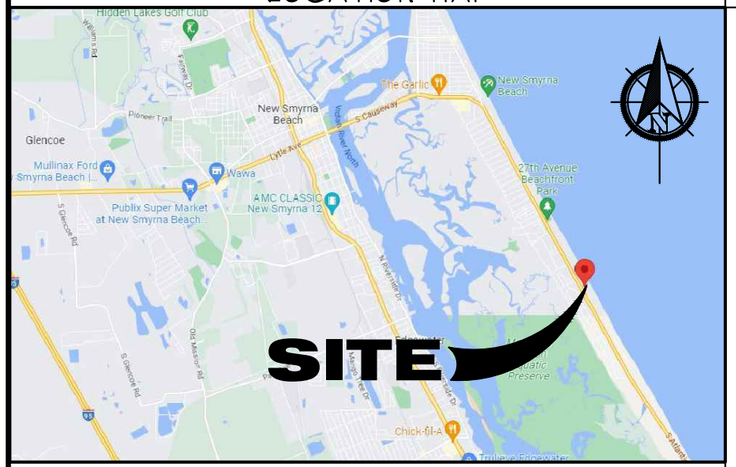
STRUCTURAL PLANS FOR A NEW SEAWALL INSTALLATION AT:

SEA DUNES STARFISH

4315 SOUTH ATLANTIC AVENUE
NEW SMYRNA BEACH, FLORIDA 32169

LOCATION MAP



SYMBOLS LEGEND

# / A# — ELEVATION	0'-0" — ELEVATION HT
# / A# — SECTION	# — DOOR NUMBER
# / A# — DETAIL	# — WINDOW NUMBER
# — KEY NOTE	# — REVISION NUMBER
1 — WALL TYPE	01 — ROOM NAME

⚠ ABBREVIATIONS

ALUM	ALUMINUM
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CMU	CONCRETE MASONRY UNIT
CMI	CRANE MATERIALS INTERNATIONAL
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
C/L	CENTER LINE
DBL	DOUBLE
DIA	DIAMETER
DIM	DIMENSION
EA	EACH
EC	EVERCOMP
ELEC	ELECTRICAL
ELEV/EL	ELEVATION
EQ	EQUAL
EOR	ENGINEER OF RECORD
ESP	EVERLAST SYNTHETIC PRODUCTS
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FRP	FIBER-REINFORCED POLYMER
FT	FEET
GALV	GALVANIZED
GBFS	GRANULATED BLAST FURNACE SLAG
HDG	HOT DIPPED GALVANIZED
HP	HELICAL PILE
INFO	INFORMATION
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
M.G.	MARINE GRADE
MFGR/MFR	MANUFACTURER
MHWL	MEAN HIGH WATER LINE
MIN	MINIMUM
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
PLYWD	PLYWOOD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PT	PAINT/PRESSURE TREATED/POST TENSION
REBAR	REINFORCING BAR
REF	REFENCE
REINF	REINFORCE
REQ'D	REQUIRED
RO	ROUGH OPENING
SG	SHOREGUARD
SIM	SIMILAR
UC	ULTRA COMPOSITE
VIF	VERIFY IN FIELD
YD	YARD

PROJECT DIRECTORY

ENGINEER OF RECORD - FLORIDA LICENSE NO. 15113

CRA Charles R. Adams & Associates, Inc.
STRUCTURAL ENGINEERS

414 Canal Street - New Smyrna Beach, FL 32168 - 386.426.5583
C.A. 4180

WIND LOAD DATA

BASIC WIND SPEED: 140
CATEGORY II ⚠ OPEN STRUCTURE
WIND EXPOSURE D

WIND PRESSURE FOR COMPONENTS & CLADDING: (ASD)

ZONE:	PRESSURE (psf):	
ZONE 1	+23.19	-42.39
ZONE 2	+23.19	-69.64
ZONE 3	+23.19	-54.00
ZONE 4	+32.91	-35.77
ZONE 5	+32.91	-43.48

JURISDICTION

CITY OF NEW SMYRNA BEACH

⚠ STATEMENTS OF COMPLIANCE

TO THE BEST OF MY KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES AND LAND DEVELOPMENT REGULATIONS.

I HEREBY CERTIFY THAT THE ENCLOSED DESIGN PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH FLORIDA ADMINISTRATIVE CODE RULE CHAPTER 62B-33.051.

INDEX of DRAWINGS

SCOPE OF WORK

COMMERCIAL - NEW EMERGENCY SEAWALL REPAIR

⚠ PROJECT CODE DATA

7th EDITION FLORIDA BUILDING CODE	2020
FLORIDA ADMINISTRATIVE CODE 62B-33	2020
VOLUSIA COUNTY CODE OF ORDINANCES - PART I - CHAPTER 50 - ARTICLE III - DIVISION 9 - SECTION 50-351	2023
ASCE 7-16	2016
USACE COASTAL ENGINEERING MANUAL	2002
USACE DESIGN OF COASTAL REVETMENTS, SEAWALLS, AND BULKHEADS	1995
USACE SHORE PROTECTION MANUAL VOLUMES I & II	1984
USACE DESIGN OF SHEET PILE WALLS	1994
DOD HANDBOOK - SEAWALLS, BULKHEADS, AND QUAY WALLS	2006
ACI 318 / 19	2022

DIGITAL SEAL

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY CHARLES R. ADAMS ON THE DATE INDICATED HERE. PRINTED COPIES, OF THIS DOCUMENT, ARE NOT CONSIDERED SIGNED AND SEALED THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Charles Adams
Digitally signed by Charles Adams
Date: 2023.04.18 00:34:35 -04'00'

REVISION LOG

	DATE	DESCRIPTION
⚠	3/14/23	DEP COMMENTS
⚠	3/30/23	EOR REVISIONS
⚠	4/7/23	DEP COMMENTS

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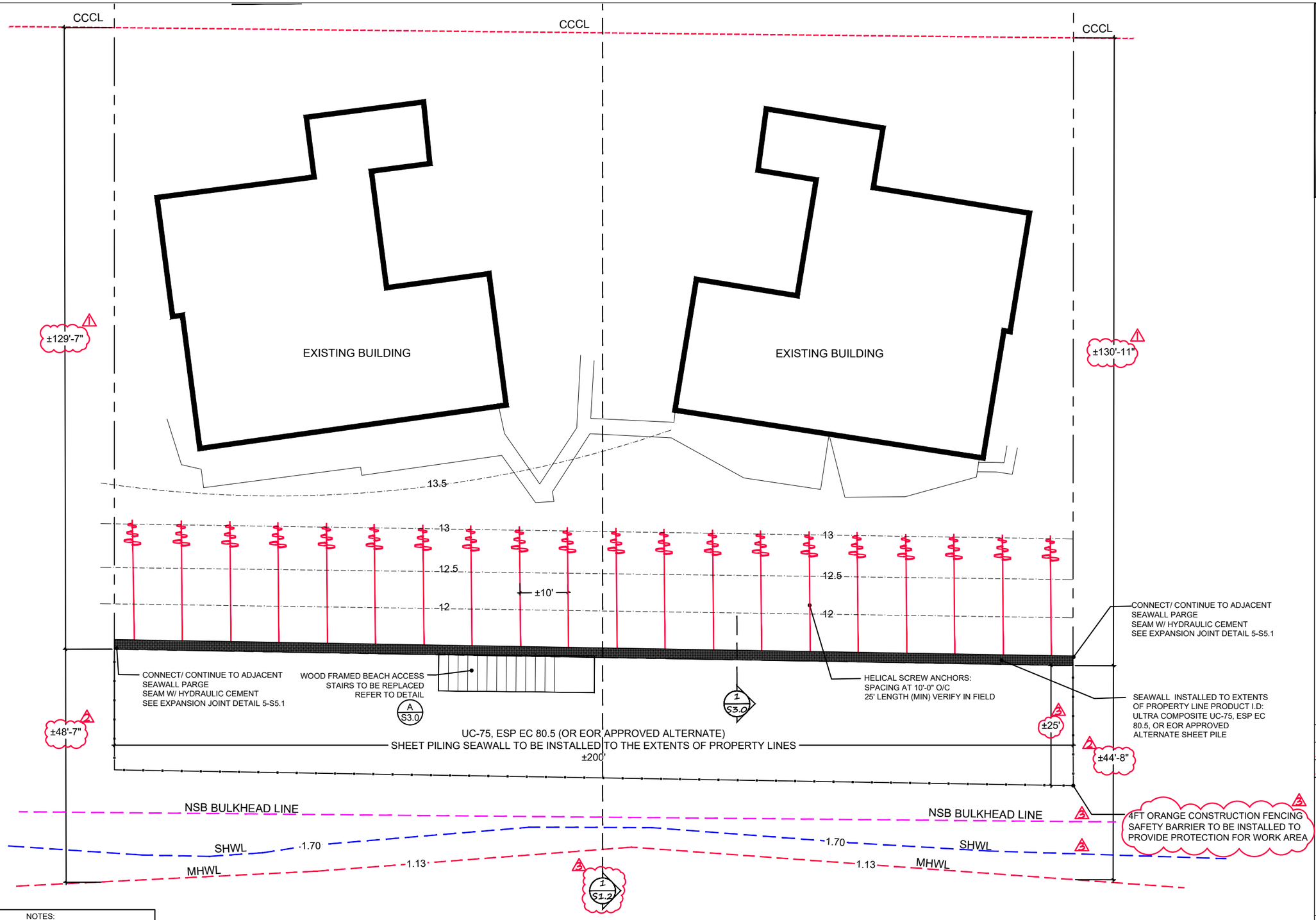
221205 - SEA DUNE STARFISH - CD SET.DWG



NOTES:

A. SITE PLAN DATA BASED ON BOUNDARY SURVEY PROVIDED BY SOUTHEASTERN SURVEYING & MAPPING CORPORATION
B. PROPOSED SEAWALL TO ALIGN WITH SEAWALLS ON ADJACENT PROPERTIES

