STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER PO-148, ST. BERNARD PARISH, LOUISIANA

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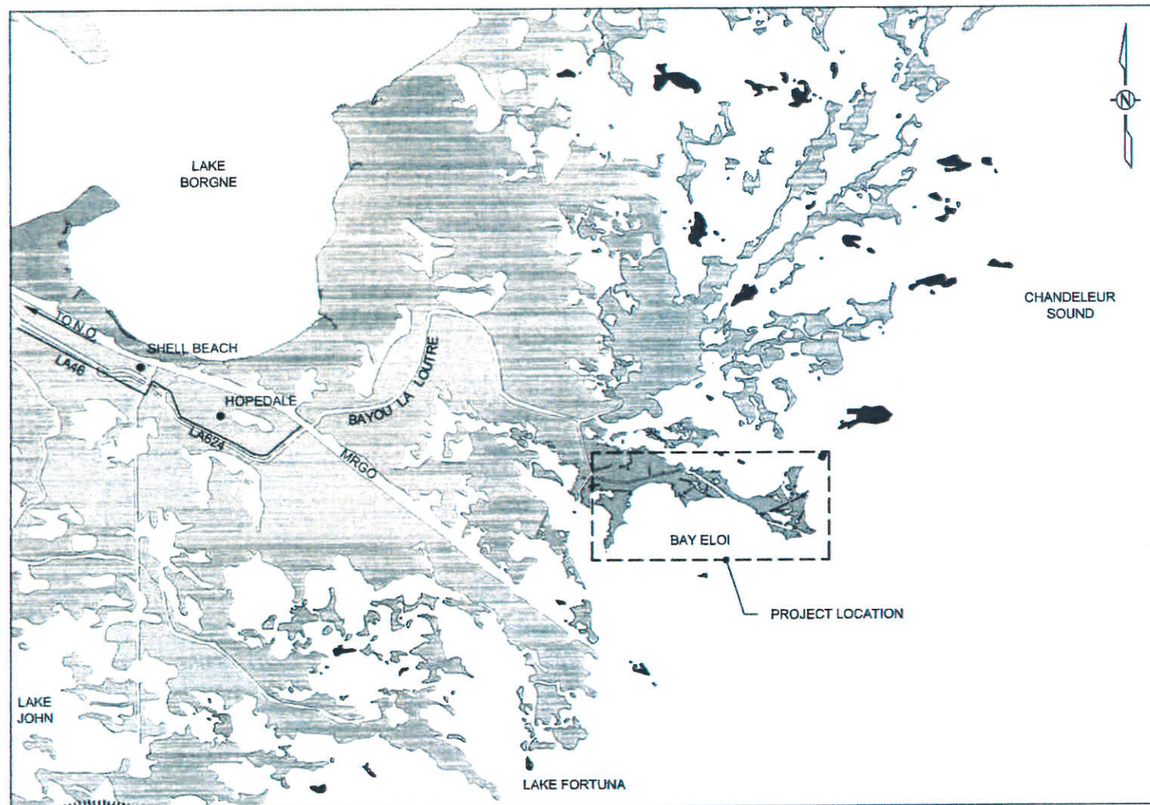
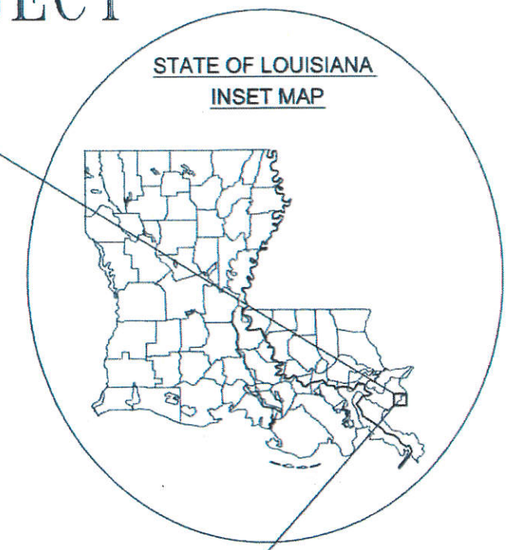


VICINITY MAP
N.T.S.



CHIEF - ENGINEERING DIVISION

ENGINEER MANAGER

PROJECT ENGINEER

ENGINEER OF RECORD

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

LICENSURE CLASSIFICATION REQUIREMENTS
MAJOR: HEAVY CONSTRUCTION

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST,
BATON ROUGE, LA 70802
(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF
JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

TITLE SHEET
DATE: 9/24/15
SHEET 1 OF 34

GENERAL NOTES

1. PROJECT SITE IS NOT ACCESSIBLE BY LAND. CONTRACTOR SHALL BE RESPONSIBLE FOR ACCESSING THE SITE FROM A NAVIGABLE WATER BODY. DREDGING FOR SITE ACCESS SHALL ONLY OCCUR WITHIN THE LIMITS SHOWN FOR TEMPORARY ACCESS/FLOTATION CHANNELS.
2. ALL DREDGED MATERIAL SHALL BE PLACED WITHIN THE LIMITS OF THE TEMPORARY SPOIL PLACEMENT AREAS, AND BACKFILLED INTO THE TEMPORARY ACCESS AND FLOTATION CHANNELS AT THE COMPLETION OF THE PROJECT.
3. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND BE FAMILIAR WITH LOCAL SITE AND MARINE CONDITIONS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. ANY DISCREPANCIES SHALL BE REPORTED IN WRITING IMMEDIATELY TO THE ENGINEER.
4. CONTRACTOR SHALL PERFORM A PRE-CONSTRUCTION HAZARD (MAGNETOMETER) SURVEY AND LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK.
5. EXISTING UTILITIES AND PIPELINES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL NOTIFY LOUISIANA ONE CALL (1-800-272-3020) AT LEAST FIVE (5) CALENDAR DAYS PRIOR TO MOBILIZATION. ALL PIPELINES AND UNDERGROUND UTILITIES IN THE WORK AREA SHALL BE MARKED BY THE CONTRACTOR, AND CONTRACTOR SHALL MAINTAIN MARKINGS DURING CONSTRUCTION. CONTRACTOR SHALL NOT ANCHOR, SPUD, DREDGE, OR EXCAVATE WITHIN THE CLEARANCES SET FORTH WITHIN THE CONTRACT DOCUMENTS OF ANY PIPELINE OR UTILITY, UNLESS OTHERWISE SPECIFIED IN AGREEMENT WITH PIPELINE OR UTILITY OWNER. KNOW PIPELINE OWNER: COX OPERATION, POC: HENRY BENTON (504-267-9138).
6. SOFT SOIL CONDITIONS ARE PRESENT ALONG THE PROJECT SITE. THE CONTRACTOR SHALL BE FAMILIAR WITH AND ANTICIPATE THESE CONDITIONS. A GEOTECHNICAL INVESTIGATION WAS PERFORMED BY ARDAMAN & ASSOCIATES INC.; THE RESULTS OF THIS INVESTIGATION ARE PRESENTED IN A REPORT APPENDICES OF THE SPECIFICATIONS. EROSION HAS OCCURRED SINCE COLLECTION OF GEOTECH DATA AND CONDITIONS ALONG THE SHORELINE WILL BE VARIED.
7. COASTAL EROSION AND SHORELINE RETREAT HAS OCCURRED AT THE PROJECT SITE SINCE COLLECTION OF THE TOPOGRAPHIC AND BATHYMETRIC DATA, AND CHANGES TO THE ELEVATION MAY HAVE OCCURRED AT THE WORK AREAS SINCE THE COLLECTION OF THE SURVEY DATA. THE ALIGNMENT OF THE TEMPLATE WILL BE ADJUSTED PRIOR TO START OF CONSTRUCTION AFTER RECEIPT OF PRE-CONSTRUCTION SURVEY OR IN THE FIELD BY THE ENGINEER TO ACCOUNT FOR CHANGES THAT MAY HAVE OCCURRED. FIELD ADJUSTMENTS ARE NOT INTENDED TO ADJUST TOTAL BID QUANTITIES; HOWEVER, ENGINEER MAY ADJUST QUANTITIES IF CONDITIONS WARRANT. CONTRACTOR SHALL OBTAIN WRITTEN NOTICE FROM ENGINEER FOR ALL ALIGNMENT CHANGES.
8. THE BASELINE OF THE PROJECT SITE SHALL BE MARKED OR STAKED FOR REVIEW BY THE ENGINEER AND APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.
9. PIPELINE CROSSING LOCATIONS ARE SHOWN ON SHEET 5. THE OWNER HAS NOT SECURED AGREEMENTS TO CROSS PIPELINES. IT IS THE CONTRACTORS RESPONSIBILITY TO SECURE PIPELINE CROSSING AGREEMENTS WITH PIPELINE OWNER. CONTRACTOR SHALL NOT CROSS ANY PIPELINES WITHOUT PIPELINE OWNER WRITTEN APPROVAL. SEE TECHNICAL SPECIFICATIONS FOR MORE INFORMATION.
10. PLANS AND BID DOCUMENTS ARE COMPLEMENTARY; WHAT IS REQUIRED IN ONE IS AS BINDING AS IF REQUIRED BY ALL. CLARIFICATIONS AND INTERPRETATIONS OF, OR NOTIFICATIONS OF MINOR VARIATIONS AND DEVIATIONS IN, THE CONTRACT DOCUMENTS WILL BE ISSUED BY THE ENGINEER.

ENVIRONMENTAL NOTES

1. THE PROJECT IS WITHIN AND ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS. CONTRACTOR SHALL AVOID IMPACTS TO THESE AREAS DURING CONSTRUCTION. THE OWNER RESERVES THE RIGHT TO SUSPEND WORK AT ANY TIME IF IMPACTS OCCUR UNTIL SATISFACTORY CORRECTIVE MEASURES ARE IMPLEMENTED BY THE CONTRACTOR, SEE TECHNICAL SPECIFICATIONS FOR MORE INFORMATION.

TIDAL ELEVATIONS (NAVD88)	
MEAN HIGHER HIGH WATER (MHHW)	+1.32'
MEAN SEA LEVEL (MSL)	+0.60'
MEAN LOWER LOW WATER (MLLW)	-0.19'
NAVD88	0.00'

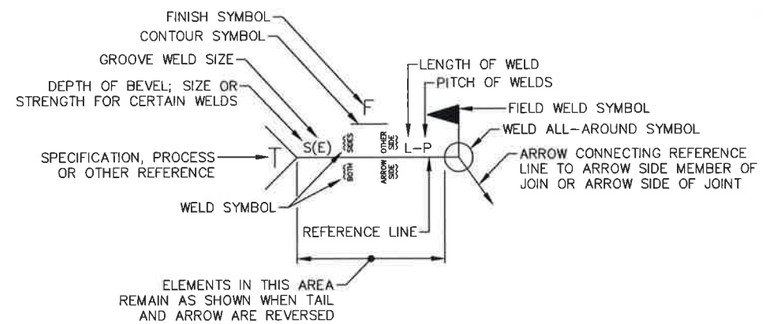
SURVEY NOTES

1. SURVEY CONTROL
   - HORIZONTAL DATUM IS NAD83 LOUISIANA STATE PLANE COORDINATE SYSTEM, LOUISIANA SOUTH ZONE FEET AND REFERENCED TO SURVEY CONTROL POINTS SHOWN BELOW.
   - VERTICAL DATUM IS NAVD88. (GEOID 12A)
   - TIDAL ELEVATIONS PROVIDED HAVE BEEN OBTAINED FROM THE BAY WAVELAND NOAA GAUGE AND TRANSFORMED TO THE PROJECT SITE VIA USACE VDATUM TOOL, REFERENCED TO NAVD88.
2. THE BASIS OF THE SITE PLANS (SHEETS 4 TO 20) AND DETAILS (SHEETS 21 TO 27) TOPOGRAPHIC DATA IS AS FOLLOWS:
   - TOPOGRAPHY AND BATHYMETRY DERIVED FROM T. BAKER SMITH, LLC APRIL 2013-AUGUST 2013.
   - AERIAL PHOTOGRAPHY FROM GULF COAST AERIAL MAPPING ON AUGUST 2, 2013.
3. THE SURVEY DATA AND AERIAL PHOTOGRAPH CAN ONLY BE CONSIDERED REPRESENTATIVE OF THE CONDITIONS AT THE TIME OF ACQUISITION.
4. SURVEY POINTS SHALL GOVERN OVER CONTOURS IF A CONFLICT OCCURS BETWEEN OVERLAPPING DATA.

REFERENCE BENCHMARKS			
POINT ID	LONGITUDE	LATITUDE	ELEVATION (NAVD88)
PO148-SM-01	29° 47' 43.673"	89° 23' 20.725	+3.7'
PO148-SM-02	29°46' 24.809"	89° 19' 9.898"	+2.9'

NOTE: SEE APPENDICES OF THE SPECIFICATIONS FOR MONUMENT SHEET DATA

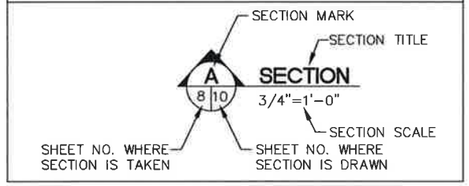
STANDARD WELDING SYMBOL



STANDARD ABBREVIATIONS

EL	= ELEVATION
T.O.	= TOP OF
B.O.	= BOTTOM OF
MHHW	= MEAN HIGHER HIGH WATER
EA.	= EACH
TYP.	= TYPICAL
O.C.	= ON CENTER
@	= AT
APPROX	= APPROXIMATE
BM	= BENCH MARK
MAX	= MAXIMUM
MIN	= MINIMUM
TBAR	= TEMPORARY BEACH ACCESS ROAD
U.N.O.	= UNLESS NOTED OTHERWISE
'	= MINUTES OR FEET
"	= SECONDS OR INCHES
	= CONTROL POINT
	= GEOTECHNICAL BORING
	= PERMANENT NAVIGATION AID

TYPICAL REFERENCE SYMBOLS



CALL BEFORE YOU DIG!

LOUISIANA ONE CALL PARTICIPANTS REQUEST
48 HOURS NOTICE BEFORE YOU DIG,
DRILL, OR BLAST - STOP CALL

Louisiana One Call System
1-800-272-3020

TABLE 1 - SUMMARIES OF ESTIMATED QUANTITIES

BASE BID (STA 0+00 TO 154+47)

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	1
2	SURVEYING	LUMP SUM	1
3	ENVIRONMENTAL PROTECTION	LUMP SUM	1
4	ACCESS AND FLOATATION CHANNEL	LUMP SUM	1
5	NAVIGATION AIDS	EA	49
6	REEFBLK	EA	576
7	REEFBLK ANCHORS	EA	311
8	REEF BALL	EA	2,322
9	OYSTERBREAK - BOTTOM	EA	2,589
10	OYSTERBREAK - TOP	EA	1,701
11	WAVE ATTENUATING DEVICE	EA	1,414
12	GEOGRID AND GEOTEXTILE	SQ YD	32,370

ALTERNATE BID NO.		1 (STA 200+00 TO 217+37)		2 (STA 218+37 TO 231+85)		3 (STA 235+29 TO 252+45)	
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM NO.	ESTIMATED QUANTITY	ITEM NO.	ESTIMATED QUANTITY
13	SURVEYING	LUMP SUM	1	24	1	35	1
14	ENVIRONMENTAL PROTECTION	LUMP SUM	1	25	1	36	1
15	ACCESS AND FLOATATION CHANNEL	LUMP SUM	1	26	1	37	1
16	NAVIGATION AIDS	EA	6	27	6	38	6
17	OYSTERBREAK - BOTTOM	EA	304	28	241	39	301
18	OYSTERBREAK - TOP	EA	201	29	159	40	199
19	REEF BALL	EA	268	30	166	41	262
20	WAVE ATTENUATING DEVICE	EA	178	31	146	42	178
21	REEFBLK	EA	48	32	72	43	48
22	REEFBLK ANCHORS	EA	25	33	37	44	25
23	GEOGRID AND GEOTEXTILE	SQ YD	3,734	34	3,024	45	3,662

STATE OF LOUISIANA
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FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

NOTES SHEET

DATE: 9/24/15
SHEET 2 OF 34

TABLE 2 - BASELINE ALIGNMENT POINTS (BASE BID)

POINT NO.	RADIUS	START STA.	END STA.	PI STA.	START POINT		END POINT		CENTER POINT	
					EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1		0+00.00	0+28.62		3,888,884.52	462,085.50	3,888,904.19	462,106.29		
2	50	0+28.62	0+56.12	0+42.73	3,888,904.19	462,106.29	3,888,916.79	462,130.34	3,888,867.87	462,140.66
3		0+56.12	1+09.06		3,888,916.79	462,130.34	3,888,927.71	462,182.14		
4	50	1+09.06	1+53.30	1+32.74	3,888,927.71	462,182.14	3,888,953.63	462,216.22	3,888,976.64	462,171.82
5		1+53.30	1+63.22		3,888,953.63	462,216.22	3,888,962.44	462,220.78		
6	50	1+63.22	2+03.05	1+84.26	3,888,962.44	462,220.78	3,889,001.09	462,223.96	3,888,985.54	462,176.44
7		2+03.05	2+68.09		3,889,001.09	462,223.96	3,889,063.13	462,204.44		
8	50	2+68.09	3+05.32	2+87.62	3,889,063.13	462,204.44	3,889,099.43	462,206.89	3,889,078.14	462,252.13
9		3+05.32	3+60.38		3,889,099.43	462,206.89	3,889,149.25	462,230.33		
10	50	3+60.38	3+83.43	3+72.12	3,889,149.25	462,230.33	3,889,167.16	462,244.53	3,889,127.96	462,275.58
11		3+83.43	4+60.44		3,889,167.16	462,244.53	3,889,214.97	462,304.88		
12	50	4+60.44	4+73.87	4+67.19	3,889,214.97	462,304.88	3,889,221.81	462,316.39	3,889,175.78	462,335.93
13		4+73.87	5+38.95		3,889,221.81	462,316.39	3,889,247.24	462,376.31		
14	50	5+38.95	5+52.37	5+45.70	3,889,247.24	462,376.31	3,889,250.77	462,389.21	3,889,201.22	462,395.85
15		5+52.37	5+79.96		3,889,250.77	462,389.21	3,889,254.44	462,416.55		
16	50	5+79.96	6+00.01	5+90.12	3,889,254.44	462,416.55	3,889,253.10	462,436.42	3,889,204.88	462,423.19
17		6+00.01	6+87.96		3,889,253.10	462,436.42	3,889,229.82	462,521.24		
18	50	6+87.96	7+42.65	7+18.40	3,889,229.82	462,521.24	3,889,244.15	462,571.23	3,889,278.04	462,534.47
19		7+42.65	9+23.49		3,889,244.15	462,571.23	3,889,377.11	462,693.81		
20	50	9+23.49	9+37.12	9+30.34	3,889,377.11	462,693.81	3,889,385.75	462,704.29	3,889,343.21	462,730.57
21		9+37.12	10+45.22		3,889,385.75	462,704.29	3,889,442.56	462,796.26		
22	50	10+45.22	10+60.31	10+52.82	3,889,442.56	462,796.26	3,889,448.45	462,810.10	3,889,400.02	462,822.54
23		10+60.31	11+94.22		3,889,448.45	462,810.10	3,889,481.77	462,939.80		
24	50	11+94.22	12+41.60	12+19.86	3,889,481.77	462,939.80	3,889,512.03	462,973.94	3,889,530.20	462,927.36
25		12+41.60	14+97.34		3,889,512.03	462,973.94	3,889,749.83	463,068.04		
26	500	14+97.34	18+40.12	16+75.77	3,889,749.83	463,068.04	3,890,085.15	463,091.05	3,889,949.72	462,609.67
27	100	18+40.12	19+64.38	19+11.71	3,890,085.15	463,091.05	3,890,198.41	463,117.98	3,890,122.97	463,183.62
28		19+64.38	20+54.00		3,890,198.41	463,117.98	3,890,255.24	463,187.27		
29	50	20+54.00	20+61.49	20+57.75	3,890,255.24	463,187.27	3,890,259.53	463,193.40	3,890,216.55	463,218.95
30		20+61.49	21+48.34		3,890,259.53	463,193.40	3,890,303.90	463,268.06		
31	50	21+48.34	21+85.43	21+67.78	3,890,303.90	463,268.06	3,890,309.79	463,303.83	3,890,260.86	463,293.50
32		21+85.43	26+27.02		3,890,309.79	463,303.83	3,890,218.62	463,735.91		
33	50	26+27.02	26+45.18	26+36.20	3,890,218.62	463,735.91	3,890,217.88	463,753.95	3,890,267.39	463,746.95
34		26+45.18	27+69.63		3,890,217.88	463,753.95	3,890,235.30	463,877.17		
35	50	27+69.63	27+81.93	27+75.81	3,890,235.30	463,877.17	3,890,235.52	463,889.44	3,890,185.80	463,884.17
36		27+81.93	32+12.26		3,890,235.52	463,889.44	3,890,190.15	464,317.38		
37	50	32+12.26	32+17.08	32+14.68	3,890,190.15	464,317.38	3,890,189.87	464,322.19	3,890,239.87	464,322.65
38		32+17.08	36+53.47		3,890,189.87	464,322.19	3,890,185.85	464,758.56		
39	50	36+53.47	36+72.86	36+63.29	3,890,185.85	464,758.56	3,890,189.39	464,777.50	3,890,235.85	464,759.02
40		36+72.86	43+67.21		3,890,189.39	464,777.50	3,890,457.60	465,417.95		
41	2750	43+67.21	70+79.38	58+45.07	3,890,457.60	465,417.95	3,892,524.27	467,001.46	3,892,964.23	464,286.89
42		70+79.38	71+73.52		3,892,524.27	467,001.46	3,892,617.20	467,016.52		
43	600	71+73.52	73+63.63	72+69.38	3,892,617.20	467,016.52	3,892,806.50	467,014.80	3,892,706.45	466,423.20
44		73+63.63	74+27.24		3,892,806.50	467,014.80	3,892,870.00	467,010.99		
45	550	74+27.24	75+58.27	74+93.07	3,892,870.00	467,010.99	3,893,000.16	467,023.06	3,892,884.67	467,560.80
46	25	75+58.27	76+21.74	76+38.69	3,893,000.16	467,023.06	3,893,006.46	467,070.39	3,892,995.95	467,047.70
47		76+21.74	77+04.53		3,893,006.46	467,070.39	3,892,933.58	467,109.67		
48	100	77+04.53	77+13.42	77+08.98	3,892,933.58	467,109.67	3,892,925.58	467,113.54	3,892,886.14	467,021.64
49		77+13.42	78+11.04		3,892,925.58	467,113.54	3,892,835.87	467,152.04		
50	100	78+11.04	78+38.18	78+24.69	3,892,835.87	467,152.04	3,892,812.68	467,165.97	3,892,875.31	467,243.93
51		78+38.18	82+26.78		3,892,812.68	467,165.97	3,892,509.74	467,409.36		
52	50	82+26.78	82+38.82	82+32.83	3,892,509.74	467,409.36	3,892,499.54	467,415.71	3,892,478.43	467,370.38
53		82+38.82	83+24.09		3,892,499.54	467,415.71	3,892,421.23	467,449.44		
54	50	83+24.09	83+54.77	83+39.93	3,892,421.23	467,449.44	3,892,398.39	467,469.20	3,892,441.00	467,495.36
55	1700	83+54.77	113+28.81	103+88.60	3,892,398.39	467,469.20	3,893,161.20	469,964.52	3,893,823.08	468,397.94
56		113+28.81	114+87.18		3,893,161.20	469,964.52	3,893,307.08	470,026.13		
57	50	114+87.18	115+19.53	115+03.94	3,893,307.08	470,026.13	3,893,338.79	470,028.54	3,893,326.53	469,980.07
58		115+19.53	115+51.35		3,893,338.79	470,028.54	3,893,369.63	470,020.75		
59	50	115+51.35	115+68.23	115+59.87	3,893,369.63	470,020.75	3,893,386.39	470,019.43	3,893,381.88	470,069.22
60		115+68.23	115+91.68		3,893,386.39	470,019.43	3,893,409.73	470,021.54		
61	100	115+91.68	116+79.18	116+38.45	3,893,409.73	470,021.54	3,893,482.94	470,064.21	3,893,400.73	470,121.13
62		116+79.18	117+16.37		3,893,482.94	470,064.21	3,893,504.11	470,094.78		
63	50	117+16.37	117+33.40	117+24.97	3,893,504.11	470,094.78	3,893,511.26	470,110.15	3,893,463.01	470,123.25
64		117+33.40	120+13.42		3,893,511.26	470,110.15	3,893,584.60	470,380.40		
65	50	120+13.42	120+19.83	120+16.63	3,893,584.60	470,380.40	3,893,586.67	470,386.46	3,893,632.86	470,367.30
66		120+19.83	121+63.42		3,893,586.67	470,386.46	3,893,641.69	470,519.09		

BASELINE ALIGNMENT POINTS (BASE BID) - CONTINUED

POINT NO.	RADIUS	START STA.	END STA.	PI STA.	START POINT		END POINT		CENTER POINT	
					EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
67	50	121+63.42	121+84.51	121+74.12	3,893,641.69	470,519.09	3,893,645.48	470,539.68	3,893,595.50	470,538.25
68		121+84.51	122+39.47		3,893,645.48	470,539.68	3,893,643.91	470,594.62		
69	50	122+39.47	122+61.99	122+50.93	3,893,643.91	470,594.62	3,893,638.30	470,616.24	3,893,593.93	470,593.19
70		122+61.99	123+49.46		3,893,638.30	470,616.24	3,893,597.98	470,693.85		
71	50	123+49.46	123+82.20	123+66.44	3,893,597.98	470,693.85	3,893,593.12	470,725.64	3,893,642.35	470,716.90
72		123+82.20	124+70.45		3,893,593.12	470,725.64	3,893,608.54	470,812.54		
73	50	124+70.45	124+98.17	124+84.67	3,893,608.54	470,812.54	3,893,605.77	470,839.76	3,893,559.31	470,821.28
74		124+98.17	126+66.73		3,893,605.77	470,839.76	3,893,548.79	470,998.40		
75	50	126+66.73	126+74.11	126+70.43	3,893,548.79	470,998.40	3,893,545.79	471,005.14	3,893,501.73	470,981.49
76		126+74.11	127+89.35		3,893,545.79	471,005.14	3,893,491.29	471,106.68		
77	50	127+89.35	128+09.60	127+99.62	3,893,491.29	471,106.68	3,893,485.54	471,125.94	3,893,535.35	471,130.32
78		128+09.60	128+34.42		3,893,485.54	471,125.94	3,893,483.37	471,150.68		
79	50	128+34.42	128+54.77	128+44.74	3,893,483.37	471,150.68	3,893,477.57	471,170.03	3,893,433.56	471,146.30
80		128+54.77	130+48.00		3,893,477.57	471,170.03	3,893,385.83	471,340.10		
81	50	130+48.00	131+33.39	131+05.36	3,893,385.83	471,340.10	3,893,312.84	471,358.91	3,893,341.13	471,317.69
82	100	131+33.39	133+36.21	132+94.07	3,893,312.84	471,358.91	3,893,157.28	471,426.99	3,893,256.24	471,441.35
83		133+36.21	134+95.50		3,893,157.28	471,426.99	3,893,146.86	471,585.94		
84	180	134+95.50	136+31.06	135+66.68	3,893,146.86	471,585.94	3,893,177.36	471,714.76	3,893,324.99	471,611.79
85		136+31.06	146+24.72		3,893,177.36	471,714.76	3,893,745.78	472,529.77		
86	100	146+24.72	146+50.12	146+37.49	3,893,745.78	472,529.77	3,893,762.79	472,548.55	3,893,827.80	472,472.57
87		146+50.12	148+11.54		3,893,762.79	472,548.55	3,893,885.44	472,653.49		
88	180	148+11.54	150+36.42	149+41.31	3,893,885.44	472,653.49	3,893,935.15	472,858.08	3,893,768.41	472,790.26
89		150+36.42	151+74.48		3,893,935.15	472,858.08	3,893,883.13	472,985.97		
90	180	151+74.48	152+65.38	152+20.92	3,893,883.13	472,985.97	3,893,871.13	473,075.09	3,894,049.86	473,053.79
91		152+65.38	154+47.31		3,893,871.13	473,075.09	3,893,892.66	473,255.74		

