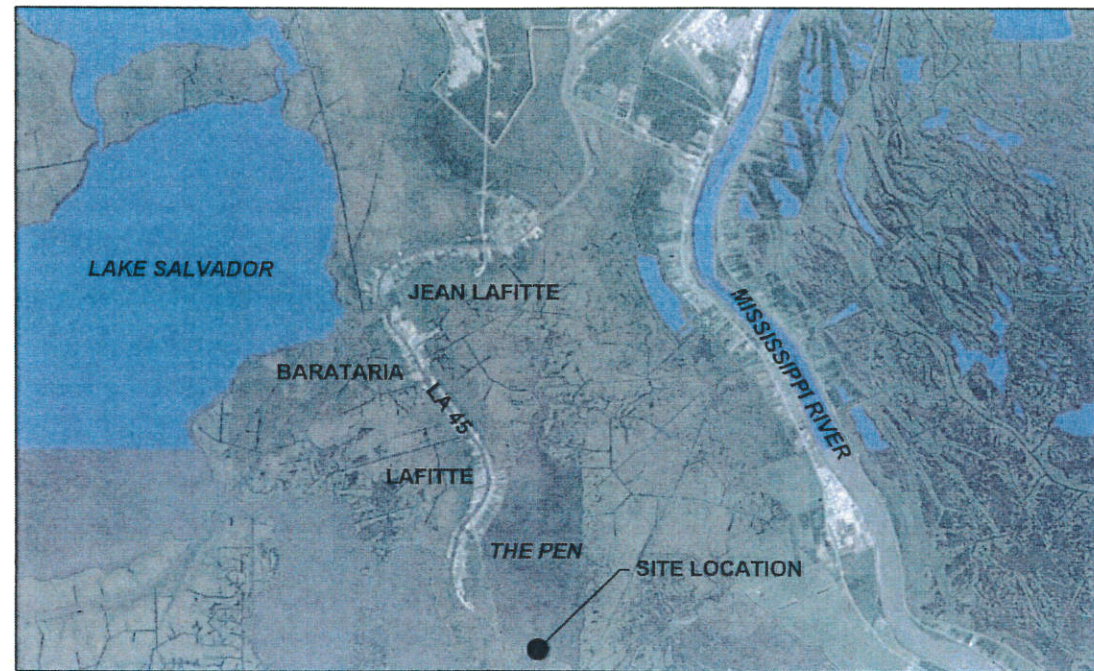
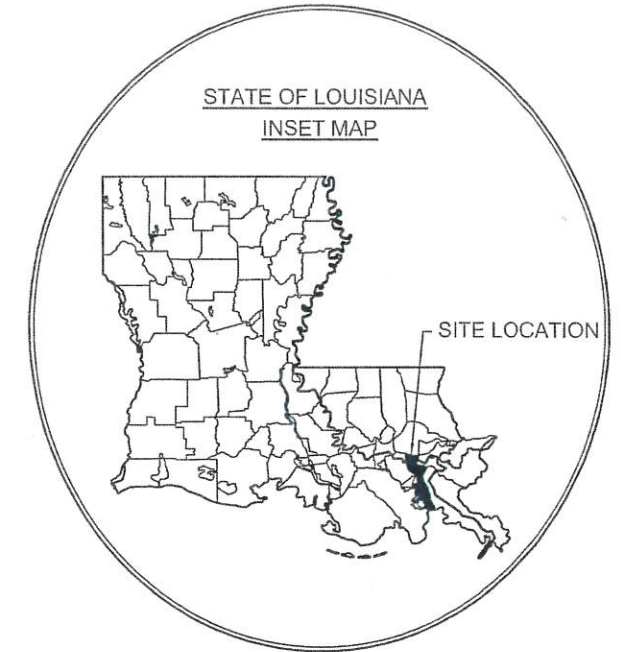


INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES AND LEGEND
3	EXISTING SITE PLAN
4	BREAKWATER CENTRAL REACH - STA. 29+00 TO STA. 45+00
5	BREAKWATER CENTRAL REACH - STA. 45+00 TO STA. 55+00
6	BREAKWATER CENTRAL REACH - STA. 55+00 TO STA. 64+19, EAST REACH - STA. 0+00 TO STA. 8+00
7	BREAKWATER EAST REACH - STA. 8+00 TO 24+00
8	BREAKWATER EAST REACH - STA. 24+00 TO STA. 27+02
9	BREAKWATER PROFILES - CENTRAL REACH
10	BREAKWATER PROFILES - EAST REACH
11	TYPICAL SECTION
12	CROSS SECTIONS - CENTRAL REACH
13	CROSS SECTIONS - EAST REACH
14	SOIL BORING LEGEND
15	SOIL LOGS (1 OF 3) - BREAKWATER
16	SOIL LOGS (2 OF 3) - BREAKWATER
17	SOIL LOGS (3 OF 3) - BREAKWATER

STATE OF LOUISIANA
COASTAL PROTECTION AND RESTORATION AUTHORITY

SOUTH SHORE OF
THE PEN MAINTENANCE PROJECT
(BA-41)
JEFFERSON PARISH



Jerry Carr
CHIEF, ENGINEERING DIVISION

J. Arzoo
CHIEF, OPERATIONS DIVISION

Peter Hopkins
ENGINEER SUPERVISOR

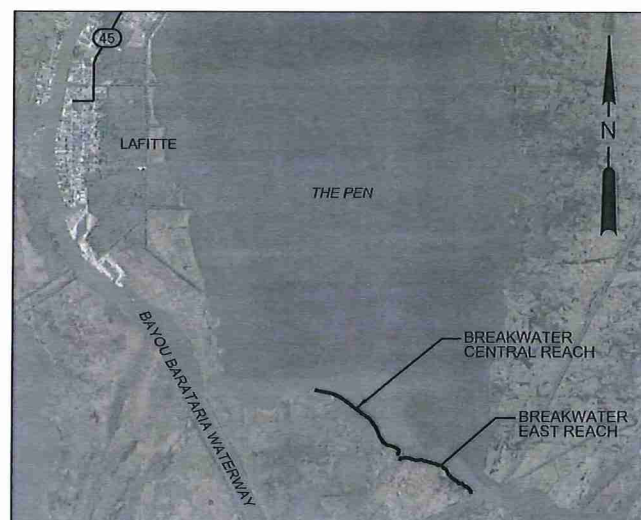
D. Hill
PROJECT ENGINEER



LICENSURE CLASSIFICATION REQUIREMENTS
MAJOR CLASSIFICATION: HEAVY CONSTRUCTION

<p>500 MAIN STREET BATON ROUGE, LA 70801</p>					<p>COASTAL PROTECTION AND RESTORATION AUTHORITY</p> <p>450 LAUREL STREET BATON ROUGE, LOUISIANA 70801</p>	<p>SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)</p>	TITLE SHEET
	REV.	DATE	DESCRIPTION			BY	<p>STATE PROJECT NUMBER: BA-41</p> <p>FEDERAL PROJECT NUMBER: BA-41</p> <p>APPROVED BY: D. PASSMAN</p>

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS



VICINITY MAP

GENERAL NOTES

1. THE PROJECT SITE IS NOT ACCESSIBLE BY LAND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NAVIGATING FROM A NAVIGABLE WATER BODY TO THE PROJECT AREA AND WITHIN THE LIMITS OF THE PROJECT PLAN AREA. THE ENGINEER OR HIS REPRESENTATIVE SHALL MONITOR THE EQUIPMENT LOCATION DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT TREAD ON EXISTING MARSH OR VEGETATED WETLAND UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL "LOUISIANA ONE CALL" AT 1-800-272-3020 TO LOCATE ANY EXISTING UTILITIES IN THE PROJECT AREA OR WITHIN THE TRANSPORTATION ROUTE.
3. THE CONTRACTOR SHALL DETERMINE IF EXISTING PIPELINES, ABANDONED WELLS, OR OTHER POSSIBLE OBSTRUCTIONS ARE LOCATED WITHIN THE PROJECT AREA OR WITHIN THE TRANSPORTATION ROUTE.
4. ANY DAMAGE TO U.S. COAST GUARD NAVIGATION AIDS OR PRIVATE NAVIGATION AIDS SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNER STANDARDS AND AT THE EXPENSE OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
6. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS, OBTAIN PERMISSION FROM APPLICABLE PROPERTY OWNERS, AND PAY ALL ASSOCIATED FEES FOR STAGING, FABRICATING, AND LOADING BARGES ON PRIVATE PROPERTY.
7. THE LIMITS OF CONSTRUCTION SHALL BE MARKED/STAKED FOR CONCURRENCE BY THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. THE EXISTING ACCESS/FLOTATION CHANNEL SHOWN ON THESE PLANS WAS ESTABLISHED FOR CONSTRUCTION OF THE COMBINED BA-43 & BA-48 PROJECTS TO THE EAST OF THE PEN. USE OF THE ACCESS CHANNEL FOR MOVEMENT OF EQUIPMENT TO AND FROM THE BA-43 / BA-48 PROJECT AREA MAY BE REQUIRED DURING THE CONTRACT TIME FOR THE BA-41 PROJECT. THE BA-41 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ACCESS WITH THE BA-43 / BA-48 CONTRACTOR.
9. THE BA-41 CONTRACTOR SHALL NOT IMPEDE PASSAGE OF BA-43 / BA-48 CONTRACTOR'S EQUIPMENT OR SUPPORT VESSELS. DURING CONSTRUCTION, IT MAY BE NECESSARY FOR THE BA-41 CONTRACTOR TO STOP WORK AND/OR TO TEMPORARILY MOVE EQUIPMENT TO ALLOW THE REQUIRED PASSAGE OF BA-43 / BA-48 VESSELS AND EQUIPMENT. ANY SUCH REQUIRED MOVEMENT SHALL BE PERFORMED AT NO DIRECT PAY.
10. EXISTING CHANNEL WAS PERMITTED WITH A MAXIMUM DEPTH OF -8.0' NAVD 88, MAXIMUM BOTTOM WIDTH OF 80' AND SIDE SLOPE OF 1:3. CONSTRUCTED "AS-BUILT" ACCESS CHANNEL DIMENSIONS MAY VARY. ACCESS CHANNEL LOCATION, DIMENSIONS, AND/OR DEPTH INDICATED ON THE PLANS AND SPECIFICATIONS IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY, WITH NO WARRANTY OF CONDITION OR GUARANTEE OF ACCURACY.
11. SHALLOW DEPTHS MAY BE ENCOUNTERED WITHIN THE PROJECT AREA. PRIOR TO PLACING A BID, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE PROJECT SITE AND FOR VERIFYING THE CONDITION OF THE ACCESS CHANNEL IN ACCORDANCE WITH SPECIFICATION GP-2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING EQUIPMENT WHICH CAN OPERATE WHILE FLOATING AT ALL TIMES, SUBJECT TO AND WITHOUT MODIFICATION OF THE EXISTING ACCESS CHANNEL CONDITIONS.

SURVEY NOTES

1. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) IN U.S. SURVEY FEET (FEET). ALL HORIZONTAL COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) LOUISIANA STATE PLANE, SOUTH ZONE IN FEET.
2. PRIMARY SURVEY CONTROL EMPLOYED DURING CONSTRUCTION SHALL MATCH THE PRIMARY CONTROL PUBLISHED IN THESE CONTRACT DOCUMENTS. BENCHMARK IS BA-41-SM01 LOCATED APPROXIMATELY 1.3 MILES SOUTH OF LAFITTE HARBOR MARINA IN LAFITTE, LOUISIANA, ON THE EAST BANK OF BAYOU BARATARIA IMMEDIATELY NORTH OF THE CUT INTO THE PEN.

