

2 Oct 95

✓ MEMORANDUM FOR C/Ops Div

SUBJECT: Calcasieu River and Pass, Louisiana

1. This is in reference to CELMN-OD-C memo dated 3 Mar 95, subject, Implementation of Guidance on Dredged Material Management Plans, which requested a Dredged Material Management Plan Preliminary Assessment for Calcasieu River and Pass, Louisiana.

2. We have enclosed two bound copies and one loose copy of the requested Dredged Material Management Plan Preliminary Assessment for the subject project. The findings of this preliminary assessment are that continued maintenance of the subject project is justified, based upon economic productivity, sufficient available disposal capacity, and compliance with environmental laws and regulations. No additional work is required beyond this preliminary assessment.

3. Point of contact is Mr. David Elmore at ext. 1504.

Encl


R. H. SCHROEDER, JR.
Chief, Planning Division

Dredged Material Management Plan
Preliminary Assessment

Summary of Findings and Recommendations

1. Calcasieu River and Pass, Louisiana
CWIS No. 02440

The Calcasieu River and Pass Project is located in Southwestern Louisiana, in Cameron and Calcasieu Parishes as shown in the project maps (Plates 1-7(1) thru 1-7(3), enclosed). The features of the Calcasieu River and Pass, Louisiana, Project follow.

CWIS Number	Reach or Segment (if more than one)	Nominal Depth		Nom. Chan. Width		Max. Sailing Draft	Project Sponsor (Y/N)
		(as auth)	(as maint)	(as auth)	(as maint)		
02440	Bar Chan.	42	42	800	800	40	Y
02440	Mi 5 to 22	40	40	400	400	40	Y
02440	Mi 22 to 34	40	40	400	400	40	Y
02440	Mi 34 to 36	35	35	250	250	35	Y
Project Sponsor All Reaches:							
Name: Lake Charles Harbor and Terminal District							
Address: P.O. Box AAA							
City: Lake Charles				State: LA		Zip: 70602	
Point of Contact: John Polansky				Phone #: (318) 439-3661			

Notes: Above LC=Channel above Lake Charles at U.S. Highway 90
The Bar Channel, Jetty, Cameron, and Inland Reaches are all subreaches of the Lower Reach of the Calcasieu River and Pass project.

- An approach channel (bar channel) 42 feet deep and 800 feet wide in the Gulf of Mexico.
- A channel 40 feet deep and 400 feet wide extending from the jetties at the mouth of the river to Lake Charles (mile 34.1).
- A 40-foot deep turning basin at mile 29.6.
- A mooring basin at mile 3.
- A 35-foot deep channel over a bottom width of 250 feet from Lake Charles (mile 34.1) to U.S. Highway 90 (mile 36.0) with a turning basin at the upper end.

■ A 12-foot deep by 200-foot wide channel in the old bends of the Calcasieu River to Phillips Bluff (mile 36.0 to 85.9).

The Calcasieu River and Pass Saltwater Barrier consists of a tainter gate structure in a new channel, an earthen dam, and bank revetment. A navigation channel with a gated structure 56 feet wide and with sills at elevation -13 feet Mean Low Gulf (MLG) is located north of the new Barrier Channel.

Calcasieu River at Devil's Elbow consists of a 40-foot deep channel over a bottom width of 400 feet, and a 1,200 by 1,400-foot turning basin at the landward end of the channel.

The Calcasieu River at Coon Island is a 40-foot below MLG channel over a bottom width of 200 feet with a 750-foot wide turning basin over a distance of 1,000 feet at the end.

2. Authority

The River and Harbor Act of 24 July 1946 (Public Law 79-525) and prior River and Harbor Acts provide for a channel 35 feet deep and 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 of the 37 foot depth in the Gulf of Mexico. This Act also provides for reconstruction and extension of improvements of the river from Lake Charles to Phillips Bluff by removing logs, snags, and overhanging trees; and dredging the navigation and floodway channels of the Saltwater Barrier Structure.

The River and Harbor Act of 14 July 1960 (Public Law 86-645) 2nd Session provides for an approach channel having a depth of 42 feet below Mean Low Gulf level (MLG) 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 over a bottom width of 400 feet from 42 feet at the seaward end to 40 feet at the shoreline; a channel 40 feet deep over a bottom width of 400 feet from the shoreline at mile 0 to the wharves of the Port of Lake Charles at mile 34.1; enlargement of the existing turning basin at mile 29.6 to a depth of 40 feet; and a mooring basin at about mile 3.0 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 MLG 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 U.S. Highway 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.

A salt water barrier structure with five 40-foot tainter gates in a new bypass channel, a parallel channel with navigation structure and a single sector type gate, an earth closure dam, and a woven lumber type revetment were provided for by the River and Harbor Act of 23 October 1962 (Public Law 86-874).

The Senate Public Works Committee on 27 December 1970, and the House Public Works Committee on 15 December 1970, adopted resolutions approving the project at Devil's Elbow under the provisions of Section 201 of the Flood Control Act of 1965 (Public Law 89-298). The project consists of enlarging 2.3 miles of the existing industrial channel to a 40 foot depth over a bottom width of 400 feet, a 1/2 mile eastward extension of the enlarged channel, and the construction of a 1200 foot by 1400 foot turning basin south of the extended channel at its landward end.

The Calcasieu River at Coon Island, Louisiana, project was constructed in 1973-74 under the authority of Section 107 of the River and Harbor Act of 1960, as amended. The project consists of enlarging the channel to a 40 foot depth below MLG over a bottom width of 200 feet for a distance of 6,943 feet and enlarging the existing turning basin to a depth of 40 feet below MLG over a width of 750 feet for a distance of 1,000 feet.

