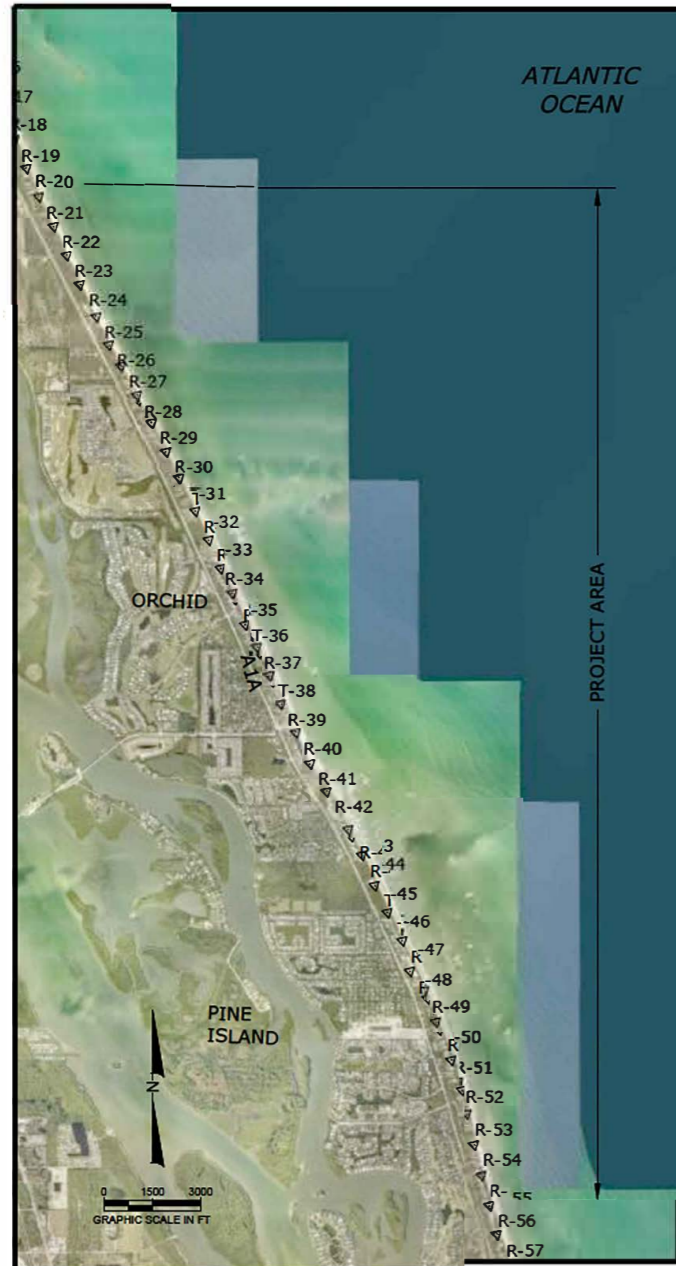


SECTOR 3 BEACH AND DUNE RENOURISHMENT PROJECT (IRC PROJECT NO. 1925) INDIAN RIVER COUNTY, FLORIDA

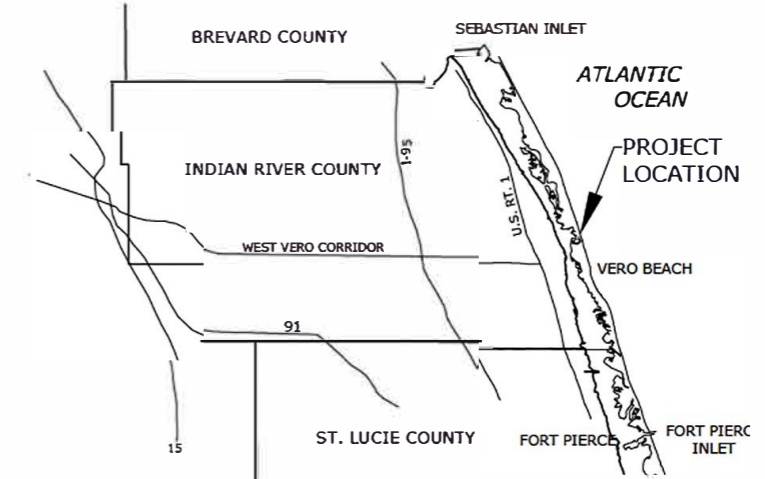
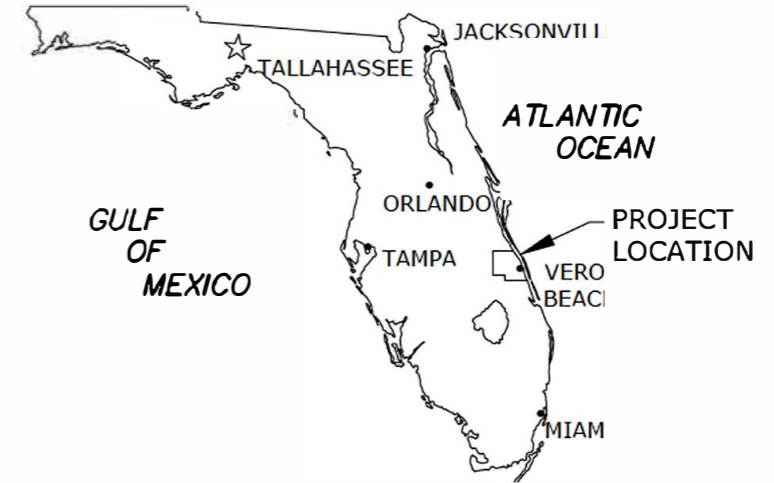


SHEET INDEX	
1	COVER SHEET
2-4	CONTROL DATA SHEETS
5	PROJECT OVERVIEW - APPROVED UPLAND SAND SOURCES
6	PROJECT OVERVIEW - OFFSHORE BORROW AREA
7	PROJECT OVERVIEW - ACCESS AREA
8-30	PLAN VIEWS
32-40	CROSS SECTIONS
41	TYPICAL SECTIONS
42	DUNE PLANTING DETAILS
43	BORROW AREA PLAN VIEW
44	BORROW AREA CROSS SECTIONS

PLAN VIEW LEGEND:

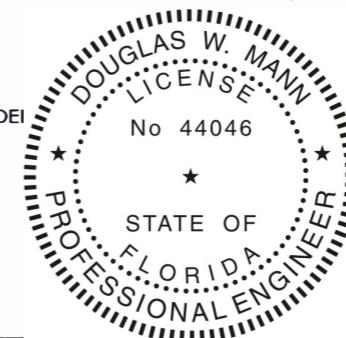
- R-15 FDEP MONUMENT AND ID
- JULY 2018 MEAN HIGH WATER LINE
- PROJECT BASELINE
- FILL PLACEMENT
- 2009 EROSION CONTROL LINE
- CONSTRUCTION ACCESS
- DUNE PLANTING
- 2016 LANDWARD EDGE OF HARDBOTTOM (DIVER DELINEATED)
- 2019 DIVER DELINEATED HARDBOTTOM

NOTE: PLANS SHOULD BE PLOTTED IN COLOR.



This item has been digitally signed and sealed by Douglas W. Mann, P.E. on the specified date using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Sheets 1-42, on Typ.



CERTIFICATION:
I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

Douglas W. Mann
DOUGLAS W. MANN, P.E. NO. 44046

DATE

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC	
2481 N.W. BOCA RATON BOULEVARD BOCA RATON, FLORIDA 33431 www.APTIM.com	
PH. (561) 391-8102 FAX (561) 391-9116 C.O.A. FL. #9317 C.O.A. LA. #2531	
REVISIONS	
Checked by:	No. Date
Designed by:	
Reviewed by:	
Submitted by:	
Comm. No.:	
For Scale:	
SECTOR 3 BEACH AND DUNE RENOURISHMENT PROJECT CONSTRUCTION PLANS INDIAN RIVER COUNTY, FLORIDA	
DRAWING NO.	
CS-1	
SHEET 1 OF 44	

C:\Users\dw3\Desktop\Design and Remedial_031225714_CD.dwg - 14.14.2020 @ 12:29pm - heston.walton

PAY PROFILES table with columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 10+00 to 58+00.

PAY PROFILES table with columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 59+00 to 105+00.

PAY PROFILES table with columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 106+00 to 154+00.

PAY PROFILES table with columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 155+00 to 188+00.

NOTES:

- 1. ALL PAY PROFILES SHALL BE SURVEYED AT THE AZIMUTH SHOWN IN THE PAY PROFILES TABLE.
2. CONTRACTOR WILL ONLY BE PAID FOR SAND PLACED WITHIN THE LINES AND GRADES AS SHOWN ON SHEETS PV-1 TO PV-24.
3. COORDINATES ARE IN FEET BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
4. ELEVATIONS ARE IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

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FAX: (561) 391-9116
C.O.A. FL #8317
C.O.A. LA #2531

Table with columns: REVISIONS, Description, No., Date. Includes rows for Checked by, Designed by, Drawn by, Date, and Scale.

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA
CONTROL DATA SHEET

DRAWING NO.

CD-1

SHEET 2 OF 44

PAY PROFILES

Table with 5 columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 189+00 to 236+00.

PAY PROFILES

Table with 5 columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 237+00 to 283+00.

PAY PROFILES

Table with 5 columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 284+00 to 330+00.

PAY PROFILES

Table with 5 columns: STATION, NORTHING, EASTING, PERPENDICULAR DISTANCE TO NEXT STATION, AZIMUTH (DEGREES). Rows 331+00 to 356+70.

NOTES:

- 1. ALL PAY PROFILES SHALL BE SURVEYED AT THE AZIMUTH SHOWN IN THE PAY PROFILE TABLE.
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www.APTIM.com

Table with columns: REVISIONS, Checked by, Drawn by, Date, No., Description.

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA
CONTROL DATA SHEET

DRAWING NO.

CD-2

SHEET 3 OF 44

Updated: 10/21/2017 1:58:00 PM by: Douglas W Mann, P.E. (661) 391-8102

FDEP R-MONUMENTS

STATION	RANGE	NORTHING	EASTING	ELEVATION	AZIMUTH	STAMPING
R-20	0	1264644	842898.8	8.52	70°	R-20 IND. R. 72
R-21	0	1263722	843254.5	8.04	70°	R-21 IND. R. 72
R-22	0	1262824	843751.7	8.14	70°	R-22 IND. R. 72
R-22	0	1262779	843652.7	12.53	70°	R-22 IND. R. -110 1986
R-23	0	1261888	844158.1	8.45	70°	R23 IR 97
R-24	0	1260976	844565.8	11.75	70°	R24 IR 97
R-25	0	1259968	845052.9	10.15	70°	R-25 IND. R. 72
R-26	0	1259089	845441.6	8.9	70°	R-26 IND. R. RESET-00-1986
R-27	0	1258429	845818	10	70°	R-27 IND. R. 72
R-28	0	1257512	846320.9	12.73	70°	R-28 IND. R. 72
R-29	0	1256682	846807.7	13.84	70°	R-29 IND. R. 72
R-30	0	1255774	847271.1	16.99	70°	R-30 IND. R. 72
R-31	0	1254930	847677.8	18.02	70°	T-31 IND. R. 1978
R-32	0	1254060	848087	14.16	70°	R-32 IND. R. 72
R-33	0	1253164	848497.9	16.47	70°	R-33 IND. R. 72
R-34	0	1252279	848868.8	13.87	70°	R-34 IND. R. 72
R-35	0	1251317	849305.3	15.16	70°	R-35 IND. R. 72
R-36	0	1250523	849634.5	12.96	70°	T-36 IND. R. 1978
R-37	0	1249637	850067.1	11.89	70°	R-37 IND. R. 72
R-38	0	1248753	850470.1	14.92	70°	T-38 IND. R. 1978
R-39	0	1247858	850813.7	13.12	70°	R-39 IND. R. RESET-00-1986
R-40	0	1246965	851288.1	---	70°	R40 IR 97
R-41	0	1245993	851770	15.85	70°	R-41 IND. R. 72
R-42	0	1245137	852279.9	17.65	70°	R-42 IND. R. 72
R-43	0	1243939	852926.6	15.66	70°	R-43 IND. R. 1986
R-44	0	1243353	853257.5	13.04	70°	R44 IR 97
R-45	0	1242409	853652.5	13.22	70°	T-45 IND. R. 1978
R-46	0	1241568	854053.3	13.95	70°	T-46 IND. R. 1978
R-47	0	1240694	854515.6	---	70°	R47 IR 97
R-48	0	1239743	854750.4	15.53	70°	R48 IR 97
R-49	0	1238891	855298.9	12.85	70°	R-49 IND. R. 72
R-50	0	1237923	855660.9	13.13	70°	R-50 IND. R. 72
R-51	0	1236972	856032.2	16.28	70°	R-51 IND. R. 72
R-51	0	1236979	856050.8	15.12	70°	R-51 O/S RNG. 20 2001
R-52	0	1236045	856362.9	13.86	70°	R-52 IND. R. 72
R-53	0	1235049	856624.4	15.78	70°	R-53 IND. R. +96 1986
R-54	0	1234074	856897.5	14	70°	R-54 IND. R. 72
R-55	0	1233118	857087.9	15.01	70°	R-55 IND. R. 72

BENCHMARK CONTROL POINTS
SECOND ORDER CONTROL (A-MONUMENTS)

FDEP MONUMENT ID	NORTHING	EASTING	ELEVATION (FT, NAVD88)	STAMPING
A-09	1260281.76	844426.04	6.93	88-78-A09
A-10	1255223.74	847007.70	8.2	88-78-A10
A-11	1251561.73	848670.12	7.94	88-78-A11
A-12	1248469.92	850063.84	5.53	88-78-A12
A-15	1238793.85	854935.12	9.84	88-78-A15
A-16	1234676.88	856148.19	8.85	88-78-A16

WATER LEVEL TABLE

TIDAL DATUM	ELEVATION (FT, NAVD88)
MEAN HIGH WATER (MHW)	+0.60
MEAN LOW WATER (MLW)	-2.82

NOTES:

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- ELEVATIONS ARE IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- R-MONUMENT AND WATER LEVEL DATA FOR REFERENCE ONLY. ALL CONTROL SHALL BE SET BY SECOND ORDER A-MONUMENTS.
- TIDAL DATUMS AT INDIAN RIVER COUNTY, ATLANTIC OCEAN WERE OBTAINED FROM THE LAND BOUNDARY INFORMATION SYSTEM (LABINS), BASED ON EPOCH 1983-2001, TIDE INTERPOLATION POINT #101033, QUAD MAP NAME SEBASTIAN.

CERTIFICATION:

I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046

DATE

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C.O.A. LA #2531

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BOCA RATON, FLORIDA 33431
www.APTIM.com

REVISIONS

Checked by:

DMH

Designed by:

CP

Reviewed by:

CP

Submitted by:

CP

Date:

04/16/20

Proj. No.:

631235716

Com. No.:

AS NOTED

No.

Date

Description

SECTOR 3

BEACH AND DUNE RENOURISHMENT PROJECT

CONSTRUCTION PLANS

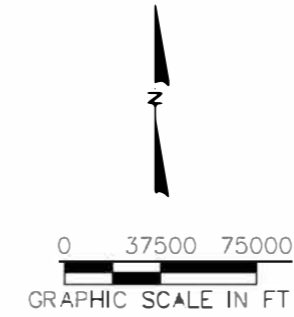
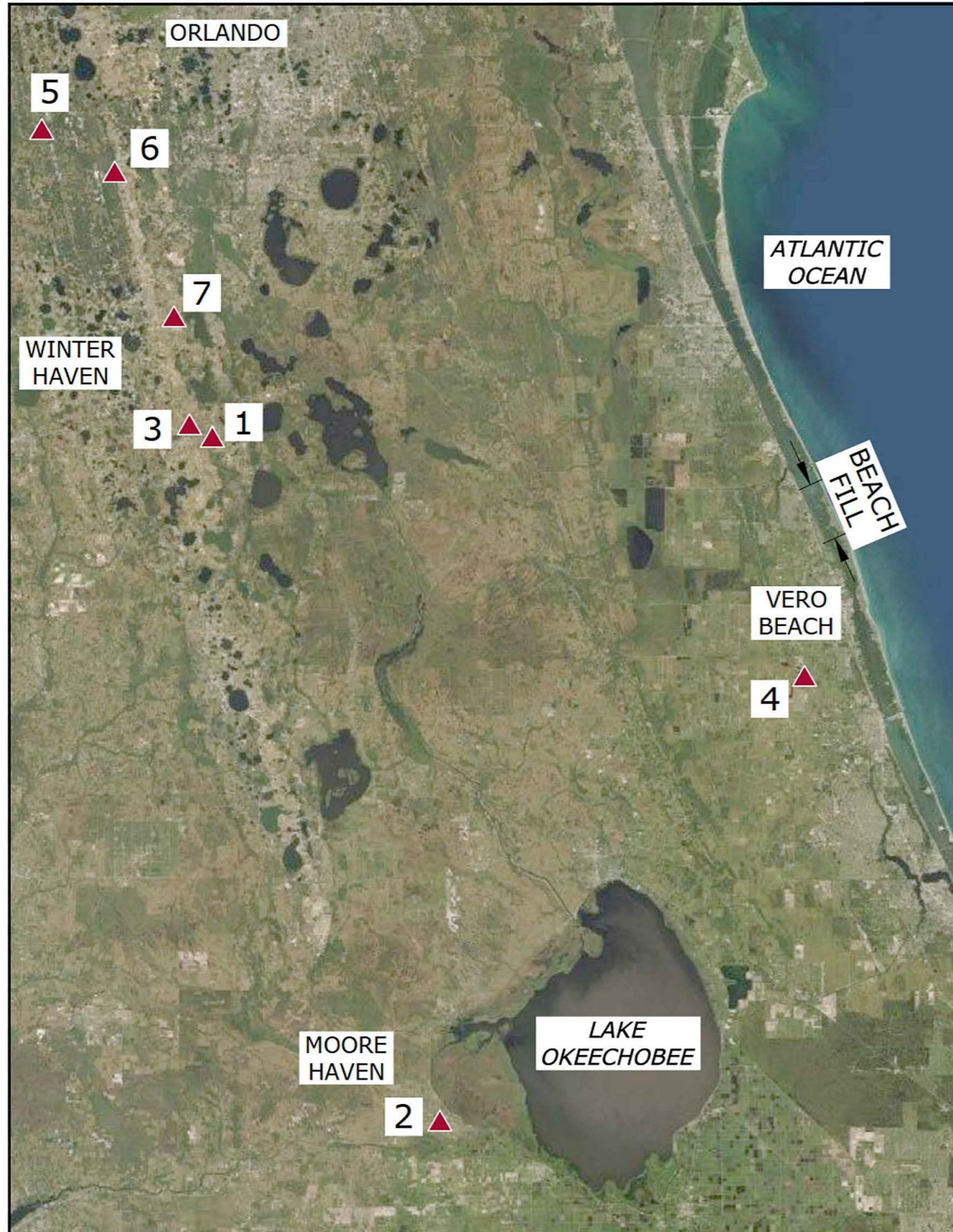
INDIAN RIVER COUNTY, FLORIDA

CONTROL DATA SHEET

DRAWING NO.

CD-3

SHEET 4 OF 44



- UPLAND SAND SOURCES**
1. VULCAN – DIAMOND MINE
205 STORY ROAD
LAKE WALES, FL 33898
 2. VULCAN – WITHERSPOON MINE
7425 W. STATE ROAD 78
MOORE HAVEN, FL 33471
 3. VULCAN – SANDLAND MINE
2200 BURNS AVENUE
LAKE WALES, FL 33898
 4. STEWART – FORT PIERCE MINE
13575 INDRIO ROAD
FORT PIERCE, FL 34945
 5. JAHNA – INDEPENDENT MINE
8455 COUNTY ROAD 474
CLERMONT, FL 34714
 6. JAHNA – GREEN BAY MINE
4949 SAND MINE ROAD
DAVENPORT, FL 33897
 7. JAHNA – HAINES CITY MINE
4910 JAHNA SAND MINE ROAD
HAINES CITY, FL 33844

NOTES:
1. AERIAL PHOTOGRAPHY: JANUARY 2020

CERTIFICATION:
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THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046

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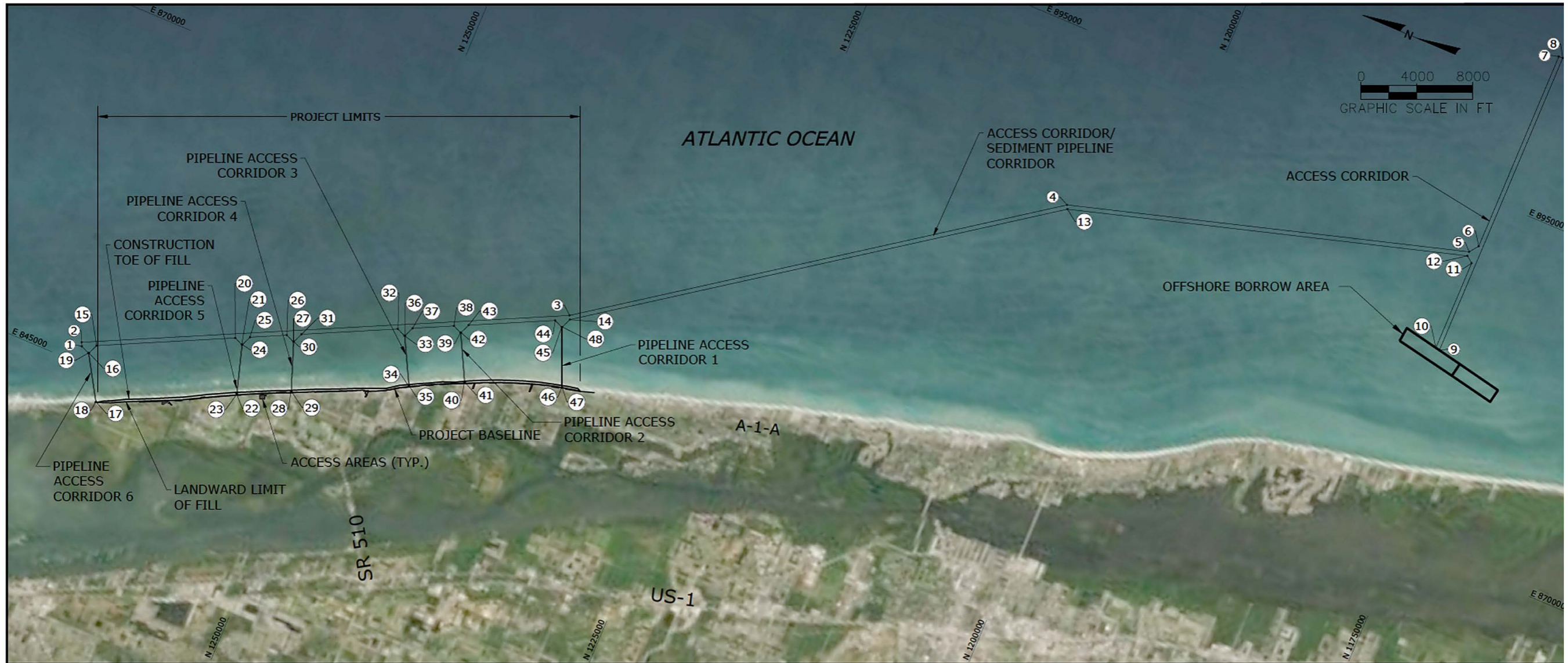
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C.O.A. FL.#9317

Reference Files	Designed by:	Checked by:	Drawn by:	Reviewed by:	Date:	Submitted by:	Comm. No.:	REVISIONS	Description
	CP	DN	KC	CP	04/16/20	CP			

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA
PROJECT OVERVIEW

DRAWING NO.
OV-1

SHEET 5 OF 44



ACCESS CORRIDOR/SEDIMENT PIPELINE CORRIDOR COORDINATES		
POINT NO.	EASTING	NORTHING
1	846186.4	1267210.7
2	846456.0	1267342.4
3	861796.0	1235935.5
4	882907.5	1206228.8
5	891000.1	1178444.0
6	891639.9	1177964.0
7	906345.3	1177964.0
8	906360.2	1177664.0
9	883694.4	1177664.0
10	883755.3	1177964.0
11	890327.4	1177964.0
12	890687.6	1178444.0
13	882635.3	1206090.6
14	861526.5	1235803.8

ACCESS CORRIDOR/SEDIMENT PIPELINE CORRIDOR COORDINATES		
POINT NO.	EASTING	NORTHING
15	846647.5	1266266.8
16	845953.0	1266560.0
17	842926.0	1264719.0
18	842900.0	1264761.0
19	845930.8	1266605.4
20	851009.4	1257334.7
21	850754.0	1256730.0
22	847379.0	1255717.0
23	847393.5	1255668.8
24	850776.0	1256684.0
25	851470.5	1256390.8
26	852629.4	1254019.7
27	852374.0	1253414.0
28	849026.0	1252185.0

ACCESS CORRIDOR/SEDIMENT PIPELINE CORRIDOR COORDINATES		
POINT NO.	EASTING	NORTHING
29	849043.0	1252138.0
30	852396.0	1253369.0
31	853090.5	1253075.8
32	856120.4	1246872.7
33	855865.0	1246267.0
34	852656.0	1244574.0
35	852679.2	1244530.1
36	855887.0	1246222.0
37	856581.5	1245928.8
38	857882.4	1243263.7
39	857626.8	1242658.4
40	854456.0	1241013.0
41	854479.0	1240969.0
42	857649.0	1242613.0

ACCESS CORRIDOR/SEDIMENT PIPELINE CORRIDOR COORDINATES		
POINT NO.	EASTING	NORTHING
43	858343.5	1242319.8
44	861065.4	1236747.7
45	860809.8	1236142.4
46	856817.0	1234456.0
47	856836.4	1234410.2
48	860832.0	1236097.0

NOTES:

- SIX PIPELINE CORRIDOR OPTIONS ARE AVAILABLE FOR USE BY THE CONTRACTOR. A MAXIMUM OF FOUR OF THE SIX PIPELINE CORRIDORS SHALL BE UTILIZED BY THE CONTRACTOR.
- AERIAL PHOTOGRAPHY: 2020 INDIAN RIVER COUNTY.
- COORDINATES SHOWN HEREON ARE IN FEET REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
- SEE TP-16.5 FOR SEDIMENT PIPELINE INSTALLATION REQUIREMENTS.

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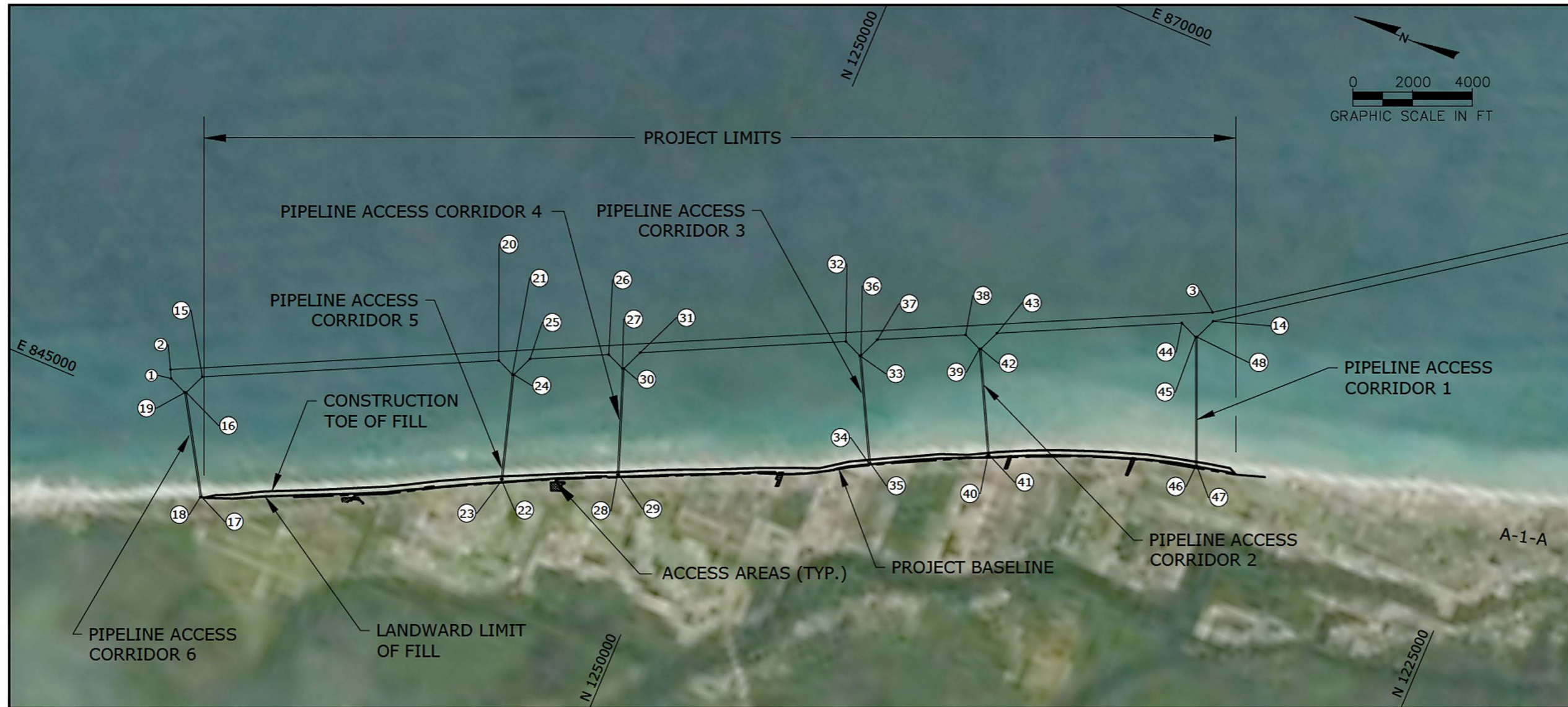
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	CP	DM
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	CP	CP
	Date: <td>Submitted by: </td>	Submitted by:
	04/16/20	CP
	Plot Scale: <td>Comm. No.: </td>	Comm. No.:
		Description:

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 PROJECT OVERVIEW
 OFFSHORE BORROW AREA

DRAWING NO.

OV-2



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- SEE SHEET 6 FOR COORDINATE TABLES.

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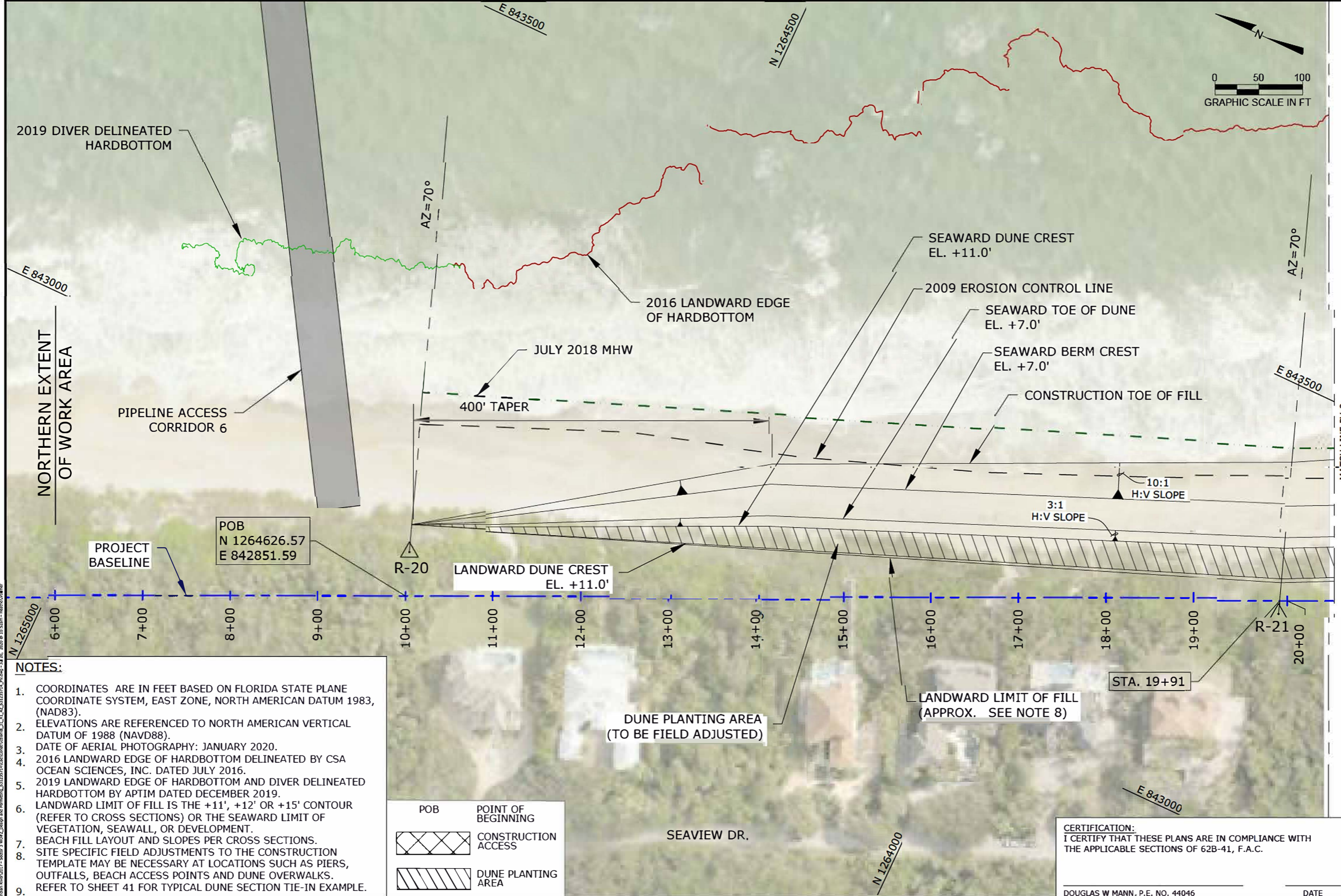
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 C.O.A. FL #9317
 C.O.A. LA #2631

REVISED BY	DATE	DESCRIPTION

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 PROJECT OVERVIEW
 OFFSHORE BARROW AREA

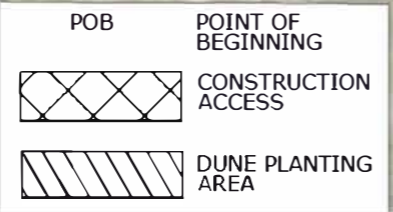
DRAWING NO.
OV-3
 SHEET 7 OF 44

\Indian River\2017 - Sector 3\Map_Design_and_Permitting\31025714\001\Construction\7_31025714C_001.dwg - Jul 14, 2020 @ 12:59pm - Heather Nulmer



PROJECT BASELINE
 POB
 N 1264626.57
 E 842851.59

- NOTES:**
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 - DATE OF AERIAL PHOTOGRAPHY: JANUARY 2020.
 - 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
 - 2019 LANDWARD EDGE OF HARDBOTTOM AND DIVER DELINEATED HARDBOTTOM BY APTIM DATED DECEMBER 2019.
 - LANDWARD LIMIT OF FILL IS THE +11', +12' OR +15' CONTOUR (REFER TO CROSS SECTIONS) OR THE SEAWARD LIMIT OF VEGETATION, SEAWALL, OR DEVELOPMENT.
 - BEACH FILL LAYOUT AND SLOPES PER CROSS SECTIONS.
 - SITE SPECIFIC FIELD ADJUSTMENTS TO THE CONSTRUCTION TEMPLATE MAY BE NECESSARY AT LOCATIONS SUCH AS PIERS, OUTFALLS, BEACH ACCESS POINTS AND DUNE OVERWALKS.
 - REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.



