CEMVN-CD-NO-Q 21 August 2002

MEMORANDUM THRU Area Engineer, NOAO
C/ Construction Division
Attn: Contract Administration Branch

For: Chief, Engineering Division

SUBJECT: Contract DACW29-99-C-0046, Lake Pontchartrain, La. And Vicinity, High Level Plan, Jefferson Parish Lakefront Levee, Breakwaters at Pump Station No. 2 and No. 3, Jefferson Parish, La.

1. The subject contract dated 1 Jul 99 was awarded to Boines Construction and Equipment Company, Inc., 2402 Norman Street, Harvey, Louisiana 70058. The notice to proceed was issued on 26 Jul 99. The original completion date was set for 15 Feb 01, with a contract price at $9,689,431.40.

Significant dates and numbers related to the contract:

1. **Contract Award: 1 Jul 99**
2. **Pre-Construction Conference: 3 Aug 99**
3. **Notice to Proceed: 26 Jul 99**
4. **Substantially Complete: 16 Aug 01**
5. **Revised Completion: 22 May 01**
6. **Original Contract Amount: $9,689,431.40**
7. **Revised Contract Amount: $ TBD by modification**

2. Required work under this contract included: Construction of concrete breakwaters at Pumping Station #2 and Pumping Station #3. The Concrete breakwater consists of concrete piling, steel sheet piling, and a concrete deck. Other work involved is the dredging and backfilling of floatation channel, demolition of existing bike path, construction of new bike path, site cleaning and fertilizing and seeding.

3. The Pre-construction Meeting was held on Tuesday, 3 Aug 99, @ 1000 hours, in the New Orleans Area Office conference room. Detailed minutes of this meeting are located in the contract files.

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4. The Mutual understanding and Pre-work Safety meeting were held at the jobsite on Friday, 20 Aug 99. The project engineer, project inspector, contractor's superintendent and quality control manager briefly discussed the contractor's plans for initiating construction activities and specific items of the contract. During the Pre-work Safety meeting, the contractor's Accident Prevention Plan and Job Hazard Analysis were reviewed as well as the Corps' safety manual, EM385-1-1. Detailed minutes of these meetings are located in the contract files.

5. **Summary of items worked on this project:**

Mobilization and demobilization – The project began with the sub-contractor, C. F. Bean, mobilizing one dredge, Bean 11 and one towboat, Miss. Enola, to Pumping Station #3 (PS #3) on 20 August 99. Bean 11 is a spud barge equipped with a Manitowoc Crane and a 6-yard clamshell bucket. While dredging the floatation channel, the contractor then mobilized a trailer to the land work site at Pumping Station #3. Throughout the course of this project, cranes, tractors, dozers, backhoes, trucks barges (owned and leased), additional dredges and towboats were mobilized for this project, along with scarifiers, spreaders, and rollers.

Dredging – The first phase of the contract was dredging, which was performed by C.F. Bean Corporation. This operation began on 21 August 99. After the preparatory meeting and initial safety inspection of Bean 11, a spud barge equipped with a Manitowoc Crane and a 6-yard clamshell bucket, the contractor began laying out the floatation channels and spoil areas at both pumping stations and taking soundings. Once these areas were marked and sounded, Bean began dredging the floatation channel at PS#3 to an elevation of –5 to –8 NGVD. The dredged material was then stockpiled in the designated spoil area as shown on the drawings. On 16 September 99, a second dredge mobilized to the jobsite to assist in dredging operations. One dredge loaded dredged material into barges and the second dredge unloaded material into the spoil area. Dredging operations were continuous, only stopping for necessary fueling and maintenance until the floatation channel at P.S. #3 was completed. The sub-contractor then mobilized to P.S. #2 to dredge the floatation channel there. Dredging operations were completed on Friday, 8 October 99. When dredging operations were completed, soundings at PS #2 and PS #3 were taken to ensure proper depth was achieved.

After dredging the two sites, the sub-contractor demobilized the dredges from the worksite. However, when the concrete pilings were shipped to the jobsite, the barges ran aground in the floatation channel. Due to the long period of time between dredging operations and concrete piling being shipped to the jobsite, the floatation channels had silted in. This required the floatation channel to be re-dredged. Bean mobilized two dredges to start re-dredging the floatation channel at PS #2 on 10 Feb 00, working 24 hour operations, two 12 hour shifts until 14 Feb 00. At this time, we directed the contractor to dredge from 0600 hours until 2200 hours (CO-07), due to

complaints from neighbors. Dredging at both PS #2 and PS #3 were completed on Monday, 13 Mar 00.

When stone placement operations were to begin, the floatation channel had to again be re-dredged due to silting. Bertucci Contracting, who was sub-contracted to place the stone, performed the dredging operations. Bertucci mobilized two Bucyurus Erie crane barges, one with a 110' boom and 5 yd. bucket, and one with 100' boom and 4 yd. Bucket on 2 October 00. Bertucci completed dredging operations on 19 October 01.

16" Concrete Piles - A preparatory meeting was held at Gulf Coast Pre-stress, Gulfport, MS., for the 16" Concrete piling on 02 September 99. The first pile was cast 7 September 99, after casting procedures and pile beds were inspected and accepted.

Once enough piling were cast, sub-contractor Kostmayer Construction, mobilized their pile driving equipment. A crane barge with a Lima crane, Leads, Vulcan 506 hammer, and template accompanied by a barge with the first shipment of 16" concrete piles arrived at PS #3 on 21 December 99. Pile driving operations began on 22 December 99 at Pump Station #3. During excavation for the installation of the template, an obstruction was encountered. This obstruction was removed, and the template was set. The first pile was driven at PS #3 on 4 January 00. A total of 568 batter piles 61' long, and 2 vertical piles 60' long were driven at PS #3, with the final concrete pile driven on 20 March 00.

Concrete pile operations then proceeded to move to PS #2 on 21 March 00. Kostmayer decided to drive the concrete piles without the assistance of a template, and attempted to support the leads with a dozer. This resulted in the contractor driving some 11 piles out of tolerance. This would have later consequences because two of the piles would fall out of the required 10' wide deck resulting in the deck being changed to 11' for the first two monoliths, then gradually transiting back to the 10' when reaching the third monolith. Kostmayer then reverted back to using the template to drive the remaining pilings. A total of 413 batter piles at 82'5" long and 3 vertical piles 80'0" long were driven at PS #2.

All pile heads were removed with jackhammers to expose 4 180° hook bars, which were embedded in the structural concrete.

Sheet Piles – This phase of construction began with a preparatory meeting on 5 January 00, for the painting of the sheet piles at Poston's Painting, who painted the sheet piles. All sheet piles were white blasted for surface preparation, then painted with two coats of zinc epoxy E303d, then two coats of black coal tar epoxy C-200a. Sheet piles were painted as follows: 42' sheet piles were painted 6'6" with start paint minus 1' from top; 50' sheet piles were painted 13'6" with start paint minus 1', with minimum of 16 mil thickness.

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Preparatory meeting on installation of the sheet piles was held on 17 February 00, at the jobsite trailer, and at this time we stressed that all sheet piles were required by the contract to be delivered by barge only. First shipment of sheet piles arrived by barge at PS #3 on 21 February 00. With the aid of a template, the sheets were driven using a P & H crane with Vulcan 01 hammer, with first 42' sheet pile driven on 21 February 00 at PS #3. Approximately 1500' of 42' sheetpile were driven at PS #3, and approximately 1000' of 50' sheetpile were driven at PS #2.

Structural Concrete – Before placement of concrete, several issues were addressed about handrail installation and concrete mix design. The first issue came up at the pre-construction meeting. The contractor was concerned because the drawings did not include expansion joints for the handrails. Another issue brought about during the submittal process, was the installation of the handrails. The contractor proposed grouting the 1 1/2" ϕ reinforcing bar into the concrete rather than placing the bar into the fabricated aluminum spool. A modification (CO-06) was issued to allow for expansion joints and grouting of reinforcing bar. Prior to concrete placement, the contractor proposed using different concrete mix designs than prescribed by the contract. The contractor did not provide test results for this mix design, and it was agreed to have one placement and wait for the test results of the cylinder breaks. Concrete preparation began at PS #3 on 9 April 00. Monoliths were approximately 60' in length, but varied since expansion joints were required to fall on a sheet pile interlock. Kostmayer Construction prepared all formwork and sub-contractor, Choctaw Steel, installed all reinforcement. The contractor elected to core drill for handrails rather than block out. Monolith Sections 1, 2, and 3 were placed on 9 June 00 by pump truck. The remaining monolith sections were placed using the following method: five two yard concrete buckets were loaded onto a transport barge and winched out to an awaiting barge and then unloaded, using a crane barge, into the monolith section. All concrete was cured using a concrete curing compound. The last section (24^{th}) was placed at PS #3 on 16 December 00.

At PS #2, the monolith design required a handicap ramp, with a 1V on 12H slope, which would start from the new bike bath. The first concrete placement at PS #2 was on 30 August 00, beginning at section 3 instead of section 1 due to, the previously mentioned, misaligned concrete piles. As mentioned previously, the contractor's corrective action was to make the first 2 sections 11' wide, and transition into 10' at section 3. Final placement of concrete at PS #2 was on 2 February 01.

Breakwater Stone, Pump Station Stone and Geotextile: A preparatory meeting was held on 29 September 2001, with Bertucci Contracting, who performed all operations associated with the stone placement. As stated previously, Bertucci mobilized two Bucyurus Erie crane barges, one with a 110' boom and 5 yd. bucket, and one with 100' boom and 4 yd, and proceeded to use the same equipment to place the stone. The reinforcing geotextile was placed in the water and pinned with small amounts of mud or stone until the full section of stone could be constructed on top. A full 5' lap was maintained by the contractor and was controlled by physical measurement of the cloth.

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The Breakwater Stone was placed on top of the geotextile to a height of 36" using the cranes and buckets, and was placed 36' out from the center of the breakwater. The stone placed directly under the breakwater was placed with the crane and then maneuvered behind the concrete piling using a Link Belt 3400 excavator. Prior to installation of Pump Station Stone, Bertucci requested that we revise the limits of Pump Station Stone because it would be easier to mobilize to another contract that Bertucci was working on in the same channel. Modifications (CIN 19 and 26) were issued to add geotextile under the Pump Station Stone and change the limit of Pump Station Stone. The Pump Station Stone was placed in the same manner as Breakwater Stone and was placed in the pumping station's channel as shown on the drawings. A total of 33,367 Tons of Breakwater Stone were placed at both breakwaters, and a total of 4,154 Tons of Pump Station Stone were placed at Pumping Station #3.

Handrails: The aluminum handrails were fabricated by F & K Fabricators, of Belle Chase, La. The handrails were shipped to Pumping Station #3 on 18 April 2001, by flat bed truck. Since the concrete monoliths were not exactly 60', because of expansion joints, the corresponding shop drawings were designed to account for different lengths. The first two sections were 20' and the third section was designed specifically for each monolith's length. As discussed previously, a modification changed the original handrail design from a fabricated aluminum spool to a grouted reinforcing bar. Instead of forming the holes for the handrails, the contractor elected to core drill the holes for the reinforcing bar. Using the shop drawings the locations of the posts were marked and core drilled. Once drilled, the sections were field welded together and placed into the cored holes for grouting. Over 5,000 linear feet of handrail was placed on the concrete breakwaters with work concluding on 16 August 2001. During installation of the handrails, a change order (CO-10) was issued to move the handrail 9" closer to the outer edge of the concrete.

Clearing and Grubbing and Semi-Compacted Fill: Prior to any clearing and grubbing of the bike paths at PS #2 and PS #3, a modification (A00027) was issued concerning the slope of the path at PS #3 shown on the drawings. East Jefferson Levee District requested this modification to change alignment of the bike path in order to reduce the 1V on 12H slope. A preparatory meeting was held on 6 March 2001, with sub-contractor, Rockport, on the semi-compacted fill. This phase of work began on 16 March 2001, with the surveyor laying out the bike paths at both pumping stations. Rockport mobilized to the borrow pit at Bonne Carre on 25 April 2001. There was some lapse of time between the layout of the bike paths and the clearing and grubbing because of contractor and sub-contractor problems. The clearing and grubbing operations finally began on 9 July 2001, and once the clearing and grubbing operations were complete, the contractor began hauling semi-compacted fill from the borrow pit to the project site. Using a caterpillar D-5 dozer, the semi-compacted fill was placed in 12-inch lifts and then compacted to a density of 90%. This phase of work was completed on 17 September 2001.

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Asphalt Bike Path: On 14 September 01, the contractor held a preparatory meeting on the bike paths. All clearing, grubbing and semi-compacted fill operations were complete and the paths were ready for asphalting. Barriere Construction, was sub-contracted to place the asphalt. The operations began on 20 September 2001, with the placing of the base course. The contractor achieved over 100% compaction and then sprayed a tack coat on the base course in preparation for the binder course. On 27 September 2001, asphalt operations began and both pumping stations were completed by the end of the day. The contractor used a caterpillar 10' paver and two rollers to complete the paving work.

Navigational Aids: Once dredging operations began, a modification (A00002) was issued to install temporary bouys, marking the spoil area dike at both pump stations. There were several navigational aids installed on this job, and instead of having a preparatory for each item the items were addressed at several preparatory meetings. The first navigational aid installed was the temporary warning signs installed at 300' intervals marking the floatation channel. These signs were installed using the crane barge that drove the concrete piling. These temporary signs were later changed to permanent and are now part of the warning system. The second navigational aid installed on this project was the permanent warning signs, which were installed on the outside edge of the stone and were installed at the points of intersection (PI) of the breakwater on both sides and at the ends of the breakwaters. A total of 12 signs were placed at both breakwaters. These signs were likewise installed using the crane barge. The third navigational aid was the warning lights, which were installed during concrete operations. The lights consisted of FA 249 flashing photocell lanterns. Three lanterns were installed at PS #3, one at the end of breakwater, and one at each PI, and two lanterns were placed at PS #2, one at the end of breakwater and another at the second PI. A modification (A00026) was issued to extend the lights 7' rather than the initial 4' as shown on the drawings. Finally, a modification (A00023) was issued to install warning signs on the handrails. These signs were installed at 300' intervals and a total of six signs were placed at PS #3 and four were placed at PS #2.

Chain Link Fencing and Gates: A preparatory was held on 1 November 00. Sub-contractor, Scott Fence, performed all work associated with this item. Operations began on 2 November 00, at PS #3 and work concluded on 23 February 01. The contractor chose to core drill for the fence posts, and once holes were cored the fence posts were set using Sikadur 35 Hi-mod grout. The fence runs along both sides of the breakwaters for the first 100'. The fence also includes a gate at the entrance to the breakwaters that swings 180°.

Fertilizing, Seeding and Mulching: A preparatory meeting was held on fertilizing, seeding and mulching on 2 October 01. Sub-contractor, Fastgrass, performed all fertilizing, seeding and mulching operations. Using a mechanical broadcatser, the contractor spread the fertilizer, seed and mulch as a mix. On 8 October 01, Fastgrass applied the fertilizer, seed and mulch mix at PS#3 and on 10 October 01, completed

operations at PS #2. All disturbed areas were sprayed with the fertilizer, seed and mulch, and within days of application all areas produced favorable results.

6. Comparison of contract estimated quantities and actual quantities:

Item	Description	Contract Quantity	Unit Price	Estimated Amount	Actual Quantity	Actual Amount
0003	Semi-compacted Fill	6,800 CY	$15.18	$103,224.00	2,454 CY	$37,251.72
0006	Pre-stressed Concrete Piles	69,520 LF	$30.98	$2,153,729.60	69,520 LF	$2,153,729.60
0007	Z-type Steel Sheet Piling	104,200 SF	$14.55	$1,516,110.00	106,026. 51 SF	$1,542,685.72
0010	Geotextile	23,050 SY	$5.00	$115,250.00	23,413 SY	$117,065.00
0011	Breakwater Stone	28,120 TON	$35.94	$1,010,632.80	33,367 TON	$1,199,209.98
0012	Pump Station Stone	6,600 TON	$25.00	$165,000	4,154 TON	$103,850.00

7. A modification report is included with this narritive.

8. Subcontractors Performing work on this contract along with there responsibilities were as follows:

   a. Kostmayer Construction, Inc., 2112 Veterans Blvd., Metairie, La. 70002. Performed all concrete and sheet pile driving, concrete placement, installation of navigational aids and handrail installation.

   b. C. F. Bean Corporation, 619 Engineers Road, Belle Chasse, La. 70037. Performed dredging of floatation and pump station channels.

   c. Bertucci Contracting Corp., P.O. Box 10582, Jefferson, La. 70181. Performed all stone work.

   d. F & K Fabricators, 1907 Engineers Rd., Belle Chasse, La. 70037. Fabricated all handrails.

   e. Barriere Construction Co., 430 Notre Dame Street, P.O. Box 2430, New Orleans, La. 70176. Performed asphalt work for both bike paths.

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f. Scott Fence Inc. Installed fence and gates.

g. Rockport. Performed all clearing and grubbing and semi-compacted fill.

9. The contractor submitted and enforced an adequate Safety and Accident Prevention Program. The contractor was cooperative in the performance of the work and performed daily safety inspections. In addition to holding weekly safety meetings with their entire crew, bi-weekly safety inspections were conducted, and records of these and other safety inspections are contained in the project files. There was one lost time accident on 15 January 2000, throughout the duration of the contract.

10. The contractor submitted and enforced an adequate Environmental Protection Plan. The contractor also conducted daily inspections, and noted these in their daily QC Reports throughout the life of the contract.

11. A copy of the as-built drawings is included with this narrative.

William R. Rossignol
Project Engineer

CF:
Project Engineer (Rossignol)
Office Engineer W/As-Built ([redacted])
CEMVN-CT
CEMVN-ED-TF W/As-Built (Desoto)
CEMVN-CD-CS (Wagner)
CEMVN-ED-C
CEMVN-CD-Q
CEMVN-PM-E

Mod Log Report

ContractNumber 99C0046 L PONT BREAKWATERS PS 2 & 3

Modification Number	CIN	Change Description	Status	Reason	Modification Amount	Obligation Amount	Other Time	Severe Weather Time	River Time	Signature Date
	005	DEFINS CO-03 PROHIBITING HYD DREDGE	Awaiting Audit Report	Engineering Change	$0.00	$0.00	27	0	0	
	014	VARIATION ON STONE GRADATION.	Cancelled	Engineering Change	$0.00	$0.00	0	0	0	
	015	DEFINITIZE CO-09; SHORTEN SHEET PILES AT PS #2 DUE TO OBSTRUCTION	Cancelled	Engineering Change	$0.00	$0.00	0	0	0	
	017	REINSTALLATION OF BOUYS	Cancelled	Construction Change	$0.00	$0.00	0	0	0	
A00001	CO-004	POSTPONE DREDGING AT PS #2	Finalized	Construction Change	$0.00	$0.00	0	0	0	10/5/1999
A00002	CO-005	ADD MORE BUOYS	Finalized	Construction Change	$0.00	$0.00	0	0	0	10/14/1999
A00003	006	ADDITION OF "PAYMENT FOR MATERIALS STORED OFF-SITE" CLAUSE	Finalized	Construction Change	$0.00	$0.00	0	0	0	11/12/1999
A00004	TE-001	USW (ROUGH SEAS) FOR THE PERIOD 27 JUL 99 THRU 30 NOV 99	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	0	4	12/14/1999
A00005	001	DEFINITIZATION OF CO-01 THAT ADDED BOUYS TO MARK FLOTATION CHANNEL.	Finalized	Engineering Change	$30,523.07	$0.00	0	0	0	1/27/2000
A00006	002	DEFINITIZATION OF CO-02 THAT SHIFTED ALIGNMENT OF BREAKWATER AT P.S. NO.2	Finalized	Engineering Change	$79,315.67	$0.00	10	0	0	2/2/2000
A00007	CO-007	PROHIBIT DREDGING AT NIGHT.	Finalized	Suspension of Work and Term for Conv	$0.00	$0.00	0	0	0	2/15/2000
A00008	CO-008	REDREDGE FLOTATION CHANNEL @ PS NO. 3	Finalized	Construction Change	$0.00	$0.00	0	0	0	2/29/2000
A00009	004	DEFINITIZES CO-05, MORE BUOYS.	Finalized	Engineering Change	$54,620.79	$0.00	4	0	0	3/10/2000

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Modification Number	CIN	Change Description	Status	Reason	Modification Amount	Obligation Amount	Other Time	Severe Weather Time	River Time	Signature Date
A00010	TE-002	ROUGH SEAS (12/1/99 - 2/29/00)	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	0	3	4/10/2000
A00011	008	REMOVAL OF UNDERGROUND OBSTRUCTIONS FOUND ON 12/29/99	Finalized	Differing Site Condition	$35,623.95	$0.00	2	0	0	4/25/2000
A00012	012	REMOVAL OF OBSTRUCTIONS AT PS #2	Finalized	Engineering Change	$14,058.39	$0.00	0	0	0	4/25/2000
A00013	013	SHORTENING OF STEEL SHEETPILES	Finalized	Engineering Change	$24,688.30	$0.00	0	0	0	4/25/2000
A00014	CO-009	SHORTEN SHEET PILES DUE TO OBSTRUCTION @ PS #2	Cancelled	Differing Site Condition	$0.00	$0.00	0	0	0	
A00015	TE-003	USW (3/1/00 - 5/31/00)	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	0	2	8/4/2000
A00016	016	ALLOWS AGGREGATE ROAD AS AN OPTION TO TRUCK WASH RACKS, CIN 16	Finalized	Administrative	$0.00	$0.00	0	0	0	9/20/2000
A00017	TE-005	(10/01/00-12/31/00) OCT 4 DAYS;NOV 2 DAYS; DEC 1-DAY	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	0	7	2/1/2001
A00018	018	CUTTING SHEETPILES AT PUMPING STATION #2	Finalized	Differing Site Condition	$6,537.19	$0.00	0	0	0	2/5/2001
A00019	TE-004	(06/01/00 - 09/30/00) USW & HLS, 8-DAYS	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	3	5	2/23/2001
A00020	CO-010	CHANGE LOCATION OF HANDRAILS TO 9 INCHES FROM EXTERIOR EDGE OF CONCRETE.	Finalized	Engineering Change	$0.00	$0.00	0	0	0	4/26/2001
A00021	TE-006	(01/01/01-03-31-01) JAN 1-DAY, FEB 2-DAYS	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	3	0	7/10/2001
A00022	TE-007	(4/1/01-6/30/01) USW, APR 1-DAY MAY 1-DAY	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	2	0	7/10/2001
A00023	020	REDREDGING THE FLOATATION CHANNEL AT PUMPING STATIONS' #2 AND #3 IN ORDER TO FLOAT IN EQUIPMENT TO PLACE STONE.	Finalized	Construction Change	$59,300.00	$0.00	0	0	0	9/27/2001

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Modification Number	CIN	Change Description	Status	Reason	Modification Amount	Obligation Amount	Other Time	Severe Weather Time	River Time	Signature Date
A00023	022	ADD SIGNAGE TO THE BREAKWATER HANDRAIL SYSTEM	Finalized	Miscellaneous Change	$4,300.00	$0.00	0	0	0	9/27/2001
A00024	019	PLACE GEOTEXTILE IN OUTFLOW CHANNEL OF PS #3	Finalized	Engineering Change	$9,600.00	$0.00	0	0	0	9/27/2001
A00024	026	CHANGE LIMIT OF WORK IN CONJUNCTION WITH A LOCATION/QUANTITY CHANGE IN PUMP STATION STONE	Finalized	Miscellaneous Change	($61,150.00)	$0.00	0	0	0	9/27/2001
A00025	TE-008	(7/1/01-9/30/01) USW, AUG 17-DAYS, SEP 1-DAY	Finalized	Excusable Delays (No Fault)	$0.00	$0.00	0	18	0	12/20/2001
A00026	025	FENCE EXTENSIONS & CHANGES TO MARINE WARNING LIGHTS	Finalized	Engineering Change	$5,544.22	$0.00	0	0	0	12/20/2001
A00027	021	REVISE THE BIKE PATH AT PUMPING STATION NO. 3	Finalized	Miscellaneous Change	$14,578.00	$0.00	0	0	0	12/20/2001
A00028	CAN-01	ADMINISTRATIVE CHANGE TO CORRECT LINE ITEMS FOR MOD A00026, CIN-25, SIGNATURE DATE 12/20/2001	Modification being Processed	Administrative	$0.00	$0.00	0	0	0	1/28/2002
A00029	024	DEFINITIZE CO-10, REVISE HANDRAIL LAYOUT	Finalized	Engineering Change	$16,000.00	$0.00	4	0	0	1/31/2002
FD-001	FD-001	COMMITTED FUNDS	Pending Obligation	Administrative	$0.00	$437,992.00	0	0	0	
FP-001	FP-001	PROGRAMMED	Finalized	Administrative	$1,401.66	$0.00	0	0	0	3/1/2002
P00001	CO-001	ADD SPOIL AREA MARKERS (BOUYS).	Finalized	Engineering Change	$0.00	$0.00	0	0	0	9/2/1999
P00002	FM-001	FUNDING MOD +$150,000.00	Finalized	Administrative	$0.00	$150,000.00	0	0	0	9/3/1999
P00003	CO-002	SHIFT THE ALIGNMENT OF THE BREAKWATER LOCATED AT PUMP STA NO. 2	Finalized	Engineering Change	$0.00	$0.00	0	0	0	9/3/1999
P00004	CO-003	PROHIBIT HYDRAULIC DREDGING	Finalized	Engineering Change	$0.00	$0.00	0	0	0	9/10/1999
P00005	FM-002	FUNDING MOD +$700,000.00	Finalized	Administrative	$0.00	$700,000.00	0	0	0	9/10/1999
P00006	FM-003	FUNDING MOD +$750,000.00	Finalized	Administrative	$0.00	$750,000.00	0	0	0	10/7/1999

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Modification Number	CIN	Change Description	Status	Reason	Modification Amount	Obligation Amount	Other Time	Severe Weather Time	River Time	Signature Date
P00007	FM-004	FUNDING MOD +$989,425.00	Finalized	Administrative	$0.00	$989,425.00	0	0	0	10/26/1999
P00008	FM-005	FUNDING MOD +$1,000,000.00	Finalized	Administrative	$0.00	$1,000,000.00	0	0	0	11/19/1999
P00009	XX-XX1	CANCELLED	Cancelled	Engineering Change	$0.00	$0.00	0	0	0	
P00010	CO-006	CHANGES TO THE HANDRAIL DESIGN (There's no P9)	Finalized	Engineering Change	$0.00	$0.00	0	0	0	2/1/2000
P00011	FM-006	FUNDING MOD +$500,000.00	Finalized	Administrative	$0.00	$500,000.00	0	0	0	2/15/2000
P00012	FM-007	FUNDING MOD +$420,000.00	Finalized	Administrative	$0.00	$420,000.00	0	0	0	2/28/2000
P00013	FM-008	FUNDING MOD +2,350,000.00	Finalized	Administrative	$0.00	$2,350,000.00	0	0	0	4/4/2000
P00014	01A	PROVIDES PARTIAL PAYMENT FOR A1, A7, A8, & CIN-09 (SEE P00019 FOR TOTAL CHANGE)	Finalized	Engineering Change	$0.00	$0.00	0	0	0	6/8/2000
P00015	FM-009	FUNDING MOD - CCC	Finalized	Administrative	$0.00	$36,600.00	0	0	0	8/29/2000
P00016	FM-010	FUNDING MOD - VEQ & CCC	Finalized	Administrative	$26,575.72	$113,874.00	0	0	0	9/13/2000
P00017	FM-011	FUNDING MOD - CCC	Finalized	Administrative	$0.00	$100,000.00	0	0	0	9/14/2000
P00018	FM-012	FUNDING MOD - CCC	Finalized	Administrative	$0.00	$326,000.00	0	0	0	9/27/2000
P00019	003	SETTL'MNT OF CO-04. ADD'L MOB & DEMOB OF DREDGE TO MINIMIZE SILTATION OF PUMP STA NO. 2 FLOTATION CHANNEL.	Finalized	Construction Change	$45,789.00	$0.00	29	0	0	10/12/2000
P00019	009	REDREDGING OF CHANNEL FOR PS#2 (RFP)	Finalized	Miscellaneous Change	$166,021.00	$0.00	0	0	0	10/12/2000
P00019	010	DEFINITIZES CO-7 - PROHIBIT DREDGING AT NIGHT	Finalized	Construction Change	$221,893.00	$0.00	0	0	0	10/12/2000
P00019	011	DEFINITIZES CO-08 REDREDGE @ PS NO. 3	Finalized	Miscellaneous Change	$316,297.00	$0.00	0	0	0	10/12/2000
P00020	FM-013	FUNDING MOD - CCC	Finalized	Administrative	$0.00	$280,000.00	0	0	0	10/26/2000
P00021	FM-014	FUNDING MOD - CCC - $1,700,000	Finalized	Administrative	$0.00	$1,700,000.00	0	0	0	11/16/2000
P00022	FM-015	FUNDING MOD - CCC - $750,000.00	Finalized	Administrative	$0.00	$750,000.00	0	0	0	2/9/2001

ContractNumber 99C0046 **L PONT BREAKWATERS PS 2 & 3**

Modification Number	CIN	Change Description	Status	Reason	Modification Amount	Obligation Amount	Other Time	Severe Weather Time	River Time	Signature Date
P00023	007	DEFINITIZATION OF CO-06, CHANGES TO THE HANDRAIL DESIGN. (Unilateral)	Finalized	Engineering Change	$49,958.00	$0.00	0	0	0	3/30/2001
P00024	FM-016	FUNDING MOD - CCC & VEQ	Finalized	Administrative	$188,990.52	$234,466.00	0	0	0	3/26/2001
P00025	023	REDUCE LD'S	Finalized	Administrative	$0.00	$0.00	0	0	0	8/14/2001
P00026	FM-017	FUNDING MOD, $62,008	Finalized	Administrative	$0.00	$62,008.00	0	0	0	10/23/2001
		Summation for those having Status Code equal to "M"			$1,310,465.48	$10,462,373.00	49	26	21	
							Total Time 96			
		Summation for all Mods other than Status Code "X"			$1,310,465.48	$10,900,365.00	76	26	21	
							Total Time 123			

Current Contract Price (including signed mods and all variations): **$10,999,896.88**

Current Contract Obligation (including only signed mods): **$10,962,373.00**

Current Scheduled Completion (including only signed mods): **22-May-01**

PLANS FOR

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

HURRICANE PROTECTION

HIGH LEVEL PLAN

JEFFERSON PARISH, LA.

JEFFERSON PARISH

LAKEFRONT LEVEE

BREAKWATERS AT

PUMPING STATIONS NOS. 2 AND 3

"As-Built"

DRAWINGS IN THIS FOLIO
HAVE BEEN REDUCED ONE
HALF THE ORIGINAL SCALE

US Army Corps
of Engineers
New Orleans District
1998

H-4-44967

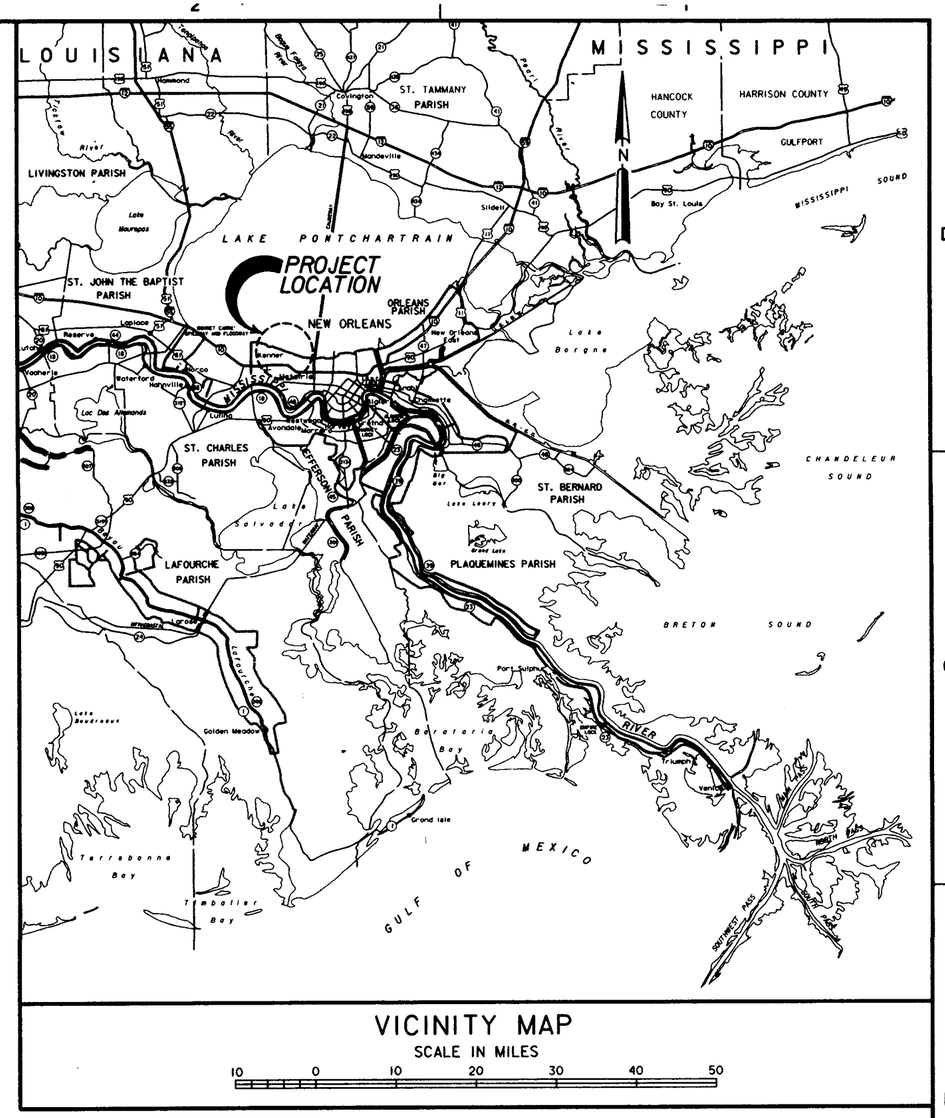
44967R00.DGN PLOT SCALE: 12

Safety is a Part of Your Contract

LOCATION MAP

SCALE IN FEET

4000 0 4000 8000 12000 16000 20000



VICINITY MAP

SCALE IN MILES

10 0 10 20 30 40 50

THIS PROJECT WAS DESIGNED BY THE NEW ORLEANS DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEARING ON THESE PROJECT DOCUMENTS ARE WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152.

INDEX TO DRAWINGS

TABULATION OF BENCH MARKS

DESIGNATION	DESCRIPTION	ELEVATION
O-148 (AT PS#2)	AT METAIRIE, ABOUT 1.6 MILES WEST ALONG PONTCHARTRAIN LEVEE FROM NORTH CAUSEWAY BLVD., SET IN TOP OF THE DOORSILL AT THE WEST ENTERANCE TO PUMPING STATION NO. 2, 1.5 FEET NORTH OF THE SOUTH END OF THE DOORSILL, 1.7 FEET EAST OF THE WEST EDGE OF THE DOORSILL, 18 FEET NORTH OF THE SOUTHWEST CORNER OF THE BUILDING, AND ABOUT 3 INCHES ABOVE THE GROUND.	EL. 1.94 N.G.V.D.
F-150 (AT PS#3)	AT METAIRIE, ABOUT 4.2 MILES WEST ALONG PONTCHARTRAIN LEVEE FROM NORTH CAUSEWAY BLVD., SET IN CONCRETE FLOOR OF PUMPING STATION NO. 3, NEAR THE DOORWAY TO A LOADING RAMP ON THE EAST END OF THE BUILDING, 2.0 FEET NORTH OF THE SOUTH SIDE OF THE DOOR OPENING.	EL. 6.97 N.G.V.D.

SYMBOL	DESCRIPTION	DATE	APPROVED
1	CHANGED DWG. TITLE	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

INDEX, LOCATION, AND VICINITY MAP

DESIGNED BY: ALD
DRAWN BY: ALD
CHECKED BY: JAR
DATE: X

SOLICITATION NO. DACW29-99-B-0020

APPROVED BY: Donald A. Setliff, P.E., CHIEF, ENGINEERING DIVISION

SUBMITTED BY: Robert Mayronne, CHIEF, STRUCTURES BRANCH

APPROVED BY: [illegible], COLONEL, C. E. DISTRICT ENGINEER

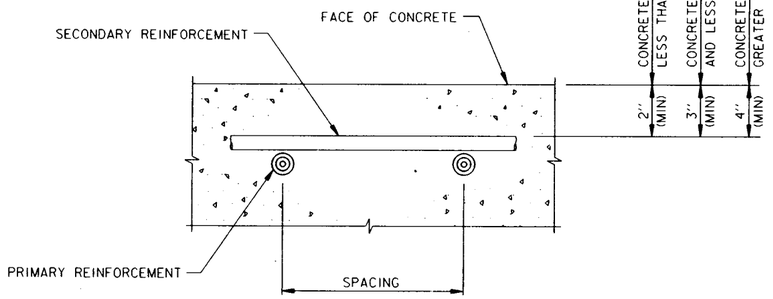
CADD FILE: 44967R01.DGN
PLOT DATE: OCT 98
PLOT SCALE: 4800
FILE NO. H-4-44967
DWG. 1 OF 24

GENERAL NOTES:

1. AZIMUTHS SHOWN ARE MEASURED CLOCKWISE FROM THE NORTH.
2. ELEVATIONS ARE IN FEET AND REFER TO NATIONAL GEODETIC VERTICAL DATUM (N.G.V.D.).
3. DIMENSIONS AND/OR ELEVATIONS MARKED THUS (±) ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS IN THE FIELD.
4. DIMENSIONS AND/OR ELEVATIONS MARKED THUS (N.T.S.) ARE NOT SHOWN TO SCALE.
5. DRAWINGS ARE GENERALLY TO SCALE, BUT SHOULD NOT BE SCALED. N.T.S. IS SHOWN ONLY WHERE DRAWING IS OBVIOUSLY OUT OF SCALE.
6. BENCH MARKS AND BASE LINES HAVE BEEN ESTABLISHED AT THE SITE BY THE GOVERNMENT.
7. FOR BORING LOGS, SEE DWG. 21.

STEEL NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. TO PREVENT CORROSION BY MOISTURE BETWEEN STEEL SURFACES IN CONTACT, ALL SUCH CONTACTS SHALL BE SEALED WATERTIGHT BY RUNNING A CONTINUOUS 1/8" FILLET WELD ALONG ALL EDGES OF THE CONTACT, UNLESS OTHERWISE NOTED.
3. ALL WELDING SHALL BE ELECTRIC WELDING. WORKMANSHIP AND TECHNIQUE, WHERE APPLICABLE, SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE, SEE SPECIFICATIONS.
4. WELDING SYMBOLS SHOWN ARE THOSE ADOPTED BY THE AMERICAN WELDING SOCIETY AND INDICATE ONLY SIZE AND TYPE OF WELDS REQUIRED. DETAILED INFORMATION SHALL BE SHOWN ON THE SHOP DRAWINGS AND SUBMITTED BY THE CONTRACTOR FOR APPROVAL.
5. DIMENSIONS SHOWN OR CALLED FOR ARE THE FINAL DIMENSIONS; ALLOWANCES MUST BE MADE FOR MACHINING.
6. ITEMS MARKED C.R.S. SHALL BE CORROSION RESISTANT STEEL (STAINLESS STEEL), SEE SPECIFICATIONS.



REINFORCEMENT CLEARANCE DETAIL

NOT TO SCALE

CONCRETE NOTES:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 4000 PSI AT 28 DAYS, 90 DAYS IF POZZOLAN IS USED, UNLESS OTHERWISE NOTED.
2. REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH (Fy) OF 60,000 PSI.
3. CONSTRUCTION JOINTS SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS. WHERE NOT SHOWN, CONSTRUCTION JOINTS SHALL BE PLACED AT LOCATIONS LEAST LIKELY TO IMPAIR THE INTERGRITY OF THE CONCRETE STRUCTURE. THESE ADDITIONAL CONSTRUCTION JOINT LOCATIONS SHALL BE APPROVED BY THE CONTRACTING OFFICER.
4. UNLESS OTHERWISE NOTED, PROVIDE 3/4" CHAMFER AT ALL EXPOSED JOINTS, EDGES, EXTERNAL CORNERS, AND VERTICAL EXPANSION JOINTS.
5. ALL REINFORCEMENT SHALL HAVE A MINIMUM COVER OF 4" UNLESS OTHERWISE NOTED.
6. ALL BENDS OF REINFORCEMENT AND ALL BAR SPACERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH SP-66, AMERICAN CONCRETE INSTITUTE DETAILING MANUAL - 1994.
7. REINFORCING BAR DESIGNATION NUMBERS CONFORM TO THE NUMBERING SYSTEM OF THE CONCRETE REINFORCING STEEL INSTITUTE.
8. REINFORCING BARS SHALL BE CONTINUOUS AT ALL CORNERS UNLESS OTHERWISE NOTED.
9. REINFORCEMENT, WHERE NECESSARY TO AVOID OPENINGS, PIPES, EMBEDDED ITEMS AND OTHER OBSTRUCTIONS, SHALL BE BENT OR SHIFTED AS DIRECTED BY THE CONTRACTING OFFICER.
10. THE EMBEDMENT AND SPLICE TABLE SHALL BE USED IN DETERMINING LAP SPLICES AND EMBEDMENT LENGTHS WHERE LENGTHS ARE NOT OTHERWISE INDICATED. SPLICE LENGTHS SHALL BE BASED ON THE SMALLER BAR BEING LAPPED. THE CONTRACTOR WILL BE ALLOWED TO MAKE SPLICES IN ADDITION TO THOSE INDICATED IN THE DRAWINGS, WHERE ESSENTIAL TO CONSTRUCTIBILITY, SUBJECT TO APPROVAL BY THE CONTRACTING OFFICER. SPLICES OTHER THAN THOSE SHOWN ON THE DRAWINGS AND OTHER THAN ANY ADDITIONAL SPLICES REQUIRED BY THE CONTRACTING OFFICER, WILL BE AT THE CONTRACTOR'S EXPENSE.
11. ALL EXTERIOR FORMED SURFACES NOT COVERED BY BACKFILL SHALL BE CLASS "A" FINISH AND SURFACES COVERED BY BACKFILL SHALL BE CLASS "D" FINISH, UNLESS OTHERWISE NOTED.