3. Economic Assessment

This project can be divided into two separable reaches for the purpose of the economic assessment. The first economic reach includes the bar channel reach and miles 0 to 36 of Calcasieu River and Pass project. The second reach is from mile 36 to Phillips Bluff (mile 85.9). Only the first economic reach will be evaluated in this report since no dredging is conducted on the second reach.

A justification for maintenance dredging of the Calcasieu River was conducted in 1994. The study, which was based on 1994 prices and 1992 traffic, found the benefit-to-cost ratio to be 6.2 to 1. It will be used for comparison purposes in this assessment. The benefit indicators that are evaluated are total tonnage, import tonnage, and crude petroleum tonnage for the entire project. The source for this information is 1992 and 1993 Waterborne Commerce statistics.

Total tonnage increased from 44.0 million tons to 45.4 million tons from 1992 to 1993, an increase of 3 percent. Import tonnage increased by 10 percent, from 19.4 to 21.4 million tons. Crude petroleum tonnage also increased from 17 million tons in

1992 to 17.9 million tons in 1993, a 10 percent increase.

The 1994 study quantified only the crude petroleum imports, since they represented the predominant import commodity and were sufficient to justify continued maintenance. All of the benefit indicators reflected positive growth in river usage, thus the summary indicator for benefits is a plus sign.

The cost indicators which are compared are frequency of dredging cycles and average annual maintenance cost. There was no change in dredging cycles from 1992 to 1993. The channel is divided into three distinct sections for which the dredging cycles vary from one year, to 2.5 years, to five years.

The average annual maintenance costs are derived from a rolling average of the cost of dredging for the current and previous three years, to take the uneven nature of the dredging cycles, as well as annual variations in river conditions into account. The costs are calculated in 1994 dollars, which is the price level that was used in the recent study. As measured, the average annual maintenance costs increased from \$4.2 million to \$4.5 million, a seven percent increase. Since there was no change for the first cost indicator, and only a slight increase for the second cost indicator, the summary rating for costs is a minus sign to reflect increased costs despite the lack of change in the dredging cycles.

Although the summary ratings conflict, it is clear that the conclusion is that maintenance dredging should continue, and there is not a need for a detailed analysis. Since the previous benefit-to-cost ratio was so large (6.2 to 1), and the traffic has increased further, there is no doubt that the project remains justified.

Reach or Segment	Benefit Indicators	Current Operations	Trend (↑, ↓, NC)	Summary/Remarks
Entire Project	Total Tonnage (million Tons)	45.4	↑	
	Import Tonnage (million Tons)	21.4	↑	
	Crude Petroleum (million Tons)	17.9	↑	

CHANNEL MAINTENANCE COST HISTORY

Reach or Segment	Construction/ Acquisition		Dredging Cost (thousand dollars/year) (1995 Price Levels)						
	Year	Cost		1991	1992	1993	1994	1995	Ave.
Bar Channel			Dredging:	1,677	4,249	737.4	2,731	1,805	2,239.9
			Env. Studies:	79.1	31.3	137.3	113.8	50.0	82.3
			Disposal Site O&M:	0	0	0	0	0	0
			Total:	1,756	4,280	874.7	2,845	1,855	2,322.2
Mile 5 to 22			Dredging:	113.0	219.7	5,906	1,067	250.0	1,511.1
			Env. Studies:	4.1	34.2	0	53.0	10.0	20.3
			Disposal Site O&M:	0	0	0	0	0	0
			Total:	117.4	253.9	5,906	1,120	260.0	1,531.4
Mile 22 to 36			Dredging:	113.0	936.8	288.2	259.7	4,738	1,267.1
			Env. Studies:	0	0	15.5	3.3	1.0	3.8
			Disposal Site O&M:	0	0	0	0	0	0
			Total:	113.0	936.8	303.7	263.0	4,739	1,228.4

CHANNEL MAINTENANCE COST PROJECTIONS

Reach or Segment	Programmed Maintenance Cost (thousand dollars/year, consistent ten year project O&M maintenance schedule) (1995 Price Levels)	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE.
		Bar Channel	Dredging:	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240
	Env. Studies:	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	Disp. Site O&M:	0	0	0	0	0	0	0	0	0	0	0
	Total:	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320

CHANNEL MAINTENANCE COST PROJECTIONS (CONTINUED)

Reach or Segment	Programmed Maintenance Cost (thousand dollars/year, consistent ten year project O&M maintenance schedule) (1995 Price Levels)	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE.
		Mile 5 to 22	Dredging:	6,400	190.0	190.0	5,900	190.0	190.0	5,900	190.0	190.0
	Env. Studies:	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	Disp. Site O&M:	0	0	0	0	0	0	0	0	0	0	0
	Total:	6,420	210.0	210.0	5,920	210.0	210.0	5,920	210.0	210.0	6,420	2,594
Mile 22 to 36	Dredging:	200.0	200.0	900.0	200.0	5,000	200.0	200.0	900.0	200.0	5,000	1,300
	Env. Studies:	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	4.0
	Disp. Site O&M:	0	1,000	0	0	0	0	0	0	0	0	100.0
	Total:	210.0	1,210	910.0	210.0	5,010	210.0	210.0	910.0	210.0	5,010	1,404

4. Maintenance Dredging History

This project is divided into three reaches for the purposes of maintenance dredging. A fourth reach from mile 36.0 to Phillips Bluff (mile 85.9) is not addressed in this Dredged Material Management Plan since no dredging is done on this reach.

The lowest reach, the bar channel reach, is dredged annually. An average of 694,000 cubic yards per year (cy/yr) has been removed over the previous five years. We anticipate no changes in the required dredging over the next five years.

