Number 9 Original

In the Supreme Court of the United States

OCTOBER TERM 1968

UNITED STATES OF AMERICA,
Plaintiff,

v.

STATE OF LOUISIANA, ET AL.

Appendix G, Map Exhibits and Related Materials for Brief of the State of Louisiana in Support of its Motion for Entry of Supplemental Decree No. 2

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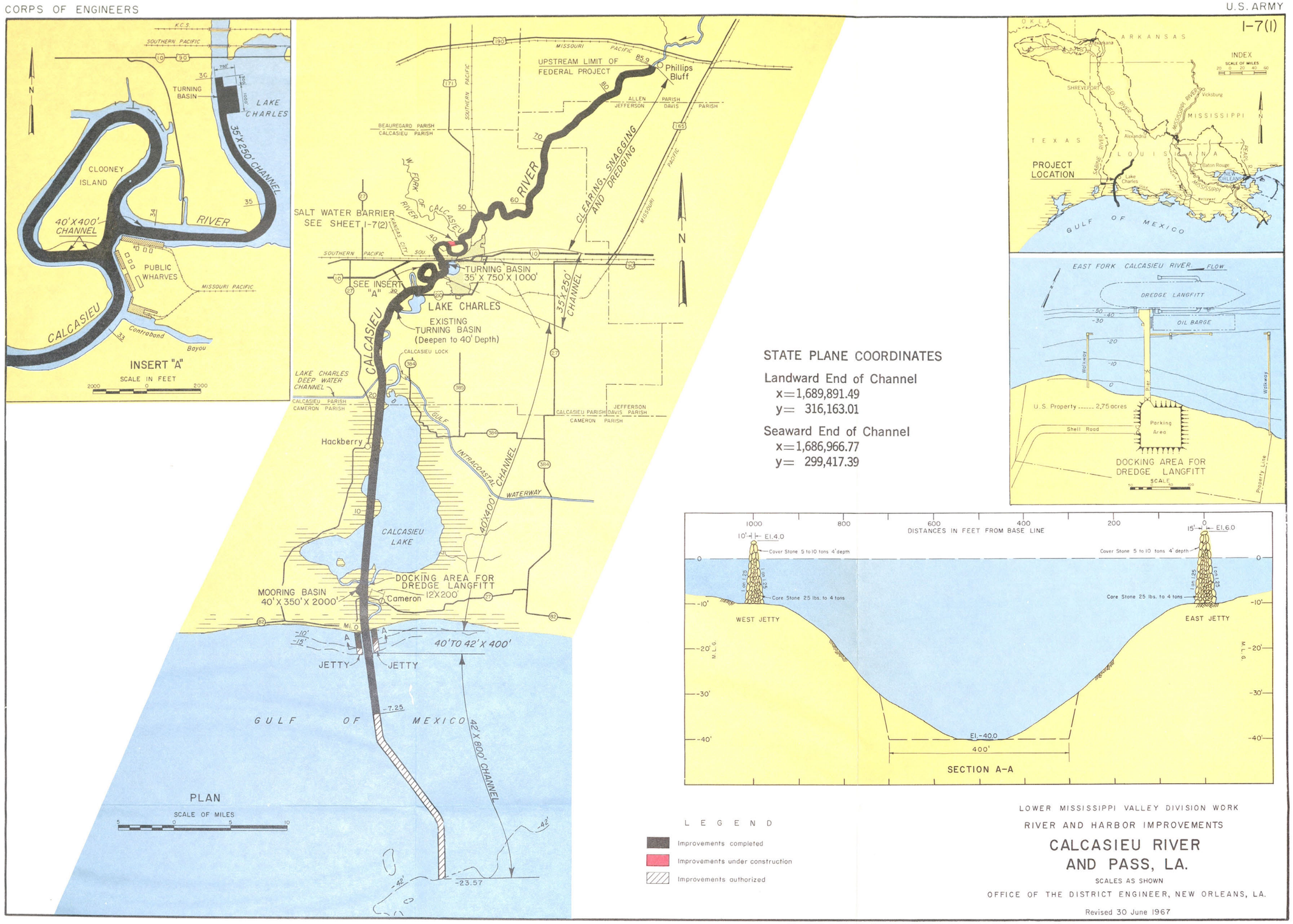
EXHIBITS 104-113

EXHIBIT 104

I-7(1)



STATE PLANE COORDINATES

Landward End of Channel
x=1,689,891.49
y= 316,163.01

Seaward End of Channel
x=1,686,966.77
y= 299,417.39

LEGEND

- Improvements completed
- Improvements under construction
- Improvements authorized

LOWER MISSISSIPPI VALLEY DIVISION WORK
RIVER AND HARBOR IMPROVEMENTS

CALCASIEU RIVER AND PASS, LA.

SCALES AS SHOWN
OFFICE OF THE DISTRICT ENGINEER, NEW ORLEANS, LA.
Revised 30 June 1967

EXHIBIT 104

EXHIBIT 105

CALCASIEU RIVER AND PASS, LA.

CONDITION OF IMPROVEMENT, 30 JUNE 1966

Project

River and Harbor Act of 24 July 1946 House Document 190, 79th Congress, 2nd Session and prior River and Harbor Acts, provided for a channel 35 feet deep by 250 feet wide from the wharves of the Lake Charles Harbor and Terminal District (including the Loop around Clooney Island) to the Gulf of Mexico, via Calcasieu Lake and through Calcasieu Pass, a Channel 35 to 37 feet deep and 250 feet wide between the jetties, and an approach channel 37 feet deep and 400 feet wide seaward to the jetties in the Gulf of Mexico; the reconstruction and extension of existing jetties to the 15-foot depth contour if and when it becomes necessary; improvement of the river from Lake Charles to Phillips Bluff by removing logs, snags, overhanging trees and by dredging. Total length of improvement is approximately 102.1 miles.

River and Harbor Act of 14 July 1960 House Document 436, 86th Congress, 2nd Session provides for an approach channel having a depth of 42 feet below mean low Gulf level over a bottom width of 800 feet from the 42-foot depth in the Gulf of Mexico to the jettied channel; a channel between the jetties varying in depth from 40 to 42 feet at the seaward end and shoreline, respectively, over a bottom width of 400 feet; a channel 40 feet deep over a bottom width of 400 feet from the shoreline, mile 0, to the wharves of the Port of Lake Charles, mile 34.1;

enlargement of the existing turning basin at mile 29.6 to a depth of 40 feet; and a mooring basin about mile 3 having a width of 350 feet, a length of 2,000 feet, and a depth of 40 feet; extension of the existing ship channel at a depth of 35 feet below mean low Gulf level over a bottom width of 250 feet from the wharves of the Port of Lake Charles, mile 34.1, to the vicinity of the bridge on United States Highway No. 90, mile 36.0, and a turning basin of the same depth at the upper end having a width of 750 feet and a length of 1,000 feet; and maintenance of the existing channel, 12 feet deep and 200 feet wide, from the ship channel to Cameron, Louisiana, via the old channel of the Calcasieu River.

River and Harbor Act of 23 October 1962 House Document 582, 87th Congress, 2nd Session provides a salt water barrier structure with five 40-foot tainter gates in a new bypass channel; a parallel channel with a navigation structure and a single sector type gate; an earth closure dam, and a woven lumber type revetment.

Physical Data

Under ordinary conditions, the mean range of tide is 10 inches at mouth, diminishing to zero at Phillips Bluff, the extreme range being 14 inches and zero, respectively.

Controlling depths mean low Gulf; (June 1966) through bar and jetty channel 42 feet; to mile 16, 40 feet; (Sept. 1965) to mile 26.3, 31 feet, to mile 28.6, 40 feet; to mile 30.5, 31 feet, to mile 33 (in-

cluding Clooney Island Loop) being enlarged to 40 feet; to mile 40, 20 feet; to mile 60, 9 feet; to mile 85.9, 0.0 feet; (Sept. 1964) channel to Cameron, 10 feet.

Progress of Work

Completed above Lake Charles in 1906. Dredging under R&H Act 26 August 1937 was completed in 1941.

ACT 24 JULY 1946

Dredging under R&H Acts of 2 March 1945 and 24 July 1946 was completed 25 April 1953. The jetty structure is considered complete unless at a later date it is found necessary to extend the jetties seaward to the 15-foot depth contour, as provided for in the project. Construction of a turning basin at mile 3.0 was completed in 1952 and a turning basin at mile 29.6 was completed in July 1957.

ACT 14 JULY 1960

Construction under modification of 14 July 1960, initiated 7 April 1962, is 72% complete with 41.35 miles of project channel completed. Work remaining to be accomplished under this modification is completion of enlargement to 42 by 800 feet between mile 2.85 and 23.57 and construction of project channel between miles 33.0 and 34.1 (including Clooney Island Loop) presently under way.

ACT 23 OCTOBER 1962

Construction of 3,463 linear feet of board revet-

ment, left descending bank of Calcasieu River, mile 43.5 was completed 5 August 1965.

Construction of the proposed revetment at mile 39.8 has not been initiated.

Contract for construction of Calcasieu River salt water barrier control structure and closure dam was awarded 28 May 1965 with initiation of construction 2 July 1965 and is 49% complete.

The project modification is approximately 83% complete.

Cost

Act of 24 July 1946	$ 495,914
Code 820	107,837
Act of 23 October 1962	2,024,883
Act of 14 July 1960	24,466,449
Total	$27,095,083

EXHIBIT 106, Page 1

CALCASIEU PASS WATERWAY

MEMORANDUM

April 4, 1968

Prior to the adoption of the present project in 1937 Lake Charles had no direct deep-water access to the Gulf of Mexico. There was a channel from Lake Charles into the Gulf of Mexico with jetties at the Gulf extending out approximately 8,600 feet on the east and 3,200 feet on the west but this channel was not navigable by deep-draft vessels. At its greatest depth, the passage through the jetties, it was only 10 feet deep.

To remedy this problem the Calcasieu Police Jury in 1922 applied for a permit to construct a passage up the Calcasieu River to the Intercoastal Waterway, along that Waterway to the Sabine River and down the Sabine to the Sabine-Neches Waterway and thence out into the Gulf. This project was the Lake Charles Deep Water Channel.

This channel was first used in 1926, although it was not fully completed until 1927. At completion the Deep Water Channel had dimensions of 30x125 feet. This channel was taken over by the federal government in 1935.

The volume of traffic over the Lake Charles Deep Water Channel eventually caused the Corps of Engineers to reverse its earlier decision, based on a feasibility study made in 1916, that another channel so near to the Sabine-Neches channel was impractical.

In 1937 the Corps authorized a channel 30x250 feet from the docks at Lake Charles to the Gulf of Mexico.

No work was done on this channel in 1937 and 1938. In 1939 operations began on the project, and extensive dredging operations were carried out. In 1940, there were additional extensive dredging operations, and some work was done towards improving the jetties. At the end of this year the project dredging was 72% completed.

In 1941 project depth of 30 feet from Lake Charles to the Gulf of Mexico had been reached. Extension of the jetties to the 15-foot contour as authorized by the 1937 Act, was 38% complete. However, there was no intention at this time to extend the jetties to the 15-foot contour. The plans at this time only called for the jetties to be built to the 12-foot contour.

During the course of dredging this channel the Corps of Engineers removed 48,514,973 cubic yards of material.

In 1941 the Corps extended the east jetty with the addition of 106,811 tons of stone. Maintenance on the project commenced in the year 1941 with removal of 1,610,456 cubic yards of materials from the project channel.

In 1942 the east and west jetties had been extended to the 12-foot contour. In this year maintenance activities were relatively minor.

In 1943 and 1944 there was no new work done

on the channel although rather extensive maintenance dredging was done.

In 1945 this project was modified to add a 30x 250 foot channel around Clooney Island.

In 1946 the project was modified by increasing the depths along the channel. The new project called for depths of 35 feet from Lake Charles to the landward edge of the jetty channel; depths ranging from 35 at the northern to 37 feet at the southern end of the jetty channel, and 37 feet in the Gulf approach channel. Operations were not begun on this new project in 1947 or 1948.

In 1947 some studies were conducted and minor maintenance dredging was carried out.

In 1948 plans were made for a new channel from Lake Charles to the Gulf Intercoastal Waterway. Minor dredging was done and snags were removed from the upper channel.

In 1949 operations were begun on the new channel. Between 1949 and 1952 the channel was dredged with a total removal of 17,159,765 cubic yards of material.

During this time there was only relatively minor maintenance operations.

In 1953 major maintenance operations resumed. In that year over 4 million cubic yards of material were removed, and the following year almost 9 million cubic yards were removed.

In 1955 the progress of the project was revised

at which time the Corps' report states that the project was 87% complete.

During 1955, 2,878,400 cubic yards of materials were removed in what was called "channel rectification."

In 1956 the progress of the project was revised and the project was 54% complete; however, this included extending the jetties to the 15-foot contour, which had not been included in the prior estimate.

In 1957 new surveys were made on the existing project and some minor dock construction was carried on.

From 1958 through 1960 there was no new work carried out on the project. During this same period there was, however, much maintenance work carried out including replacing of range towers and the dredging of 1,329,167 cubic yards of material, both of which were necessitated by hurricane Audrey.

In 1961 the project was again modified. Modification was under the authority of the Act of July 14, 1960 which called for an approach-channel 42 feet by 800 feet; a jetty channel 42 feet at the southern end, grading to 40 feet at the northern end, and 400 feet in width; and a channel from the shore to Lake Charles 40x400 feet. Work was begun on the new project in 1962.

Work during 1962 consisted of real estate operations, preparation of plans, dredging, in addition to removal of over 4 million cubic yards of material. This same year the maintenance work consisted of real

estate operations and studies on the existing channel. Maintenance operations were listed under two headings. Hurricane Carla caused extensive shoaling and removal of this material amounted to 2,971,668 cubic yards. In addition normal maintenance operations resulted in the removal of another 4,344,024 cubic yards.

In 1963 the project was 24% complete. During this year more real estate activities were carried out and new work was done under 2 headings. An experimental dredge removed 329,000 cubic yards of material. Normal dredging operations removed an additional 4,000,000 yards.

Also during this fiscal year there was some maintenance, Old River Bend was restored with the removal of 224,257 cubic yards of material and the maintenance on the entire project amounted to more than 1,200,000 cubic yards. Also during this year there was a "rehabilitiation" of the jetties. These rehabilitation operations were carried out on both the east and west jetties. 342 tons of stone were placed on a 300-foot section of the east jetty, and 1,639 tons on a 900-foot section of the west jetty.

In 1964 continued operations were carried out on the 1961 project. These operations encompassed the removal of more than 23 million cubic feet of materials, over 6 million of which was by the experimental dredging methods. These operations were carried out on the interim project and on the project channel itself. The interim channel was 200 feet wide to project depth.

In 1965 the channel was listed at 56% complete. During this year over 35 million cubic yards of material were removed, more than 8 1/2 million of which was removed in the restoration of the eastern half of the channel.