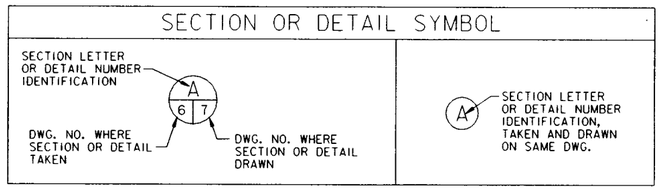
REINFORCEMENT EMBEDMENT AND SPLICE TABLES - 4000 PSI

BAR SIZE	BASIC TABLE				ALTERNATE TABLE			
	MINIMUM EMBEDMENT LENGTH, INCHES		MINIMUM LAP LENGTH INCHES		MINIMUM EMBEDMENT LENGTH, INCHES		MINIMUM LAP LENGTH INCHES	
	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER
3	18	14	24	18	12	12	14	12
4	25	19	32	25	15	12	19	15
5	31	24	40	31	18	14	24	18
6	37	28	48	37	22	17	29	22
7	54	42	70	54	32	25	42	32
8	62	47	80	62	37	28	48	37
9	69	53	90	69	42	32	54	42
10	77	59	100	77	46	36	60	46
11	85	65	110	85	51	39	66	51

NOTES:

1. USE THE BASIC TABLE IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
   A) CENTER TO CENTER BAR SPACING LATERALLY IS AT LEAST 3 BAR DIAMETERS.
   B) DISTANCE FROM THE CENTER OF A BAR TO THE NEAREST CONCRETE SURFACE MUST BE AT LEAST 2 BAR DIAMETERS.
2. THE ALTERNATE TABLE MAY BE USED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
   A) CENTER TO CENTER BAR SPACING LATERALLY IS AT LEAST 5 BAR DIAMETERS.
   B) DISTANCE FROM THE CENTER OF A BAR TO THE NEAREST CONCRETE SURFACE MUST BE AT LEAST 2.5 BAR DIAMETERS.
3. IF CONCRETE COVER OR EDGE DISTANCE IS LESS THAN 1 BAR DIAMETERS OR THE CENTER TO CENTER BAR SPACING LATERALLY IS LESS THAN 3 DIAMETERS, SEE ACI 318 FOR APPROPRIATE GUIDANCE.
4. TOP BARS ARE HORIZONTAL BARS AND BARS INCLINED LESS THAN 45 DEGREES WITH RESPECT TO A HORIZONTAL PLANE WHICH ARE PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
5. THE TABLES SHOWN ABOVE ARE FOR NORMAL WEIGHT CONCRETE AND UNCOATED REINFORCING BARS. IF EPOXY COATED BARS ARE USED, SEE ACI 318 FOR ADDITIONAL CONSIDERATIONS.

SECTION OR DETAIL SYMBOL



ABBREVIATIONS

ALT. SP.	= ALTERNATE SPACING
AZ	= AZIMUTH
B/L	= BASELINE
BF	= BOTTOM FACE
BL	= BOTTOM LAYER
C	= CENTER
CB	= CATCH BASIN
C.I.	= CAST IRON
CJ	= CONSTRUCTION JOINT
CL	= CLEAR COVER
C/L OR ℄	= CENTER LINE
C.R.S.	= CORROSION RESISTANT STEEL
Ø	= DIAMETER
D	= DRAIN
D.I.	= DROP INLET
D.P.	= DRAIN PIPE
D/S	= DOWN STREAM
D.V.	= DRAIN VALVE
D.V. MH.	= DRAIN VALVE MANHOLE
E	= ELECTRICAL
EF	= EACH FACE
EL.	= ELEVATION
ES	= EQUALLY SPACED
F.H.	= FIRE HYDRANT
FF	= FAR FACE
G	= GAS
H.S.	= HIGH STRENGTH
LP	= LIGHT POLE
LS	= LIGHT STANDARD
MH	= MANHOLE
NF	= NEAR FACE
O.C.	= ON CENTER
OPT.	= OPTIONAL
P	= POWER
P.C.	= POINT OF CURVATURE
P.T.	= POINT OF TANGENCY
S	= SEWER
SB/L	= SUBBASELINE
S.C.O.	= SEWER CLEANOUT
STD. HK.	= STANDARD HOOK
STA.	= STATION
T	= TELEPHONE
TD	= TRENCH DRAIN
TF	= TOP FACE
TEL.M.H.	= TELEPHONE MANHOLE
TL	= TOP LAYER
TP	= TEST PILE
U.O.N.	= UNLESS OTHERWISE NOTED
U/S	= UP STREAM
W	= WATER
W/L	= WALL LINE
W.M.	= WATER METER
W.V.	= WATER VALVE

SYMBOL	DESCRIPTION	DATE	APPROVED

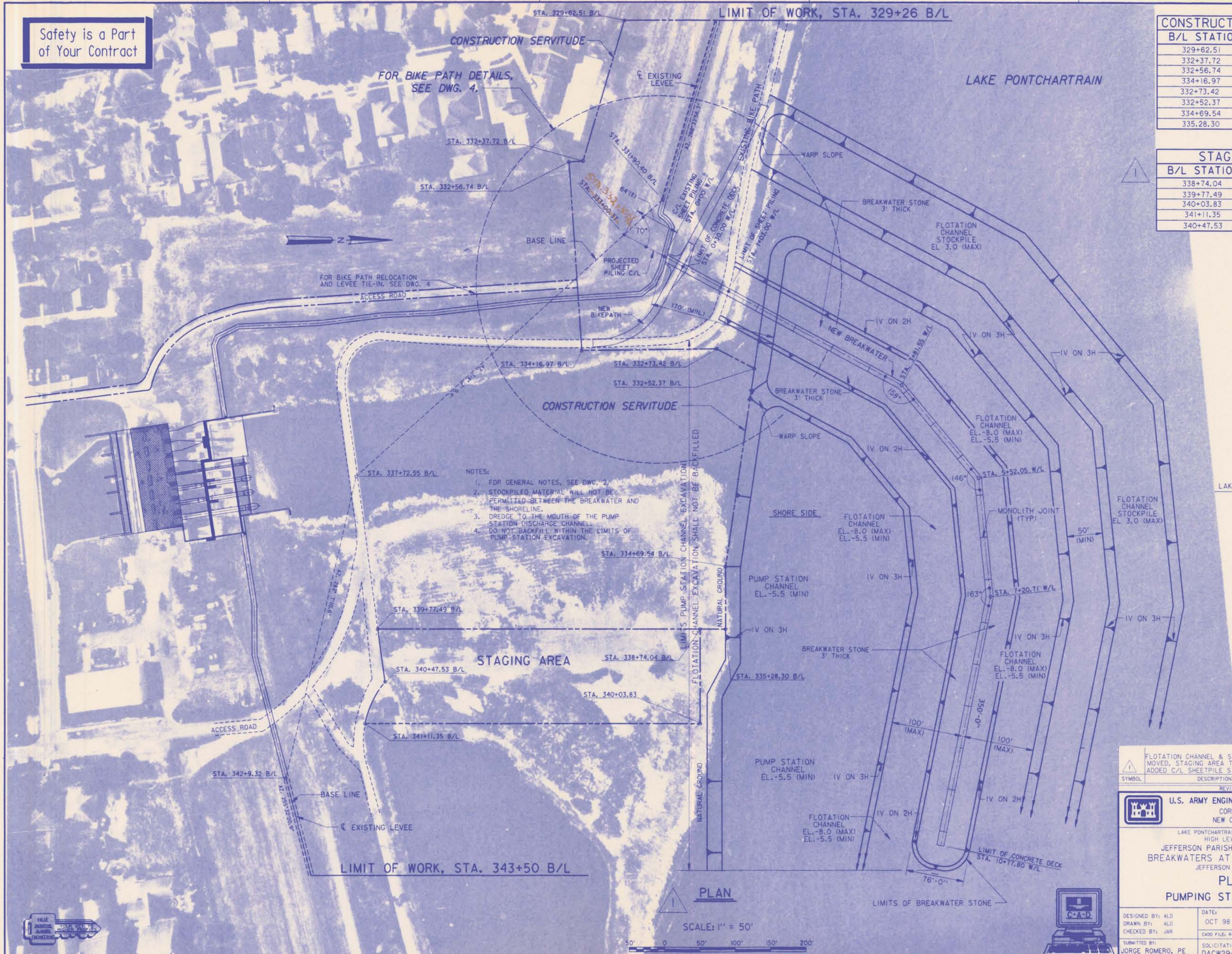
REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

GENERAL NOTES

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 1	PLOT DATE: 9-24-98
	CADD FILE: 44967RO2.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 2 OF 24


Safety is a Part of Your Contract
LIMIT OF WORK, STA. 329+26 B/L
STA. 329+62.51 B/L
CONSTRUCTION SERVITUDE
FOR BIKE PATH DETAILS, SEE DWG. 4.
℄ EXISTING LEVEE
LAKE PONTCHARTRAIN
STA. 332+37.72 B/L
STA. 331+90.40 B/L
STA. 332+56.74 B/L
C/L EXISTING SHEET PILING
STA. 0+00 W/L
EXISTING BIKE PATH
LIMIT OF CONCRETE DECK
STA. 0+38.00 W/L
LIMIT OF SHEET PILING
STA. 1+02.00 W/L
WARP SLOPE
BREAKWATER STONE 3' THICK
FLOTATION CHANNEL STOCKPILE EL 3.0 (MAX)
70°
BASE LINE
PROJECTED SHEET PILING C/L
FOR BIKE PATH RELOCATION AND LEVEE TIE-IN, SEE DWG. 4
ACCESS ROAD
NEW BIKEPATH
170' (MIN.)
NEW BREAKWATER
1V ON 2H
1V ON 3H
STA. 1+81.55 W/L
STA. 334+16.97 B/L
STA. 332+73.42 B/L
STA. 332+52.37 B/L
159°
CONSTRUCTION SERVITUDE
FLOTATION CHANNEL EL.-8.0 (MAX) EL.-5.5 (MIN)
WARP SLOPE
STA. 337+72.55 B/L
NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. STOCKPILED MATERIAL WILL NOT BE PERMITTED BETWEEN THE BREAKWATER AND THE SHORELINE.
3. DREDGE TO THE MOUTH OF THE PUMP STATION DISCHARGE CHANNEL.
4. DO NOT BACKFILL WITHIN THE LIMITS OF PUMP STATION EXCAVATION.
146°
STA. 5+52.05 W/L
LAKE SIDE
SHORE SIDE
MONOLITH JOINT (TYP)
FLOTATION CHANNEL STOCKPILE EL 3.0 (MAX)
50' (MIN)
STA. 334+69.54 B/L
LIMITS PUMP STATION CHANNEL EXCAVATION
FLOTATION CHANNEL EXCAVATION SHALL NOT BE BACKFILLED
NATURAL GROUND
PUMP STATION CHANNEL EL.-5.5 (MIN)
163°
STA. 7+20.71 W/L
STA. 339+77.49 B/L
BREAKWATER STONE 3' THICK
STAGING AREA
STA. 338+74.04 B/L
STA. 340+47.53 B/L
STA. 335+28.30 B/L
STA. 340+03.83
350'-0"
100' (MAX)
STA. 341+11.35 B/L
STA. 342+9.32 B/L
BASE LINE
℄ EXISTING LEVEE
LIMIT OF WORK, STA. 343+50 B/L
LIMIT OF CONCRETE DECK
STA. 10+77.80 W/L
76'-0"
LIMITS OF BREAKWATER STONE
PLAN
SCALE: 1" = 50'
50' 0 50' 100' 150' 200'

CONSTRUCTION SERVITUDE	
B/L STATION	DISTANCE, FT.
329+62.51	124.12
332+37.72	115.79
332+56.74	151.85
334+16.97	81.10
332+73.42	206.95
332+52.37	263.14
334+69.54	443.87
335.28.30	509.23

STAGING AREA	
B/L STATION	DISTANCE, FT.
338+74.04	522
339+77.49	78
340+03.83	553
341+11.35	91
340+47.53	105

SYMBOL	DESCRIPTION	DATE	APPROVED
1	FLOTATION CHANNEL & STOCKPILE AREA MOVED, STAGING AREA TABLE CHANGED ADDED C/L SHEETPILE STATIONS	4-19-99	ALD

REVISIONS

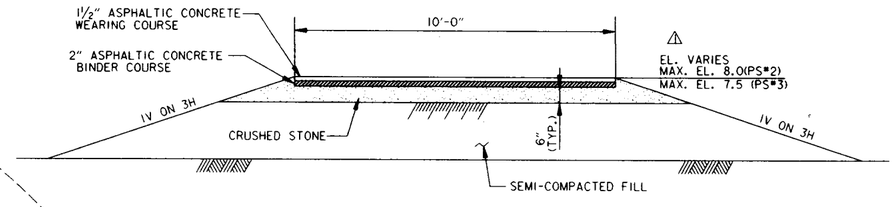
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

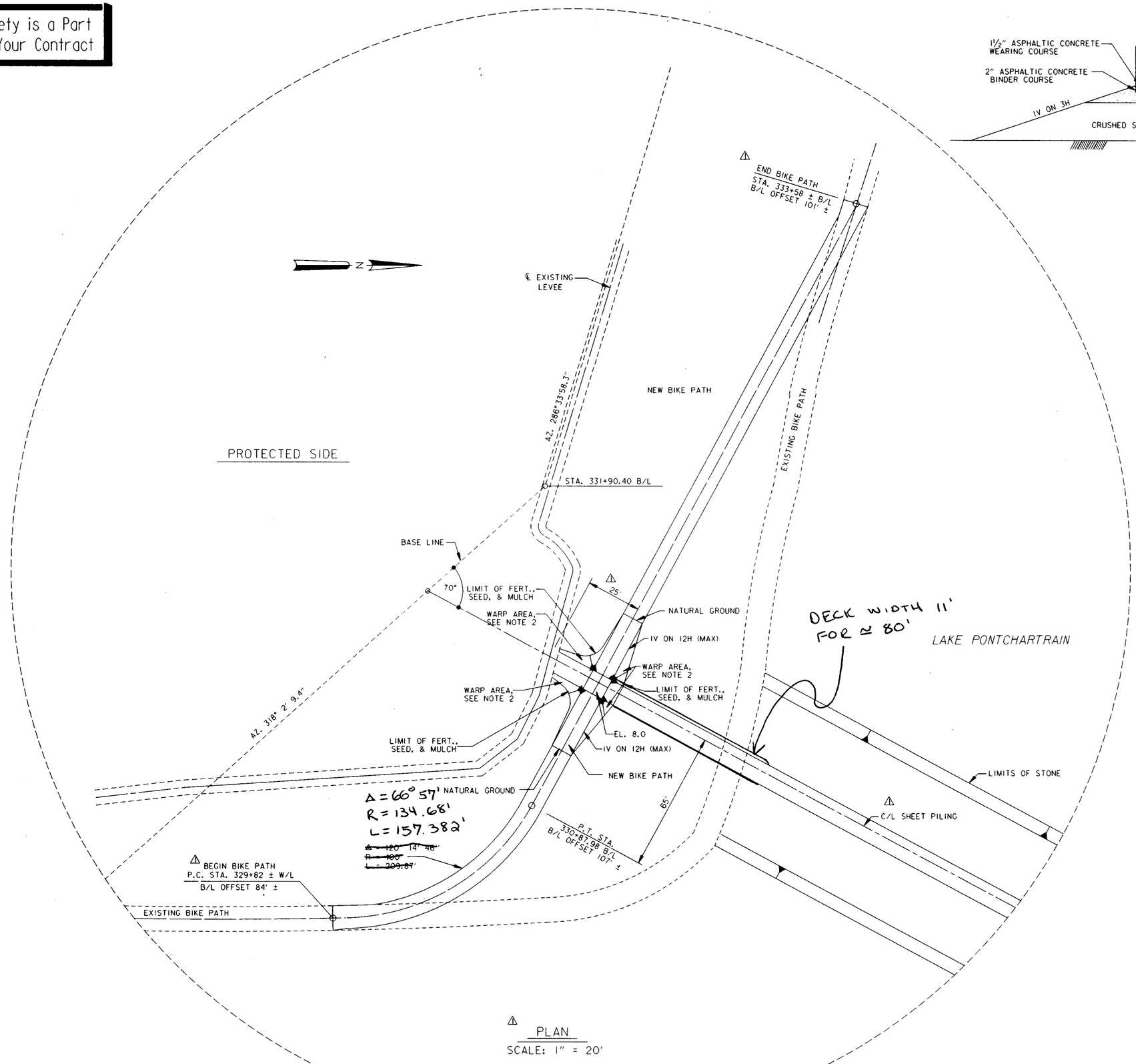
PLAN
PUMPING STATION NO. 2

DESIGNED BY: ALD
DRAWN BY: ALD
CHECKED BY: JAR
DATE: OCT 98
PLOT SCALE: 600
PLOT DATE: 3-5-99
CADD FILE: 44967R05.DGN
FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER
SOLICITATION NO. DACW29-99-B-0020
DWG. 3 OF 24

Safety is a Part of Your Contract



BIKE PATH
SCALE: 1" = 2'



PLAN
SCALE: 1" = 20'

NOTES:

1. FOR GENERAL NOTES, SEE DWG. 2.
2. SLOPE SHALL NOT BE GREATER THAN 1V ON 3H IN WARPED AREAS.
3. FOR SETTLEMENT GAGE DETAIL, SEE DWG. 7.
4. FOR BREAKWATER SLOPE, SEE DWG. 5.

SCALE: 1" = 20'

20' 0 20' 40' 60' 80'

SYMBOL	DESCRIPTION	DATE	APPROVED
⚠	ADDED STATIONING	4/19/99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

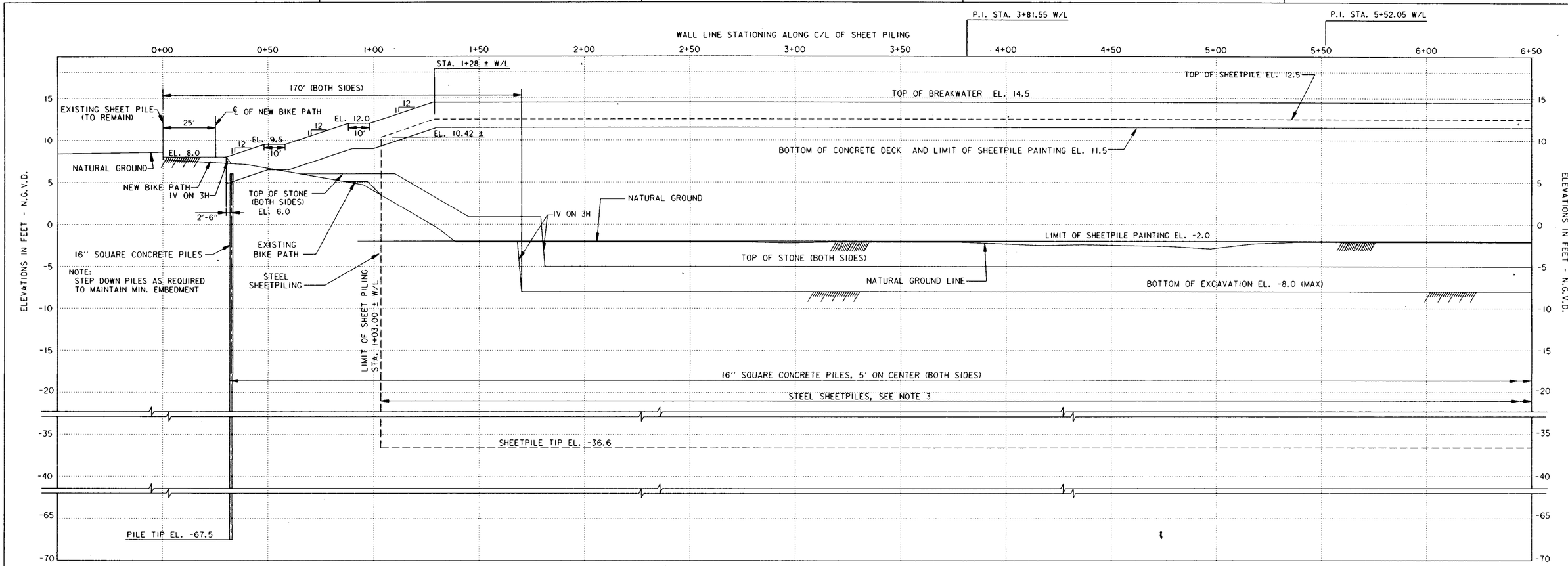
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

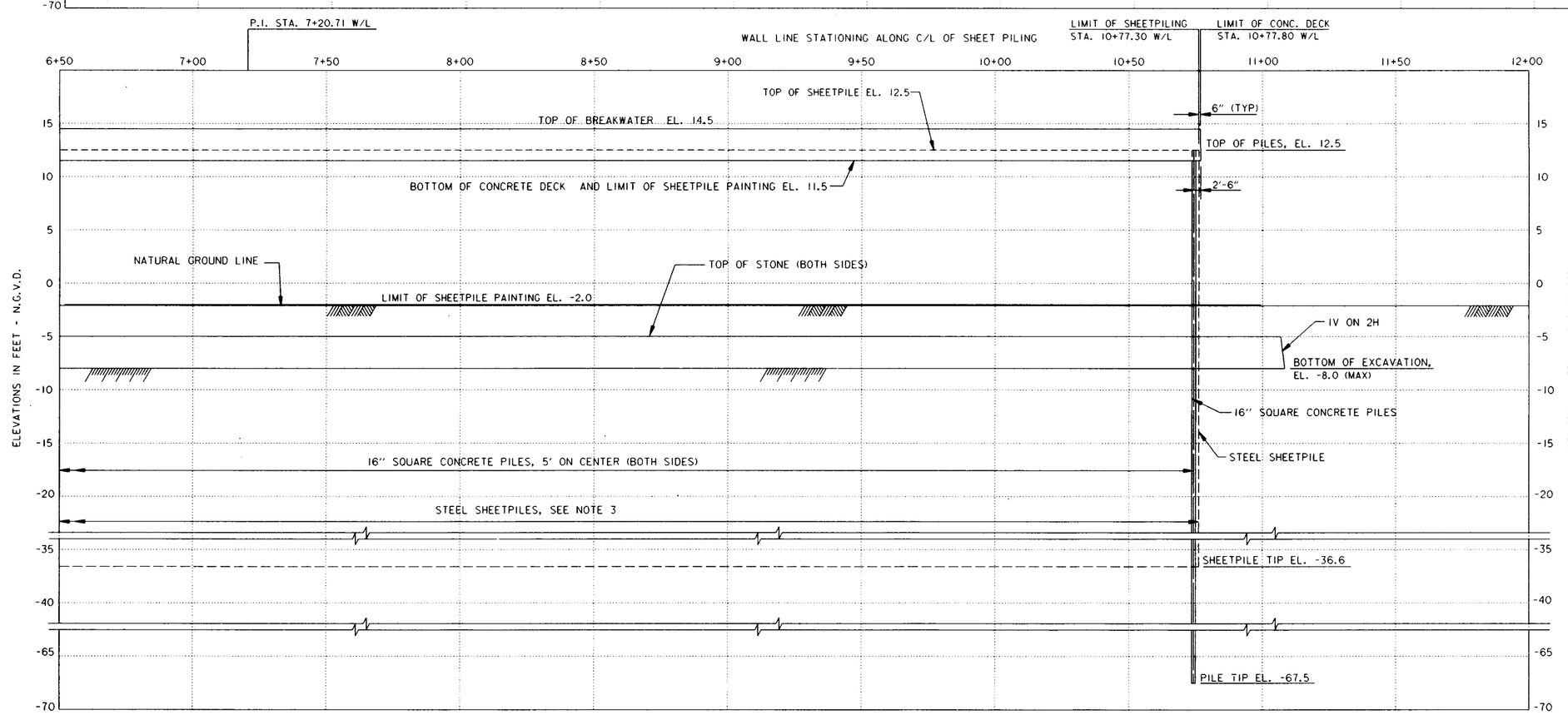
BIKE RAMP AND LEVEE TIE-IN
PUMPING STATION 2

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 240	PLOT DATE: 11-6-98
	CADD FILE: 44967R28.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 4 OF 24

VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS

C·A·D





C•A•D

Safety is a Part of Your Contract

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. GUARDRAILS AND FENCE NOT SHOWN FOR CLARITY.
3. STOP STEEL SHEET PILING WHEN NATURAL GROUND EL. 5.0.
4. FOR P.I.'S, SEE DWG. 3.

⚠ PROFILE

SCALE: HOR. 1" = 20
VERT. 1" = 5'

VALUE INCENTIVE CLAUSES ENGINEERING YOUR KEY TO HIGHER PROFITS

SCALE: 1" = 20'

20' 0 20' 40' 60' 80'

SCALE: 1" = 5'

5' 0 5' 10' 15' 20'

SYMBOL	DESCRIPTION	DATE	APPROVED
⚠	REVISED CONCRETE PILES AND STEEL SHEETPILES, ADDED STATIONING	4-19-99	ALD

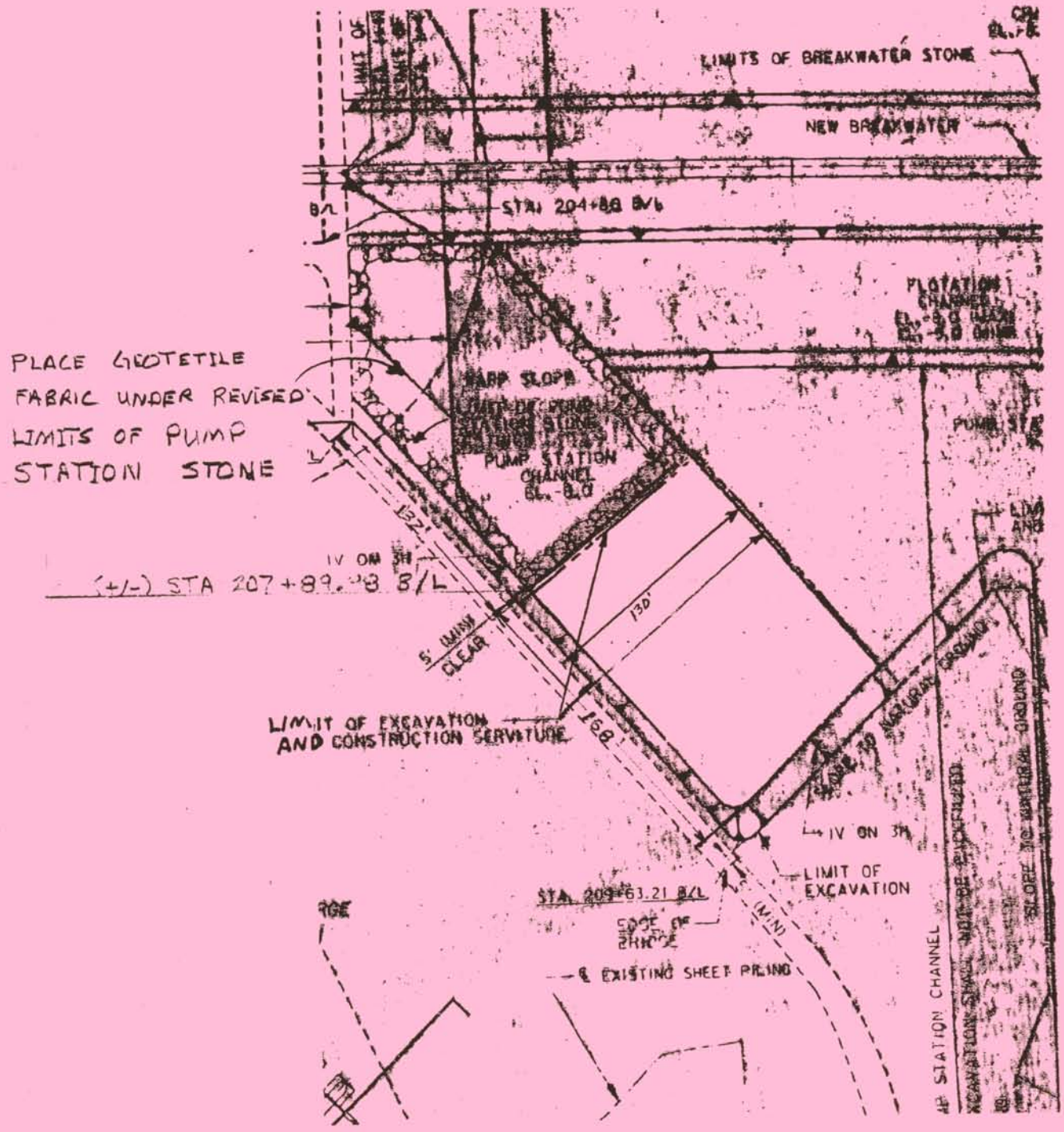
REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

PROFILE
PUMPING STATION 2

DESIGNED BY: ALD DRAWN BY: CPB CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 60	PLOT DATE: 3-16-98
	CADD FILE: 44967R29.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29- 99-B-0020		DWG. 5 OF 24



attachment to DWG 6.1

SK-99-C-0046-04

LIMIT OF WORK, STA. 203+66.76 B/L

Safety is a Part of Your Contract

⚠ CONSTRUCTION SERVITUDE AND PROTECTED SIDE EDGE OF LEVEE CROWN

FOR LEVEE TIE-IN AND BIKE PATH RELOCATION, SEE DWG. 7

PROTECTED SIDE

⚠ THIS ACCESS SHALL BE A SHARED ACCESS ROAD WITH THE CONTRACTOR FOR THE PS# 3 ADDITION

ACCESS ROUTE

STAGING AREA (0.6 ACRES)

LEVEE TOE

EXISTING BIKE PATH

255'-0" (MIN.)

℄ EXISTING LEVEE

STA. 204+25.22 B/L

STA. 204+91 B/L

STA. 204+86 B/L

145'

210'-0" (MIN)

STA. 205+89.98 B/L

CONSTRUCTION SERVITUDE STA. 205+89.98 B/L

BASE LINE

℄ EXISTING SHEET PILING

1V ON 3H

5' (MIN) CLEAR

130'

LIMIT OF PUMP STATION STONE 3' THICK

LIMIT OF EXCAVATION AND CONSTRUCTION SERVITUDE

SLOPE TO NATURAL GROUND

DISCHARGE BASIN

STA. 209+63.21 B/L

EDGE OF BRIDGE

5' (MIN)

LIMIT OF EXCAVATION

℄ EXISTING SHEET PILING

PUMPING STATION NO. 3

EXISTING BIKE PATH

225'

BASE LINE

STA. 213+54.55 B/L

NATURAL GROUND AND CONSTRUCTION SERVITUDE

℄ LEVEE

STA. 213+79.47 B/L

PROTECTED SIDE

LIMIT OF CONCRETE DECK STA. 1+47.17 W/L

LIMIT OF SHEET PILING STA. 1+47.67 W/L

WARP SLOPE

FLOTATION CHANNEL STOCKPILE EL 3.0 (MAX)

FLOTATION CHANNEL EL.-8.0 (MAX)

LIMITS OF BREAKWATER STONE

1V ON 2H

NEW BREAKWATER

STA. 6+45.17 W/L

142'

FLOTATION CHANNEL EL.-8.0 (MAX) EL.-5.0 (MIN)

WARP SLOPE

PUMP STATION CHANNEL EL.-8.0

PUMP STATION CHANNEL EL.-5.0

LIMIT OF EXCAVATION AND CONSTRUCTION SERVITUDE

1V ON 3H

STA. 209+04.77 B/L

STA. 208+96.50 B/L

SLOPE TO NATURAL GROUND

LIMITS OF PUMP STATION CHANNEL

FLOTATION CHANNEL EXCAVATION SHALL NOT BE BACKFILLED

SLOPE TO NATURAL GROUND

STA. 211+09.59 B/L

STA. 211+41.32 B/L

1V ON 3H

PUMP STATION CHANNEL EL.-5.0

225'

EXISTING BIKE PATH

SHORE SIDE

LIMITS OF STONE

75'-0"

1V ON 2H

LIMIT OF CONCRETE DECK STA. 15+80.81 W/L

30-U

1V ON 3H

MONOLITH JOINT (TYP.)

NEW BREAKWATER

STA. 10+02.92 W/L

131'

1V ON 2H

BREAKWATER STONE 3' THICK

1V ON 3H

50' (MIN)

FLOTATION CHANNEL STOCKPILE EL 3.0 (MAX)

FLOTATION CHANNEL EL.-8.0 (MAX) EL.-5.0 (MIN)

FLOTATION CHANNEL EL.-8.0 (MAX) EL.-5.0 (MIN)

100' (MIN)

100' (MIN)

1V ON 3H

LAKE PONTCHARTRAIN

LAKE SIDE

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. STOCKPILED MATERIAL WILL NOT BE PERMITTED BETWEEN THE BREAKWATER AND THE SHORELINE.
3. DREDGE TO THE MOUTH OF THE PUMP STATION DISCHARGE CHANNEL.
4. DO NOT BACKFILL FLOTATION CHANNEL WITHIN THE LIMITS OF PUMP STATION EXCAVATION.

CONSTRUCTION SERVITUDE	
B/L STATION	DISTANCE, FT.
203+66.76	124.73
205+89.98	160.88
209+65.21	228.04
208+96.50	417.93
209+04.77	435.98
211+09.59	346.39
211+41.32	309.60
213+79.47	198.14

REQUIRED STAGING AREA	
B/L STATION	DISTANCE, FT.
204+86	148
204+91	62
202+93	34
202+93	145

LEGEND
LIMIT OF PUMP STATION STONE
LIMIT OF CONSTRUCTION SERVITUDE

⚠ PLAN

SCALE: 1" = 50'

50' 0 50' 100' 150' 200'

SYMBOL	DESCRIPTION	DATE	APPROVED
1	FLOTATION CHANNELS AND STOCKPILE AREA MOVED, REVISED CONSTRUCTION SERVITUDE AND ADDED C/L SHEETPILE STATIONS	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

PLAN
PUMPING STATION NO. 3

DESIGNED BY: ALD	DATE: OCT 98	PLOT SCALE: 600	PLOT DATE: 11-2-98
DRAWN BY: ALD	CADD FILE: 44967R06.DGN		FILE NO. H-4-44967
CHECKED BY: JAR			
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 6 OF 24

C-A-D

VALUE ENGINEERING CLAUSES YOUR KEY TO HIGHER PROFITS

5 4 3 2 1

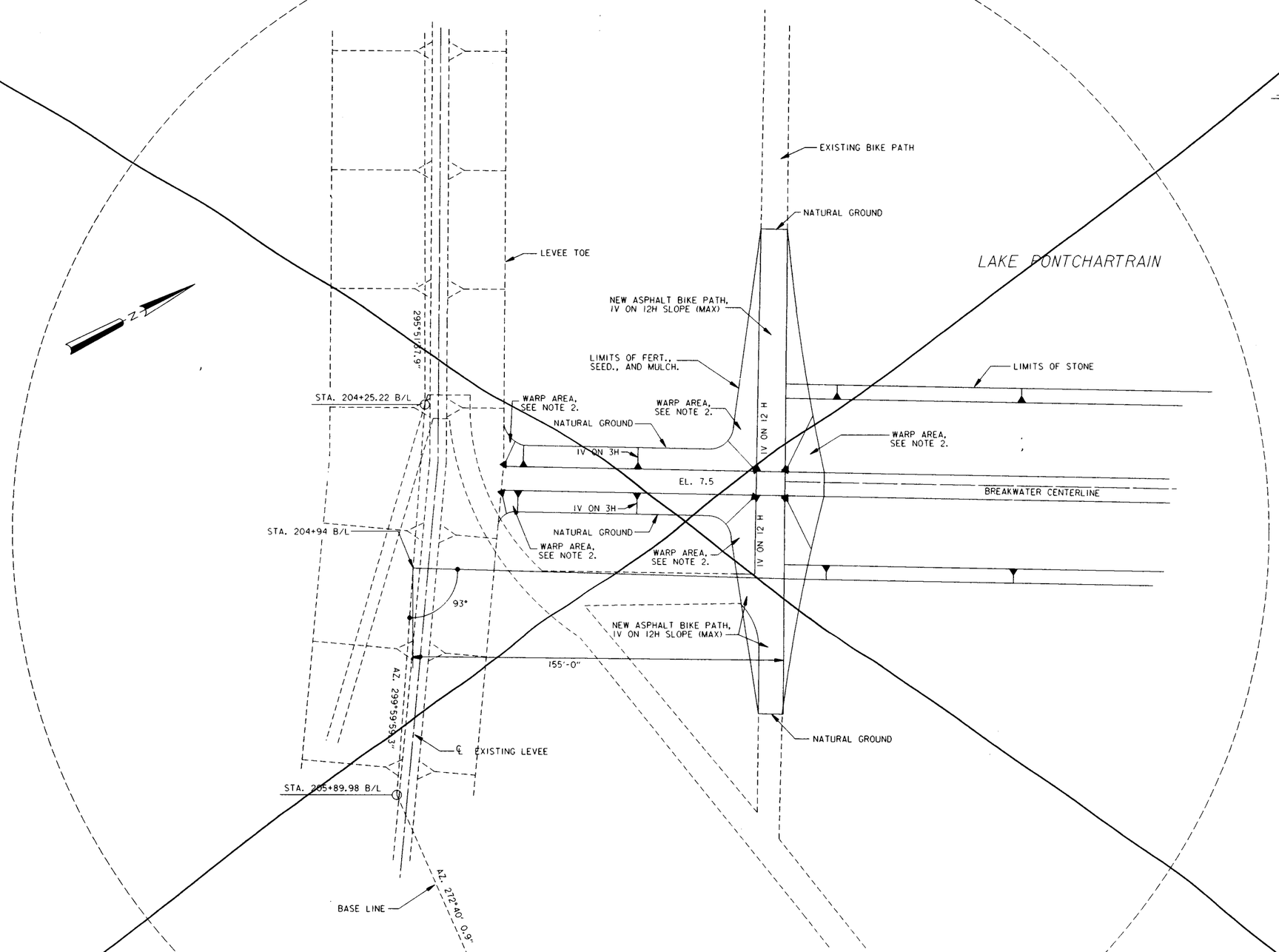
Safety is a Part of Your Contract

SHOULD THE CONTRACTOR ELECT TO PLACE SETTLEMENT GAGES FOR MEASUREMENT OF THE FOUNDATION, INSTALLATION OF GAGES SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS AND THE GAGES SHALL BE LOCATED AT EACH TIE-IN.

THE SETTLEMENT MEASUREMENT RANGE FOR EACH SETTLEMENT GAGE SHALL BE TO THE LIMITS OF TIE-IN.

SETTLEMENT GAGE PLATE 1/8" (I.D GAGE) PLATE 2'X2' MINIMUM

SETTLEMENT GAGE
N.T.S



PLAN
SCALE: 1" = 20'

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. SLOPE SHALL NOT BE GREATER THAN 1V ON 3H IN WARPED AREAS.
3. FOR ASHPALT BIKE PATH DETAIL, SEE DWG. 4.