The next reach, mile 5 to 22, is dredged every third year. An average of 2,152,000 cy/yr has been removed over the previous five years. We anticipate no changes in the required dredging over the next ten years. However, the anticipated dredging chart indicates a significant increase in dredging requirements over the next ten years relative to the previous five years. This increase is indicated since only one dredging cycle is captured in the five year span used as the historical average (average cycle is once every five years) where 3 cycles are captured in the 10 year projection (average cycle is once every 3.3 years). The per cycle quantities are expected to remain constant.

The final reach, mile 22 to 36, is dredged every fifth year. A small portion of this reach at Devil's Elbow is dredged every 2-1/2 years. The Calcasieu River at Coon Island Project is located in this reach, but requires no maintenance. An average

of 1,262,000 cy/yr has been removed from this reach over the previous five years. We anticipate no change in dredging requirements over the next ten years for this reach.

DREDGING HISTORY

Reach or Segment	Primary Dredging Method	Dredging History (1,000 CY/Year)						Disposal Site Used
		1991	1992	1993	1994	1995	Ave.	
Bar Channel	Hopper	7,815	6,353	6,589	6,593	6,521	6,774	Channel
	Hopper	418.3	1,381	809.4	695.1	166.9	694.1	ODMDS
Mile 5 to 22	Cutter-head			138.5			27.7	12B
				907.1			181.4	13
				759.6			151.9	15
				692.3			138.5	16N
				78.6			15.7	17
				746.5			149.3	23
				687.2			137.4	A
				1,402			280.5	B-1
				801.8			160.4	B-2
				793.5			158.7	D&E
				1,156			231.3	K
				756.4			151.3	Brown Lk
		1,840			368.0	Sab. NWR		

DREDGING HISTORY (Continued)

Reach or Segment	Primary Dredging Method	Dredging History (1,000 CY/Year)						Disposal Site Used	
		1991	1992	1993	1994	1995	Ave.		
Mile 22 to 36	Cutter- head					88.5	17.7	1	
						321.4	64.3	2	
						356.4	71.3	3	
						246.2	49.2	4	
						615.6	123.1	7	
						268.5	53.7	8	
						394.8	79.0	9	
						158.3	31.7	10	
						103.5	20.7	11	
						518.1	103.6	12A	
				356.5			1,111	293.6	12B
				385.2			1,387	354.4	13

ANTICIPATED DREDGING:

Reach or Segment	Programmed Dredging (CY) (consistent with 10-year O&M maintenance plan)											Disposal Site(s) to be Used	
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Ave.		
Bar Channel	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	Channel
	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	ODMDS
Mile 5 to 22				100.0			100.0			100.0	30.0		12B
	680.0			600.0			600.0			700.0	250.0		13
				600.0			600.0			700.0	190.0		15
				600.0			600.0			700.0	190.0		16N
							300.0			350.0	65.0		16S
				100.0			100.0			100.0	30.0		17
							300.0			700.0	100.0		22
	380.0			600.0			600.0				158.0		23
	400.0										40.0		A
	700.0										70.0		B-1
	500.0										50.0		B-2
	380.0			700.0			700.0			1,350	275.0		D&E
				700.0			700.0			1,500	290.0		F
										350.0	35.0		H
										350.0	35.0		J
	160.0			700.0							86.0		K
100.0						800.0				90.0		N	
2,000			700.0							270.0		Brown Lake	
1,600			1,500			1,500				460.0		Sabine NWR	
Mile 22 to 36					90.0					90.0	18.0		1
					320.0						32.0		2
					350.0					350.0	70.0		3
					250.0					570.0	82.0		4
					615.0					615.0	123.0		7

ANTICIPATED DREDGING (Continued)

Reach or Segment	Programmed Dredging (CY) (consistent with 10-year O&M maintenance plan)											Disposal Site(s) to be Used	
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Ave.		
Mile 22 to 36					270.0						270.0	54.0	8
					400.0						400.0	80.0	9
					160.0						160.0	32.0	10
					100.0						100.0	20.0	11
					520.0						520.0	104.0	12A
			350.0		1,100			350.0			1,100	290.0	12B
			400.0		1,400			400.0			1,400	360.0	13

5. Dredged Material Disposal Site Capacity and Usage

Disposal areas 1-23 (including 2A, 12 A & B, and 16 N & S) are confined upland disposal areas located adjacent to the authorized channel between miles 36 and 16 of the Calcasieu River and Pass, Louisiana, project. Existing beneficial use of dredged material in this reach has consisted of pumping material dredged between miles 21 and 16.5 to Brown Lake and placing the material in a confined disposal area for marsh creation. This activity has resulted from a Fiscal Year 1993 Congressional Add, and it is anticipated that material dredged during the Fiscal Year 1996 dredging cycle will be disposed of in a similar manner under Section 204 of the Water Resources Development Act of 1992 (WRDA '92) as detailed in the feasibility report titled, Brown Lake, Louisiana. It is anticipated that there is enough capacity remaining to create marsh in Brown Lake for 2 additional dredging cycles. No other beneficial use alternatives have been identified for this reach.

Disposal areas A - O (including B-1 and B-2, but not including I and L) are confined, upland disposal areas located adjacent to the navigation channel between miles 16 and 5 of the Calcasieu River and Pass, Louisiana, project. Beneficial use of dredged material in this reach is limited to unconfined placement of the material in eroded areas of the Sabine National Wildlife Refuge for Marsh Creation. This action was undertaken in Fiscal Year 1993 under the authority of Section 1135 of the Water Resources Development Act of 1986 in accordance with the report titled Marsh Creation at Sabine National Wildlife Refuge dated March, 1992. It is anticipated that this beneficial use alternative will be undertaken again during the fiscal year 1996 dredging cycle under the authority of Section 204 of WRDA '92 as detailed in the report Sabine National Wildlife Refuge,

Louisiana, dated September, 1995. It is anticipated that there is enough capacity remaining at this site for 3 additional dredging cycles. No other beneficial use alternatives have been identified in this reach.