1 S1.0 REPAIR PLAN
SCALE: 1" = 20'

VO R-181 (CLOSEST COASTAL RANGE MONUMENT)

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STRUCTURAL PLANS FOR A NEW SEAWALL INSTALLATION AT

SEA DUNE STARFISH

4315 SOUTH ATLANTIC AVENUE
NEW SMYRNA BEACH, FL 32169

NO	REMARKS	DATE
2	EOR REVISIONS	3/30/23
1	DEP COMMENTS	1/1/23

CHARLES R ADAMS LICENSE NO 15113 STATE OF FLORIDA PROFESSIONAL ENGINEER

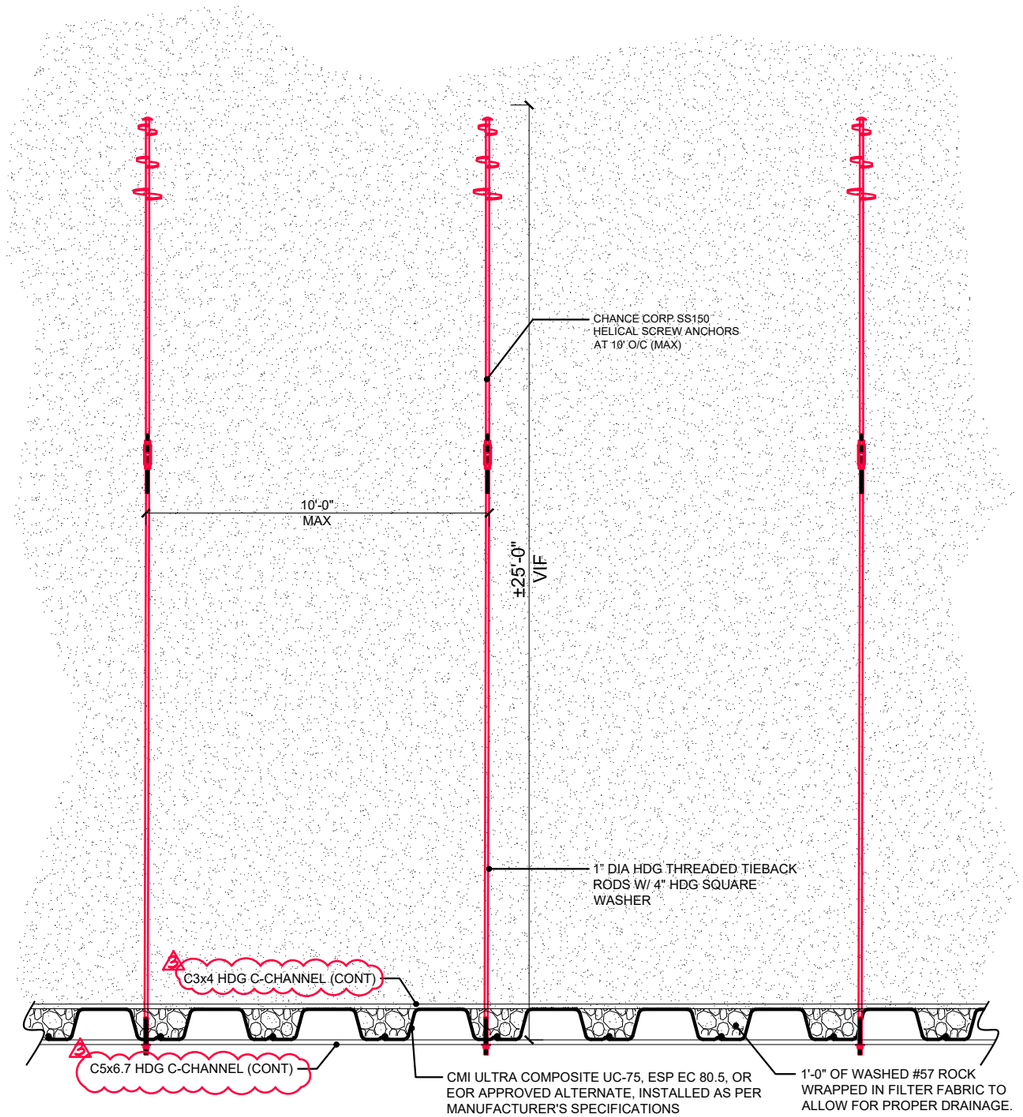
SITE PLAN

DRAWN BY	EAA
CHECKED BY	JAA
SCALE	AS NOTED
DATE	7 MAR 2023

SHEET 2 OF 11

S1.1

MATERIALS LIST			
UC-75, ESP EC 80.5 COMPOSITE SHEET PILING	20' TALL SHEET MAX	± 200 lf ± 4,000 ft^3	<0.05% DISPLACEMENT
CONCRETE CAP BEAM	26" x 24" x 200'	±1,733.3 ft^3	0% DISPLACEMENT
MARINE GRADE WOOD POSTS	6" x 6" x 72" EMBEDDED	10 QTY	± 12 ft^3 DISPLACEMENT
HELICAL SCREW ANCHOR	AS PER DETAIL	10 QTY	0% DISPLACEMENT
BEACH COMPATIBLE SAND FILL	319 ft^2 x 200'		±2,363 YD^3 2
WASHED #57 ROCK	17 WEEPS @ 1YD EACH		±17 YD^3 2



2 S1.0 REPAIR DETAILS
SCALE: 1/4" = 1'-0"

1 S1.0 NOT USED

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4315 SOUTH ATLANTIC AVENUE
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NO	REMARKS	DATE
2	DEP COMMENTS	4/1/23

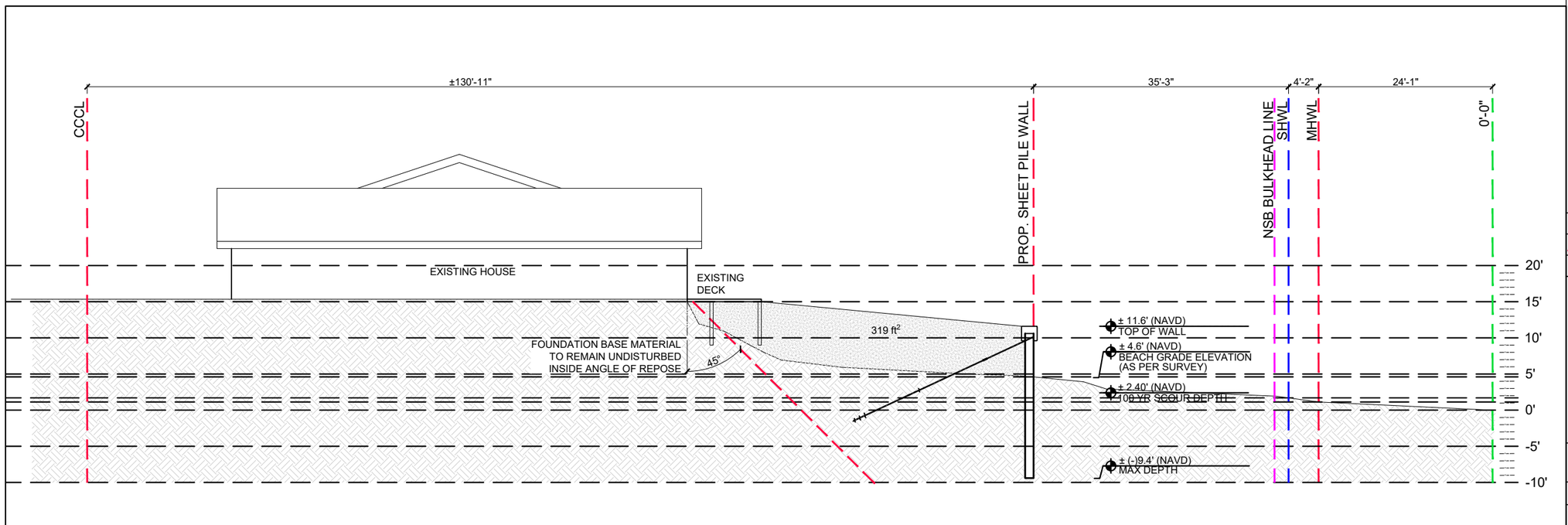
CHARLES R ADAMS LICENSE NO 15113 STATE OF FLORIDA PROFESSIONAL ENGINEER

MATERIAL QUANTITIES, SITE PLAN, INSTALLATION DETAILS

DRAWN BY EAA
CHECKED BY JAA
SCALE AS NOTED
DATE 7 MAR 2023

SHEET 3 OF 11

S1.0



1 / S1.2 GRADING DETAIL
SCALE: 1/16" = 1'-0"

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GRADING DETAIL

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SHEET 4 OF 11

S1.2 (2)

