8768

Diag. Cht. No. 1239-2.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HFP 10-1-63 *Office No.* H-8768

LOCALITY

State South Carolina

General locality South Carolina Coast

Locality Charleston Harbor

1963

CHIEF OF PARTY

Harold E. McCall

LIBRARY & ARCHIVES

DATE JUN 11 1964

COMM-DC 61300

8768

Form 537
(Ed. June 1946)

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-8768

Field No. HFP 10-1-63

State SOUTH CAROLINA

General locality SOUTH CAROLINA COAST

Locality CHARLESTON HARBOR

Scale 1:10,000 Date of survey 31 July to 3 Dec. 1963

Instructions dated 15 May 1963

Vessel HYDROGRAPHIC FIELD PARTY NO. 220

Chief of party HAROLD E. McCALL

Surveyed by S.R. PETERSON & W.C. PAGE

Soundings taken by ~~fathometer~~, graphic recorder, hand lead, ~~XXX~~ POLE

Fathograms scaled by PARTY PERSONNEL

Fathograms checked by PARTY PERSONNEL

Protracted by ALPHA G. ATWILL (NORFOLK PROCESSING UNIT)

Soundings penciled by ALPHA G. ATWILL " " "

Soundings in ~~fathoms~~ feet at MLW ~~XXXX~~

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8768 (Sheet No. HFP 10-1-63)

A. Project:

Project Number: OPR - 436
Date of original instructions: 15 May 1963

B. Area surveyed

The area surveyed consists of the entire Charleston Harbor betw een the submerged jetties, and east to a line between the inside ends of the exposed jetties. The survey area was bounded on the north by Lat. 32 - 48'- 00"

The survey was started on 31 July 1963 and completed on 3 Dec. 1963.

C. Sounding Vessel:

Launch 1176, Skiff 770, and Skiff - Outboard # 1 were used for all soundings. The identifying colors used were blue, purple, and brown, respectively.

Launch 1176 and Skiff 770 were used for all echo soundings Skiff - Outboard # 1 was used for lead line soundings along piers and pole soundings while locating pilings, etc.

D. Sounding Equipment:

All echo soundings were taken by the Raytheon D. E. 723 sounding machines. Launch 1176 used Fathometer # 546 with power pack # 517 until and including "ca" Day. Fathometer # 546 with power pack # 518 was used from "da" day on. Skiff 770 used fathometer # 531 with power pack # 516 through "e" day ; power pack # 517 was used thereafter. Echo soundings were generally taken in depths of three feet or more, and pole soundings were taken in shoaler water. Least depths on shoals were takenby pole soundings. Lead lines soundings were taken along pier faces etc.

Bar checks were taken at least once each day to obtain echo sounder corrections. Because of the extreme current in the project area, Difficulty was encountered in taking bar checks, especially when the wind was against the current. IT was found that usually better bar checks could be obtained while the wind was light. Therefore, Fewer checks were taken than usual, with the idea that fewer good checks with the lines

vertical

D. Sounding Equipment (cont.)

vertical were of more value than a great number of bar checks, many of which would have beenin slight error because of the difficulty in keeping the bar lines vertical.

E. Smooth Sheet:

The smooth sheet projection was made by hand in Norfolk Records Processing Unit.

F. Control:

All control was visual using the three point fix system except for an occasional fix in a line of sight restricted area, in which "see boat sheet" was usually employed.

The photogrammetric compilations used for transfer of signals were:T-12281, T-12282, T-12283, T-12286, and T-12287. A list of type and number of signals used is attached.

G. Crosslines:

Approximately 8 percent of cross lines were run. Any discrepancies noted in crossings are due to changes in predicted tides and to differences in fathometer corrections.

H. Shoreline:

All shoreline was obtained by photogrammetric compilations. No discrepancies were found in shoreline or offshore details. Any changes in piers, jetties, etc., are notedon boat sheet and in sounding volumes.

I. Junctions:

No junctions were made with either prior or contemporary surveys. Junction with a survey, of the entrance channel to the harbor, by theUSC&GSS PEIRCE will be completed next season.

J. Comparison with Prior Surveys:

PRE - SURVEY REVIEW

Item I:

The waterfront and associated detail in the project area w as checked for location and condition of pilings, platforms, obstructions etc., which are a menace to navigation. All these items are found on the boat sheet and appropriate notes can be found in the sounding volumes.

Item II:

The anchorage basin between the dredged navigational channels was found to be 1 to 2 feet deeper than on last chart.

The Corps of Engineers was contacted and they informed this party that the basin would be dredged approximately every six months. It was due to be dredged when this project concluded.

