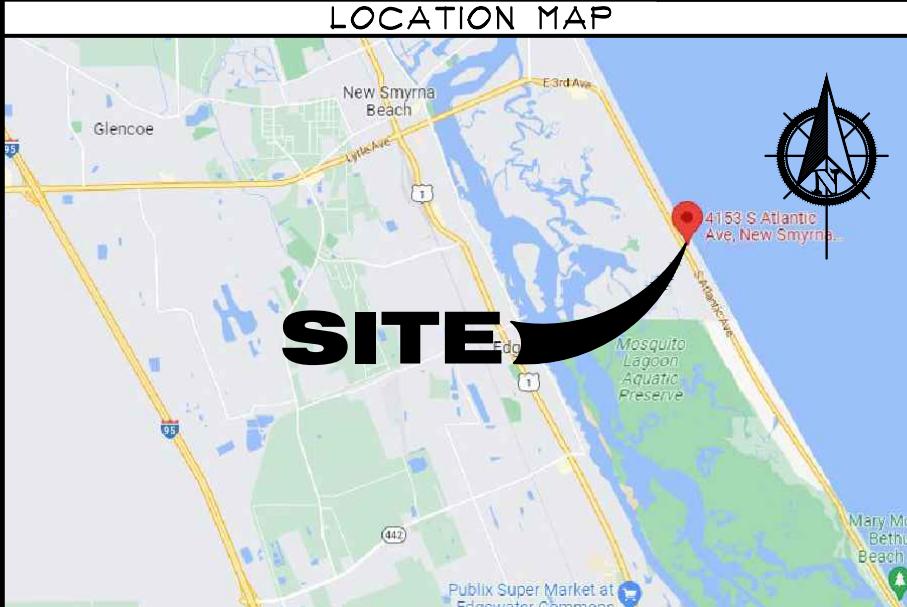


# STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPAIR AT: SEACOAST GARDENS III

4153 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

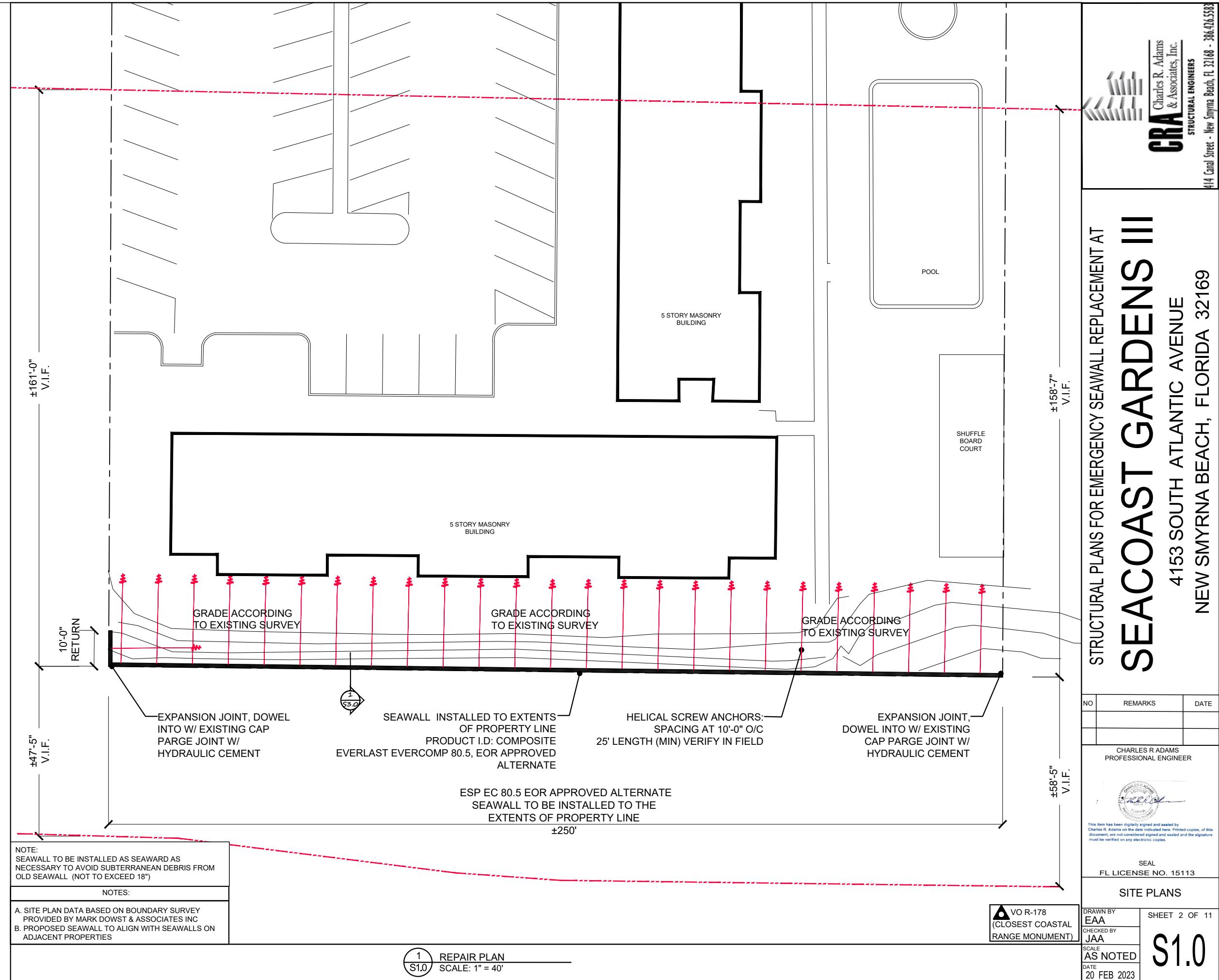


ELEVATION	A# O-O' ELEVATION HT
SECTION	# DOOR NUMBER
DETAIL	# WINDOW NUMBER
KEY NOTE	# REVISION NUMBER
WALL TYPE	01 ROOM NAME