TABLE 3 - BASELINE ALIGNMENT POINTS (ALTERNATE BIDS)

POINT NO. (P-#)	RADIUS	START STA.	END STA.	PI STA.	START POINT		END POINT		CENTER POINT	
					EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
1000		200+00.00	201+75.00		3,904,813.40	470,825.45	3,904,709.37	470,684.73		
1001	300	201+75.00	203+18.08	202+47.90	3,904,709.37	470,684.73	3,904,661.64	470,551.25	3,904,962.52	470,518.94
1002		203+18.08	205+45.75		3,904,661.64	470,551.25	3,904,637.55	470,324.87		
1003	50	205+45.75	205+48.46	205+47.10	3,904,637.55	470,324.87	3,904,637.32	470,322.17	3,904,687.23	470,319.24
1004		205+48.46	207+38.21		3,904,637.32	470,322.17	3,904,626.20	470,132.74		
1005	100	207+38.21	209+90.02	210+48.52	3,904,626.20	470,132.74	3,904,439.95	470,093.43	3,904,526.74	470,143.09
1006		209+90.02	210+36.33		3,904,439.95	470,093.43	3,904,415.69	470,132.89		
1007	50	210+36.33	210+46.96	210+41.67	3,904,415.69	470,132.89	3,904,411.13	470,142.46	3,904,458.29	470,159.07
1008		210+46.96	212+06.12		3,904,411.13	470,142.46	3,904,358.26	470,292.59		
1009	50	212+06.12	212+13.83	212+09.99	3,904,358.26	470,292.59	3,904,355.15	470,299.63	3,904,311.10	470,275.98
1010		212+13.83	214+99.12		3,904,355.15	470,299.63	3,904,220.18	470,550.97		
1011	50	214+99.12	215+00.85	214+99.99	3,904,220.18	470,550.97	3,904,219.39	470,552.51	3,904,264.23	470,574.63
1012		215+00.85	217+22.16		3,904,219.39	470,552.51	3,904,121.51	470,750.99		
1013	50	217+22.16	217+28.08	217+25.12	3,904,121.51	470,750.99	3,904,118.58	470,756.13	3,904,076.66	470,728.88
1014		217+28.08	222+62.82		3,904,118.58	470,756.13	3,903,827.05	471,204.42		
1015	50	222+62.82	222+67.59	222+65.21	3,903,827.05	471,204.42	3,903,824.26	471,208.29	3,903,785.13	471,177.16
1016		222+67.59	227+17.07		3,903,824.26	471,208.29	3,903,544.47	471,560.07		
1017	50	227+17.07	227+27.86	227+22.49	3,903,544.47	471,560.07	3,903,536.90	471,567.73	3,903,505.34	471,528.95
1018		227+27.86	230+63.12		3,903,536.90	471,567.73	3,903,276.86	471,779.34		
1019	50	230+63.12	230+81.47	230+72.40	3,903,276.86	471,779.34	3,903,265.05	471,793.24	3,903,308.42	471,818.12
1020		230+81.47	231+02.58		3,903,265.05	471,793.24	3,903,254.54	471,811.56		
1021		231+02.58	231+85.03		3,903,254.54	471,811.56	3,903,213.51	471,883.07		
1022	50	231+85.03	232+15.12	232+00.54	3,903,213.51	471,883.07	3,903,207.05	471,911.99	3,903,256.88	471,907.95
1023		232+15.12	232+96.15		3,903,207.05	471,911.99	3,903,213.60	471,992.76		
1024	100	232+96.15	233+73.19	233+36.69	3,903,213.60	471,992.76	3,903,185.57	472,062.48	3,903,113.60	471,993.06
1025		233+73.19	234+19.25		3,903,185.57	472,062.48	3,903,153.59	472,095.64		
1026	100	234+19.25	235+10.07	234+68.06	3,903,153.59	472,095.64	3,903,071.16	472,125.66	3,903,081.62	472,026.21
1027		235+10.07	236+41.43		3,903,071.16	472,125.66	3,902,940.52	472,111.92		
1028	400	236+41.43	237+24.32	236+83.03	3,902,940.52	472,111.92	3,902,857.78	472,111.82	3,902,898.68	472,509.73
1029		237+24.32	241+42.89		3,902,857.78	472,111.82	3,902,441.41	472,154.62		
1030	50	241+42.89	241+55.19	241+49.07	3,902,441.41	472,154.62	3,902,429.45	472,157.36	3,902,446.52	472,204.36
1031		241+55.19	241+76.91		3,902,429.45	472,157.36	3,902,409.03	472,164.78		
1032		241+76.91	242+47.55		3,902,409.03	472,164.78	3,902,342.64	472,188.90		
1033	50	242+47.55	242+55.34	242+51.45	3,902,342.64	472,188.90	3,902,335.55	472,192.12	3,902,359.71	472,235.89
1034		242+55.34	243+56.66		3,902,335.55	472,192.12	3,902,246.84	472,241.08		
1035	100	243+56.66	244+43.89	244+03.27	3,902,246.84	472,241.08	3,902,210.17	472,317.19	3,902,310.16	472,318.48
1036		244+43.89	252+45.00		3,902,210.17	472,317.19	3,902,192.12	473,118.10		

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
BATON ROUGE, LA 70802
(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF
JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

ALIGNMENT TABLES

DATE: 9/24/15

SHEET 3 OF 34

TREASURE BAY

BAYOU LA LOUTRE

SHEET 15

SHEET 14

SHEET 13

SHEET 12

SHEET 11

N: 466763.69
E: 3894027.44

SHEET 10

SHEET 9

SHEET 8

SHEET 7

N: 462948.84
E: 3890623.92

BASE BID ACCESS CHANNEL

SHEET 6

LIMITS OF WORK

BASE BID

BAY ELOI

SHEET 18

SHEET 17

SHEET 16

ALTERNATE BIDS

LIMITS OF WORK

N: 469898.56
E: 3904916.72

ALTERNATE BIDS
ACCESS CHANNEL

SHEET 30

N: 466209.22
E: 3907859.28

DEADMAN'S
ISLAND

LEGEND

- TEMPORARY ACCESS/FLOTATION CHANNEL AND SPOIL PLACEMENT AREA, COORDINATES DENOTE CHANNEL CENTERLINE
- OYSTER LEASE AREAS
- PIPELINE BUFFER
- REEF BREAKWATER

OVERALL SITE PLAN

0 1500 3000
SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
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PROFESSIONAL ENGINEER
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9/24/15

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LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

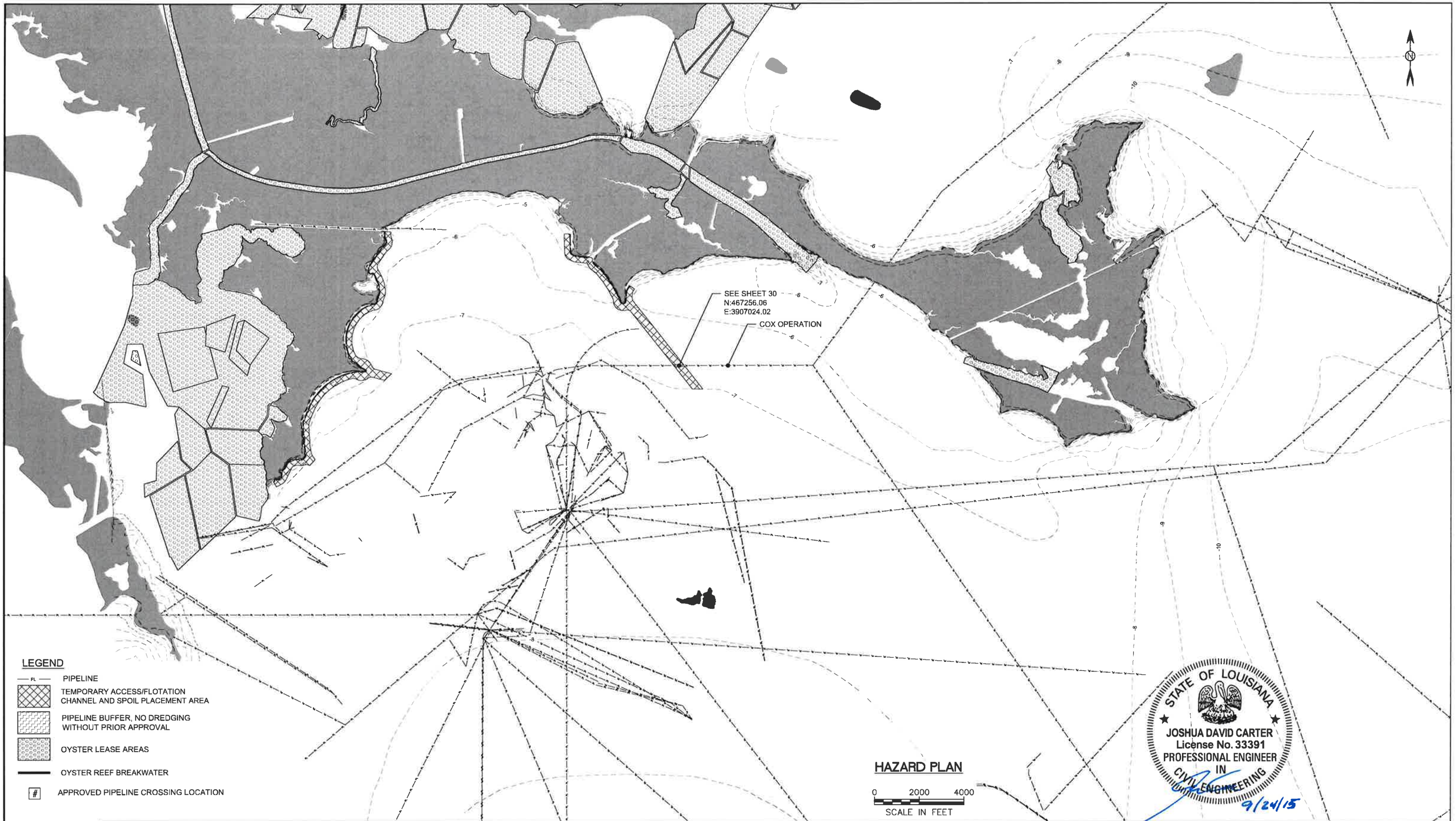
FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

OVERALL SITE PLAN

DATE: 9/24/15

SHEET 4 OF 34



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LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

HAZARD PLAN

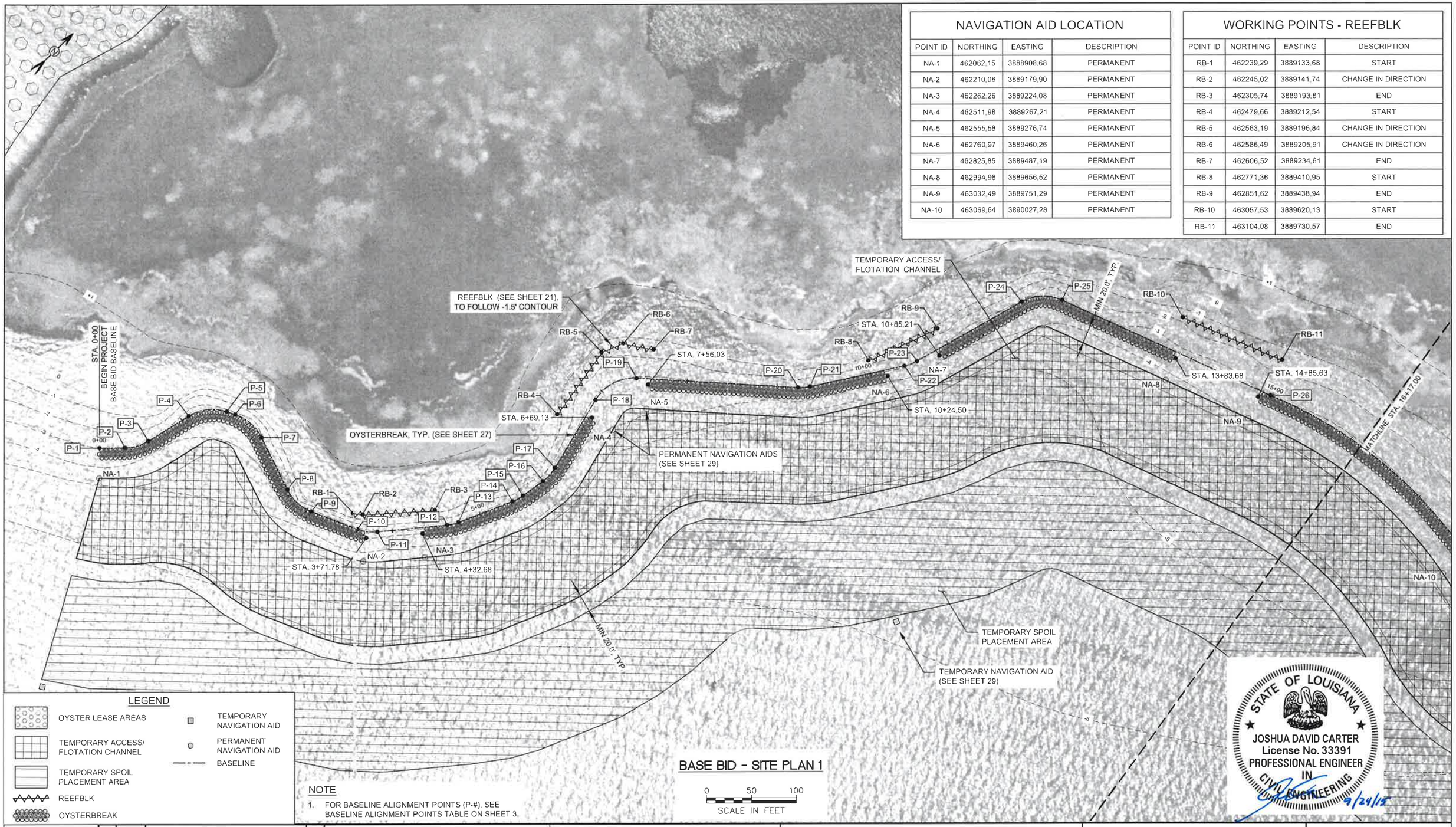
DATE: 9/24/15
SHEET 5 OF 34

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-1	462062.15	3888908.68	PERMANENT
NA-2	462210.06	3889179.90	PERMANENT
NA-3	462262.26	3889224.08	PERMANENT
NA-4	462511.98	3889267.21	PERMANENT
NA-5	462555.58	3889276.74	PERMANENT
NA-6	462760.97	3889460.26	PERMANENT
NA-7	462825.85	3889487.19	PERMANENT
NA-8	462994.98	3889656.52	PERMANENT
NA-9	463032.49	3889751.29	PERMANENT
NA-10	463069.64	3890027.28	PERMANENT

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-1	462239.29	3889133.68	START
RB-2	462245.02	3889141.74	CHANGE IN DIRECTION
RB-3	462305.74	3889193.81	END
RB-4	462479.66	3889212.54	START
RB-5	462563.19	3889196.84	CHANGE IN DIRECTION
RB-6	462586.49	3889205.91	CHANGE IN DIRECTION
RB-7	462606.52	3889234.61	END
RB-8	462771.36	3889410.95	START
RB-9	462851.62	3889438.94	END
RB-10	463057.53	3889620.13	START
RB-11	463104.08	3889730.57	END



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DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 1

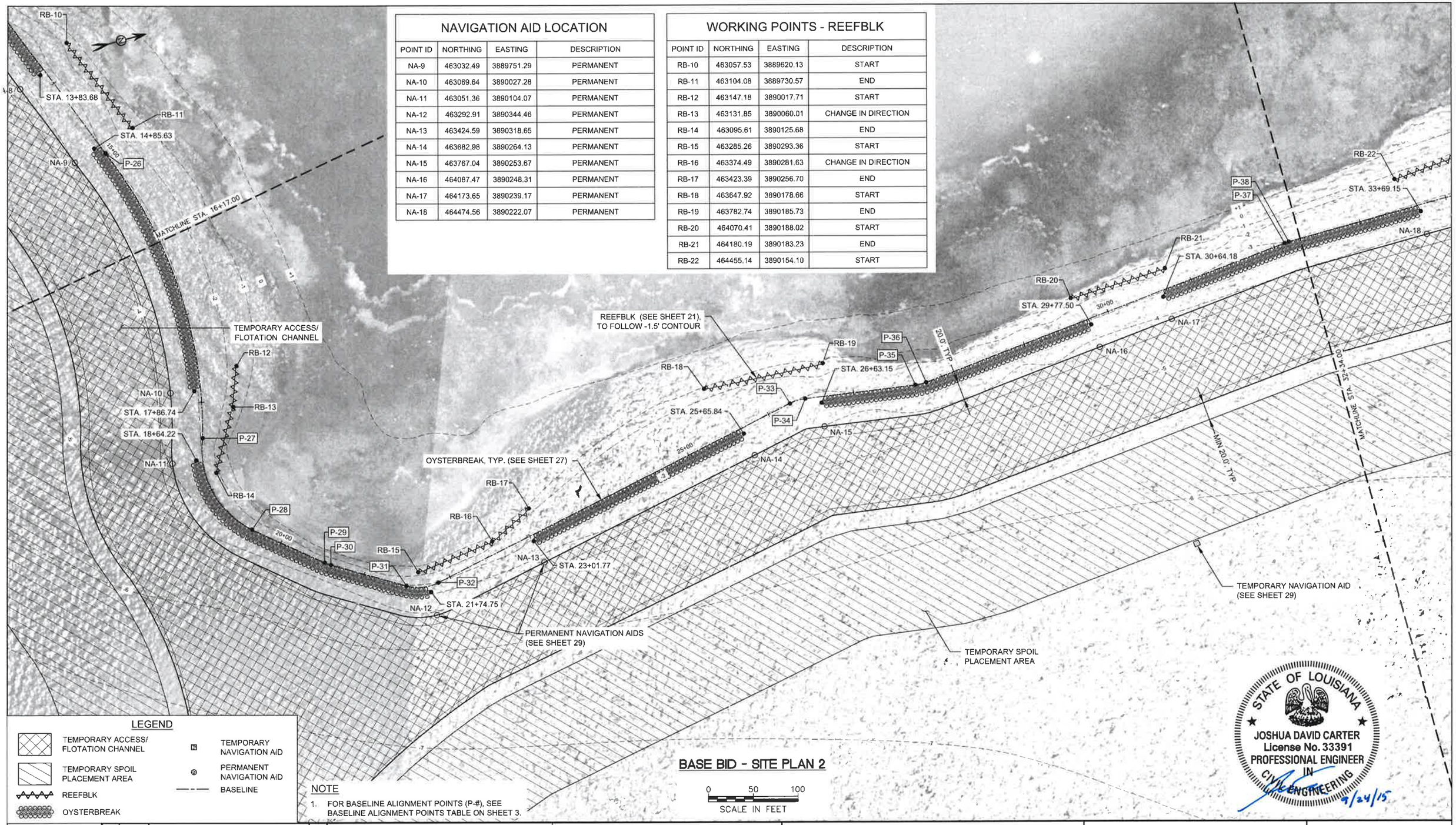
DATE: 9/24/15
SHEET 6 OF 34

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-9	463032.49	3889751.29	PERMANENT
NA-10	463069.64	3890027.28	PERMANENT
NA-11	463051.36	3890104.07	PERMANENT
NA-12	463292.91	3890344.46	PERMANENT
NA-13	463424.59	3890318.65	PERMANENT
NA-14	463682.98	3890264.13	PERMANENT
NA-15	463767.04	3890253.67	PERMANENT
NA-16	464087.47	3890248.31	PERMANENT
NA-17	464173.65	3890239.17	PERMANENT
NA-18	464474.56	3890222.07	PERMANENT

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-10	463057.53	3889620.13	START
RB-11	463104.08	3889730.57	END
RB-12	463147.18	3890017.71	START
RB-13	463131.85	3890060.01	CHANGE IN DIRECTION
RB-14	463095.61	3890125.68	END
RB-15	463285.26	3890293.36	START
RB-16	463374.49	3890281.63	CHANGE IN DIRECTION
RB-17	463423.39	3890256.70	END
RB-18	463647.92	3890178.66	START
RB-19	463782.74	3890185.73	END
RB-20	464070.41	3890188.02	START
RB-21	464180.19	3890183.23	END
RB-22	464455.14	3890154.10	START



LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- OYSTERBREAK
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE

NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

BASE BID - SITE PLAN 2

0 50 100
SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV	DATE	DESCRIPTION	BY

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SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 2

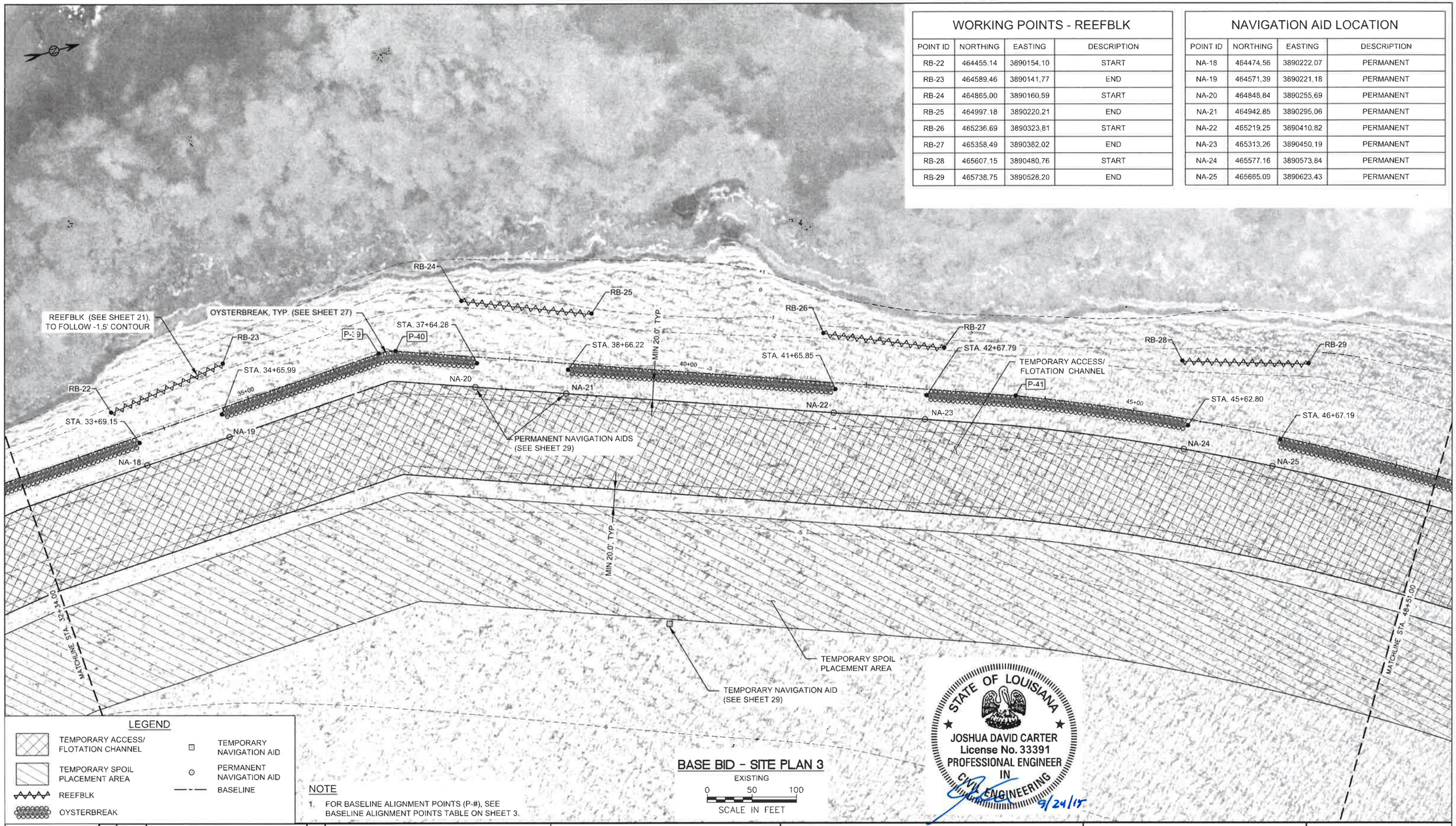
DATE: 9/24/15
SHEET 7 OF 34

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-22	464455.14	3890154.10	START
RB-23	464589.46	3890141.77	END
RB-24	464865.00	3890160.59	START
RB-25	464997.18	3890220.21	END
RB-26	465236.69	3890323.81	START
RB-27	465358.49	3890382.02	END
RB-28	465607.15	3890480.76	START
RB-29	465738.75	3890528.20	END

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-18	464474.56	3890222.07	PERMANENT
NA-19	464571.39	3890221.18	PERMANENT
NA-20	464848.84	3890255.69	PERMANENT
NA-21	464942.85	3890295.06	PERMANENT
NA-22	465219.25	3890410.82	PERMANENT
NA-23	465313.26	3890450.19	PERMANENT
NA-24	465577.16	3890573.84	PERMANENT
NA-25	465665.09	3890623.43	PERMANENT



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LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 3