Item III:

Hog Island channel has shoaled up considerably. There is no longer a channel leading to Shem Creek from the southwest and the channel leading from the southeast has shoaled up to a least depth of eight feet. At the immediate entrance to Shem Creek the channel is very narrow due to extending shoals.

Item IV:

Any discrepancies found in this crossing of sounding lines can be attributed to differences in predicted tides. Crossing lines agreed very well.

Hydrographic coverage on this sheet is very ample and all channels have been surveyed very adequately. Junction between this survey and a survey of the entrance channel to the harbor by the USC&GSS PEIRCE will be completed next field season.

Item V:

The reported wreck at Lat. 32 - 45.99', Long. 79 - 52.32' was not found by the regular system of sounding lines and it was not practicable to run any wire drag lines over the area due to strong currents and lack of equipment. Believed verified — See 25' sdg. between 81 & 82 Sa (blue)

Item VI:

The submerged piles at Lat 32 - 46.0', Long. 79 - 51.4'; the single pile at Lat. 32 - 45.97', Long. 79 - 51.74'; the girder at Lat. 32 - 46.03', LOng. 79 - 51.47', were all searched for at low tide and no evidence of their existence was found. This party is not equiped to do wire-drag survey therefore it was not attempted.

The boiler @ Lat. 32 - 45.96; Long. 79 - 51.76 was located by Pes. I"d" (Skiff-outboard I).

J. Comparason with Prior Surveys (cont)

PRE SURVEY REVIEW (cont)

Item VII:

Position and present condition of the dolphins in the Ashley River at Lat. 32 - 46.6', Leng. 79 - 57.3';

These dolphins are in position as shown on the beat sheet from the blue line tracing. Afix was taken on the southeastern most and northwestern most dolphins and are recorded as positions 1 pa and 2pa, launch 1176, respectively.

The three dolphins between the two end ones are more closley grouped, as shown and all three five are in a straight line.

The condition of these dolphins is good and each one forms a stout structure.

Item VIII:

Two positions (2-3d), Skiff-outboard Iwere taken on platforms in the area of the Navy degaussing range at Lat. 32 - 46.6', Long. 79 - 55.0'. Location of dolphins and floats remain as shown on pre survey chart,and review. Condition of all is good except for western most platform (3d) which is tilted. However, the group of pilings holding the platform remain in good condition. West platform Signal DEG is east of charted position.

In the area of Lat 32 - 47.7', Long 79 - 55.35', all dolphins and platforms have been removed. The two fixed lights still remain in operation according to theNavy. The removal of the dolphins and platforms had been noted in the Notice to Mariners according to Navy informant. charted 7½' sdg. this area not found shoalest was 17' - see 5d (br)

Item IX:

Visible w recks located in the Cooper River:

The wreck at Lat. 32--47.99 32 - 47.6, Long. 79 - 54.55', was located by pos. lw a (Launch 1176). This wreck consists of several sunken steel tanks. These tanks bare four feet at low water. Wreckage and shoal extends from this fix (pos lwa) due east to the shore line. Note 3' sdg. 150 m WNW - possibly wreckage

The wreck at Lat. 32 - 47.39', Long. 79 - 54.42', was located by pos. 6-7d (Skiff-outboard I). It is a ten meter wide reinforced concrete barge which is solid as "rock". The barge bares ~~six~~ 17 feet at low water.

Item X:

The dolphin at Lat, 32 - 46.86',Leng. 79 - 54.23 was looked for at low tide besides regular soundings lines run over the area. No trace was found. NO wire drag was performed due to lack of equipment.

J. Comparason With Prior Surveys (cont)

PRE-SURVEY REVIEW (cont)

Item XI:

In the area of Lat. 32 - ~~45.3'~~ 45.3', Long. 79 - 54.8', seven pilings were located. These positions can be found in Skiff-outboard I volume (pos. 1-4a) and Launch 1176 volume (pos. 24-26 j).

It is not known whether these are dredging markers or not but they should be charted.

Item XIII #13

The Corps of Engineers was consulted regarding the spoil areas in Charleston Harbor. The limits of the present spoil areas w ere verified as they are still being used as noted.

The spoil area in the Cooper River off Hog Island is presently being usedoff and on only from about the wreck at Lat. 32 - 47.6' to its northern limit.

Two areas in Charleston Harbor were being dredged as this surveyed added. These areas are outlined on the boat sheet(IN GREEN). One area along the docks was being dredged at present and the anchorage basin was to be dredged presently. The spoil from the anchorage basin was to be pumped out on the shoal behind Ft. Sumter.