<b>ABBREVIATIONS</b>	
ALUM	ALUMINUM
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CMU	CONCRETE MASONRY UNIT
CM	CRANE MATERIALS INTERNATIONAL
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
C/L	CENTER LINE
DBL	DOUBLE
DA	DIAMETER
DM	DIMENSION
EA	EACH
EC	EVERCOMP
ELEC	ELECTRICAL
ELEV/EL	ELEVATION
EQ	EQUAL
EOR	ENGINEER OF RECORD
ESP	EVERLAST SYNTHETIC PRODUCTS
EXIST	EXISTING
FPE	FINISHED FLOOR ELEVATION
FRP	FIBER-REINFORCED POLYMER
FT	FEET
GALV	GALVANIZED
GBFS	GRANULATED BLAST FURNACE SLAG
HDG	HOT DIPPED GALVANIZED
HP	HELICAL PIPE
INFO	INFORMATION
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
M.G.	MARINE GRADE
MFG/MFR	MANUFACTURER
MHWL	MEAN HIGH WATER LINE
MIN	MINIMUM
NA	NOT APPLICABLE
NC	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	REFERENCE
REINF	REINFORCE
REQ'D	REQUIRED
RO	ROUGH OPENING
SG	SHOREGUARD
SM	SIMILAR
UC	ULTRA COMPOSITE
VIF	VERIFY IN FIELD
YD	YARD

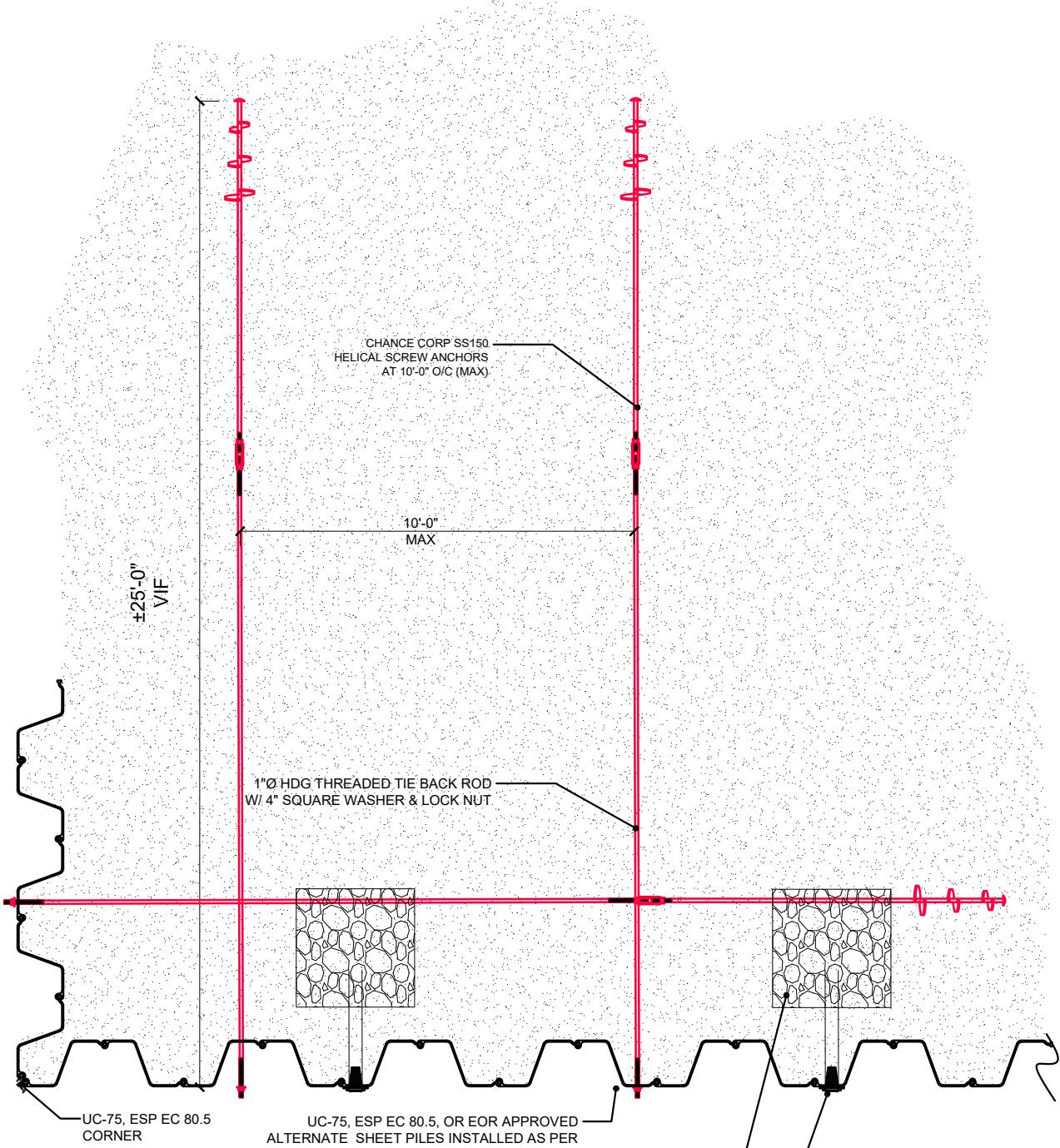
PROJECT DIRECTORY		INDEX of DRAWINGS													
ENGINEER OF RECORD		Charles R. Adams & Associates, Inc. <b>STRUCTURAL ENGINEERS</b> 414 Canal Street - New Smyrna Beach, FL 32168 - 386.426.5583 C.A. 4180													
		▲SO COVER SI.0 REPAIR PLAN S2.0 DAMAGE SURVEY PHOTOS ▲S3.0 REPAIR SECTION DETAIL S3.1 DETAILS AND SPECIFICATIONS S3.2 DETAILS AND SPECIFICATIONS ▲S4.0 GENERAL NOTES S5.0 SURVEY													
<b>WIND LOAD DATA</b> BASIC WIND SPEED: 140 CATEGORY II ENCLOSURE BUILDING WIND EXPOSURE D		<b>SCOPE OF WORK</b> COMMERCIAL - EMERGENCY SEAWALL REPAIR													
<b>PROJECT CODE DATA</b> <table border="1"> <tbody> <tr> <td>ZONE:</td> <td>PRESSURE (psf):</td> </tr> <tr> <td>ZONE 1</td> <td>+23.19 -42.39</td> </tr> <tr> <td>ZONE 2</td> <td>+23.19 -69.64</td> </tr> <tr> <td>ZONE 3</td> <td>+23.19 -54.00</td> </tr> <tr> <td>ZONE 4</td> <td>+32.91 -35.71</td> </tr> <tr> <td>ZONE 5</td> <td>+32.91 -43.48</td> </tr> </tbody> </table>		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 -35.71	ZONE 5	+32.91 -43.48	FLORIDA BUILDING CODE - 7th EDITION 2020 NATIONAL ELECTRICAL CODE 2011 UNIFORM PLUMBING CODE 2021 FL. FIRE PREVENTION CODE 2020 NFPA 101 LIFE SAFETY CODE 2018 NFPA-1 UNIFORM FIRE CODE 2018 ACCESSIBILITY CODE 2020 ENERGY CODE 2020 ACI 318 / 19 2019 ASCE 7-16 2016	
ZONE:	PRESSURE (psf):														
ZONE 1	+23.19 -42.39														
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ZONE 4	+32.91 -35.71														
ZONE 5	+32.91 -43.48														
<b>JURISDICTION</b> CITY OF NEW SMYRNA BEACH		<b>REVISION LOG</b> DATE 3/30/23 DESCRIPTION DEP COMMENTS													
<b>STATEMENT OF COMPLIANCE</b> TO THE BEST OF OUR KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING AND FIRE SAFETY CODES. I HEREBY CERTIFY THAT PLANS AND SPECIFICATIONS ARE IN COMPLIANCE w/ FAC 62B-33.051 (FLORIDA ADMINISTRATIVE CODE).		 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 and the signature must be verified on any electronic copies.													
		FLORIDA LICENSE NO. 15113													