DAMAGE SURVEY PHOTOGRAPH - 1

DAMAGE SURVEY PHOTOGRAPH - 2

DAMAGE SURVEY PHOTOGRAPH - 3

DAMAGE SURVEY PHOTOGRAPH - 4

DAMAGE SURVEY PHOTOGRAPH - 5

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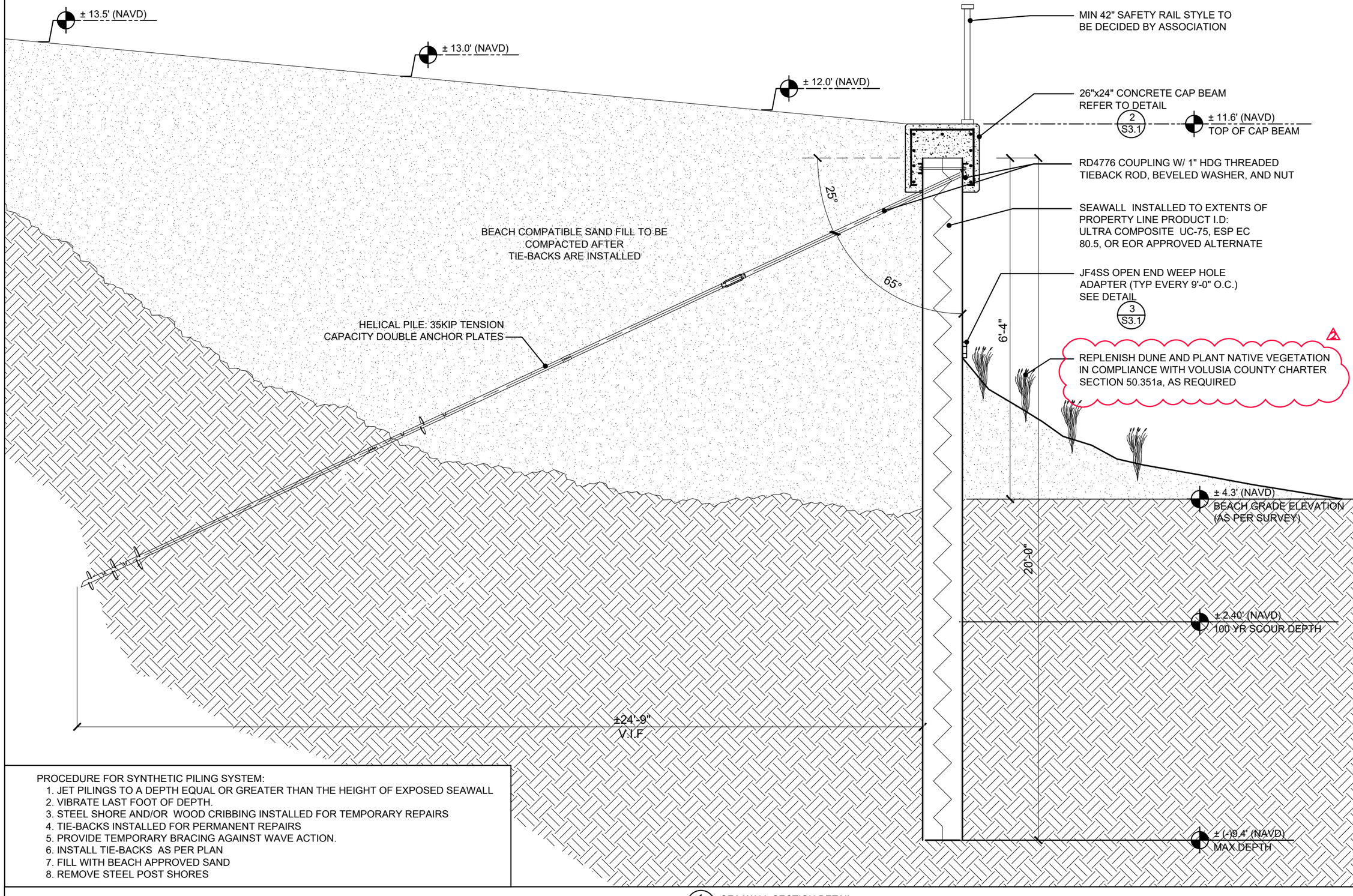
DAMAGE SURVEY PHOTOS

DRAWN BY EAA	SHEET 5 OF 11
CHECKED BY JAA	
SCALE AS NOTED	S2.0
DATE 7 MAR 2023	



PROCEDURE FOR SYNTHETIC PILING SYSTEM:

1. JET PILINGS TO A DEPTH EQUAL OR GREATER THAN THE HEIGHT OF EXPOSED SEAWALL
2. VIBRATE LAST FOOT OF DEPTH.
3. STEEL SHORE AND/OR WOOD CRIBBING INSTALLED FOR TEMPORARY REPAIRS
4. TIE-BACKS INSTALLED FOR PERMANENT REPAIRS
5. PROVIDE TEMPORARY BRACING AGAINST WAVE ACTION.
6. INSTALL TIE-BACKS AS PER PLAN
7. FILL WITH BEACH APPROVED SAND
8. REMOVE STEEL POST SHORES

1 / S3.0 SEA WALL SECTION DETAIL
SCALE: 3/8"=1'-0"

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2	EOR REVISIONS	3/30/23

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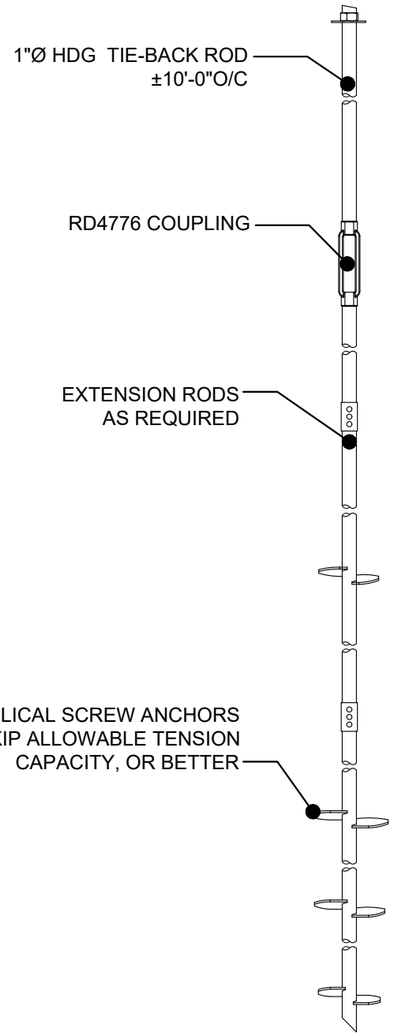
SEAWALL SECTION

DRAWN BY	EAA
CHECKED BY	JAA
SCALE	AS NOTED
DATE	7 MAR 2023

SHEET 6 OF 11

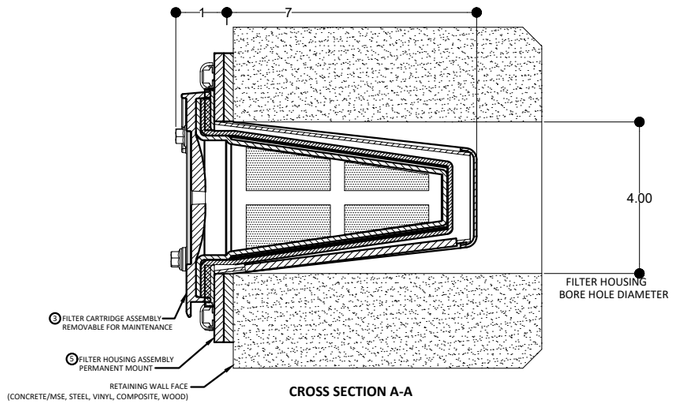
S3.0



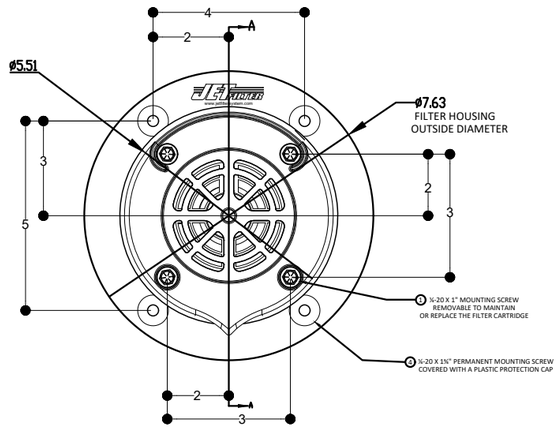
5 S3.1 HELICAL PILE DETAIL
N.T.S.

UC-75		
ALLOWABLE MOMENT (M):	31,667 FT-LB/FT	140.85 KN-m/m
SECTION MODULUS (Z):	38.0 IN^3/FT	2,043 cm^3/m
MOMENT OF INERTIA (I):	266 IN^4/FT	36,325 cm^4/m
THICKNESS (t):	0.400/0.430 IN	10.2/10.9 mm
SECTION DEPTH:	14 IN	356 mm
SECTION WIDTH:	24 IN	610 mm
MATERIAL:	STRUCTURAL FRP COMPOSITE	
STANDARD COLORS:	CHARCOAL	
PROFILE/PATENTED FEATURES:	Z PROFILE	

6 S3.1 ULTRA COMPOSITE SHEET PILE SPECIFICATIONS

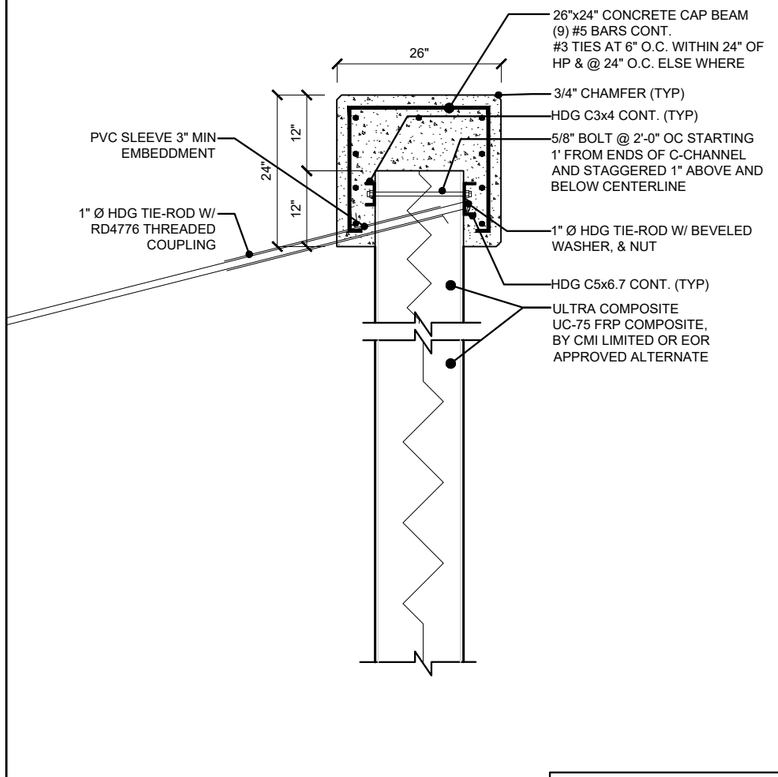


CROSS SECTION A-A



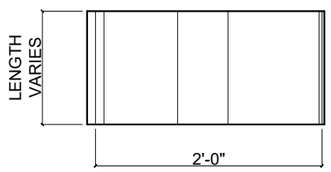
3 S3.1 JF4SS WEEP VENTS
N.T.S.