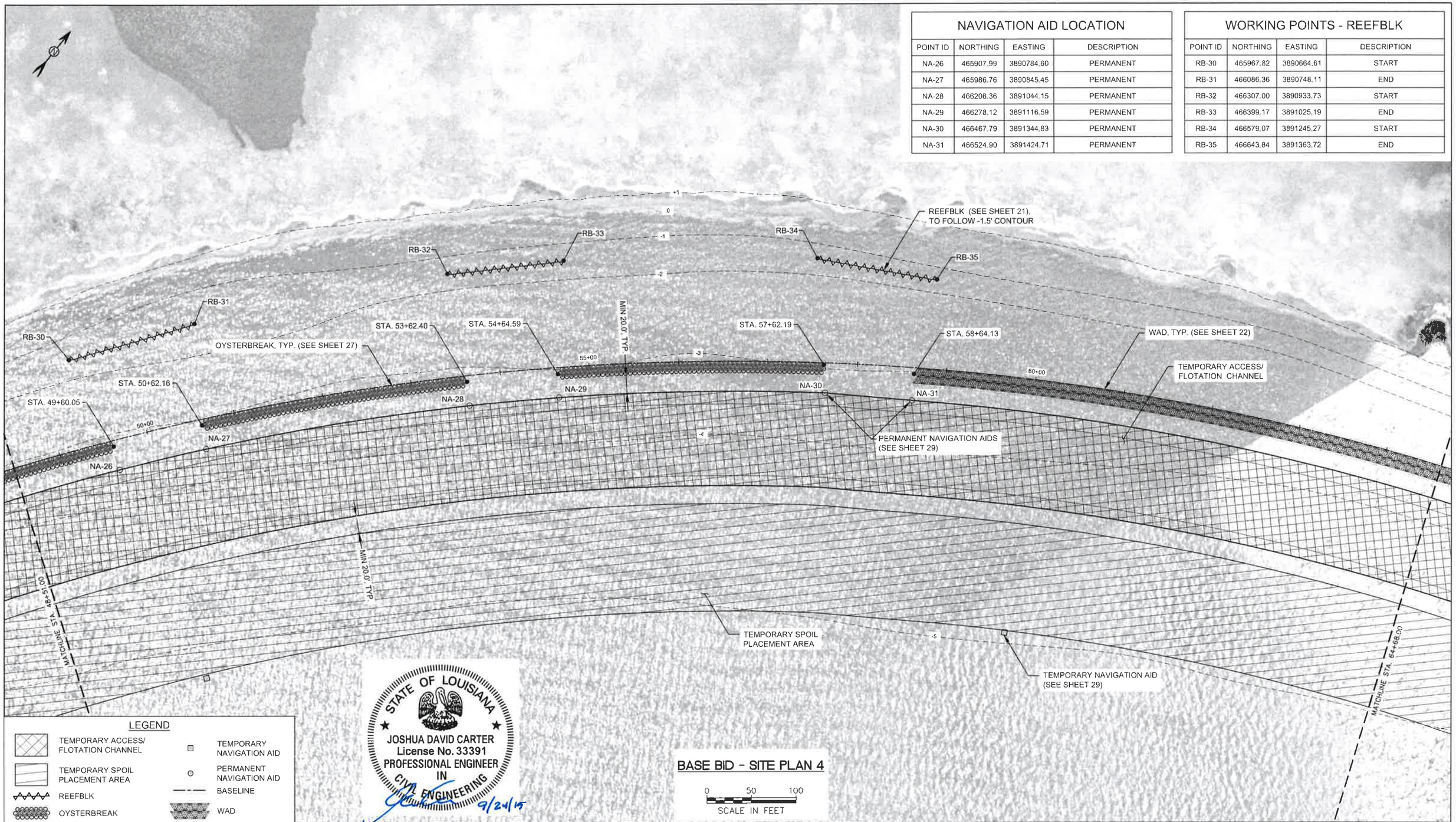
DATE: 9/24/15
SHEET 8 OF 34

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-26	465907.99	3890784.60	PERMANENT
NA-27	465986.76	3890845.45	PERMANENT
NA-28	466208.36	3891044.15	PERMANENT
NA-29	466278.12	3891116.59	PERMANENT
NA-30	466467.79	3891344.83	PERMANENT
NA-31	466524.90	3891424.71	PERMANENT

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-30	465967.82	3890664.61	START
RB-31	466086.36	3890748.11	END
RB-32	466307.00	3890933.73	START
RB-33	466399.17	3891025.19	END
RB-34	466579.07	3891245.27	START
RB-35	466643.84	3891363.72	END



REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
BATON ROUGE, LA 70802
(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

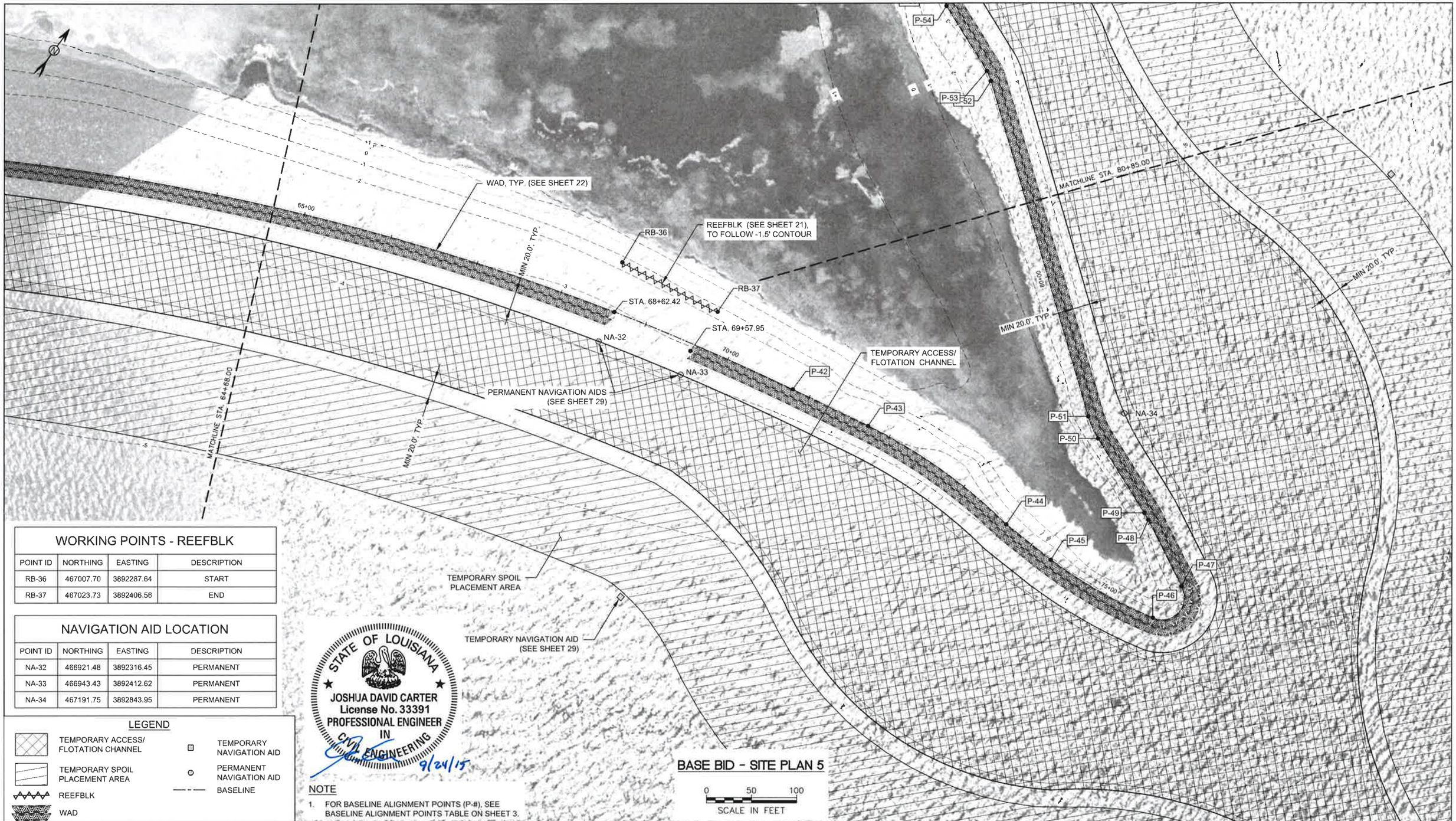
FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 4

DATE: 9/24/15

SHEET 9 OF 34



WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-36	467007.70	3892287.64	START
RB-37	467023.73	3892406.56	END

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-32	466921.48	3892316.45	PERMANENT
NA-33	466943.43	3892412.62	PERMANENT
NA-34	467191.75	3892843.95	PERMANENT

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- WAD
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE

NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
BATON ROUGE, LA 70802
(225) 383-1780

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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 5

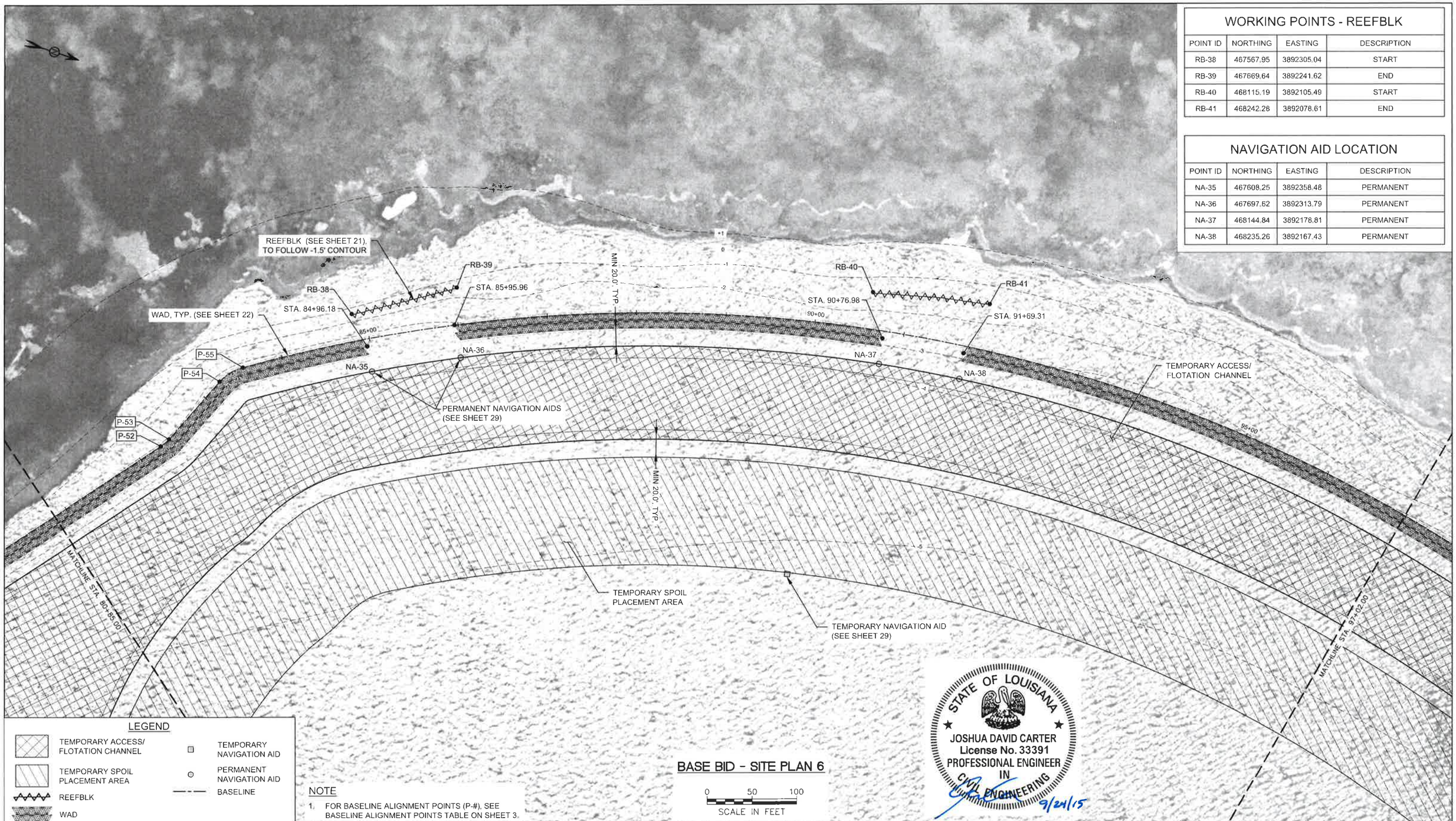
DATE: 9/24/15
SHEET 10 OF 34

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-38	467567.95	3892305.04	START
RB-39	467669.64	3892241.62	END
RB-40	468115.19	3892105.49	START
RB-41	468242.26	3892078.61	END

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-35	467608.25	3892358.48	PERMANENT
NA-36	467697.62	3892313.79	PERMANENT
NA-37	468144.84	3892178.81	PERMANENT
NA-38	468235.26	3892167.43	PERMANENT



REV.	DATE	DESCRIPTION	BY

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748 MAIN ST.
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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 6

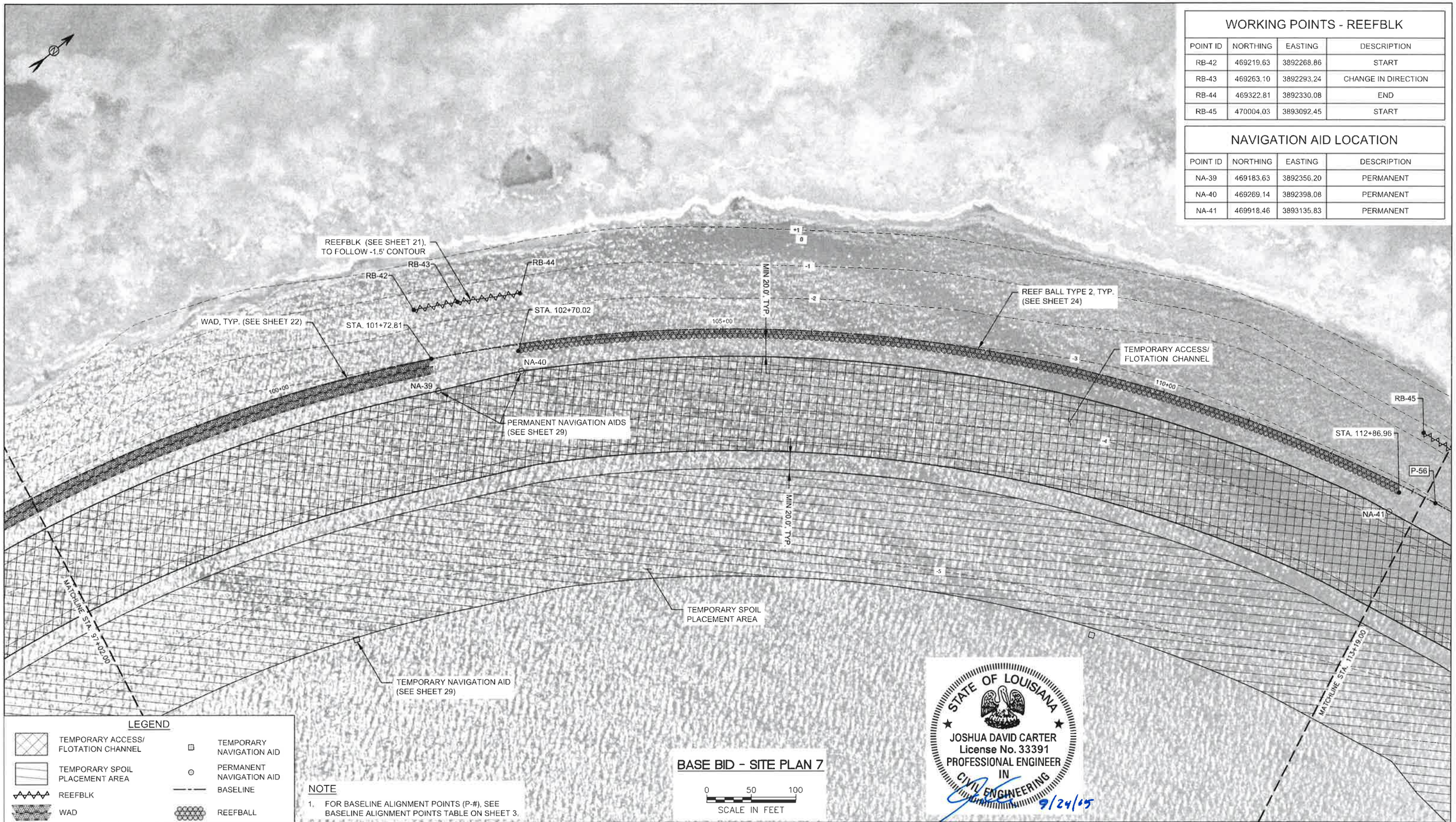
DATE: 9/24/15
SHEET 11 OF 34

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-42	469219.63	3892268.86	START
RB-43	469263.10	3892293.24	CHANGE IN DIRECTION
RB-44	469322.81	3892330.08	END
RB-45	470004.03	3893092.45	START

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-39	469183.63	3892356.20	PERMANENT
NA-40	469269.14	3892398.08	PERMANENT
NA-41	469918.46	3893135.83	PERMANENT



LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- WAD
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE
- REEFBALL

NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

BASE BID - SITE PLAN 7

0 50 100

SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON | DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 7

DATE: 9/24/15

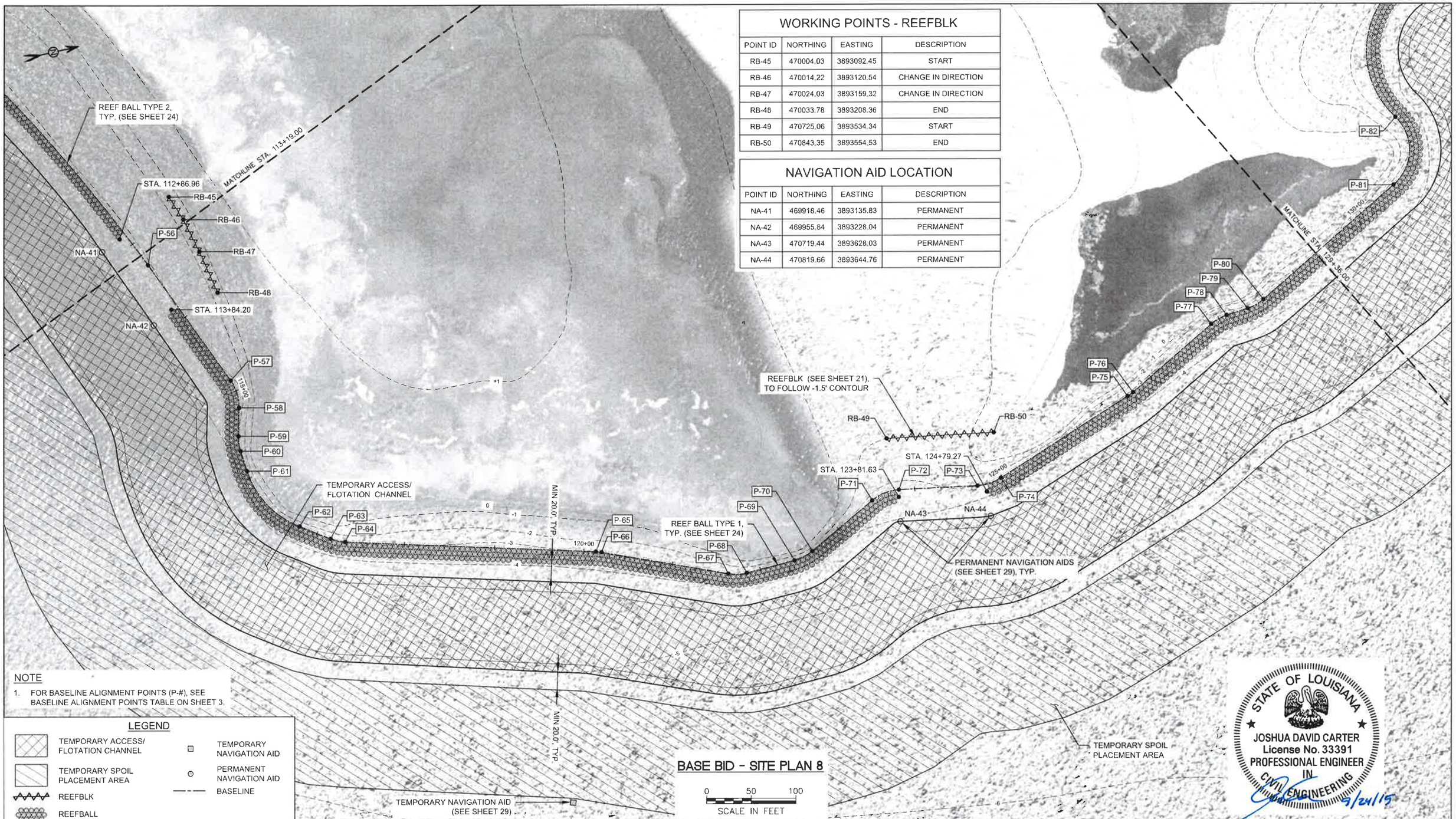
SHEET 12 OF 34

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-45	470004.03	3893092.45	START
RB-46	470014.22	3893120.54	CHANGE IN DIRECTION
RB-47	470024.03	3893159.32	CHANGE IN DIRECTION
RB-48	470033.78	3893208.36	END
RB-49	470725.06	3893534.34	START
RB-50	470843.35	3893554.53	END

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-41	469918.46	3893135.83	PERMANENT
NA-42	469955.84	3893228.04	PERMANENT
NA-43	470719.44	3893628.03	PERMANENT
NA-44	470819.66	3893644.76	PERMANENT



NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- REEFBALL
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE

REV.	DATE	DESCRIPTION	BY

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748 MAIN ST.
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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 8

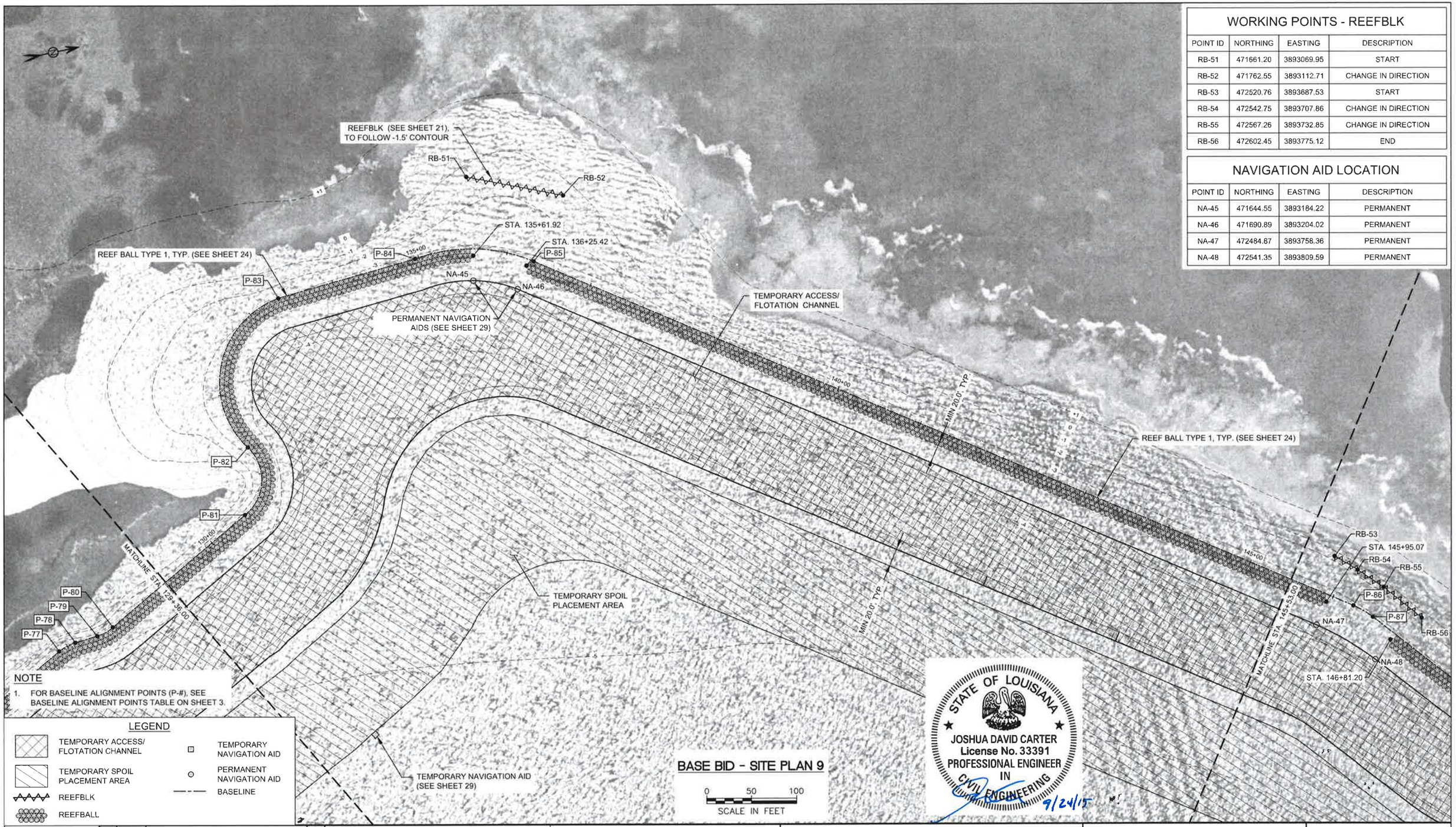
DATE: 9/24/15
SHEET 13 OF 34

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-51	471661.20	3893069.95	START
RB-52	471762.55	3893112.71	CHANGE IN DIRECTION
RB-53	472520.76	3893687.53	START
RB-54	472542.75	3893707.86	CHANGE IN DIRECTION
RB-55	472567.26	3893732.85	CHANGE IN DIRECTION
RB-56	472602.45	3893775.12	END

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-45	471644.55	3893184.22	PERMANENT
NA-46	471690.89	3893204.02	PERMANENT
NA-47	472484.87	3893758.36	PERMANENT
NA-48	472541.35	3893809.59	PERMANENT



NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- REEFBALL
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE

REV.	DATE	DESCRIPTION	BY

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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 9

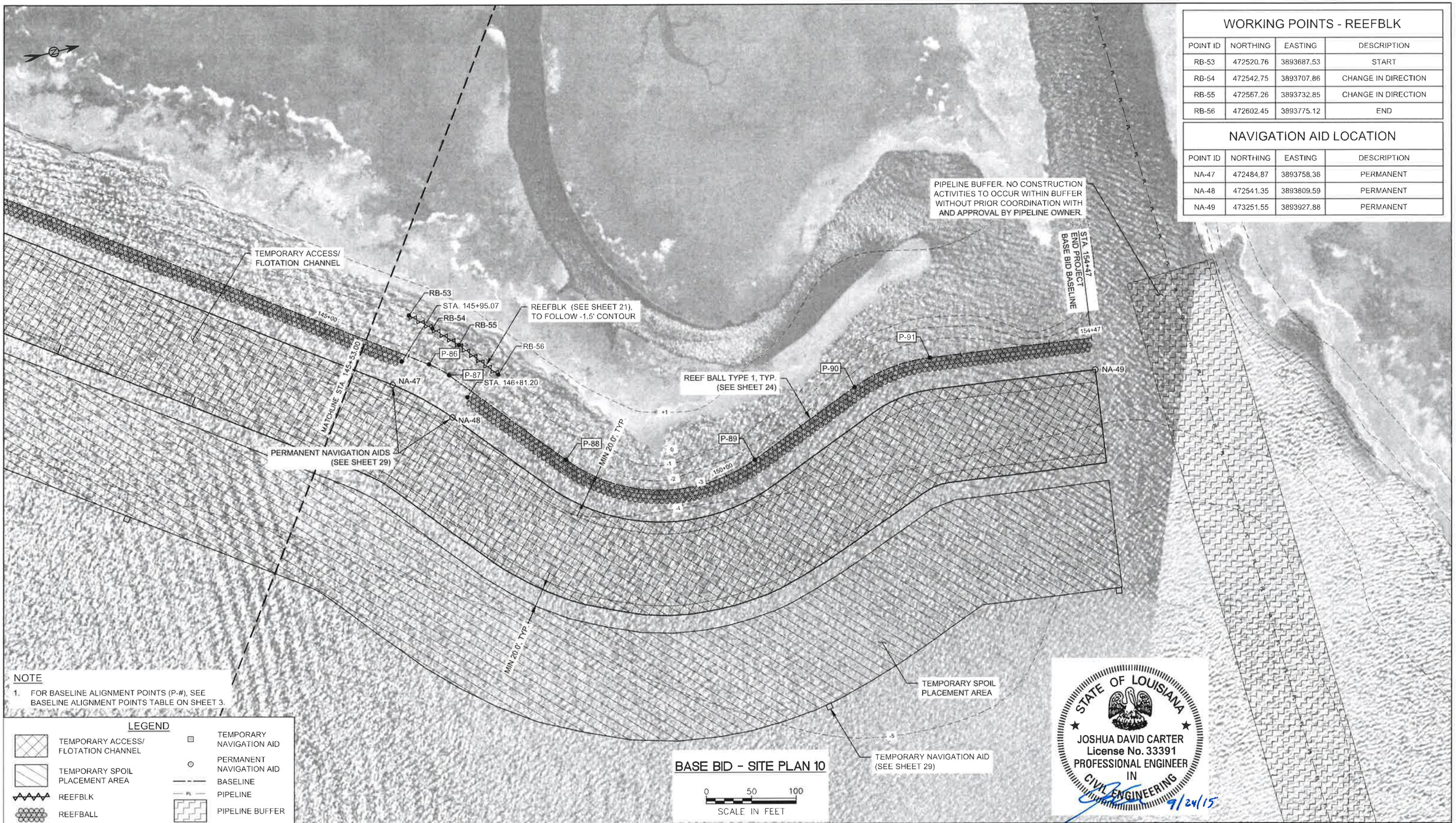
DATE: 9/24/15
SHEET 14 OF 34

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-53	472520.76	3893687.53	START
RB-54	472542.75	3893707.86	CHANGE IN DIRECTION
RB-55	472567.26	3893732.85	CHANGE IN DIRECTION
RB-56	472602.45	3893775.12	END

