

Appendix A

Project Drawings

Appendix A-1

USACE Permit Drawings

DESIGN AUTHENTICATION

PROJECT: Palm Beach Harbor Maintenance Dredging, Palm Beach County, Florida

ATTACHED PLAN SHEETS: 15 Plates

Dated: June 4, 2021

The attached plan was prepared by the Jacksonville District, U.S. Army Corps of Engineers (USACE). The initials or signatures and registrations designations of the signatory below or that appear on these project documents are within the scope of employment as required by USACE Engineering Regulation 1110-1-8152, PROFESSIONAL REGISTRATION, 8 Aug 1995, and are not made in the individual capacity of the signatories.

USACE employee signatures are provided in support of the "Interagency Coordination Agreement for Civil Works Projects", signed 28 Feb 2006 by the Florida Department of Environmental Protection, the USACE Jacksonville District, and USACE Mobile District.

These plans are for permitting purposes only and are not for construction.

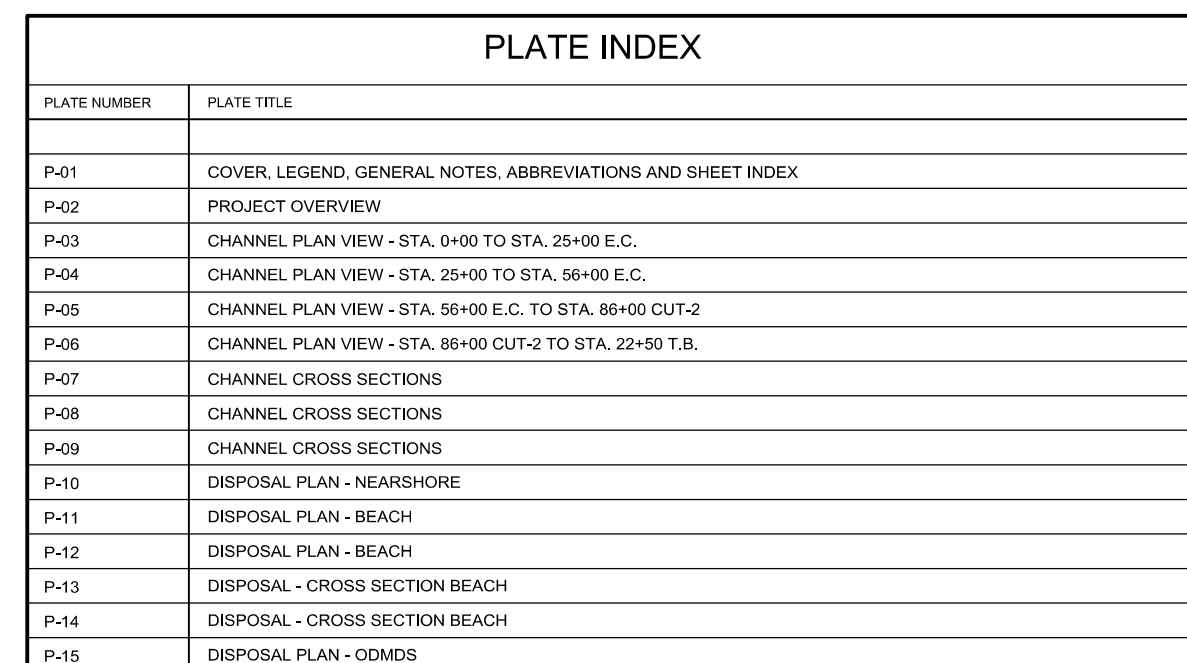
DUDLEY.DAVID
Digitally signed by
DUDLEY.DAVID.F.1399388569
Date: 2021.06.04 13:09:43
-04'00'

David Dudley P.E.
Chief, Design Branch (CH EN-D)
Engineering Division

DATE

US Army Corps
of Engineers®

**PERMIT PLATE
NOT FOR CONSTRUCTION**



TERMS AND ABBREVIATIONS

APPROX	APPROXIMATE
BLVD	BOULEVARD
CHN.	CHANNEL
CL	CENTERLINE
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CY	CUBIC YARD
D/A-B	BEACH DISPOSAL AREA
DWG	DRAWING
E.C.	ENTRANCE CHANNEL
EL / ELEV	ELEVATION
ENV	ENVIRONMENT
EOB	EDGE OF BERM
ETOF	EQUILIBRIUM TOE OF FILL
EX	EXISTING
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FT	FOOT/FEET
HORIZ	HORIZONTAL
IWW	INTRACOASTAL WATERWAY
LF	LINEAR FOOT/FEET
MHW	MEAN HIGH WATER
MLW	MEAN LOWER LOW WATER
MLW	MEAN LOW WATER
NAD 83	NORTH AMERICAN DATUM OF 1983
NAV08	NORTH AMERICAN VERTICAL DATUM OF 1988
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NO	NUMBER
N.T.S.	NOT TO SCALE
ODMS	OCEAN DREDGED MATERIAL DISPOSAL SITE
PID	PERMANENT IDENTIFIER
RD	ROAD
RFI	REQUEST FOR INFORMATION
RGE	RANGE
SH	SHEET
SF	SQUARE FEET/FOOT
ST	STREET
STA	STATION
TOB	TOP OF BERM
TOL	TOLERANCE
TOS	TOE OF SLOPE
TYP	TYPICAL
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USC	UNITED STATES CODE
USCG	UNITED STATES COAST GUARD
VERT	VERTICAL

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

6. ALL BEACH DISPOSAL BERM WIDTHS AND OTHER TEMPLATE FEATURES ARE MEASURED PERPENDICULAR TO THE R-MONUMENT BASELINE. POSITIVE VALUES INDICATE SEAWARD DISTANCE. DISTANCES ALONG ESTABLISHED AZIMUTHS OF FDEP'S RANGE MONUMENTS MAY VARY SLIGHTLY DUE TO MINOR DIFFERENCES IN THE BEARING

7. UNLESS OTHERWISE INDICATED, ALL PLANIMETRIC FEATURES DEPICTED ON THESE DRAWINGS ARE FOR INFORMATION ONLY AND WERE NOT PHYSICALLY LOCATED BY SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL SUCH FEATURES THAT ARE NECESSARY FOR OR AFFECT THE PERFORMANCE OF CONSTRUCTION OF THIS PROJECT. THE AERIAL IMAGERY SHOWN ON THESE DRAWINGS IS FOR GENERAL INFORMATION ONLY AND IS NOT TO BE USED FOR MEASUREMENTS (AERIAL IMAGERY DATED MONTH YEAR).

8. THE LEGENDS ON THIS SHEET ARE COMPOSED OF STANDARD SYMBOLS AND ARE PERTINENT TO THE CONDITIONS ON THIS SET OF DRAWINGS TO THE EXTENT APPLICABLE. ADDITIONAL LEGENDS AND/OR ABBREVIATIONS MAY APPEAR IN THIS SET OF DRAWINGS TO INDICATE SPECIFIC CONDITIONS IN LIEU OF SYMBOLS SHOWN ON THIS SHEET.

2. UNLESS OTHERWISE INDICATED, ALL HORIZONTAL POSITIONS ARE SHOWN IN THE STATE PLANE COORDINATE SYSTEM OF 1983, FLORIDA EAST ZONE (0901), AND ARE REFERENCED TO THE 2011 ADJUSTMENT OF THE NORTH AMERICAN DATUM OF 1983 (NAD83(2011)).

3. ALL ELEVATIONS FOR THE NAVIGATION CHANNEL AND ODMDS ARE REFERENCED TO THE MEAN LOW LOW WATER (MLLW) DATUM TIDAL, 1983-2001 EPOCH. MLLW IS REALIZED DURING SURVEY OPERATIONS VIA A KINEMATIC TIDAL DATUM (KTD) MODEL, BASED ON NOAA'S VDUTUM PROGRAM AND PUBLISHED NOAA TIDE GAUGE INFORMATION. THE RELATIONSHIP BETWEEN MLLW AND THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88) VARIES ALONG THE EXTENTS OF A PROJECT; A SINGLE VALUE FROM A PUBLISHED TIDE GAUGE IS NOT TO BE USED FOR AN ENTIRE PROJECT. REFER TO SURVEY NOTES ACCOMPANYING THESE PLANS FOR THE APPLICABLE PROJECT KTD FILE NAME AND TIDAL CALIBRATION/VERIFICATION STATIONS, OR BENCHMARKS TO BE EMPLOYED TO CONDUCT, OR REPRODUCE, A SURVEY. ALL ELEVATIONS SHOWN ABOVE REFERENCED DATUM ARE ASSIGNED THE PLUS SYMBOL (+).

4. ALL ELEVATIONS FOR THE BEACH AND NEARSHORE DISPOSAL ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL ELEVATIONS SHOWN ABOVE REFERENCED DATUM ARE ASSIGNED THE PLUS SYMBOL (+).

5. ALL CHANNEL POSITIONS, STATIONING AND ELEVATIONS ARE IN THE UNITS OF U.S. SURVEY FEET. UNLESS OTHERWISE INDICATED, ALL STATIONS REFER TO DISTANCE ALONG THE CHANNEL CENTERLINE.

1. REFER TO SURVEY NO. 20-269.
2. SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO NOAA'S REPORTED MEAN LOWER LOW WATER (MLLW) OF THE 1983-2001 TIDAL EPOCH.
3. TIDAL REDUCTIONS WERE OBTAINED UTILIZING A REAL-TIME KINEMATIC (RTK) GPS AND REFERENCED TO MLLW UTILIZING A HYPACK KINEMATIC TIDE DATUM (KTD) MODEL. KTD FILE NAME IS: "PALMBEACH_2018 05 03.KTD".
4. ALL ELEVATIONS ARE BELOW THE CHART DATUM UNLESS PRECEDED BY A (+) SIGN.
5. PLANE COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE EAST ZONE OF FLORIDA AND REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD83).
6. ALL STATIONING REFERS TO THE CENTERLINE OF THE CHANNEL.
7. THIS SURVEY WAS PERFORMED USING REAL-TIME KINEMATIC (RTK) GPS POSITIONING WITH THE FOLLOWING REFERENCE BASE LOCATION: REFERENCE BASE LOCATED AT "WOLFIE" (OPUS PID: B8B246) TIDE STAFF LOCATED FROM "COE A 310 RESET" (PID: B8GN25)
8. DEPTHS DEPICTED BY THIS SURVEY ARE REFERENCED TO MLLW, TIDAL EPOCH 1983-2001 AS REPORTED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA). A MODIFIED VERSION OF NOAA'S VDUTUM MODEL WAS USED TO CALIBRATE TO THE PUBLISHED MLLW HEIGHT OF THE BENCHMARK ASSOCIATED BELOW:
NOAA TIDAL STATION 872-2588, PORT OF W. PALM BEACH, LAKE WORTH (PID: B8GN25). VERTICAL MEASUREMENTS WERE MADE USING A R2 SONIC MULTI-BEAM SYSTEM AND A ROSS MODEL 835 SMARTSOUNDER. ALL SOUNDINGS SHOWN ARE IN HIGH FREQUENCY.

VESSEL	DATE OF SURVEY	CUT
SB-52	03 AUG 2020	ENT. CHANNEL STA 42+00 THRU CUTS 1 & 2
SB-52	04 AUG 2020	ENT. CH., TURNING BASIN, SETTLING BASINS

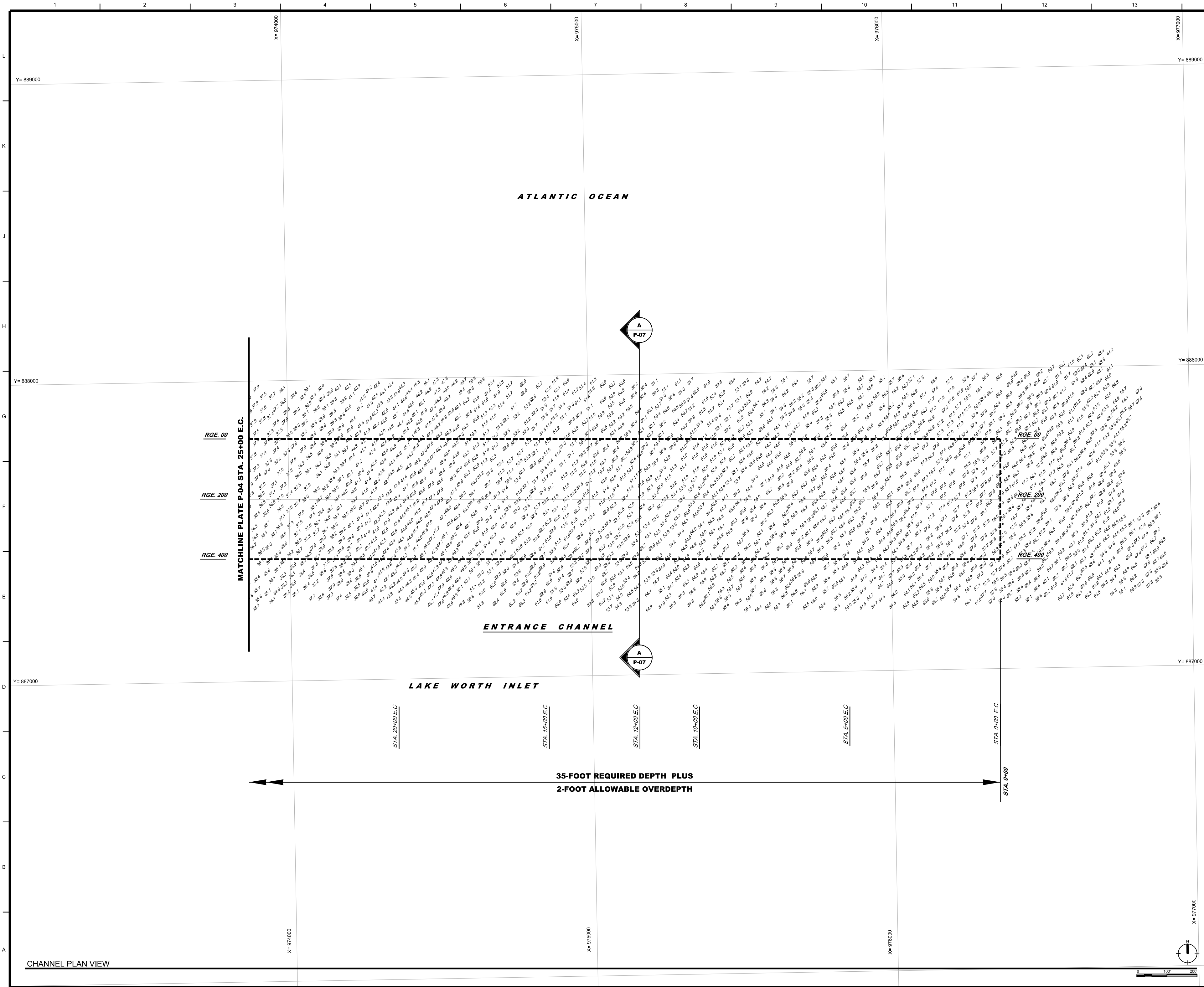
9. AIDS TO NAVIGATION WERE LOCATED DURING THIS SURVEY.
10. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED ABOVE AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THAT TIME. THIS CHART IS SOLELY FOR THE DISTRIBUTION OF AVAILABLE DEPTHS AT THE TIME OF THE SURVEY.
11. SURVEY ACCURACY PERFORMANCE STANDARDS, QUALITY CONTROL, AND QUALITY ASSURANCE REQUIREMENTS WERE FOLLOWED DURING THIS SURVEY IN ACCORDANCE WITH USACE EM 1110-2-1003, HYDROGRAPHIC SURVEYING, 30 NOV 2013.

ARMY CORPS OF ENGINEERS JACKSONVILLE DISTRICT 701 SAN MARCO BLVD. JACKSONVILLE FL, 32207	DESIGNED BY:	ISSUE DATE:
	DRAWN BY:	SOLICITATION
	CHECKED BY:	CONTRACT NO.
	SUBMITTED BY:	DRAWING DATE:
PERMIT PLATE NOT FOR CONSTRUCTION	SIZE:	NOVEMBER 20
	FILE NAME:	

MIAMI BEACH HARBOR MAINTENANCE DREDGING
33-FOOT PROJECT
PLANT BEACH COUNTY, FLORIDA

PLATE NUMBER

P-01



US Army Corps of Engineers

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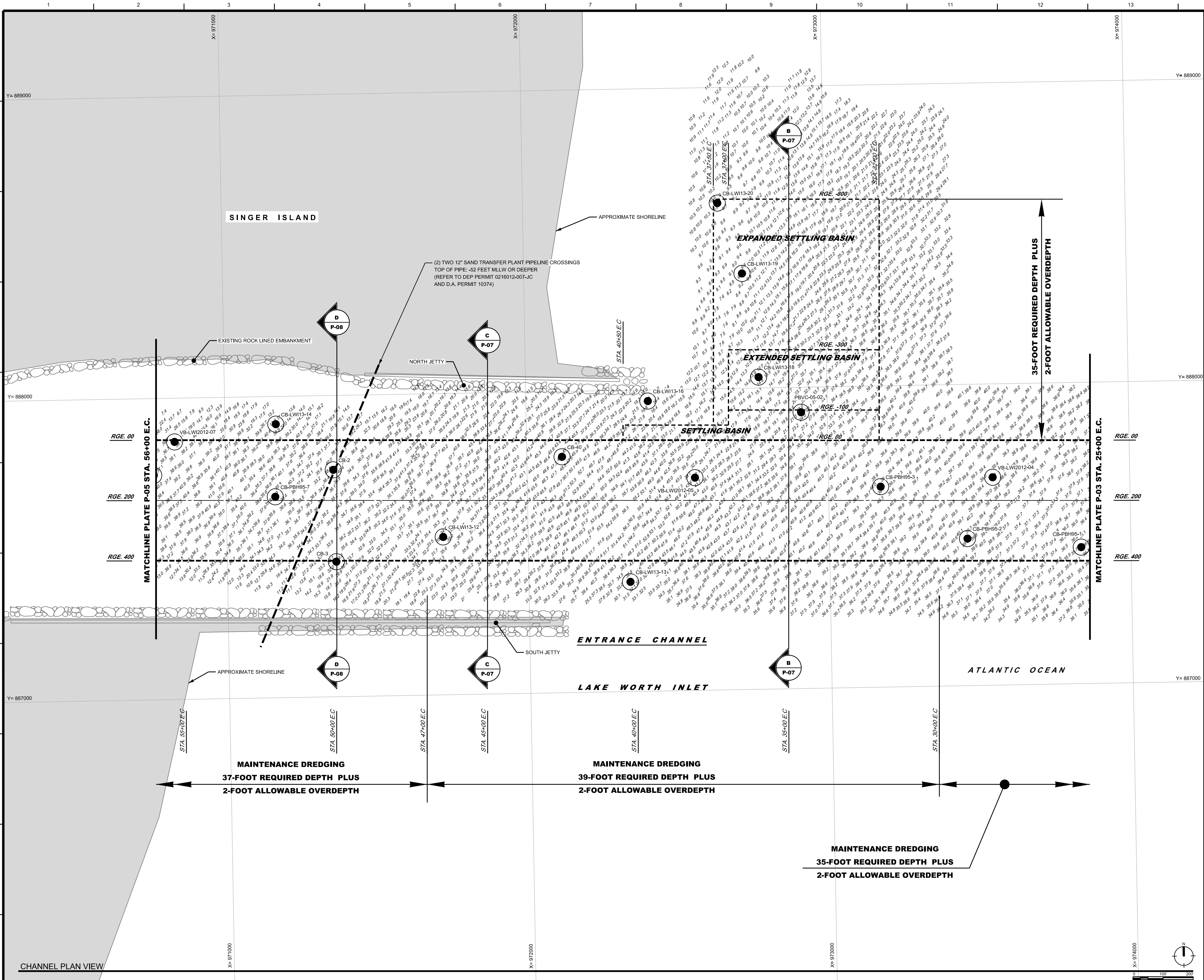
ISSUED DATE:	11/26/2020
DESIGNED BY:	J. KELLY
CHECKED BY:	M. KELLY
SUBMITTED BY:	M. KELLY
FILE NAME:	11/26/2020-11/26/2020
DATE:	11/26/2020

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FL 32207

PERMIT PLATE
CHANNEL PLAN VIEW
STA. 0+00 TO 25+00 E.C.

PLATE NUMBER

P-03



US Army Corps of Engineers

**PERMIT PLATE
NOT FOR CONSTRUCTION**

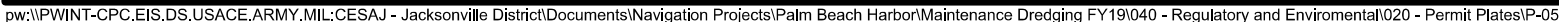
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CHECKED BY:	W. REILLY
DATE:	NOVEMBER 2020
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FILE NO.:	11/28/2020-11/28/2020

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JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA 32207

PERMIT PLATE
NOT FOR CONSTRUCTION

PLATE NUMBER

P-04



**PERMIT PLATE
NOT FOR CONSTRUCTION**

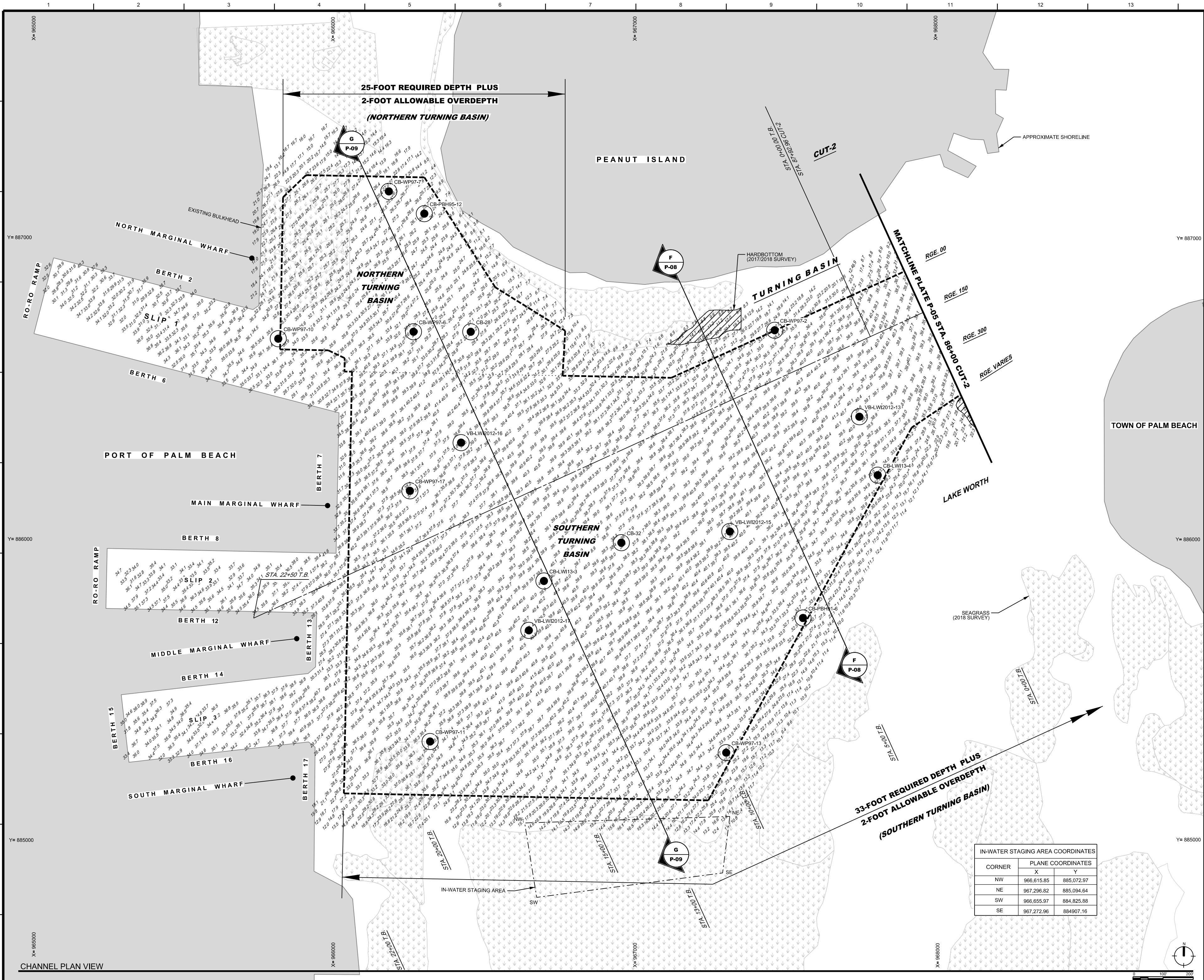
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DESIGNED BY: ENGINEER: PROJECT NO. 187: 701 SAN MARCO BLVD JACKSONVILLE FL, 32207	ISSUE DATE: SOLICITATION NO. 2: CHECKED BY: CONTRACT NO. 2: N/A SUBMITTED BY: DRAWING DATE: NOVEMBER 2020
PERMIT PLATE NOT FOR CONSTRUCTION	SIZE: FILE NAME:

PALM BEACH HARBOR MAINTENANCE DREDGING
334-FOOT PROJECT
PLAM BEACH COUNTY, FLORIDA
PERMIT PLATE
CHANNEL PLAN VIEW
STA. 56+00 E.C. TO 86+00 CUT-2

PLATE NUMBER

P-05



CORNER	PLANE COORDINATES	
	X	Y
NW	966,615.85	885,072.97
NE	967,296.82	885,094.64
SW	966,655.97	884,825.88
SE	967,272.96	884,907.16

US Army Corps of Engineers

ISSUE DATE: 11/26/2020

CONTRACT NO.: 68000

CONTRACT DATE: NOVEMBER 2020

FILE NAME: 116522016-00000

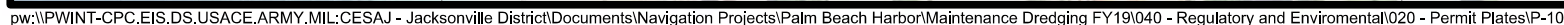
DATE: 11/26/2020

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
PLANNING AND DESIGN DIVISION
JACKSONVILLE, FL 32207

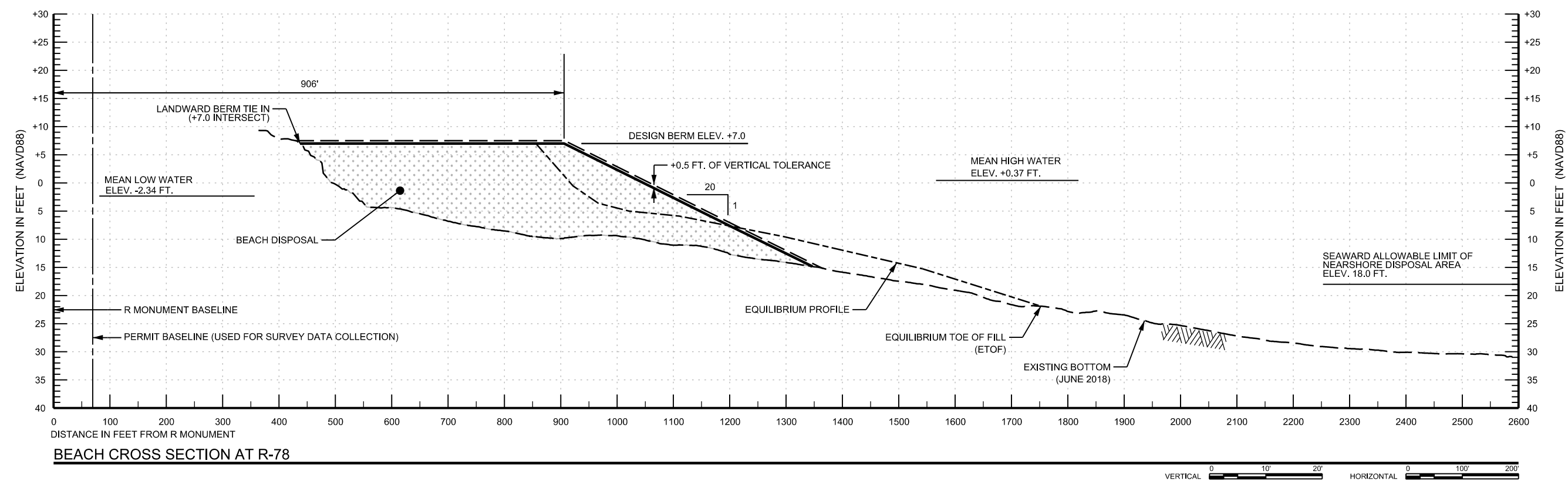
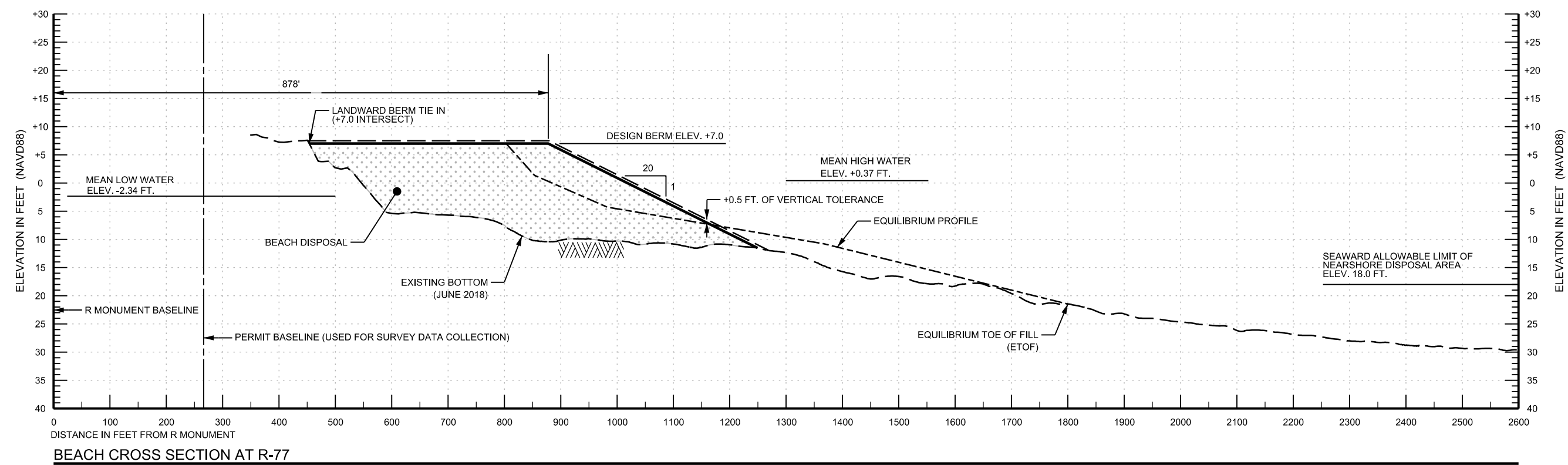
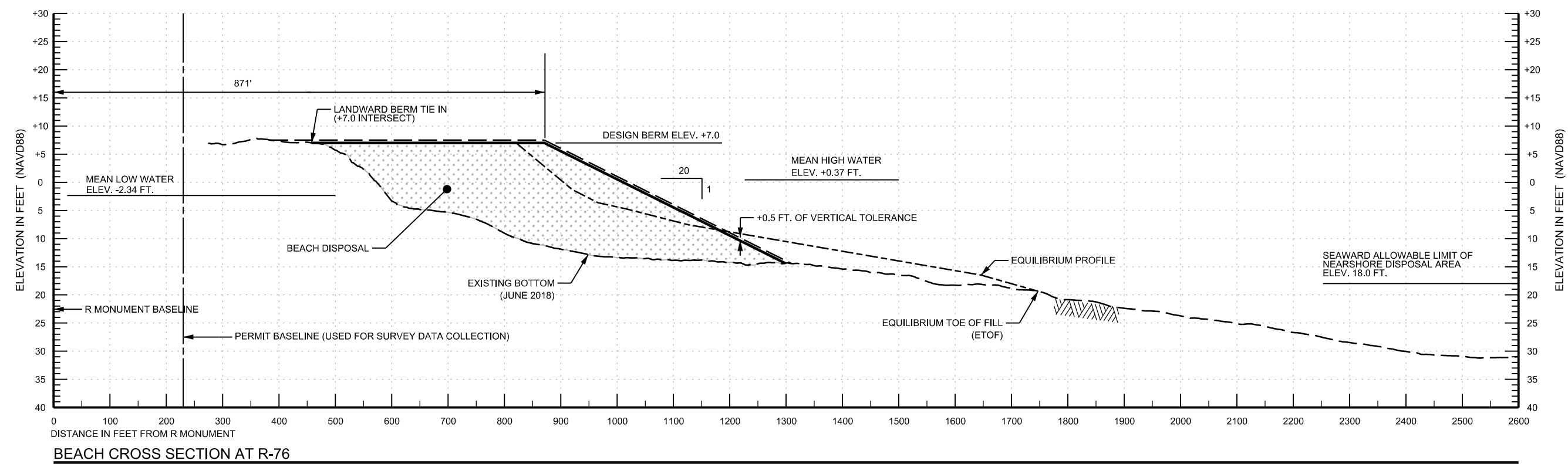
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PLATE NUMBER

P-06







**PERMIT PLATE
NOT FOR CONSTRUCTION**

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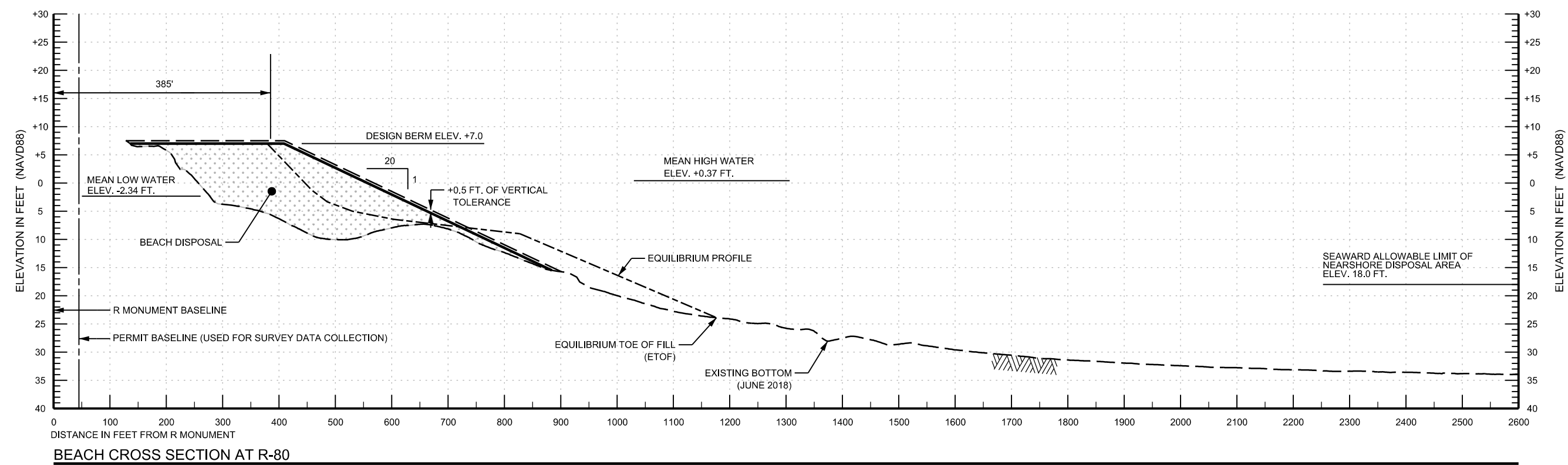
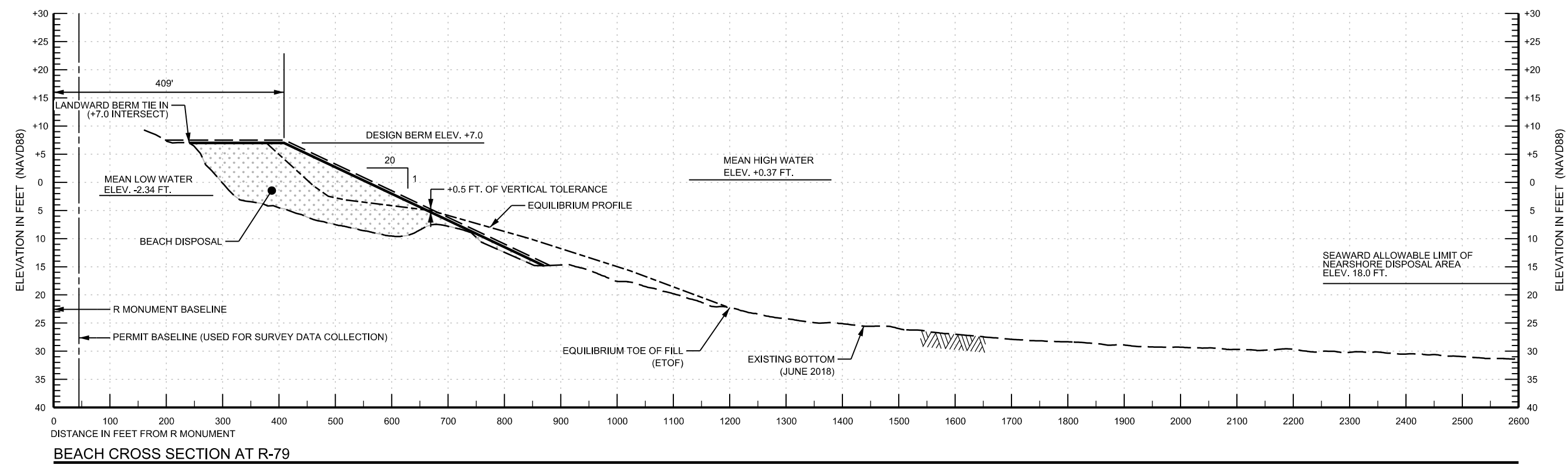
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	DRAWN BY: M. RAICE	SOLICITATION NO.:
	CHECKED BY: J. HARRIS	CONTRACT NO.:
	SUBMITTED BY:	DRAWING DATE: NOVEMBER 2020
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PALM BEACH HARBOR MAINTENANCE DREDGING
33-FOOT PROJECT
PALM BEACH COUNTY, FLORIDA

PERMIT PLATE
DISPOSAL
CROSS SECTIONS

PLATE NUMBER

P-13



PERMIT PLATE
NOT FOR CONSTRUCTION

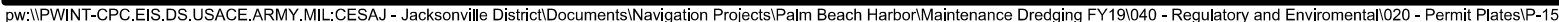
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U.S. ARMY CORPS OF ENGINEERS JACKSONVILLE DISTRICT 701 SAN MARCO BLVD JACKSONVILLE FL 32207	DESIGNED BY: L. HEAUSER	ISSUE DATE:
	DRAWN BY: M. RICE	SOLICITATION NO.:
	CHECKED BY: W. RILLY	CONTRACT NO.:
	SUBMITTED BY:	N/A
PERMIT PLATE NOT FOR CONSTRUCTION	DRAWING DATE: NOVEMBER 2020	
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PALM BEACH HARBOR MAINTENANCE DREDGING
33-FOOT PROJECT
PLANT BEACH COUNTY, FLORIDA

PLATE NUMBER

P-14



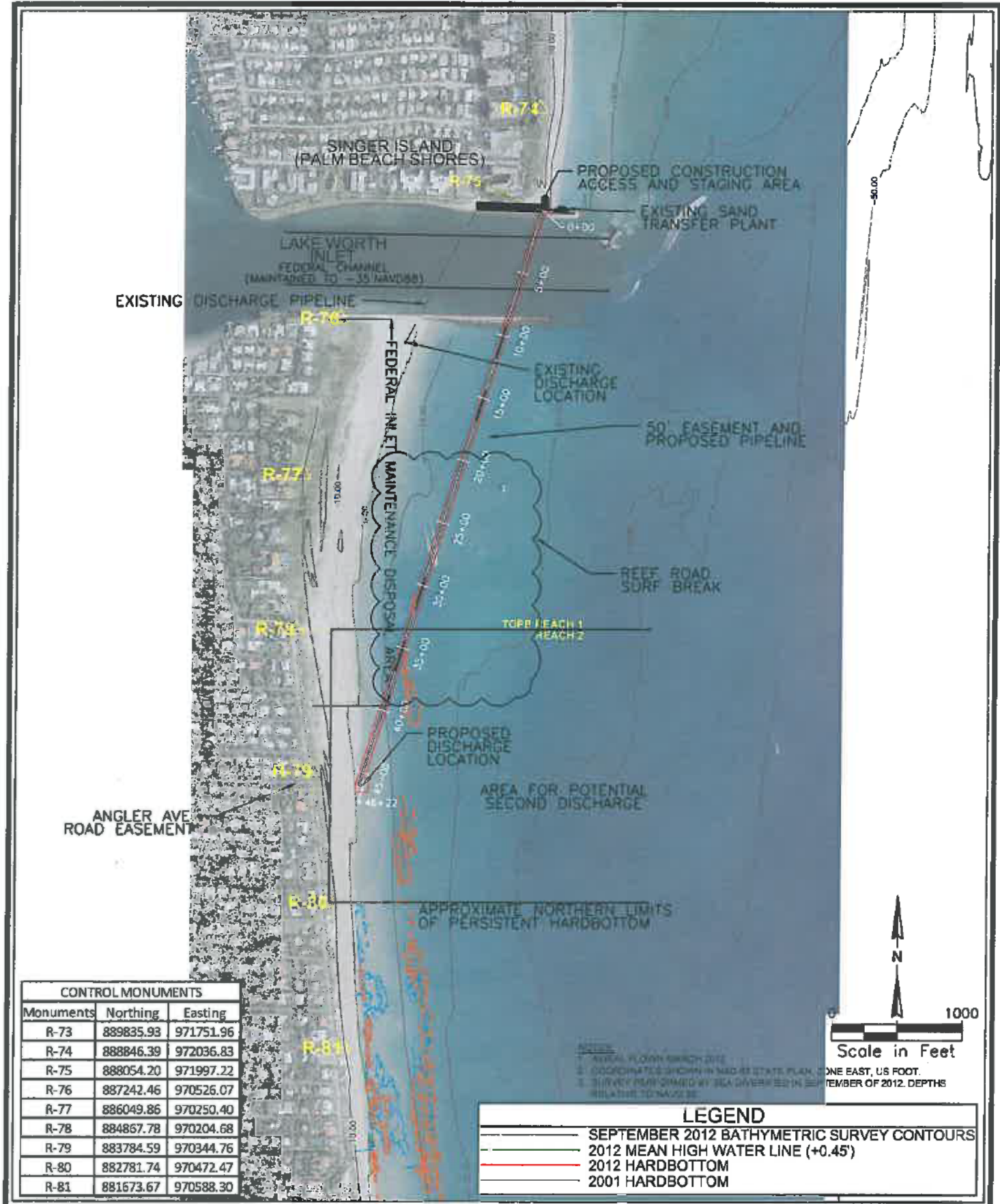
Appendix A-

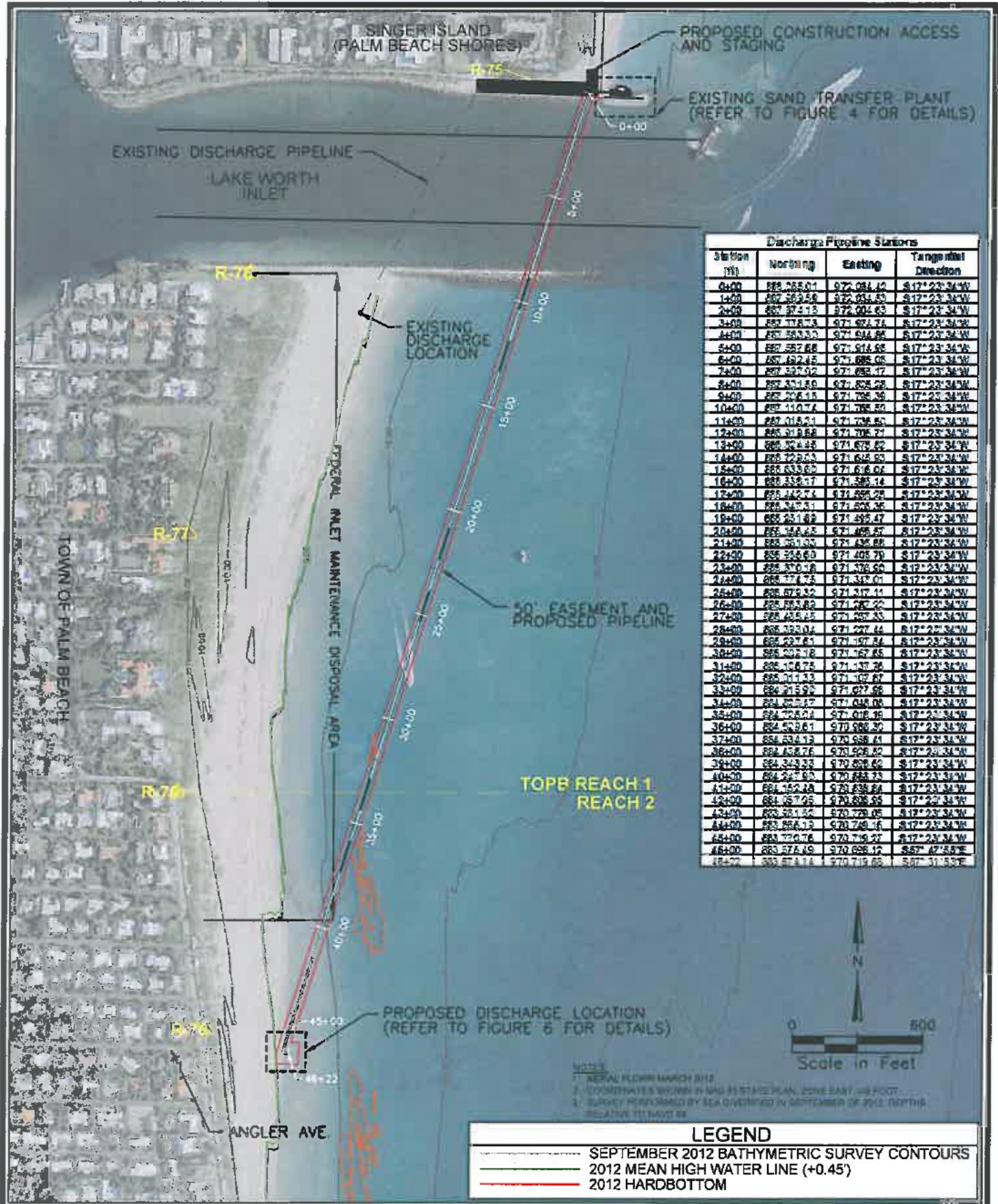
Sand Transfer Plant Drawings

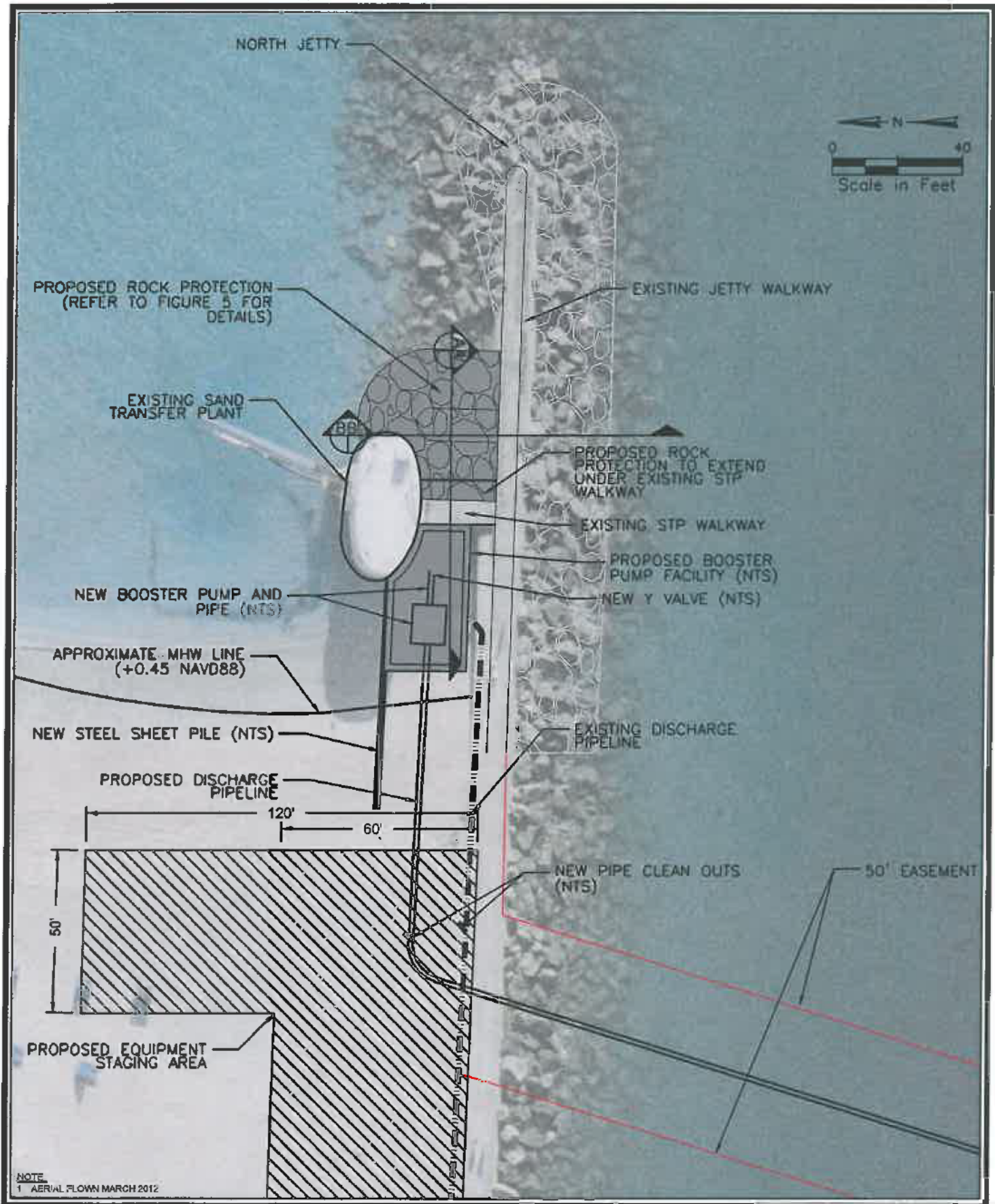
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PROJECT SITE