**NOTE:**  
SEAWALL LOCATION AS PER EFO FOR SUBTROPICAL STORM NICOLE – OGC 22-2816 C.1.A.2.E.: (e) ANY FILL THAT IS DEPOSITED TO RESTORE A FORMER SHORELINE, AND ANY RIPRAP THAT IS USED TO STABILIZE A SHORELINE, MUST NOT BE PLACED ANY FARTHER WATERWARD THAN THE TOE OF SLOPE OF THE SHORELINE THAT LEGALLY EXISTED IMMEDIATELY PRIOR TO THE STORM. IF THE PRE-STORM SHORELINE WAS STABILIZED WITH A FUNCTIONING SEAWALL OR RIPRAP, THE SEAWALL OR RIPRAP MAY BE RESTORED AT ITS FORMER LOCATION OR WITHIN 18 INCHES WATERWARD OF THE LOCATION WHERE THE SEAWALL OR RIPRAP LEGALLY EXISTED IMMEDIATELY PRIOR TO THE STORM, AS MEASURED FROM THE FACE OF THE EXISTING SEAWALL SLAB TO THE FACE OF RESTORED SEAWALL SLAB OR FROM THE FRONT SLOPE OF THE EXISTING RIPRAP TO THE FRONT SLOPE OF THE RESTORED RIPRAP.



### MATERIALS LIST

ESP EC 80.5 COMPOSITE SHEET PILING	20' TALL MAXIMUM	$\pm 260$ lf	$\pm 5,200$ ft <sup>2</sup>
CONCRETE CAP BEAM	24" x 26" x 260'	$\pm 1,126$ ft <sup>3</sup>	0% DISPLACEMENT
HELICAL SCREW ANCHORS	AS PER DETAIL	26 QTY	0% DISPLACEMENT
BEACH COMPATIBLE SAND FILL	$\pm 250$ ft <sup>2</sup> x 8'		$\pm 74.0$ YD <sup>3</sup>
WASHED #57 ROCK	26 WEEPS @ 1YD EA		$\pm 26$ YD <sup>3</sup>



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

## SEACOAST GARDENS II

STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPLACEMENT AT  
4153 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

NO	REMARKS	DATE
	CHARLES R ADAMS PROFESSIONAL ENGINEER	



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### SITE PLAN DETAILS

A. SITE PLAN DATA BASED ON COASTAL SURVEY  
PROVIDED BY MARK DOWST & ASSOCIATES, INC.  
B. PROPOSED SEAWALL TO ALIGN WITH SEAWALLS ON  
ADJACENT PROPERTIES