4 S3.1 CORNER SPECIFICATIONS
N.T.S.

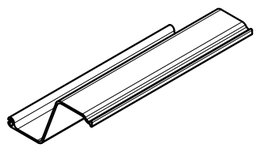


NOTE:
ALL CONCRETE TO BE 5,500psi
WITH FLY ASH ADDITIVE
OR ENGINEER APPROVED EQUAL

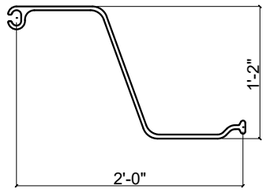
1 S3.1 PILE / CAP BEAM DETAIL
SCALE: 1/2"=1'-0"



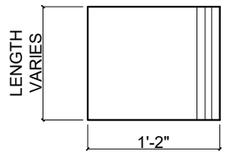
ESP EC 80.5 PROFILE VIEW



ESP EC 80.5 ISOMETRIC VIEW



ESP EC 80.5 PLAN VIEW



ESP EC 80.5 SECTION VIEW

2 S3.1 ULTRA COMPOSITE PILE
N.T.S.

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NO	REMARKS	DATE

CHARLES R ADAMS LICENSE NO 15113 STATE OF FLORIDA PROFESSIONAL ENGINEER

DETAILS
SPECIFICATIONS

DRAWN BY EAA
CHECKED BY JAA
SCALE AS NOTED
DATE 7 MAR 2023

SHEET 7 OF 11

S3.1

GENERAL DESIGN AND CONSTRUCTION NOTES

MATERIAL

GENERAL DESIGN:

1. ALL MATERIALS SHALL BE AS NOTED UNLESS LOCAL CODES PROVIDE A STRICTER GUIDELINE I.E. GREATER STRENGTH DURABILITY, ETC. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THESE CODES.

SHEET PILE:

1. SHEET PILE MATERIAL SHALL BE CMI LIMITED CORP UC-75, ESP EC 80.5, OR EOR APPROVED ALTERNATE.

DRAINS:

1. OPEN END WEEP HOLE FILTER WITH ADAPTER, INSTALLED IMMEDIATELY ABOVE SCOUR ELEV. @ SPECIFIED SPACING.
2. THE JET FILTER ASSEMBLY HOUSING SHOULD NOT BE REMOVED ONCE INSTALLED.
3. WEEPS (JF4SS) TO ALLOW FOR EXCESSIVE HYDROSTATIC PRESSURE, FROM STORM WATER BUILD UP, TO RELEASE FROM BEHIND SEA WALL.

STEEL:

1. ALL C-CHANNELS, TIE-RODS, AND STEEL FASTENERS SHALL BE HOT DIP GALVANIZED PER ASTM A-153 WITH 2 OUNCES OF ZINC PER SQUARE FOOT.
2. ALL REINFORCING BAR SHALL BE GRADE FRP, OR EOR APPROVED EQUAL.
3. ALL TIEBACK ROD SHALL BE 60 KSI MINIMUM.

CONCRETE:

1. CONCRETE TO HAVE A 28-DAY COMPRESSIVE STRENGTH OF 5,500PSI.
2. CONCRETE SHALL HAVE A MINIMUM 25% FLY ASH OR GBFS ADDED TO THE MIXTURE.
3. CONCRETE MIX TO HAVE A MAX W/C RATIO OF 0.4.
4. CONCRETE TO BE VIBRATED TO MINIMIZE AIR VOIDS.

BACKFILL:

1. BACKFILL MATERIAL SHALL BE COMPATIBLE W/THE BEACH SAND & APPROVED BY THE DEP.
2. BACKFILL SHALL BE INSTALLED IN ±12" LIFTS AND COMPACTED TO 95% PROCTOR.
3. IN GENERAL, BEACH-COMPATIBLE FILL MATERIAL WILL BE PREDOMINANTLY QUARTZ SAND OF A MEAN GRAIN SIZE DIAMETER BETWEEN 0.20MM AND 0.45MM, WITH A MOIST MUNSELL COLOR VALUE/CHROMA OF 7/1 OR LIGHTER AND A SIMILAR QUANTITY OF SHELL AS THE EXISTING BEACH.
4. 2 THE FILL MATERIAL MEETS THE SPECIFICATIONS/CRITERIA OF SUBSECTION 62B-33.005(7), F.A.C.

ANCHORS:

1. SHALL BE EOR APPROVED W/ SPECIFIED CAPACITY AND TIE BACK ROD DIAMETER.

WOOD

1. ALL LUMBER SHALL BE MARINE GRADE, OR EOR APPROVED ALTERNATE
2. ALL LUMBER FASTENERS SHALL BE 316 STAINLESS STEEL, OR EOR APPROVED ALTERNATE

DESIGN:

1. DESIGN IS BASED ON SOIL PROPERTIES AS NOTED:

LAYER 1 (ELEV. +15.0 TO -4.5)
γ =115 PCF γ'=57 PCF φ =32° C=0 PSF
LAYER 2 (ELEV. +4.5 & BELOW) (DRIVEN CONDITIONS)
γ =125 PCF γ'=62 PCF φ =40° C=0 PSF
LAYER 1 (ELEV. +4.5 & BELOW) (JETTED CONDITIONS)
γ =120 PCF γ'=60 PCF φ =34° C=0 PSF

2. IF ACTUAL SOIL OR SITE CONDITIONS DIFFER FROM THAT NOTED IN DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR A POSSIBLE REDESIGN.
3. DESIGN DOES NOT CONSIDER GLOBAL (SLOPE) STABILITY. AT MINIMUM, GEOTECHNICAL ENGINEER SHALL CONFIRM THAT GLOBAL STABILITY IS NOT AN ISSUE. OTHERWISE, OWNER ASSUMES RISK FOR GLOBAL STABILITY.
4. DESIGN DOES NOT ACCOUNT FOR PRESENCE OF UNDERGROUND SPRINGS, WELLS, OR EXCESSIVE WATER FROM SITE RUNOFF. IF THESE CONDITIONS EXIST THE ENGINEERS SHALL BE NOTIFIED.

INSTALLATION

GENERAL INSTALLATION:

1. PRIOR TO INSTALLATION, CONTRACTOR SHALL EXAMINE/PROBE ALONG THE ALIGNMENT OF THE SHEET PILE (APPROX. EVERY 5') TO DETERMINE THE POTENTIAL OF ANY SOIL VARIATION OR OBSTRUCTIONS.
2. INSTALLATION TO BE CONDUCTED ACCORDING TO ALL APPLICABLE OSHA AND LOCAL CODES. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE SE CODES.
3. PRIOR TO INSTALLATION CONTRACTOR SHALL EXAMINE SHEET PILE FOR ANY MANUFACTURING DEFECTS, OR DAMAGE DURING SHIPPING, ANY DEFECTIVE OR DAMAGED SHEET PILE SHALL BE DISCARDED AND REPLACED WITH NEW DEFECT & DAMAGE FREE MATERIAL. THIS SHALL BE THE RESPONSIBILITY OF THE SUPPLIER OR CONTRACTOR, AND NOT THE CLIENT OR EOR.

SHEET PILE:

3. CONTRACTOR SHOULD REVIEW SOIL BORINGS AND PLAN FOR DIFFICULT DRIVING CONDITIONS, JETTING AND TRENCHING IS ALLOWED FOR NEW SHEET PILE INSTALLATION. LAST 10% OF SHEET PILE DRIVE TO BE VIBRATED.
4. SHEET PILE SHALL PENETRATE TO DEPTH SHOWN IN THE PLANS.
5. AFTER DRIVING SHEET PILE, SAW PILING OFF AT A TRUE PLANE INDICATED ON THE PLANS. FINAL ELEVATIONS ARE TO BE WITHIN ONE (1) INCH OF ESTABLISHED ELEVATION.
6. RETURN WALLS TO BE PROVIDED AT ENDS OF ALL BULKHEADS TO PROVIDE FLANKING PROTECTION.

CONCRETE CAP:

1. REFER TO ACI FOR PROPER CURING REQUIREMENTS.
2. EXPANSION JOINTS ARE TO BE LOCATED AT NO GREATER THAN 50' INTERVALS
3. ANCHOR RODS TO BE PROVIDED 1.5' ON SIDE SIDE OF EXPANSION JOINT.

JET FILTER UNITS:

1. CORE A TRUE DIAMETER HOLE IN THE SHEET PILLING/SEAWALL OR CONCRETE ABUTMENT ABOUT 4 INCHES BEHIND WALL EVERY 12 FEET ON CENTER, SLIGHTLY ABOVE MEAN WATER LINE IN COASTAL AREAS OR LOWEST ELEVATION. IF POSSIBLE CORE FURTHER INTO THE GROUND AND PACK FLOWABLE MATERIAL BEHIND WALL SUCH AS #57 STONE THEN SAND.
2. INSERT THE JET FILTER ASSEMBLY INTO DRILLED HOLE ON WALL.
3. PRE-DRILL THE MOUNTING HOLES BY USING:
   CONCRETE: PILOT HOLE BIT SIZE 3/16"
   STEEL SHEET PILING: PILOT HOLE BIT SIZE 7/32 " OR 15/64"
   COMPOSITE / VINYL SHEET PILING: SELF-TAP
4. ATTACH WITH BI-FLEX SS ANCHORS (SUPPLIED) THROUGH THE ASSEMBLY HOUSING HOLES INTO THE SHEET PILLING/SEAWALL, CONCRETE ABUTMENT A 3/8" SOCKET.