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-47	472484.87	3893758.36	PERMANENT
NA-48	472541.35	3893809.59	PERMANENT
NA-49	473251.55	3893927.88	PERMANENT



NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- REEFBALL
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE
- PIPELINE
- PIPELINE BUFFER

BASE BID - SITE PLAN 10

0 50 100
SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
746 MAIN ST.
BATON ROUGE, LA 70802
(225) 383-1780

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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

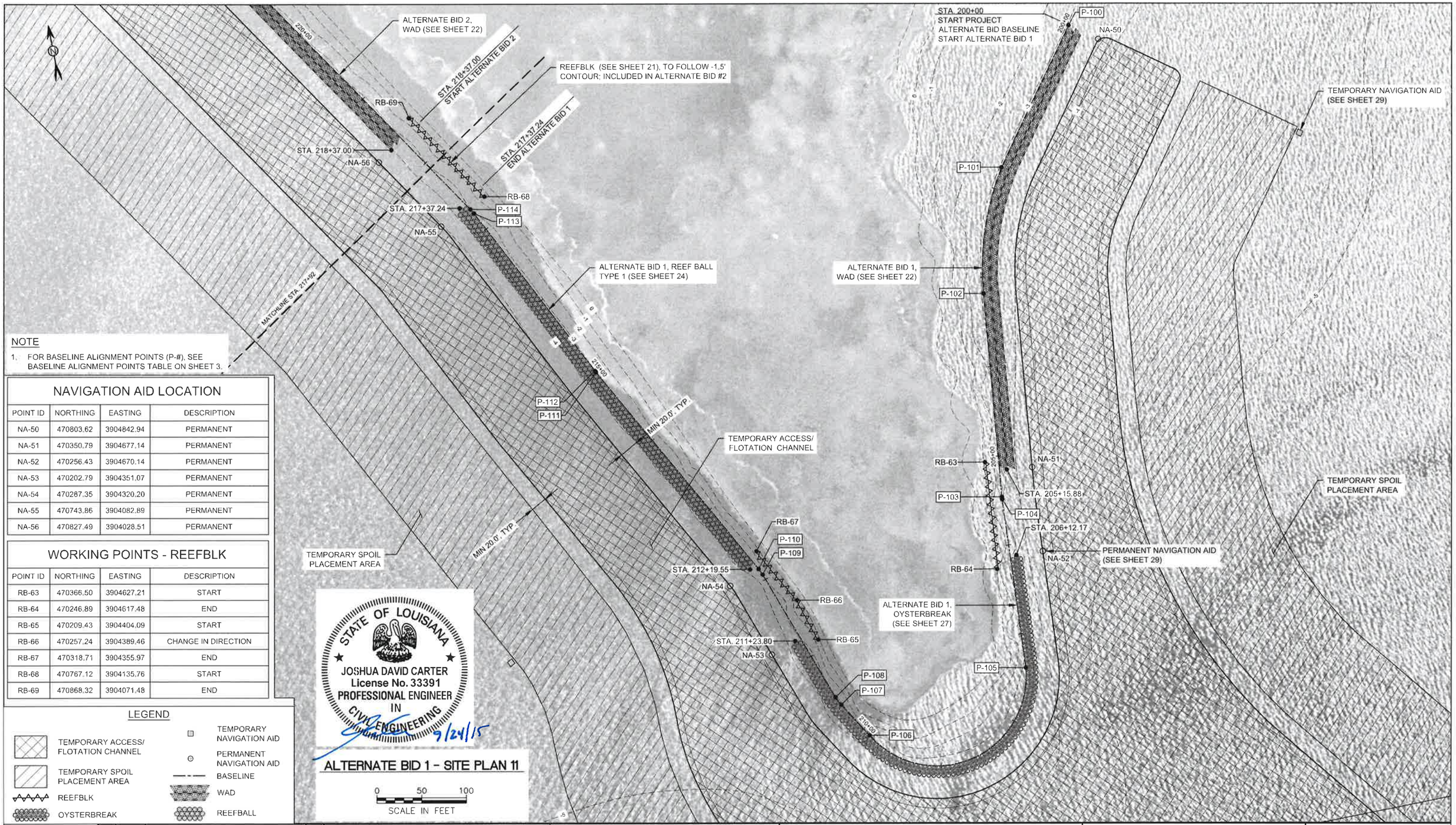
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

BASE BID - SITE PLAN 10

DATE: 9/24/15
SHEET 15 OF 34



NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-50	470803.62	3904842.94	PERMANENT
NA-51	470350.79	3904677.14	PERMANENT
NA-52	470256.43	3904670.14	PERMANENT
NA-53	470202.79	3904351.07	PERMANENT
NA-54	470287.35	3904320.20	PERMANENT
NA-55	470743.86	3904082.89	PERMANENT
NA-56	470827.49	3904028.51	PERMANENT

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-63	470366.50	3904627.21	START
RB-64	470246.89	3904617.48	END
RB-65	470209.43	3904404.09	START
RB-66	470257.24	3904389.46	CHANGE IN DIRECTION
RB-67	470318.71	3904355.97	END
RB-68	470767.12	3904135.76	START
RB-69	470868.32	3904071.48	END

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- OYSTERBREAK
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE
- WAD
- REEFBALL

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.,
BATON ROUGE, LA 70802
(225) 383-1760

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

ALTERNATE BID 1
SITE PLAN 11

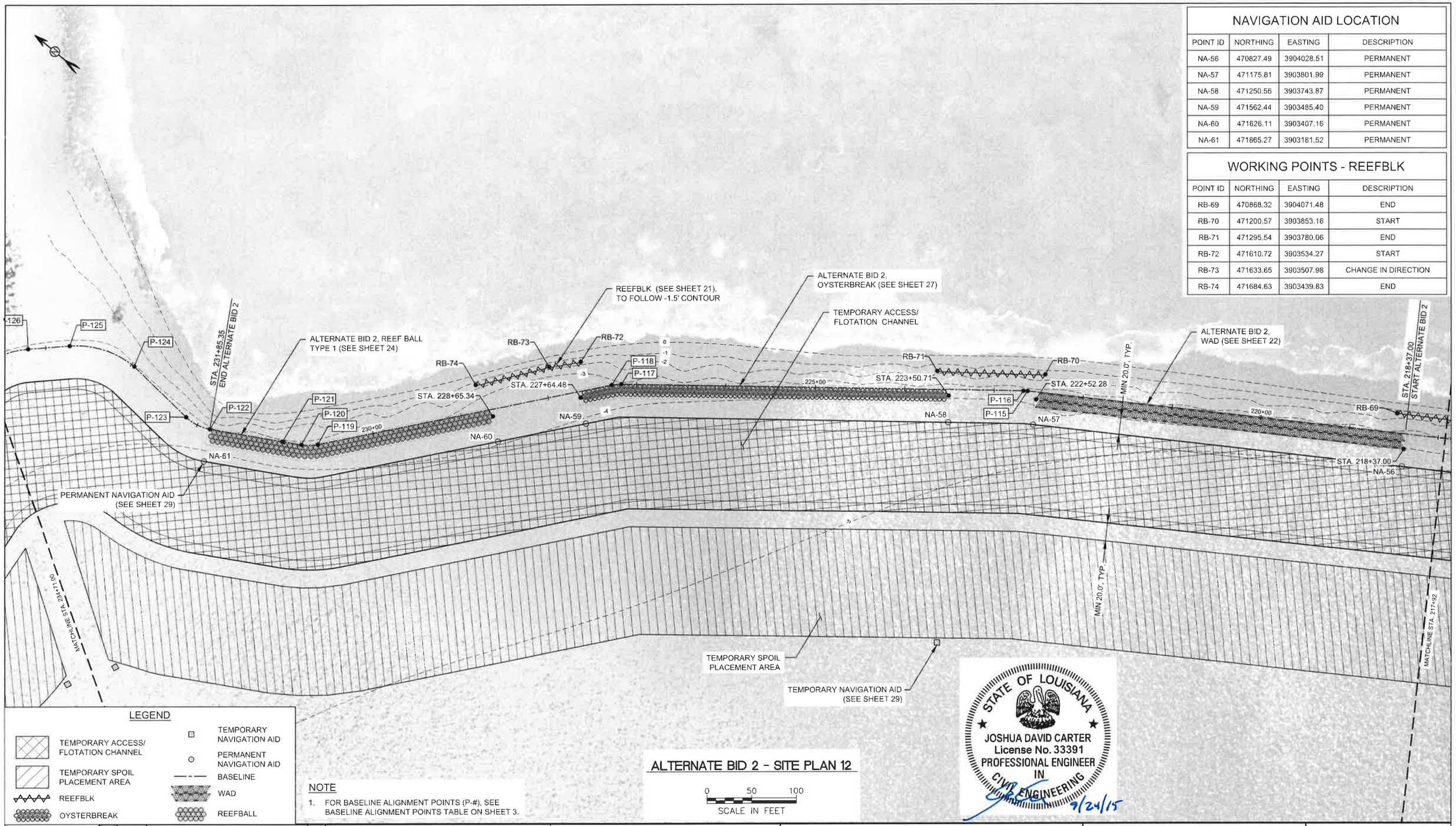
DATE: 9/24/15
SHEET 16 OF 34

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-56	470827.49	3904028.51	PERMANENT
NA-57	471175.81	3903801.99	PERMANENT
NA-58	471250.56	3903743.87	PERMANENT
NA-59	471562.44	3903485.40	PERMANENT
NA-60	471626.11	3903407.16	PERMANENT
NA-61	471865.27	3903181.52	PERMANENT

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-69	470868.32	3904071.48	END
RB-70	471200.57	3903853.16	START
RB-71	471295.54	3903780.06	END
RB-72	471610.72	3903534.27	START
RB-73	471633.65	3903507.98	CHANGE IN DIRECTION
RB-74	471684.63	3903439.83	END



REV.	DATE	DESCRIPTION	BY

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748 MAIN ST.
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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

ALTERNATE BID 2
SITE PLAN 12

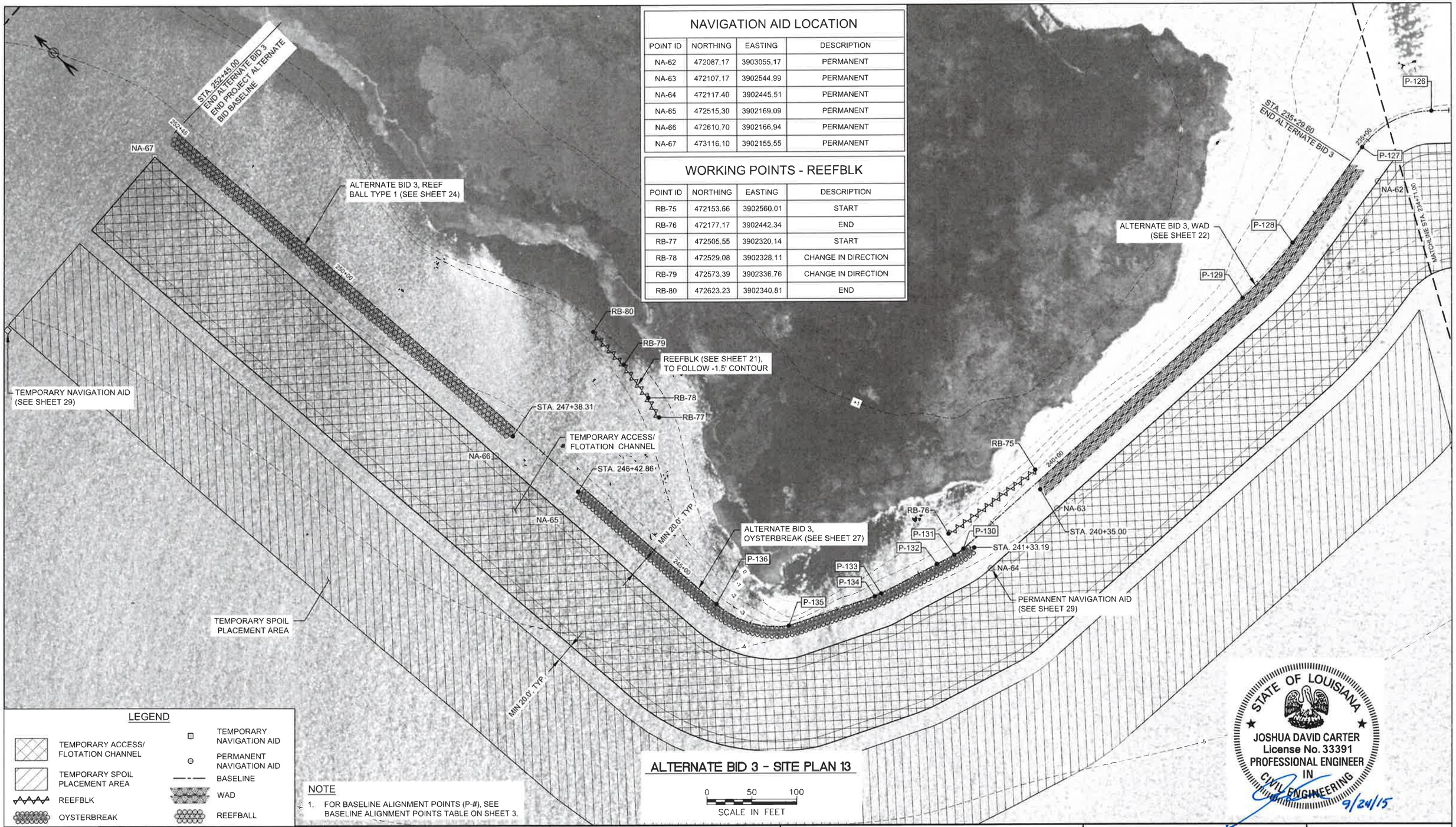
DATE: 9/24/15
SHEET 17 OF 34

NAVIGATION AID LOCATION

POINT ID	NORTHING	EASTING	DESCRIPTION
NA-62	472087.17	3903055.17	PERMANENT
NA-63	472107.17	3902544.99	PERMANENT
NA-64	472117.40	3902445.51	PERMANENT
NA-65	472515.30	3902169.09	PERMANENT
NA-66	472610.70	3902166.94	PERMANENT
NA-67	473116.10	3902155.55	PERMANENT

WORKING POINTS - REEFBLK

POINT ID	NORTHING	EASTING	DESCRIPTION
RB-75	472153.66	3902560.01	START
RB-76	472177.17	3902442.34	END
RB-77	472505.55	3902320.14	START
RB-78	472529.08	3902328.11	CHANGE IN DIRECTION
RB-79	472573.39	3902336.76	CHANGE IN DIRECTION
RB-80	472623.23	3902340.81	END



LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- TEMPORARY SPOIL PLACEMENT AREA
- REEFBLK
- OYSTERBREAK
- TEMPORARY NAVIGATION AID
- PERMANENT NAVIGATION AID
- BASELINE
- WAD
- REEFBALL

NOTE

1. FOR BASELINE ALIGNMENT POINTS (P-#), SEE BASELINE ALIGNMENT POINTS TABLE ON SHEET 3.

ALTERNATE BID 3 - SITE PLAN 13

0 50 100
SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
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(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

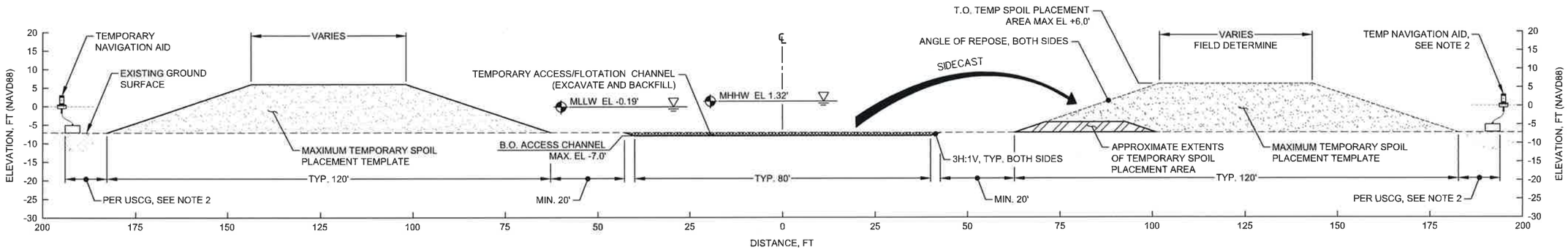
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

ALTERNATE BID 3
SITE PLAN 13

DATE: 9/24/15
SHEET 18 OF 34

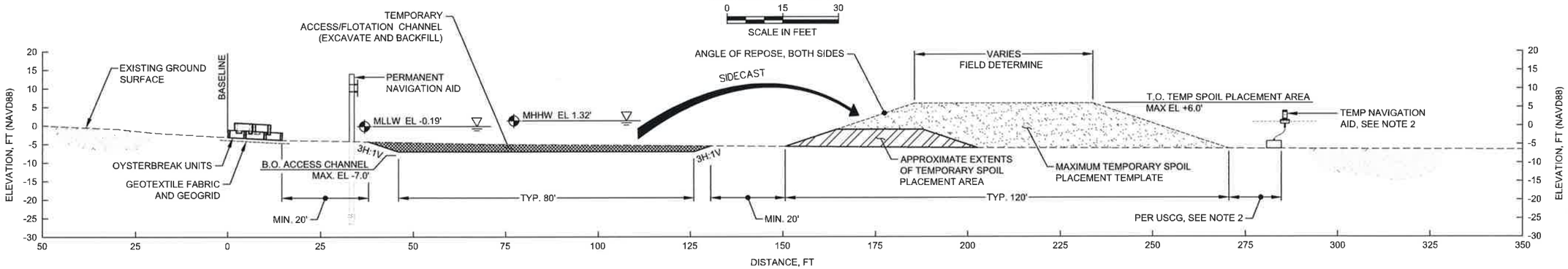


TYPICAL SECTION

ACCESS CHANNEL ENTRANCE

0 15 30

SCALE IN FEET

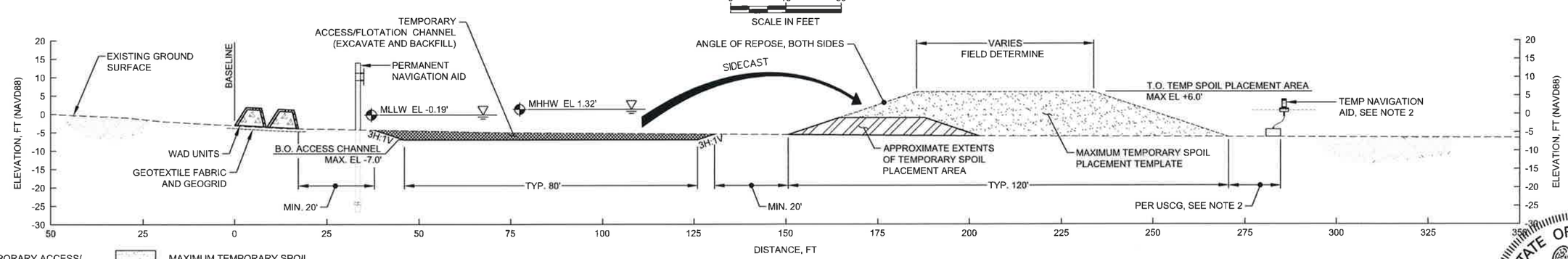


TYPICAL SECTION

ACCESS CHANNEL WITH OYSTERBREAK

0 15 30

SCALE IN FEET



TYPICAL SECTION

ACCESS CHANNEL WITH WAD

0 15 30

SCALE IN FEET

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- MAXIMUM TEMPORARY SPOIL PLACEMENT TEMPLATE
- APPROXIMATE EXTENTS OF TEMPORARY SPOIL PLACEMENT AREA

NOTES

1. THE TEMPORARY SPOILS SHALL BE BACKFILLED INTO THE TEMPORARY ACCESS AND FLOTATION CHANNEL AT THE COMPLETION OF THE PROJECT.
2. TEMPORARY WARNING SIGNS SHALL BE INSTALLED SEAWARD OF TEMPORARY SPOIL PLACEMENT AREAS TO WARN MARINERS OF LIMITED DEPTH OR BLOCKED PASSAGE, AT LOCATIONS OR SPACING AS DESIGNATED BY THE US COAST GUARD (USCG). CONTRACTOR IS RESPONSIBLE FOR APPROVAL OF TEMPORARY WARNING SIGN PLANS BY THE USCG. ALL SIGNS WILL MEET USCG STANDARDS.

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST,
BATON ROUGE, LA 70802
(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

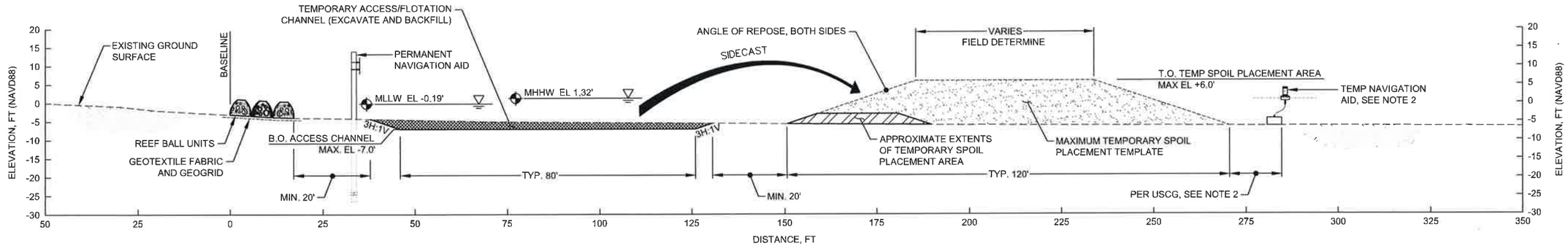
FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

TYPICAL SECTIONS 1

DATE: 9/24/15

SHEET 19 OF 34

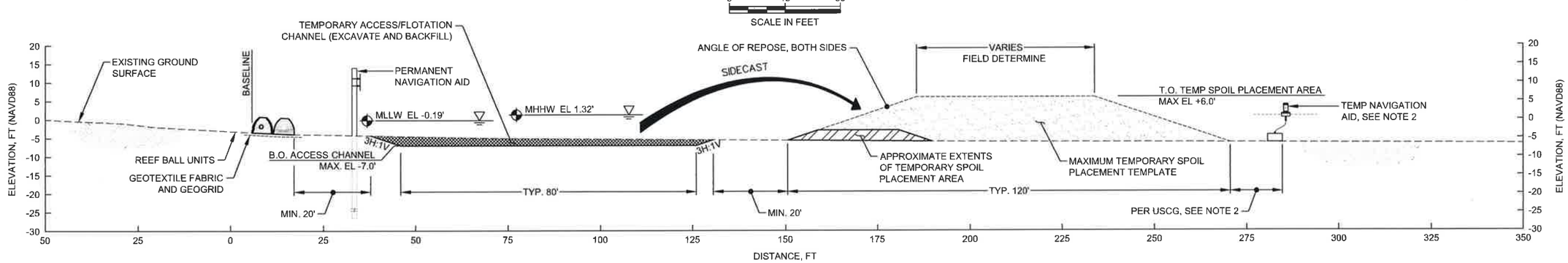


TYPICAL SECTION

ACCESS CHANNEL WITH TYPE 1 REEF BALL

0 15 30

SCALE IN FEET

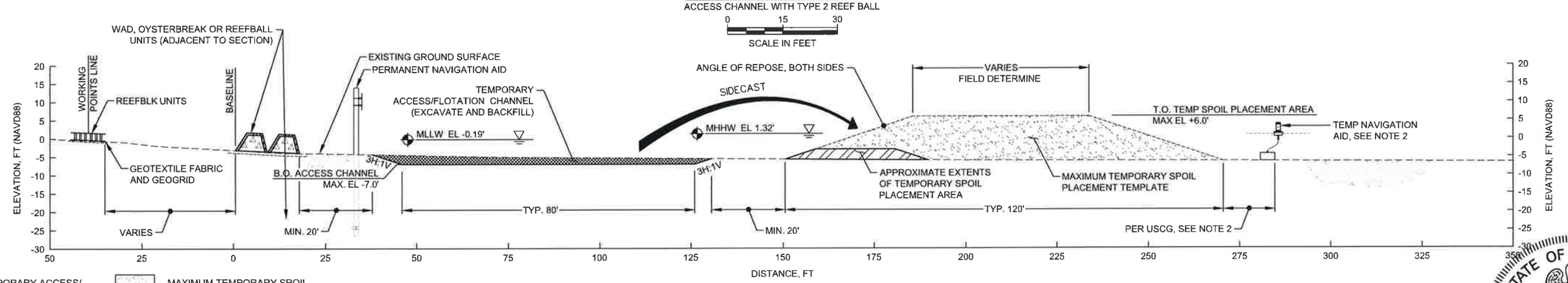


TYPICAL SECTION

ACCESS CHANNEL WITH TYPE 2 REEF BALL

0 15 30

SCALE IN FEET



TYPICAL SECTION

ACCESS CHANNEL WITH REEFBLK

0 15 30

SCALE IN FEET

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- MAXIMUM TEMPORARY SPOIL PLACEMENT TEMPLATE
- APPROXIMATE EXTENTS OF TEMPORARY SPOIL PLACEMENT AREA

NOTES

1. THE TEMPORARY SPOILS SHALL BE BACKFILLED INTO THE TEMPORARY ACCESS AND FLOTATION CHANNEL AT THE COMPLETION OF THE PROJECT.
2. TEMPORARY WARNING SIGNS SHALL BE INSTALLED SEAWARD OF TEMPORARY SPOIL PLACEMENT AREAS TO WARN MARINERS OF LIMITED DEPTH OR BLOCKED PASSAGE, AT LOCATIONS OR SPACING AS DESIGNATED BY THE US COAST GUARD (USCG). CONTRACTOR IS RESPONSIBLE FOR APPROVAL OF TEMPORARY WARNING SIGN PLANS BY THE USCG. ALL SIGNS WILL MEET USCG STANDARDS.