STAMPING: CRMSTE-SM-10

ADJUSTED NAD83 DATUM LSZ FEET
NORTH = 417912.65
EAST = 3673985.68

ADJUSTED NAVD88 ELEV. = 4.78'
3. ELEVATIONS SHOWN ARE BASED ON SURVEYS PERFORMED IN JULY 2013 BY THE U.S. NATURAL RESOURCES CONSERVATION SERVICE.

SUMMARY OF ESTIMATED QUANTITIES

MOBILIZATION AND DEMOBILIZATION	LUMP SUM	1
SURVEYS	LUMP SUM	1
250 LB. CLASS ROCK	TON	12825

Stantec

500 MAIN STREET
BATON ROUGE, LA
70801

REV.	DATE	DESCRIPTION	BY



COASTAL PROTECTION AND RESTORATION AUTHORITY

450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF
THE PEN MAINTENANCE PROJECT
(BA-41)

STATE PROJECT NUMBER: BA-41
FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

GENERAL NOTES
AND LEGEND

DATE: JANUARY 9, 2015

SHEET 2 OF 17



PIPELINE CONTACT INFORMATION:
 CENTRAL CRUDE PIPELINE: 337-436-1000
 PLAINS ALL AMERICAN PIPELINE: 504-398-6282
 ENBRIDGE PIPELINE: 504-656-0194

NOTICE:
 48 HOURS BEFORE DIGGING
 CALL 1-800-272-3020
 TO LOCATE UTILITY LINES

LEGEND	
	- BREAKWATER
	- PIPELINE
	- STATE HIGHWAY



Stantec
 500 MAIN STREET
 BATON ROUGE, LA
 70801

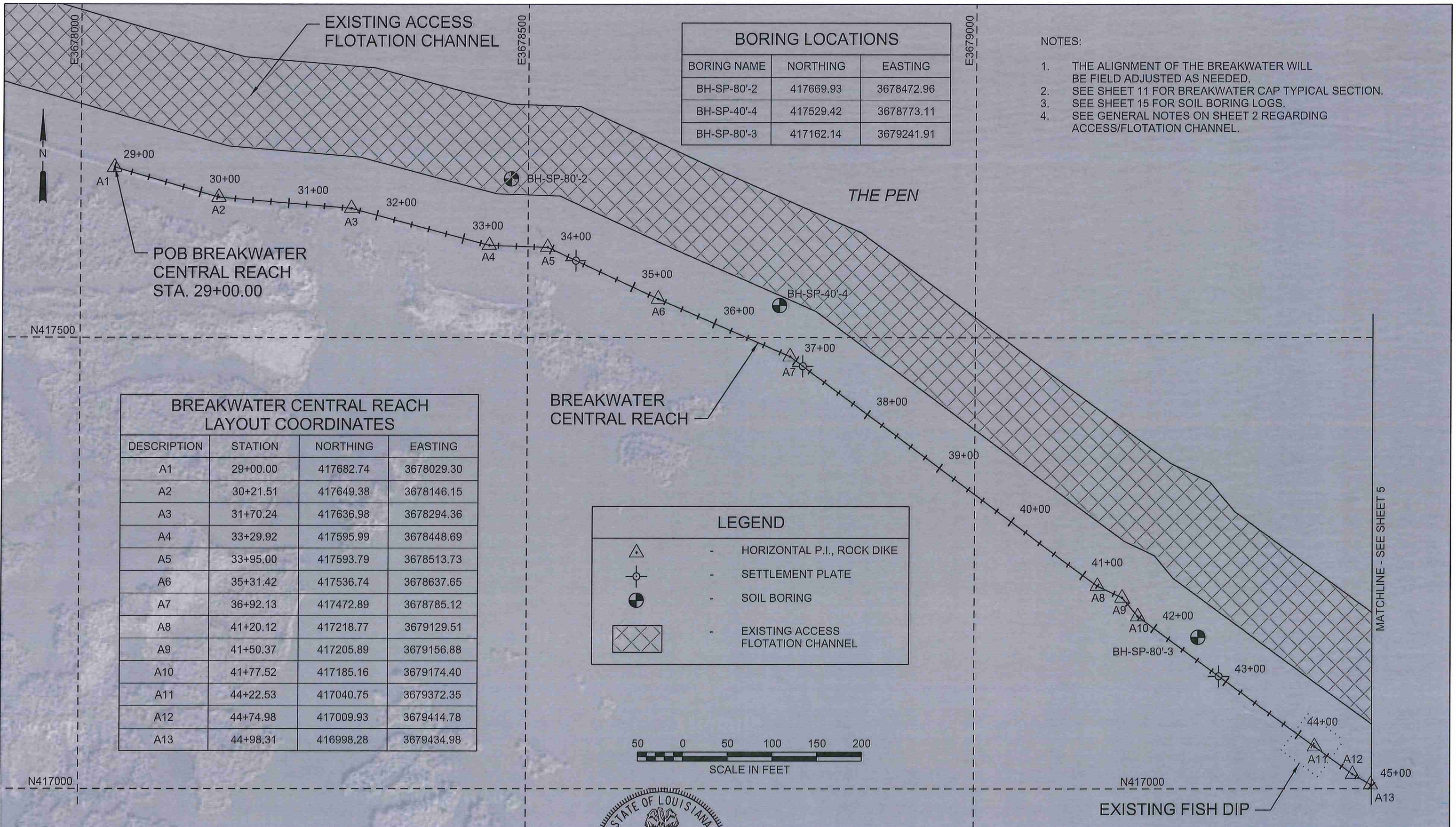
REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
 DENNIS M. PASSMAN, P.E.
 REG. No. 27987
 REGISTERED PROFESSIONAL ENGINEER
Dennis M. Passman
 1/9/15

COASTAL PROTECTION AND RESTORATION AUTHORITY
 450 LAUREL STREET
 BATON ROUGE, LOUISIANA 70801
 DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)
 STATE PROJECT NUMBER: BA-41
 FEDERAL PROJECT NUMBER: BA-41
 APPROVED BY: D. PASSMAN

EXISTING SITE PLAN
 DATE: JANUARY 9, 2015
 SHEET 3 OF 17

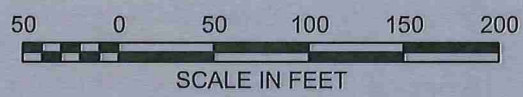


BORING LOCATIONS		
BORING NAME	NORTHING	EASTING
BH-SP-80'-2	417669.93	3678472.96
BH-SP-40'-4	417529.42	3678773.11
BH-SP-80'-3	417162.14	3679241.91

- NOTES:
1. THE ALIGNMENT OF THE BREAKWATER WILL BE FIELD ADJUSTED AS NEEDED.
 2. SEE SHEET 11 FOR BREAKWATER CAP TYPICAL SECTION.
 3. SEE SHEET 15 FOR SOIL BORING LOGS.
 4. SEE GENERAL NOTES ON SHEET 2 REGARDING ACCESS/FLOTATION CHANNEL.

BREAKWATER CENTRAL REACH LAYOUT COORDINATES			
DESCRIPTION	STATION	NORTHING	EASTING
A1	29+00.00	417682.74	3678029.30
A2	30+21.51	417649.38	3678146.15
A3	31+70.24	417636.98	3678294.36
A4	33+29.92	417595.99	3678448.69
A5	33+95.00	417593.79	3678513.73
A6	35+31.42	417536.74	3678637.65
A7	36+92.13	417472.89	3678785.12
A8	41+20.12	417218.77	3679129.51
A9	41+50.37	417205.89	3679156.88
A10	41+77.52	417185.16	3679174.40
A11	44+22.53	417040.75	3679372.35
A12	44+74.98	417009.93	3679414.78
A13	44+98.31	416998.28	3679434.98

LEGEND	
	- HORIZONTAL P.I., ROCK DIKE
	- SETTLEMENT PLATE
	- SOIL BORING
	- EXISTING ACCESS FLOTATION CHANNEL



500 MAIN STREET
BATON ROUGE, LA
70801

REV.	DATE	DESCRIPTION	BY

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450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

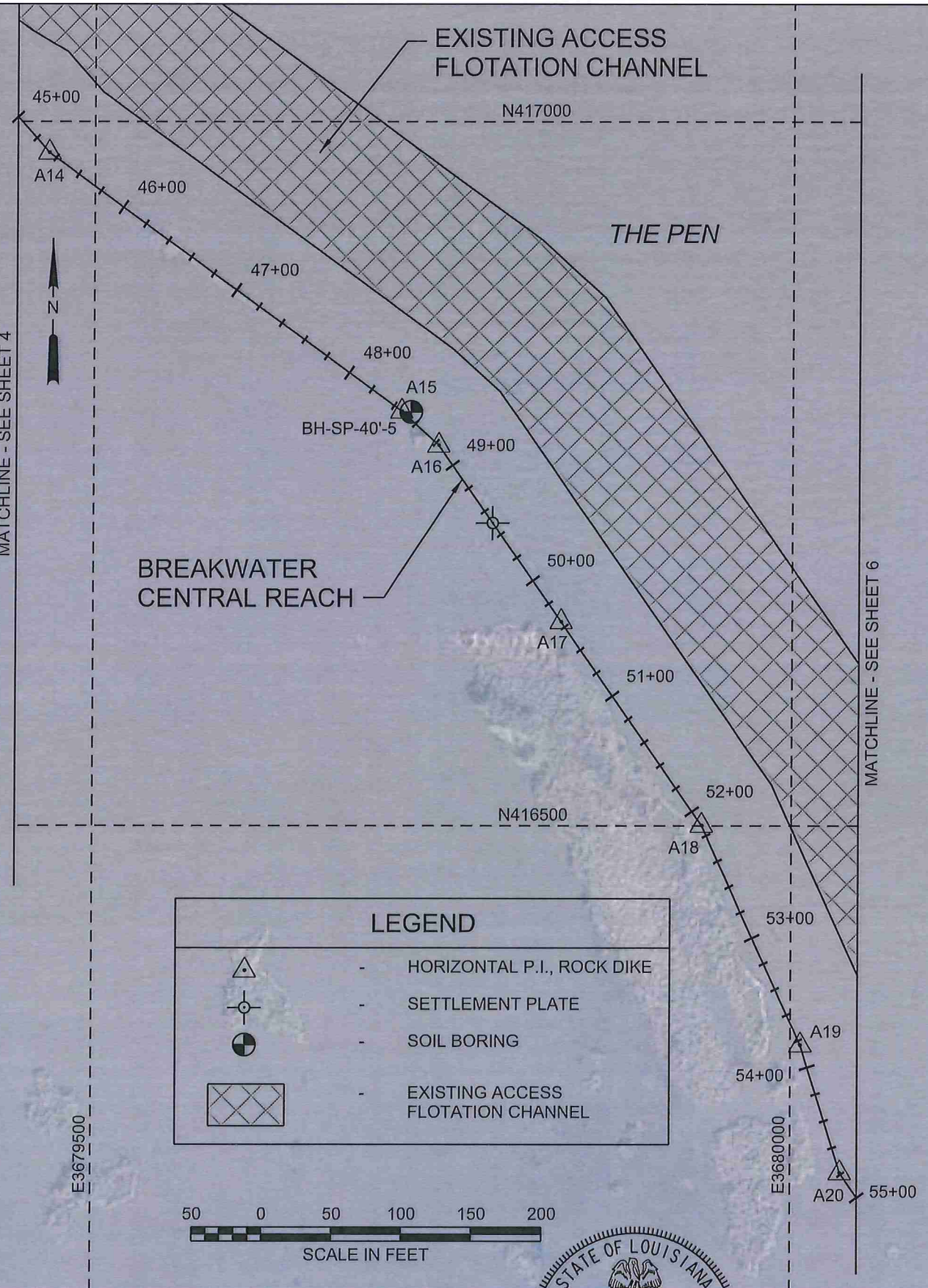
SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)