No disposal areas are located along the reach from Mile 5 to mile 0 (the shoreline) since no dredging is done in this reach of the Calcasieu River and Pass, Louisiana, project.

Material dredged from the Bar Channel Reach of the Calcasieu River and Pass, Louisiana, project are disposed of in the approved Ocean Dredged Material Disposal Site. No opportunities for beneficial use of dredged material in this reach are available.

DISPOSAL SITE DATA

Disposal Site(s)	Site Type	Disposal Site Capacity		Beneficial Uses (CY/Year)		Other Users	Disposal Site Sponsor (Y/N)
		Original (000 CY)	Percent Filled	Existing	Anti-cipated		
1	UC	600	15	None	None	None	Y
2	UC	650	49	None	None	None	Y
2A	UC	200	0	None	None	None	Y
3	UC	1,500	24	None	None	None	Y
4	UC	5,000	5	None	None	None	Y
5	UC	500	0	None	None	None	Y
6	UC	700	0	None	None	None	Y
7	UC	3,000	21	None	None	None	Y
8	UC	2,500	11	None	None	None	Y
9	UC	2,000	20	None	None	None	Y
10	UC	1,600	10	None	None	None	Y
11	UC	1,700	6	None	None	None	Y
12A	UC	4,200	12	None	None	None	Y
12B	UC	7,300	22	None	None	None	Y
13	UC	11,600	23	None	None	None	Y
14	UC	200	0	None	None	None	Y
15	UC	3,000	25	None	None	None	Y

DISPOSAL SITE DATA (CONTINUED)

Disposal Site(s)	Site Type	Disposal Site Capacity		Beneficial Uses (CY/Year)		Other Users	Disposal Site Sponsor (Y/N)
		Original (000 CY)	Percent Filled	Existing	Anti-cipated		
16N	UC	3,000	23	None	None	None	Y
16S	UC	2,500	0	None	None	None	Y
17	UC	2,700	3	None	None	None	Y
18	UC	50	0	None	None	None	Y
19	UC	600	0	None	None	None	Y
20	UC	200	0	None	None	None	Y
21	UC	300	0	None	None	None	Y
22	UC	2,000	0	None	None	None	Y
23	UC	2,600	29	None	None	None	Y
A	UC	1,087	63	137	20	None	Y
B-1	UC	2,102	67	280	35	None	Y
B-2	UC	1,301	62	160	25	None	Y
D & E	UC	7,500	11	None	None	None	Y
F	UC	6,000	0	None	None	None	Y
G	UC	1,000	0	None	None	None	Y
H	UC	2,000	0	None	None	None	Y
J	UC	1,000	0	None	None	None	Y
K	UC	3,000	39	None	None	None	Y
M	UC	6,000	0	None	None	None	Y
N	UC	4,500	0	None	None	None	Y
O	UC	1,200	0	None	None	None	Y
BROWN LAKE	WDC	3,500	22	151	137	None	Y
SABINE NWR	WDS	10,000	18	368	408	None	Y
AGITAT	OW	UNLIMIT	N/A	None	None	None	Y

DISPOSAL SITE DATA (CONTINUED)

Disposal Site(s)	Site Type	Disposal Site Capacity		Beneficial Uses (CY/Year)		Other Users	Disposal Site Sponsor (Y/N)
		Original (000 CY)	Percent Filled	Existing	Anti-cipated		
ODMDS	OW	UNLIMIT	N/A	None	None	None	Y
Sponsor(s) for Disposal Site(s)							
Name: Lake Charles Harbor and Terminal District							
Address: P. O. Box AAA							
City: Lake Charles				State: Louisiana		Zip: 70602	
Point of Contact: John Polansky				Phone #: (318) 439-3661			

KEY: UC = Upland Confined Disposal
OW = Open Water Disposal
WDC = Wetland Development, Confined
WDS = Wetland Development, Unconfined

PLACEMENT HISTORY

Disposal Site(s)	Primary Disposal Method	Placement History (1,000 CY/year)					
		1991	1992	1993	1994	1995	Ave.
1	CH	0	0	0	0	88.5	17.7
2	CH	0	0	0	0	321.4	64.3
2A	CH	0	0	0	0	0	0
3	CH	0	0	0	0	356.4	71.3
4	CH	0	0	0	0	246.2	49.2
5	CH	0	0	0	0	0	0
6	CH	0	0	0	0	0	0
7	CH	0	0	0	0	615.6	123.1
8	CH	0	0	0	0	268.5	53.7
9	CH	0	0	0	0	394.8	79.0
10	CH	0	0	0	0	158.3	31.7

PLACEMENT HISTORY (CONTINUED)

Disposal Site(s)	Primary Disposal Method	Placement History (1,000 CY/year)					
		1991	1992	1993	1994	1995	Ave.
11	CH	0	0	0	0	103.5	20.7
12A	CH	0	0	0	0	518.1	103.6
12B	CH	0	356.5	138.5	0	1,111	321.3
13	CH	0	385.2	907.1	0	1,387	535.8
14	CH	0	0	0	0	0	0
15	CH	0	0	759.6	0	0	151.9
16N	CH	0	0	692.3	0	0	138.5
16S	CH	0	0	0	0	0	0
17	CH	0	0	78.6	0	0	15.7
18	CH	0	0	0	0	0	0
19	CH	0	0	0	0	0	0
20	CH	0	0	0	0	0	0
21	CH	0	0	0	0	0	0
22	CH	0	0	0	0	0	0
23	CH	0	0	746.5	0	0	149.3
A	CH	0	0	687.2	0	0	137.4
B-1	CH	0	0	1,402	0	0	280.5
B-2	CH	0	0	801.8	0	0	160.4
D & E	CH	0	0	793.5	0	0	158.7
F	CH	0	0	0	0	0	0
G	CH	0	0	0	0	0	0
H	CH	0	0	0	0	0	0
J	CH	0	0	0	0	0	0