STATE OF LOUISIANA
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PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
9/24/15

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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

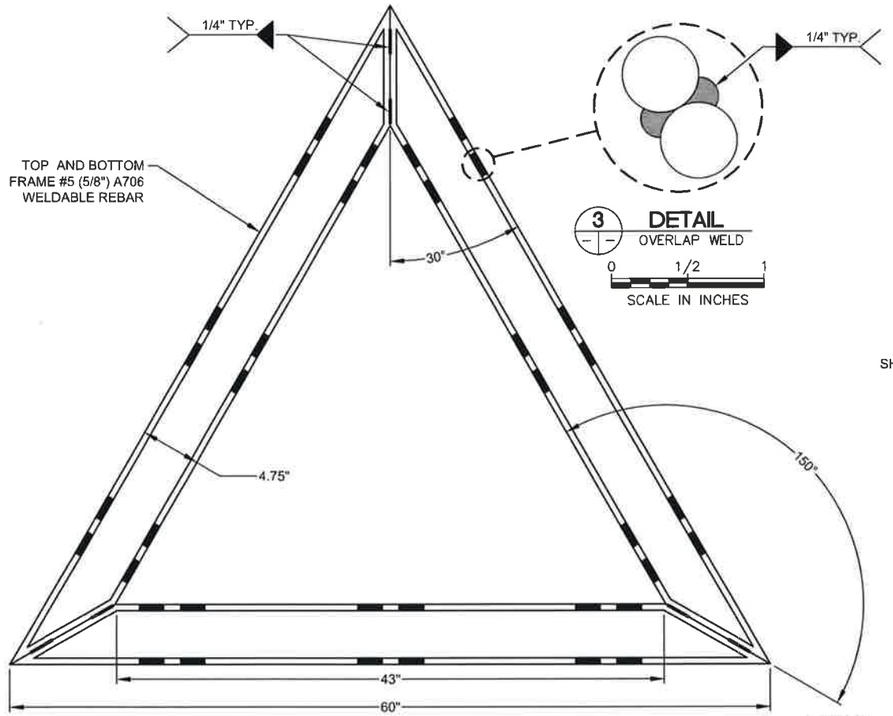
FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

TYPCIAL SECTIONS 2

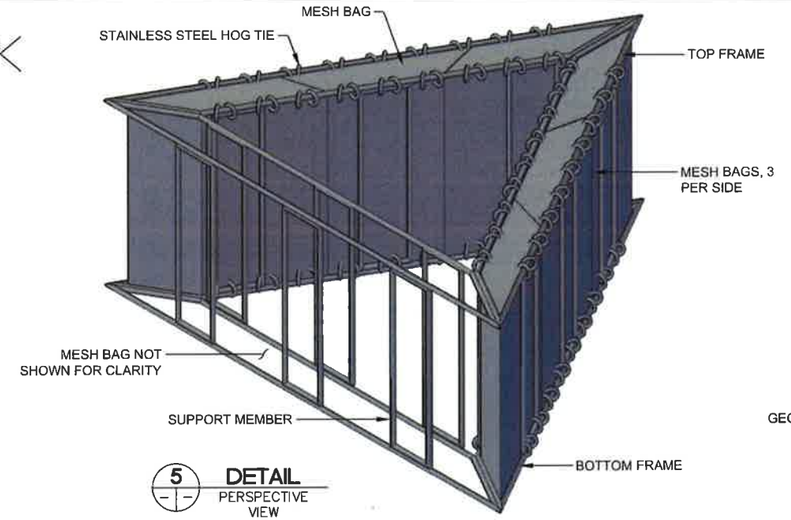
DATE: 9/24/15

SHEET 20 OF 34

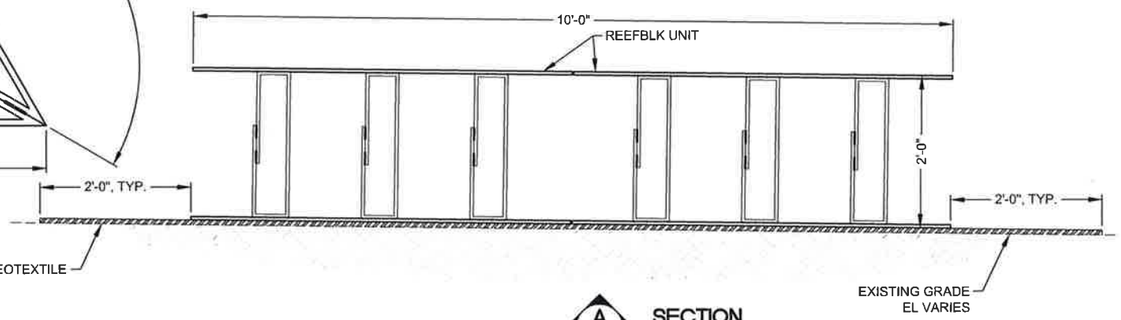


1 DETAIL
REEFBLK UNIT PLAN VIEW
0 6 12
SCALE IN INCHES

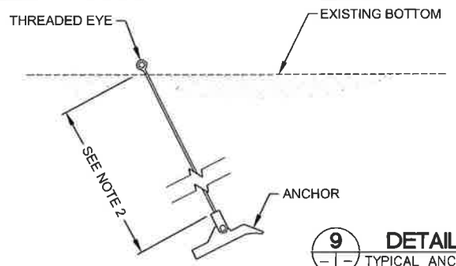
3 DETAIL
OVERLAP WELD
0 1/2 1
SCALE IN INCHES



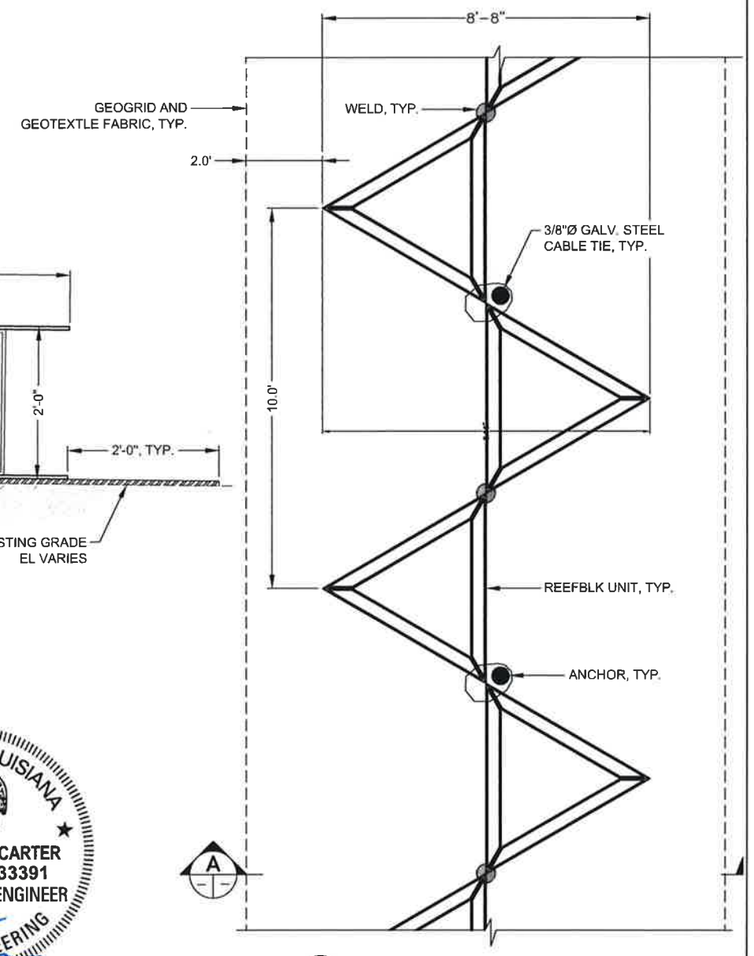
5 DETAIL
PERSPECTIVE VIEW



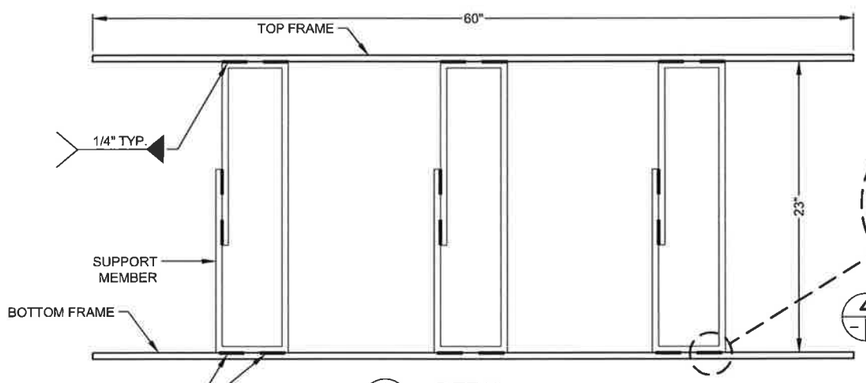
A SECTION
REEFBLK
0 1 2
SCALE IN FEET



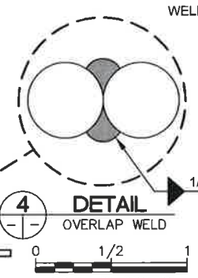
9 DETAIL
TYPICAL ANCHOR
NOT TO SCALE



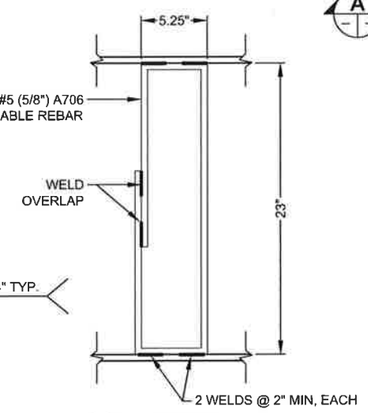
10 DETAIL
REEFBLK PLAN VIEW
0 1 2
SCALE IN FEET



2 DETAIL
REEFBLK UNIT ELEVATION VIEW
0 6 12
SCALE IN INCHES



4 DETAIL
OVERLAP WELD
0 1/2 1
SCALE IN INCHES



7 DETAIL
SUPPORT MEMBER
0 6 12
SCALE IN INCHES

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

NOTES

1. ALL STRUCTURAL STEEL SHALL BE ASTM A-706 WELDABLE #5 (5/8") REBAR.
2. ANCHOR MUST PROVIDE 5,000 PSI (MIN) CAPACITY AT ALL SITE LOCATIONS. CONTRACTOR TO CALCULATE THE ANCHOR TYPE AND LENGTH REQUIRED TO MEET CAPACITY, SEE TECHNICAL SPECIFICATIONS.

REV.	DATE	DESCRIPTION	BY

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450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

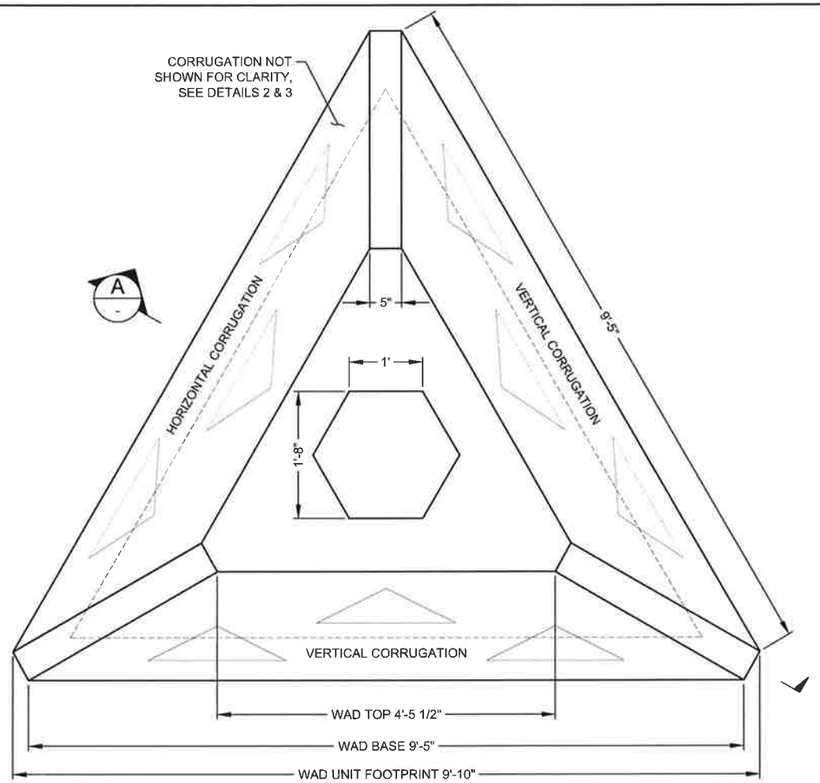
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

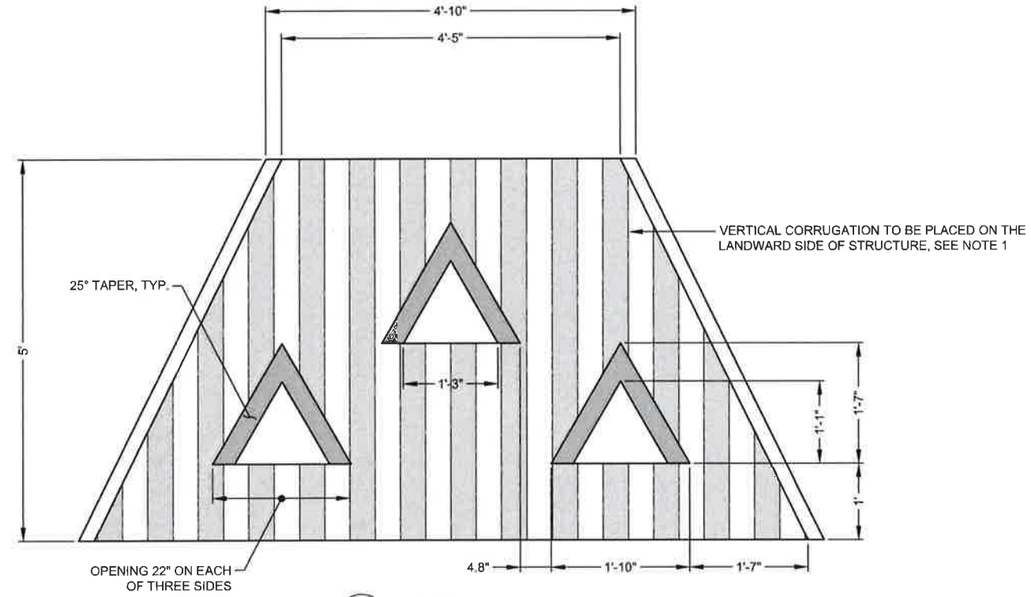
REEFBLK DETAILS

DATE: 9/24/15
SHEET 21 OF 34



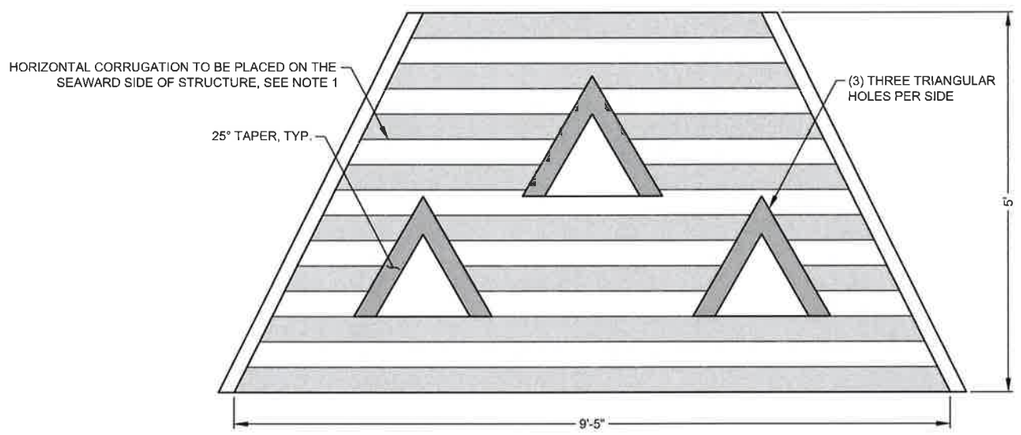
1 DETAIL
TOP OF WAD

0 1 2
SCALE IN FEET



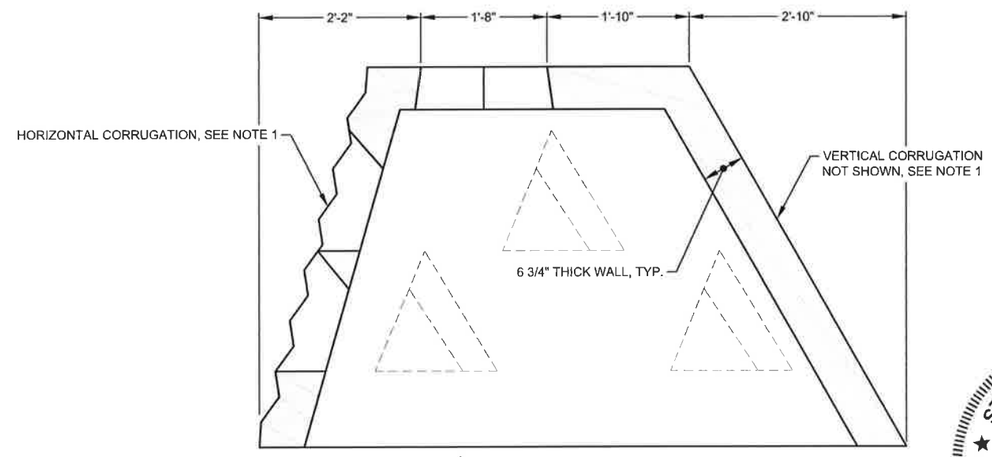
3 DETAIL
LANDWARD SIDE OF WAD

0 1 2
SCALE IN FEET



2 DETAIL
SEAWARD SIDE OF WAD

0 1 2
SCALE IN FEET



A SECTION
CENTER OF WAD

0 1 2
SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

NOTES

1. WAD UNITS WILL BE CORRUGATED OR SMOOTH, AS DEPICTED ON SHEET 23. FOR SMOOTH UNITS, REMOVE CORRUGATION SHOWN ON THIS SHEET.

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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

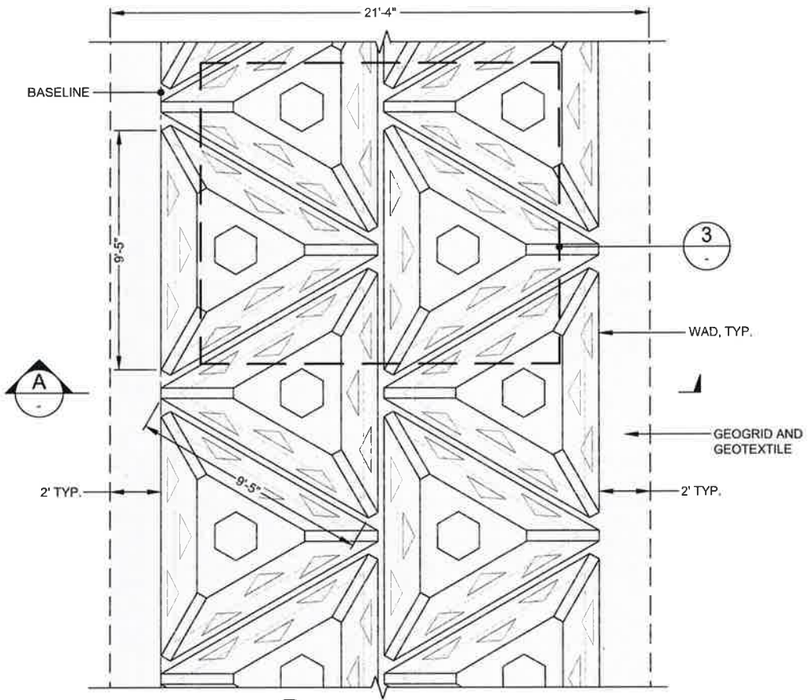
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

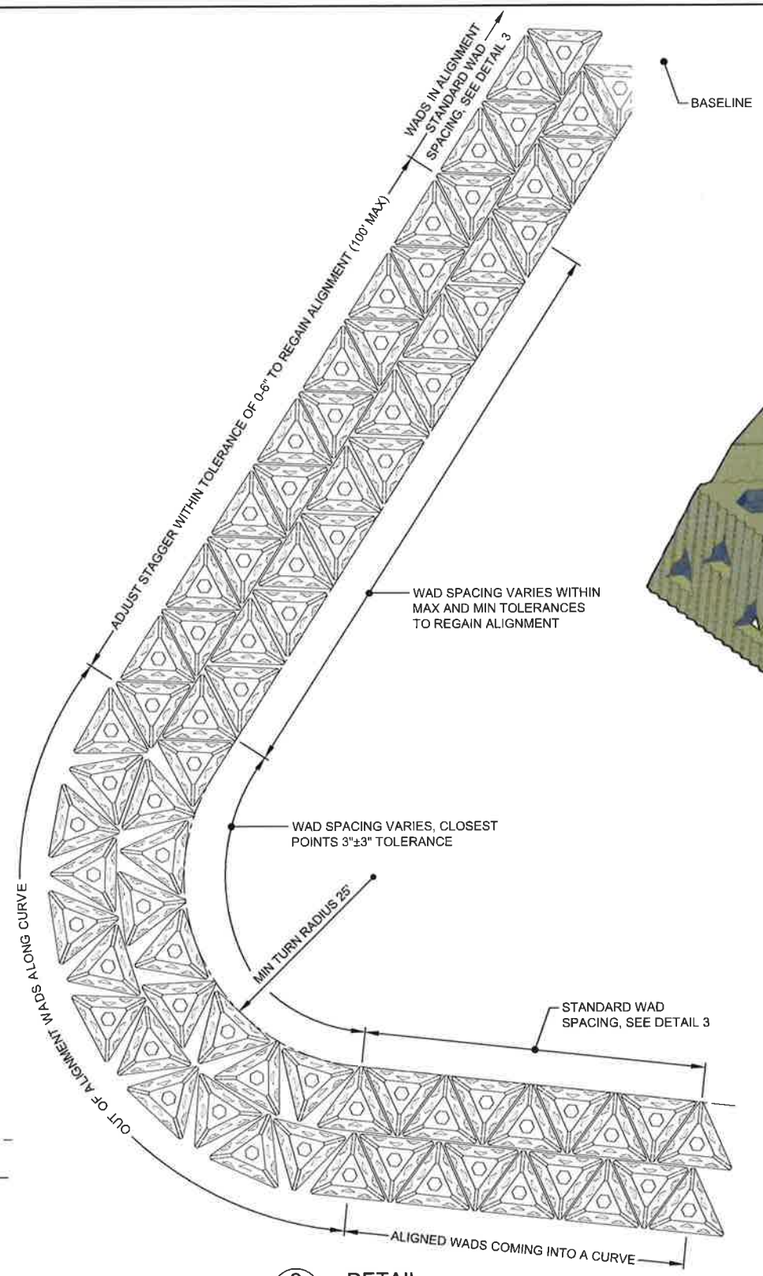
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

WAD UNIT DETAILS

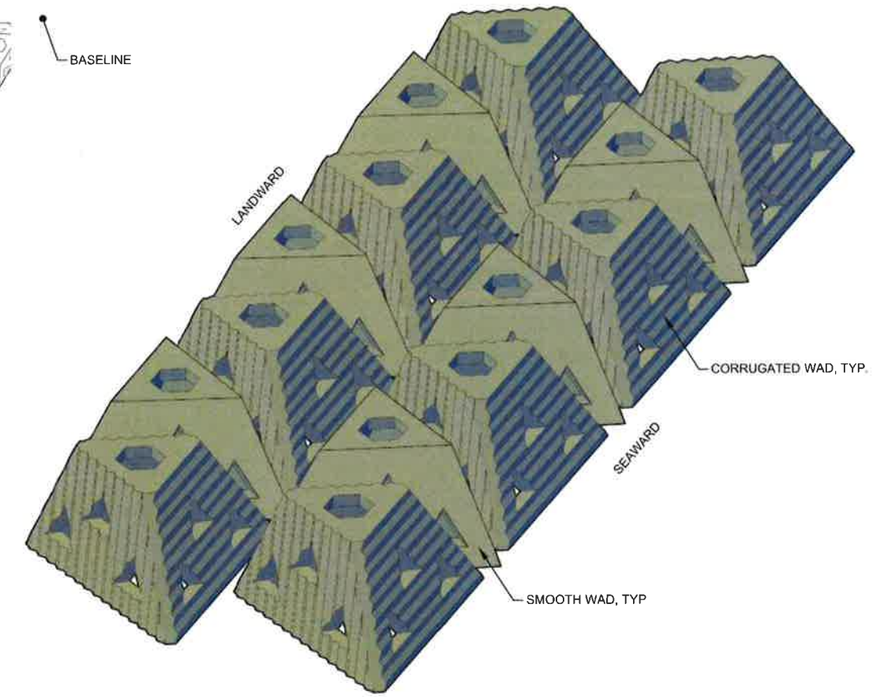
DATE: 9/24/15
SHEET 22 OF 34



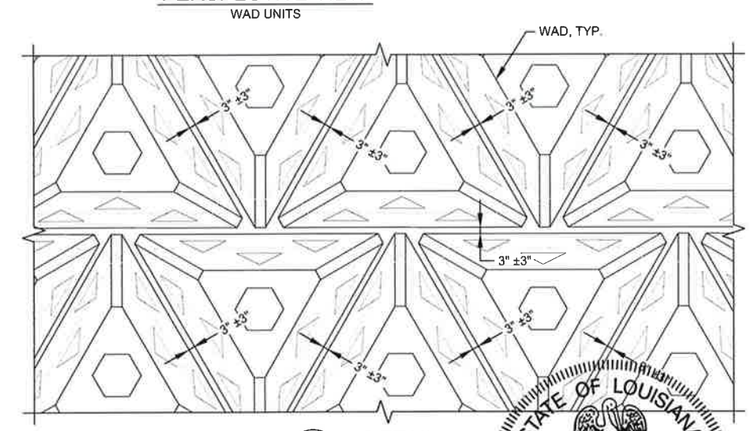
1 DETAIL
STANDARD WAD PLAN VIEW
0 3 6
SCALE IN FEET



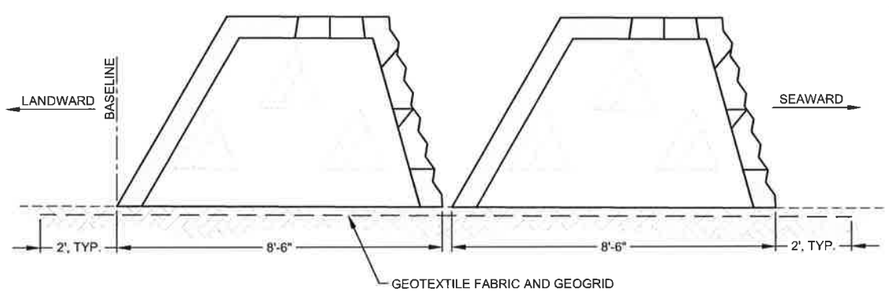
2 DETAIL
WAD SPACING AROUND CURVE
0 10 20
SCALE IN FEET



PERSPECTIVE VIEW
WAD UNITS



3 DETAIL
STANDARD WAD SPACING
0 3 6
SCALE IN FEET



A SECTION
CENTER OF WAD
0 2 4
SCALE IN FEET

NOTES

1. DIMENSIONS OF ARMOR UNITS ARE APPROXIMATE AND MAY BE MODIFIED AT TIME OF CONSTRUCTION.
2. UNITS TO BE PLACED IN OPPOSING PATTERN.

