

**(TE-43) Bank Restoration of Critical Areas – Segment No. 4,
(EB-10) GIWW Breach Closure Project – Segment No. 6, and
(TE-34) Penchant Basin Natural Resource Plan – Increment 1**

DATA COLLECTION REPORT

PREPARED FOR:

**COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA**



APRIL 4, 2017

SUBMITTED BY:



**(TE-43) Bank Restoration of Critical Areas – Segment No. 4,
(EB-10) GIWW Breach Closure Project – Segment No. 6, and
(TE-34) Penchant Basin Natural Resource Plan – Increment 1**

DATA COLLECTION REPORT

Prepared for: C.P.R.A.
Coastal Protection and Restoration Authority of Louisiana
Project Management Division
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**(TE-43) Bank Restoration of Critical Areas – Segment No. 4,
(EB-10) GIWW Breach Closure Project – Segment No. 6, and
(TE-34) Penchant Basin Natural Resource Plan – Increment 1**

DATA COLLECTION REPORT

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- Data Collection Report file (PDF format)
- Project digital drawing files (AutoCAD, and PDF format)
- Topographic digital survey point data (csv format)
- LASARD Data files
- Survey Field Notes (PDF Format)

DATA COLLECTION REPORT

(TE-43) Bank Restoration of Critical Areas – Segment No. 4, (EB-10) GIWW Breach Closure Project – Segment No. 6, and (TE-34) Penchant Basin Natural Resource Plan – Increment 1

1.0 INTRODUCTION

The purpose of this document is to identify and outline data collection methods used to support the design of the (TE-43) Bank Restoration of Critical Areas – Segment No. 4, (EB-10) GIWW Breach Closure Project – Segment No. 6, (TE-34) Penchant Basin Natural Resource Plan – Increment 1, and (CIAP) GIWW Breach Closure Project – Segment No. 2B. T. Baker Smith, LLC (TBS), under our 2015 Survey IDIQ Contract (Contract #2503-15-33), has been tasked with collecting topographic data across the project areas as described in the Scope of Services dated December 13, 2016. The services provided under this task order are intended to assist the Coastal Restoration and Protection Authority (CPRA) with the necessary data needed in an organized and workable format for design.

2.0 PROJECT OVERVIEW

The (TE-43) Bank Restoration of Critical Areas – Segment No. 4 and (EB-10) GIWW Breach Closure Project – Segment No. 6 projects are located along the south bank of the Gulf Intracoastal Waterway (GIWW), approximately 10 miles east of the Lower Atchafalaya River and approximately 10 miles southwest of Houma, La. in Terrebonne Parish, Louisiana. The (TE-34) Penchant Basin Natural Resource Plan – Increment 1 project is in Terrebonne Parish located on the south bank of Bayou Chene at the intersection of Bayou Penchant and Bayou Chene. All survey data gathered was referenced to the LDNR Louisiana Coastal Zone (LCZ) GPS Network.

(TE-43) Bank Restoration of Critical Areas – Segment No. 4 project is a continuous 10,579 linear foot composite rock dike section with a lightweight aggregate core along the southern bank of the GIWW, east of Bayou Copasaw. At the time of final project design in 2003, the finished top of the rock dike design was at a +3.5' (NAVD88) elevation. Other features include (9) settlement plates along the existing rock dike of Segment No. 4 and installation of staff gages at the project site.

(EB-10) GIWW Breach Closure Project – Segment No. 6 project is approximately 7,700 linear feet of rock dike along the southern bank of the GIWW east of the Copasaw Canal. This segment of rock has experienced the most severe settlement of all the rock dike segments construction along the southern bank of the GIWW. At the time of final project design in 2003, the finished top of the rock dike design was at a +3.5' (NAVD88) elevation. Other features include (15) settlement plates along the existing rock dike of Segment No. 6 and installation of staff gages at the project site.

(TE-34) Penchant Basin Natural Resource Plan – Increment 1 project is approximately 6,667 linear feet of rock dikes and two (2) marsh creation areas totaling 30 acres at the mouth of Bayou Penchant near Bayou Chene. These rock structures were constructed to protect and provide containment for the 30 acres of marsh creation on both sides of Bayou Penchant and along the bank the Bayou Chene. At the time of final project design in 2009, the finished top of the rock dike design was at a +3.5' (NAVD88) elevation and the target marsh elevation in this area was +2.0' (NAVD88). Other features include (7) settlement plates along the rock dike containment (four (4) along the east dike and three (3) along the west dike) at the mouth of Bayou Penchant on Increment 1 and installation of a staff gage at the project site.

(CIAP) GIWW Breach Closure Project – Segment No. 2B project is approximately 4,376 linear feet of rock dike along the southern bank of the GIWW. This segment of rock was an additional area of interest to CPRA for possible settlement since construction of the rock dike. Other features include installation of staff gages at the project site.

3.0 DATA COLLECTION SUMMARY

Once access was granted from all land owners, TBS field crews began data collection during the period of December 2016 through January 2017 using airboats for marine transportation throughout the project area as specified in the scope of work provided by CPRA dated December 13, 2016. This data collection task consisted of topographic surveys within the (TE-43) Bank Restoration of Critical Areas – Segment No. 4, (EB-10) GIWW Breach Closure Project – Segment No. 6, (TE-34) Penchant Basin Natural Resource Plan – Increment, and (CIAP) GIWW Breach Closure Project – Segment No. 2B project areas.

3.1 TOPOGRAPHIC SURVEYS

A. (TE-43) Bank Restoration of Critical Areas – Segment No. 4

Topographic surveys were performed along the centerline profile of the existing rock dike and forty-four (44) transects across dike along Segment No. 4 of the GIWW Bank Restoration (TE-43). The points along the survey profile were taken at 50 feet intervals along the centerline of the rock dike and at abrupt changes in elevations along the profile. All transects were taken at 250 feet intervals as shown on the attached as-built drawings. Transects were surveyed perpendicular to the project baseline with points taken at 10 feet intervals and at all abrupt changes in elevation. Transects extended out 100 feet on the GIWW side and 50 feet on the marsh side or to the vegetative line of the marsh. TBS was able to recover 5 of 9 settlement plates on Segment No. 4 of the GIWW Bank Restoration Project (TE-43). The Segment No. 4 overall plan view is shown on sheet 5 of the deliverables.

B. (EB-10) GIWW Breach Closure Project – Segment No. 6

Topographic surveys were performed along a centerline profile of the existing rock dike along Segment No. 6 of the GIWW Breach Closure Project (EB-10). The points along the survey profile were taken at 100 foot intervals along the centerline crest elevation of the existing rock dike and at abrupt changes along the profile. There were no survey transects taken for this Segment No. 6. TBS was able to recover 5 of 15 settlement plates on Segment No. 6 of the GIWW Breach Closure Project (EB-10). The Segment No. 6 overall plan view is shown on sheet 2 of the deliverables.

C. (TE-34) Penchant Basin Natural Resource Plan – Increment 1

Topographic surveys were performed along a centerline profile of the two (2) existing rock dikes and twenty-six (26) Marsh Creation Transects across the 30 acres of marsh area for Increment 1 of the Penchant Basin Resources Plan (TE-34) project. The points along the survey profile were taken at 50 feet intervals along the centerline of the rock dikes and at abrupt changes in

elevations along the profile. All Marsh Creation Transects were taken at 250 foot intervals along the centerline of the rock dikes and were surveyed perpendicular to the project baseline. Positions and elevations along the marsh creation transects were recorded at 50 foot intervals along each transect or where elevation changes of greater than 0.5 feet occur. A 6-inch diameter metal plate was attached to the bottom of the survey rod to prevent the rod from sinking. The Marsh Creation transects extended from the centerline of the rock dike to approximately 25 feet past the vegetative line of the marsh. TBS was able to recover 6 of 7 settlement plates on Increment 1 of the Penchant Basin Natural Resource Plan (TE-34). The Increment 1 overall plan view is shown on sheet 21 of the deliverables.

D. (CIAP) GIWW Breach Closure Project – Segment No. 2B

Topographic surveys were performed along a centerline profile of the existing rock dike along Segment No. 2B of the GIWW Breach Closure Project (CIAP). The points along the survey profile were taken at approximately 500 foot intervals along the centerline crest elevation of the existing rock dike and at abrupt changes along the profile. There were no survey transects taken for this Segment No. 2B. The Segment No. 2B overall plan view is shown on sheet 20 of the deliverables.

3.3 STAFF GAGES

TBS established seven (7) staff gages in the project area that can be easily accessed near (TE-43) Bank Restoration of Critical Areas – Segment No. 4, (EB-10) GIWW Breach Closure Project – Segment No. 6, (TE-34) Penchant Basin Natural Resource Plan – Increment 1, and (CIAP) GIWW Breach Closure Project – Segment No. 2B portions of this project. The locations were chosen after site visit by Continental Land and Fur representative Greg Linscombe. The installation and surveying techniques used for the setting the staff gages followed the guidelines listed in Section J of the survey manual entitled “A Contractor’s Guide to Minimum Standards”, January 2013, which has been published by CPRA to assist in surveying contractors. The staff gages were surveyed into the LCZ Secondary Network using the Secondary Monuments “TE43-SM-C” and “CRMSTE-SM-11”.

Two (2) staff gages were set at (TE-43) Bank Restoration of Critical Areas – Segment No. 4 at the far north and south ends of the project area. The staff gages were placed on existing pilings with the elevation of the gage set to NAVD88 (Geoid 12A) as shown on sheet 5 of the deliverables.

Two (2) staff gages were set at (EB-10) GIWW Breach Closure Project – Segment No. 6 at the far north and south ends of the project area. The staff gage located at the north end was placed on an existing piling and set to NAVD88 Geoid 12A Elevation. The staff gage located at the south end was placed on a 4-inch by 4-inch post that was set by TBS with the elevation of the staff gage set to NAVD88 (Geoid 12A) as shown on sheet 2 of the deliverables

One (1) staff gages was set at (TE-34) Penchant Basin Natural Resource Plan – Increment 1 along the west bank of Bayou Penchant near the south end of the west project area. The staff gages were placed on existing pilings with the elevation of the gage set to NAVD88 (Geoid 12A), as shown on sheet 21 of the deliverables

Two (2) staff gages were set at (CIAP) GIWW Breach Closure Project – Segment No. 2B at the far northwest and southeast ends of the project area. The staff gages were placed on existing pilings with the elevation of the gage set to NAVD88 (Geoid 12A) as shown on sheet 20 of the deliverables

4.0 SURVEY METHODOLOGY

The RTK base station was set up over secondary monuments “TE43-SM-C” and “CRMSTE-SM-11” and used to transmit real time corrections to the rover unit, where horizontal and vertical positions were established on all data collected within the respective project areas. For QA/QC purposes, static surveys were performed at both Secondary Monuments “TE43-SM-C” and “CRMSTE-SM-11”. The results of those surveys were sent to OPUS for processing and returned negligible differences. Geographic coordinates are provided as NAD 83 latitudes and longitudes. The adjusted data was also converted to UTM, NAD 83 (Zone 15) meters.

The survey data was downloaded from the Trimble TSC-2 Data Collector into the Trimble Business Center software for processing. This software allows for additional QA/QC of GPS data, and was used to check for instrument setup errors, antenna height errors, and other blunders. The survey data was exported to digital point files and then entered into AutoCAD for drawing creation.

The processed survey data was exported into one combined digital csv file containing X, Y, & Z coordinates, and then formatted into the required LASARD file deliverables.

4.1 SURVEY CONTROL AND DATUM INFORMATION

The equipment used for control and all data collected on this project was a Trimble R8 base station, a Trimble R8 rover unit, and a Trimble TSC-2 data collector. All survey data was recorded using established control from CPRA Secondary Monuments “TE43-SM-C” and “CRMSTE-SM-11”. The established horizontal data for the monument is in Louisiana South Zone (1702) NAD 83, U.S. Survey feet, with vertical datum of NAVD 88 (Geoid 12A). Data Sheets for these monuments are provided in Appendix A.

4.2 WATER HEIGHT DERIVATION

During the project, daily top of water shots was taken with RTK, and compared to the electronic top of water data gathered from the CRMS5035-SG-H01, which is located near the project site. There was a total of 29 top of water elevation shots gathered and compared with the electronic data, which resulted in an average comparison difference of -0.17’ in elevation. This data from 11/19/2008 through 12/27/2016 was also utilized to calculate the MSL (the arithmetic mean of hourly heights), MHW (the average of all the high water heights), and MLW (the average of all low water heights). The following table shows the breakdown of the computed average tidal data in NAVD88 datum:

CRMS5035-SG-H01 Tide Gauge	
MHW	1.6’
Mean	1.2’
MLW	0.7
Diurnal Range	0.9’

4.3 TOPOGRAPHIC SURVEYS

Topographic surveys were performed using TBS survey crews accessing the survey area by airboat. A Trimble R8 RTK unit was used to collect the topographic field data. For the subaqueous portions of cross-sections, water bottom data was collected with RTK GPS using a standard 2.0 meter range pole with a 6” diameter bottom plate, and also by taking manual soundings using a standard 25’ stadia rod with a 6” diameter bottom plate. RTK GPS was used for horizontal positioning of each sounding. All soundings were referenced to an RTK GPS observed top of water elevation at the time of survey.

APPENDIX A

Survey Benchmark Datasheets



VICINITY MAP

1 Inch = 3,000 feet

Reproduced from NAIP Louisiana 2013 1m Aerial Imagery

Station Name: TE43 SM C

Location: The monument is located on the eastern bank line of an unnamed canal approximately 350 feet south of its intersection with the Intracoastal Waterway. To access this monument from Bob's Bayou Black Marina, proceed westerly in Shell Canal to the Intracoastal Waterway. Thence easterly in the Intracoastal Waterway approximately 5.5 miles to the intersection of said unnamed canal.

Monument Description: NGS Style floating sleeve monument; 9/16" stainless steel rods driven to refusal, set in a sand filled 6" PVC pipe with access cover set flush with the ground.

Stamping: TE43 SM C

Installation Date: 2002 **Date of Survey:** 2014

Monument Established By: N/A

NAD83 (2011) Epoch 2010.00 Geodetic Position

Lat: 29°33'17.88493"N
 Long: 90°55'06.66180"W

NAD83 (2011) Epoch 2010.00 Datum LSZ (1702) Ft

N= 383,894.00'
 E= 3,412,721.45'

Adjusted NAVD88 Height

Elevation = 1.85 feet (0.565 mtrs)
 Ellipsoid Height (2011.00) = -24.543mtrs.
 Geoid12A Height = -25.108 mtrs.

FOR REFERENCE ONLY

LCZ Adjusted NAVD88 Height
 Elevation (Geoid09)= N/A
 Ellipsoid Height = N/A
 Elevation (Geoid03)= N/A
 Ellipsoid Height = N/A
 Elevation (Geoid99)= 3.35 feet (1.022mtrs.)
 Ellipsoid Height = -24.328 mtrs.





VICINITY MAP Scale: 1" = 2000'

2013 NAIP imagery provided by USDA Farm Service Agency

Station Name: "CRMSTE-SM-11"

Monument Location: From Bayou Black Marina in Gibson, Louisiana, proceed southerly in an unnamed canal approximately 0.2 miles to Shell Canal, then proceed westerly in Shell Canal approximately 1.4 miles, then proceed southerly in Shell Canal approximately 1.5 miles to the Intracoastal Waterway, then proceed southwesterly in the Intracoastal Waterway approximately 3.0 miles to Copasaw Canal, then proceed southerly in Copasaw Canal approximately 2.2 miles to Bayou Copasaw, then proceed in Bayou Copasaw approximately 4.9 miles to Bayou Penchant, then proceed westerly in Bayou Penchant approximately 14.8 miles to an unnamed canal, then proceed southwesterly in the unnamed canal approximately 0.4 miles to the monument located on the north bank of the unnamed canal

Monument Description: NGS Style floating sleeve monument; 9/16" stainless steel rods driven 100 feet to refusal, set in a sand filled 6" PVC pipe with access cover.

Stamping: CRMSTE-SM-11

Installation Date: 09/29/07

Date of Survey: May 2014

Monument Established By: Morris P. Hebert, Inc.

For: Louisiana Department of Natural Resources, CRD

Adjusted NAD 83 Geodetic Position

Lat. 29°31'51.9418" N

Long. 91°06'47.1019" W

Adjusted NAD 83 Datum LSZ (1702) Feet

N= 375,041.20

E= 3,350,877.02

Adjusted UTM, NAD 83 Datum (Zone 15) Meters

N= 3,268,313.159

E= 682,855.281

Adjusted NAVD88 (2011) Height

Elevation Geoid12A = 2.74 ft (0.835mtrs)

Elevation Geoid99 = 3.36ft (1.023 mtrs)

Ellipsoid Height = -24.304 mtrs.

Geoid 12A Height = -25.139 mtrs.

Ellipsoid Height = -24.304 mtrs.

Geoid99 Height = -25.327 mtrs.



TERREBONNE PARISH, LOUISIANA

SHEET NO.	INDEX TO SHEETS DESCRIPTION
1.....	OVERALL PLAN VIEW
2.....	EB-10 SEGMENT 6 PLAN OVERVIEW
3-4.....	EB-10 SEGMENT 6 CENTERLINE
5.....	TE-43 SEGMENT 4 PLAN OVERVIEW
6-9.....	TE-43 SEGMENT 4 PLAN VIEW
10-11.....	TE-43 SEGMENT 4 CENTERLINE
12-19.....	TE-43 SEGMENT 4 CROSS SECTIONS
20.....	CIAP SEGMENT 2B PLAN OVERVIEW
21.....	TE-34 PENCHANT PLAN OVERVIEW
22-23.....	TE-34 PENCHANT CENTERLINE
24-31.....	TE-34 PENCHANT TRANSECTS

T 17 S - R 12 E

T 16 S - R 13 E

T 16 S - R 14 E

T 16 S - R 15 E

T 17 S - R 13 E

T 17 S - R 14 E

T 17 S - R 15 E

T 18 S - R 14 E

T 18 S - R 13 E

T 18 S - R 15 E

PENCHANT BASIN
NATURAL RESOURCE -
INCREMENT 1 (TE-34)
6,667'

GIWW BREACH
CLOSURE PROJECT
(CIAP) - SEGMENT 2B
4,376'

GIWW BANK
RESTORATION OF
CRITICAL AREAS
(TE-43) - SEGMENT 4
10,578'

GIWW BREACH
CLOSURE PROJECT
(EB10) - SEGMENT 6
7,768'

"CRMSTE-SM-11"
ELEVATION = 2.74' (GEOID 12A)
X = 3,350,877.02' NAD 83
Y = 375,041.20' NAD 83
LAT = 29° 31' 51.9418" NAD 83
LONG = 91° 6' 47.1019" NAD 83

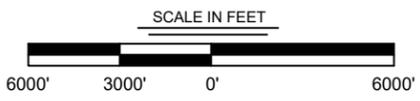
"TE-43-SM-C"
ELEVATION = 1.85' (GEOID 12A)
X = 3,412,721.45' NAD 83
Y = 383,894.00' NAD 83
LAT = 29° 33' 17.8849" NAD 83
LONG = 90° 55' 6.6618" NAD 83

LEGEND	
	ROCK DIKE CENTERLINE
	BENCHMARK

- SURVEY NOTES:**
- ROCK DIKE SURVEY PERFORMED DECEMBER 28, 2016 TO JANUARY 13, 2017 BY T. BAKER SMITH, LLC.
 - ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD 83, IN U.S. SURVEY FEET. GEOGRAPHIC COORDINATES ARE NAD 83.
 - THE VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD 88 (GEOID 12A), IN U.S. SURVEY FEET.
 - THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 - BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.

I CERTIFY THAT THE TOPOGRAPHIC SURVEY DEPICTED ON THIS PLAN WAS PERFORMED ON THE GROUND UNDER MY SUPERVISION IN ACCORDANCE WITH GENERALLY ACCEPTED SURVEY PRACTICES. THIS SURVEY DOES NOT MEET THE STANDARDS OF PRACTICE FOR BOUNDARY SURVEYS AS SET FORTH BY THE LOUISIANA PROFESSIONAL ENGINEERS AND LAND SURVEYORS BOARD.

APPROVED:
Evan M. Chiasson
 License No. 5139
 PROFESSIONAL
 L.A. LAND SURVEYOR REG. NO. 5139
 P.O. BOX 2266, HOUMA, LA 70361 (985)888-1050



DRAWN BY:	EMC	APPROVED BY:	KAK
DATE:	4/4/2017	JOB NO:	2016.0971
DRAWING NAME:	SHEET 1.DWG		
PROJECTION:	LA SOUTH ZONE 1702		
GEO. DATUM:	NAD83 VERT. DATUM: NAVD88		
GRID UNITS:	US SURVEY FEET		
SHEET NO:	1	OF	31

OVERALL PLAN VIEW

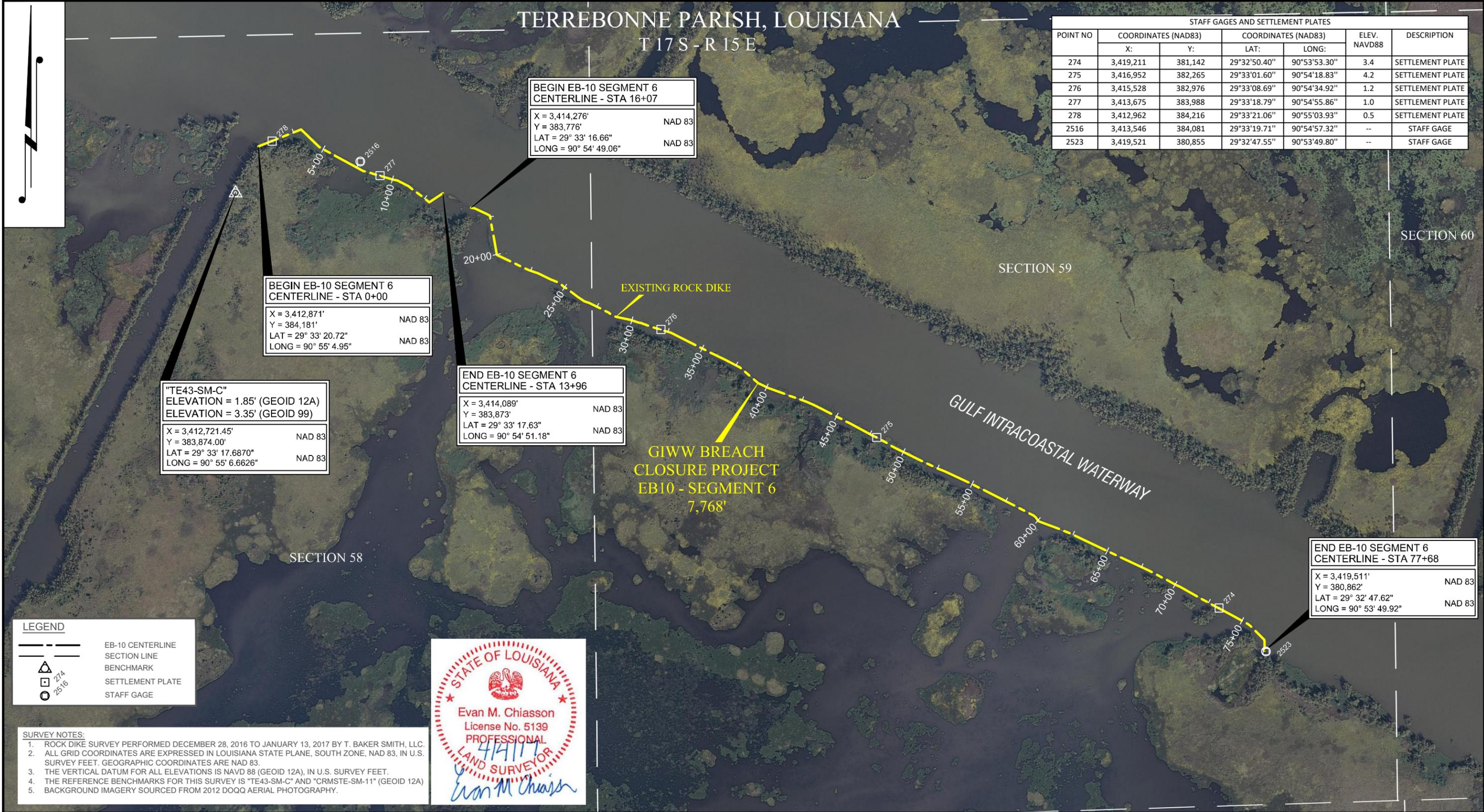
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
 GIWW BREACH CLOSURE (EB-10)
 PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
 COASTAL PROTECTION AND RESTORATION AUTHORITY
 OF LOUISIANA
 TERREBONNE PARISH, LOUISIANA



4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 1.DWG

TERREBONNE PARISH, LOUISIANA
T 17 S - R 15 E

POINT NO	COORDINATES (NAD83)		COORDINATES (NAD83)		ELEV. NAVD88	DESCRIPTION
	X:	Y:	LAT:	LONG:		
274	3,419,211	381,142	29°32'50.40"	90°53'53.30"	3.4	SETTLEMENT PLATE
275	3,416,952	382,265	29°33'01.60"	90°54'18.83"	4.2	SETTLEMENT PLATE
276	3,415,528	382,976	29°33'08.69"	90°54'34.92"	1.2	SETTLEMENT PLATE
277	3,413,675	383,988	29°33'18.79"	90°54'55.86"	1.0	SETTLEMENT PLATE
278	3,412,962	384,216	29°33'21.06"	90°55'03.93"	0.5	SETTLEMENT PLATE
2516	3,413,546	384,081	29°33'19.71"	90°54'57.32"	--	STAFF GAGE
2523	3,419,521	380,855	29°32'47.55"	90°53'49.80"	--	STAFF GAGE



**BEGIN EB-10 SEGMENT 6
CENTERLINE - STA 0+00**
X = 3,412,871' NAD 83
Y = 384,181' NAD 83
LAT = 29° 33' 20.72" NAD 83
LONG = 90° 55' 4.95" NAD 83

**BEGIN EB-10 SEGMENT 6
CENTERLINE - STA 16+07**
X = 3,414,276' NAD 83
Y = 383,776' NAD 83
LAT = 29° 33' 16.66" NAD 83
LONG = 90° 54' 49.06" NAD 83

**"TE43-SM-C"
ELEVATION = 1.85' (GEOID 12A)
ELEVATION = 3.35' (GEOID 99)**
X = 3,412,721.45' NAD 83
Y = 383,874.00' NAD 83
LAT = 29° 33' 17.6870" NAD 83
LONG = 90° 55' 6.6626" NAD 83

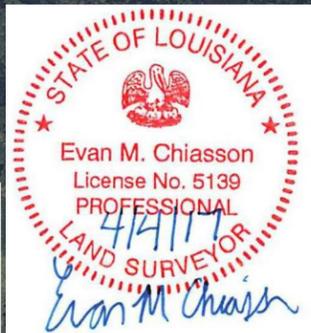
**END EB-10 SEGMENT 6
CENTERLINE - STA 13+96**
X = 3,414,089' NAD 83
Y = 383,873' NAD 83
LAT = 29° 33' 17.63" NAD 83
LONG = 90° 54' 51.18" NAD 83

**END EB-10 SEGMENT 6
CENTERLINE - STA 77+68**
X = 3,419,511' NAD 83
Y = 380,862' NAD 83
LAT = 29° 32' 47.62" NAD 83
LONG = 90° 53' 49.92" NAD 83

LEGEND

	EB-10 CENTERLINE
	SECTION LINE
	BENCHMARK
	SETTLEMENT PLATE
	STAFF GAGE

- SURVEY NOTES:**
- ROCK DIKE SURVEY PERFORMED DECEMBER 28, 2016 TO JANUARY 13, 2017 BY T. BAKER SMITH, LLC.
 - ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD 83, IN U.S. SURVEY FEET. GEOGRAPHIC COORDINATES ARE NAD 83.
 - THE VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD 88 (GEOID 12A), IN U.S. SURVEY FEET.
 - THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 - BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



TBS
T. BAKER SMITH
SOLUTIONS START HERE
412 South Van Ave, Houma, LA 70363
(985)668-1050 - tbsmith.com