ATM
APPLIED TECHNOLOGY MANAGEMENT
ATM
2047 Vista Parkway, Suite 201
West Palm Beach, FL 33411
(561) 659-0041
Certificate of Authorization #4669

Booster Pump Facility

Lake Worth Inlet
Sand Transfer Plant Modification
Town of Palm Beach, Florida

FIGURE 4

JOB NUMBER: 09-2078

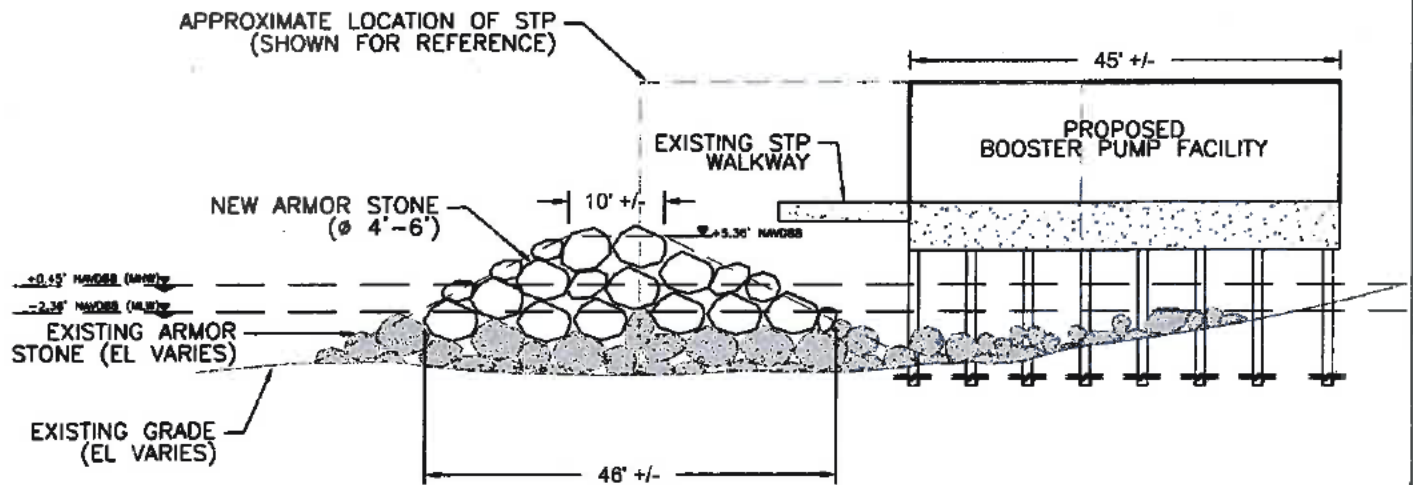
ISSUE DATE: 09-22-2011

REVISED DATE: 10-17-2012

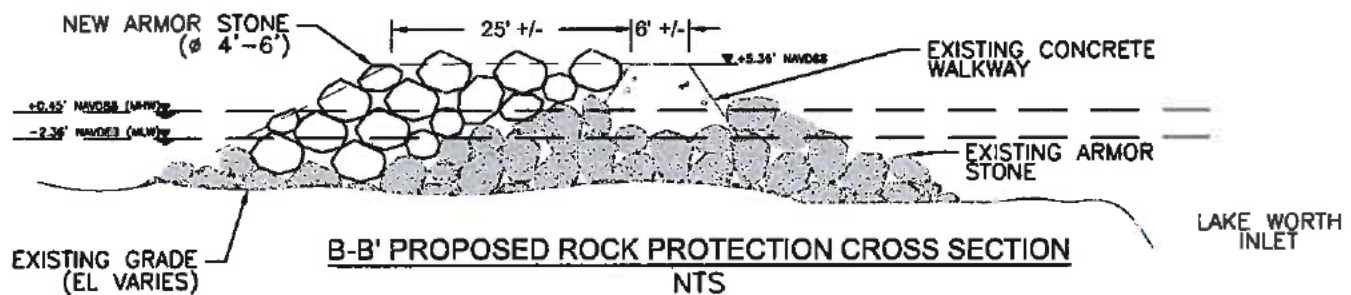
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Michael Jenkins, Ph.D., P.E.
Florida License Number 58072

2/12/13



A-A' PROPOSED ROCK PROTECTION CROSS SECTION
NTS



B-B' PROPOSED ROCK PROTECTION CROSS SECTION
NTS

NOTE: APPROXIMATE DIMENSIONS SHOWN FROM DESIGN TO BE PERFORMED.

ATM
APPLIED TECHNOLOGY & MANAGEMENT
2047 Viela Parkway, Suite 201
West Palm Beach, FL 33411
(561) 850-0041
Certificate of Authorization #4699

Proposed Rock Protection Details

Lake Worth Inlet
Sand Transfer Plant Modification
Town of Palm Beach, Florida

FIGURE 5

JOB NUMBER: 09-2078

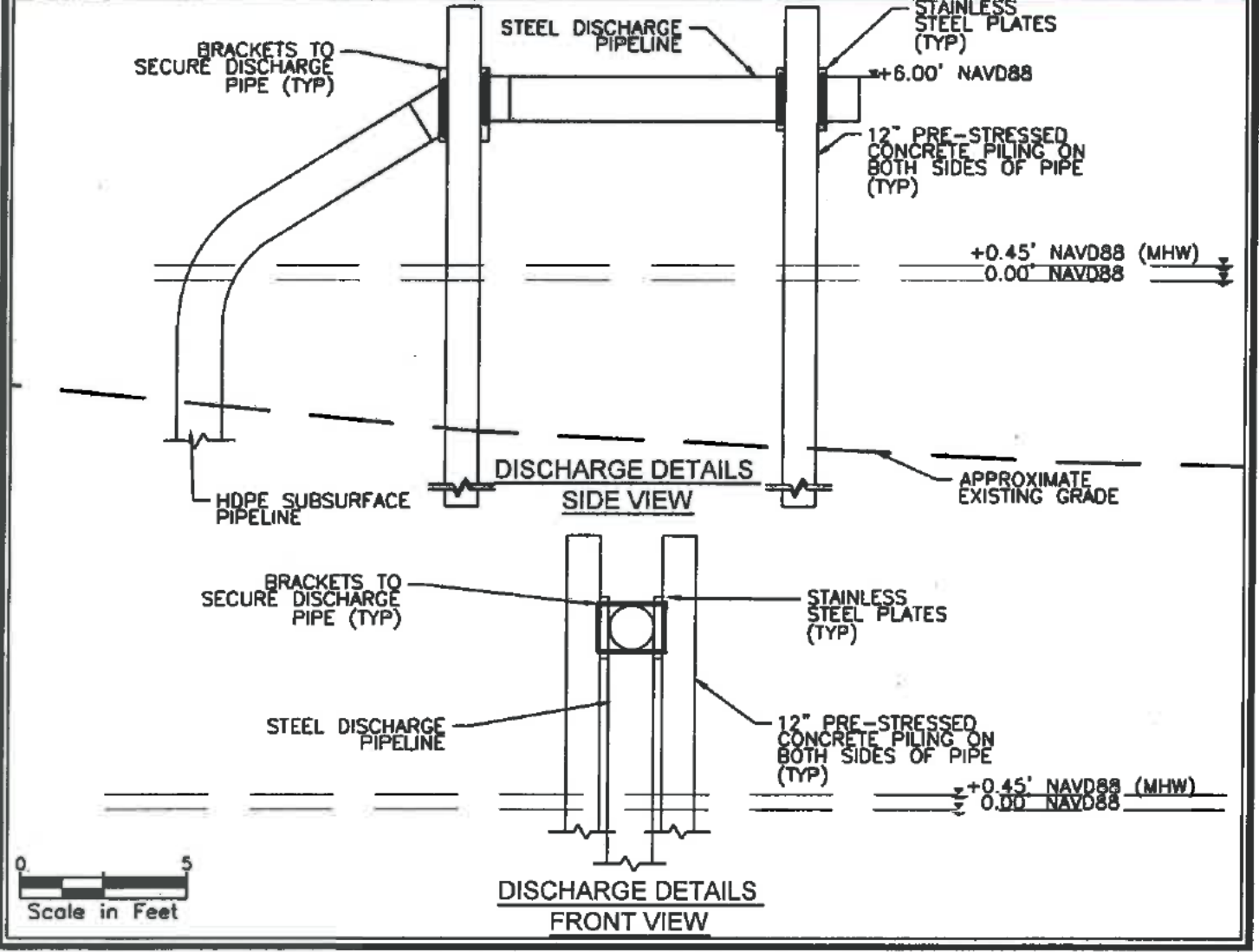
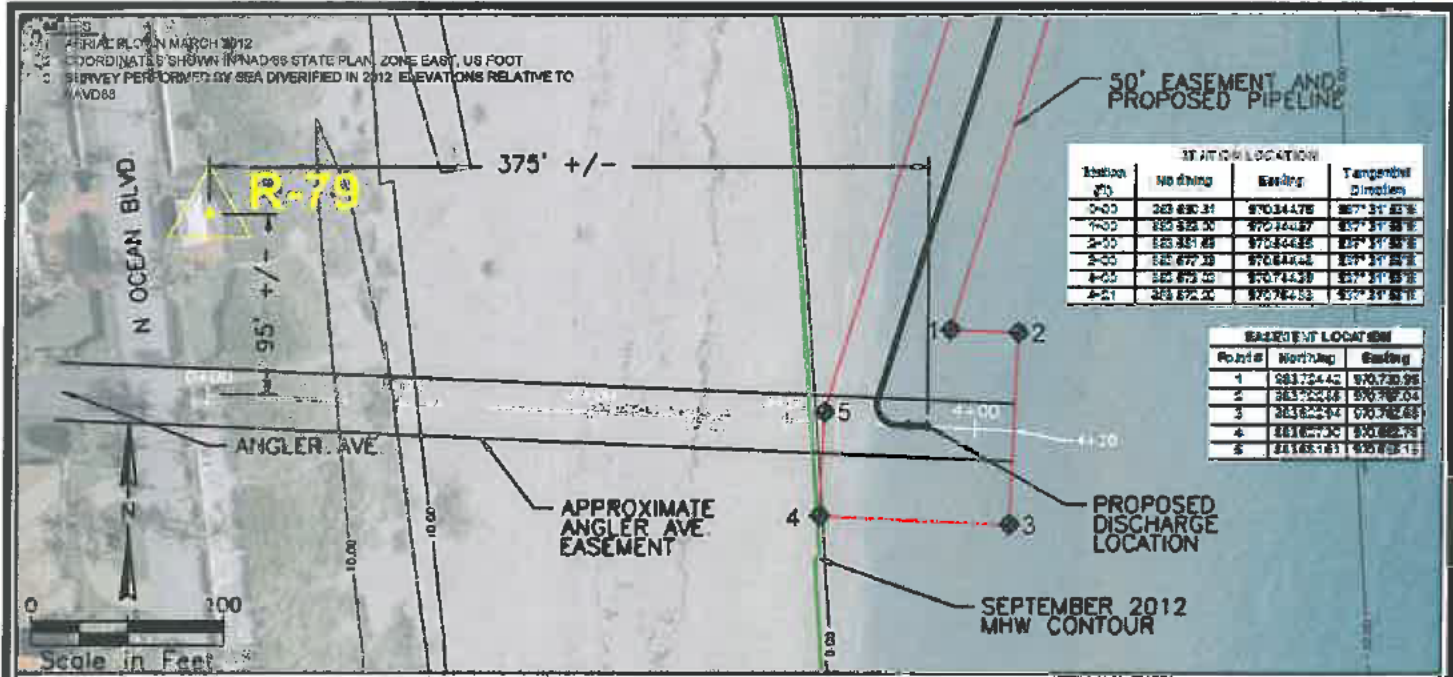
ISSUE DATE: 09-22-2011

REVISED DATE: 10-17-2012

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Florida License Number 58072

2/12/13



ATM
 AUTHORITY TO MODIFY
 2047 Vista Parkway, Suite 201
 West Palm Beach, FL 33411
 (561) 659-0041
 Certificate of Authorization #4969

Discharge Pipeline Layout

Lake Worth Inlet
 Sand Transfer Plant Modification

Town of Palm Beach, Florida

FIGURE 6

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011
 REVISED DATE: 10-17-2012

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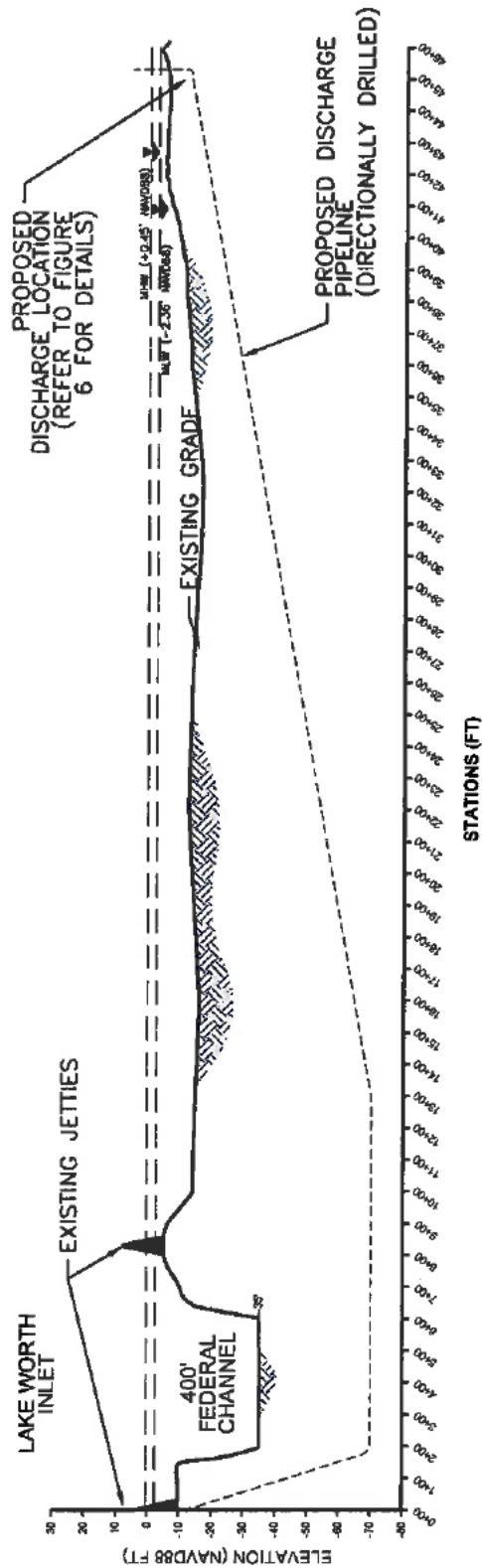


FIGURE 7

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011

REVISED DATE: 10-17-2012

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[Signature]

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Florida License Number 58072

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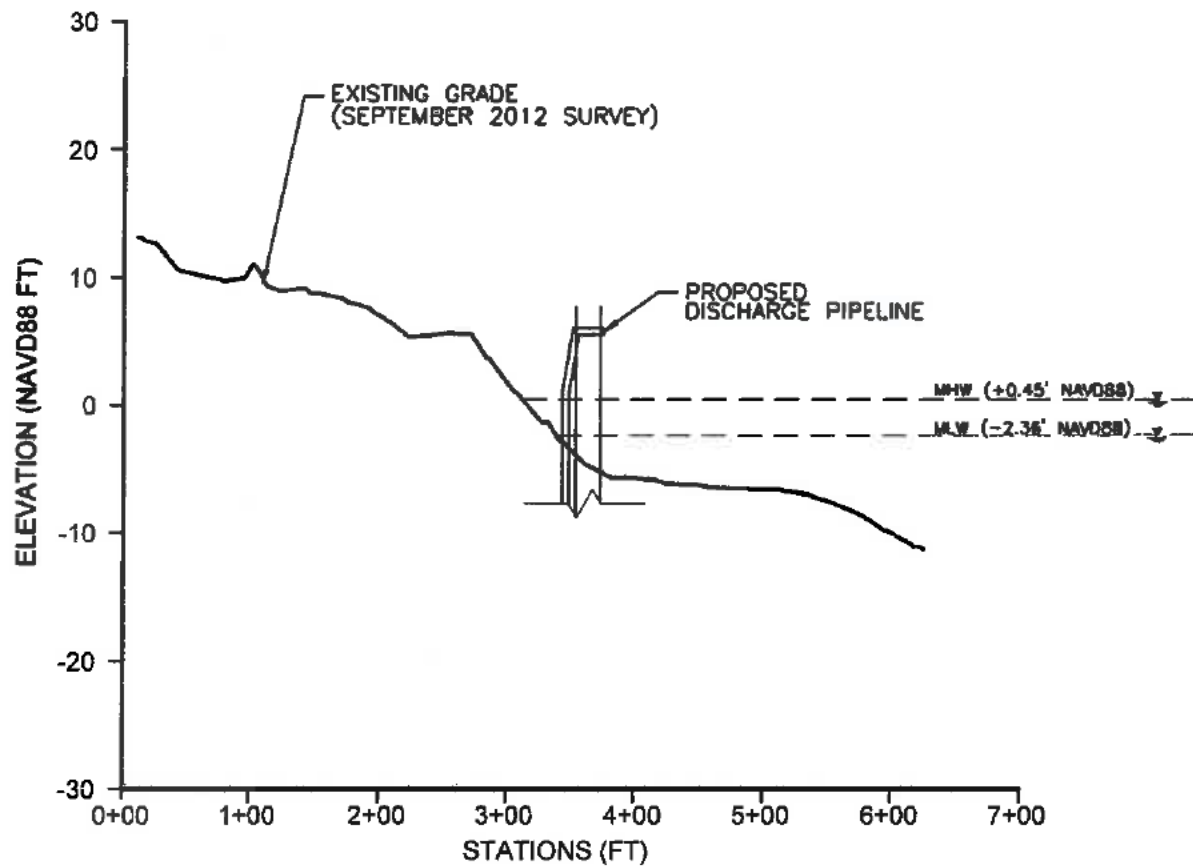


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Certificate of Authorization #4899

Pipeline Profile

Lake Worth Inlet
Sand Transfer Plant Modification

Town of Palm Beach, Florida



NOTE: VERTICAL EXAGGERATED TO SHOW DETAIL.



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Beach Profile at R-79
(New Discharge Location)

Lake Worth Inlet
Sand Transfer Plant Modification
Town of Palm Beach, Florida

FIGURE 8

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011

REVISED DATE: 10-17-2012

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ATM
Aerial Technology & Mapping, Inc.

2047 Vista Parkway, Suite 201
West Palm Beach, FL 33411
(561) 859-0041
Certificate of Authorization #4689

2012 Aerial Photography
and DNR Monuments

Lake Worth Inlet
Sand Transfer Plant Modification
Town of Palm Beach, Florida

FIGURE 9

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011

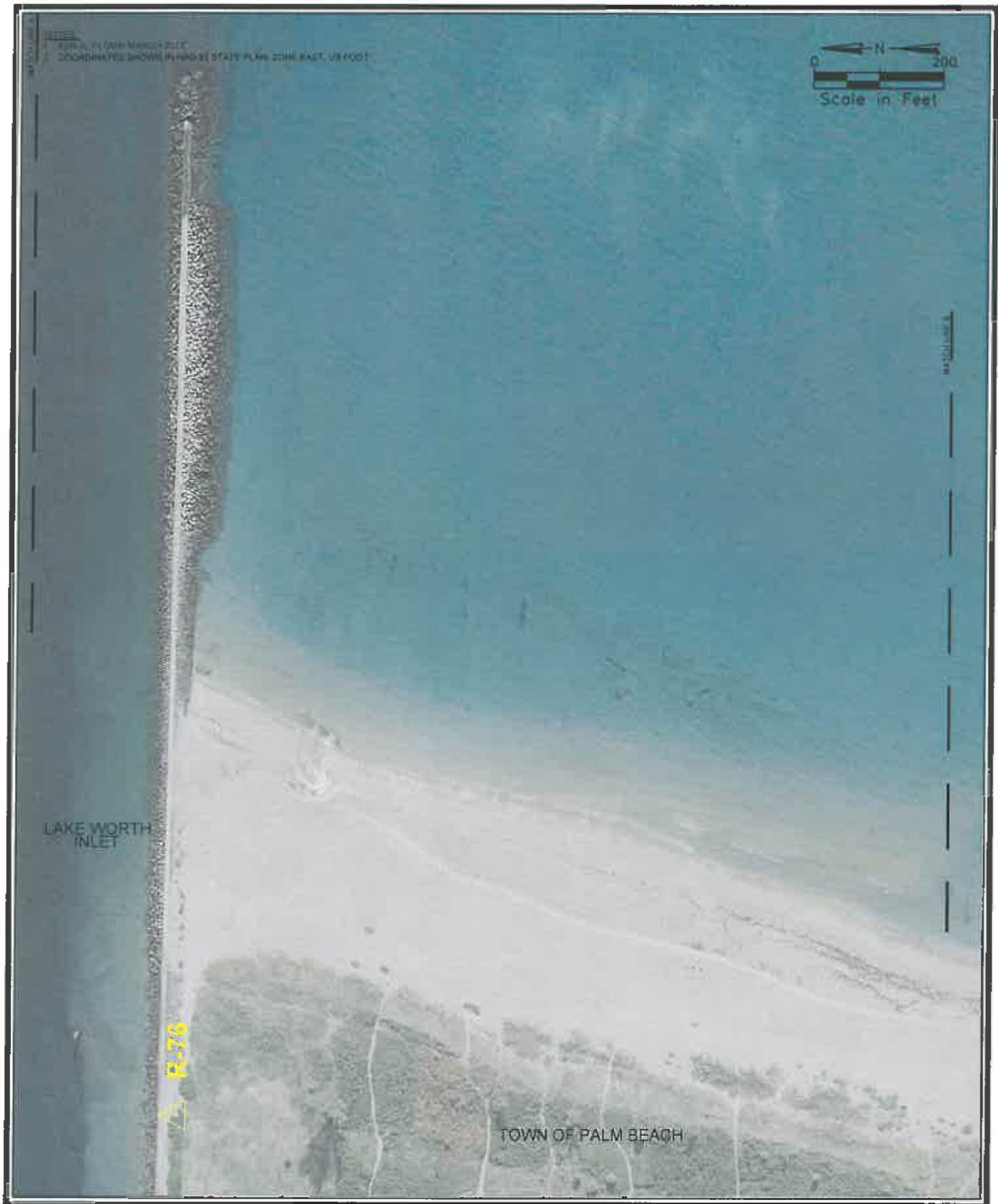
REVISED DATE: 10-17-2012

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[Signature]

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Florida License Number 58072

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2012 Aerial Photography
and DNR Monuments

Lake Worth Inlet
Sand Transfer Plant Modification
Town of Palm Beach, Florida

FIGURE 10

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011

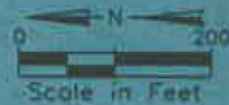
REVISED DATE: 10-17-2012

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Florida License Number 58072

2/2/13

1. AERIAL PHOTOGRAPHY MARCH 2012
 2. COORDINATES SHOWN W/HAZ 43 STATE PLAN, ZONE EAST, US FOOT



ATM
 AERIAL TECHNOLOGICAL MONITORING
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 West Palm Beach, FL 33411
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**2012 Aerial Photography
 and DNR Monuments**
**Lake Worth Inlet
 Sand Transfer Plant Modification**
 Town of Palm Beach, Florida

FIGURE 11
 JOB NUMBER: 09-2078
 ISSUE DATE: 09-22-2011
 REVISED DATE: 10-17-2012
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 2/12/13



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2012 Aerial Photography
and DNR Monuments

Lake Worth Inlet
Sand Transfer Plant Modification
Town of Palm Beach, Florida

FIGURE 12

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011

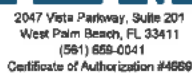
REVISED DATE: 10-17-2012

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NOT FOR CONSTRUCTION

Michael Jenkins

Michael Jenkins, Ph.D., P.E.
Florida License Number 58072

2/12/13



Lake Worth Inlet Sand Transfer Plant Modification

FOR PERMITTING PURPOSES ONLY
NOT FOR CONSTRUCTION

Michael Jenkins, Ph.D., P.E.
Florida License Number 58072

212/13

1. 2012 Aerial Photography
 2. COORDINATES SHOWN IN THIS STATE PLAT ZONE EAST, US FOOT

0 100 200
 Scale in Feet



ATM
 2047 Vista Parkway, Suite 201
 West Palm Beach, FL 33411
 (561) 653-0041
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2012 Aerial Photography
 and DNR Monuments
 Lake Worth Inlet
 Sand Transfer Plant Modification
 Town of Palm Beach, Florida

FIGURE 14

JOB NUMBER: 09-2078

ISSUE DATE: 09-22-2011

REVISED DATE: 10-17-2012

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 Florida License Number 58072
 2/12/13

Appendix A-

Mid -Town Nourishment Drawings

Town of Palm Beach, Florida



Drawings intended for PPEP
(BMA) Regulatory review
only. Not for Construction



NOTE: AERIAL DATED MARCH 2012



Location Map

2012 Mid-Town Nourishment Project Design

FIGURE 1

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

21

Michael Jenkins Ph.D., P.E.
Florida License Number 58072

**Town of Palm Beach
2012 Mid-Town Nourishment Project Design**

	Mon.	Effective Distance (ft)	Density (cy/lf)	Volume (cy)	Average Density (cy/lf)
North Mid-Town	R89		0		
		1,047		17,876	17.07
	R90		34.147		
		1,118		40,170	35.93
	R91		37.714		
		1,154		46,372	40.18
	R92		42.654		
		1,173		72,819	62.08
	R93		81.504		
		1,071		47,646	44.49
	R94		7.47		
	North Total	Effective Distance (ft)		Volume (cy)	Average Density (cy/lf)
		5,563		224,883	40
South Mid-Town	R94+1118		0		
		475		22,121	46.57
	R95		93.141		
		786		74,137	94.32
	R96		95.502		
		1,268		90,280	71.20
	R97		46.895		
		1,212		70,138	57.87
	R98		68.845		
		1,154		90,467	78.39
	R99		87.944		
		988		82,647	83.65
	R100		79.358		
		1,207		90,218	74.75
	R101		70.134		
		1,082		37,942	35.07
	R102		0		
	South Total	Effective Distance (ft)		Volume (cy)	Average Density
		8,172		557,951	68
	Project Total	Effective Distance (ft)		Volume (cy)	Average Density
		13,735		782,834	57

NOTE: VOLUME BASED ON COMPARISON OF THE PROJECT TEMPLATE TO THE SEPTEMBER 2012 SURVEY.