CERTIFICATION:
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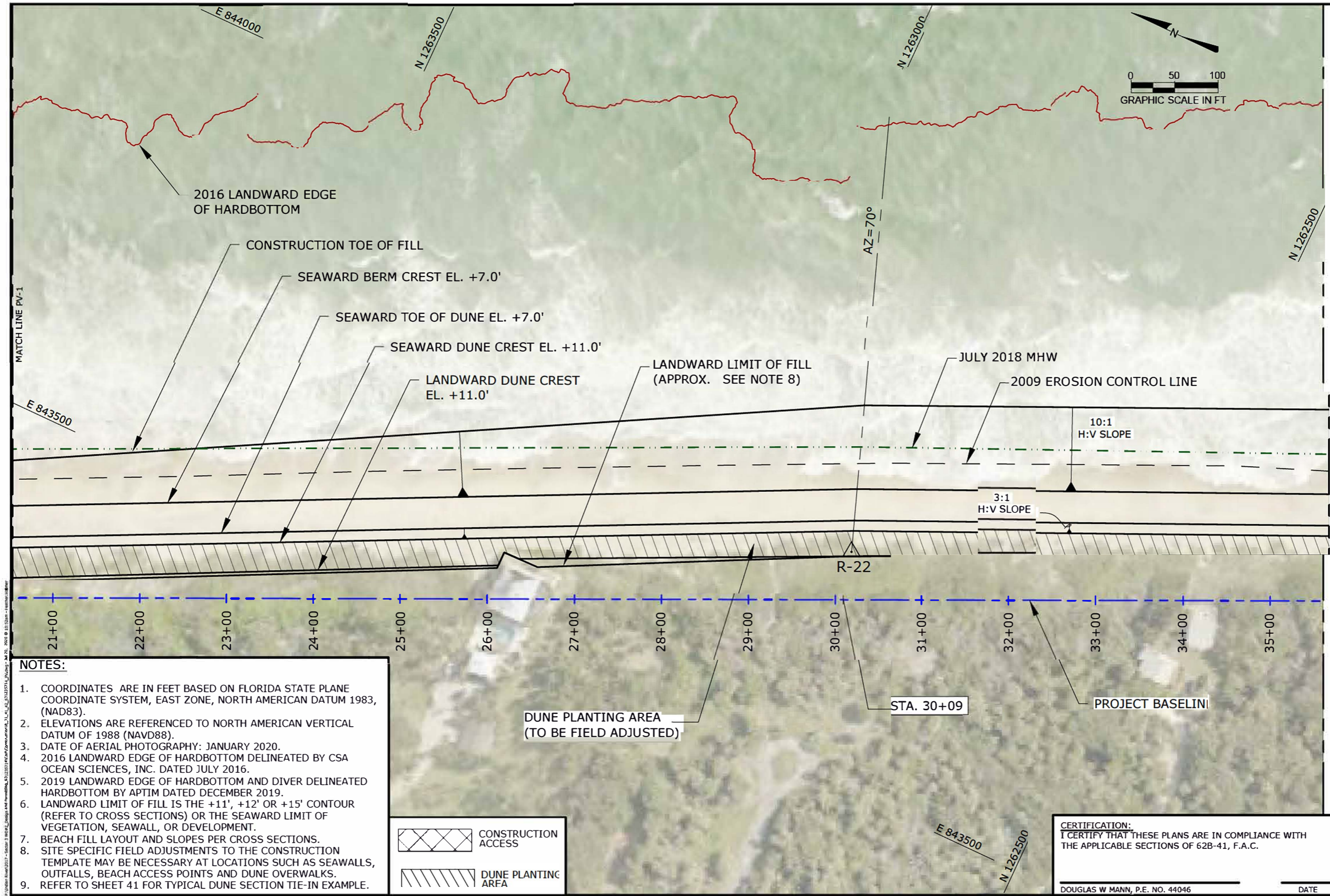
DOUGLAS W MANN, P.E. NO. 44046 DATE

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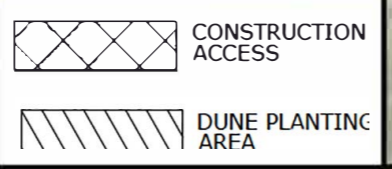
Checked by: DM	Reviewed by: CP	Submitted by: CP	Comm. No.:
Drawn by: RC	Date: 04/16/20	Proj. Scale:	

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-1
 SHEET 8 OF 44



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 - REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.



CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046 _____ DATE _____

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 PH. (861) 391-8102
 FAX (861) 391-9116
 C.O.A. FL #9317

2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

REVISIONS	DATE	DESCRIPTION

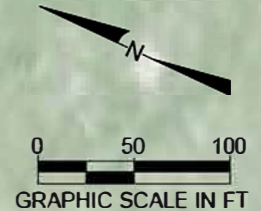
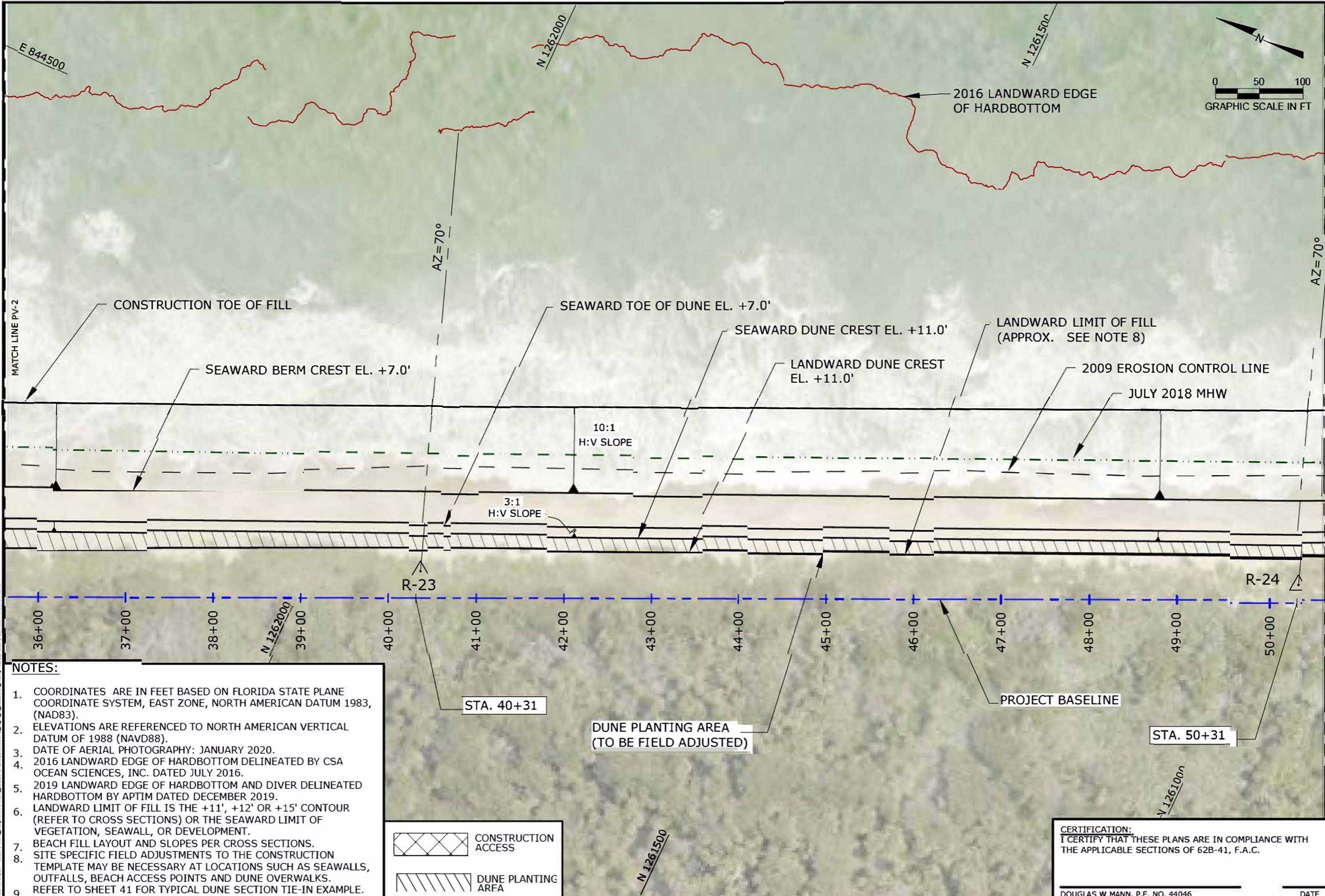
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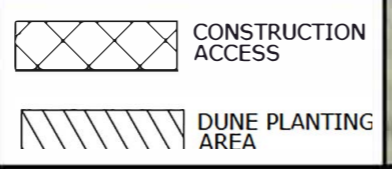
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-2**

SHEET 9 OF 44



- NOTES:**
- COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM 1983, (NAD83).
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DOUGLAS W MANN, P.E. NO. 44046

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 BOCA RATON, FLORIDA 33431
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 C.O.A. FL #9317

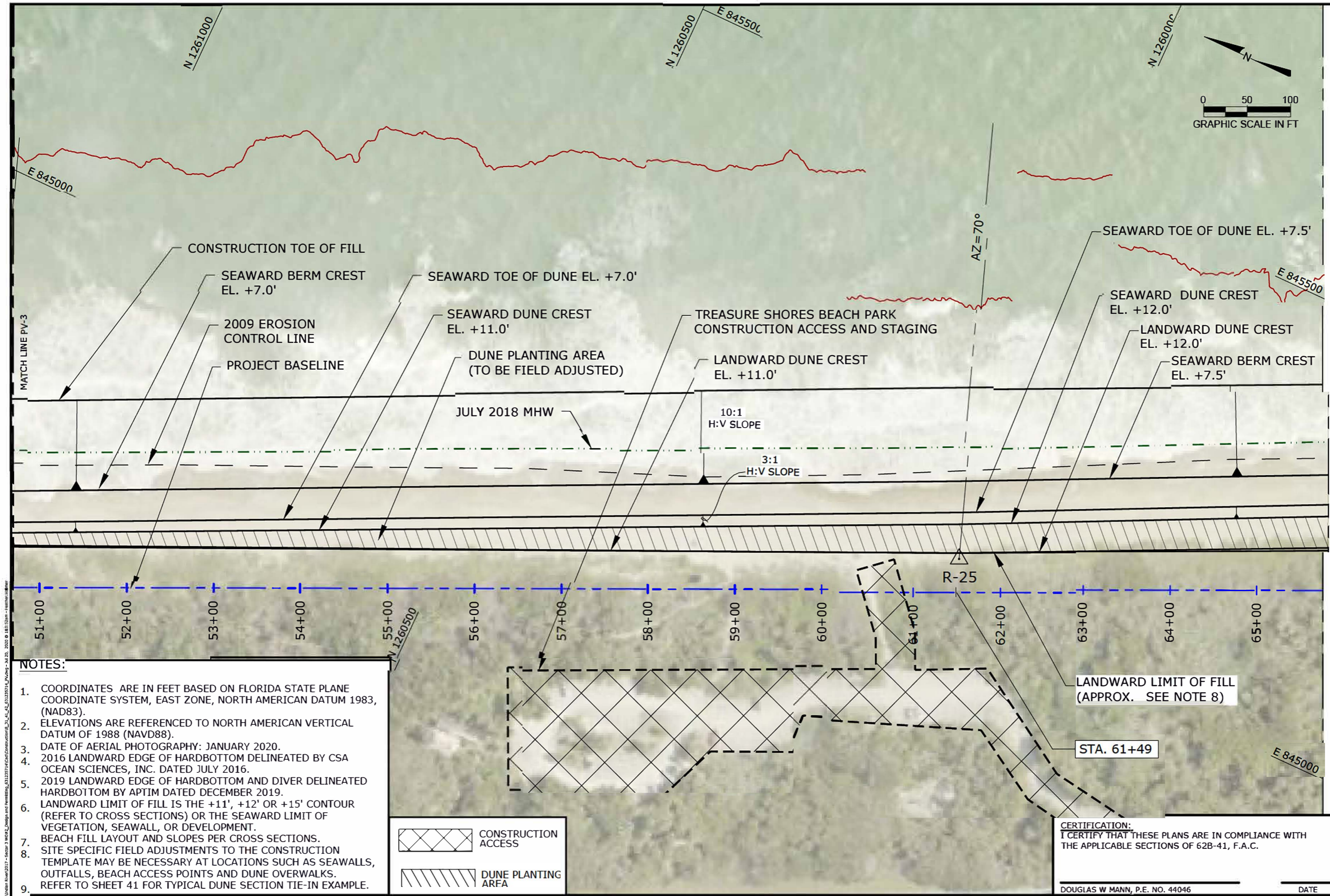
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	CP	DM
	KC	CP
	07/16/20	CP

Reference File: _____
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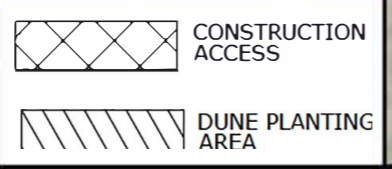
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-3**

SHEET 10 OF 44



- NOTES:**
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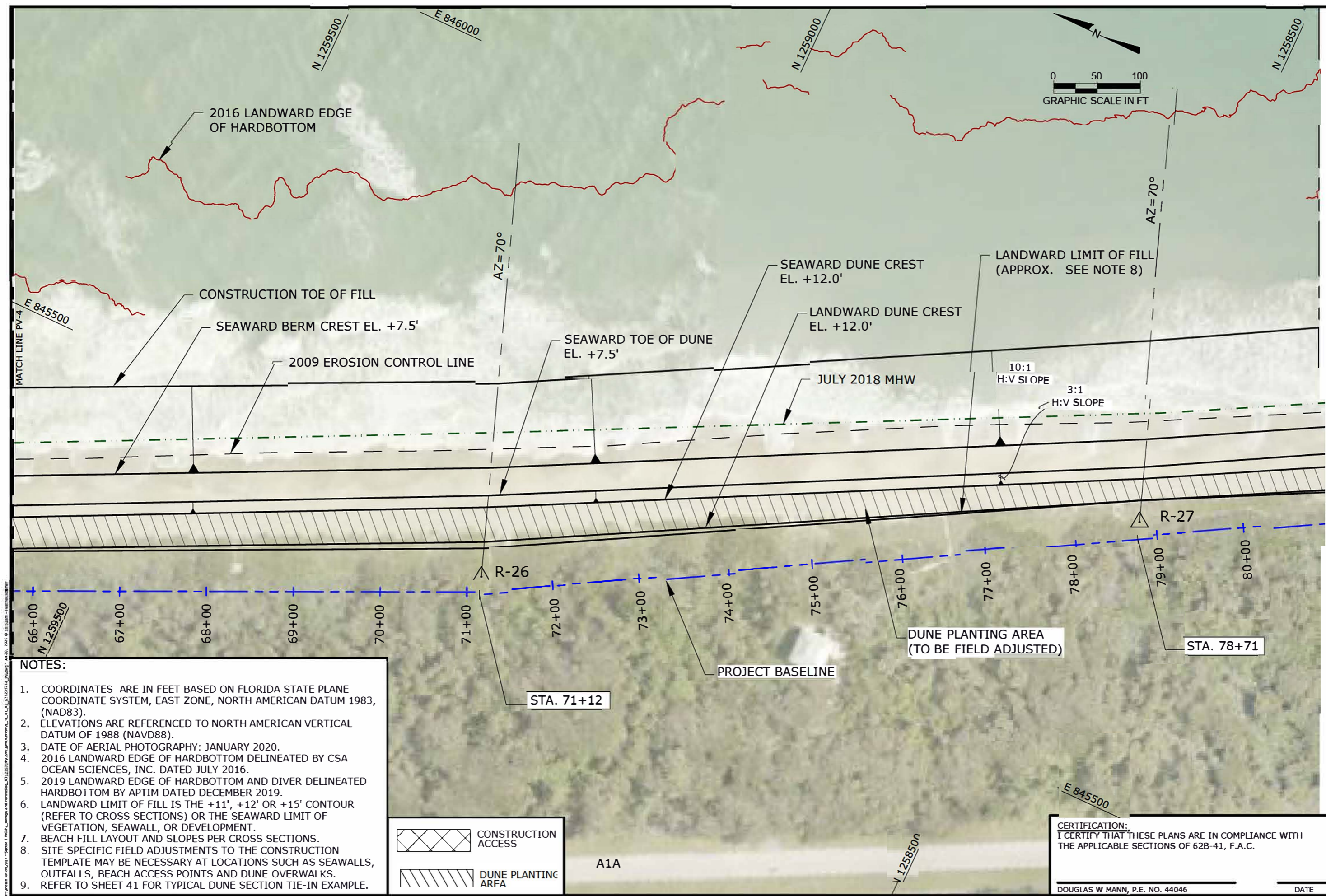
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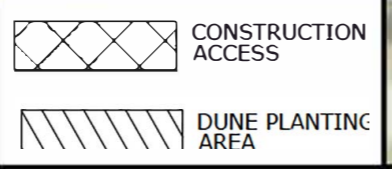
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-4**

SHEET 11 OF 44



- NOTES:**
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A1A

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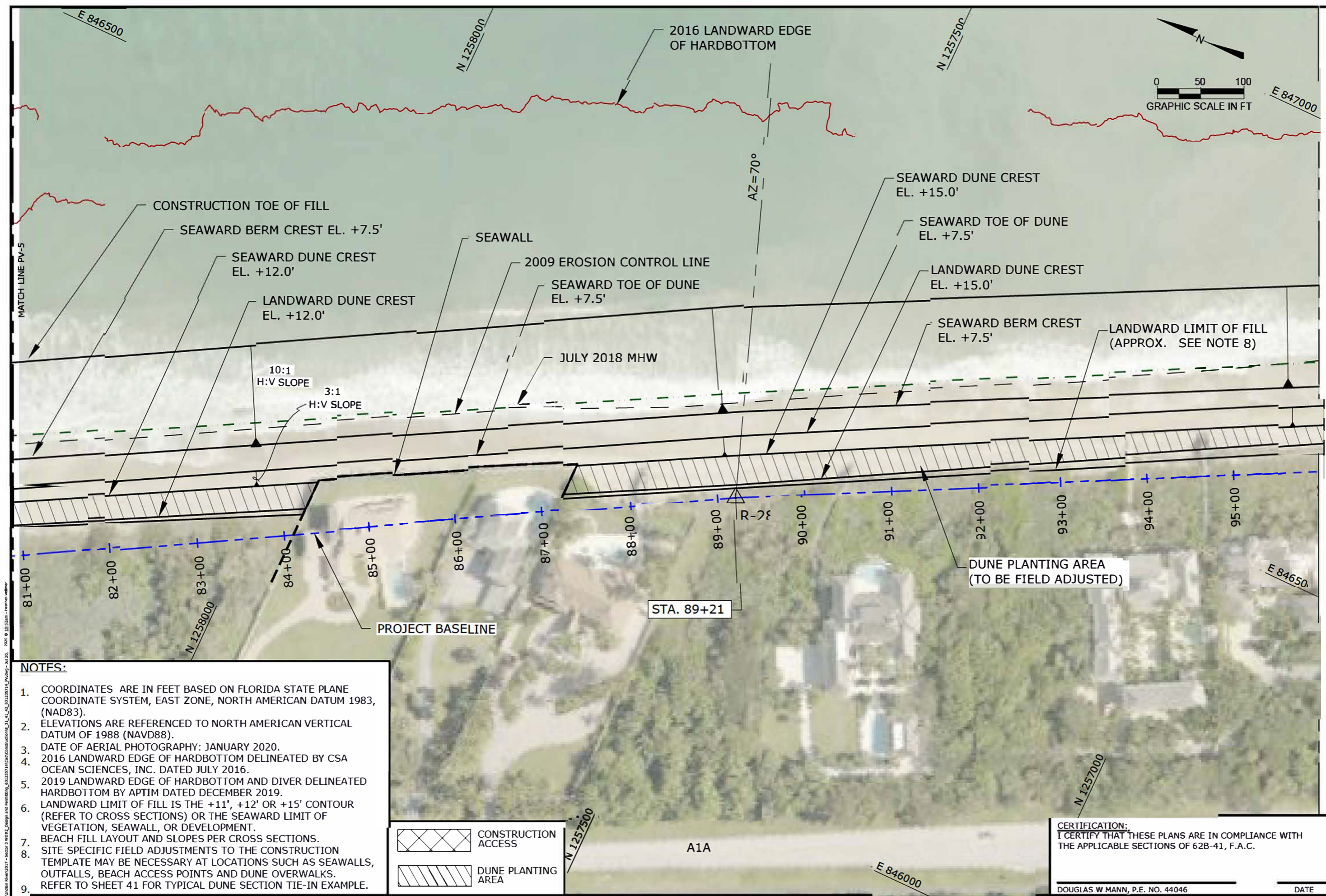
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Reference File:
 SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-5

SHEET 12 OF 44



- NOTES:**
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DOUGLAS W MANN, P.E. NO. 44046

DATE

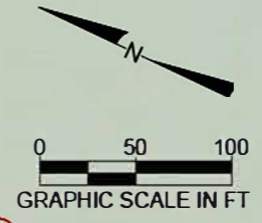
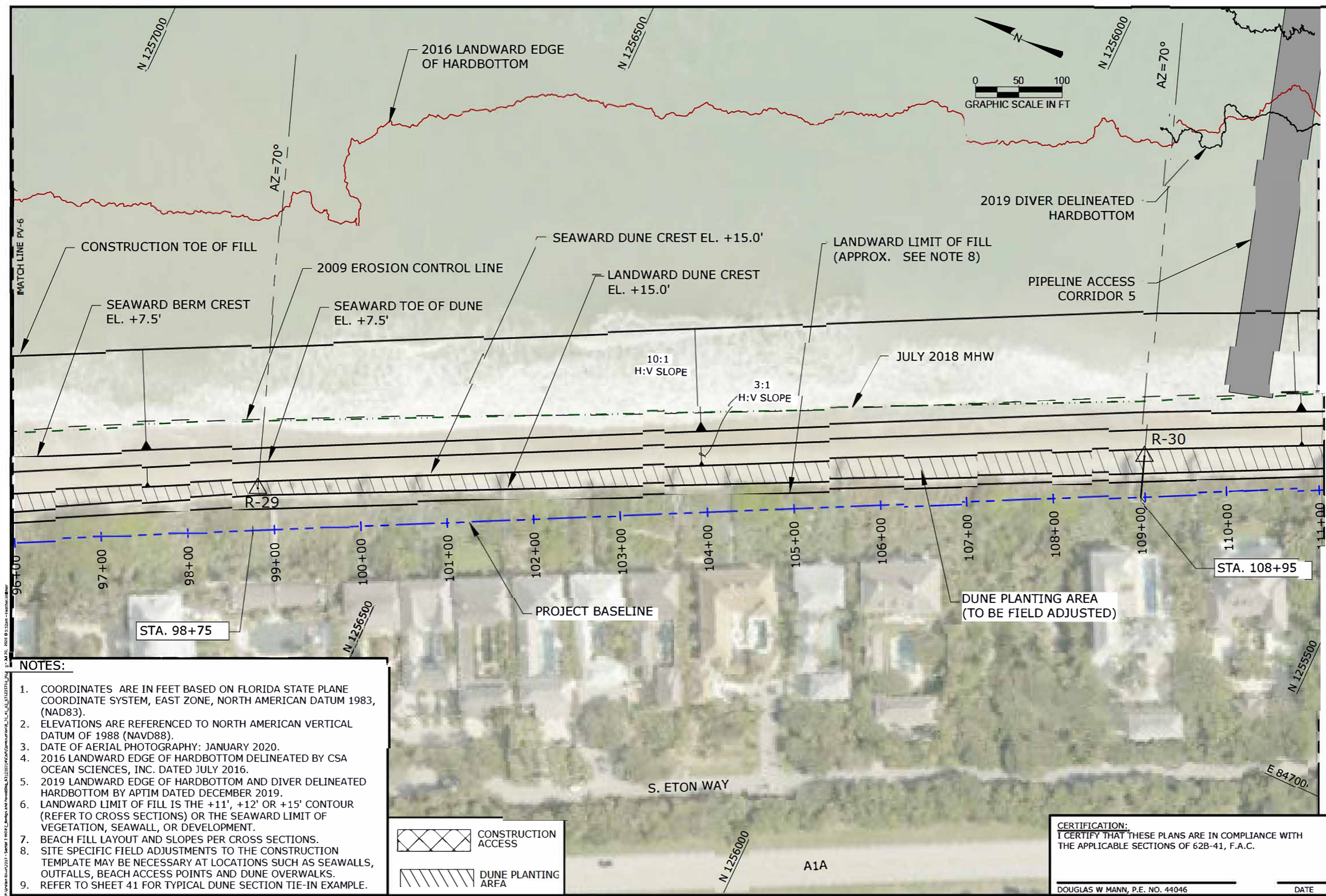
APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

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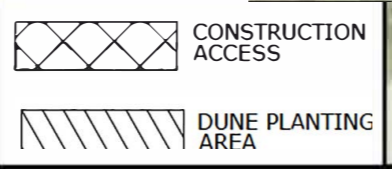
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
PV-6

SHEET 13 OF 44



- NOTES:**
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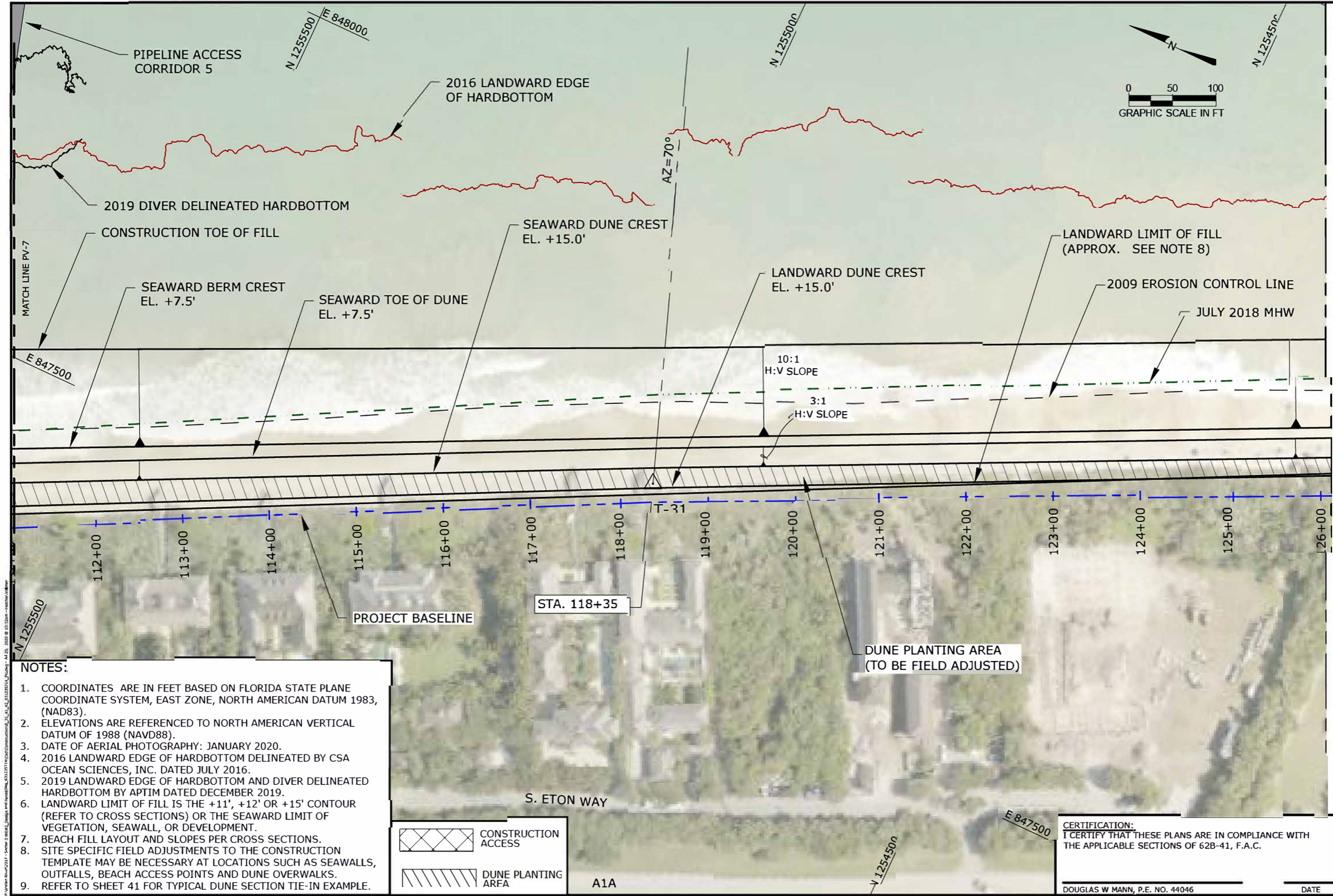
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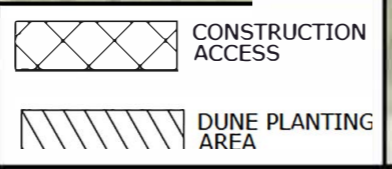
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-7**

SHEET 14 OF 44



- NOTES:**
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DATE

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2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