STATE PROJECT NUMBER: BA-41
FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

BREAKWATER CENTRAL REACH
STA. 29+00 TO STA. 45+00

DATE: JANUARY 9, 2015
SHEET 4 OF 17



BREAKWATER CENTRAL REACH LAYOUT COORDINATES			
DESCRIPTION	STATION	NORTHING	EASTING
A14	45+33.96	416971.81	3679458.87
A15	48+46.80	416787.86	3679711.92
A16	48+82.74	416763.75	3679738.57
A17	50+35.65	416638.56	3679826.38
A18	52+12.03	416494.09	3679927.56
A19	53+83.43	416338.23	3679998.89
A20	54+78.67	416247.31	3680027.23

BORING LOCATIONS		
BORING NAME	NORTHING	EASTING
BH-SP-40'-5	416787.59	3679718.68

LEGEND	
	- HORIZONTAL P.I., ROCK DIKE
	- SETTLEMENT PLATE
	- SOIL BORING
	- EXISTING ACCESS FLOTATION CHANNEL

- NOTES:
1. THE ALIGNMENT OF THE BREAKWATER WILL BE FIELD ADJUSTED AS NEEDED.
 2. SEE SHEET 11 FOR BREAKWATER CAP TYPICAL SECTION.
 3. SEE SHEET 15 FOR SOIL BORING LOGS.
 4. SEE GENERAL NOTES ON SHEET 2 REGARDING ACCESS/FLOTATION CHANNEL.

500 MAIN STREET
BATON ROUGE, LA
70801

REV.	DATE	DESCRIPTION	BY

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

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)

STATE PROJECT NUMBER: BA-41
FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

BREAKWATER CENTRAL REACH
STA. 45+00 TO STA. 55+00

DATE: JANUARY 9, 2015
SHEET 5 OF 17

BREAKWATER EAST REACH LAYOUT COORDINATES

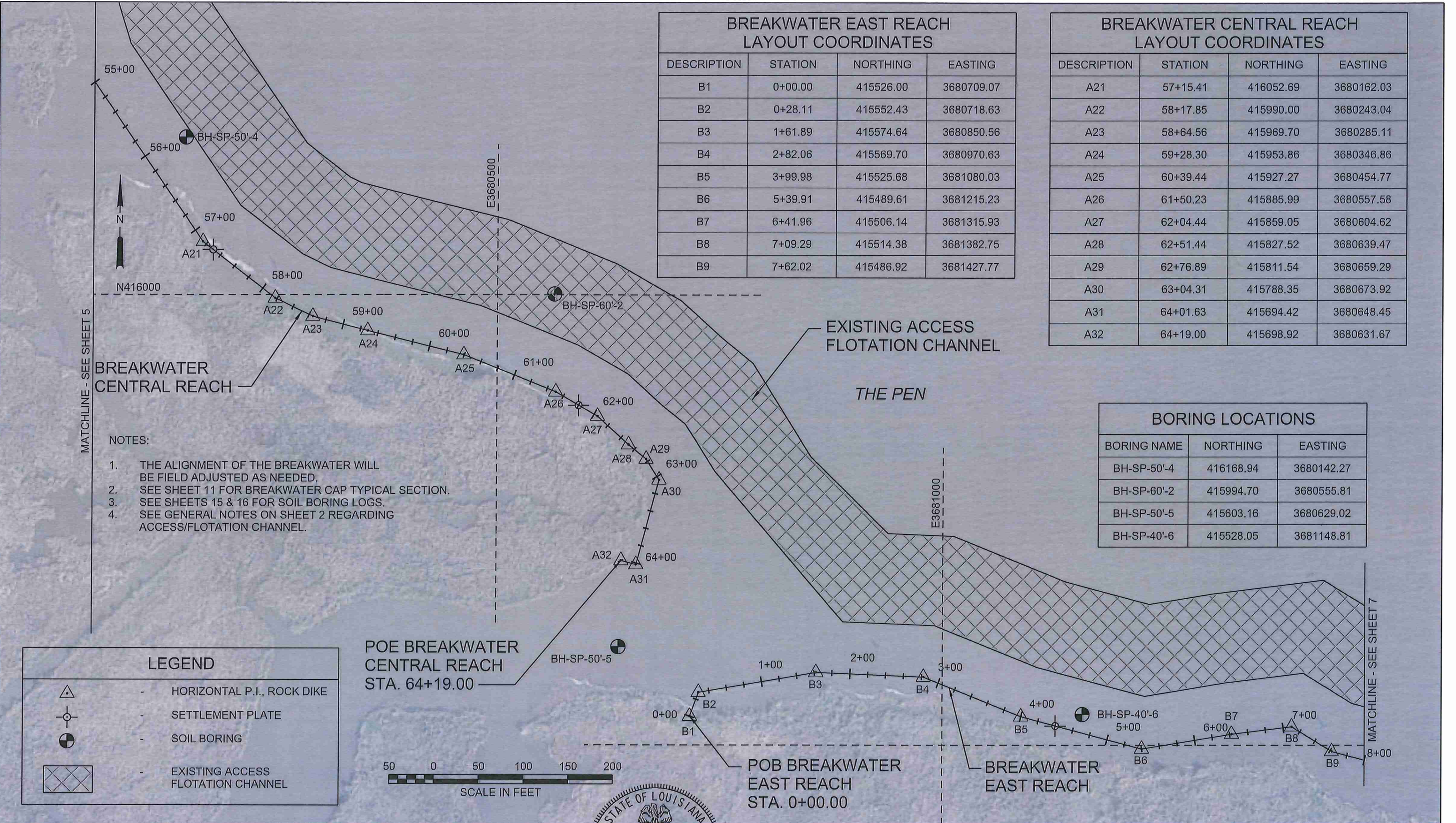
DESCRIPTION	STATION	NORTHING	EASTING
B1	0+00.00	415526.00	3680709.07
B2	0+28.11	415552.43	3680718.63
B3	1+61.89	415574.64	3680850.56
B4	2+82.06	415569.70	3680970.63
B5	3+99.98	415525.68	3681080.03
B6	5+39.91	415489.61	3681215.23
B7	6+41.96	415506.14	3681315.93
B8	7+09.29	415514.38	3681382.75
B9	7+62.02	415486.92	3681427.77

BREAKWATER CENTRAL REACH LAYOUT COORDINATES

DESCRIPTION	STATION	NORTHING	EASTING
A21	57+15.41	416052.69	3680162.03
A22	58+17.85	415990.00	3680243.04
A23	58+64.56	415969.70	3680285.11
A24	59+28.30	415953.86	3680346.86
A25	60+39.44	415927.27	3680454.77
A26	61+50.23	415885.99	3680557.58
A27	62+04.44	415859.05	3680604.62
A28	62+51.44	415827.52	3680639.47
A29	62+76.89	415811.54	3680659.29
A30	63+04.31	415788.35	3680673.92
A31	64+01.63	415694.42	3680648.45
A32	64+19.00	415698.92	3680631.67

BORING LOCATIONS

BORING NAME	NORTHING	EASTING
BH-SP-50'-4	416168.94	3680142.27
BH-SP-60'-2	415994.70	3680555.81
BH-SP-50'-5	415603.16	3680629.02
BH-SP-40'-6	415528.05	3681148.81



- NOTES:
1. THE ALIGNMENT OF THE BREAKWATER WILL BE FIELD ADJUSTED AS NEEDED.
 2. SEE SHEET 11 FOR BREAKWATER CAP TYPICAL SECTION.
 3. SEE SHEETS 15 & 16 FOR SOIL BORING LOGS.
 4. SEE GENERAL NOTES ON SHEET 2 REGARDING ACCESS/FLOTATION CHANNEL.

LEGEND

- HORIZONTAL P.I., ROCK DIKE
- SETTLEMENT PLATE
- SOIL BORING
- EXISTING ACCESS FLOTATION CHANNEL

500 MAIN STREET
BATON ROUGE, LA
70801

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DENNIS M. PASSMAN, P.E.
REG. No. 27987
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING
1/9/15

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

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF
THE PEN MAINTENANCE PROJECT
(BA-41)

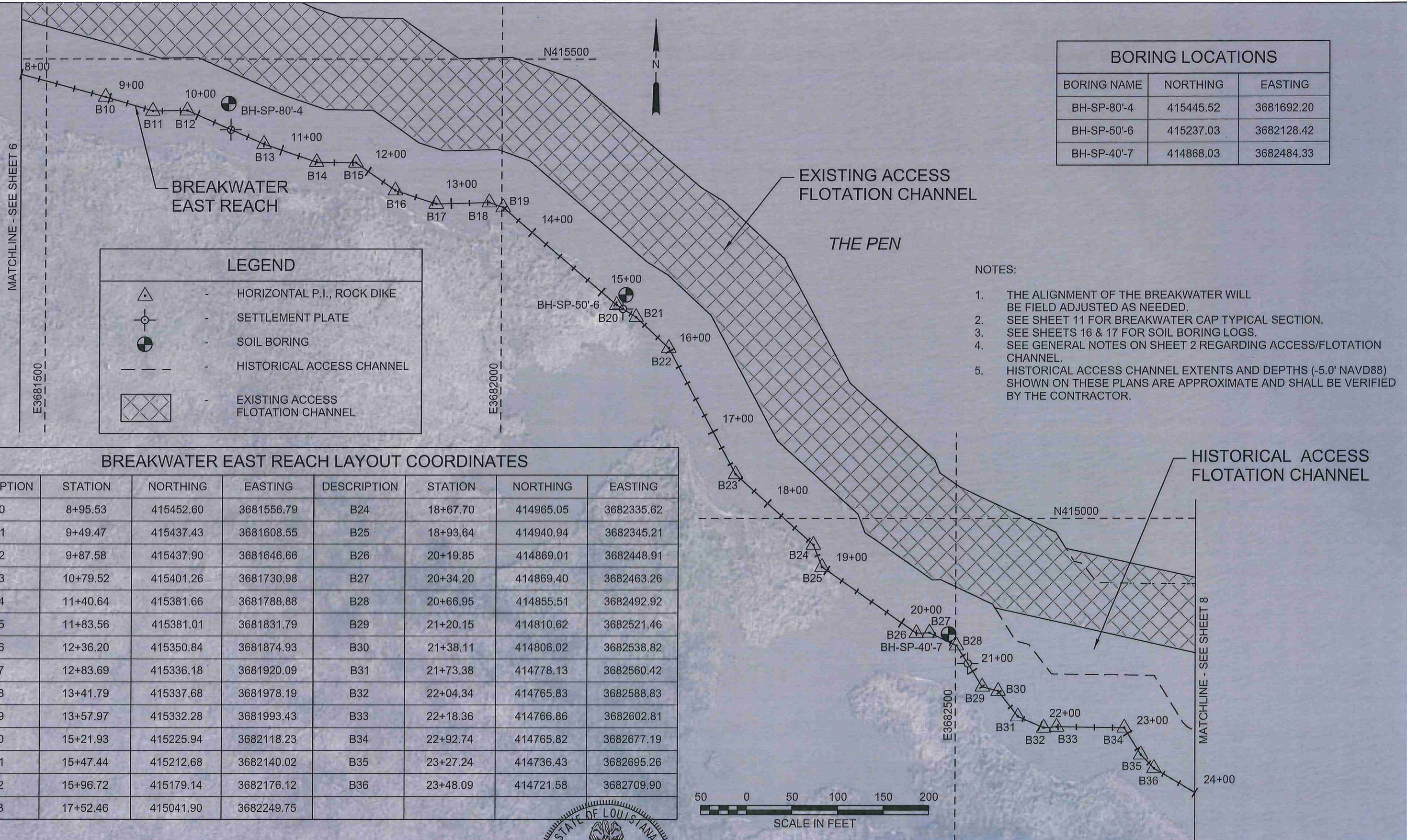
STATE PROJECT NUMBER: BA-41
FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

