			4.0		8.8		13.8		18.8		24.4
	-			4.0		8.8		13.8		18.8		23.8
b - 10	-			4.0		9.0		13.6		18.8		
Vol. I	-			3.8		8.8		14.2		18.8		
	-											
b - 10	-	3.0		4.0		9.2		14.4		19.2		
Vol. I	-	3.0		4.0		8.8		13.8		19.4		
	-											
c - 35	-			4.4		9.0		14.0		19.0		23.8
Vol. I	-			4.0		8.8		14.0		18.8		23.8
	-											
c - 35	-	2.8		3.8		8.8		13.8		18.8		
Vol. I	-	<u>2.8</u>		<u>4.0</u>		<u>9.0</u>		<u>13.8</u>		<u>18.8</u>		<u> </u>
	-											
TOTAL	-	14.4		56.4		125.0		195.2		226.8		95.8
AVERAGE	-	2.9		4.0		8.9		13.9		18.9		24.0

8724

Diag. Cht. No. 1222-2.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. SDP 10-2-62 Office No. H-8724

LOCALITY

State VIRGINIA

General locality COAST OF VIRGINIA

Locality RUDEE INLET, LAKE RUDEE &

LAKE WESLEY

19 63

CHIEF OF PARTY

H. E. McCALL

LIBRARY & ARCHIVES

DATE

COMM-DC 61300

8724

Abstract of Velocity Corrections

Sheet SDP - 10-2-62 (Launch 1176, fathometer 546)

Depth Applicable (feet)	Correction (feet)
-------------------------	-------------------

0.0 to 3.2	+1.2
3.4 to limit	+1.0

:

TIDE NOTE FOR HYDROGRAPHIC SHEET

6/14/65

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
29 volumes of sounding records for

HYDROGRAPHIC SHEET 8724

Locality: Lynnhaven, Broad and Linkhorn Bays, Rudee Bay
and Inlet and Lake Wesley, Virginia

Chief of Party: H. E. McCall, 1963

Plane of reference is mean low water

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

Bayville	Broad Bay
Lynnhaven Inlet	Crystal Lake
Kempsville	Brown Cove
Linkhorn Bay	Rudee Inlet
Long Creek	

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

Bayville	1.7 ft.
Lynnhaven Inlet	2.0 "
Kempsville	1.9 "
Linkhorn Bay	0.3 "
Long Creek	0.8 "
Broad Bay	0.2 "
Brown Cove	1.7 "
Rudee Inlet	2.6 "

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

<u>Vol.</u>	<u>Position</u>
I	14d-38d ✓
III	94j-110j ✓
IV	kl-kl32 ✓

J. M. Leonard
Chief, Tides and Currents Branch

1108724

CORRECTIONS

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

Form No J-100-5

CORRECTIONS IN FEET, FATHOMS

VELOCITY CORRECTIONS

U.S. Coast and Geodetic Survey

Ship STORM DAMAGE SURVEY PARTY

Lt. H. E. McCall Comdg.