PLACEMENT HISTORY (CONTINUED)

Disposal Site(s)	Primary Disposal Method	Placement History (1,000 CY/year)					
		1991	1992	1993	1994	1995	Ave.
K	CH	0	0	1,156	0	0	231.3
M	CH	0	0	0	0	0	0
N	CH	0	0	0	0	0	0
O	CH	0	0	0	0	0	0
BROWN LAKE	CH	0	0	756.4	0	0	151.3
SABINE NWR	CH	0	0	1,840	0	0	368.1
AGITATE	HO	7,815	6,353	6,589	6,593	6,521	6,774
ODMDS	HO	418.3	1,381	809.4	695.1	166.9	694.1

KEY: CH = CUTTERHEAD DREDGE
HO = HOPPER DREDGE

6. Environmental Compliance

Environmental impacts associated with Calcasieu River dredging were assessed in a Final Environmental Impact Statement "Calcasieu River and Pass (including Salt Water Barrier), Coon Island, Devil's Elbow, Calcasieu River Basin, Louisiana, Continued Operation and Maintenance," filed with the Council on Environmental Quality on 11 March 1977. Environmental impacts associated with marsh restoration were assessed in an Environmental Assessment (EA) on marsh restoration at Brown's Lake and Sabine National Wildlife Refuge along with a signed Finding of No Significant Impact were distributed on 4 February 1992.

Adequate disposal sites and capacity exist for this project and no long-term problems are foreseen. Should disposal capacity be reached in the upper reach, the containment dikes will be raised to increase disposal capacity. Due to the presence of contaminants, retention time drives the size of disposal areas in the upper reaches. Sediments are tested periodically; no change in status of these contaminants is foreseen. In the middle reach, current projections show that placement of materials for only two more dredging cycles would be permitted for the Brown's Lake area based upon current state/private plans for marsh restoration. If no more sediment is allowed in Brown's Lake, it would be placed in existing

confined areas or on previously cleared upland sites. It is possible, though, that Brown's Lake would be able to accept more than the next two dredging cycles, but negotiations between the concerned parties including Louisiana Department of Wildlife and Fisheries, Amoco, and the Black Lake Hunting Club would be necessary. Additionally, future marsh restoration efforts in lower Calcasieu Lake may be severely limited by existing and proposed oyster leases in that area.

Cultural resources investigations and requirements for project disposal sites have been coordinated and cleared with the State Historic Preservation Officer. Plans and specifications for dredging contracts will continue to be reviewed by Corps cultural resources specialists to ensure that significant cultural resources are not impacted by the project. Approval of any off-site disposal areas is required prior to disposing of material.

One area of concern, however, is the Bar Channel offshore disposal site. This area has not been surveyed for submerged cultural resources. Maintenance dredging in this reach involves the removal of shoal material from the existing navigation channel and placing this sediment in previously utilized offshore disposal compartments. At least ten historic shipwrecks are recorded in the Corps of Engineers' submerged cultural resources database for this area. Information on these shipwrecks come from various historic documents and cartographic data. Additional shipwrecks may exist in the area since the area was a historic shipping route.

A submerged cultural resource survey was not recommended in the past since the proposed dredging would extend neither deeper, nor wider, than what had been previously dredged and that disposal material was to be placed in areas that had already been used for disposal. The short and long term impacts from placing dredge material on top of submerged cultural resources has never been fully assessed. Recently, however, there has been a move by the National Advisory Council on Historic Preservation and the State Historic Preservation Office to request survey coverage for these areas in order to state once and for all, that there are no impacts to any significant cultural resources. With this in mind, a submerged cultural resources survey may be conducted.

PROJECT COMPLIANCE

Reach or Segment	Document	Preparation Date	Expiration Date	Scheduled Update
Entire Project	EIS	11 Mar 77	None	None
	WQC	6 Feb 79	None	None
Brown Lake & Sabine NWR	EIS	4 Feb 92	None	None
	WQC	30 Apr 92	None	None

7. Conclusions

Material dredged from the Calcasieu River and Pass, Louisiana project is disposed of in various upland and open water disposal areas. We do not expect to encounter any problems in identifying adequate disposal areas over the next twenty years. Disposal capacity will be increased in areas with limited disposal area by raising the disposal dikes in those areas. Beneficial uses of dredged material for the Calcasieu River and Pass, Louisiana, project are limited to the marsh creation sites at Brown Lake and Sabine National Wildlife Refuge. We expect to fill these two sites within the next 3 dredging cycles, exhausting beneficial use options.

The ability to maintain this project for the next 20 years is limited by :