BREAKWATER
CENTRAL REACH
STA. 55+00 TO STA. 64+19,
EAST REACH
STA. 0+00 TO STA. 8+00

DATE: JANUARY 9, 2015
SHEET 6 OF 17

BORING LOCATIONS		
BORING NAME	NORTHING	EASTING
BH-SP-80'-4	415445.52	3681692.20
BH-SP-50'-6	415237.03	3682128.42
BH-SP-40'-7	414868.03	3682484.33



LEGEND	
	HORIZONTAL P.I., ROCK DIKE
	SETTLEMENT PLATE
	SOIL BORING
	HISTORICAL ACCESS CHANNEL
	EXISTING ACCESS FLOTATION CHANNEL

- NOTES:
1. THE ALIGNMENT OF THE BREAKWATER WILL BE FIELD ADJUSTED AS NEEDED.
 2. SEE SHEET 11 FOR BREAKWATER CAP TYPICAL SECTION.
 3. SEE SHEETS 16 & 17 FOR SOIL BORING LOGS.
 4. SEE GENERAL NOTES ON SHEET 2 REGARDING ACCESS/FLOTATION CHANNEL.
 5. HISTORICAL ACCESS CHANNEL EXTENTS AND DEPTHS (-5.0' NAVD88) SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.

BREAKWATER EAST REACH LAYOUT COORDINATES

DESCRIPTION	STATION	NORTHING	EASTING	DESCRIPTION	STATION	NORTHING	EASTING
B10	8+95.53	415452.60	3681556.79	B24	18+67.70	414965.05	3682335.62
B11	9+49.47	415437.43	3681608.55	B25	18+93.64	414940.94	3682345.21
B12	9+87.58	415437.90	3681646.66	B26	20+19.85	414869.01	3682448.91
B13	10+79.52	415401.26	3681730.98	B27	20+34.20	414869.40	3682463.26
B14	11+40.64	415381.66	3681788.88	B28	20+66.95	414855.51	3682492.92
B15	11+83.56	415381.01	3681831.79	B29	21+20.15	414810.62	3682521.46
B16	12+36.20	415350.84	3681874.93	B30	21+38.11	414806.02	3682538.82
B17	12+83.69	415336.18	3681920.09	B31	21+73.38	414778.13	3682560.42
B18	13+41.79	415337.68	3681978.19	B32	22+04.34	414765.83	3682588.83
B19	13+57.97	415332.28	3681993.43	B33	22+18.36	414766.86	3682602.81
B20	15+21.93	415225.94	3682118.23	B34	22+92.74	414765.82	3682677.19
B21	15+47.44	415212.68	3682140.02	B35	23+27.24	414736.43	3682695.26
B22	15+96.72	415179.14	3682176.12	B36	23+48.09	414721.58	3682709.90
B23	17+52.46	415041.90	3682249.75				



Stantec
500 MAIN STREET
BATON ROUGE, LA
70801

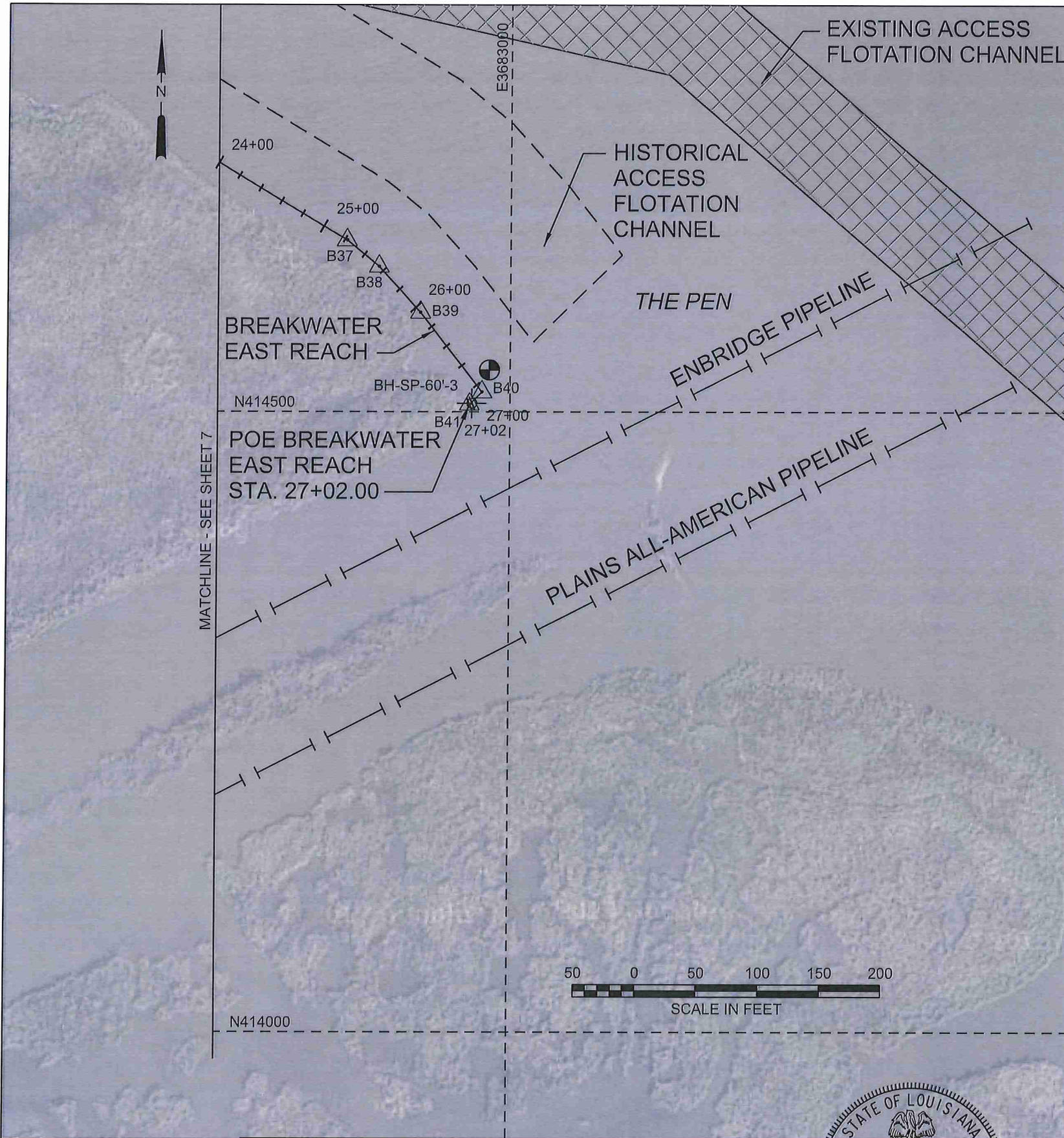
REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DENNIS M. PASSMAN, P.E.
REG. No. 27987
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING
1/9/15

COASTAL PROTECTION AND RESTORATION AUTHORITY
450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801
DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)
STATE PROJECT NUMBER: BA-41
FEDERAL PROJECT NUMBER: BA-41
APPROVED BY: D. PASSMAN

BREAKWATER EAST REACH
STA. 8+00 TO STA. 24+00
DATE: JANUARY 9, 2015
SHEET 7 OF 17



BREAKWATER EAST REACH LAYOUT COORDINATES			
DESCRIPTION	STATION	NORTHING	EASTING
B37	25+21.78	414632.40	3682858.93
B38	25+55.39	414611.16	3682884.99
B39	26+05.48	414574.09	3682918.67
B40	26+87.14	414509.82	3682969.04
B41	27+02.00	414499.97	3682958.95

BORING LOCATIONS		
BORING NAME	NORTHING	EASTING
BH-SP-60'-3	414527.72	3682974.94

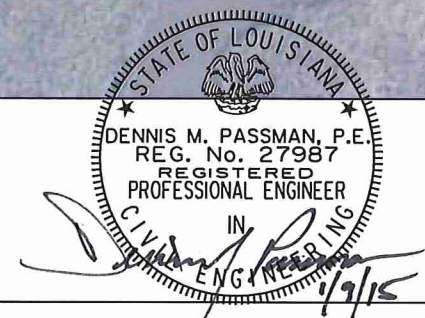
NOTES:

1. THE ALIGNMENT OF THE BREAKWATER WILL BE FIELD ADJUSTED AS NEEDED.
2. SEE SHEET 11 FOR BREAKWATER CAP TYPICAL SECTION.
3. SEE SHEET 17 FOR SOIL BORING LOGS.
4. SEE GENERAL NOTES ON SHEET 2 REGARDING ACCESS/FLOTATION CHANNEL.
5. HISTORICAL ACCESS CHANNEL EXTENTS AND DEPTHS (-5.0' NAVD88) SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.

LEGEND	
	- HORIZONTAL P.I., ROCK DIKE
	- SETTLEMENT PLATE
	- SOIL BORING
	- HISTORICAL ACCESS CHANNEL
	- PIPELINE
	- EXISTING ACCESS FLOTATION CHANNEL



REV.	DATE	DESCRIPTION	BY



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

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)