These corrections are to be used
between 1963 and 1963

in the locality VIRGINIA COAST

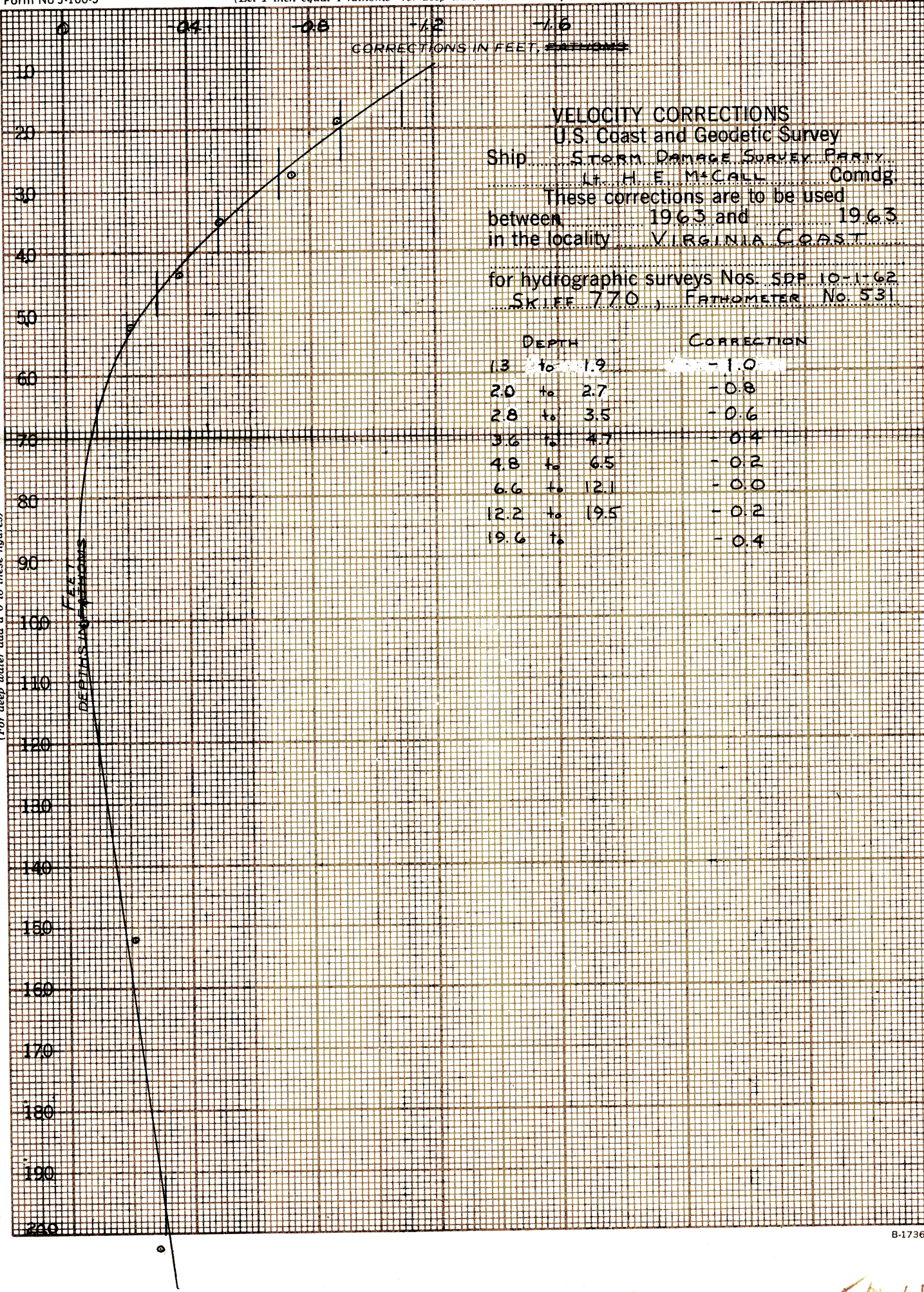
for hydrographic surveys Nos. SPP 10-1-62