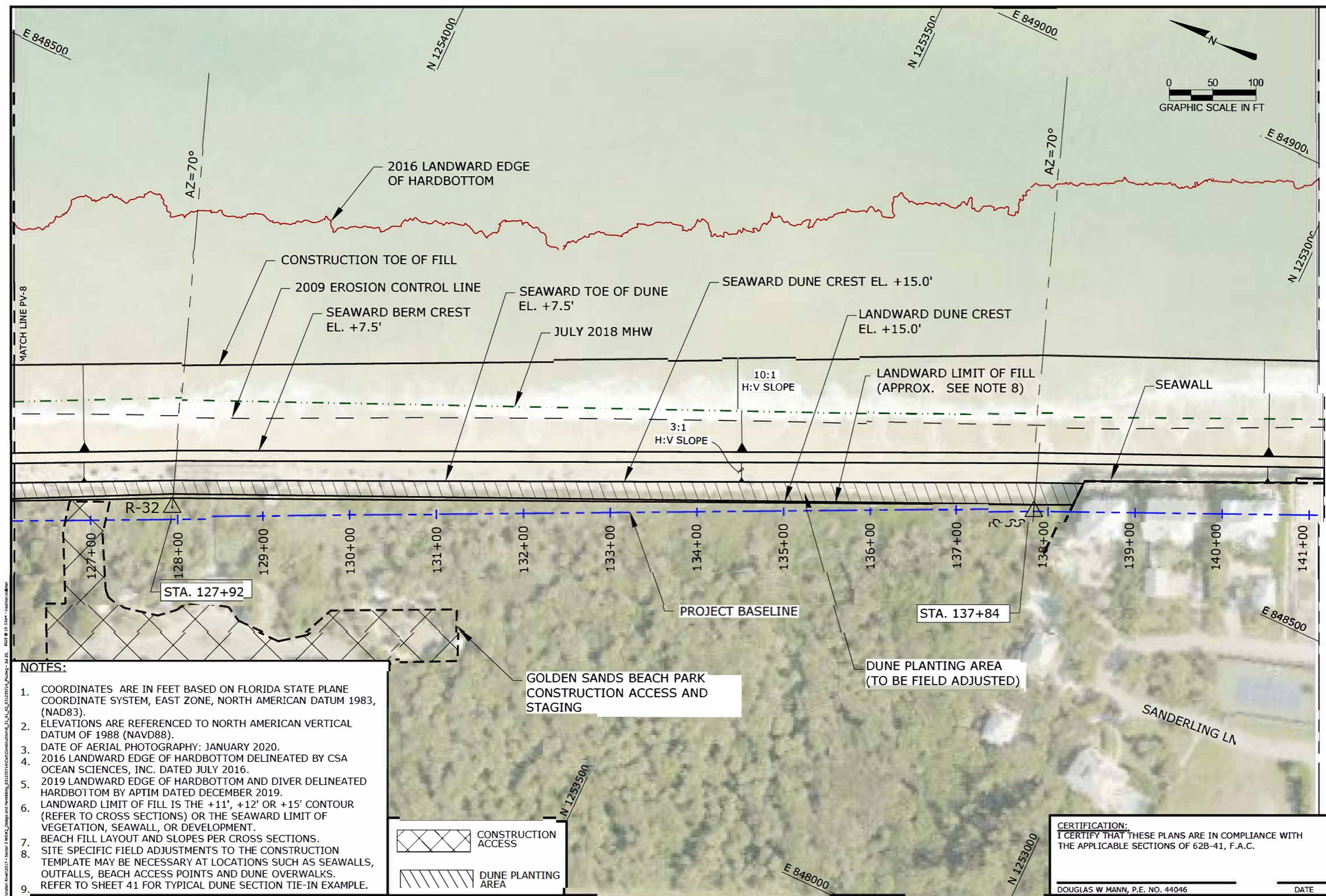
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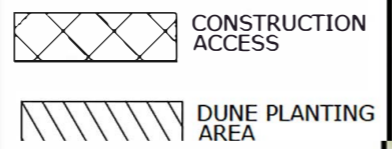
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
PV-8

SHEET 15 OF 44



- NOTES:**
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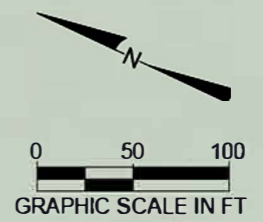
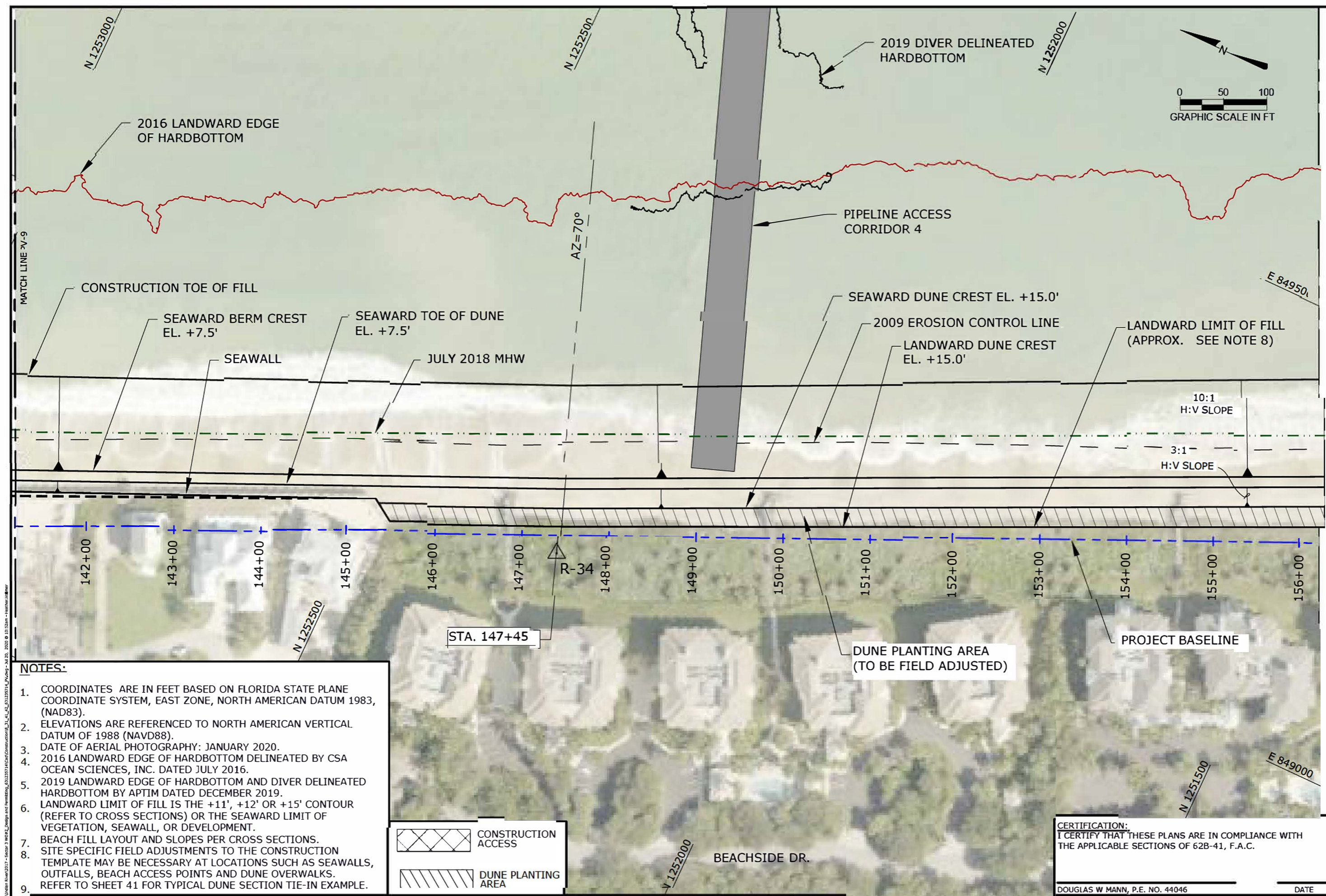
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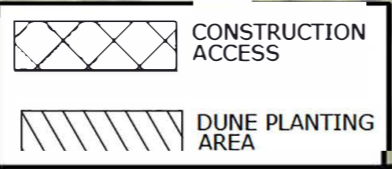
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-9**

SHEET 16 OF 44



- NOTES:**
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2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

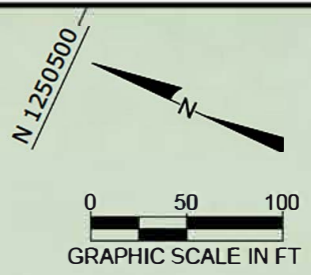
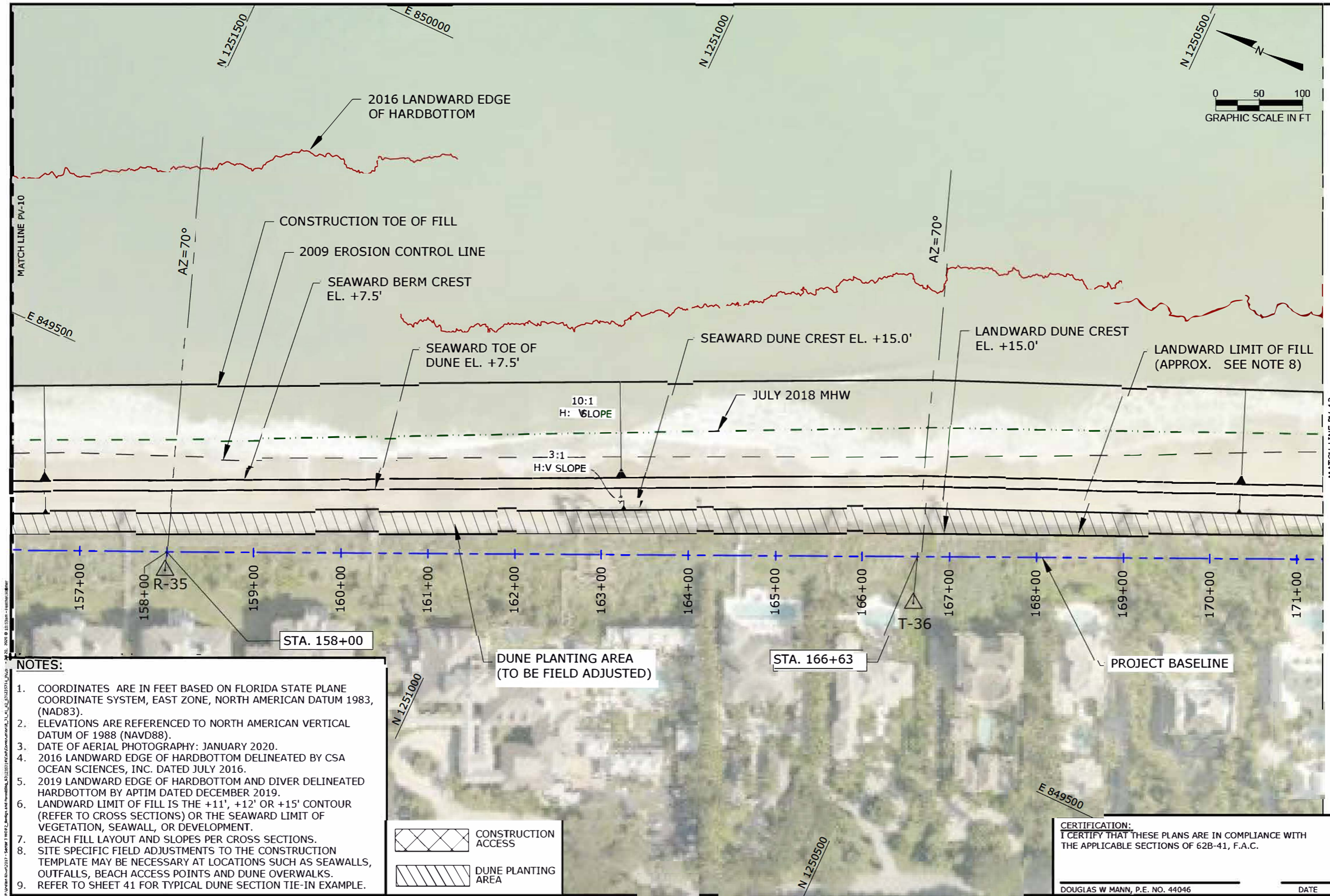
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SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-10**

SHEET 17 OF 44



- NOTES:**
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 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
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 C.O.A. FL #9317

REVISIONS	DATE	DESCRIPTION

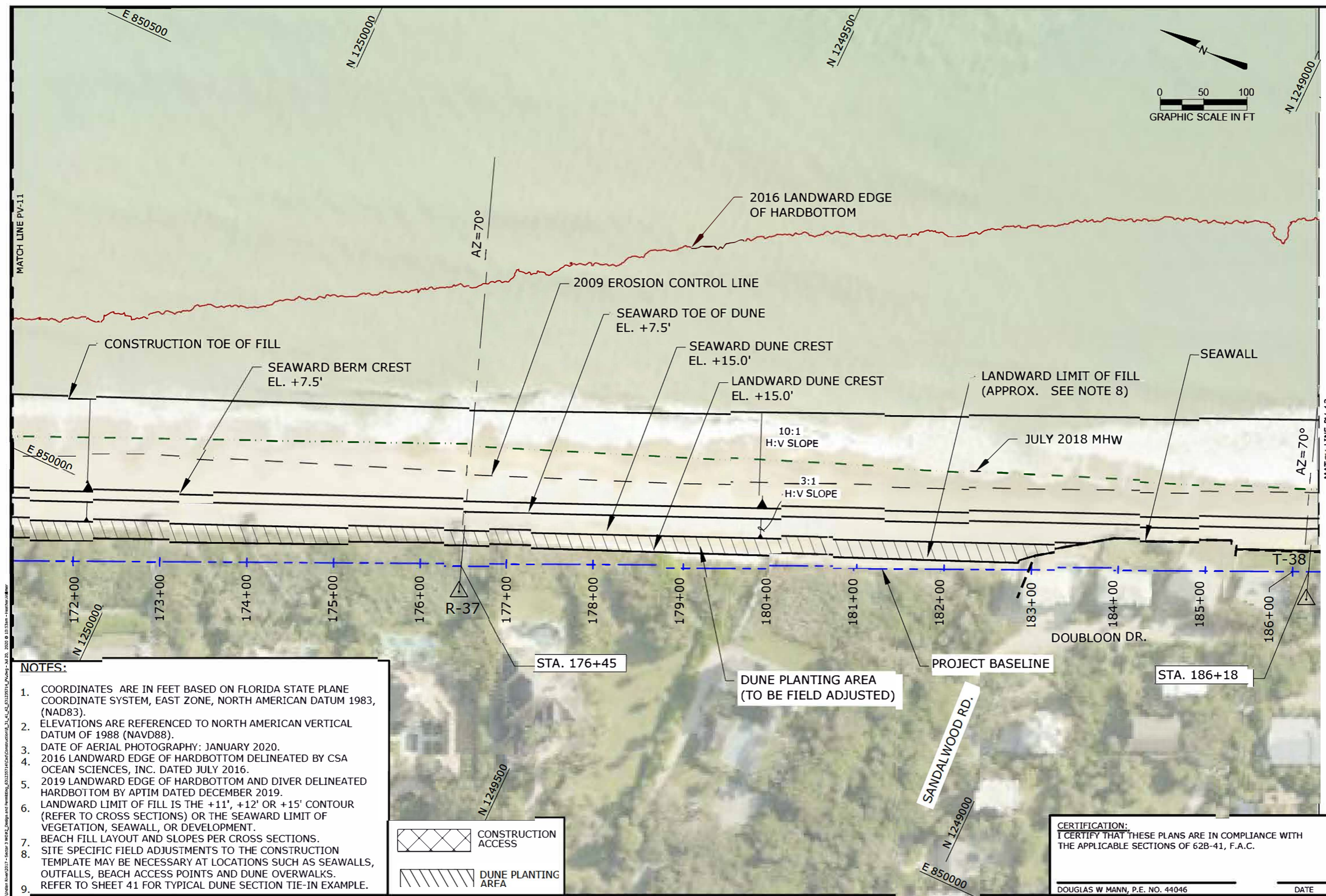
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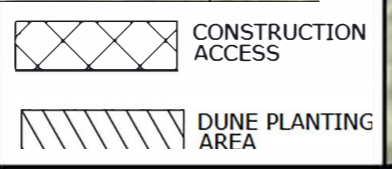
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-11**

SHEET 18 OF 44



- NOTES:**
- COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM 1983, (NAD83).
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DOUGLAS W MANN, P.E. NO. 44046

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 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #93317

REVISIONS	DATE	DESCRIPTION

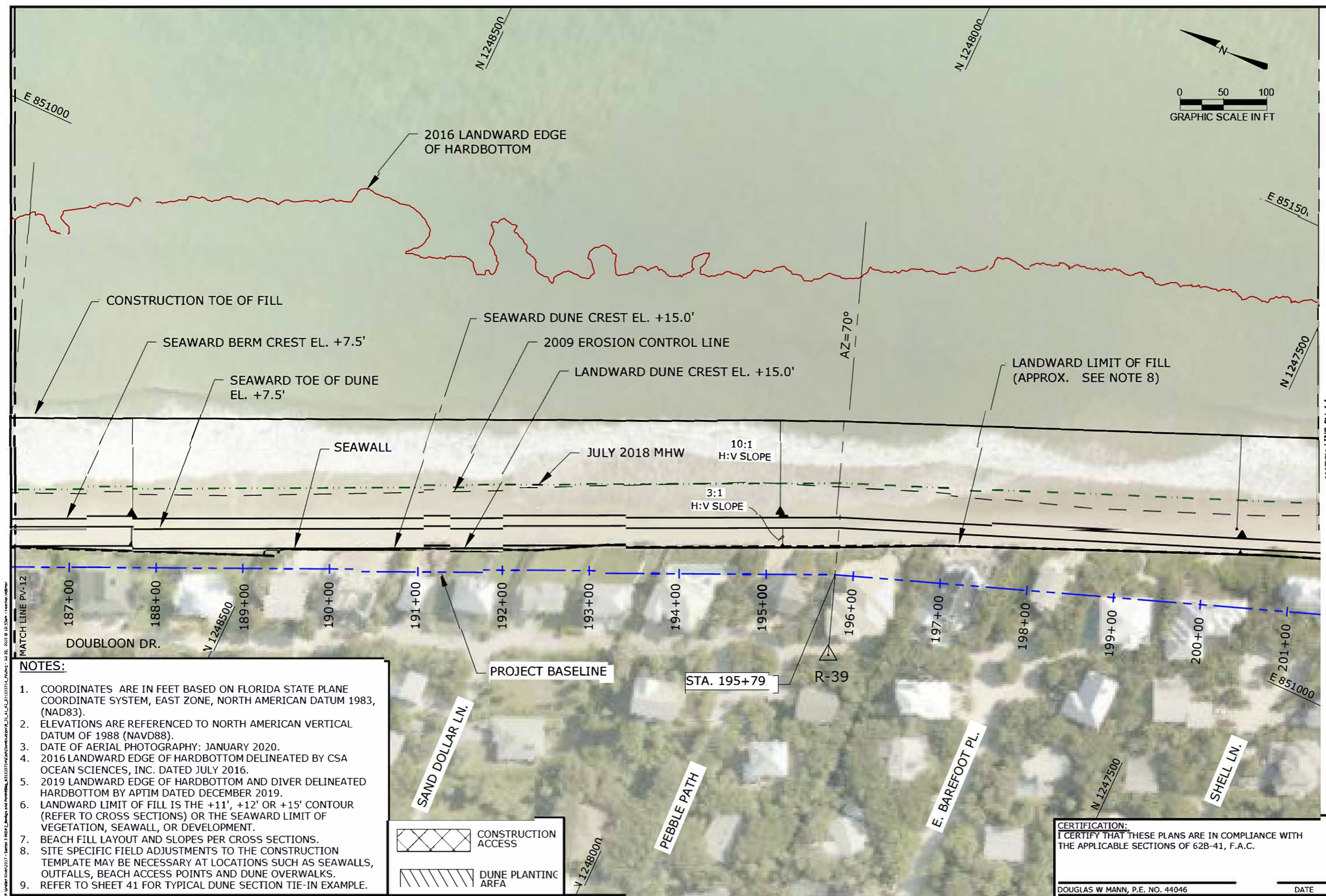
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Designed by: CP			

Reference File: _____

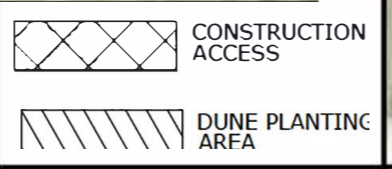
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-12**

SHEET 19 OF 44



- NOTES:**
- COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM 1983, (NAD83).
 - ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - DATE OF AERIAL PHOTOGRAPHY: JANUARY 2020.
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 - REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.



CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046 _____ DATE _____

MATCH LINE PV-14
 MATCH LINE PV-12
 Reference files:
 Checked by: DM
 Drawn by: KC
 Date: 07/16/20
 Scale:

REVISIONS	DATE	DESCRIPTION

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-13
 SHEET 20 OF 44

NOTES:

- COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM 1983, (NAD83).
- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
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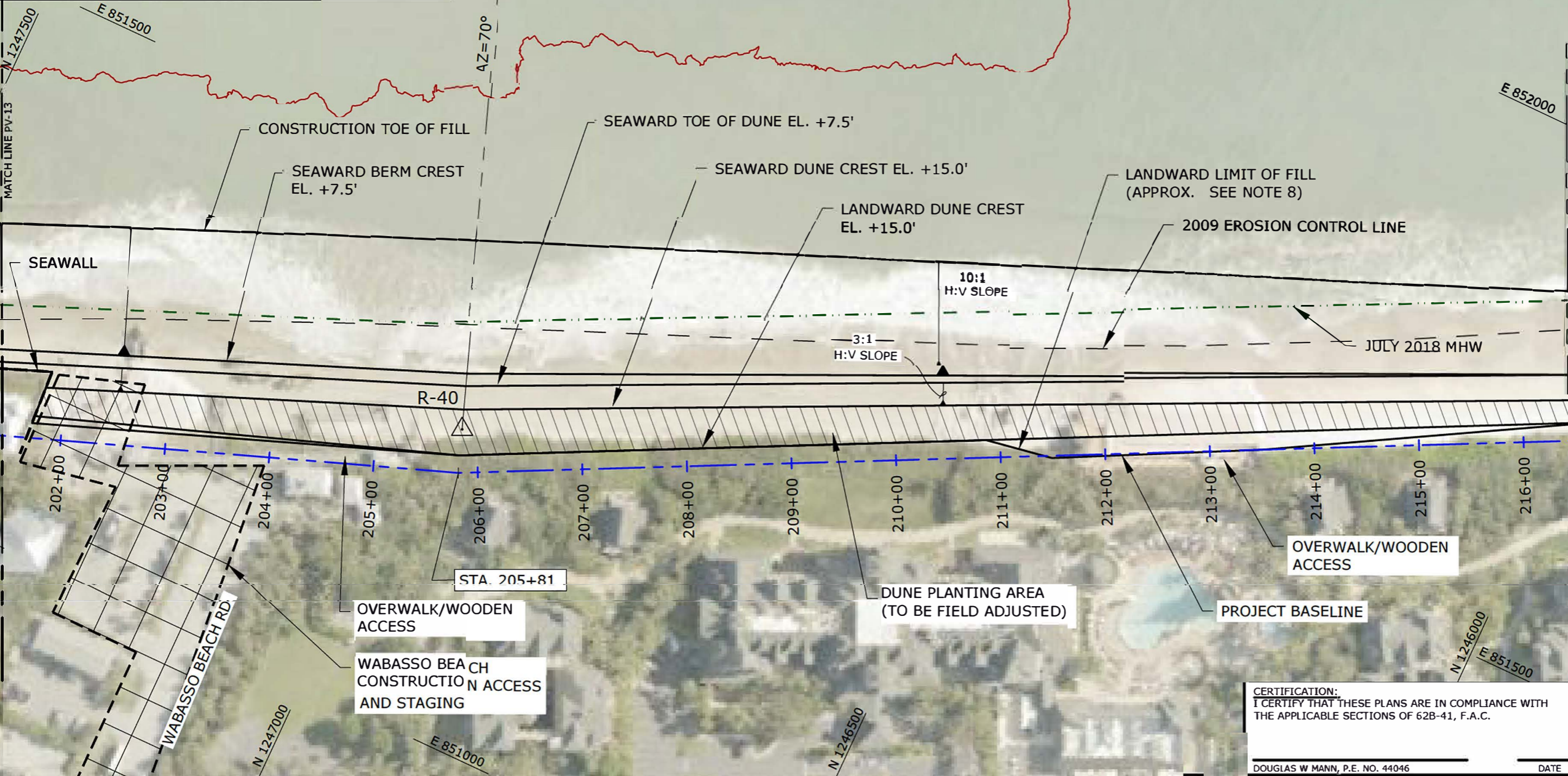
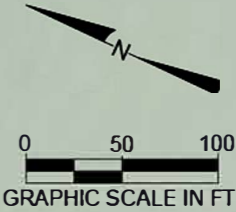
CONSTRUCTION ACCESS



DUNE PLANTING AREA

N 1247000

N 1246500



MATCHLINE PV-13

MATCHLINE PV-15

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 PH. (861) 391-8102
 FAX (861) 391-9116
 C.O.A. FL #9317

2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

REVISIONS	
No.	Description

Designed by:	CP
Drawn by:	KC
Checked by:	DM
Reviewed by:	CP
Submitted by:	CP
Date:	07/16/20
Job No.:	
Scale:	

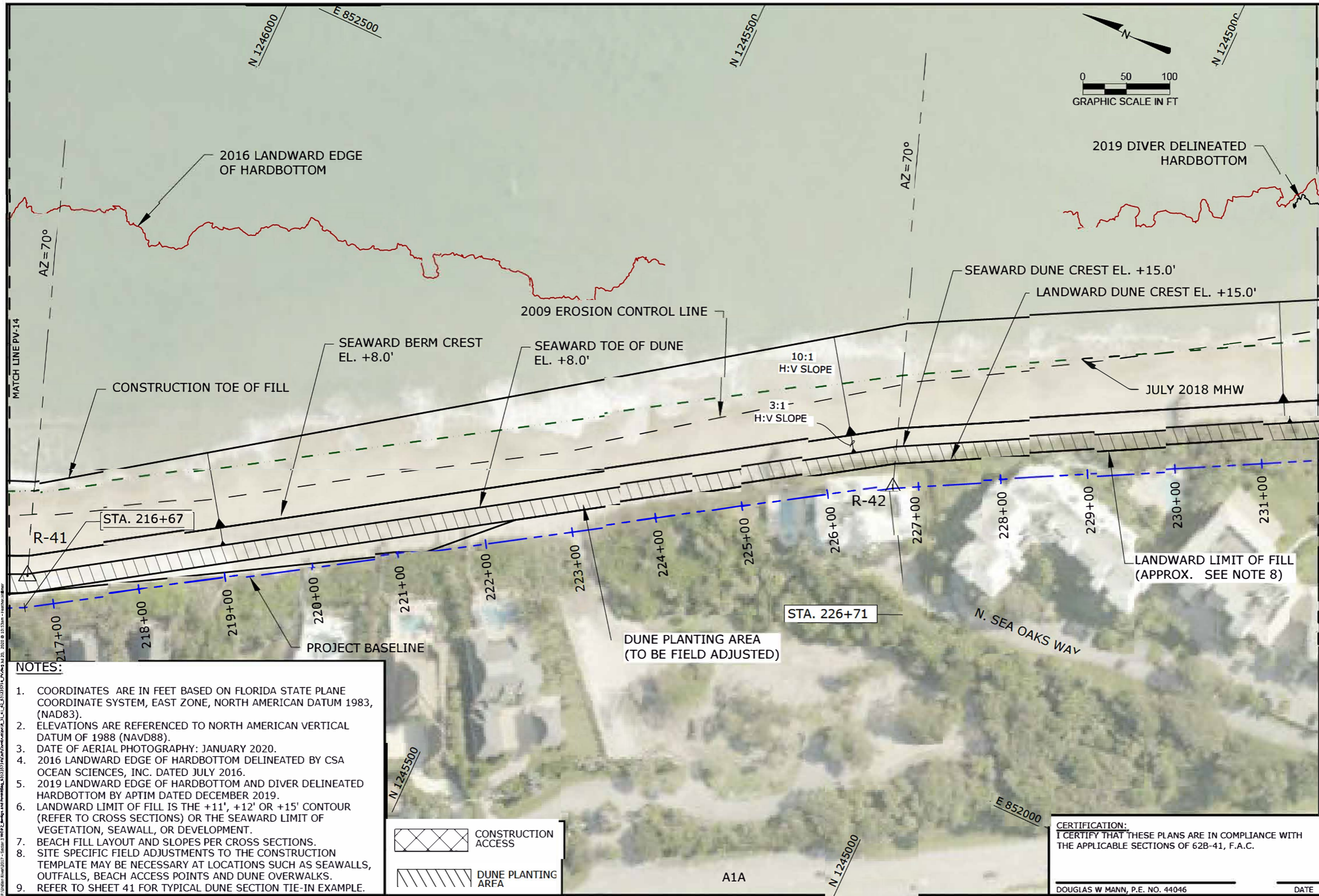
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
PV-14
 SHEET 21 OF 44

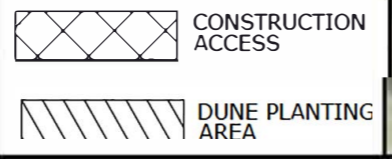
CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH
 THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046
 DATE

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- NOTES:**
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DOUGLAS W MANN, P.E. NO. 44046

DATE _____

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 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

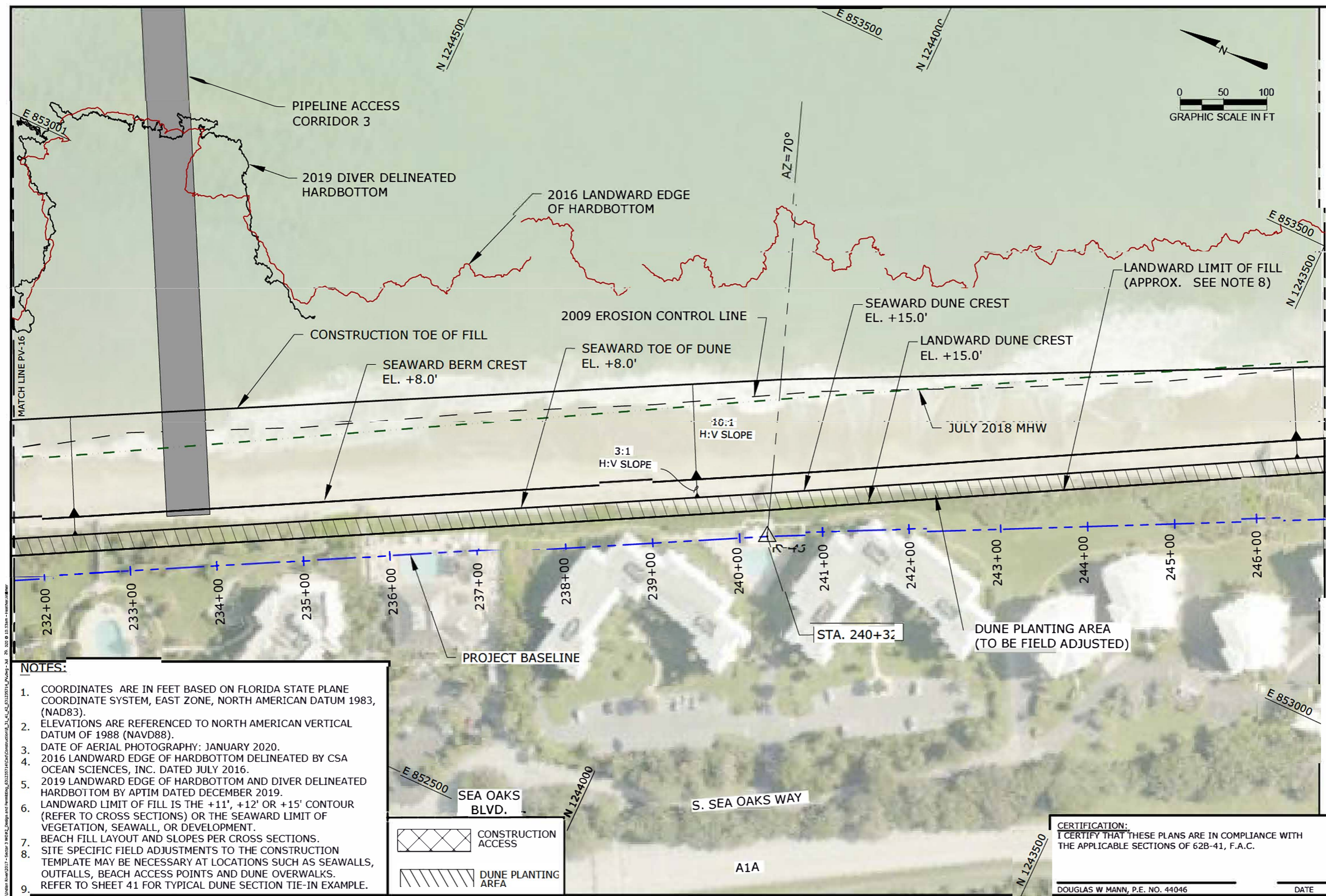
REVISIONS	DATE	DESCRIPTION

Checked by: DM
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 Submitted by: CP
 Date: 07/16/20
 Job No.:
 Scale:

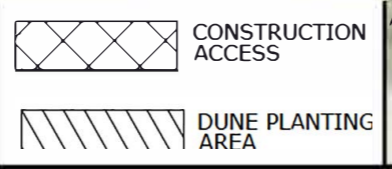
Reference files:
 SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-15**

SHEET 22 OF 44



- NOTES:**
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DOUGLAS W MANN, P.E. NO. 44046

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 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

