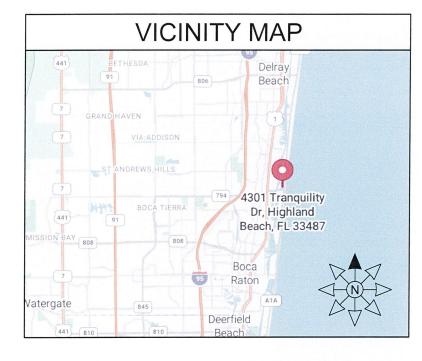


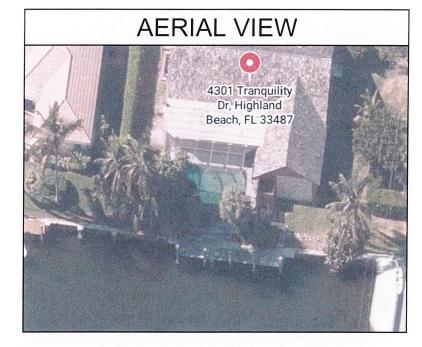
NEW TRULINE SEAWALL & WOOD DOCK

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MAY 28 2025

HIGHLAND BEACH BUILDING DEPARTMENT







ADDRESS: 4301 TRANQUILITY DRIVE HIGHLAND BEACH, FL 33487 PALM BEACH COUNTY COORDINATES: 26°23'57.2"N, 80°04'01.1"W ABBREVIATED LEGAL DESCRIPTION: LOT 22, BLOCK 3, 'BEL LIDO', ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 25, PAGE 97, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

SCOPE OF WORK

DEMOLITION:

- 1. REMOVE EXISTING WOOD DOCK.
- 2. PARTIALLY REMOVE EXISTING SEAWALL CAP & PILES.

NEW CONSTRUCTION:

- 1. INSTALL NEW 100-FT LONG TRULINE SEAWALL RESTRAINED WITH CONCRETE ANCHOR BLOCKS.
- 2. CONSTRUCT A NEW 5' WIDE x 40' LONG WOOD DOCK SUPPORTED BY DRIVEN TIMBER PILES.

SHEET INDEX		
SHEET	DESCRIPTION	
S-0	TITLE SHEET	
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S-2	EXISTING SITE PLAN	
S-3	PROPOSED SITE PLAN	
S-4	EXISTING DOCK & SEAWALL SECTION	
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S-6	CONCRETE & ANCHOR NOTES	
S-7	SEAWALL DETAILS	
S-8	SEAWALL DETAILS	
S-9 DOCK FRAMIG & WOOD NOTES		
S-10	DOCK SECTION & DETAILS	
S-11	PILE DETAILS	

FLORIDA WATERWAY ENGINEERING

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PROJECT ADDRESS:

4301 TRANQUILITY DRIVE HIGHLAND BEACH, FL PALM BEACH COUNTY

PREPARED FOR:

APH MARINE CONSTRUCTION



JOB NO.:	240345D	DATE: 14-Apr-25
DATE	REV.	DESCRIPTION
1/27/25	1	SITE REV.
4/14/25	2	TOWN REVIEW

SHEET NAME:

TITLE SHEET

SHEET NO:

S-0

APPLICABLE CODES:

- 1. FLORIDA BUILDING CODE, 8TH EDITION, 2023 (FBC)
- 2. AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2022 (ASCE 7-22)
- NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, 2024 (NDS)
- AMERICAN CONCRETE INSTITUTE. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, 2019 (ACI 318-19)
- AMERICAN CONCRETE INSTITUTE, GUIDE FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL CONCRETE REINFORCED WITH FRP BARS, 2015 (ACI 440.1R-15)

DESIGN CRITERIA:

RECEIVED

WIND SPEED CRITERIA:

MAY 28 2025

RISK CATEGORY **EXPOSURE CATEGORY ULTIMATE WIND SPEED**

D 170 MPH

HIGHLAND BEACH BUILDING DEPARTMENT

ULTIMATE WIND UPLIFT

66 PSF / 40 PSF (ASD)

2. NOAA TIDE DATA:

MEAN HIGH WATER (MHW) MEAN LOW WATER (MLW)

+0.36-FT (NAVD 88) -1.99-FT (NAVD 88)

LOAD CRITERIA:

DOCK LIVE LOAD

60 PSF

DOCK DEAD LOAD

5 PSF

UPLAND LIVE LOAD SURCHARGE 60 PSF

4. GEOTECHNICAL REPORT BY SPECIALTY ENGINEERING CONSULTANTS, INC., DATED

MARCH 4, 2024. ACTIVE WATER PRESSURE ELEVATION

MHW PASSIVE WATER PRESSURE ELEVATION MLW

WEEP HOLES

8'-0" O.C. AT MHW

TOPOGRAPHICAL AND BOUNDARY SURVEY BY "PHILLIPS SURVEYING & MAPPING". DATED 9/20/2024.