Volumes

2012 Mid-Town Nourishment Project Design

FIGURE 3

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

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2/12/13

LEGEND

-  PREVIOUS PROJECT CONSTRUCTION FOOTPRINT
-  2012 DESIGN LANDWARD LIMIT OF FILL
-  2012 DESIGN BERM CREST
-  2012 DESIGN CONSTRUCTION TOE OF FILL
-  2012 DESIGN EQ. TOE OF FILL
-  EROSION CONTROL LINE



Scale in Feet

NOTE: AERIAL DATED MARCH 2012

MATCHLINE A



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Mid-Town Design Plan View

2012 Mid-Town Nourishment Project Design

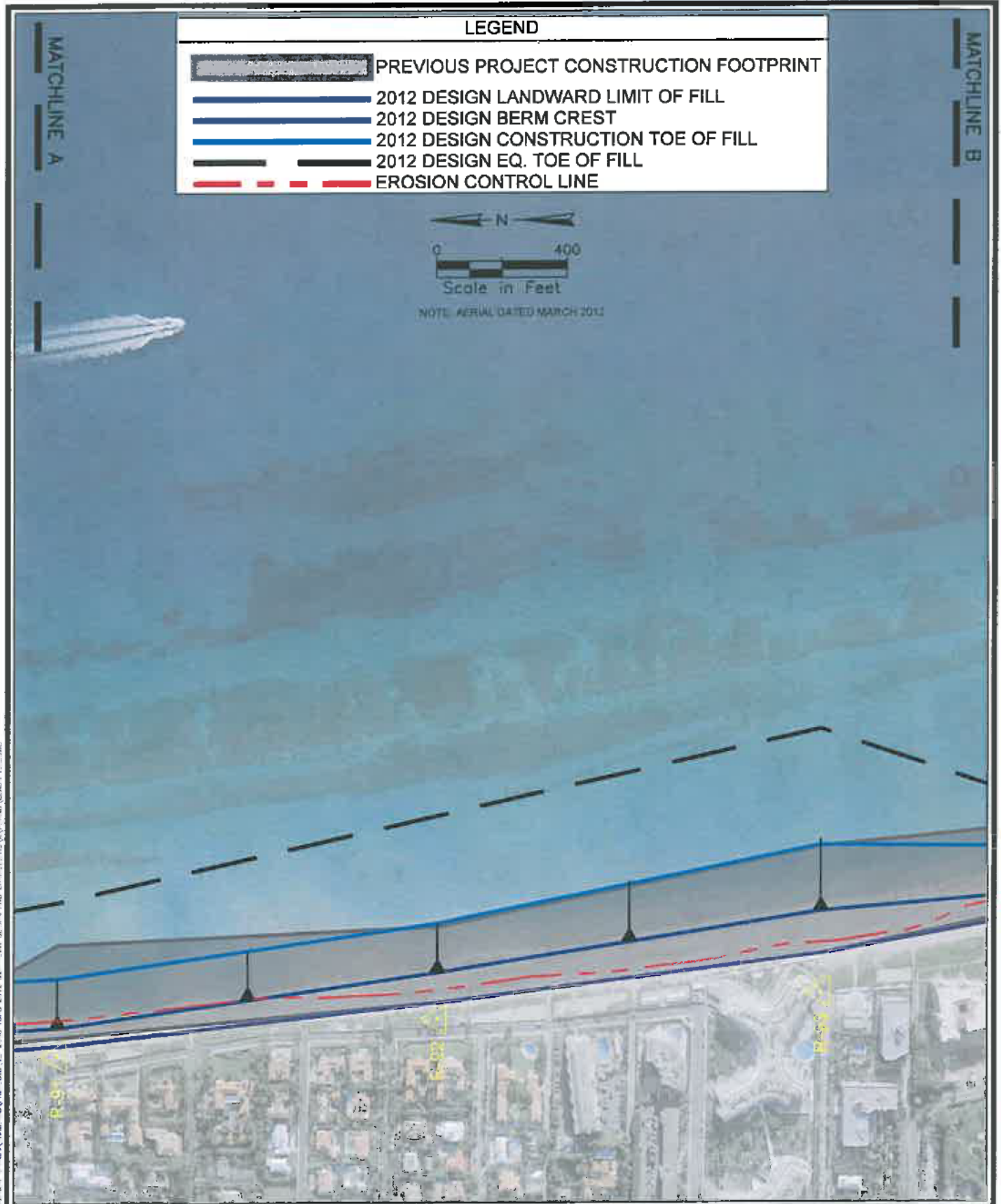
Figure 4

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

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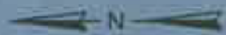


MATCHLINE B

MATCHLINE C

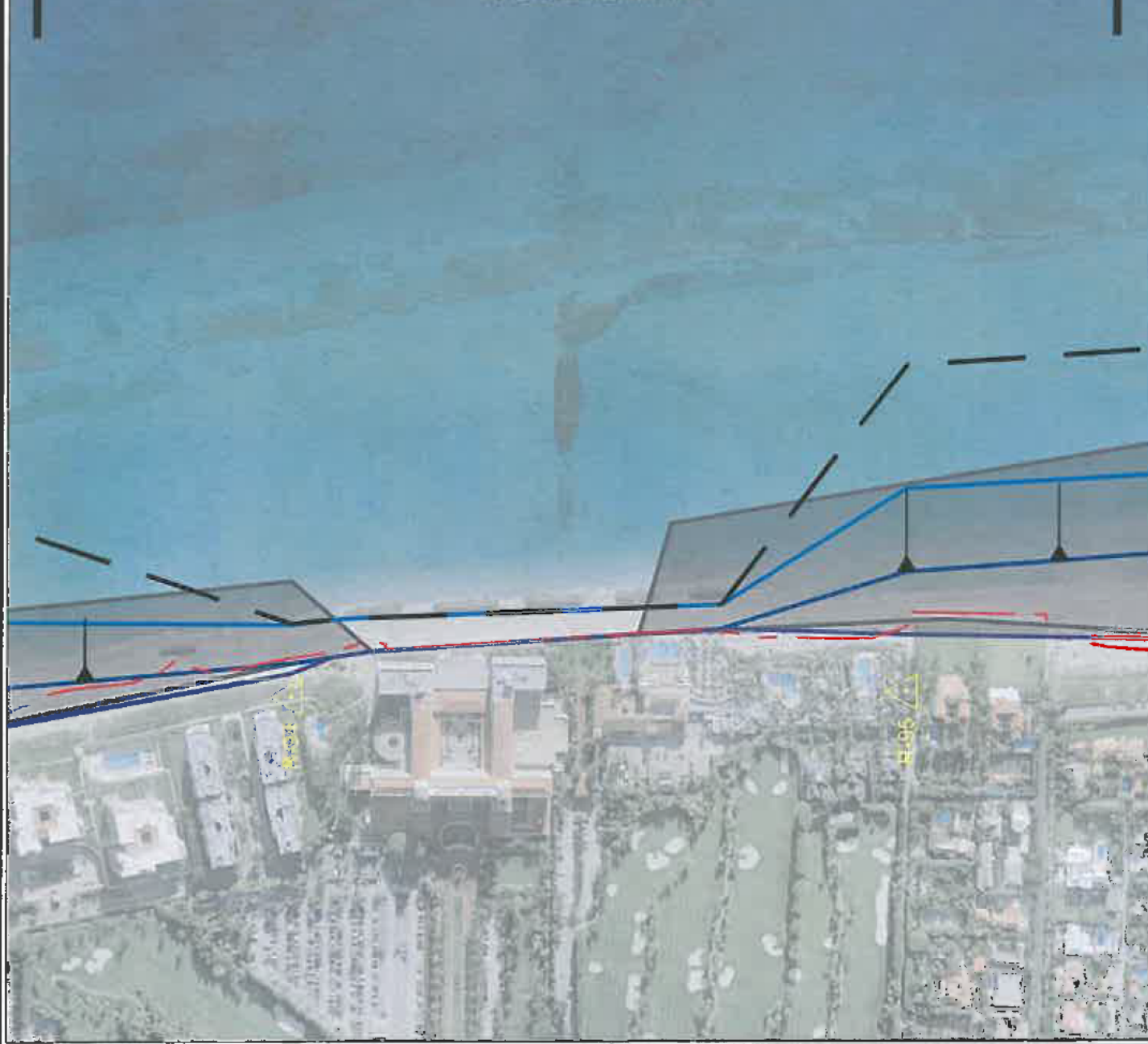
LEGEND

- PREVIOUS PROJECT CONSTRUCTION FOOTPRINT
- 2012 DESIGN LANDWARD LIMIT OF FILL
- 2012 DESIGN BERM CREST
- 2012 DESIGN CONSTRUCTION TOE OF FILL
- 2012 DESIGN EQ. TOE OF FILL
- EROSION CONTROL LINE



Scale in Feet

NOTE: AERIAL DATED MARCH 2012



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Mid-Town Design Plan View

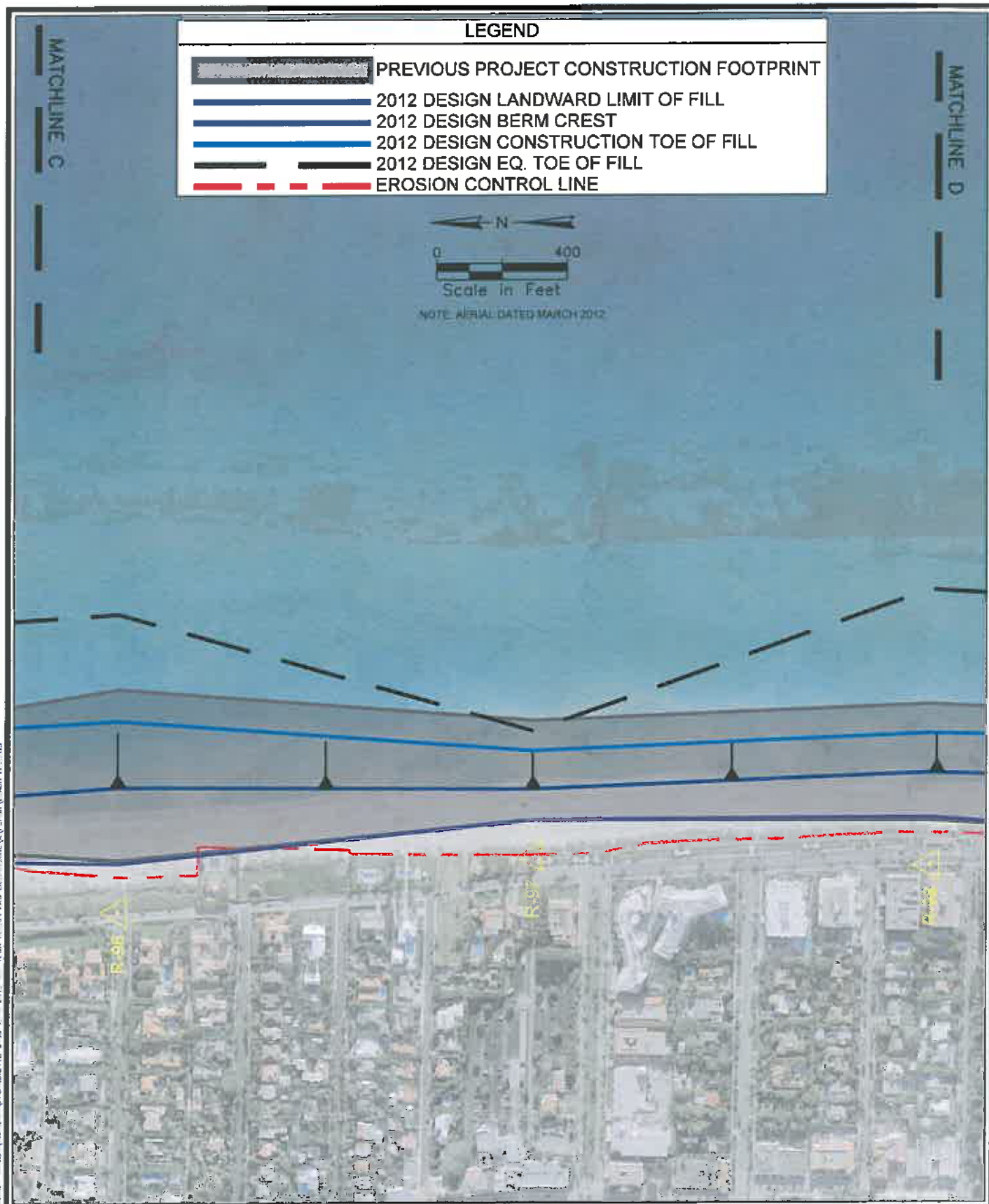
2012 Mid-Town Nourishment Project Design

Figure 6

JOB NUMBER: 12-2396

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Mid-Town Design Plan View

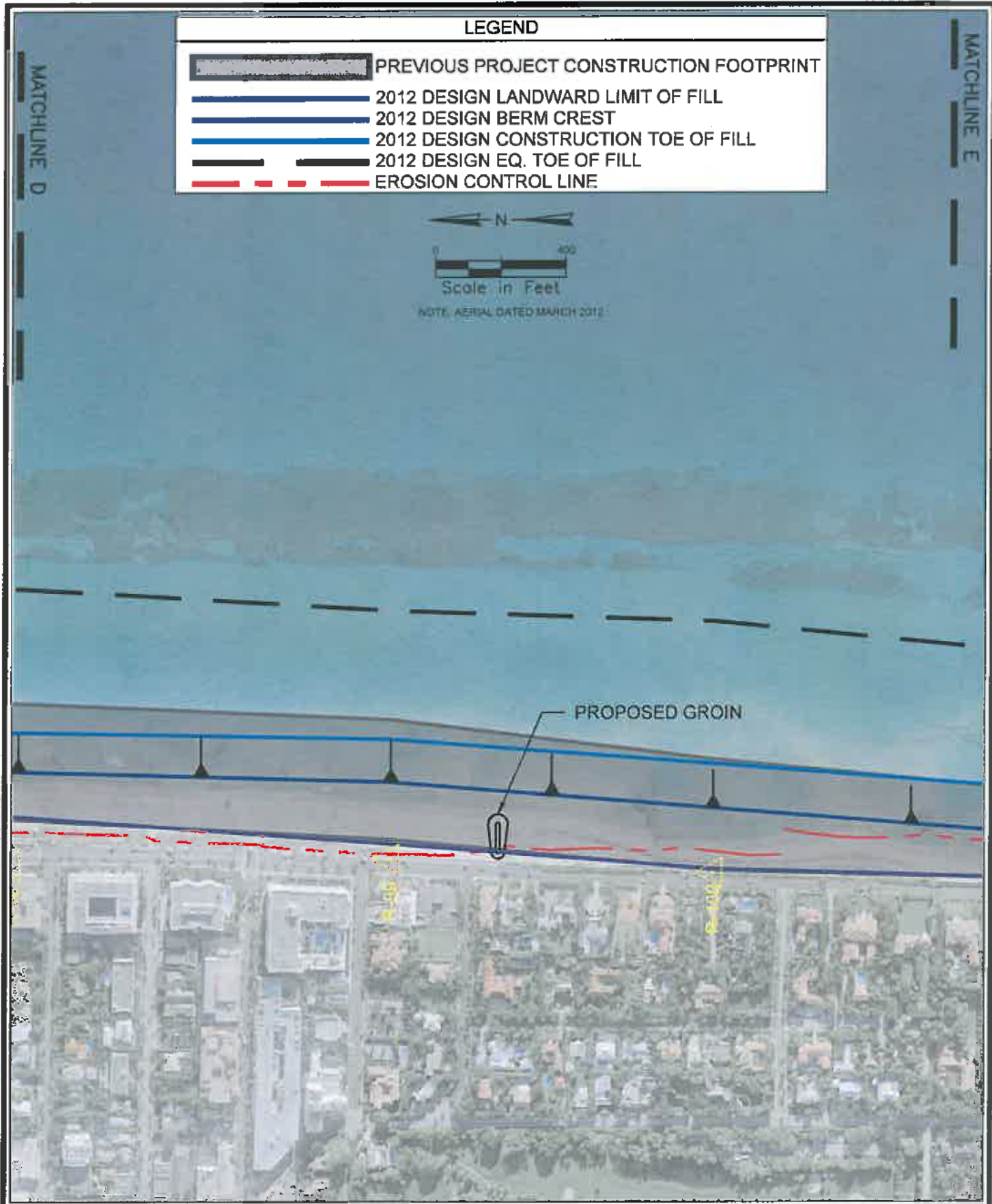
2012 Mid-Town Nourishment Project Design

Figure 7

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

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Mid-Town Design Plan View

2012 Mid-Town Nourishment Project Design

Figure 8

JOB NUMBER: 12-2396

ISSUE DATE: 11-05-12

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Florida License Number 58072

2/12/13

MATCHLINE E

LEGEND

- PREVIOUS PROJECT CONSTRUCTION FOOTPRINT
- 2012 DESIGN LANDWARD LIMIT OF FILL
- 2012 DESIGN BERM CREST
- 2012 DESIGN CONSTRUCTION TOE OF FILL
- 2012 DESIGN EQ. TOE OF FILL
- EROSION CONTROL LINE



Scale in Feet

NOTE: AERIAL DATED MARCH 2012



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Mid-Town Design Plan View

2012 Mid-Town Nourishment Project Design

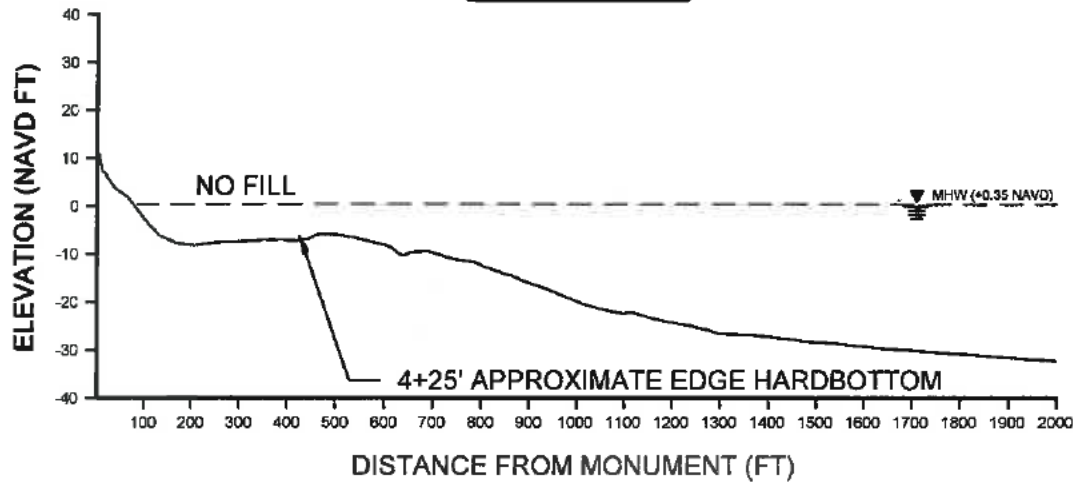
Figure 9

JOB NUMBER: 12-2398

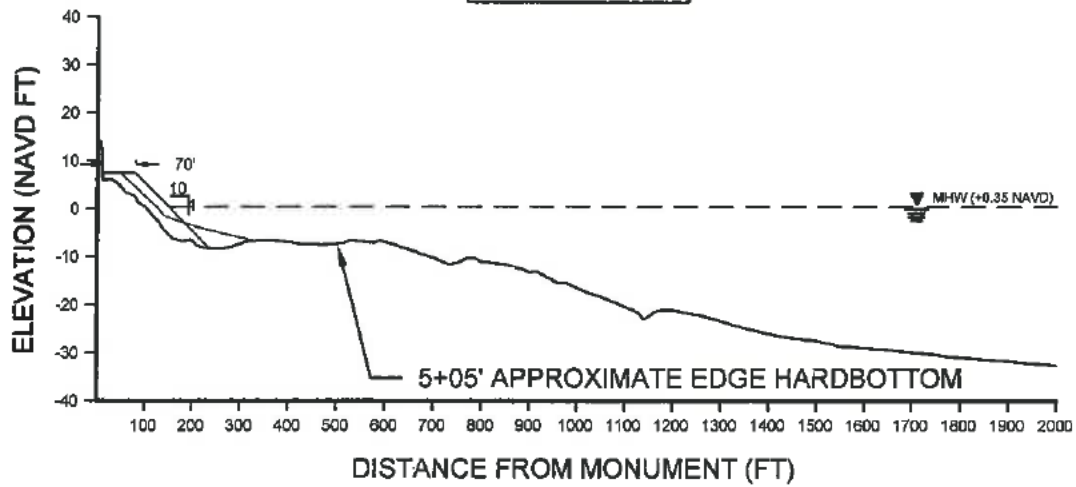
ISSUE DATE: 11-05-12

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Florida License Number 58072
2/12/13

R-89 PROFILE



R-90 PROFILE



LEGEND

- *2012 SURVEY PROFILE
- SUB-BOTTOM SURVEY (HARBOTTOM)
- - - PREVIOUS TEMPLATE
- CONSTRUCTION TEMPLATE
- EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED INC. IN SEPTEMBER 2012.