Item XII: #12

Submerged portions of North and South jetties:

Hydrography lines were run over these submerged jetties to find least depths. (a day Skiff 770)

It appears there is safe passage over the southern submerged jetty for small boats. The least depths obtained were considerably shealer than the present chart shows, however. Very strong currents were encountered in this area.

A line of hydrography was not obtained preciseley over the north submerged jetty for its entire length as strong currents made this very difficult; how ever it has been adequately determined that this jetty has jagged rock peaks that extend very near the surface.and is extremely dangerous for any boat in this area. We reccomend this be labled "danger" on the chart. plotted on smooth overlay

Extensive notes concerning soundings over the north submerged jetty arecto be found in sounding volume, Skiff 770, "a day", pages 36 & 40.

J. Comparison withprior surveys (cont)
PRE-SURVEY REVIEW (cont

Item XIV:

Humble Oil Co., owner of the finger pier at Lat. 32 - 49.5', Long. 79 - 56.0', was contacted concerning their dolphins around their pier and the area was also investigated by boat. Falls off sheet

The dolphins now shown on the chart were removed about 1957 and replaced by concrete abuttments. Walkways were constructed from the dock, at the end of the finger pier, to the abuttments.

The only dolphin stillin place, in good condition is the w western-most one, south of the pier.

A comparison with 1953 survey (H-8352) shows a shoaling trend with the depth curves still following the same general lines.

Acomparison with 1934 surveys (H-5433a and H-5455) shows a general shoaling trend overall and extensive shoaling below Shutes Folly Island between Long. 79-56 and Long 79-53.5.

K. Comparison with the Chart:

(a) Aposition was taken locating the shoalest sounding by the Black day Beacon at Lat. 32-45-53, Long. 79-54-19, This position was 1 ba day and a depth of -0.8 feet was determined. Chart 470 does not show this as breaking at low water.

(b) The least depth by red and black day beacon at Lat. 32-46-06 Long. 79-55-41 was determined by pos. 3 ba day. This sounding was 0.4 ft. There two (2) iron pipes projecting 3 above high water located appreximately 8 meters northeast of the beacon.

A comparison with chart (C&GS 470) 15th edition, 3 June 1963, shows that the depth curves tend to follow the same general lines. Shoaling has occurred in many areas but channels are kept dredged and some are deeper than shown on the chart. Channel leading to Ashley River just below the battery, has shoaled to a least depth of 16 ft. Dredged and spoils areas are generally in disagreement with charted depths.

L. Adequacy of Survey:

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

M. Aids to Navigation:

All buoys and beacons , not used for signals, in Charleston Harbor were cut in visually. They all agree with the Light List. The aids are adequate for navigation.

Any pipelines, cables, etc. found are noted on the boat sheet and in sounding volumes.

N. Statistics:

	No. of Pos.	Naut. Miles Sdg. Line
Launch 1176	4823	486.5
Skiff770	982	81.6
Skiff- Outboard I	117	0.0

Total Area Of Sheet 11.27 $(mi)^2$
Bottom Samples 70

O. Miscellaneous:

Strong currents were encountered flowing in and out through Charleston Harbor and the Ashley and Cooper Rivers. Since the hydro lines were usually run at nearly right angles to these currents, it was found impossible to run reasonable hydro lines using compass courses. Therefore, after the first few days work, two range buoys were built, each consisting of a fifty-five gal. drum, Painted International Orange and with about 25 feet of line attached to a cement weight for an anchor. One ofthese buoys was attached planted by trial fixes in shoal water for each hydro line to be run. Arange would be determined from the buoy to a n natural object on shore, and after starting each line the coxswain would keep the launch on this range. If the plot showed to be going off line slightly , the plotter would have the launch brought right or left slightly and the appropriate new range would then be used. Two lines would be run then the buoys moved to the next two hydro lines. This method proved very effective for good lines in strong current.

P. Recommendations:

It is recommended that the contact be kept with the Corps of Engineers concerning dredging and spoil areas in Charleston Harbor.

Due to wide interest of various groups in the area, as to the silting problem in the harbor and possible changes proposed to combat this problem by these groups, close contact should be kept with changes.

TIDE NOTE

No portable or standard tide gages were operated by this party for this survey, One standard gage was located in Charleston Harbor, Customhouse Wharf, but was operated by a Mr. DeVeaux of the U.S. Weather Bureau.