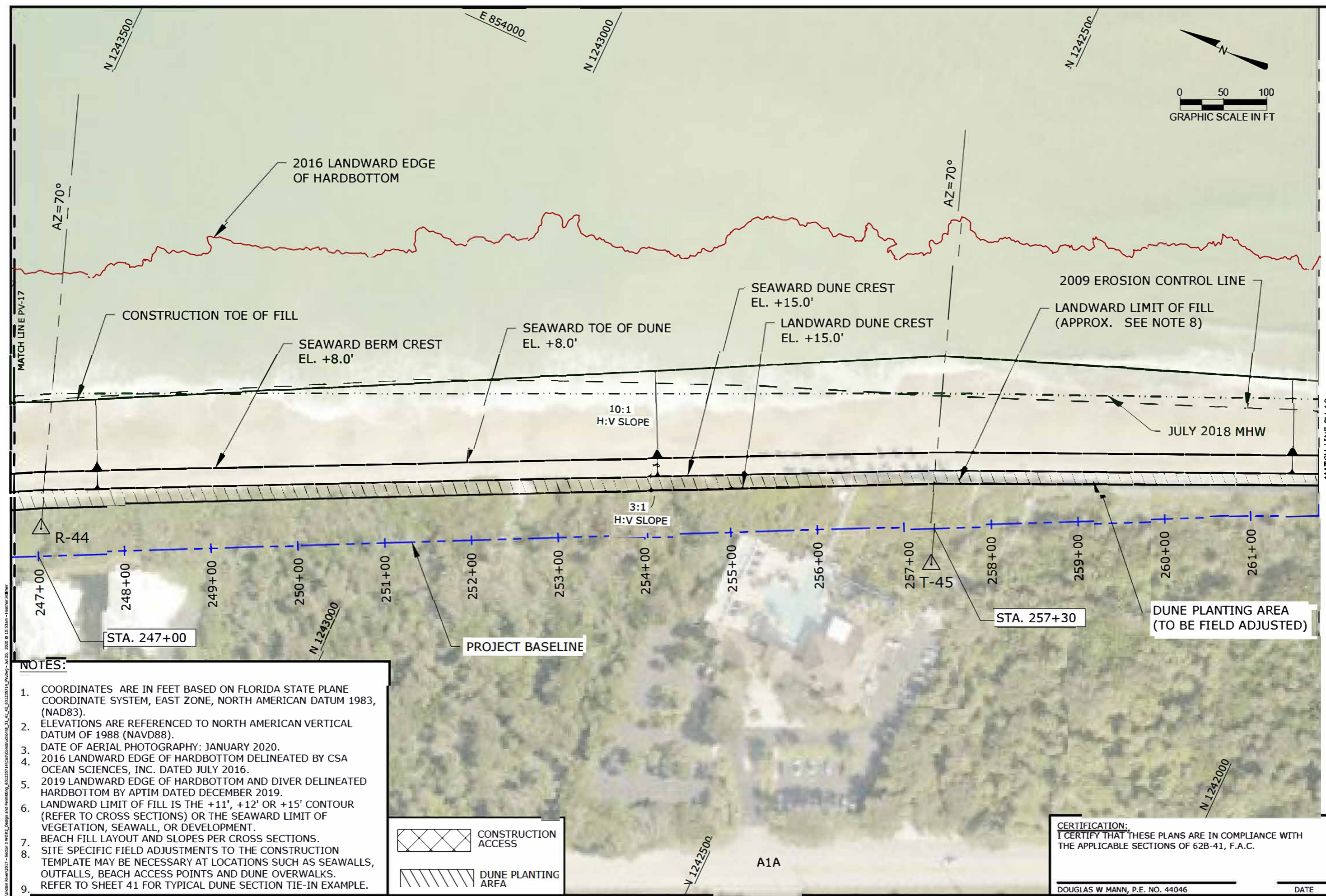
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Date:	07/10/20	Submitted by:	CP
Lot Scale:		Comm. No.:	

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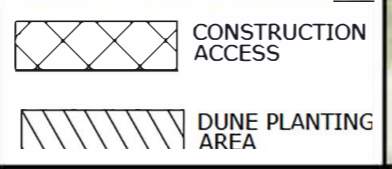
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-16**

SHEET 23 OF 44



- NOTES:**
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 DOUGLAS W MANN, P.E. NO. 44046

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 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #93317

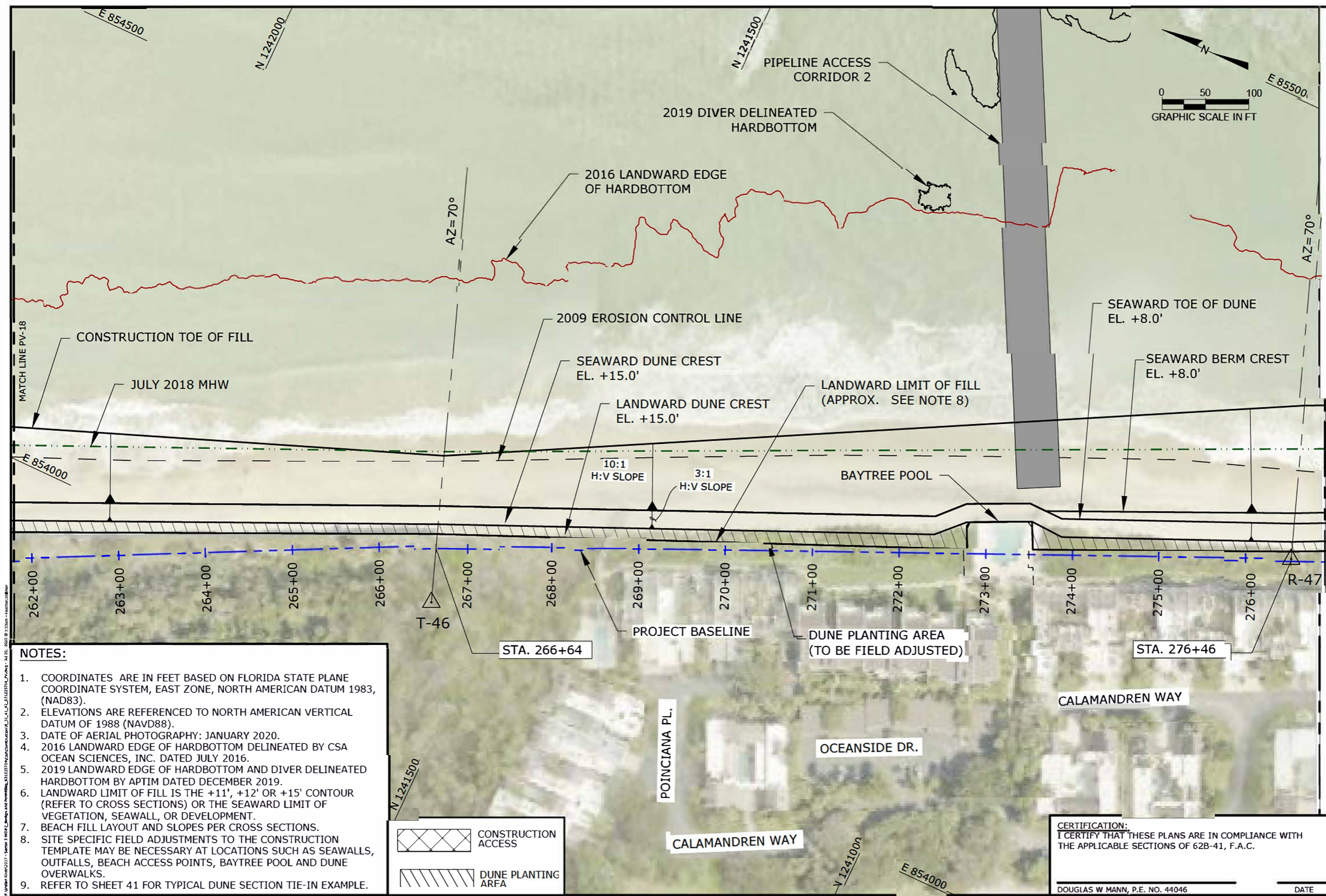
REVISIONS	DATE	DESCRIPTION

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Reviewed by: CP	Drawn by: KC
Submitted by: CP	Date: 07/16/20
Job No.:	Scale:

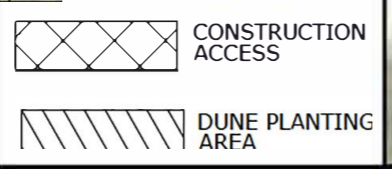
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 SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-17**
 SHEET 24 OF 44

Update Plan 2017 - Sector 3 - WOP2 - Design and Permitting - 012125714100/Construction/1_1_4_2_012125714_PV17.dwg - Jul 20, 2020 @ 10:53am - Hecobor/afm



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DOUGLAS W MANN, P.E. NO. 44046

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 C.O.A. FL #9317

2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

Checked by:	DM
Designed by:	CP
Drawn by:	KC
Submitted by:	CP
Date:	07/10/20
Lot Scale:	
Comm. No.:	

Reference File:

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-18

SHEET 25 OF 44

NOTES:

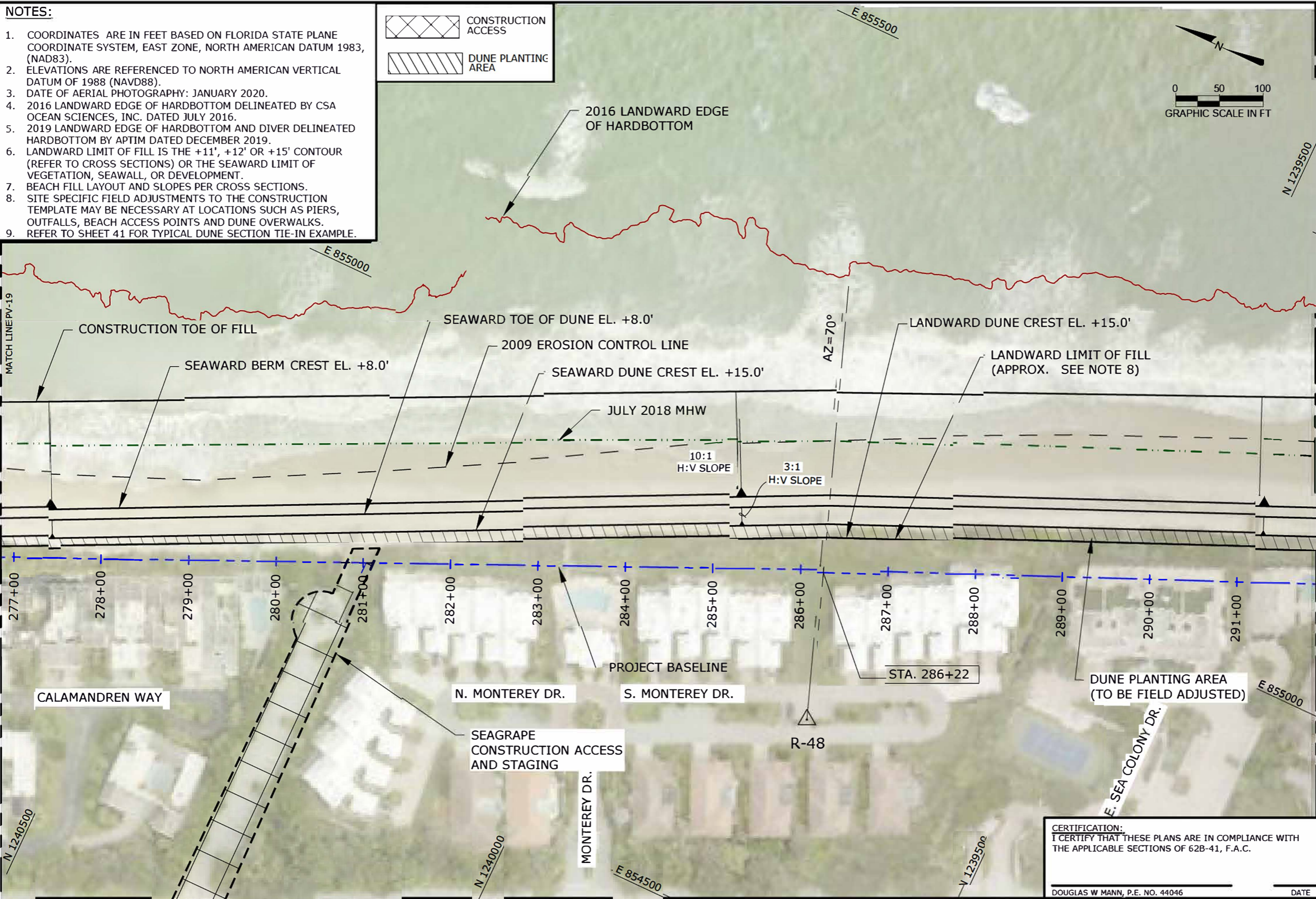
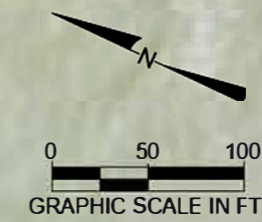
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CONSTRUCTION ACCESS



DUNE PLANTING AREA



APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 PH. (861) 391-8102
 FAX (861) 391-9116
 C.O.A. FL #9317

2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

REVISIONS	No.	Date	Description

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Reviewed by:	GP
Submitted by:	GP
Date:	07/16/20
AS NOTED	63123571-4

Reference File:

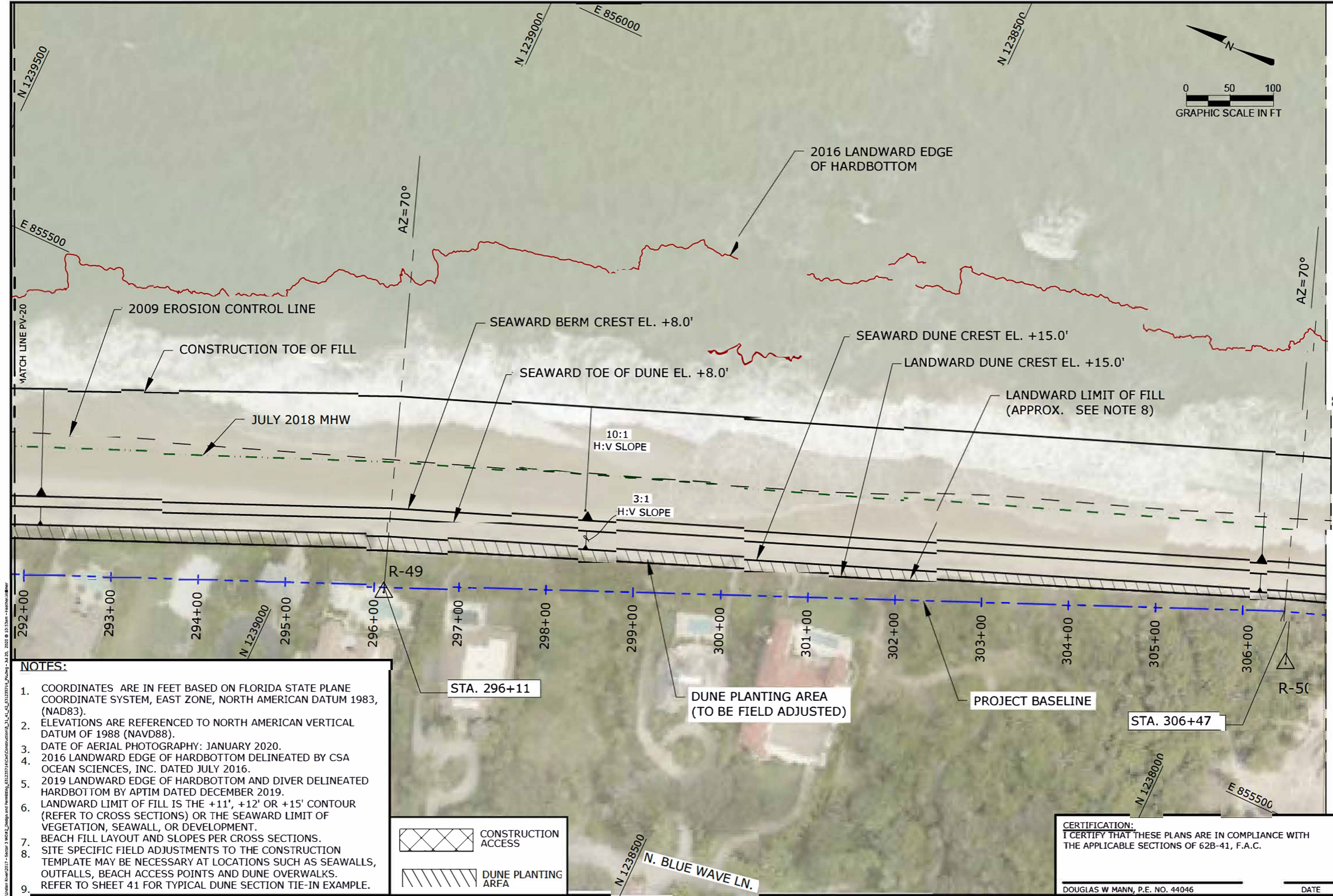
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
PV-19
 SHEET 26 OF 44

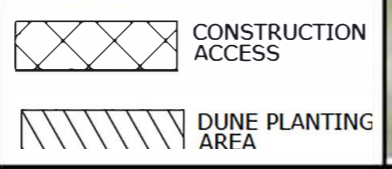
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DOUGLAS W MANN, P.E. NO. 44046
 DATE

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- NOTES:**
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DOUGLAS W MANN, P.E. NO. 44046

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 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

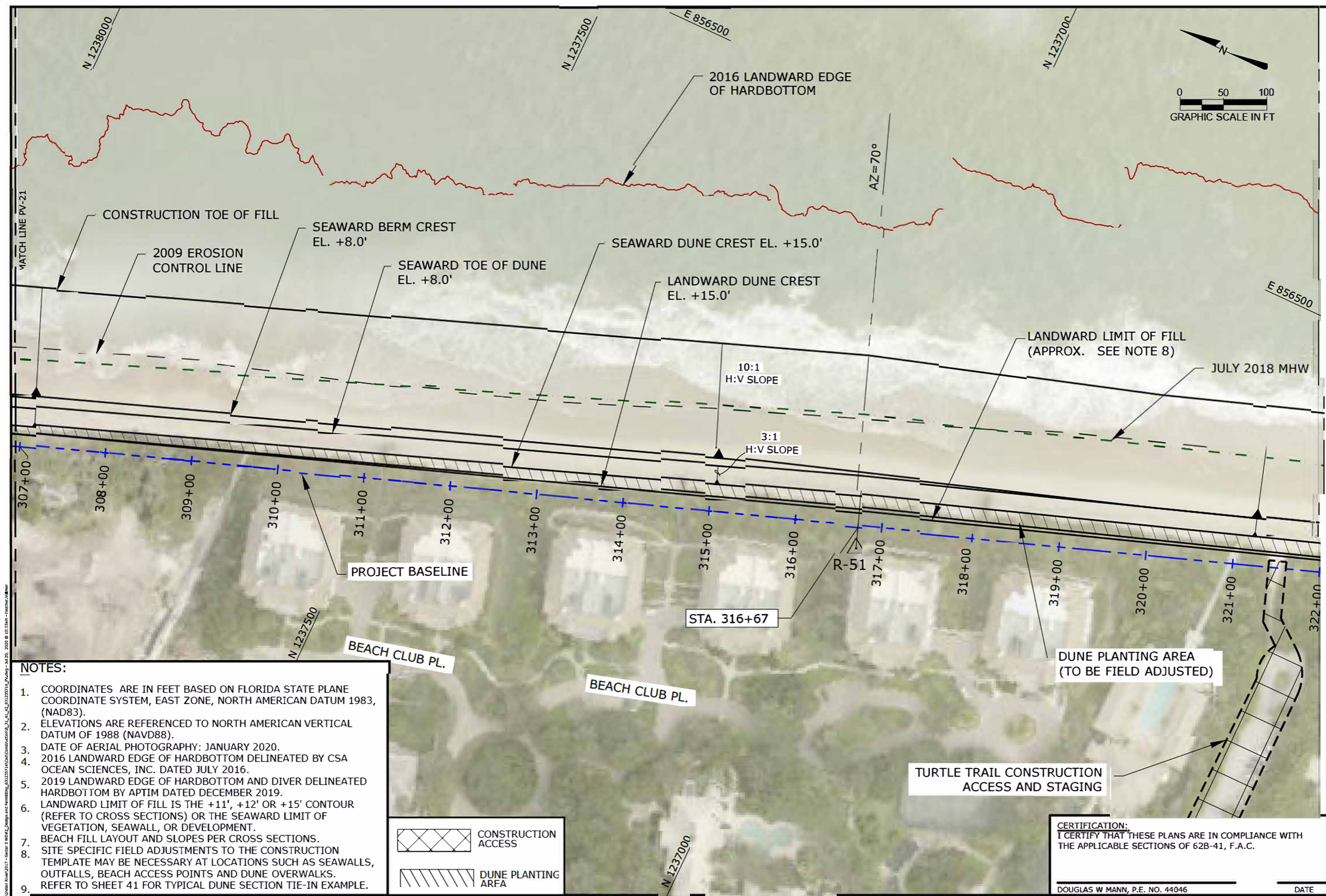
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Reference File: JMS

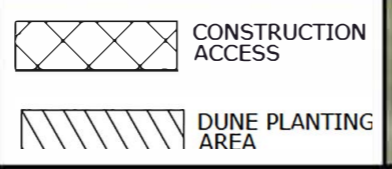
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-20

SHEET 27 OF 44



- NOTES:**
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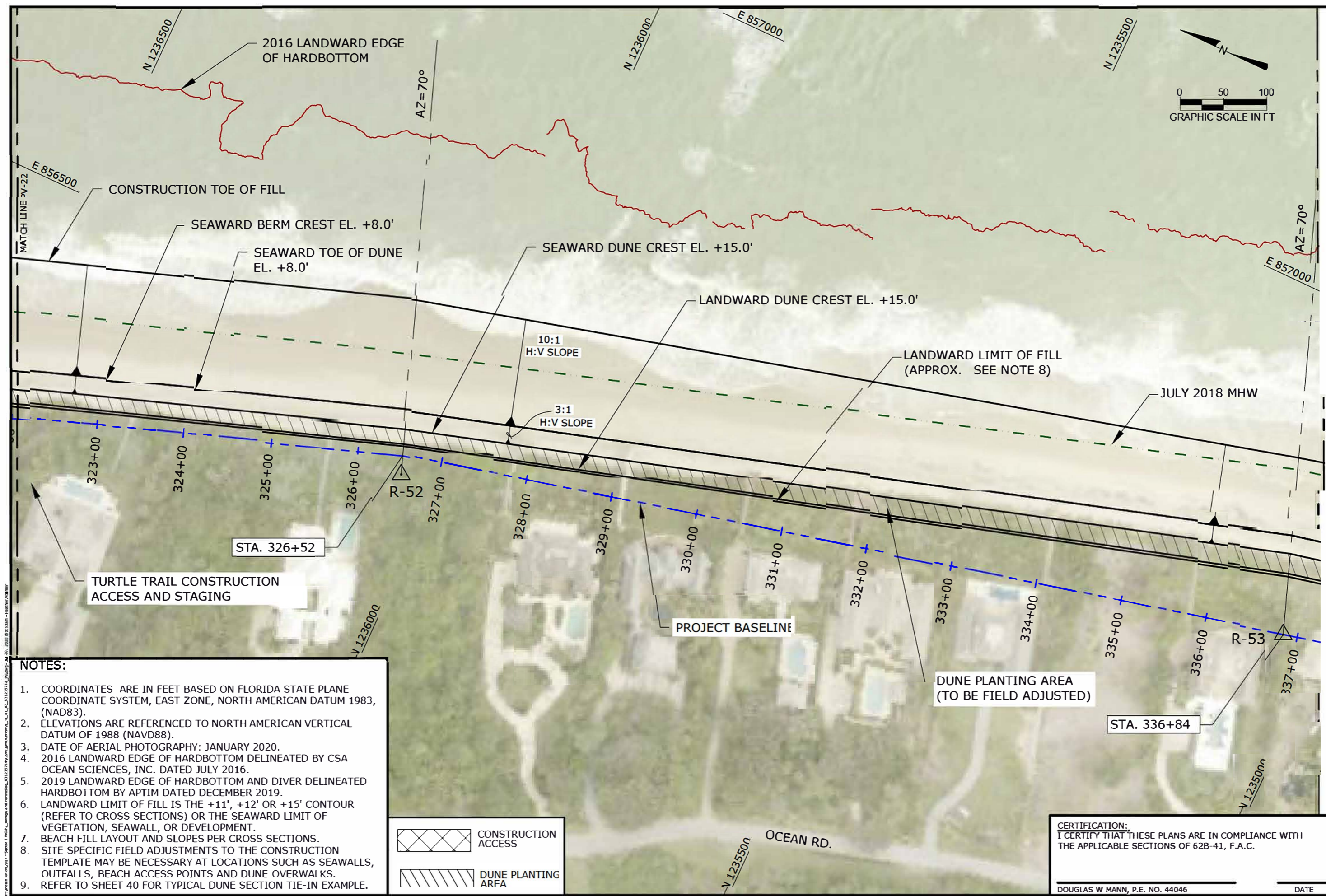
DOUGLAS W MANN, P.E. NO. 44046 _____ DATE _____

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
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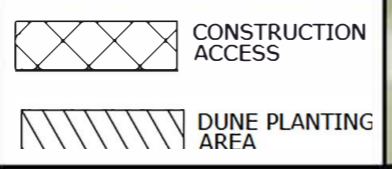
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Reference File:
 SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-21
 SHEET 28 OF 44



- NOTES:**
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DOUGLAS W MANN, P.E. NO. 44046

DATE

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2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

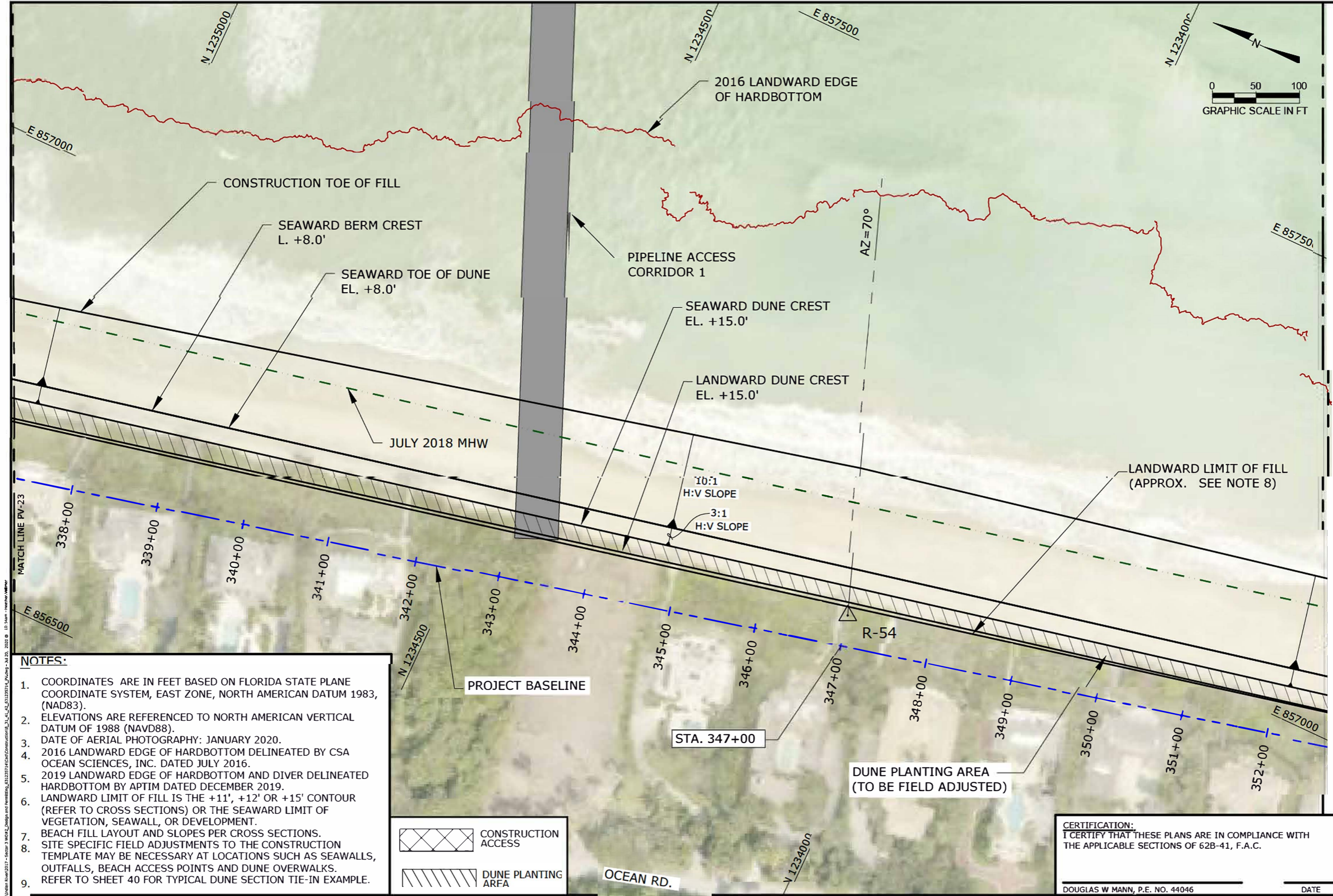
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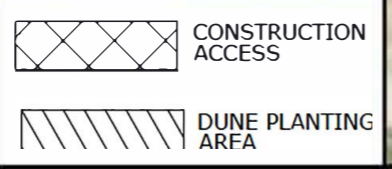
SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-22

SHEET 29 OF 44



- NOTES:**
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 - ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - DATE OF AERIAL PHOTOGRAPHY: JANUARY 2020.
 - 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
 - 2019 LANDWARD EDGE OF HARDBOTTOM AND DIVER DELINEATED HARDBOTTOM BY APTIM DATED DECEMBER 2019.
 - LANDWARD LIMIT OF FILL IS THE +11', +12' OR +15' CONTOUR (REFER TO CROSS SECTIONS) OR THE SEAWARD LIMIT OF VEGETATION, SEAWALL, OR DEVELOPMENT.
 - BEACH FILL LAYOUT AND SLOPES PER CROSS SECTIONS.
 - SITE SPECIFIC FIELD ADJUSTMENTS TO THE CONSTRUCTION TEMPLATE MAY BE NECESSARY AT LOCATIONS SUCH AS SEAWALLS, OUTFALLS, BEACH ACCESS POINTS AND DUNE OVERWALKS.
 - REFER TO SHEET 40 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.



CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

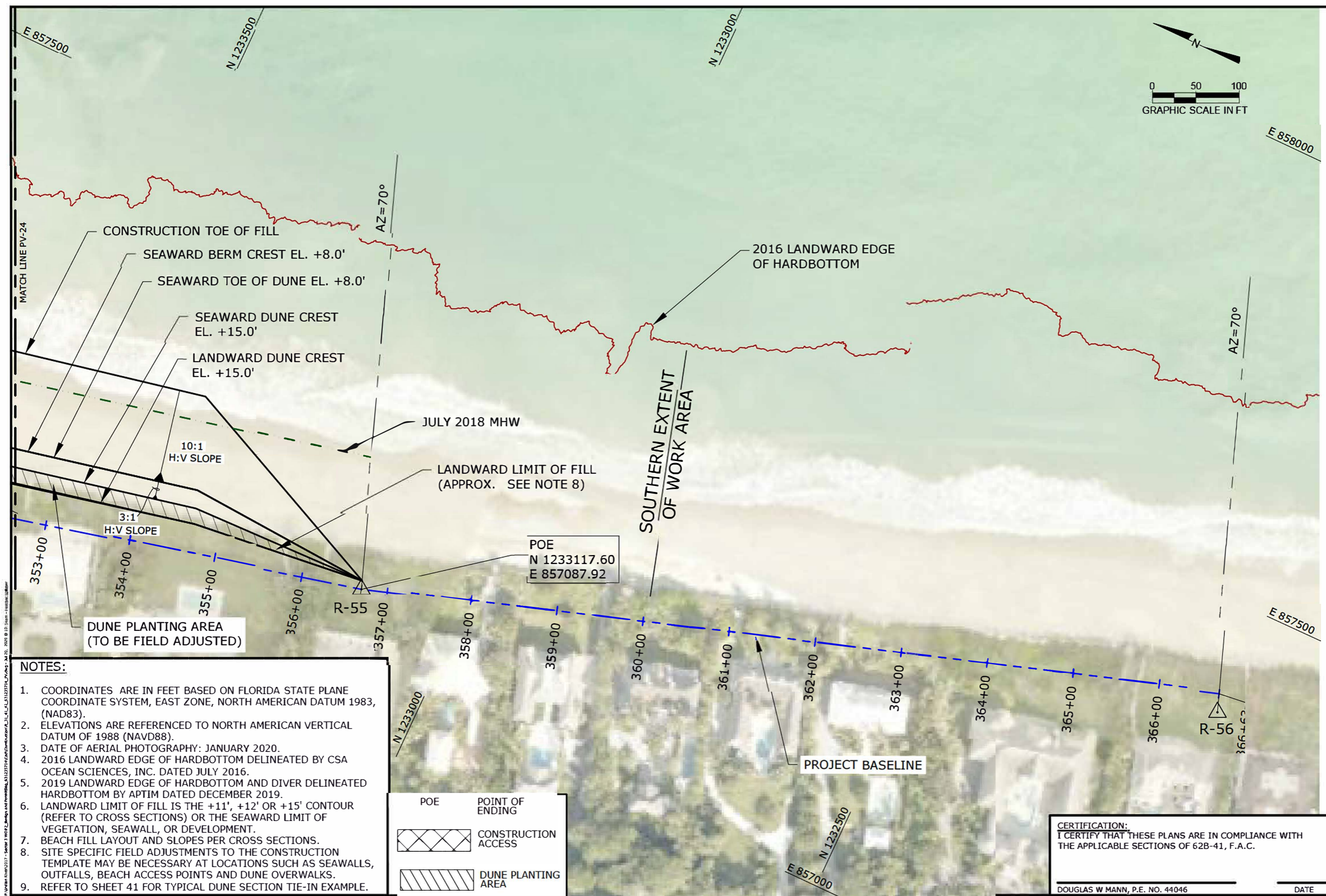
DOUGLAS W MANN, P.E. NO. 44046 _____ DATE _____

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

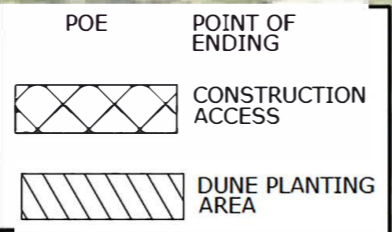
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 drawn by: KC
 date: 07/16/20
 checked by: DM
 reviewed by: CP
 submitted by: CP
 form No.:
 lot Scale:

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. PV-23
 SHEET 30 OF 44



- NOTES:**
- COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM 1983, (NAD83).
 - ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - DATE OF AERIAL PHOTOGRAPHY: JANUARY 2020.
 - 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
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 - BEACH FILL LAYOUT AND SLOPES PER CROSS SECTIONS.
 - SITE SPECIFIC FIELD ADJUSTMENTS TO THE CONSTRUCTION TEMPLATE MAY BE NECESSARY AT LOCATIONS SUCH AS SEAWALLS, OUTFALLS, BEACH ACCESS POINTS AND DUNE OVERWALKS.
 - REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.