DRAWN BY EAA	SHEET 2 OF 11
CHECKED BY JAA	
SCALE AS NOTED	
DATE 20 FEB 2023	

S1.1



# SEACOAST GARDENS II

4153 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPLACEMENT AT



414 Canal Street - New Smyrna Beach, FL 32168 - 386.476.5533

NO	REMARKS	DATE

CHARLES R ADAMS  
PROFESSIONAL ENGINEER

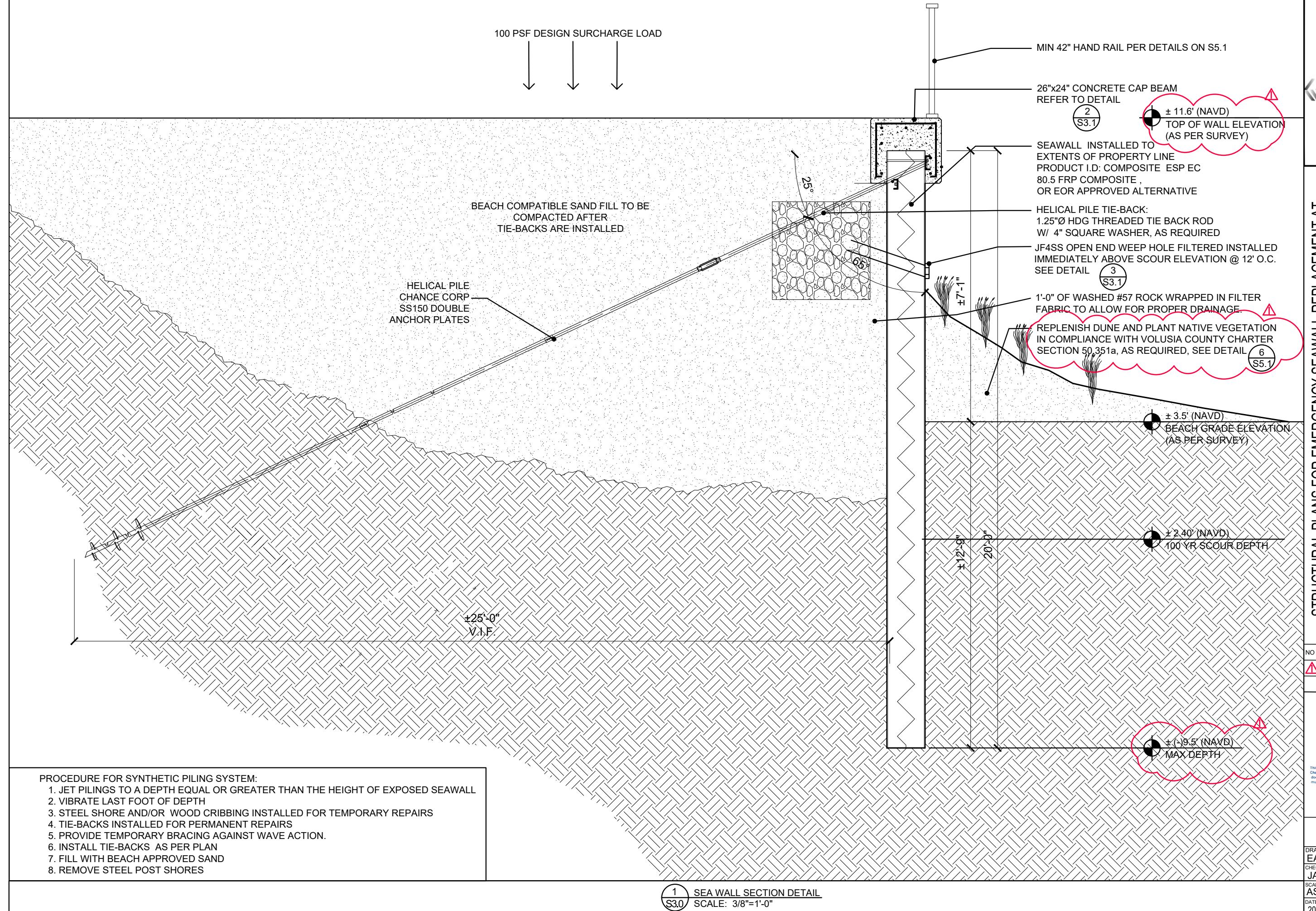


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Charles R. Adams, as indicated here. Printed copies of this  
document are not considered signed and sealed and the signature  
must be verified on any electronic copies.

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DAMAGE SURVEY  
PHOTOS

DRAWN BY EAA	SHEET 3 OF 11
CHECKED BY JAA	
SCALE AS NOTED	
DATE 20 FEB 2023	S2.0



# SEACOAST GARDENS III

STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPLACEMENT AT  
4153 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

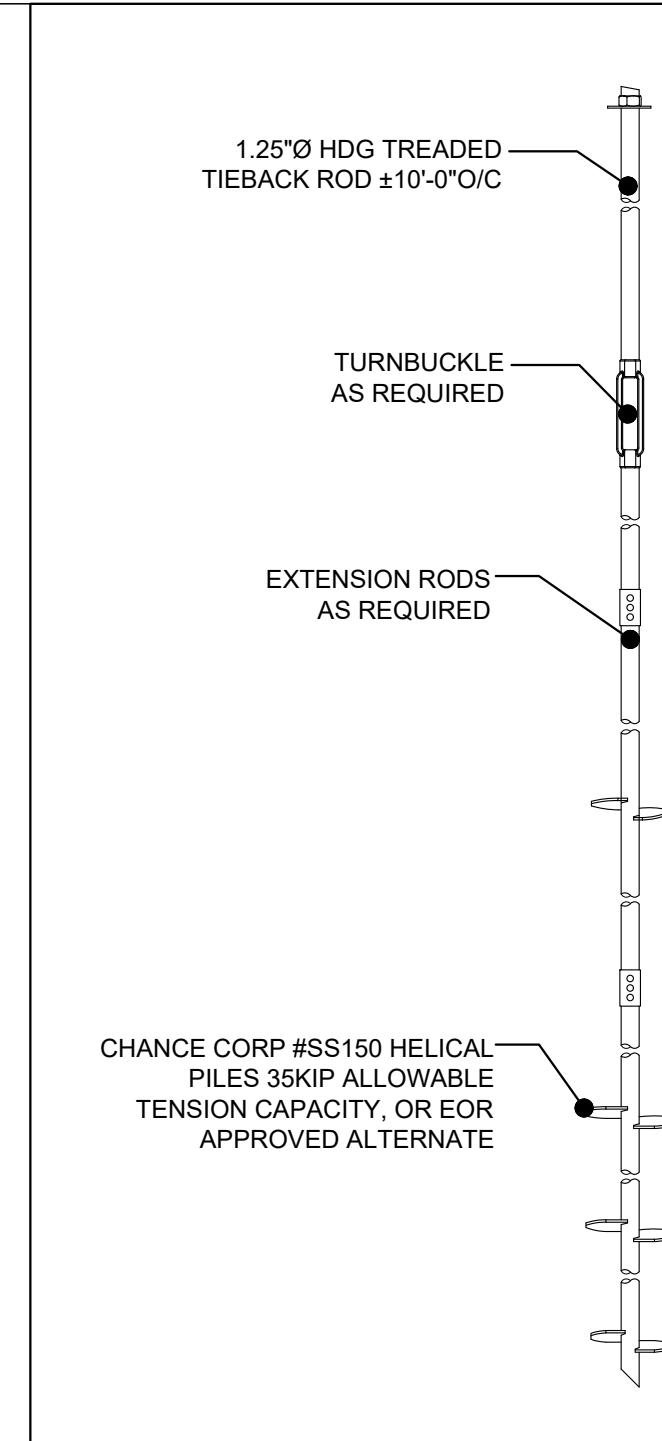
STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPLACEMENT AT

