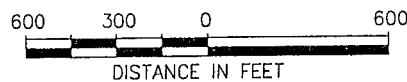


VICINITY MAP

GRAPHIC SCALE

LAT. 29° 55' 00"N
LONG. 90° 04' 16"W



8195-P1



LANIER & ASSOCIATES
CONSULTING ENGINEERS
INCORPORATED

NEW ORLEANS, LA

HOUSTON, TX

GRETNA

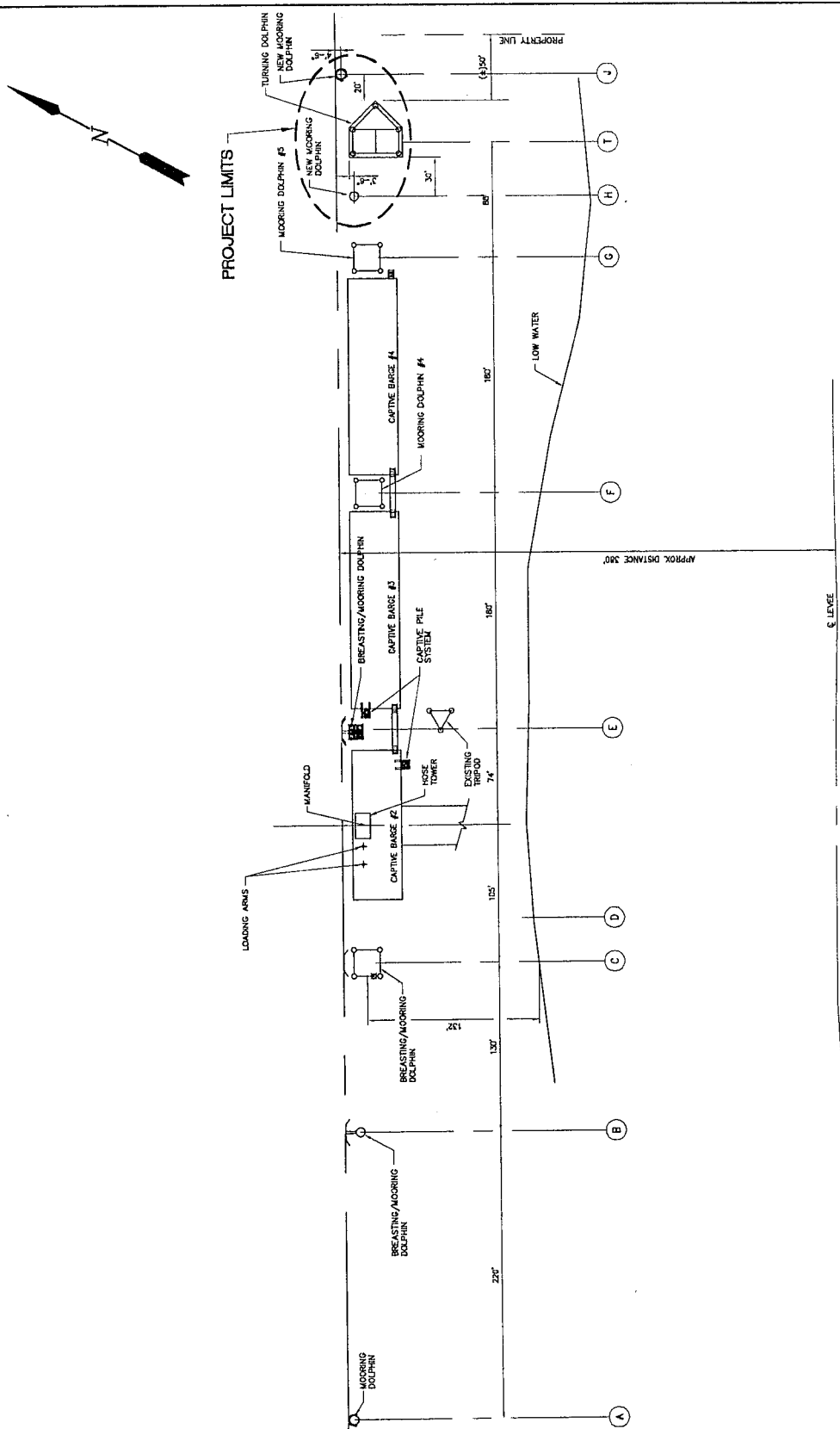
IMTT

LOUISIANA

**PROPOSED NEW DOWNSTREAM DOLPHINS
GRETNA DOCK FACILITY - DOCK UPGRADE
VICINITY MAP**