NOTE: BE SURE TO EPOXY/SEAL AROUND THE HOUSING IF ANY POSSIBLE OPENING TO THE CORE.

MAINTENANCE:

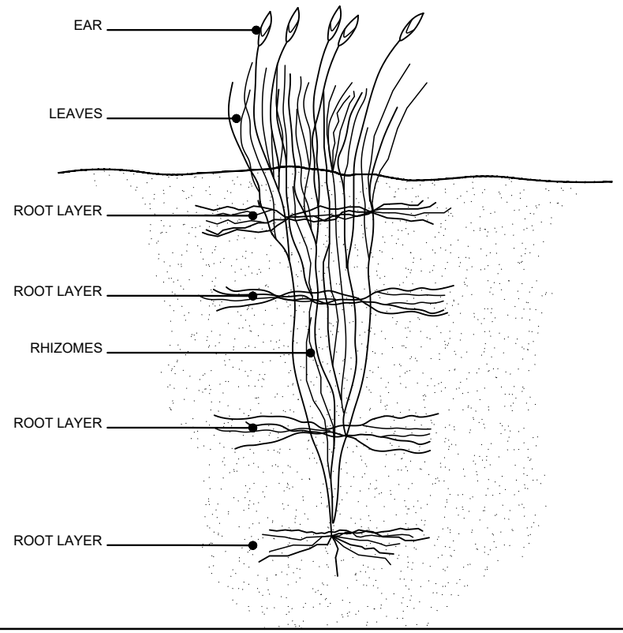
1. TO REMOVE OR REPLACE THE FILTER CARTRIDGE, SIMPLY UNSCREW THE (4) SCREWS SECURING THE FILTER CARTRIDGE AND GENTLY PULL OUT.
2. ONCE FILTER IS REMOVED CLEAN WITH A SOFT BRUSH WITH A SOFT BRUSH WITH WATER RINSE OR REPLACE, IN REVERSE ORDER.

MONITORING:

1. SHEET PILE INSTALLATION SHALL BE SUPERVISED BY A THIRD PARTY MONITORING COMPANY LIKE UES, OR EOR APPROVED ALTERNATE, IN ORDER TO VERIFY EMBEDMENT DEPTH.
2. VIBRATION MONITORING SERVICES SHALL BE PROVIDED BY UES, OR EOR APPROVED ALTERNATE, TO VERIFY THAT FDOT VIBRATION LIMITS ARE NOT EXCEEDED.
3. TORQUE LOGS FOR HELICAL PILE INSTALLATION SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL PRIOR TO CONTINUING WITH SEAWALL INSTALLATION.

LANDSCAPE:

1. 2 COMPLY WITH THE VOLUSIA COUNTY CHARTER, SECTION 50.351a.



1 / S3.2 DUNE PLANTING DETAIL
NOT TO SCALE

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NOTES

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SCALE AS NOTED
DATE 7 MAR 2023

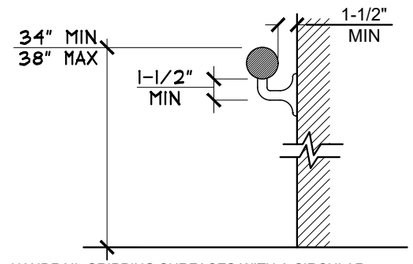
SHEET 8 OF 11

S4.0

NOTES:
1. HANDRAIL, SUPPORTS, & FASTENERS SHALL BE CAPABLE OF SUPPORTING A 250lb. POINT LOAD @ ANY POINT ON SYSTEM. TOP RAIL SHALL BE A MIN. HEIGHT OF 36".

2. HANDRAIL STYLE, SPINDLES OR RAILS, TO BE DETERMINED BY OWNER.

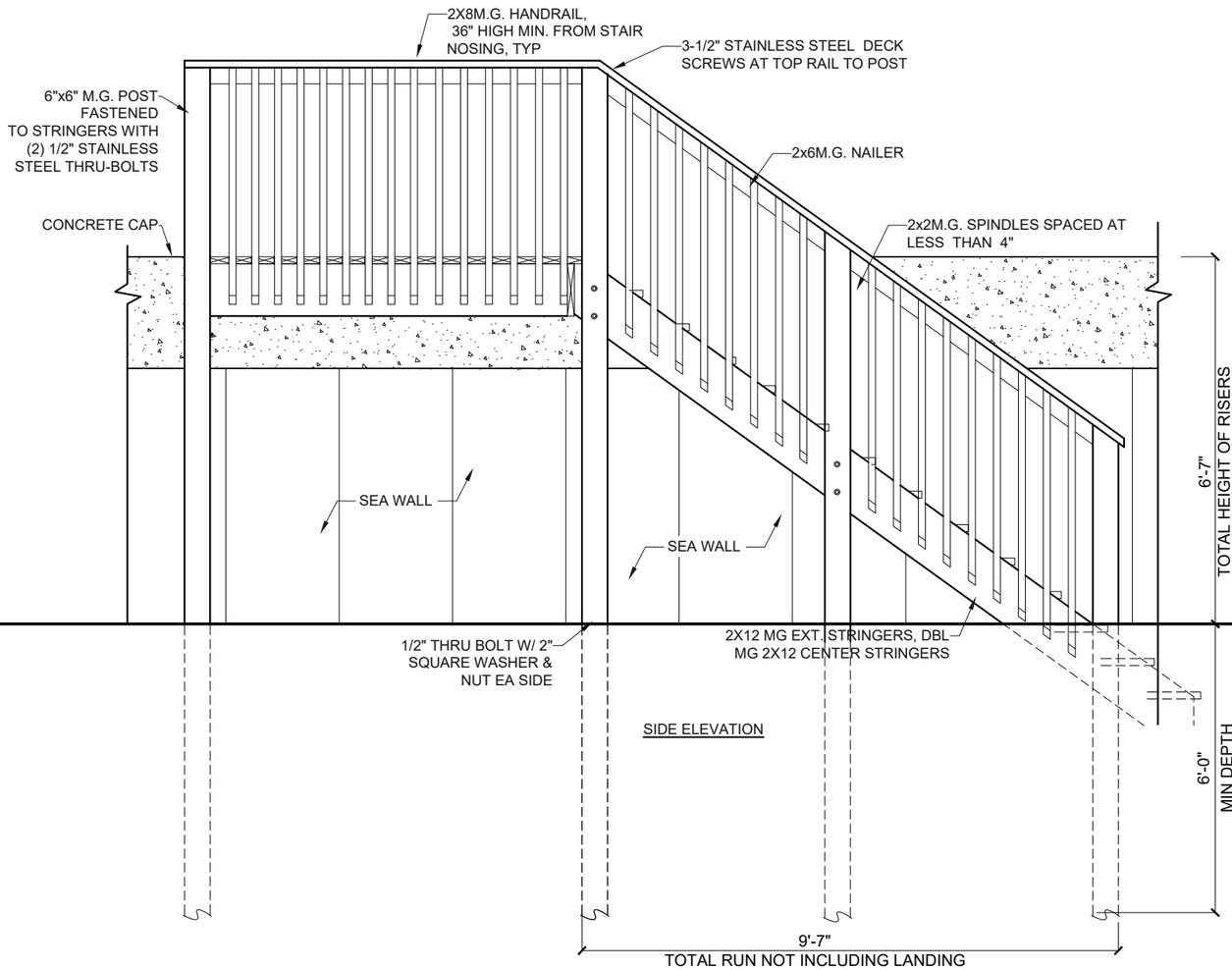
STAIR DATA :
TOTAL RISE .....±79"
TOTAL RISERS 11
RISER DISTANCE .....±7-3/16"
TOTAL TREADS .....11 @ 11-1/4"
LANDINGS 0
TOTAL RUN .....±115"



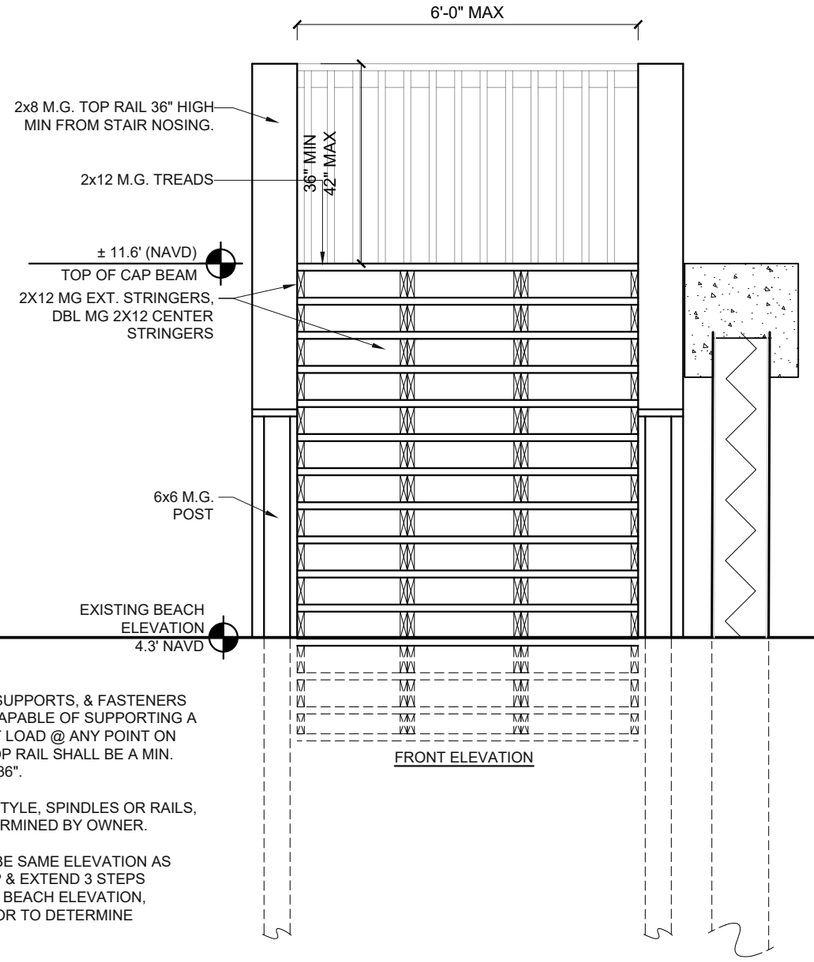
HANDRAIL GRIPPING SURFACES WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF 1-1/4" MINIMUM AND 2" MAXIMUM.