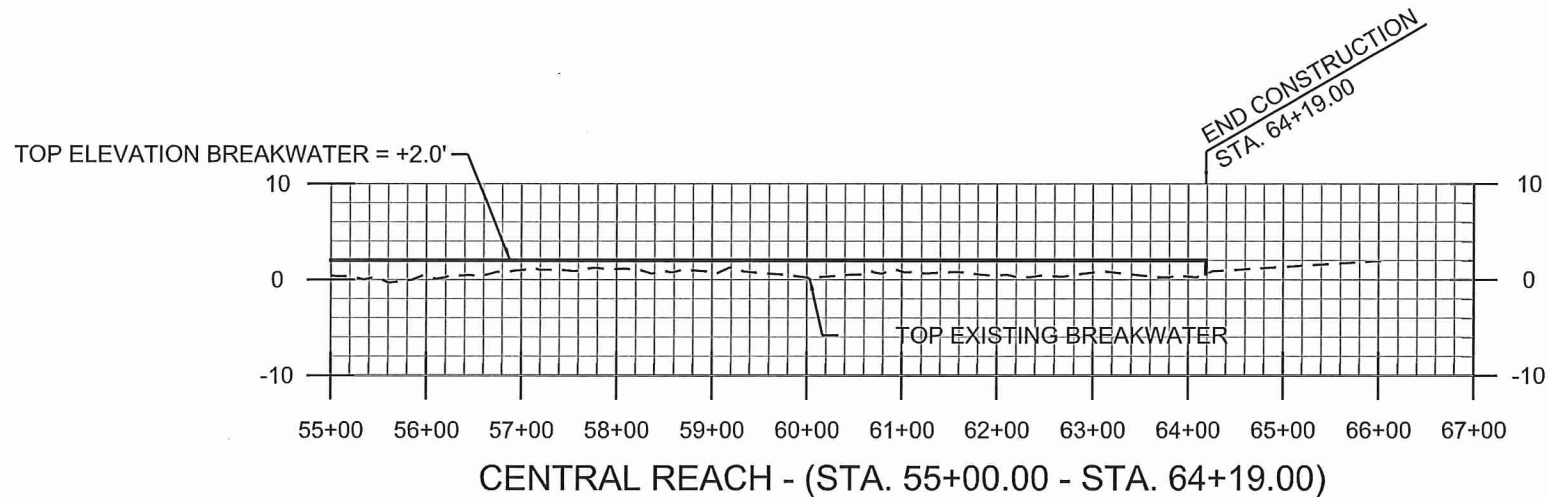
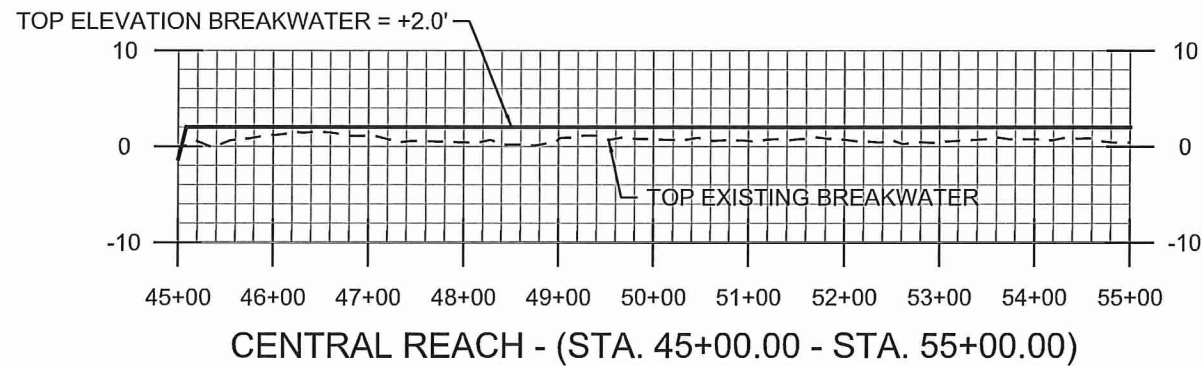
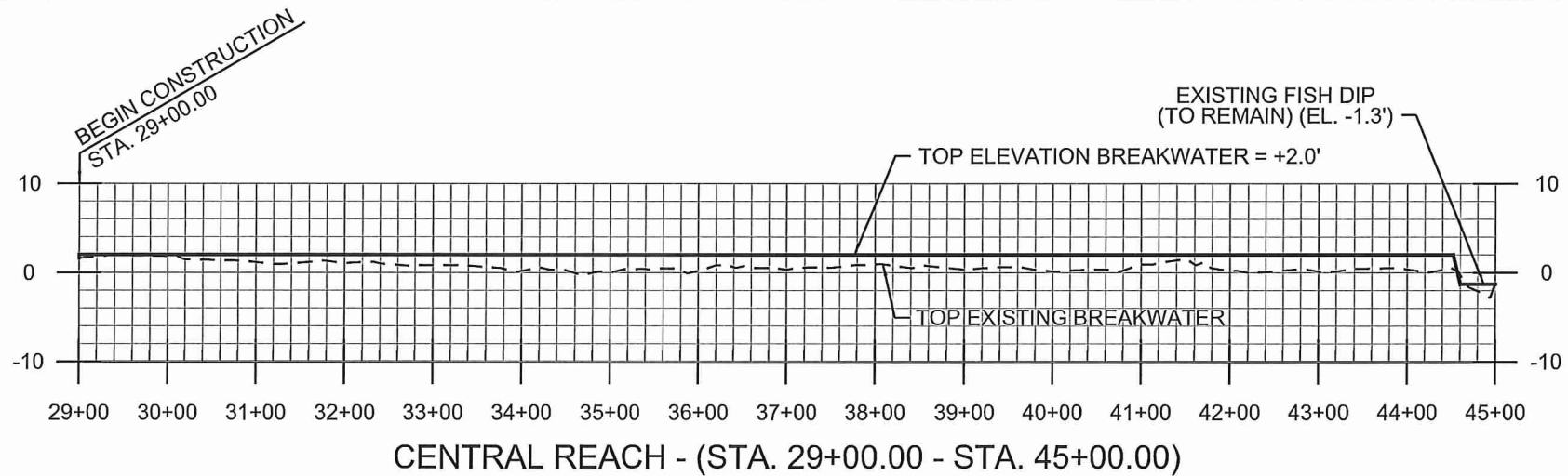
STATE PROJECT NUMBER: BA-41
 FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

BREAKWATER EAST REACH
 STA. 24+00 TO STA. 27+02

DATE: JANUARY 9, 2015

SHEET 8 OF 17



NOTE: EXISTING GROUND INFORMATION PROVIDED BY CPRA

Stantec
 500 MAIN STREET
 BATON ROUGE, LA
 70801

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
 DENNIS M. PASSMAN, P.E.
 REG. No. 27987
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL ENGINEERING
Dennis M. Passman
 1/9/15

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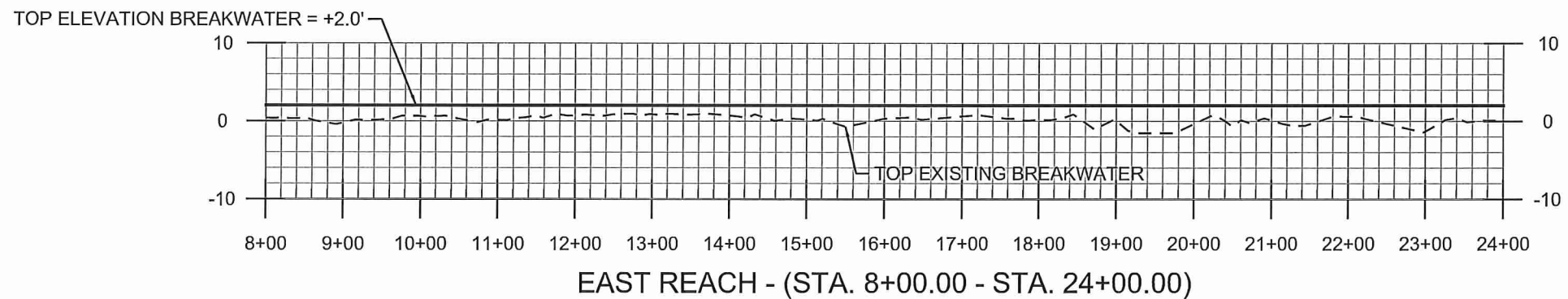
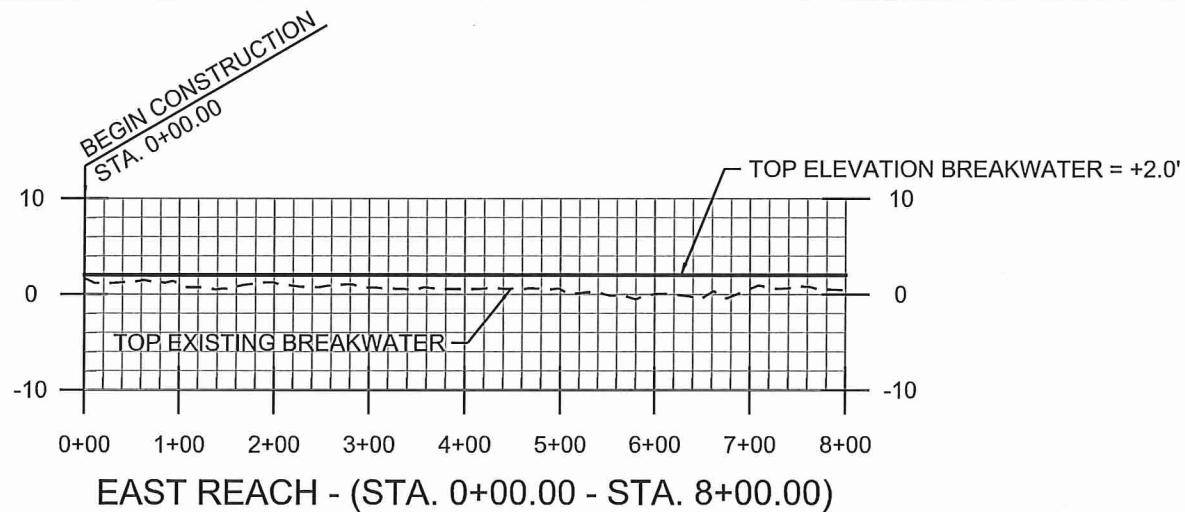
DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF
 THE PEN MAINTENANCE PROJECT
 (BA-41)

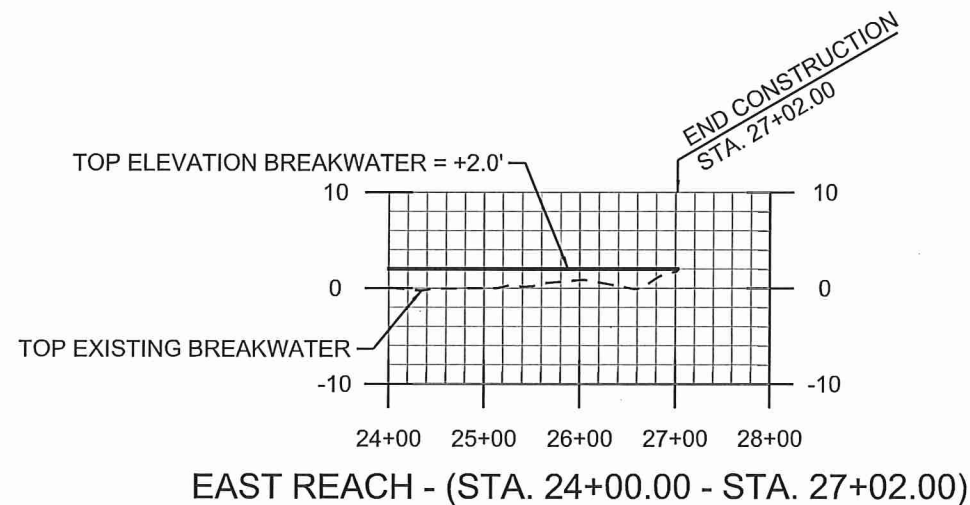
STATE PROJECT NUMBER: BA-41
 FEDERAL PROJECT NUMBER: BA-41
 APPROVED BY: D. PASSMAN

BREAKWATER
 PROFILES
 CENTRAL REACH

DATE: JANUARY 9, 2015
 SHEET 9 OF 17



NOTE: EXISTING GROUND INFORMATION PROVIDED BY CPRA



Stantec
500 MAIN STREET
BATON ROUGE, LA
70801

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DENNIS M. PASSMAN, P.E.
REG. No. 27987
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING
1/9/15

COASTAL PROTECTION AND RESTORATION AUTHORITY

450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: D. HILL

DESIGNED BY: D. SHEETS

SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)