SCALE: 1" = 20'

20' 0 20' 40' 60' 80'

SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

BIKE RAMP AND LEVEE TIE-IN PUMPING STATION 3

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 20	PLOT DATE: 9-24-98
	CADD FILE: 44967R27.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 7 OF 24

VALUE INCENTIVE SAVES ENGINEERING — YOUR KEY TO HIGHER PROFITS

C·A·D

Safety is a Part of Your Contract

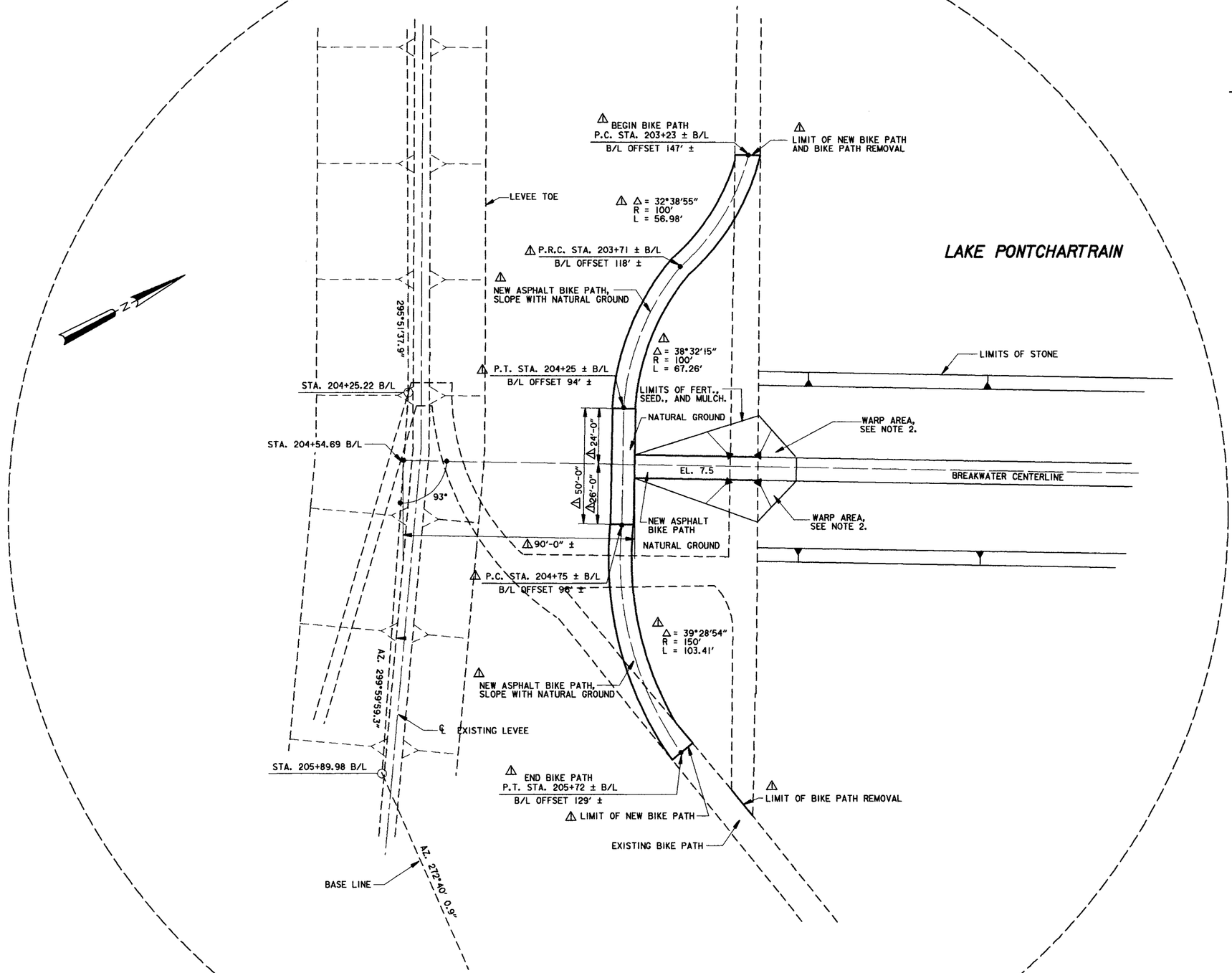
SHOULD THE CONTRACTOR ELECT TO PLACE SETTLEMENT GAGES FOR MEASUREMENT OF THE FOUNDATION, INSTALLATION OF GAGES SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS AND THE GAGES SHALL BE LOCATED AT EACH TIE-IN.

THE SETTLEMENT MEASUREMENT RANGE FOR EACH SETTLEMENT GAGE SHALL BE TO THE LIMITS OF TIE-IN.

SETTLEMENT GAGE PLATE 1/8" (10 GAGE) PLATE 2'X2' MINIMUM

SETTLEMENT GAGE

N.T.S



PLAN

SCALE: 1" = 20'

NOTES:

1. FOR GENERAL NOTES, SEE DWG. 2.
2. SLOPE SHALL NOT BE GREATER THAN IV ON 6H IN WARPED AREAS.
3. FOR ASHPALT BIKE PATH DETAIL, SEE DWG. 4.
4. REMOVE EXISTING BIKE PATH WITHIN THE LIMITS OF THE NEW BIKE PATH.

SCALE: 1" = 20'

20' 0 20' 40' 60' 80'

SYMBOL	DESCRIPTION	DATE	APPROVED
1	CHANGE BIKE PATH ALIGNMENT	2/13/01	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

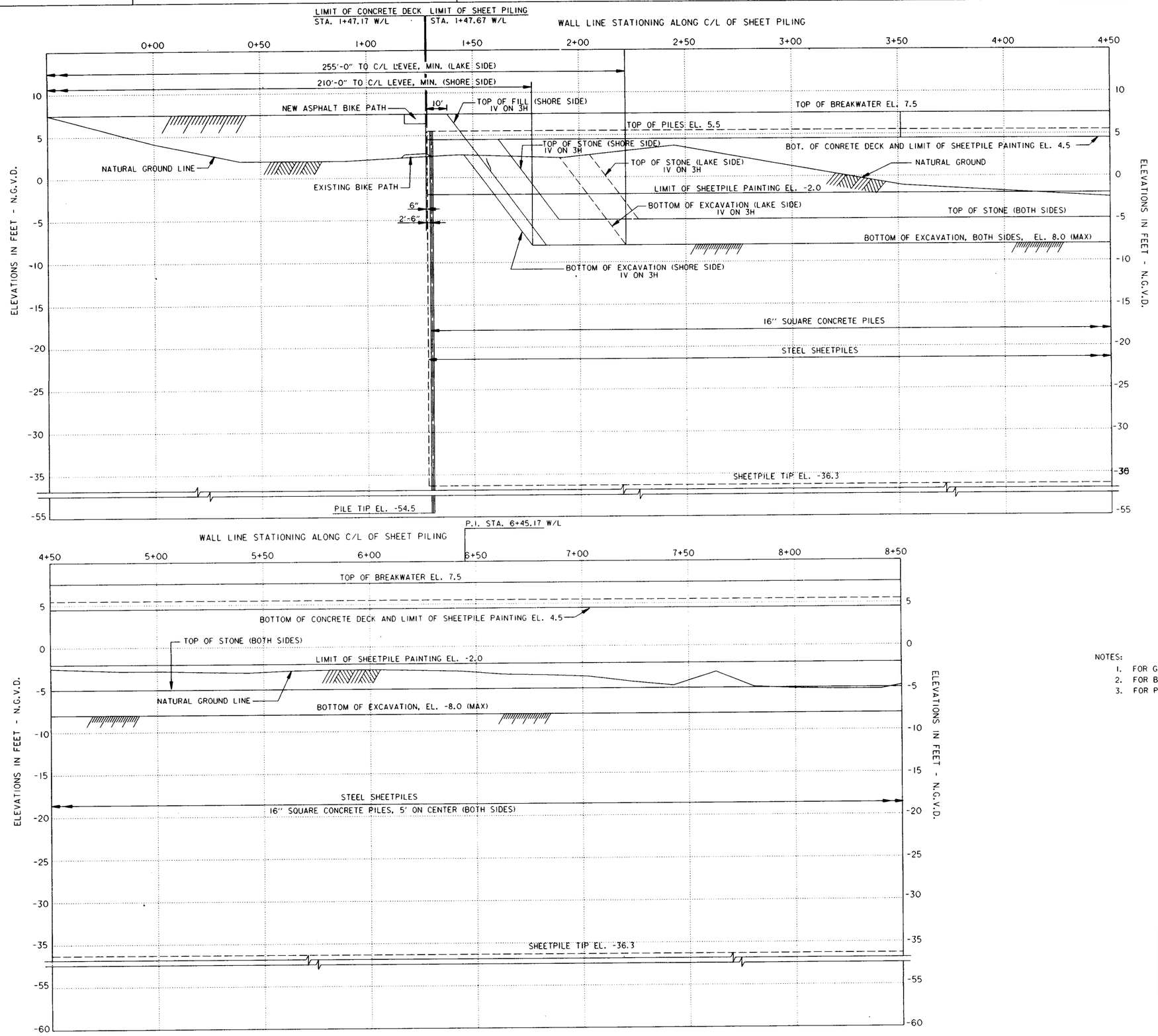
BIKE RAMP AND LEVEE TIE-IN
PUMPING STATION 3

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 240	PLOT DATE: 9-24-98
	CADD FILE: 44967R27.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 7 OF 24

VALUE ENGINEERING CHANGES YOUR KEY TO HIGHER PROFITS

C-A-D

Safety is a Part of Your Contract



⚠ PROFILE

SCALE: HOR. 1" = 20'
VERT. 1" = 5'

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2
2. FOR BREAKWATER LAYOUT, SEE DWG. 6.
3. FOR P.I.'S, SEE DWG. 6.

SCALE: 1" = 5'

5' 0 5' 10' 15' 20'

SCALE: 1" = 20'

20' 0 20' 40' 60' 80'

SYMBOL	DESCRIPTION	DATE	APPROVED
⚠	REVISED CONCRETE PILES AND STEEL SHEETPILES AND ADDED STATIONING	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

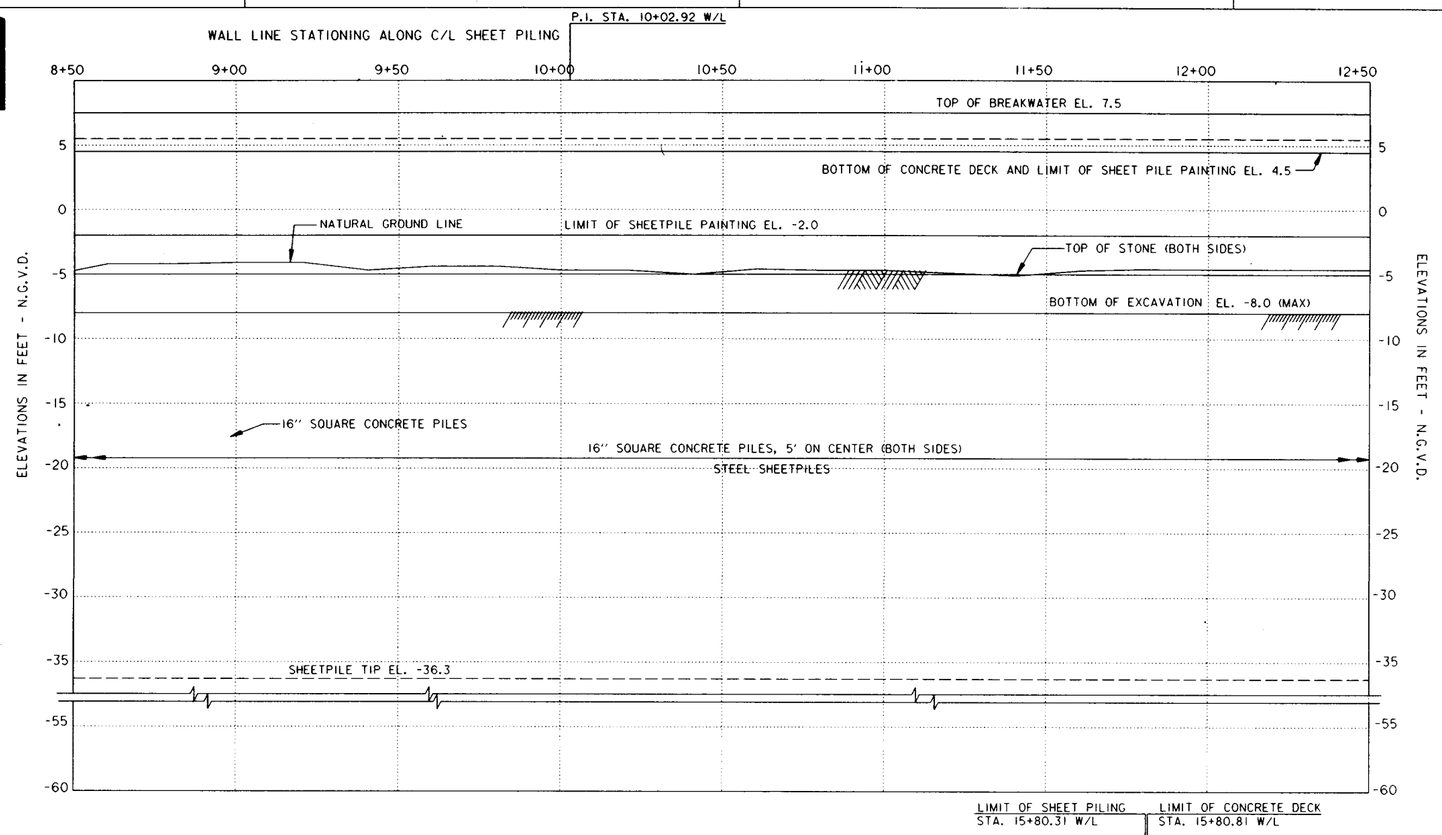
PROFILE
PUMPING STATION #3

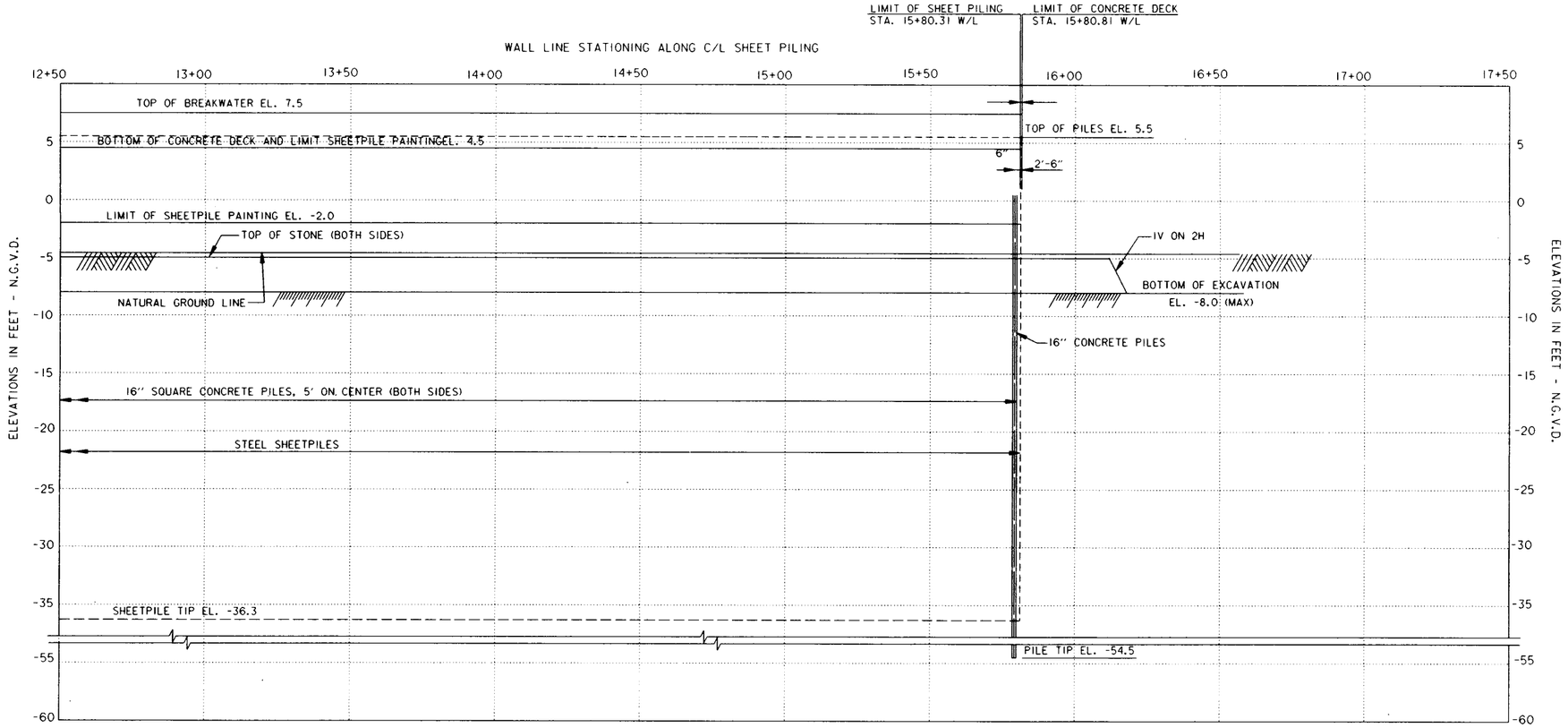
DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 60	PLOT DATE: 9-24-98
	CADD FILE: 44967R21.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 8 OF 24

C•A•D

VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS

Safety is a Part of Your Contract





NOTES:

1. FOR GENERAL NOTES, SEE DWG. 2.
2. FOR P.I.'S, SEE DWG. 6
3. GUARDRAIL AND FENCE NOT SHOWN FOR CLARITY.

SCALE: 1" = 5'

5' 0 5' 10' 15' 20'

SCALE: 1" = 20'

20' 0 20' 40' 60' 80'

⚠ PROFILE

SCALE: HOR. 1" = 20'
VERT. 1" = 5'

SYMBOL	DESCRIPTION	DATE	APPROVED
⚠	REVISED CONCRETE PILES AND STEEL SHEETPILES AND ADDED STATIONING	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

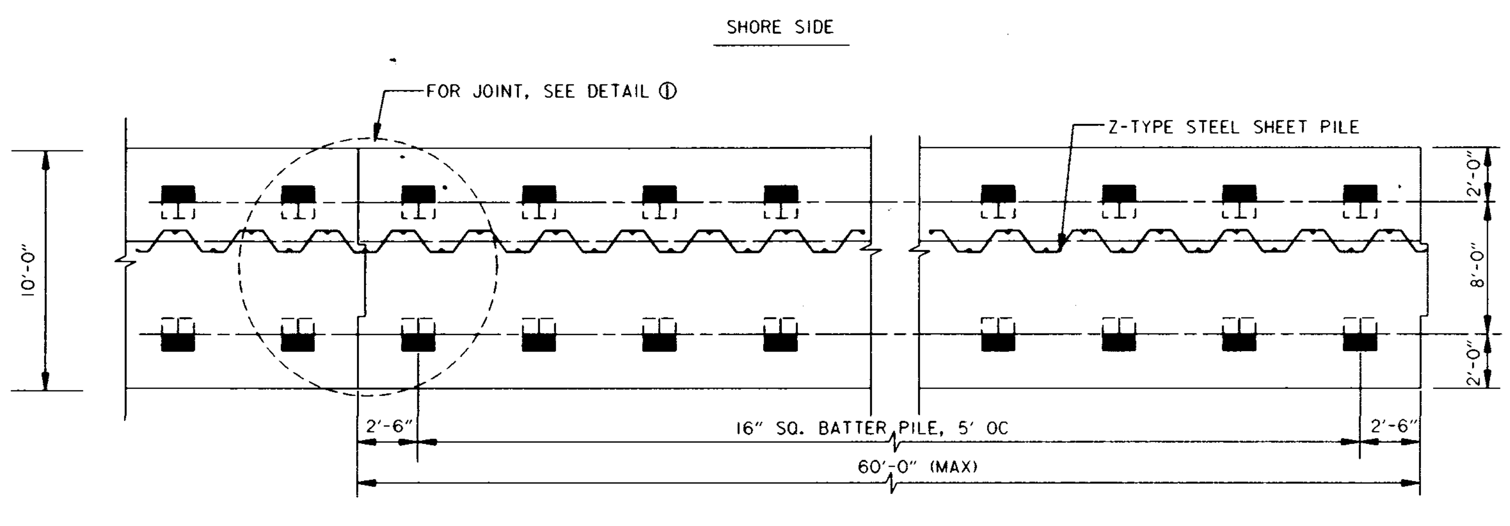
PROFILE
PUMPING STATION #3

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 60	PLOT DATE: 9-24-98
	CADD FILE: 44967R22.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 9 OF 24

VALUE ENGINEERING — INCENTIVE CLAUSES — YOUR KEY TO HIGHER PROFITS

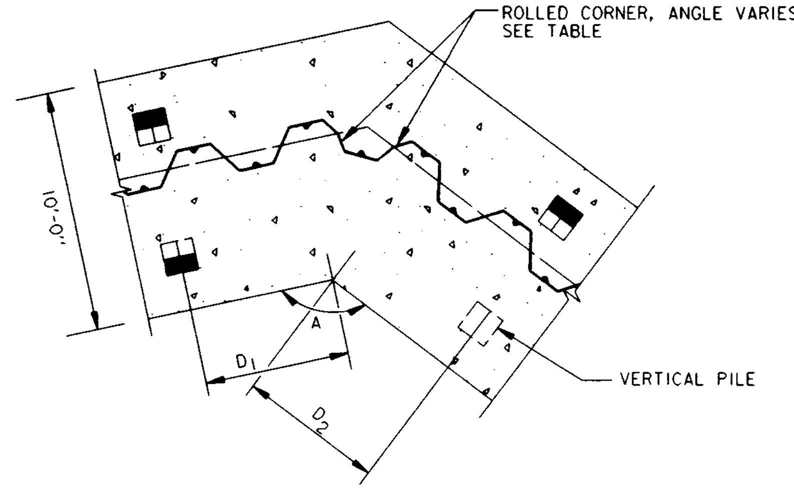
C•A•D

Safety is a Part of Your Contract



⚠ TYPICAL MONOLITH LAYOUT

SCALE: 1/4" = 1'- 0"



A, ANGLE	D_1	D_2
131°	2'-4"	2'-8"
142°	4'-4"	0'-8"
146°	0'-4 1/2"	4'-7 1/2"
158°	2'-10 1/2"	2'-1 1/2"
163°	1'-3 3/4"	3'-8 1/4"

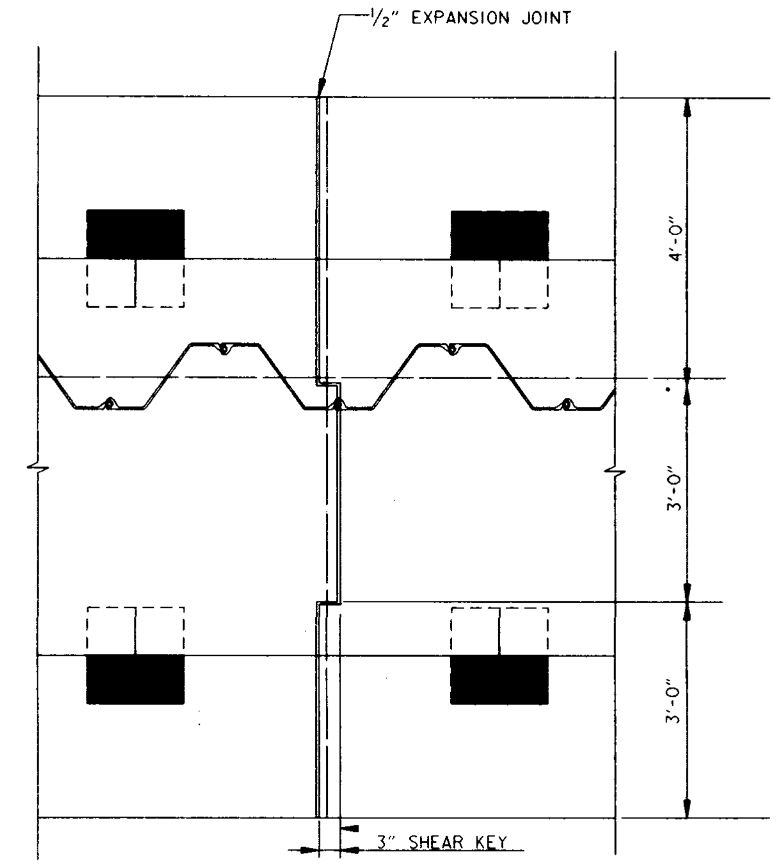
⚠ 16" PILE SPACING AT P.I.

SCALE: 1/4" = 1'- 0"

NOTE:
EACH MONOLITH SHALL END AT THE CENTER OF THE NEAREST STEEL SHEETPILE INTERLOCK.

⚠ PILE SCHEDULE

LOCATION	PILE SIZE	NUMBER OF PILES SHORE SIDE	NUMBER OF PILES LAKE SIDE	PILE BATTER	TIP ELEV.	PAYMENT LENGTH
PS #2	16" ⌀	205	208	4V ON 1H	-67.5 ±	82'-5"
PS #2	16" ⌀	3	—	VERTICAL	-67.5 ±	80'-0"
PS #3	16" ⌀	283	285	4V ON 1H	-54.5 ±	61'-10"
PS #3	16" ⌀	2	—	VERTICAL	-54.5 ±	60'-0"



⚠ DETAIL ①

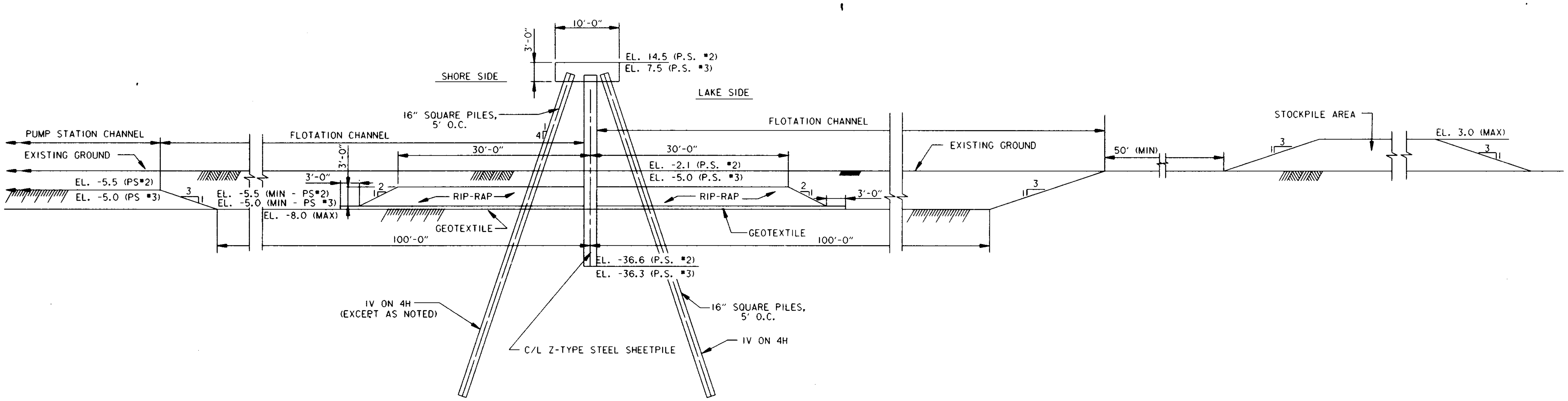
SCALE: 3/4" = 1'- 0"

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. MONOLITH JOINTS SHALL BE EVENLY SPACED TO MISS WALL P.I.'S.

SCALE: 1/8" = 1'- 0" (0, 5', 10', 15', 20', 25')

SCALE: 3/4" = 1'- 0" (12", 0, 1', 2', 3', 4', 5')

SCALE: 1/4" = 1'- 0" (12" 0, 5', 10', 15', 20')



⚠ TYPICAL CROSS SECTION

SCALE: 1/8" = 1'- 0"

VALUE ENGINEERING INCENTIVE CLAUSE SHARE PROFITS

SYMBOL	DESCRIPTION	DATE	APPROVED
⚠	REVISED PILE LAYOUT ADDED PILE SCHEDULE	4-19-99	ALD

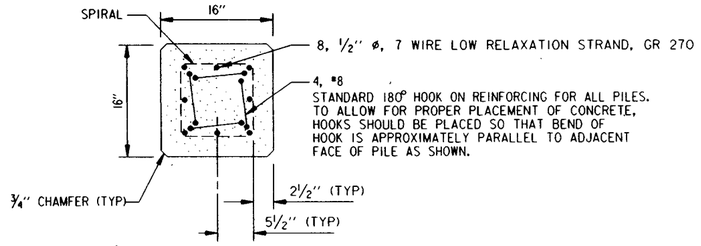
REVISIONS

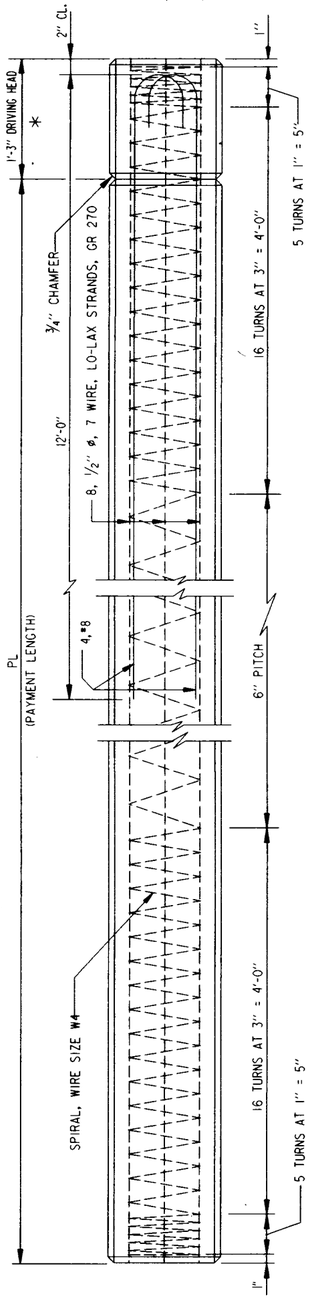
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

TYPICAL SECTION

DESIGNED BY: ALD
DRAWN BY: ALD
CHECKED BY: JAR
DATE: OCT 98
PLOT SCALE: 96
PLOT DATE: 3-26-99
CADD FILE: 44967R03.DGN
FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER
SOLICITATION NO. DACW29-99-B-0020
DWG. 10 OF 24





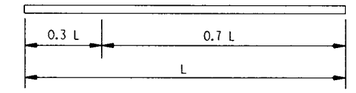
* DRIVING HEAD CONCRETE, STRANDS AND SPIRAL TIES TO BE REMOVED AFTER DRIVING TO EXPOSE HOOKS. (NO PAYMENT)

NOTE:
GRIND PRESTRESSED STRANDS FLUSH WITH PILE HEAD AND PILE TIP.

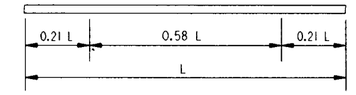
16" X 16"
PRESTRESSED PRECAST
CONCRETE PILE

Safety is a Part of Your Contract

VALUE INCENTIVE CLAUSES — YOUR KEY TO HIGHER LEVELS — ENGINEERING



1 POINT PICKUP (L ≤ 63') 16" X 16" PILE



2 POINT PICKUP (L ≤ 90') 16" X 16" PILE

NOTE: PICKUP POINTS TO BE PLAINLY MARKED ON PILES

NOTES

1. FOR GENERAL NOTES, SEE DWG. 2.

REFERENCE DRAWINGS

1. PILING AND MONOLITH LAYOUT, DWGS. 3, 5, 6, 8, 9, AND 10.

SYMBOL	DESCRIPTION	DATE	APPROVED
1	REVISED PILES	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

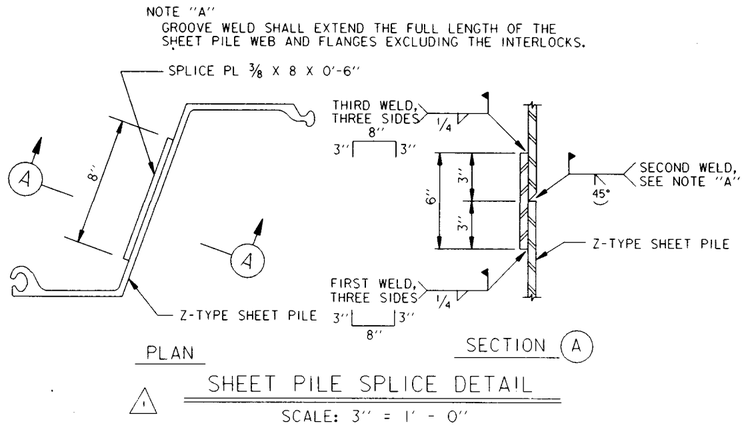
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

CONCRETE PILE DETAILS LOW RELAXATION STRANDS

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 1	PLOT DATE: 9-24-98
	CADD FILE: 44967R04.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 11 OF 24

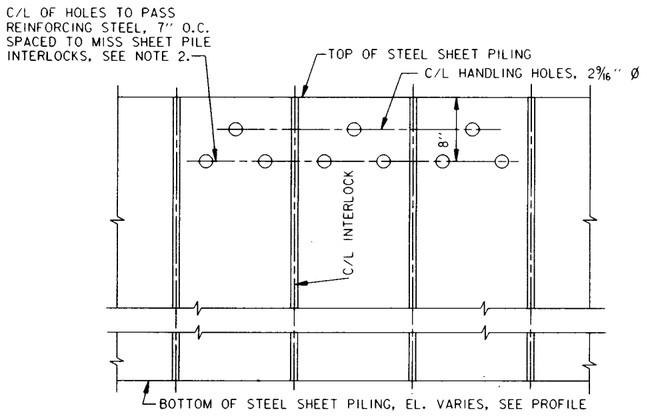
C•A•D

Safety is a Part of Your Contract



SHEET PILE SPLICE DETAIL

SCALE: 3" = 1' - 0"



ELEVATION

DETAILS OF HOLES IN SHEET PILING

SCALE: 1" = 1'- 0"

SHEET PILE NOTES

1. HOLES CUT IN STEEL SHEET PILING FOR PASSING REINFORCING BARS SHALL NOT EXCEED 2"Ø. WHERE HOLES FALL WITHIN THE WEB OF THE STEEL SHEET PILE, THE HOLE SHALL BE SLOTTED 4" HORIZONTALLY TO ACCOMMODATE PASSING THE REINFORCING BARS.
2. ANY SUBSTITUTIONS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR APPROVAL.
3. STEEL SHEET PILE SURFACE PREPARATION AND PAINTING SHALL BE IN ACCORDANCE WITH SECTION 09940 OF THE SPECIFICATIONS.

NOTES

1. FOR GENERAL NOTES, SEE DWG. 2.

SCALE: 3" = 1' - 0"

12" 0 1'

SCALE: 1" = 1'- 0"

12" 0 1' 2' 3' 4' 5'

SYMBOL	DESCRIPTION	DATE	APPROVED
1	DELETED CONCRETE PILE DETAILS AND ADDED STEEL SHEETPILE DETAILS	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

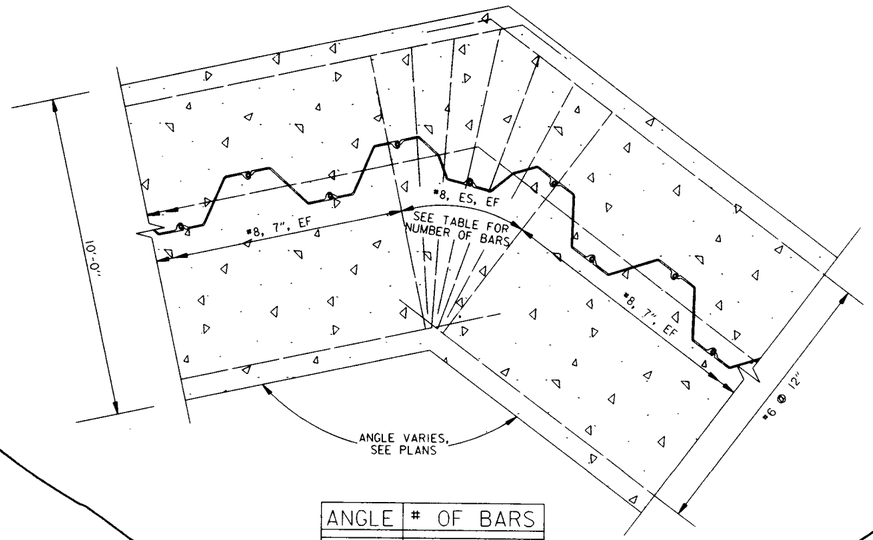
SHEET PILE DETAILS

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT '98	PLOT SCALE: 4	PLOT DATE: 4-9-99
	CADD FILE: 44967R16.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, P.E., DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 11A OF 24

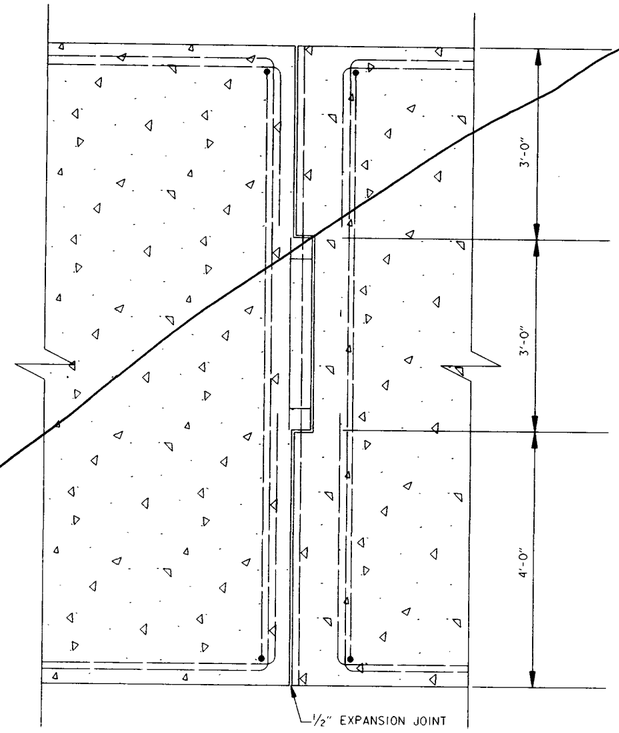
VALUE INCENTIVE CLAUSES — YOUR KEY TO HIGHER PROFITS — ENGINEERING

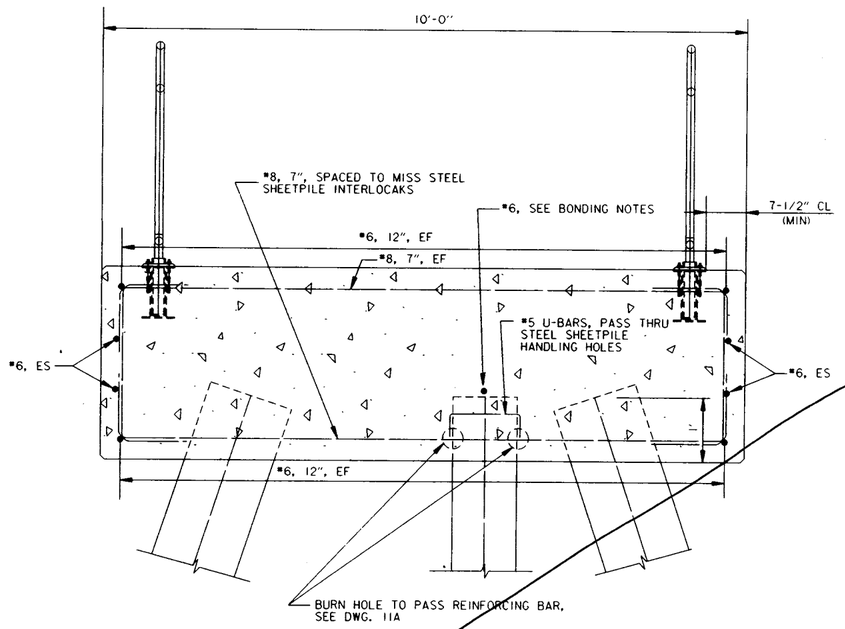
C•A•D

Safety is a Part of Your Contract



ANGLE	# OF BARS
131°	11
142°	9
146°	8
158°	6
163°	5





1 REINFORCEMENT AND GUARDRAIL DETAILS

SCALE: 1" = 1'- 0"

NOTES:
1. REINFORCEMENT SHALL BE SPACED TO MISS BOTH THE 16" CONCRETE PILES AND THE HANDRAIL SUPPORTS.
2. MAXIMUM REINFORCEMENT SPACING SHALL BE AS SHOWN.

1 TYPICAL REINFORCEMENT AT P.I.

SCALE: 1/2" = 1'- 0"

BONDING NOTES :

BOND CABLE SHALL HAVE AN 8" DIAMETER LOOP TO ALLOW FOR STRESSES. BOND CABLES SHALL BE WELDED AS SPECIFIED TO ADJACENT STEEL PILES 7" BELOW BOTTOM OF CONCRETE CAP.

WELDED CONNECTIONS SHALL BE COATED WITH SPLICING EPOXY TO OBTAIN MOISTURE PROOF JOINT.
SEE SPECIFICATIONS.

*6 REINFORCING BARS SHALL BE WELDED TO THE LAST THREE SHEET PILINGS AT EACH END OF THE MONOLITH AS SHOWN FOR CONTINUITY.

SPLICING OF *6 REINFORCING BAR WILL NOT BE ALLOWED.

1 TYPICAL MONOLITH JOINT

SCALE: 1" = 1'- 0"

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. FOR MONOLITH ANGLES, SEE DWGS. 3 AND 6.

SCALE: 1/2" = 1'- 0"

12" 0 2' 4' 6' 8'

SCALE: 1" = 1'- 0"

12" 0 1' 2' 3' 4' 5'

SCALE: 3" = 1' - 0"

12" 0 1'

SYMBOL	DESCRIPTION	DATE	APPROVED
1	REINFORCEMENT DETAILS & BREAKWATER CROSS SECTION		ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEE PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS # 3
JEFFERSON PARISH, LA.

