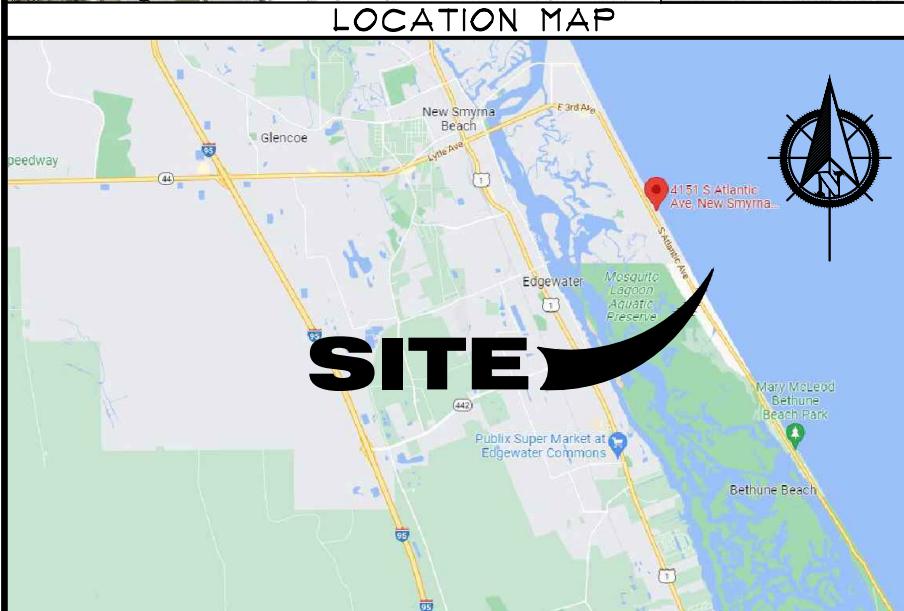
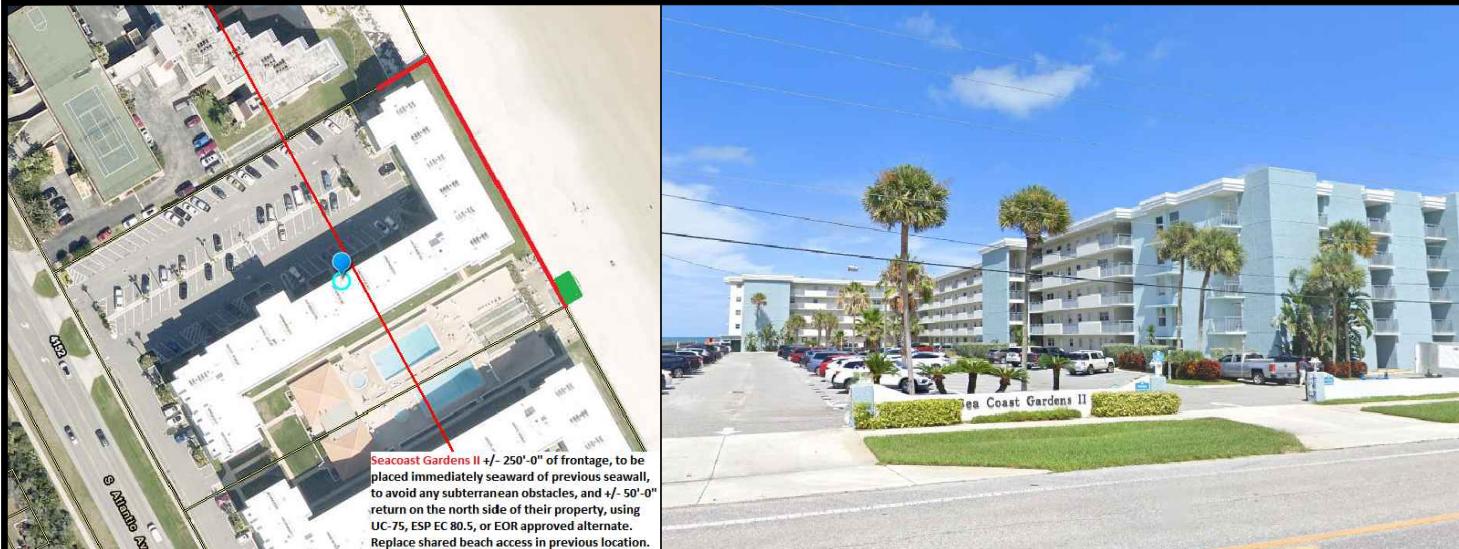