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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

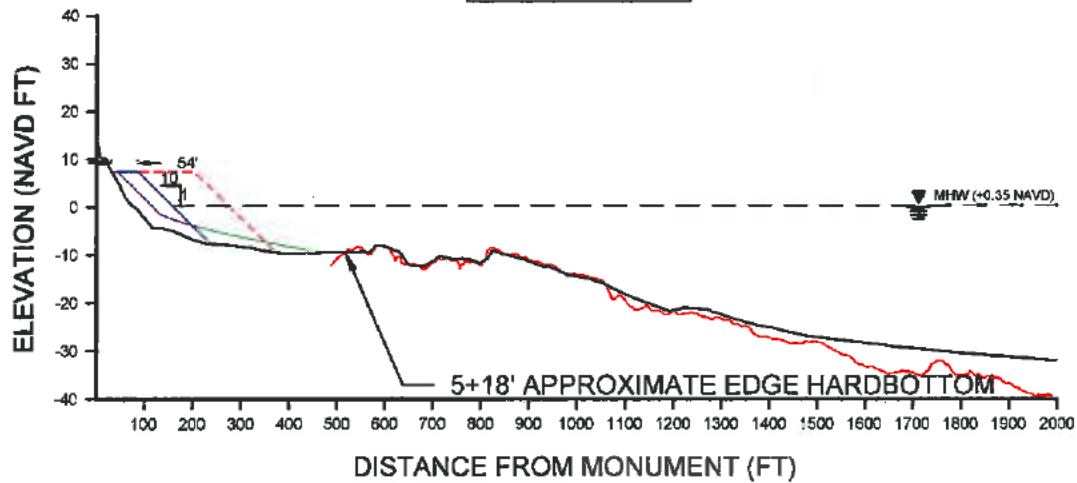
Figure 10

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

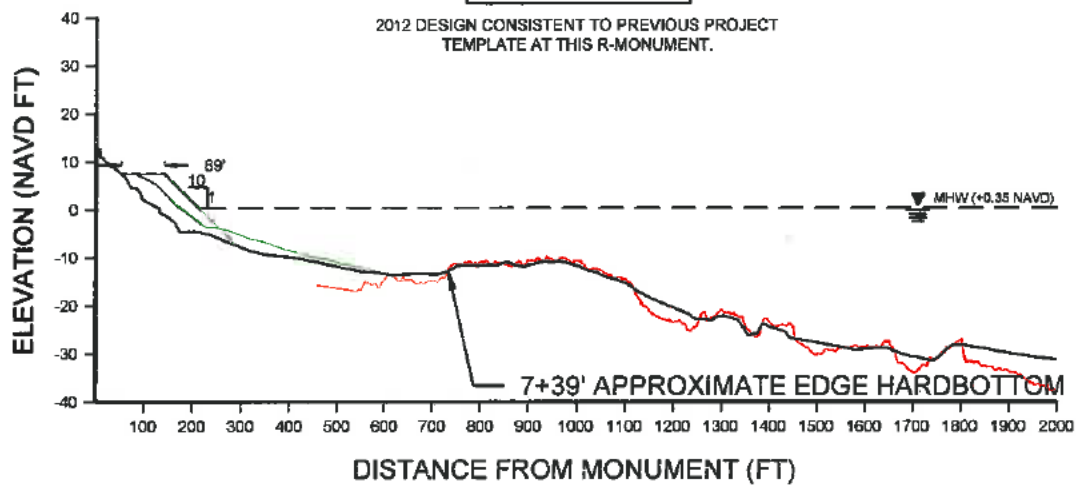
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R-91 PROFILE



R-92 PROFILE

2012 DESIGN CONSISTENT TO PREVIOUS PROJECT
TEMPLATE AT THIS R-MONUMENT.



LEGEND

- *2012 SURVEY PROFILE
- SUB-BOTTOM SURVEY (HARDBOTTOM)
- - - PREVIOUS TEMPLATE
- CONSTRUCTION TEMPLATE
- EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED
INC. IN SEPTEMBER 2012.



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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

Figure 11

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

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2/12/13

Notes:

North Mid-Town

1. Beach placement has been extended north from R-90.5 to R-89.
2. Project fill densities have been reduced from the permitted design.
3. A reduced fill template has been adopted in the vicinity of the Breakers Hotel.
4. A 1:10 beach construction slope has been maintained.
5. The equilibrium toe of fill has been calculated based on the Munoz-Perez modified equilibrium profile theory utilizing a mean grain size of 0.25 mm and an Arp/A coefficient of 1.1 except for the profiles at R-92 and R-93.
6. At R-92 and R-93 the equilibrium toe of fill has been calculated based on the average of the modified equilibrium profile (as referenced above) and the translated profile for each monument.
7. Template density has been calculated to avoid direct and secondary impacts to nearshore hardbottom.

South Mid-Town

1. Beach placement has been extended south from R-101.4 to R-102.
2. Project fill densities have been reduced from the permitted design.
3. An additional groin structure has been implemented in the vicinity of R-99.3.
4. A 1:10 beach construction slope has been maintained.
5. The equilibrium toe of fill has been calculated based on the Munoz-Perez modified equilibrium profile theory utilizing a mean grain size of 0.25 mm and an Arp/A coefficient of 1.1.
6. Template density has been calculated to avoid direct and secondary impacts to nearshore hardbottom.

LOCATION: CENTER OF LATEL SHORE NOURISHMENT PROJECTS (12-2-01) DDPB 2012 MT-TOWN DESIGN AND ENVIRONMENTAL IMPACTS AND DMS



Notes

2012 Mid-Town Nourishment Project Design

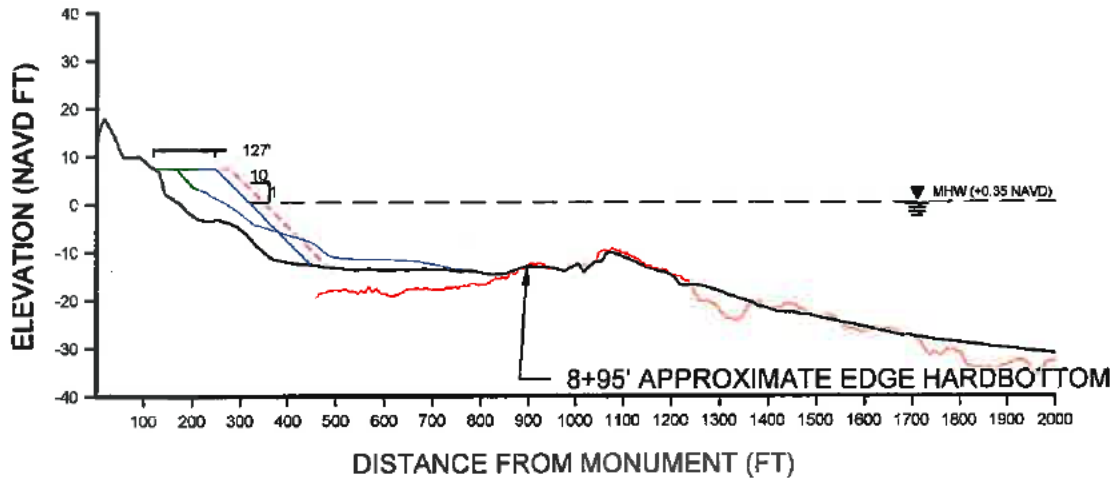
FIGURE 2

JOB NUMBER: 12-2398

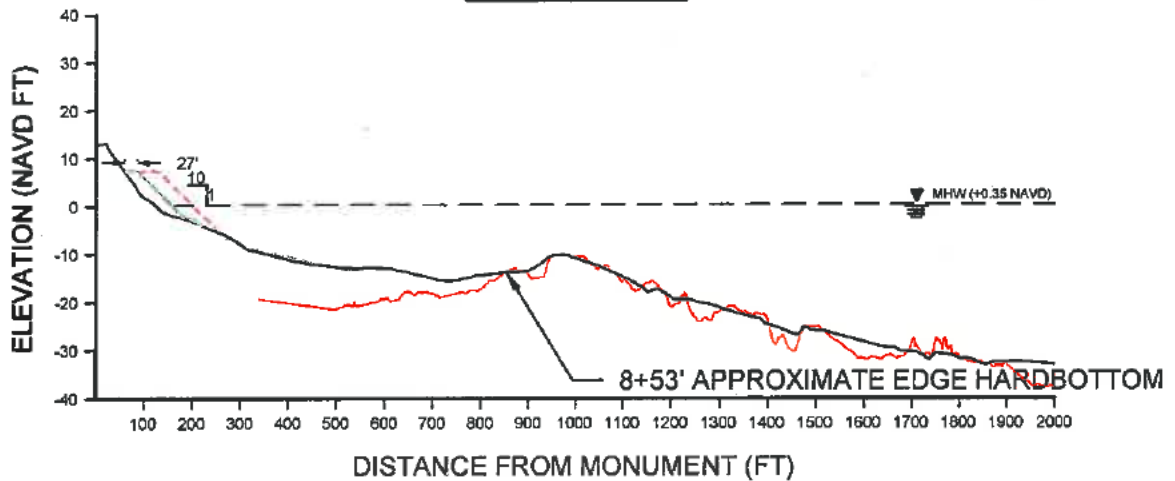
ISSUE DATE: 11-05-12


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R-93 PROFILE



R-94 PROFILE



LEGEND

- 2012 SURVEY PROFILE
- SUB-BOTTOM SURVEY (HARDBOTTOM)
- - - PREVIOUS TEMPLATE
- CONSTRUCTION TEMPLATE
- EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED INC. IN SEPTEMBER 2012.



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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

Figure 12

JOB NUMBER: 12-2398

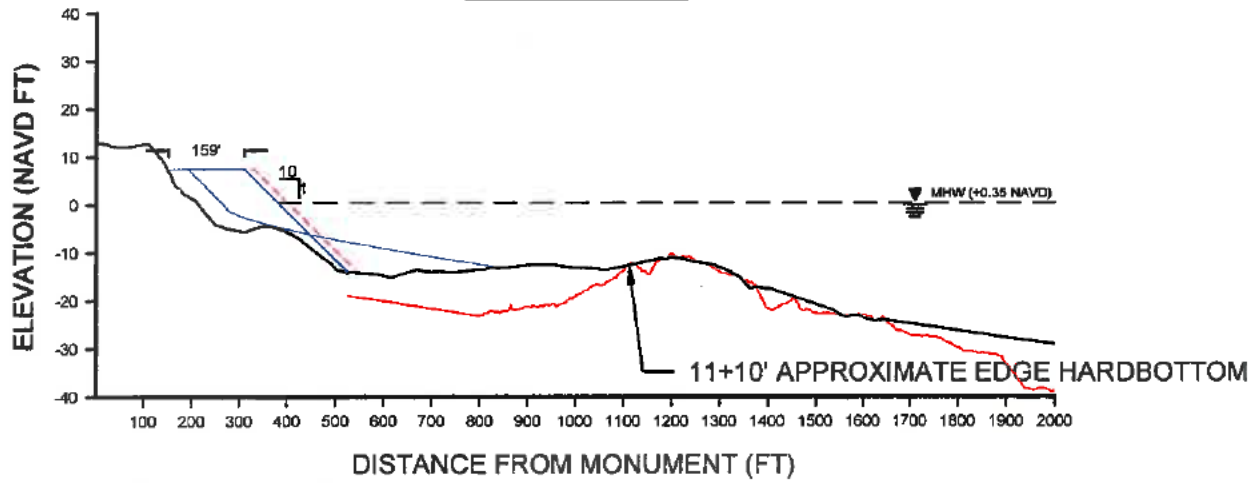
ISSUE DATE: 11-05-12

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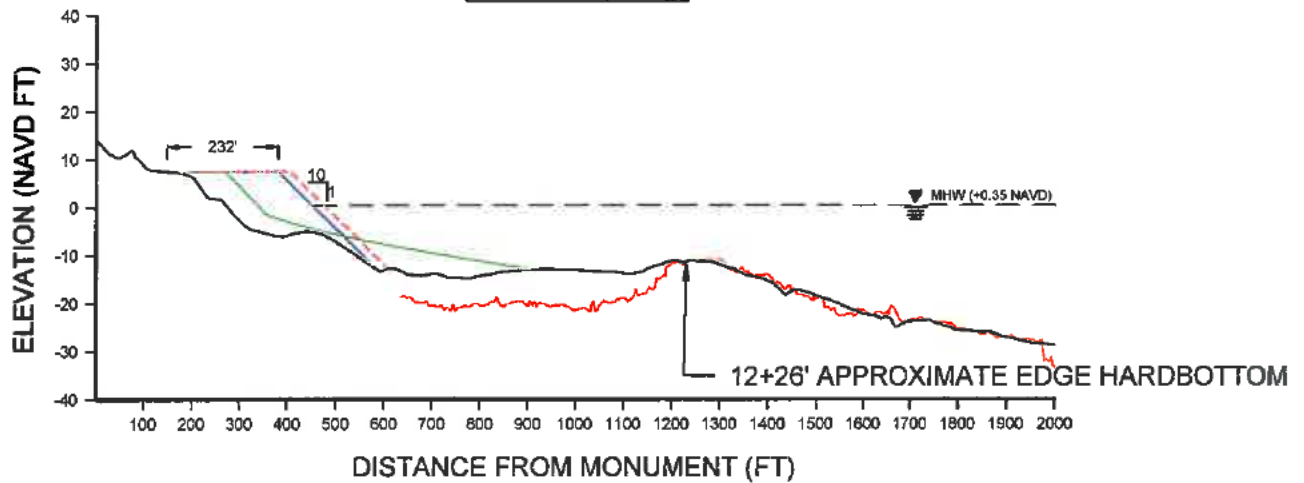
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Florida License Number 58072

2/12/13

R-95 PROFILE



R-96 PROFILE



LEGEND

- 2012 SURVEY PROFILE
- SUB-BOTTOM SURVEY (HARDBOTTOM)
- - - PREVIOUS TEMPLATE
- CONSTRUCTION TEMPLATE
- EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED INC. IN SEPTEMBER 2012.



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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

Figure 13

JOB NUMBER: 12-2398

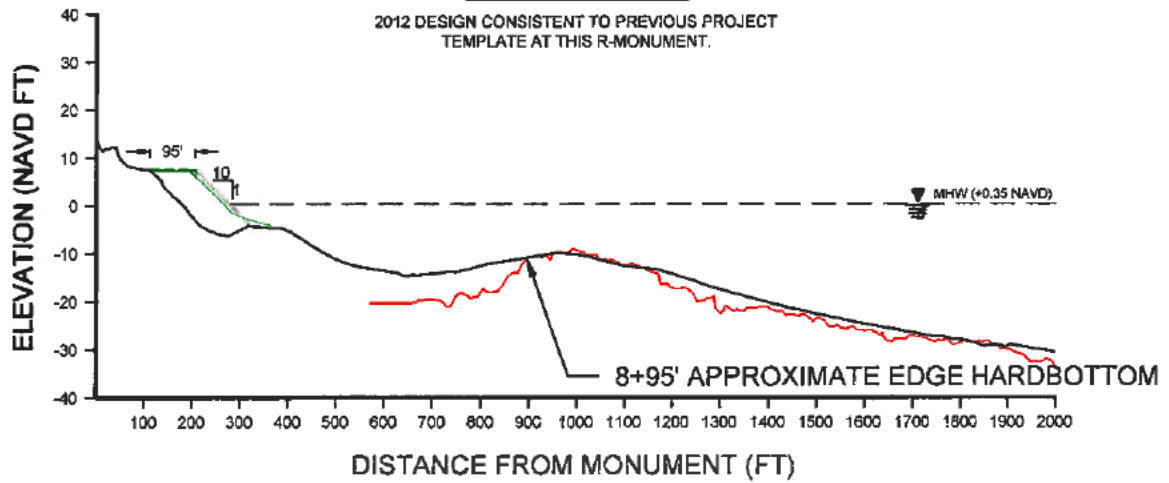
ISSUE DATE: 11-05-12

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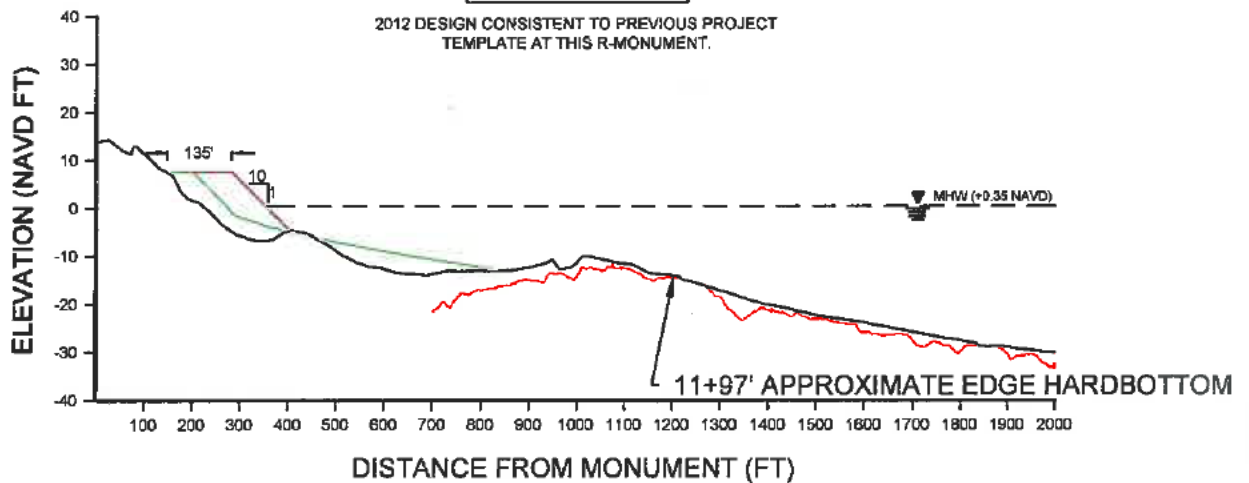
R-97 PROFILE

2012 DESIGN CONSISTENT TO PREVIOUS PROJECT
TEMPLATE AT THIS R-MONUMENT.



R-98 PROFILE

2012 DESIGN CONSISTENT TO PREVIOUS PROJECT
TEMPLATE AT THIS R-MONUMENT.



LEGEND

- *2012 SURVEY PROFILE
- SUB-BOTTOM SURVEY (HARDBOTTOM)
- - - PREVIOUS TEMPLATE
- CONSTRUCTION TEMPLATE
- EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED
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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

Figure 14

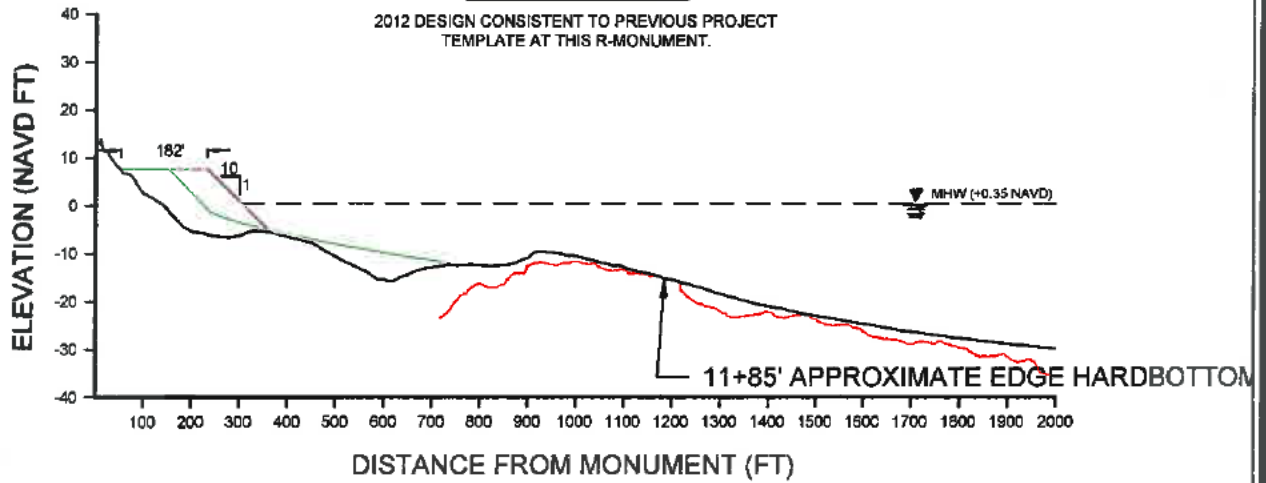
JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

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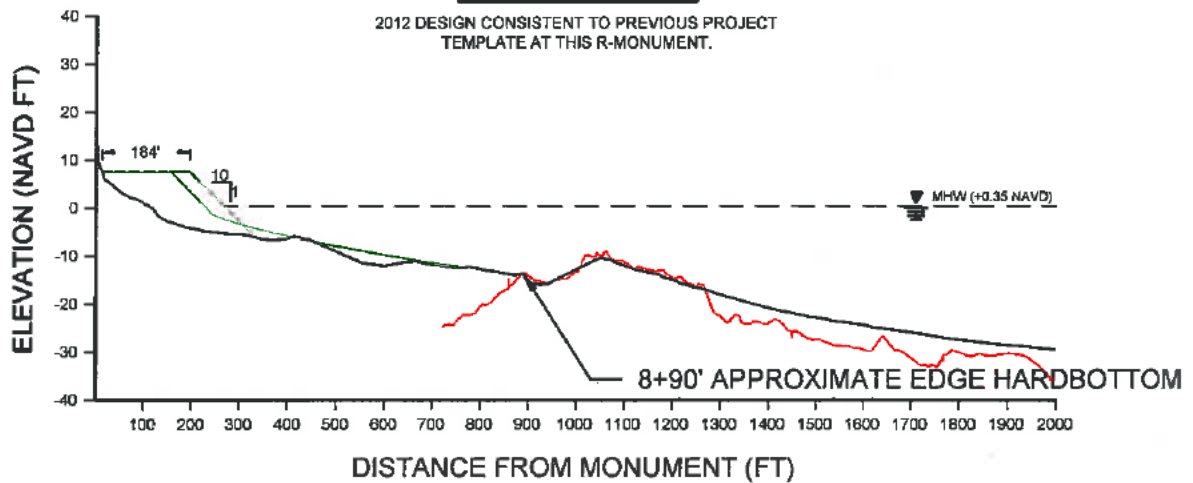
R-99 PROFILE

2012 DESIGN CONSISTENT TO PREVIOUS PROJECT
TEMPLATE AT THIS R-MONUMENT.



R-100 PROFILE

2012 DESIGN CONSISTENT TO PREVIOUS PROJECT
TEMPLATE AT THIS R-MONUMENT.



LEGEND

- *2012 SURVEY PROFILE
- SUB-BOTTOM SURVEY (HARDBOTTOM)
- - - PREVIOUS TEMPLATE
- CONSTRUCTION TEMPLATE
- EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED
INC. IN SEPTEMBER 2012.

LOCATION: COAST GUARDANCE ON 2012/05/01 (NAVD) (12-3400) 2012 MTD-NOURN DESIGN FOR ENGINEERING AND CONSTRUCTION

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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

Figure 15

JOB NUMBER: 12-2398

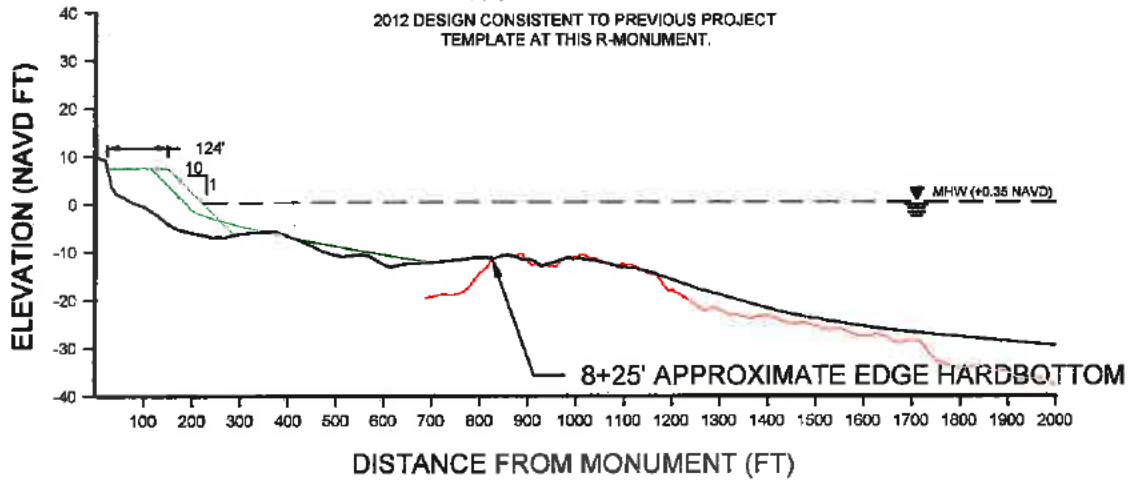
ISSUE DATE: 11-05-12

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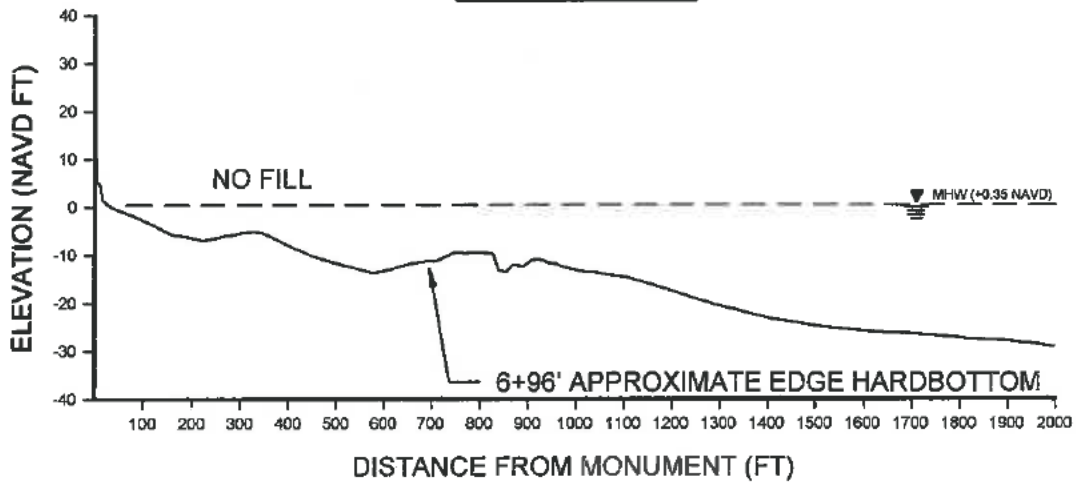
2012/13

R-101 PROFILE

2012 DESIGN CONSISTENT TO PREVIOUS PROJECT
TEMPLATE AT THIS R-MONUMENT.



R-102 PROFILE



LEGEND	
	*2012 SURVEY PROFILE
	SUB-BOTTOM SURVEY (HARDBOTTOM)
	PREVIOUS TEMPLATE
	CONSTRUCTION TEMPLATE
	EQUILIBRIUM TOE OF FILL

* PROFILES TAKEN FROM SURVEY PERFORMED BY SEA DIVERSIFIED
INC. IN SEPTEMBER 2012.