REINFORCEMENT

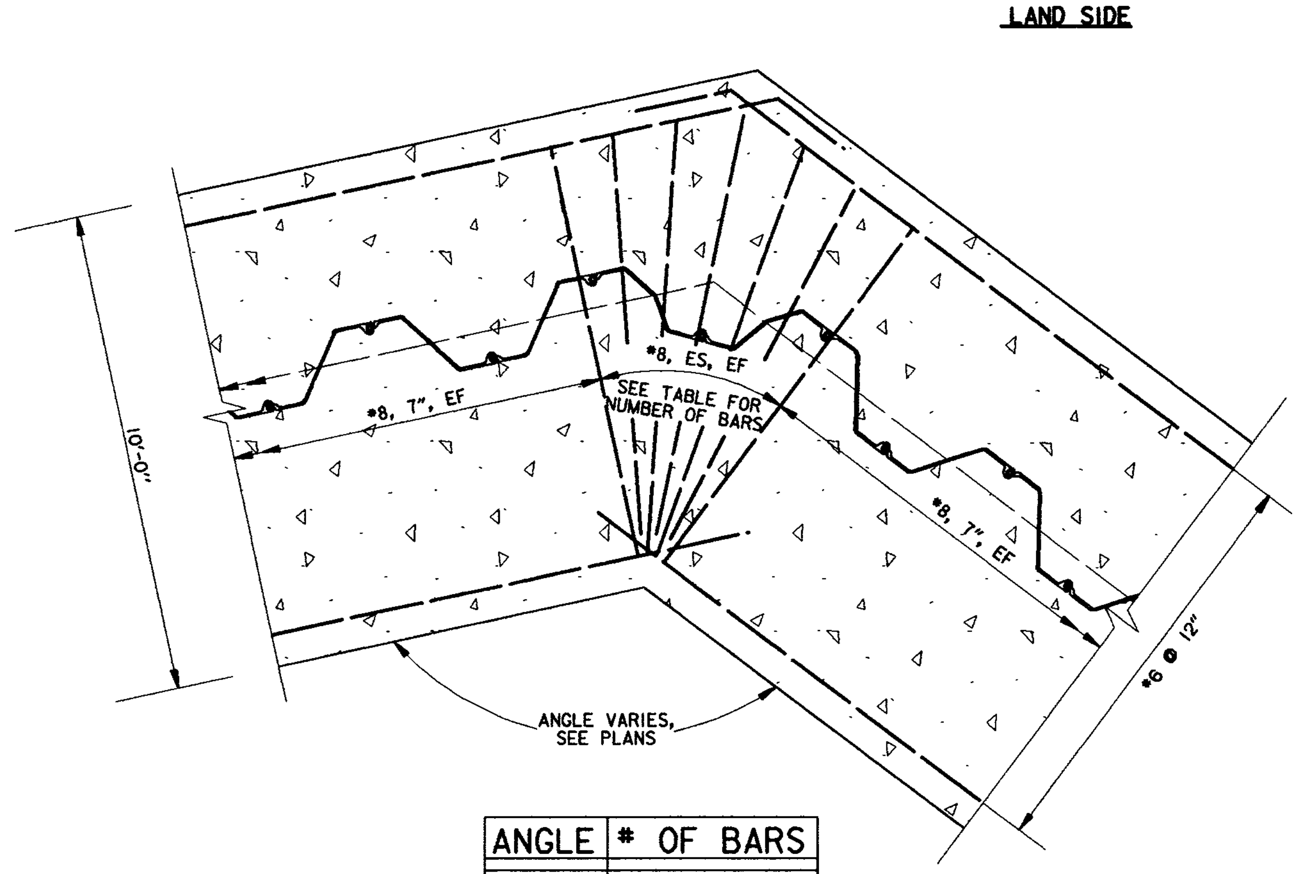
DESIGNED BY: ALD DRAWN BY: CPB CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 12	PLOT DATE: 3-26-99
	CADD FILE: 44967R07.DGN		FILE NO. 4-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 12 OF 24

C•A•D

VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS

Safety is a Part of Your Contract

LAND SIDE

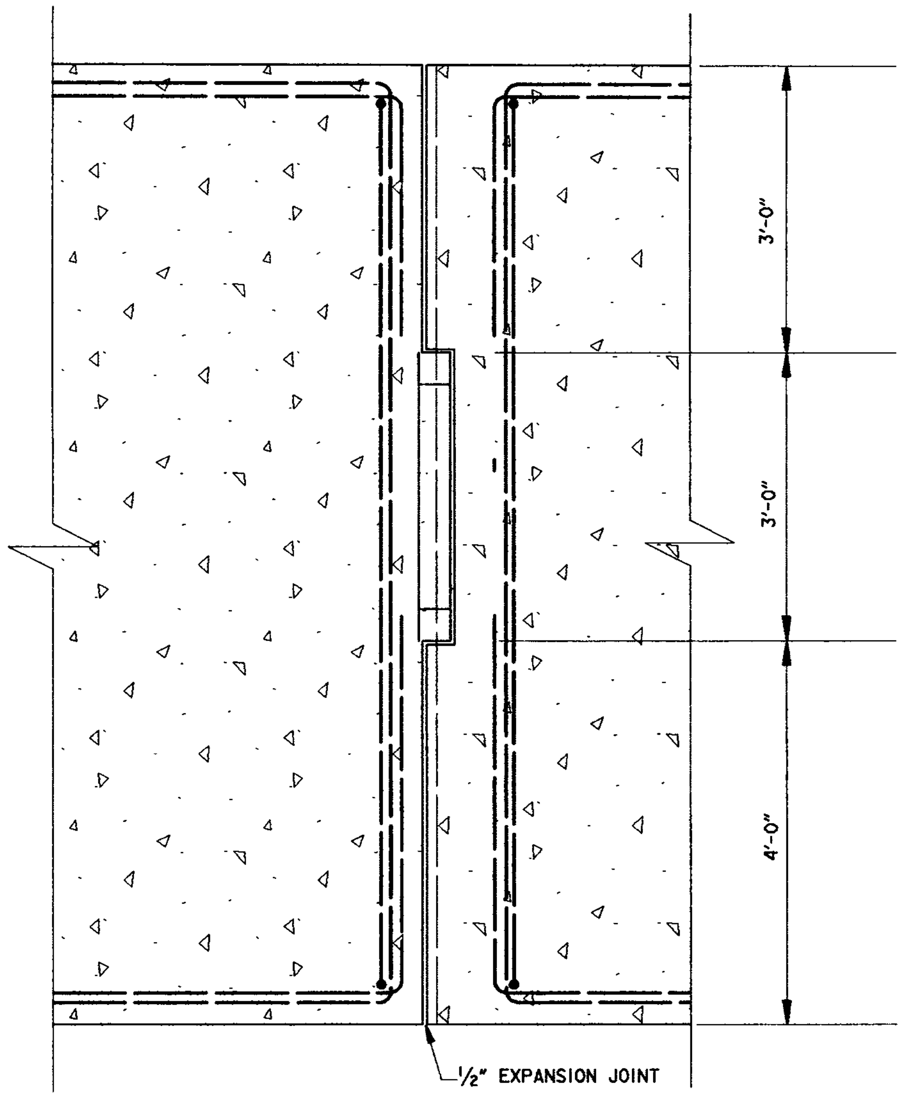


ANGLE	# OF BARS
131°	11
142°	9
146°	8
158°	6
163°	5

SHORE SIDE

⚠1 TYPICAL REINFORCEMENT AT P.I.

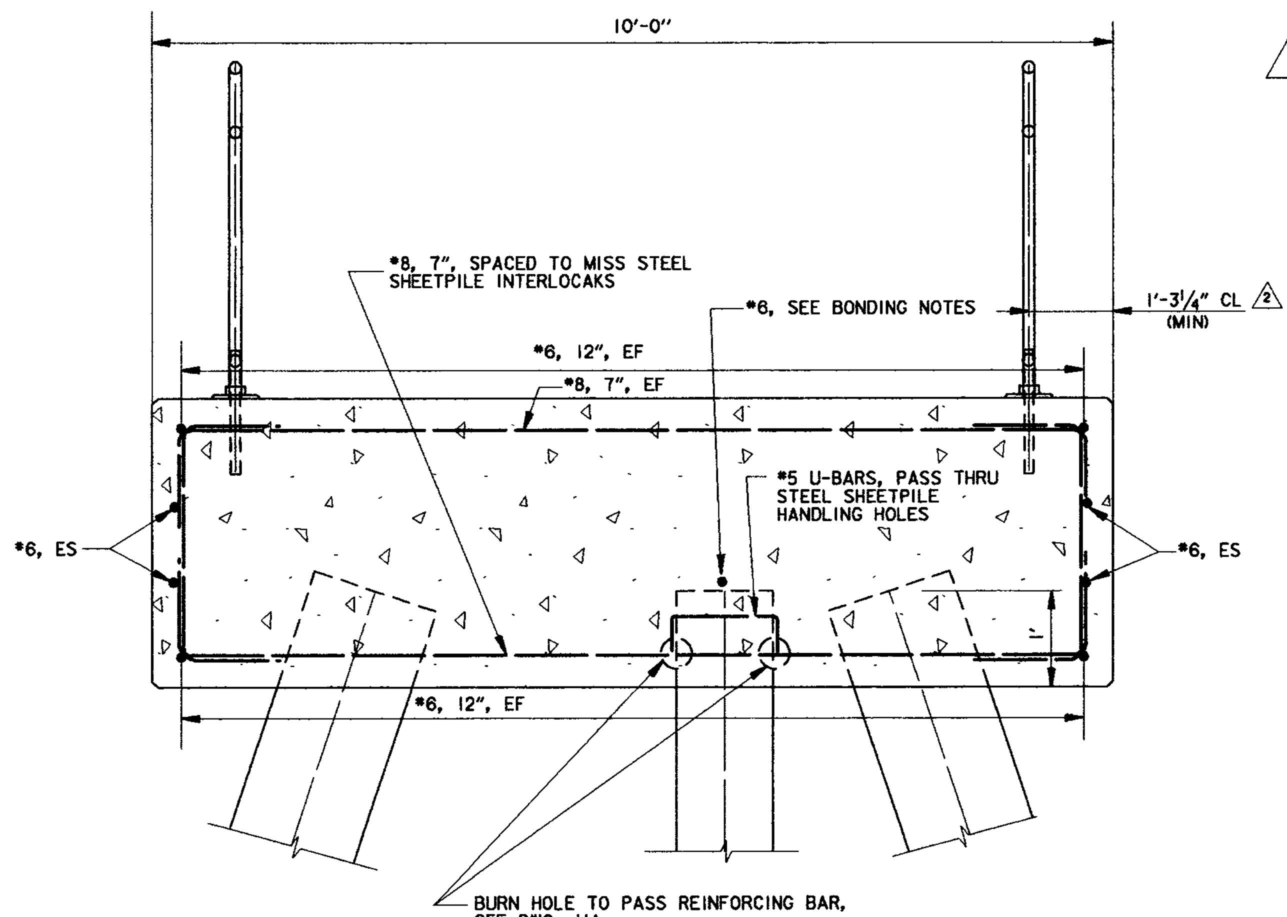
SCALE: $1/2$" = 1'- 0"



⚠1 TYPICAL MONOLITH JOINT

SCALE: 1" = 1'- 0"

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. FOR MONOLITH ANGLES, SEE DWGS. 3 AND 6.



BONDING NOTES :

BOND CABLE SHALL HAVE AN 8" DIAMETER LOOP TO ALLOW FOR STRESSES. BOND CABLES SHALL BE WELDED AS SPECIFIED TO ADJACENT STEEL PILES 7" BELOW BOTTOM OF CONCRETE CAP.

WELDED CONNECTIONS SHALL BE COATED WITH SPLICING EPOXY TO OBTAIN MOISTURE PROOF JOINT. SEE SPECIFICATIONS.

#6 REINFORCING BARS SHALL BE WELDED TO THE LAST THREE SHEET PILINGS AT EACH END OF THE MONOLITH AS SHOWN FOR CONTINUITY.

SPLICING OF #6 REINFORCING BAR WILL NOT BE ALLOWED.

NOTES:
1. REINFORCEMENT SHALL BE SPACED TO MISS BOTH THE 16" CONCRETE PILES AND THE HANDRAIL SUPPORTS.
2. MAXIMUM REINFORCEMENT SPACING SHALL BE AS SHOWN.

⚠2 REINFORCEMENT AND GUARDRAIL DETAILS

SCALE: 1" = 1'- 0"

SCALE: $1/2$" = 1'- 0"

SCALE: 1" = 1'- 0"

SCALE: 3" = 1'- 0"

SYMBOL	DESCRIPTION	DATE	APPROVED
⚠2	GUARDRAIL ANCHOR DETAIL	1/24/00	ALD
⚠1	REINFORCEMENT DETAILS & BREAKWATER CROSS SECTION		ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEE PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS # 3
JEFFERSON PARISH, LA

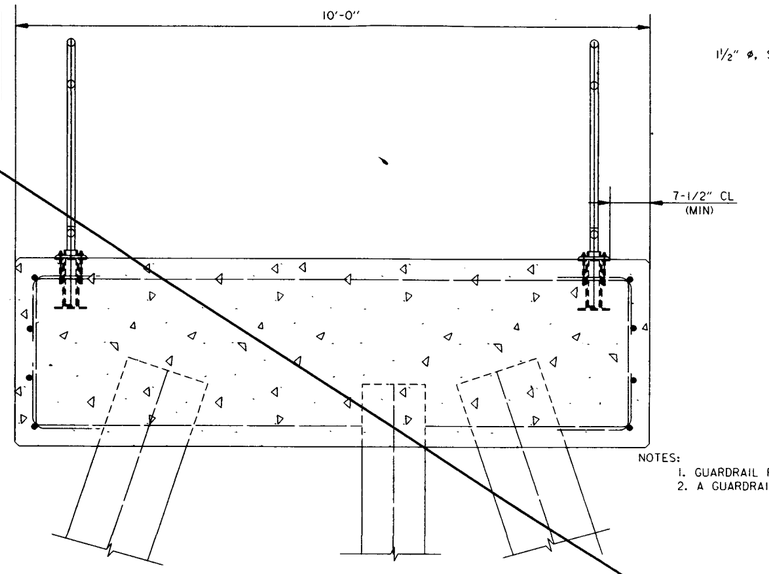
REINFORCEMENT

THIS PLAN ACCOMPANIES MODIFICATION ~~A0005~~ P00010 TO CONTRACT NUMBER DACW29-99-C-0046

DESIGNED BY: ALD
DRAWN BY: CPB
CHECKED BY: JAR
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER

DATE: OCT 98 | PLOT SCALE: 12 | PLOT DATE: 3-26-99
CADD FILE: 44967ROT.DGN
SOLICITATION NO. DACW29-99-B-0020
FILE NO. H-4-44967
DWG. 12 OF 24

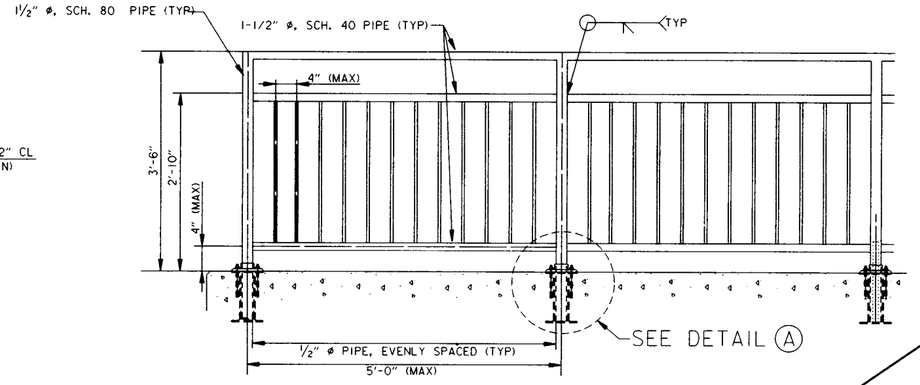
Safety is a Part of Your Contract

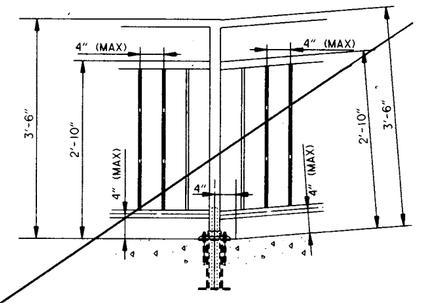


NOTES:
1. GUARDRAIL POSTS SHALL BE EVENLY SPACED.
2. A GUARDRAIL POST SHALL BE PLACED AT EVERY P.I.

TYPICAL GUARDRAIL SECTION

SCALE: 1" = 1'- 0"





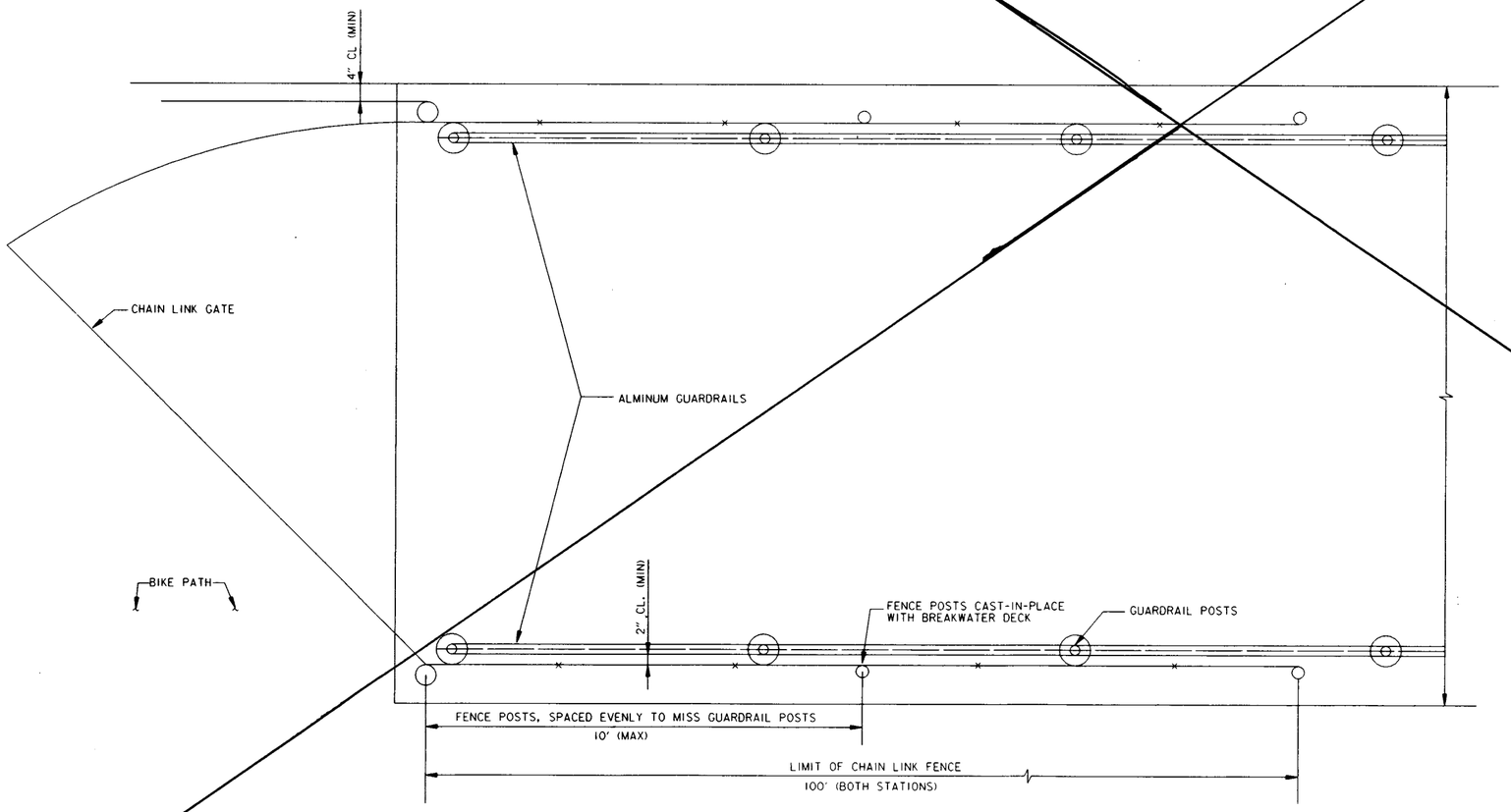
TYPICAL GUARDRAIL SECTION AT RAMP

SCALE: 1" = 1'- 0"

NOTES:
1. REINFORCEMENT SHALL BE SPACED TO MISS BOTH THE CONCRETE PILES AND THE HANDRAIL SUPPORTS.

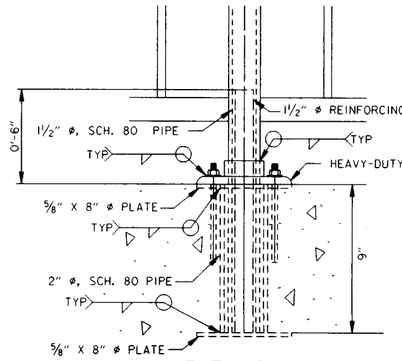
TYPICAL GUARDRAIL DETAILS (1)

SCALE: 1" = 1'- 0"



TYPICAL CHAIN LINK FENCE LAYOUT

SCALE: 1" = 1'- 0"



NOTES:
1. ANCHOR BOLTS SHALL BE HILTI, KWIK BOLT II. C.R.S. ⅜" ø WITH 5" MIN. EMBEDMENT. AS MFD. BY HILTI, TULSA, OKLAHOMA OR EQUAL. PROVIDE C.R.S. LOCKWASHERS AND NUTS WITH ALL ANCHOR BOLTS.

ELEVATION

DETAIL (A) (1)

SCALE: 3 " = 1'- 0"

1. FOR GENERAL NOTES, SEE DWG. 2.
2. FOR MONOLITH AGLES, SEE DWGS. 3 AND 6.

NOTES:

SCALE: ½" = 1'- 0"

12" 0 2' 4' 6' 8'

SCALE: 1" = 1'- 0"

12" 0 1' 2' 3' 4' 5'

SCALE: 3" = 1' - 0"

12" 0 1'

SYMBOL	DESCRIPTION	DATE	APPROVED
1	HANDRAIL CONNECTIONS & BREAKWATER CROSS SECTION	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

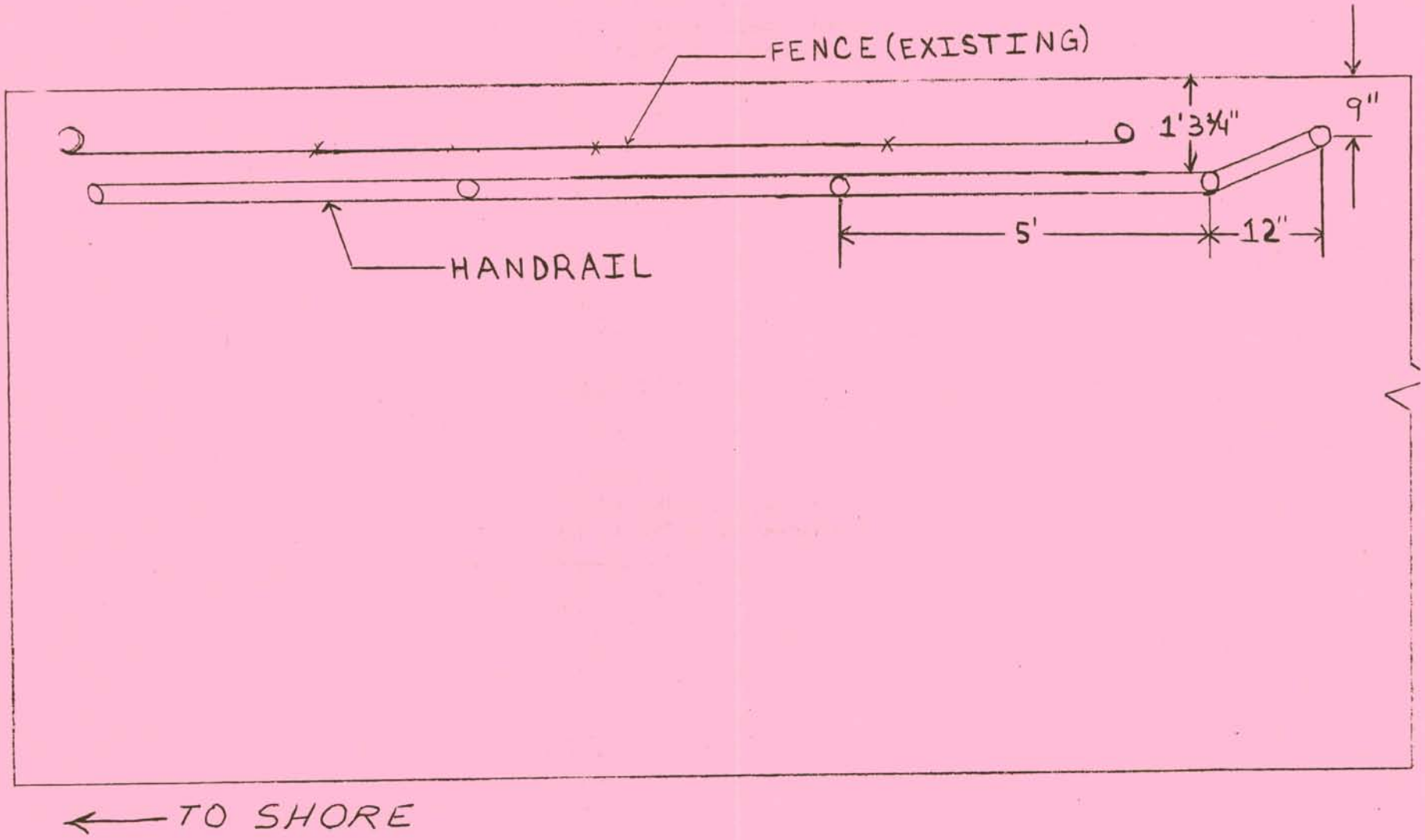
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEE PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS # 3
JEFFERSON PARISH, LA

HANDRAIL DETAILS

DESIGNED BY: ALD DRAWN BY: CPB CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 12	PLOT DATE: 3-26-99
	CADD FILE: 44967R31.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 13 OF 24

VALUE INCENTIVE CLAUSE APPLICABLE TO HIGHER PROFITS

C•A•D

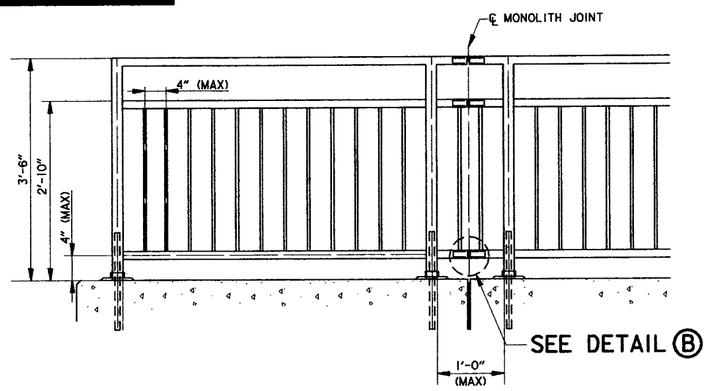


NOT TO SCALE

attachment to DWG 13.2

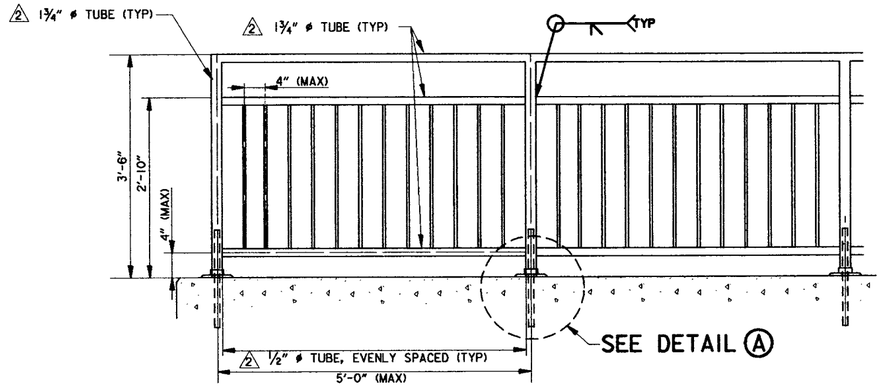
SK-99C0046-02

Safety is a Part of Your Contract



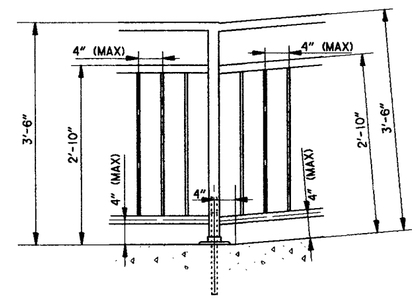
TYPICAL GUARDRAIL SECTION AT MONOLITH JOINT △2

SCALE: 1" = 1'- 0"



TYPICAL GUARDRAIL SECTION △2

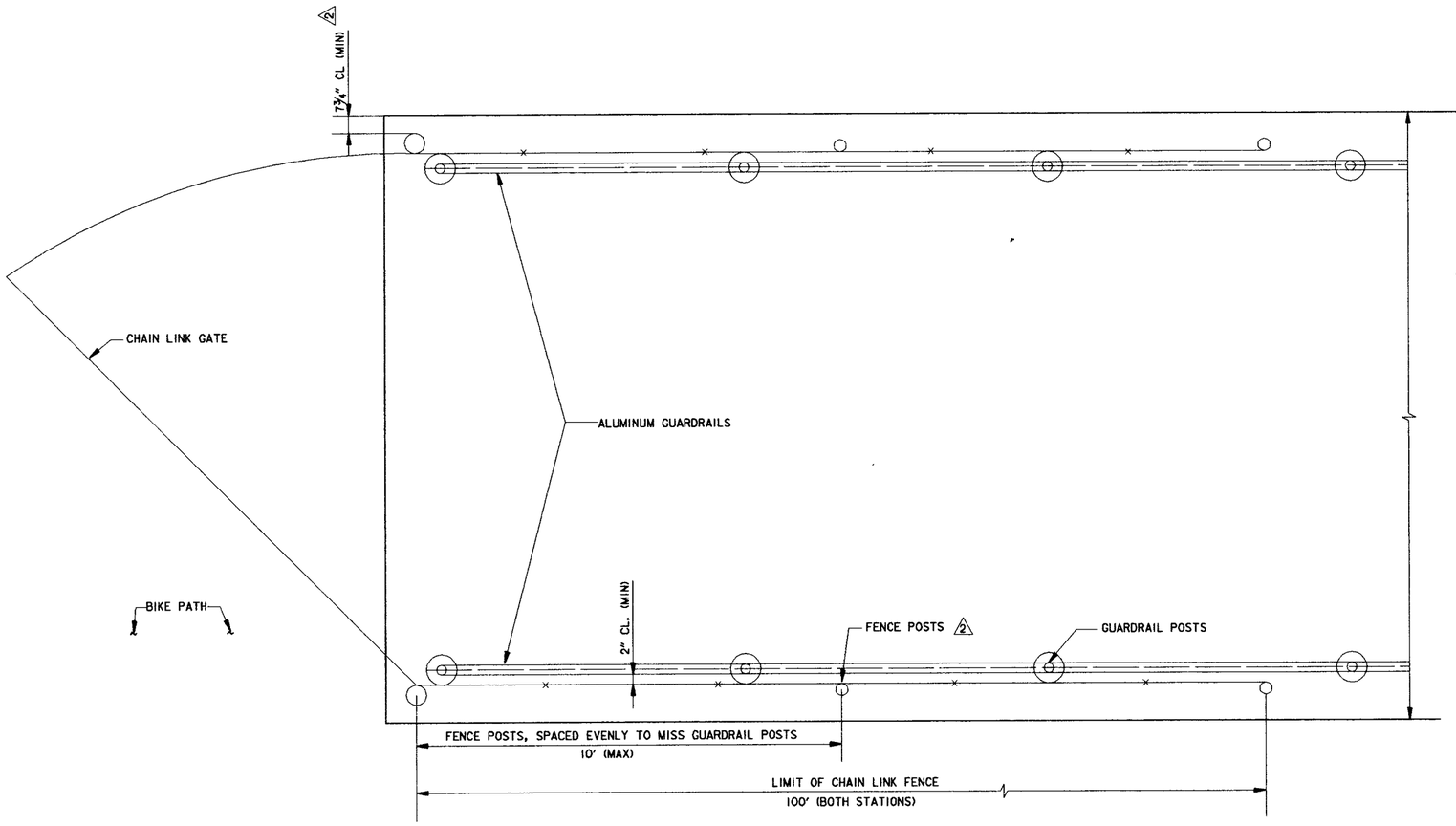
SCALE: 1" = 1'- 0"



△2 TYPICAL GUARDRAIL SECTION AT RAMP

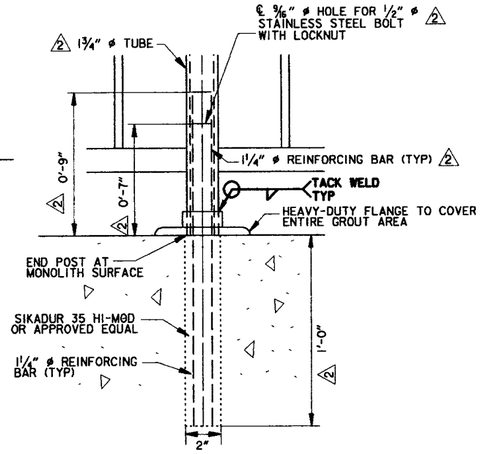
SCALE: 1" = 1'- 0"

△2 1. GUARDRAIL POSTS SHALL BE EVENLY SPACED, EXCEPT AT MONOLITH JOINTS WHERE SPACING SHALL BE AS SHOWN.
2. A GUARDRAIL POST SHALL BE PLACED AT EVERY P.I.



TYPICAL CHAIN LINK FENCE LAYOUT

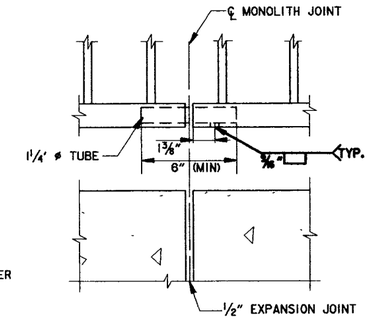
SCALE: 1" = 1'- 0"



ELEVATION

DETAIL Ⓐ △2

SCALE: 3 " = 1'- 0"



ELEVATION

DETAIL Ⓑ △2

SCALE: 3 " = 1'- 0"

NOTES:
1. FOR GENERAL NOTES, SEE DWG. 2.
2. FOR MONOLITH AGLES, SEE DWGS. 3 AND 6.

SCALE: 1" = 1'- 0"

12" 0 1' 2' 3' 4' 5'

SCALE: 3" = 1' - 0"

12" 0 1'

THIS PLAN ACCOMPANIES MODIFICATION ~~A0005~~ P00010 TO CONTRACT NUMBER DACW29-99-C-0046

C·A·D

SYMBOL	DESCRIPTION	DATE	APPROVED
△2	HANDRAIL CONNECTIONS	1-24-00	ALD
△1	HANDRAIL CONNECTIONS & BREAKWATER CROSS SECTION	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEE PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS # 3
JEFFERSON PARISH, LA

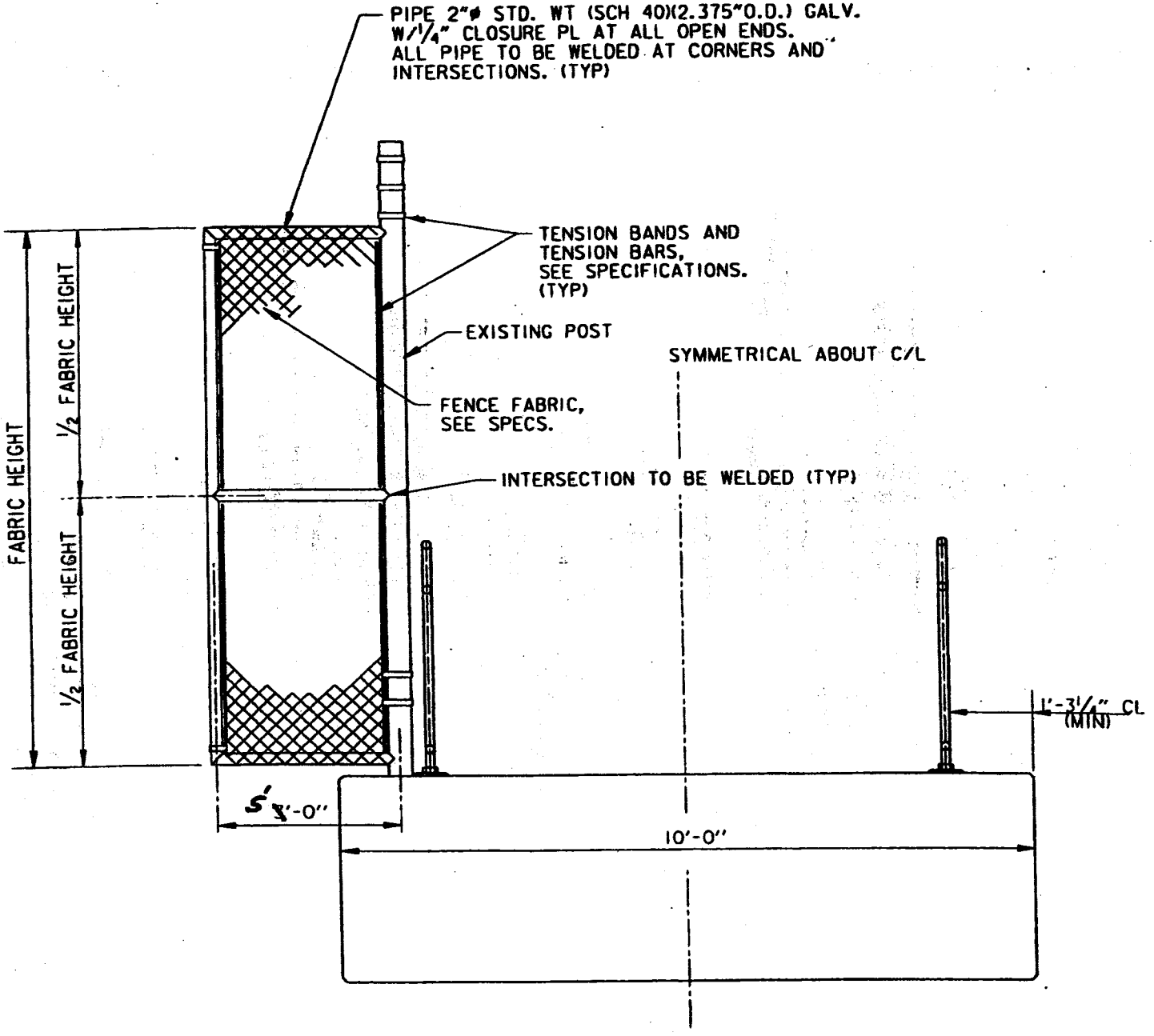
HANDRAIL DETAILS

DESIGNED BY: ALD DRAWN BY: CPB CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 12	PLOT DATE: 1-19-00
	CADD FILE: 44967R31.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 13 OF 24

VALUE INCENTIVE CLAUSE ENGINEERING — YOUR VALUE IS HIGHER PROFITS

COMPUTATION SHEET

PROJECT BREAKWATERS AT PS 2 & 3	PAGE 1 OF 1	COMPUTED BY CBW	DATE AUG 01
SUBJECT FENCE FIELD MODIFICATION		CHECKED BY	DATE



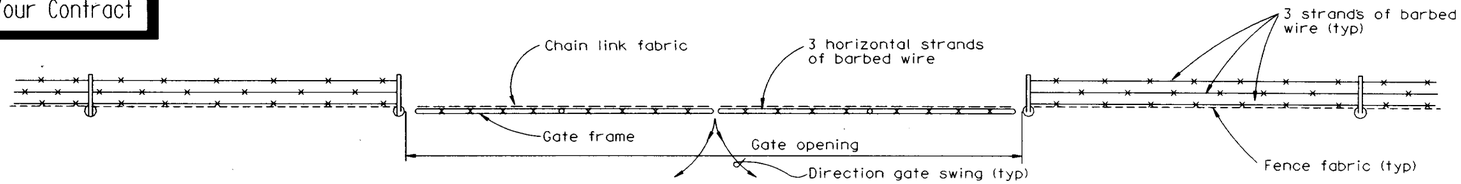
NOTE:

FENCE EXTENSION TO BE INSTALLED AT LAST FENCE POST.