SHEET HFP-10-1-63

LIST OF SIGNALS

CHARLESTON HARBOR

OPR-436

PH-6216

TRIANGULATION:

Name	Origin	Manuscript
ANN 055	SOUTH CHANNEL RANGE FRONT LT., 1953 (JAMES ISLAND LIGHT)	T-12282
ANT 058	MT. PLEASANT NEW TANK, 1936	83
ASH 073	ASHLEY RIVER APPROACH RANGE FRONT LIGHT (ASHLEY RIVER APPROACH FRONT RANGE, 1953)	81
BAY 009	MT. PLEASANT RANGE REAR LT., 1963	82
EAR 207	FORT SUMTER RANGE REAR LIGHT, 1963	82
FRO 276	FORT SUMTER RANGE FRONT LIGHT (FORT SUMTER FRONT RANGE, 1933)	87
LEE 422	ASHLEY RIVER APPROACH RANGE REAR LIGHT (ASHLEY RIVER APPROACH REAR RANGE, 1953)	81
LIP 436	CHARLESTON ST. PHILLIPS CHURCH SPIRE (1890-1933)	82
LUX 489	COUNTRY CLUB TANK, 1928	81
MAS ~~MAT~~ 507	CHARLESTON WEATHER BUREAU MAST, 1933	81
NEW 529	CHARLESTON NEW LIGHTHOUSE, 1963	83
ORT 678	FORT JOHNSON SOUTH TANK, 1953	82
PAL 604	CHARLESTON EPISCOPAL CHURCH SPIRE, 1932	82
RAN 705	QUARANTINE W.T., 1921	82
RIP 736	RIPLEY DAYBEACON, 1953	82
SUB 780	WINDEMERE TANK, 1928	81
SUE 782	SOUTH CHANNEL RANGE REAR LT. (SOUTH CHANNEL REAR RANGE BN., 1933)	81
WAR 907	CHARLESTON WATERWORKS TANK, 1932	81
MAT~~H~~ 508	CHARLESTON ST. MATTHEWS LUTHERAN CHURCH SPIRE, 1932	82

TOPOGRAPHIC STATIONS:

Name	Origin	Manuscript
ATE 082	S.C. STATE PORT AUTHORITY TANK, 1963	T-12282

SHEET HFP-10-1-63

LIST OF SIGNALS

TOPOGRAPHIC STATIONS:

Name	Origin	Manuscript T-12282
ATE 082	S.C. STATE AUTHORITY TANK, 1963	
DEE 122	OBSTRUCTION LIGHT (COOPER RIVER BRIDGE)	T-12282
FOR 267	FT. MOULTRIE NEW TANK, 1963	83
LAC 401	BLACK WATER TANK, 1963	82
NIC 531	OBSTRUCTION LIGHT (COOPER RIVER BRIDGE)	82
NOR 567	SULLIVANS ISLAND NORTH TANK, 1963	83
OLE 642	OBSTRUCTION LIGHT (COOPER RIVER BRIDGE)	82
SAN 706	OBSTRUCTION LIGHT (COOPER RIVER BRIDGE)	82
SIT 738	CITADEL WATER TANK, 1963	81
TEL 824	WCIV TELEVISION TOWER, 1963	83
TOO 866	WUSN TELEVISION TOWER, 1962	82
TOW 869	WCSC TELEVISION TOWER, 1963	83
WER 927	STELLA MARIS CHURCH TOWER, 1963	83

SHEET HFP-10-1-63

LIST OF SIGNALS

PHOTO-HYDRO SIGNALS:

Name	Manuscript
ABE 002	T-12283
ALP 046	83
AND 051	81
ART 078	86
BAT 008	82
BOA 060	82
BOB 061	83
BOX 069	82
BUS 087	82
BEC 021	
CAR 107	81
CAT 108	83
COD 161	83
CUT 188	81
DEG 123	82
DIP 136	82
DOG 163	83
DOL 164	81
DOT 168	83
EVA 280	82
EBB 200	83
FEZ 229	83
GAL 304	81
GEM 325	82
GIG 333	81
GUM 385	83
GUY 389	81
HEE 322	82
HEX 329	86
HOG 363	82
HOT 368	82
HUG 383	81
IDA 310	83
JOE 462	81
JUT 488	82
KEY 429	T-12281
KIM 435	81
LAY 409	82
LIZ 439	82
LOW 469	82
MID 532	82
MUN 585	81
MUR 587	83
	82
NAT 509	82
NIP 536	83
NIX 539	81
OAK 605	81
OWL 694	82
PAT 608	81
PEG 623	83
PET 628	83
POL 664	83
POO 666	81
PUP 686	81
QUE 682	81
RUM 785	82
SEX 729	82
SIG 733	81
SIS 737	82
SHE 732	82
SKY 749	81
SOW 769	81
SUM 785	82
VIA 830	82
WAP 906	81
WAX 909	83
WES 929	82
YAK 904	81
YET 928	83
ZAG 903	83
ZIG 933	83
ZOO 966	87