> TOP OF EXISTING SEAWALL TOP OF NEW SEAWALL

<u>+2.34 FEET (NAVD 88) / +3.89 (NGVD 29)</u> +7.17 FEET (NAVD 88) / +8.72 (NGVD 29)

GENERAL NOTES:

- 1. TO THE BEST OF OUR KNOWLEDGE, THESE DRAWINGS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE.
- 2. ALL ELEVATIONS ON DRAWINGS DEPICTED AS NAVD 88, U.N.O.
- 3. INFORMATION SHOWN ON THE DRAWINGS AS TO THEIR LOCATION AND CHARACTER HAS BEEN PREPARED FROM THE MOST RELIABLE DATA AVAILABLE TO THE ENGINEER: THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED. THE ENGINEER IS NOT LIABLE FOR ANY UNKNOWNS THAT ARE DISCOVERED DURING CONSTRUCTION.
- 4. ALL EXISTING DIMENSIONS AFFECTING THE WORK SHOWN ON THE DRAWINGS SHALL BE FIFI D CHECKED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

- DO NOT SCALE THESE DRAWINGS TO OBTAIN DIMENSIONS.
- NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE ENGINEER OF RECORD.
- 7. THESE DRAWINGS DO NOT DEFINE THE TOTAL SCOPE OF CONSTRUCTION CONTRACT DOCUMENTS. REFER TO CONSTRUCTION MANAGER'S CONTRACT DOCUMENTS.
- 8. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING SAFETY OF PERSONS AND PROPERTY. THE ENGINEER'S PRESENCE OR REVIEW OF WORK DOES NOT INCLUDE THE ADEQUACY OF THE CONTRACTOR'S MEANS OR METHODS OF CONSTRUCTION.

DEMOLITION:

- 1. THE CONTRACTOR SHALL VERIFY ALL UTILITIES WITHIN THE CONSTRUCTION AREA, CALL 811 AT LEAST 48 HOURS BEFORE CONSTRUCTION BEGINS.
- 2. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS RELATED TO THE PARTIAL DEMOLITION OF THE EXISTING SEAWALL, INCLUDING SHORING, BRACING, AND PROTECTING THE STABILITY AND INTEGRITY OF EXISTING AND NEW STRUCTURES DURING DEMOLITION AND CONSTRUCTION.
- 3. STABILIZATION OF SOIL DURING DEMOLITION OF EXISTING WALLS AND CONSTRUCTION OF NEW SEAWALL IS REQUIRED. ALL ENGINEERING, DESIGNS AND MEANS AND METHODS OF CONSTRUCTION RELATED TO SOIL STABILIZATION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWING REVIEW:

- 1. SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS.
- 2. SHOP DRAWING SUBMITTALS ARE REQUIRED FOR THE FOLLOWING ITEMS:
 - PRECAST CONCRETE PILES
 - CONCRETE MIX DESIGNS, COATINGS, AND SEALING COMPOUNDS
 - STEEL PLATE, ANGLE, & ANCHOR RODS
 - CONCRETE BAR REINFORCEMENT

TURBIDITY BARRIERS:

- 1. FLOATING TURBIDITY BARRIERS WILL BE PLACED AT ALL OUTFALL LOCATIONS CONNECTED TO THE WORK AREA DURING ACTIVE CONSTRUCTION. IF SEAGRASSES ARE PRESENT BARRIERS WILL NOT BE PLACED OVER THEM. THE FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED IN A MANNER TO PREVENT MANATEE ENTANGLEMENT.
- 2. USE FLOATING TURBIDITY BARRIERS WITH WEIGHTED SKIRTS EXTENDING TO WITHIN 1 FT OF THE BOTTOM AROUND ALL IN-WATER OR ADJACENT WORK AREAS.
- MARK TURBIDITY BARRIERS WITH THE CONTRACTOR'S COMPANY NAME IN PERMANENT MARKINGS AT LEAST 3 INCHES HIGH ON THE TOP OF THE BARRIER.
- TURBIDITY BARRIERS SHALL REMAIN IN PLACE DURING ALL PHASES OF IN-WATER WORK.
- 5. CONTRACTOR SHALL EMPLOY AND MAINTAIN ADEQUATE SEDIMENT AND EROSION CONTROL MEASURES DURING ALL PHASES OF WORK.