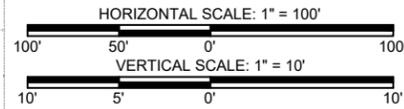
SCALE IN FEET
600' 300' 0' 600'

REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 2.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 2	OF 31

EB-10 SEGMENT 6 PLAN OVERVIEW
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43),
GIWW BREACH CLOSURE (EB-10) AND
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA

4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 2.DWG

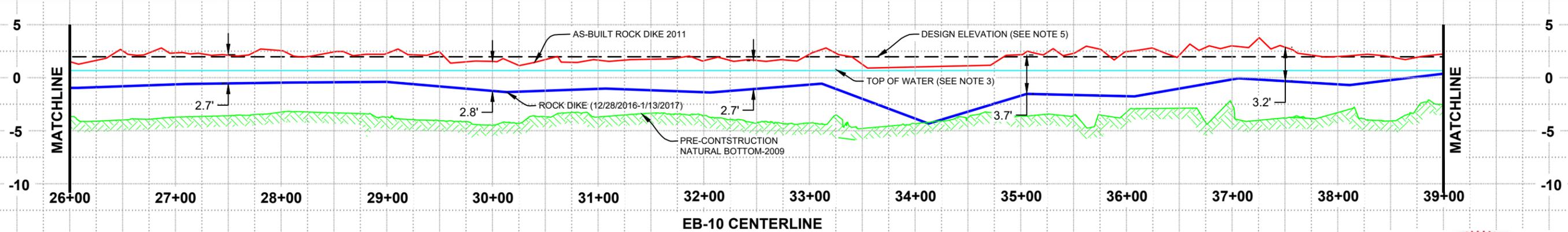
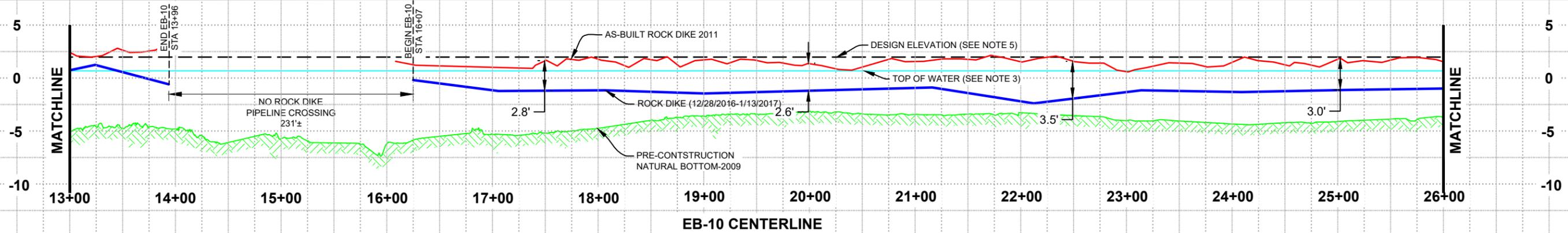
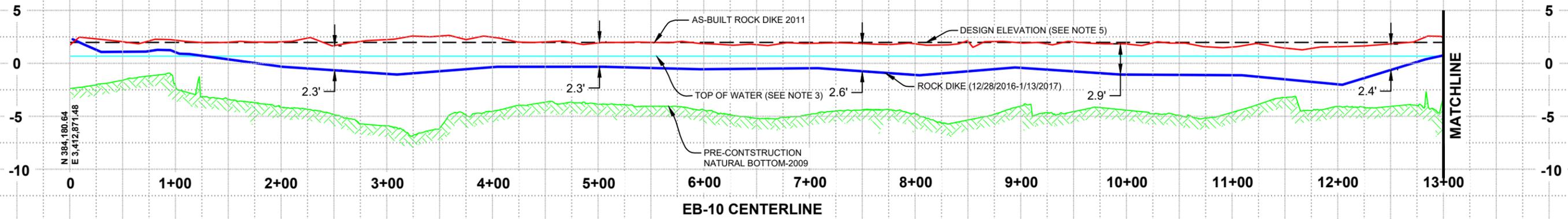


LEGEND

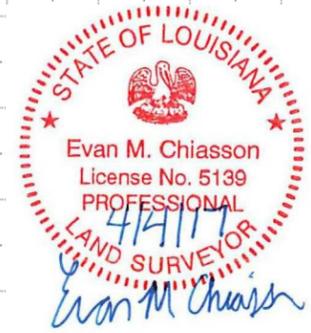
- PRE-CONSTRUCTION NATURAL BOTTOM-2009
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2011
- TOP OF WATER (SEE NOTE 3)

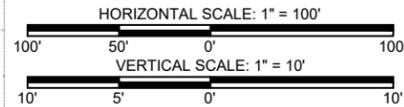
NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



EB-10 SEGMENT 6 CENTERLINE		DATE: 4/4/2017	SHEET 3 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		DESIGNED BY:	
FEDERAL PROJECT NUMBER:		DRAWN BY: EMC	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		BY	
BY		DESCRIPTION	
REV		DATE	



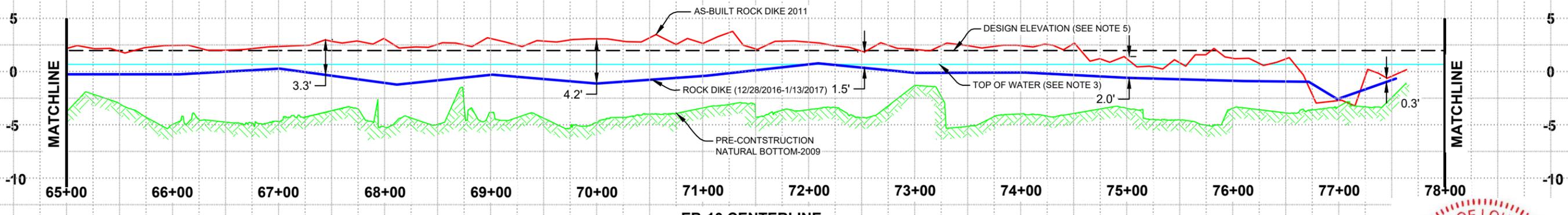
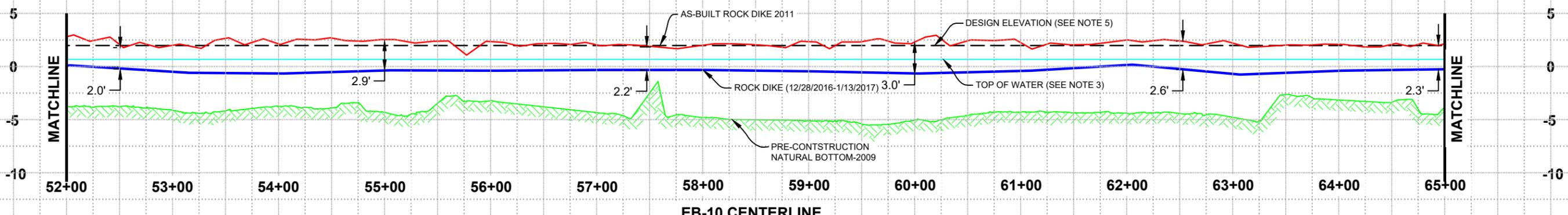
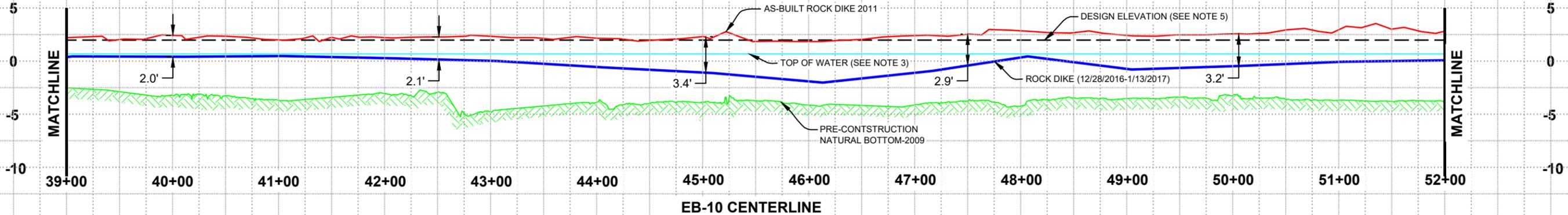


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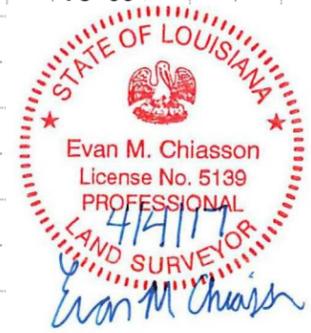
- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2011
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



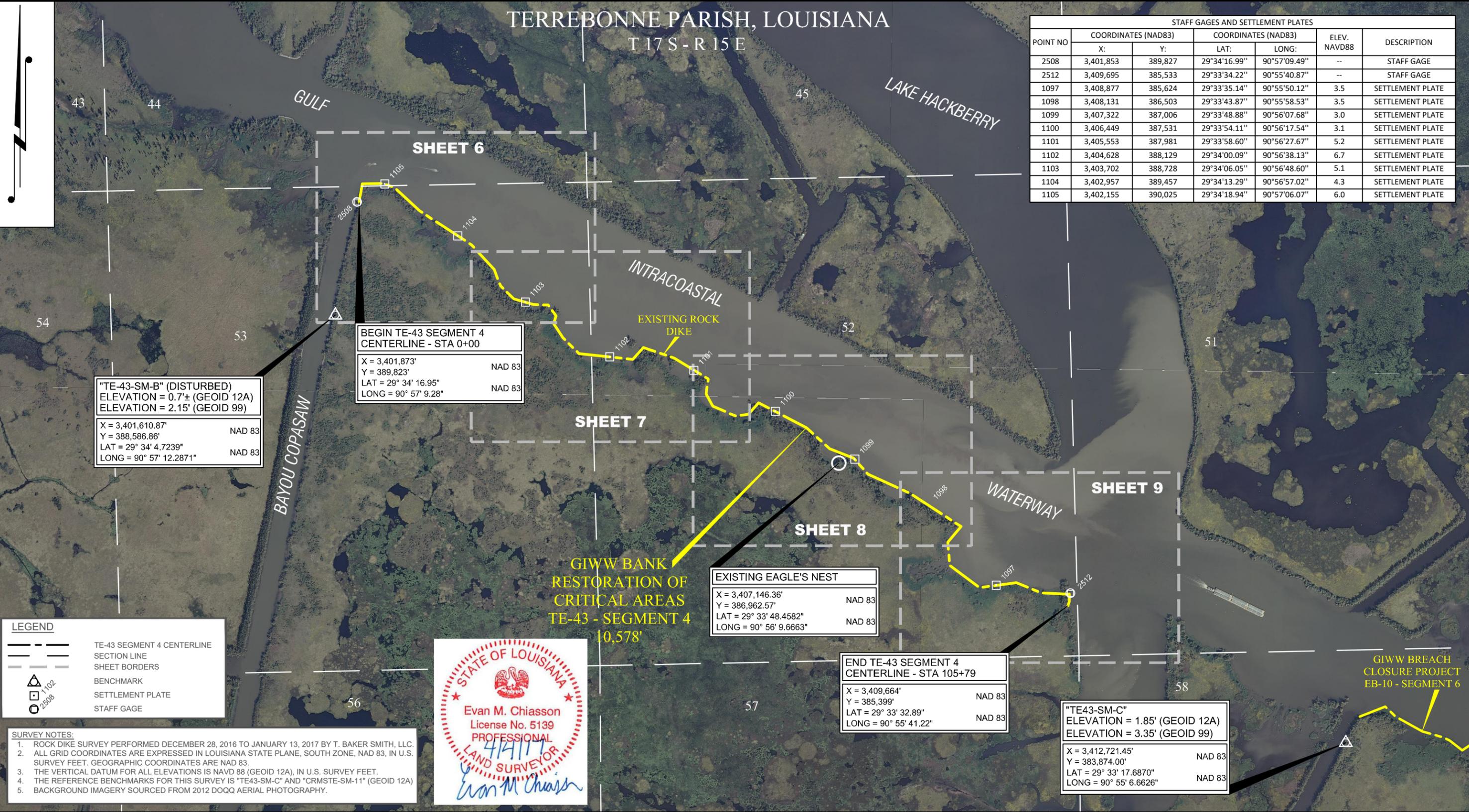
EB-10 SEGMENT 6 CENTERLINE		DATE: 4/4/2017	SHEET 4 OF 31
GROW BANK RESTORATION OF CRITICAL AREAS (TE-43), GROW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY:	
BY		DRAWN BY: EMC	
REV		DESCRIPTION	
DATE		DATE	



TERREBONNE PARISH, LOUISIANA

T 17 S - R 15 E

POINT NO	COORDINATES (NAD83)		COORDINATES (NAD83)		ELEV. NAVD88	DESCRIPTION
	X:	Y:	LAT:	LONG:		
2508	3,401,853	389,827	29°34'16.99"	90°57'09.49"	--	STAFF GAGE
2512	3,409,695	385,533	29°33'34.22"	90°55'40.87"	--	STAFF GAGE
1097	3,408,877	385,624	29°33'35.14"	90°55'50.12"	3.5	SETTLEMENT PLATE
1098	3,408,131	386,503	29°33'43.87"	90°55'58.53"	3.5	SETTLEMENT PLATE
1099	3,407,322	387,006	29°33'48.88"	90°56'07.68"	3.0	SETTLEMENT PLATE
1100	3,406,449	387,531	29°33'54.11"	90°56'17.54"	3.1	SETTLEMENT PLATE
1101	3,405,553	387,981	29°33'58.60"	90°56'27.67"	5.2	SETTLEMENT PLATE
1102	3,404,628	388,129	29°34'00.09"	90°56'38.13"	6.7	SETTLEMENT PLATE
1103	3,403,702	388,728	29°34'06.05"	90°56'48.60"	5.1	SETTLEMENT PLATE
1104	3,402,957	389,457	29°34'13.29"	90°56'57.02"	4.3	SETTLEMENT PLATE
1105	3,402,155	390,025	29°34'18.94"	90°57'06.07"	6.0	SETTLEMENT PLATE



"TE-43-SM-B" (DISTURBED)
ELEVATION = 0.7'± (GEOID 12A)
ELEVATION = 2.15' (GEOID 99)

X = 3,401,610.87' NAD 83
Y = 388,586.86' NAD 83
LAT = 29° 34' 4.7239" NAD 83
LONG = 90° 57' 12.2871" NAD 83

BEGIN TE-43 SEGMENT 4
CENTERLINE - STA 0+00

X = 3,401,873' NAD 83
Y = 389,823' NAD 83
LAT = 29° 34' 16.95" NAD 83
LONG = 90° 57' 9.28" NAD 83

EXISTING EAGLE'S NEST

X = 3,407,146.36' NAD 83
Y = 386,962.57' NAD 83
LAT = 29° 33' 48.4582" NAD 83
LONG = 90° 56' 9.6663" NAD 83

END TE-43 SEGMENT 4
CENTERLINE - STA 105+79

X = 3,409,664' NAD 83
Y = 385,399' NAD 83
LAT = 29° 33' 32.89" NAD 83
LONG = 90° 55' 41.22" NAD 83

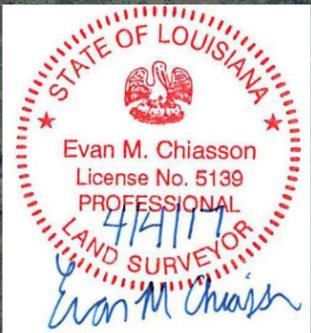
"TE43-SM-C"
ELEVATION = 1.85' (GEOID 12A)
ELEVATION = 3.35' (GEOID 99)

X = 3,412,721.45' NAD 83
Y = 383,874.00' NAD 83
LAT = 29° 33' 17.6870" NAD 83
LONG = 90° 55' 6.6626" NAD 83

LEGEND

	TE-43 SEGMENT 4 CENTERLINE
	SECTION LINE
	SHEET BORDERS
	BENCHMARK
	SETTLEMENT PLATE
	STAFF GAGE

- SURVEY NOTES:**
- ROCK DIKE SURVEY PERFORMED DECEMBER 28, 2016 TO JANUARY 13, 2017 BY T. BAKER SMITH, LLC.
 - ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD 83, IN U.S. SURVEY FEET. GEOGRAPHIC COORDINATES ARE NAD 83.
 - THE VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD 88 (GEOID 12A), IN U.S. SURVEY FEET.
 - THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 - BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 5-9.DWG



TBS **T. BAKER SMITH**
SOLUTIONS START HERE
412 South Van Ave, Houma, LA 70363
(985)868-1050 - tbsmith.com

SCALE IN FEET

1000' 500' 0' 1000'

REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 5-9.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 5	OF 31

TE-43 SEGMENT 4 PLAN OVERVIEW

GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA

TERREBONNE PARISH, LOUISIANA
T 17 S - R 15 E

BAYOU COPASAW

GULF INTRACOASTAL WATERWAY

PT 2508
STAFF GAGE

PT 1105
SETTLEMENT PLATE

PT 1104
SETTLEMENT PLATE

BEGIN TE-43 SEGMENT 4
CENTERLINE - STA 0+00
X = 3,401,873' NAD 83
Y = 389,823' NAD 83
LAT = 29° 34' 16.95" NAD 83
LONG = 90° 57' 9.28" NAD 83

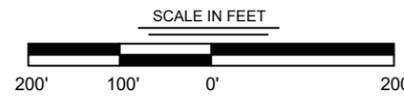
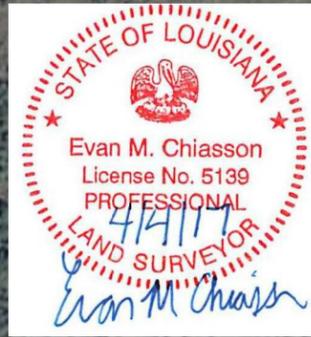
EXISTING ROCK
DIKE

GIWW BANK
RESTORATION OF
CRITICAL AREAS
(TE-43) - SEGMENT 4

LEGEND

	TE-43 SEGMENT 4 CENTERLINE
	TE-43 SEGMENT 4 TRANSECTS
	SECTION LINE
	BENCHMARK
	SETTLEMENT PLATE
	STAFF GAGE

- SURVEY NOTES:**
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 - BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 5-9.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 6	OF 31

TE-43 SEGMENT 4 PLAN VIEW

GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA



4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 5-9.DWG

TERREBONNE PARISH, LOUISIANA
T 17 S - R 15 E

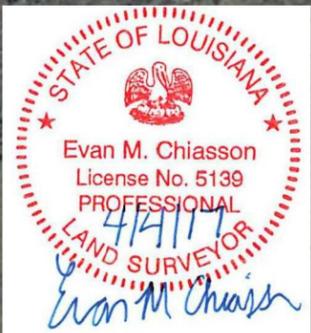


GIWW BANK RESTORATION OF CRITICAL AREAS
TE-43 - SEGMENT 4

LEGEND

	TE-43 SEGMENT 4 CENTERLINE
	TE-43 SEGMENT 4 TRANSECTS
	SECTION LINE
	BENCHMARK
	SETTLEMENT PLATE
	STAFF GAGE

- SURVEY NOTES:**
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 4. THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 5. BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



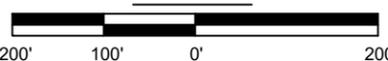
4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 5-9.DWG

NOTES:




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SCALE IN FEET



REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 5-9.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 7	OF 31

TE-43 SEGMENT 4 PLAN VIEW

GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA

TERREBONNE PARISH, LOUISIANA
T 17 S - R 15 E



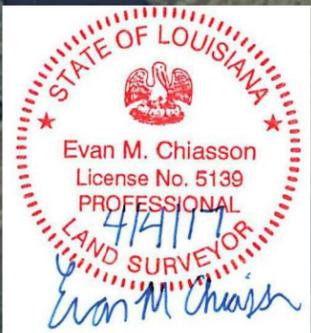
GIWW BANK
RESTORATION OF
CRITICAL AREAS
TE-43 - SEGMENT 4

EXISTING EAGLE'S NEST
X = 3,407,146.36' NAD 83
Y = 386,962.57' NAD 83
LAT = 29° 33' 48.4582" NAD 83
LONG = 90° 56' 9.6663" NAD 83

LEGEND

	TE-43 SEGMENT 4 CENTERLINE
	TE-43 SEGMENT 4 TRANSECTS
	SECTION LINE
	BENCHMARK
	SETTLEMENT PLATE
	STAFF GAGE

- SURVEY NOTES:**
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 4. THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 5. BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



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(985)668-1050 - tbsmith.com

SCALE IN FEET

REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 5-9.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 8	OF 31

TE-43 SEGMENT 4 PLAN VIEW

GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA

4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 5-9.DWG

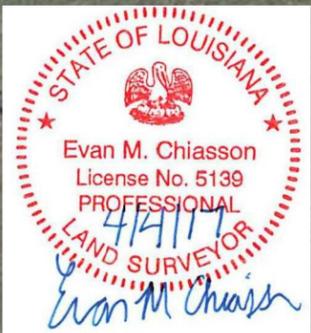
TERREBONNE PARISH, LOUISIANA
T 17 S - R 15 E



LEGEND

	TE-43 SEGMENT 4 CENTERLINE
	TE-43 SEGMENT 4 TRANSECTS
	SECTION LINE
	BENCHMARK
	SETTLEMENT PLATE
	STAFF GAGE

- SURVEY NOTES:**
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 - BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



END TE-43 SEGMENT 4
CENTERLINE - STA 105+79

X = 3,409,664' NAD 83
Y = 385,399' NAD 83
LAT = 29° 33' 32.89" NAD 83
LONG = 90° 55' 41.22" NAD 83

4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 5-9.DWG

NOTES:

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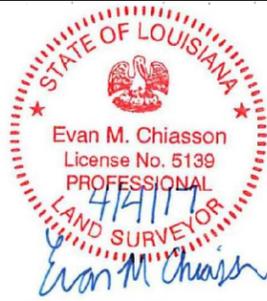
SCALE IN FEET

REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 5-9.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 9	OF 31

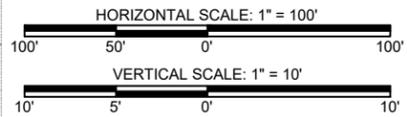
TE-43 SEGMENT 4 PLAN VIEW

GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

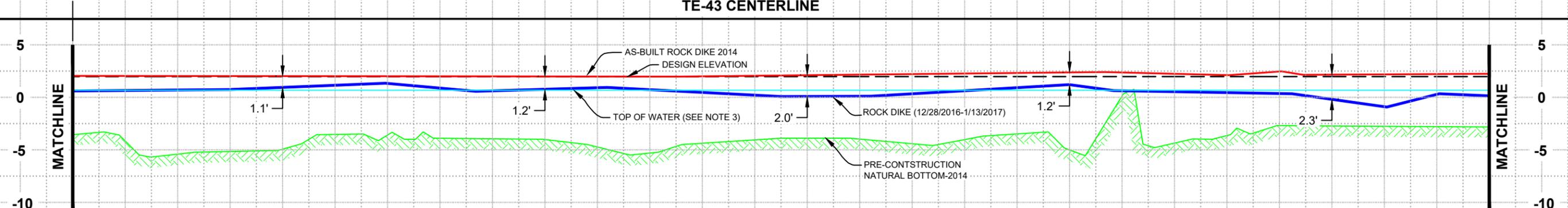
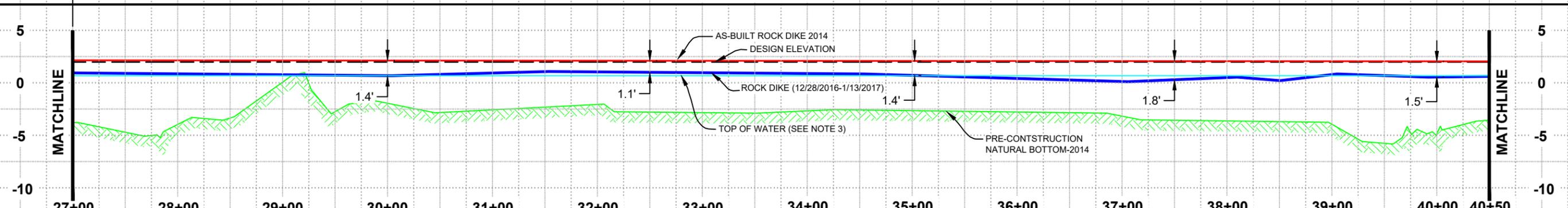
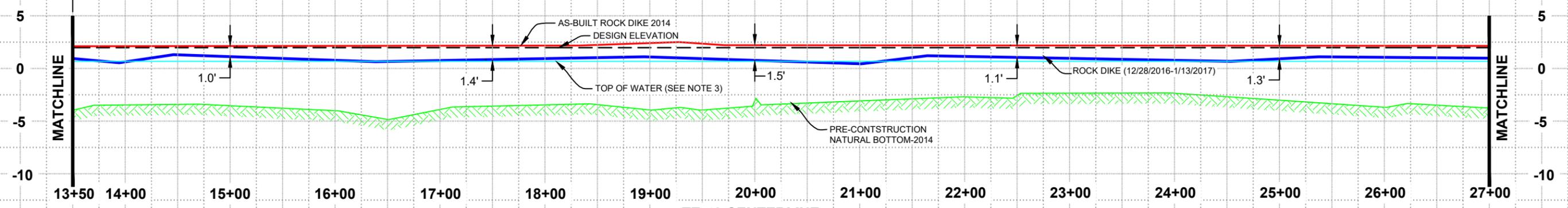
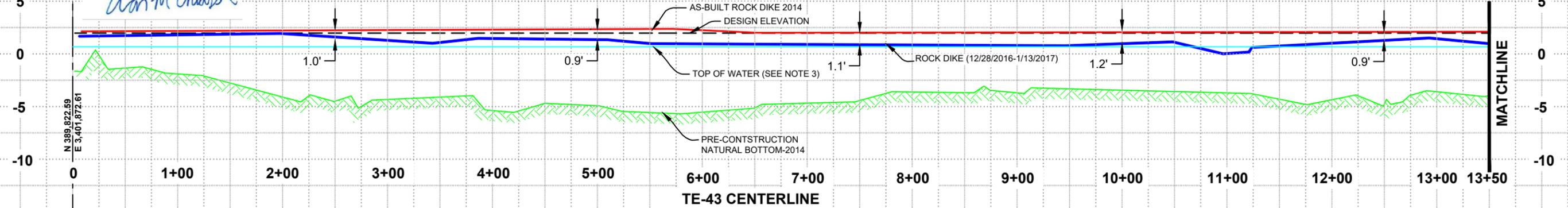


LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- - - - DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

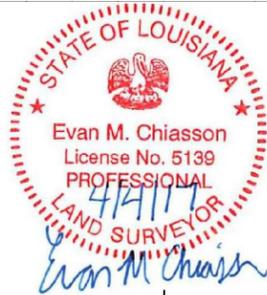
NOTES

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5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



TE-43 SEGMENT 4 CENTERLINE		DATE: 4/4/2017	SHEET 10 OF 31
GWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		DESIGNED BY: EMC	
FEDERAL PROJECT NUMBER:		DRAWN BY: EMC	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		BY	
BY		DESCRIPTION	
REV		DATE	
BY		DESCRIPTION	
REV		DATE	





WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

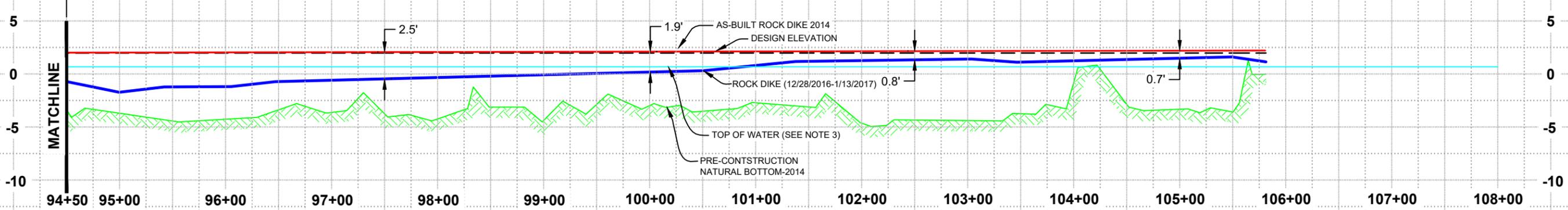
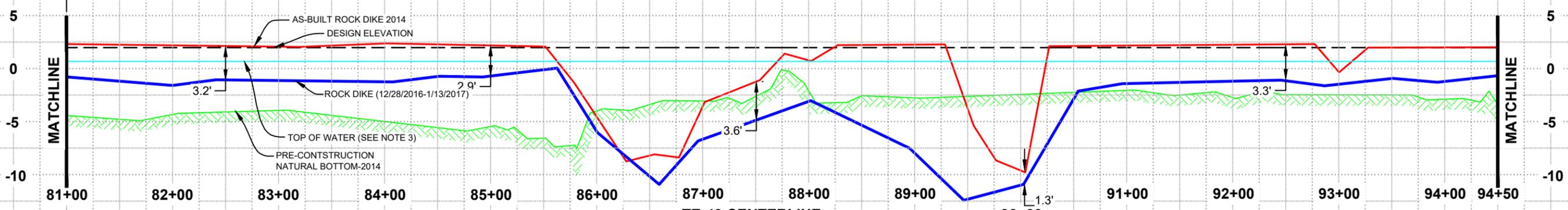
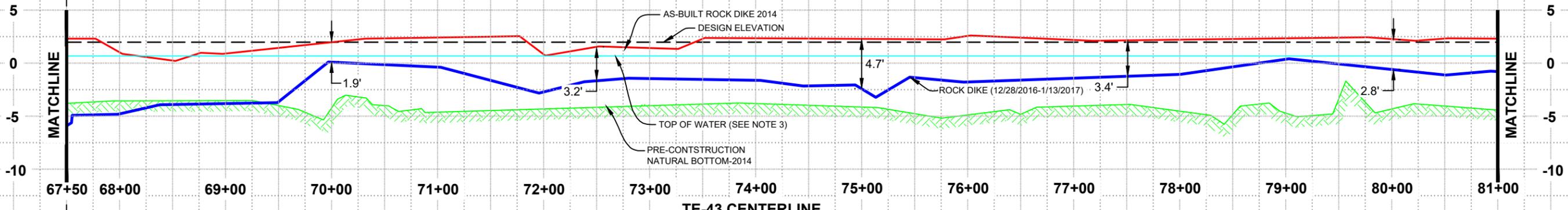
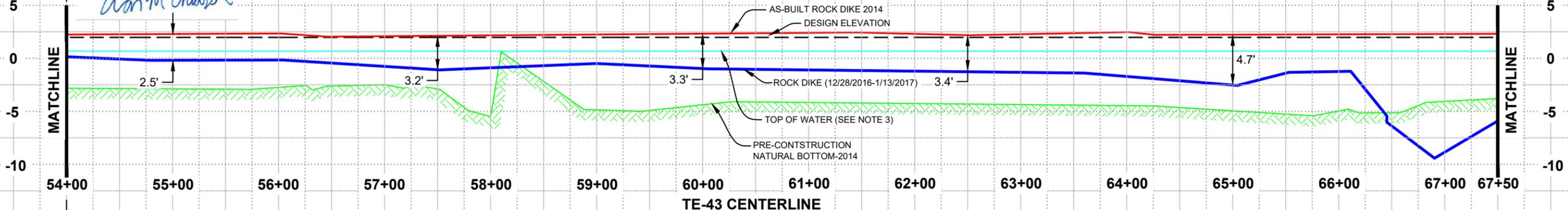
SCALE
 HORIZONTAL SCALE: 1" = 100'
 VERTICAL SCALE: 1" = 10'

LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- - - DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

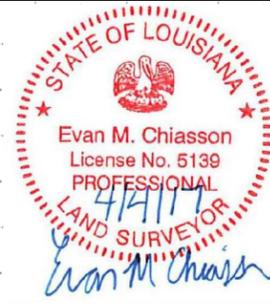
NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID 12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



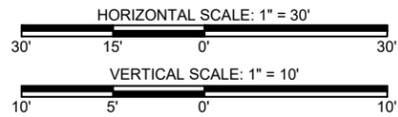
TE-43 SEGMENT 4 CENTERLINE		DATE: 4/4/2017	SHEET 11 OF 31
GROW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		DESIGNED BY: EMC	
FEDERAL PROJECT NUMBER:		DRAWN BY: EMC	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		BY	
BY		DESCRIPTION	
REV		DATE	
BY		DESCRIPTION	
REV		DATE	





WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE



LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- - - DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)

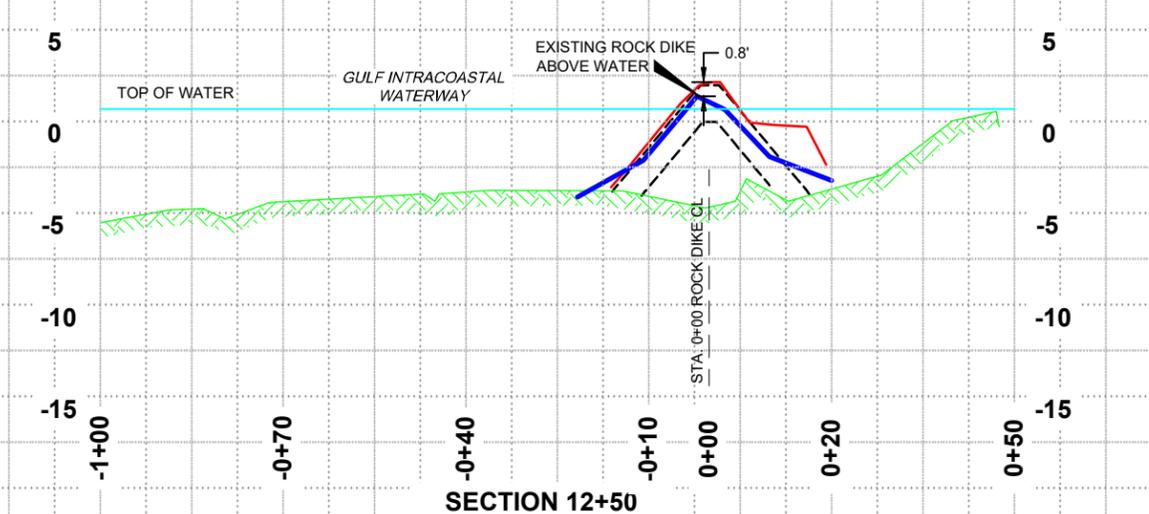
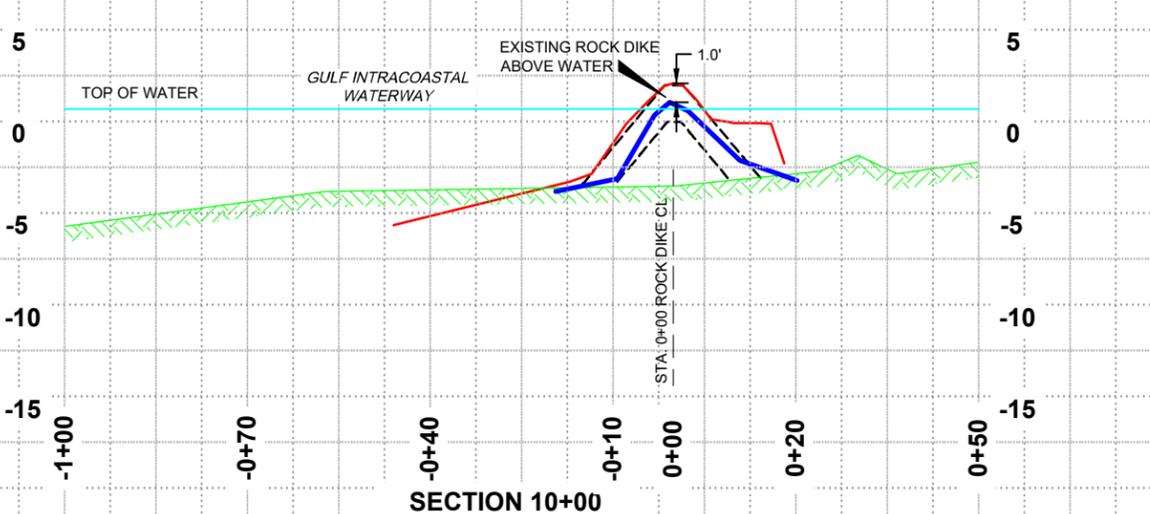
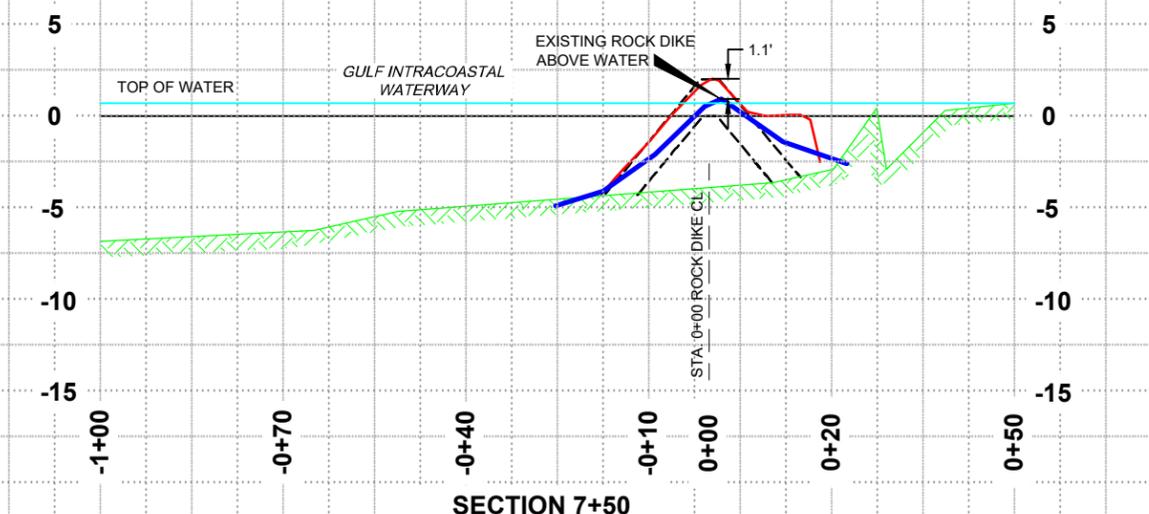
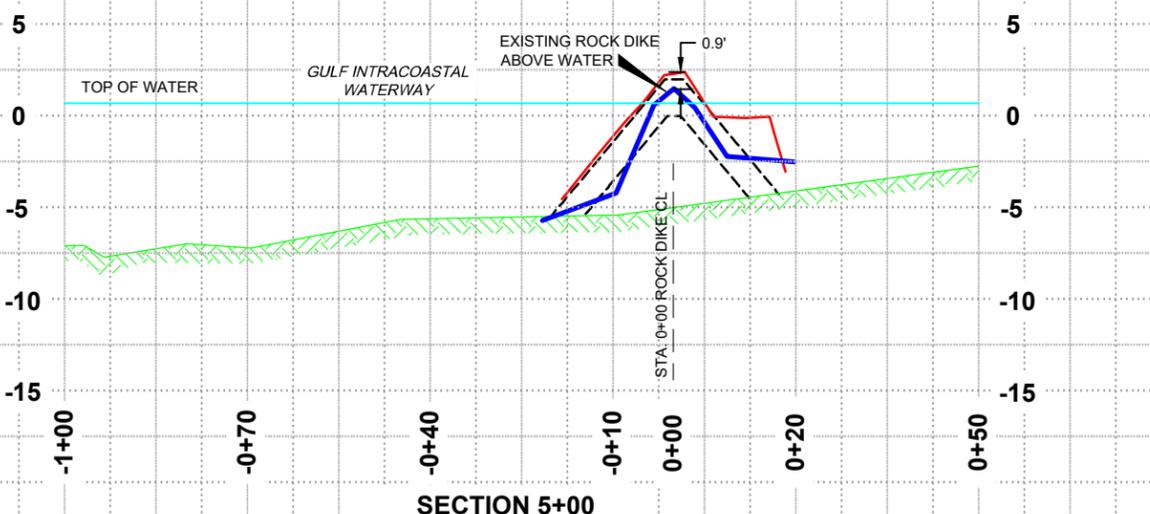
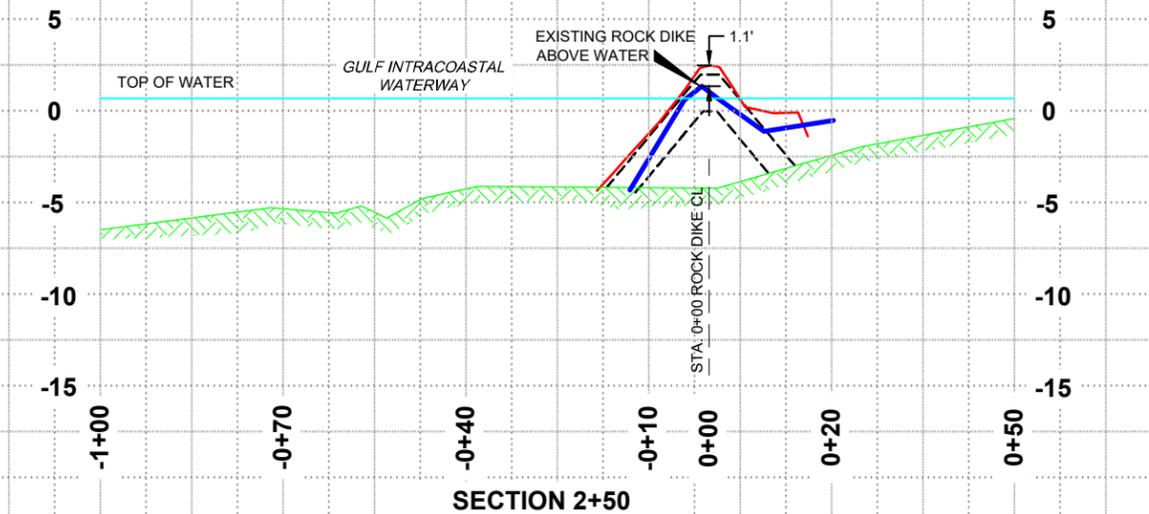
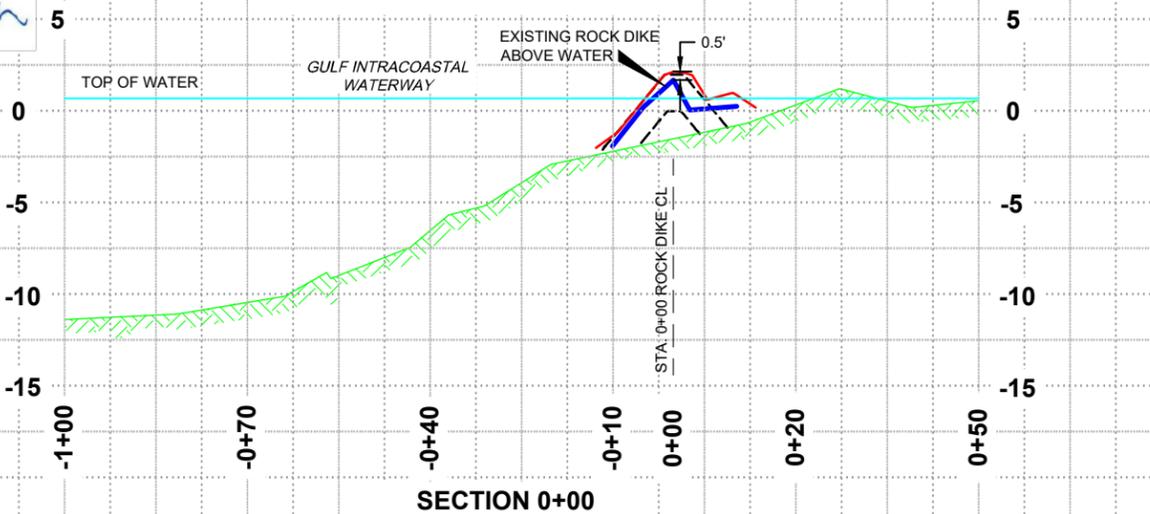
TE-43 SEGMENT 4
 CROSS-SECTIONS
 DATE: 4/4/2017
 SHEET 12 OF 31

GIWW BANK RESTORATION OF
 CRITICAL AREAS (TE-43), GIWW BREACH
 CLOSURE (EB-10) AND PENCHANT BASIN
 NATURAL RESOURCE PLAN (TE-34)
 STATE PROJECT NUMBER: TE-43 & TE-34
 FEDERAL PROJECT NUMBER:
 APPROVED BY: KAK

COASTAL PROTECTION AND
 RESTORATION AUTHORITY
 450 LAUREL ST., SUITE 1501
 BATON ROUGE, LOUISIANA 70801
 DESIGNED BY:
 DRAWN BY: EMC

REV	DATE	DESCRIPTION	BY

T. BAKER SMITH
 SOLUTIONS START HERE
 412 South Main Ave., Suite 1000, Baton Rouge, LA 70802
 (504) 388-7888 - bakersmith.com





WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

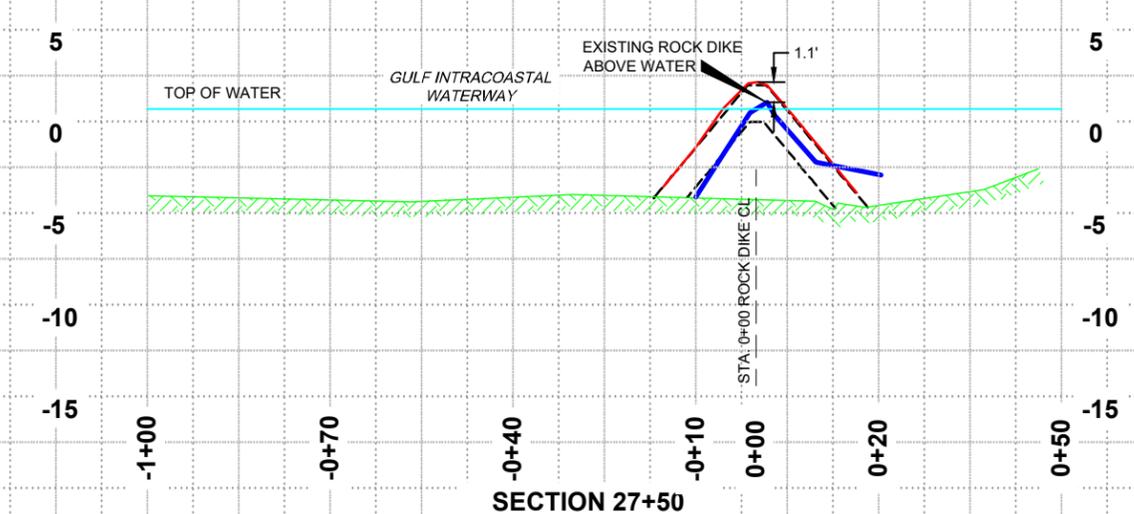
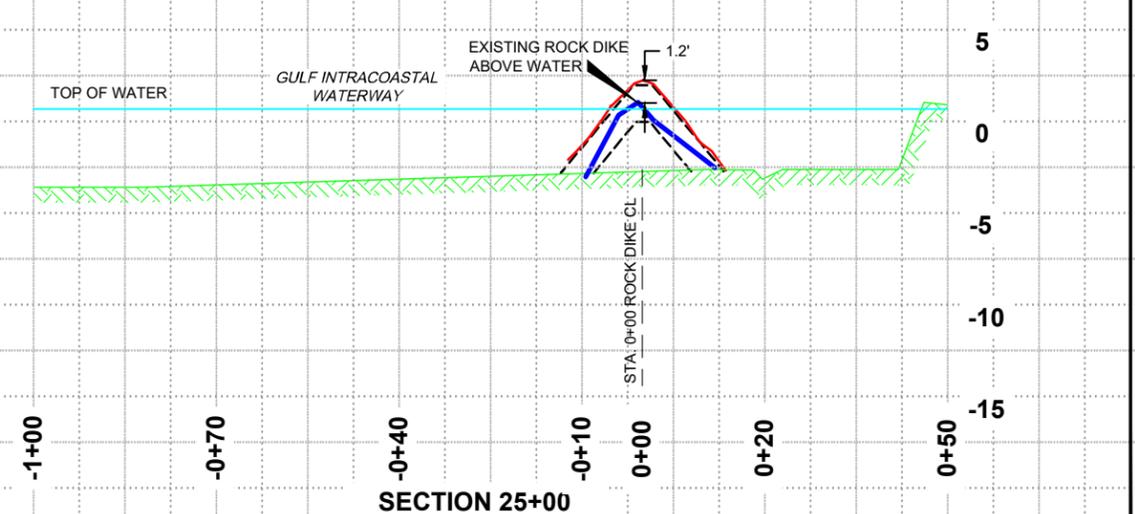
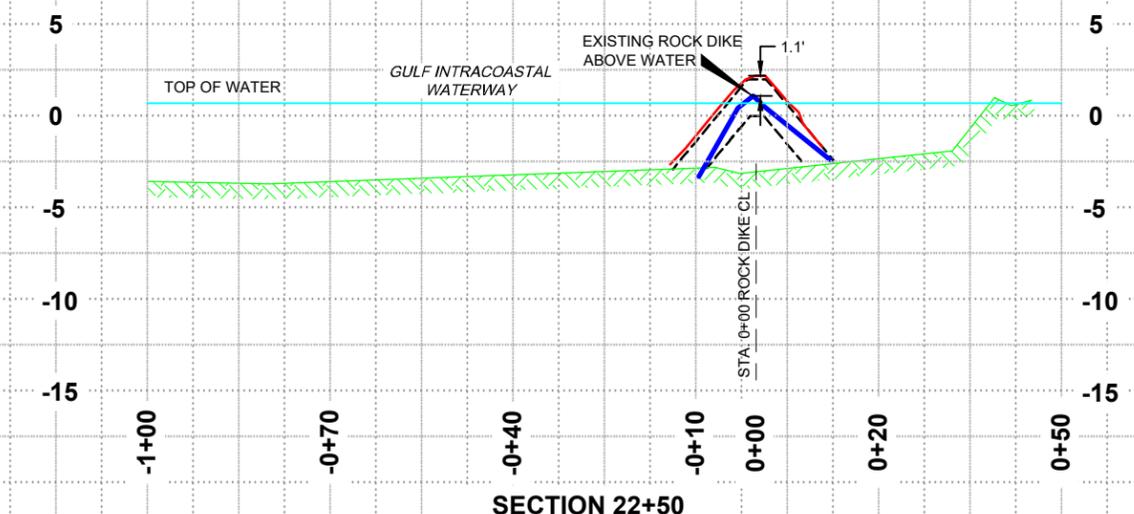
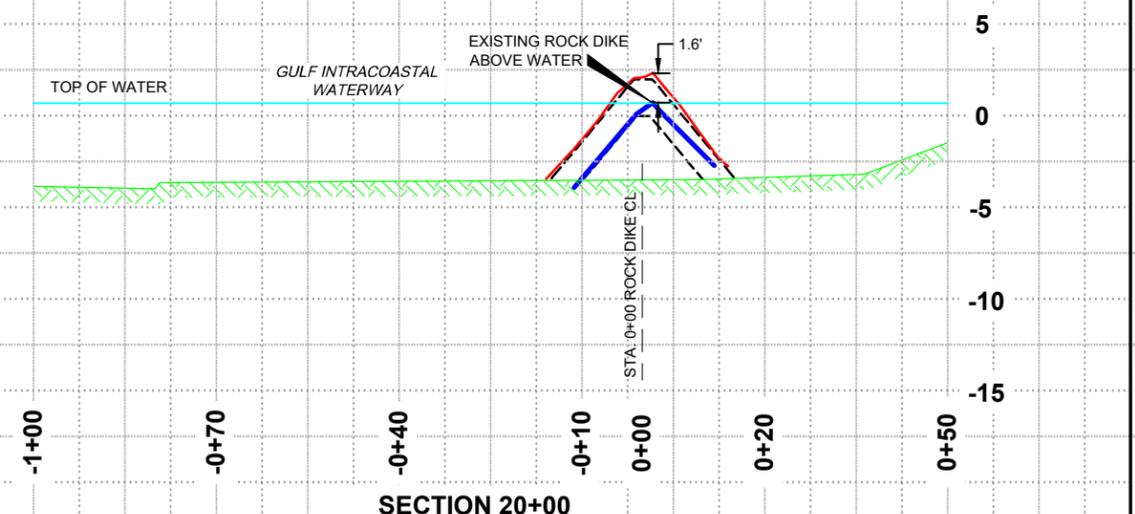
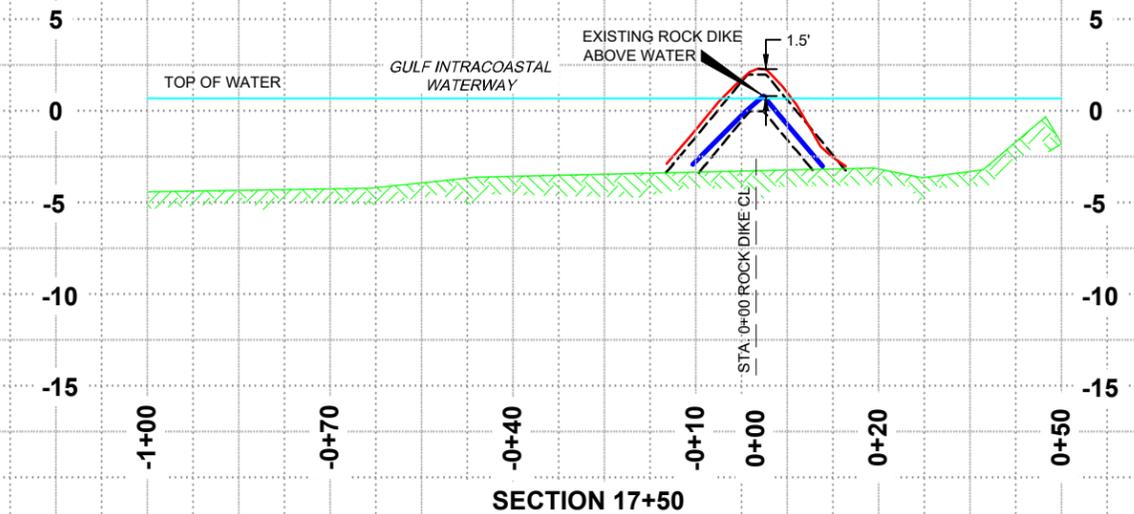
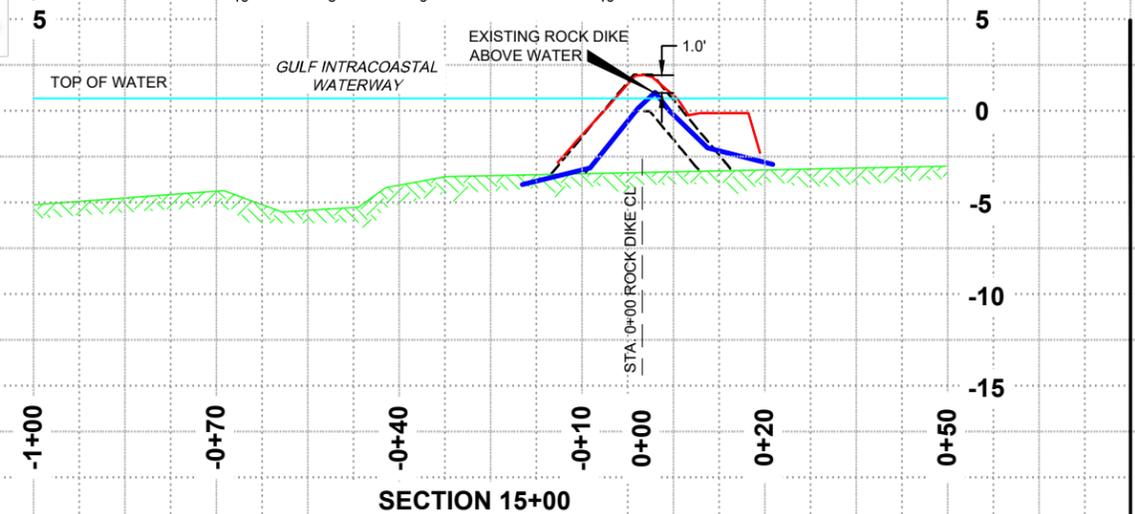
SCALE
 HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 10'

LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)

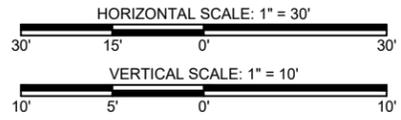


TE-43 SEGMENT 4 CROSS-SECTIONS		DATE: 4/4/2017	SHEET 13 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
DESIGNED BY: EMC			
DRAWN BY: EMC			
BY			
DESCRIPTION			
DATE			
REV			



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

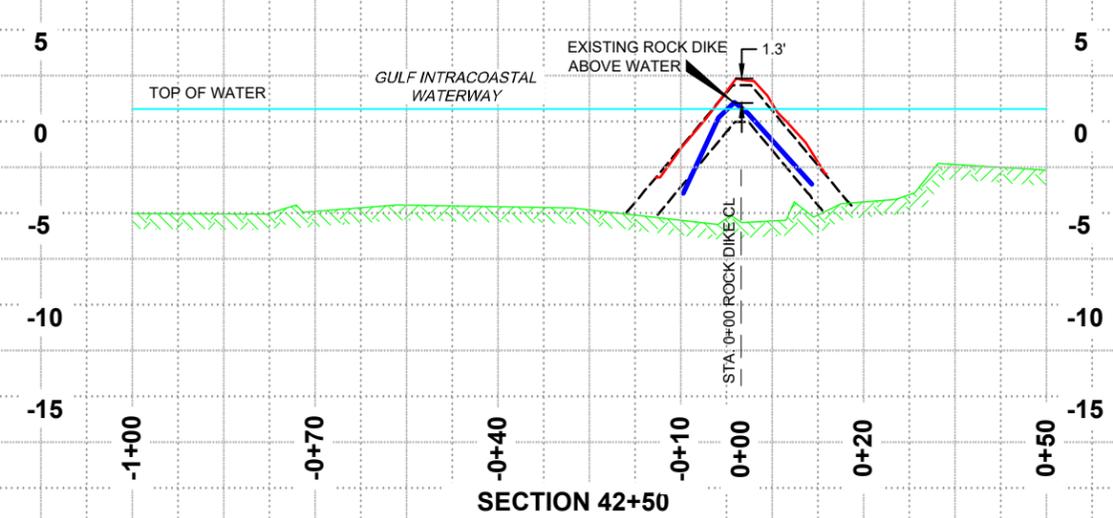
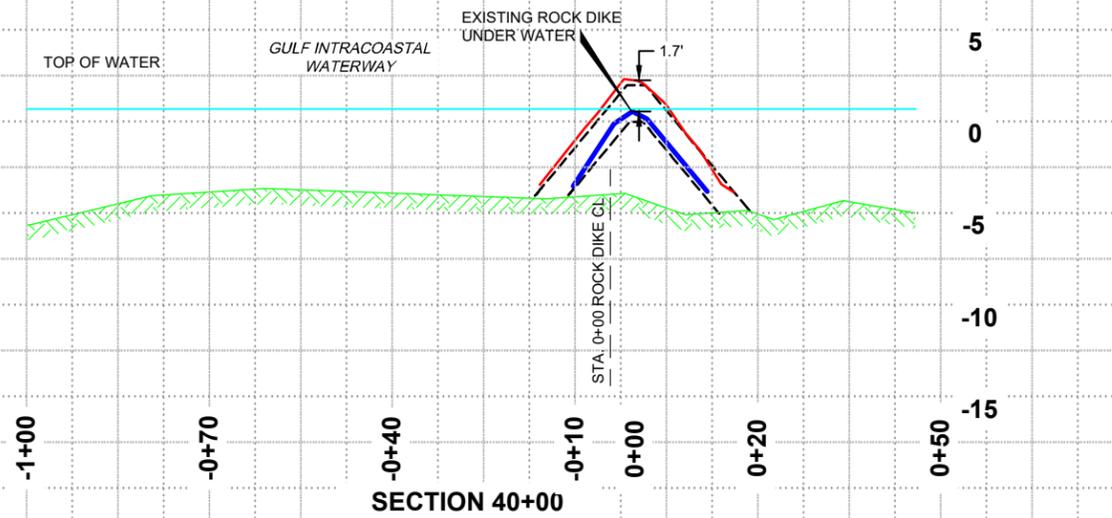
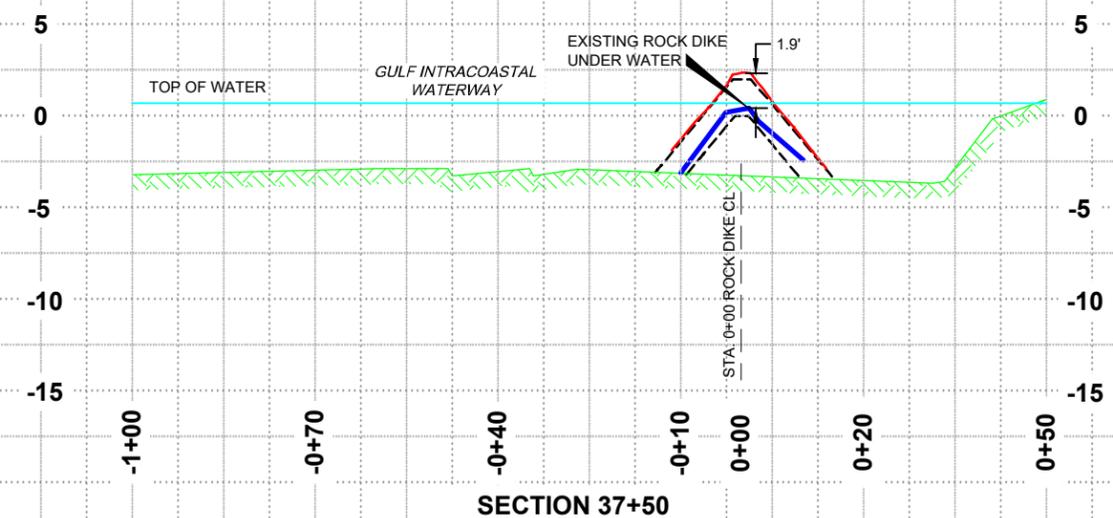
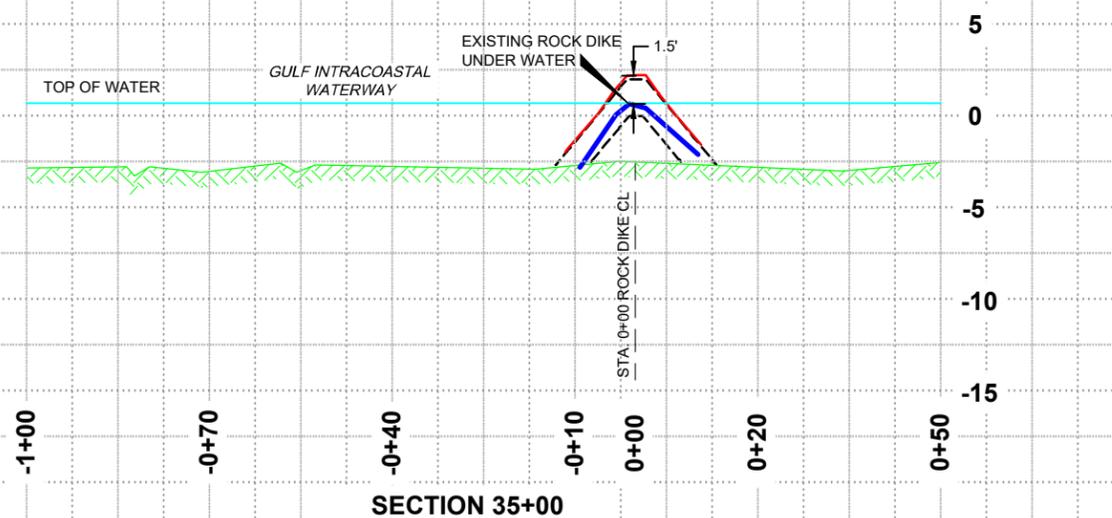
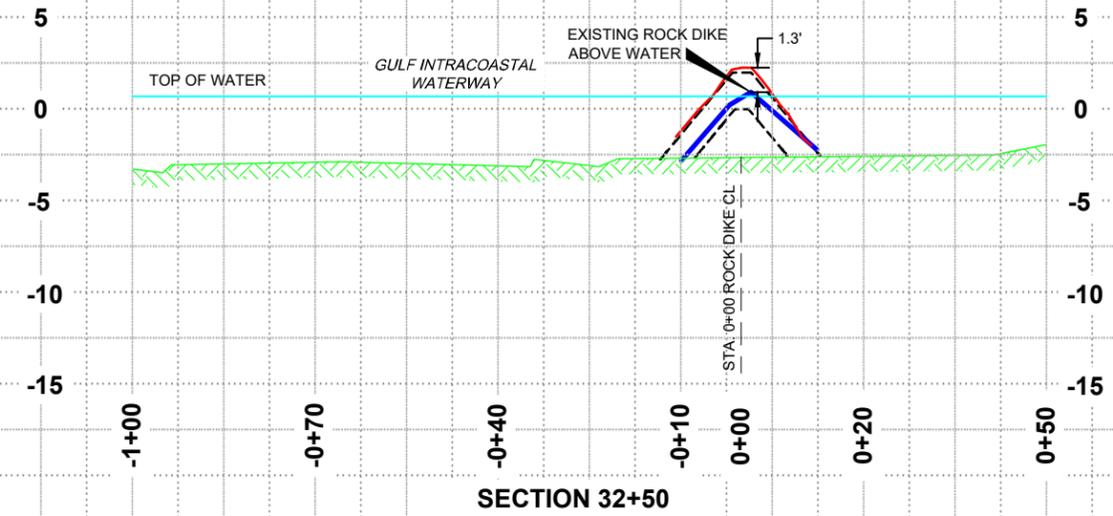
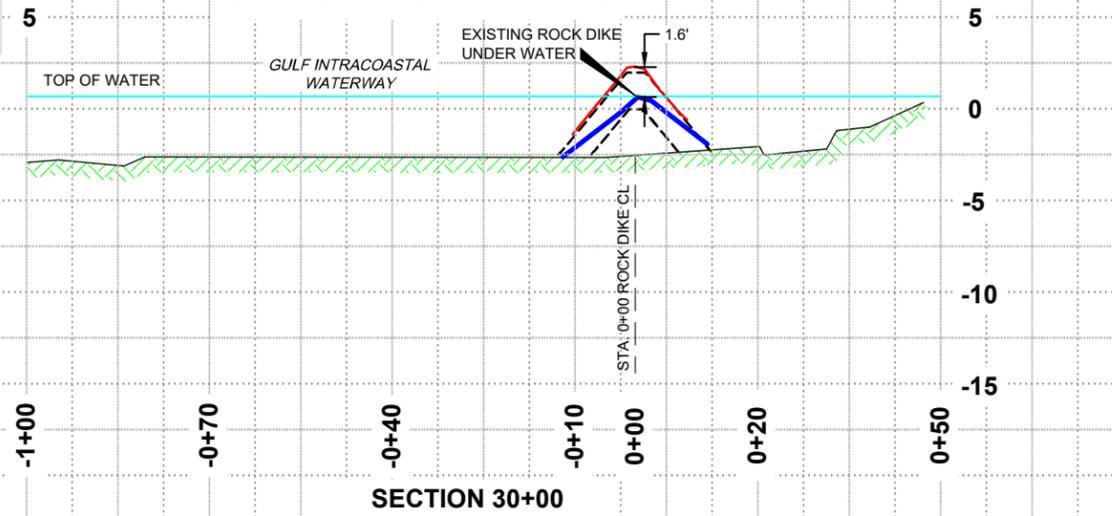


LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



TE-43 SEGMENT 4 CROSS-SECTIONS		DATE: 4/4/2017	SHEET 14 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY:	
DRAWN BY: EMC		BY	
DESCRIPTION		DATE	
REV		DATE	



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

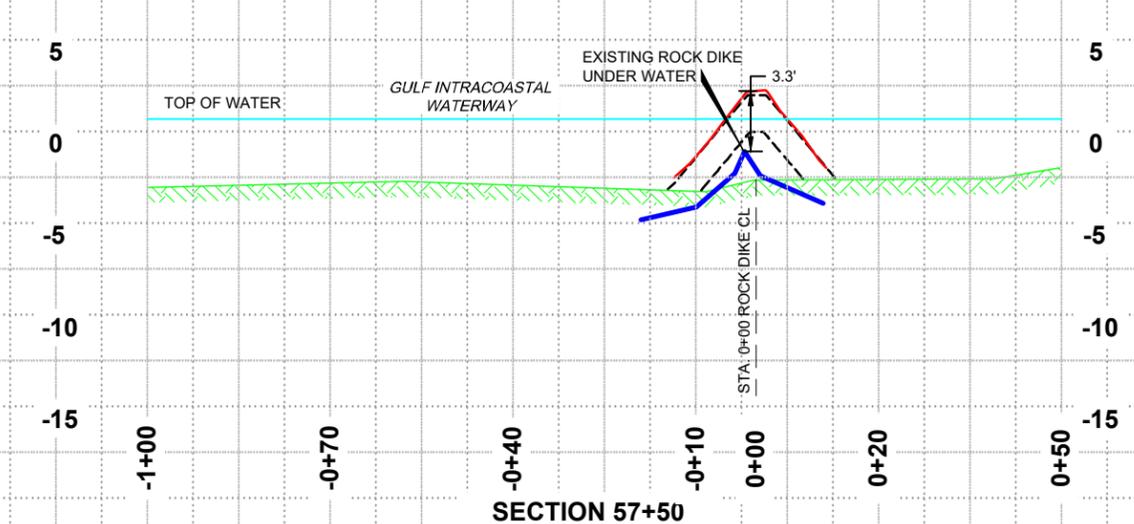
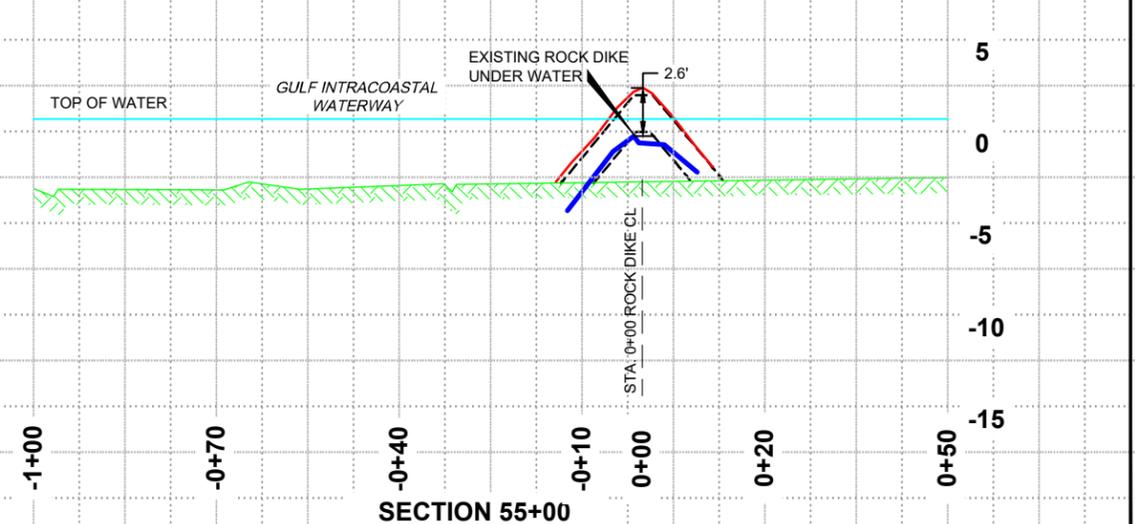
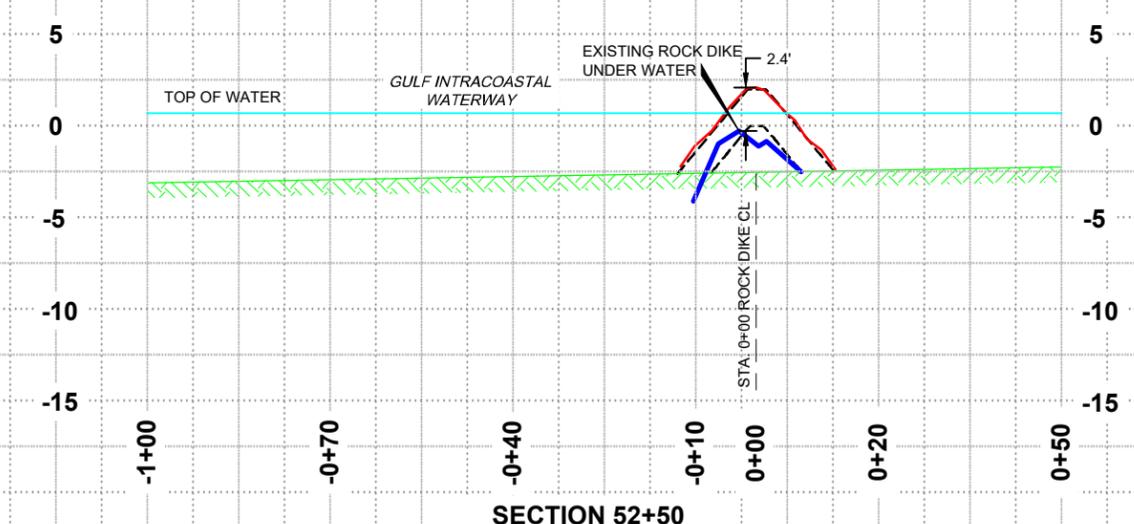
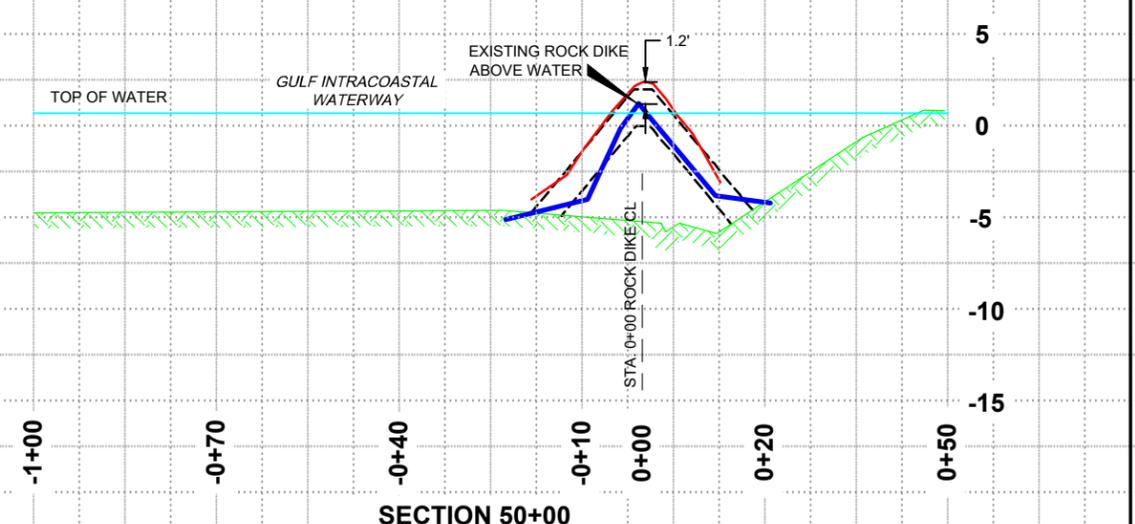
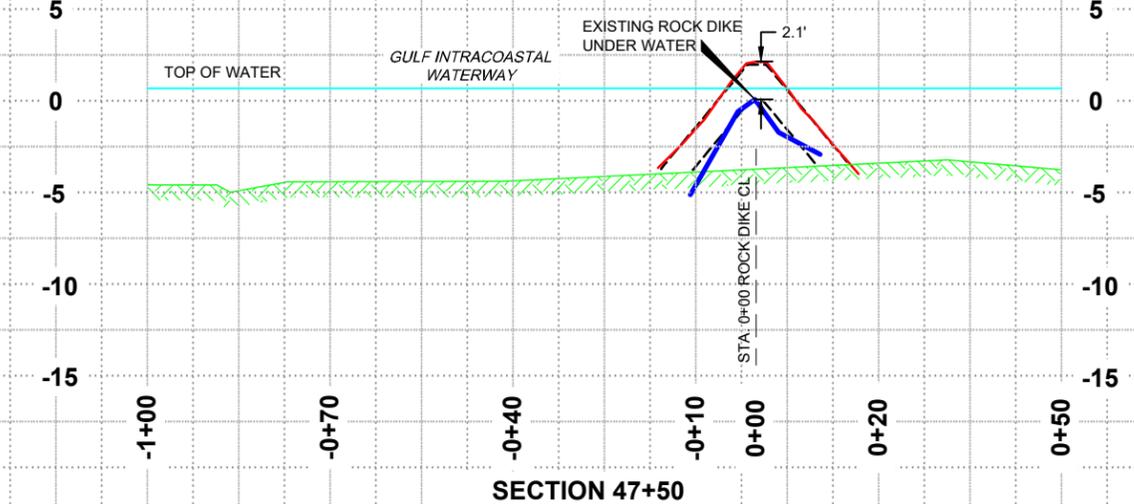
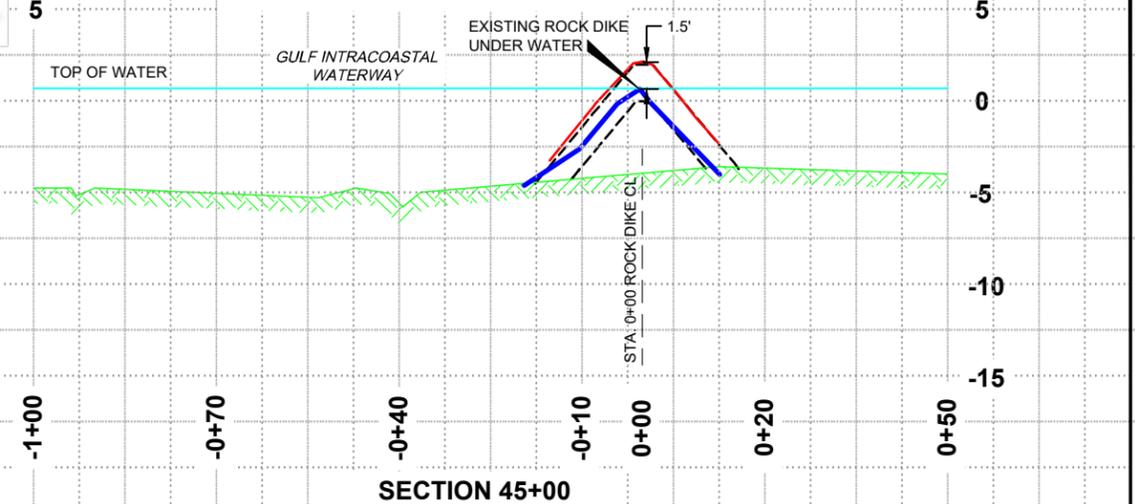
SCALE
 HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 10'

LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



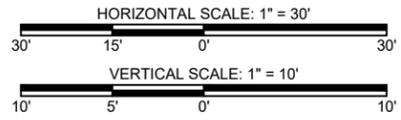
TE-43 SEGMENT 4 CROSS-SECTIONS		DATE: 4/4/2017	SHEET 15 OF 31
GULF INTRACOASTAL WATERWAY NATURAL RESOURCE PLAN (TE-34)		FEDERAL PROJECT NUMBER:	
STATE PROJECT NUMBER: TE-43 & TE-34		APPROVED BY: KAK	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY:	
DRAWN BY: EMC		BY	
DESCRIPTION		DATE	
REV		DATE	





WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

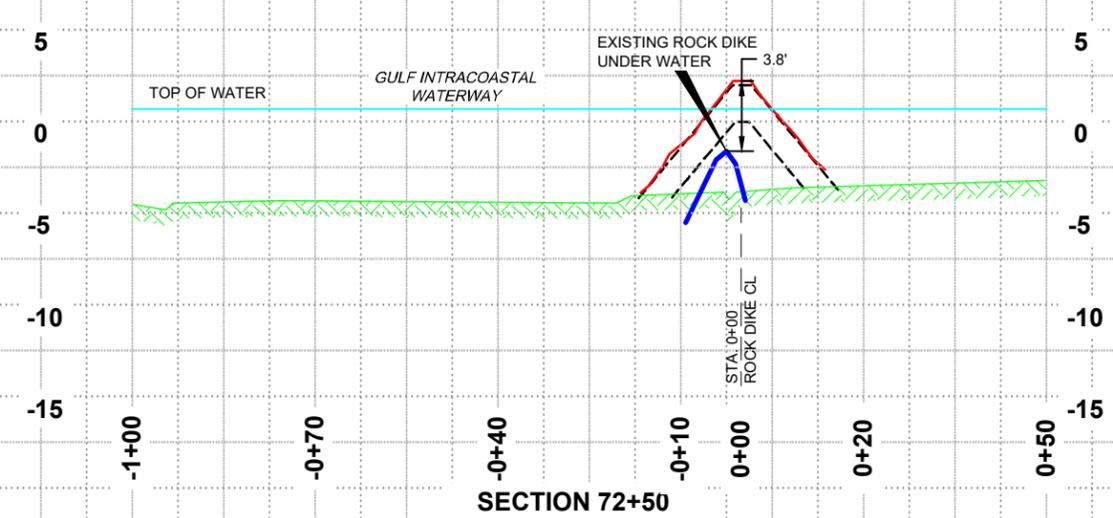
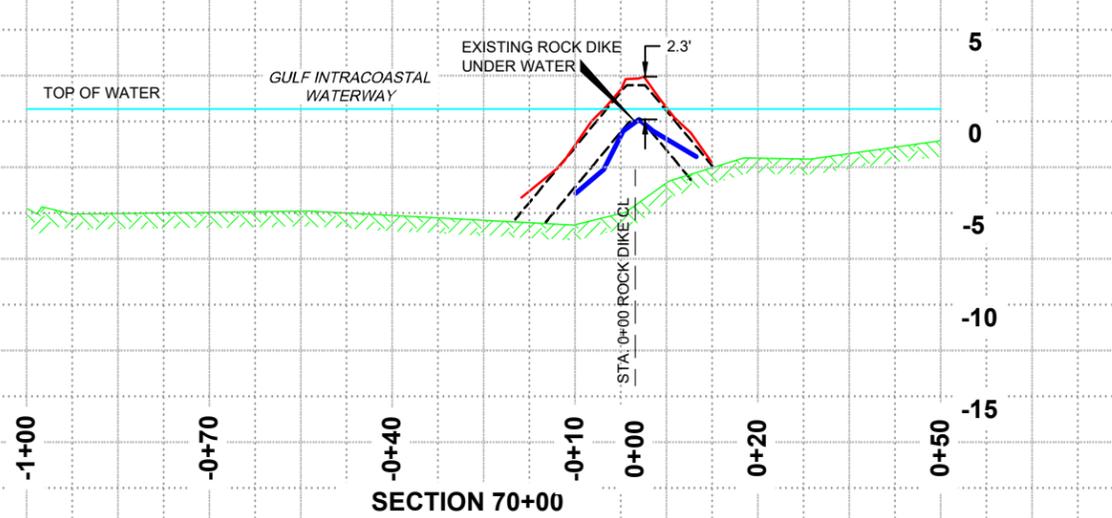
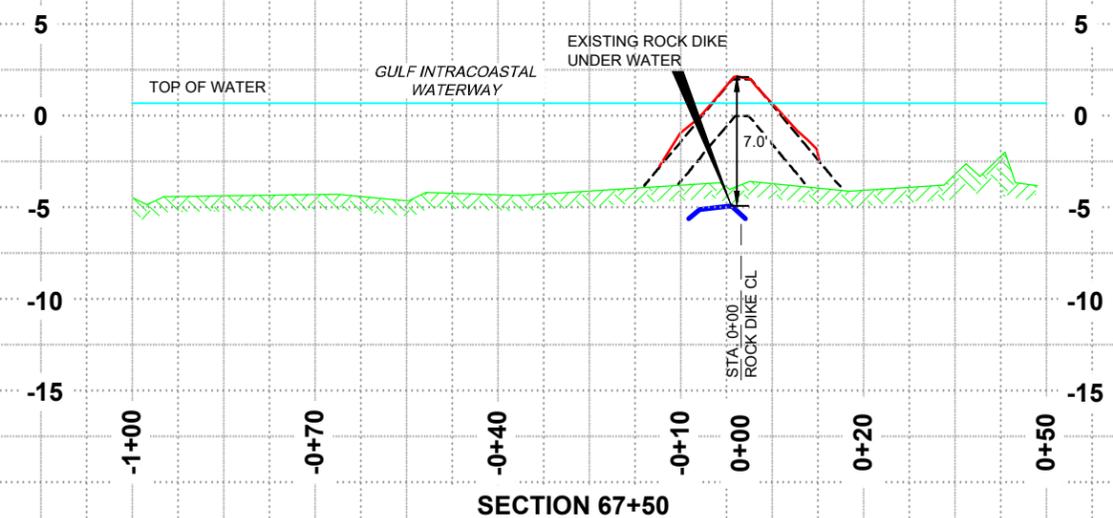
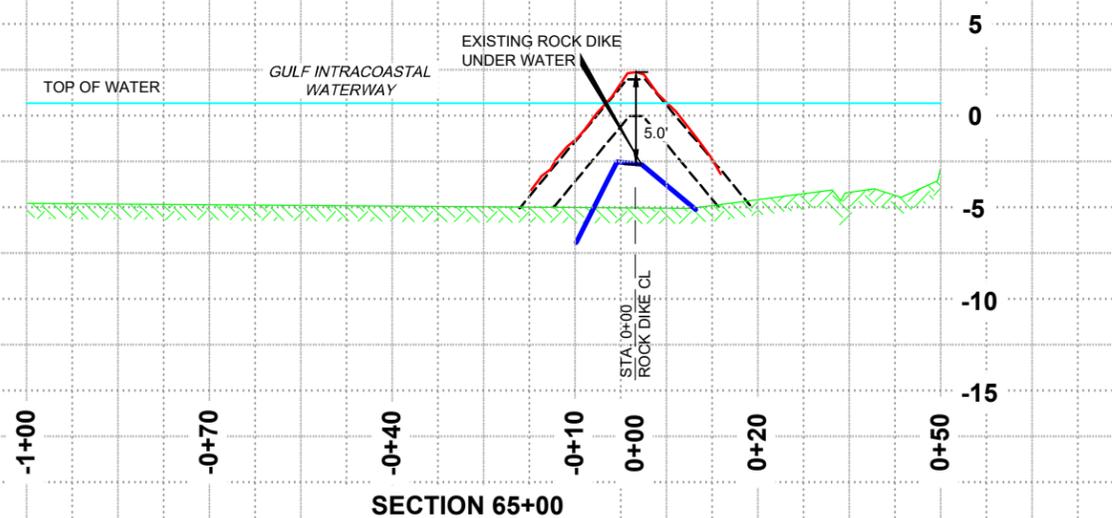
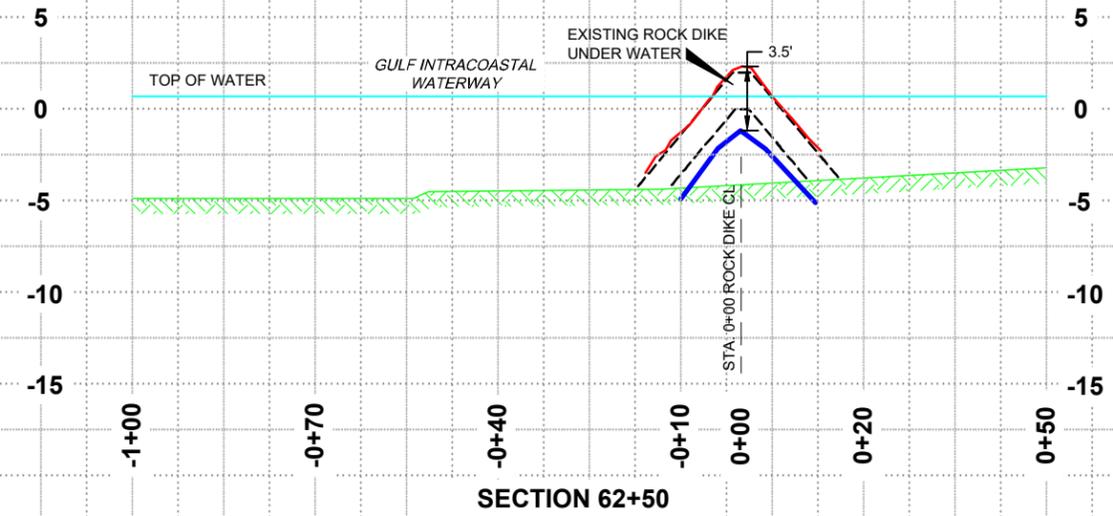
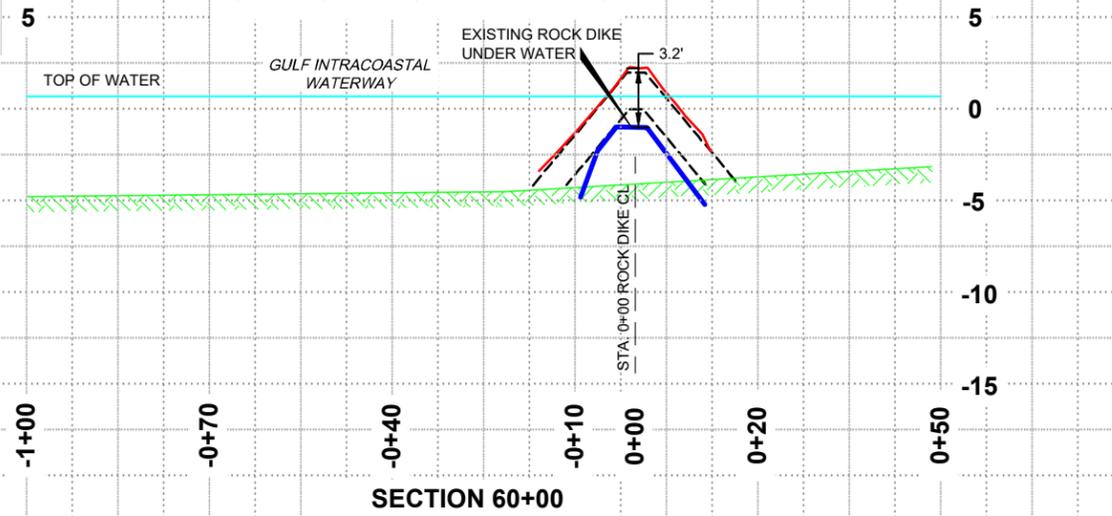


LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



TE-43 SEGMENT 4 CROSS-SECTIONS		DATE: 4/4/2017	SHEET 16 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		DESIGNED BY: EMC	
FEDERAL PROJECT NUMBER:		DRAWN BY: EMC	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		BY	
		DESCRIPTION	
		DATE	
		REV	



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

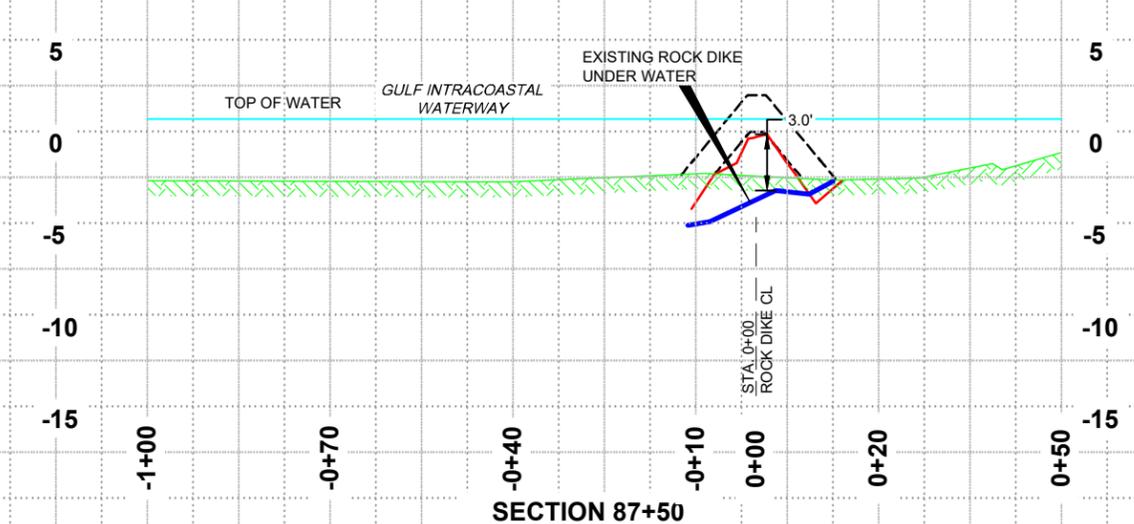
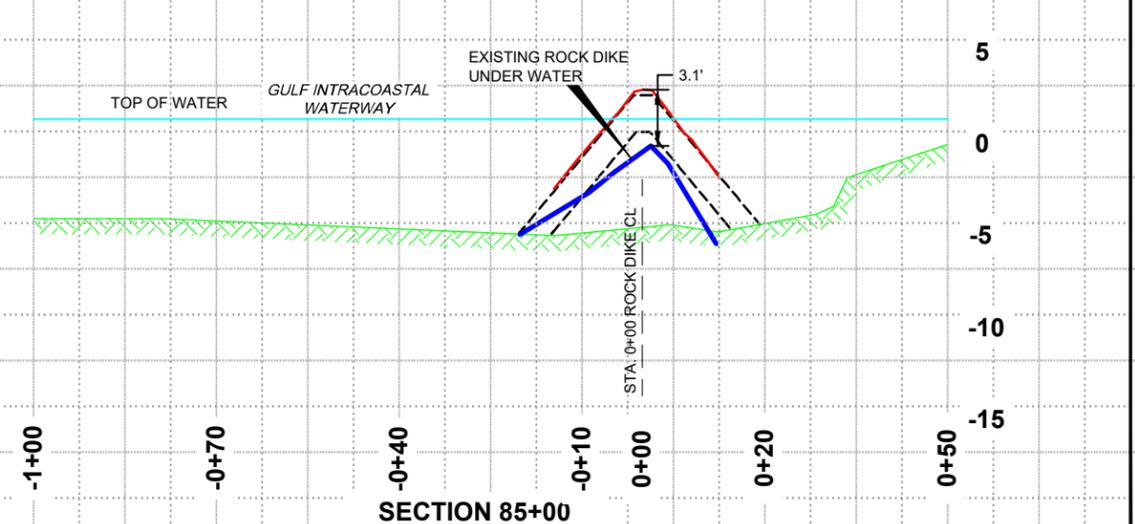
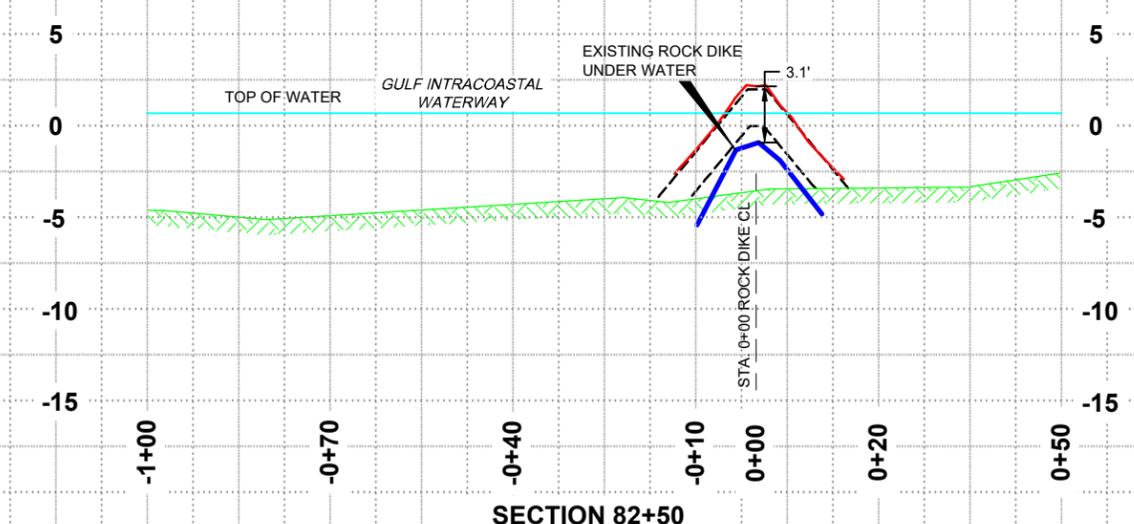
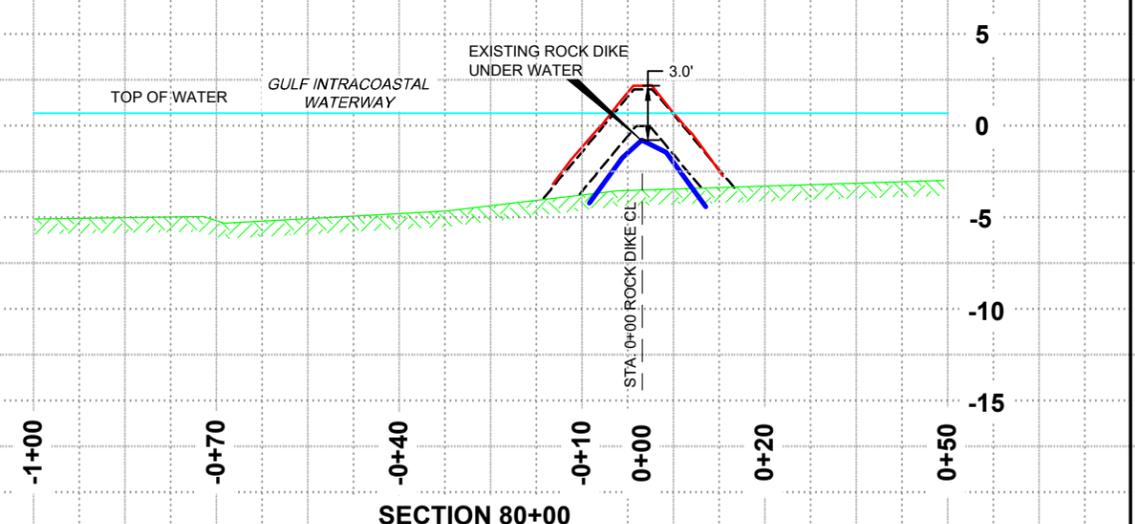
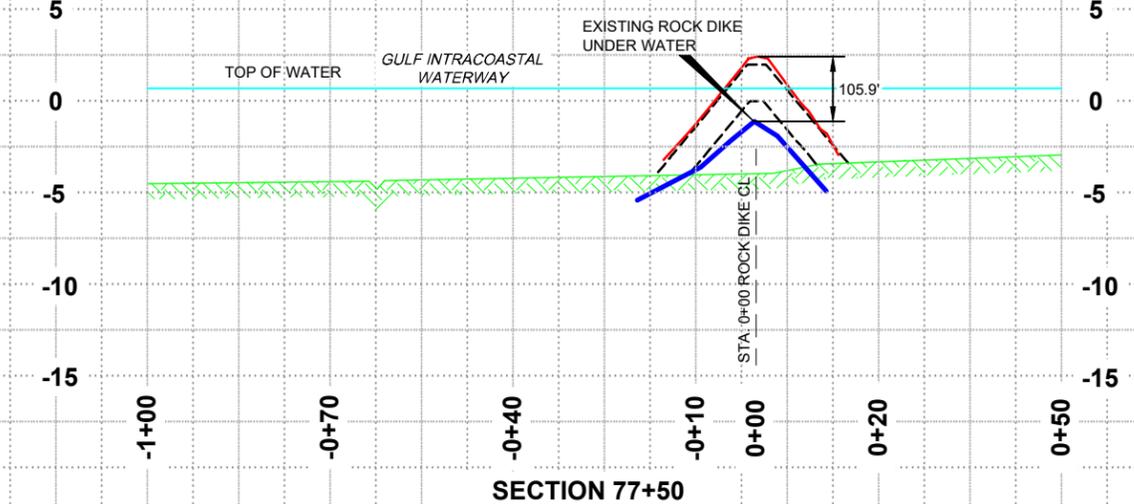
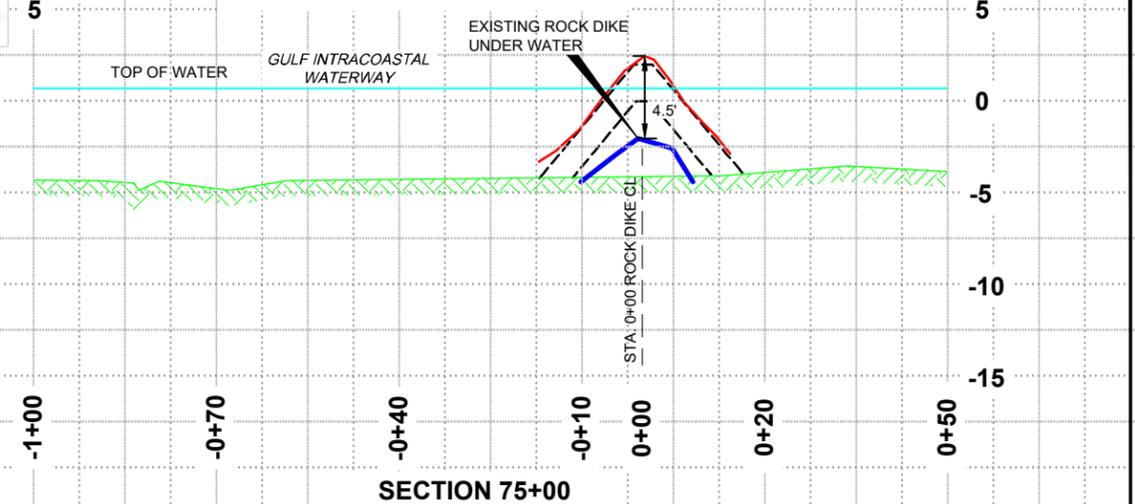
SCALE
 HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 10'

LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



TE-43 SEGMENT 4 CROSS-SECTIONS		DATE: 4/4/2017	SHEET 17 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY:	
DRAWN BY: EMC		BY	
DESCRIPTION		DATE	
REV		DATE	



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

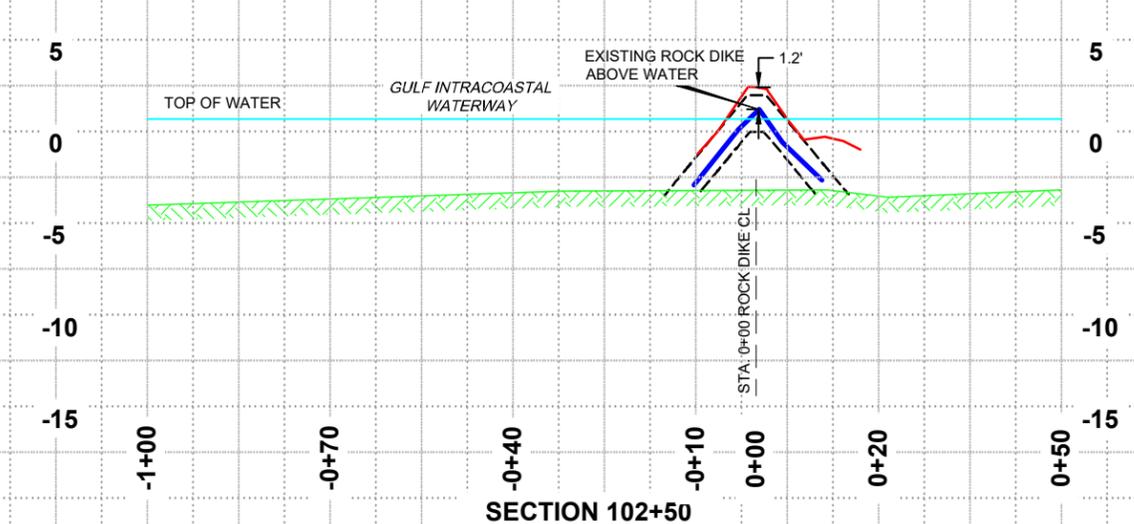
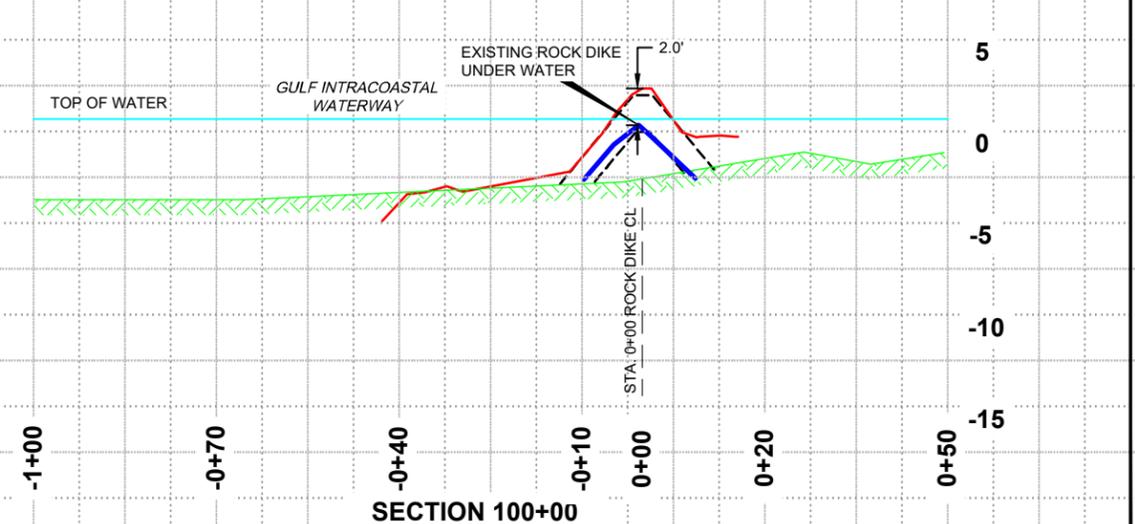
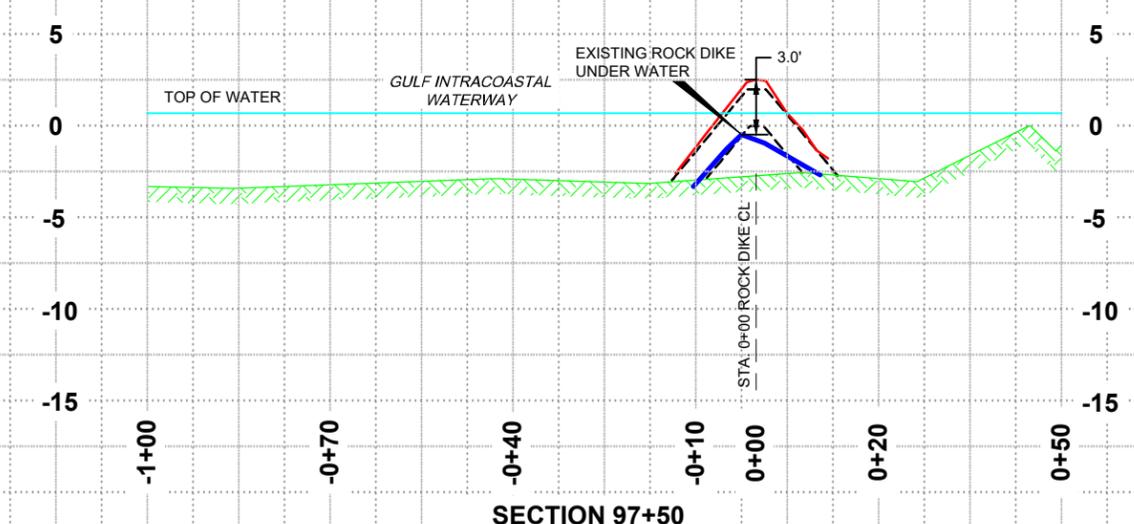
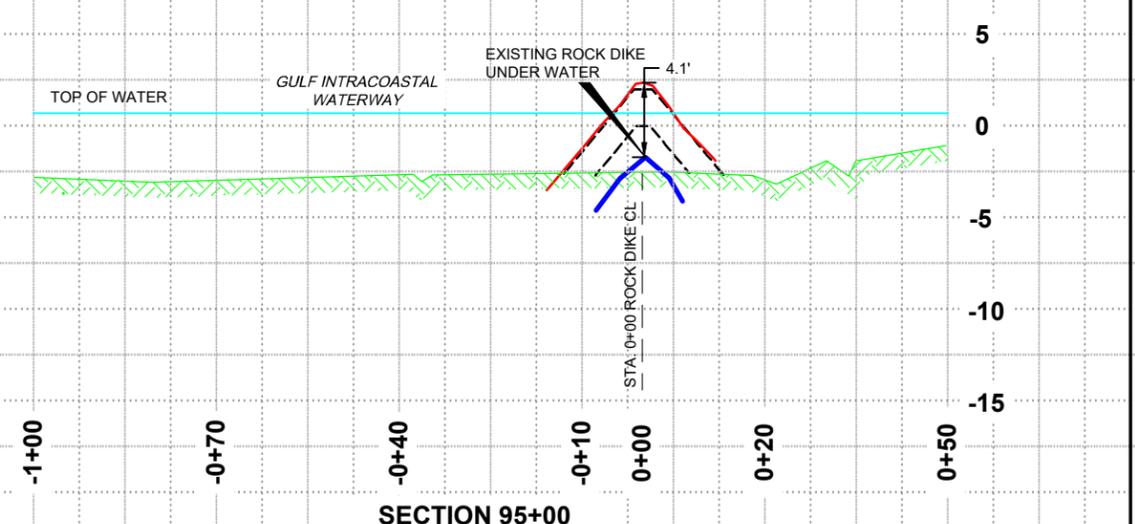
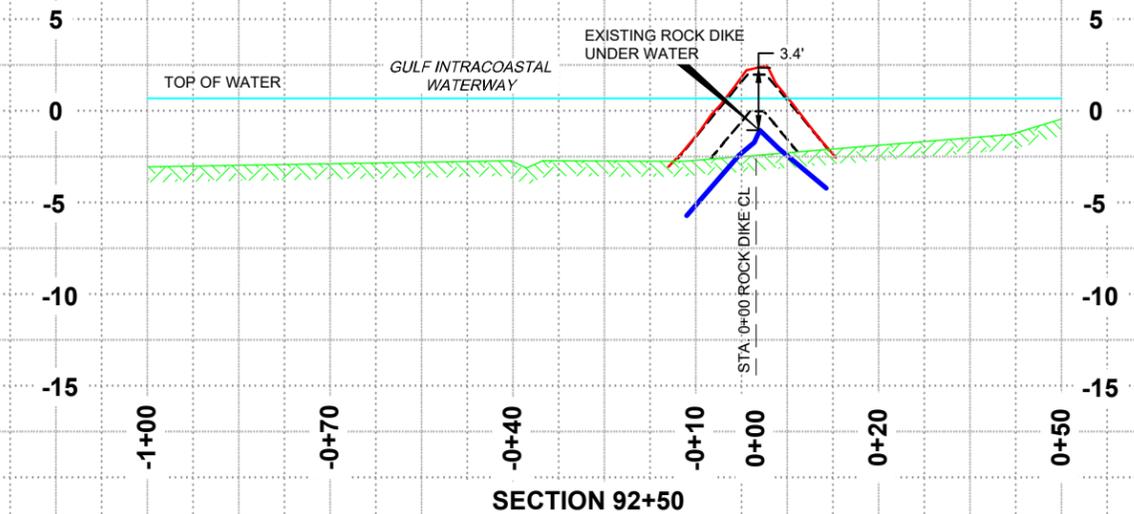
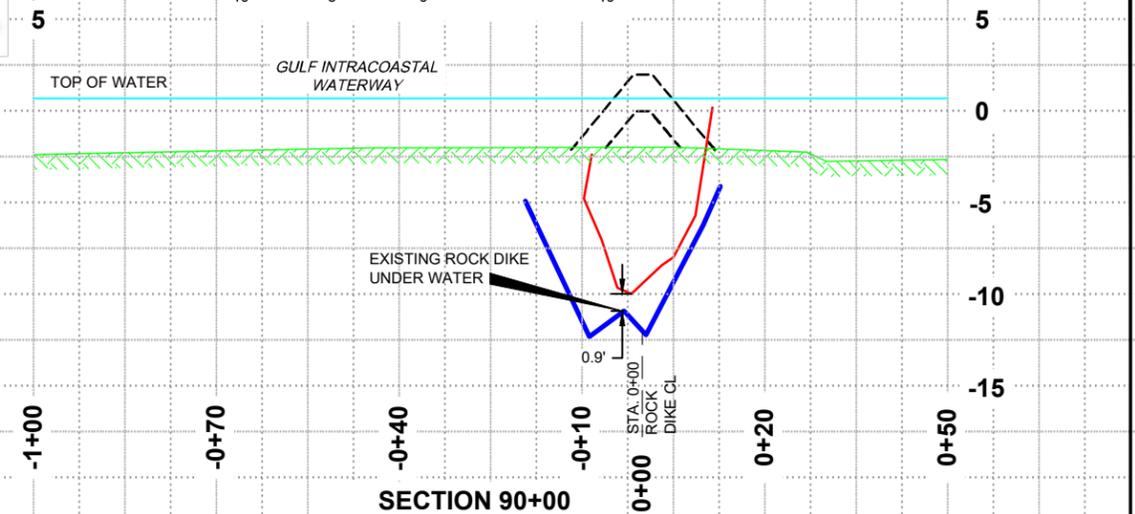
SCALE
 HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 10'