SKIFF 770, FATHOMETER No. 531

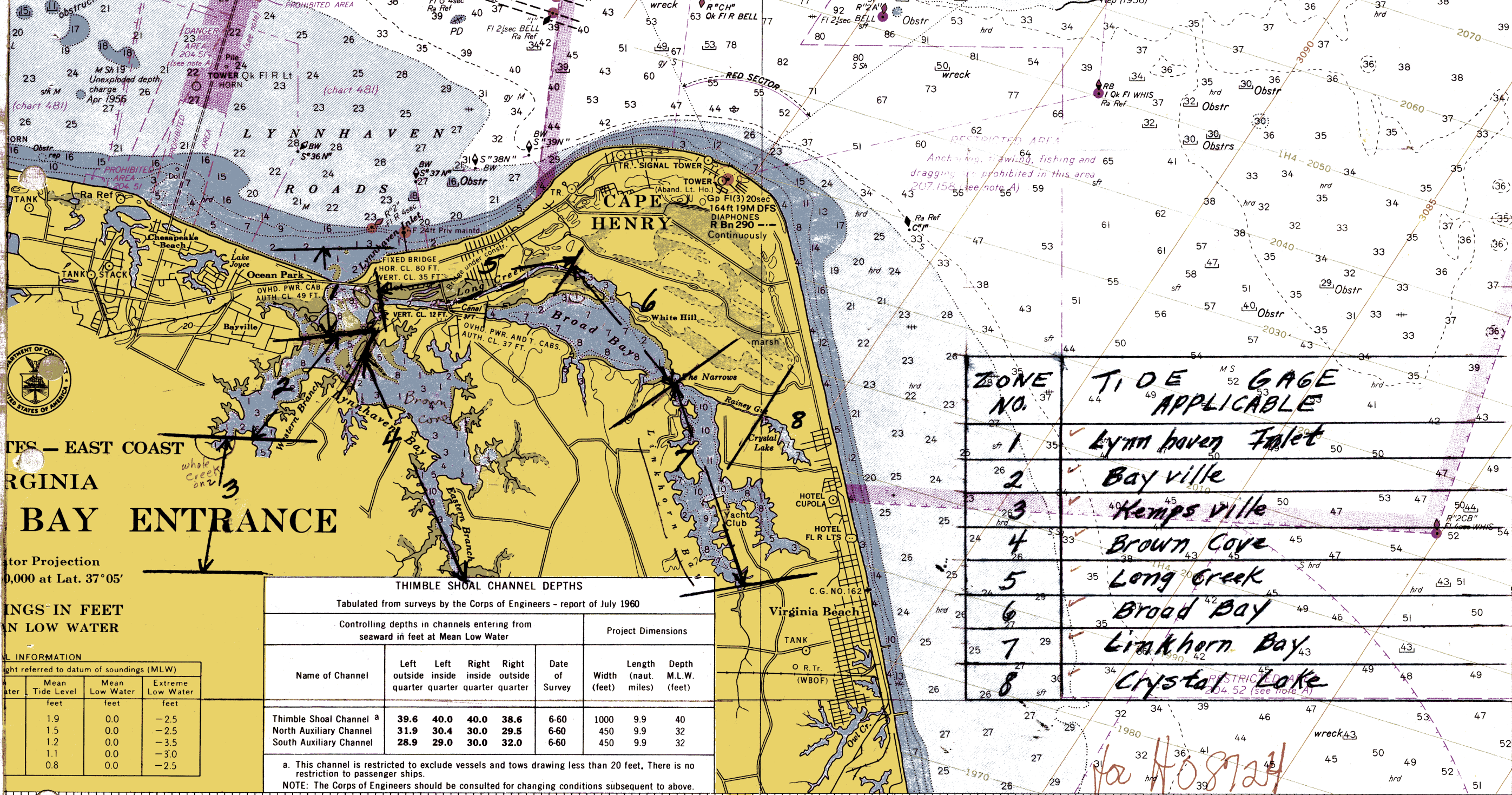
DEPTH	CORRECTION
1.3 to 1.9	-1.0
2.0 to 2.7	-0.8
2.8 to 3.5	-0.6
3.6 to 4.7	-0.4
4.8 to 6.5	-0.2
6.6 to 12.1	-0.0
12.2 to 19.5	-0.2
19.6 to	-0.4

AVERAGE DEPTH
(For deep water add a 0 to these figures)

FEET
FATHOMS



by L.B.



**ATLANTIC OCEAN — EAST COAST
VIRGINIA
LYNNHAVEN BAY ENTRANCE**

Map Projection
Scale 1:50,000 at Lat. 37°05'

Soundings in Feet
at Mean Low Water

ADDITIONAL INFORMATION

Height referred to datum of soundings (MLW)