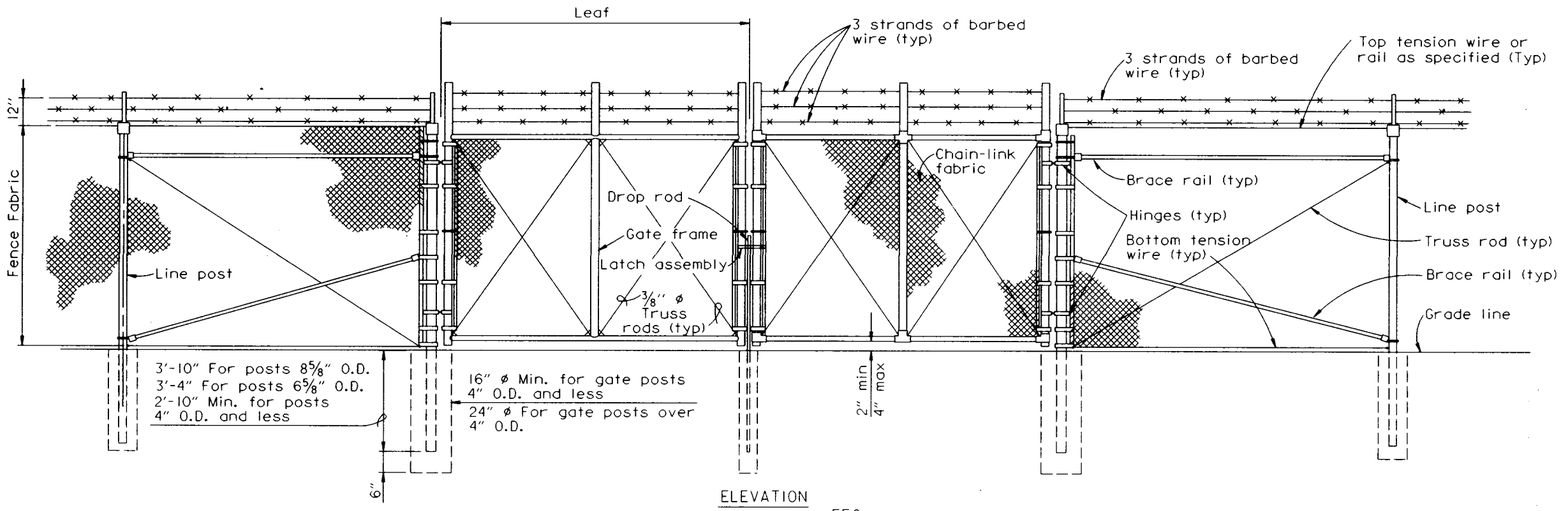
attachment to DWG 14

SK-99-C-0046-06

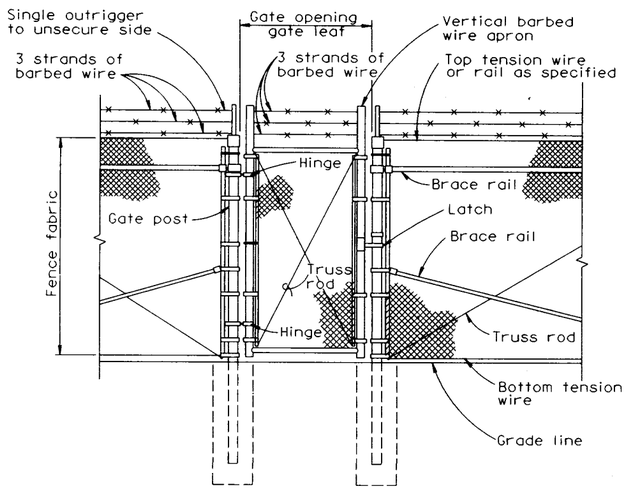
Safety is a Part of Your Contract



PLAN



ELEVATION
DOUBLE SWING GATE (TYPE FE6 FENCE)

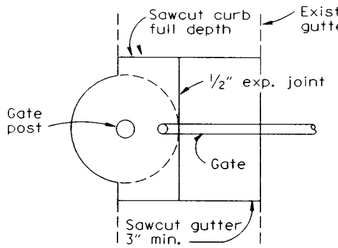


PERSONNEL GATE
TYPE FE6 FENCE

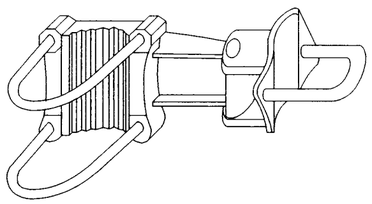
NOTES:

1. Details shown are to clarify requirements and are not intended to limit other type of fence sections and methods of installation.
2. Swing Gates shall be constructed with drop rods, padlocks, latch assembly and gate keepers except as noted.
3. All gate frames shall be a minimum 1.90" nominal (round) or 2.00" nominal (square). Gate frames shall be of welded construction or shall be assembled using heavy fittings. At Contractor's option a welded horizontal brace may be used in lieu of truss rods to brace all welded gate frames. The Contractor shall be responsible for the construction of all gates supplied.
4. Gates shall be designated as follows:
   Fence Type - FE5, FE6, etc.
   Fence Height - Inches
   Type Opening - SO (single)
   - DO (double)
   Hinge - RA (standard)
   - HO (offset)
   Opening - Feet (clear opening between gate posts)
   EXAMPLES: FE6-84-DO-RA-24
   FE5-48-SO-HO-6

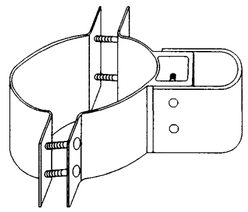
GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6' or less	2.875" O.D. 2.5" SO
More than 6' to 13'	4.0" O.D.
More than 13' to 18'	6.625" O.D.
More than 18'	8.625" O.D.



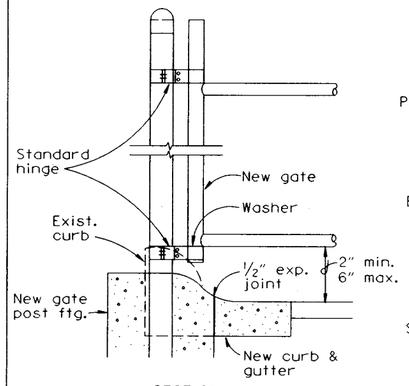
PLAN



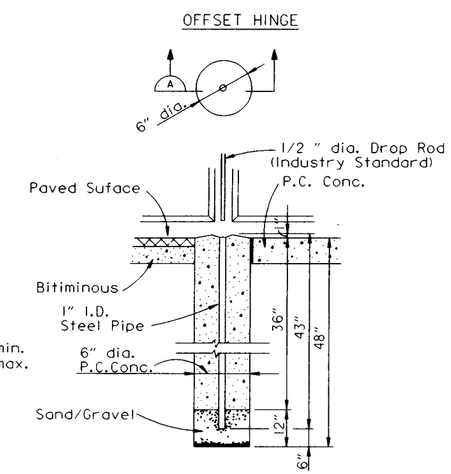
OFFSET HINGE



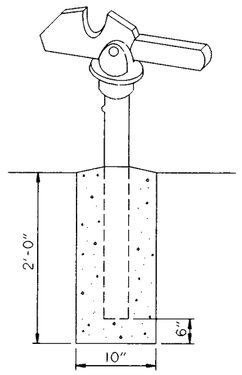
STANDARD HINGE



SECTION
GATE POST DETAIL
AT CURB AND GUTTER
NO SCALE

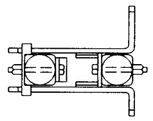


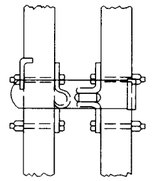
DROP ROD FOUNDATION



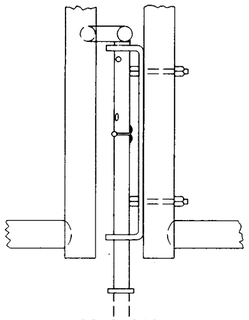
GATE KEEPER
(TO HOLD GATE OPEN)

SWING GATE DETAILS
NO SCALE





LATCH ASSEMBLY



DROP ROD ASSEMBLY

SYMBOL	DESCRIPTION	DATE	APPROVED
REVISIONS			

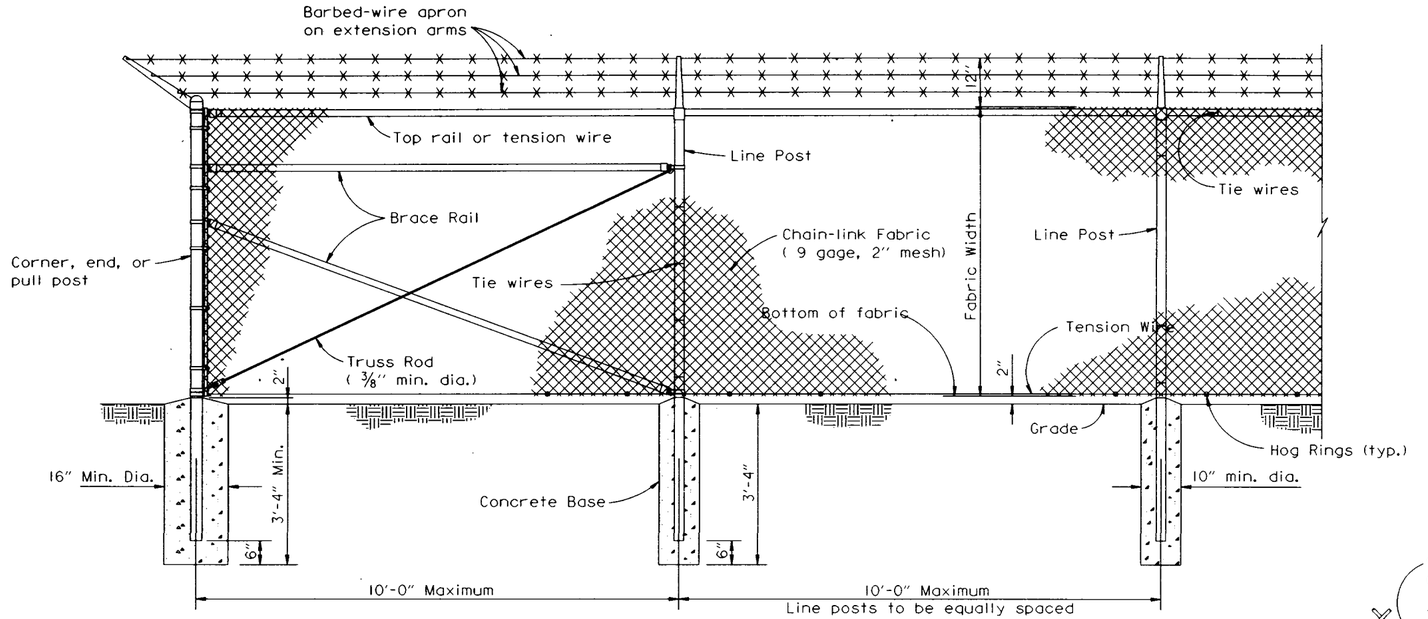
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

FE6 CHAIN LINK SECUTIY FENCE DETAILS

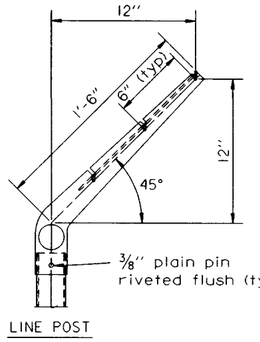
DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 12	PLOT DATE: 9/4/98
	CADD FILE: 44967R25.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 14 OF 24

C•A•D

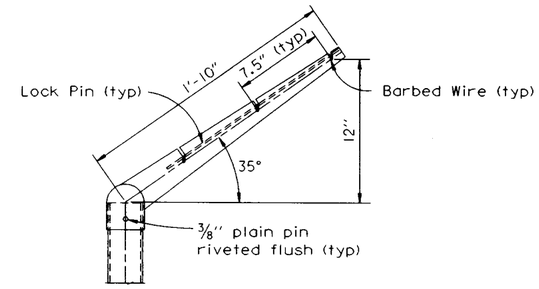


CHAIN-LINK SECURITY FENCE DETAIL

NO SCALE



LINE POST



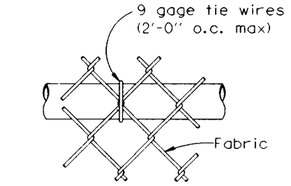
CORNER POST

EXTENSION ARM DETAILS

NO SCALE

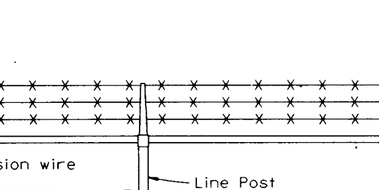
STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC LESS THAN 72"	FABRIC 72" TO 96"	FABRIC OVER 96"
Corner, End & Pull Posts			
Tubular - Round	2.375" O.D.	2.875" O.D.	4.00" O.D.
Tubular - Square	2.00" SQ.	2.50" SQ.	3.00" SQ.
C-Section (Roll-Formed)	3.50" x 3.50"	3.50" x 3.50"	———
Line Posts			
Tubular - Round	1.90" O.D.	2.375" O.D.	2.875" O.D.
H-Section	2.25" x 1.70"	2.25" x 1.70"	2.25" x 1.70"
C-Section (Roll-Formed)	1.875" x 1.625"	2.25" x 1.70"	———
Top, Bottom & Brace Rails			
Tubular - Round	1.66" O.D.		
Tubular - Square	1.50" O.D.		
H-Section	1.625" x 1.50"		
C-Section (Roll-Formed)	1.625" x 1.25"		

Safety is a Part of Your Contract



TOP OR BRACE RAIL ATTACHMENT

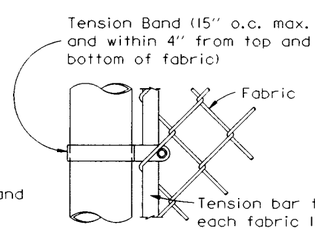
TRUSS ROD AND BAND



ROUND POST

H-BEAM

BRACE RAIL CLAMP DETAILS

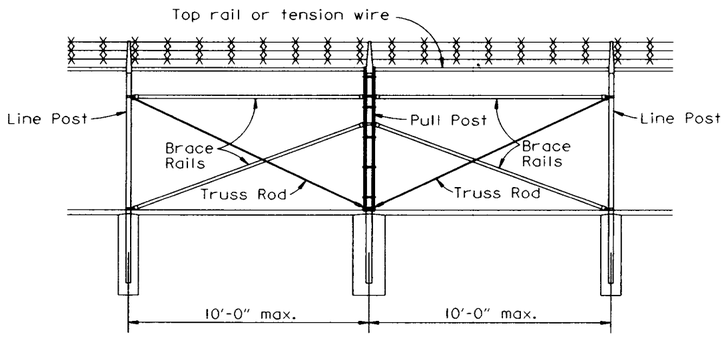


END OR GATE POST DETAIL

TENSION BAND DETAIL

FASTENING DETAILS

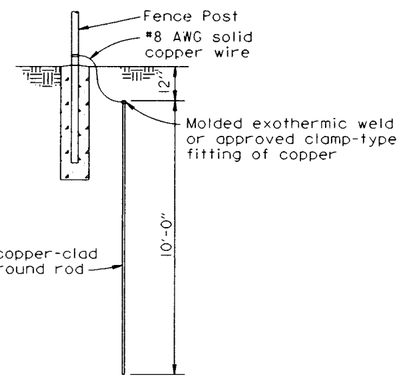
NO SCALE



BRACE PANEL DETAIL

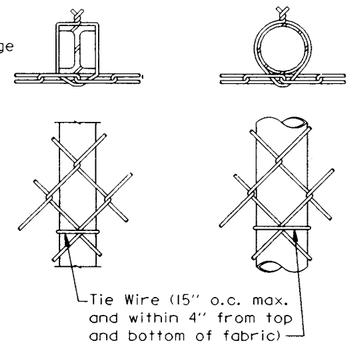
NO SCALE

NOTE:
Provide brace panel whenever straight runs exceed 500 feet.



GROUNDING DETAIL

NO SCALE



H-BEAM ROUND POST

LINE POST ATTACHMENTS

NOTES:

1. Details shown are to clarify requirements and are not intended to limit other types of fence sections and methods of installation.
2. Wire ties, rails, posts, and braces shall be constructed on the secure side of the fence alignment. Chain-link fabric shall be placed on the opposite side of the secure area.
3. Unless specifically shown or specified, all FE6 fence shall have apron extended outward from the area being protected.
4. C-section posts shall be installed so that the void inside the post is completely filled with concrete up to the top of the foundation.

FENCE LEGEND:

Type FE5 - Chain-Link Fence Without barbed-wire apron
Type FE6 - Chain-Link Fence w/barbed-wire on single outrigger
Type FE7 - Chain-Link Fence w/barbed wire on double outrigger
Type FE8 - Chain-Link Fence w/barbed-wire and barbed-tape on double outrigger
TR - Fence with top rail and tension wire at bottom
TBR - Fence with top and bottom rails
TWB - Tension wire top and bottom
TWBR - Fence with top tension wire and bottom rail
Final number is fabric width in inches.

Examples:

FE6-TR-72 - Chain-Link security fence with barbed-wire on single outrigger, top rail, and 72 inch fabric width.
FE5-TWB-48 - Chain-Link security fence with no apron, top and bottom tension wire, and 48 inch fabric width.

SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

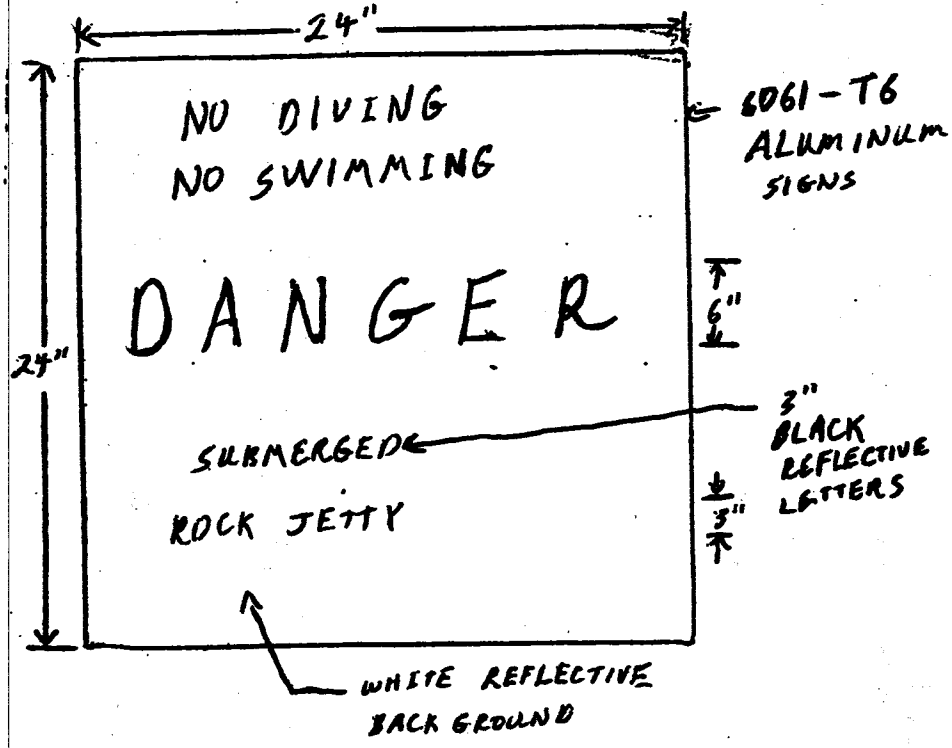
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

FE6 CHAIN-LINK SECURITY FENCE DETAILS

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 12	PLOT DATE: 9/4/98
	CADD FILE: 44967R26.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 15 OF 24

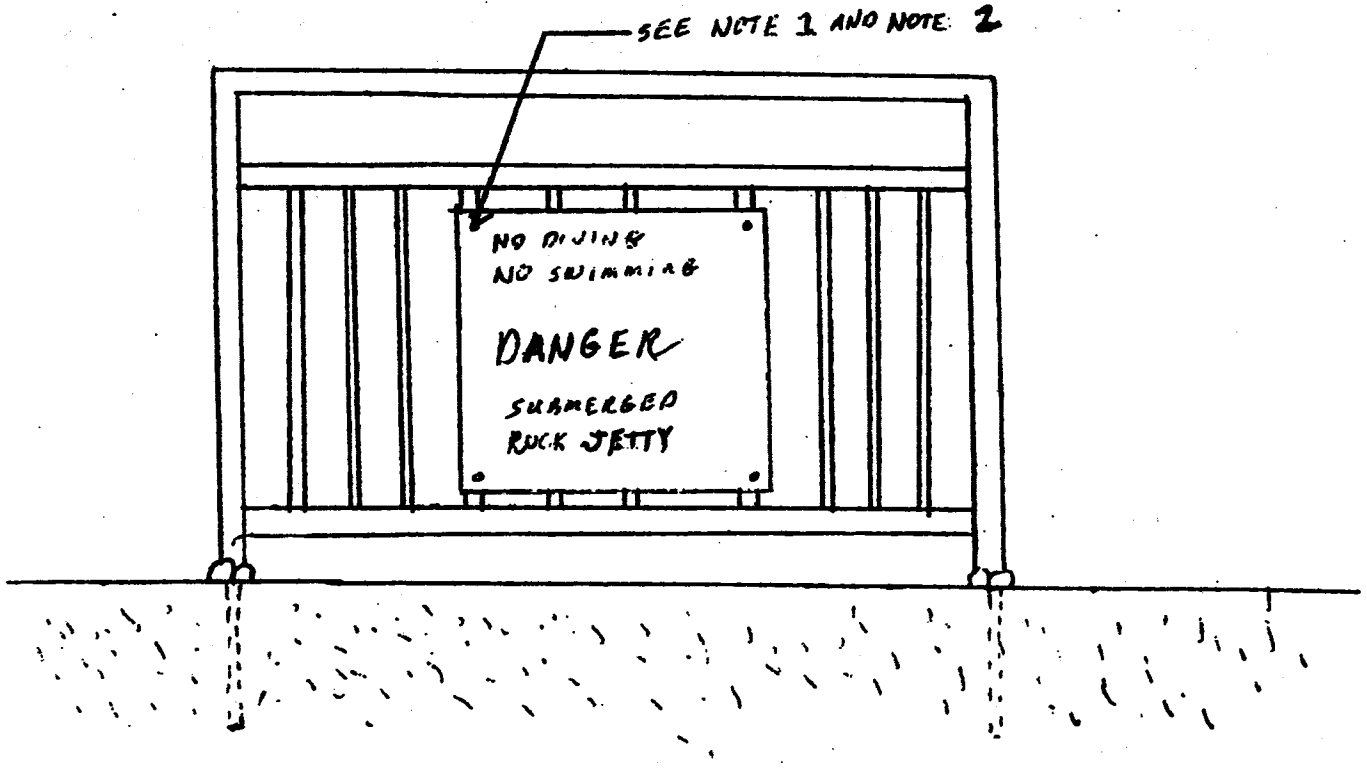
C·A·D

VALUE INCENTIVE CLASSES ENGINEERING — YOUR KEY TO HIGHER PROFITS



NOTES:

1. USE ALUMINUM SIGNS AND 4 - 3/8" x 3 1/2" ALUMINUM BOLTS AND NUTS PER SIGN
2. SCARIFY BOLTS AFTER INSTALL TO PREVENT THEFT.
3. SIGNS SHALL FACE INSIDE OF HANDRAILS AND SHALL BE STAGGERED ON 300' INTERVALS.
4. PS#3 SHALL HAVE 6 SIGNS STARTING @ STA. 1+47 W/L AND ENDING @ STA. 15+80 W
5. PS#2 SHALL HAVE 4 SIGNS STARTING @ STA. 1+03 W/L AND ENDING @ STA. 10+77



SK-99C0046-03

attachment to DWG 16

Safety is a Part of Your Contract

℄ EXISTING LEVEE

STA. 331+90.40 B/L

LAKE PONTCHARTRAIN

LIMIT OF STONE

SEE DETAIL, DWG. 18
FA-249 LANTERN

NEW BREAKWATER

STA. 337+72.55 B/L

EXISTING FLOODWALL AT PUMPING STATION

STA. 342+09.29 B/L

LIMIT OF STONE

SEE DETAIL, DWG. 18
FA-249 LANTERN

NOTES:
X - PERMANENT WARNING MARKER

PLAN
SCALE: 1" = 50'
50' 0 50' 100' 150' 200'

SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

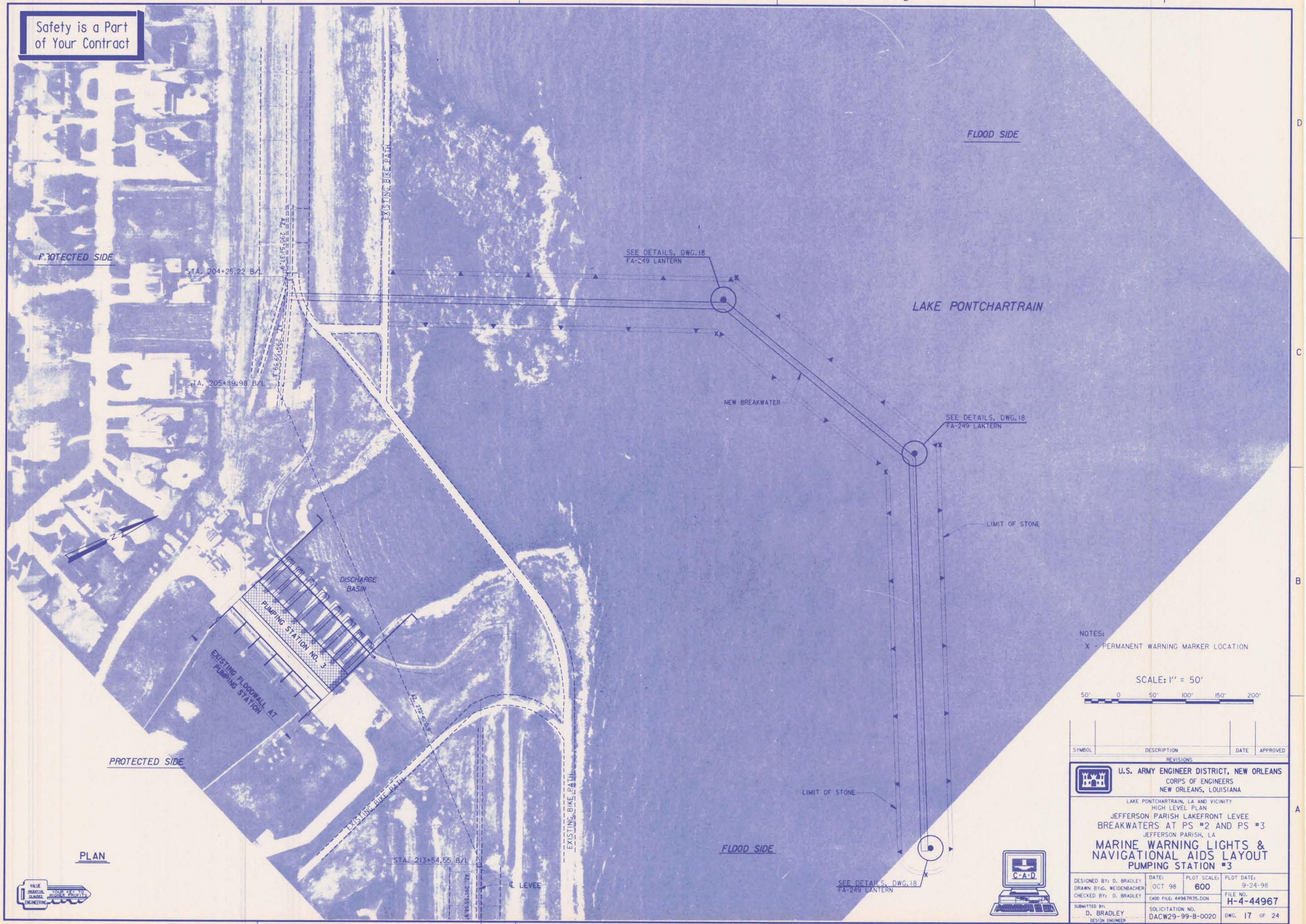
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

MARINE WARNING LIGHTS & NAVIGATIONAL AIDS LAYOUT PUMPING STATION #2

DESIGNED BY: D. BRADLEY	DATE: OCT 98	PLOT SCALE: 600	PLOT DATE: 9-24-98
DRAWN BY: G. WEIDENBACHER			
CHECKED BY: D. BRADLEY	CADD FILE: 44967R34.DGN		FILE NO. H-4-44967
SUBMITTED BY: D. BRADLEY, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 16 OF 24

Safety is a Part of Your Contract



PLAN

NOTES:
X - PERMANENT WARNING MARKER LOCATION

SCALE: 1" = 50'

50' 0 50' 100' 150' 200'

SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

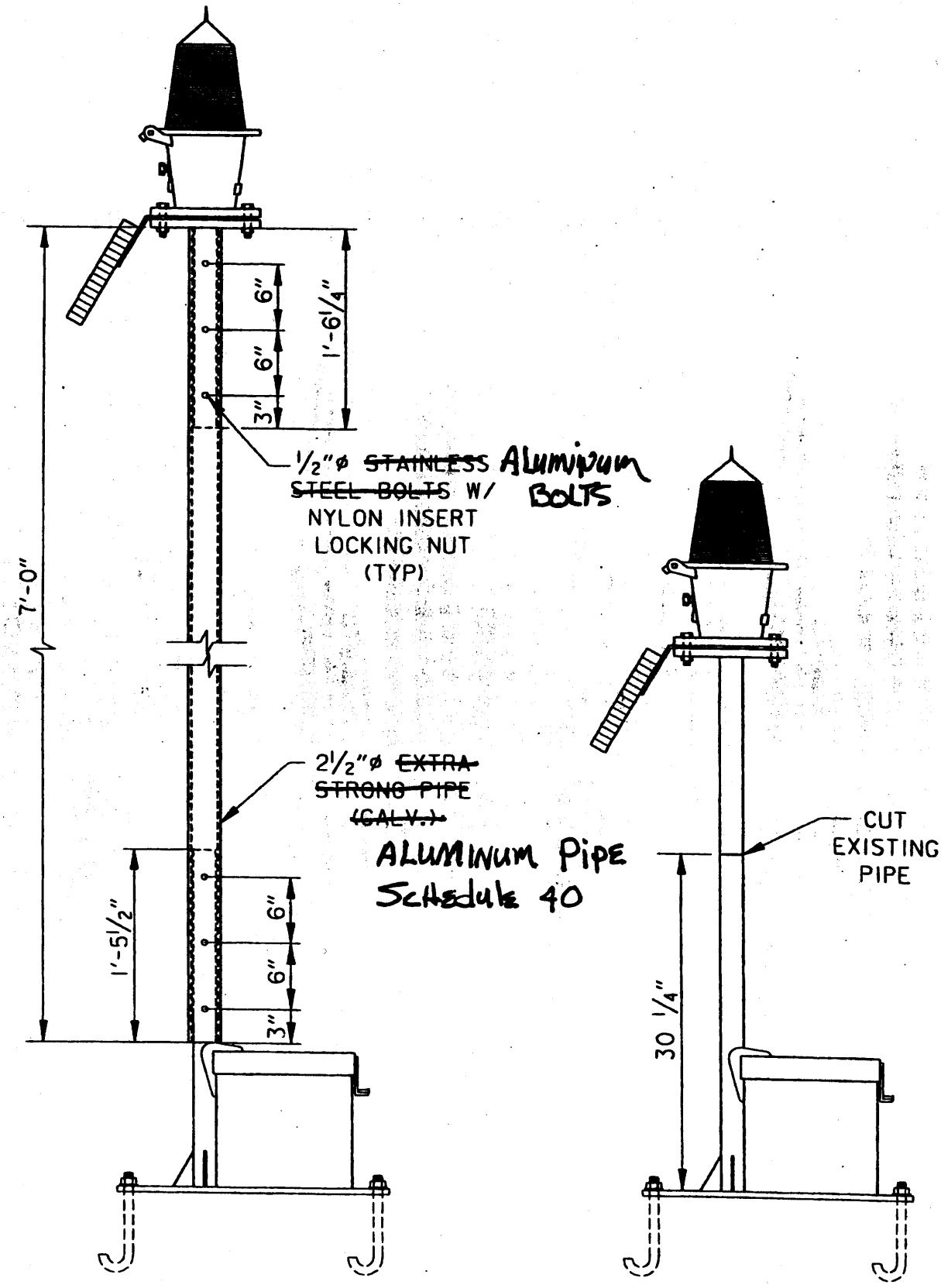
MARINE WARNING LIGHTS & NAVIGATIONAL AIDS LAYOUT PUMPING STATION #3

DESIGNED BY: D. BRADLEY DRAWN BY: G. WEIDENBACHER CHECKED BY: D. BRADLEY	DATE: OCT 98	PLOT SCALE: 600	PLOT DATE: 9-24-98
	CADD FILE: 44967R35.DGN		FILE NO. H-4-44967
SUBMITTED BY: D. BRADLEY, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 17 OF 24

VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS

COMPUTATION SHEET

PROJECT BREAKWATERS AT PS 2 & 3	PAGE 1 OF 1	COMPUTED BY CBW	DATE AUG 01
SUBJECT MARINE WARNING LIGHT FIELD MODIFICATION		CHECKED BY	DATE

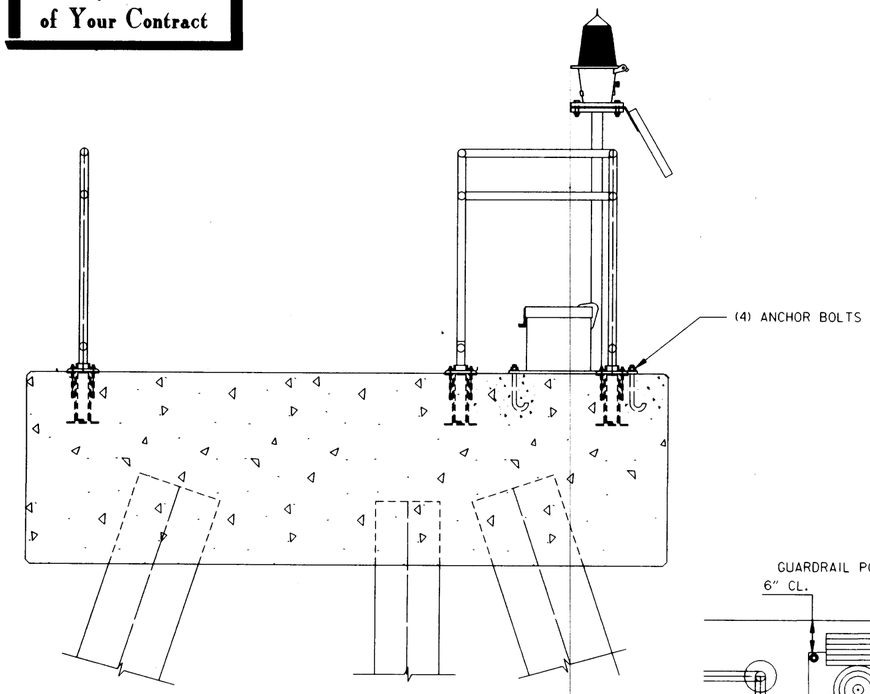


NOTE: WIRING INSIDE EXISTING PIPE SHALL BE EXTENDED TO NEW HEIGHT.

SK-99-C-0046-05

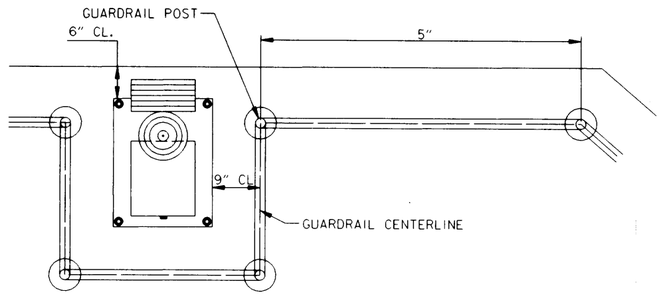
attachment to DWG 18.1

Safety is a Part of Your Contract



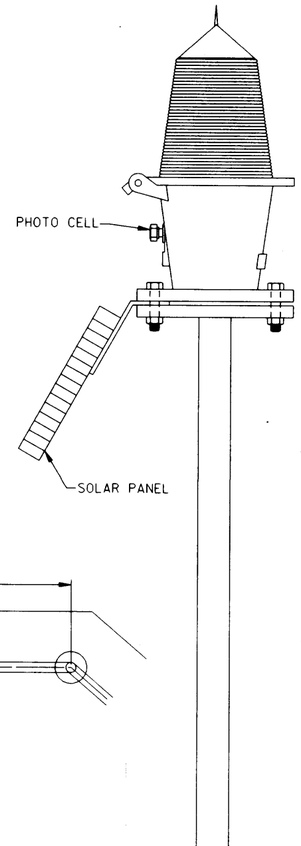
1 TYPICAL MARINE WARNING LIGHT LOCATION ELEVATION

SCALE: 1'' = 1'- 0''



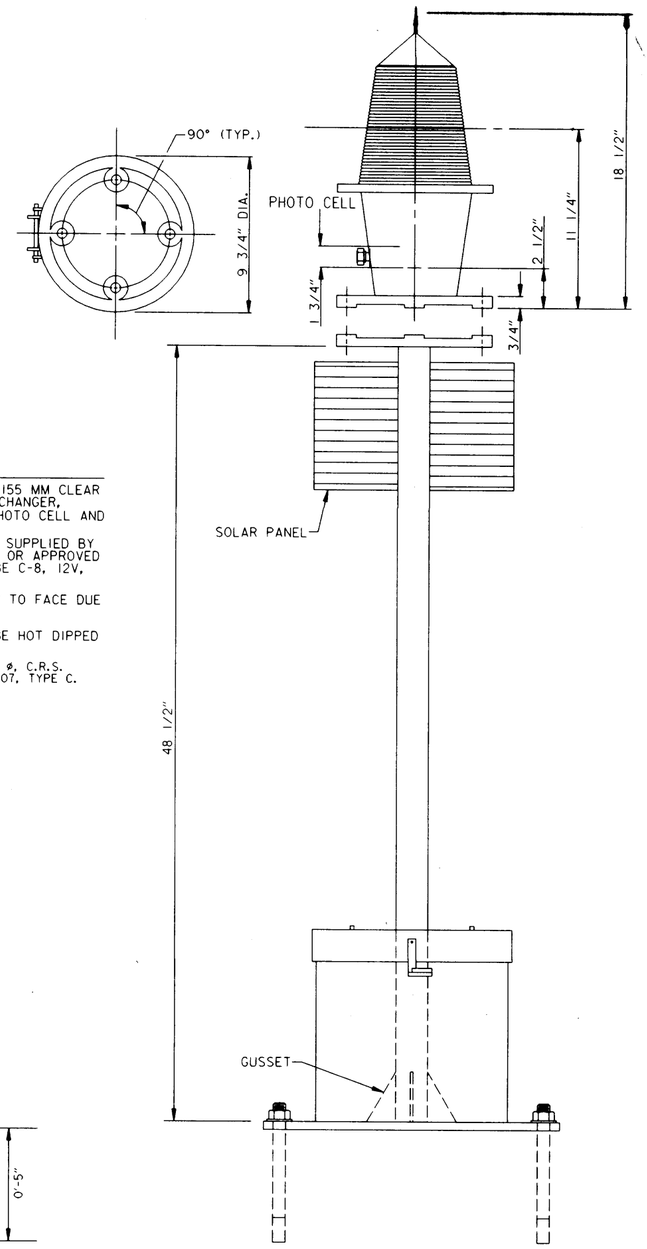
TYPICAL MARINE WARNING LIGHT LOCATION PLAN

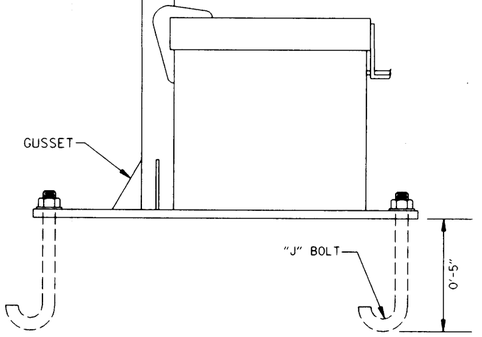
SCALE: 1'' = 1'- 0''



NOTES:

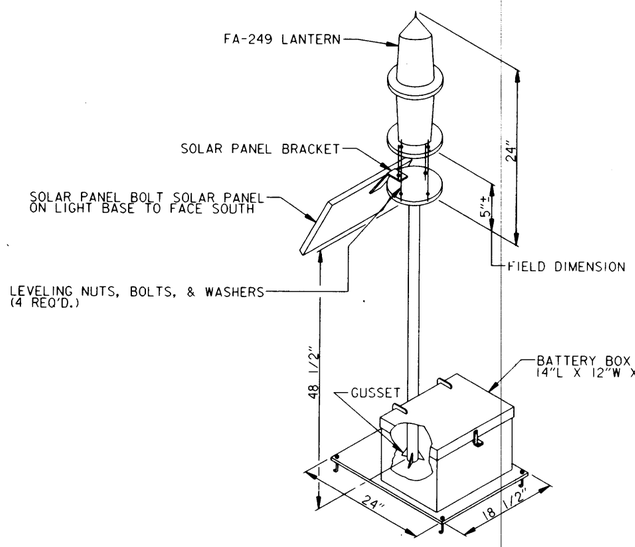
1. FA-249 LANTERN WITH 155 MM CLEAR LENS, APL-1297 LAMP CHANGER, APF-247-P FLASHER, PHOTO CELL AND LEVELING BOLTS. SINGLE LIFT ASSEMBLY SUPPLIED BY AUTOMATIC POWER INC. OR APPROVED EQUAL. LAMPS SHALL BE C-8, 12V, 0.25 A.
2. POSITION SOLAR ARRAY TO FACE DUE SOUTH.
3. CONSTRUCTION SHALL BE HOT DIPPED GALVANIZED.
4. "J" BOLTS SHALL BE 1/2" ø, C.R.S. CONFORMING TO ASTM A 307, TYPE C.