# STRUCTURAL PLANS FOR EMERGENCY SEAWALL REPAIR AT: SEACOAST GARDENS II

4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169



ELEVATION	ELEVATION HT
SECTION	DOOR NUMBER
DETAIL	WINDOW NUMBER
KEY NOTE	REVISION NUMBER
WALL TYPE	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
FFE	FINISHED FLOOR ELEVATION
FRP	FIBER-REINFORCED POLYMER
FT	FEET
GALV	GALVANIZED
GBFS	GRANULATED BLAST FURNACE SLAG
HDG	HOT DIPPED GALVANIZED
HP	HELICAL FILE
INFO	INFORMATION
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
M.G.	MARINE GRADE
MFG/MFR	MANUFACTURER
MHWL	MEAN HIGH WATER LINE
MN	MINIMUM
NA	NOT APPLICABLE
NC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
PLYWOOD	PLYWOOD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PT	PAINT/PRESSURE TREATED/POST TENSION
REBAR	REINFORCING BAR
REF	REFENCE
REINF	REINFORCE
REQD	REQUIRED
RO	ROUGH OPENING
SG	SHOREGUARD
SIM	SIMILAR
UC	ULTRA COMPOSITE
VIF	VERIFY IN FIELD
YD	YARD

<b>PROJECT DIRECTORY</b>	
ENGINEER OF RECORD	
	Charles R. Adams & Associates, Inc.
	STRUCTURAL ENGINEERS
	414 Canal Street - New Smyrna Beach, FL 32168 - 386.426.5583
	C.A. 4180
<b>INDEX of DRAWINGS</b>	
	COVER
	REPAIR PLAN
	DAMAGE SURVEY PHOTOS
	REPAIR SECTION DETAIL
	DETAILS AND SPECIFICATIONS
	DETAILS AND SPECIFICATIONS
	GENERAL NOTES
	SURVEY

<b>WIND LOAD DATA</b>	
BASIC WIND SPEED:	i40
CATEGORY II	ENCLOSED BUILDING
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 -35.71
ZONE 5	+32.91 -43.48

<b>SCOPE OF WORK</b>	
COMMERCIAL	- EMERGENCY SEAWALL REPAIR
<b>PROJECT CODE DATA</b>	
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
<b>JURISDICTION</b>	
CITY OF NEW SMYRNA BEACH	
<b>REVISION LOG</b>	
DATE	DESCRIPTION
3/30/23	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).	
<small>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.</small>	
CHARLES R ADAMS PROFESSIONAL ENGINEER	
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.

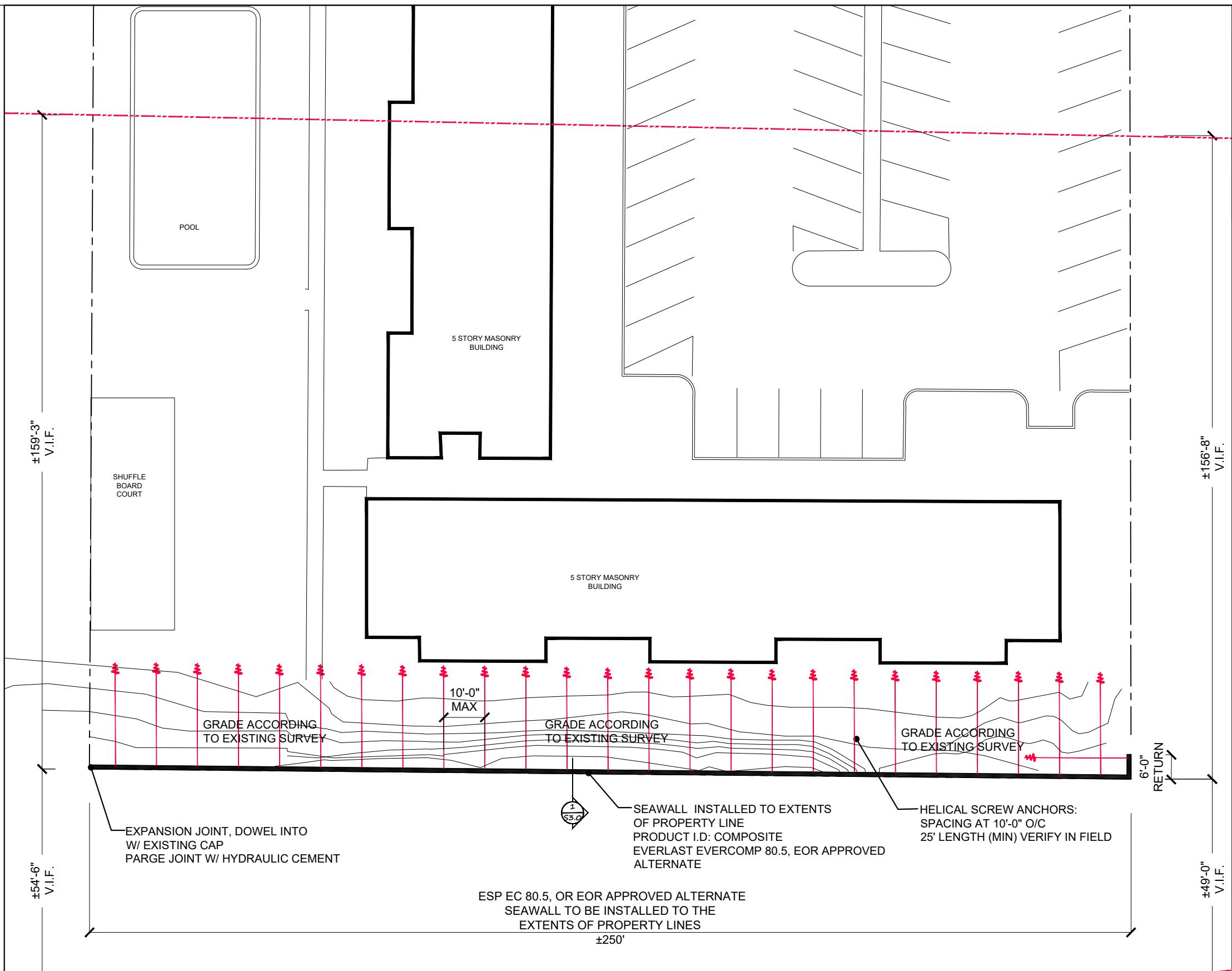
**GRA** Charles R. Adams & Associates, Inc.  
STRUCTURAL ENGINEERS