In 1966 there was again massive operations on the project with the removal of over 35 million cubic yards of material. In 1966, as had been the case in 1965, there was only minor maintenance operations carried out. In 1964 the maintenance operations were extensive, 3,000 tons of stone were placed on the jetties and 1,214,324 cubic yards of material were removed from the channel.

At this time it has still not been found necessary to extend the jetties to the 15-foot contour. Until such time they will remain at their present length although the extension is authorized under the present project.

	Appropriations		*Expended*
1872-1902	$511,500		$
1905	100,000		
1907	25,000		
1909	8,000		
1910	5,000	(to 1910)	574,271
1911[1]			6,800
1912			6,784
1913			1,264
1914			1,549
1915	3,000		2,889
1916			260
1917	2,500		5,878

	Appropriations	*Expended*
1918	5,000	139
1919	15,000	14,683
1920		4,416
1921		159
1922	15,000	
1923		1,710
1924	25,800	4,818
1925		371
1926		
1927		
1928	6,015	3,818
1929		
1930		
1931	20,000	12,794
1932	4,500	964
1933	1,739	1
1934		
1935	25,000	
1936	18,724	6,725

	Appropriations	*New Work*	*Maintenance*
1937	$	$	$
1938			
1939	3,525,000	1,035,037	
1940	876,413	1,493,790	
1941	137,000	923,149	272,366
1942	225,000	793,479	23,629
1943	179,000	271	154,143
1944		12,966	227,337
1945	370,000		27,865

	Appropriations	*New Work*	*Maintenance*
1946	- 48,000		249,744
1947	18,000		57,752
1948	630,000	9,416	63,339
1949	553,000	937,028	67,366

[1]From 1911 to 1939 all expenditures are for maintenance; prior to that time 449,335 was spent for new work and $124,936 for maintenance.

Appropriated 1960-1966

Year	*New Work*	*Total*	*Maintenance*	*Total*
1950	$ 900,000	$ 6,714,608	$ 77,000	$1,418,569
1951	600,000	7,314,608	2,360	1,347,755[1]
1952	1,025,000	8,339,608		1,347,755
1953		8,339,608	400,000	1,747,755
1954		8,339,608	356,000	2,103,756
1955		8,339,608	109,500	2,213,257
1956		8,339,608	138,783	2,352,039
1957	–46,902	8,292,707	436,500	2,788,539
1958	– 2,883	8,289,824	707,856	3,496,395
1959		8,289,824	696,700	4,193,095
1960		8,289,824	675,950	4,869,045
1961	103,000	8,427,824	821,800	5,690,845
1962	235,000	8,662,824	1,163,200	6,854,045
1963	1,246,000	9,873,824	502,945	7,356,990
1964	4,923,000	14,796,824	98,960	7,455,950
1965	5,925,000	19,832,824	49,400	7,505,350
1966	5,150,000	24,982,824	44,500	7,549,850

[1]Discrepancy in Corps Reports.

EXHIBIT 106, Page 2

Expenditures 1950-1966

Year	*New Work*	*Total*	*Maintenance*	*Total*
1950	$ 867,147	$ 6,568,201	$ 1,405	$1,339,800
1951	466,932	7,035,134	7,955	1,347,755
1952	216,452	7,251,586	.....	1,347,755
1953	561,602	7,813,206	.....	1,347,755
1954	54,740	7,867,946	755,675	2,103,430
1955	404,711	8,272,657	109,177	2,212,607
1956	15,066	8,287,723	139,405	2,352,012
1957	2,101	8,289,824	60,489	2,412,501
1958	.....	8,289,824	1,079,380	3,491,881
1959	.....	8,289,824	492,814	3,984,695
1960	.....	8,289,824	753,098	4,737,793
1961	103,000	8,427,865	648,788	5,386,581
1962	205,930	8,633,795	1,465,788	6,852,359
1963	1,106,102	9,704,856	330,207	7,182,560
1964	4,886,360	14,591,216	272,990	7,445,556
1965	5,203,810	19,565,459	24,325	7,499,881
1966	5,396,904	24,962,363	69,776	7,549,656

Rehabilitation of Jetties

Year	*Appropriated*	*Total*	*Expended*	*Total*
1962	$110,000	$110,000	$80,930	$ 80,930
1963	- 2,163	107,837	26,907	107,837

Calcasieu Salt Water Water Barrier

Year	*Appropriated*	*Total*	*Expended*	*Total*
1963	$ 56,000	$ 56,000	$ 34,134	$ 34,134
1964	93,000	149,000	114,503	148,637
1965	499,000	648,000	253,736	402,373
1966	1,400,000	2,048,000	1,622,510	2,024,882

APPENDIX VI

Part 1

Calcasieu River and Pass Freight Traffic - Short Ton (Vessel Traffic Only - No Rafts)

Year	*Calcasieu Pass*	*Calcasieu River and Pass Total Vessel*
1965	.....	.....
1964	6,870,859	16,059,089
1963	8,216,230	17,131,206
1962	9,293,597	17,495,785
1961	9,467,109	17,167,924
1960	9,626,514	17,433,441
1959	9,821,043	18,721,126
1958	7,939,606	15,380,324
1957	8,856,742	17,445,147
1956	8,724,183	17,082,251
1955	8,124,483	15,380,756
1954	8,047,083	14,263,492
1953	8,135,492	15,926,816
1952	7,412,513	16,877,602
1951	6,851,388	15,254,347
1950	7,042,882	13,853,175
1949	6,402,945	13,294,671
1948	6,565,568	12,863,136
1947	6,287,372	11,052,804
1946	6,109,054	10,051,991
1945	2,977,842	7,985,051
1944	962,072	5,671,636

Year	*Calcasieu Pass*	*Calcasieu River and Pass Total Vessel*
1943	42,938	2,881,657
1942	823,960	3,263,721
1941	1,261,322	4,551,521
1940	258,074	4,221,522
1939	155,146	4,558,236
1938	153,912	4,488,991
1937	196,158	4,536,165
1936	120,144	4,123,497
1935	.....	3,304,369
1934	.....	2,070,128
1933	150	1,635,974
1932	70	1,282,355
1931	406	1,216,024

Part 2

1930	1683	1,093,159
1929	.....	1,032,796
1928	.....	685,522
1927	.....	295,359
1926	.....	85,186
1925	.....	77,065
1924	.....	45,950
1923	.....	42,122
1922	.....	50,121
1921	.....	26,587
1920	.....	73,754
1919	.....	71,827
1918	.....	72,018

Year	*Calcasieu Pass*	*Calcasieu River and Pass Total Vessel*
1917	.....	75,845
1916	.....	67,419
1915	.....	*695,431
1914	.....	493,594
1913	.....	709,823
1912	.....	498,291
1911	.....	404,805
1910	.....	387,873
1909	.....	554,551
1908	.....	360,252
1907	.....	355,795
1906	.....	314,235
1905	.....	295,067
1904	.....	226,216
1903	.....	194,155
1902	.....	148,483
1901	.....	139,045
1900	.....	139,580
1899	.....	174,651
1898	.....	190,071
1897	.....	141,029
1896	.....	202,755
1895	.....	254,394
1894	.....	.....
1893	.....	.....
1892	.....	.....
1891	.....	.....

*Includes "Floated Logs" (rafts).

EXHIBIT 107

PROFILE OF EAST JETTY

HOR. SCALE 1"=500', VERT. SCALE 1"=10

GULF OF MEXICO

CAREY

LIGHT HOUSE

CONTRACTORS QUARTERS

PEA RIDGE

CAMERON

MAGNETIC MERIDIAN VARIATION 7°

IMPROVING CALCASIEU RIVER & PASS, LA

CALCASIEU PASS

FROM SURVEYS OF APRIL & MAY, 1894

MADE UNDER THE DIRECTION OF

MAJ. JAMES B. QUINN

CORPS OF ENGINEERS, U.S. ARMY

BY

J.L. BROWNLEE, ASS'T ENG.

SCALE IN FEET

0 500 1000 1500 2000 2500

NOTE. ONLY CHARACTERISTIC SOUNDINGS ARE GIVEN & THESE IN FEET & TENTHS OR ABOUT REFERRED TO M.L.W.

6 FT SHOWN THUS

12 FT

16 FT

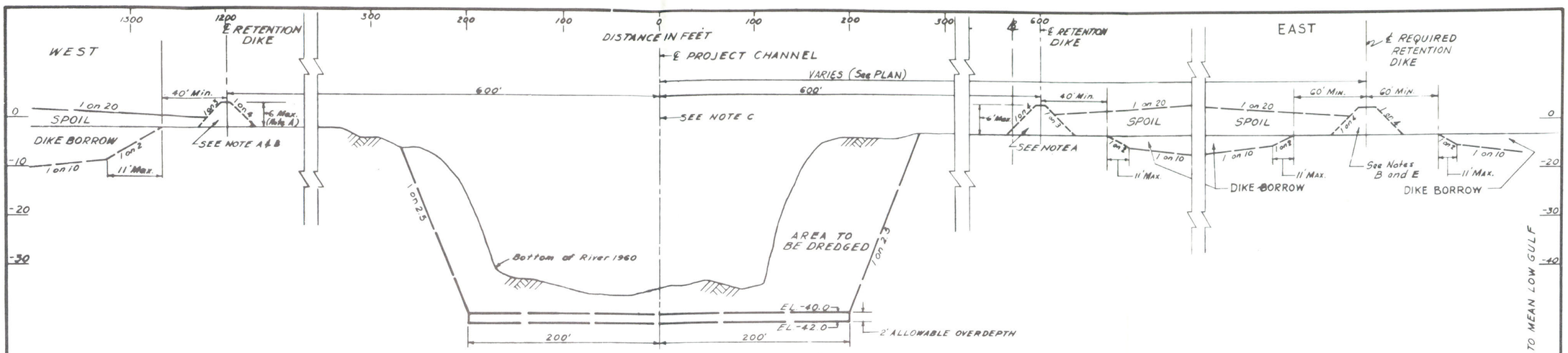
18 FT

24 FT

30 FT

EXHIBIT 107

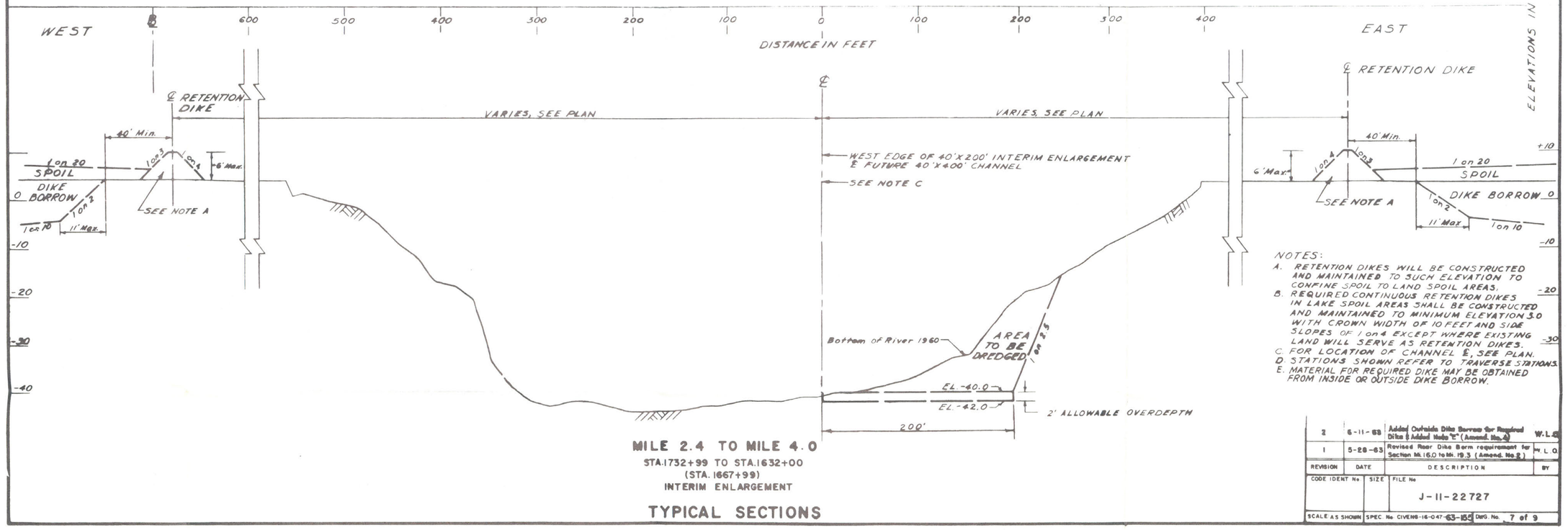
EXHIBIT 108



MILE 16.0 TO MILE 19.3 (SEE NOTE)*

STA. 998+76 TO STA. 823+40
(STA. 953+40)
PROJECT CHANNEL

NOTE: *
BETWEEN STA. 969+00 AND STA. 985+00 (VICINITY MILE 16.4) CHANNEL BOTTOM WIDTH WILL BE REDUCED. SEE PLAN FOR DEFERRED DREDGING DUE TO OIL WELL OBSTRUCTIONS.



MILE 2.4 TO MILE 4.0

STA. 1732+99 TO STA. 1632+00
(STA. 1667+99)
INTERIM ENLARGEMENT

ELEVATIONS IN FEET REFER TO MEAN LOW GULF

NOTES:
A. RETENTION DIKES WILL BE CONSTRUCTED AND MAINTAINED TO SUCH ELEVATION TO CONFINE SPOIL TO LAND SPOIL AREAS.
B. REQUIRED CONTINUOUS RETENTION DIKES IN LAKE SPOIL AREAS SHALL BE CONSTRUCTED AND MAINTAINED TO MINIMUM ELEVATION 3.0 WITH CROWN WIDTH OF 10 FEET AND SIDE SLOPES OF 1 on 4 EXCEPT WHERE EXISTING LAND WILL SERVE AS RETENTION DIKES.
C. FOR LOCATION OF CHANNEL ℄, SEE PLAN.
D. STATIONS SHOWN REFER TO TRAVERSE STATIONS.
E. MATERIAL FOR REQUIRED DIKE MAY BE OBTAINED FROM INSIDE OR OUTSIDE DIKE BORROW.

REVISION	DATE	DESCRIPTION	BY
2	6-11-63	Added Outside Dike Borrow for Required Dike & Added Note "E" (Amend. No. 4)	W.L.G.
1	5-28-63	Revised Rear Dike Borm requirement for Section Mi. 16.0 to Mi. 19.3 (Amend. No. 2)	W.L.G.