Disposal Site Capacity	N
Economic Viability	N
Environmental Compliance	N

8. Recommendations

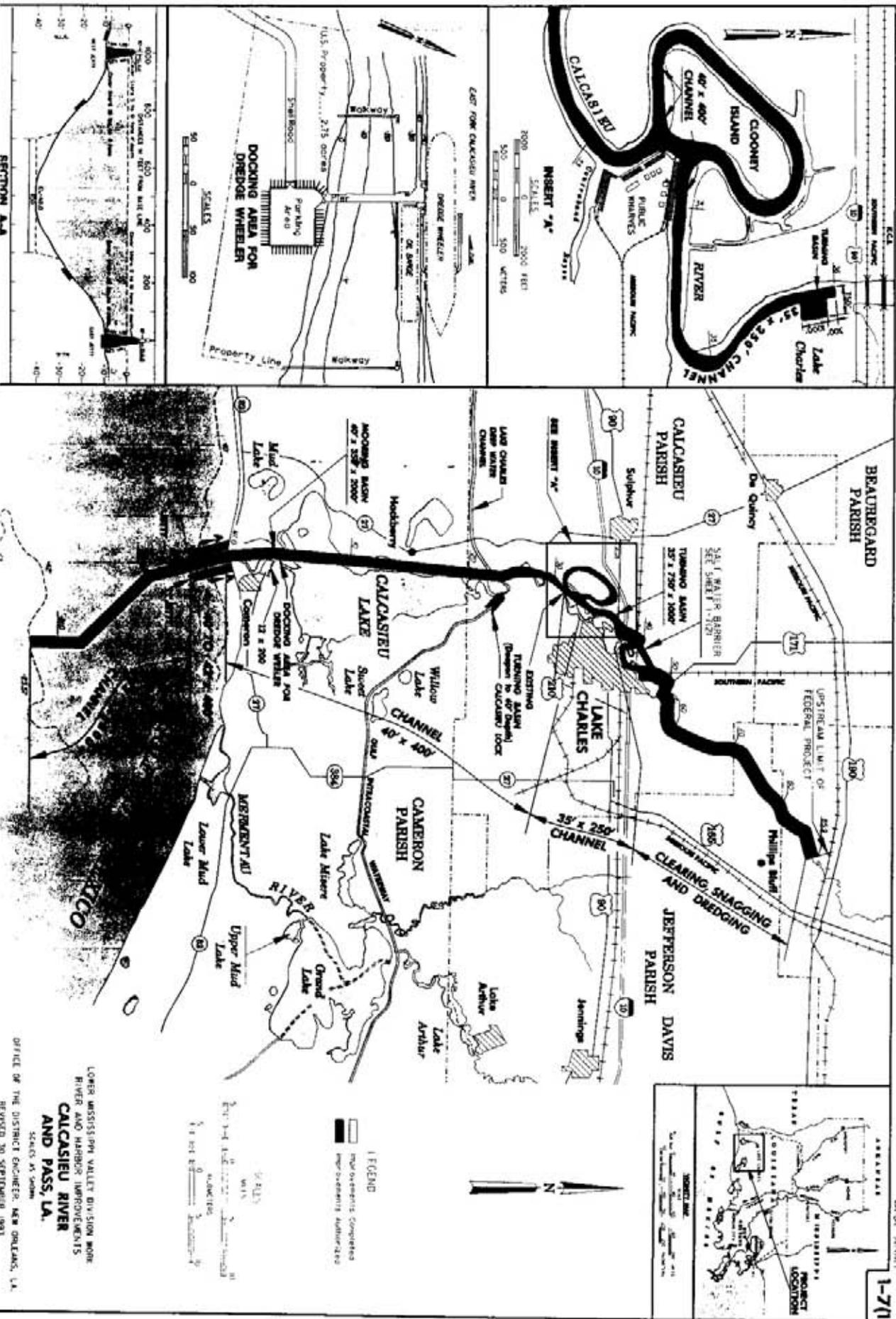
Continued maintenance of this project is warranted on the basis of project usage and indicators of economic productivity, sufficient disposal capacity available, and maintenance activities in compliance with environmental laws and regulations for the next 20 years. Therefore, no additional dredged material management plan is necessary beyond this assessment.



KENNETH H. CLOW
COLONEL, U. S. ARMY
DISTRICT ENGINEER

ECONOMIC ASSESSMENT WORKSHEET
FOR CONTINUED MAINTENANCE DREDGING

	ECONOMIC STATISTICS	AUTHORIZING STUDY	RECENT STUDY	CURRENT CONDITIONS	ASSESSMENT	SUMMARY
BENEFIT INDICATORS	TOTAL TONNAGE	*	44.0 MILL	45.4 MILLION	+	
	IMPORT TONNAGE	*	19.4 MILL	21.4 MILLION	+	+
	CRUDE PETROLEUM	*	17.0 MILL	17.9 MILLION	+	
COST INDICATORS	DREDGING CYCLES	*	1/2.5/5YRS	1/2.5/5 YEARS	0	
	AVG. ANN. MAINT.	*	\$4.2 MILL	\$4.5 MILLION	-	-
	PRICE LEVEL	*	1994	1994	0	
CONCLUSION	MAINTENANCE DREDGING FOR THIS PROJECT REMAINS JUSTIFIED					
	* - NOT APPLICABLE					