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Mid-Town Design Profile View

2012 Mid-Town Nourishment Project Design

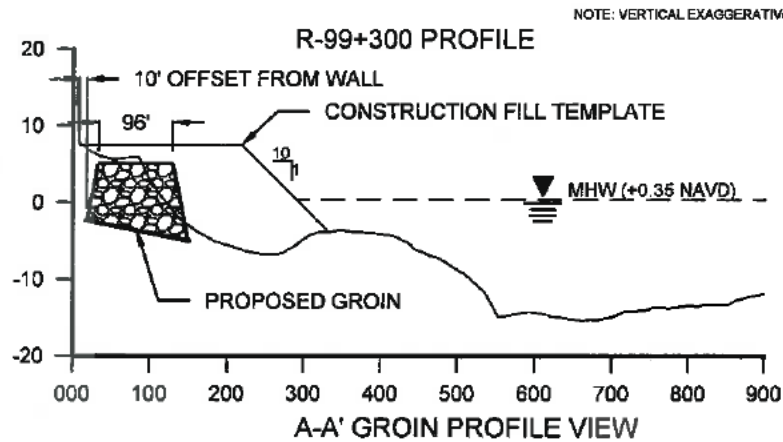
Figure 16

JOB NUMBER: 12-2398

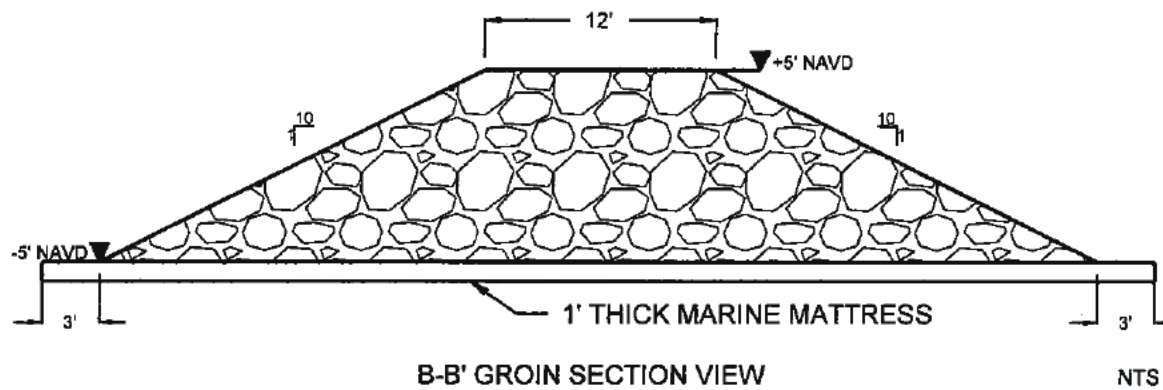
ISSUE DATE: 11-05-12

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NTS



NTS



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Proposed Groin Profile/Section View

2012 Mid-Town Nourishment Project Design

Figure 18

JOB NUMBER: 12-2398

ISSUE DATE: 11-05-12

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Appendix A-
Phipps Ocean Park Nourishment Drawings

Phipps Ocean Park Beach Restoration

Town of Palm Beach, Florida



INDEX OF SHEETS

SHEET	DESCRIPTION
1.....	Cover Sheet
2.....	Location Map - Fill Area & Offshore Borrow Areas
3.....	Plan View - Proposed Fill Area
4.....	Profiles - Proposed Fill Area
5.....	Profiles - Proposed Fill Area
6.....	Profiles - Proposed Fill Area
7.....	Profiles - Proposed Fill Area
8.....	Profiles - Proposed Fill Area
9.....	Plan View - South Borrow Area 2
10.....	Cross-Section A-A' & E-E' - South Borrow Area 2
11.....	Plan View - South Borrow Area 3
12.....	Cross-Section A-A' - South Borrow Area 3
13.....	General Notes

Michael P. Walther 4/30/13

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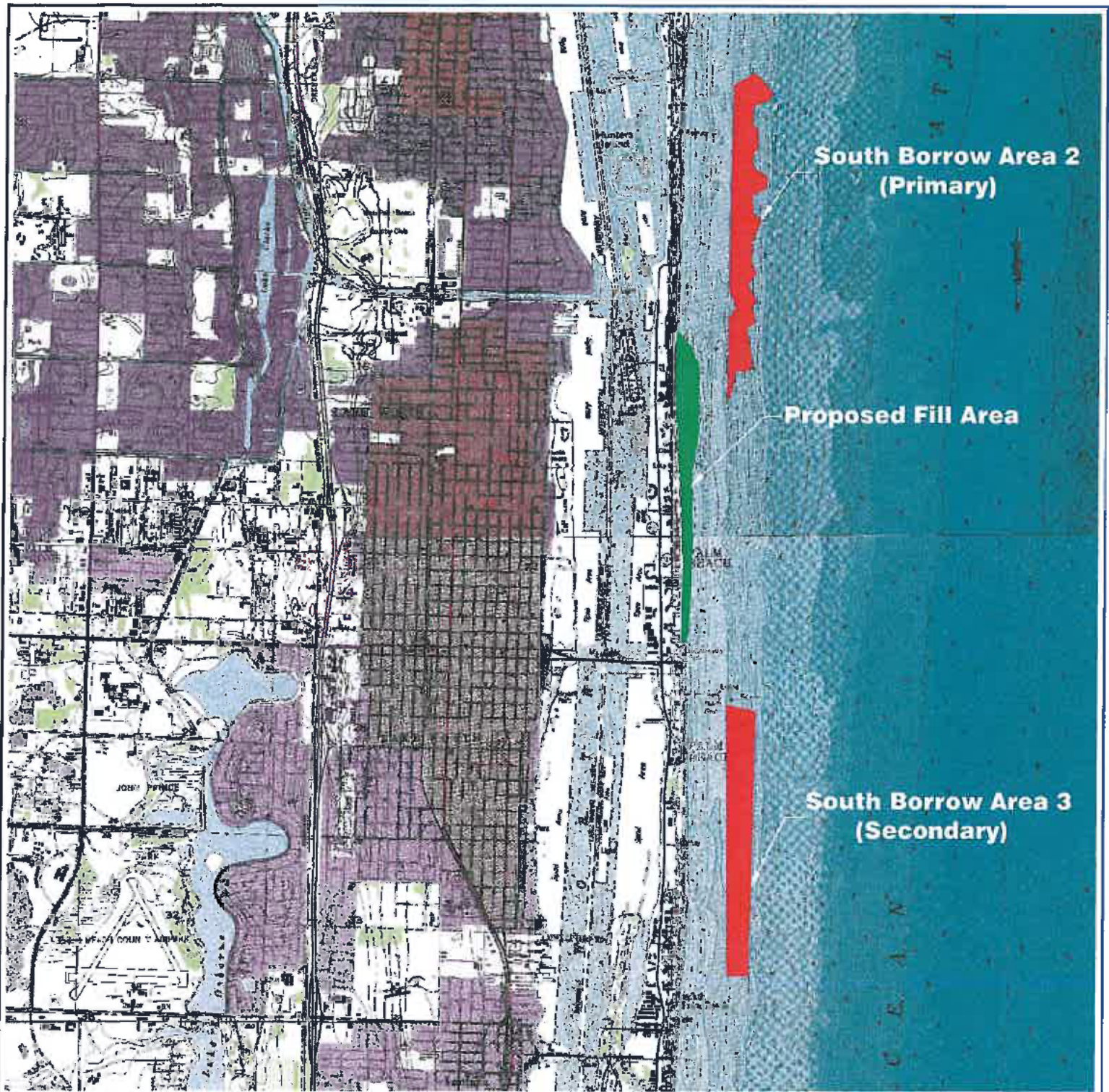
COASTAL TECH

Certificate of Authorization Number: 00004195
3625 20th Street, Vero Beach, Florida 32980
VERO BEACH SARASOTA MELBOURNE AUSTIN

Cover Sheet

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	1
LAST REVISION	DATE	OF 13 SHEETS
	04/30/2013	JOB NO.
		28115.06



Notes:

1. Digital Raster Graphics (DRG) obtained from Labins.
2. Location of Proposed Borrow Area adapted from Figure 4b & Figure 4c of "Town of Palm Beach Offshore Sand Search Investigations South Area Summary Report" dated April 2012 by ATM.



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COASTAL TECH

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3625 20th Street, Vero Beach, Florida 32960
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Location Map - Fill Area & Offshore Borrow Areas

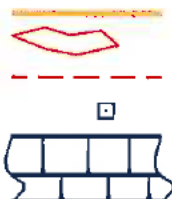
Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	2
LAST REVISION	DATE	OF 13 SHEETS
	04/30/2013	JOB NO.
		28115.06



Notes:

1. Existing Groins, Seawalls & Revetment locations from (a) drawing titled "Groin and Armoring Inventory Atlantic Ocean Frontage Town of Palm Beach, Palm Beach County Florida" by Istinger & Stubbs Engineering, INC 2010 and (b) "Palm Beach County Atlas Shoreline Maintenance Plan" by Olsen & Associates 1987.
2. Aerials provided by Town of Palm Beach; aerial date is October 2011.
3. Hardbottom digitized by Coastal Tech from 1999 aerial photographs.



Legend:

- Existing Seawall
- 1999 Existing Hardbottom
- Mean High Water Line Dec. 2012
- DEP Reference Monuments
- Proposed Beach Fill



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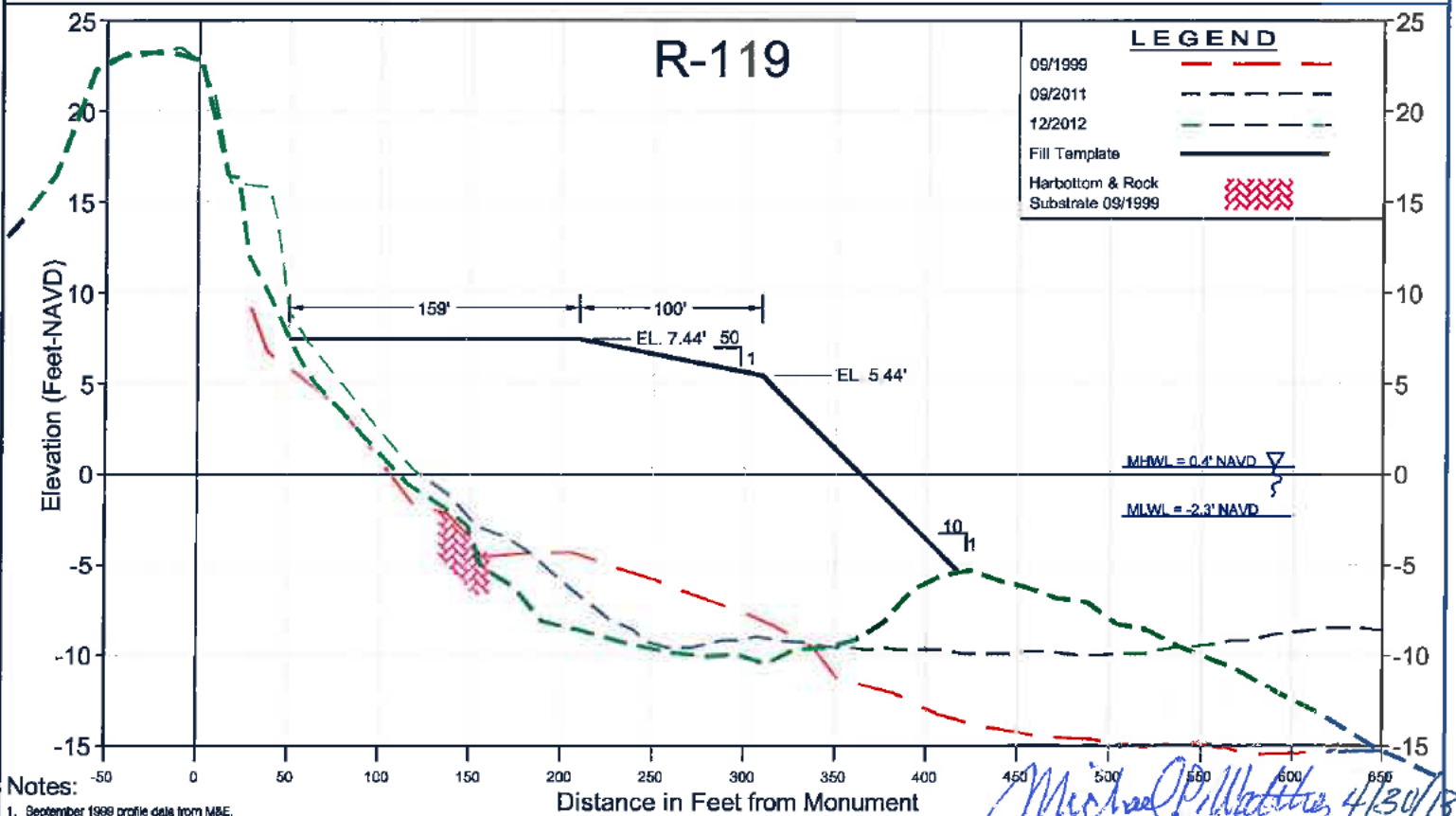
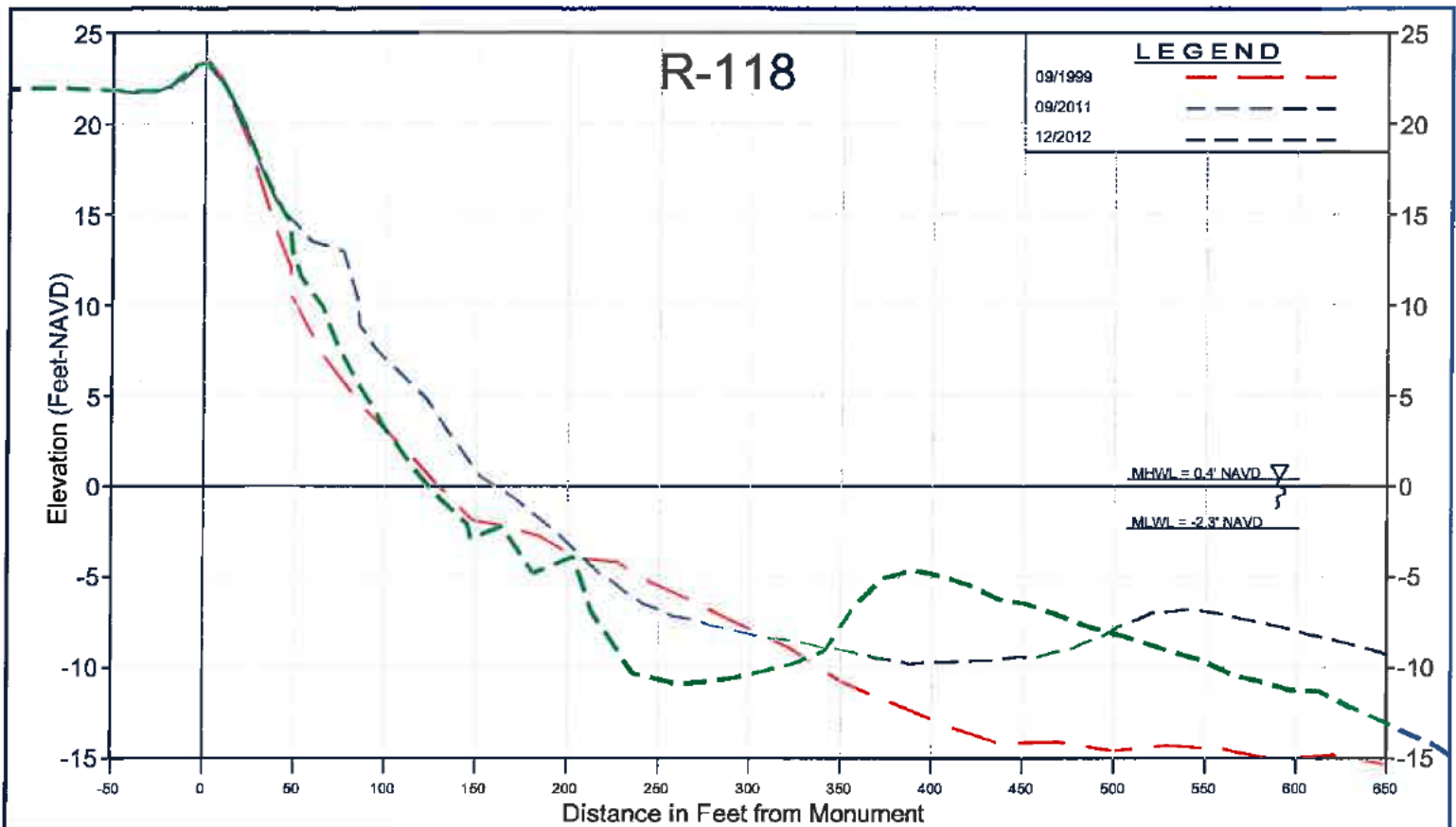
COASTAL TECH

Certificate of Authorization Number: 00004195
3625 20th Street, Vero Beach, Florida 32960
VERO BEACH SARASOTA MELBOURNE AUSTIN

Plan View - Proposed Fill Area

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR	MPW	DRAWN	AQN	SHEET	3
LAST REVISION	DATE	04/30/2013	JOB NO.	28115.06	OF 13 SHEETS



- Notes:
1. September 1999 profile data from M&E.
 2. September 2011 & 2012 profile data from Sea Diversified.
 3. Harbortom digitized by Coastal Tech from 1999 aerial photographs.



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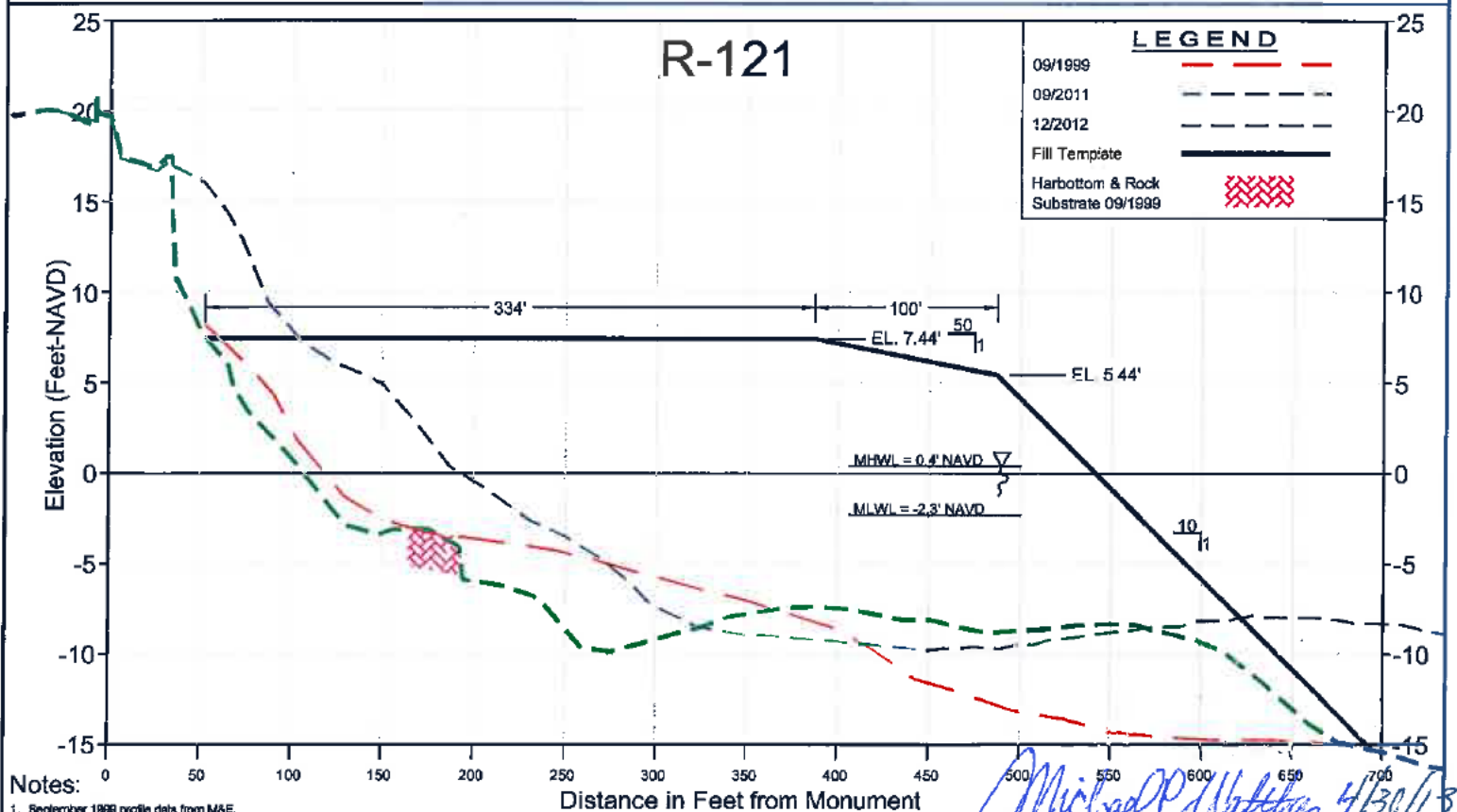
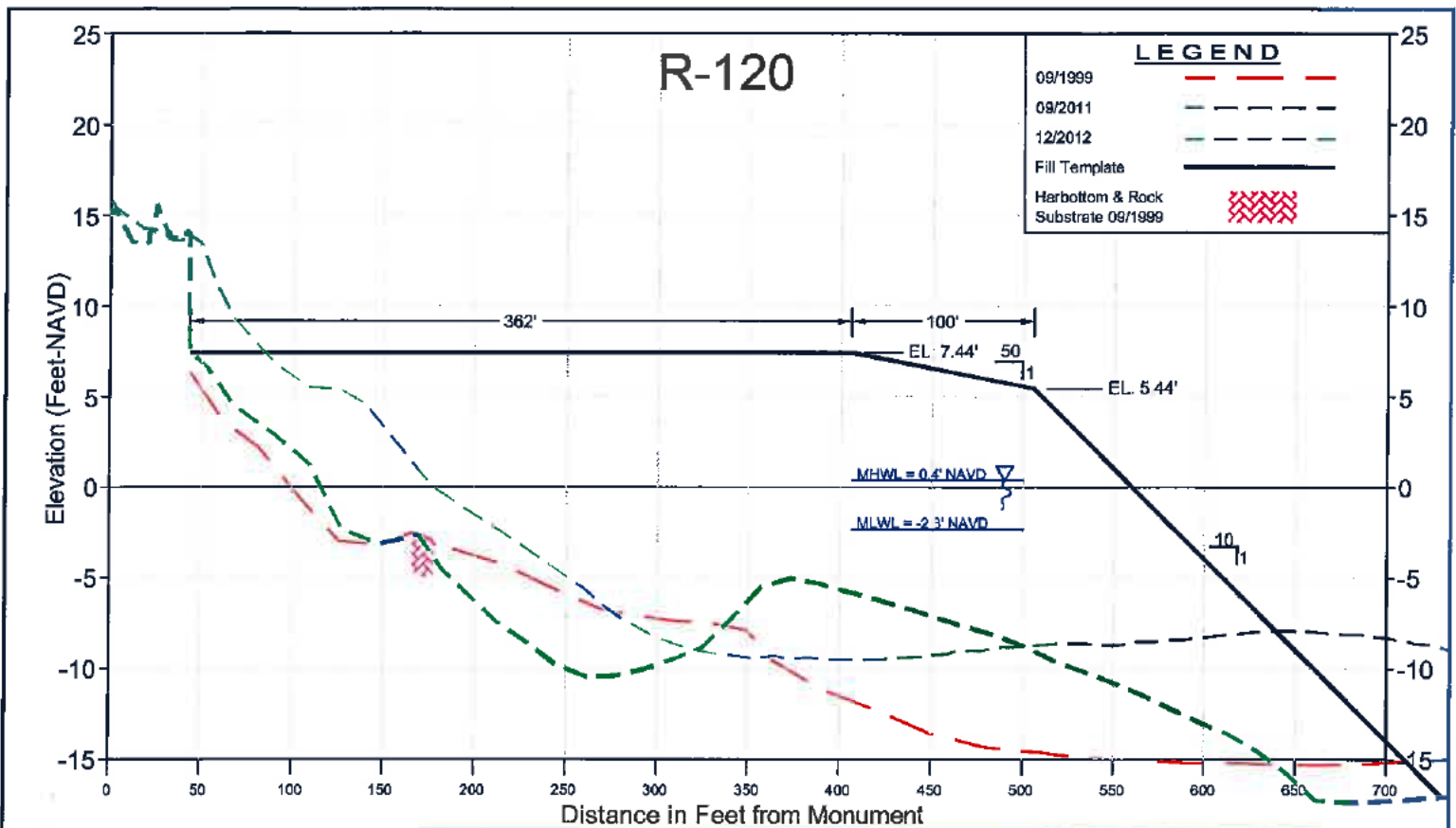
COASTAL TECH

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VERO BEACH SARASOTA MELBOURNE AUSTIN

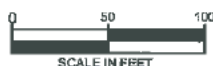
Profiles - Proposed Fill Area

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	4
LAST REVISION	DATE	OF 12 SHEETS
	04/30/2013	JOB NO.
		28115.06



- Notes:**
1. September 1999 profile data from M&E.
 2. September 2011 & 2012 profile data from Sea Diversified.
 3. Harbottom digitized by Coastal Tech from 1999 aerial photographs.