CODE IDENT No | SIZE | FILE No J-11-22727
SCALE AS SHOWN | SPEC. No CIVENG-16-047-63-155 | DWG. No. 7 of 9

TYPICAL SECTIONS

EXHIBIT 108

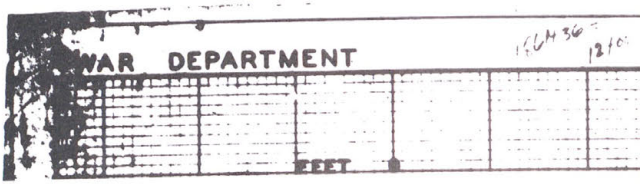
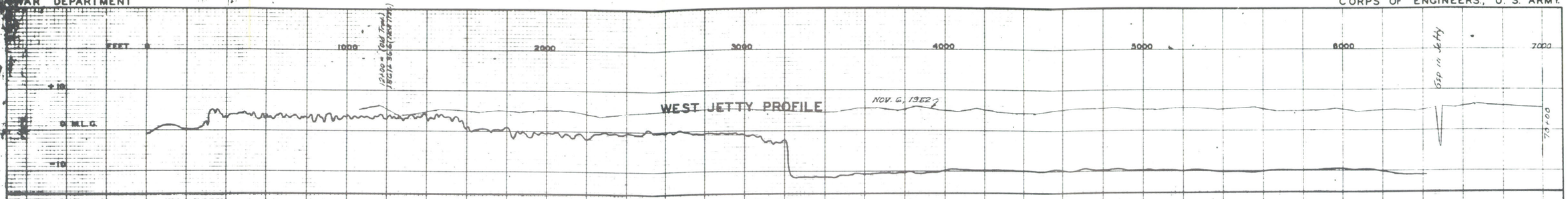


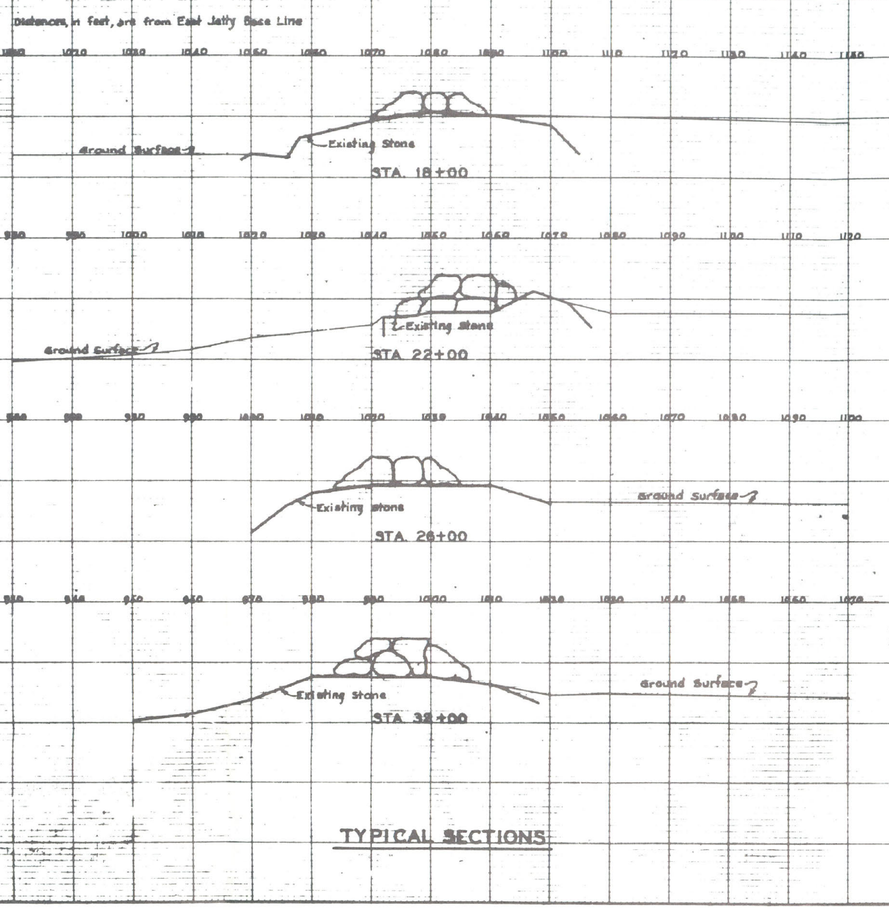
EXHIBIT 109

WAR DEPARTMENT

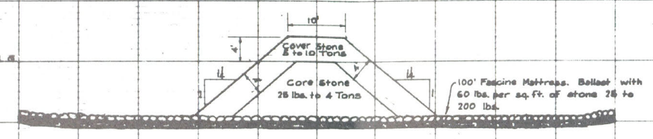
CORPS OF ENGINEERS, U. S. ARMY

WEST JETTY PROFILE

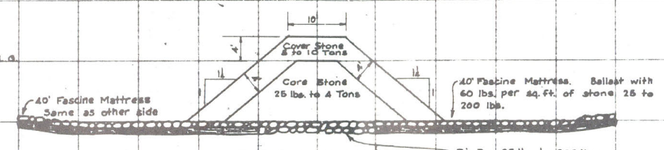




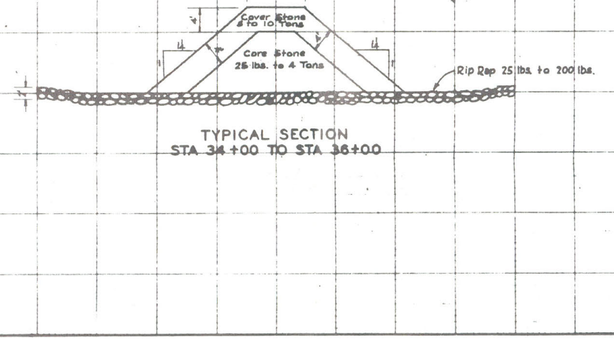
TYPICAL SECTIONS



TYPICAL SECTION
STA 36+00 TO STA 58+00



TYPICAL SECTION
STA 32+00 TO STA 34+00



TYPICAL SECTION
STA 34+00 TO STA 36+00

DATE	REVISIONS	By
12-10-52	West Jetty Profile, Bk. No. 5751/1 Pg. 9-15	E.I.C.

CALCASIEU RIVER AND PASS, LA.

30'X250' CHANNEL

WEST JETTY

IN 3 SHEETS SCALES AS SHOWN SHEET 2A

U.S. ENGINEER OFFICE; FIRST DIST. NEW ORLEANS, LA., JAN. 1940

SUBMITTED: Jno. W. Hudson, SENIOR ENGINEER

RECOMMENDED: W.M. Smith, PRINCIPAL ENGINEER

APPROVED: CAPTAIN, CORPS OF ENGINEERS

DRAWN: J.P. TRACED: W.A.C. CHECKED: G.M.H.

TO ACCOMPANY AND FORM PART OF SPECIFICATIONS DATED JULY 17, 1939 AND SUPPLEMENTAL AGREEMENT DATED FEB. 8, 1940. CONTRACT NO. W-584-ENG. 1938.

R.& S. 10/155

EXHIBIT 109

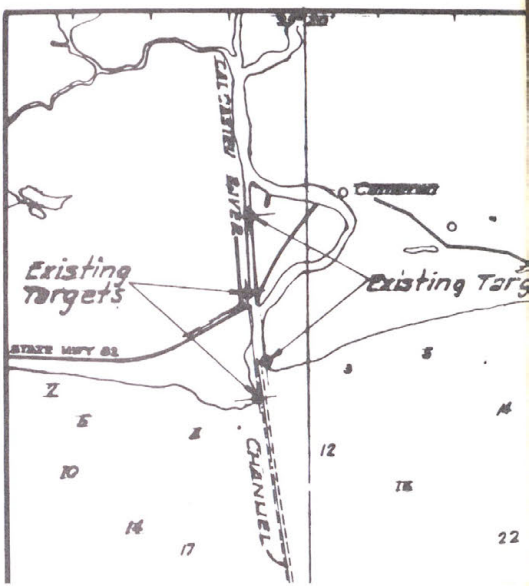
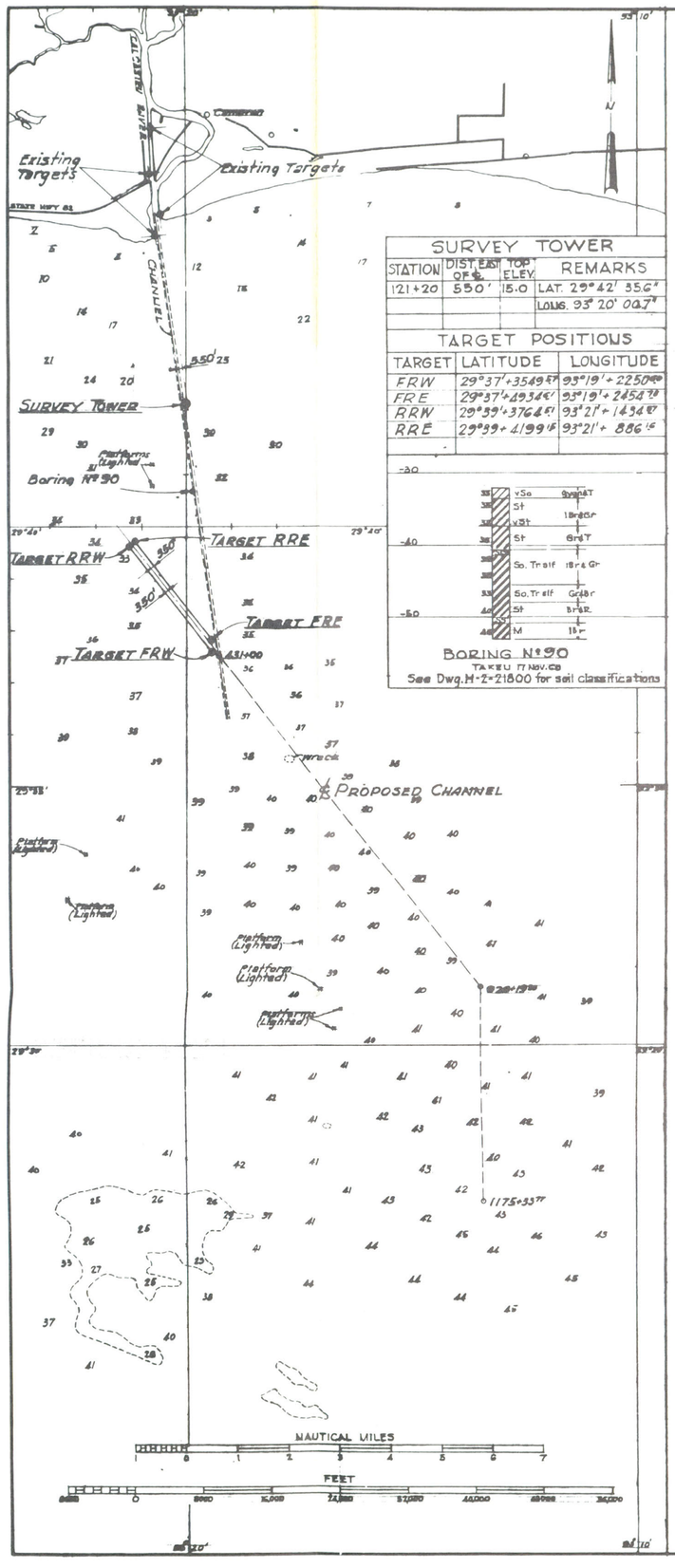


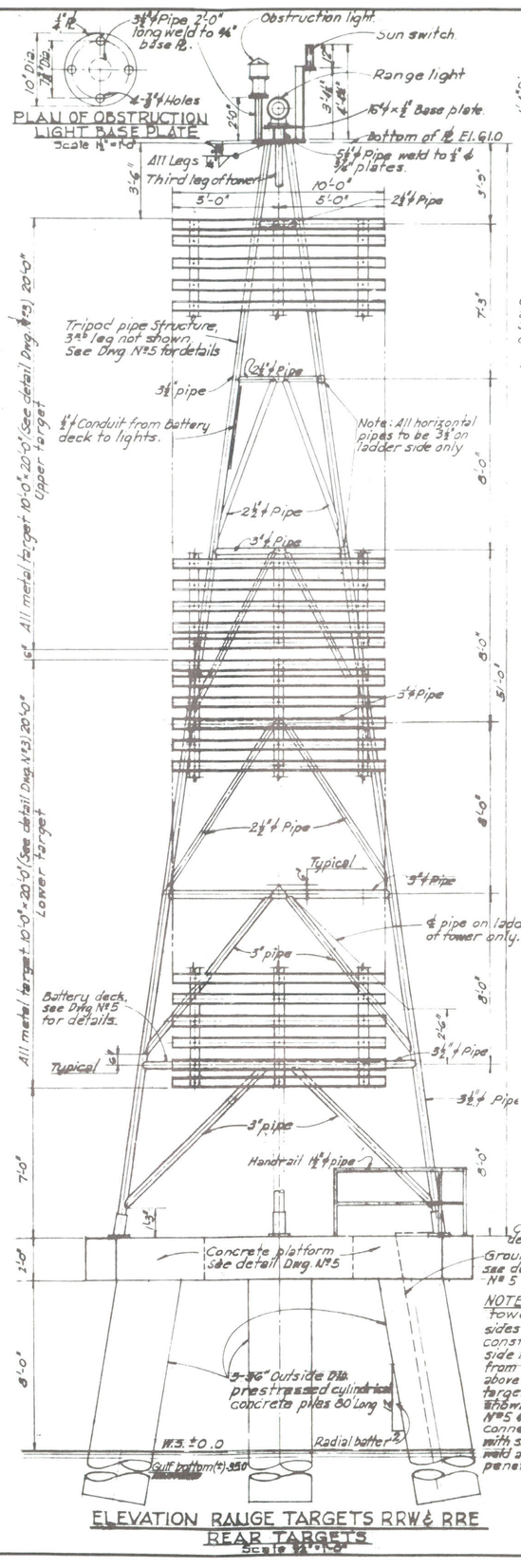
EXHIBIT 110, PAGE 1



SURVEY TOWER			
STATION	DIST. EAST OF ℄	TOP ELEV.	REMARKS
121+20	550'	15.0	LAT. 29°42' 35.6"
			LONG. 93° 20' 00.7"