ABSTRACT OF VELOCITY CORRECTIONS
Sheet HFP 10-1-63, Launch 1176, Skiff 770

Depth Applicable (feet)	Correction (feet)	
0.0 - 2.5	0.6	
2.6 - 6.4	0.8	
6.5 - 10.3	1.0	31 July – 30 Sept Table 1
10.4 - 14.0	1.2	
14.1 - 18.0	1.4	
18.1 - 21.8	1.6	
21.9 - 25.7	1.8	Use for "a" day through "ca"
25.8 - 29.6	2.0	day Launch 1176
29.7 - 33.6	2.2	
33.7 - 37.4	2.4	
37.5 - 41.6	2.6	
41.7-4 47.8	2.8	
47.9 - 80.0	3.0	
0.0 - 4.5	0.6	
4.6 - 8.6	0.8	
8.7 - 13.2	1.0	
13.3 - 17.8	1.2	
17.9 - 22.2	1.4	
22.3 - 26.6	1.6	Use for "da" day through"db"
26.7 - 31.0	1.8	day, Launch 1176
31.1 - 35.2	2.0	
35.3 - 39.4	2.2	1 Oct - 3 Dec. Table 2
39.5 - 44.0	2.4	
44.1 - 48.5	2.6	
48.6 - 53.0	2.8	
53.1 - 57.4	3.0	
57.5 - 61.8	3.2	
61.9 - 66.4	3.4	
66.5 - 72.6	3.6	
0.0 - 2.0	0.0	
2.0 - 8.0	0.2	
8.0 -17.6	0.4	
17.6 -25.5	0.6	
25.5 -30.4	0.8	
30.4 -34.6	1.0	
34.6- 38.8	1.2	
~~43.0--47.2~~ -	~~1.4~~	Use for "a"day through "g"day
38.8 -43.0	1.4	Skiff 770.
43.0 -47.2	1.6	
47.2 -51.5	1.8	19 Nov - 27 Nov Table 3
51.5 -55.7	2.0	
55.7 -59.7	2.2	
59.7-64.1	2.4	

Note; All corrections are plus

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

NORFOLK RECORDS PROCESSING UNIT
FLOATING AIDS TO NAVIGATION
H-8768

BUOY	LATITUDE	LONGITUDE	POS. NO.	DEPTH	DATE
FORT SUMTER RANGE					
Rear Chan. Buoy 19	32-44.12'	79-50.32'	5k (bl)	-	8-19-63
Ltd. Bell Buoy 20	44.22	50.89	4k "		"
Chan. Buoy 21	44.21	50.54	3k "		"
MOUNT PLEASANT RANGE					
Rear Chan. Bell Buoy 23	44.53	51.35	2k "		"
Rock Groin Buoy 2	45.18	51.29	1k "		"
Chan. Ltd. Whis. Buoy25	45.21	52.01	6k "		"
Chan. Buoy 5	46.49	52.34	40ra "	6'	10-24-63
NORTH CHANNEL					
Lighted Buoy 1	46.16	53.19	9k "		8-19-63
Lighted Buoy 2	46.18	53.12	8k "		"
Lighted Buoy 3	46.30	53.41	10k "		"
Lighted Buoy 4	46.41	53.47	11k "		"
Buoy 5	46.37	53.58	14k "		"
Lighted Buoy 6	46.46	54.22	27k "		"
Lighted Buoy 8	46.57	54.40	28k "		"
Lighted Buoy 10	47.17	54.58	29k "		"
Lighted Buoy 11	47.39	55.08	65ka "	40'	10-16-63
LOWER MIDDLE GROUND					
Lighted Bell Buoy	45.36	52.56	106d	36'	8- 5-63
Anchorage Ltd. Buoy	45.52	53.24	7k		8-19-63
BATTERY POINT					
Lighted Buoy	45.39	55.11	32k		"
COOPER RIVER					
Ltd. Gong Buoy 32	45.42	54.53	31k		"
Buoy 33	46.11	55.20	30k		"
Buoy 36	46.38	55.04	4d (br)	38'	11-22-63
FT. MOULTRIE CHANNEL					
Lighted Buoy 130	46.05	52.16	33k (bl)		8-19-63
CRAB BANK					
Buoy 2	46.04	56.07	1y "	19'	9-24-63
Buoy 3	46.07	56.42	80y "	13'	"
Buoy 4	46.31	56.59	22z "	27'	9-25-63
Buoy 5	46.41	57.22	86aa "	21'	9-26-63
Buoy 6	47.29	58.17	87f (pur)	20'	11-26-63
CHARLESTON HARBOR					
Chan. Buoy 27	45.25	53.02	105d(bl)		8- 5-63
WAPPOO CUT					
Buoy 1	46.22	57.01	20z "	27'	9-25-63
Buoy 2	46.23	57.06	21z "	13'	"
White Nun Buoy	45.20	55.09	47l "	6'	9-20-63

NORFOLK RECORDS PROCESSING UNIT
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8768 (HFP 10-1-63)

GENERAL

This is an excellent basic survey. Soundings are in good agreement at crossings and depth curves follow normal patterns. Preliminary review items were disposed of in the body of the report, and direct comparisons may be made with the chart by using the accompanying transparent overlays prepared by the smooth plotter.