NO	REMARKS	DATE
△	DEP COMMENTS 3/30/23	

CHARLES R ADAMS  
PROFESSIONAL ENGINEER



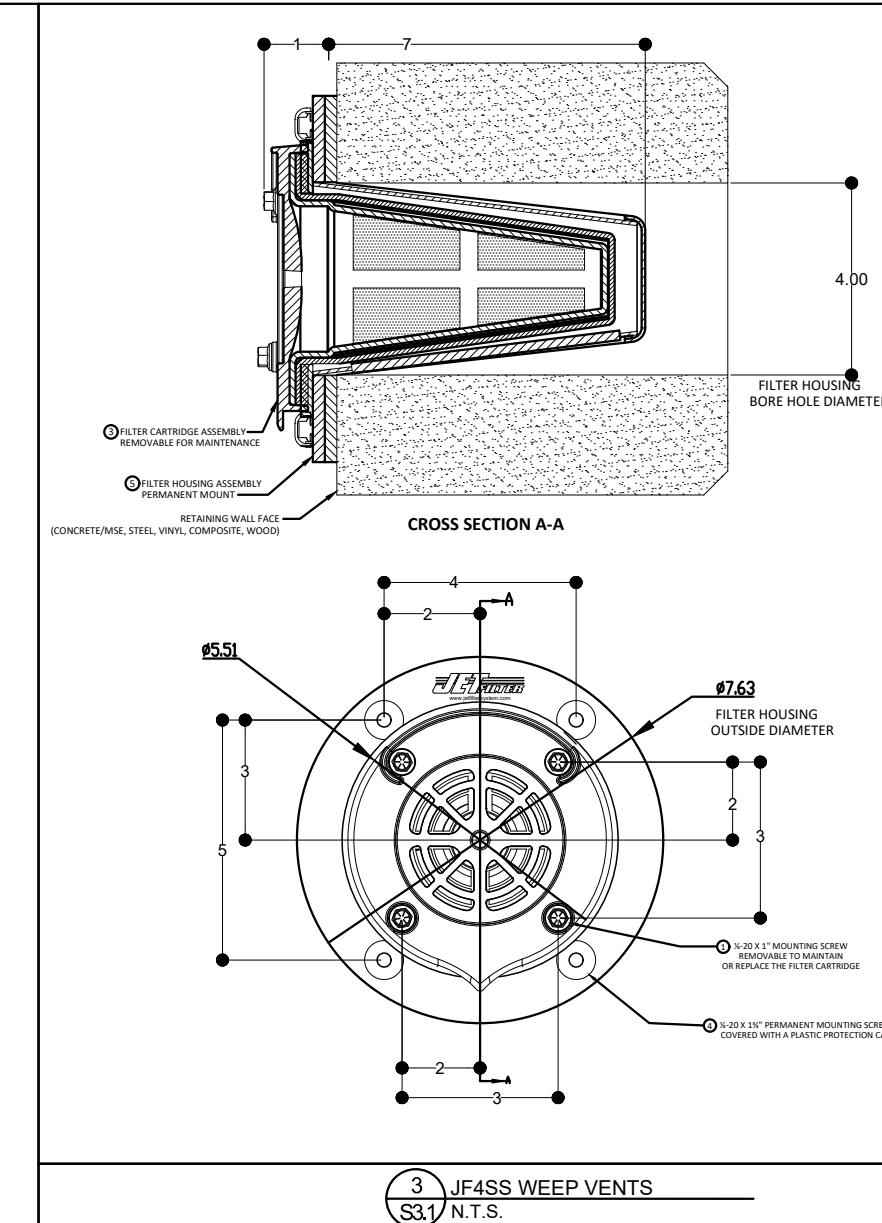
This item has been digitally signed and sealed by Charles R. Adams on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.	
SEAL	
FL LICENSE NO. 15113	
SEA WALL SECTION	
DRAWN BY EAA	SHEET 4 OF 11
CHECKED BY JAA	
SCALE AS NOTED	
DATE 20 FEB 2023	S3.0



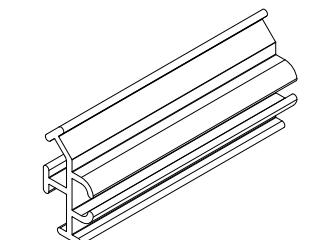
5 HELICAL PILE DE  
S3.1 N.T.S.

ESP EC 80.5		
ALLOWABLE MOMENT (M):	31,667 FT-LB/FT	140.85 KNM
SECTION MODULUS (Z):	38.0 IN <sup>3</sup> /FT	2,043 cm <sup>3</sup>
MOMENT OF INERTIA (I):	266 IN <sup>4</sup> /FT	36,325 cm <sup>4</sup>
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	

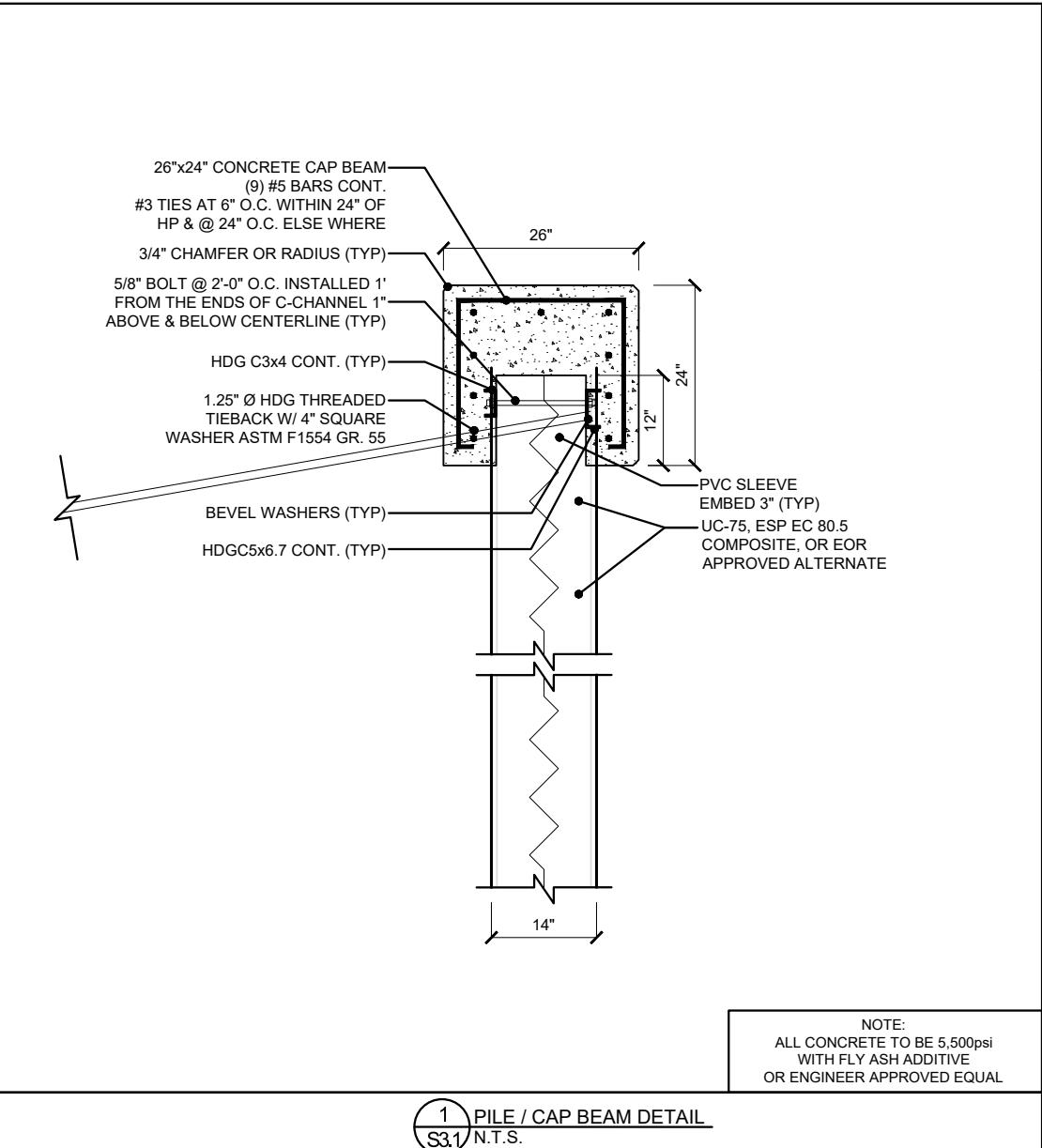
6 COMPOSITE SHEET P  
S3.1 SPECIFICATIONS