LEGEND

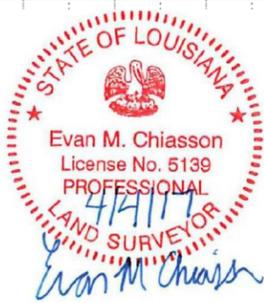
- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- - - DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



TE-43 SEGMENT 4 CROSS-SECTIONS		DATE: 4/4/2017	SHEET 18 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY:	
DRAWN BY: EMC		BY	
DESCRIPTION		DATE	
REV		DATE	



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

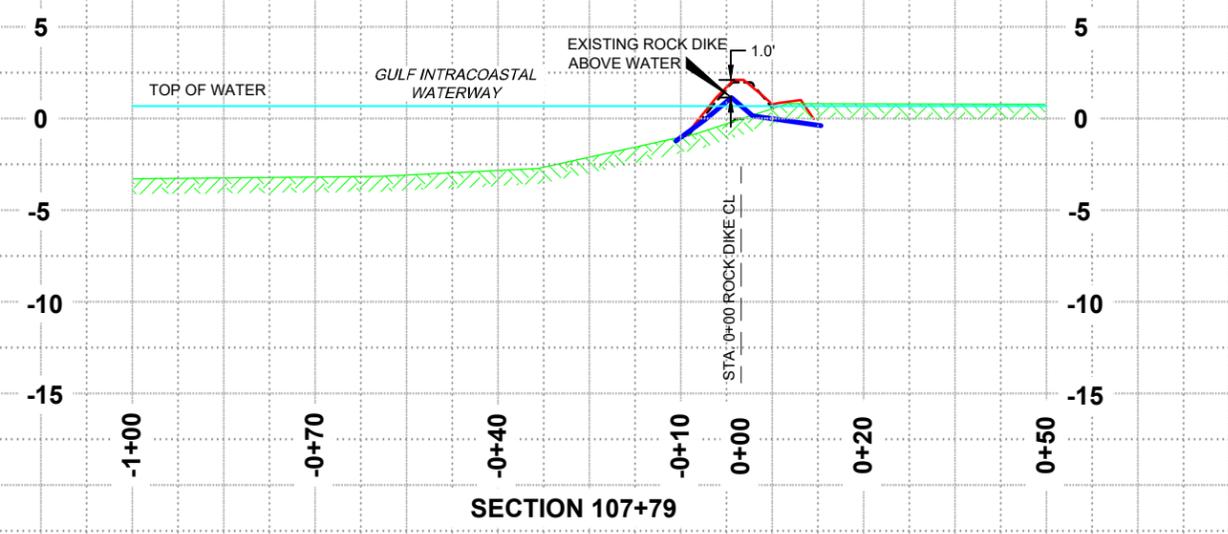
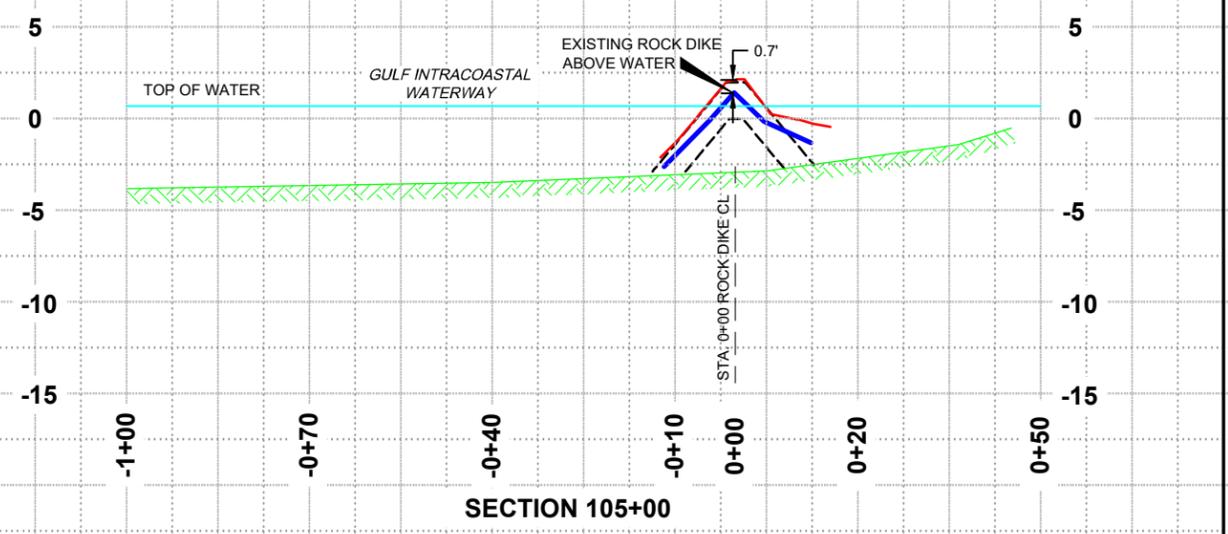
HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 10'

LEGEND

- PRE-CONSTRUCTION NATURAL BOTTOM-2014
- - - - DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2014
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION = +3.5' NAVD88 (GEOID99) = +2.0' NAVD88 (GEOID12A)



GULF INTRACOASTAL WATERWAY CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		TE-43 SEGMENT 4 CROSS-SECTIONS	DATE: 4/4/2017 SHEET 19 OF 31
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		APPROVED BY: KAK DESIGNED BY: EMC	
REV.	DATE	DESCRIPTION	BY

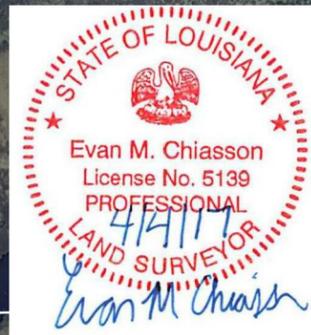
TERREBONNE PARISH, LOUISIANA
T 17 S - R 15 E

STAFF GAGES AND SETTLEMENT PLATES						
POINT NO	COORDINATES (NAD83)		COORDINATES (NAD83)		ELEV. NAVD88	DESCRIPTION
	X:	Y:	LAT:	LONG:		
2504	3,394,887	399,169	29°35'49.70"	90°58'28.06"	--	STAFF GAGE
2526	3,396,990	396,090	29°35'19.15"	90°58'04.35"	--	STAFF GAGE

WATER LEVEL
M.L.W. = +0.7' NAVD88 (GEOID 12A)
M.H.W. = +1.6' NAVD88 (GEOID 12A)

BEGIN CIAP SEGMENT 2B
CENTERLINE - STA 65+28
X = 3,394,429' NAD 83
Y = 399,297' NAD 83
LAT = 29° 35' 50.98" NAD 83
LONG = 90° 58' 33.24" NAD 83

END CIAP SEGMENT 2B
CENTERLINE - STA 109+04
X = 3,396,960' NAD 83
Y = 396,113' NAD 83
LAT = 29° 35' 19.38" NAD 83
LONG = 90° 58' 4.69" NAD 83



GIWW BANK RESTORATION OF CRITICAL AREAS
CIAP - SEGMENT 2B
4,376'

GULF INTRACOASTAL WATERWAY

EXISTING ROCK DIKE

SECTION 12

SECTION 13

T 17 S - R 14 E

T 17 S - R 15 E

SECTION 42

SECTION 41

SECTION 43

SECTION 44

LEGEND

	CIAP SEGMENT 2B CENTERLINE
	SECTION LINE
	STAFF GAGE
	DENOTES CL ELEVATION (GEOID 12A)

- SURVEY NOTES:**
1. ROCK DIKE SURVEY PERFORMED DECEMBER 28, 2016 TO JANUARY 13, 2017 BY T. BAKER SMITH, LLC.
 2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD 83, IN U.S. SURVEY FEET. GEOGRAPHIC COORDINATES ARE NAD 83.
 3. THE VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD 88 (GEOID 12A), IN U.S. SURVEY FEET.
 4. THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 5. BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



REV. NO: 00	REV. DATE: --/--	REV. BY: --
REVISION DESCRIPTION:		

DRAWN BY: EMC	APPROVED BY: KAK
DATE: 4/4/2017	JOB NO: 2016.0971
DRAWING NAME: SHEET 20.DWG	
PROJECTION: LA SOUTH ZONE 1702	
GEO. DATUM: NAD83 VERT. DATUM: NAVD88	
GRID UNITS: US SURVEY FEET	
SHEET NO: 20	OF 31

CIAP SEGMENT 2B PLAN VIEW
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA



TERREBONNE PARISH, LOUISIANA
T 17 S - R 13 E

PENCHANT NATURAL
RESOURCE PLAN - TE-34
EAST AREA
3,788'

PENCHANT NATURAL
RESOURCE PLAN - TE-34
WEST AREA
2,879'

STAFF GAGES AND SETTLEMENT PLATES						
POINT NO	COORDINATES (NAD83)		COORDINATES (NAD83)		ELEV. NAVD88	DESCRIPTION
	X:	Y:	LAT:	LONG:		
2407	3,336,219	396,196	29°35'21.62"	91°09'32.67"	--	STAFF GAGE
2373	3,334,071	396,025	29°35'19.95"	91°09'57.00"	4.6	SETTLEMENT PLATE
2374	3,334,775	396,274	29°35'22.41"	91°09'49.02"	5.7	SETTLEMENT PLATE
2375	3,335,520	396,538	29°35'25.02"	91°09'40.57"	6.9	SETTLEMENT PLATE
2376	3,337,333	397,248	29°35'32.02"	91°09'20.03"	5.4	SETTLEMENT PLATE
2377	3,336,963	397,035	29°35'29.91"	91°09'24.23"	5.1	SETTLEMENT PLATE
2380	3,336,728	396,571	29°35'25.32"	91°09'26.90"	3.5	SETTLEMENT PLATE

BEGIN TE-34 PENCHANT EAST
CENTERLINE - STA 0+00
X = 3,338,249' NAD 83
Y = 397,779' NAD 83
LAT = 29° 35' 37.26" NAD 83
LONG = 91° 9' 9.64" NAD 83

BEGIN TE-34 PENCHANT WEST
CENTERLINE - STA 0+00
X = 3,333,841' NAD 83
Y = 395,944' NAD 83
LAT = 29° 35' 19.16" NAD 83
LONG = 91° 9' 59.61" NAD 83

END TE-34 PENCHANT EAST
CENTERLINE - STA 37+88
X = 3,337,492' NAD 83
Y = 395,177' NAD 83
LAT = 29° 35' 11.51" NAD 83
LONG = 91° 9' 18.27" NAD 83

END TE-34 PENCHANT WEST
CENTERLINE - STA 28+79
X = 3,336,145' NAD 83
Y = 396,102' NAD 83
LAT = 29° 35' 20.69" NAD 83
LONG = 91° 9' 33.50" NAD 83

TBM (BRASS CAP) (DISTURBED)
ELEVATION = 3.3'± (GEOID 12A)
ELEV = 5.14' (PROJECT DESIGN)
X = 3,336,850.51' NAD 83
Y = 394,985.35' NAD 83
LAT = 29° 35' 9.6226" NAD 83
LONG = 91° 9' 25.5353" NAD 83

TBM (PK NAIL) FOUND IN PILE
ELEVATION = 5.00' (GEOID 12A)
X = 3,336,831.40' NAD 83
Y = 394,982.26' NAD 83
LAT = 29° 35' 9.5922" NAD 83
LONG = 91° 9' 25.7517" NAD 83

"CRMSTE-SM-11"
ELEVATION = 2.74' (GEOID 12A)
X = 3,350,877.02' NAD 83
Y = 375,041.20' NAD 83
LAT = 29° 31' 51.9418" NAD 83
LONG = 91° 6' 47.1019" NAD 83

TRANSECTS	BEGINNING		ENDING	
	EASTING	NORTHING	EASTING	NORTHING
M1	3,334,077	396,028	3,334,141	395,846
M2	3,334,312	396,111	3,334,401	395,862
M3	3,334,548	396,195	3,334,684	395,812
M4	3,334,784	396,278	3,334,967	395,760
M5	3,335,019	396,362	3,335,237	395,747
M6	3,335,255	396,445	3,335,499	395,756
M7	3,335,490	396,529	3,335,737	395,835
M8	3,335,726	396,613	3,335,952	395,976
M9	3,335,949	396,665	3,334,323	395,882
M10	3,336,057	396,440	3,334,755	395,812
M11	3,336,166	396,214	3,335,212	395,755
M12	3,338,033	397,654	3,338,153	397,447
M13	3,337,816	397,529	3,337,981	397,244
M14	3,337,600	397,404	3,337,758	397,131
M15	3,337,383	397,279	3,337,593	396,916
M16	3,337,167	397,154	3,337,496	396,585
M17	3,336,950	397,029	3,337,370	396,303
M18	3,336,734	396,904	3,337,172	396,145
M19	3,336,633	396,746	3,338,272	397,642
M20	3,336,753	396,527	3,337,633	397,008
M21	3,336,873	396,308	3,337,536	396,670
M22	3,336,993	396,088	3,337,329	396,272
M23	3,337,113	395,869	3,337,241	395,939
M24	3,337,233	395,650	3,337,392	395,736
M25	3,337,353	395,430	3,337,516	395,519
M26	3,337,473	395,211	3,337,555	395,255

LEGEND

- TE-34 PENCHANT CENTERLINE
- - - TE-34 PENCHANT TRANSECTS
- - - SECTION LINE
- △ 2407 BENCHMARK
- 2373 SETTLEMENT PLATE
- 2380 STAFF GAGE

- SURVEY NOTES:**
- ROCK DIKE SURVEY PERFORMED DECEMBER 28, 2016 TO JANUARY 13, 2017 BY T. BAKER SMITH, LLC.
 - ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD 83, IN U.S. SURVEY FEET. GEOGRAPHIC COORDINATES ARE NAD 83.
 - THE VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD 88 (GEOID 12A), IN U.S. SURVEY FEET.
 - THE REFERENCE BENCHMARKS FOR THIS SURVEY IS "TE43-SM-C" AND "CRMSTE-SM-11" (GEOID 12A)
 - BACKGROUND IMAGERY SOURCED FROM 2012 DOQQ AERIAL PHOTOGRAPHY.



TBS
T. BAKER SMITH
SOLUTIONS START HERE
412 South Van Ave, Houma, LA 70363
(985)868-1050 - tbsmith.com

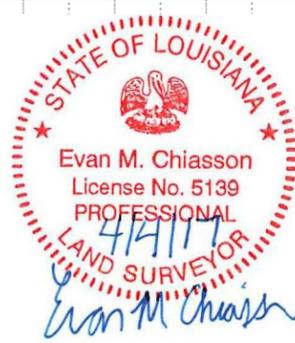
SCALE IN FEET
400' 200' 0' 400'

REV. NO: 00 REV. DATE: --/-- REV. BY: --
REVISION DESCRIPTION: --

DRAWN BY: EMC APPROVED BY: KAK
DATE: 4/4/2017 JOB NO: 2016.0971
DRAWING NAME: SHEET 21.DWG
PROJECTION: LA SOUTH ZONE 1702
GEO. DATUM: NAD83 | VERT. DATUM: NAVD88
GRID UNITS: US SURVEY FEET
SHEET NO: 21 OF 31

TE-34 ROCK DIKE PLAN OVERVIEW
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43)
GIWW BREACH CLOSURE (EB-10)
PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)
COASTAL PROTECTION AND RESTORATION AUTHORITY
OF LOUISIANA
TERREBONNE PARISH, LOUISIANA

4/4/2017 - P:\Y-2016\2016.0971\DWG\SHEET 21.DWG



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

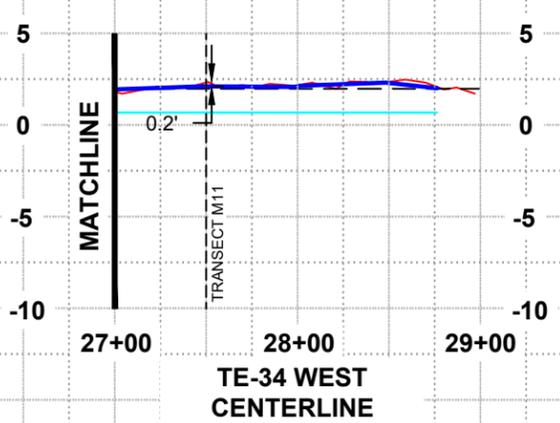
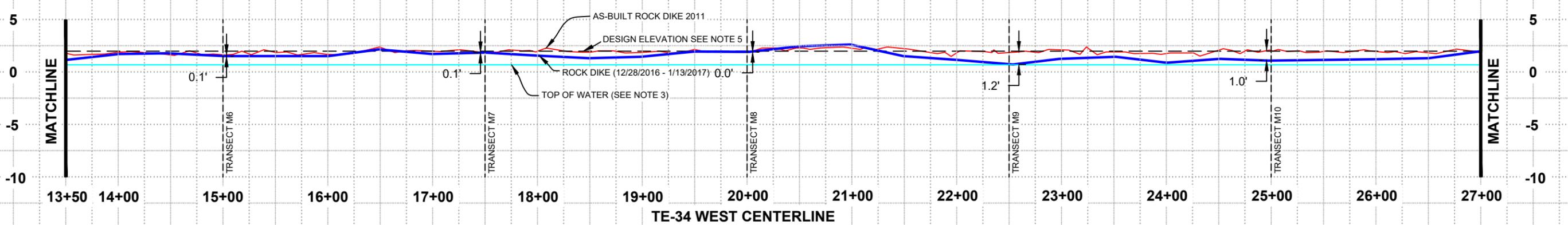
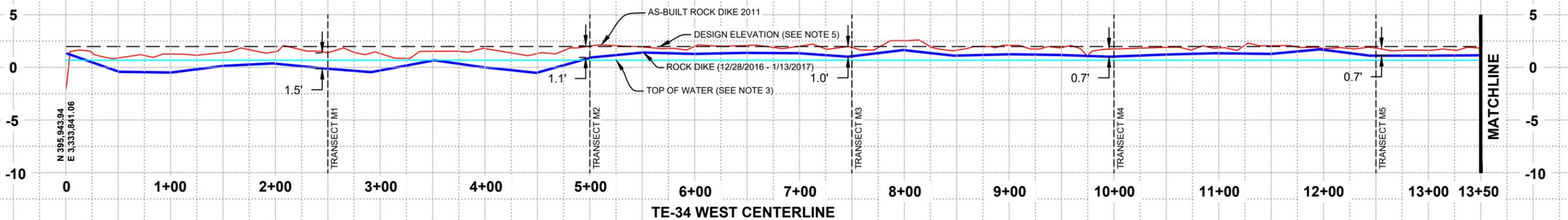
SCALE
 HORIZONTAL SCALE: 1" = 100'
 VERTICAL SCALE: 1" = 10'

LEGEND

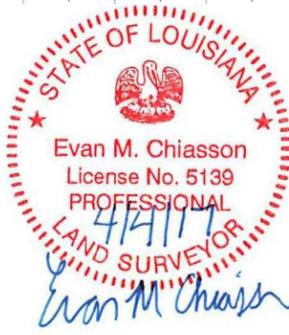
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2011
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (ROCK DIKE) = +3.5' NAVD88 = +2.0' NAVD88 (GEOID 12A)



TE-34 PENCHANT CENTERLINE		DATE: 4/4/2017	SHEET 22 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY:	
BY		DRAWN BY: EMC	
REV		DESCRIPTION	
DATE		DATE	
T. BAKER SMITH SOLUTIONS SOLUTIONS START HERE 452 South West Ave., Metairie, LA 70005 (504) 885-1000 - bakersmith.com			



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

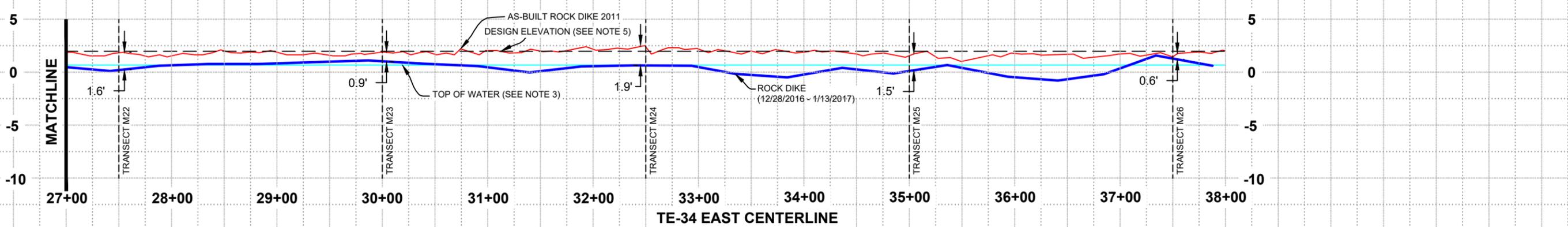
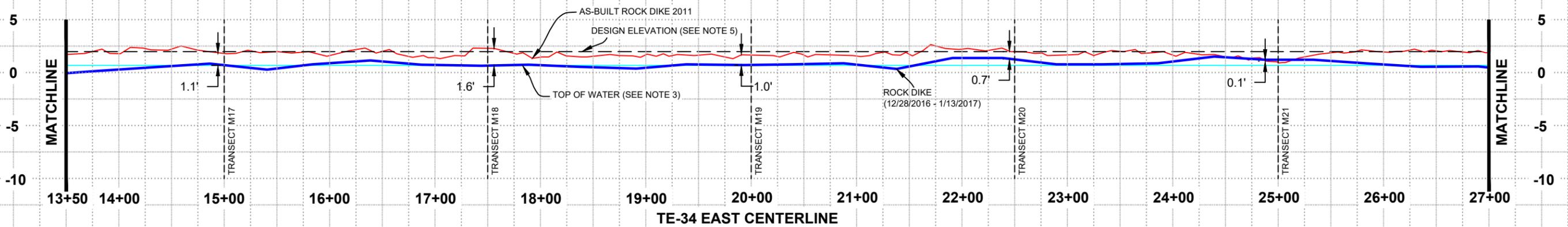
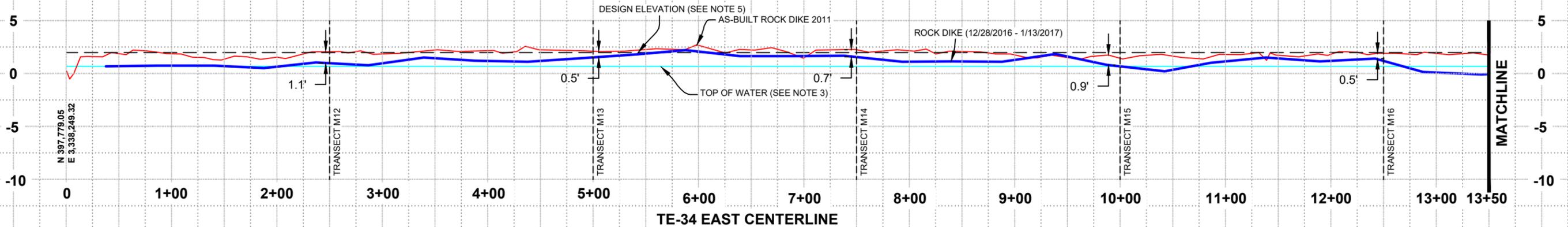
SCALE
 HORIZONTAL SCALE: 1" = 100'
 VERTICAL SCALE: 1" = 10'

LEGEND

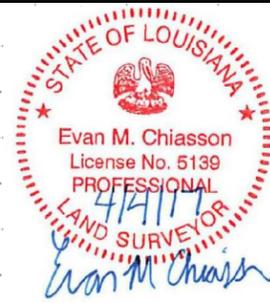
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- AS-BUILT ROCK DIKE 2011
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING SOUTHEASTERLY
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (ROCK DIKE) = +3.5' NAVD88 = +2.0' NAVD88 (GEOID 12A)

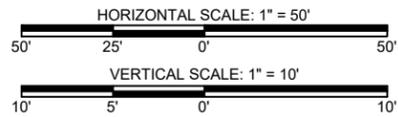


TE-34 PENCHANT CENTERLINE		DATE: 4/4/2017	SHEET 23 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		STATE PROJECT NUMBER: TE-43 & TE-34	FEDERAL PROJECT NUMBER:
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801			
		DESIGNED BY: EMC	APPROVED BY: KAK
REV	DATE	DESCRIPTION	BY
 T. BAKER SMITH SOLUTIONS 452 South West Ave., Metairie, LA 70002 (504) 885-1000 - www.tbakersmith.com			