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DOUGLAS W MANN, P.E. NO. 44046

DATE

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 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
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 C.O.A. FL #9317

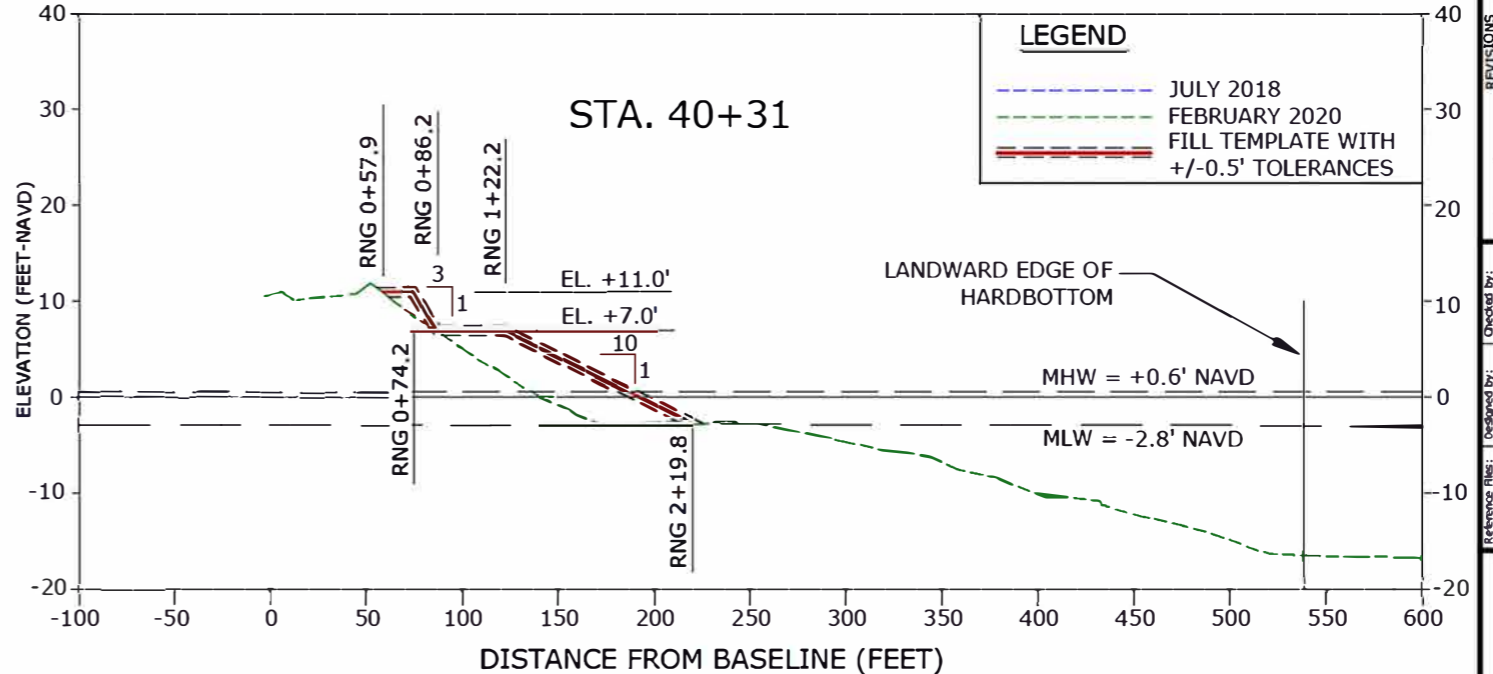
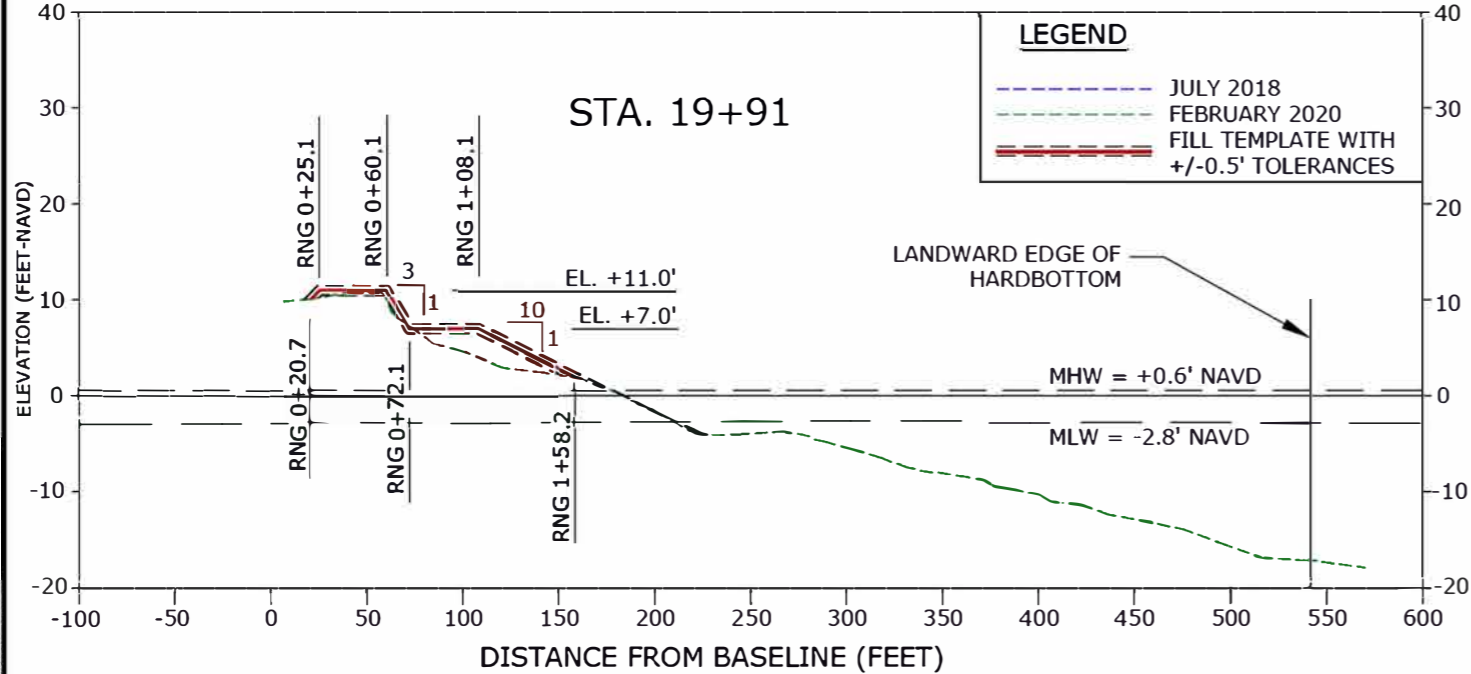
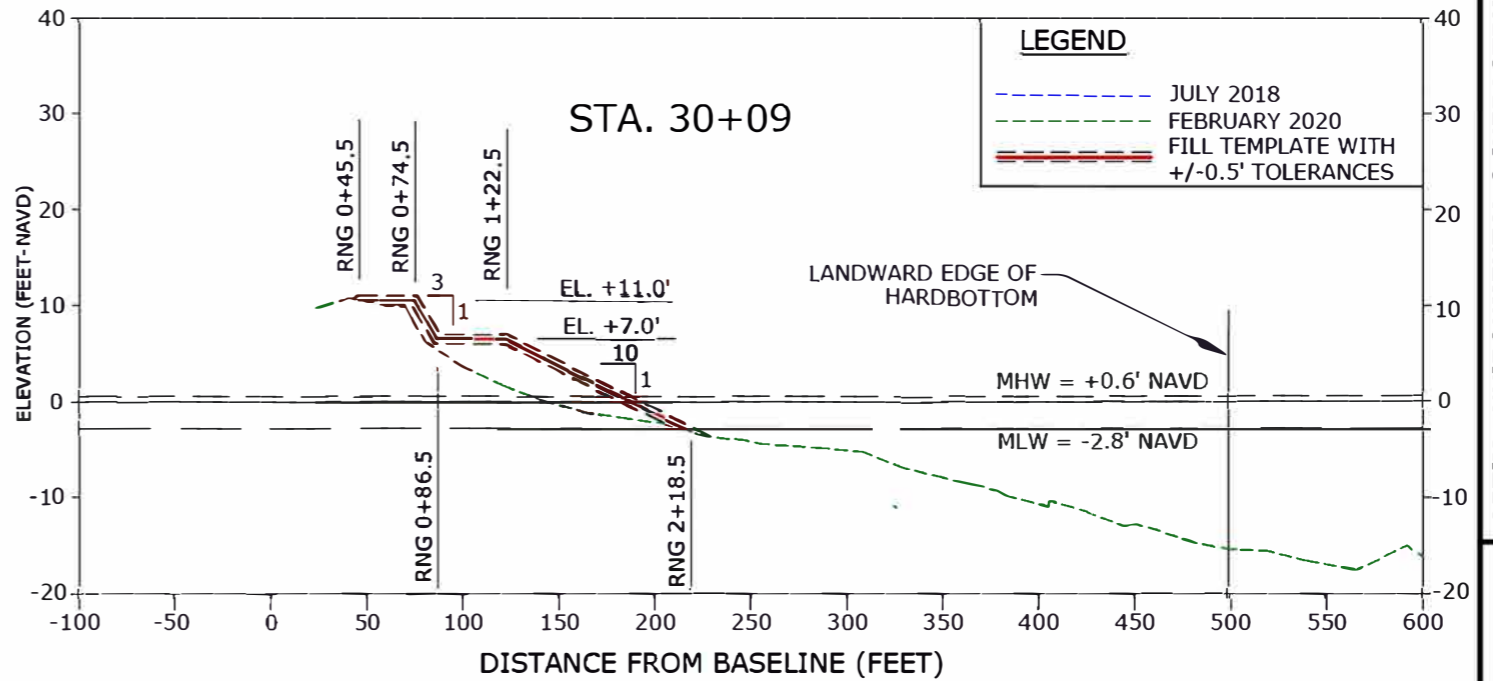
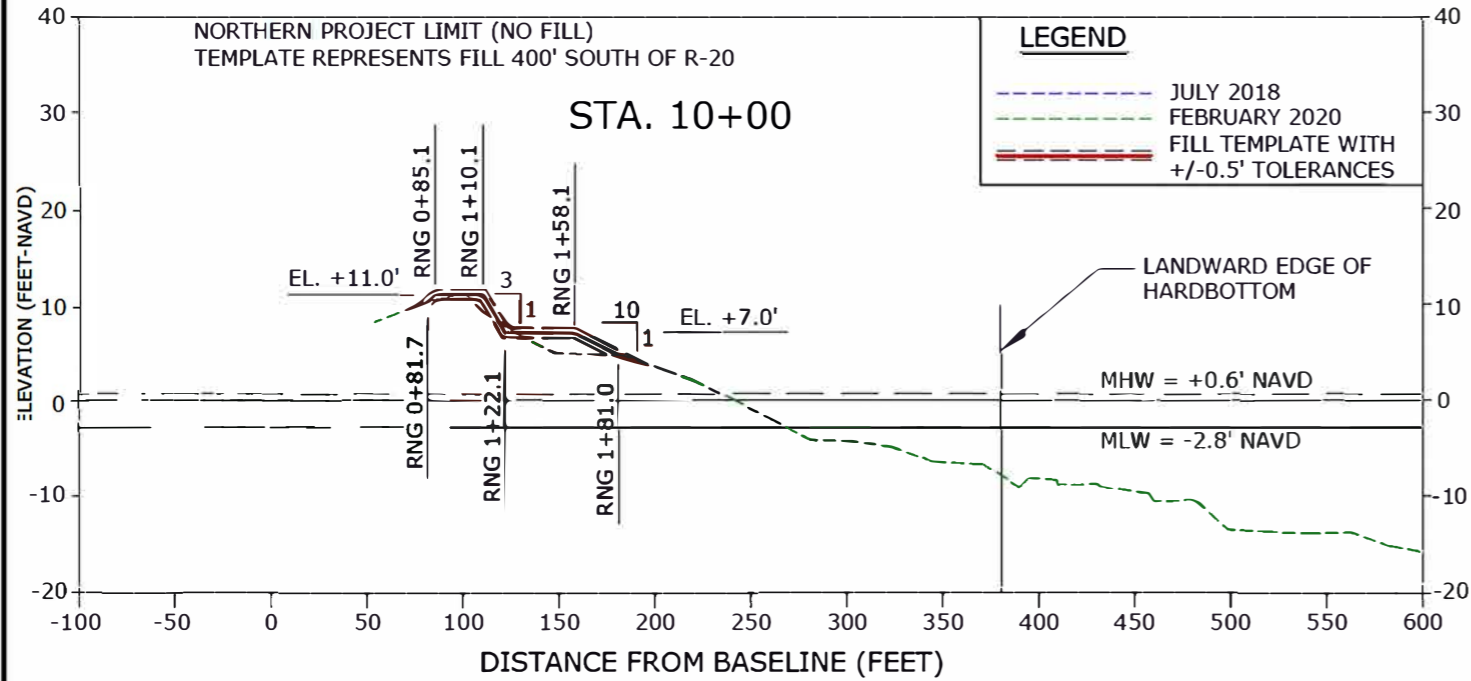
REVISIONS	DESIGNED BY	DESIGNED DATE	DESIGNED SCALE

REFERENCE FILE:	DESIGNED BY:	DESIGNED DATE:	DESIGNED SCALE:

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **PV-24**

SHEET 31 OF 44



NOTES:

- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
- 2019 LANDWARD EDGE OF HARDBOTTOM (DIVER VERIFIED AND SIDESCAN SONAR) DELINEATED BY APTIM DATED DECEMBER 2019.
- LANDWARD EDGE OF HARDBOTTOM REPRESENTS EITHER THE 2016 DIVER DELINEATED, 2019 DIVER DELINEATED, OR 2019 SIDESCAN SONAR DELINEATED EDGE OF HARDBOTTOM, WHICHEVER IS MORE LANDWARD.
- BEACH PROFILE SURVEYS COLLECTED BY MORGAN AND EKLUND, INC. JULY 2018 AND FEBRUARY 2020.
- INTERSECTION OF DUNE CREST WITH EXISTING GRADE TO BE FIELD DETERMINED. IF NECESSARY, SLOPE DOWN NO STEEPER THAN 1V:5H.
- REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.

CERTIFICATION:
I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046

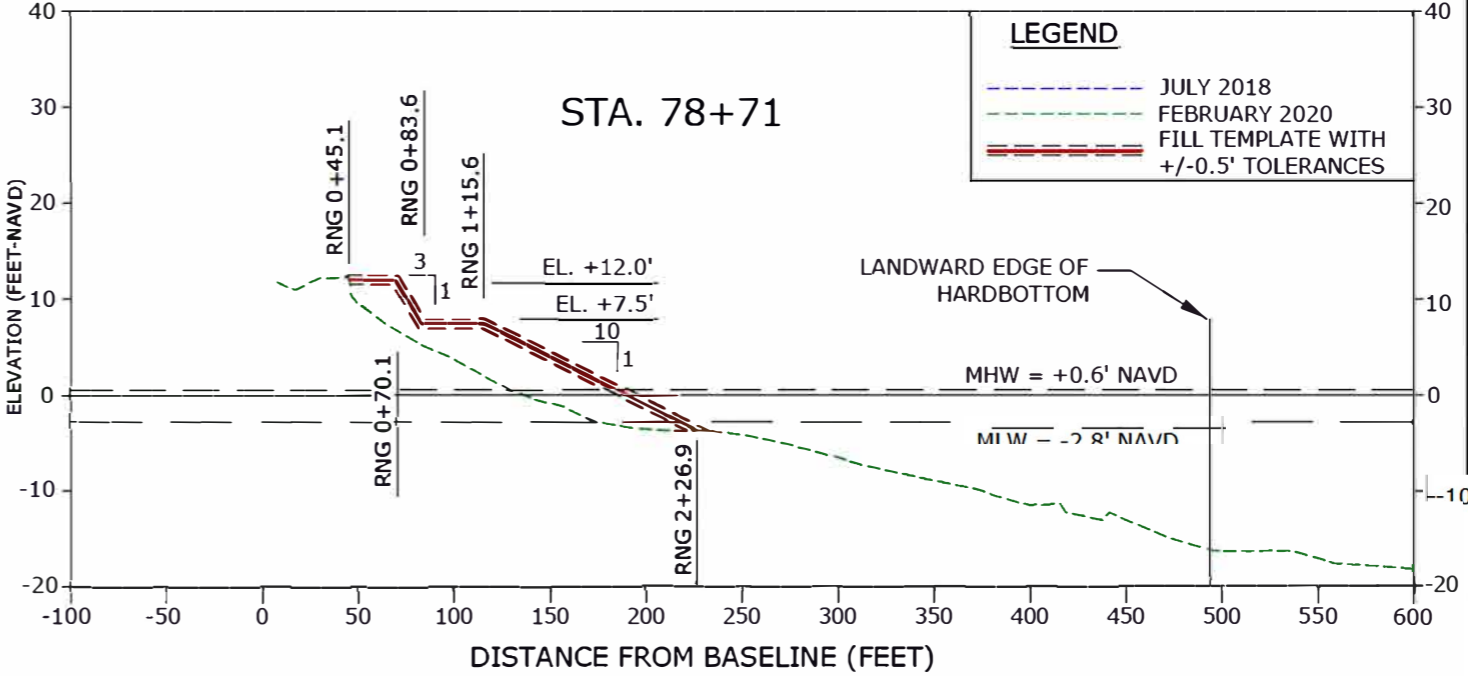
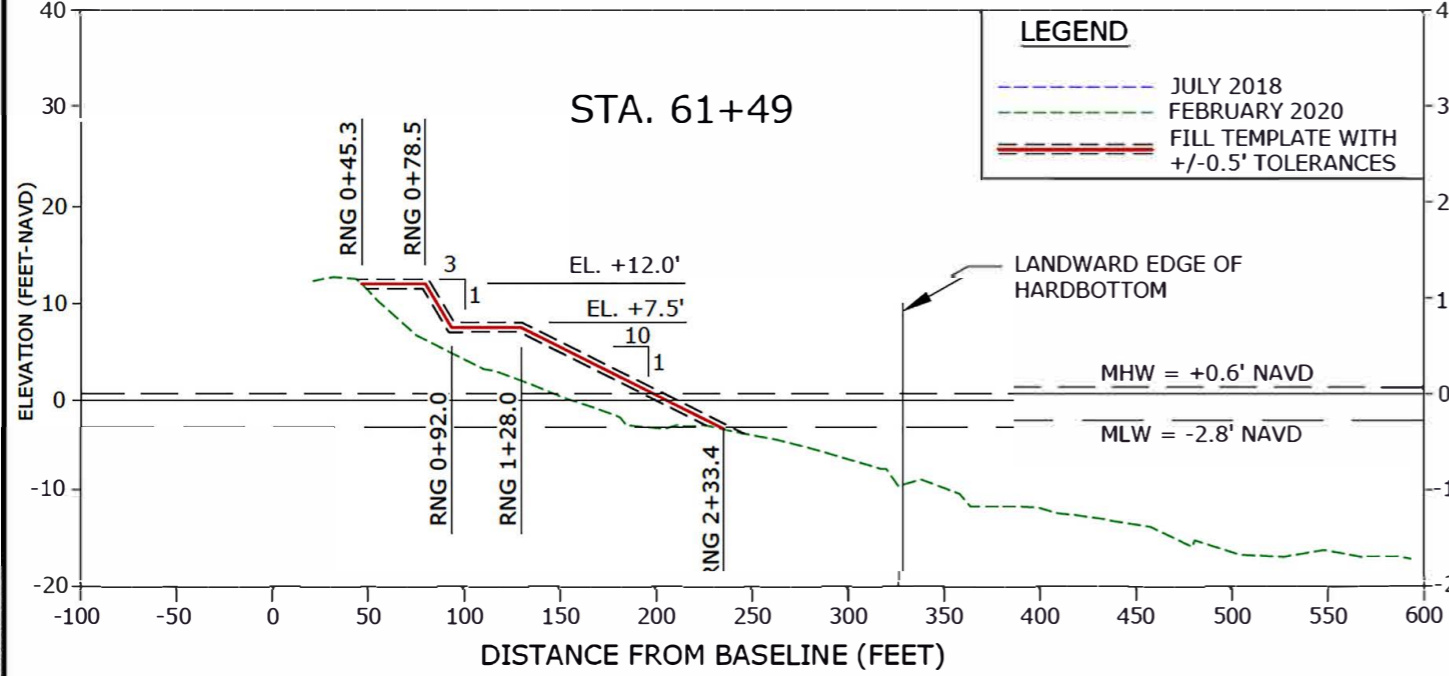
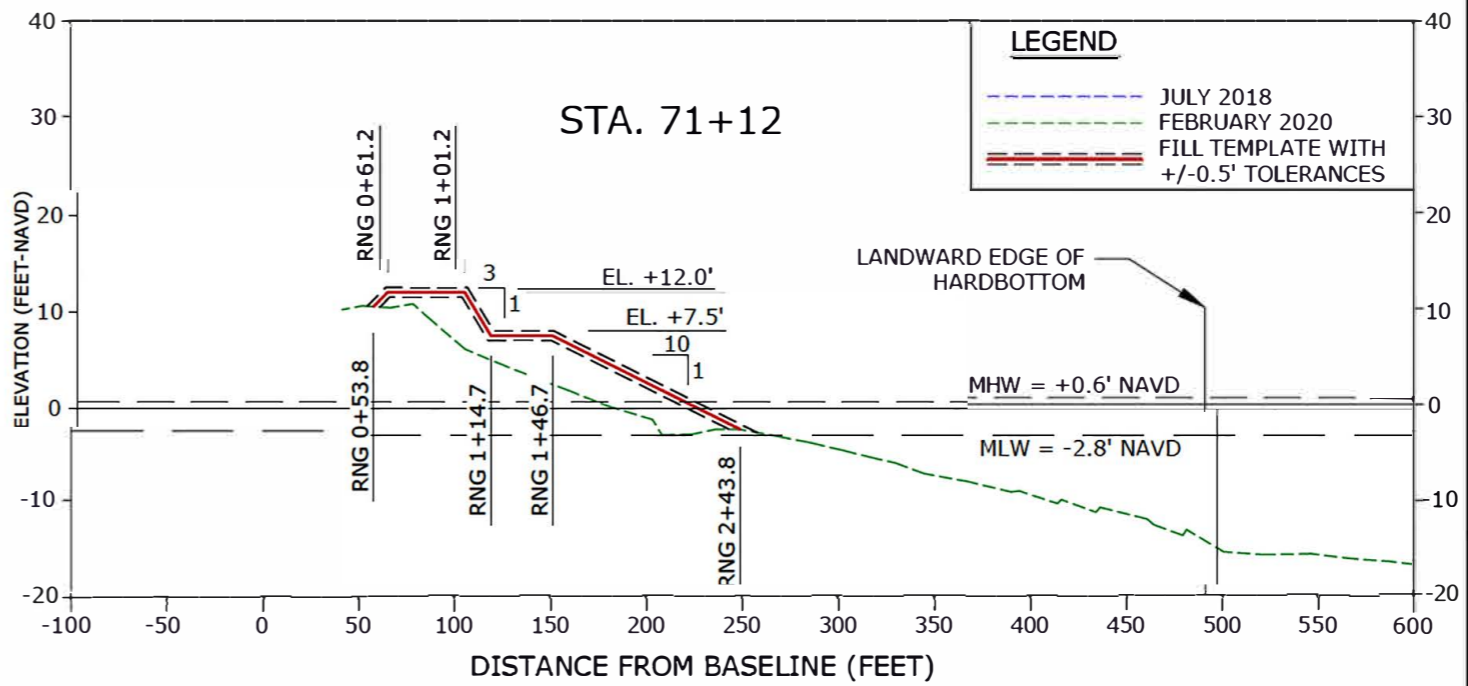
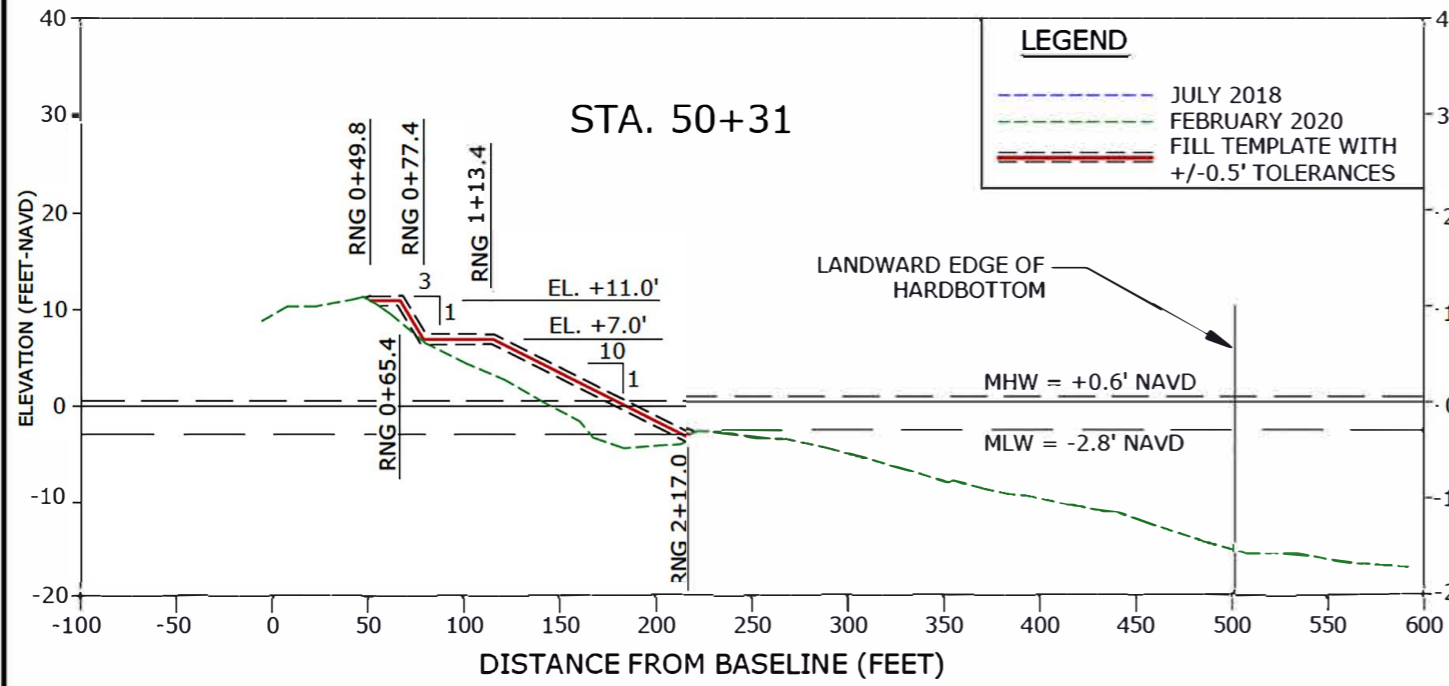
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REVISIONS	No.	Date	Description

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA
CROSS SECTIONS

DRAWING NO.

XS-1



- NOTES:**
- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
 - 2019 LANDWARD EDGE OF HARDBOTTOM (DIVER VERIFIED AND SIDESCAN SONAR) DELINEATED BY APTIM DATED DECEMBER 2019.
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 - BEACH PROFILE SURVEYS COLLECTED BY MORGAN AND EKLUND, INC. JULY 2018 AND FEBRUARY 2020.
 - INTERSECTION OF DUNE CREST WITH EXISTING GRADE TO BE FIELD DETERMINED. IF NECESSARY, SLOPE DOWN NO STEEPER THAN 1V:5H.
 - REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.