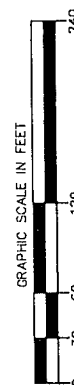
DATE JULY '10
DESIGN MER
DRAWN BSB
CHECK JEJ
CONTRACT 8195
SHEET No.

1 OF 5



FINAL SITE PLAN

SCALE: GRAPHIC



8195-P3



LANIER & ASSOCIATES
CONSULTING ENGINEERS
INCORPORATED

NEW ORLEANS, LA

BEAUMONT, TX

GRETTA

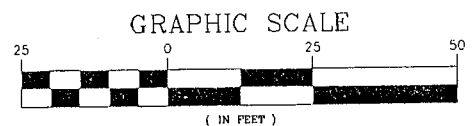
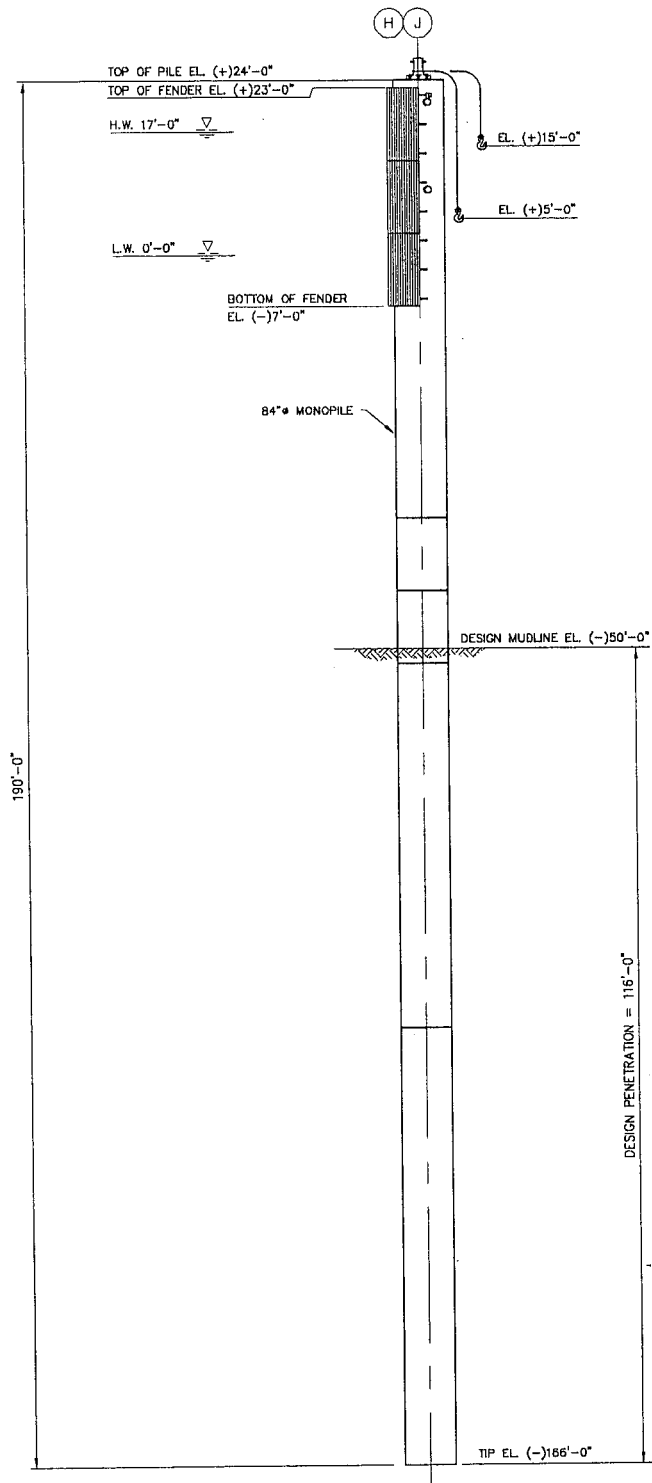
IMTT