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

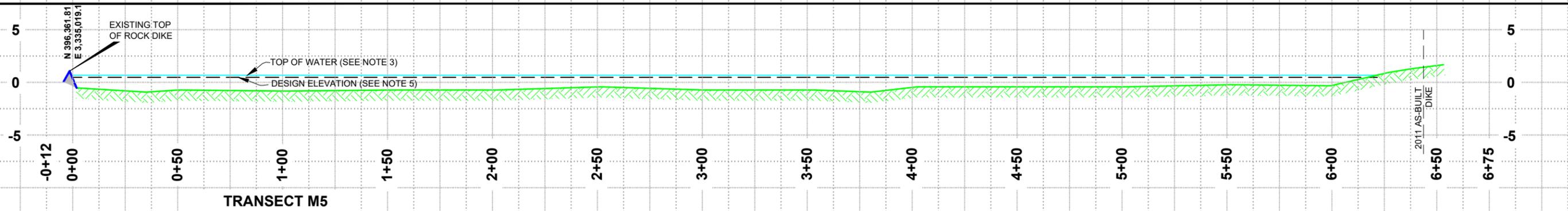
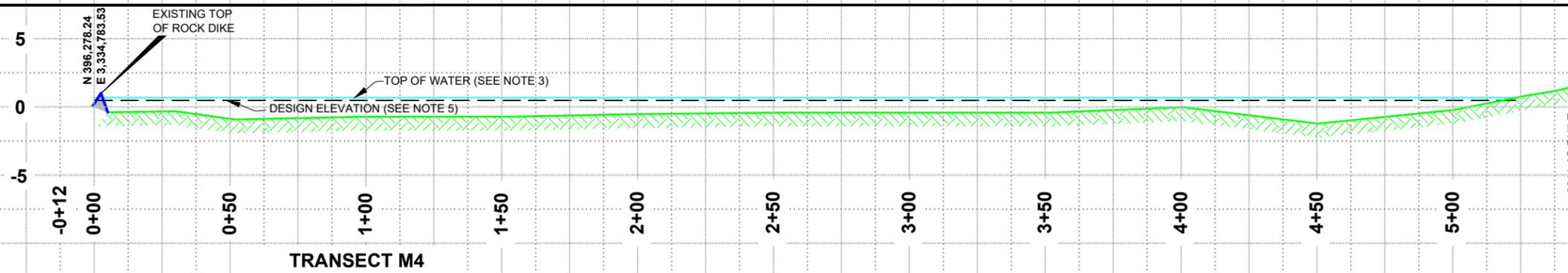
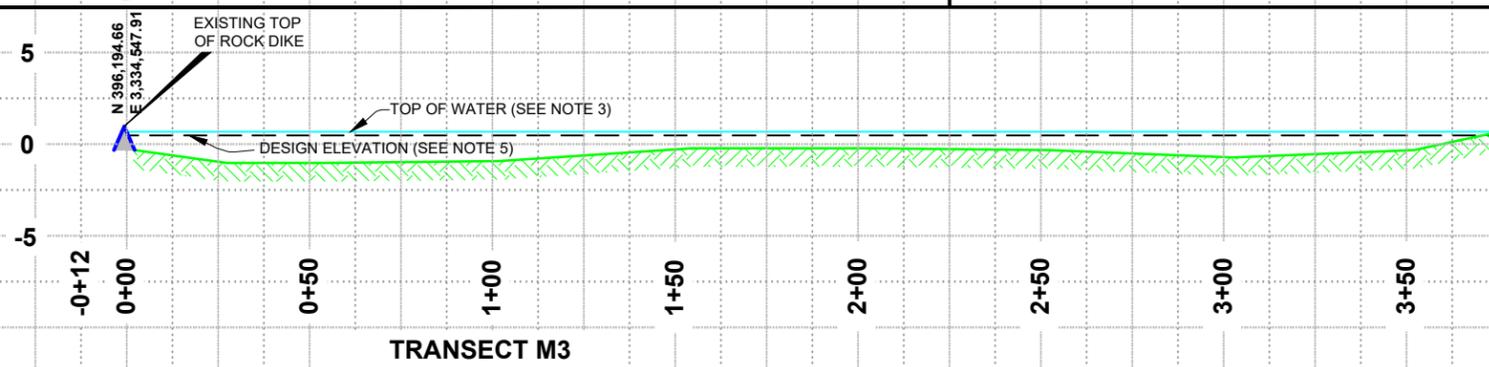
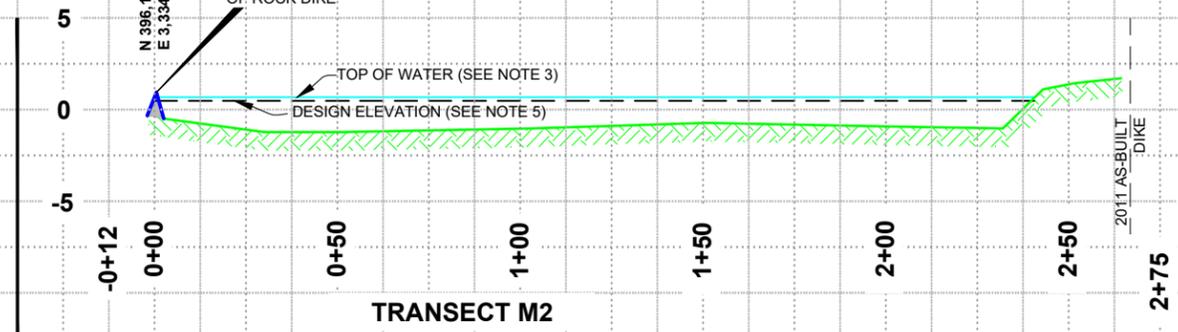
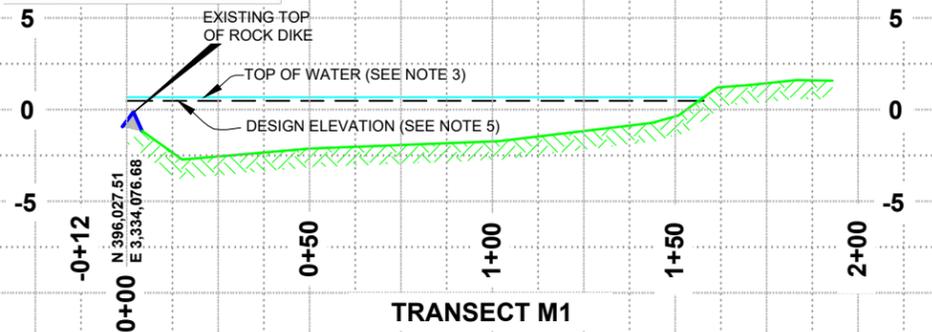


LEGEND

- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

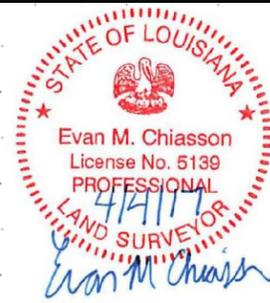
NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88 = +0.5' NAVD88 (GEOID 12A)



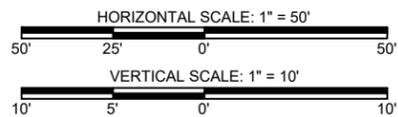
GWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		TE-34 PENCHANT TRANSECTS
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DATE: 4/4/2017 SHEET 24 OF 31
FEDERAL PROJECT NUMBER: TE-43 & TE-34 FEDERAL PROJECT NUMBER:		APPROVED BY: KAK
DESIGNED BY: EMC		DESIGNED BY:
DRAWN BY:		BY
DESCRIPTION		DATE
REV		DATE





WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

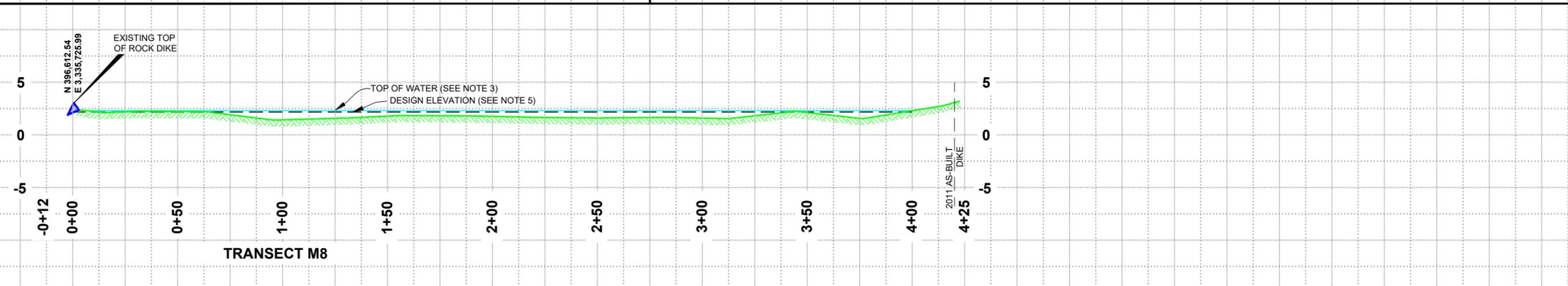
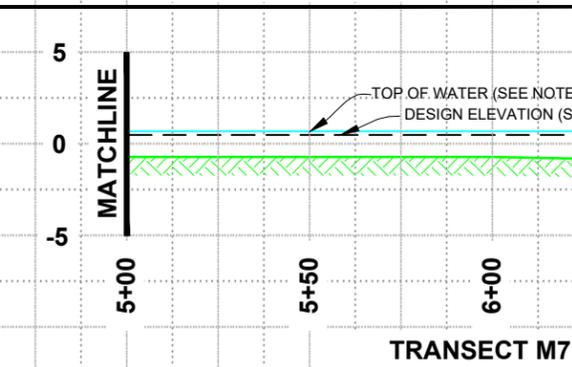
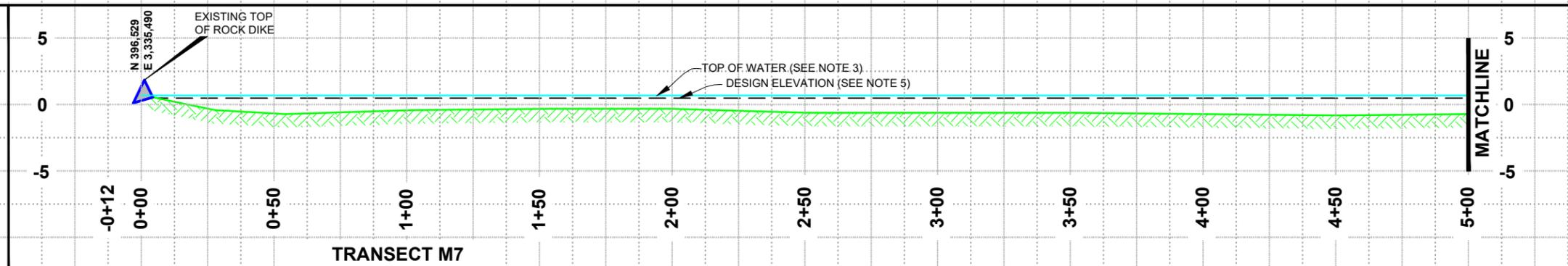
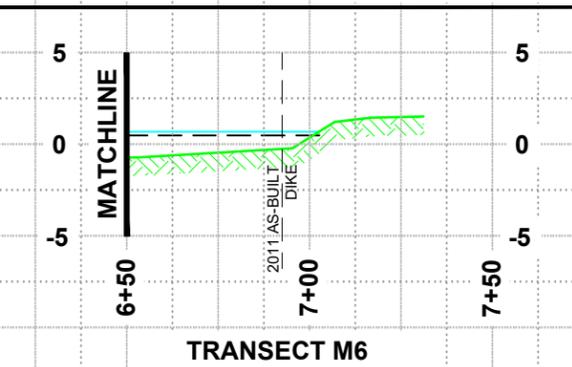
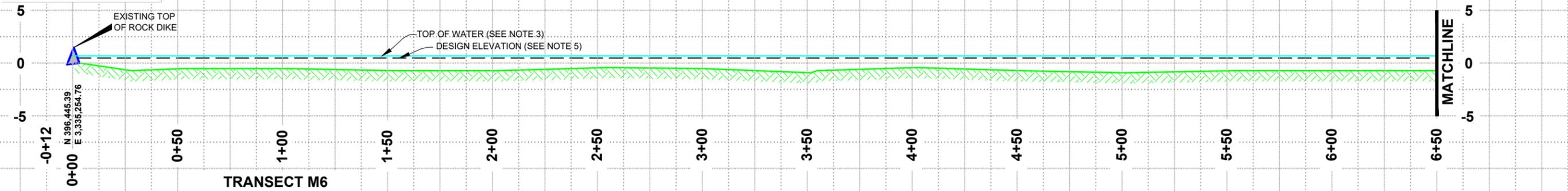


LEGEND

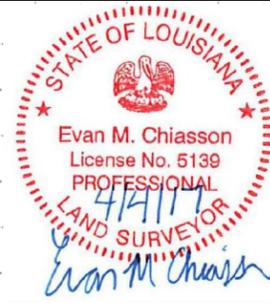
- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88
= +0.5' NAVD88 (GEOID 12A)



GWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		TE-34 PENCHANT TRANSECTS
STATE PROJECT NUMBER: TE-43 & TE-34 FEDERAL PROJECT NUMBER:		DATE: 4/4/2017 SHEET 25 OF 31
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		APPROVED BY: KAK
	DRAWN BY: EMC DESIGNED BY:	
	BY DESCRIPTION	
	REV DATE	



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

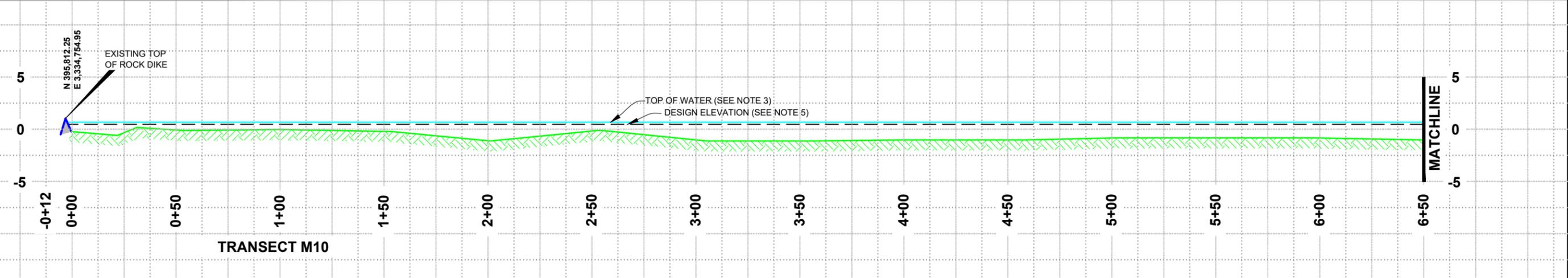
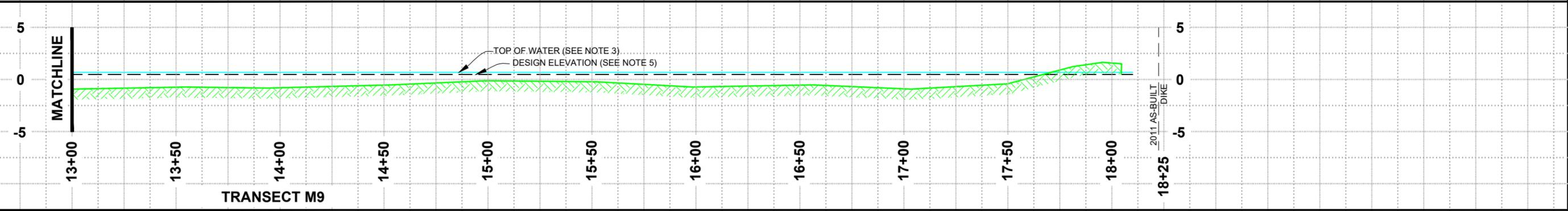
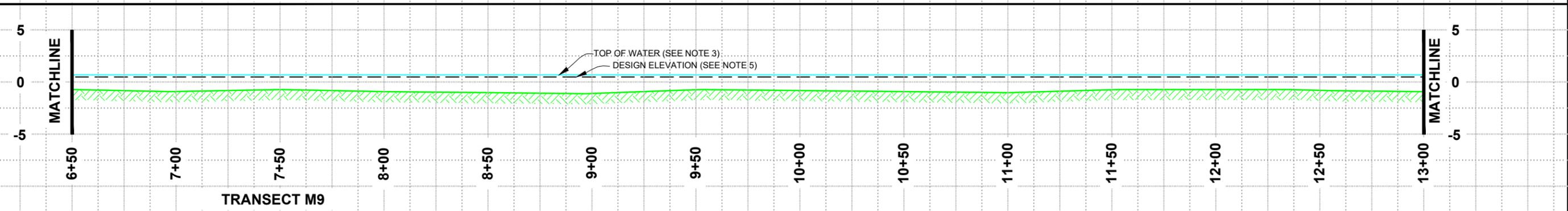
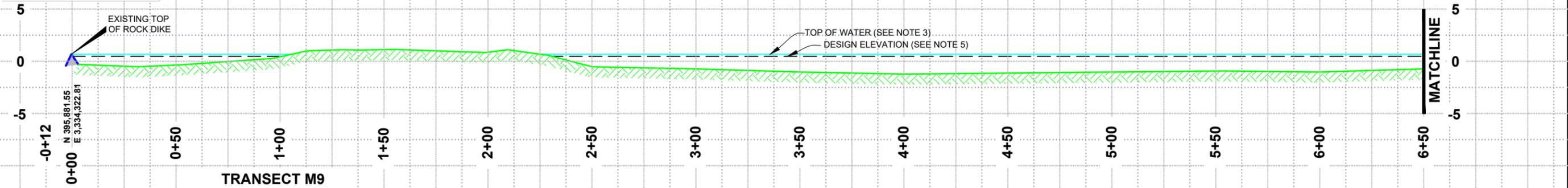
SCALE
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 10'

LEGEND

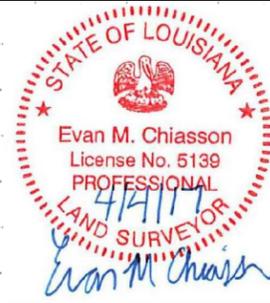
- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHWESTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88 = +0.5' NAVD88 (GEOID 12A)

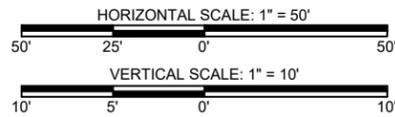


TE-34 PENCHANT TRANSECTS		DATE: 4/4/2017		SHEET 26 OF 31	
GROW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DRAWN BY: EMC		DESIGNED BY:	
REV	DATE	BY	DESCRIPTION		
 T. BAKER SMITH SOLUTIONS START HERE 452 South West Ave., Metairie, LA 70005 (504) 885-7888 - tbaker@tbsolutions.com					



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

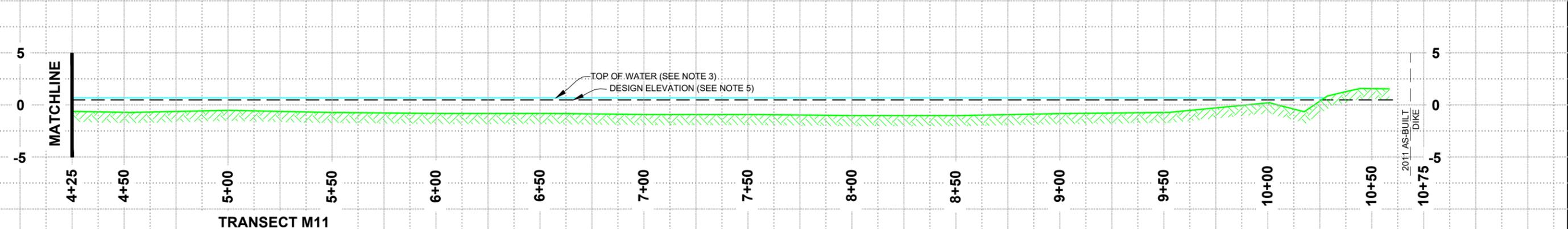
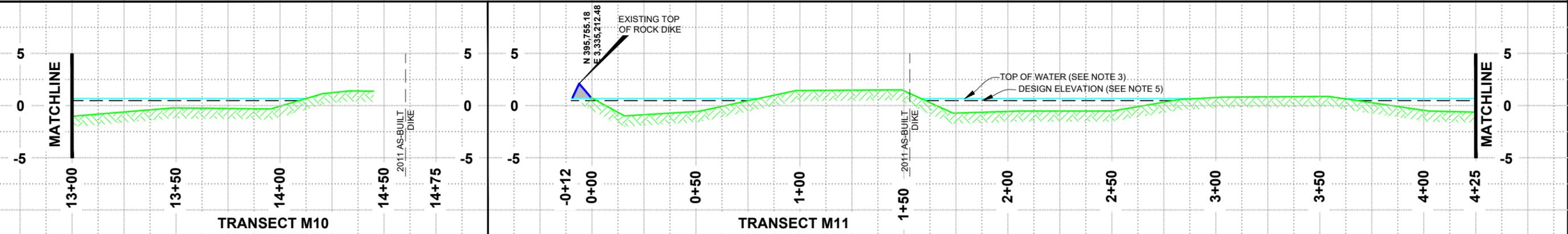
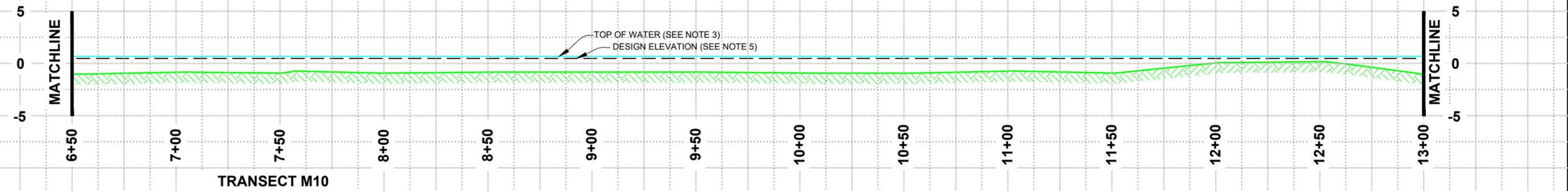


LEGEND

- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

NOTES

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4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88
 = +0.5' NAVD88 (GEOID 12A)

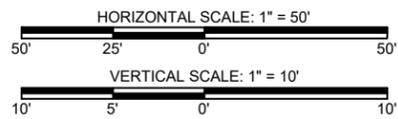


STATE OF LOUISIANA Evan M. Chiasson License No. 5139 PROFESSIONAL LAND SURVEYOR 4/14/17 Evan M. Chiasson		WATER LEVEL M.L.W. = +0.7' NAVD88 (GEOID 12A) M.H.W. = +1.6' NAVD88 (GEOID 12A)		LEGEND EXISTING NATURAL BOTTOM DESIGN ELEVATION (SEE NOTE 5) ROCK DIKE (12/28/2016-1/13/2017) TOP OF WATER (SEE NOTE 3)		NOTES 1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY. 2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET. 3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A). 4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET. 5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88 = +0.5' NAVD88 (GEOID 12A)		TE-34 PENCHANT TRANSECTS	DATE: 4/4/2017	SHEET 27 OF 31
GROW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		FEDERAL PROJECT NUMBER: TE-43 & TE-34		APPROVED BY: KAK				
				DESIGNED BY: EMC		BY				
				DESCRIPTION		DATE				
				REV						
				T. BAKER SMITH SOLUTIONS START HERE 442 South West Ave. Metairie, LA 70005 (504) 885-7888 - tbaker@tbsolutions.com						



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

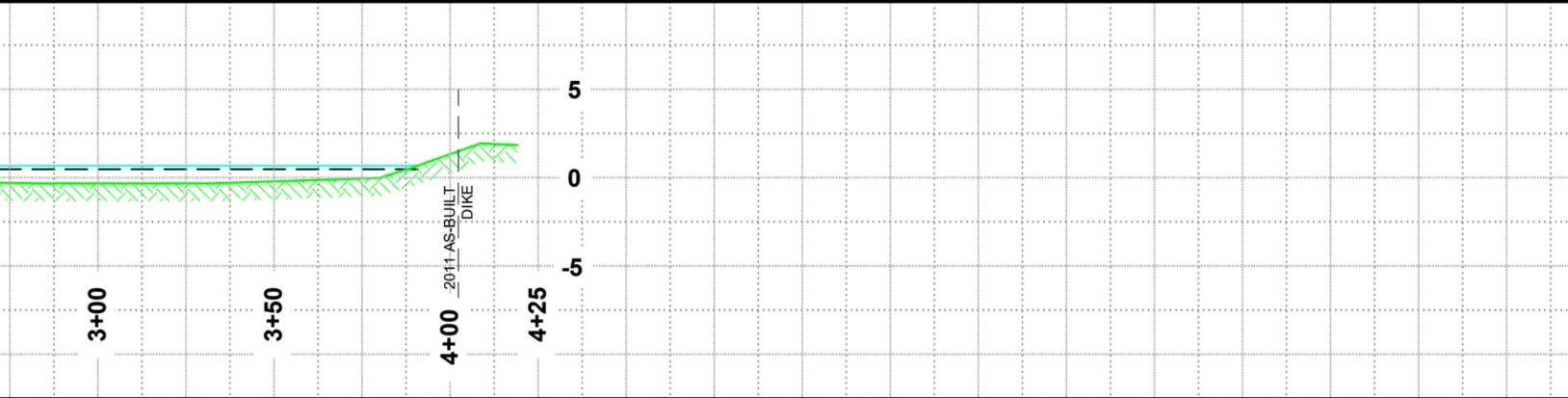
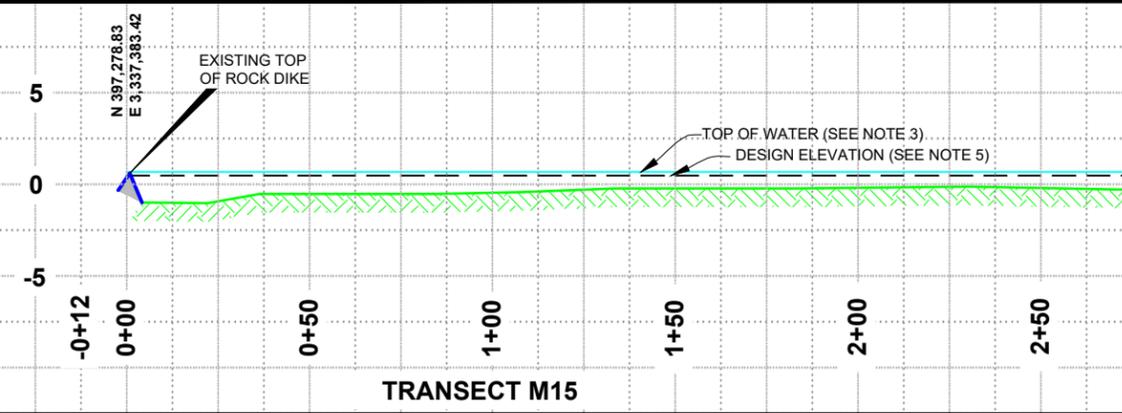
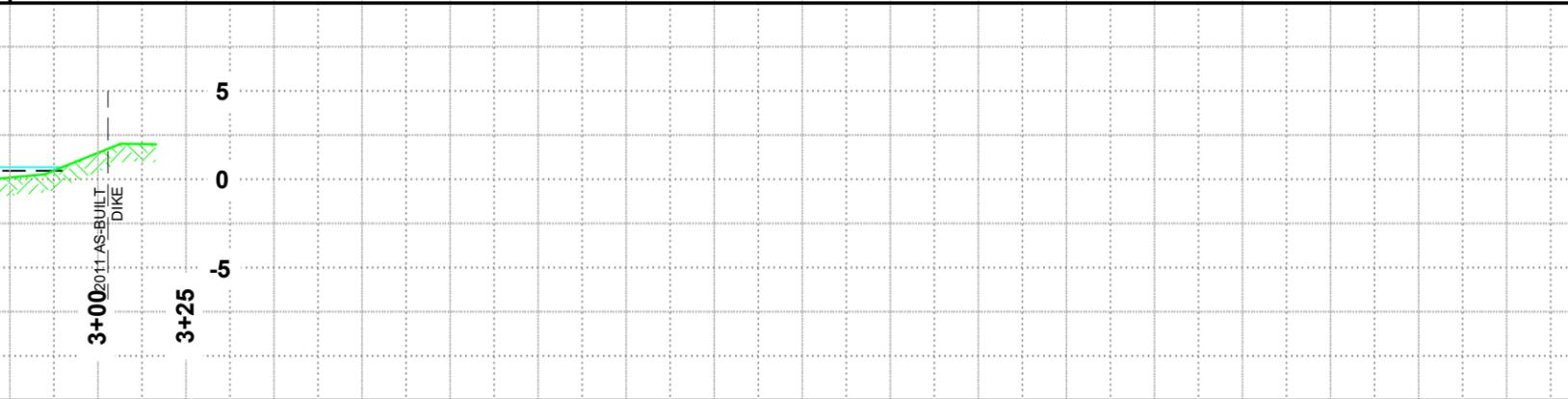
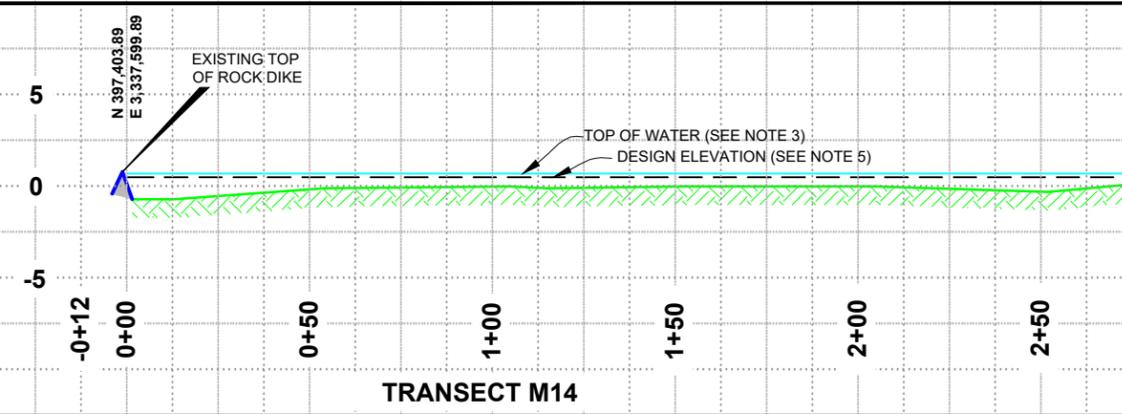
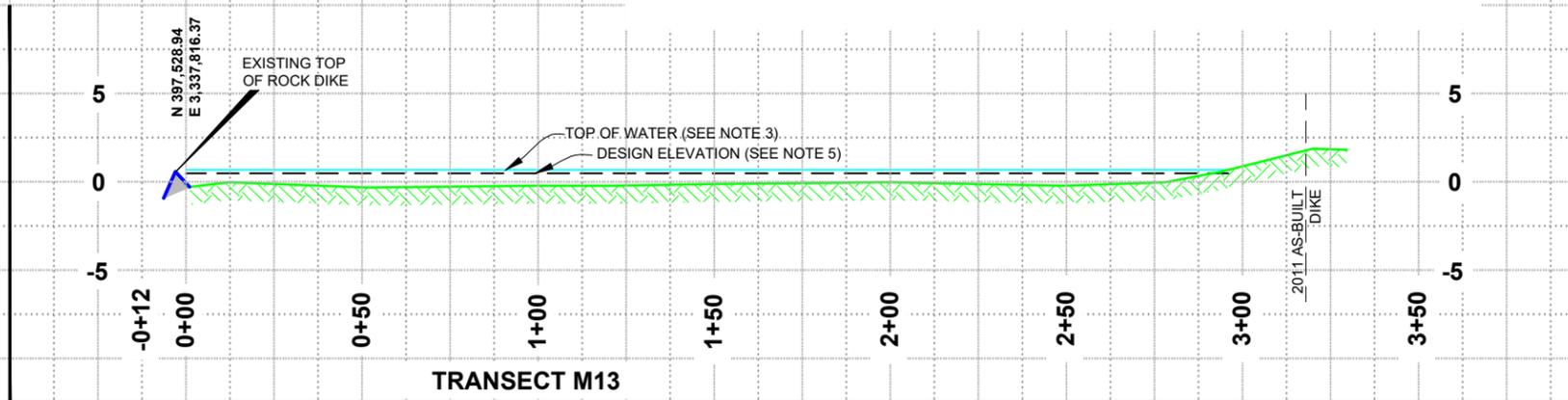
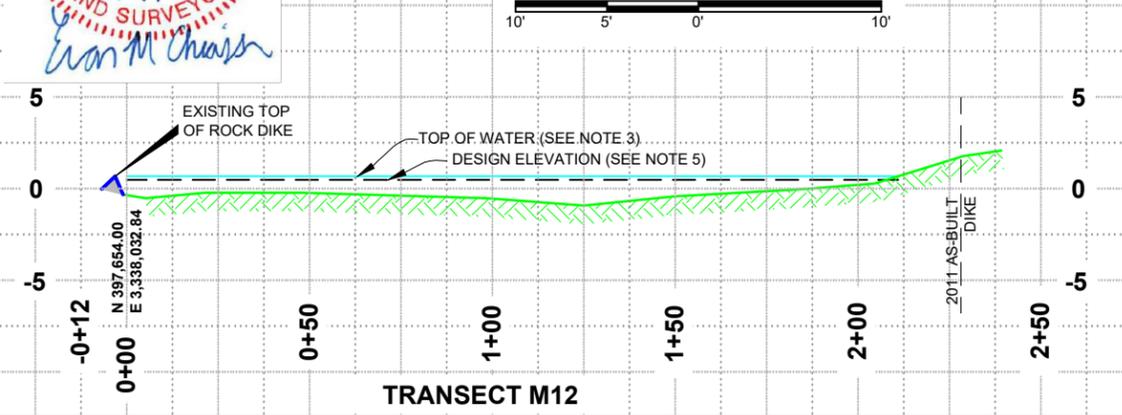