OVERLAYS

Developement lines in the area of the North jetty are being submitted on a smooth overlay.

PROCESSING

Tide corrections were compiled and entered and the processing completed by Unit personnel for all work done between 1 Oct. and 3 December 1963. Hourly heights were taken from the standard gage in Charleston Harbor.

Respectfully submitted,

Hugh L. Proffitt
Cartographer

Norfolk, Va.
June 4, 1964

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8768

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Charleston										1
Cummings Pt.										2
Hog I.										3
Intracoastal Waterway										4
James I. Creek										5
Shutes Folly I.										6
Sullivans I.										7
										8
										9
				Approved						10
				10-8-64						11
				R. J. Wright						12
										13
										14
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										26
										27

FORM C&GS-946
(REV. 3-1-64)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. 8768

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS	1
DESCRIPTIVE REPORT		OVERLAYS Chart comparisons.. 1 Hydrography..... 1	

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	3-Cahiers					
CAHIERS						
VOLUMES	27					
BOXES						

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				
POSITIONS CHECKED				
POSITIONS REVISED				
DEPTH SOUNDINGS REVISED				
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS				
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS				
SPECIAL ADJUSTMENTS				
ALL OTHER WORK				
TOTALS				

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY		
VERIFICATION BY		
REVIEW BY		

USCOMM-DC 8641-P64

FORM C&GS-946A
(REV. 2-1-64)
(PRES. BY HYDROGRAPHIC MANUAL, 6-94)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VERIFIER'S REPORT

HYDROGRAPHIC SURVEY, H-8768

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
Note: The verifier should first read the Descriptive Report for general information and problems.		
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		
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		
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None		
Part II - SHORELINE AND SIGNALS		
4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs b. Field inspection date c. Field Edit date d. Reviewed-Unreviewed		
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.		
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		
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 unidentified.		
Part III - JUNCTIONS **Note:** Make a cursory comparison preliminary to inking soundings in area of overlap.		
8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None		
9. The notation in slanted lettering "JOINS H----(19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None		

Part III - JUNCTIONS (Continued)	CL	R
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**.		
Part IV - VOLUMES		
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		
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		
Part V - PROTRACTING		
13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None		
14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None		
15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None		

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Part V - PROTRACTING (Continued)	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 replotting or adjustments.		
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.		
Part VI - SOUNDINGS		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None		
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.		
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None		
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.		
Part VII - CURVES		
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.		
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		
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.		

Part VIII - AIDS TO NAVIGATION	CL	R
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.		
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		
Part IX - BOAT SHEET		
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		
29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.		
Part X - GENERAL		
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		
31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None		
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		
33. The bottom characteristics are adequately shown. Remarks Required: -- None		
Part XI - NOTES TO THE REVIEWER		
34. Unresolved discrepancies and questionable soundings.		
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
36. Supplemental information.		

Verified by	Date

RHC

FORM C&GS-712
(3-9-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

9/1/64

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
27 volumes of sounding records for

HYDROGRAPHIC SHEET 8768

Locality: Charleston Harbor, South Carolina

Chief of Party: H. E. McCall

Plane of reference is mean low water

Tide Station Used (Form C&GS-681): Charleston Harbor (Union pier No. 1)

Height of Mean High Water above Plane of Reference is as follows: 5.1 ft.