STATE PROJECT NUMBER: BA-41

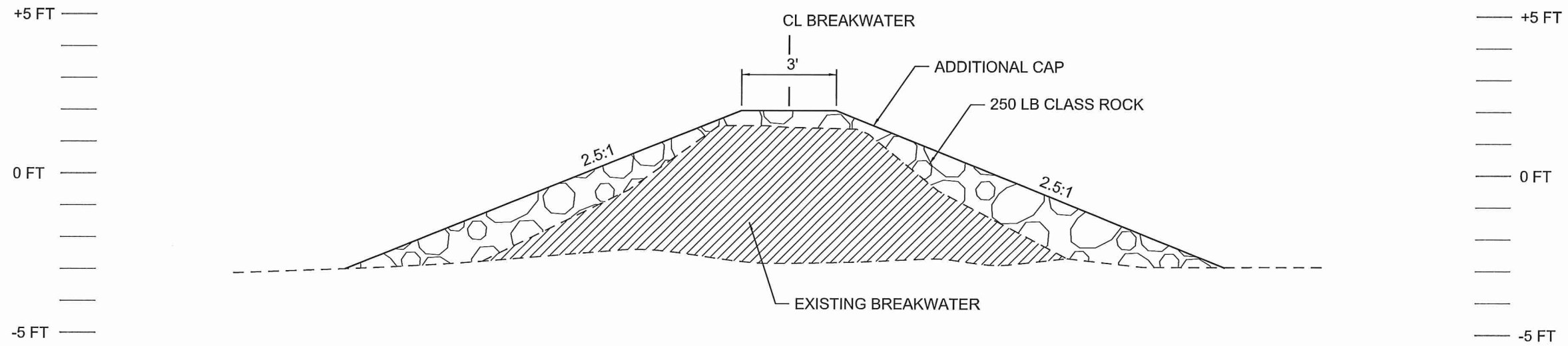
FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN


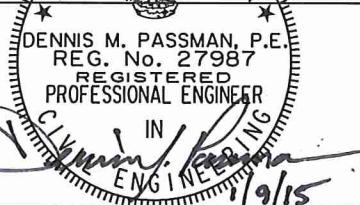
BREAKWATER PROFILES EAST REACH

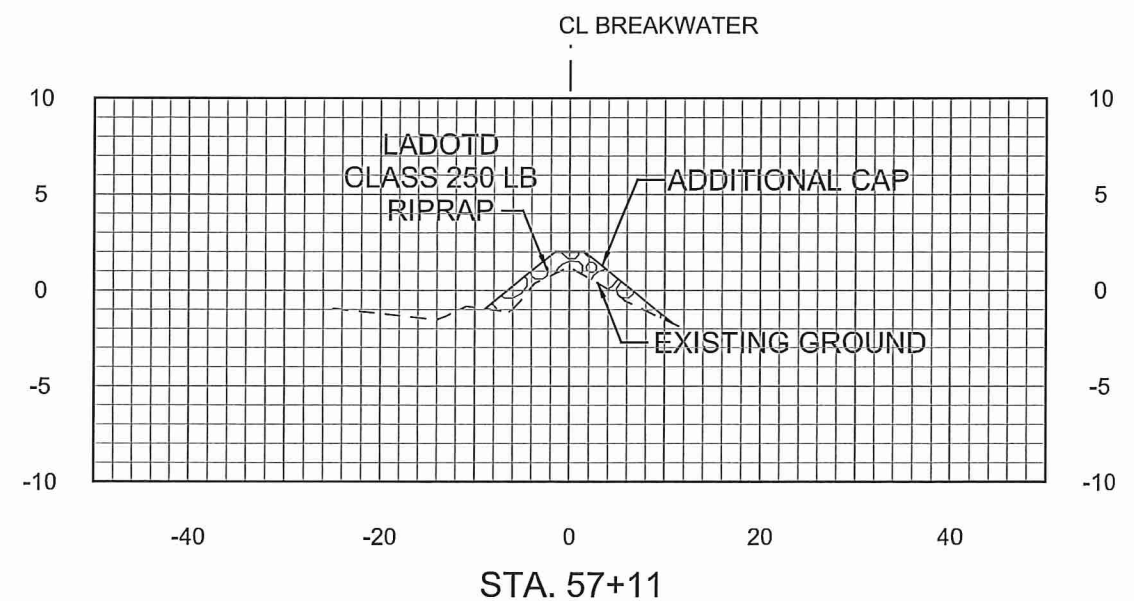
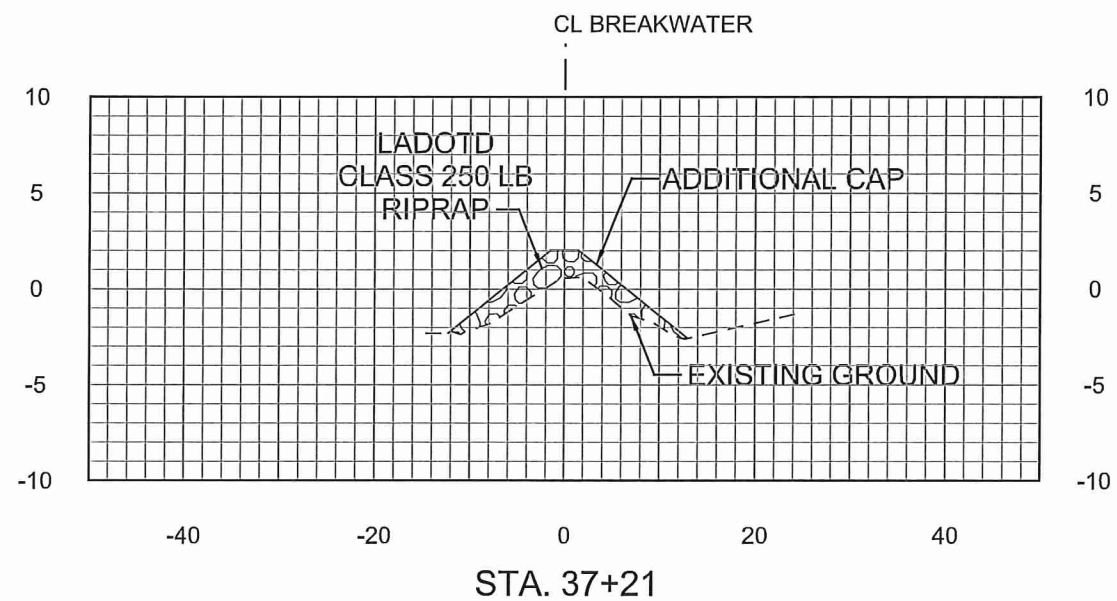
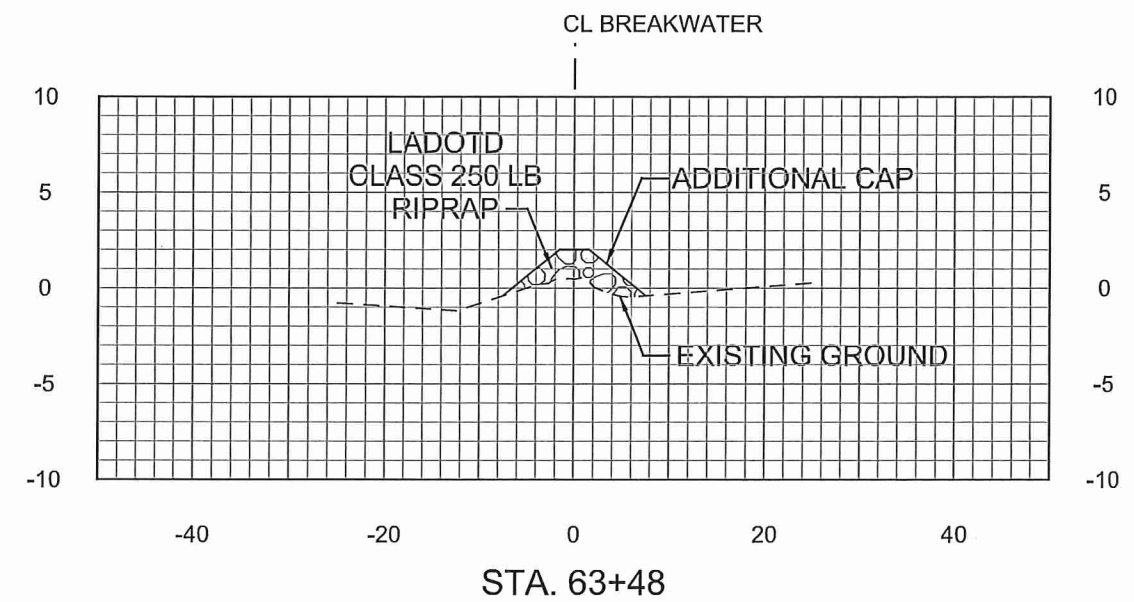
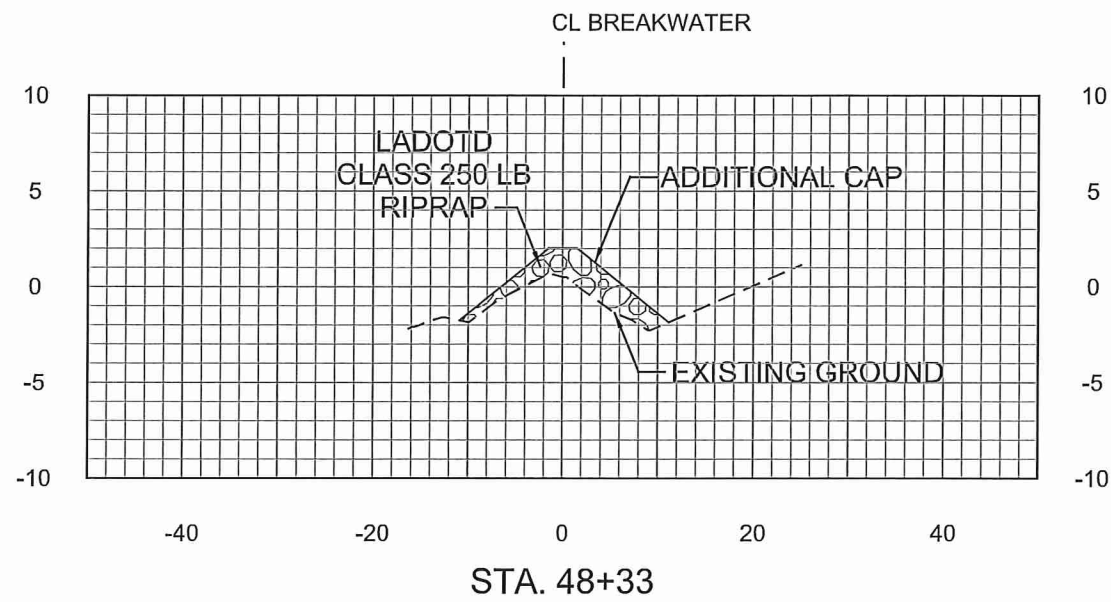
DATE: JANUARY 9, 2015

SHEET 10 OF 17



TYPICAL SECTION - BREAKWATER CAP

 500 MAIN STREET BATON ROUGE, LA 70801				 DENNIS M. PASSMAN, P.E. REG. No. 27987 REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING 1/9/15	COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL STREET BATON ROUGE, LOUISIANA 70801	SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)	TYPICAL SECTION DATE: JANUARY 9, 2015 SHEET 11 OF 17
						STATE PROJECT NUMBER: BA-41	
						FEDERAL PROJECT NUMBER: BA-41	
						APPROVED BY: D. PASSMAN	
	REV.	DATE	DESCRIPTION	BY	DRAWN BY: D. HILL	DESIGNED BY: D. SHEETS	



REV.	DATE	DESCRIPTION	BY

CROSS SECTION DATA
PROVIDED BY CPRA

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

DRAWN BY: D. HILL

DESIGNED BY: D. SHEETS

SOUTH SHORE OF
THE PEN MAINTENANCE PROJECT
(BA-41)