414 Canal Street - New Smyrna Beach, FL 32168 - 346-426-5533

# SEACOAST GARDENS II

4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

STRUCTURAL PLANS FOR AN EMERGENCY SEAWALL REPLACEMENT AT



NO	REMARKS	DATE

CHARLES R ADAMS  
PROFESSIONAL ENGINEER



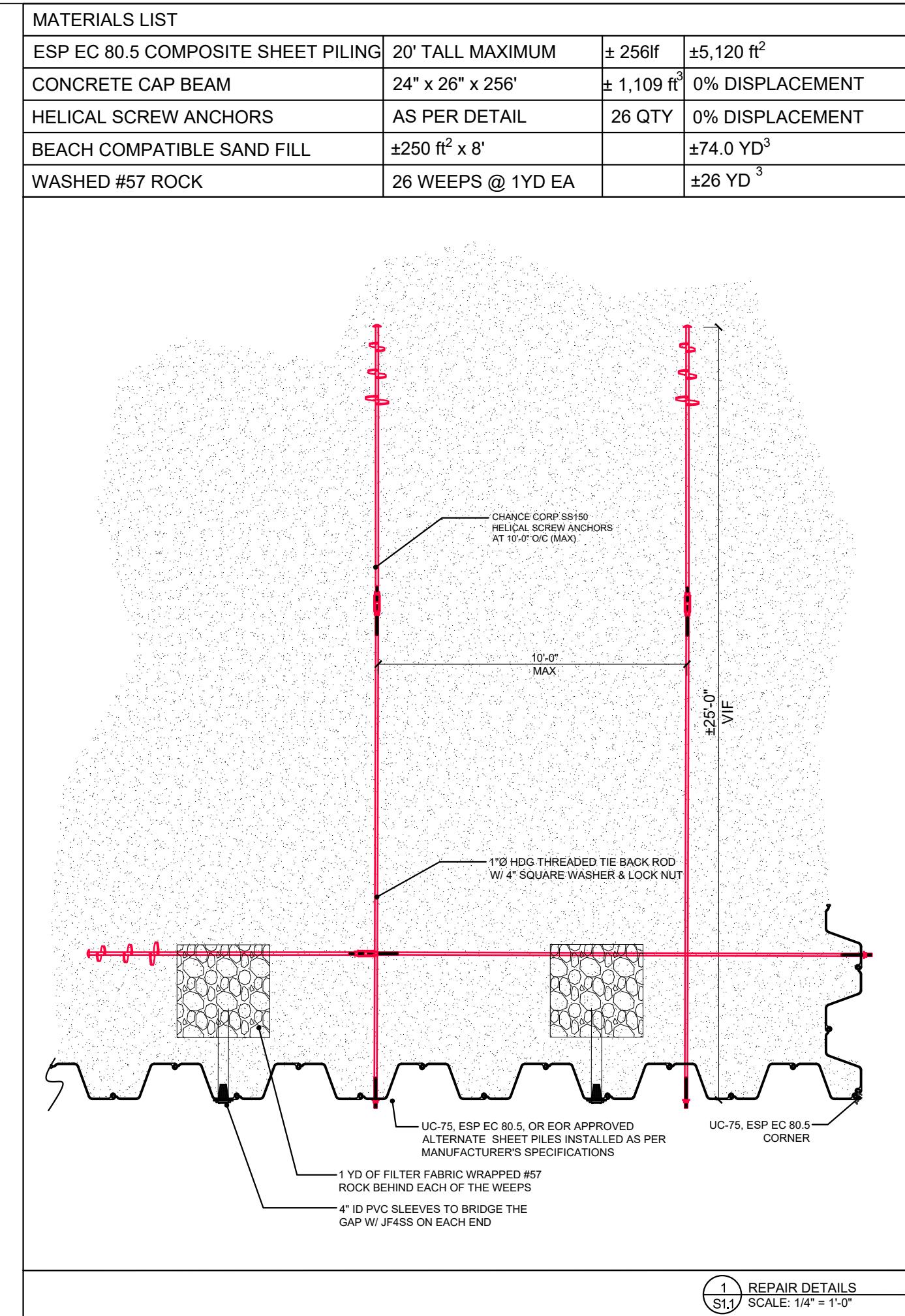
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## SITE PLANS