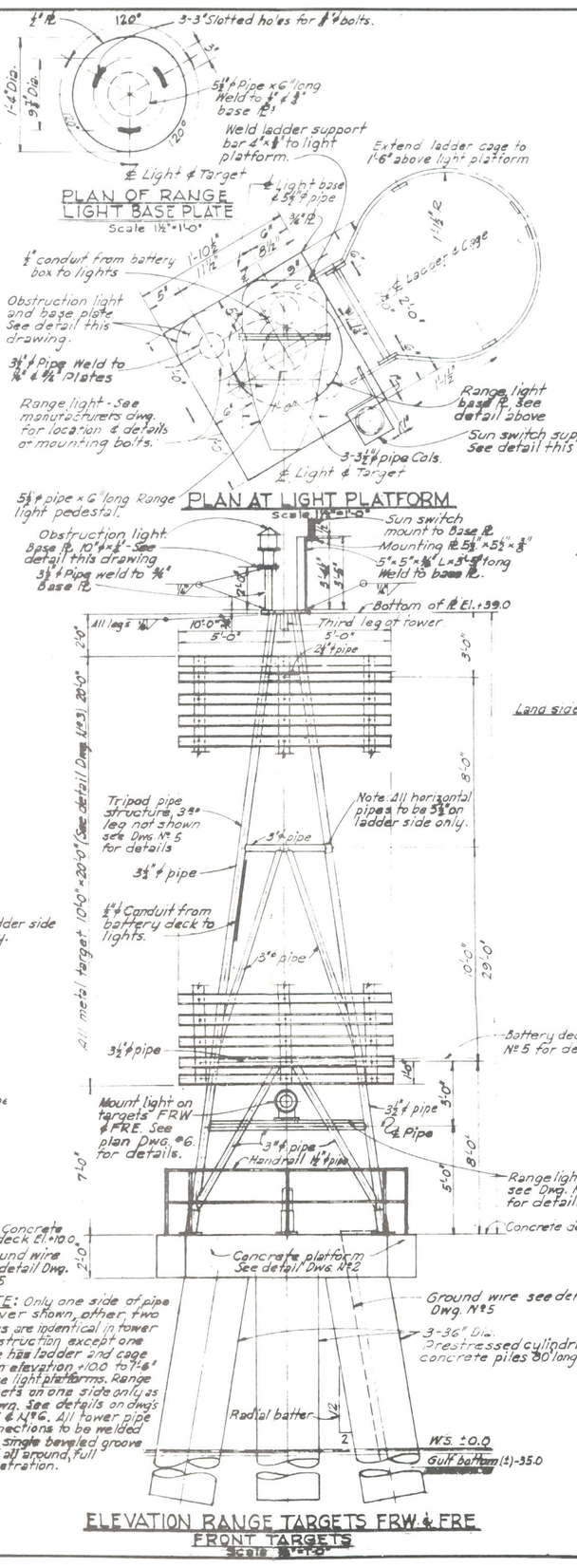
TARGET POSITIONS		
TARGET	LATITUDE	LONGITUDE
FRW	29°37'+3549.5E	93°19'+2250.4E
FRE	29°37'+4934.4E	93°19'+2454.7E
RRW	29°39'+3764.5E	93°21'+1434.8E
RRE	29°39'+4199.1E	93°21'+886.1E

See Dwg. M-2-21800 for soil classifications

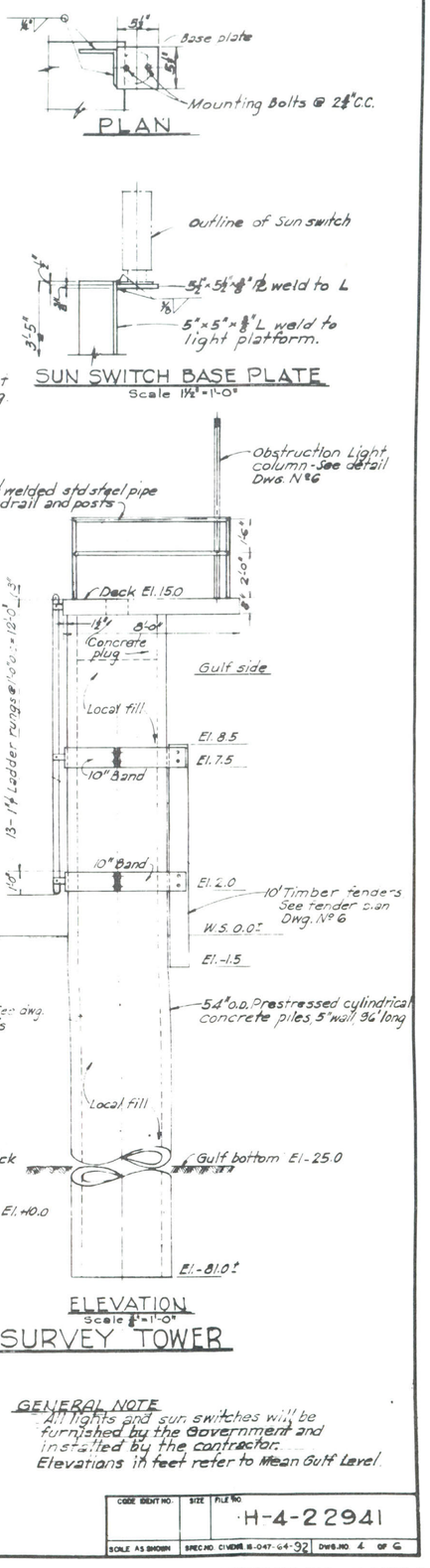


ELEVATION RANGE TARGETS RRW & RRE
REAR TARGETS
Scale ½"=1'-0"

NOTE: Only one side of pipe tower shown, other two sides are indentical in tower construction except one side has ladder and cage from elevation +10.0 to 71'-6" above light platforms. Range targets on one side only as shown. See details on dwg's N°5 & N°6. All tower pipe connections to be welded with single beveled groove weld all around, full penetration.

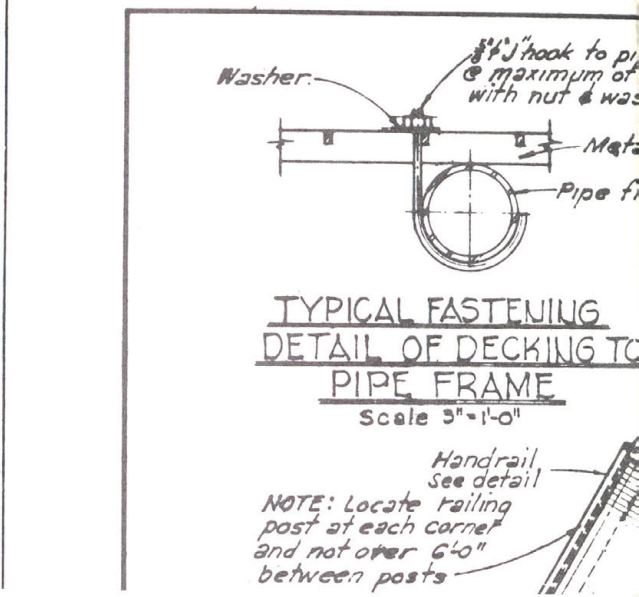


ELEVATION RANGE TARGETS FRW & FRE
FRONT TARGETS
Scale ½"=1'-0"

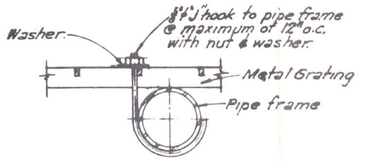


GENERAL NOTE
All lights and sun switches will be furnished by the Government and installed by the contractor.
Elevations in feet refer to Mean Gulf Level.

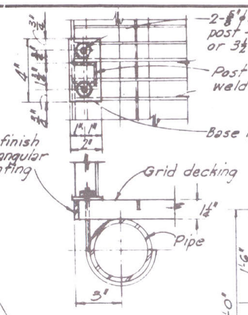
CODE IDENT NO.	SIZE	FILE NO. H-4-22941
SCALE AS SHOWN	SPEC NO. CIVDES 18-047-64-92	DWG NO. 4 OF 6



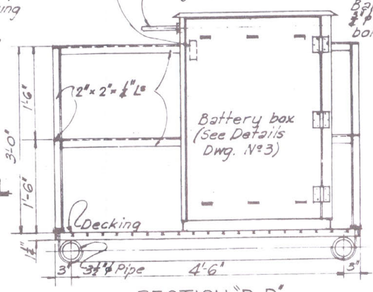
TYPICAL FASTENING
DETAIL OF DECKING TO
PIPE FRAME
Scale 3"=1'-0"



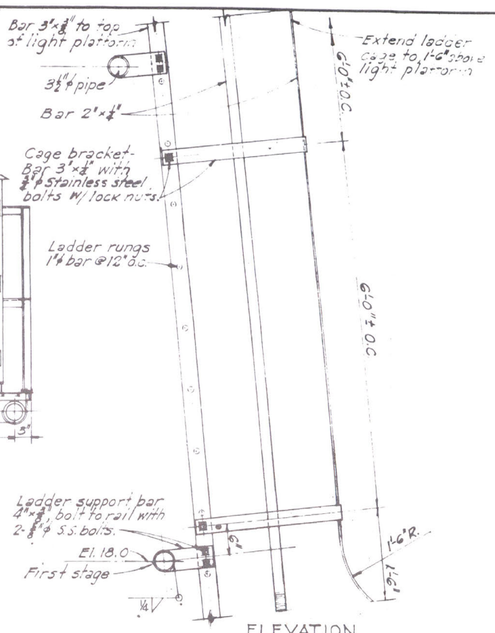
TYPICAL FASTENING DETAIL OF DECKING TO PIPE FRAME
Scale 3"=1'-0"



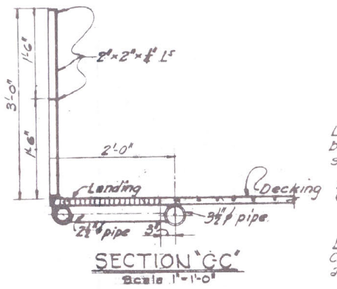
TYPICAL POST FASTENING DETAIL
Scale 3"=1'-0"



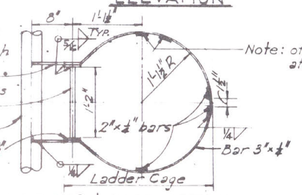
SECTION "D-D"
Scale 1"=1'-0"



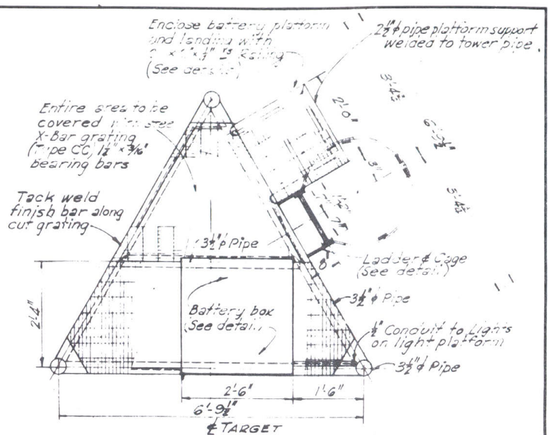
ELEVATION



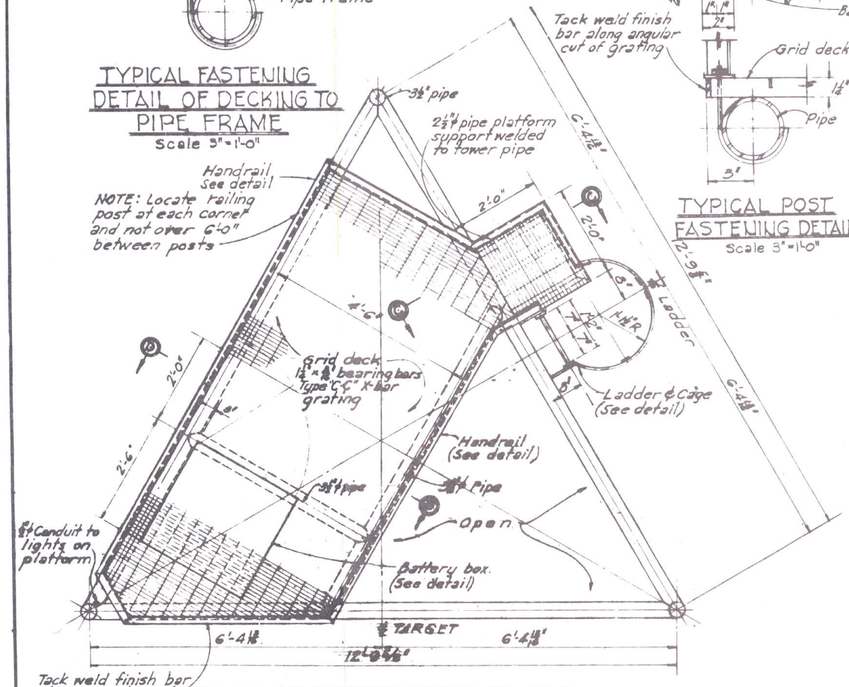
SECTION "GC"
Scale 1"=1'-0"



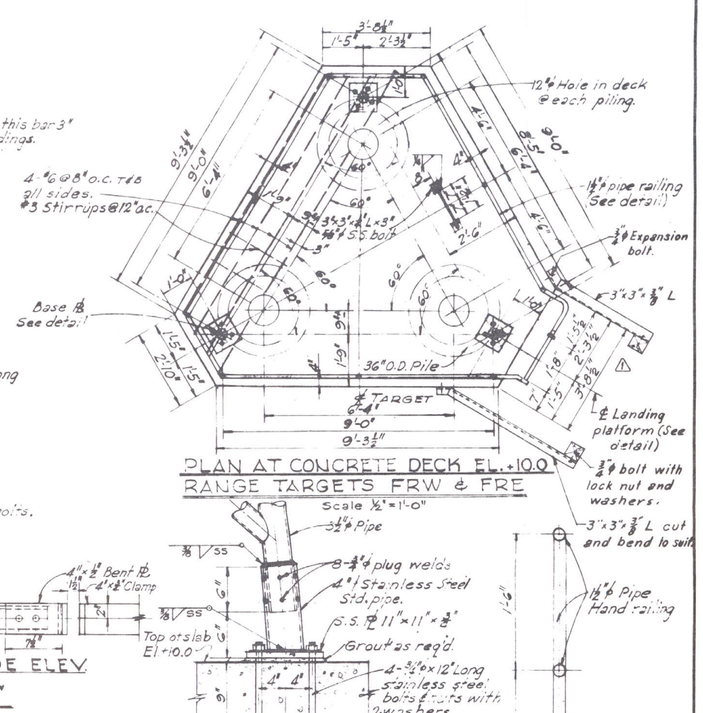
LADDER & CAGE DETAIL
Scale 1"=1'-0"



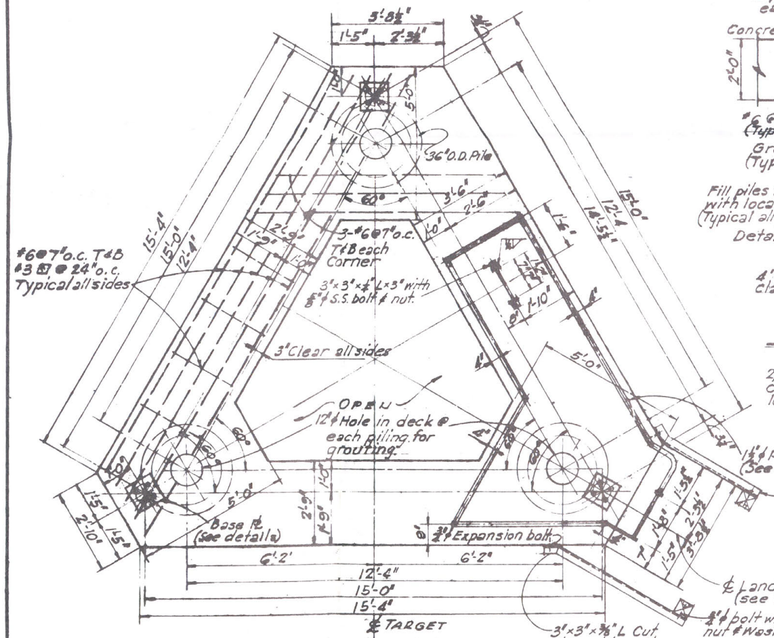
PLAN AT BATTERY DECK EL. 18.0
RANGE TARGETS FRW & FRE
Scale ¾"=1'-0"