Remarks

J. M. Symons
Chief, Tides and Currents Branch

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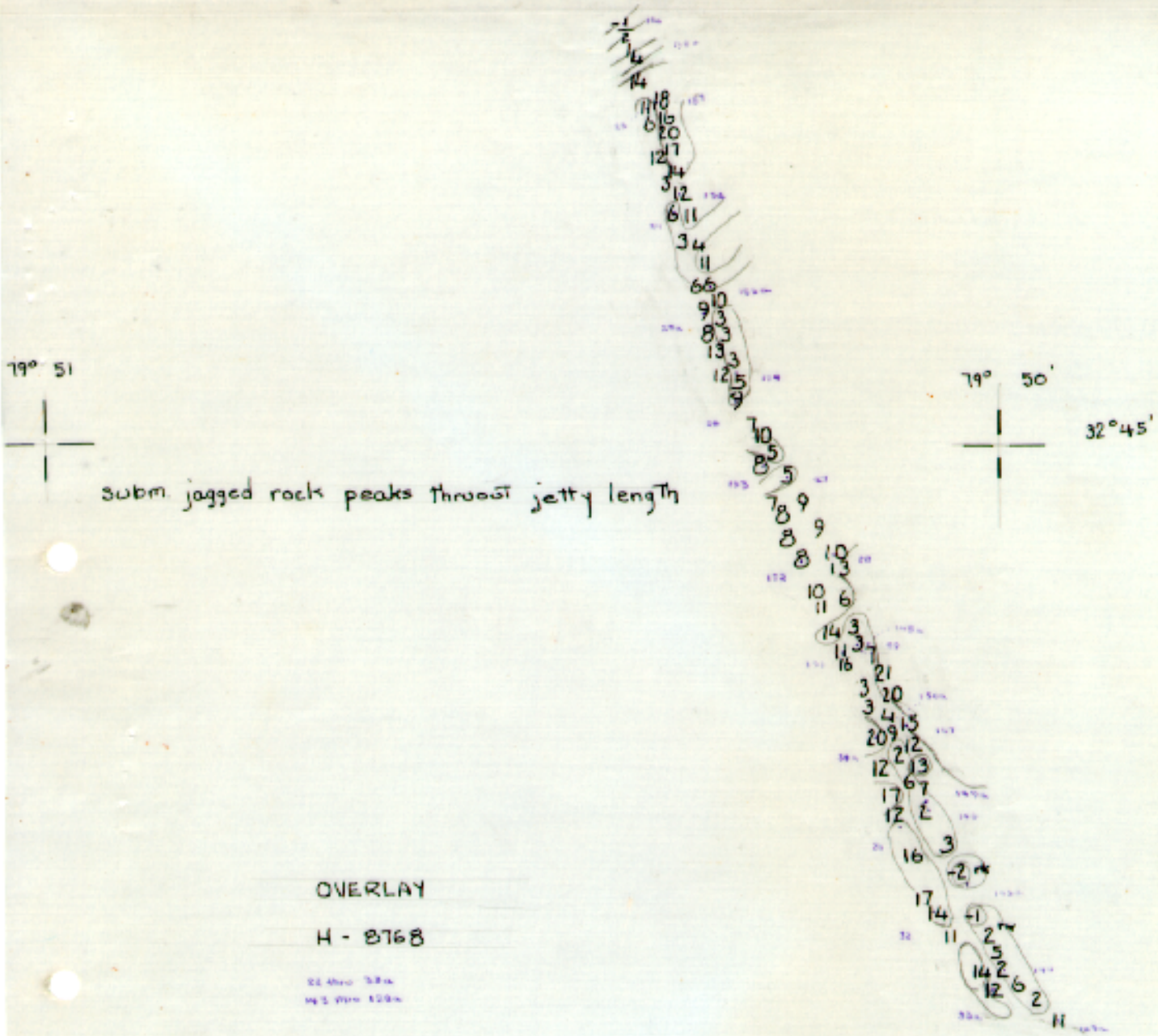
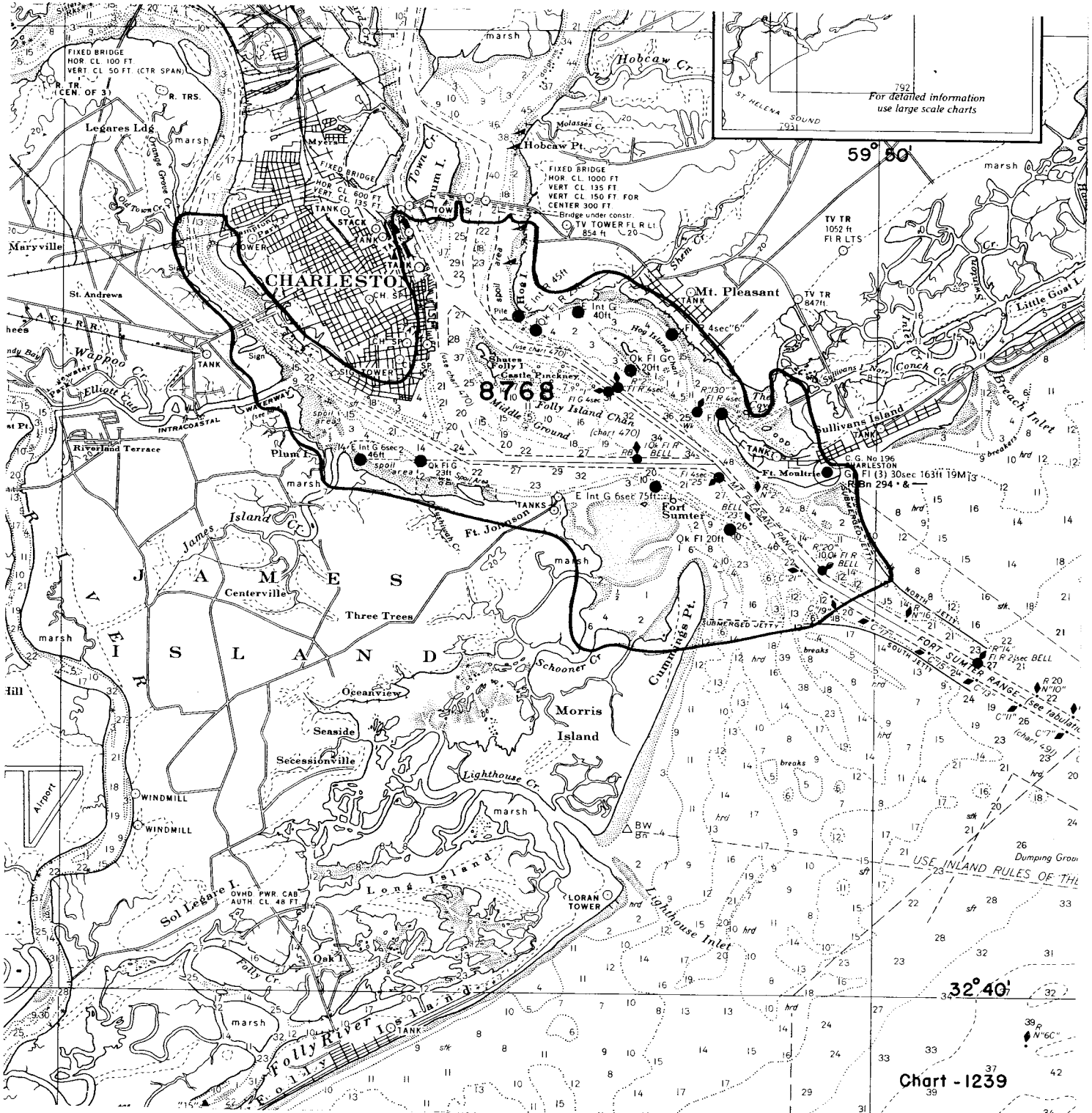