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

**S1.0**



NOTES:  
A. SITE PLAN DATA BASED ON BOUNDARY 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	

SEAL  
FL LICENSE NO. 15113

SITE PLAN DETAILS

S1.1

# SEACOAST GARDENS II

STRUCTURAL PLANS FOR AN EMERGENCY SEAWALL REPLACEMENT AT  
4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169



**SEACOAST GARDENS II**  
4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

STRUCTURAL PLANS FOR AN EMERGENCY SEAWALL REPLACEMENT AT

NO      REMARKS      DATE  
CHARLES R ADAMS  
PROFESSIONAL ENGINEER

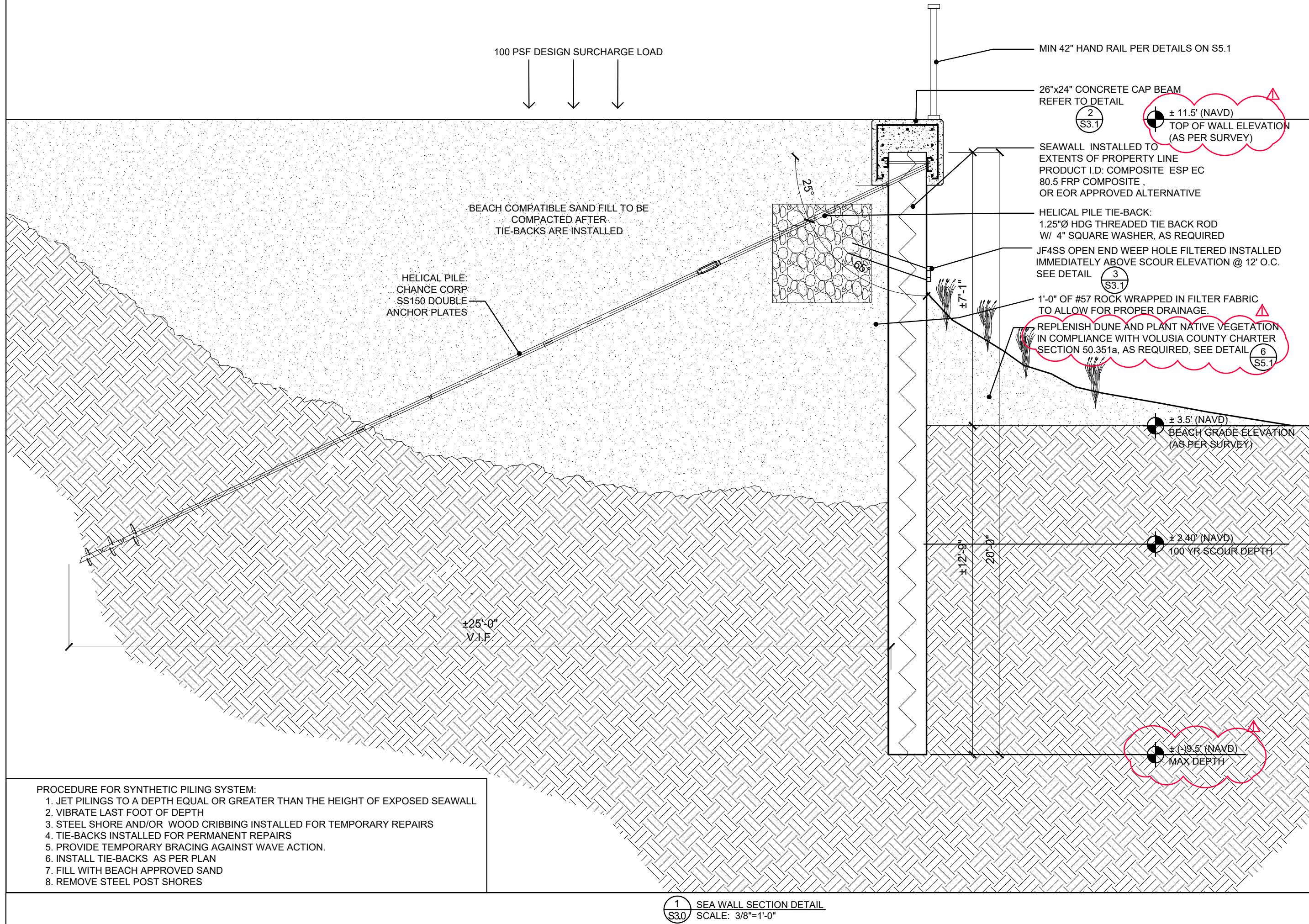


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DAMAGE SURVEY  
PHOTOS

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



# SEACOAST GARDENS II

## STRUCTURAL PLANS FOR AN EMERGENCY SEAWALL REPLACEMENT AT

4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

**Charles R. Adams & Associates, Inc.**

STRUCTURAL ENGINEERS

414 Canal Street - New Smyrna Beach, FL 32168 386.476.5583

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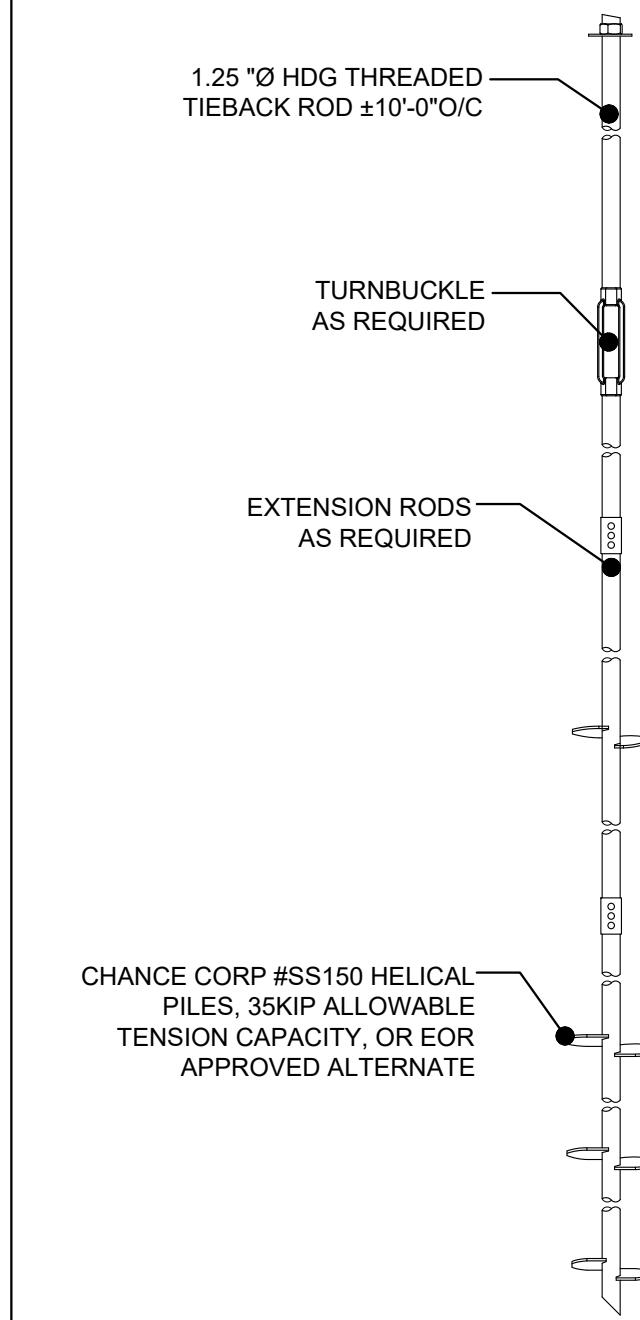
SEAWALL SECTION