LOUISIANA

**PROPOSED NEW DOWNSTREAM DOLPHINS
GRETTA DOCK FACILITY - DOCK UPGRADE
FINAL SITE PLAN**

DATE JULY '10
DESIGN MER
DRAWN BSB
CHECK JEJ
CONTRACT 8195
SHEET No.

3 OF 5



NEW DOLPHINS "H" & "J"

SCALE: GRAPHIC

8195-P4



LANIER & ASSOCIATES
CONSULTING ENGINEERS
INCORPORATED

NEW ORLEANS, LA

BEAUMONT, TX

GRETN

IMTT

LOUISIANA

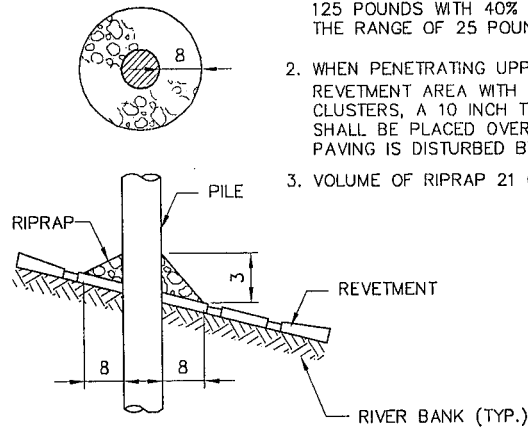
**PROPOSED NEW DOWNSTREAM DOLPHINS
GRETN DOCK FACILITY - DOCK UPGRADE
TYPICAL SECTION DOLPHINS "H" & "J"**

DATE JULY '10
DESIGN MER
DRAWN BSB
CHECK JEJ
CONTRACT 8195
SHEET No.

4 OF 5

NOTES:

1. SIZE OF RIPRAP TO VARY BETWEEN 6 POUNDS AND 125 POUNDS WITH 40% TO 60% OF THE STONE WITHIN THE RANGE OF 25 POUNDS TO 75 POUNDS.
2. WHEN PENETRATING UPPER BANK PAVING IN A REVETMENT AREA WITH PILES, CAISSONS AND/OR PILE CLUSTERS, A 10 INCH THICKNESS OF RIPRAP STONE SHALL BE PLACED OVER ALL AREAS WHERE BANK PAVING IS DISTURBED BY DRIVING OPERATIONS.
3. VOLUME OF RIPRAP 21 CUBIC YARDS.



DEPTH OF WATER IN FEET AT POINT OF PENETRATION AT TIME OF STONE PLACEMENT	DIMENSIONS IN FEET FOR PROTECTION AREA REQUIRED							
	PILE		CAISSON		SPUD PILE W/ ANCHOR CHAIN & BUOY		PILE CLUSTER	
	X	Y	X	Y	X	Y	X	Y
1 TO 10	3	1 1/2	5	2			3	1
11 TO 40	5	2	8	3	7	3	6	2
41 TO 60	8	3	12	4	12	4	10	3

REVTMENT REPAIR DETAIL

SCALE: N.T.S.

8195-P5



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CONSULTING ENGINEERS
INCORPORATED

NEW ORLEANS, LA

BEAUMONT, TX

GRETN A

IMTT

LOUISIANA

**PROPOSED NEW DOWNSTREAM DOLPHINS
GRETN A DOCK FACILITY - DOCK UPGRADE
REVTMENT REPAIR DETAIL**

DATE JULY '10
DESIGN MER
DRAWN BSB
CHECK JEJ
CONTRACT 8195
SHEET No.

5 OF 5