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

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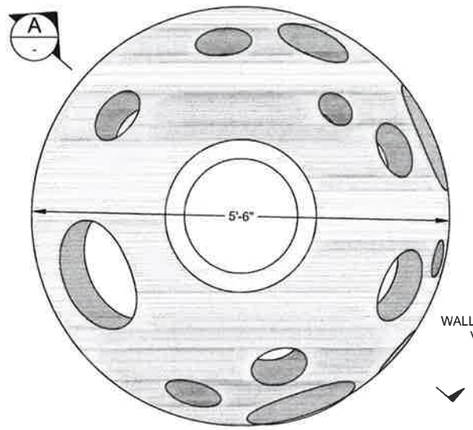
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

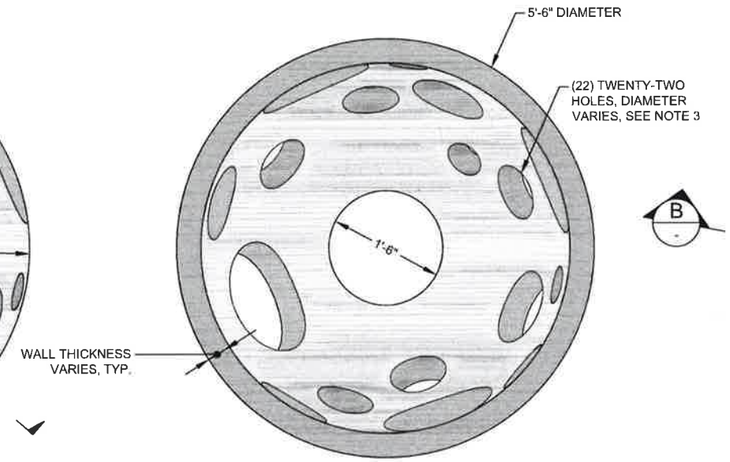
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

WAD UNIT LAYOUT

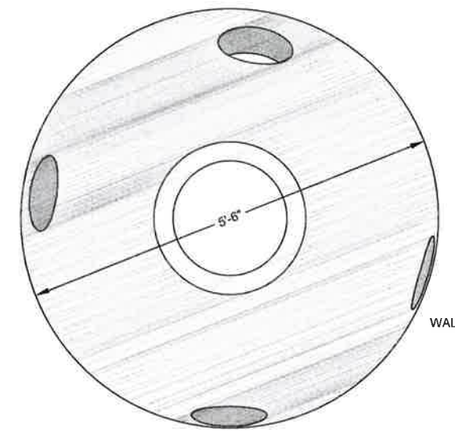
DATE: 9/24/15
SHEET 23 OF 34



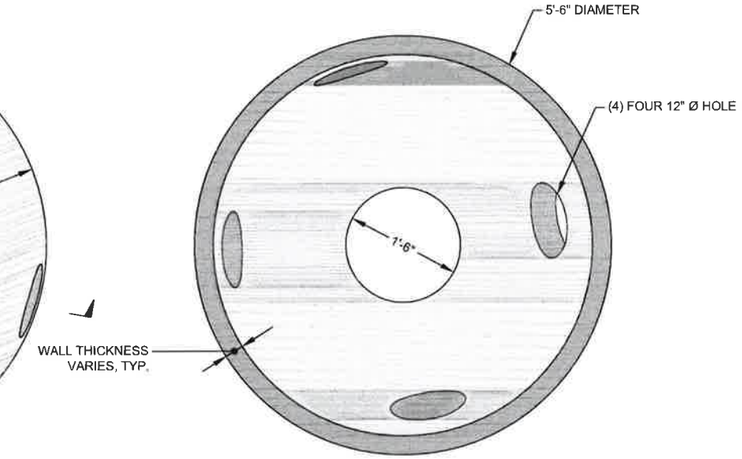
1 DETAIL
TOP OF REEF BALL (TYPE 1)
0 1 2
SCALE IN FEET



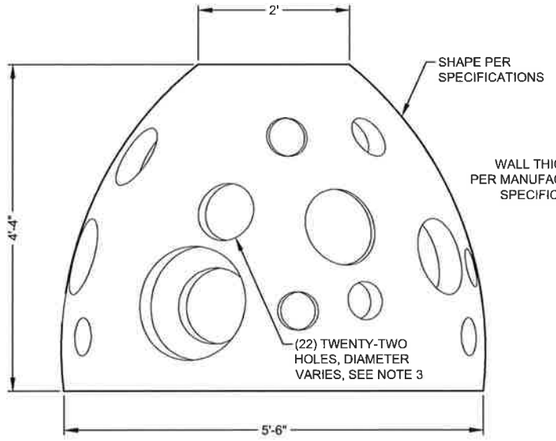
3 DETAIL
BOTTOM OF REEF BALL (TYPE 1)
0 1 2
SCALE IN FEET



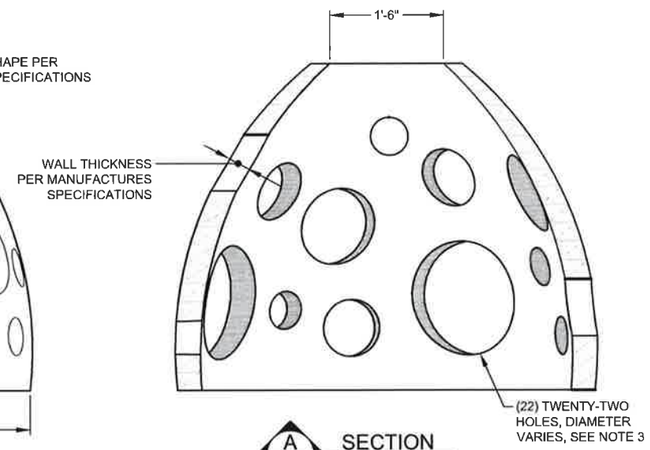
4 DETAIL
TOP OF REEF BALL (TYPE 2)
0 1 2
SCALE IN FEET



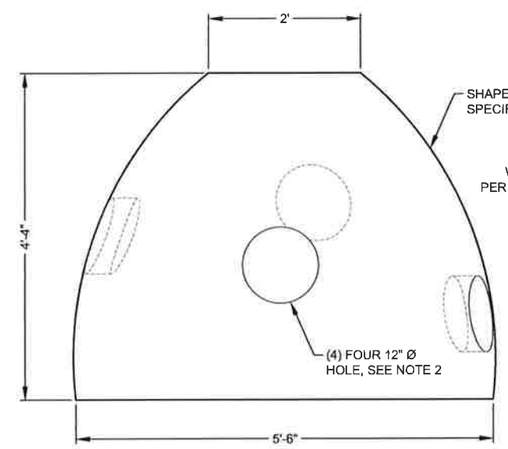
6 DETAIL
BOTTOM OF REEF BALL (TYPE 2)
0 1 2
SCALE IN FEET



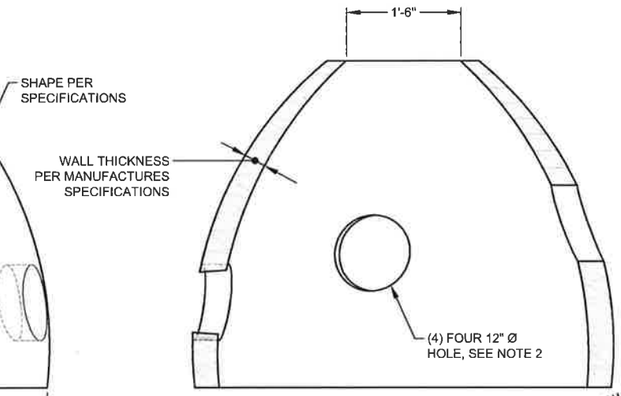
2 DETAIL
SIDE OF REEF BALL (TYPE 1)
0 1 2
SCALE IN FEET



A SECTION
CENTER OF REEF BALL (TYPE 1)
0 1 2
SCALE IN FEET



5 DETAIL
SIDE OF REEF BALL (TYPE 2)
0 1 2
SCALE IN FEET



B SECTION
CENTER OF REEF BALL (TYPE 2)
0 1 2
SCALE IN FEET

NOTES

1. DIMENSIONS OF ARMOR UNITS ARE APPROXIMATE AND MAY BE MODIFIED AT TIME OF CONSTRUCTION.
2. HOLES SHOULD BE SPACED AT APPROXIMATELY MID-UNIT HIGH AND APPROXIMATELY EQUALLY AROUND UNIT PERIMETER.
3. HOLE SIZE AND LOCATION SET PER MANUFACTURER'S INSTRUCTIONS.

STATE OF LOUISIANA
JOSHUA DAVID CARTER
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PROFESSIONAL ENGINEER
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9/24/15

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450 LAUREL STREET
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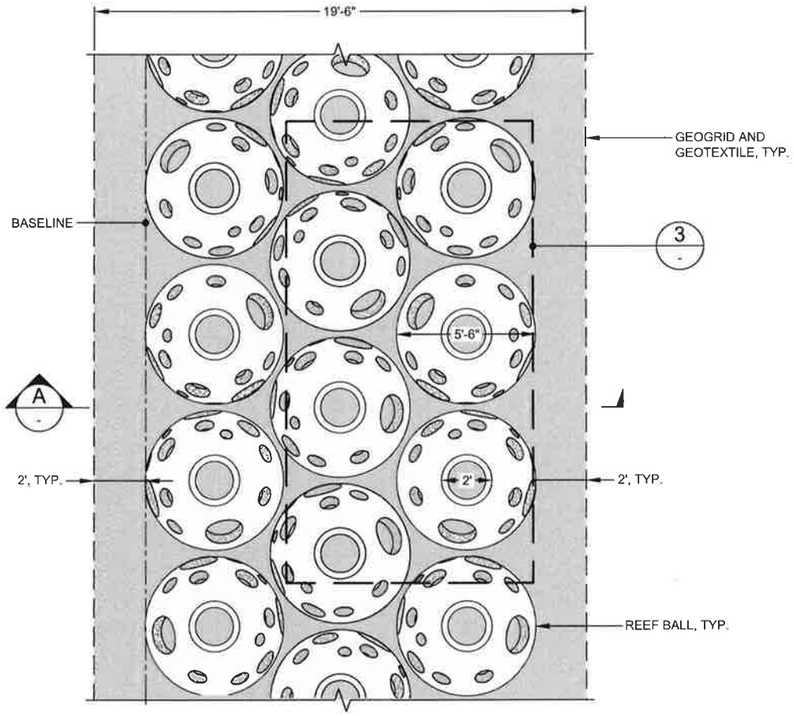
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

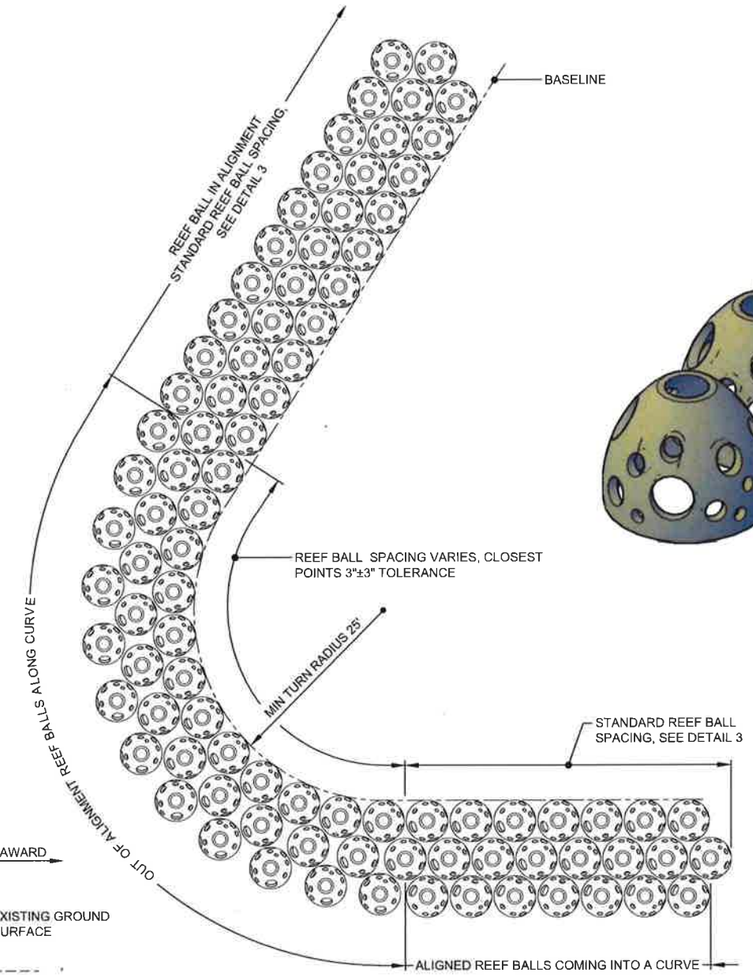
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

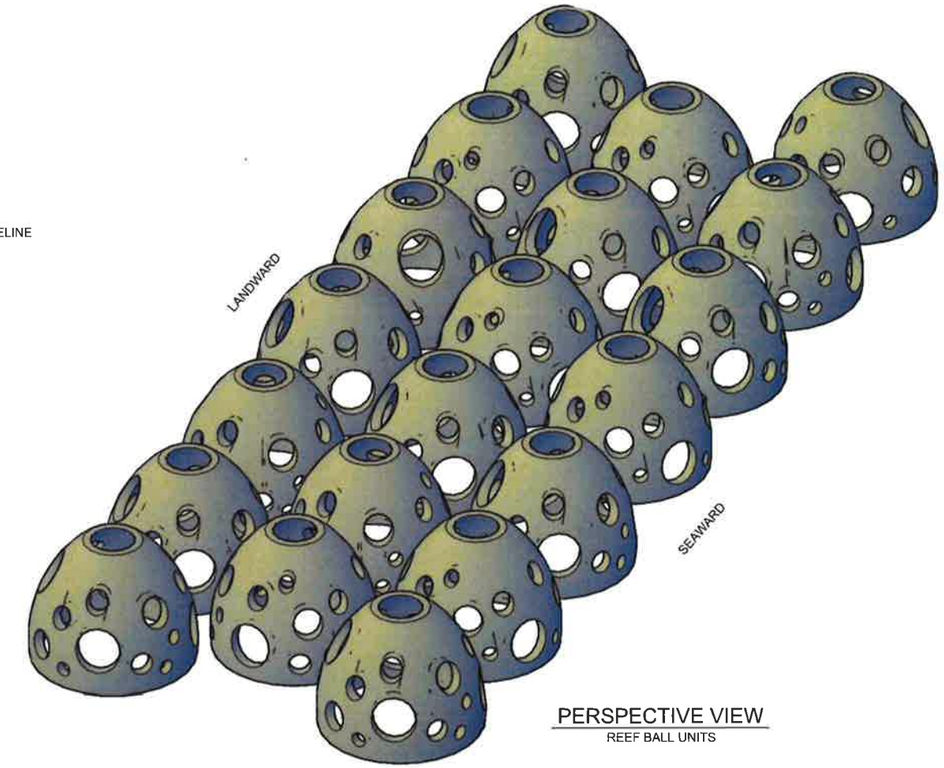
REEF BALL DETAILS

DATE: 9/24/15
SHEET 24 OF 34

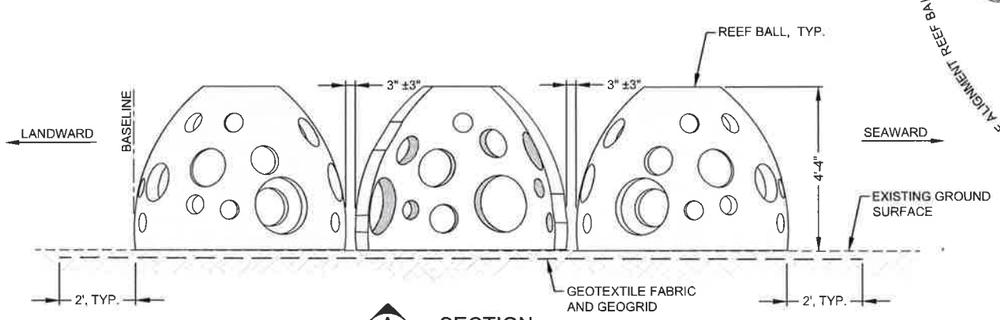


1 DETAIL
REEF BALL PLAN VIEW
0 3 6
SCALE IN FEET



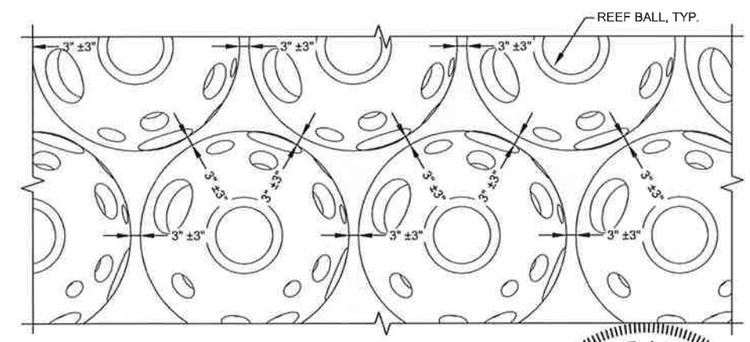


PERSPECTIVE VIEW
REEF BALL UNITS



A SECTION
CENTER OF REEF BALL
0 2 4
SCALE IN FEET

2 DETAIL
REEF BALL SPACING AROUND CURVE
0 10 20
SCALE IN FEET



3 DETAIL
STANDARD REEF BALL SPACING
0 3 6
SCALE IN FEET

STATE OF LOUISIANA
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PROFESSIONAL ENGINEER
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NOTES

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2. UNITS TO BE PLACED IN OPPOSING PATTERN.

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DRAWN BY: T. MORRISON
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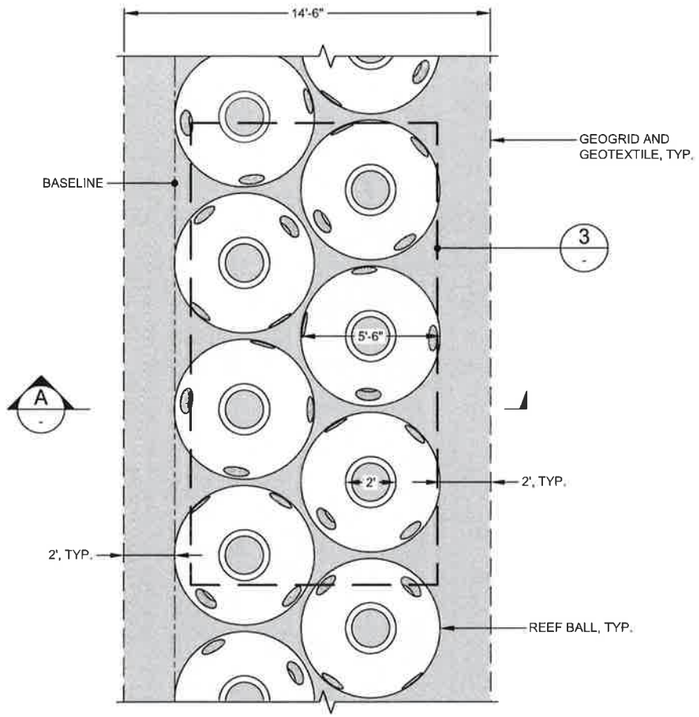
LIVING SHORELINE DEMONSTRATION PROJECT

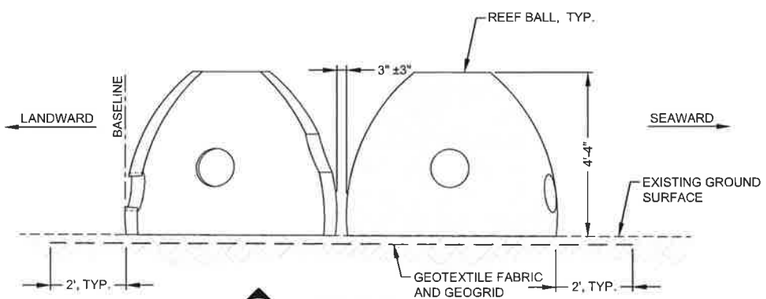
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

REEF BALL LAYOUT TYPE 1 UNIT

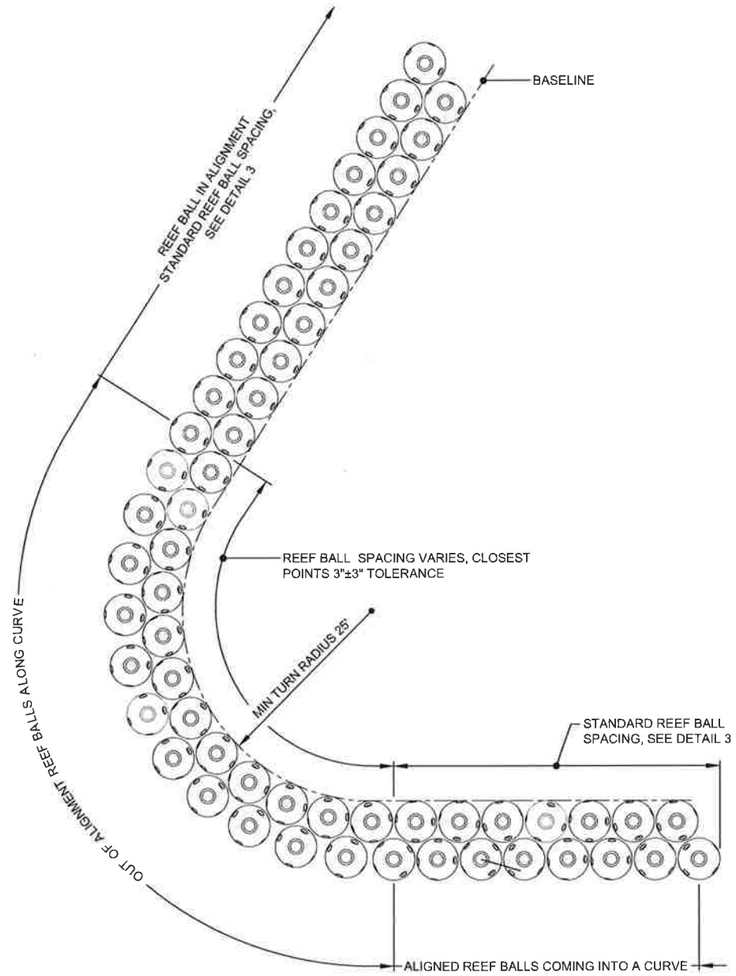
DATE: 9/24/15
SHEET 25 OF 34



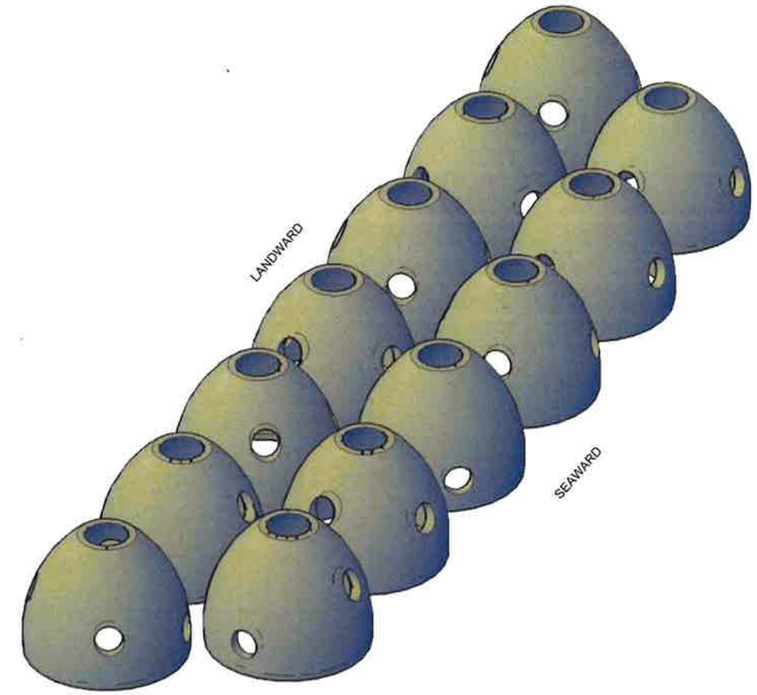
1 DETAIL
REEF BALL PLAN VIEW
0 3 6
SCALE IN FEET



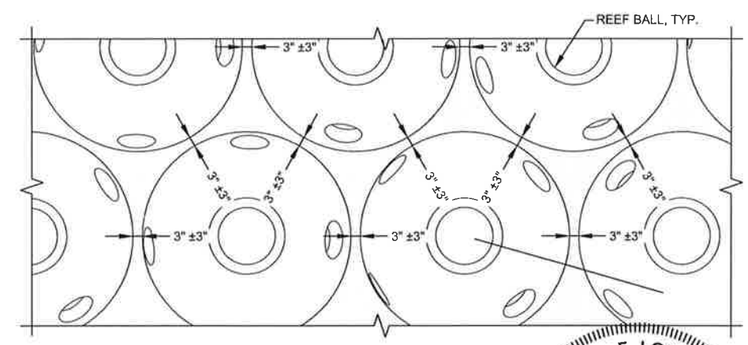
A SECTION
CENTER OF REEF BALL
0 2 4
SCALE IN FEET



2 DETAIL
REEF BALL SPACING AROUND CURVE
0 10 20
SCALE IN FEET



PERSPECTIVE VIEW
REEF BALL UNITS



3 DETAIL
STANDARD REEF BALL SPACING
0 3 6
SCALE IN FEET

NOTES

1. DIMENSIONS OF ARMOR UNITS ARE APPROXIMATE AND MAY BE MODIFIED AT TIME OF CONSTRUCTION.
2. UNITS TO BE PLACED IN OPPOSING PATTERN.