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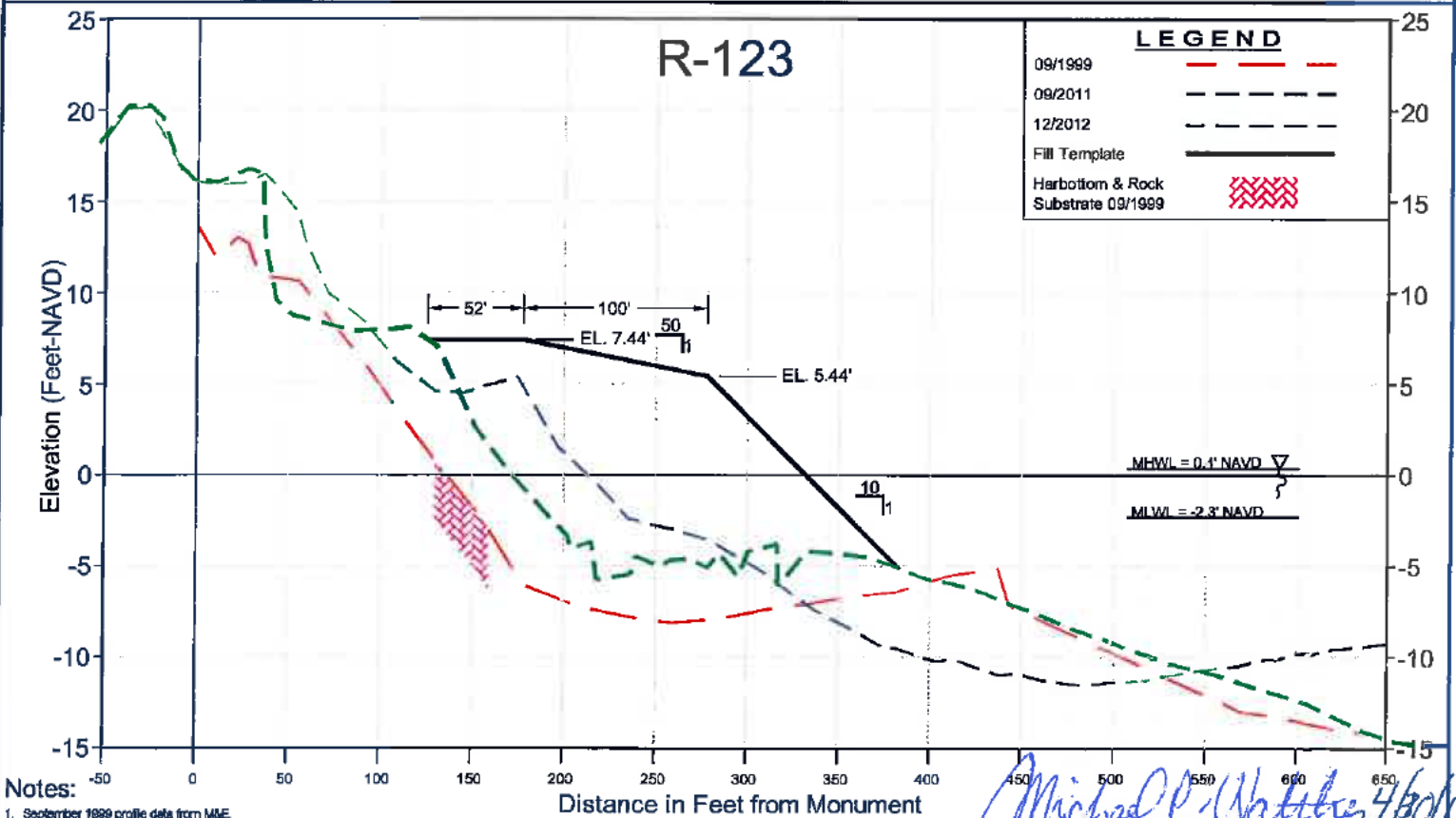
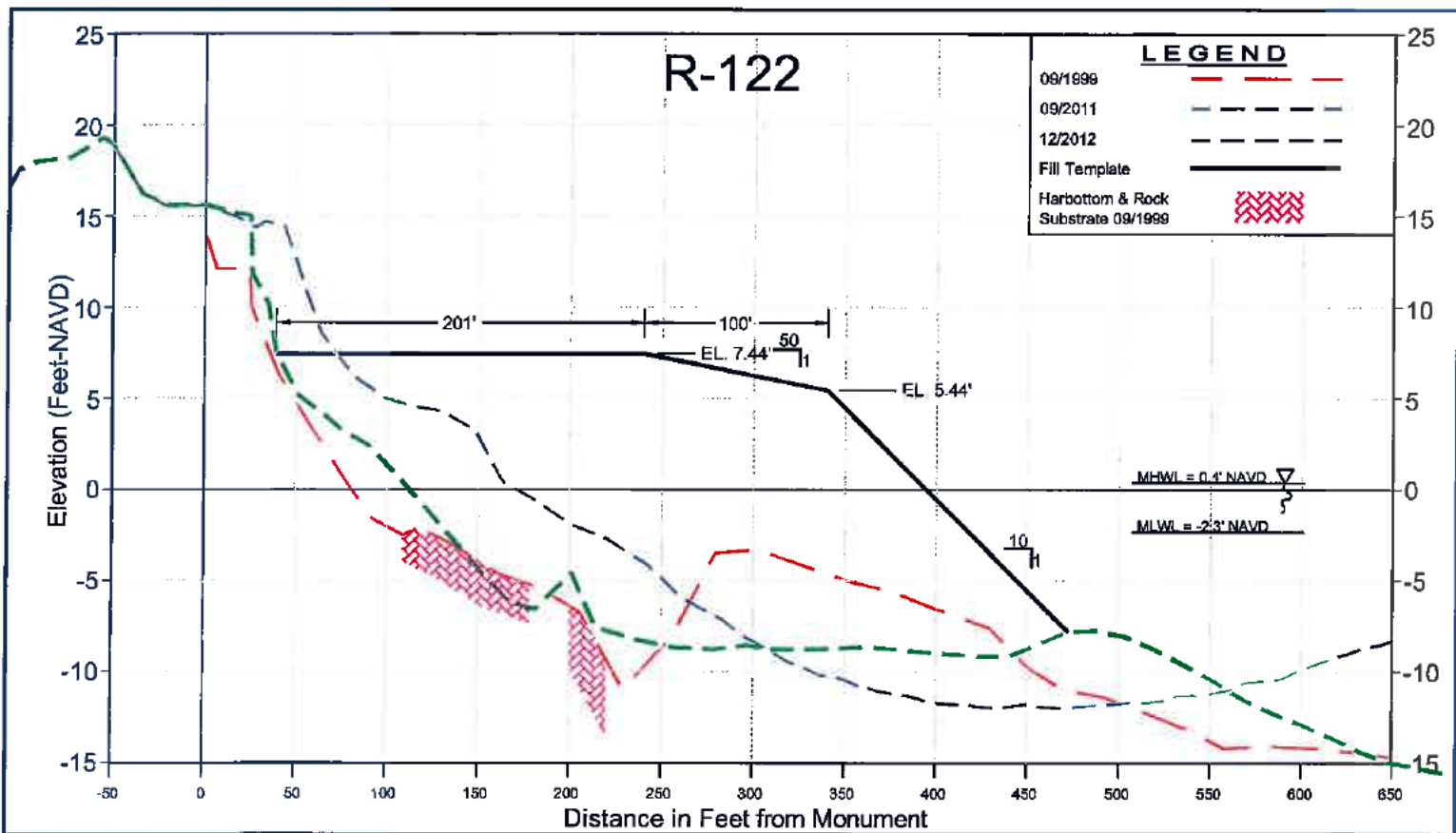
COASTAL TECH

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Profiles - Proposed Fill Area

Phipps Ocean Park Beach Restoration
 Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	5
LAST REVISION	DATE	JOB NO.
	04/30/2013	28115.06



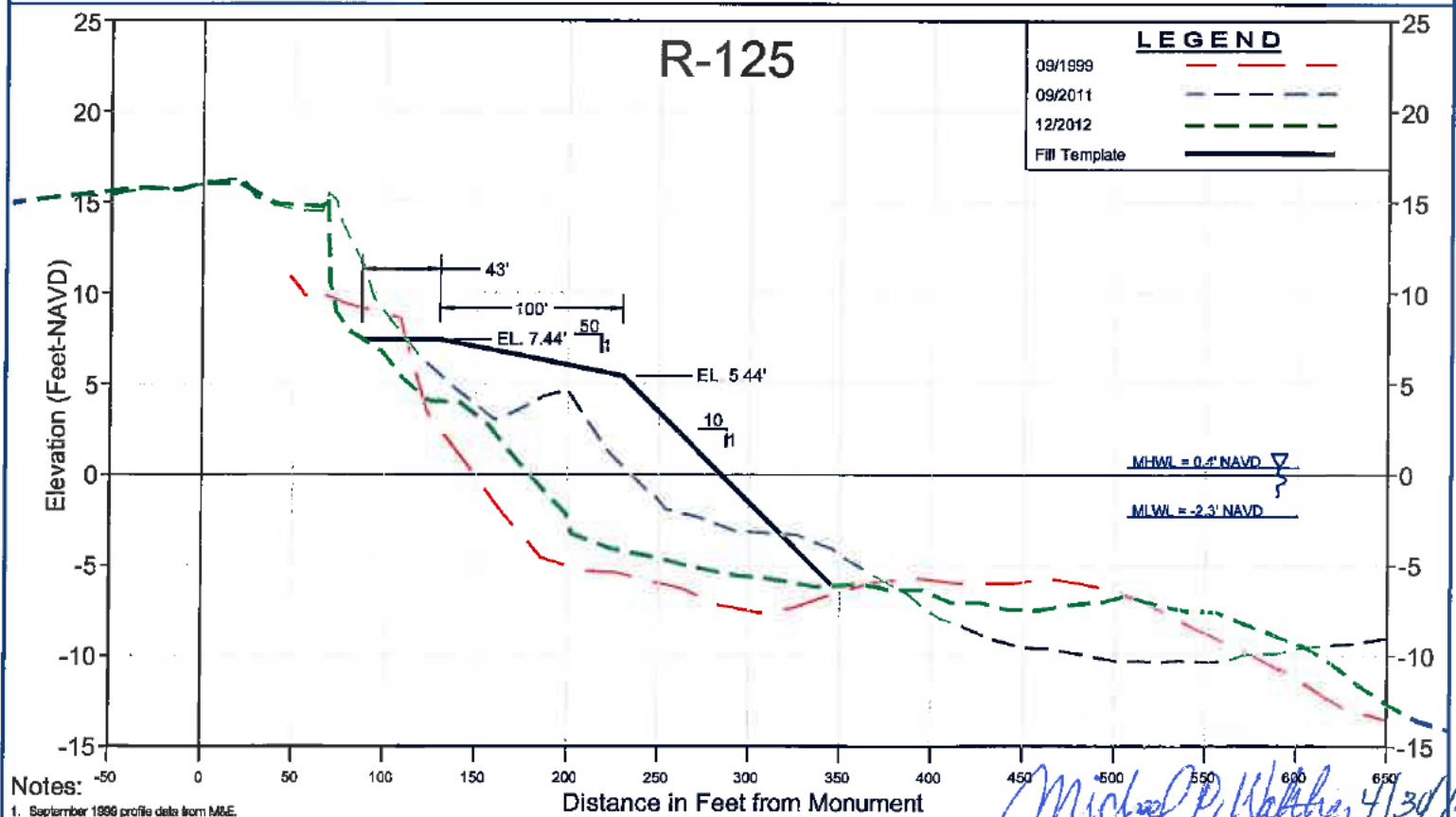
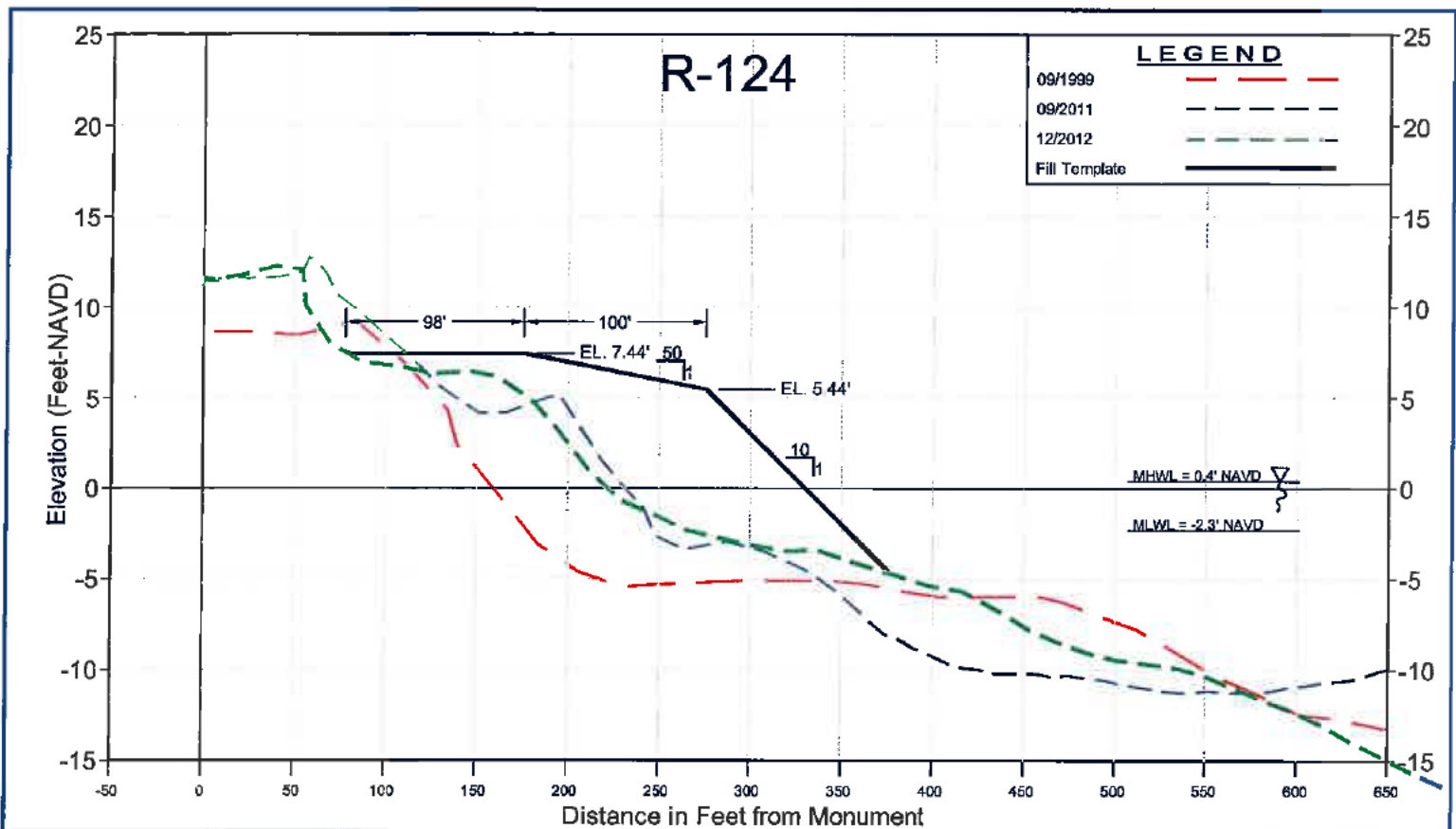
- Notes:**
1. September 1999 profile data from NME.
 2. September 2011 & 2012 profile data from Sea Diversified.
 3. Harbottom digitized by Coastal Tech from 1999 aerial photographs.

COASTAL TECH
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Profiles - Proposed Fill Area
 Phipps Ocean Park Beach Restoration
 Town of Palm Beach, Florida

Michael P. Walther 4/30/13
MICHAEL P. WALTHER, P.E. DATE
 FLORIDA P.E. LICENSE NUMBER 32081

ENGR	DRAWN	SHEET
MPW	AQN	6
LAST REVISION	DATE	JOB NO.
	04/30/2013	28115.06



Notes:

1. September 1999 profile data from M&E.
2. September 2011 & 2012 profile data from Sea Diversified.



COASTAL TECH

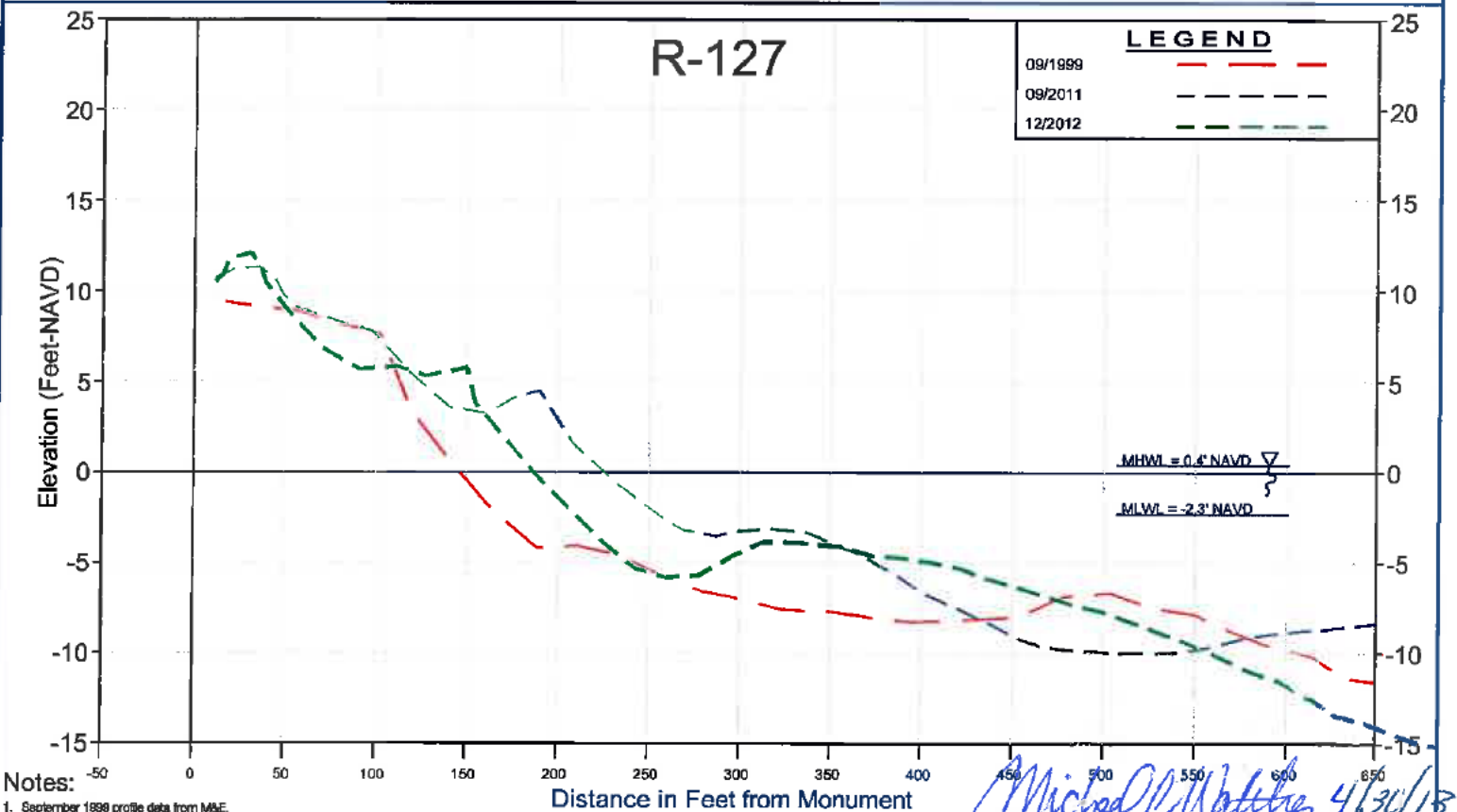
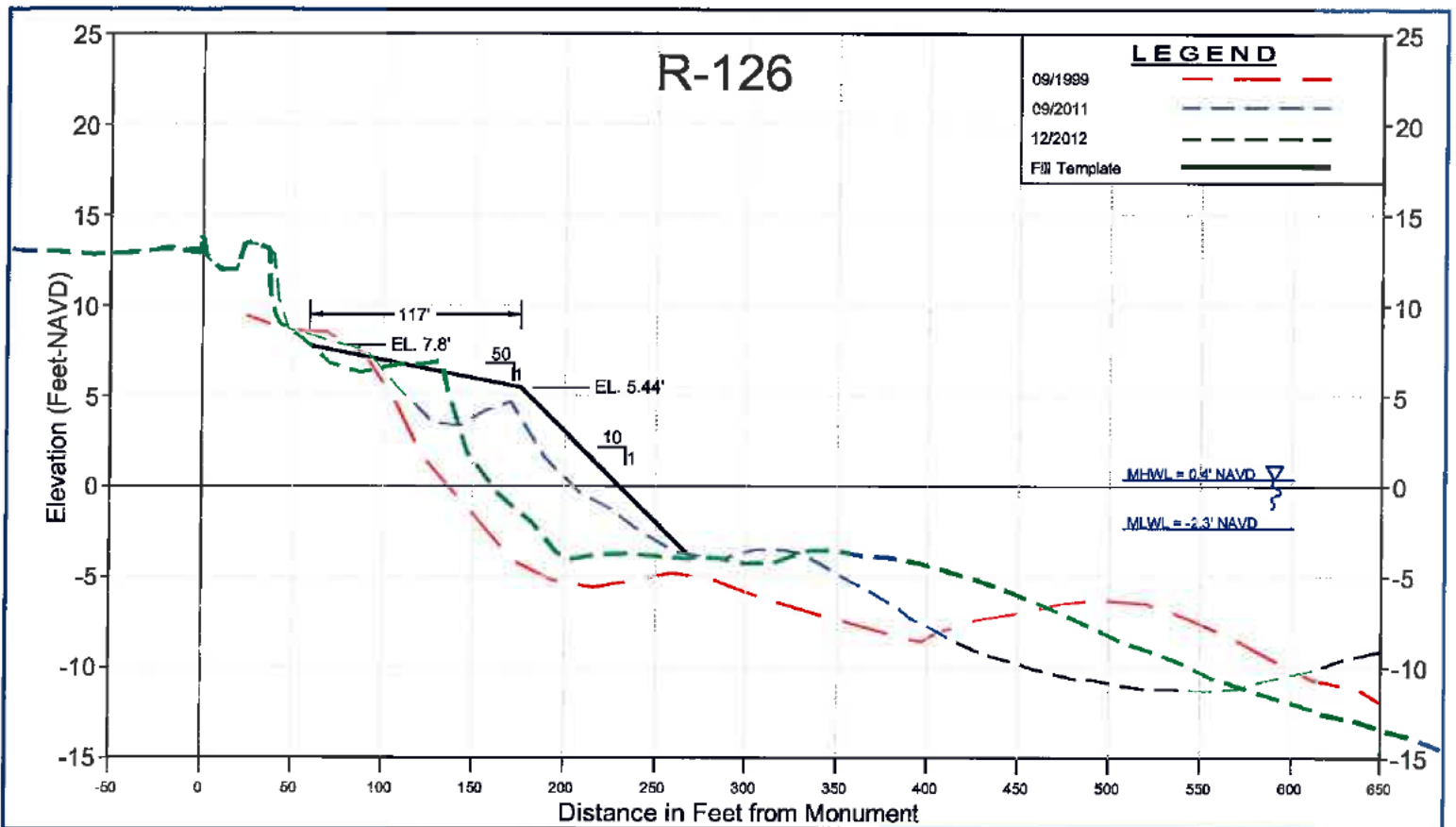
Certificate of Authorization Number: 00004195
3825 20th Street, Vero Beach, Florida 32960
VERO BEACH SARASOTA MELBOURNE AUSTIN

Profiles - Proposed Fill Area

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

MICHAEL P. WALTHER, P.E. DATE
FLORIDA P.E. LICENSE NUMBER 32081

ENGR	DRAWN	SHEET
MPW	AQN	7
LIST REVISION	DATE	OF 13 SHEETS
	04/30/2013	JOB NO.
		28115.06



- Notes:
1. September 1999 profile data from M&E.
 2. September 2011 & 2012 profile data from Sea Diversified.