DRAWN BY EAA

CHECKED BY JAA

SCALE AS NOTED

DATE 20 FEB 2023



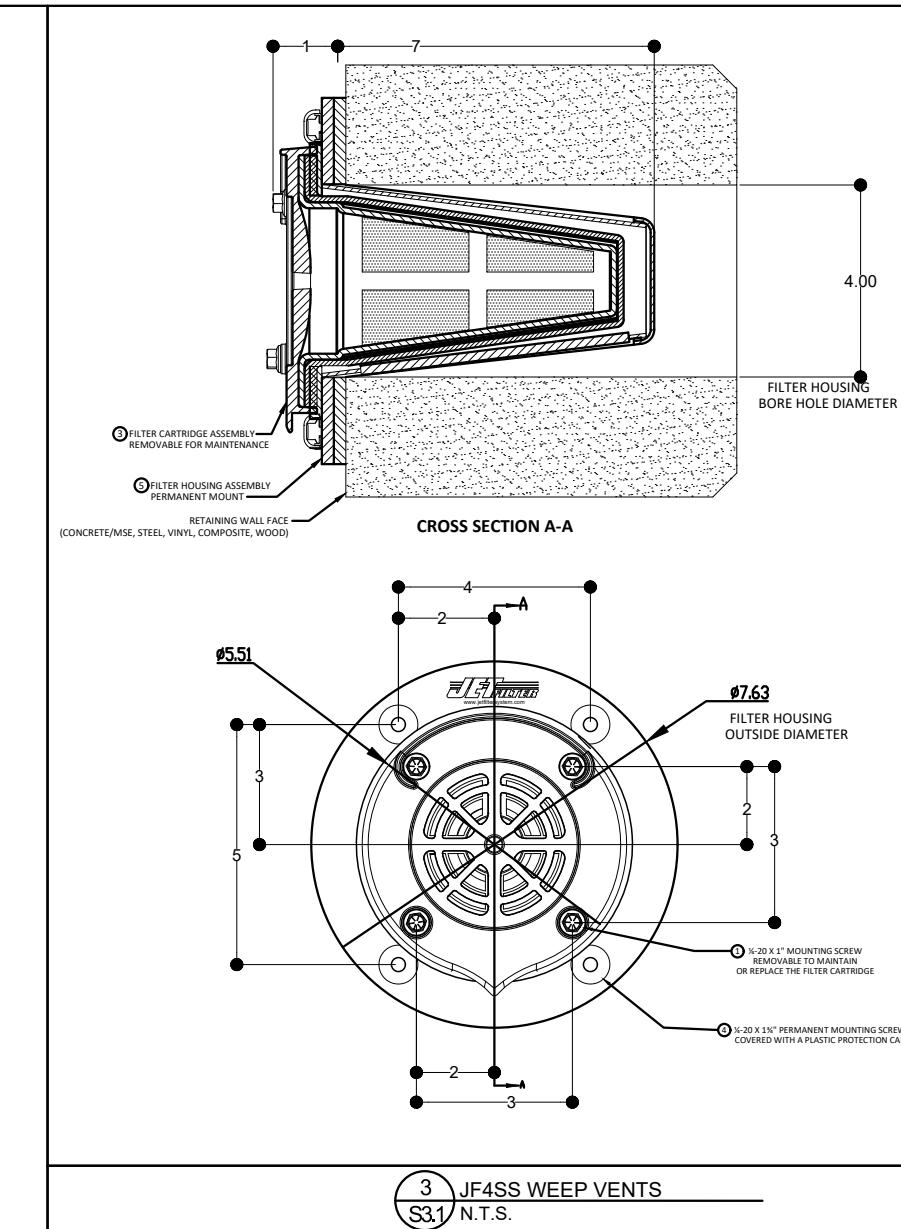
CHANCE CORP #SS150 HELICAL PILES, 35KIP ALLOWABLE TENSION CAPACITY, OR EOR APPROVED ALTERNATE

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

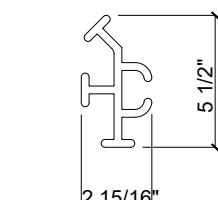
ESP EC 80.5

ALLOWABLE MOMENT (M):	31,667 FT-LB/FT	140.85 KN-m/m
SECTION MODULUS (Z):	38.0 IN <sup>3</sup> /FT	2,043 cm <sup>3</sup> /m
MOMENT OF INERTIA (I):	266 IN <sup>4</sup> /FT	36,325 cm <sup>4</sup> /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 COMPOSITE SHEET PILE SPECIFICATIONS  
S3.1