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST,
BATON ROUGE, LA 70802
(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

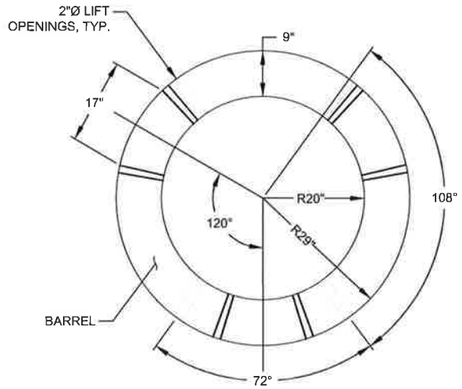
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

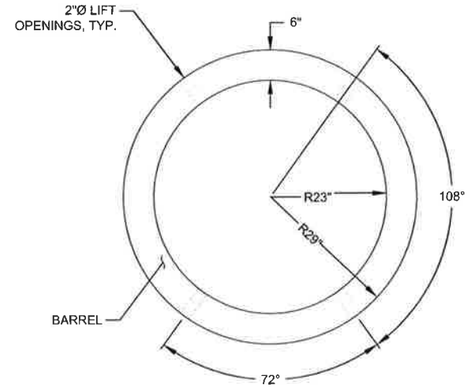
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

REEF BALL LAYOUT TYPE 2 UNIT

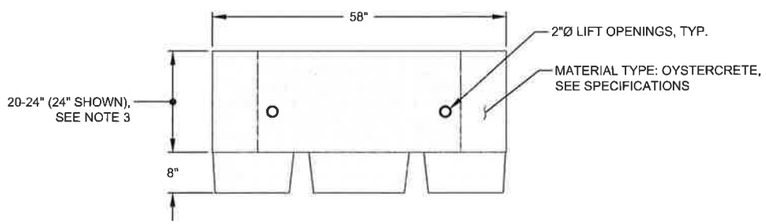
DATE: 9/24/15
SHEET 26 OF 34



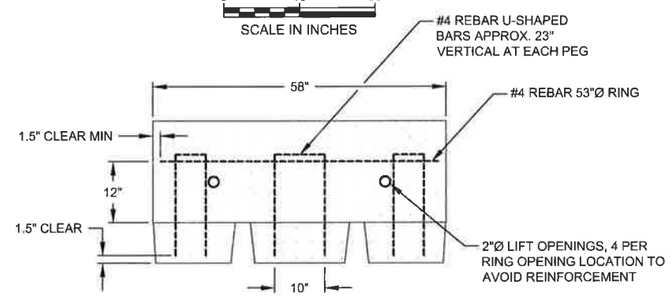
1 DETAIL
OYSTERBREAK ARMOR UNIT PLAN VIEW (TOP UNIT)
0 15 30
SCALE IN INCHES



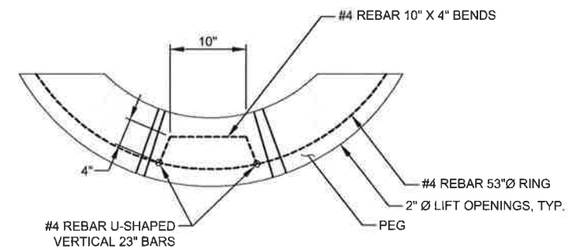
4 DETAIL
OYSTERBREAK ARMOR UNIT PLAN VIEW (BOTTOM UNIT)
0 15 30
SCALE IN INCHES



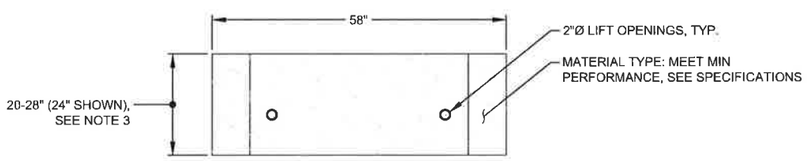
2 DETAIL
OYSTERBREAK ARMOR UNIT SIDE VIEW (TOP UNIT)
0 15 30
SCALE IN INCHES



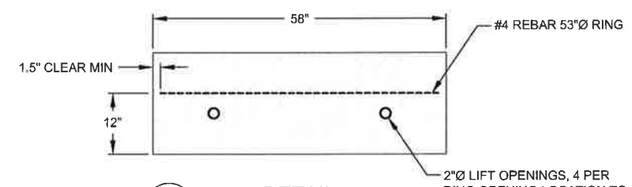
5 DETAIL
OYSTERBREAK ARMOR UNIT REINFORCEMENT (TOP UNIT)
0 15 30
SCALE IN INCHES



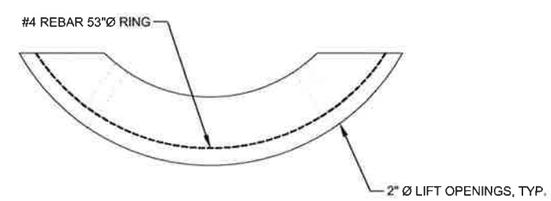
7 DETAIL
OYSTERBREAK ARMOR UNIT REINFORCEMENT (TOP UNIT)
0 15 30
SCALE IN INCHES



3 DETAIL
OYSTERBREAK ARMOR UNIT SIDE VIEW (BOTTOM UNIT)
0 15 30
SCALE IN INCHES



6 DETAIL
OYSTERBREAK ARMOR UNIT REINFORCEMENT (BOTTOM UNIT)
0 15 30
SCALE IN INCHES



8 DETAIL
OYSTERBREAK ARMOR UNIT REINFORCEMENT (BOTTOM UNIT)
0 15 30
SCALE IN INCHES

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

NOTES

1. DIMENSIONS OF UNITS ARE APPROXIMATE AND MAY BE MODIFIED AT TIME OF CONSTRUCTION.
2. TOP UNITS IN STRUCTURE TO HAVE PEGS ON BOTTOM OF UNIT. BOTTOM UNITS IN STRUCTURE TO BE FABRICATED WITHOUT PEGS.
3. WHEN BOTTOM AND TOP UNITS ARE STACKED, TOTAL HEIGHT SHALL EQUAL 48".

REV.	DATE	DESCRIPTION	BY

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BATON ROUGE, LA 70802
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650 POYDRAS ST, NEW ORLEANS, LA 70130
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SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

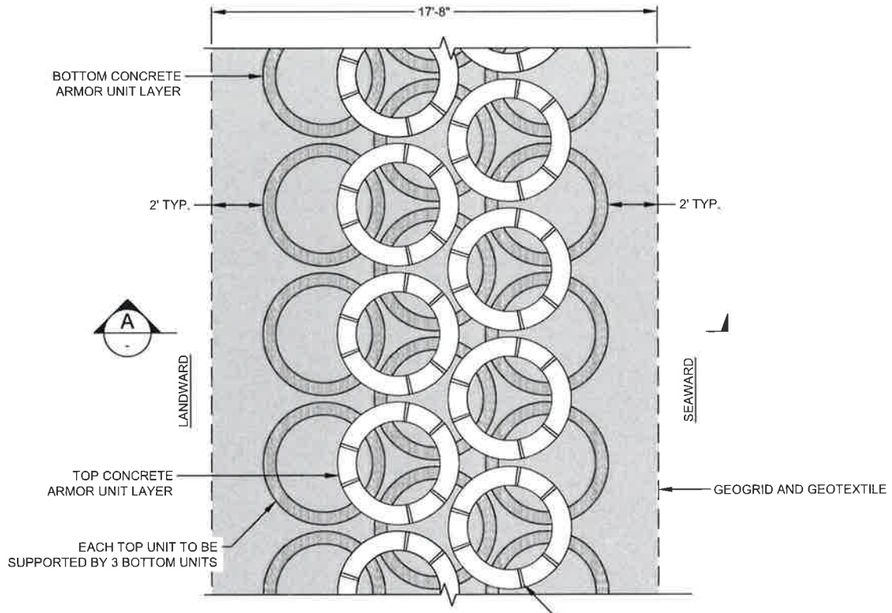
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

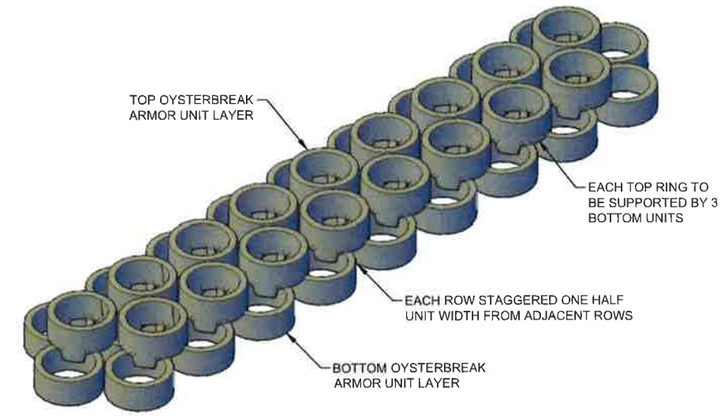
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

OYSTERBREAK DETAILS

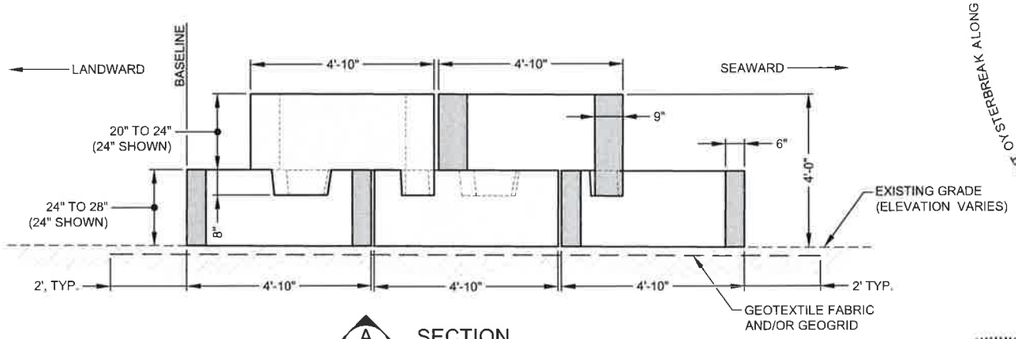
DATE: 9/24/15
SHEET 27 OF 34



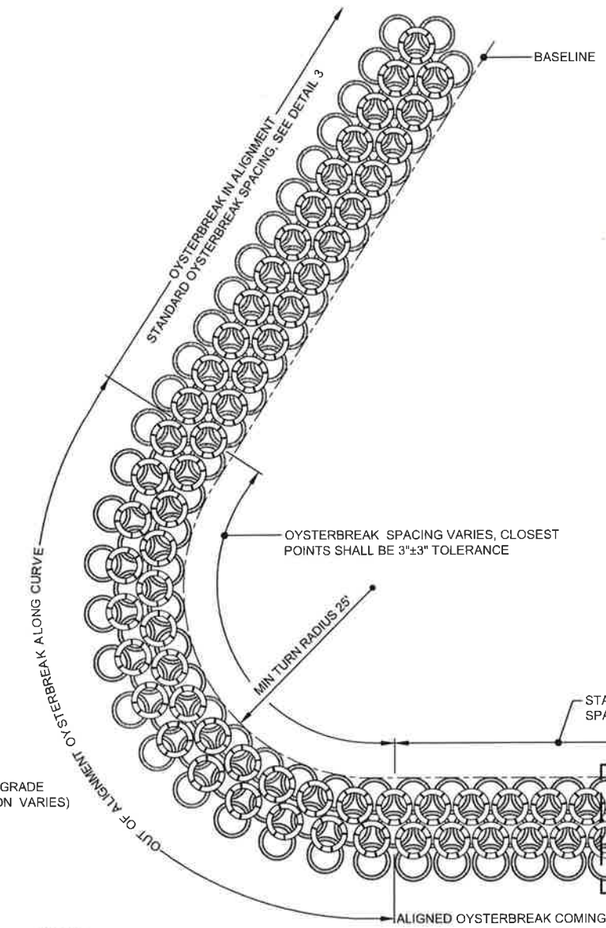
1 DETAIL
OYSTERBREAK PLAN VIEW
0 3 6
SCALE IN FEET



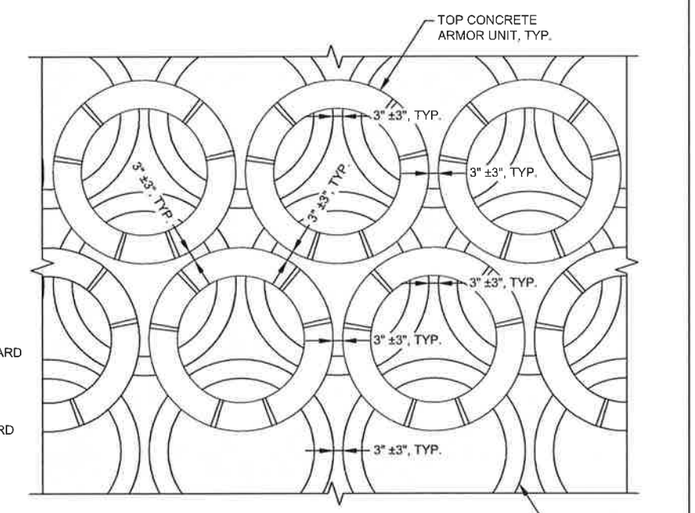
PERSPECTIVE VIEW
REEF BALL UNITS



A SECTION
CENTER OF OYSTERBREAK
0 2 4
SCALE IN FEET



2 DETAIL
REEF BALL SPACING AROUND CURVE
0 10 20
SCALE IN FEET



3 DETAIL
STANDARD OYSTERBREAK SPACING
0 3 6
SCALE IN FEET

NOTES

1. DIMENSIONS OF UNITS ARE APPROXIMATE AND MAY BE MODIFIED AT TIME OF CONSTRUCTION.
2. THE CENTER OF TOP LAYER ARMOR UNITS SHALL BE PLACED ON TOP OF THREE (3) BOTTOM LAYER UNITS, WHERE TOP LAYER PEGS ARE INSERTED INTO BOTTOM LAYER HOLES.
3. TOP UNITS IN STRUCTURE TO HAVE PEGS ON BOTTOM OF UNIT. BOTTOM UNITS IN STRUCTURE TO BE FABRICATED WITHOUT PEGS.

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

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748 MAIN ST.
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650 POYDRAS ST, NEW ORLEANS, LA 70130
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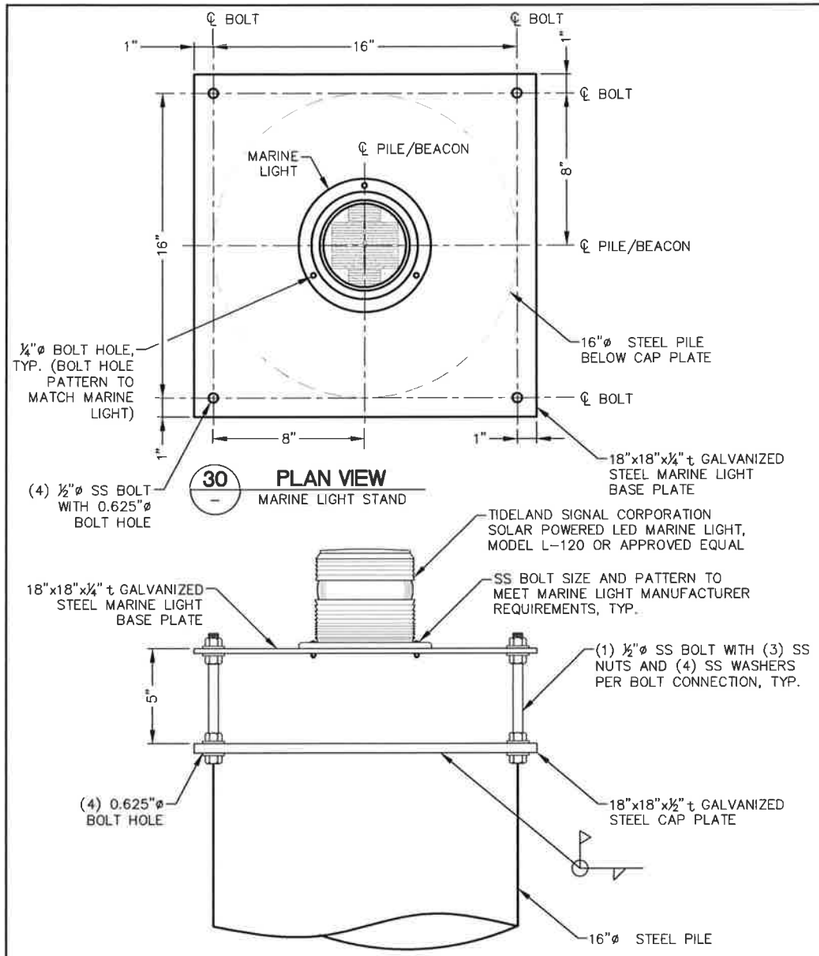
SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT
STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

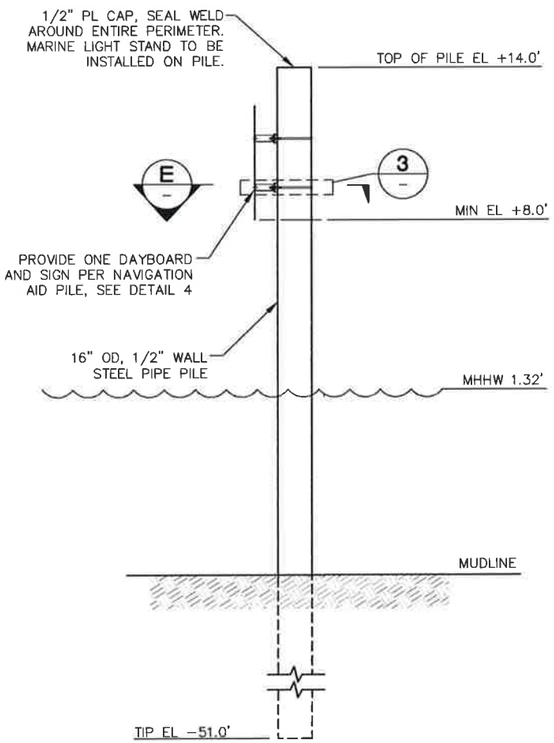
OYSTERBREAK LAYOUT
DATE: 9/24/15
SHEET 28 OF 34



30 PLAN VIEW
MARINE LIGHT STAND

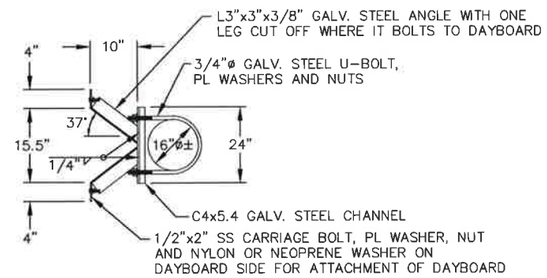
1 DETAIL
MARINE LIGHT STAND

0 4 8
SCALE IN INCHES

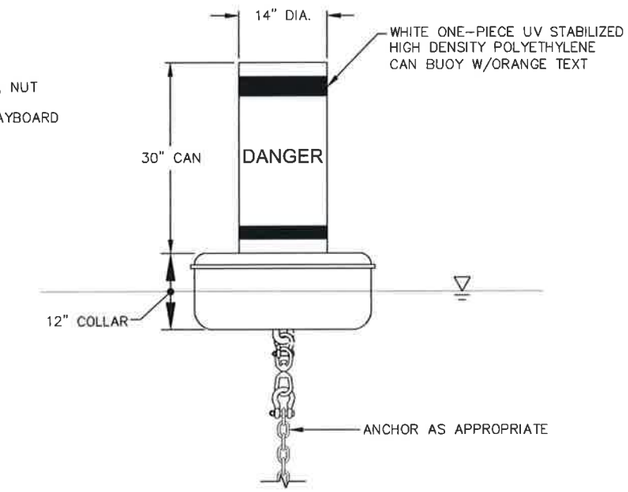


2 DETAIL
PERMANENT NAVIGATION AID

0 3 6
SCALE IN FEET

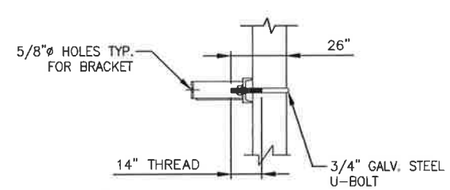


E SECTION
DAYBOARD AND SIGN MOUNTING BRACKET



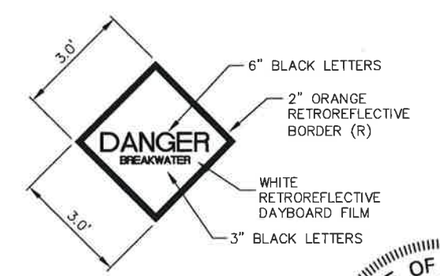
5 DETAIL
TEMPORARY WARNING BUOY

0 1 2
SCALE IN FEET



3 DETAIL
DAYBOARD AND SIGN MOUNTING BRACKET

0 3 6
SCALE IN FEET



4 DETAIL
PERMANENT DAYBOARD AND TEMP WARNING SIGN

0 2 4
SCALE IN FEET

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING
9/24/15

NOTES

1. NAVIGATION AID AND MOUNT ASSEMBLY SHALL BE FABRICATED FROM A36 STEEL, UNLESS NOTED OTHERWISE.
2. HOT DIP GALVANIZE STEEL COMPONENTS AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.
3. ALL HARDWARE (NUTS, BOLT AND WASHERS) FOR NAVIGATION AIDS SHALL BE STAINLESS STEEL TYPE 316. ALL NUTS SHALL BE LOCK NUTS WITH NYLON INSERTS.
4. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 (STRUCTURAL WELDING CODE – STEEL).
5. DAYBOARD AND SIGN SHALL CONFORM TO REGULATIONS OF USCG COMMANDMENT DIRECTIVES MANUALS #16500.3 (SERIES), "AIDS TO NAVIGATION MANUAL – TECHNICAL" AND #10360-3 (SERIES) "COATINGS AND COLOR MANUAL".
6. PROPER INSULATION SHALL BE PROVIDED BETWEEN DIFFERENT METAL TYPES TO PREVENT GALVANIC CORROSION.
7. DAYBOARD AND SIGN TO BE INSTALLED FACING SEAWARD IN THE SHORELINE NORMAL DIRECTION.

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
BATON ROUGE, LA 70802
(225) 383-1780

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A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
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SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

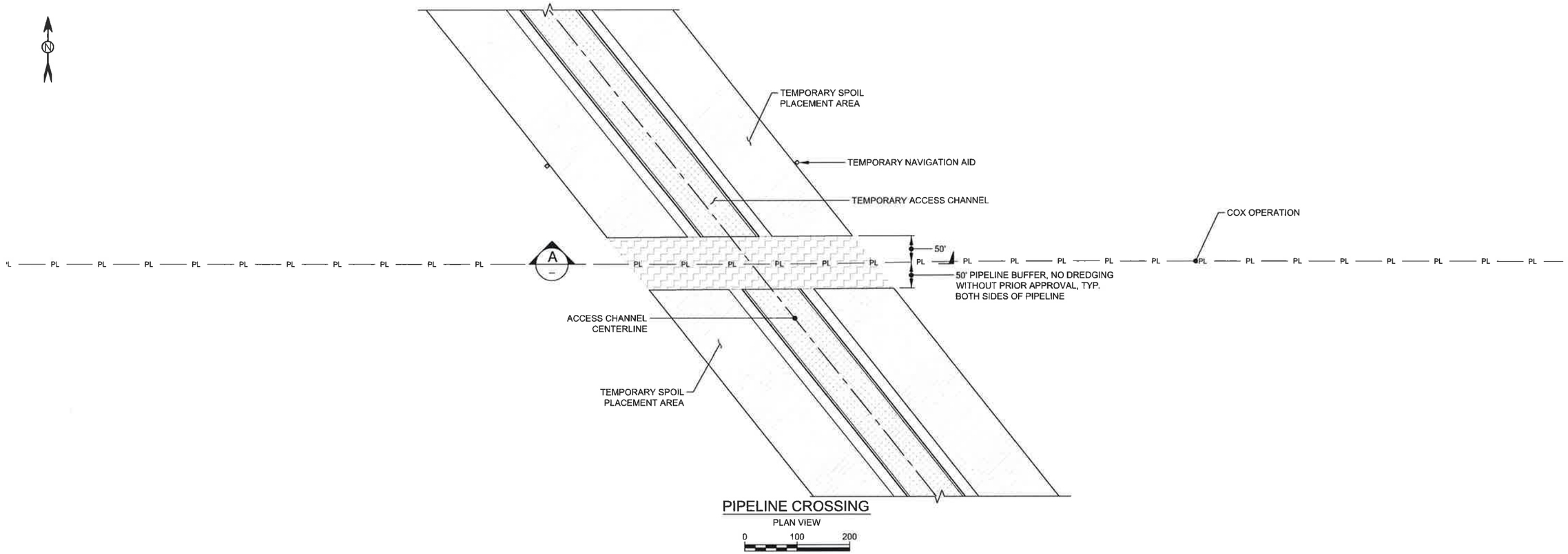
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

NAVIGATION AID DETAILS

DATE: 9/24/15
SHEET 29 OF 34

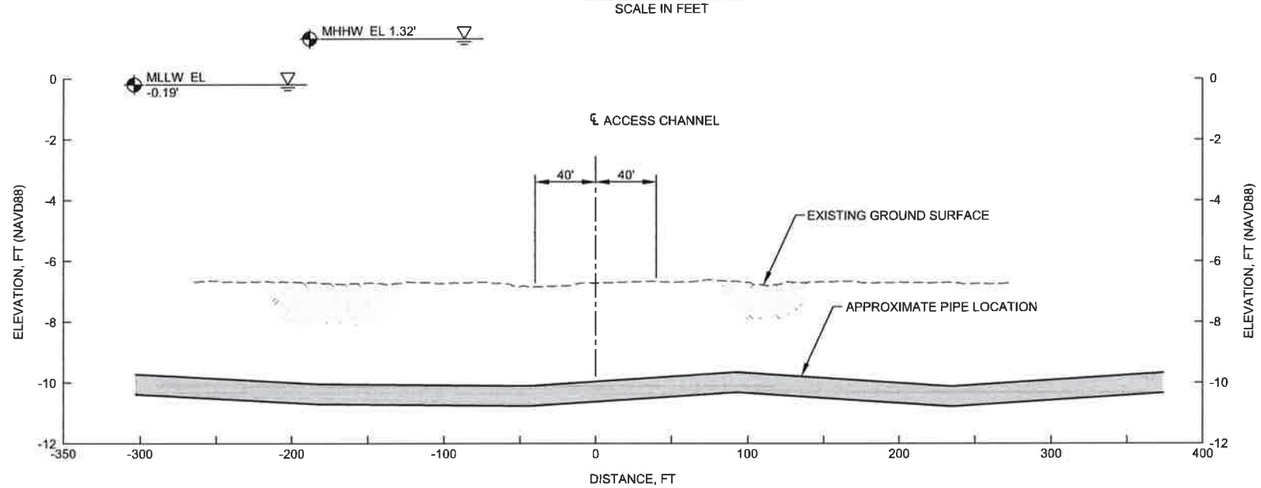


PIPELINE CROSSING

PLAN VIEW

0 100 200

SCALE IN FEET



A SECTION
PIPELINE CROSSING

HORIZ. 0 50 100
VERT. 0 2.5 5
SCALE IN FEET

LEGEND

— PL — PIPELINE

TEMPORARY ACCESS CHANNEL

TEMPORARY SPOIL PLACEMENT AREA

PIPELINE BUFFER

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

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DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148

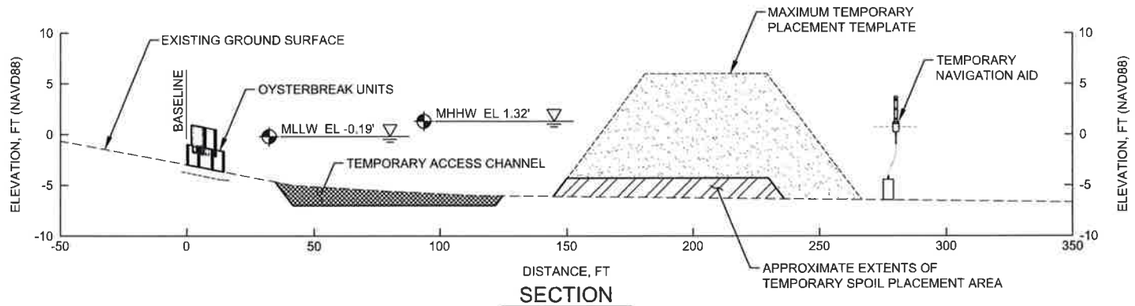
FEDERAL PROJECT NUMBER: NA

APPROVED BY: H. BERMUDEZ

PIPELINE CROSSING DETAILS

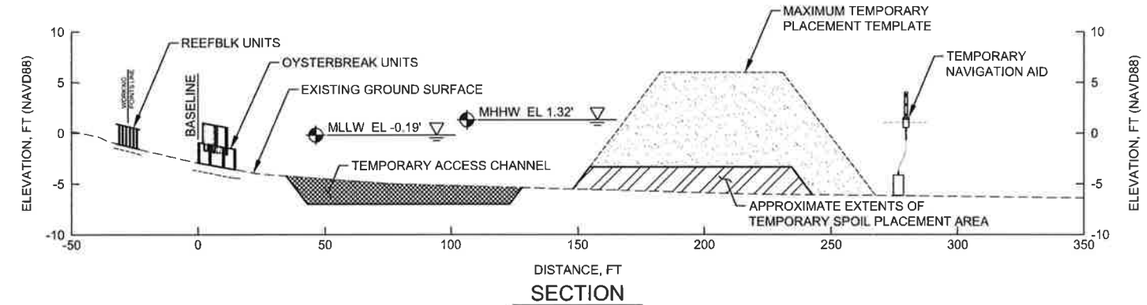
DATE: 9/24/15

SHEET 30 OF 34



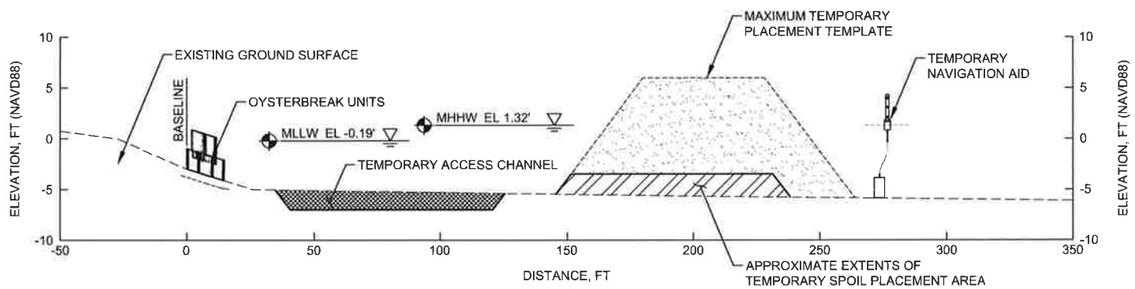
SECTION
STA 0+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