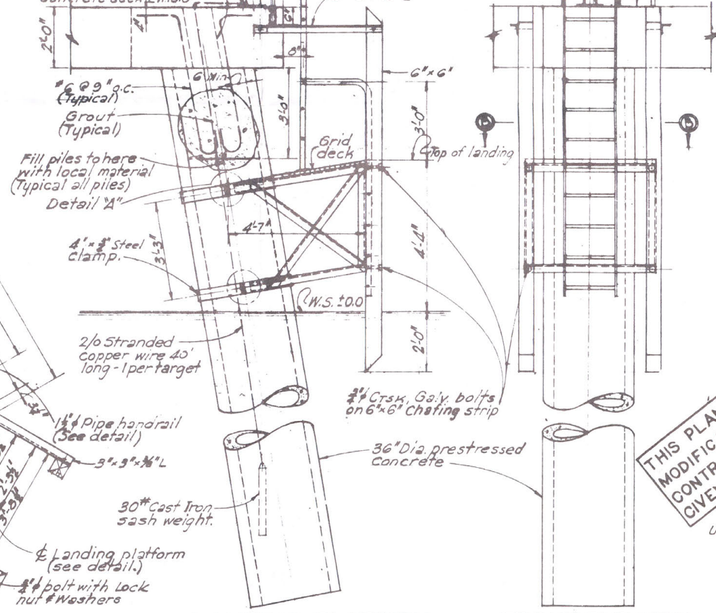
PLAN AT BATTERY DECK EL. 18.0
RANGE TARGETS RRW & RRE
Scale ¾"=1'-0"



PLAN AT CONCRETE DECK EL. +10.0
RANGE TARGETS FRW & FRE
Scale ½"=1'-0"

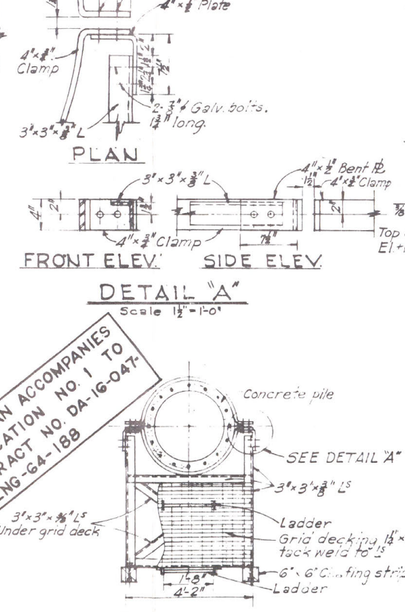


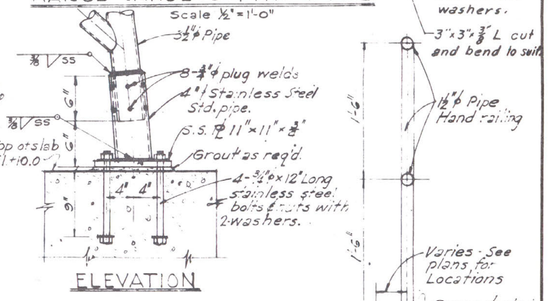
PLAN AT CONCRETE DECK EL. +10.0
RANGE TARGETS RRW & RRE
Scale ¾"=1'-0"

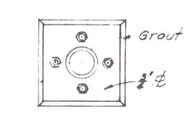


LANDING PLATFORM ELEVATION
Scale ½"=1'-0"

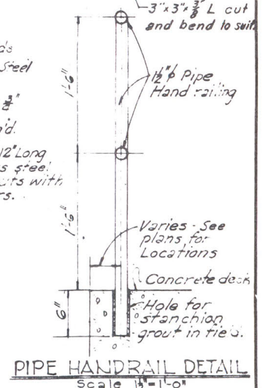
FRONT ELEVATION
Scale ½"=1'-0"







BASE PLATE PLAN
Scale 1½"=1'-0"



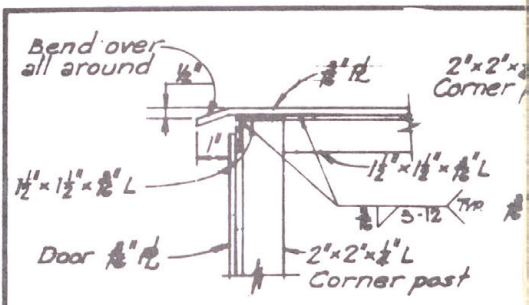
PIPE HANDRAIL DETAIL
Scale 1½"=1'-0"

THIS PLAN ACCOMPANIES MODIFICATION NO. 1 TO CONTRACT NO. DA-16-047-CIVENG-64-188

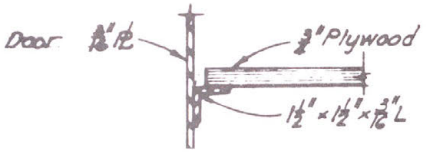
SECTION B-B
Scale ½"=1'-0"
Entire assembly to be galvanized after fabrication.

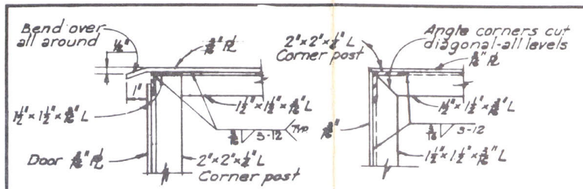
REVISION	DATE	DESCRIPTION	BY
1	6-9-64	Revised handrail range targets FRW & FRE (Mod. "1")	D.J.H.

CODE IDENT. NO.	SIZE	FILE NO.
		H-4-22941
SCALE: AS SHOWN	SPEC. NO. CIVENG-M-047-64-92	DWG. NO. 5 OF 6


Bend over all around
1/4"
2"x2"x
Corner
1"
1½"x1½"x
Door
2"x2"x
Corner post
TYP

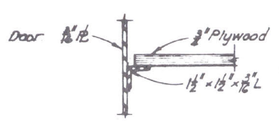
SECTION "A-A"


Door
¾" Plywood
1½"x1½"x

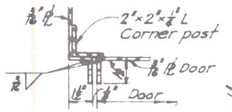


SECTION "A-A"

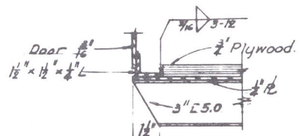
POST DETAIL



SECTION "B-B"

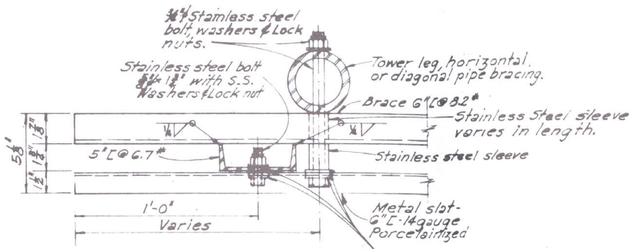


DETAIL "F"

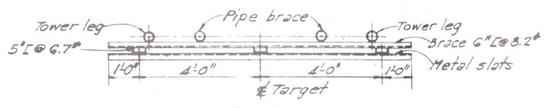


SECTION "C-C"

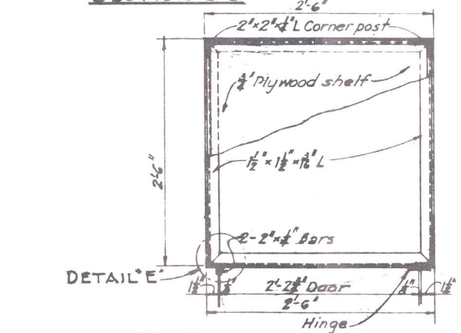
TYPICAL SECTIONS
Scale 3"=1'-0"



DETAIL "X"
Scale 3"=1'-0"



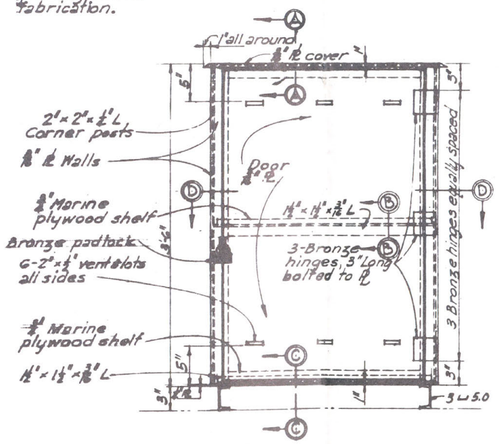
PLAN



DETAIL "E"

SECTION "D-D"

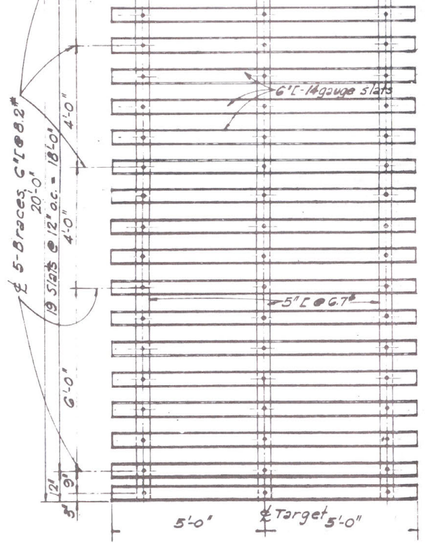
NOTE: Box to be fabricated of angles & plates welded throughout-Hot dipped galvanized after fabrication.



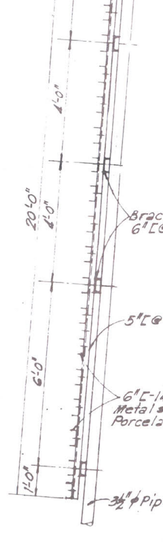
ELEVATION

BATTERY BOX DETAILS
Scale 1½"=1'-0"

NOTE: Contractor to provide conduit and all fittings necessary for connecting batteries to lights. Provide disconnect switch for range light and separate wiring to obstruction lights and son switches.

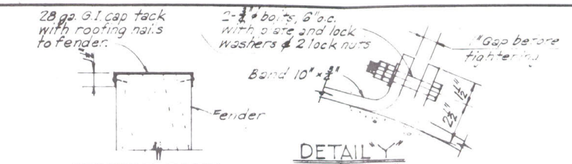


FRONT ELEVATION



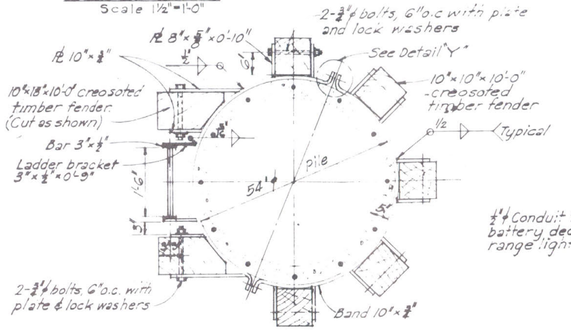
SIDE ELEVATION

TARGET DETAILS
Scale ½"=1'-0"

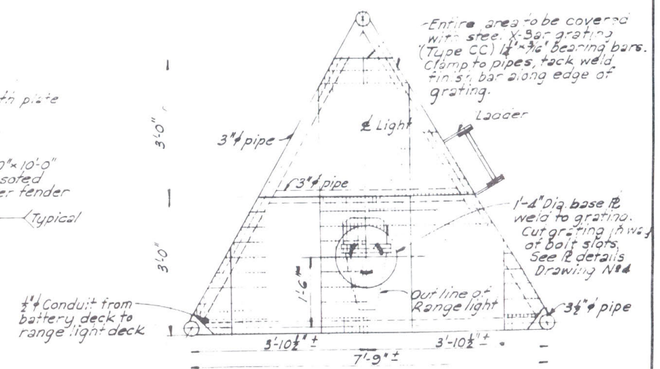


FENDER CAPS
Scale 1½"=1'-0"

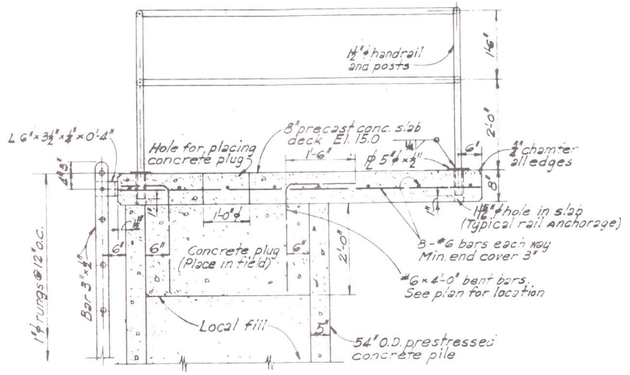
DETAIL "Y"
Scale 3"=1'-0"



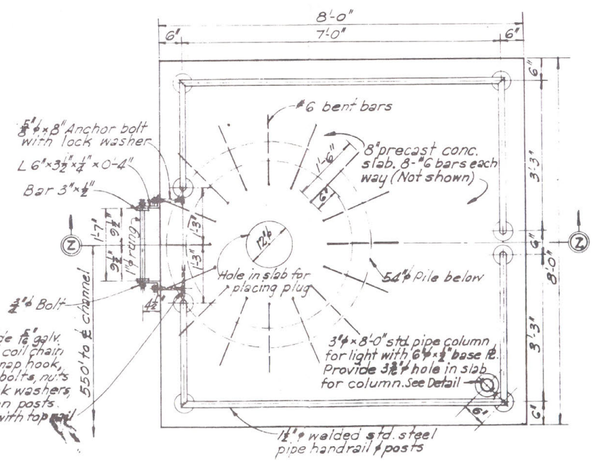
FENDER PLAN
Scale ¾"=1'-0"



PLAN AT RANGE LIGHT DECK
RANGE TARGETS FRW & FRE
Scale ¾"=1'-0"

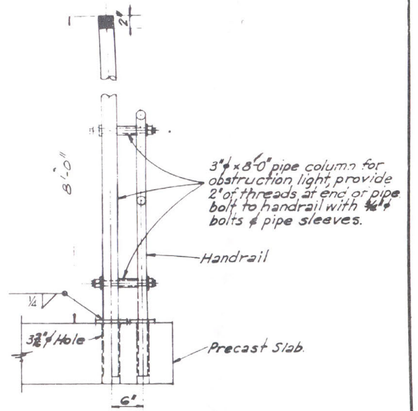


SECTION "Z-Z"