HANDRAIL GRIPPING SURFACES WITH A NON-CIRCULAR CROSS SECTION SHALL HAVE A PERIMETER DIMENSION OF 4" MINIMUM AND 6-1/4" MAXIMUM, AND A CROSS-SECTION DIMENSION OF 2-1/4" MAXIMUM.

1 / S5.0 RAIL DETAILS
SCALE: 1"=1'-0"



SIDE ELEVATION



FRONT ELEVATION

NOTES:
1. HANDRAIL, SUPPORTS, & FASTENERS SHALL BE CAPABLE OF SUPPORTING A 250lb. POINT LOAD @ ANY POINT ON SYSTEM. TOP RAIL SHALL BE A MIN. HEIGHT OF 36".

2. HANDRAIL STYLE, SPINDLES OR RAILS, TO BE DETERMINED BY OWNER.

3. STAIRS TO BE SAME ELEVATION AS TOP OF CAP & EXTEND 3 STEPS BELOW THE BEACH ELEVATION, CONTRACTOR TO DETERMINE

1 / S5.0 STAIR DETAILS
SCALE: 3/8"=1'-0"

Charles R. Adams & Associates, Inc.
STRUCTURAL ENGINEERS
414 Canal Street - New Smyrna Beach, FL 32168 - 386.426.5583

221205 - SEA DUNE STARFISH- CD SET.DWG

STRUCTURAL PLANS FOR A NEW SEAWALL INSTALLATION AT

SEA DUNES STARFISH

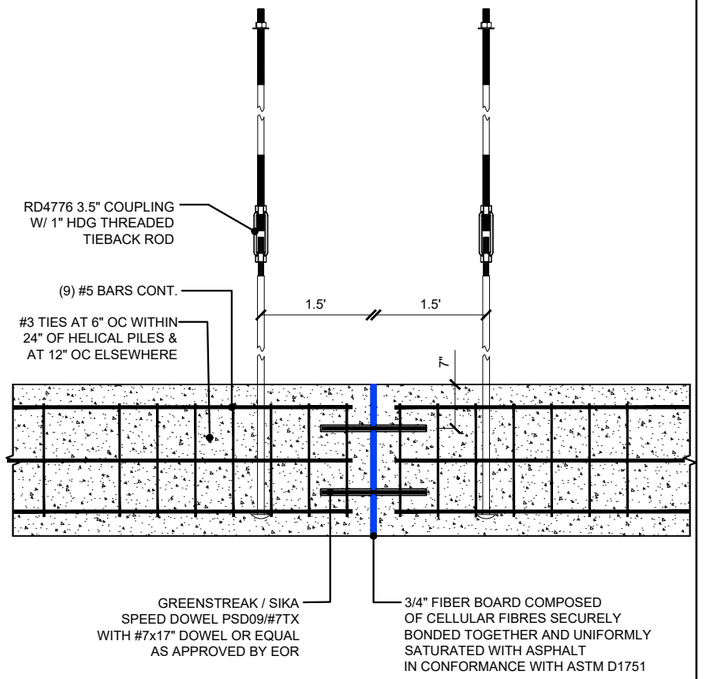
4315 SOUTH ATLANTIC AVENUE
NEW SMYRNA BEACH, FL 32169

NO	REMARKS	DATE

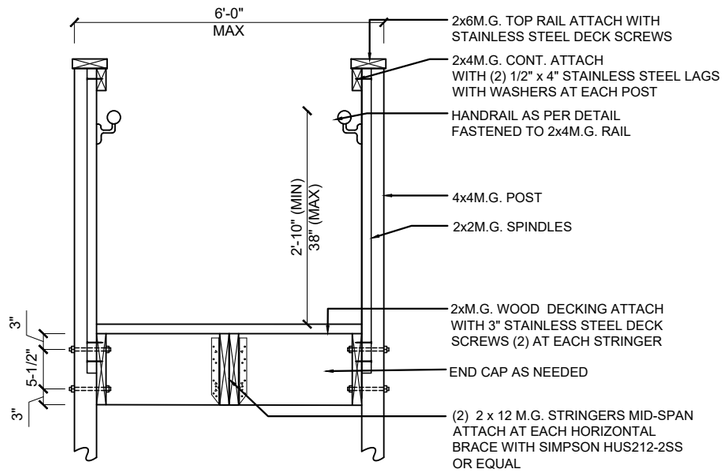
CHARLES R ADAMS LICENSE NO 15113 STATE OF FLORIDA PROFESSIONAL ENGINEER

BEACH APPROACH STAIRS

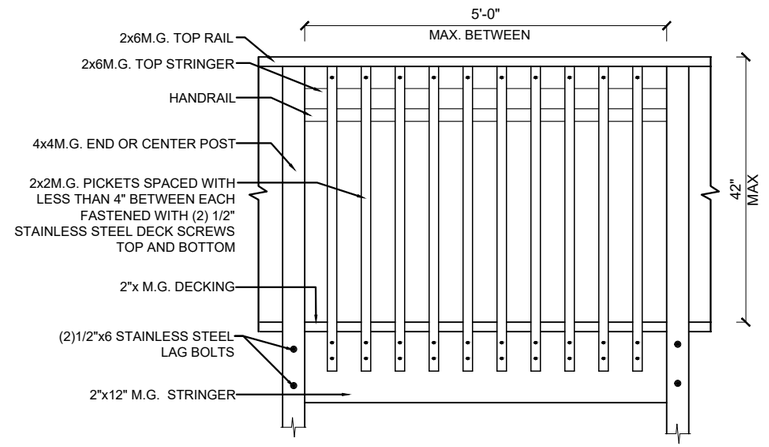
DRAWN BY EAA	SHEET 9 OF 11
CHECKED BY JAA	
SCALE AS NOTED	S5.0
DATE 7 MAR 2023	



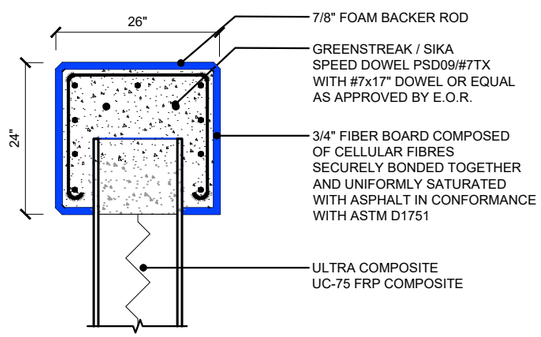
5 S5.1 EXPANSION JOINT DETAIL - PLAN VIEW
SCALE: 1/2"=1'-0"



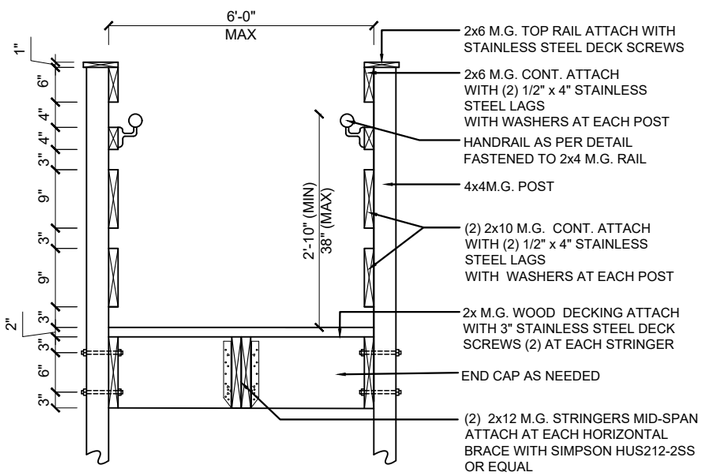
2 S5.1 RAIL DETAILS - SPINDLES
N.T.S.