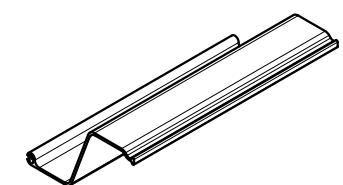
#### ESP EC 80.5 ISOMETRIC VIEW



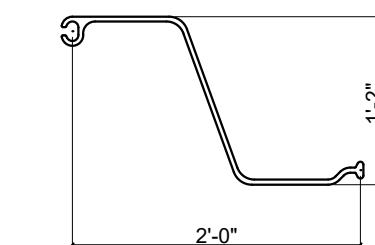
ESP EC 80.5 PLAN VIEW



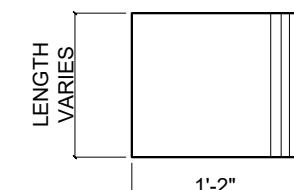
ESP EC 80.5 PROFILE VIEW



## ESP EC 80.5 ISOMETRIC VIEW



ESP EC 80.5 PLAN VIEW



## ESP EC 80.5 SECTION VIEW

# **SEACOAST GARDENS III**

**ACOAST GARDENS**  
4153 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH FLORIDA 32166

O	REMARKS	DATE

CHARLES R ADAMS  
PROFESSIONAL ENGINEER

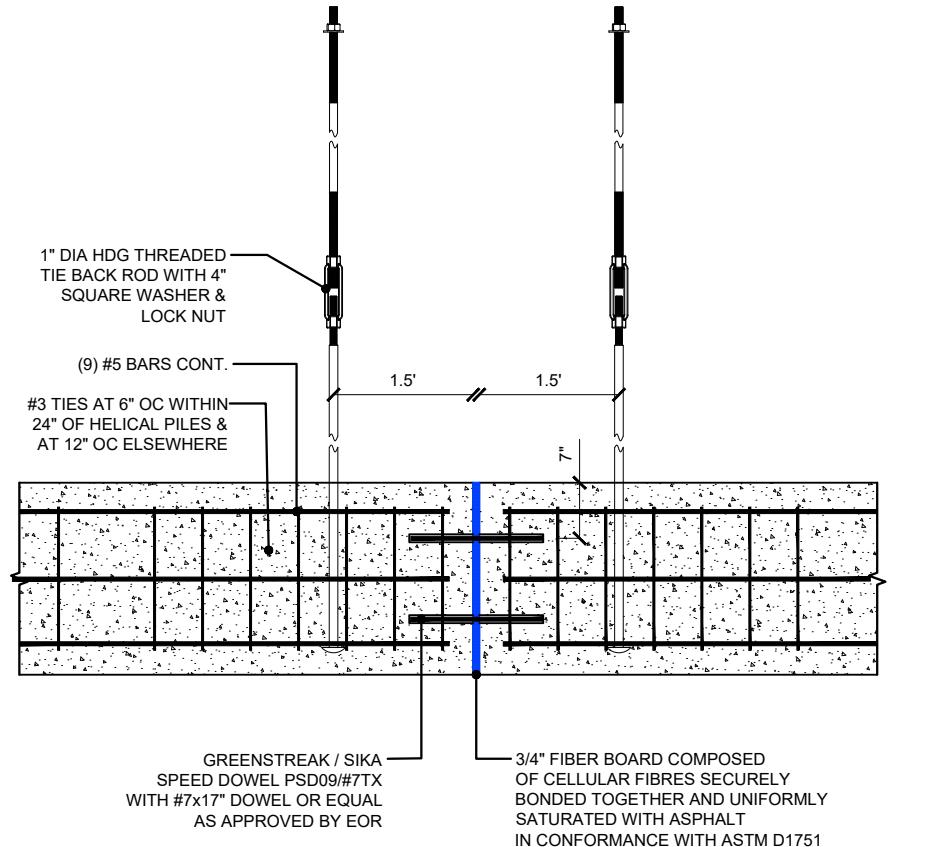
SEAL  
FL LICENSE NO. 15113

**DETAILS  
SPECIFICATIONS**

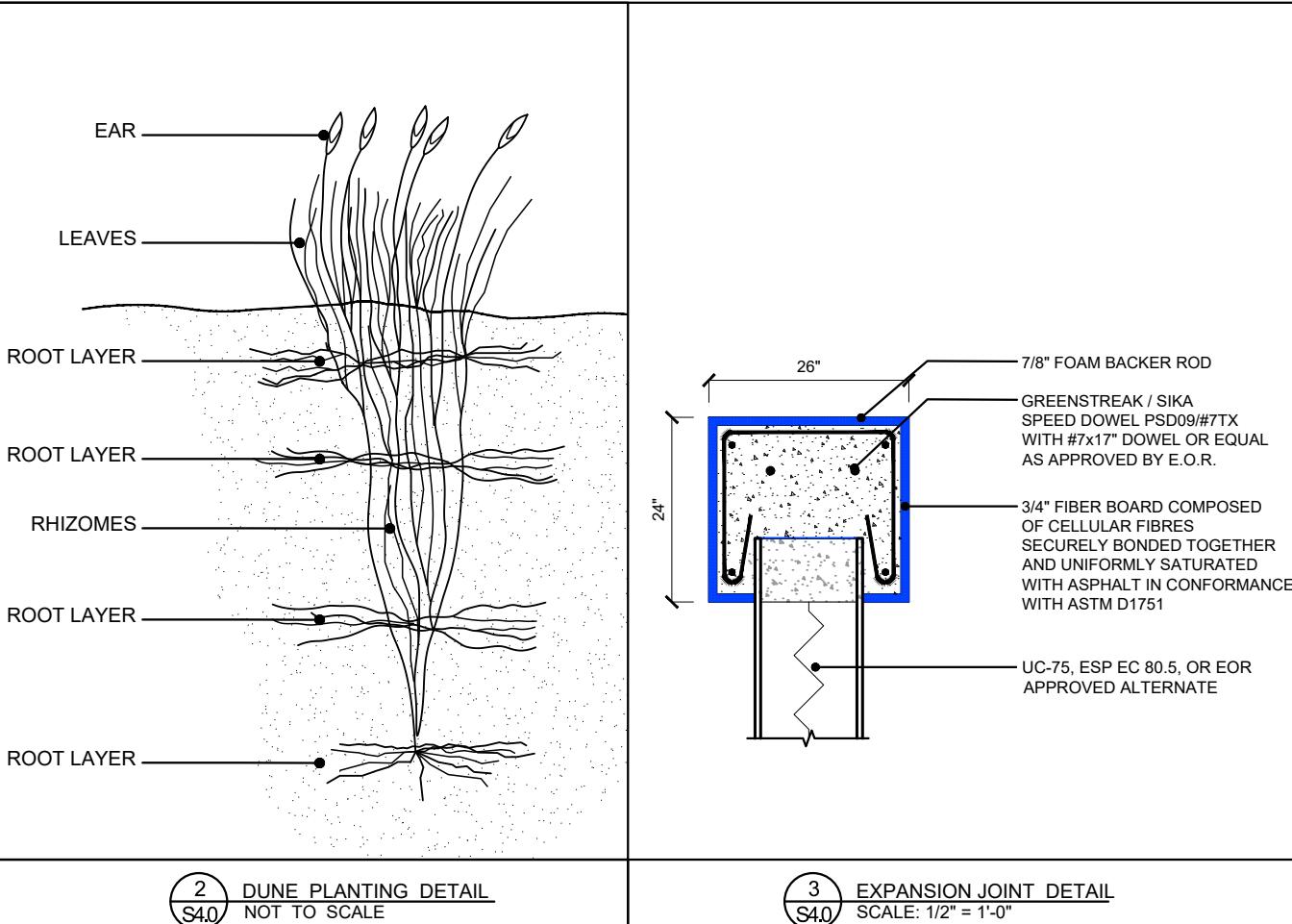
DRAWN BY  
EAA  
CHECKED BY  
EAA

S3.1

# GENERAL DESIGN AND CONSTRUCTION NOTES



1 EXPANSION JOINT DETAIL  
S4.0 SCALE: 1/2" = 1'-0"



2 DUNE PLANTING DETAIL  
S4.0 NOT TO SCALE

3 EXPANSION JOINT DETAIL  
S4.0 SCALE: 1/2" = 1'-0"

## MATERIAL

### GENERAL DESIGN:

- 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:

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

### DRAINS:

- JF4SS OPEN END WEEP HOLE FILTER WITH ADAPTER, INSTALLED @ 2'-0" ABOVE SCOUR ELEV. @ SPECIFIED SPACING.
- THE JET FILTER ASSEMBLY HOUSING SHOULD NOT BE REMOVED ONCE INSTALLED.
- WEEPS (JF4SS) TO ALLOW FOR EXCESSIVE HYDROSTATIC PRESSURE, FROM STORM WATER BUILD UP, TO RELEASE FROM BEHIND SEA WALL.

### STEEL:

- ALL STEEL CHANNELS, STEEL FASTENERS, AND TIE-RODS SHALL BE HOT DIP GALVANIZED PER ASTM A-153 WITH 2 OUNCES OF ZINC PER SQUARE FOOT.
- ALL REINFORCING BAR SHALL BE GRADE FRP, OR EOP APPROVED EQUAL

### CONCRETE:

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

### BACKFILL:

- BACKFILL MATERIAL SHALL BE COMPATIBLE W/THE BEACH SAND & APPROVED BY THE DEP.
- BACKFILL SHALL BE INSTALLED IN ±12" LIFTS AND COMPAKTED TO 95% PROCTOR.
- 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.

### ANCHORS:

- SHALL BE CHANCE CORP. SS150, OR EOR APPROVED ALTERNATE W/ 1" HDG THREADED TIE BACK ROD WITH 4" SQUARE WASHER, AS NEEDED