PLAN

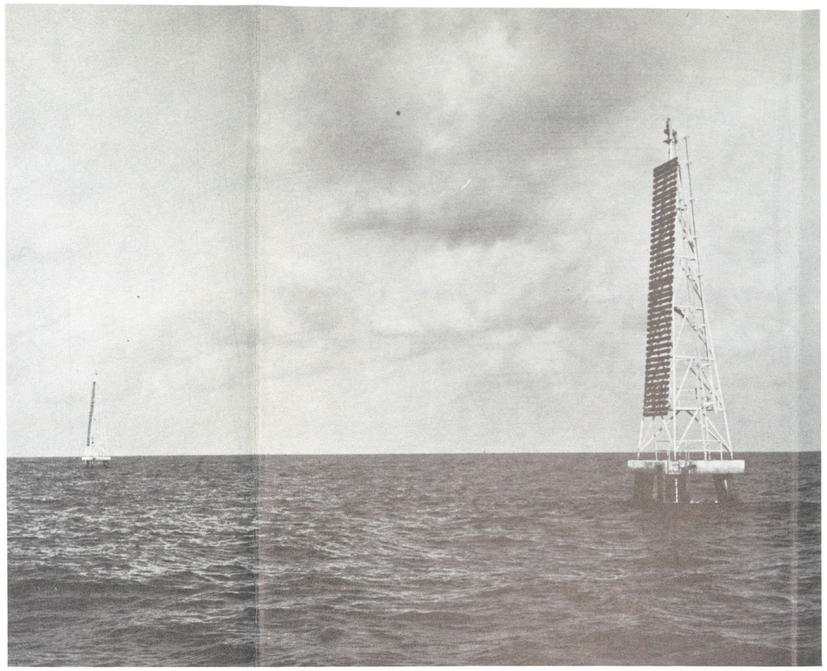
SURVEY TOWER DETAILS
Scale ½"=1'-0"

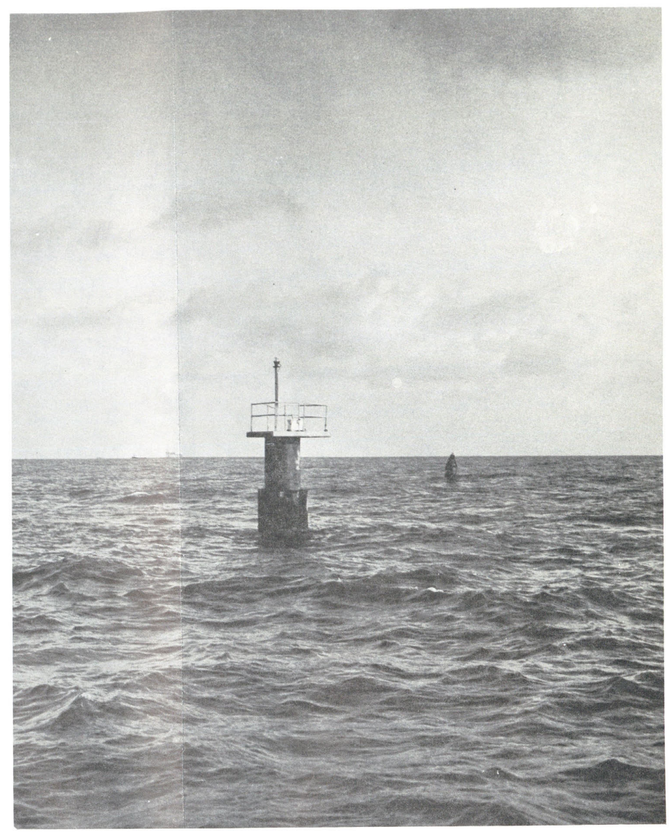


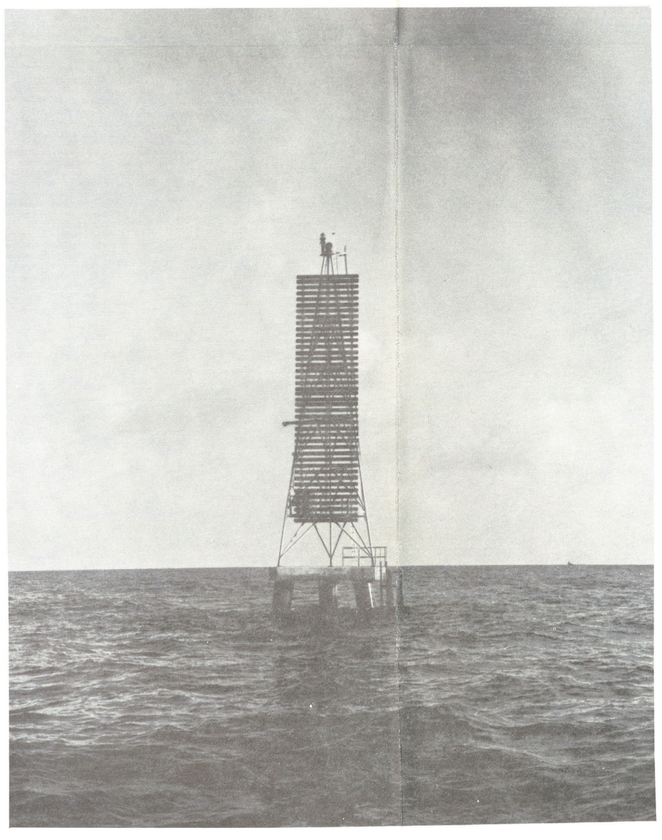
DETAIL OF LIGHT COLUMN
Scale 1"=1'-0"

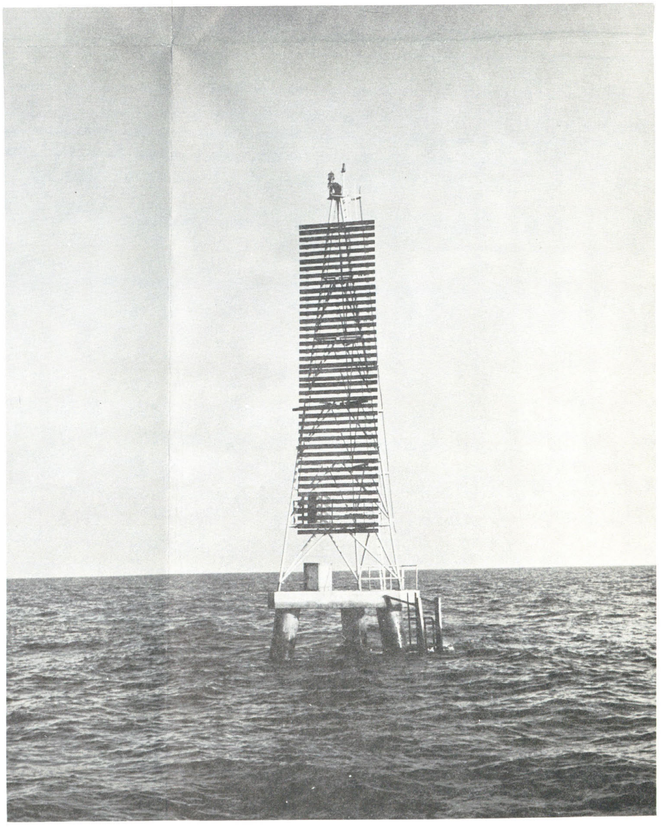
CODE IDENT. NO.	SIZE	FILE NO.
SCALE: AS SHOWN	SPEC. NO. CIVDNS-16-047- C-6 - 92	DWG. NO. 6 OF 6