STATE PROJECT NUMBER: BA-41

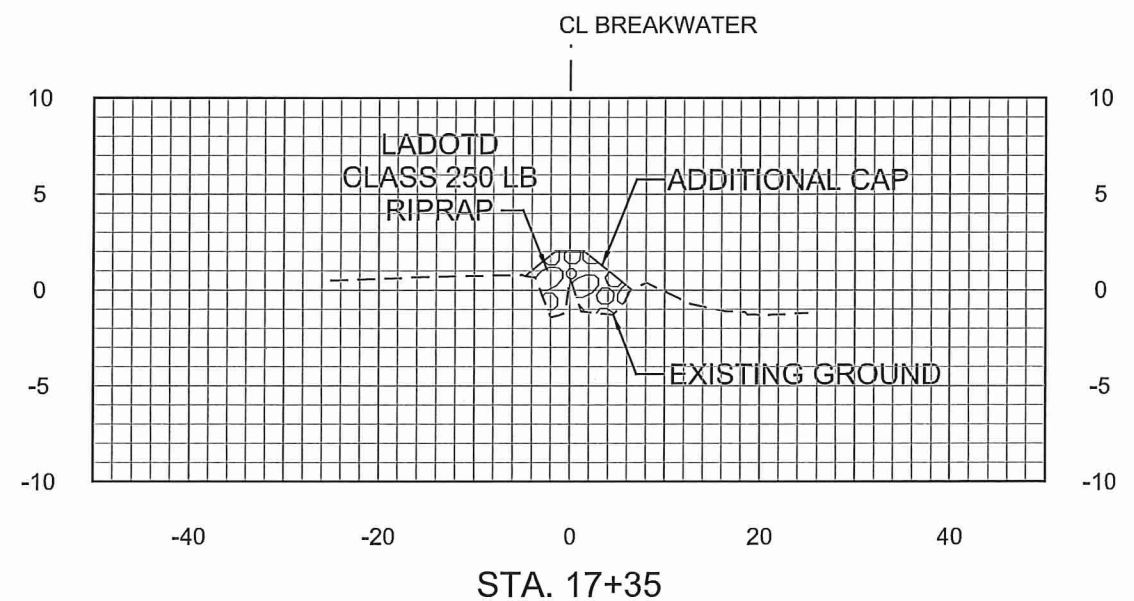
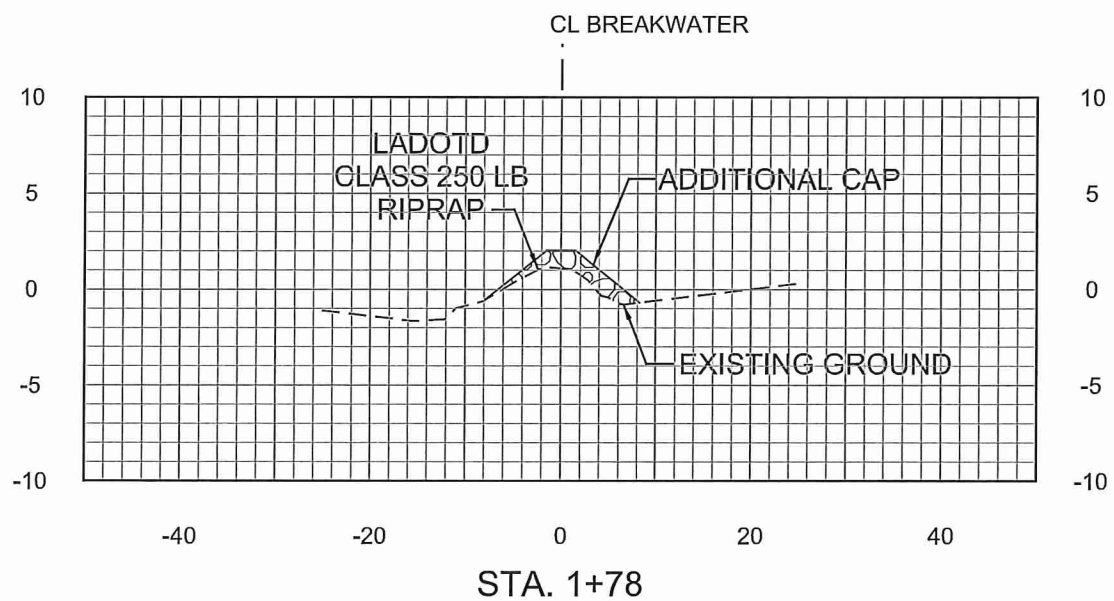
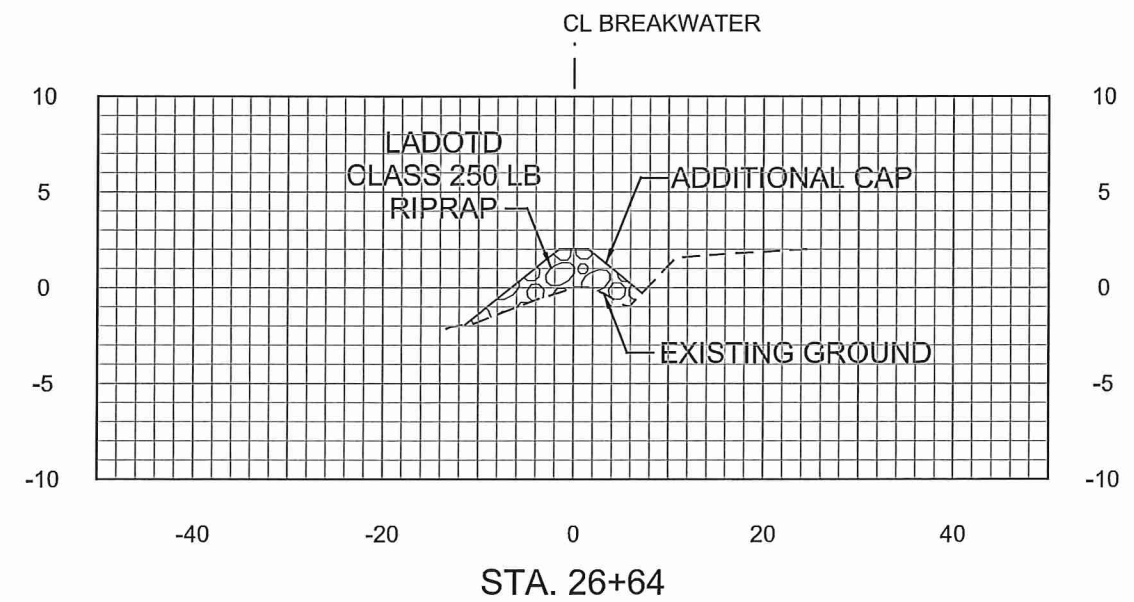
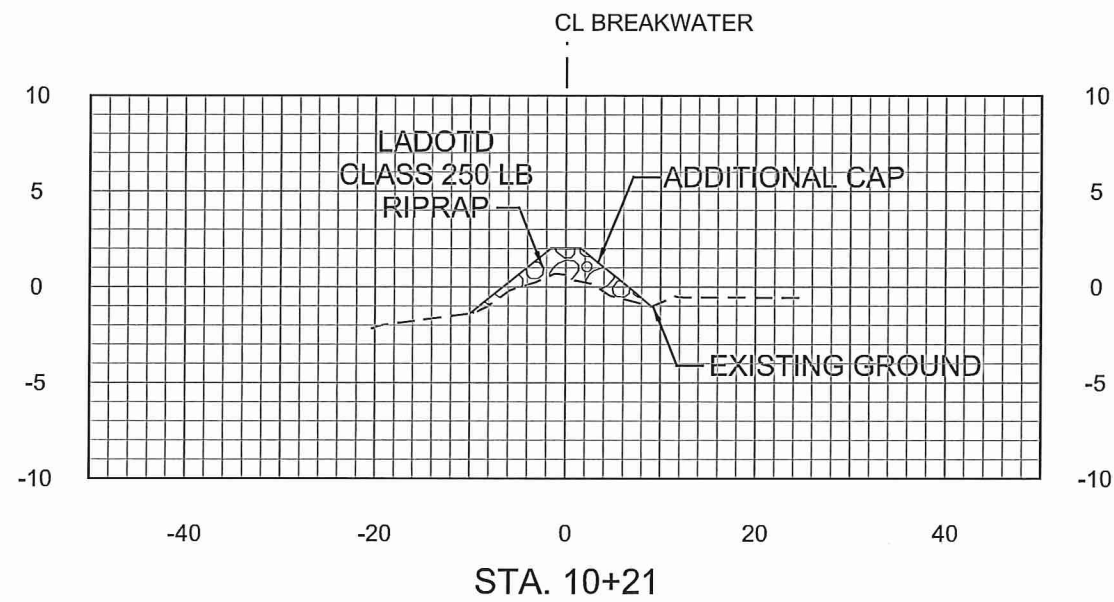
FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

CROSS SECTIONS
CENTRAL REACH

DATE: JANUARY 9, 2015

SHEET 12 OF 17



REV.	DATE	DESCRIPTION	BY

CROSS SECTION DATA
PROVIDED BY CPRA

**COASTAL PROTECTION AND
RESTORATION AUTHORITY**

450 LAUREL STREET
BATON ROUGE, LOUISIANA 70801

DRAWN BY: D. HILL

DESIGNED BY: D. SHEETS

SOUTH SHORE OF
THE PEN MAINTENANCE PROJECT
(BA-41)