### WOOD

- ALL LUMBER SHALL BE MARINE GRADE, OR EOR APPROVED ALTERNATE
- ALL LUMBER FASTENERS SHALL BE 316 STAINLESS STEEL, OR EOR APPROVED ALTERNATE

### DESIGN:

- DESIGN IS BASED ON SOIL PROPERTIES AS NOTED:  
LAYER 1 (ELEV. +15.0 TO -4.5)  
 $\gamma = 115 \text{ PCF}$     $\gamma' = 57 \text{ PCF}$     $\phi = 34^\circ$     $C = 0 \text{ PSF}$   
LAYER 2 (ELEV. +4.5 & BELOW) (DRIVEN CONDITIONS)  
 $\gamma = 125 \text{ PCF}$     $\gamma' = 62 \text{ PCF}$     $\phi = 40^\circ$     $C = 0 \text{ PSF}$   
LAYER 1 (ELEV. +4.5 & BELOW) (JETTED CONDITIONS)  
 $\gamma = 120 \text{ PCF}$     $\gamma' = 60 \text{ PCF}$     $\phi = 36^\circ$     $C = 0 \text{ PSF}$
- IF ACTUAL SOIL OR SITE CONDITIONS DIFFER FROM THAT NOTED IN DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR A POSSIBLE REDESIGN.
- 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.
- 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:

- 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.
- INSTALLATION TO BE CONDUCTED ACCORDING TO ALL APPLICABLE OSHA AND LOCAL CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE SE CODES.
- PER OGC 22-2816 C.1.A.2.E. - SEAWALL MAY BE INSTALLED IMMEDIATELY SEAWARD OF PREVIOUS WALL, TO AVOID ANY SUBTERRANEAN OBSTACLES.
- 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:

- CONTRACTOR SHOULD REVIEW SOIL BORINGS AND PLAN FOR DIFFICULT DRIVING CONDITIONS, JETTING AND TRENCHING IS ALLOWED FOR NEW SHEET PILE INSTALLATION. LAST 1'OF SHEET PILE DRIVE TO BE VIBRATED.
- SHEET PILE SHALL PENETRATE TO DEPTH SHOWN IN THE PLANS.

- AFTER DRIVING SHEET PILE AND ATTACHING WALE, SAW PILING OFF AT A TRUE PLANE INDICATED ON THE PLANS. FINAL ELEVATIONS ARE TO BE WITHIN ONE (1) INCH OF ESTABLISHED ELEVATION.
- RETURN WALLS TO BE PROVIDED AT ENDS OF ALL BULKHEADS, AS SPECIFIED, TO PROVIDE FLANKING PROTECTION.