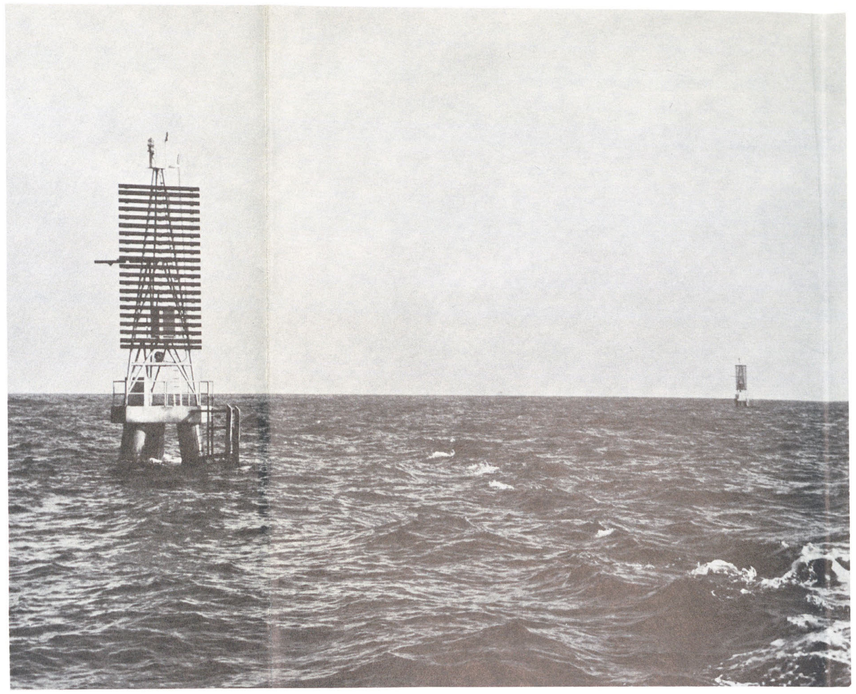
H-4-22941

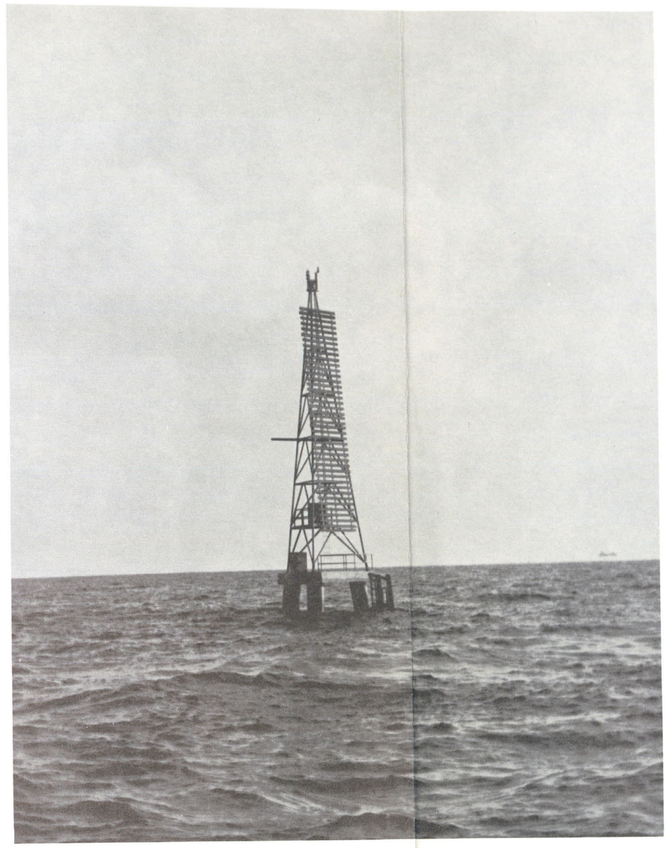


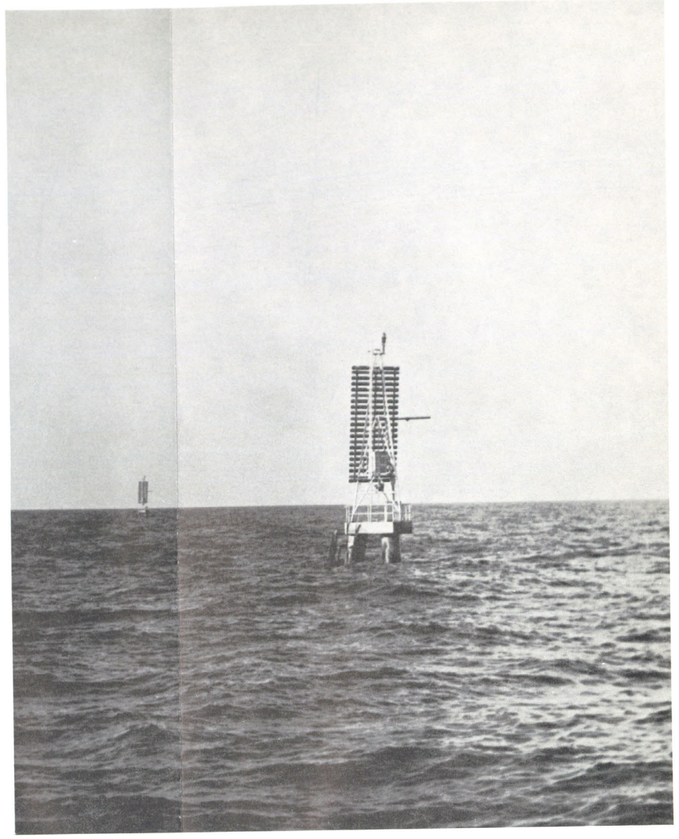


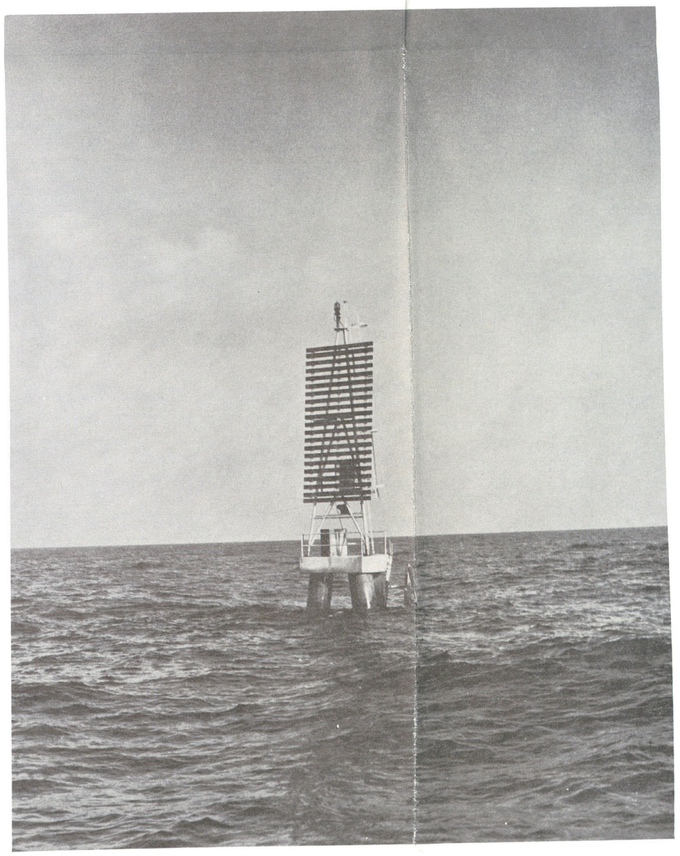












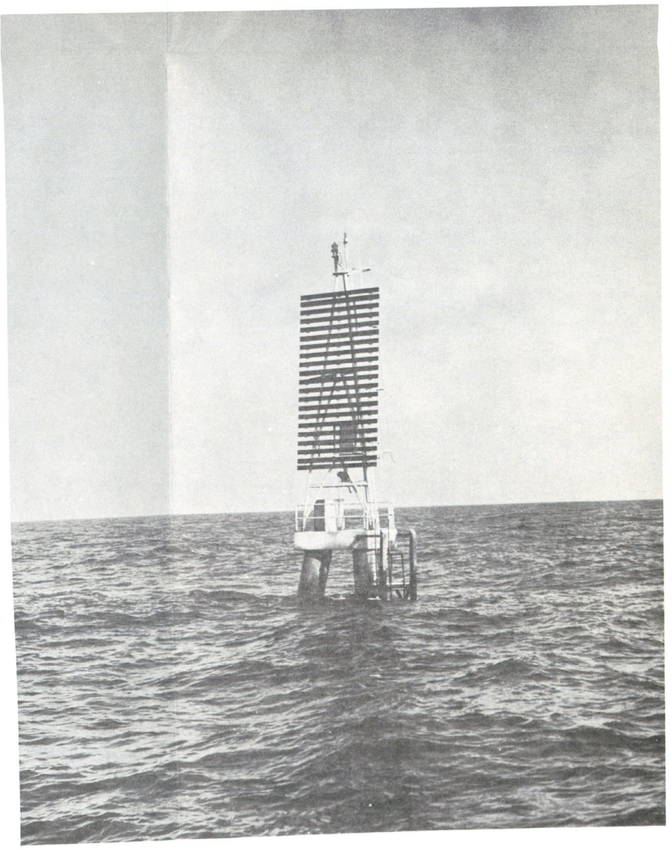


EXHIBIT 112

RIVER AND HARBOR PROJECT
SABINE-NECHES WATERWAY, TEX.
INDEX MAP

30 JUNE 1964
SCALE OF MILES 0 1 2 3 4 5

GALVESTON DISTRICT GALVESTON, TEXAS

EXHIBIT 112

8-1

BEAUMONT
UPSTREAM LIMIT OF THE FEDERAL PROJECT
30'X200' CHAN.
K.C.S.
T.&N.O.
TURNING BASIN EXTENSION
BEAUMONT TURNING BASIN
PLATE 8-1A
SPINDLETOP
McFADDIN BEND CUT-OFF
36'X350'
SMITH'S BLUFF CUT-OFF
U.S MARITIME RESERVE FLEET ANCHORAGE
NECHES RIVER
PORT NECHES
NEDERLAND
JEFFCHEM CUTOFF
PLATE 8-1B
SABINE-NECHES CANAL
30'X200'
FIXED HIGHWAY BRIDGE
VER. CLEARANCE 176.9'
HOR. " 600'
DAM
OLD SPOIL LEVEE
TEXAS
LOUISIANA
PROPOSED FOLEY AVE.
FIXED BRIDGE
VERT. CLEARANCE 138'
HOR. " 400'
PORT ARTHUR
SABINE-NECHES 36'X400'
SABINE LAKE
BASCULE BRIDGE
200' HOR CLEARANCE
REVETMENT
CORPS OF ENGINEERS
PORT ARTHUR
RESIDENT OFFICE
TAYLORS BAYOU TURNING BASIN
PORT ARTHUR EAST & WEST TURNING BASINS
WIDENING OF CURVE (AUTHORIZED)
GULF I.W.W.
PORT ARTHUR CANAL 36'X400'
TAYLORS BAYOU
ALLIGATOR BAYOU
LOCK
DAM
EAGLE LAKE
ROUND LAKE
LOST LAKE
KEITH LAKE
JOHNSONS BAYOU
EXISTING ANCHORAGE BASIN
SABINE PASS ANCORAGE BASIN 40'X1500'X3000' (AUTHORIZED)
SABINE PASS
SABINE
LIGHTHOUSE (Abandoned)
36'X400'
EAST JETTY
WEST JETTY
GULF OF MEXICO
ECHO
12'X125' CHANNEL (AUTHORIZED)
ORANGE
ADAMS AND COW BAYOUS SEE PLATE 8-1C
T.&N.O.
M.P.
Drainage Canal
UPSTREAM LIMIT OF FEDERAL PROJECT
ORANGEFIELD TURNING BASIN 300'X500'
ORANGE MUNICIPAL SLIP
ADAMS BAYOU
COW BAYOU
30'X200'
SABINE RIVER CHANNEL AROUND HARBOR ISLAND 25'X150'
G.I.W.W.
PLATE 8-1C
BLACK BAYOU

SCALE (All Sections)
10' 0 20' 40'

TYPICAL SECTION OF EAST JETTY FROM STA 0+00 TO 183+66.8
M.L.T.

TYPICAL SECTION OF EAST JETTY FROM 183+66.8 TO 253+10
EL+5.7 10' M.L.T.

TYPICAL SECTION OF WEST JETTY FROM STA 0+70 TO 90+00
EL+1.5 7' 4.3' M.L.T. MUD

TYPICAL SECTION OF WEST JETTY FROM STA 90+00 TO 157+80.5
EL+5.0' 11.5' 3' M.L.T. MUD

TYPICAL SECTION OF WEST JETTY FROM STA 157+80.5 TO 219+05
M.L.T.

TEXAS
BEAUMONT
ORANGE
PT. ARTHUR
SABINE LAKE
PROJECT
LA.
SABINE
GULF OF MEXICO
VICINITY MAP
SCALE OF MILES 10 0 10

MEAN TIDAL VARIATIONS

At Sabine Pass	1.9 ft.
At Port Arthur	1.0 ft.
At Beaumont	0.5 ft.
At Orange	0.5 ft.

CREOSOTED WAKEFIELD SHEET PILING 3 PCS. 3"X10"-24'
EL+5.0'
CREOSOTED WALES 10"X10"
ROUND CREOSOTED PILING 24' LONG SPACED 5' C TO C
M.L.T.
MUD

TYPICAL SECTION OF REVETMENT IN SABINE LAKE FROM STA 0 TO 9+99.1 & 89+50.3 TO 99+51.4

6'-0"
-6"-6"-6"-6"-6"
EL+5.0'
3'-0"
2'-0"
6.99
REINFORCED CONCRETE SHEET PILING 9"X18'-24'
SAND & CLAY FILL
M.L.T.
Mud

TYPICAL SECTION OF REVETMENT IN SABINE LAKE FROM STA 9+99.1 TO 23+95 & 29+97 TO 89+50.3

SCALE
2 0 2 4 6 8 10 FT.

STATE PLANE COORDINATES

Landward End of Channel
x=1,257,281.21
y= 287,105.34

Seaward End of Channel
x=1,205,205.0
y= 379,935.0

EXHIBIT 113, Page 1

"The city limits or the boundaries of the port authorities are not necessarily considered in determining the port boundaries used in our reports. The boundaries are usually determined from the limits of the navigation channel required to serve the port area." [4]

The Corps therefore divides the waterway into four sections, each of which is regarded as a "port." The waterway commences with the Sabine Pass section which begins, or will begin when the presently-authorized project is completed in 1970, 2.80 nautical miles due south of Sabine Bank Pass at the 42-foot contour. Entering the waterway at this point,which is estimated to be 17.2 miles from the nearest land, a vessel will proceed north along the Sabine Bank Channel, an underwater dredged channel with dimensions of 42 ft. x 800 ft., to "Turning Point 'B'," just outside the Sabine Bank Pass, where course is altered to the northwest. The natural depth of the water through the Pass is 32 ft., and there are points on the Bank on the east side of the Pass as shallow as 18 feet. There is a lighthouse west of the Pass at a point where the depth is 16 feet.

The Sabine Bank Channel continues northwest 9.98 nautical miles to "Turning Point 'A' " at the beginning of the Outer Bar Channel presently dredged to 37 ft. x 800 ft. This extends 2.97 nautical miles

[4]Letter from C. F. Baehr, Chief, Construction-Operations Division, Galveston District Corps of Engineers, Department of the Army, to C. J. Dwyer, Director, International & Industrial Economics Research, Gulf South Research Institute.

to the jetties, which mark the beginning of Sabine Pass Channel. The total length of the outer harbor-works from their beginning below Sabine Bank Pass to Sabine Pass Channel at the seaward end of the jetties is thus 15.74 nautical miles.

Fourteen permanent structures have been erected along the route of the Sabine Bank Channel to guide the dredges. Two of these are "survey towers" or "tables" located along the northern border of the long reach of the channel at points which trisect it.

The dredging ranges are structures upon which the dredge can align itself; a front and rear tower for each side of the channel. The long reach has four at each end, but the short section beyond Sabine Pass has only one set of four. These structures range in elevation above sea level from 44.5 ft. to 83.0 ft. There are two oil drilling platforms on Sabine Bank east of the Pass, but no others are found near the channel until the jetties are reached.

The tip of the East Jetty where there is a light has been regarded by the Corps of Engineers as "Mile Zero" on the waterway since 1920, when the East Jetty was completed to its present length. Distances along the Waterway inland are measured from this point as are distances along the dredged channels to the beginning of Sabine Bank Pass Channel.

The East Jetty is 25,270 feet long or 4.16 nautical miles; the West Jetty, completed in 1929, is 21,905 feet long, or 3.60 miles. The length of the jetty channel itself is calculated by the Corps at 21,488 feet, or 3.53 miles.

Work on these jetties was started in 1883. At the time, they began at approximately the normal shore but there has been considerable accretion since. The distance along the west jetty to the apparent low-water mark is estimated at 2.39 miles and the similar estimate for the curved east jetty is 2.95 miles. Swinging an arc from the tip of the west jetty as shown on available maps indicates the nearest land is approximately 2.24 miles from the tip of the west jetty and 2.27 from the tip of the east one.

The Sabine Pass section of the Sabine-Neches Waterway continues through the Pass 5.6 statute miles to the entrance of Sabine Lake. This part of the Waterway has already been dredged to the authorized 40 ft. x 500 ft. The Port Arthur section, which starts here, follows the Port Arthur Canal (40 ft. x 500 ft.) which cuts across the southwestern end of Sabine Lake (6.2 statute miles) to the City of Port Arthur and via the Sabine-Neches Canal (11.2 statute miles) to its junction with the Neches River at an existing depth of 36 ft. x 400 ft., now being dredged to 40 ft. x 400 ft.

The waterway then splits, the Beaumont Section extending 18.3 statute miles up the Neches River to the City of Beaumont (30 ft. x 350 ft.) and the Orange Section to that city on the remaining portion of the Sabine-Neches Canal (4.5 statute miles) at 30 ft. x 400 ft. and the Sabine River (9.7 miles) at 30 ft. x 400 ft. (A channel of 12 ft. x 125 ft. to the City of Echo, beyond Orange, has been authorized.)

SABINE-NECHES WATERWAY

In fiscal 1913 the present project was authorized by the Rivers and Harbors Act of July 25, 1912. The Act called for a 25-foot channel of "proper width" across the bar at the mouth of the Sabine Pass and the raising of the existing jetties to a height of 4 feet above mean-low Gulf for their full length. Work commenced on this project in 1913 and was completed in 1920. From the time of passage of this Act in 1912 until the date of completion of the work in 1920 total appropriations for the project amounted to approximately 2 million dollars. The amount spent on new work during this period was slightly less than $1,300,000. During the same period maintenance operations had been carried out with a total expenditure of slightly more than $850,000.

During the period in which the new project was constructed approximately 8,000,000 cubic yards of material were removed. Maintenance during this time accounted for an additional 800,000 cubic yards. Work on the jetty consisted of adding over 150,000 tons of stone on the existing jetty.

During 1921 and 1922 there were no new operations. Maintenance during this time amounted to a removal of 1.6 million cubic yards of material and the expenditure of $420,000.

In 1921 the Corps of Engineers recommended an amendment to the 1912 project. The recommendation called for an enlarging of the channel from the Port Arthur Canal to deep water in the Gulf. Dimensions

on the channel were: From the Port Arthur Canal to the landward end of the jetty, 30 feet deep, 150 feet wide; jetty channel, 30 feet deep, 200 feet wide; the channel over the bar beyond the jetty, 33 feet deep, 450 feet wide. This recommendation was not adopted until the Rivers and Harbors Act of September 22, 1922 so there were no new operations carried out during fiscal 1922.

In 1923 the Corps of Engineers consolidated three prior projects; the harbor at Sabine Pass, the Port Arthur Canal, and the Sabine-Neches Canal to Beaumont and Orange, Texas.

During the period between the completion of the 1912 project and the beginning of the 1923 project approximately 3.7 million cubic yards of material were removed from the channel in maintenance operations. In 1923 there were no major new operations on the amended project although contracts were let during that year to extend the west jetty.

In 1924 the jetties were extended with the addition of 48,000 tons of stone. During the course of the operations to improve the waterway to the 1921 project depth, operations resulted in the removal of 11.7 millions cubic yards of material at a cost of $1,937,000. During this same period 9 million cubic yards of material were removed from the channels by maintenance dredging. Maintenance dredging during this period cost over $800,000.

In 1926 the Report of the Corps of Engineers indicated the project had been completed to specified

dimensions. In that same year the Corps recommended that the project be modified to widen the Sabine Pass Channel and the Sabine Pass Jetty Channel to 300 feet. The revision recommended by the Corps was adopted by the Rivers and Harbors Act of January 21, 1927. During 1927 operations began on this revision with the removal of 2.6 million cubic yards of material at a cost of $660,000.

In 1928 no dredging operations were carried out; however, contracts were awarded to extend the west jetty. Under these contracts 83,000 tons of stone were placed on the jetty under these contracts. This project was completed in 1930 at a cost of $1,125,000. This cost covered the removal of almost 5 million cubic yards of material and the addition of 127,000 tons of stone on the jetties.

During this time, 1923-1928, 12 million cubic yards of material was removed in maintenance operations at a cost of approximately $1,375,000.

There were no major operations carried out between the years 1931 and 1933. The $29,000 which was spent for new work was for the removal of 175,000 cubic yards of material. Maintenance operations during this period cost approximately $1,600,000 and resulted in the removal of 7,000,000 cubic yards of material from the entire project.

In 1934 the project was amended under Public Works Administration authorization to increase the depth of the entire project. The amended depths were: Sabine Pass Outer Bar, 35 feet; Sabine Pass jetty

channel, 35 feet; Sabine Pass, 32 feet; Port Arthur Canal, 32 feet; Sabine-Neches Channel, 31 feet. Maintenance operations during the 3-year period during which this new project was under way was carried out under the normal Rivers and Harbors appropriations. There was no new work accomplished with Rivers and Harbors appropriation funds. This project was begun in 1934 and completed in 1936 with the expenditure of $1.3 million dollars resulting in the removal of 16,000,000 cubic yards of material. The maintenance during this same period cost approximately $500,000, during which period 3.6 million cubic yards of material were removed from the channel.