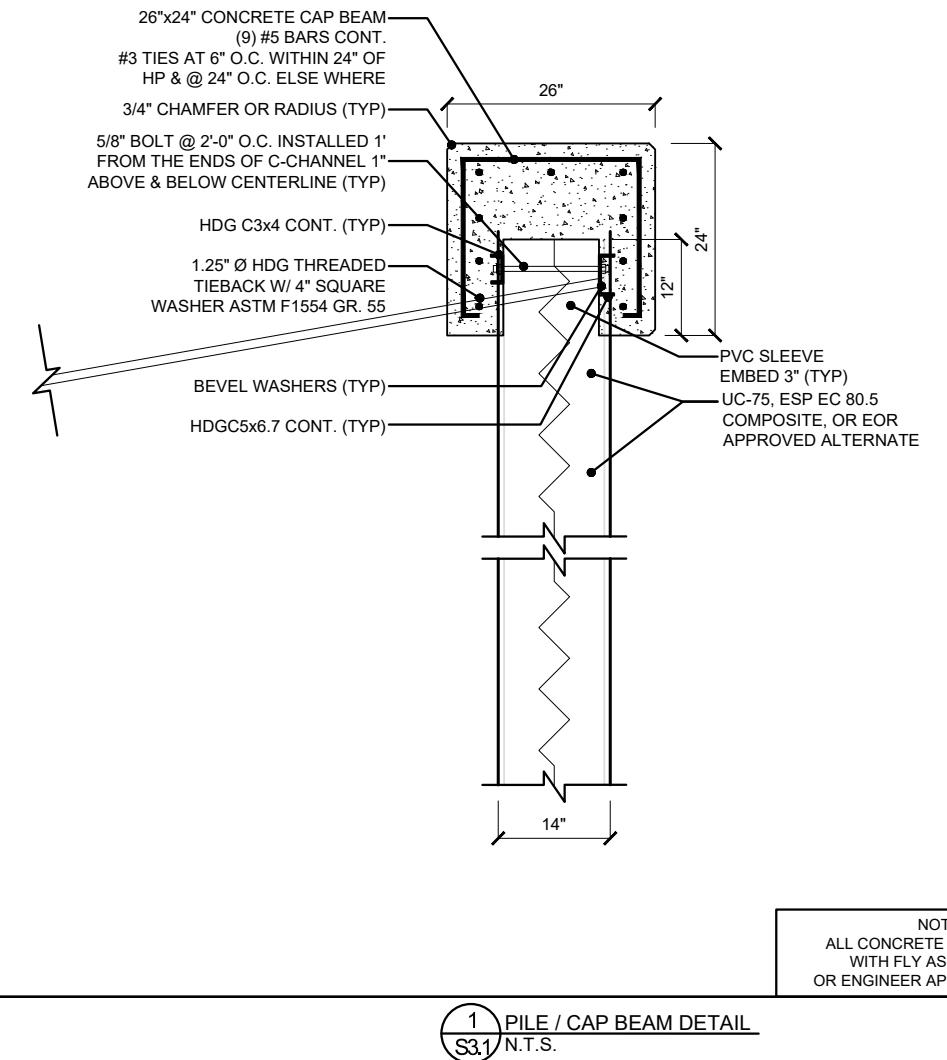


ESP EC 80.5 ISOMETRIC VIEW

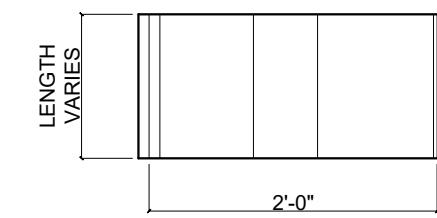


ESP EC 80.5 PLAN VIEW

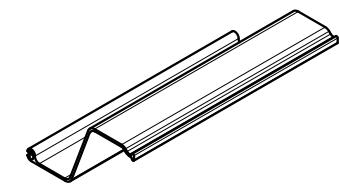
4 ESP EC 80.5 CORNER  
S3.1 N.T.S.



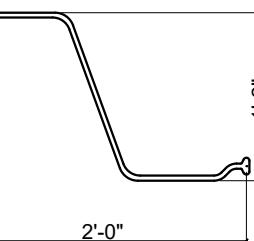
1 PILE / CAP BEAM DETAIL  
S3.1 N.T.S.



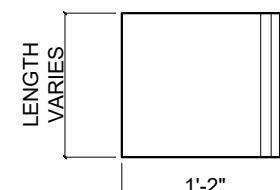
ESP EC 80.5 PROFILE VIEW



ESP EC 80.5 ISOMETRIC VIEW



ESP EC 80.5 PLAN VIEW



ESP EC 80.5 SECTION VIEW

2 COMPOSITE DETAILS  
S3.1

# SEACOAST GARDENS II

4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

STRUCTURAL PLANS FOR AN EMERGENCY SEAWALL REPLACEMENT AT

# GENERAL DESIGN AND CONSTRUCTION NOTES

## 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:  

$\gamma = 115 \text{ PCF}$	$\gamma' = 57 \text{ PCF}$	$\phi = 34^\circ$	$C = 0 \text{ PSF}$
LAYER 1 (ELEV. +4.5 TO -4.5)			
$\gamma = 125 \text{ PCF}$	$\gamma' = 62 \text{ PCF}$	$\phi = 40^\circ$	$C = 0 \text{ PSF}$
LAYER 2 (ELEV. +4.5 & BELOW) (DRIVEN CONDITIONS)			
$\gamma = 120 \text{ PCF}$	$\gamma' = 60 \text{ PCF}$	$\phi = 36^\circ$	$C = 0 \text{ PSF}$
LAYER 1 (ELEV. +4.5 & BELOW) (JETTED CONDITIONS)			
- 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:

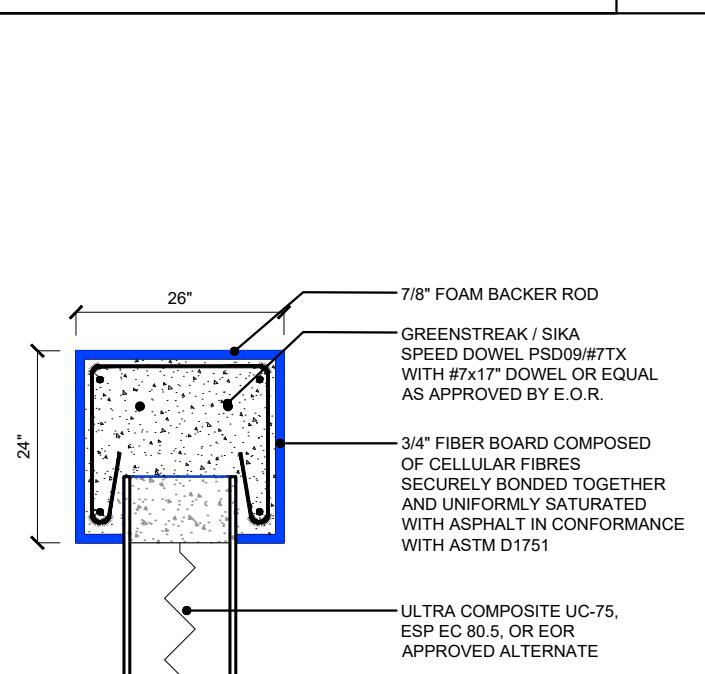
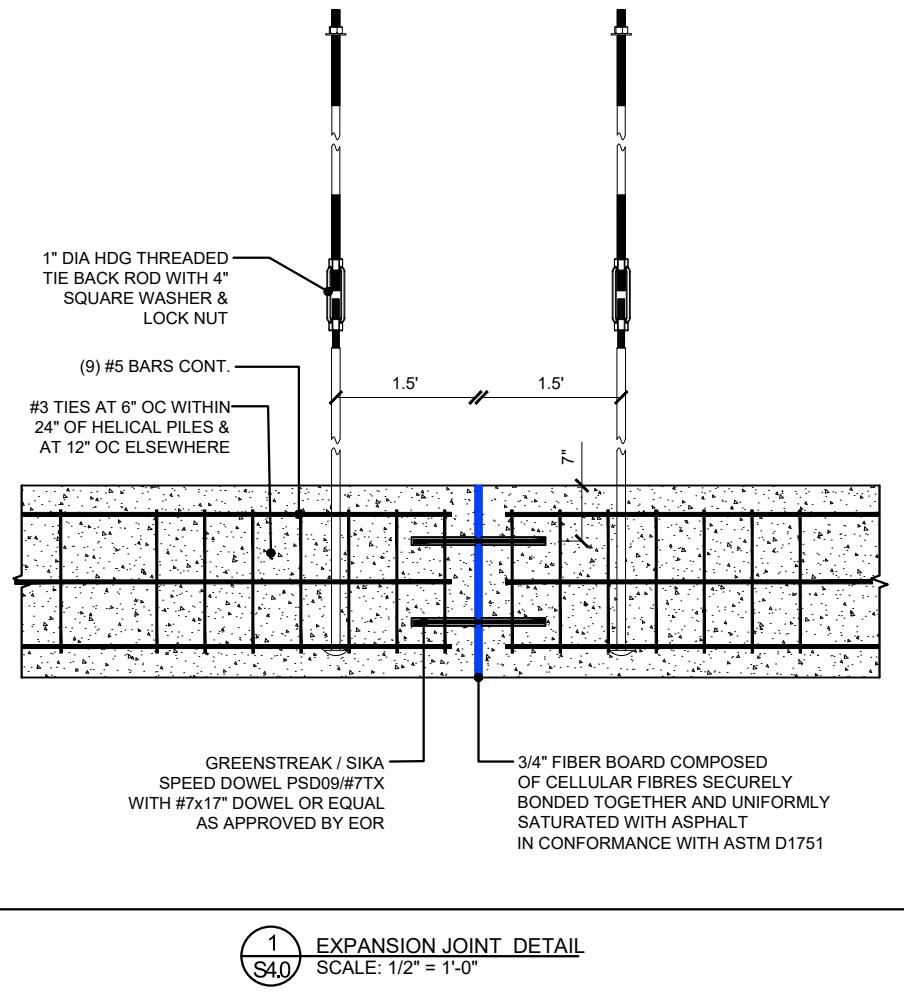
- COMPLY WITH THE VOLUSIA COUNTY CHARTER, SECTION 50-351A

# SEACOAST GARDENS II

4151 SOUTH ATLANTIC AVENUE  
NEW SMYRNA BEACH, FLORIDA 32169

STRUCTURAL PLANS FOR AN EMERGENCY SEAWALL REPLACEMENT AT

NO	REMARKS	DATE
	DEP COMMENTS	3/30/23
CHARLES R ADAMS PROFESSIONAL ENGINEER		
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SEAL FL LICENSE NO. 15113		
NOTES		
DRAWN BY EAA	SHEET 7 OF 11	
CHECKED BY JAA		
SCALE AS NOTED		
DATE 20 FEB 2023		
<b>S4.0</b>		



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