### CONCRETE CAP:

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

### JET FILTER UNITS:

- CORE A TRUE DIAMETER HOLE IN THE SHEET PILLING/SEAWALL OR CONCRETE ABUTMENT ABOUT 4 INCHES BEHIND WALL EVERY 12'-0" O.C. 2'-0" ABOVE BEACH SCOUR LEVEL, 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.
- INSERT THE JET FILTER ASSEMBLY INTO DRILLED HOLE ON WALL.
- PRE-DRILL THE MOUNTING HOLES BY USING:  
CONCRETE / COMPOSITE: PILOT HOLE BIT SIZE 3/16"  
STEEL SHEET PILING: PILOT HOLE BIT SIZE 7/32" OR 15/64"  
VINYL SHEET PILING: SELF-TAP
- 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:

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

### MONITORING:

- SHEET PILE INSTALLATION SHALL BE SUPERVISED BY A THIRD PARTY MONITORING COMPANY LIKE UES, OR EOR APPROVED ALTERNATE, IN ORDER TO VERIFY EMBEDMENT DEPTH.
- VIBRATION MONITORING SERVICES SHALL BE PROVIDED BY UES, OR EOR APPROVED ALTERNATE, TO VERIFY THAT FDOT VIBRATION LIMITS ARE NOT EXCEEDED.

### LANDSCAPE:

- COMPLY WITH THE VOLUSIA COUNTY CHARTER, SECTION 50-351A

# SEACOAST GARDENS III

4153 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPLACEMENT AT

NO	REMARKS	DATE
1	DEP COMMENTS 3/30/23	

CHARLES R ADAMS  
PROFESSIONAL ENGINEER



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 and the signature must be verified on any electronic copies.

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FL LICENSE NO. 15113

NOTES

DRAWN BY EAA	SHEET 7 OF 11
CHECKED BY JAA	
SCALE AS NOTED	

20 FEB 2023

S4.0

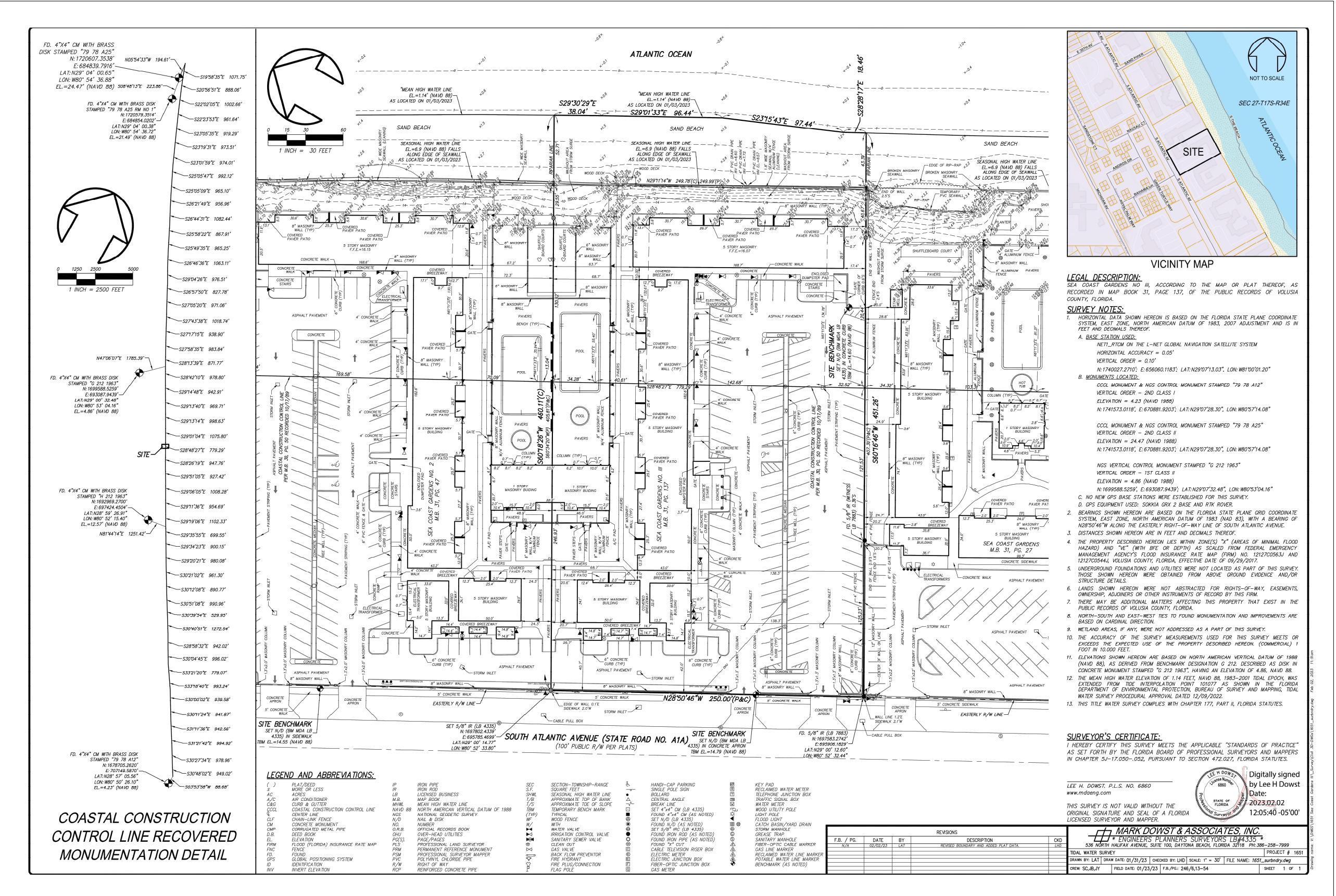
# SEACOAST GARDENS III

4153 SOUTH ATLANTIC AVENUE

NEW SMYRNA BEACH, FLORIDA 32169

## STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPLACEMENT AT

NO	REMARKS	DATE
CHARLES R ADAMS PROFESSIONAL ENGINEER		
Lee H. Dowst, P.L.S. No. 6860 <a href="http://www.ndeng.com">www.ndeng.com</a>	Digitally signed by Lee H Dowst Date: 2023.02.02 12:05:40 -05'00'	
THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.		
536 NORTH ATLANTIC AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 PH: 386-258-7999	PROJECT # 1651	
DRAWN BY LATT DRAW DATE 01/23/23 CHECKED BY LHD SCALE: 1" = 30' FILE NAME: 1651_surbdry.dwg		
CREW SCJB,JF FIELD DATE 01/23/23 F.E.PC: 246,613-54		
SHEET 1 OF 11		
DRAWN BY EAA CHECKED BY JAA SCALE AS NOTED DATE 20 FEB 2023		
S5.0		



COASTAL CONSTRUCTION  
CONTROL LINE RECOVERED  
MONUMENTATION DETAIL