In 1936 the project was modified by the Rivers and Harbors Act of August 30, 1935. Under this project the dimensions were: Sabine Pass Outer Bar Channel, 600 x 36 feet; Sabine Pass Jetty Channel, 400 feet at the inner end, increasing to 600 feet at the outer end by 34 feet deep at the inner end, increasing to 35 feet at the outer end; Sabine Pass, 400 x 34 feet. Operations on the new project began in 1937. These operations lasted for one year with the expenditure of $406,000 and the removal of 5.7 million cubic yards of material.

In 1938 the project was amended to the following dimensions: Approach channel dimensions, 800 x 36 feet; Sabine Pass Jetty Channel, 500 to 800 feet wide, 34 to 36 feet deep; Sabine Pass Channel, 500 x 34 feet. This project was completed in 1944. During the time this project was under way new work expenditures amounted to $4.6 million, resulting in the removal of 57,185,000 cubic yards of material. In this same time maintenance operations continued with the expenditure of 2.2 million dollars resulting in the removal of approximately 30,000,000 cubic yards of material.

From 1945 through 1947 there were no new operations. Excluding 1946 figures, which were unattainable as the report was missing from the library, maintenance for those years resulted in the removal of 6.2 million cubic yards of material at a total cost, including work done in 1946, of $346,000.

The Act of July 24, 1946 increased the dimensions of the channel to Sabine Outer Bar Channel to 800 x 37; Sabine Pass Jetty Channel from 500 to 800 feet by 36 to 37 feet; Sabine Pass Channel, 500 x 36 feet. These operations began in 1948 and were completed in 1954. The operations carried out under this amendment resulted in the removal of 24,000,000 cubic yards of material at a total cost of $4,150,000. During this period maintenance operations continued. The cost of these operations amounted to $7.3 million, and resulted in the removal of 25,000,000 cubic yards of material. Dredging operations on the new project were completed in 1953; some slight work was done in 1954.

The Rivers and Harbors Act of September 3, 1954, modified the project; this modification, however, affected only the upper portions of the lake and the rivers entering into the lake.

In 1960 work was begun on the realignment of

Sabine Pass Channel. The work on this realignment lasted from 1960 to 1961 and cost $3,000,000. The amount of material removed from the channel was 8.4 million cubic yards.

The overall cost of the new work for realignment and the 1954 amendment to the upper portions of the lake and rivers cost $6.9 million, and caused the removal of 9.7 million cubic yards of materials. In addition to this, maintenance carried on during the same period cost $9.5 million and saw the removal of 38,000,000 cubic yards of material.

In addition to the new work, there was some major repair work done on the jetties with the addition of 344,000 tons of stone. Repair of the west jetty was completed in 1962; repair of the east jetty was completed in 1963 with the addition of an additional 8,000 tons of stone.

The latest amendment of the project came in 1963 and was authorized by the Act of October 23, 1962. This improvement called for the extension of the outer bar channel to the 42-foot contour with 40-foot depths for all inland channels to Port Arthur and Beaumont. Work on the 1963 amendment began in fiscal 1963; between then and the end of fiscal 1966, 4.7 million dollars had been spent on new work, with dredging in excess of 12 million cubic yards of material. Since that time there have been extensive maintenance operations carried out with the removal of more than 20 million cubic yards of material and the expenditure of over 7 million dollars.

Appropriations Prior to 1912 Project

1852	$ 5,000	1894	271,000[3]
1873[1]	2,000	1896	75,000
1875	20,000	1897	480,000
1876	38,000	1898	400,000
1878[2]	30,000	1899	264,000
1879	25,000	1899	150,000
1880	50,000	1900[2]	36,000
1881	150,000	1900	10,000
1882	150,000	1902	185,000
1884	200,000	1905	150,000
1886	198,750	1907	110,000
1888	250,000	1910	150,000
1890	300,000	1911	150,000
1892	350,000		

[1]Survey [2]Allotted

[3]$4,000 of this appropriation, originally $275,000, used to dredge bar at Sabine River Texas.

Appropriations and Cost of New Work and Maintenance from 1912 to 1949

Year	*Appropriations 1912-1966*	*Cost* New Work	Maintenance
1912	$ 433,800	$	$
1913	400,000	158,354	40,730
1914	240,000	409,789	36,087
1915	330,000	334,337	44,932
1916	590,000	136,994	150,267
1917		102,516	279,829
1918	387,500	109,825	130,373
1919		162	63,450
1920		186,494	105,693

Year	*Appropriations 1912-1966*	*Cost* New Work	Maintenance
1921	160,000		281,800
1922	150,000		143,048
1923	930,000	192,840	174,251
1924	690,000	510,791	239,602
1925	1,000,000	686,508	224,371
1926	1,100,000	547,128	248,043
1927	740,000	660,545	268,126
1928	1,158,815	557,521	349,778
1929	824,000	401,646	166,811
1930	306,700	166,430	590,419
1931	425,000		639,753
1932	65,000	29,800	603,563
1933	542,421		381,120
1934*†	803,314	803,314*	220,126†
	9,525		
1935*†	548,220	548,202*	98,763†
	98,763		
1936*†	$ 31,955	$ 31,955*	$ 205,008†
	205,008		
1937	1,070,802	406,951	478,754
1938	1,911,200	1,065,719	222,690
1939	846,800	849,105	225,209
1940	819,500	348,656	331,132
1941	1,023,000	321,377	496,281
1942	1,543,015	686,743	120,327
1943	190,000	735,456	264,763
1944	122,024	602,581	558,030
1945	1,050,000		500,947

*W.P.A. Appropriation †R. & H. Appropriation

Year	*Appropriations 1912-1966*	*Cost* New Work	Maintenance
1946	325,000	14,385	701,938
1947	127,189	22,295	143,283
1948	1,322,000	262,262	189,250

Appropriated[1]

Year	*New*	*Total*	*Main.*	*Total*
1950	$ 749,960	$18,516,292	$ 570,000	$12,774,700
1951	1,500,000	20,016,292	540,381	13,315,082
1952	465,000	20,481,292	439,185	13,754,267
1953	20,000	20,426,241	685,050	14,439,317
1954	7,718	20,419,674	584,230	15,023,547
1955		20,419,674	746,190	15,769,737
1956		20,419,674	273,000	16,042,737
1957	695,000	21,114,074	1,185,726	17,228,463
1958	730,000	21,844,074	1,693,567	18,922,875
1959	1,121,500	22,990,574	1,825,747	20,748,622
1960	1,682,845	24,673,419	1,311,082	22,059,704
1961	1,422,500	26,095,919	2,450,363	24,510,067
1962	1,385,400	27,481,319	2,145,500	26,655,567
1963	915,000	28,371,319	2,236,364	28,891,931
1964	2,390,741	30,762,060	2,296,900	31,188,831
1965	450,000	31,212,060	1,740,501	32,929,332
1966	1,505,000	32,717,660	3,068,427	35,937,759

[1]Exclusive of $931,006 contributed funds.

Cost

Year	New Work	Total	Maintenance	Total
1950	$ 786,388	$18,016,162	$ 486,799	$12,639,625
1951	1,347,311	19,363,474	658,239	13,297,864
1952	708,972	20,072,446	424,646	13,722,511
1953	343,794	20,416,241	543,400	14,265,912
1954	-2,832	20,419,074	753,514	15,019,427
1955	.....	20,419,074	717,856	15,737,283
1956	.....	20,419,074	291,544	16,028,827
1957	265,181	20,684,255	1,113,508	17,142,335
1958	716,747	21,404,002	1,692,483	18,834,818
1959	1,561,937	22,987,939	1,913,049	20,747,867
1960	1,684,781	24,672,720	968,963	21,716,830
1961	1,397,433	26,070,153	2,758,006	24,474,836
1962	1,338,233	27,408,386	2,173,233	26,648,069
1963	915,956	28,299,342	2,241,812	28,889,881
1964	1,573,811	29,296,900	1,635,764	30,525,645
1965	980,072	30,853,225	2,105,904	32,631,549
1966	1,270,122	32,123,347	3,275,667	35,907,216

Part 1

Sabine-Neches Waterway
Freight Traffic - Short Ton
(Vessel Traffic Only - No Rafts)

Year	Total Thru Sabine Pass Jetties	Sabine-Neches Total Vessel	Sabine Pass Harbor
1965	.....	.....	.....
1964	44,483,630	74,842,811	111,094
1963	46,773,034	77,061,737	302,533
1962	42,312,844	68,508,825	172,260
1961	42,417,867	67,699,637	176,258
1960	44,165,944	68,693,211	365,282
1959	39,615,843	62,474,378	216,509
1958	39,342,147	60,674,062	207,111
1957	40,321,329	62,638,250	681,121
1956	42,671,800	62,790,305	329,593
1955	38,532,129	56,218,285	165,659
1954	36,692,329	53,504,920	187,395
1953	.....	56,739,601	785
1952	34,872,308	54,599,609	1,021
1951	38,026,440	54,344,133	3,755
1950	34,107,818	48,377,483	857,582
1949	37,288,644	51,062,098	592,242
1948	40,171,263	55,594,660	150,835
1947	38,663,489	47,838,462	257,709
1946	36,475,390	43,746,411	368,311
1945	18,835,708	26,318,285	526,301
1944	8,926,866	16,541,689	661,586
1943	7,944,626	14,520,261	572,463
1942	9,552,481	20,536,162	573,930

Year	Total thru Sabine Pass Jetties	Sabine-Neches Total Vessel	Sabine Pass Harbor
1941	35,893,514	39,982,256	651,722
1940	38,165,251	38,433,143	644,680
1939	40,729,710	40,096,532	674,312
1938	38,763,512	38,136,028	735,348
1937	40,589,431	41,234,303	627,045
1936	36,242,293	36,554,637	466,268
1935	31,925,572	32,712,937	536,207
1934	28,946,568	29,325,401	741,588
1933	28,358,632	28,592,479	571,004
1932	24,591,206	24,702,371	534,252
1931	21,427,531	22,194,124	609,312

TABLE II

Part 2

Year	Total Thru Sabine Pass Jetties	Sabine-Neches Total Vessel	Sabine Pass Harbor
1930	20,210,456	20,879,602	445,475
1929	21,086,321	21,958,467	479,633
1928	18,354,801	.....	227,616
1927	16,140,735	.....	737,090
1926	14,553,869	.....	1,714,590
1925	12,985,057	.....	2,239,554
1924	12,617,562	.....	1,686,654
1923	11,961,811	.....	1,381,294
1922	9,486,844	.....	1,474,411
1921	9,729,173	.....	1,146,214
1920	10,695,466	.....	1,180,693
1919	8,140,831	.....	.....

Year	Total Thru Sabine Pass Jetties	Sabine-Neches Total Vessel	Sabine Pass Harbor
1918	7,261,187	.....	.....
1917	8,005,149	.....	.....
1916	5,830,132	.....	.....
1915	6,001,885	.....	.....
1914	5,569,454	.....	.....
1913	4,758,408	.....	.....
1912	3,100,375	.....	.....
1911	2,443,962	.....	.....
1910	2,304,113	.....	.....
1909	2,785,786	.....	.....
1908	1,802,307	.....	.....
1907	1,848,159	.....	.....
1906	1,904,389	.....	.....
1905	1,779,954	.....	.....
1904	1,192,371	.....	.....
1903	1,315,248	.....	.....
1902	689,688	.....	.....
1901	150,087	.....	.....
1900	217,489	.....	.....
1899	326,494	.....	.....
1898	238,400	.....	.....
1897	87,632	.....	.....
1896	48,886	.....	.....
1895	47,691	.....	.....
1894	40,966	.....	.....
1893	15,050	.....	.....
1892	.....	.....	.....
1891	.....	.....	.....

TABLE IIIb

Draft of Vessels Traversing
Sabine-Neches Waterway
Outboard (Number of Trips)
(Theoretical Maximum—
Authorized Depth Less 5 Feet)

Year	Total Trips	25′ & Under	Over 25′	Over 28′	Over 31′	Over 32′	Over 35′
1964	3029	1097	1932	1603	1005	624	175
1963	3039	998	2041	1749	1073	685	176
1962	3008	977	2031	1704	896	511	59
1961	3140	1065	2075	1736	875	470	47
1960	3103	939	2164	1851	838	423	17
1959	2925	944	1981	1701	793	381	17
1958	3067	1012	2055	1826	731	264	6
1957	2996	765	2231	2015	879	281	19
1956	3128	766	2362	2144	698	187	7
1955	2901	770	2131	1944	592	137	5
1954	12808[3]	10722[3]	2086	1914	537	95	.....
1953	.....	.....	.....	.....	.....	.....	.....
1952	13015[3]	10960[3]	2055	1873	418	38	.....
1951	16893[3]	14750[3]	2143	1963	414	34	.....
1950	17771[3]	15842[3]	1929	1772	415	28	.....
1949	12926[3]	10880[3]	2046	1685	47	3	.....
1948	8481	6128	2353	2140[1]	60	7	.....
1947	6969	4514	2455	2155[1]	409	40	.....
1946	2529	293	2236	1971[1]	946	32	.....
1945	1450	508	942	787[1]	126	16	.....
1944	997	632	365	282[1]	41	4	.....
1943	774	400	374	236[1]	64	2	.....

Year	Total Trips	25′ & Under	Over 25′	Over 28′	Over 31′	Over 32′	Over 35′
1942	1062	303	759	526[1]	64	8	.....
1941	2658	469	2189	1675[1]	147	19	.....
1940	3072	707	2365	1632[1]	6	.....	.....
1939	3316	787	2529	1727[1]	3	.....	.....
1938	3424	987	2437	1576[1]	.....	.....	.....
1937	3568	997	2571	1603[1]	1	.....	.....
1936	3294	991	2303	1430[1]	.....	.....	.....
1935	3110	941	2169	1416[1]	3	.....	.....
1934	3082	1103	1979	1473[1]	.....	.....	.....
1933	3182	965	2217	1667[1]	.....	.....	.....
1932	2779	931	1848	1394[1]	.....	.....	.....
1931	2374	644	1730	1467[1]	.....	.....	.....
1930	2134	578	1556	1319[1]	.....	.....	.....
1929	2252	678	1574	1271[1]	7[2]	.....	.....
1928	2104	750	1354	1039[1]	4[2]	.....	.....
1927	1910	1251	659	151[1]	34[2]	.....	.....
1926	1790	1157	633	145[1]	33[2]	.....	.....
1925	1688	832	856	120[1]	3[2]	.....	.....
1924	1052	542	510	74[1]	2[2]	.....	.....
1923	1010	748	262	49[1]	.....	.....	.....
1922	1038	882	156	.....	.....	.....	.....
1921	.....	.....	.....	.....	.....	.....	.....

[1]Over 27′
[2]Over 30′
[3]Probably includes barge traffic