BEAUREGARD PARISH

CALCASIEU PARISH

CAMERON PARISH

JEFFERSON DAVIS PARISH

LAKES

CHANNELS

TURNING BASIN

DOCKING AREA

EXISTING TURNING BASIN

LAND OWNERS

PROPERTY LINE

WALKWAY

PARKING AREA

STAIRS

DOCK

DOCKING AREA FOR DREDGE WHEELER

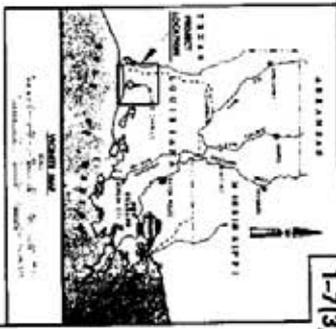
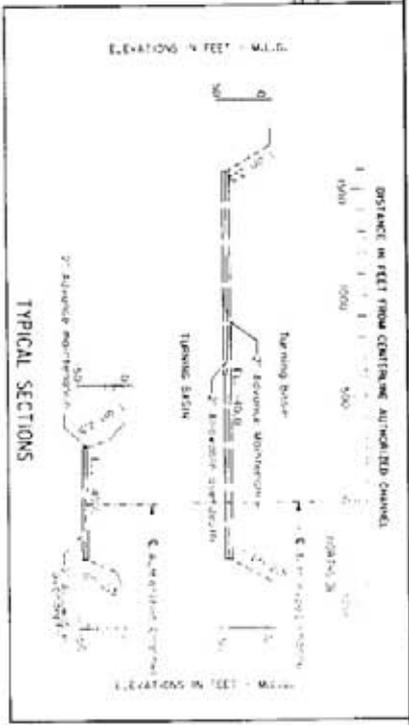
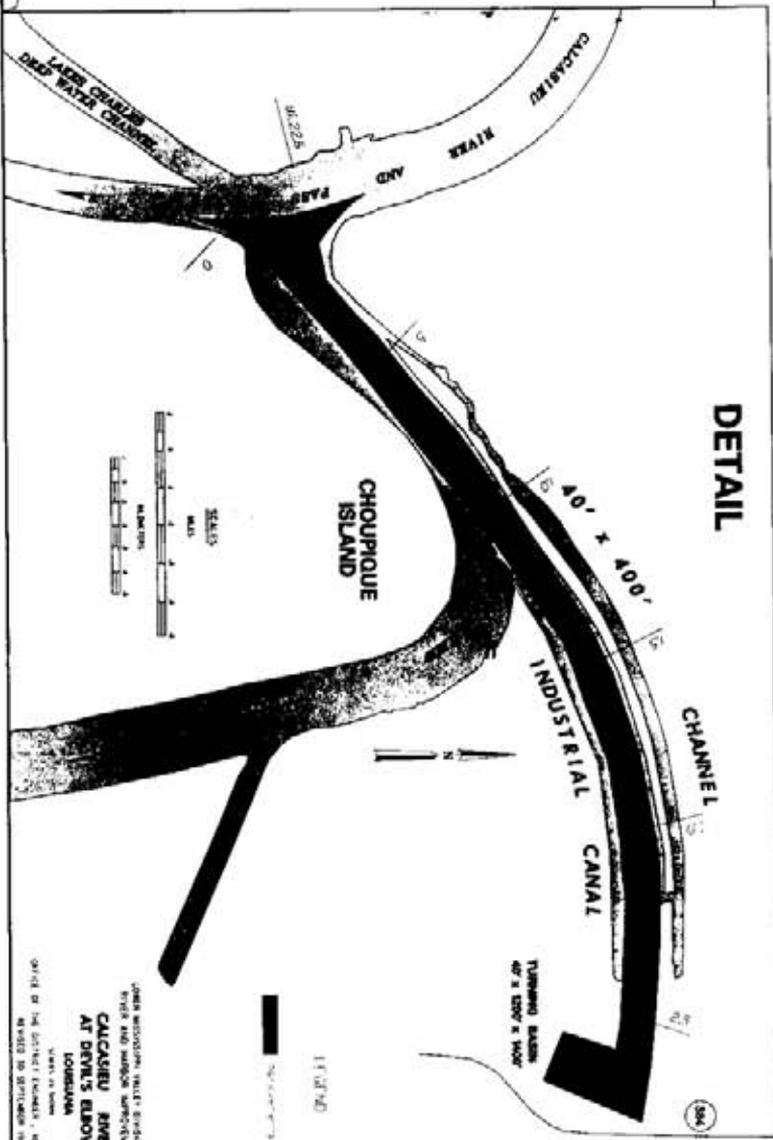
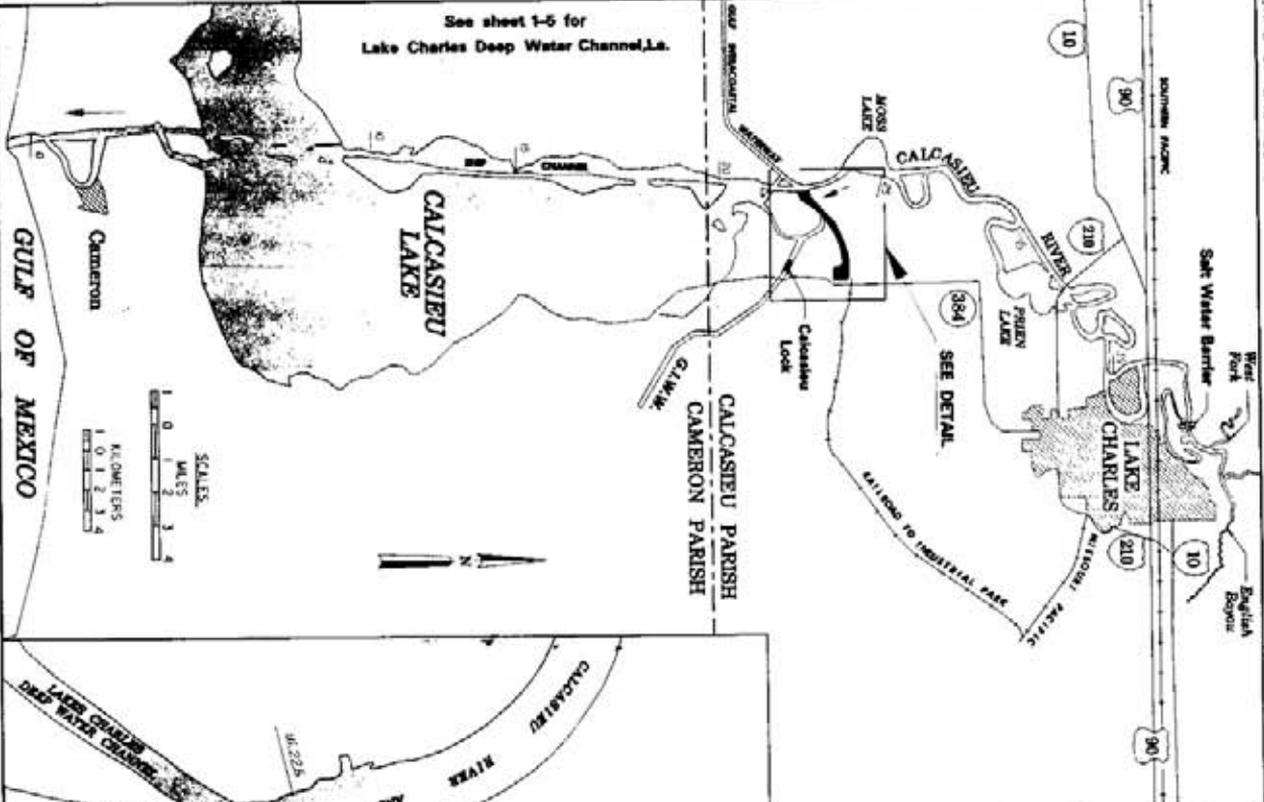
SECTION A-A