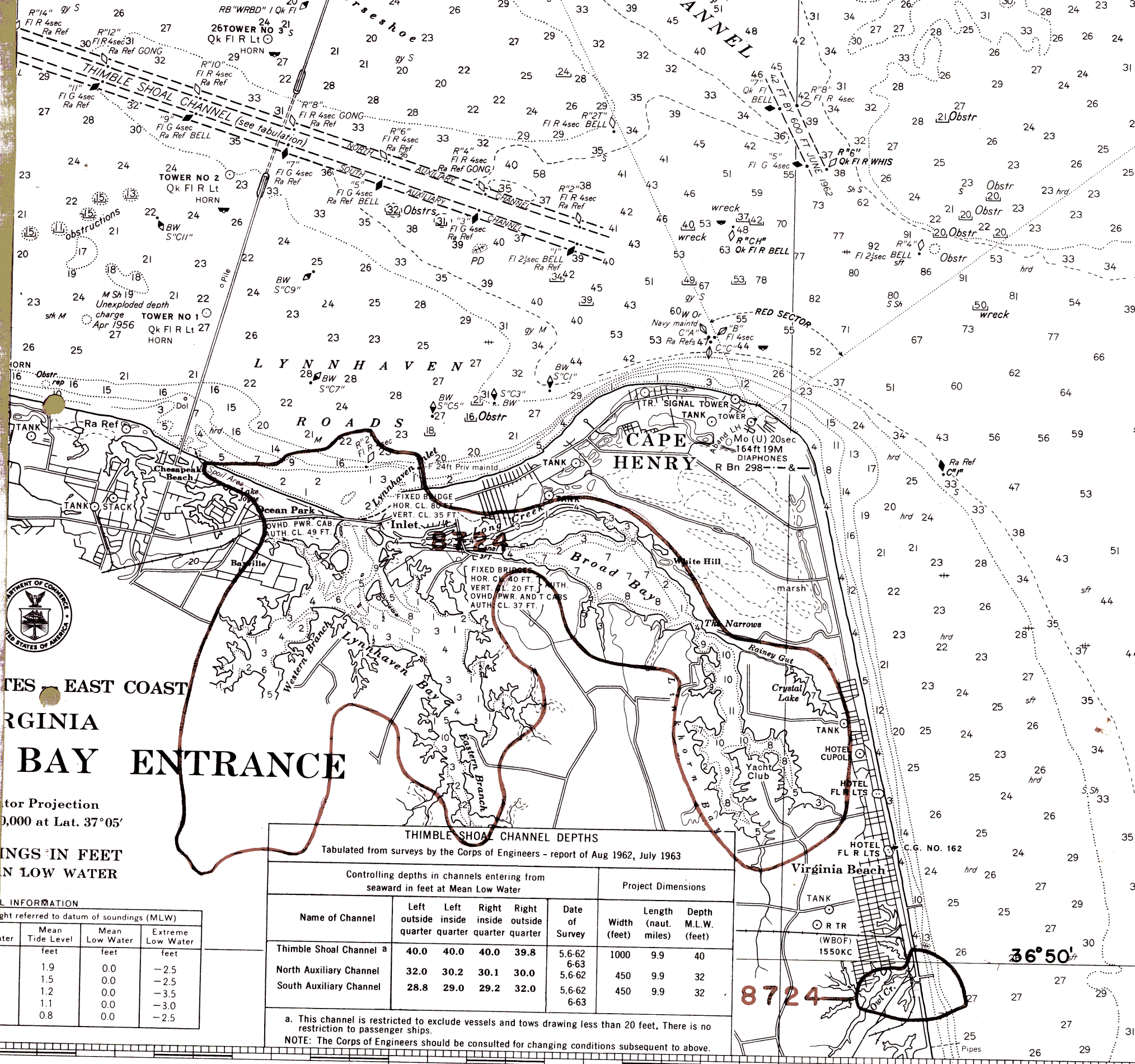
Water	Mean Tide Level feet	Mean Low Water feet	Extreme Low Water feet
	1.9	0.0	-2.5
	1.5	0.0	-2.5
	1.2	0.0	-3.5
	1.1	0.0	-3.0
	0.8	0.0	-2.5

THIMBLE SHOAL CHANNEL DEPTHS
Tabulated from surveys by the Corps of Engineers - report of July 1960

Name of Channel	Controlling depths in channels entering from seaward in feet at Mean Low Water				Date of Survey	Project Dimensions		
	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter		Width (feet)	Length (naut. miles)	Depth M.L.W. (feet)
Thimble Shoal Channel ^a	39.6	40.0	40.0	38.6	6-60	1000	9.9	40
North Auxiliary Channel	31.9	30.4	30.0	29.5	6-60	450	9.9	32
South Auxiliary Channel	28.9	29.0	30.0	32.0	6-60	450	9.9	32

a. This channel is restricted to exclude vessels and tows drawing less than 20 feet. There is no restriction to passenger ships.
NOTE: The Corps of Engineers should be consulted for changing conditions subsequent to above.

ZONE NO.	TIDE GAGE APPLICABLE
1	Lynnhaven Inlet
2	Bayville
3	Kempsville
4	Brown Cove
5	Long Creek
6	Broad Bay
7	Linkhorn Bay
8	Crystal Lake



ATLANTIC EAST COAST
VIRGINIA
BAY ENTRANCE

Projection
 1:50,000 at Lat. 37°05'

DEPTHS IN FEET
AT MEAN LOW WATER

DEPTH INFORMATION

Height referred to datum of soundings (MLW)

Water	Mean Tide Level	Mean Low Water	Extreme Low Water
	feet	feet	feet
	1.9	0.0	-2.5
	1.5	0.0	-2.5
	1.2	0.0	-3.5
	1.1	0.0	-3.0
	0.8	0.0	-2.5

481 Part App'd Before V&R. J.N.E. 9/18/64

3335 No Cow - Hydro removed in area on chit LHE
562 - Part app. Before V&R. OS 1/29/65 thru chert 481 ^{MR}
Dug #36

12254 Partially superceeded by H-9814, OTHERWISE Adequately Applied
8-8-90, LA

12222 Partially superceeded by H-9814, OTHERWISE considered Adequately
Applied 1-24-91, LA