CERTIFICATION:
I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046 DATE

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 PH. (861) 391-8102
 FAX (861) 391-9116
 C.O.A. FL #9317

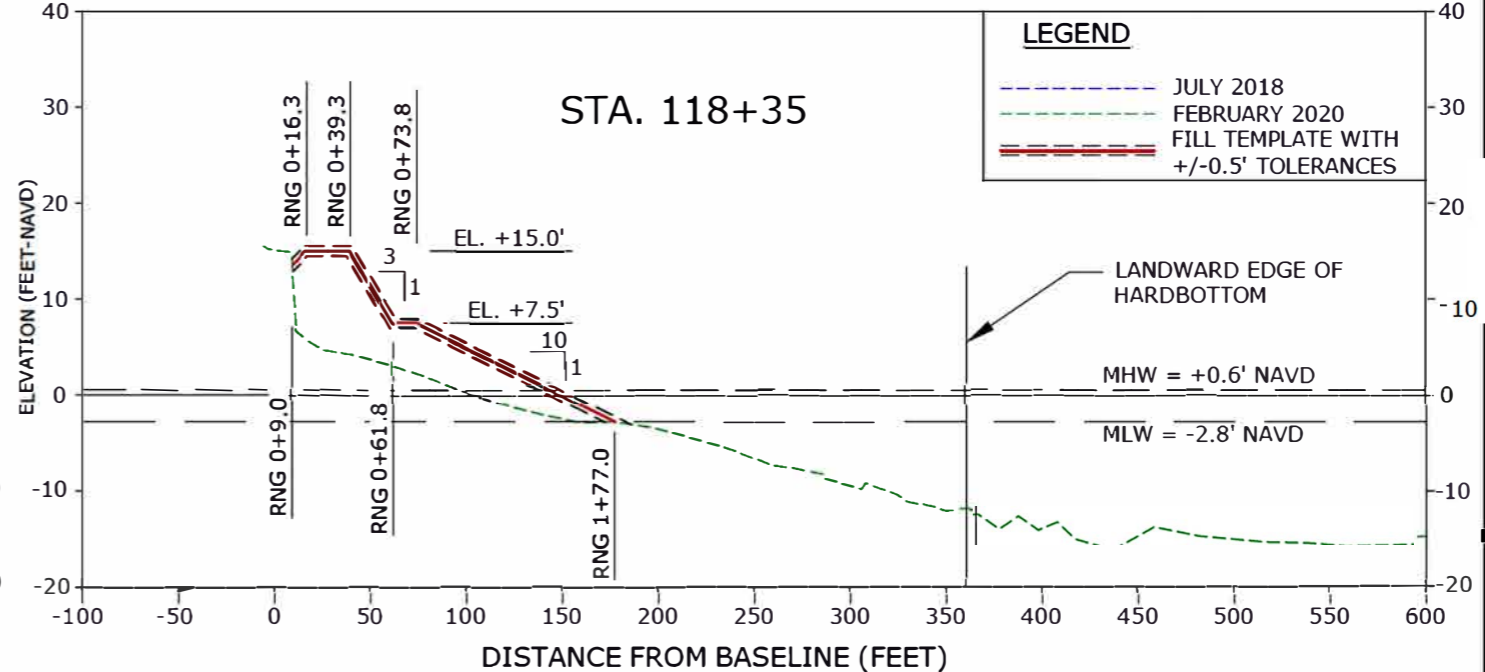
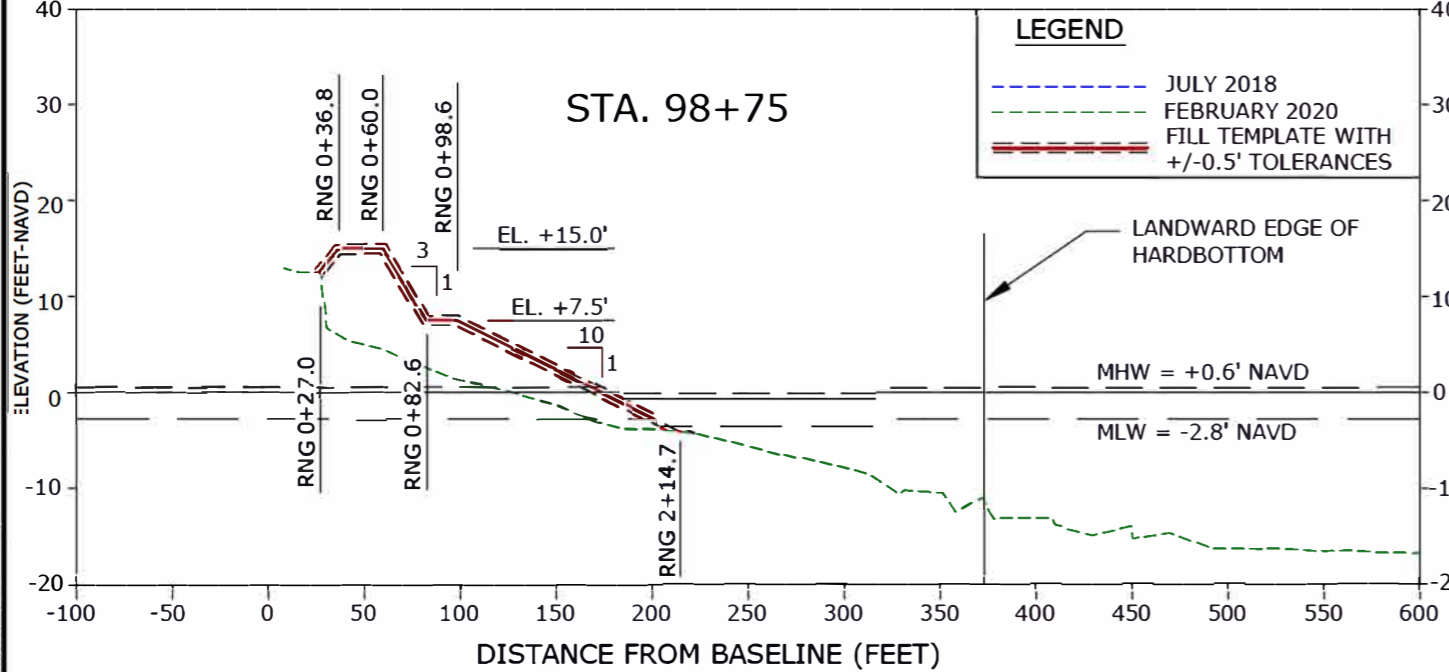
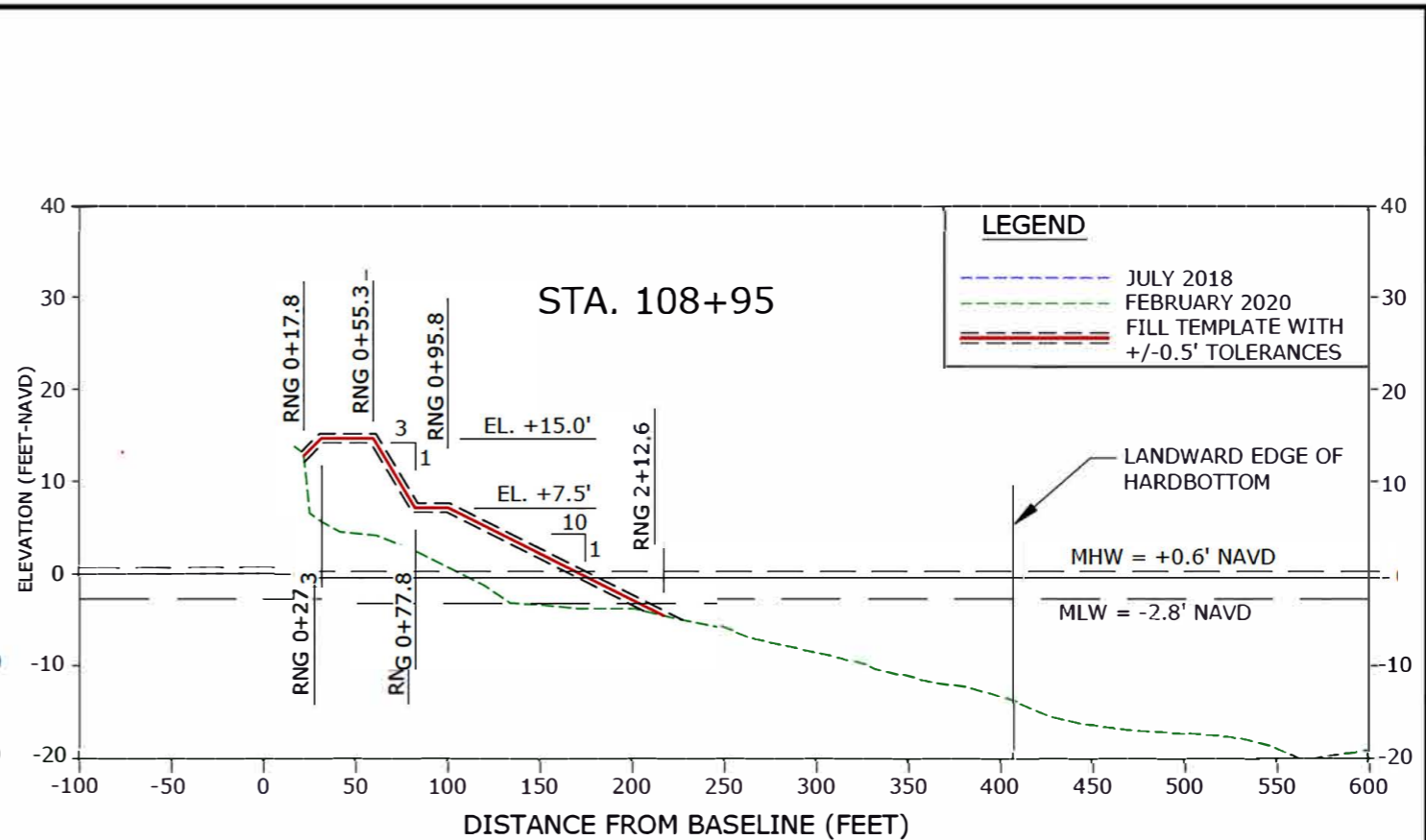
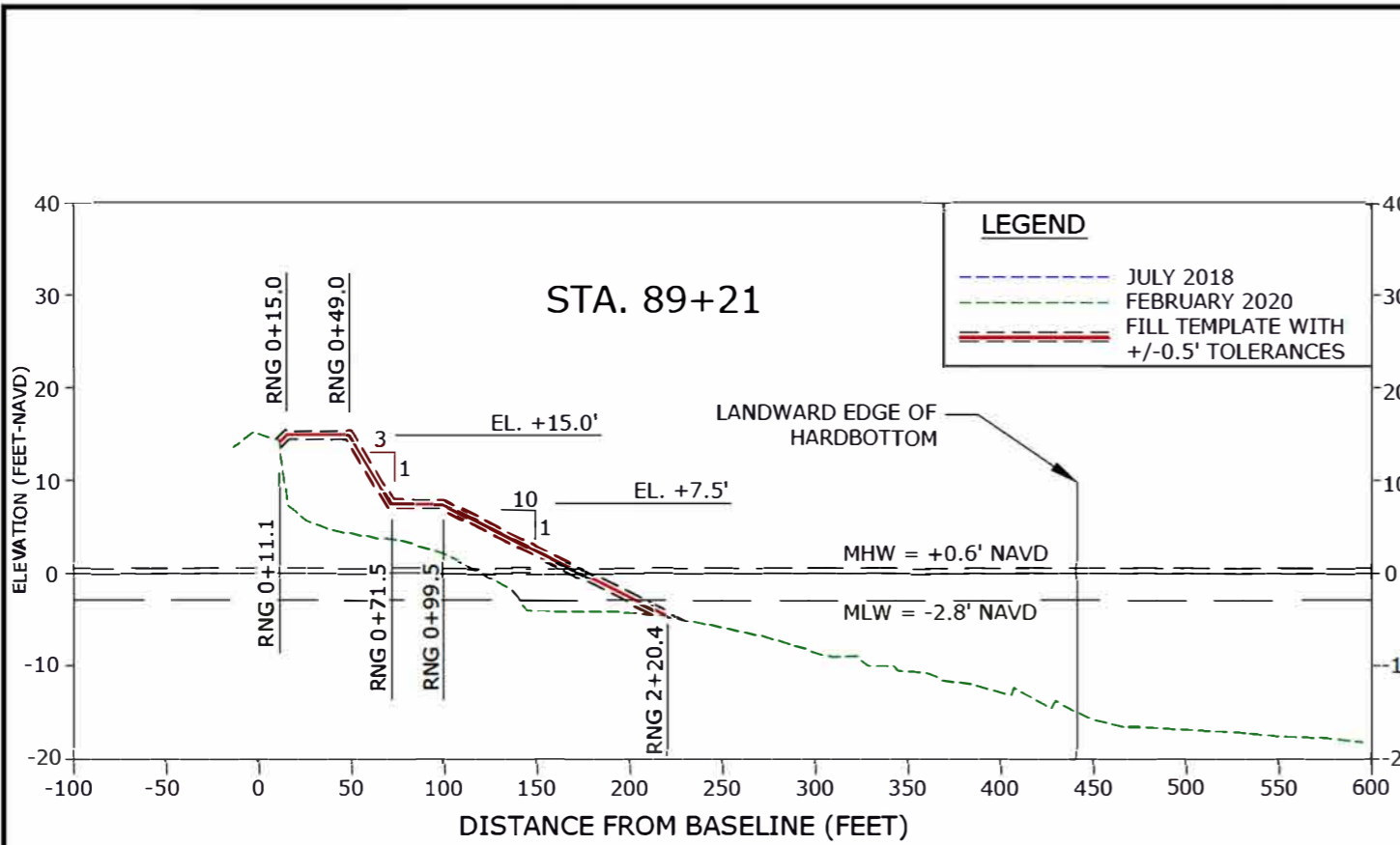
2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

REVISIONS	No.	Date	Description

Checked by:	DM	
Reviewed by:	CP	
Drawn by:	KE	
Submittal by:	CP	
Date:	07/16/20	
Comm. No.:	63123571-4	
AS NOTED		

SECTOR 3
 EACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA
 CROSS SECTIONS

DRAWING NO. XS-2
 SHEET 33 OF 44



NOTES:

1. ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
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5. BEACH PROFILE SURVEYS COLLECTED BY MORGAN AND EKLUND, INC. JULY 2018 AND FEBRUARY 2020.
6. INTERSECTION OF DUNE CREST WITH EXISTING GRADE TO BE FIELD DETERMINED. IF NECESSARY, SLOPE DOWN NO STEEPER THAN 1V:5H.
7. REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.

CERTIFICATION:
I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH
THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W. M. AN, P.E., NO. 44046

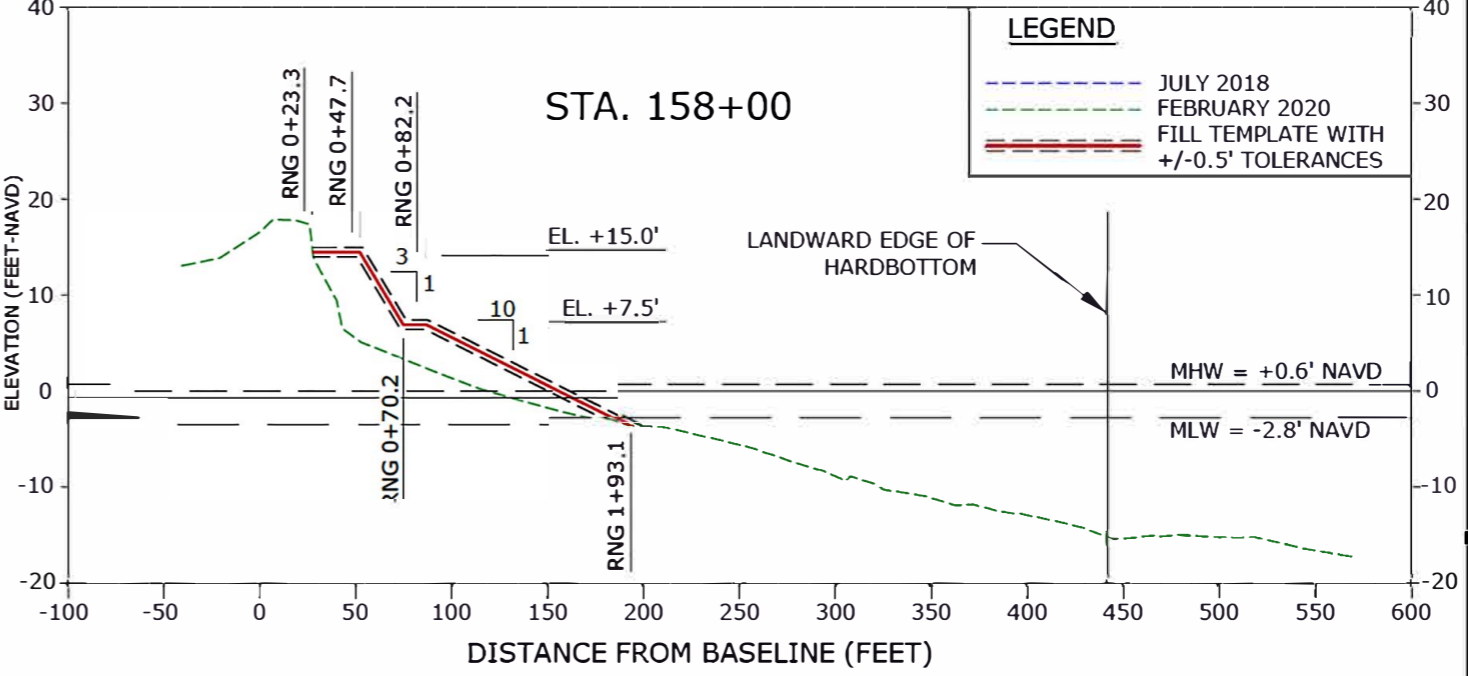
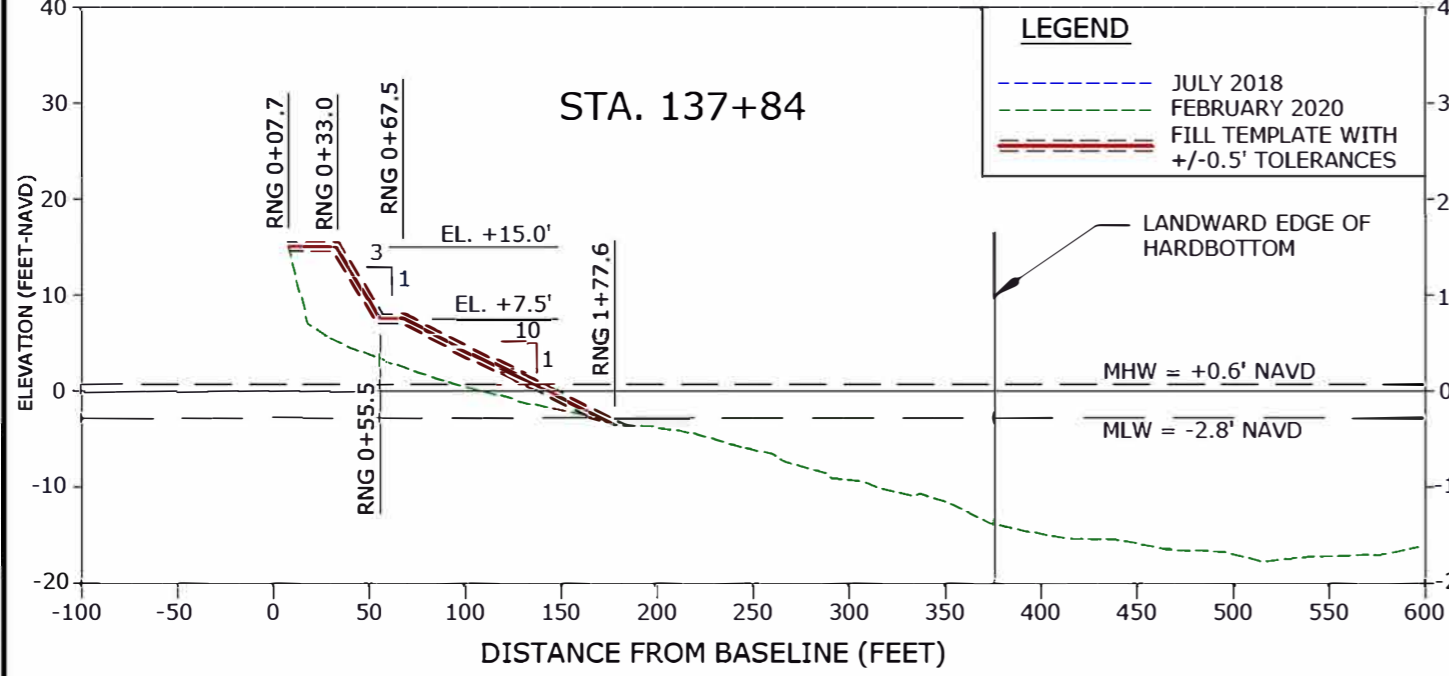
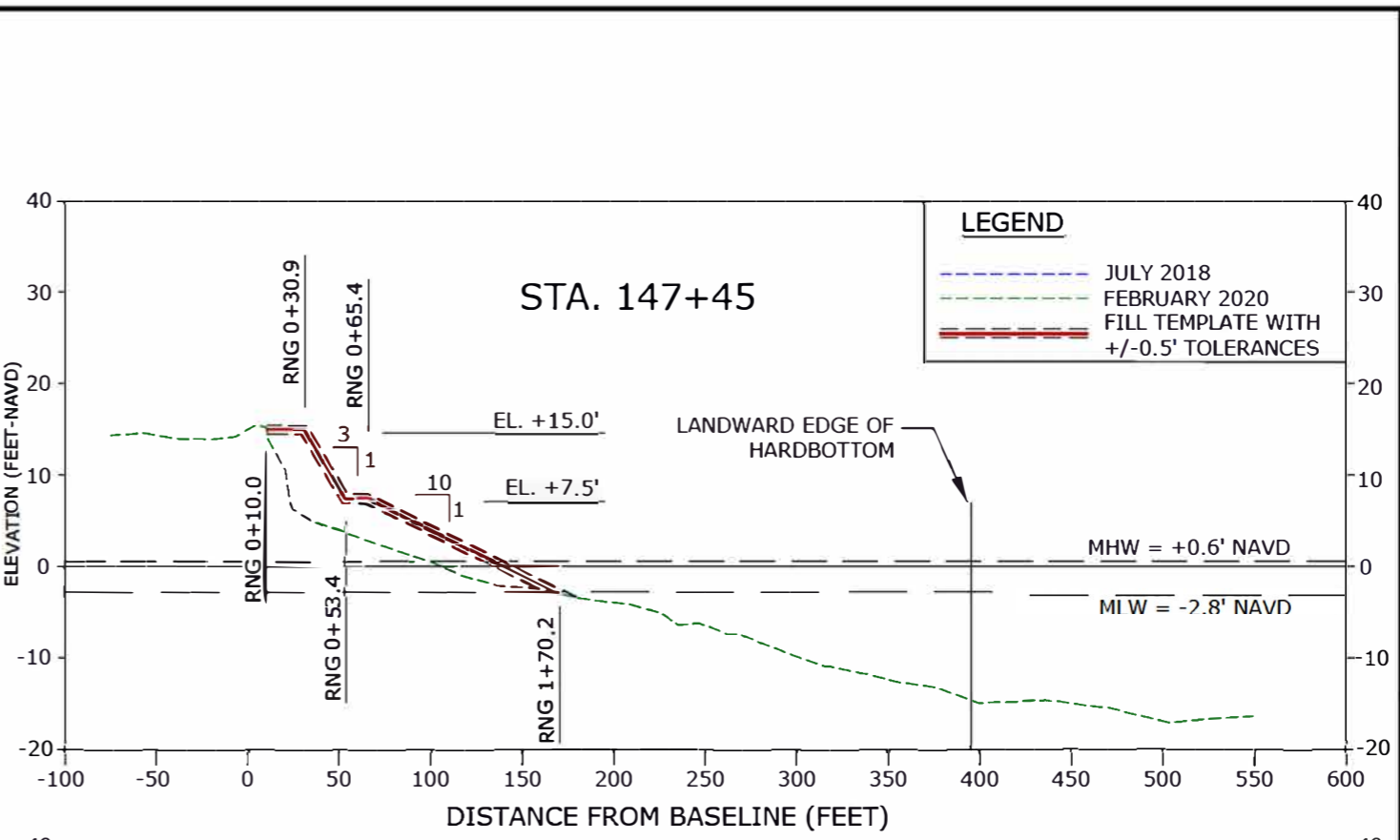
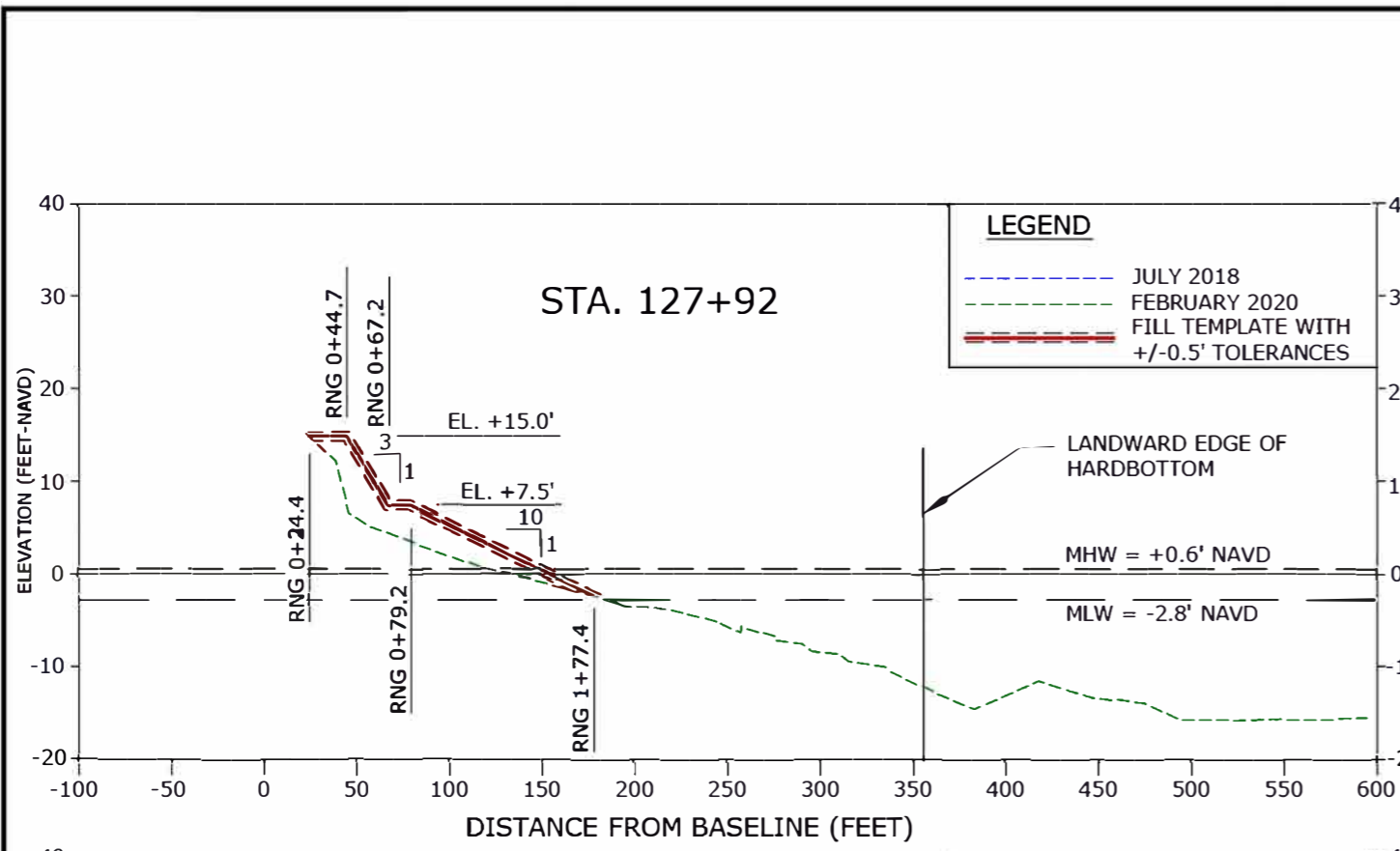
D A T E

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH. (561) 391-8102
FAX (561) 391-9116
C.O.A. FL #9317

REVISIONS	DATE	DESCRIPTION

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
XS-3
SHEET 34 OF 44



- NOTES:**
- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
 - 2019 LANDWARD EDGE OF HARDBOTTOM (DIVER VERIFIED AND SIDESCAN SONAR) DELINEATED BY APTIM DATED DECEMBER 2019.
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CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046 _____ DATE _____

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

REVISIONS	No.	Date	Description

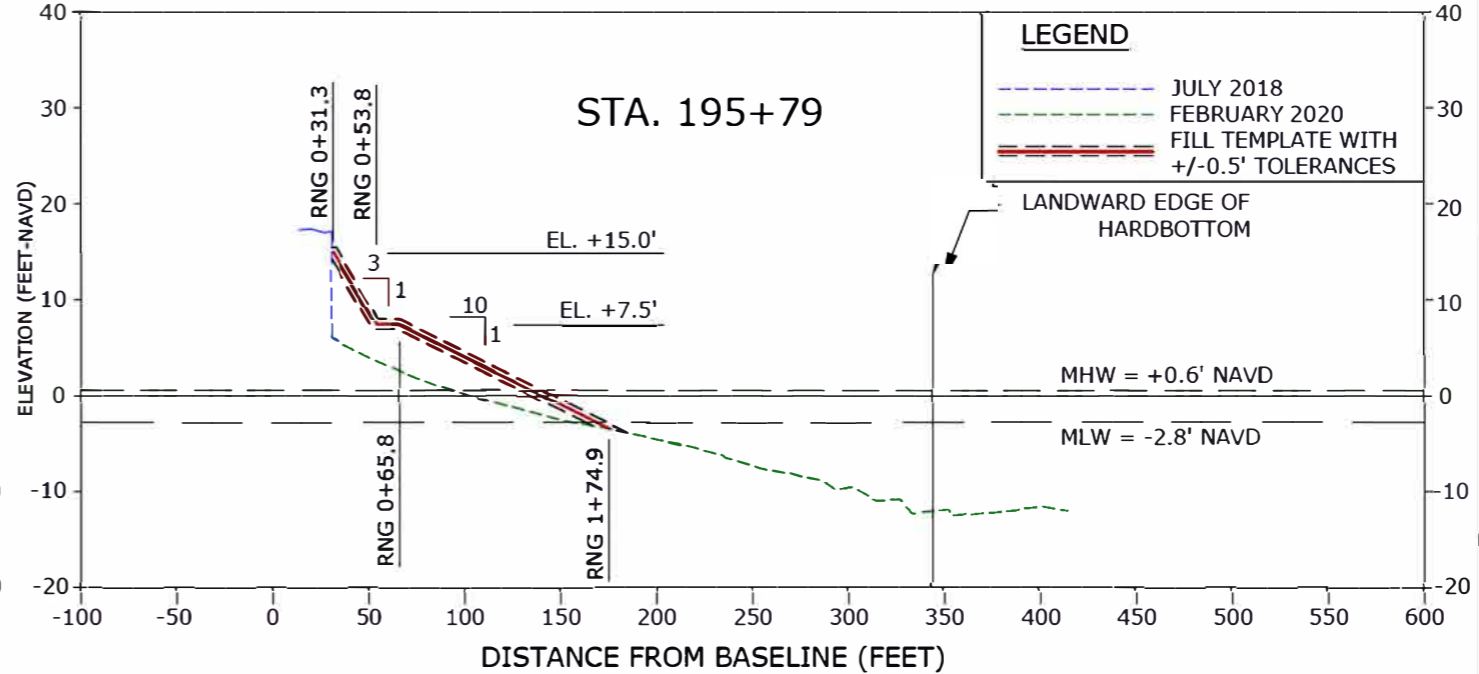
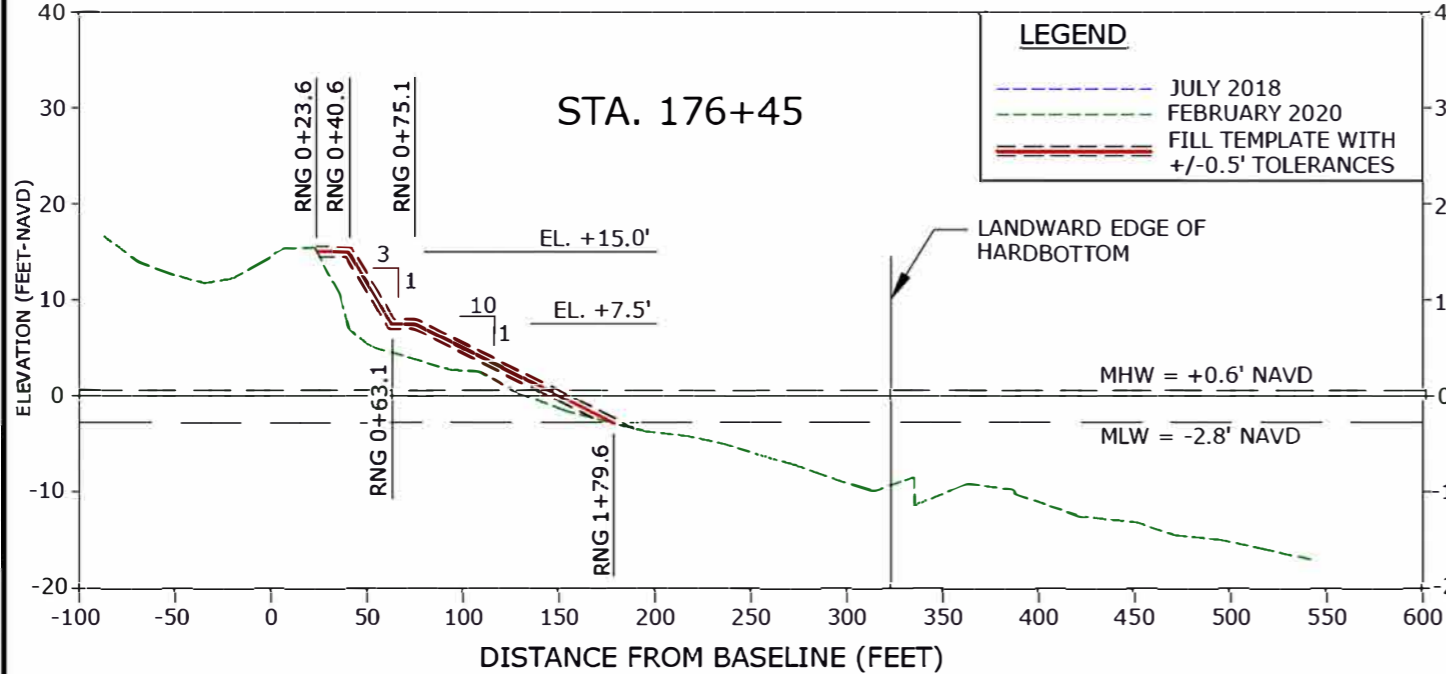
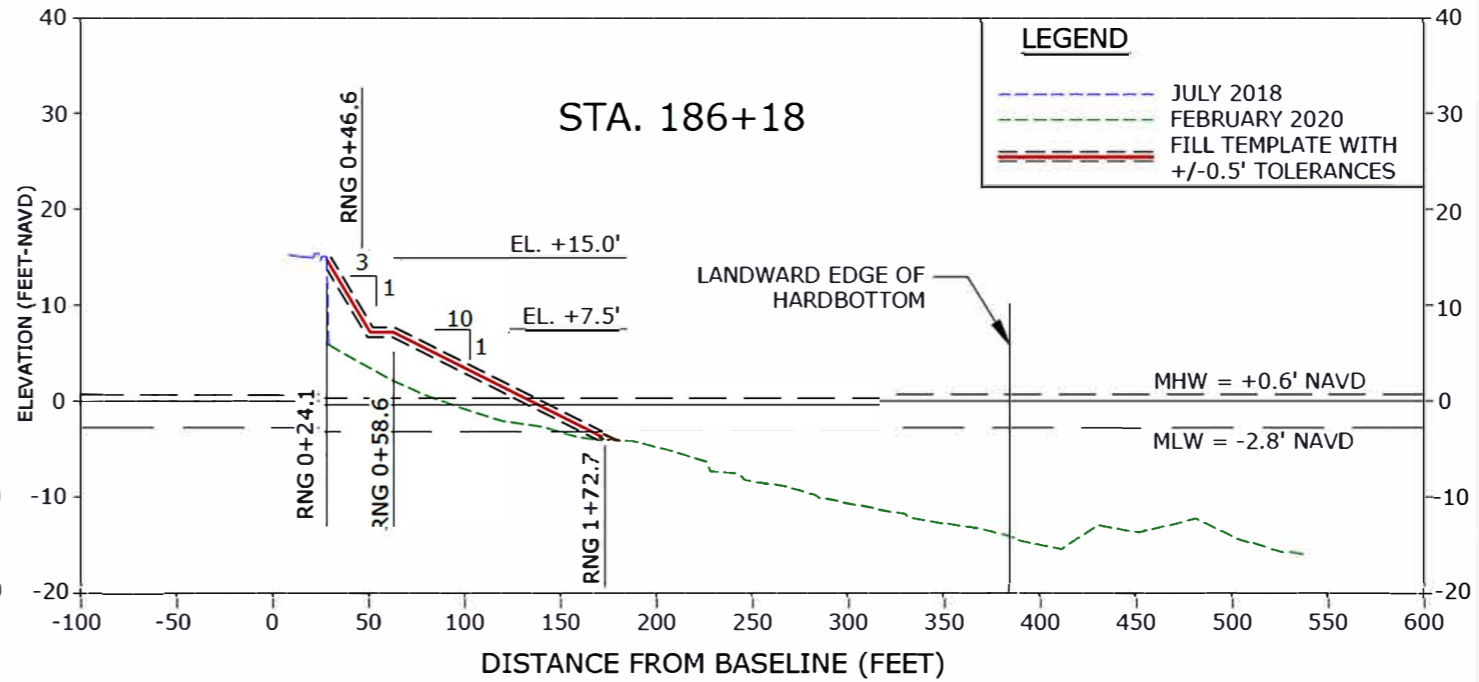
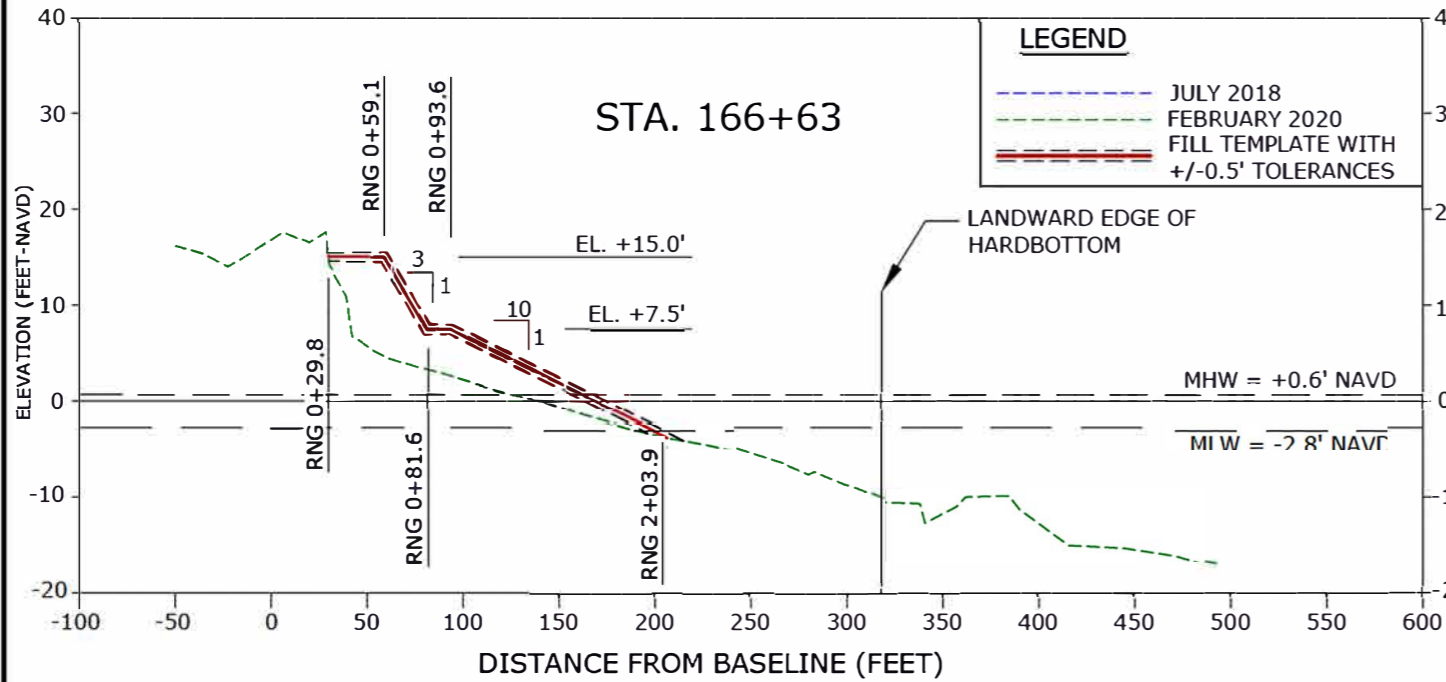
Checked by:	DM	Date:	
Reviewed by:	CP		
Submitted by:	CP		
Comm. No.:	63123571-4		