SCALE: AS SHOWN

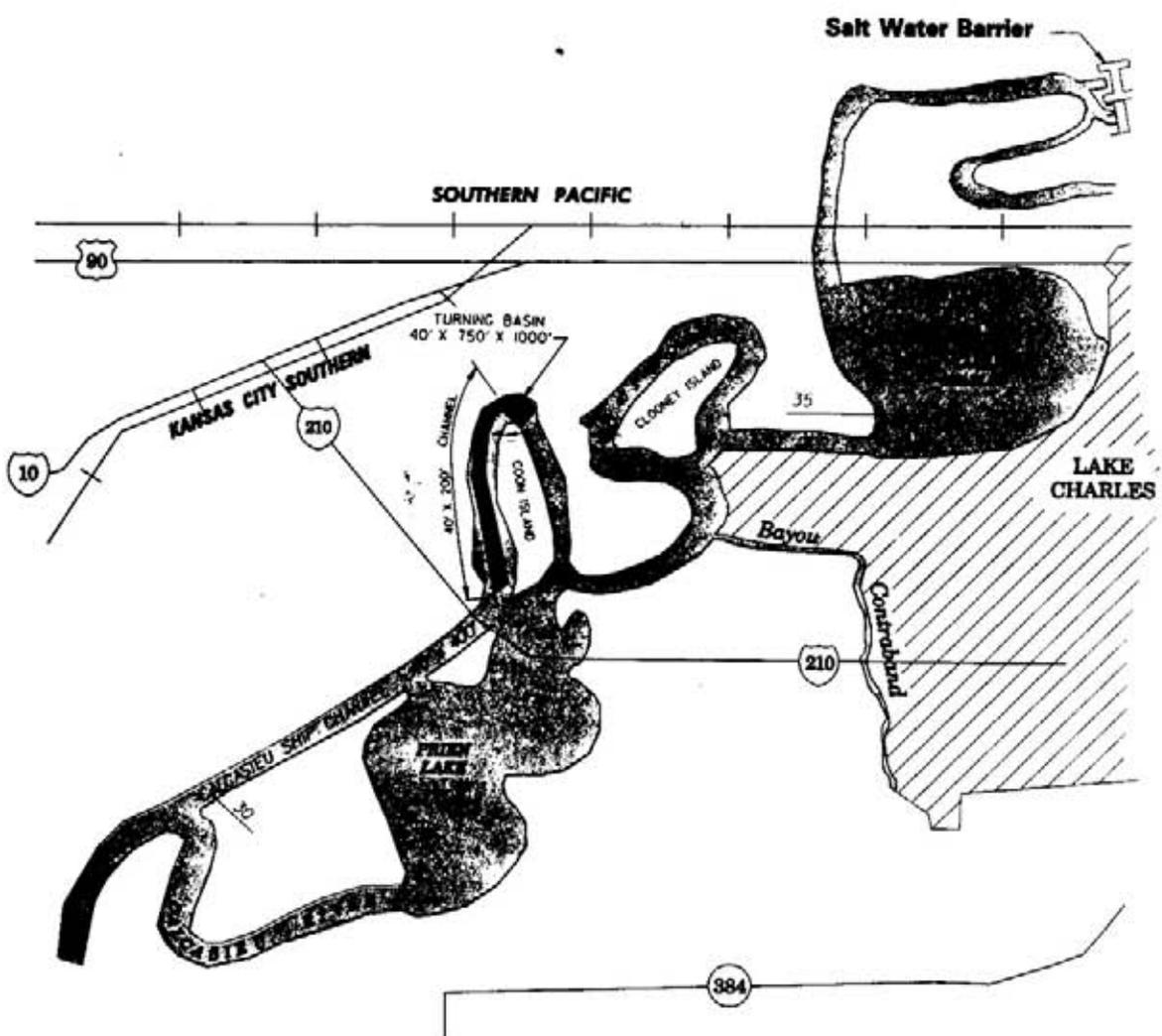
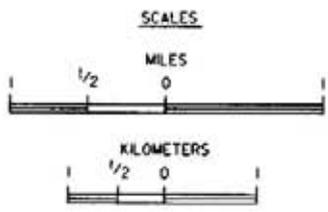
OFFICE OF THE DISTRICT ENGINEER, NEW ORLEANS, LA.

REVISION 20 SEPTEMBER 1993

DOCKING AREA FOR DREDGE WHEELER



JOHN WOODSON, TRUSTEES, NEW ORLEANS, LA.
 CIVIL ENGINEERS
 OFFICE OF THE DISTRICT ENGINEER, NEW ORLEANS, LA.
 DRAWING NO. 1-713 (REV. 1967)



LEGEND

Improvements completed

LOWER MISSISSIPPI VALLEY DIVISION WORK
RIVER AND HARBOR IMPROVEMENTS

**CALCASIEU RIVER
AT COON ISLAND
LOUISIANA**