LEGEND

- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING NORTHEASTERLY.
2. ALL GRID COORDINATES ARE EXPRESSED IN LOUISIANA STATE PLANE, SOUTH ZONE, NAD83, IN U.S. SURVEY FEET.
3. AVERAGE TOP OF WATER AT TIME OF SURVEY = +0.7' NAVD88(GEOID12A).
4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88
= +0.5' NAVD88 (GEOID 12A)

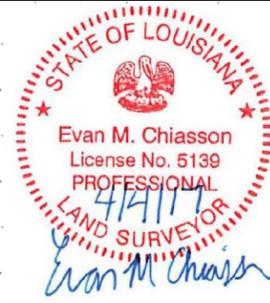


TE-34 PENCHANT TRANSECTS		DATE: 4/4/2017	SHEET 28 OF 31
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		APPROVED BY: KAK	
STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	

COASTAL PROTECTION AND RESTORATION AUTHORITY
 450 LAUREL ST., SUITE 1501
 BATON ROUGE, LOUISIANA 70801

REV	DATE	DESCRIPTION	BY

T. BAKER SMITH SOLUTIONS START HERE
 452 South Vieux Bois, Metairie, LA 70005
 (504) 885-7888 - tbakerm.com



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

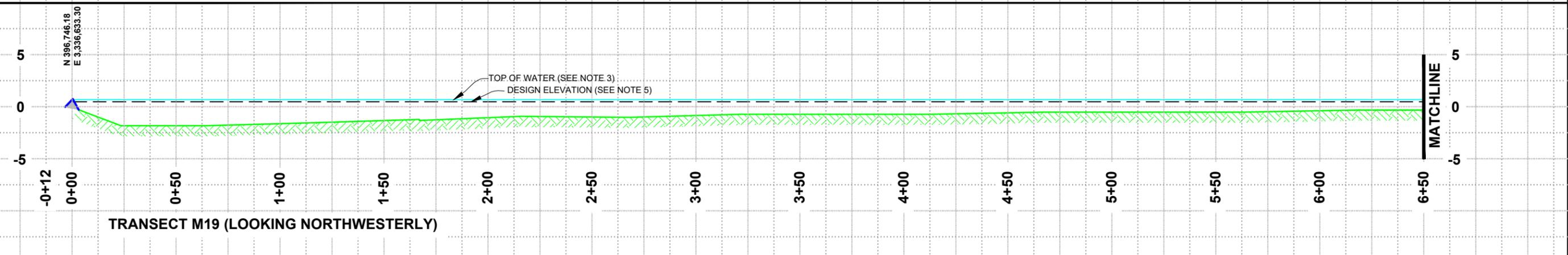
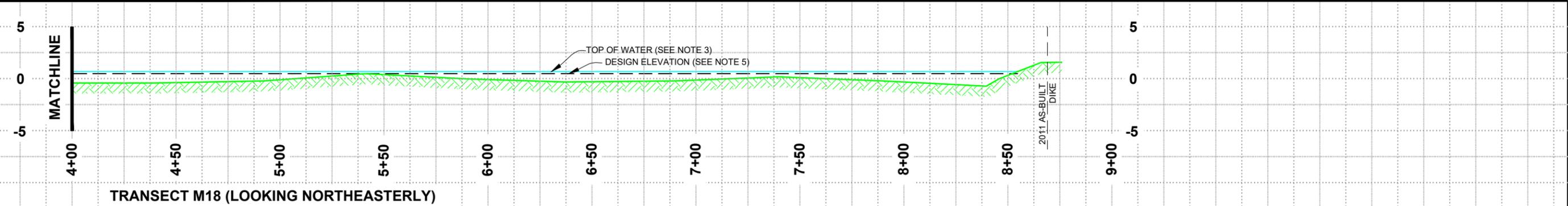
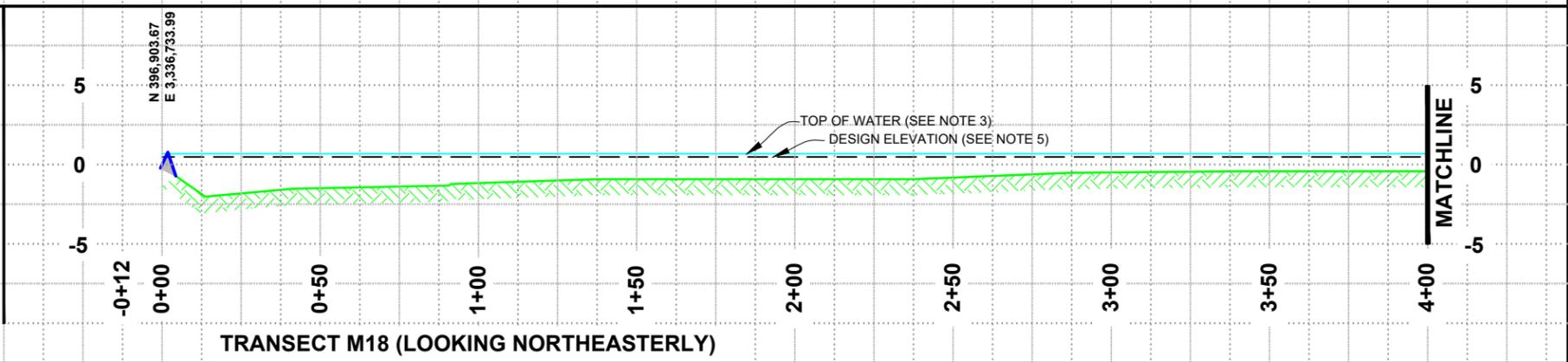
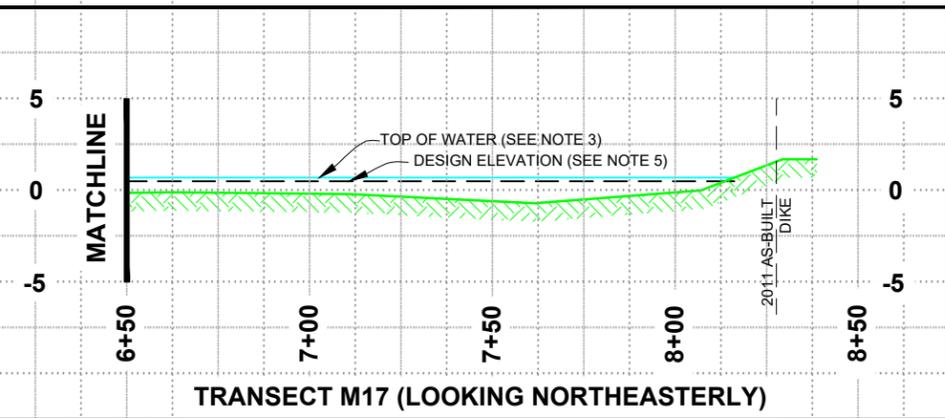
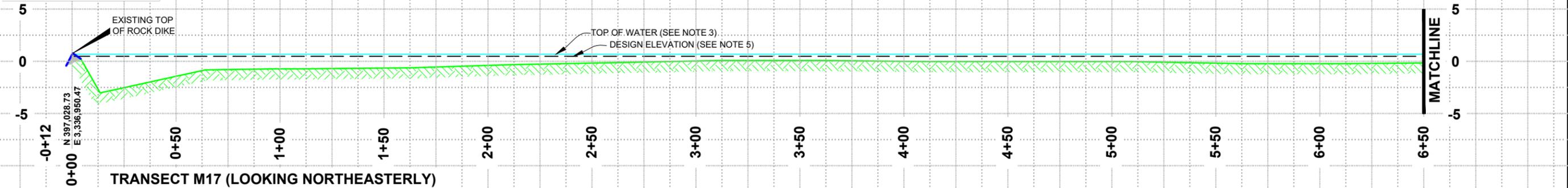
SCALE
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 10'

LEGEND

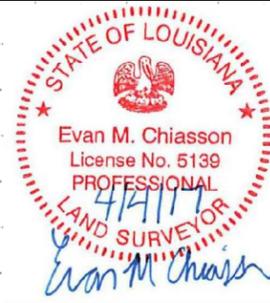
- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

NOTES

1. ALL PROFILES SHOWN ARE LOOKING AS SHOWN.
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4. VERTICAL DATUM FOR ALL ELEVATIONS IS NAVD88 (GEOID12A), IN U.S. SURVEY FEET.
5. PROJECT DESIGN ELEVATION (MARSH) = +2.0' NAVD88 = +0.5' NAVD88 (GEOID 12A)



TE-34 PENCHANT TRANSECTS		DATE: 4/4/2017		SHEET 29 OF 31	
GIWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		STATE PROJECT NUMBER: TE-43 & TE-34		FEDERAL PROJECT NUMBER:	
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DESIGNED BY: EMC		DRAWN BY: EMC	
REV	DATE	DESCRIPTION	BY		



WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

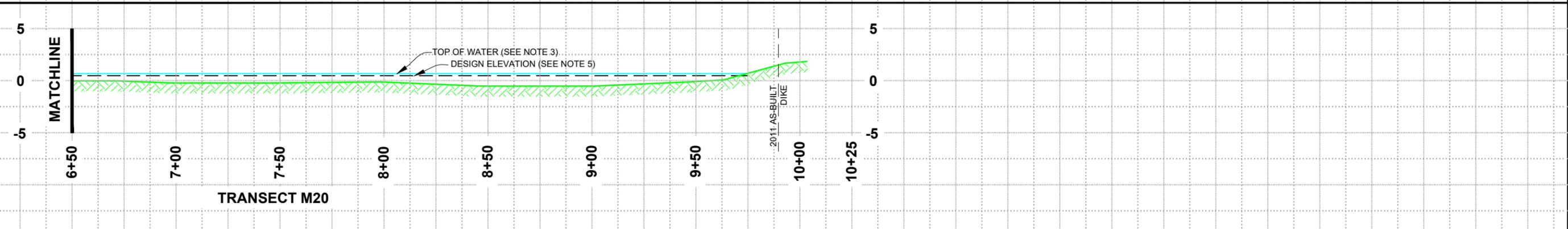
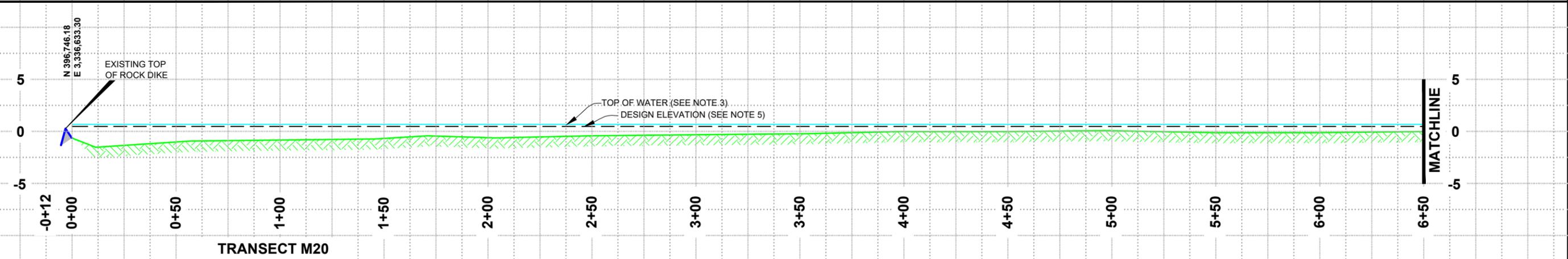
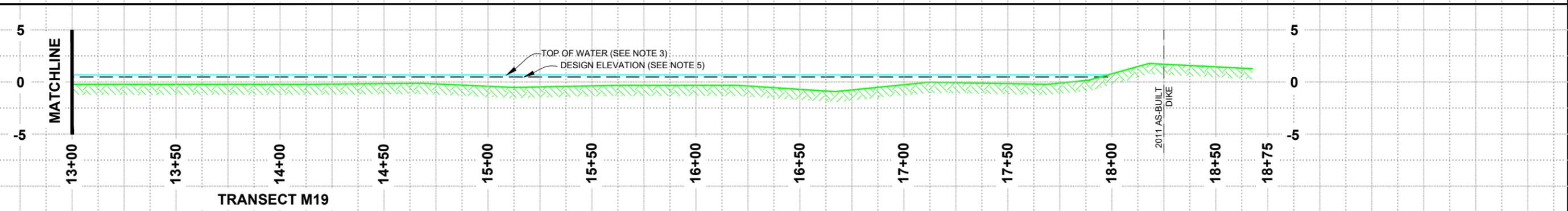
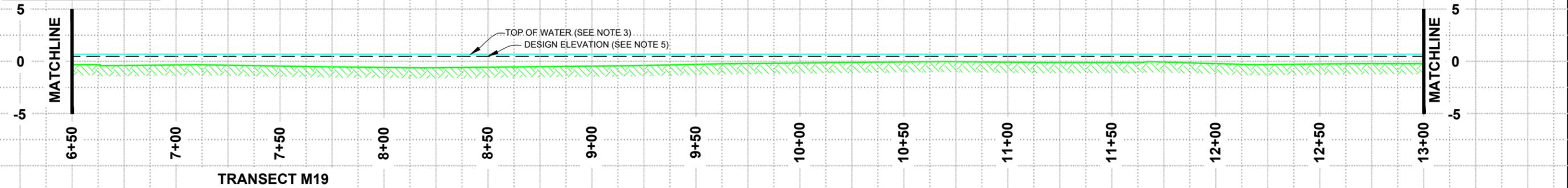
SCALE
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 10'

LEGEND

- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

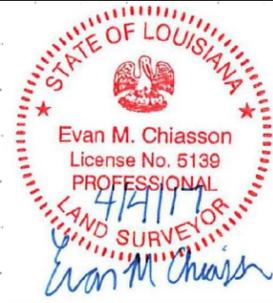
NOTES

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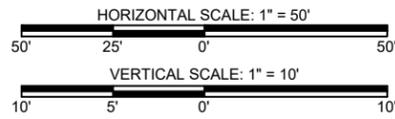
GROW BANK RESTORATION OF CRITICAL AREAS (TE-43), GIWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		TE-34 PENCHANT TRANSECTS
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		DATE: 4/4/2017 SHEET 30 OF 31
FEDERAL PROJECT NUMBER: TE-43 & TE-34	APPROVED BY: KAK	
FEDERAL PROJECT NUMBER:	DESIGNED BY:	
BY	DRAWN BY: EMC	DESCRIPTION
REV	DATE	DATE





WATER LEVEL
 M.L.W. = +0.7' NAVD88 (GEOID 12A)
 M.H.W. = +1.6' NAVD88 (GEOID 12A)

SCALE

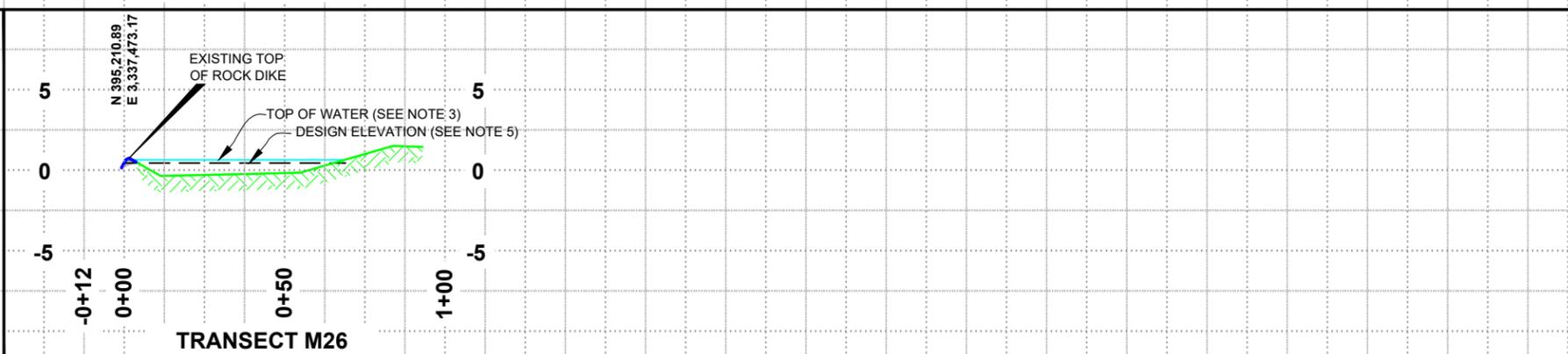
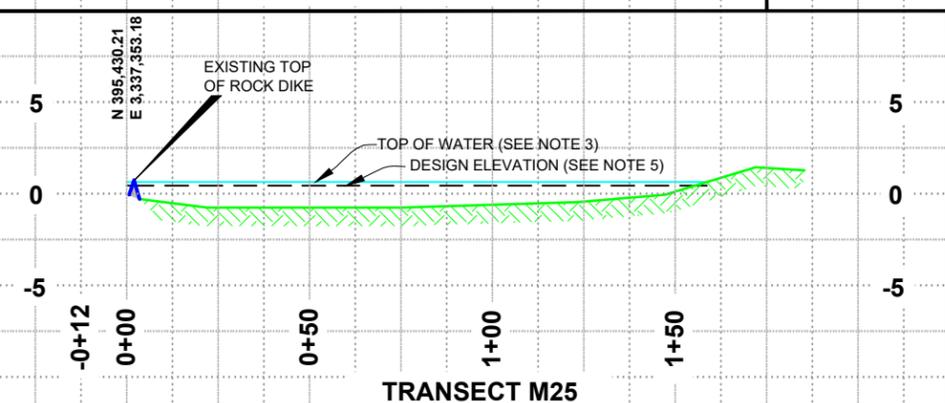
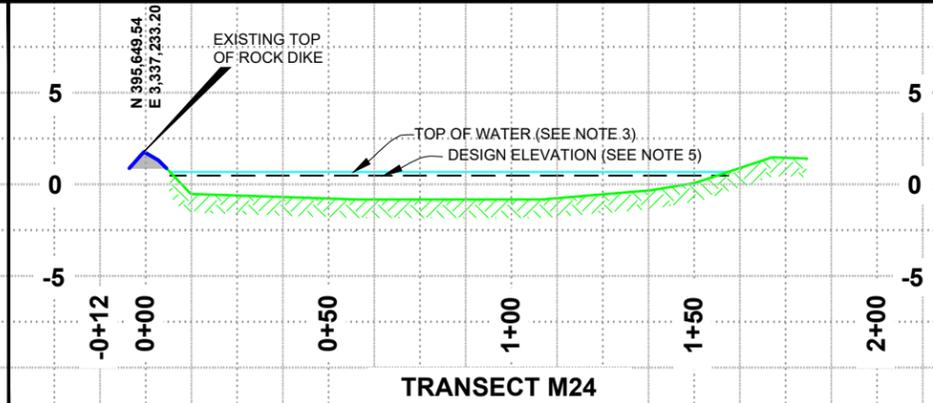
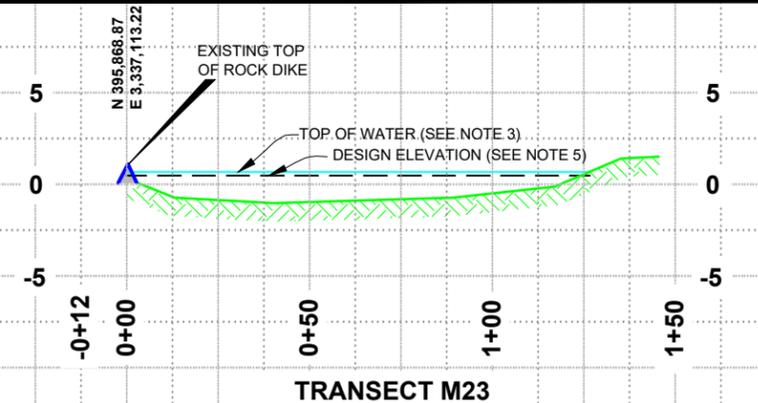
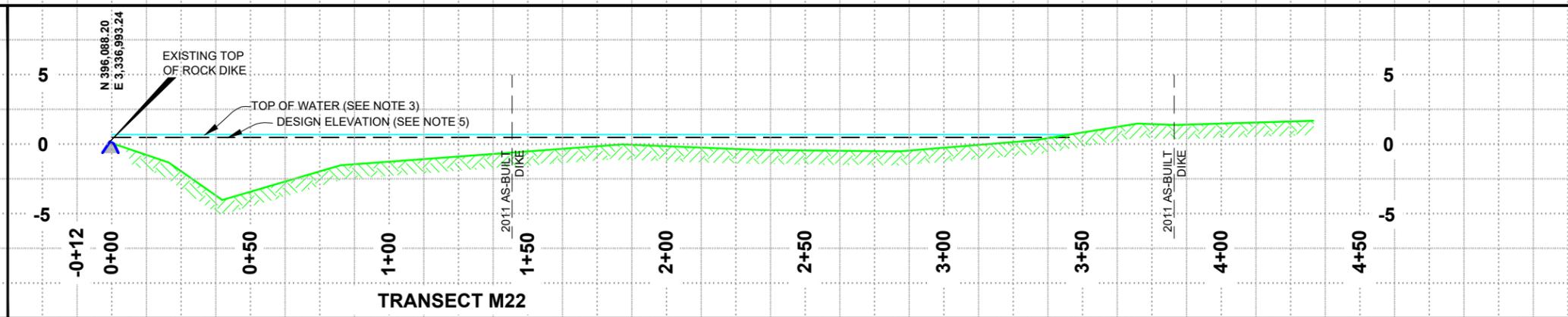
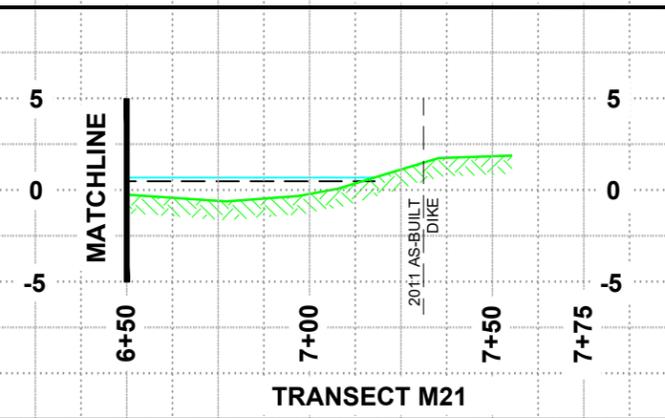
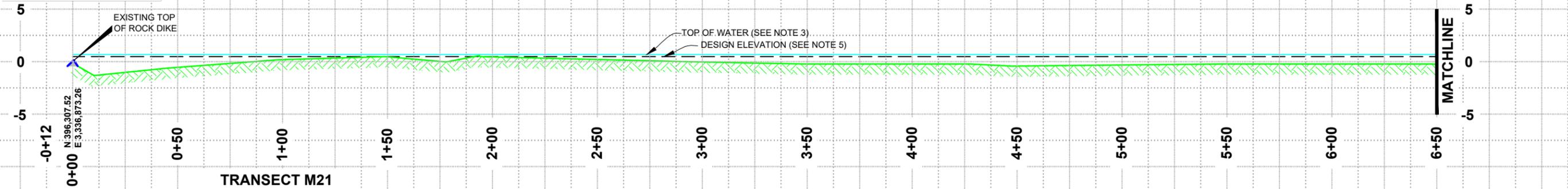


LEGEND

- EXISTING NATURAL BOTTOM
- DESIGN ELEVATION (SEE NOTE 5)
- ROCK DIKE (12/28/2016-1/13/2017)
- TOP OF WATER (SEE NOTE 3)

NOTES

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GWW BANK RESTORATION OF CRITICAL AREAS (TE-43), GWW BREACH CLOSURE (EB-10) AND PENCHANT BASIN NATURAL RESOURCE PLAN (TE-34)		TE-34 PENCHANT TRANSECTS
STATE PROJECT NUMBER: TE-43 & TE-34 FEDERAL PROJECT NUMBER:		DATE: 4/4/2017 SHEET 31 OF 31
COASTAL PROTECTION AND RESTORATION AUTHORITY 450 LAUREL ST., SUITE 1501 BATON ROUGE, LOUISIANA 70801		APPROVED BY: KAK DESIGNED BY: EMC
	BY	DESCRIPTION
REV	DATE	DATE