Michael P. Walther 4/30/13

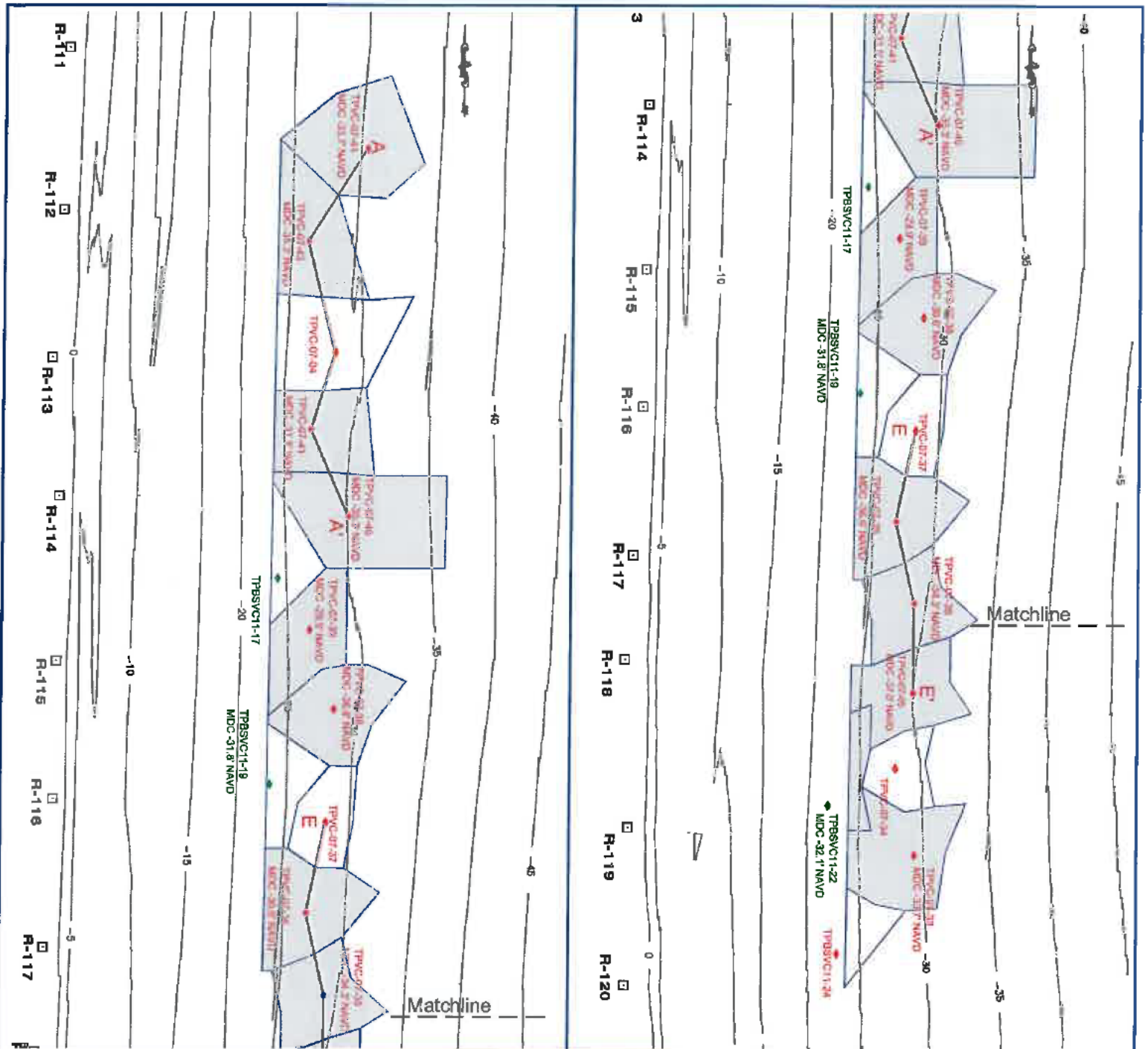
MICHAEL P. WALTHER, P.E. DATE
FLORIDA P.E. LICENSE NUMBER 32081

COASTAL TECH
 Certificate of Authorization Number: 00004195
 3625 20th Street, Vero Beach, Florida 32980
 VERO BEACH SARASOTA MELBOURNE AUSTIN

Profiles - Proposed Fill Area

Phipps Ocean Park Beach Restoration
 Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	8
LAST REVISION	DATE	JOB NO.
	04/30/2013	28115.06



Notes:

1. Contour elevations referenced to North American Vertical Datum 1988 (NAVD88).
2. South Borrow Area 2 Plan View adapted from "Figure 4b" of "Town of Palm Beach Offshore Sand Search Investigations South Area Summary Report" dated April 2012 by ATM.
3. Bathymetry from survey by Sea Diversified dated November 2011.

Legend:

- Borrow Area Core Influences
- Borrow Area Core Influences Proposed Cut Area Maximum Depth of Cut (MDC) varies
- TPVC-07-43 2007 Core locations
- TPBSVC11-22 2011 Core locations
- Elevation NAVD Contour
- DEP Reference Monument



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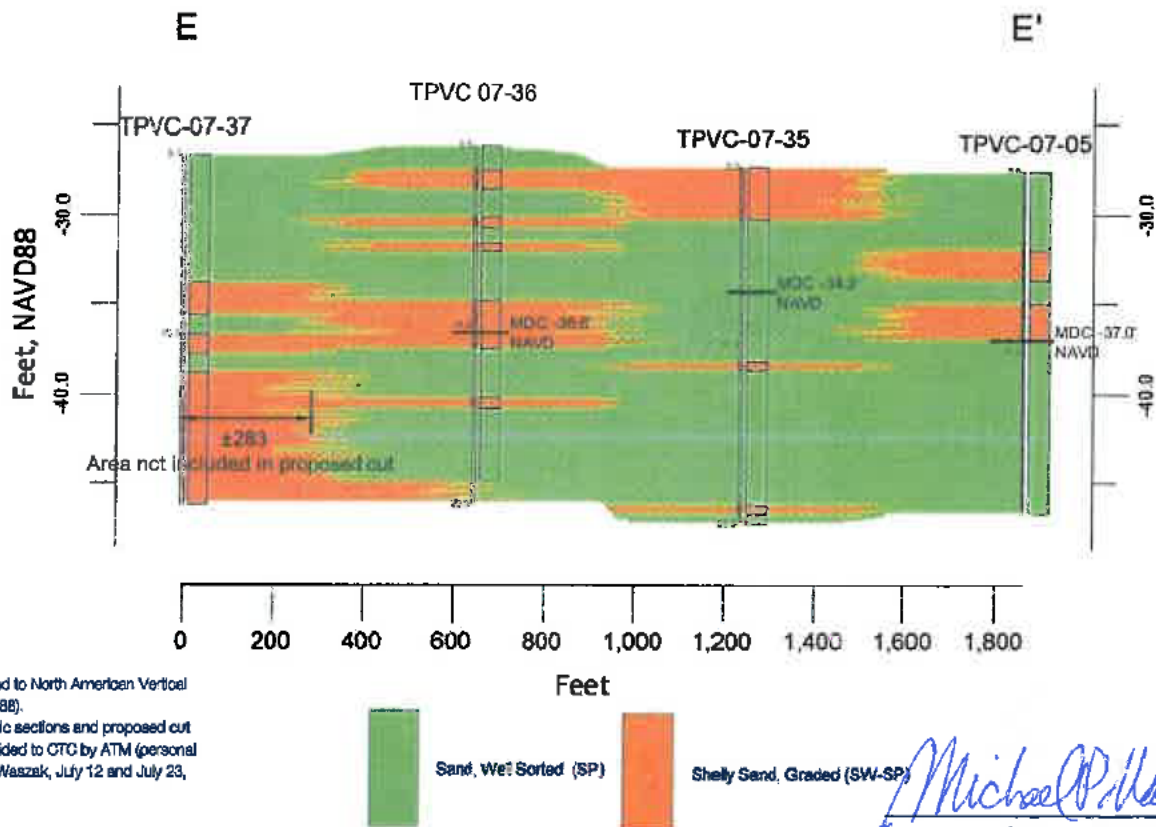
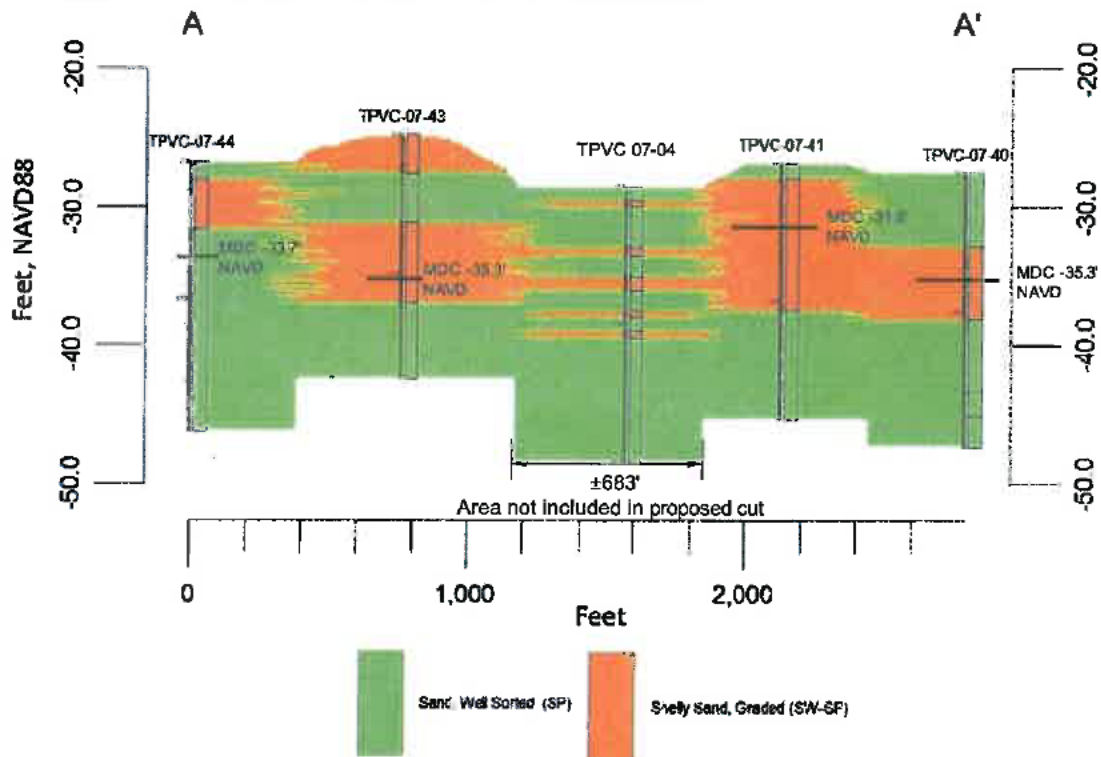


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Plan View - South Borrow Area 2

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	9
LAST REVISION	DATE	JOB NO.
	04/30/2013	28115.06



Notes:

1. Elevations referenced to North American Vertical Datum 1988 (NAVD88).
2. Borrow Area geologic sections and proposed cut depths by SEA provided to CTC by ATM (personal communication, J. Waszak, July 12 and July 23, 2012).

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VERO BEACH SARASOTA MELBOURNE AUSTIN

Cross-Section A-A' & E-E' - South Borrow Area 2

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR

MPW

LAST REVISION

DRAWN

AQN

DATE

04/30/2013

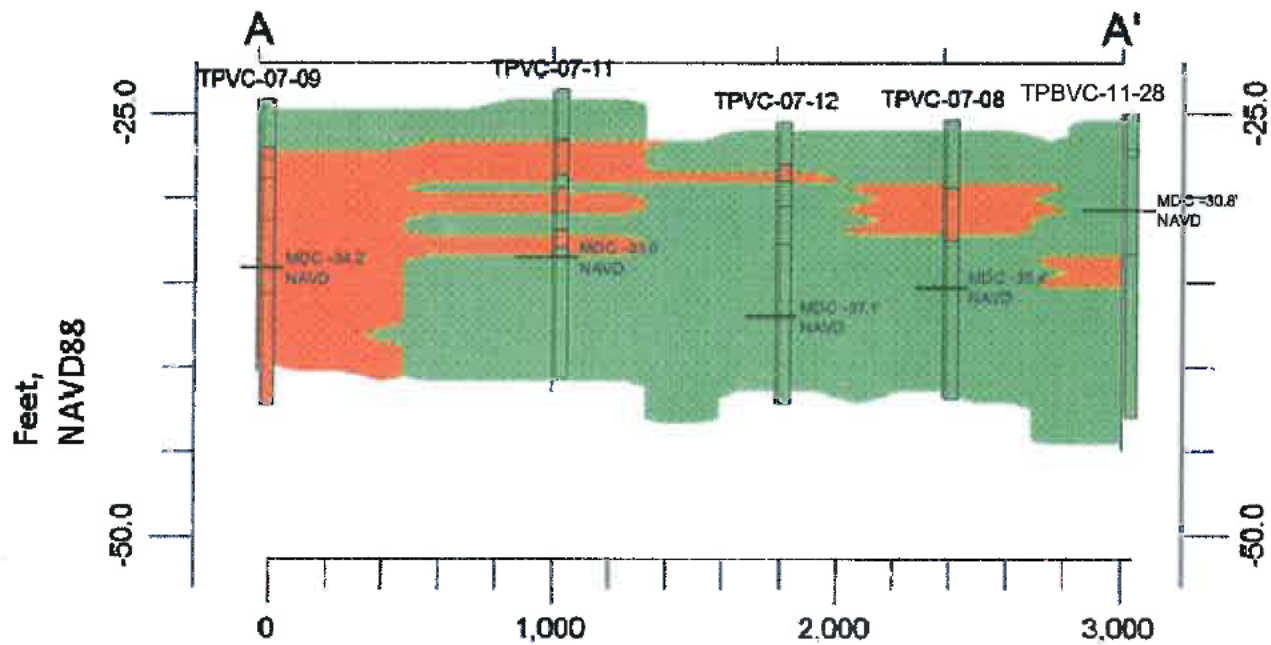
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OF 13 SHEETS

JOB NO.

28115.06



Notes:

1. Elevations referenced to North American Vertical Datum 1988 (NAVD88).
2. Borrow Area geologic sections and proposed cut depths by SEA provided to CTC by ATM (personal communication, J. Waszak, July 12 and July 23, 2012).

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Cross-Section A-A' - South Borrow Area 3

Phipps Ocean Park Beach Restoration
Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	12
LAST REVISION	DATE	OF 13 SHEETS
	04/30/2013	JOB NO.
		28115.06

GENERAL NOTES

1. These drawings are "Permit Sketches" intended to facilitate the evaluation of the proposed Phipps Ocean Park Beach Restoration (Project) within the Town of Palm Beach, in Palm Beach County, Florida. THESE DRAWINGS ARE NOT FOR CONSTRUCTION.
2. Elevations refer to North American Vertical Datum (NAVD).
3. Based upon the December 2012 survey, approximately 942,518 cubic yards of sand are proposed to be dredged from an offshore sand source and placed onto the beach. Erosion within the Project area is anticipated to continue at the rate of 59,149 cubic yards per year which is expected to increase the amount of sand proposed to be dredged and placed to 1,001,667 in November 2013. The Project Area extends approximately 1.7 miles along the Town of Palm Beach Shoreline from about 500 feet north of FDEP Monument R-119 to R-127.
4. The Contractor shall dredge fill material from the proposed borrow area, transport the material to the Project Fill Area and pump material to the beach through pipelines on the ocean bottom; construction may occur via use of either a hydraulic-pipeline dredge or a hopper dredge. A shore-parallel dike (as required to meet State Water Quality standards) comprised of sand shall be constructed to confine and accommodate settlement of the beach fill material from the pipeline discharge. The dike will be advanced along the beach as the pipeline discharge point advances. The Contractor shall maintain the dike so that at least 100 meters of dike exists ahead of the pipeline discharge point. Proposed equipment may be stored and staged on upland Access/Staging Areas and may include: one construction trailer, bulldozers, front end loaders, and other similar earth moving equipment.
5. The following lists potential Upland Construction Access / Staging Areas to be available to the Contractor:

<u>Access/Staging Area</u>	<u>Reference Monument</u>
Phipps Ocean Beach Park	R-119
Old Ocean Boulevard	R-121

The actual area to be used by the Contractor at each Access/Staging Area will be at the discretion of the Contractor, as approved by the Town at the Pre-Construction Meeting - subject to complete restoration of the site by the Contractor, as approved by the Town and the Engineer.

Prior to and during construction, the Contractor shall implement and maintain all sediment control measures required to retain sediment on-site to prevent violations of State Water Quality standards. In addition, the Contractor shall not damage any existing dune vegetation not directly buried by the Project.

6. The Contractor is allowed to operate 24 hours per day, 7 days a week unless otherwise restricted by the Contract Documents. Actual hours of operation are at the discretion of the Contractor.

Michael P. Walther 4/30/13
 MICHAEL P. WALTHER, P.E. DATE
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COASTAL TECH

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 VERO BEACH SARASOTA MELBOURNE AUSTIN

General Notes

Phipps Ocean Park Beach Restoration
 Town of Palm Beach, Florida

ENGR	DRAWN	SHEET
MPW	AQN	13
LAST REVISION	DATE	JOB NO.
	04/30/2013	28115.06

ASSHQQI A-

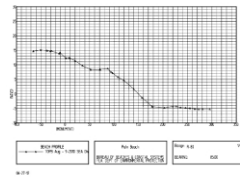
Dune Conditions Table and Exhibits

Note - this table is the original BMA dune condition table. The BMA Main Agreement will show any updates to dune conditions on the Figure 6 - Cell Wide Dune Condition Map.

Table of BMA Cell-wide Dune Conditions

CONDITION AREA	FROM RANGE	FROM PROPERTY	TO RANGE MONUMENT	TO PROPERTY ADDRESS	CONDITION NO.	LENGTH (ft)	MUNICIPALITY
1	R-76	149 East Inlet Dr.	R-81 + 1,150 ft	1100 N. Ocean Blvd.	1	6,737	Town of Palm Beach
2	R-81 + 1,150 ft	1095 N. Ocean Blvd.	R-89	515 N. County Rd.	3	7,833	Town of Palm Beach
3	R-89	473 N. County Rd.	R-94 + 215 ft	1 N. Breakers Row	4	5,800	Town of Palm Beach
4	R-94 + 215 ft	1 S. County Rd.	R-94 + 1,122 ft	1 S. County Rd.	3	907	Town of Palm Beach
5	R-94 + 1,122 ft	1 S. County Rd.	R-102	680 S. Ocean Blvd.	4	8,190	Town of Palm Beach
6	R-102	102 Banyan Rd.	R-102 + 640 ft	720 S. Ocean Blvd.	3	640	Town of Palm Beach
7	R-102 + 640 ft	780 S. Ocean Blvd.	R-110 + 240 ft	1472 S. Ocean Blvd.	1	8,775	Town of Palm Beach
8	R-110 + 240 ft	1482 S. Ocean Blvd.	R-111	125 Ocean View Rd.	3	771	Town of Palm Beach
9	R-111	11 Lagomar Rd.	R-116 + 450 ft	1980 S. Ocean Blvd.	2	5,754	Town of Palm Beach
10	R-116 + 450 ft	1 Sloan's Curve Dr.	R-127 + 110 ft	2850 S. Ocean Blvd.	4	10,950	Town of Palm Beach
11	R-127 + 110 ft	2882 S. Ocean Blvd.	R-134 + 100 ft	10 S. Ocean Blvd.	2	1,880	Town of Palm Beach, City of Lake Worth
12	R-128 + 980 ft	3000 S. Ocean Blvd.	R-134 + 100 ft	3475 S. Ocean Blvd.	4	6,544	Town of Palm Beach
13	R-134 + 100 ft	3492 S. Ocean Blvd.	R-136 + 660 ft	4500 S. Ocean Blvd.	3	2,800	Town of South Palm Beach
14	R-136 + 660 ft	100 N. Ocean Blvd.	R-137 + 430 ft	100 N. Ocean Blvd.	3	770	City of Lantana
15	R-137 + 430 ft	100 S. Ocean Blvd.	R-145	1440 S. Ocean Blvd.	3	7,780	Town of Manalapan
16	R-145	1460 S. Ocean Blvd.	R-151 + 310 ft	6900 N. Ocean Blvd.	1	6,218	Palm Beach County

DUNE CONDITION 1 - Examples



CONDITION 1 R080

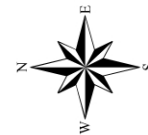
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- CONDITION_1
- 2011_PROFILES
- ▲ PB_R_MON
- SHW_4.6_NAVD 88

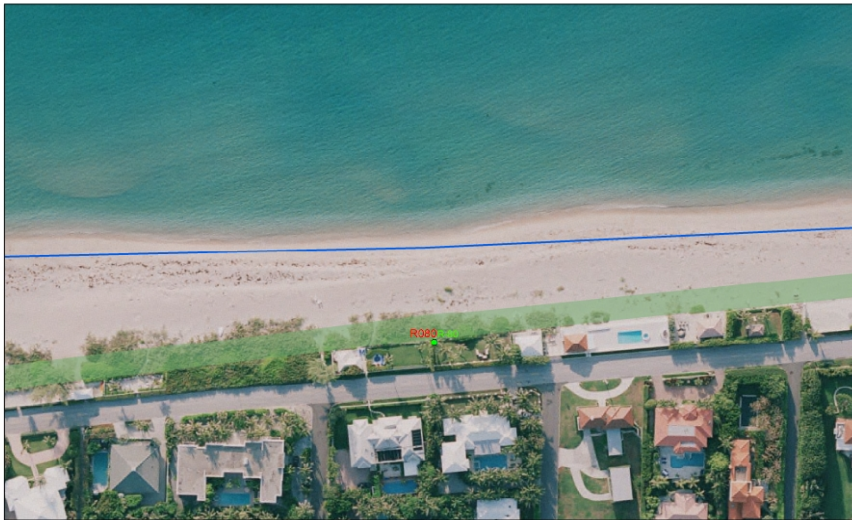
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RGB

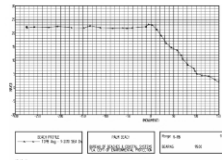
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- Green: Band_2
- Blue: Band_3



0 55 110 220 Feet



DUNE CONDITION 2 - Examples



CONDITION 2 R118

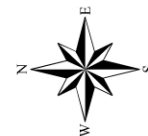
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- CONDITION_2
- 2011_PROFILES
- ▲ PB_R_MON
- SHW_4.6_NAVD 88

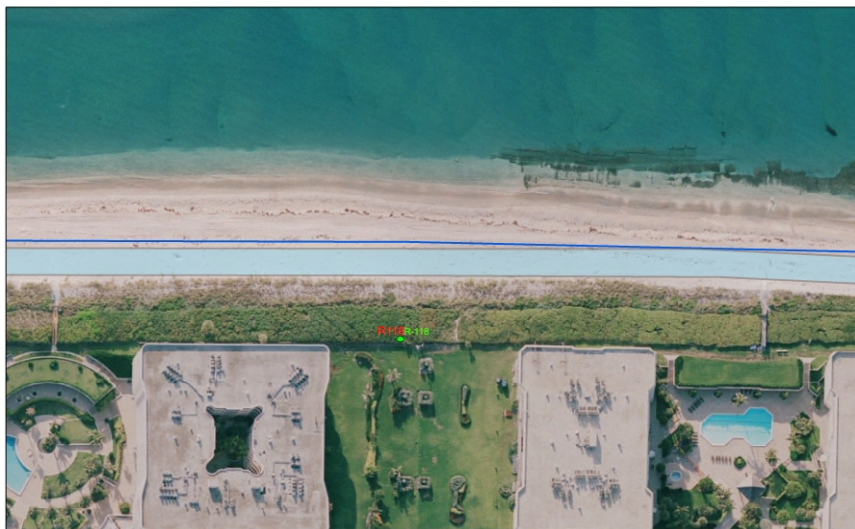
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RGB

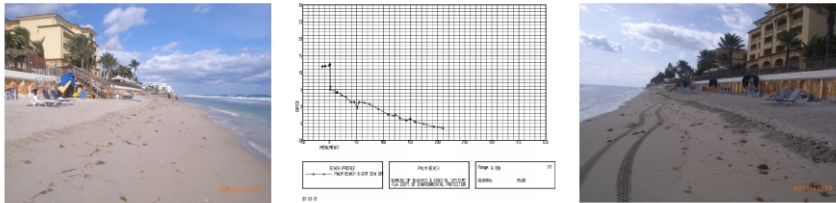
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- Blue: Band_3



0 50 100 200 Feet



DUNE CONDITION 3 - Examples



CONDITION 3 R138



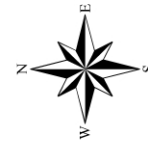
Legend

- 2011_PROFILES
- ▲ PB_R_MON
- CONDITION_3
- SHW_4.6_NAVD 88

20100701_AERIALS

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3



0 50 100 200 Feet

A scale bar showing distances in feet: 0, 50, 100, and 200.