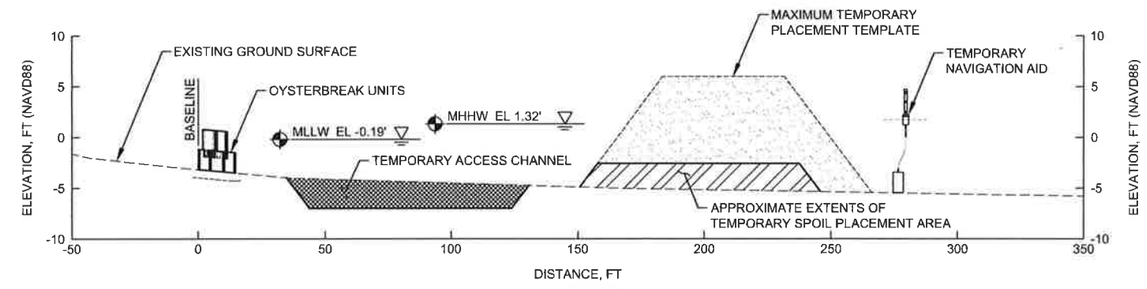
SECTION
STA 29+75

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



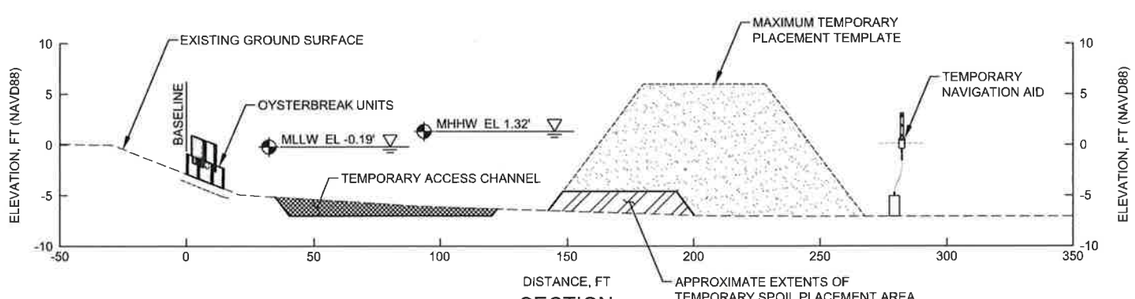
SECTION
STA 10+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



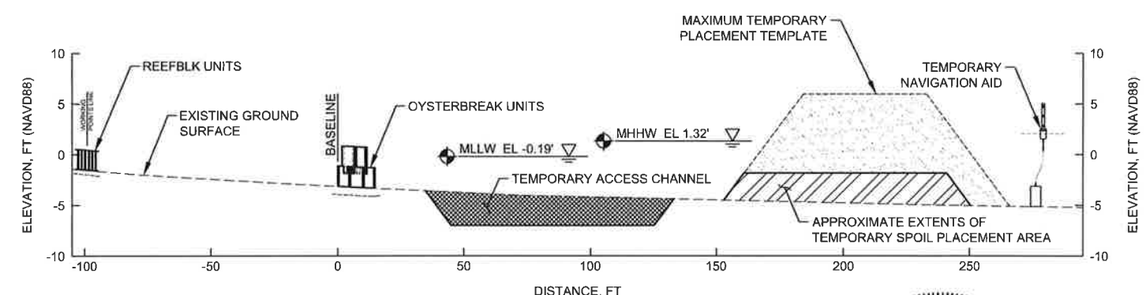
SECTION
STA 40+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 20+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 49+60

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- MAXIMUM TEMPORARY SPOIL PLACEMENT TEMPLATE
- APPROXIMATE EXTENTS OF TEMPORARY SPOIL PLACEMENT AREA

NOTES

1. THE TEMPORARY SPOILS SHALL BE BACKFILLED INTO THE TEMPORARY ACCESS AND FLOTATION CHANNEL AT THE COMPLETION OF THE PROJECT.
2. TEMPORARY WARNING SIGNS SHALL BE INSTALLED SEAWARD OF TEMPORARY SPOIL PLACEMENT AREAS TO WARN MARINERS OF LIMITED DEPTH OR BLOCKED PASSAGE, AT LOCATIONS OR SPACING AS DESIGNATED BY THE US COAST GUARD (USCG). CONTRACTOR IS RESPONSIBLE FOR APPROVAL OF TEMPORARY WARNING SIGN PLANS BY THE USCG. ALL SIGNS WILL MEET USCG STANDARDS.

STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
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9/24/15

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COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

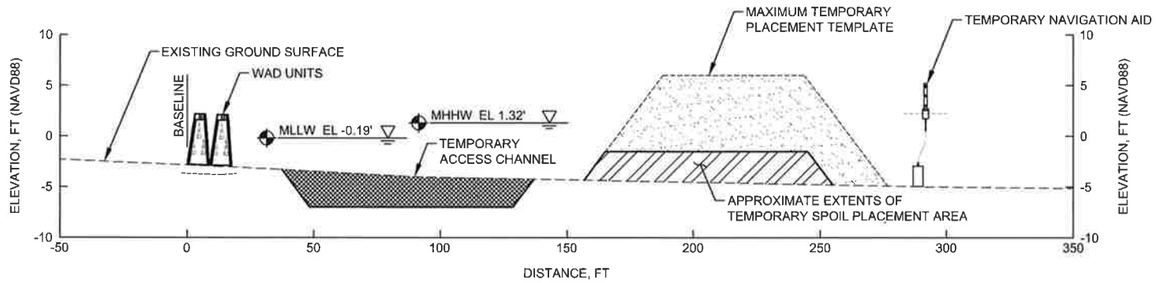
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

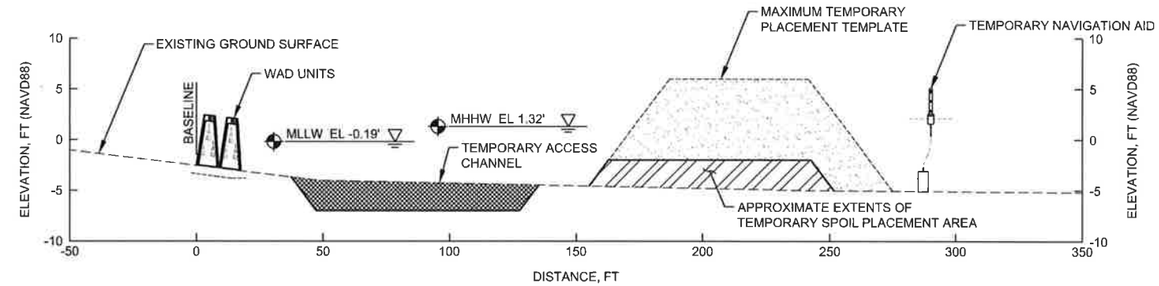
BASE BID - SECTIONS 1

DATE: 9/24/15
SHEET 31 OF 34



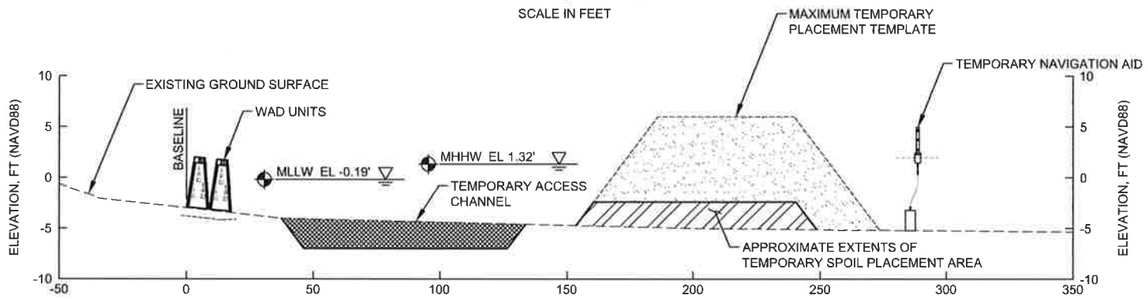
SECTION
STA 60+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



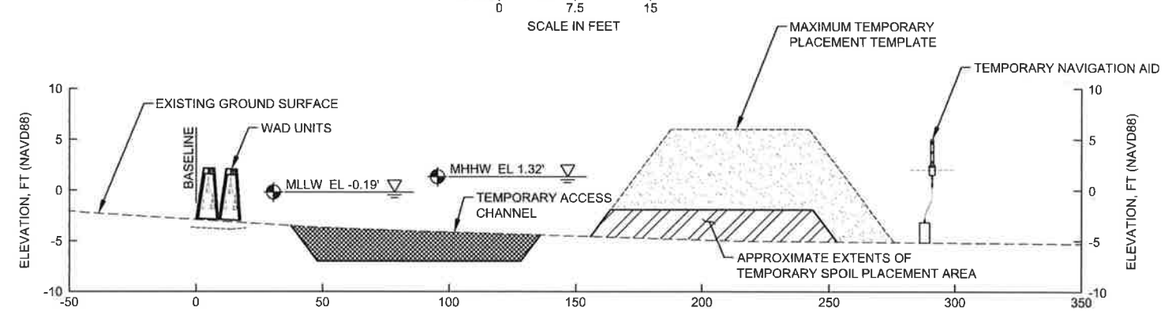
SECTION
STA 90+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



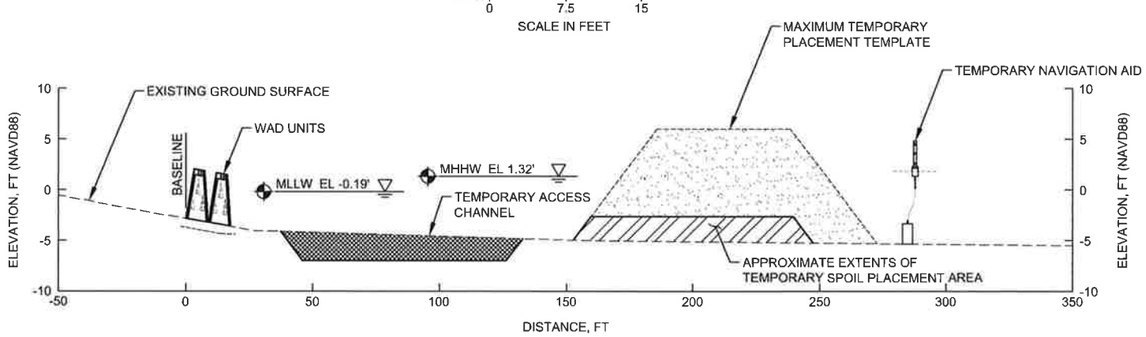
SECTION
STA 70+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



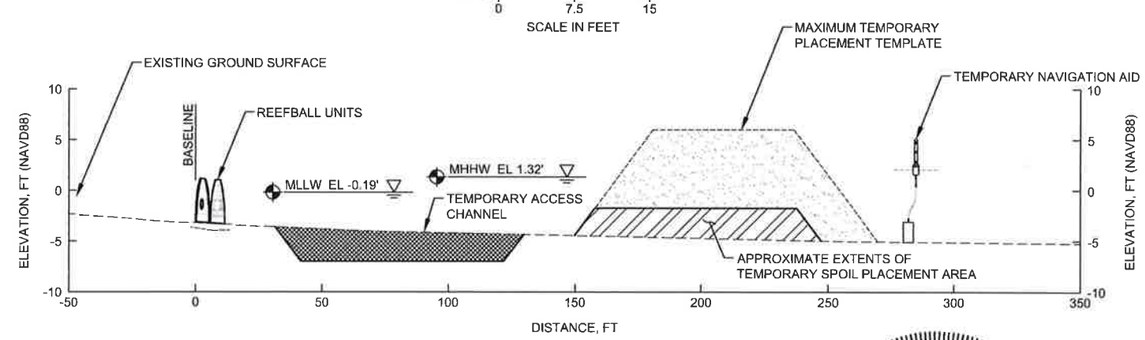
SECTION
STA 100+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 80+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 110+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- MAXIMUM TEMPORARY SPOIL PLACEMENT TEMPLATE
- APPROXIMATE EXTENTS OF TEMPORARY SPOIL PLACEMENT AREA

NOTES

1. THE TEMPORARY SPOILS SHALL BE BACKFILLED INTO THE TEMPORARY ACCESS AND FLOTATION CHANNEL AT THE COMPLETION OF THE PROJECT.
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STATE OF LOUISIANA
JOSHUA DAVID CARTER
License No. 33391
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
748 MAIN ST.
BATON ROUGE, LA 70802
(225) 383-1780

COAST & HARBOR ENGINEERING
A Division of Hatch Mott MacDonald
650 POYDRAS ST, NEW ORLEANS, LA 70130
PH 504-529-7687 • FAX 504-529-7688

SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

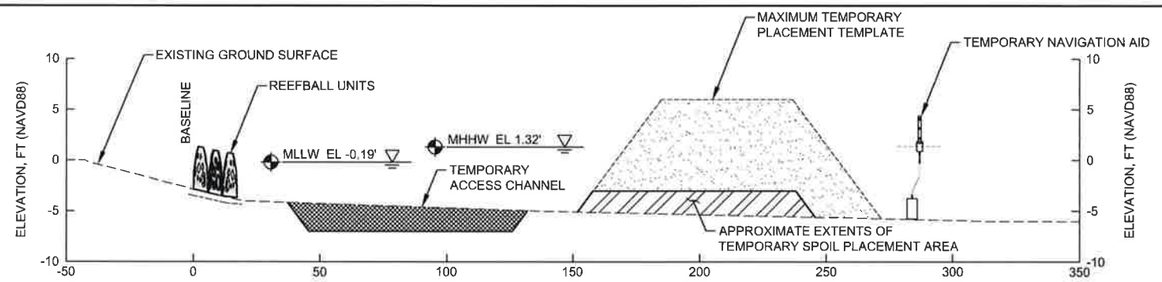
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

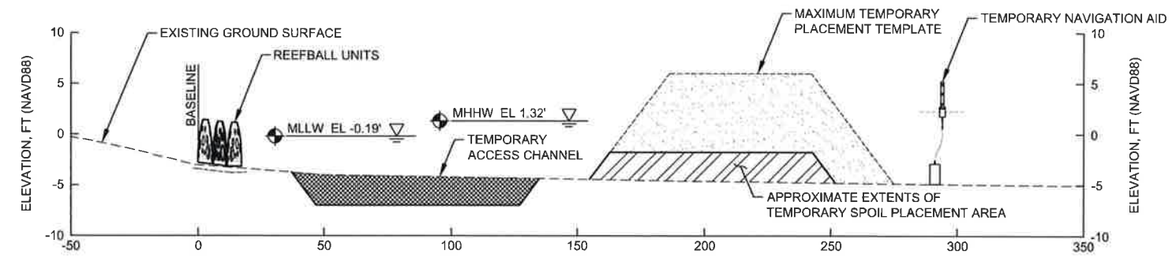
BASE BID - SECTIONS 2

DATE: 9/24/15
SHEET 32 OF 34



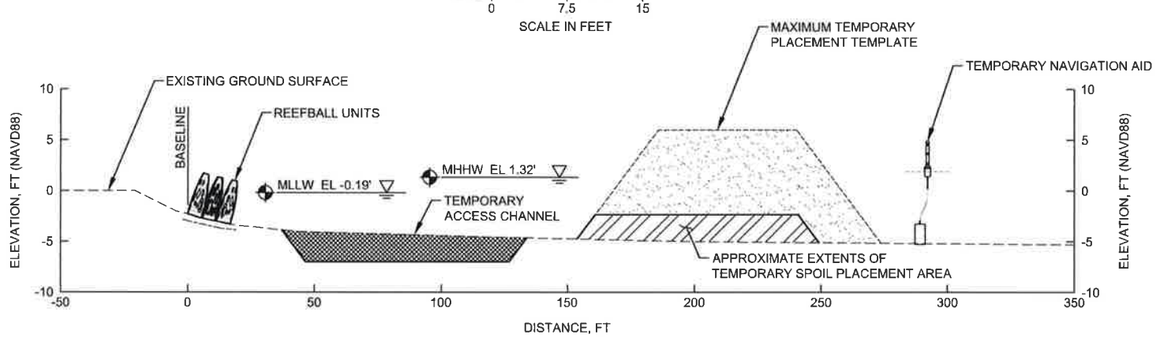
SECTION
STA 112+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



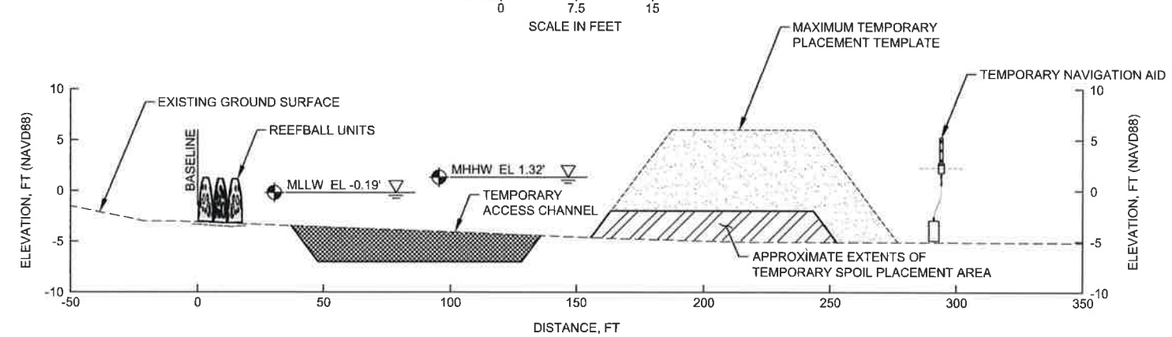
SECTION
STA 115+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



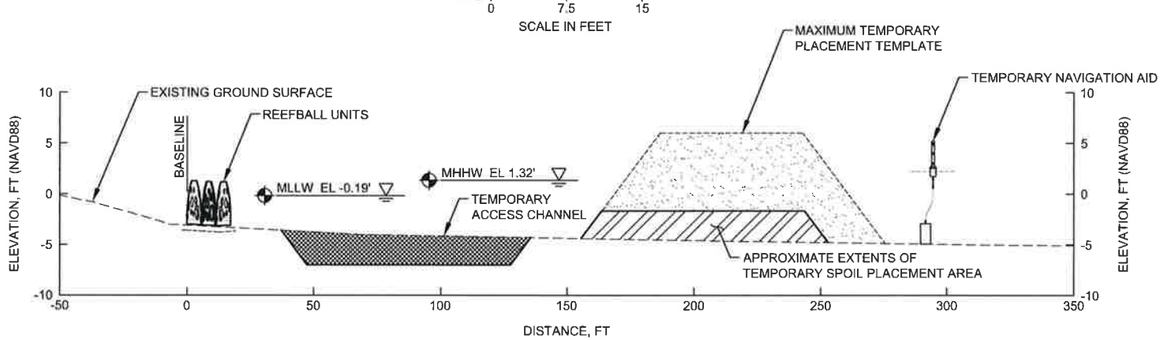
SECTION
STA 130+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 154+47

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 140+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
- MAXIMUM TEMPORARY SPOIL PLACEMENT TEMPLATE
- APPROXIMATE EXTENTS OF TEMPORARY SPOIL PLACEMENT AREA

NOTES

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STATE OF LOUISIANA
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9/24/15

REV.	DATE	DESCRIPTION	BY

TETRA TECH, INC.
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SUBMITTED UNDER THE AUTHORITY OF JOSH CARTER, P.E. 33391

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

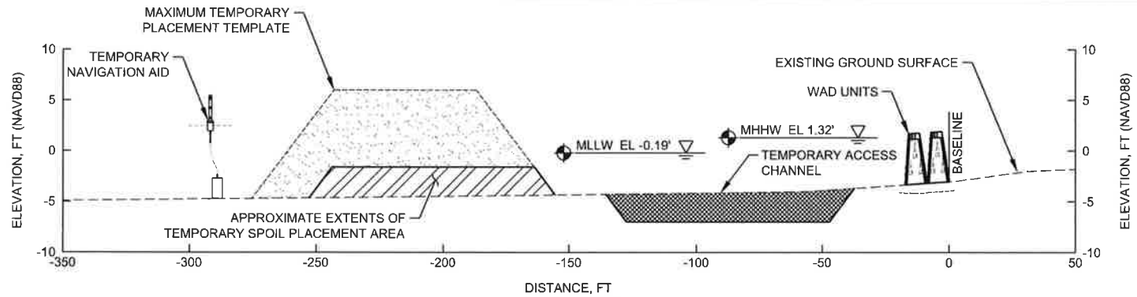
DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

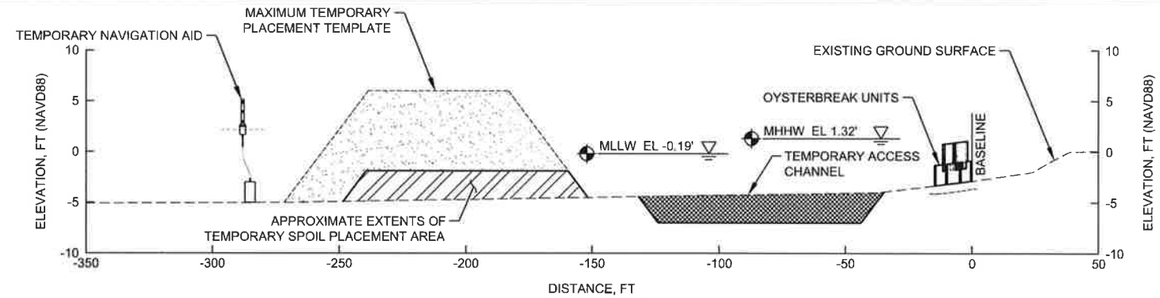
BASE BID - SECTIONS 3

DATE: 9/24/15
SHEET 33 OF 34



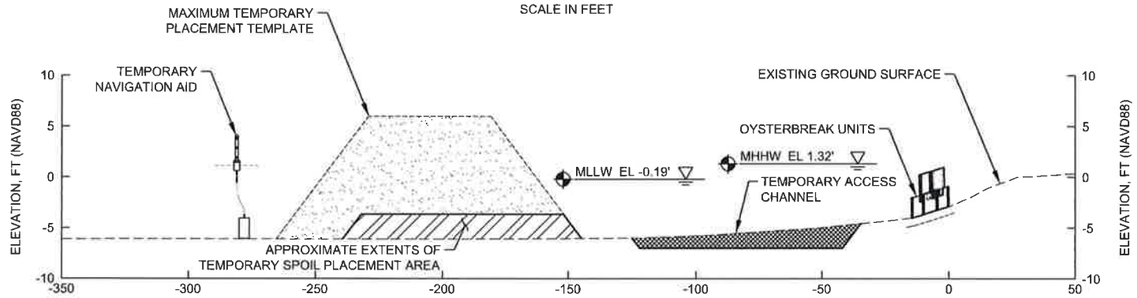
SECTION
STA 200+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



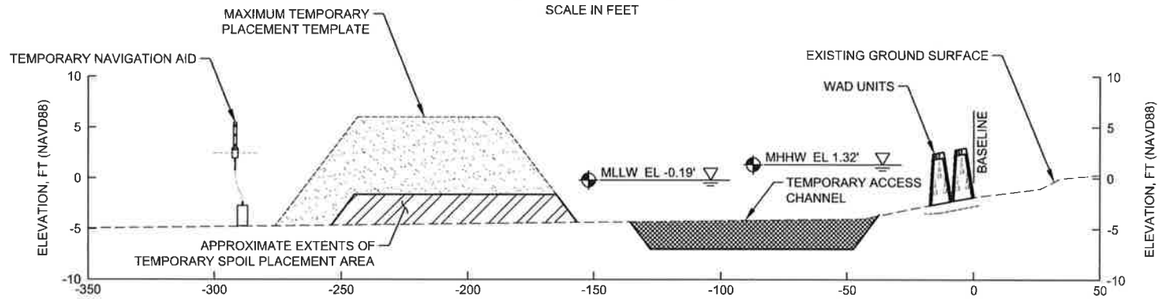
SECTION
STA 230+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



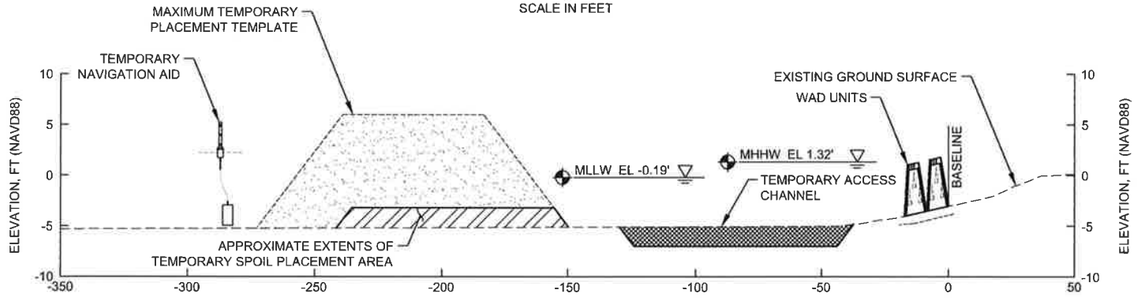
SECTION
STA 210+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



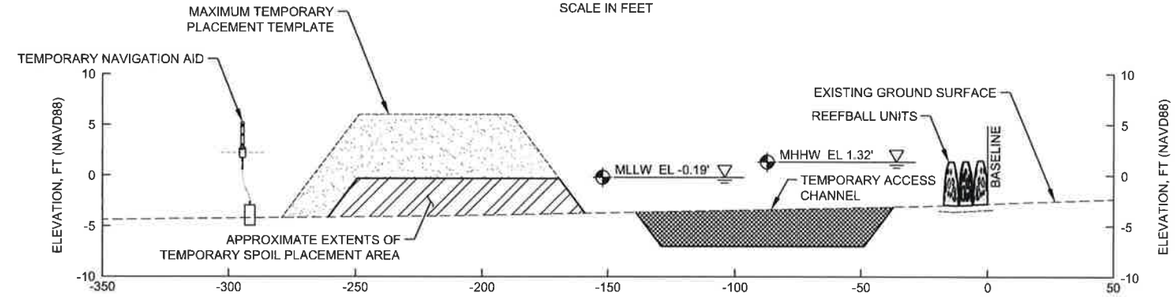
SECTION
STA 240+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 220+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET



SECTION
STA 250+00

HORIZ. 0 30 60
VERT. 0 7.5 15
SCALE IN FEET

LEGEND

- TEMPORARY ACCESS/ FLOTATION CHANNEL
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DRAWN BY: T. MORRISON
DESIGNED BY: J. CARTER

LIVING SHORELINE DEMONSTRATION PROJECT

STATE PROJECT NUMBER: PO-148
FEDERAL PROJECT NUMBER: NA
APPROVED BY: H. BERMUDEZ

ALTERNATE BID SECTIONS

DATE: 9/24/15
SHEET 34 OF 34