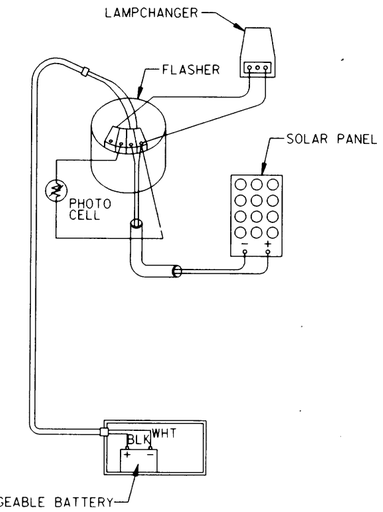




SINGLE LIFT ASSEMBLY
SOLAR POWERED CLASS "C" ZONE

SCALE: 3'' = 1' - 0''





SINGLE LIFT ASSEMBLY

SCALE: 1'' = 1'- 0''

SCALE: 3'' = 1' - 0''

12'' 0 1'

SCALE: 1'' = 1'- 0''

12'' 0 1' 2' 3' 4' 5'

SCALE: 12'' = 1' - 0''

6" 3" 0

SYMBOL	DESCRIPTION	DATE	APPROVED
1	BREAKWATER CROSS SECTION CHANGED	4-19-99	ALD

REVISIONS

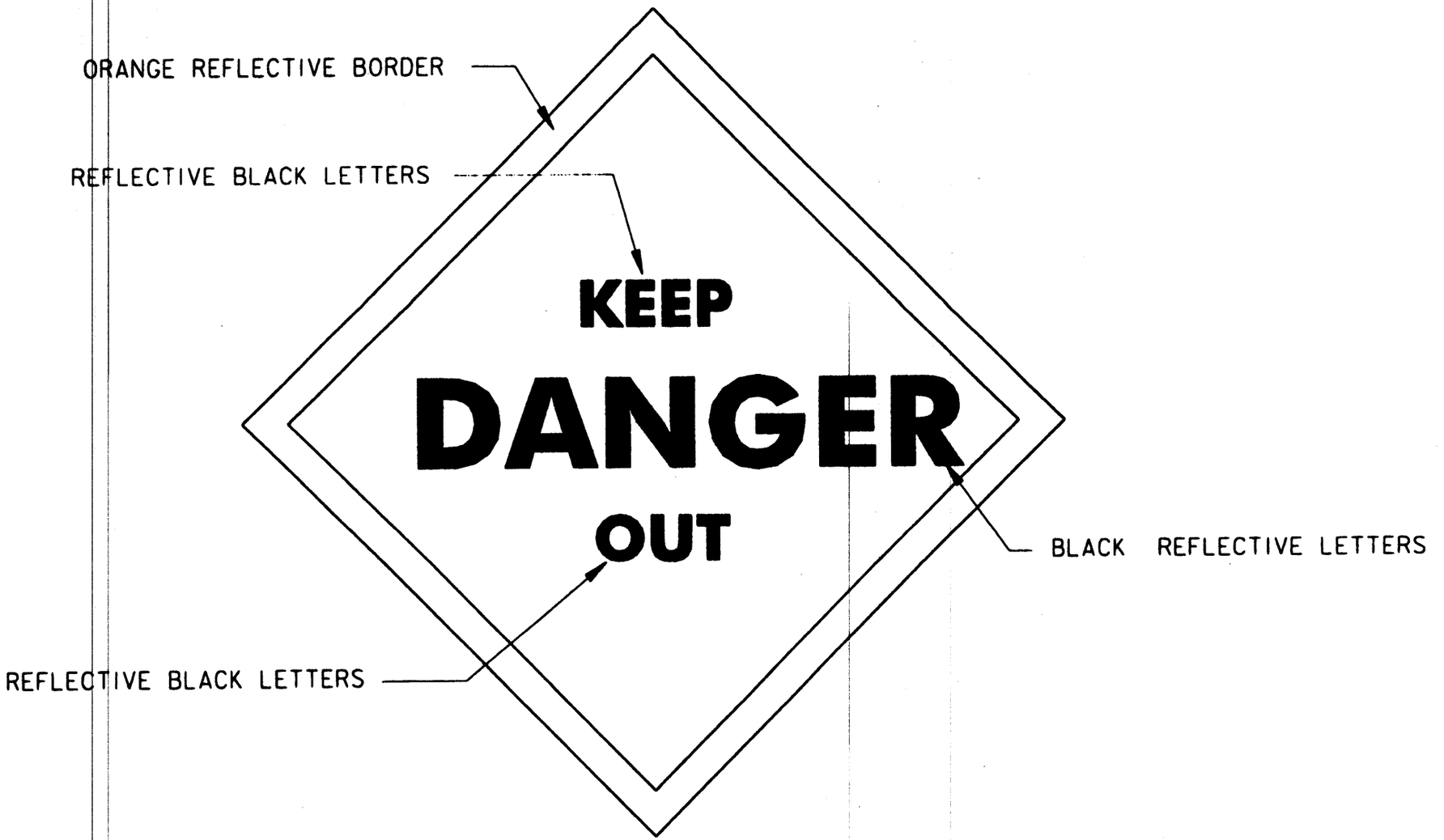
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEE PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS # 3
JEFFERSON PARISH, LA

MARINE WARNING LIGHT AND DETAIL

DESIGNED BY: D.BRADLEY DRAWN BY: G.WEIDENBACHER CHECKED BY: D.BRADLEY	DATE: OCT 98	PLOT SCALE: 12	PLOT DATE: 3-29-99
	CADD FILE: 44967R36.DGN		FILE NO. H-4-44967
SUBMITTED BY: D.BRADLEY, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 18 OF 24

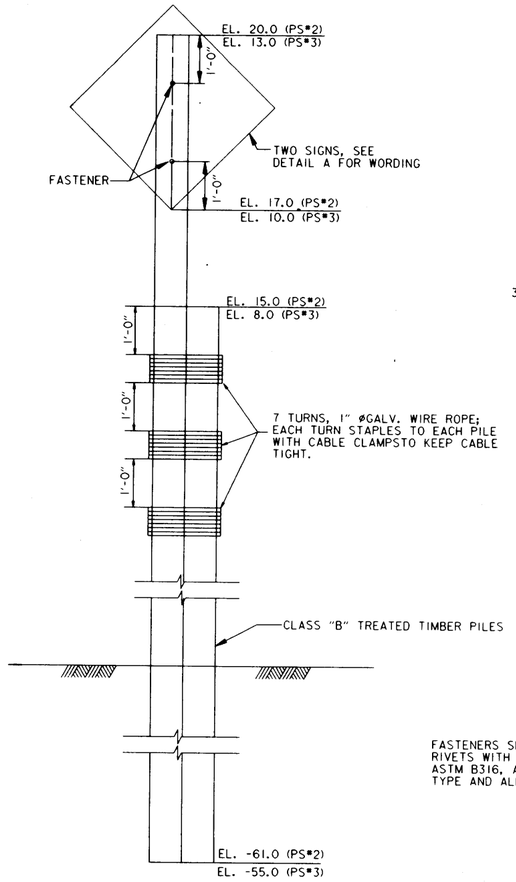
VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS



attachment to DWG 19

SK 001

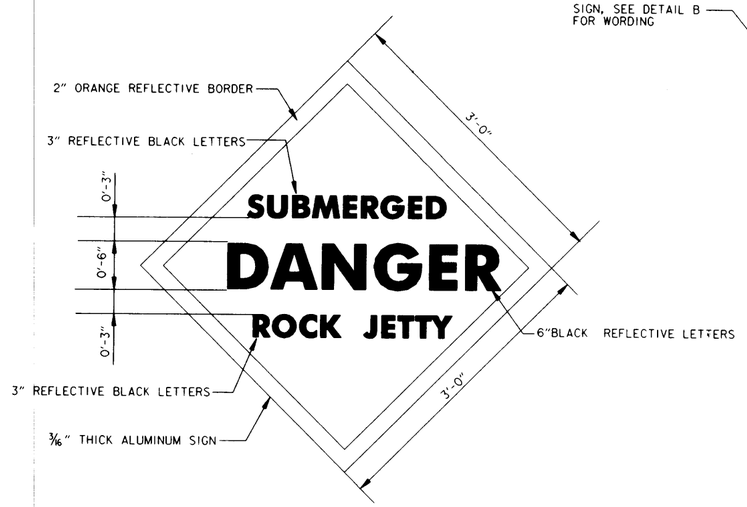
Safety is a Part of Your Contract



FASTENERS SHALL BE 3/16" ØSOLID-PIN, ALUMINUM ALLOY RIVETS WITH BRASIER HEADS. ALUMINUM ALLOY SHALL BE ASTM B316, ALLOY 2024-T4. COLLORS SHALL BE OF THE TYPE AND ALLOY RECOMMENDED BY THE MANUFACTURER.

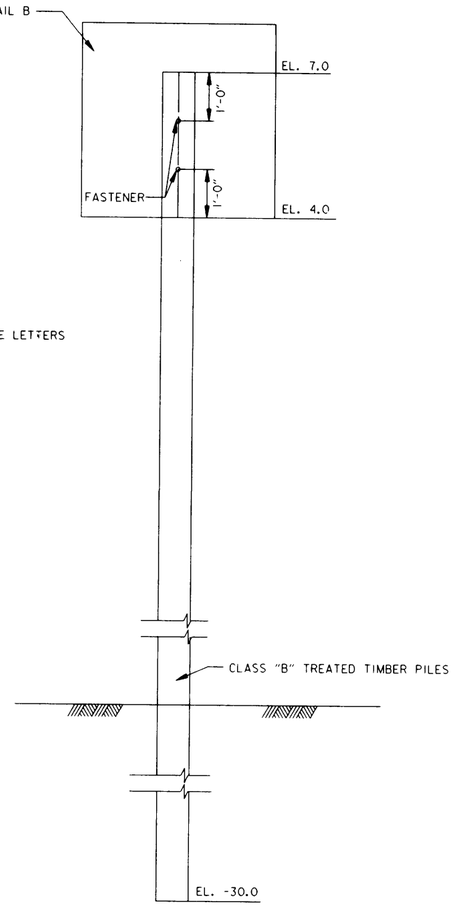
WARNING MARKER

SCALE: 3/4" = 1'-0"



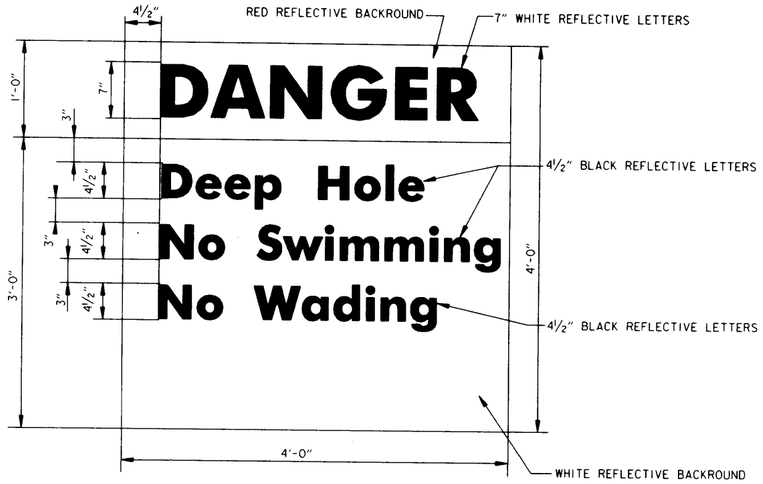
DETAIL A

SCALE: 1 1/2" = 1'-0"



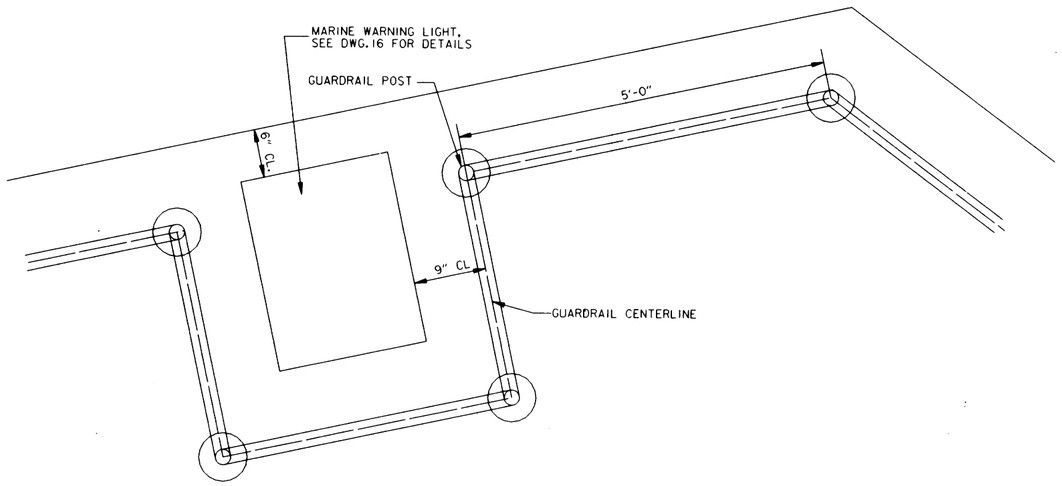
TEMPORARY WARNING SIGN

SCALE: 3/4" = 1'-0"



DETAIL B

SCALE: 1 1/2" = 1'-0"



TYPICAL MARINE WARNINE LIGHT LOCATION

SCALE: 1 1/2" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. 2.
2. FOR LOCATIONS OF NAVIGATION MARKERS AND MARINE LIGHTS, SEE DWGS.16 AND 17.
3. ALL SIGN LETTERING SHALL BE HELVETICA BOLD TYPE.
4. ALL SIGNS SHALL BE 6061-T6 ALUMINUM.
5. FASTENERS SHALL BE 3/16" ØSOLID-PIN, ALUMINUM ALLOY RIVETS WITH BRASIER HEADS. ALUMINUM ALLOY SHALL BE ASTM B316, ALLOY 2024-T4. COLLORS SHALL BE OF THE TYPE AND ALLOY RECOMMENDED BY THE MANUFACTURER.

SCALE: 3/4" = 1'- 0"
12" 0 1' 2' 3' 4' 5'

SCALE: 1 1/2" = 1' - 0"
12" 0 1' 2' 3'

SYMBOL	DESCRIPTION	DATE	APPROVED
REVISIONS			

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

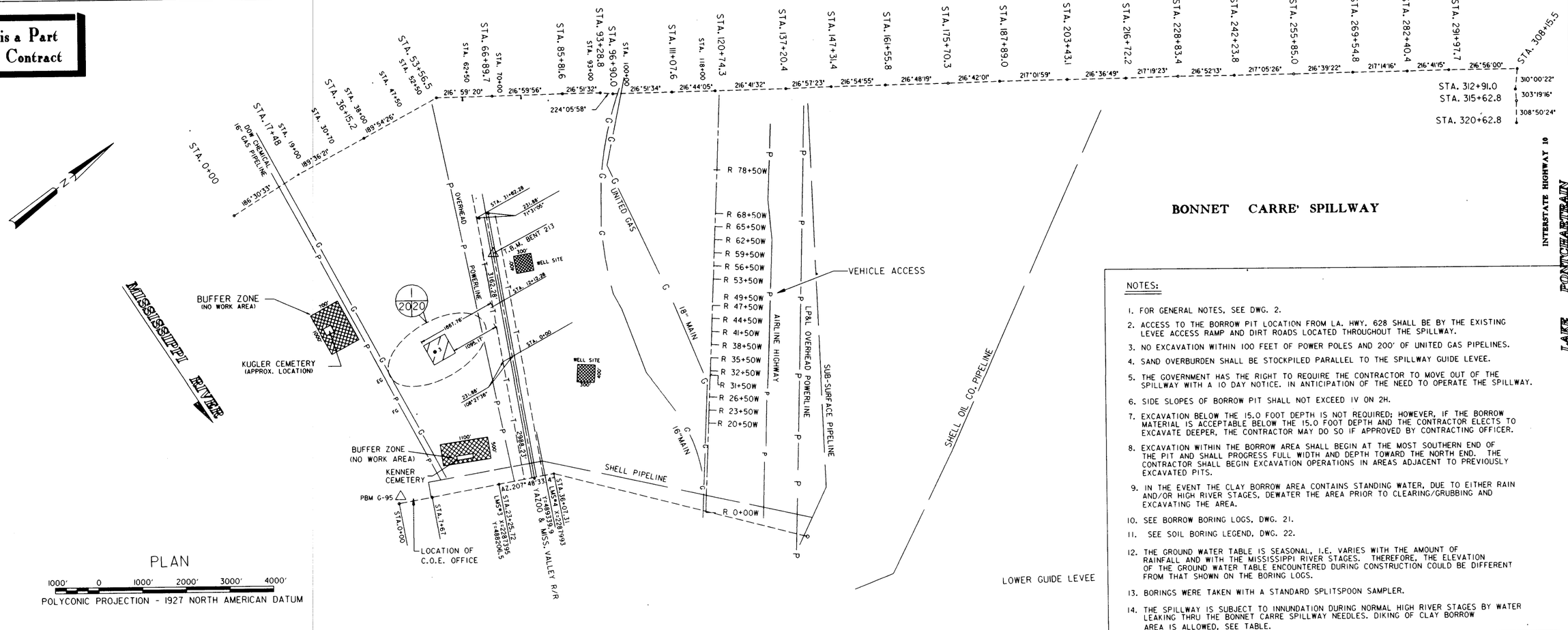
NAVIGATIONAL AIDS

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 8	PLOT DATE: 9/24/98
	CADD FILE: 44967R32.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 19 OF 24

VALUE INCENTIVE CLAUSES — YOUR KEY TO HIGHER PROFITS — ENGINEERING

C•A•D

Safety is a Part of Your Contract



PLAN

1000' 0 1000' 2000' 3000' 4000'

POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM

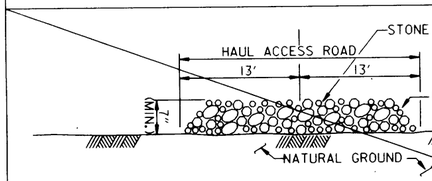
BONNET CARRE' SPILLWAY

INTERSTATE HIGHWAY 10

LAKE PONTCHARTRAIN

NOTES:

1. FOR GENERAL NOTES, SEE DWG. 2.
2. ACCESS TO THE BORROW PIT LOCATION FROM LA. HWY. 628 SHALL BE BY THE EXISTING LEVEE ACCESS RAMP AND DIRT ROADS LOCATED THROUGHOUT THE SPILLWAY.
3. NO EXCAVATION WITHIN 100 FEET OF POWER POLES AND 200' OF UNITED GAS PIPELINES.
4. SAND OVERBURDEN SHALL BE STOCKPILED PARALLEL TO THE SPILLWAY GUIDE LEVEE.
5. THE GOVERNMENT HAS THE RIGHT TO REQUIRE THE CONTRACTOR TO MOVE OUT OF THE SPILLWAY WITH A 10 DAY NOTICE. IN ANTICIPATION OF THE NEED TO OPERATE THE SPILLWAY.
6. SIDE SLOPES OF BORROW PIT SHALL NOT EXCEED 1V ON 2H.
7. EXCAVATION BELOW THE 15.0 FOOT DEPTH IS NOT REQUIRED; HOWEVER, IF THE BORROW MATERIAL IS ACCEPTABLE BELOW THE 15.0 FOOT DEPTH AND THE CONTRACTOR ELECTS TO EXCAVATE DEEPER, THE CONTRACTOR MAY DO SO IF APPROVED BY CONTRACTING OFFICER.
8. EXCAVATION WITHIN THE BORROW AREA SHALL BEGIN AT THE MOST SOUTHERN END OF THE PIT AND SHALL PROGRESS FULL WIDTH AND DEPTH TOWARD THE NORTH END. THE CONTRACTOR SHALL BEGIN EXCAVATION OPERATIONS IN AREAS ADJACENT TO PREVIOUSLY EXCAVATED PITS.
9. IN THE EVENT THE CLAY BORROW AREA CONTAINS STANDING WATER, DUE TO EITHER RAIN AND/OR HIGH RIVER STAGES, DEWATER THE AREA PRIOR TO CLEARING/GRUBBING AND EXCAVATING THE AREA.
10. SEE BORROW BORING LOGS, DWG. 21.
11. SEE SOIL BORING LEGEND, DWG. 22.
12. THE GROUND WATER TABLE IS SEASONAL, I.E. VARIES WITH THE AMOUNT OF RAINFALL AND WITH THE MISSISSIPPI RIVER STAGES. THEREFORE, THE ELEVATION OF THE GROUND WATER TABLE ENCOUNTERED DURING CONSTRUCTION COULD BE DIFFERENT FROM THAT SHOWN ON THE BORING LOGS.
13. BORINGS WERE TAKEN WITH A STANDARD SPLITSPOON SAMPLER.
14. THE SPILLWAY IS SUBJECT TO INNUNDATION DURING NORMAL HIGH RIVER STAGES BY WATER LEAKING THRU THE BONNET CARRE SPILLWAY NEEDLES. DIKING OF CLAY BORROW AREA IS ALLOWED, SEE TABLE.



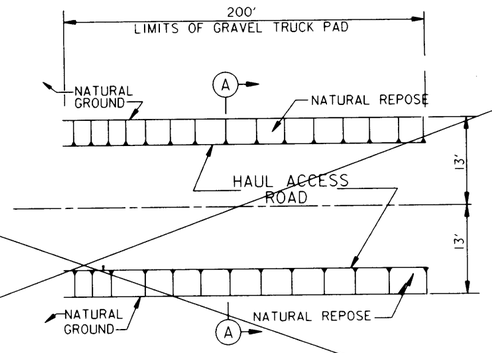
SECTION (A)

NOT TO SCALE

NOTES: FOR BONNET CARRE' SPILLWAY ONLY

A STONE STABILIZED PAD SHALL BE LOCATED AT POINTS OF VEHICULAR EGRESS FROM THE BORROW AREAS TO ELIMINATE MUD FROM BEING TRANSPORTED ONTO PUBLIC ROADS.
THE TIRES OF ALL VEHICLES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD. A FEW BASIC DESIGN GUIDELINES FOR THE USE OF A STONE CONSTRUCTION ENTRANCE AND WASH RACKS ARE:

1. THE STONE LAYER MUST BE AT LEAST 7 INCHES THICK;
2. THE STONE SHALL CONFORM TO THE GRADATION SHOWN ON THE ABOVE TABLE.
3. THE LENGTH OF THE PAD MUST BE AT LEAST 200 FEET AND IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR EGRESS;
4. PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF-SITE;



FOR BONNET CARRE' SPILLWAY ONLY

PLAN VIEW - GRAVEL TRUCK PAD

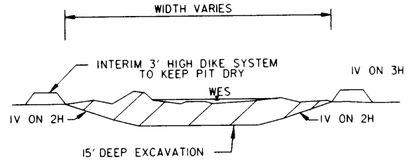
NOT TO SCALE

1 DELETE TRUCK WASH RACK DETAILS

STONE GRADATION TABLE FOR TRUCK PAD	
STONE SIZE LBS.	PERCENT SMALLER THAN
10	100
4	40-100
2	15-50
0.75	0-15

TABLE OF DIKE ELEVATIONS FOR CLAY BORROW AREA	
EXISTING GROUND EL.	MAX. EL. OF DIKE
7.0	11.3
8.0	12.0
9.0	12.7
10.0	13.3
11.0	14.0
12.0	14.7

1

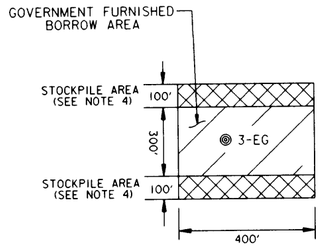


TYPICAL SECTION

CLAY BORROW PIT

NOT TO SCALE

BORROW AREA CONTAINS STANDING WATER FROM PAST SPILLWAY OPERATIONS OR RAINFALL. CONTRACTOR SHALL DRAIN AREA PRIOR TO INITIATING EXCAVATION OPERATIONS FOR EMBANKMENT MATERIALS.



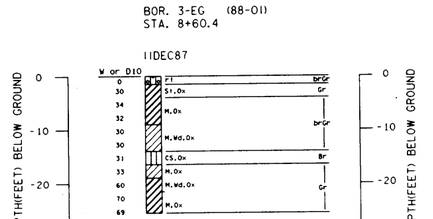
DETAIL 1

NOT TO SCALE

BENCHMARKS FOR BORROW PIT

PBM. G-95 ELEVATION 28.3 (1976)

ABOUT 1.1 MILES WEST ALONG STATE HWY.48 FROM THE JUNCTION OF GOOD HOPE ST. AT NORCO, SET ON THE TOP AND NEAR THE CENTER OF THE EAST CONCRETE ABUTEMENT OF THE SPILLWAY WEIR FOR THE BONNET CARRE' SPILLWAY, BETWEEN TWO TRACKS 3.4 FEET NORTH OF THE NORTH RAIL OF THE SOUTH TRACK, 2.5 FEET SOUTHWEST OF BENCH MARK.



SYMBOL	DESCRIPTION	DATE	APPROVED
1	DELETE TRUCK WASH RACK DESIGN & ADD TABLE	4-19-99	ALD

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

BONNET CARRE' SPILLWAY BORROW SITE & BORROW BORINGS

DESIGNED BY: ALD	DATE: OCT 98	PLOT SCALE: 1000	PLOT DATE: 19 JAN 99
DRAWN BY: ALD			
CHECKED BY: JAR	CADD FILE: 44967R33.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE	SOLICITATION NO. DACW29-99-B-0020		DWG. 20 OF 24

C-A-D

VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS

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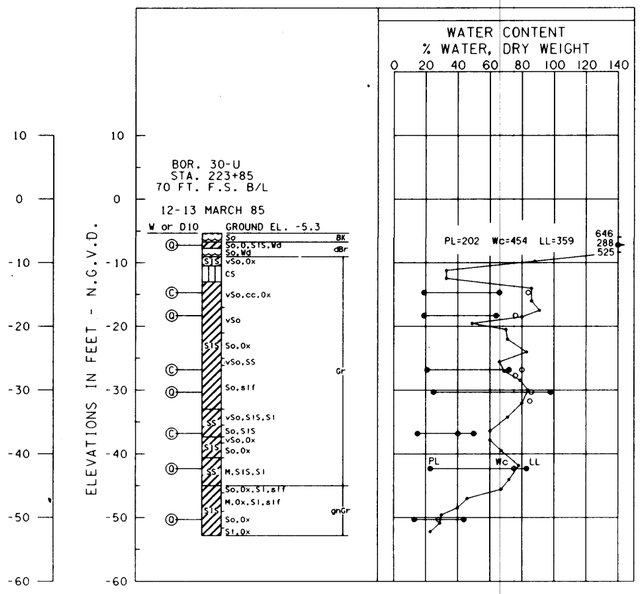

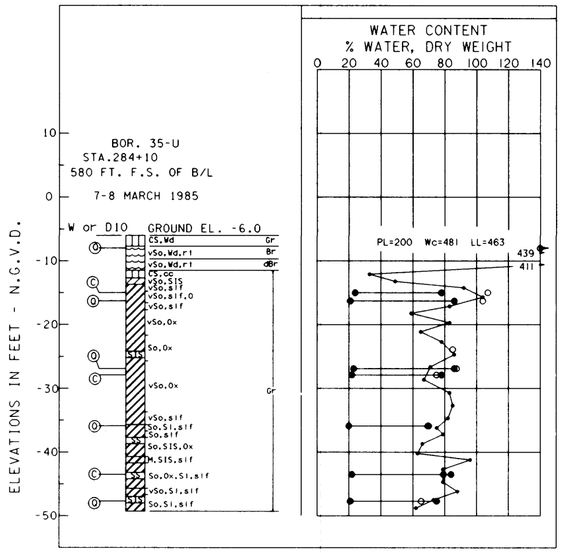

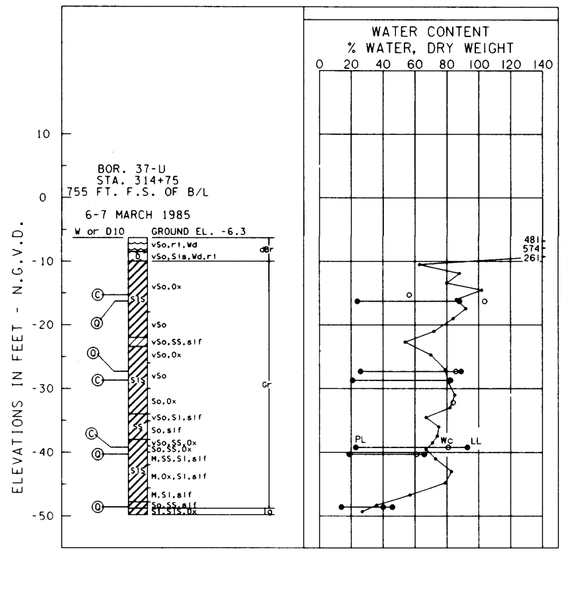

NOTES:

1. FOR GENERAL NOTES, SEE DWG.2.
2. FOR THE LOCATION OF BORING 30-U, SEE DWG. 6.
2. BORING 35-U IS LOCATED IN LAKE PONTCHARTRAIN AT APPROX. STA. 275+00 B/L.
3. BORING 31-U IS LOCATED IN LAKE PONTCHARTRAIN AT APPROX. STA. 243+00 B/L.

SCALE: 1'' = 10'

10' 0 10' 20' 30' 40'

C•A•D

SYMBOL	DESCRIPTION	DATE	APPROVED

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NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

SOIL BORING LOGS

DESIGNED BY: ESTRADA	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 9-24-98
DRAWN BY: WOODS			
CHECKED BY: ESTRADA	CADD FILE: 44967R09.DGN		FILE NO. H-4-44967
SUBMITTED BY: SHUNG-KWOK CHIU, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 21 OF 24

VALUE INCENTIVE CLAUSES — YOUR KEY TO HIGHER PROFITS — ENGINEERING

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UNIFIED SOIL CLASSIFICATION

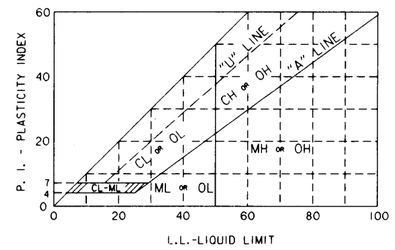
MAJOR DIVISION		TYPE	LETTER SYMBOL	SYMBOL	TYPICAL NAMES
COARSE - GRAINED SOILS More than half of material is larger than No. 200 sieve size.	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size.	CLEAN GRAVEL (Little or No Fines)	GW		GRAVEL, Well Graded, gravel-sand mixtures, little or no fines
			GP		GRAVEL, Poorly Graded, gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES (Appreciable Amount of Fines)	GM		SILTY GRAVEL, gravel-sand-silt mixtures
			GC		CLAYEY GRAVEL, gravel-sand-clay mixtures
	SANDS More than half of coarse fraction is smaller than No. 4 sieve size.	CLEAN SAND (Little or No Fines)	SW		SAND, Well-Graded, gravelly sands
			SP		SAND, Poorly-Graded, gravelly sands
		SANDS WITH FINES (Appreciable Amount of Fines)	SM		SILTY SAND, sand-silt mixtures
			SC		CLAYEY SAND, sand-clay mixtures
FINE - GRAINED SOILS More than half the material is smaller than No. 200 sieve size.		SILTS AND CLAYS (Liquid Limit < 50)	ML		SILT & very fine sand, silty or clayey fine sand or clayey silt with slight plasticity
			CL		LEAN CLAY, Sandy Clay, Silty Clay, of low, to medium plasticity
			OL		ORGANIC SILTS, and organic silty clays of low plasticity
		SILTS AND CLAYS (Liquid Limit > 50)	MH		SILT, fine sandy or silty soil with high plasticity
			CH		FAT CLAY, inorganic clay of high plasticity
			OH		ORGANIC CLAYS of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt		PEAT, and other highly organic soil
WOOD			Wd		WOOD
SHELLS			Sl		SHELLS
NO SAMPLE			NS		No Sample Retrieved

NOTE: Soils possessing characteristics of two groups are designated by combinations of group symbols.

DESCRIPTIVE SYMBOLS

COLOR	
COLOR	SYMBOL
TAN	T
YELLOW	Y
RED	R
BLACK	BK
GRAY	Gr
LIGHT GRAY	lGr
DARK GRAY	dGr
BROWN	Br
LIGHT BROWN	lBr
DARK BROWN	dBr
BROWNISH-GRAY	brGr
GRAYISH-BROWN	gyBr
GREENISH-GRAY	gnGr
GRAYISH-GREEN	gyGn
GREEN	Gn
BLUE	Bl
BLUE-GREEN	BlGn
WHITE	Wh
MOTTLED	Mot

CONSISTENCY FOR COHESIVE SOILS		
CONSISTENCY	COHESION IN LBS./SQ.FT. FROM UNCONFINED COMPRESSION TEST	SYMBOL
VERY SOFT	< 250	vSo
SOFT	250-500	So
MEDIUM	500-1000	M
STIFF	1000-2000	St
VERY STIFF	2000-4000	vSt
HARD	> 4000	H



PLASTICITY CHART

For classification of fine-grained soils in accordance with ASTM D 2487

MODIFICATIONS	
MODIFICATION	SYMBOL
Traces	Tr
Fine	F
Medium	M
Coarse	C
Concretions	cc
Rootlets	rt
Lignite fragments	lg
Shale fragments	sh
Sandstone fragments	sds
Shell fragments	slf
Organic matter	O
Clay strata or lenses	CS
Silt strata or lenses	SIS
Sand strata or lenses	SS
Sandy	S
Gravelly	G
Boulders	B
Slickensides	SL
Wood	Wd
Oxidized	Ox

NOTES:

FIGURES TO LEFT OF BORING UNDER COLUMN " W OR D_{10}"

Are natural water contents in percent dry weight

When underlined denotes D_{10} size in mm*

FIGURES TO LEFT OF BORING UNDER COLUMNS " LL" AND " PL"

Are liquid and plastic limits, respectively

SYMBOLS TO LEFT OF BORING

▽	Ground-water surface and date observed
©	Denotes location of consolidation test**
Ⓢ	Denotes location of consolidated-drained direct shear test**
Ⓡ	Denotes location of consolidated-undrained triaxial compression test**
Ⓤ	Denotes location of unconsolidated-undrained triaxial compression test**
Ⓣ	Denotes location of sample subjected to consolidation test and each of the above three types of shear test**
FW	Denotes free water encountered in boring or sample

FIGURES TO RIGHT OF BORING

Are values of cohesion in lbs./sq.ft. from unconfined compression tests

In parenthesis are driving resistances in blows per foot determined with a standard split spoon sampler (1 3/8" I.D., 2" O.D.) and a 140 lb. driving hammer with a 30" drop

Where underlined with a solid line denotes laboratory permeability in centimeters per second of undisturbed sample

Where underlined with a dashed line denotes laboratory permeability in centimeters per second of sample remoulded to the estimated natural void ratio

*The D_{10} size of a soil is the grain diameter in millimeters of which 10% of the soil is finer, and 90% coarser than D_{10}.

**Results of these tests are available for inspection in the U.S. Army Engineer District Office, if these symbols appear beside the boring logs on the drawings.

TYPICAL NOTES:

1. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of the contract clause entitled "Differing Site Conditions".

2. Ground-water elevations shown on the boring logs represent ground-water surfaces encountered in such borings on the dates shown. Absence of water surface data on certain borings indicates that no ground-water data are available from the boring but does not necessarily mean that ground-water will not be encountered at the locations or within the vertical reaches of such borings.

3. Consistency of cohesive soils shown on the boring logs is based on driller's log and visual examination and is approximate, except within those vertical reaches of the borings where shear strengths from unconfined compression tests are shown.

4. Unless otherwise noted:

   a. Undisturbed borings, indicated by the letter "U", are taken with a 5" I.D. Piston Type Sampler.

   b. General type borings are taken with a 1 7/8" I.D. Tube Sampler and/or a 1 3/8" I.D. Split Spoon Sampler.

SYMBOL	DESCRIPTION	DATE	APPROVED

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NEW ORLEANS, LOUISIANA

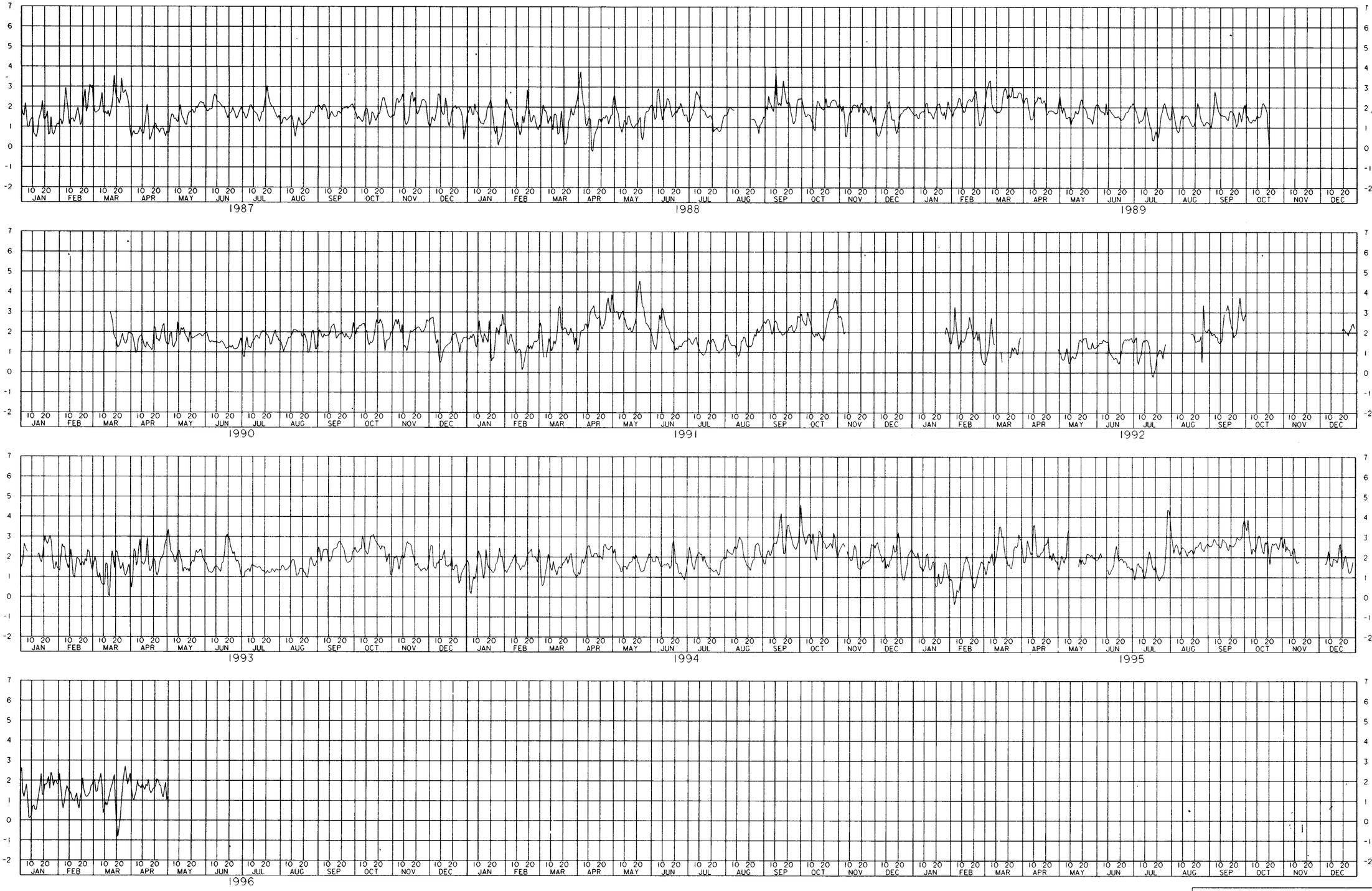
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

SOIL BORING LEGEND

DESIGNED BY: ESTRADA DRAWN BY: WOODS CHECKED BY: ESTRADA	DATE: OCT 98	PLOT SCALE: 1	PLOT DATE: 9-24-98
	CADD FILE: 44967R08.DGN		FILE NO. H-4-44967
SUBMITTED BY: SHUNG-KWOK CHIU, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 22 OF 24

C•A•D

GAGE READINGS IN FT NGVD



GAGE READINGS IN FT NGVD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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NEW ORLEANS, LOUISIANA

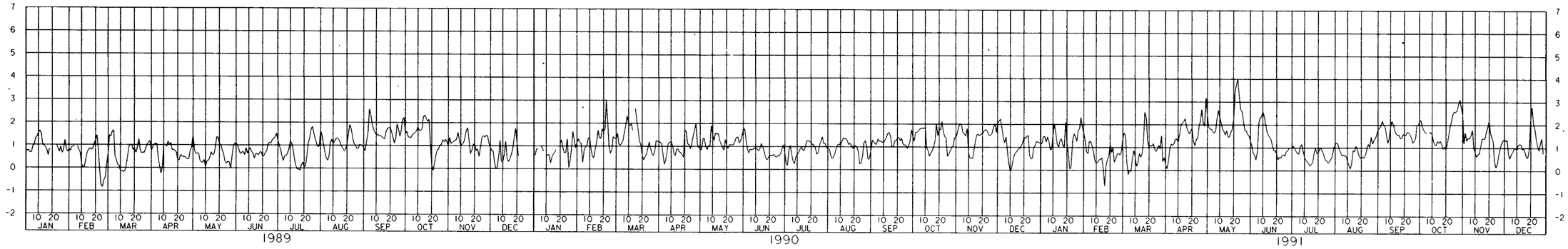
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

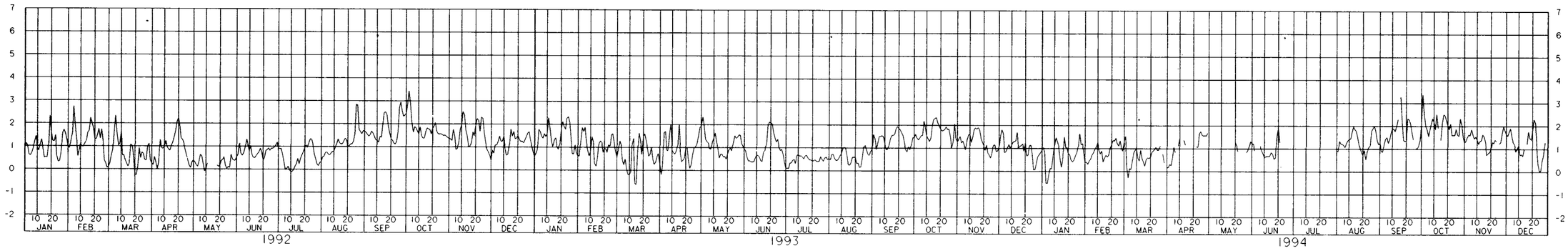
STAGE HYDROGRAPH

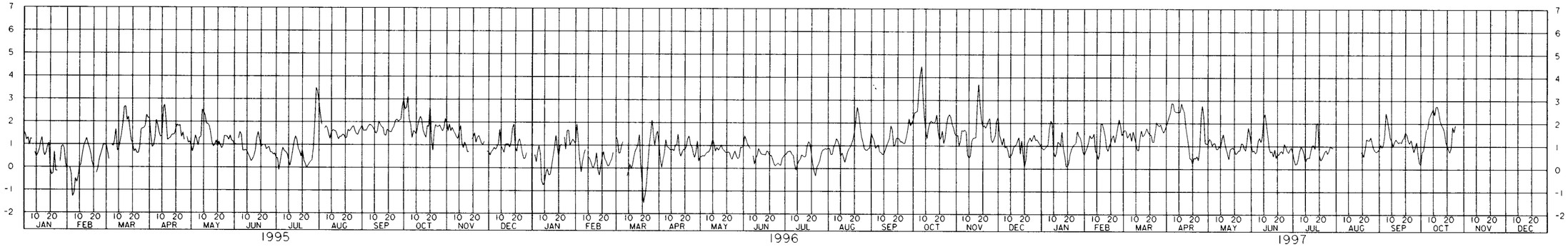
LAKE PONTCHARTRAIN AT MIDLAKE, LA

DESIGNED BY: X DRAWN BY: X CHECKED BY: X	DATE: OCT 1998	PLOT SCALE: 12	PLOT DATE: 9-24-98
	CADD FILE: 44967R10.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 23 OF 24

GAGE READINGS IN FT NGVD







GAGE READINGS IN FT NGVD

SYMBOL	DESCRIPTION	DATE	APPROVED

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LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

STAGE HYDROGRAPH

LAKE PONTCHARTRAIN AT WEST END, LA

DESIGNED BY: X DRAWN BY: X CHECKED BY: X	DATE: OCT 1998	PLOT SCALE: 12	PLOT DATE: 9-24-98
	CADD FILE: 44967R11.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. 24 OF 24

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N

EXISTING LEVEE

STA. 331+90.40 B/L-B

STA. 343+96.07 B/L-A

LIMIT OF SURVEY
STA. 341+74.00 B/L-A

LAKE PONTCHARTRAIN

BASE LINE B

STA. 350+27.67 B/L-A

AZ. 355°18'02"

BASE LINE A

AZ. 316°09'47"

STA. 337+72.55 B/L-B

EXISTING FLOODWALL AT PUMPING STATION

AZ. 264°49'18"

STA. 353+39.27 B/L-A

AZ. 233°07'10"

AZ. 259°30'32"

BASE LINE B

STA. 342+09.29 B/L-B

BASE LINE A

LIMIT OF SURVEY
STA. 356+41.16 B/L-A

AZ. 285°22'20.9"

PLAN

SCALE: 1" = 50'

50' 0 50' 100' 150' 200'

NOTES:
1. B/L-A REFERS TO THE 76-145 TRAVERSE.
2. B/L-B REFERS TO THE 93-123 TRAVERSE.