AS NOTED

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO. **XS-4**

SHEET 35 OF 44



NOTES:

- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
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CERTIFICATION:
I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046

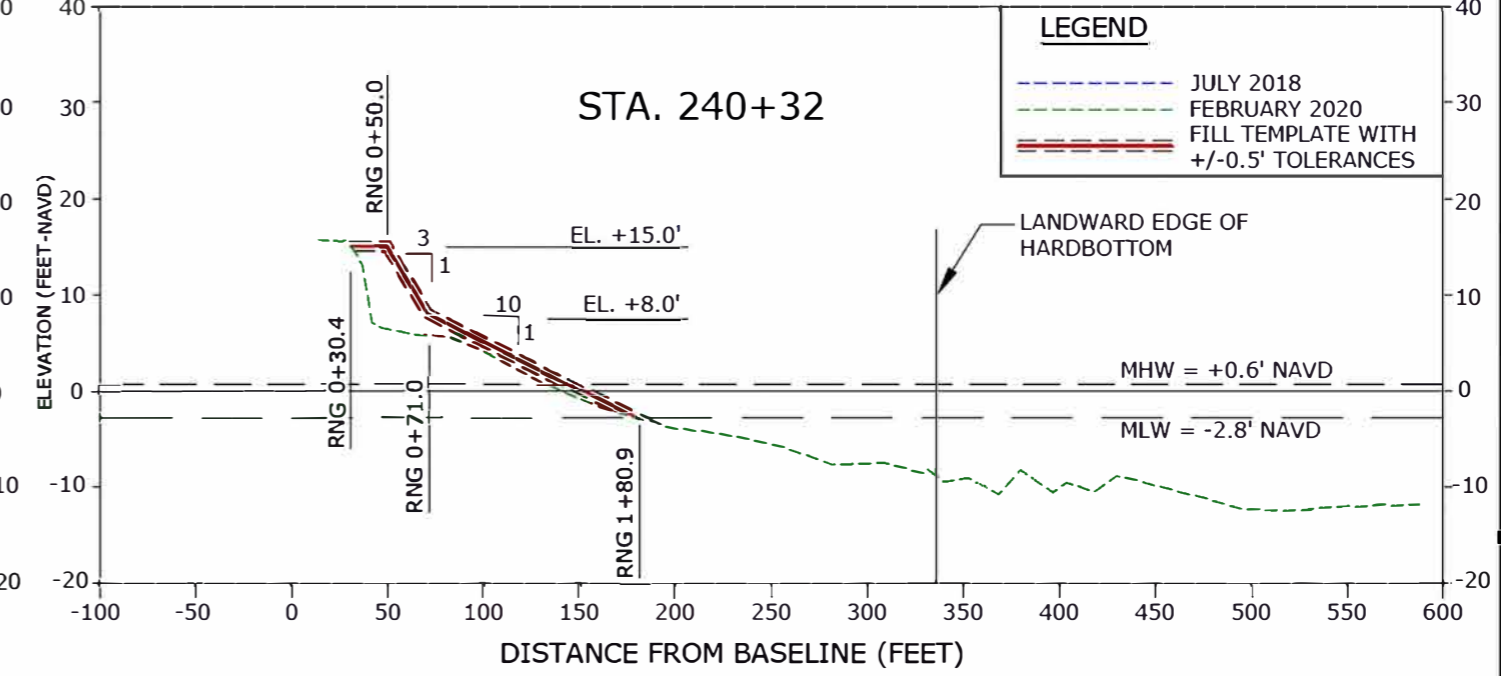
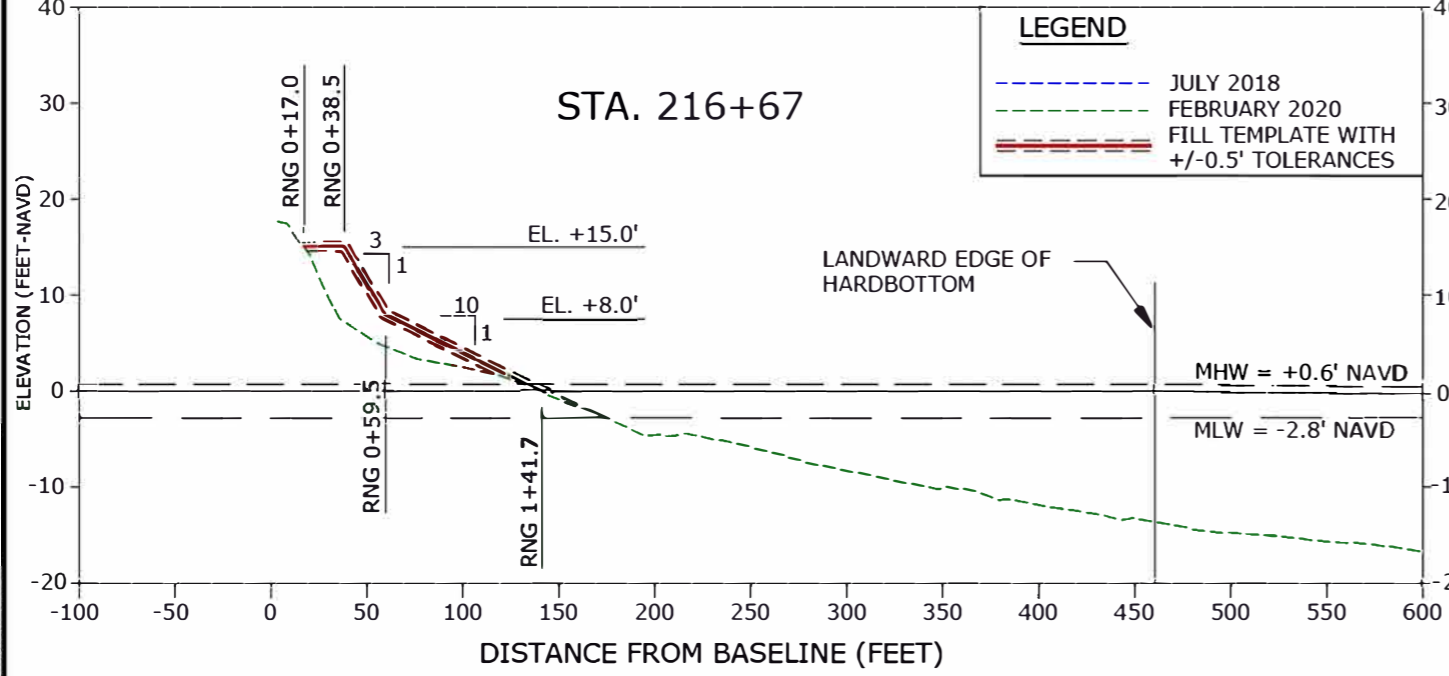
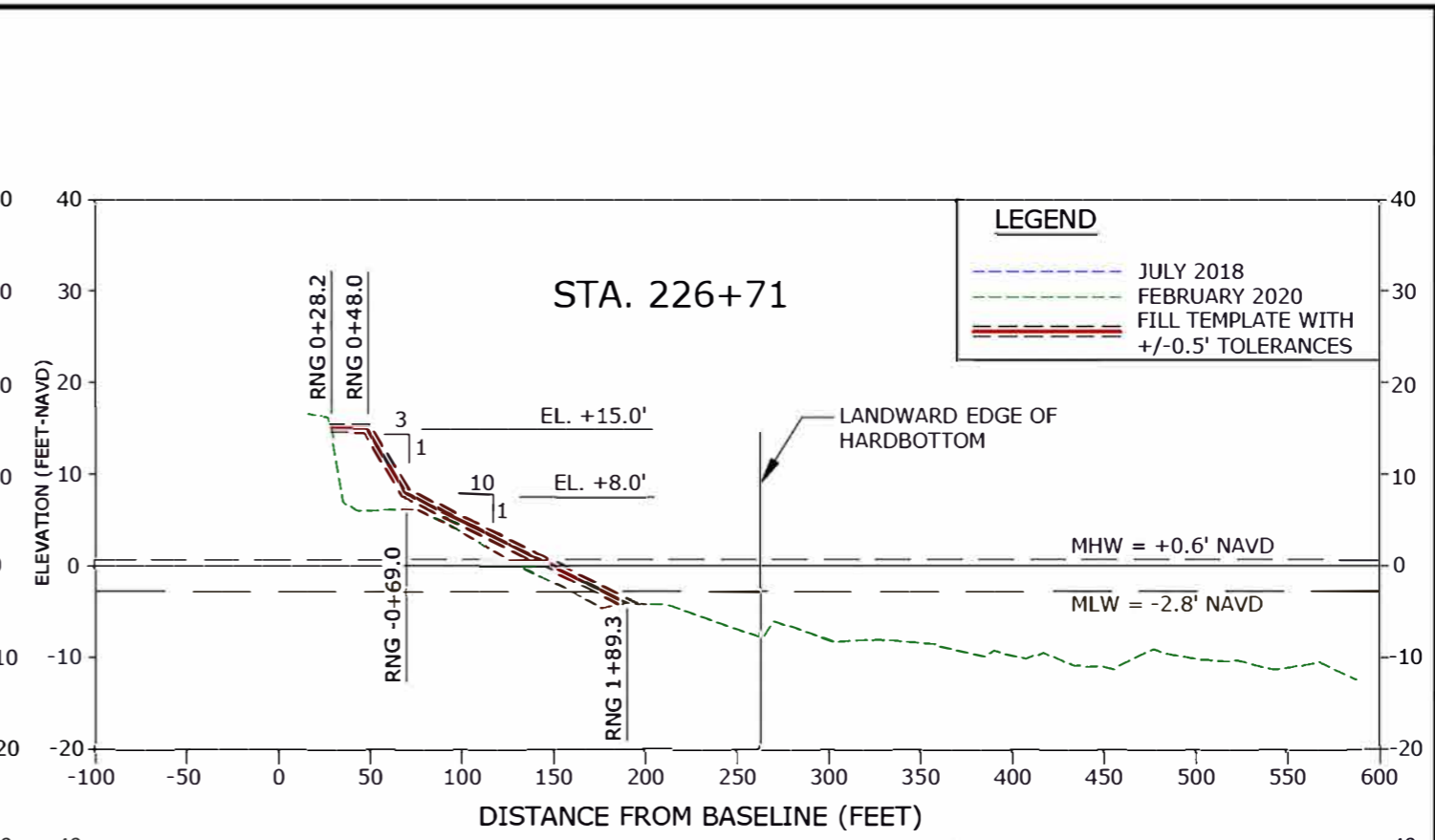
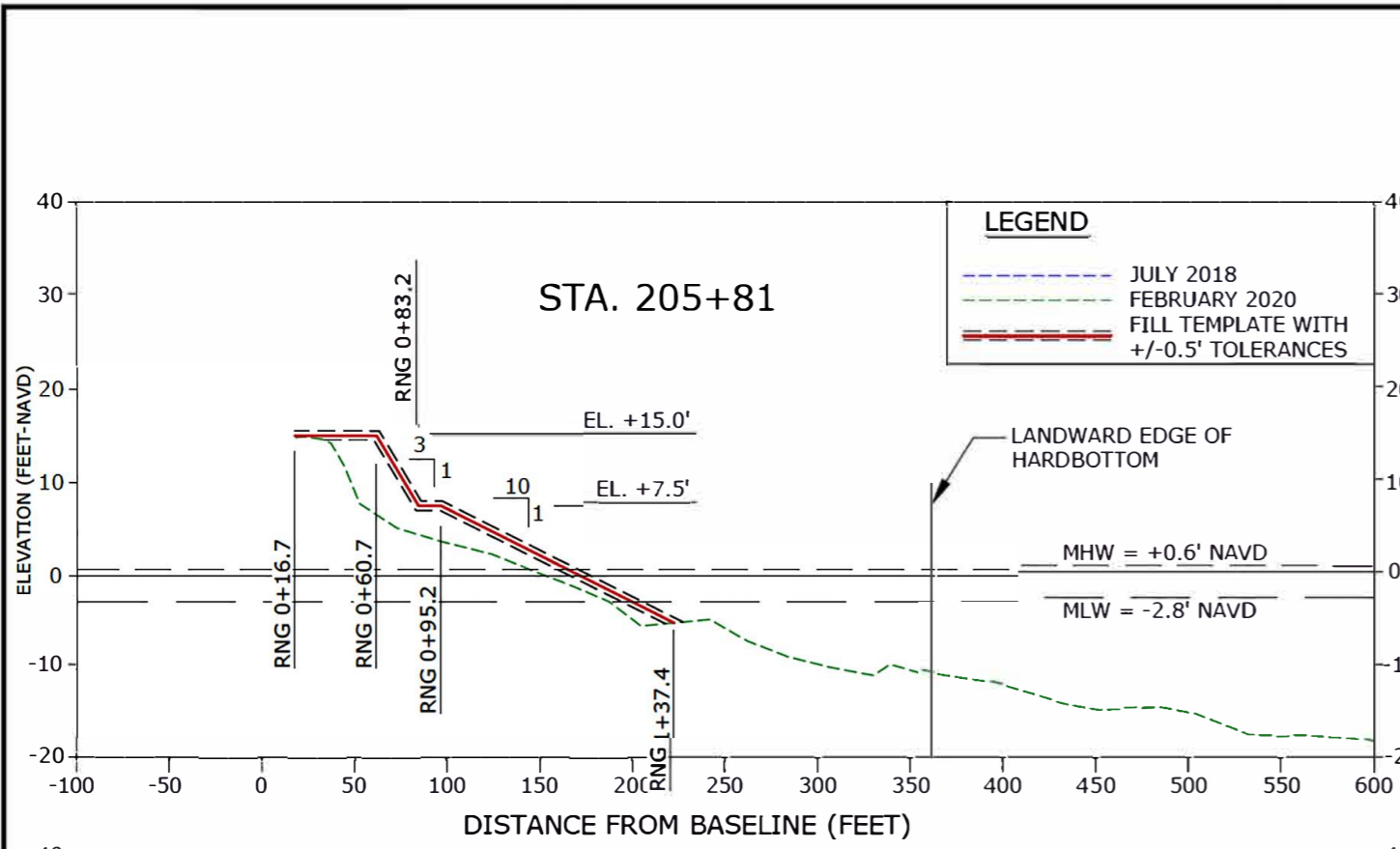
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REVISIONS	No.	Date	Description

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.

XS-5



NOTES:

- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
- 2019 LANDWARD EDGE OF HARDBOTTOM (DIVER VERIFIED AND SIDESCAN SONAR) DELINEATED BY APTIM DATED DECEMBER 2019.
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- REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.

CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH
 THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046

DATE

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431
 PH. (561) 391-8102
 FAX (561) 391-9116
 C.O.A. FL #9317

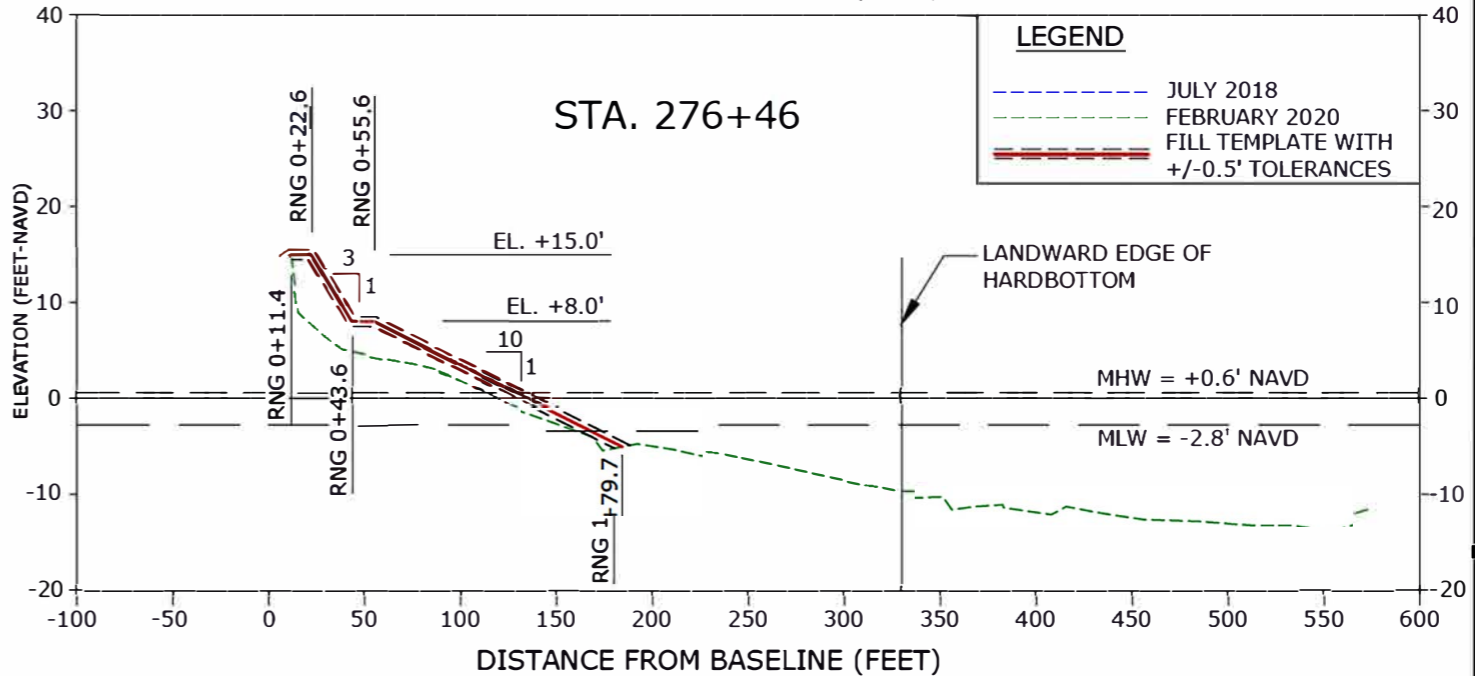
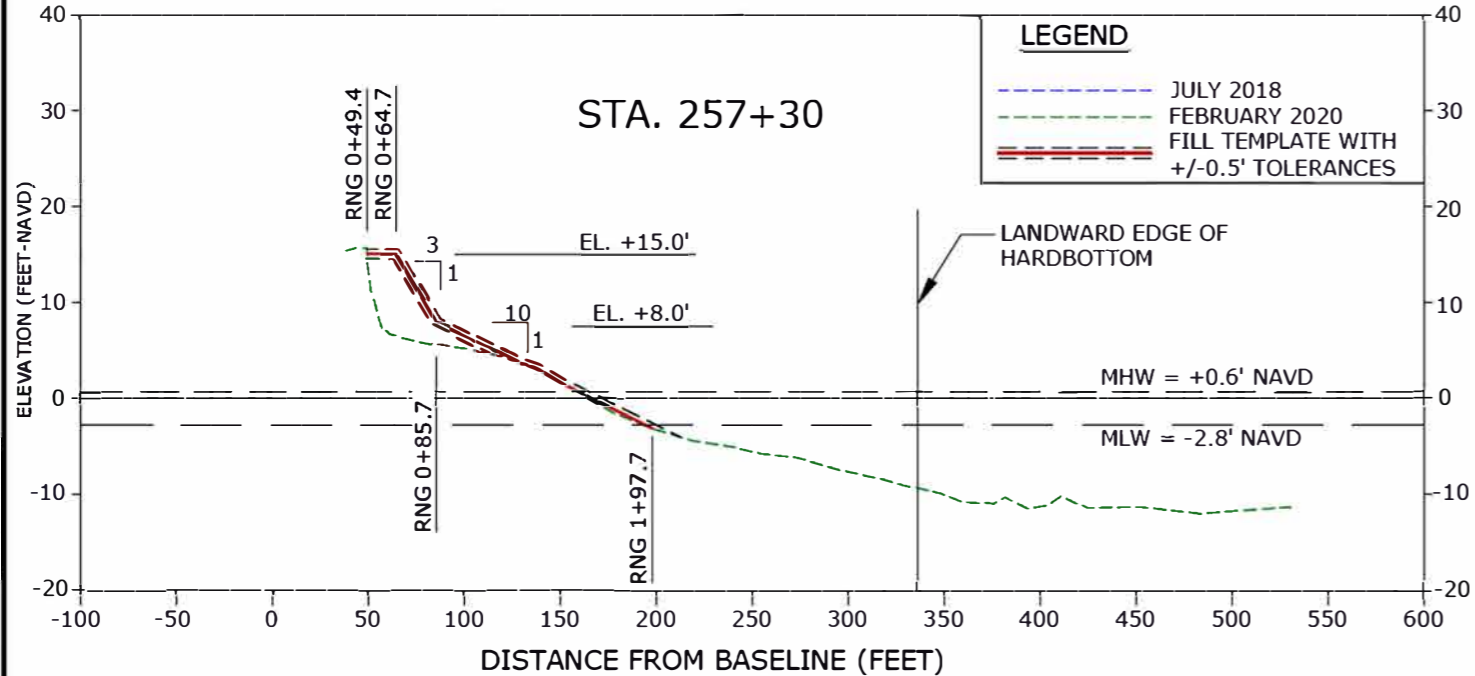
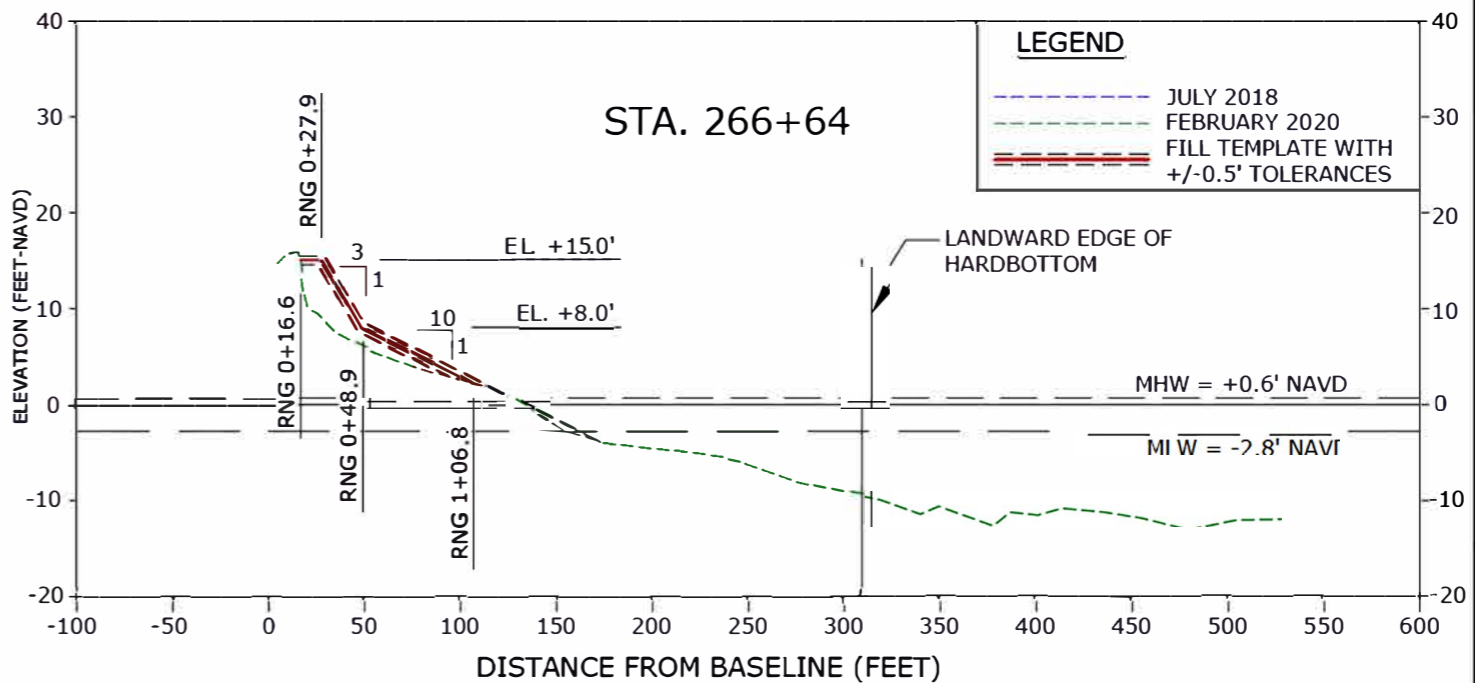
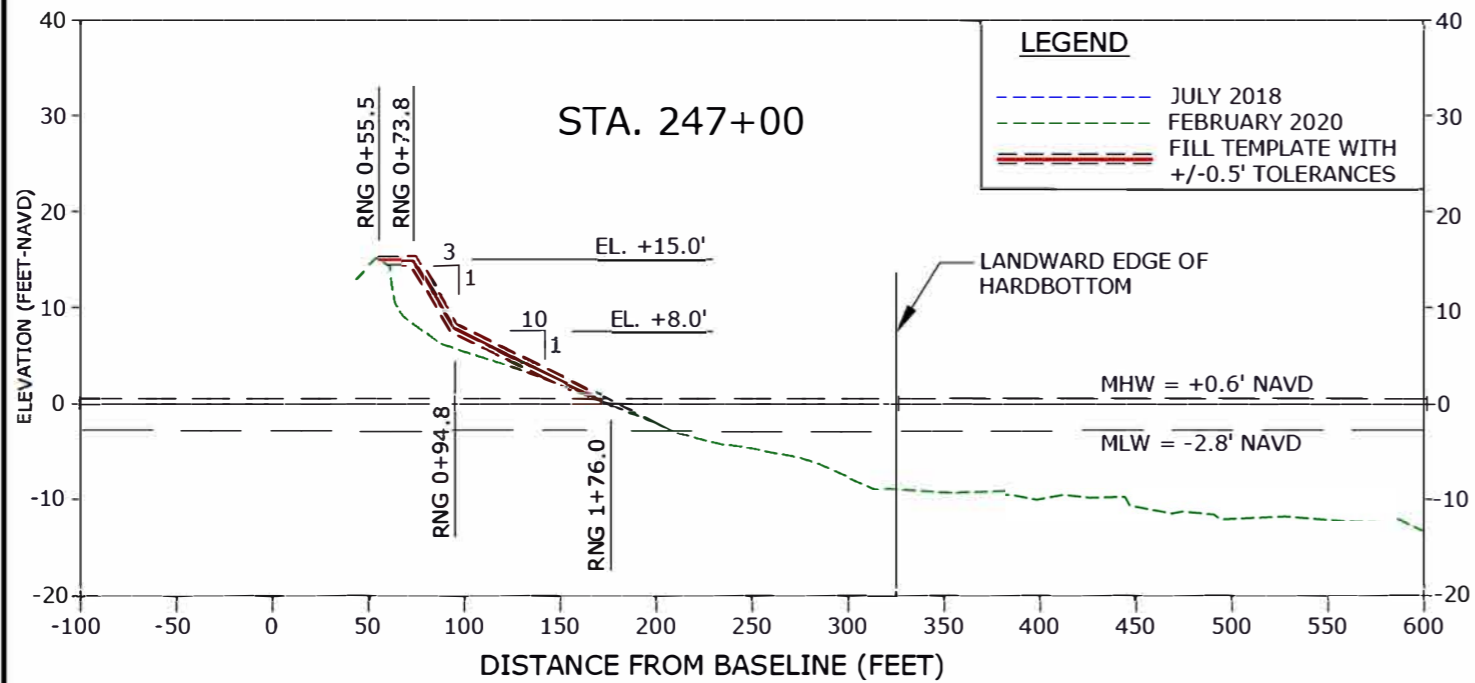
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CP	KE	CP				
CP	KE	CP				
CP	KE	CP				

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA
 CROSS SECTIONS

DRAWING NO.