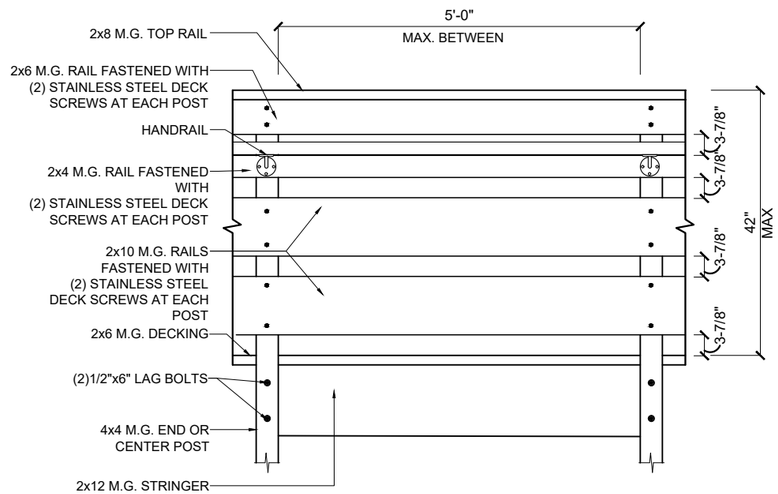
1 S5.1 RAIL DETAILS - SPINDLES
SCALE: 1/2"=1'-0"



6 S5.1 EXPANSION JOINT DETAIL - SECTION
SCALE: 1/2"=1'-0"



4 S5.1 RAIL DETAILS - RAILS
N.T.S.



3 S5.1 RAIL DETAILS - RAILS
SCALE: 1/2"=1'-0"

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221205 - SEA DUNE STARFISH- CD SET.DWG

STRUCTURAL PLANS FOR A NEW SEAWALL INSTALLATION AT

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NO	REMARKS	DATE

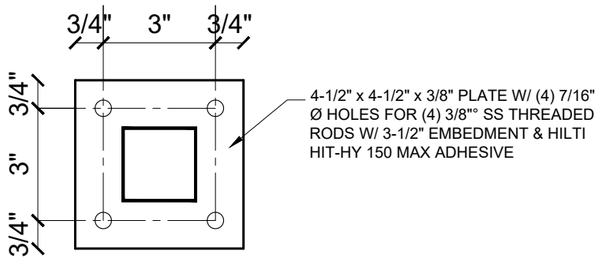
CHARLES R ADAMS
LICENSE
NO 15113
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

RAIL DETAILS

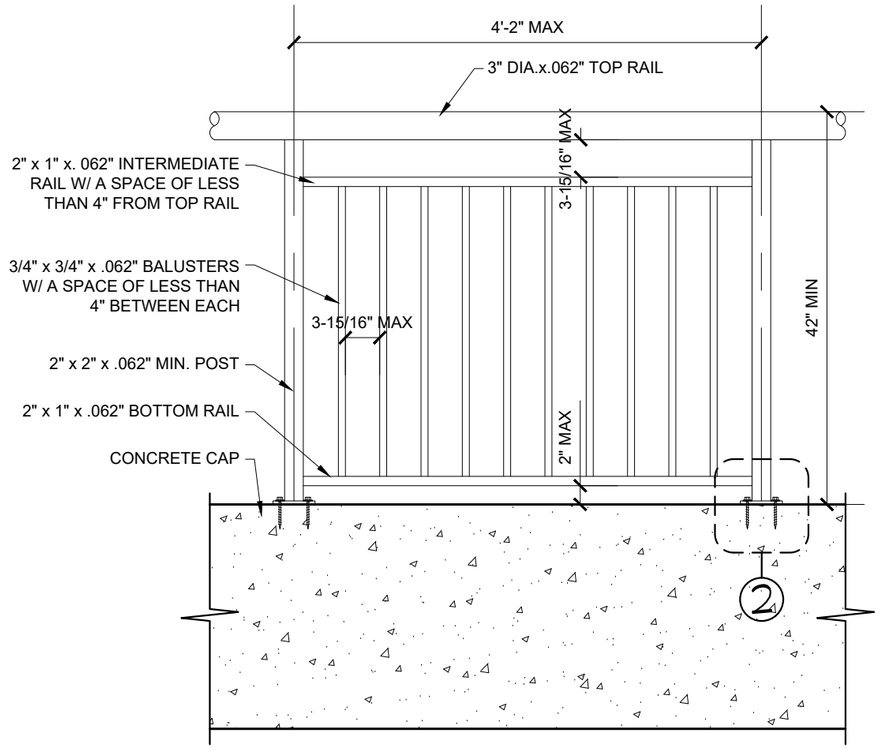
DRAWN BY	EAA
CHECKED BY	JAA
SCALE	AS NOTED
DATE	7 MAR 2023

SHEET 10 OF 11

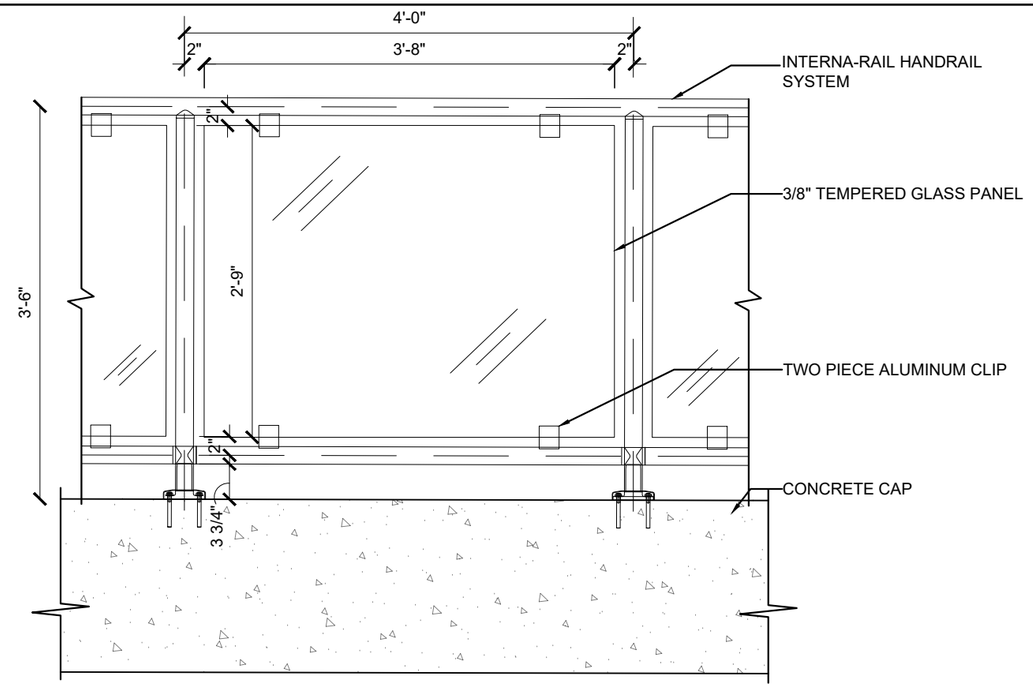
S5.1



2 S5.2 BASE PLATE DETAIL
SCALE: 3"=1'-0"



1 S5.2 GUARDRAIL DETAILS - SPINDLES
SCALE: 3/4" = 1'-0"



3 S5.2 GUARDRAIL DETAILS - GLASS
SCALE: 3/4" = 1'-0"

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STRUCTURAL PLANS FOR A NEW SEAWALL INSTALLATION AT

SEA DUNES STARFISH

4315 SOUTH ATLANTIC AVENUE
NEW SMYRNA BEACH, FL 32169

NO	REMARKS	DATE
2	EOR REVISIONS	3/30/23

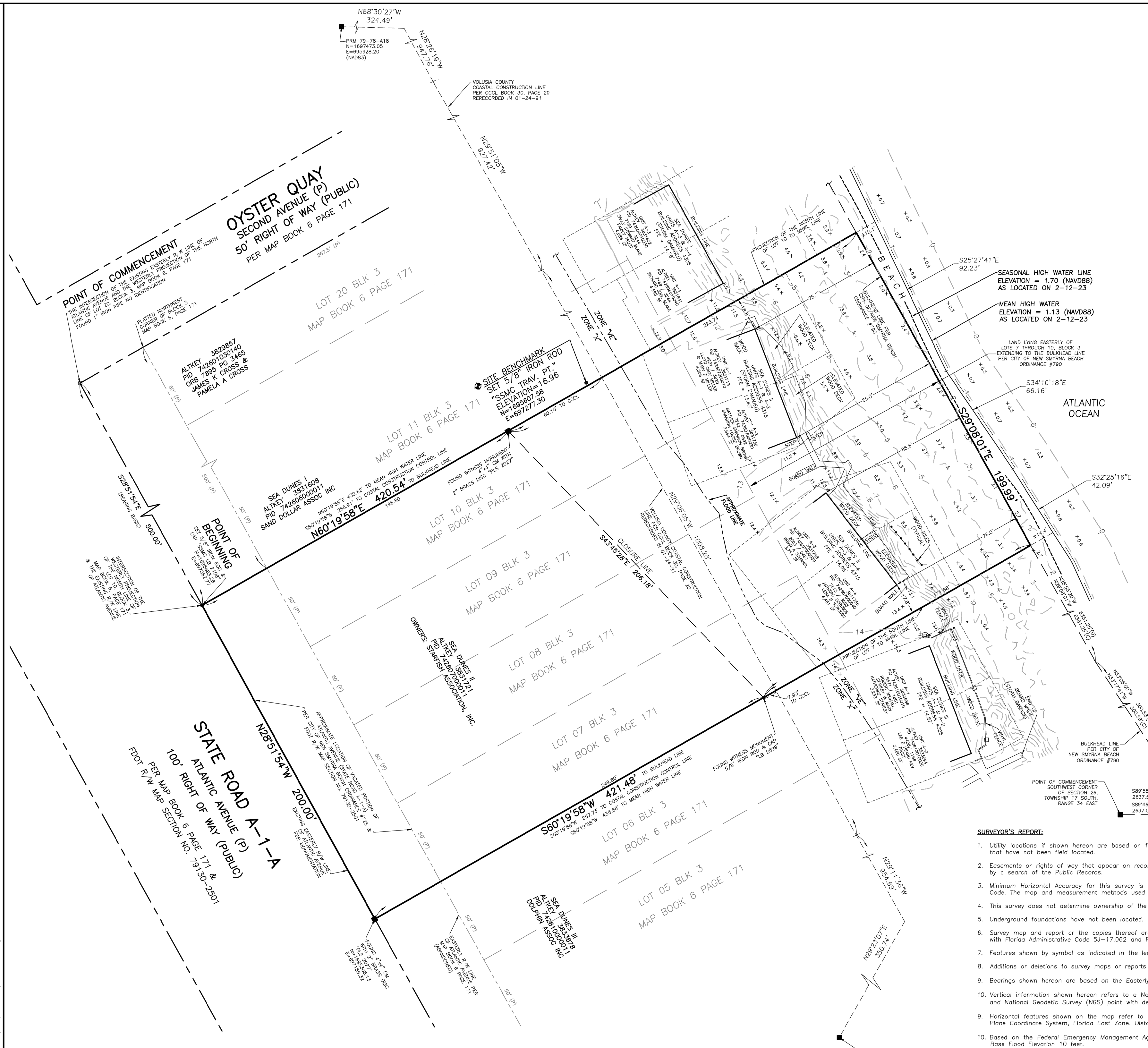
CHARLES R ADAMS LICENSE NO 15113 STATE OF FLORIDA PROFESSIONAL ENGINEER

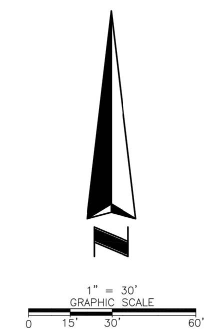
GUARDRAIL DETAILS

DRAWN BY EAA
CHECKED BY JAA
SCALE AS NOTED
DATE 7 MAR 2023

SHEET 11 OF 11
2
S6.0

P:\68924 – FDEP – Sea Dunes Proposed Seawall Project\DWG 3D\68924003.dwg





VICINITY MAP
NOT TO SCALE

LEGEND & ABBREVIATIONS:

Symbol	Meaning
–O–	WOOD FENCE
–Δ–	VINYL FENCE
■	CONCRETE MONUMENT
○	IRON PIPE
●	IRON ROD
⊙	NAIL W/DISC
h	BENCH
×	CROSS CUT
	CLEAN OUT
	ELECTRIC FIXTURE
	FLAGPOLE
●	IRON ROD
○	IRON PIPE
⊙	NAIL W/DISC
	LIGHT POLE
	PALM
•	POST/BOLLARD
⊠	RAILROAD SPIKE
	HANDRAIL

Abbreviation	Meaning
ALTKEY	ALTERNATE KEY NUMBER
ASSOC	ASSOCIATION
CCCL	COASTAL CONSTRUCTION CONTROL LINE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FFE	FINISH FLOOR ELEVATION
PID	PARCEL IDENTIFICATION NUMBER
CM	CONCRETE MONUMENT
ID	IDENTIFICATION
(P)	PLAT
(D)	DEED
BLK	BLOCK
ORB	OFFICIAL RECORDS BOOK
MB	MAP BOOK
PB	PLAT BOOK
PG(S)	PAGE(S)
NO.	NUMBER
NAD83	NORTH AMERICAN DATUM
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988
LB	LICENSED BUSINESS
MHWL	MEAN HIGH WATER LINE
SF	SQUARE FEET
PSM	PROFESSIONAL SURVEYOR AND MAPPER
PRM	PERMANENT REFERENCE MONUMENT
R/W	RIGHT OF WAY
TRAV.PT.	TRAVERSE POINT
SSMC	SOUTHEASTERN SURVEYING & MAPPING CORPORATION

DESCRIPTION:

SEA DUNES UNIT II, being Lots 7 through 10, Block 3, ATLANTIC HEIGHTS SUBDIVISION, according to the map or plat thereof, as recorded in Map Book 6, Page 171, of the Public Records of Volusia County, Florida; together with a portion of Atlantic Avenue now vacated lying adjacent to and Westerly of the existing Westerly lot line of said Lots 7 through 10 (per City of New Smyrna Beach Ordinance #725, dated 1966) and Lands lying Easterly of said Lots 7 through 10, extending to the Bulkhead line (per City of New Smyrna Beach Ordinance #790), lying in Volusia County, Florida being more particularly described as follows:

COMMENCE at the intersection of the existing Easterly right of way line of Atlantic Avenue and the Westerly Projection of the North line of Lot 20, Block 3, ATLANTIC HEIGHTS SUBDIVISION, according to the map or plat thereof, as recorded in Map Book 6, Page 171, of the Public Records of Volusia County, Florida; thence South 28°51'54" East, a distance of 500.00 feet along the existing Easterly right of way line of Atlantic Avenue to the intersection of the Westerly Projection of the North line of Lot 10, said intersection being the **POINT OF BEGINNING**; thence North 60°19'58" East, a distance of 420.54 feet along North line of Lot 10 and the projection thereof to the Bulkhead line per City of New Smyrna Beach Ordinance #790; thence South 29°08'01" East, a distance of 199.99 feet along said Bulkhead line to the Easterly Projection of South line of Lot 7; thence South 60°19'58" West, a distance of 421.48 feet along the South line of Lot 7 and the projection thereof to the aforesaid existing Easterly right of way line of Atlantic Avenue; thence North 28°51'54" West, a distance of 200.00 feet along said Easterly right of way to the **POINT OF BEGINNING**.

Containing 1.93 acres, more or less.

SURVEYOR'S REPORT:

1. Utility locations if shown hereon are based on field location of markings by utility company representatives, surface features and construction plans furnished to the surveyor. Additional sub-surface utilities may exist that have not been field located.
2. Easements or rights of way that appear on recorded plans or that have been furnished to the surveyor by others have been incorporated into this drawing with appropriate notation. Other easements may be discovered by a search of the Public Records.
3. Minimum Horizontal Accuracy for this survey is in accordance with the STANDARDS OF PRACTICE set forth by the Board of Professional Surveyors and Mappers in Chapter 5J-17 requirements of Florida Administration Code. The map and measurement methods used for this survey meet or exceed this requirement. The dimensions shown hereon are in United States survey feet and decimals thereof.
4. This survey does not determine ownership of the lands shown hereon.
5. Underground foundations have not been located.
6. Survey map and report or the copies thereof are not valid without the original signature and seal or the electronic signature and seal of a Florida Licensed Surveyor and Mapper, and if shown hereon is in compliance with Florida Administrative Code 5J-17.062 and Florida Statute 472.025.
7. Features shown by symbol as indicated in the legend are not to scale.
8. Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.
9. Bearings shown hereon are based on the Easterly Right of Way line of State Road A-1-A (Atlantic Avenue) as being South 28°51'54" East. Bearings and distances shown hereon are measured unless otherwise noted.
10. Vertical information shown hereon refers to a National Geodetic Survey (NGS) point with designation "I95 71 A13", PID number AK0498, published elevation of 19.11 feet North American Vertical Datum of 1988 (NAVD88) and National Geodetic Survey (NGS) point with designation "G 212", PID number AQ1454, published elevation of 4.86 feet North American Vertical Datum of 1988 (NAVD88).
9. Horizontal features shown on the map refer to a National Geodetic Survey point with designation "I95 71 A13", PID number AK0498 and is relative to North American Datum of 1983 (NAD83), 2011 adjustment, State Plane Coordinate System, Florida East Zone. Distances shown are GRID distances.
10. Based on the Federal Emergency Management Agency, Flood Insurance Rate Map (FIRM), map number 125132 0705 J, map revised September 29, 2017 the above described property is within Zone "X" and Zone "VE" Base Flood Elevation 10 feet.
11. This Survey was performed without benefit of an abstract, title search, title opinion or title commitment. A title search may reveal additional information affecting the parcel as shown.
12. Improvements and Topographic features shown hereon are limited to storm damaged oceanside areas per specific instructions of the client.
13. Right of Way information shown hereon was determined by found monumentation, recorded plats and information obtained on the Volusia County Property Appraisers web site. No Right of Way documentation was provided by client.
14. The Mean High Water Line as shown is depicted at 1.13 feet North American Vertical Datum 1988. Contour Line as provided by request from M. Kevin Mears, PSM on March 28, 2023 from data obtained by Florida Department of Environmental Protection.
15. Locations of the Mean High Water Line and Seasonal High Water Line were calculated with drone photogrammetry data interpolation and real time kinematics data from field date February 12, 2023.
16. Volusia County Coastal Construction Line is depicted per "CCCL Book 30, Page 20, Rerecorded in 01-24-91" using "PRM 79-78-A17" and "PRM 79-78-A18" as shown.
17. Bulkhead line is shown per City of New Smyrna Beach Ordinance #790 as described in New Smyrna Beach, Florida – Code of Ordinances Part II – Chapter 90 – Waterways.
18. No evidence of existing Beach Dunes, Coastal Stands, Hammock Canopy, Wetlands, Exotics Plants, or any Natural Vegetation were observed in the field.
19. The above described parcel contains 1.93 acres, more or less.

NOTICE OF LIABILITY:

This survey is certified to those individuals shown on the face thereof. Any other use, benefit or reliance by any other party is strictly prohibited and restricted. Surveyor is responsible only to those certified and hereby disclaims any other liability and hereby restricts the rights of any other individual or firm to use this survey, without express written consent of the surveyor.

THOMAS K. MEAD, PSM
Registered Land Surveyor

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
1130 Highway 90
Chipley, Florida 32428
(850) 638-0790
e-mail: info@southeasternsurveying.com
Certification Number LB2108

SSMC SUE • SURVEY • GIS

REVISION DATE	REVISION	BY
4/11/23	Revised per FDEP comments	WMS

SHEET NUMBER 1 OF 1
NOT VALID WITHOUT SHEETS 1 THROUGH 1

Boundary Survey

Project: 4315 South Atlantic Avenue, New Smyrna Beach, Florida

Field Date: February 12, 2023 | Drawn By: JWG | Scale: 1" = 30'

Certified to: Florida Bridge & Transportation, Inc

DRAWING NUMBER 68924003
SHEET NUMBER 1 OF 1

Charles R. Adams & Associates, Inc.
STRUCTURAL ENGINEERS
414 Canal Street - New Smyrna Beach, FL 32168 - 386.426.5583

221205 - SEA DUNE STARFISH- CD SET.DWG

STRUCTURAL PLANS FOR A NEW SEAWALL INSTALLATION AT
SEA DUNES STARFISH
4315 SOUTH ATLANTIC AVENUE
NEW SMYRNA BEACH, FL 32169

NO	REMARKS	DATE
3	DEP COMMENTS	4/1/23

CHARLES R ADAMS LICENSE NO 15113 STATE OF FLORIDA PROFESSIONAL ENGINEER

SURVEY

DRAWN BY EAA
CHECKED BY JAA
SCALE AS NOTED
DATE 7 MAR 2023

SHEET 11 OF 11

S6.0