SYMBOL	DESCRIPTION	DATE	APPROVED

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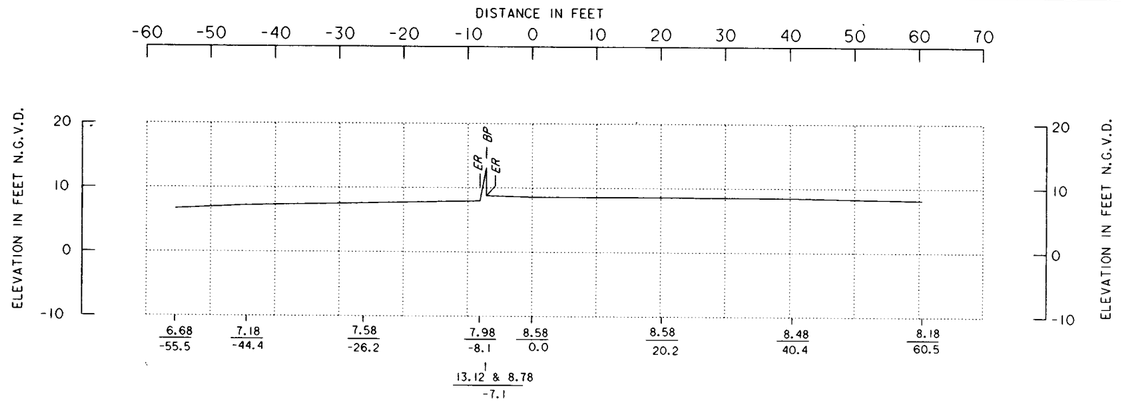
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

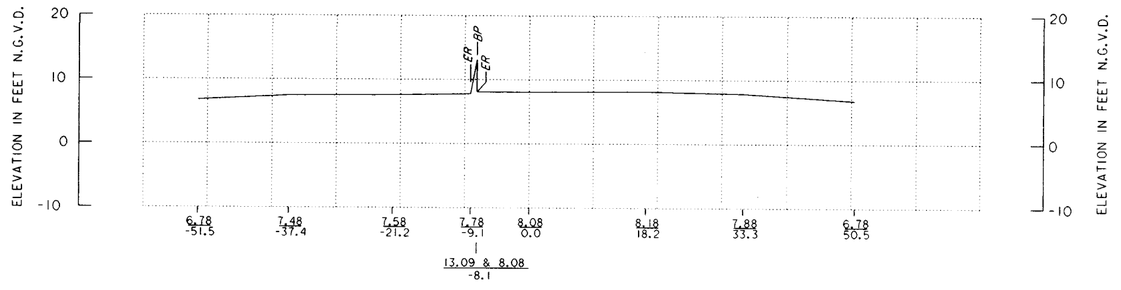
SURVEYS
PUMPING STATION #2

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 600	PLOT DATE: 9-24-98
	CADD FILE: 44967R24.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R1 OF R10



STATION 344+00.0 B/L

SURVEY DATE: 10 OCT 1997

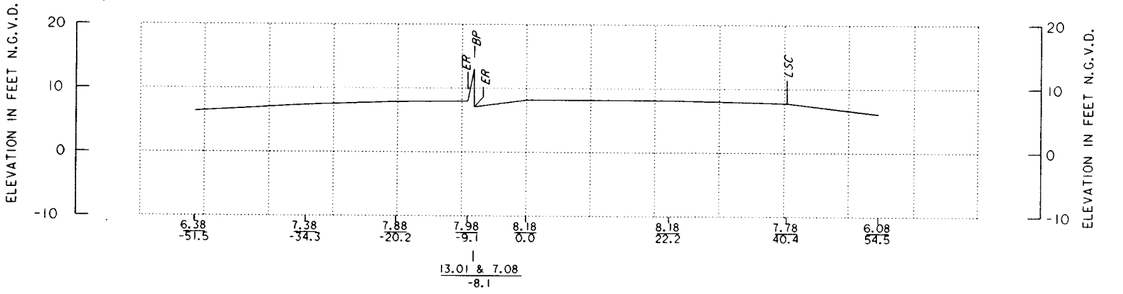


STATION 344+50.0 B/L

SURVEY DATE: 10 OCT 1997

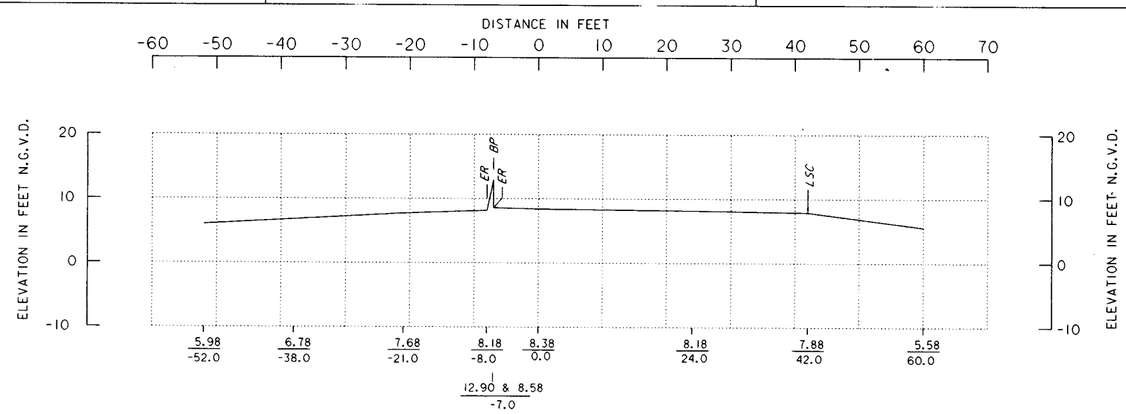
STATION 345+00.0 B/L

SURVEY DATE: 10 OCT. 1997



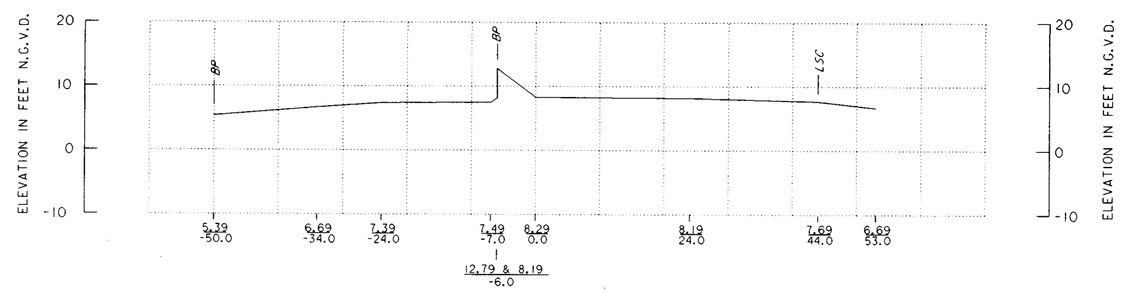
STATION 345+50 B/L

SURVEY DATE: 10 OCT .1997



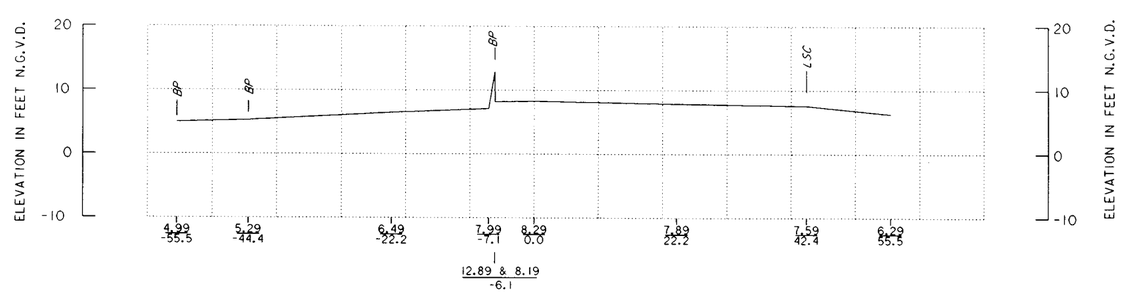
STATION 346+00.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 346+50.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 347+00.0 B/L

SURVEY DATE: 10 OCT. 1997

ABBREVIATIONS

CR = CROWN
LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
LST = LAND SIDE TOE
FST = FLOOD SIDE TOE
TBK = TOP OF BANK
TSP = TOP OF SHEET PILE
WES = WATER EDGE SURFACE
B/L-A = 76-145 TRAVERSE
B/L-B = 93-123 TRAVERSE
BP = BIKE PATH
TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1" = 10'

10' 0 10' 20' 30' 40'

NOTE:
CROSS-SECTIONS PLOTTED FROM SURVEY DATA, SEE CROSS SECTION FOR DATE.
ALL CROSS-SECTIONS ARE PLOTTED FROM BASELINE A, UNLESS OTHERWISE NOTED.

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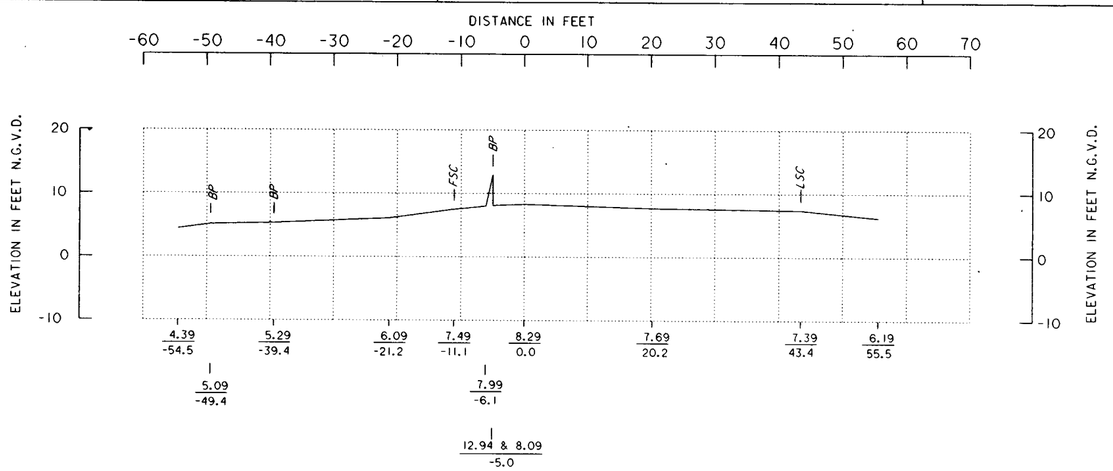
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

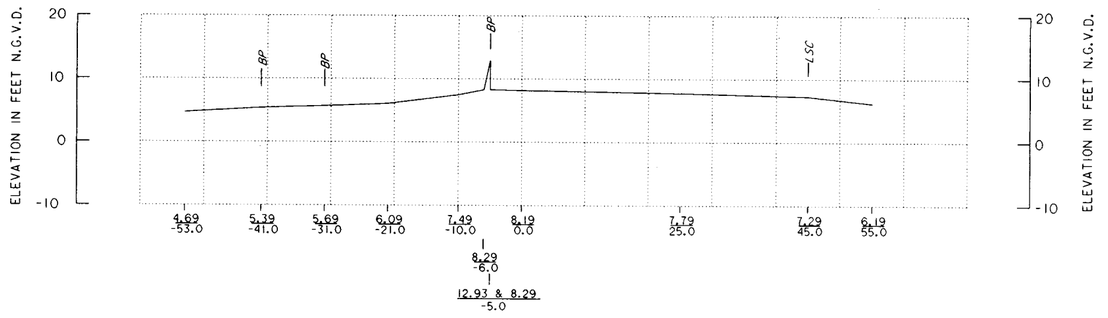
CROSS SECTIONS
PUMPING STATION NO. 2

DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R12.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R2 OF R10



STATION 347+50.0 B/L

SURVEY DATE: 10 OCT 1997



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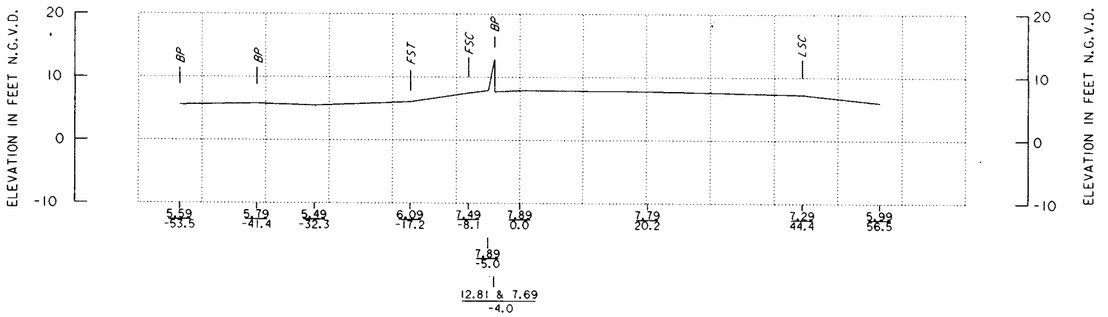
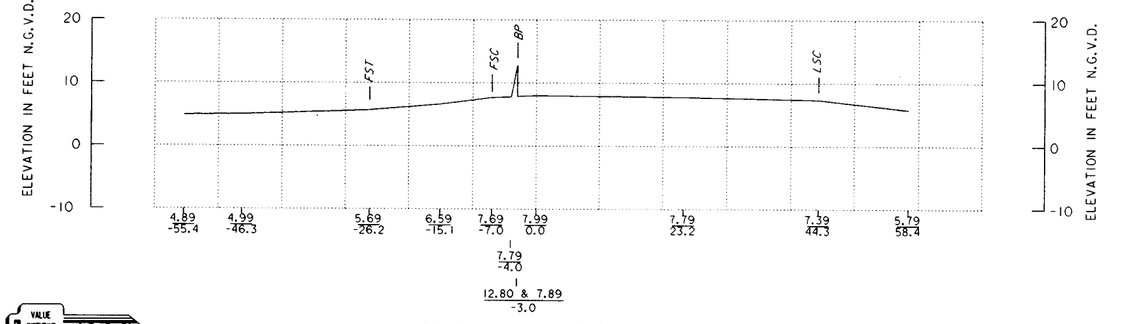


STATION 348+50.0 B/L

SURVEY DATE: 10 OCT. 1997



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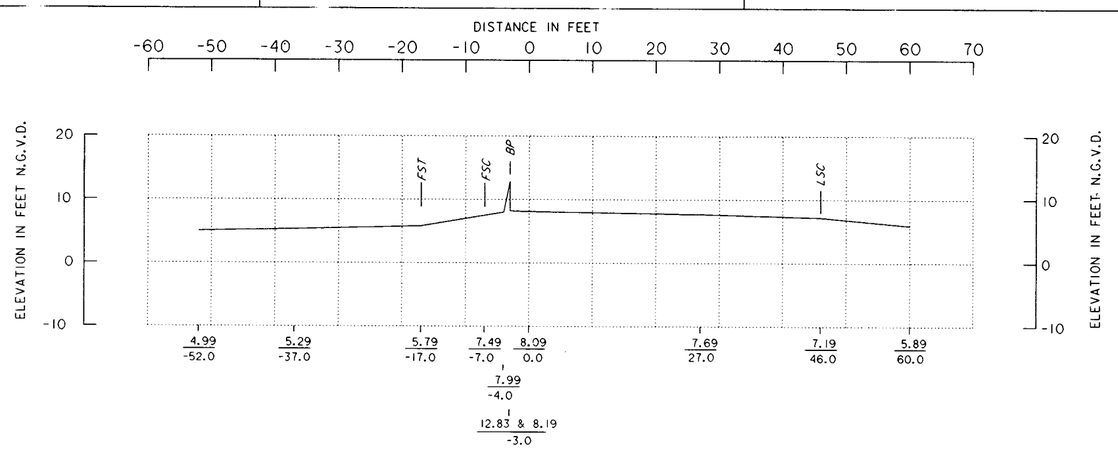
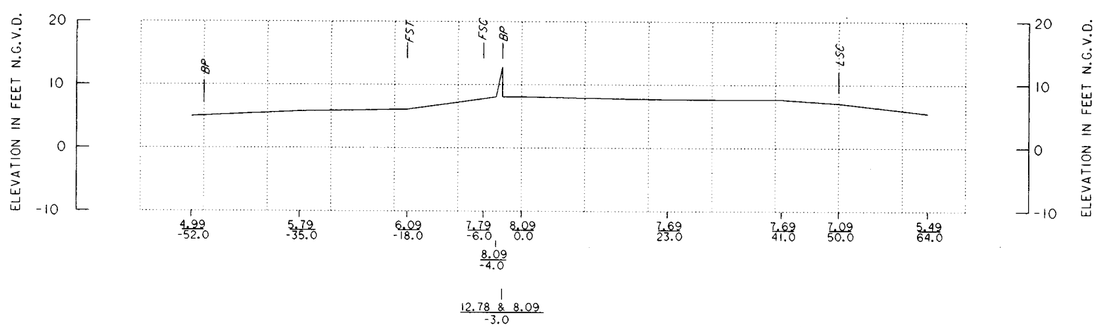
SURVEY DATE: 10 OCT 1997



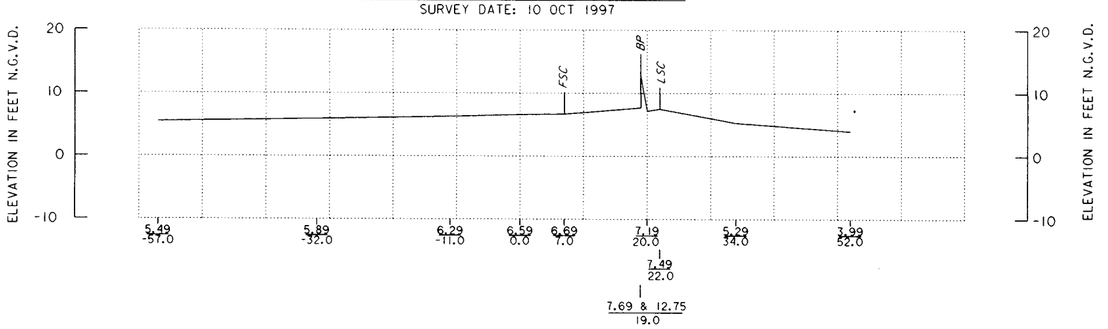
STATION 349+50.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 350+00.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 350+50.0 B/L

SURVEY DATE: 10 OCT. 1997

ABBREVIATIONS

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FSC = FLOOD SIDE CROWN
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B/L-A = 76-145 TRAVERSE
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CLL = CENTERLINE OF LEVEE
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SCALE: 1" = 10'

10' 0 10' 20' 30' 40'

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C·A·D

SYMBOL	DESCRIPTION	DATE	APPROVED

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CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

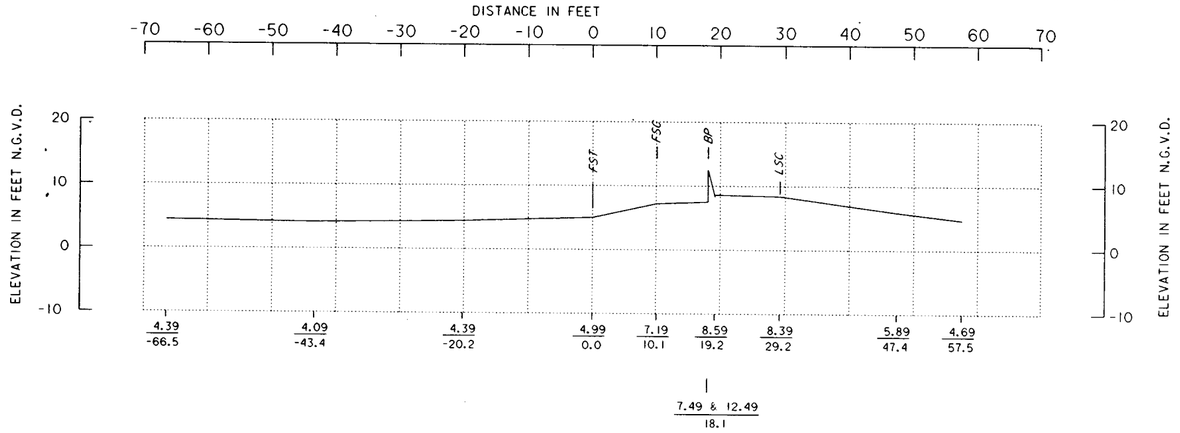
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

CROSS SECTIONS PUMPING STATION NO. 2

DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R13.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R3 OF R10

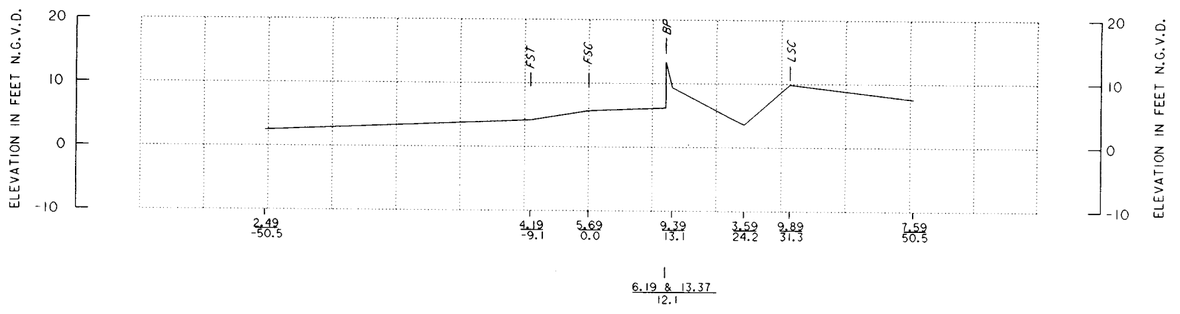
5 4 3 2 1

D C B A



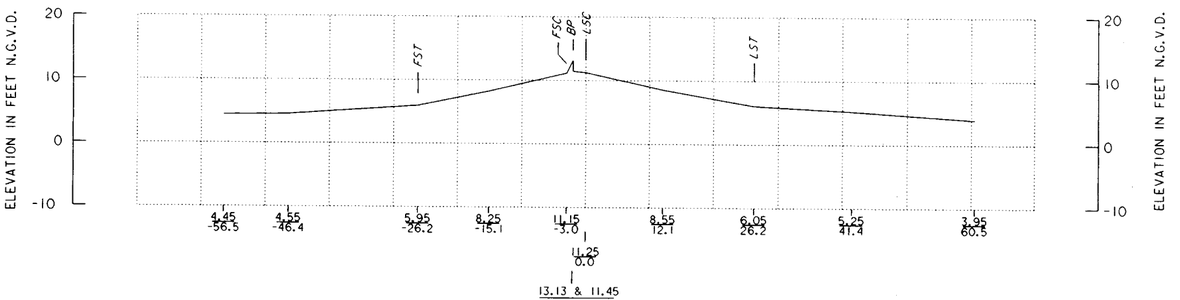
STATION 351+00.0 B/L

SURVEY DATE: 10 OCT 1997



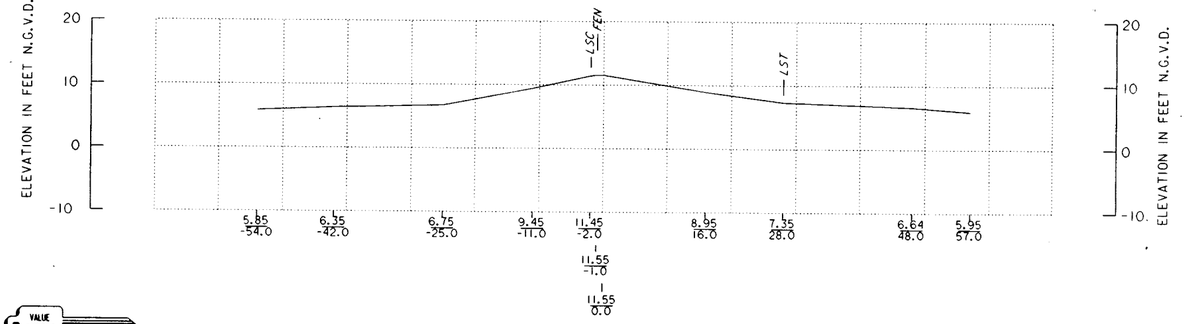
STATION 351+50.0 B/L

SURVEY DATE: 10 OCT 1997



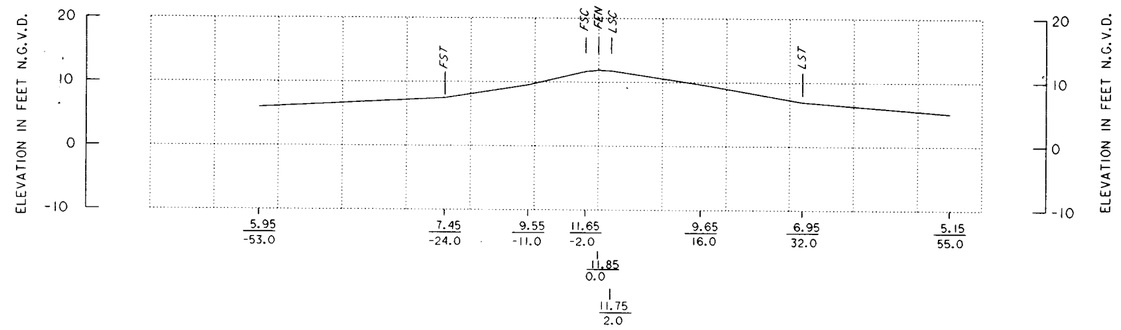
STATION 353+50.0 B/L

SURVEY DATE: 10 OCT. 1997



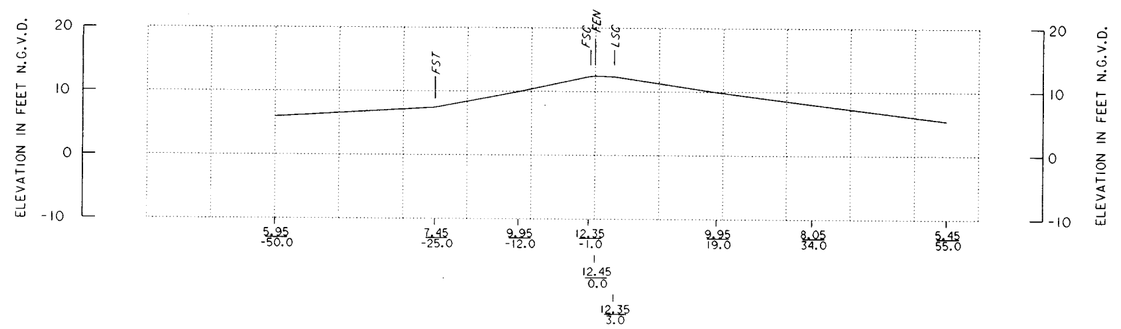
STATION 354+00 B/L

SURVEY DATE: 10 OCT 1997



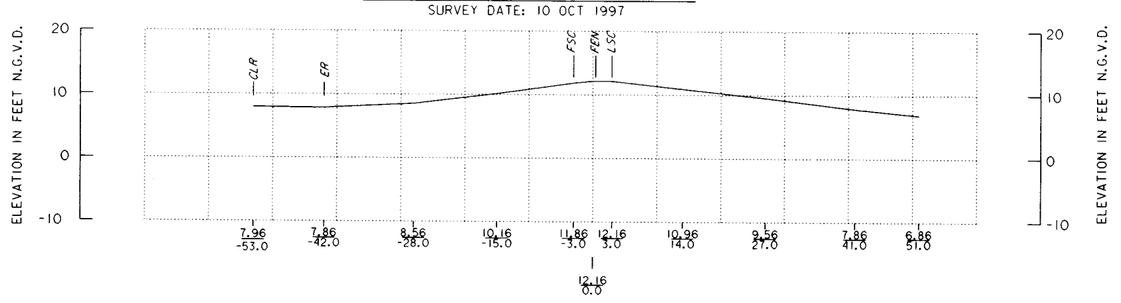
STATION 354+50.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 355+00.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 355+50.0 B/L

SURVEY DATE: 10 OCT. 1997

ABBREVIATIONS

CR = CROWN
LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
LST = LAND SIDE TOE
FST = FLOOD SIDE TOE
TBK = TOP OF BANK
TSP = TOP OF SHEET PILE
WES = WATER EDGE SURFACE
B/L-A = 76-145 TRAVERSE
B/L-B = 93-123 TRAVERSE
BP = BIKE PATH
TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1" = 10'

10' 0 10' 20' 30' 40'

NOTE:
CROSS-SECTIONS PLOTTED FROM SURVEY DATA, SEE CROSS SECTION FOR DATE.
ALL CROSS-SECTIONS ARE PLOTTED FROM BASELINE A, UNLESS OTHERWISE NOTED.

Safety is a Part of Your Contract

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SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

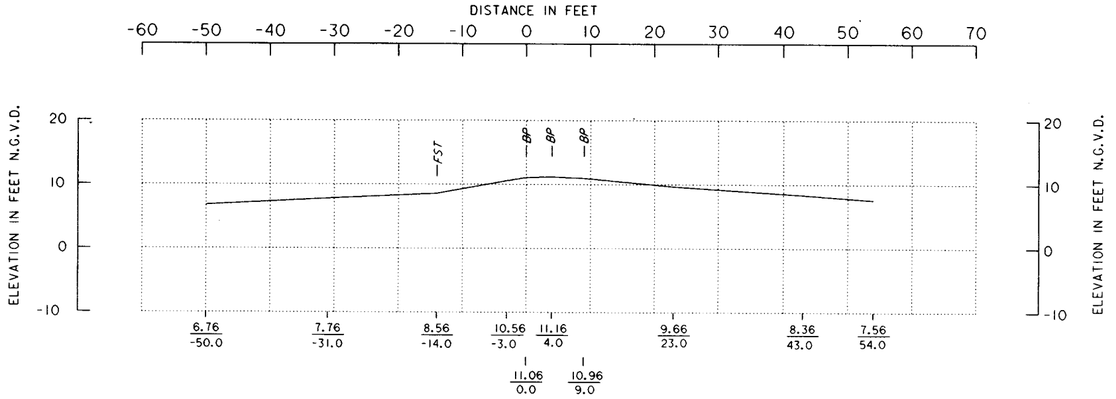
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

CROSS SECTIONS
PUMPING STATION NO. 2

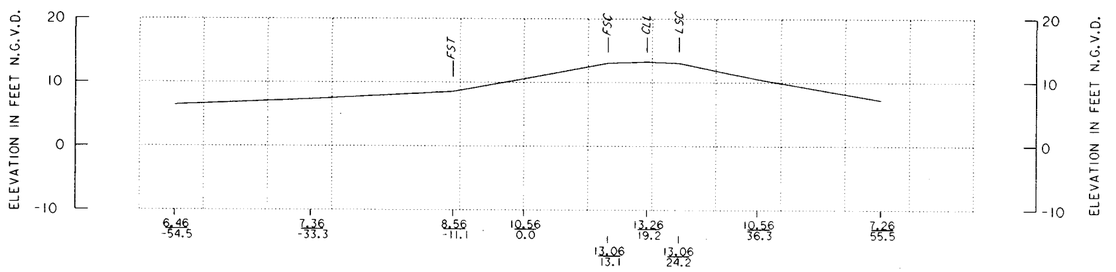
DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R14.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R4 OF R10

Safety is a Part of Your Contract



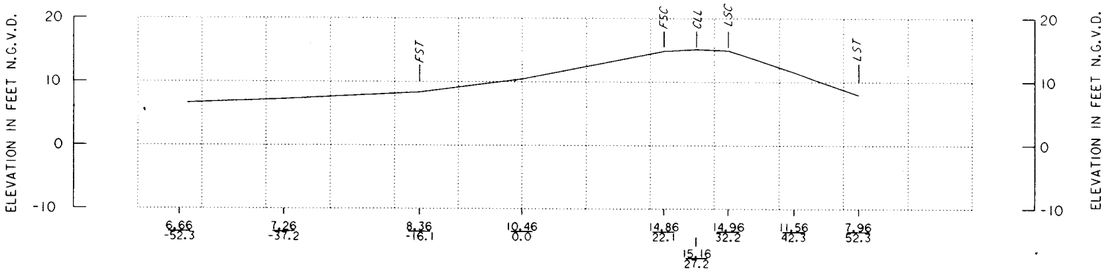
STATION 356+00.0 B/L

SURVEY DATE: 10 OCT 1997



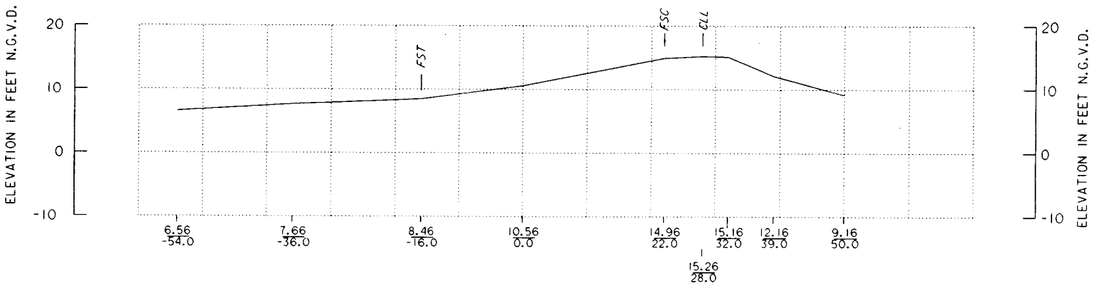
STATION 356+50.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 357+00.0 B/L

SURVEY DATE: 10 OCT. 1997



VALUE INCENTIVE CLAUSES ENGINEERING — YOUR KEY TO HIGHER PROFITS

STATION 357+50 B/L

SURVEY DATE: 10 OCT 1997

ABBREVIATIONS

CR = CROWN
LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
LST = LAND SIDE TOE
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BP = BIKE PATH
TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1'' = 10'

10' 0 10' 20' 30' 40'

NOTE:
CROSS-SECTIONS PLOTTED FROM SURVEY DATA, SEE CROSS SECTION FOR DATE.
ALL CROSS-SECTIONS ARE PLOTTED FROM BASELINE A, UNLESS OTHERWISE NOTED.

C•A•D

SYMBOL	DESCRIPTION	DATE	APPROVED
	REVISIONS		

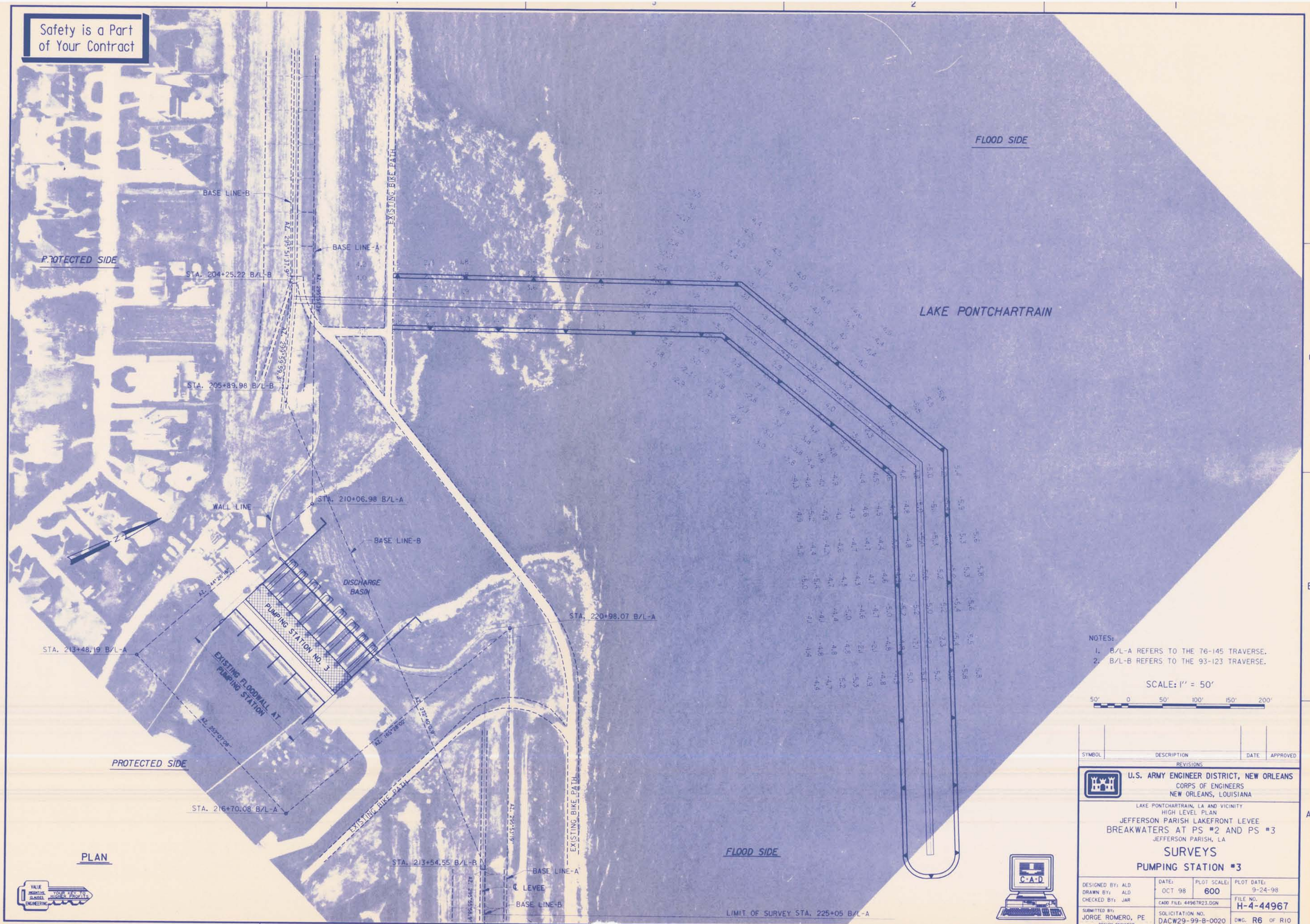
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

CROSS SECTIONS
PUMPING STATION NO. 2

DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R15.DGN		FILE NO. 4-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R5 OF R10

Safety is a Part of Your Contract



PLAN

NOTES:
1. B/L-A REFERS TO THE 76-145 TRAVERSE.
2. B/L-B REFERS TO THE 93-123 TRAVERSE.