XS-6

SHEET 37 OF 44



NOTES:

- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
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CERTIFICATION:
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DOUGLAS W MANN, P.E. NO. 44046

DATE

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PH. (861) 391-8102
FAX (861) 391-9116
C.O.A. FL #9317

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431

REVISIONS	No.	Date	Description

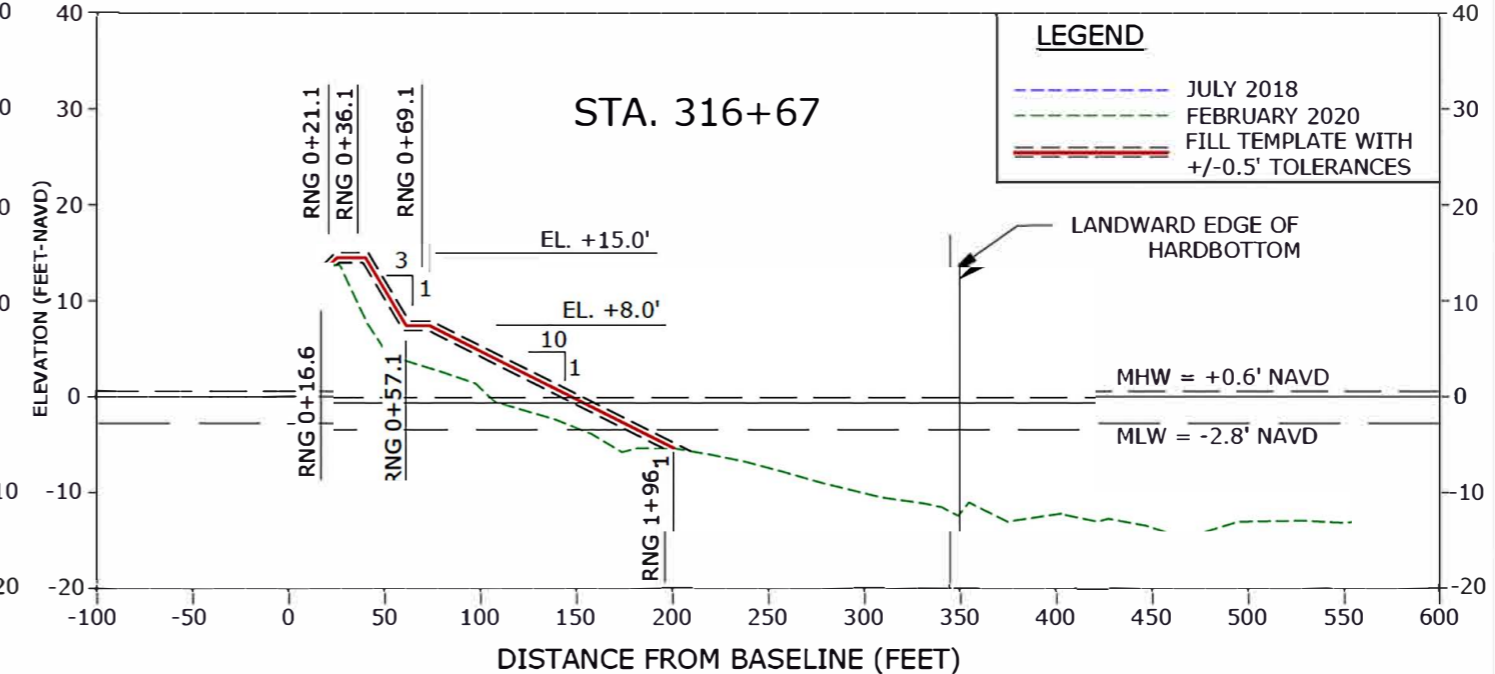
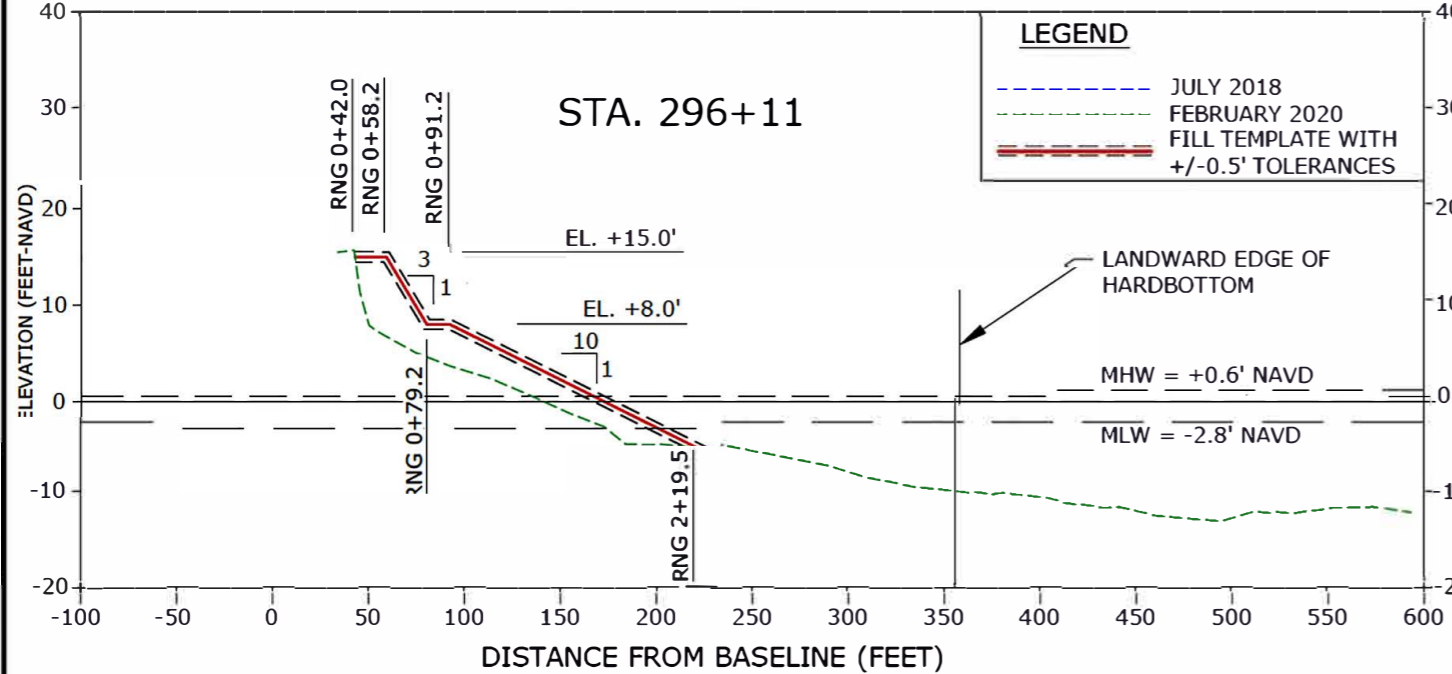
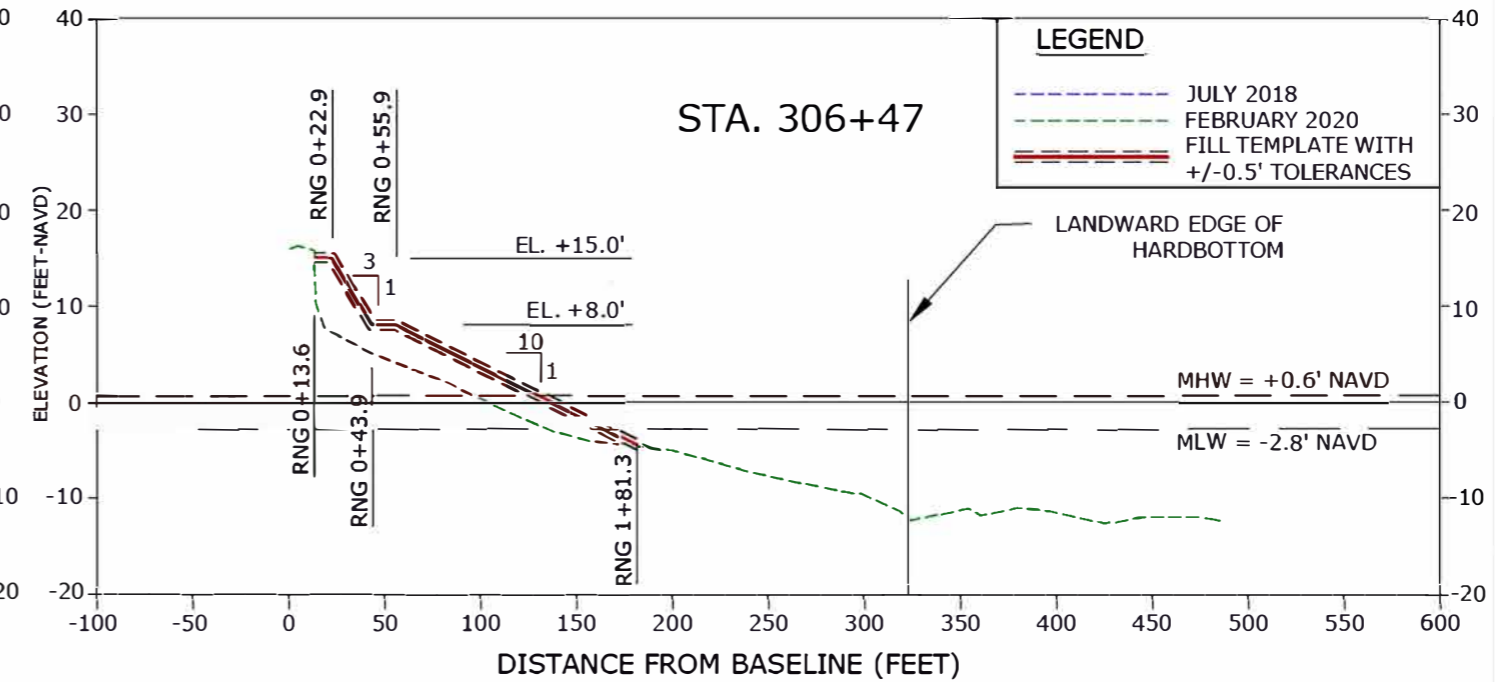
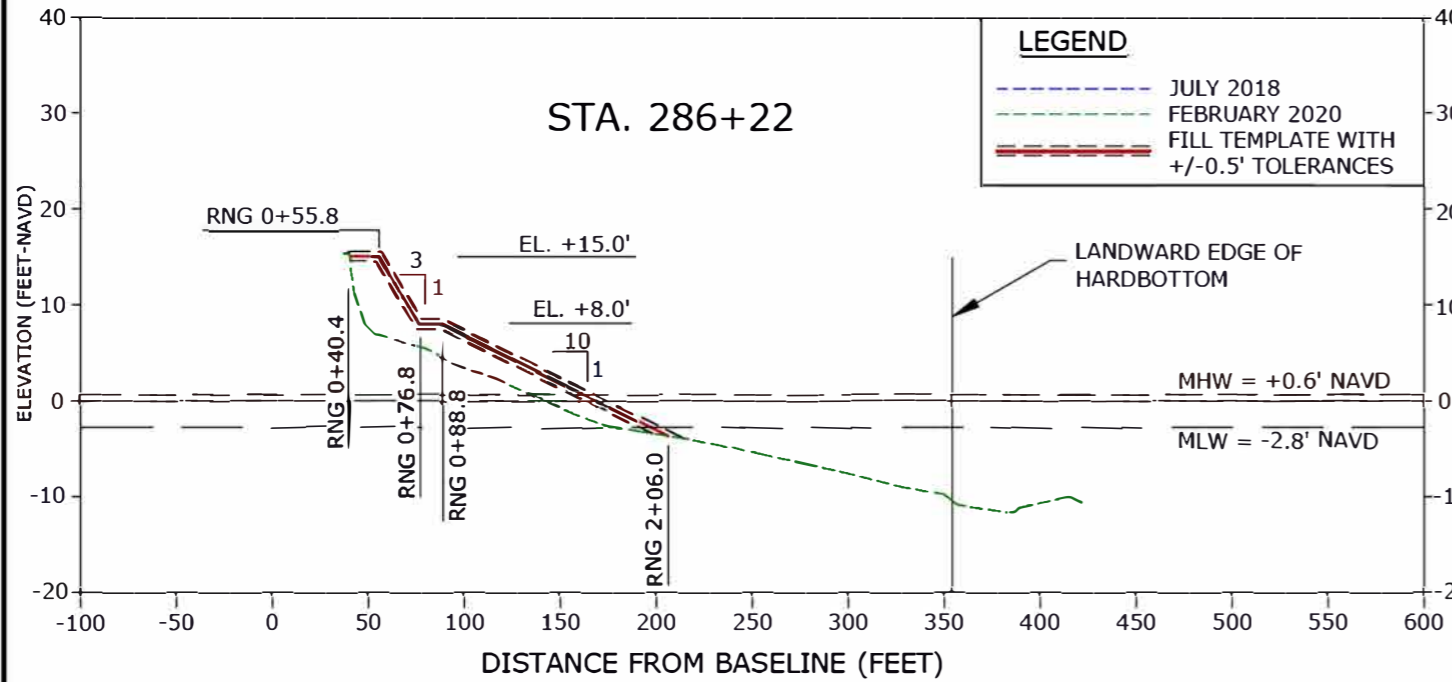
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Designed by:	CP
Drawn by:	KE
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Date:	07/16/20
AS NOTED	63123571-4

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA
CROSS SECTIONS

DRAWING NO.

XS-7

SHEET 38 OF 44



NOTES:

- ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
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- REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.

CERTIFICATION:
I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH
THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046

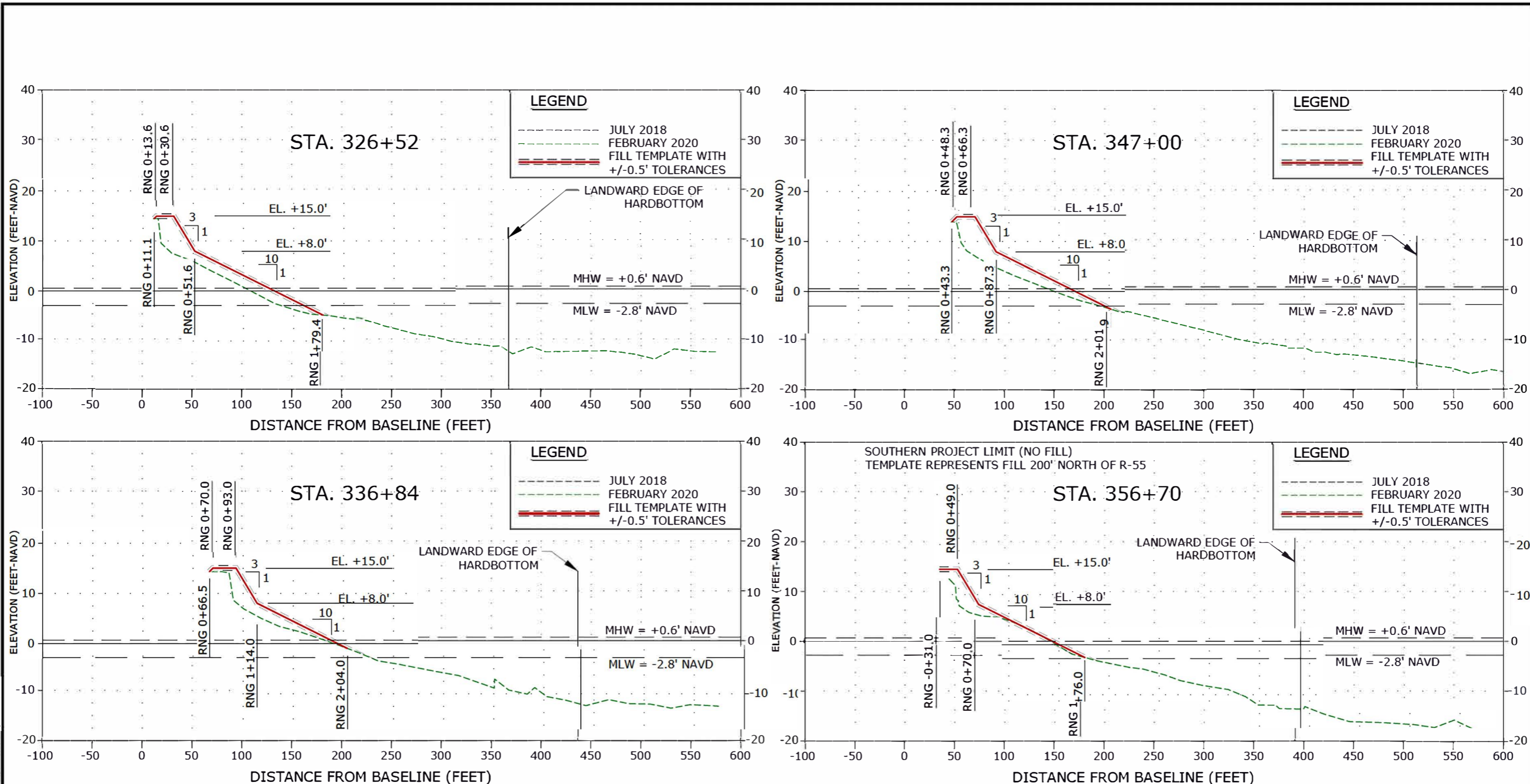
DATE

REVISIONS	No.	Date	Description

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.

XS-8



NOTES:

1. ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. 2016 LANDWARD EDGE OF HARDBOTTOM DELINEATED BY CSA OCEAN SCIENCES, INC. DATED JULY 2016.
3. 2019 LANDWARD EDGE OF HARDBOTTOM (DIVER VERIFIED AND SIDESCAN DELINEATED BY APTIM DATED DECEMBER 2019).
4. LANDWARD EDGE OF HARDBOTTOM REPRESENTS EITHER THE 2016 DIVER DELINEATED, 2019 DIVER DELINEATED, OR 2019 SIDESCAN SONAR DELINEATED EDGE OF HARDBOTTOM, WHICHEVER IS MORE LANDWARD.
5. BEACH PROFILE SURVEYS COLLECTED BY MORGAN AND EKLUND, INC. JULY 2018 AND FEBRUARY 2020.
6. INTERSECTION OF DUNE CREST WITH EXISTING GRADE TO BE FIELD DETERMINED. IF NECESSARY, SLOPE DOWN NO STEEPER THAN 1V:5H.
7. REFER TO SHEET 41 FOR TYPICAL DUNE SECTION TIE-IN EXAMPLE.

CERTIFICATION:
 I CERTIFY THAT THESE PLANS ARE IN COMPLIANCE WITH
 THE APPLICABLE SECTIONS OF 62B-41, F.A.C.

DOUGLAS W MANN, P.E. NO. 44046 _____ DATE _____

APTIM ENVIRONMENTAL & INFRASTRUCTURE, LLC
 PH: (661) 391-8102
 FAX: (661) 391-9116
 C.O.A., FL., #9317

2481 N.W. BOCA RATON BOULEVARD
 BOCA RATON, FLORIDA 33431

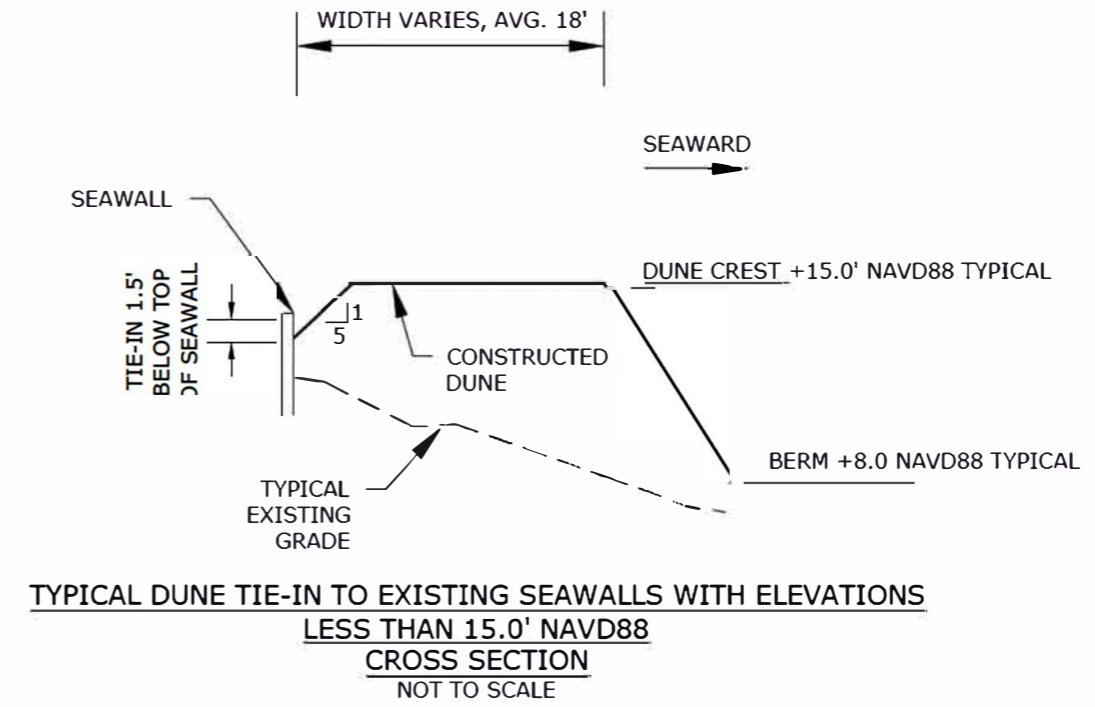
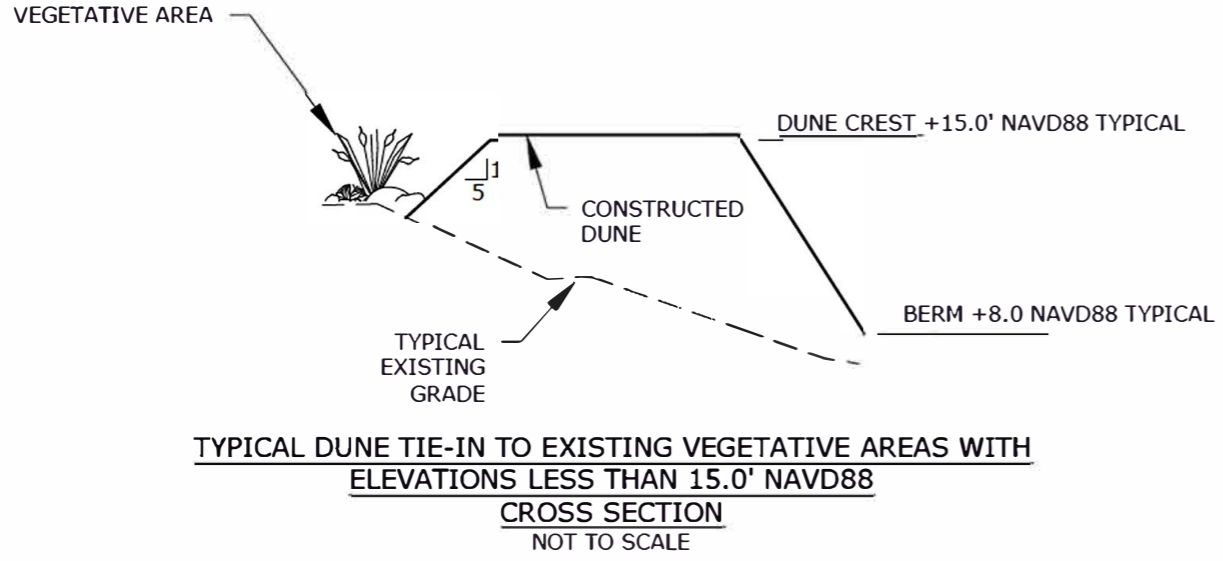
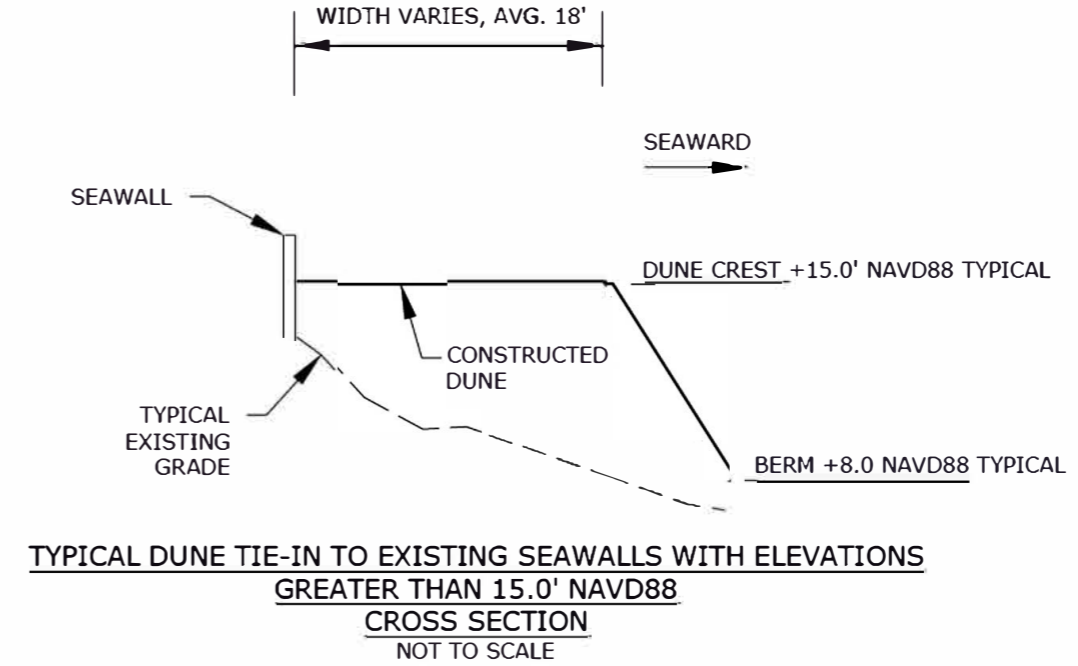
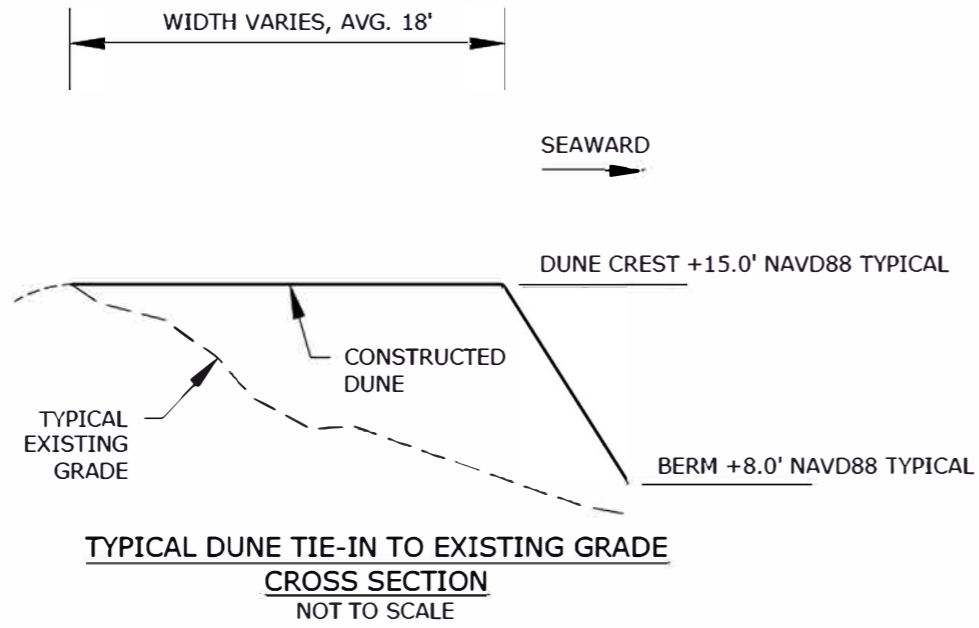
REVISIONS	Description

Designed by: CP	Reviewed by: KC	Submitted by: CP	Comm. No.:
Drawn by: CP	Checked by: CP	Date: 04/16/20	Scale:

SECTOR 3
 BEACH AND DUNE RENOURISHMENT PROJECT
 CONSTRUCTION PLANS
 INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
XS-9

SHEET 40 OF 44



NOTES:

1. SITE SPECIFIC FIELD ADJUSTMENTS TO THE CONSTRUCTION TEMPLATE MAY BE NECESSARY AT LOCATIONS SUCH AS SEAWALLS, OUTFALLS, BEACH ACCESS POINTS AND DUNE OVERWALKS.
2. DUNE CREST ELEVATION VARIES BETWEEN +11.0', +12.0', AND +15.0' NAVD88 DEPENDING ON LOCATION. REFER TO CROSS SECTIONS FOR DUNE CREST ELEVATIONS.
3. BERM CREST ELEVATION VARIES BETWEEN +7.0', +7.5', AND +8.0' NAVD88 DEPENDING ON LOCATION. REFER TO CROSS SECTIONS FOR BERM CREST ELEVATIONS.

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DATE

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BOCA RATON, FLORIDA 33431
www.APTIM.com

NO.	DATE	DESCRIPTION
1	10/2/19	REVISIONS - 1

Reference File:
AS NOTED
63123571-4

Designed by: GP
Checked by: DM
Drawn by: GP
Reviewed by: GP
Sub: 07/16/20
Submitted by: GP
No. 63123571-4
Date: Design on

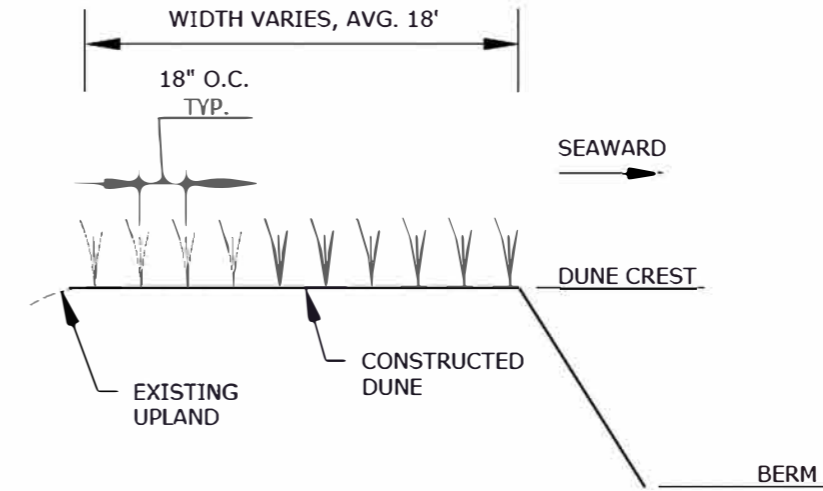
SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.
D-1

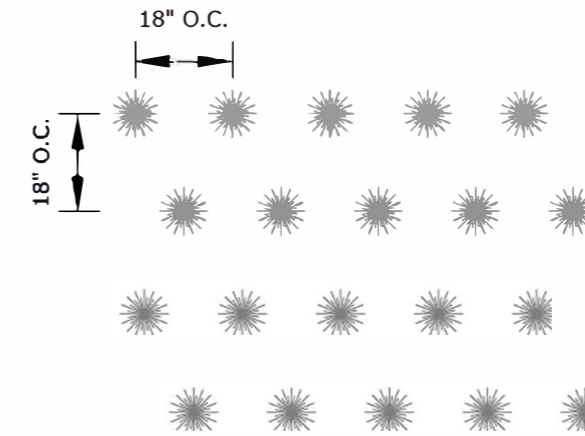
SHEET 41 OF 44

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PLANTING DETAIL					
PLANT TYPE	SCIENTIFIC NAME	PERCENT DISTRIBUTION	QUANTITY (APPROX.)	SIZE	SPACING
SEA OATS	UNIOLA PANICULATA	80% to 85%	160,568	LINER	18" O.C.
BITTER PANICGRASS	PANICUM AMARUM	10% TO 15%	20,071	LINER	18" O.C.
RAILROAD VINE	IPOMOEA PES-CAPRAE	4% TO 8% (RELATIVELY EQUAL ABUNDANCE OF EACH)	10,036	LINER	18" O.C.
DUNE SUNFLOWER	HELIANTHUS DEBILIS		10,035	LINER	18" O.C.



TYPICAL DUNE PLANTING
CROSS SECTION
NOT TO SCALE



TYPICAL DUNE PLANTING
STAGGERED LAYOUT
NOT TO SCALE

NOTES:

- CONTRACTOR SHALL FIELD LOCATE DUNE AREA PRIOR TO PLANTING. TEMPORARY STAKES DENOTING SEAWARD LIMITS SHALL BE PROVIDED. CONTRACTOR SHALL OBTAIN APPROVAL OF LOCATION FROM COUNTY OR ENGINEER PRIOR TO PLANTING.
- PLANTS SHALL BE INSTALLED FOLLOWING GOOD HORTICULTURE PRACTICES WITH A SLOW RELEASE FERTILIZER IN EACH HOLE.
- CONTRACTOR SHALL PROVIDE INITIAL WATERING. CONTRACTOR SHALL COORDINATE WITH COUNTY REGARDING USE OF LOCAL COUNTY SOURCES, OTHERWISE CONTRACTOR SHALL PROVIDE WATER. CONTRACTOR SHALL PROVIDE SUPPLEMENTAL WATERING AS NEEDED FOR 30 DAYS DEPENDING ON RAINFALL. AT END OF 30 DAYS, CONTRACTOR SHALL PROVIDE COUNTY WITH WRITTEN WATERING INSTRUCTIONS.
- CONTRACTOR SHALL WARRANTY PLANTS AT THE FOLLOWING SCHEDULE:

0-30 DAYS	100% SURVIVING
30-90 DAYS	80% SURVIVING
- CONTRACTOR SHALL MONITOR PLANTING MONTHLY FOR 3 MONTHS. AT THE END OF 3 MONTHS, A SUMMARY REPORT OF SURVIVAL AND RECOMMENDATION FOR MAINTENANCE SHALL BE PROVIDED TO COUNTY.
- ALL DUNE VEGETATION WORK SHALL BE IN COMPLIANCE WITH ALL FDEP PERMIT REQUIREMENTS.
- NO EXISTING VEGETATION TO BE REMOVED.
- THE ROOT BALL FOR BOTH GRASSES SPECIES SHALL BE NO LESS THAN 1" X 1" X 2.5" DEPTH. THE ROOT BALL FOR THE THREE GROUND COVER SPECIES SHALL BE NO LESS THAN 1.5" X 1.5" X 2.5" DEPTH.
- UNIOLA PANICULATA LINERS SHALL BE MULTI-STEMMED PLANTS (AT LEAST 2 STEMS). IPOMOEA PES-CAPRAE LINERS SHALL BE MULTI-STEMMED PLANTS (AT LEAST 2 STEMS). HELIANTHUS DEBILIS LINERS SHALL BE MULTI-STEMMED PLANTS (AT LEAST 2 STEMS). PANICUM AMARUM LINERS CAN BE SINGLE-STEMMED PLANTS. THE PLANT MATERIAL IN EACH LINER CONSTITUTES ONE DUNE GRASS PLANT, REGARDLESS OF THE NUMBER OF VIABLE STEMS IN THE LINER.
- THE LINERS FOR BOTH GRASSES SPECIES SHALL BE NO LESS THAN 12' TALL FROM THE TOP OF THE ROOT BALL TO THE TIP OF THE LONGEST LEAVE. THE LINERS FOR ALL THREE SPECIES OF GROUND COVERS SHALL BE NO LESS THAN 6" TALL FROM THE TOP OF THE ROOT BALL TO THE TIP OF THE LONGEST LEAVE.

CERTIFICATION:
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REVISIONS	DATE	BY	DESCRIPTION
1	10/27/19	DM	
		CP	
		CP	
		CP	

SECTOR 3
BEACH AND DUNE RENOURISHMENT PROJECT
CONSTRUCTION PLANS
INDIAN RIVER COUNTY, FLORIDA

DRAWING NO.

D-2

SHEET 42 OF 44