STATE PROJECT NUMBER: BA-41

FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

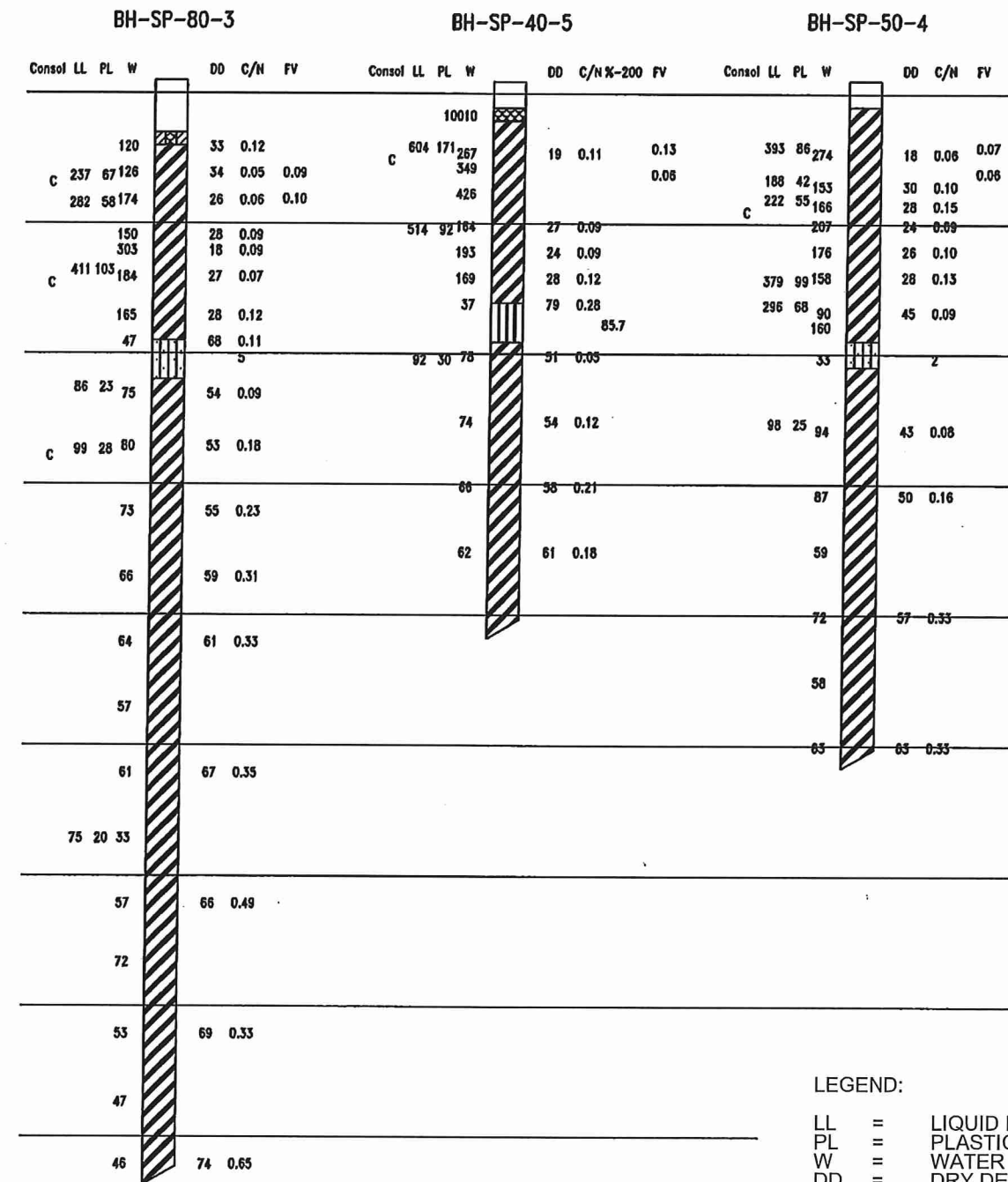
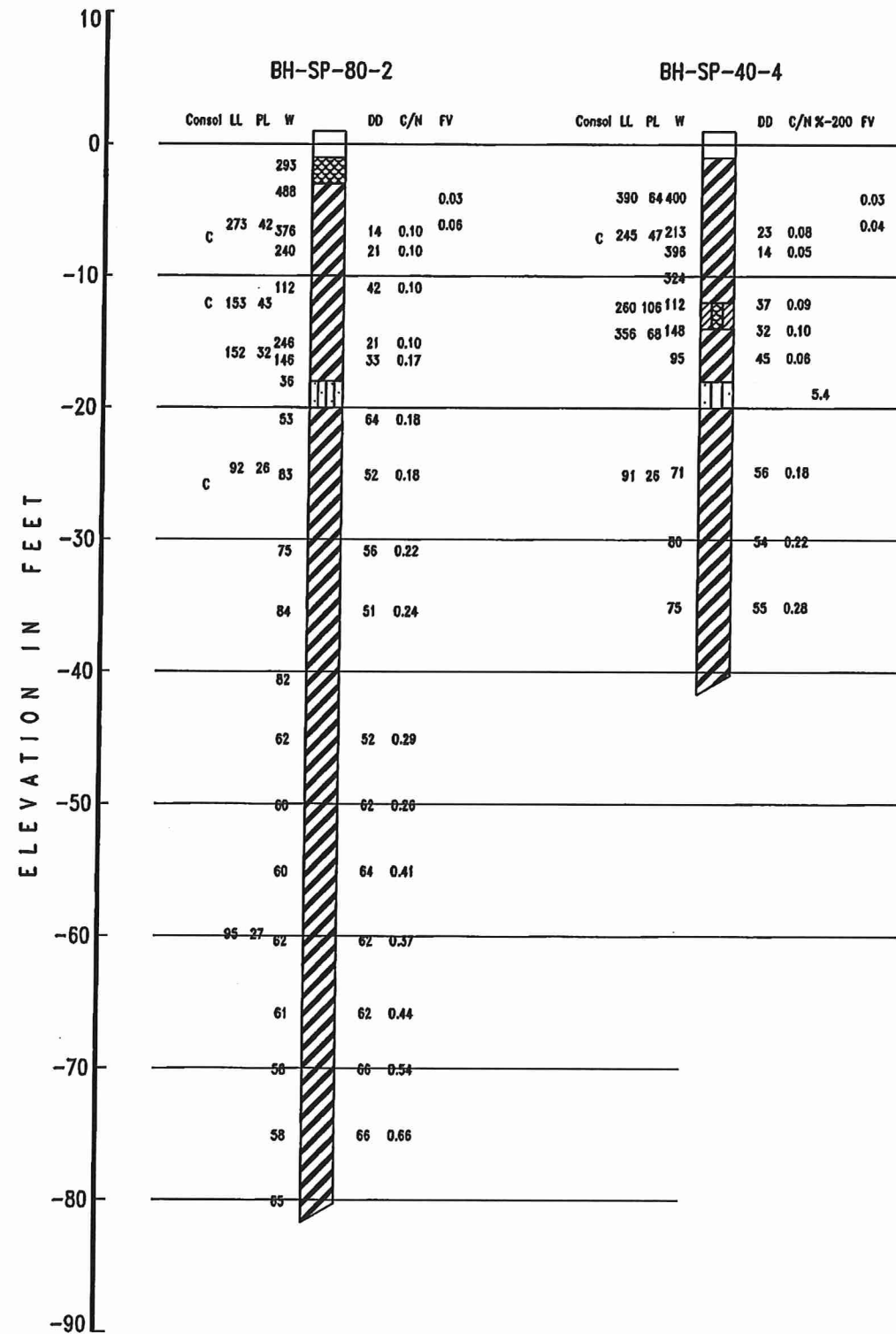
CROSS SECTIONS
EAST REACH

DATE: JANUARY 9, 2015

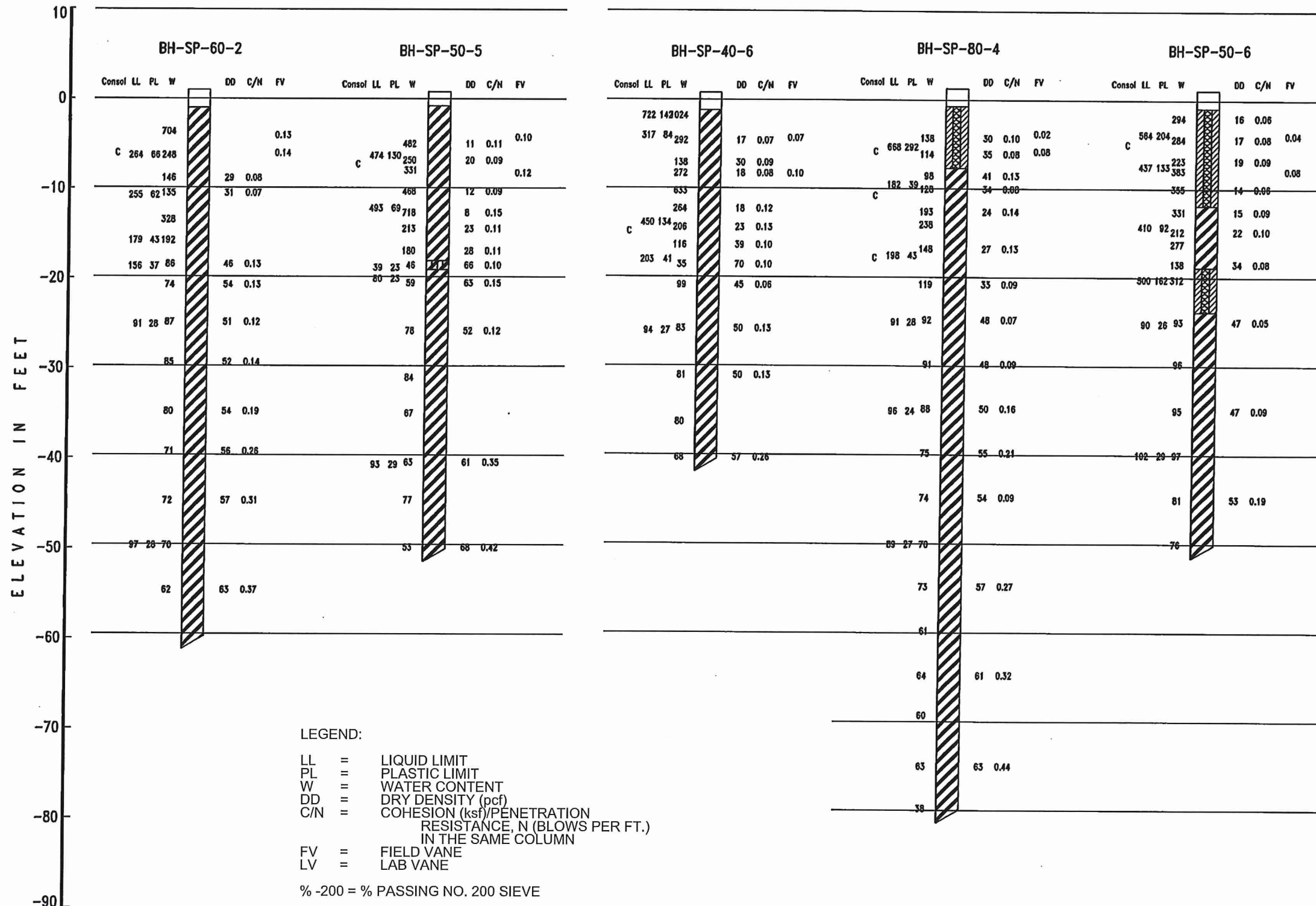
SHEET 13 OF 17

UNIFIED SOIL CLASSIFICATION SYSTEM				
MAJOR DIVISIONS			SYMBOL & LETTER	DESCRIPTION
COARSE-GRAINED SOILS More than half of material larger than No. 200 sieve size	GRAVELS More than half of coarse fraction larger than No. 4 sieve size	Clean Gravels (Little or no fines)	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURE
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURE
		Gravels with fines (Appreciable amount of fines)	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURE
	GC		CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURE	
	SANDS More than half of coarse fraction smaller than No. 4 sieve size	Clean Sands (Little or no fines)	SW	WELL GRADED SAND, GRAVELLY SAND
			SP	POORLY GRADED SAND, GRAVELLY SAND
Sands with fines (Appreciable amount of fines)		SM	SILTY SAND, SAND-SILT MIXTURE	
	SC	CLAYEY SAND, SAND-CLAY MIXTURE		
FINE-GRAINED SOILS More than half of material smaller than No. 200 sieve size	SILTS AND CLAYS	Liquid limit less than 50	ML	SILT WITH LITTLE OR NO PLASTICITY
			ML	CLAYEY SILT, SILT WITH SLIGHT TO MEDIUM PLASTICITY
			ML	SANDY SILT
			CL	SILTY CLAY, LOW TO MEDIUM PLASTICITY
			CL	SANDY CLAY, LOW TO MEDIUM PLASTICITY (30% TO 50% SAND)
	SILTS AND CLAYS	Liquid limit greater than 50	MH	SILT, HIGH PLASTICITY
			CH	CLAY, HIGH PLASTICITY
			OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOIL

REV.	DATE	DESCRIPTION	BY



LEGEND:
 LL = LIQUID LIMIT
 PL = PLASTIC LIMIT
 W = WATER CONTENT
 DD = DRY DENSITY (pcf)
 C/N = COHESION (ksf)/PENETRATION RESISTANCE, N (BLOWS PER FT.) IN THE SAME COLUMN
 FV = FIELD VANE
 LV = LAB VANE
 % -200 = % PASSING NO. 200 SIEVE



REV.	DATE	DESCRIPTION	BY

SOIL INFORMATION PROVIDED BY CPRA

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

DRAWN BY: D. HILL DESIGNED BY: D. SHEETS

SOUTH SHORE OF THE PEN MAINTENANCE PROJECT (BA-41)

STATE PROJECT NUMBER: BA-41
 FEDERAL PROJECT NUMBER: BA-41

APPROVED BY: D. PASSMAN

SOIL LOGS (2 OF 3) BREAKWATER

DATE: JANUARY 9, 2015

SHEET 16 OF 17