SCALE: 1" = 50'

50' 0 50' 100' 150' 200'

SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

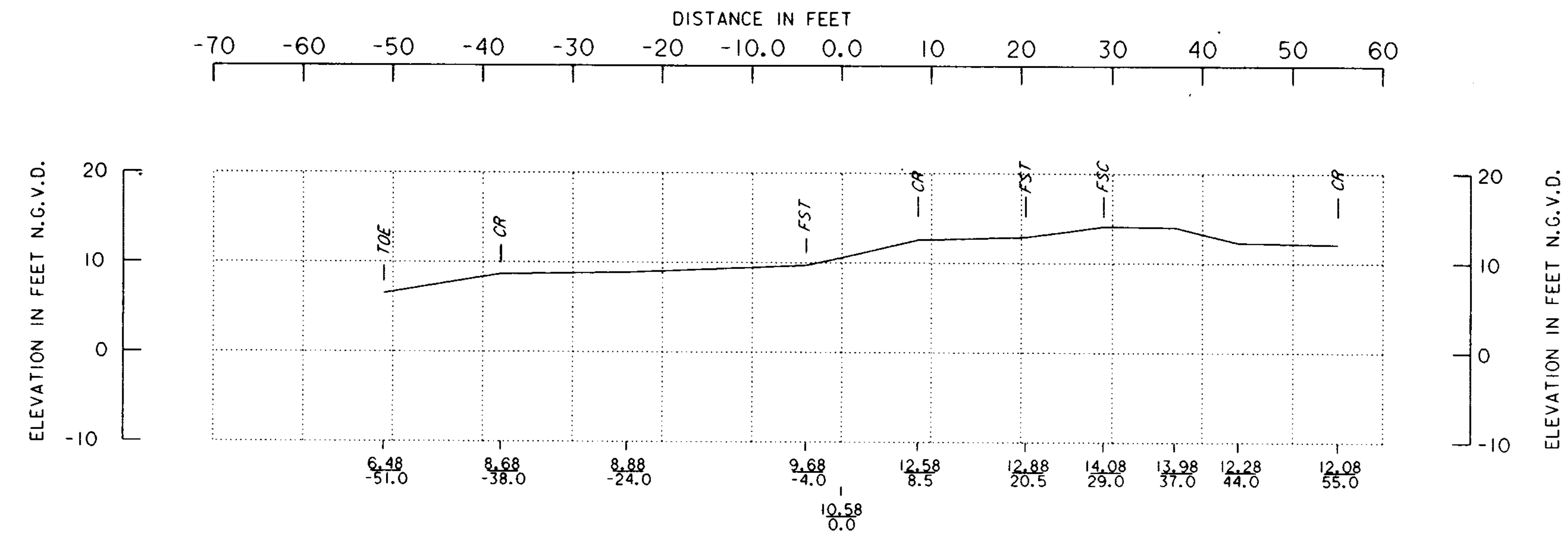
LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

SURVEYS
PUMPING STATION #3

DESIGNED BY: ALD DRAWN BY: ALD CHECKED BY: JAR	DATE: OCT 98	PLOT SCALE: 600	PLOT DATE: 9-24-98
	CADD FILE: 44967R23.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R6 OF R10

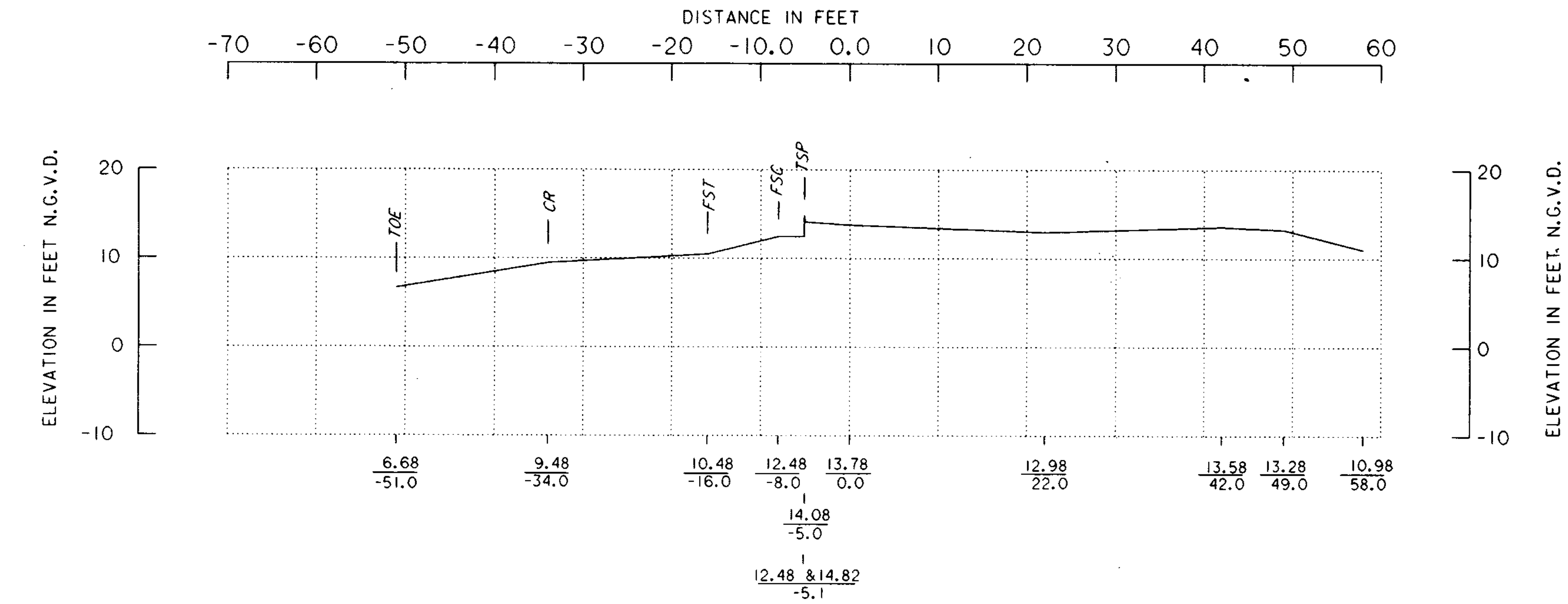
C·A·D

VALUE ENGINEERING SAVINGS ENGINEERING YOUR KEY TO HIGHER PROFITS



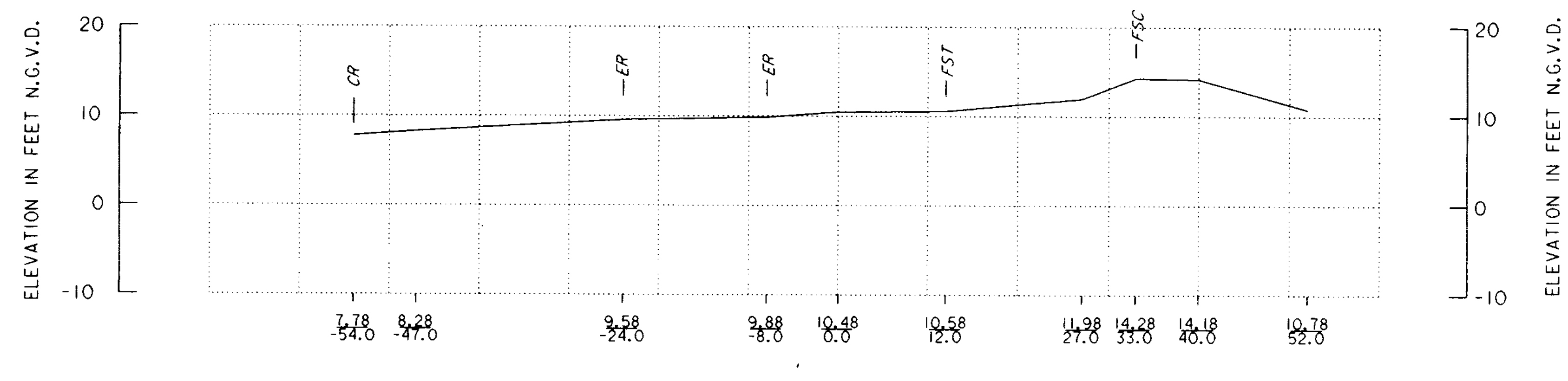
STATION 207+00.0 B/L

SURVEY DATE: 10 OCT 1997



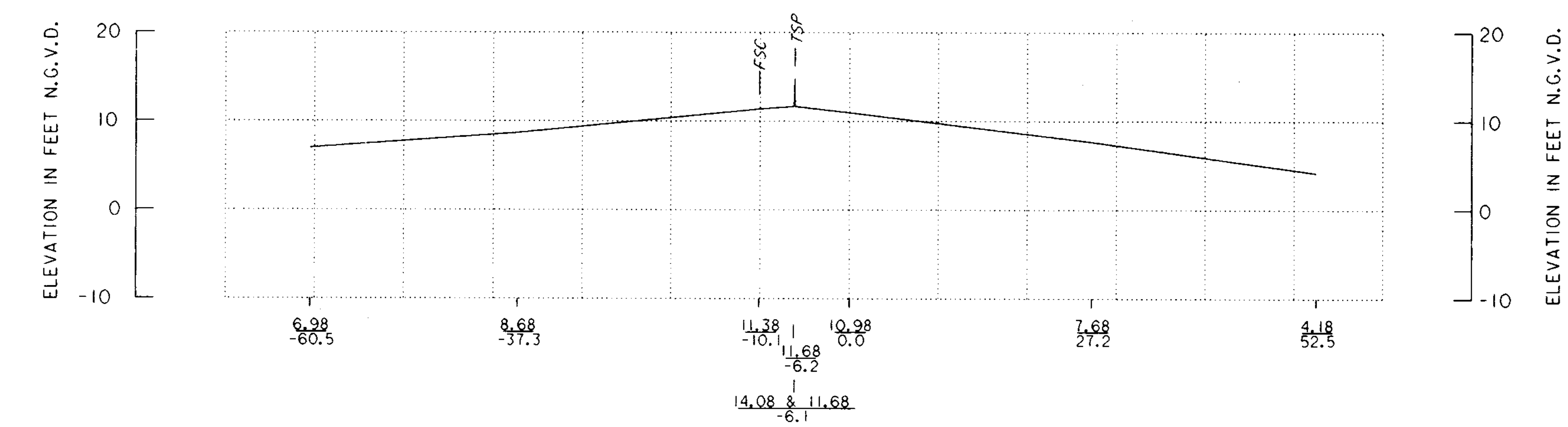
STATION 208+50.0 B/L

SURVEY DATE: 10 OCT 1997



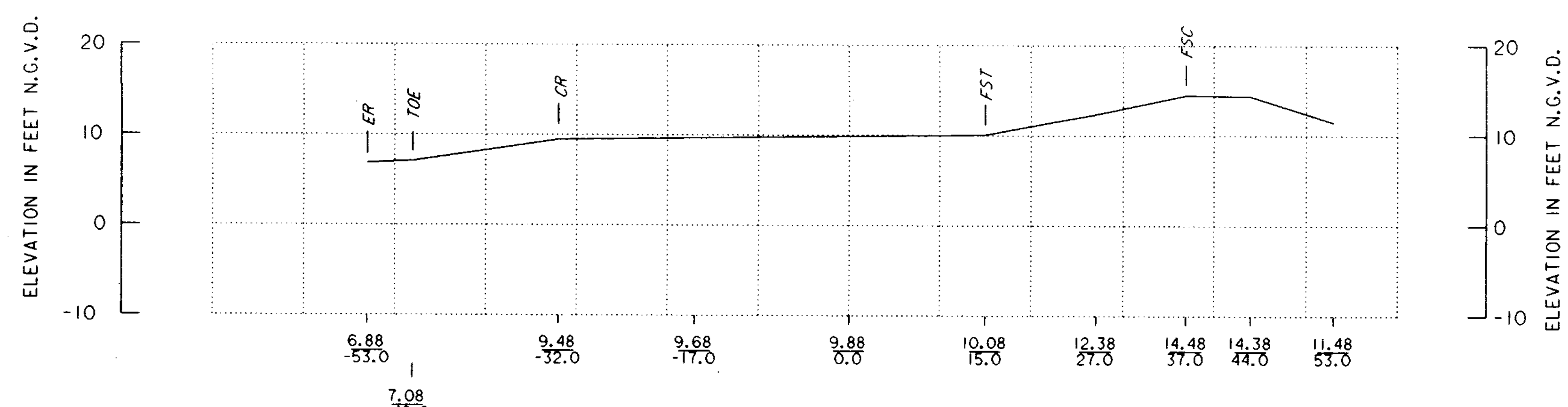
STATION 207+50.0 B/L

SURVEY DATE: 10 OCT. 1997



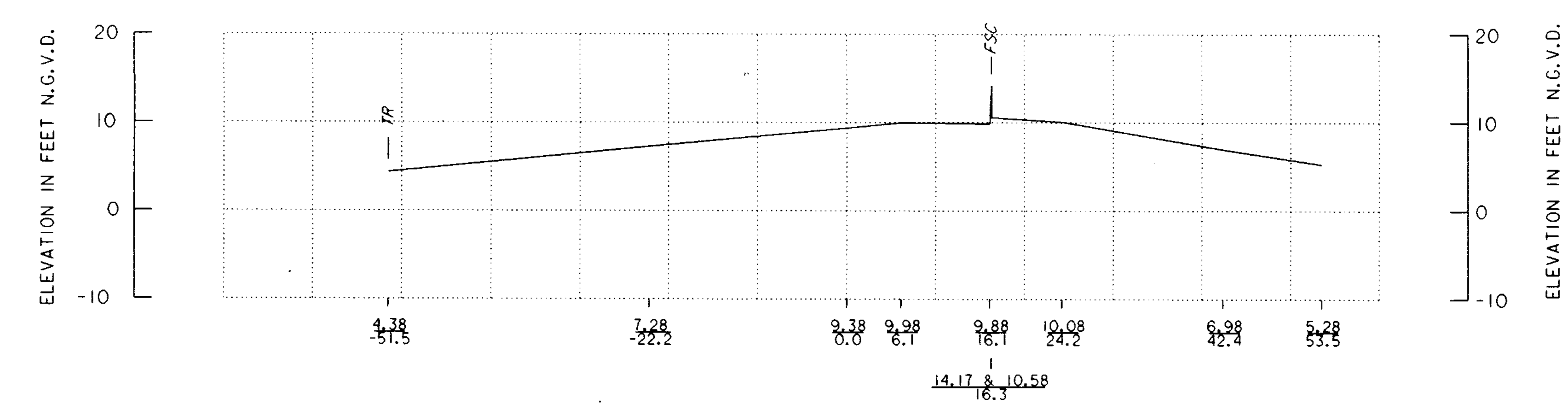
STATION 209+00.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 208+00 B/L

SURVEY DATE: 10 OCT 1997



STATION 209+50.0 B/L

SURVEY DATE: 10 OCT. 1997

ABBREVIATIONS

CR = CROWN
LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
LST = LAND SIDE TOE
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TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1" = 10'

10' 0 10' 20' 30' 40'

NOTE:
CROSS-SECTIONS PLOTTED FROM SURVEY DATA, SEE CROSS SECTION FOR DATE.
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Safety is a Part of Your Contract

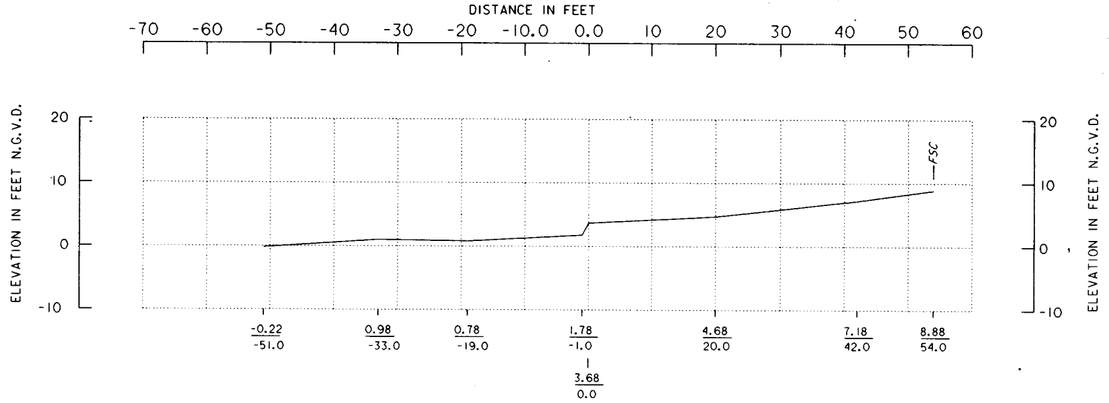
SYMBOL	DESCRIPTION	DATE	APPROVED
	REVISIONS		

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

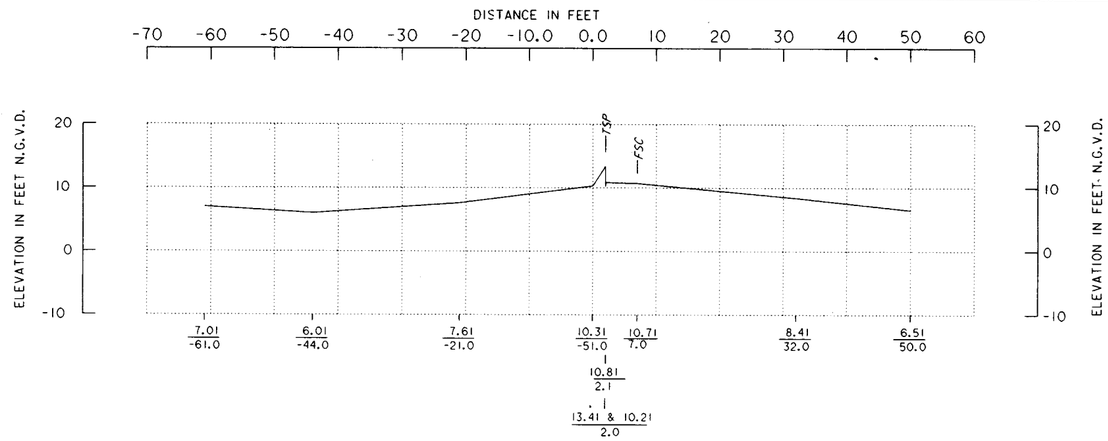
CROSS SECTIONS
PUMPING STATION NO. 3

DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R17.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R7 OF R10



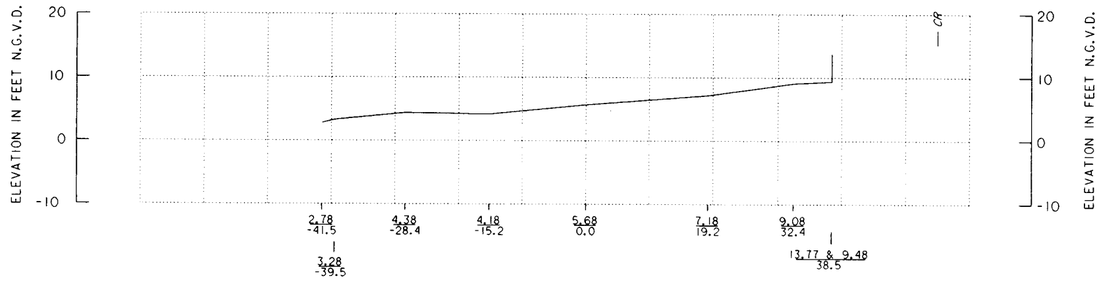
STATION 210+00.0 B/L

SURVEY DATE: 10 OCT 1997



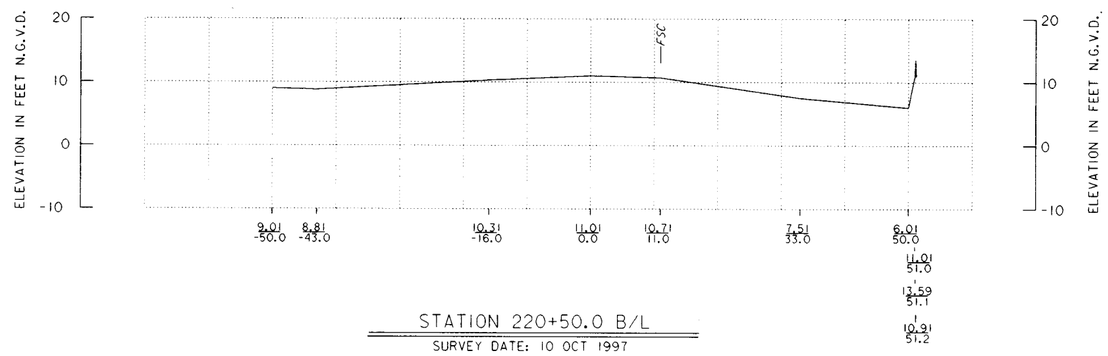
STATION 220+00.0 B/L

SURVEY DATE: 10 OCT 1997



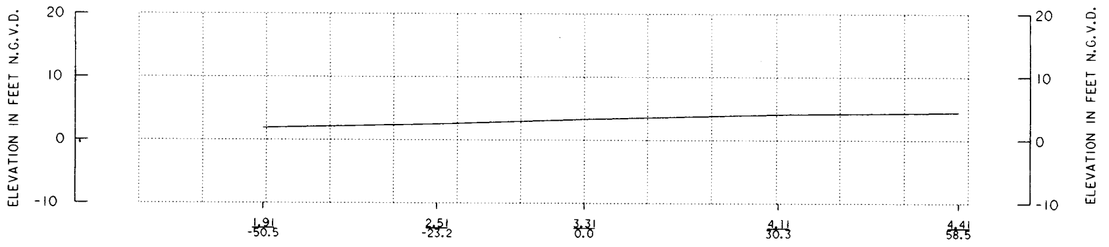
STATION 210+50.0 B/L

SURVEY DATE: 10 OCT 1997



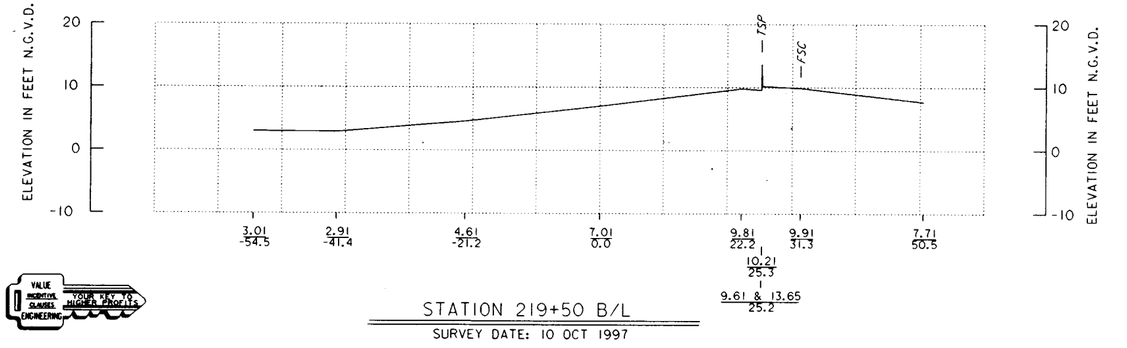
STATION 220+50.0 B/L

SURVEY DATE: 10 OCT 1997



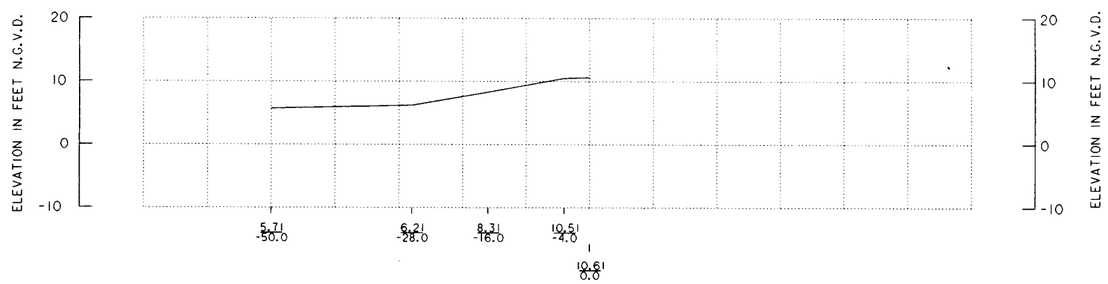
STATION 219+00.0 B/L

SURVEY DATE: 10 OCT. 1997



STATION 219+50 B/L

SURVEY DATE: 10 OCT 1997



STATION 220+98.07 B/L

SURVEY DATE: 10 OCT. 1997

ABBREVIATIONS

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LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
LST = LAND SIDE TOE
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WES = WATER EDGE SURFACE
B/L-A = 76-145 TRAVERSE
B/L-B = 93-123 TRAVERSE
BP = BIKE PATH
TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1" = 10'

10' 0 10' 20' 30' 40'

NOTE:
CROSS-SECTIONS PLOTTED FROM SURVEY DATA, SEE CROSS SECTION FOR DATE.
ALL CROSS-SECTIONS ARE PLOTTED FROM BASELINE A, UNLESS OTHERWISE NOTED.

Safety is a Part of Your Contract

C·A·D

SYMBOL	DESCRIPTION	DATE	APPROVED
REVISIONS			

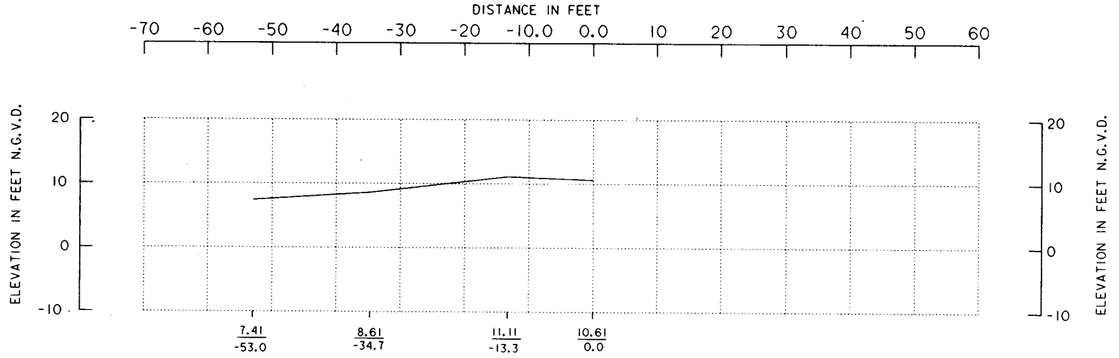
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT P'S #2 AND PS #3
JEFFERSON PARISH, LA

CROSS SECTIONS
PUMPING STATION NO. 3

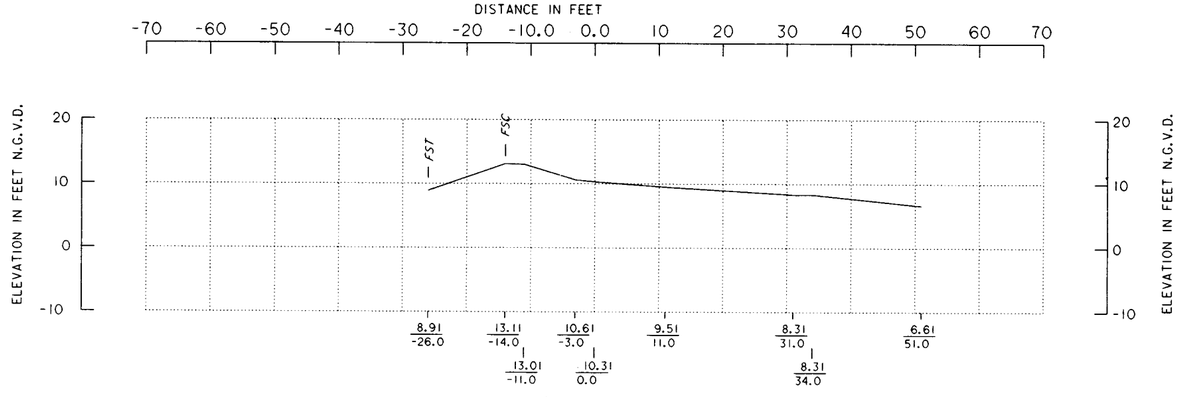
DESIGNED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
DRAWN BY: C. BRANDSTETTER			
CHECKED BY: X	CADD FILE: 44967R18.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R8 OF R10

VALUE ENGINEERING — YOUR KEY TO HIGHER PROFITS



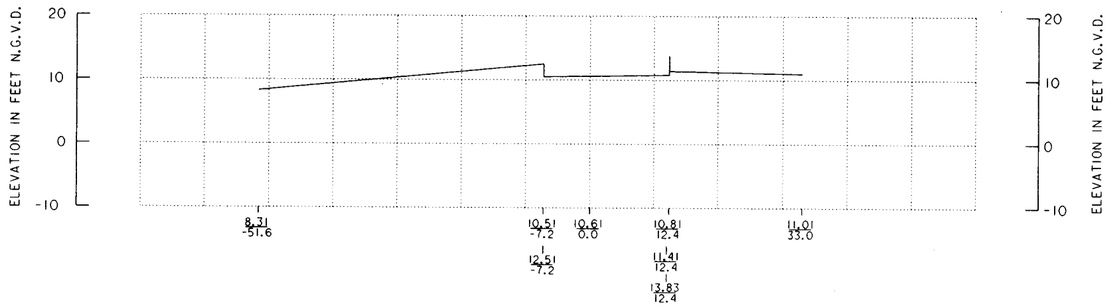
STATION 220+98.07 B/L

SURVEY DATE: 10 OCT 1997



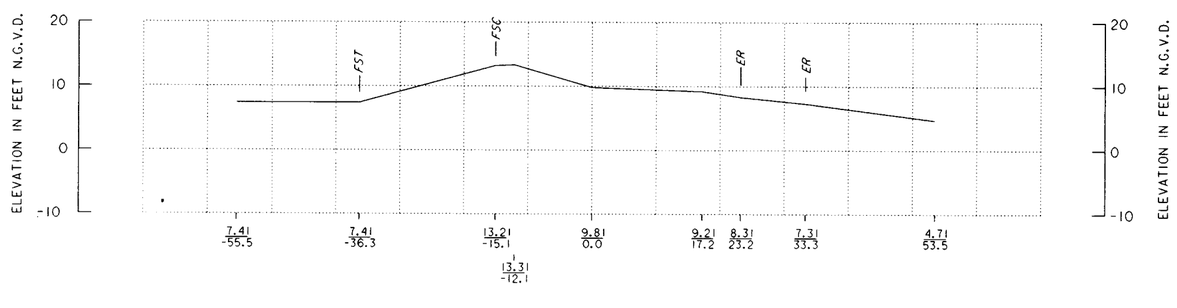
STATION 222+50.0 B/L

SURVEY DATE: 10 OCT 1997



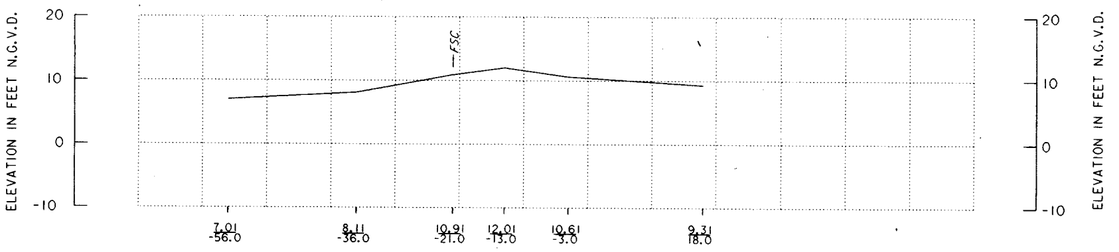
STATION 220+98.07 B/L

SURVEY DATE: 10 OCT 1997



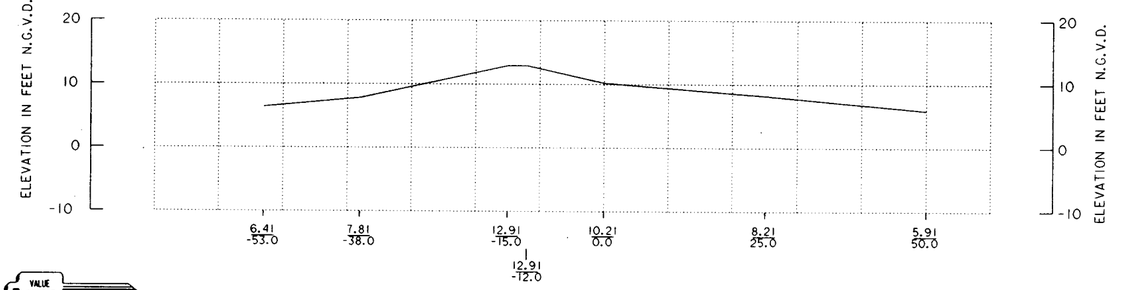
STATION 223+00.0 B/L

SURVEY DATE: 10 OCT 1997



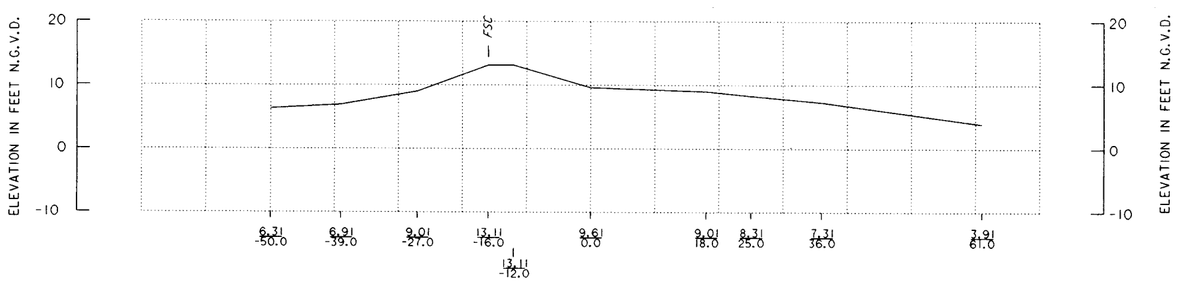
STATION 221+50.0 B/L

SURVEY DATE: 10 OCT. 1997



STATION 222+00 B/L

SURVEY DATE: 10 OCT 1997



STATION 223+50.0 B/L

SURVEY DATE: 10 OCT. 1997

ABBREVIATIONS

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LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
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B/L-B = 93-123 TRAVERSE
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TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1" = 10'

10' 0 10' 20' 30' 40'

NOTE:

CROSS-SECTIONS PLOTTED FROM SURVEY DATA. SEE CROSS SECTION FOR DATE.

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Safety is a Part of Your Contract

C·A·D

VALUE INCENTIVE CLASSES ENGINEERING — YOUR KEY TO SUCCESS PROCESS

SYMBOL	DESCRIPTION	DATE	APPROVED

REVISIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

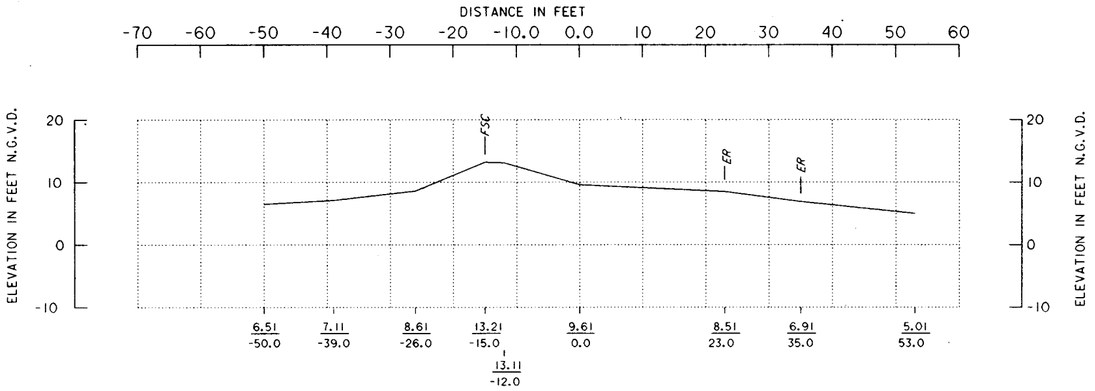
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

CROSS SECTIONS
PUMPING STATION NO. 3

DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R19.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R9 OF R10

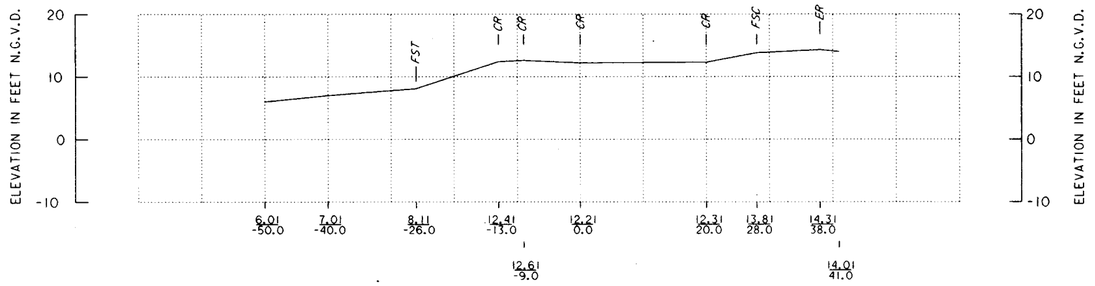
5 4 3 2 D C B A

Safety is a Part of Your Contract



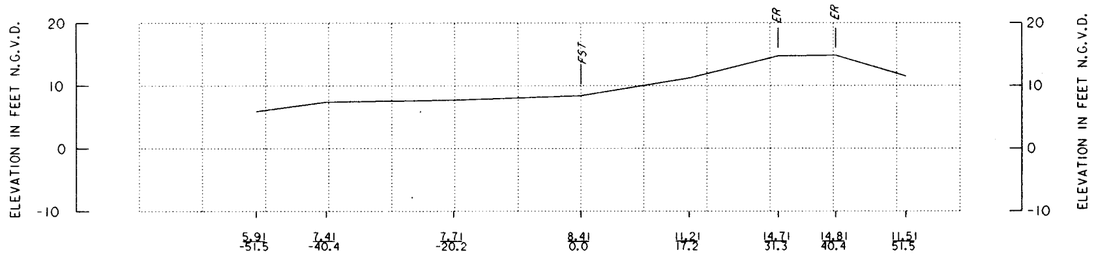
STATION 224+00.0 B/L

SURVEY DATE: 10 OCT 1997



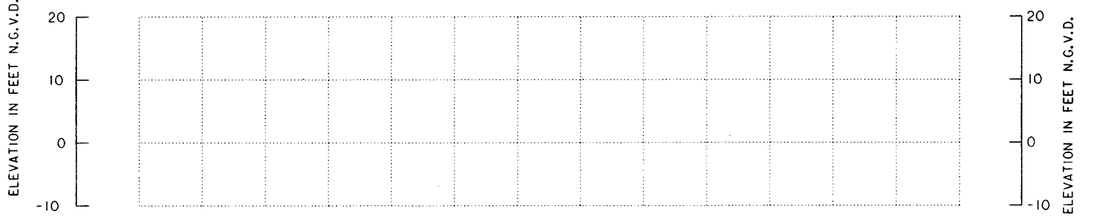
STATION 224+50.0 B/L

SURVEY DATE: 10 OCT 1997



STATION 225+00.0 B/L

SURVEY DATE: 10 OCT. 1997



STATION X+XX B/L

SURVEY DATE: 10 OCT 1997

ABBREVIATIONS

CR = CROWN
LSC = LAND SIDE CROWN
FSC = FLOOD SIDE CROWN
LST = LAND SIDE TOE
FST = FLOOD SIDE TOE
TBK = TOP OF BANK
TSP = TOP OF SHEET PILE
WES = WATER EDGE SURFACE
B/L-A = 76-145 TRAVERSE
B/L-B = 93-123 TRAVERSE
BP = BIKE PATH
TR = TREE
ER = EDGE OF ROAD
CLL = CENTERLINE OF LEVEE
FEN = FENCE

SCALE: 1" = 10'

NOTE:
CROSS-SECTIONS PLOTTED FROM SURVEY DATA, SEE CROSS SECTION FOR DATE.
ALL CROSS-SECTIONS ARE PLOTTED FROM BASELINE A, UNLESS OTHERWISE NOTED.

VALUE INCENTIVE CLAUSES — YOUR KEY TO HIGHER PROFITS — ENGINEERING

C·A·D

SYMBOL	DESCRIPTION	DATE	APPROVED
REVISIONS			

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
JEFFERSON PARISH LAKEFRONT LEVEE
BREAKWATERS AT PS #2 AND PS #3
JEFFERSON PARISH, LA

CROSS SECTIONS
PUMPING STATION NO. 3

DESIGNED BY: X DRAWN BY: C. BRANDSTETTER CHECKED BY: X	DATE: OCT 98	PLOT SCALE: 120	PLOT DATE: 8-31-98
	CADD FILE: 44967R20.DGN		FILE NO. H-4-44967
SUBMITTED BY: JORGE ROMERO, PE, DESIGN ENGINEER	SOLICITATION NO. DACW29-99-B-0020		DWG. R10 OF R10