79° 51
79° 50'
32°45'
subm jagged rock peaks thruout jetty length
OVERLAY
H - 8768
32°44'


CHARLESTON
Mt. Pleasant
Sullivans Island
Fort Sumter
Ft. Moultrie
Ft. Johnson
JAMES ISLAND
Centerville
Three Trees
Morris Island
Oceanview
Seaside
Secessionville
Folly River Island
Long Island
Sol Legare I.
Cummings Pt.
Lighthouse Inlet
Lighthouse Cr.
Schooner Cr.
James Island Cr.
Folly Cr.
Hobcaw Cr.
Hobcaw Pt.
Town Cr.
Shem Cr.
Wappoo Cr.
Elliott Cut
Middle Ground
Folly Island Chan
Hog I.
Castle Pinckney
Shutes Folly I.
Plum I.
Legares Ldg
Maryville
St. Andrews
Riverland Terrace
Conch Cr.
Breach Inlet
Little Goat I.
Ft. Sumter Range
Dumping Ground
USE INLAND RULES OF THE
Chart - 1239
8768
59° 50'
32° 40'
For detailed information use large scale charts

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8768

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
470 11524	9/23/64	J. H. Eaton	~~Full~~ Part Before ~~After~~ Verification Review Inspection Signed Via
11524 2nd ed			Drawing No.
792	4-16-65	G. O. March	~~Full~~ Part Before ~~After~~ Verification Review Inspection Signed Via 470
11522			Drawing No.
~~11239~~ 11521	1/13/66	Jesse H Eaton	~~Full~~ Part Before Exam ~~After~~ Verification Review Inspection Signed Via
			Drawing No.
11521	3/2/90	DANIELS MCALLISTER	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 34 CONSIDER ADEQUATELY APPLIED
11522	9-17-90	Ed Martin	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. 23 Adequately applyd no further
			soundings required
11518A	5/11/93	John Barber	~~Full~~ Part Before ~~After~~ Verification Review Inspection Signed Via
			Drawing No. 28A Part APP'd thru Cht 11524
			Dwg #54, Apr 1992
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975

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