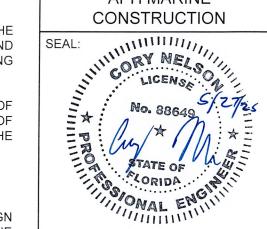
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PREPARED FOR:

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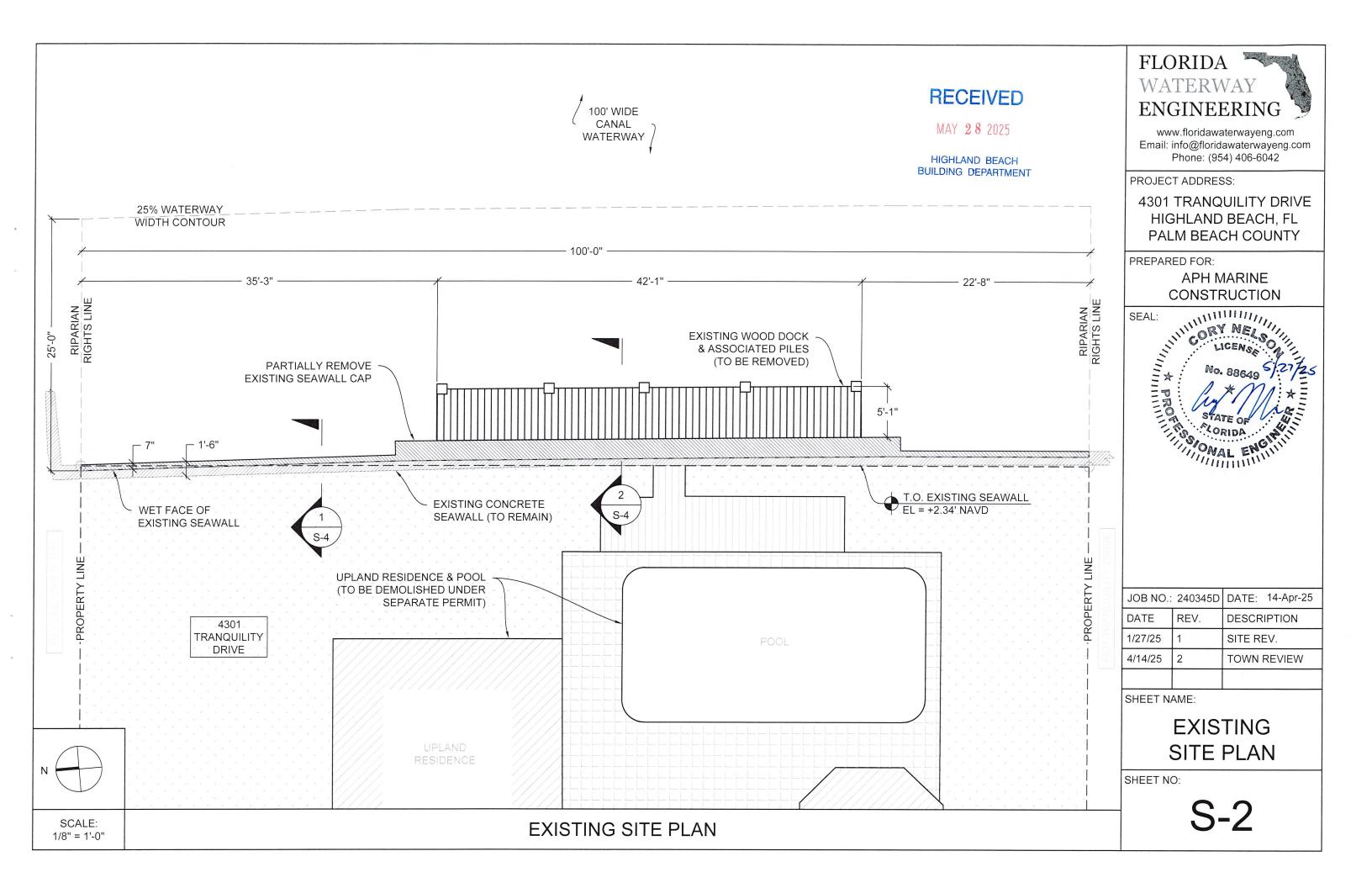


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SHEET NAME:

GENERAL NOTES

SHEET NO:





CANAL

MAY 28 2025

HIGHLAND BEACH

PROPOSED SCOPE	
SEAWALL (LINEAR FEET)	100
SEAWALL OVER WATER (SQUARE FEET)	50
DOCK OVER WATER (SQUARE FEET)	200
CONCRETE ANCHOR BLOCKS (#)	11
12" TIMBER DOCK PILES (#)	5

FLORIDA WATERWAY **ENGINEERING**

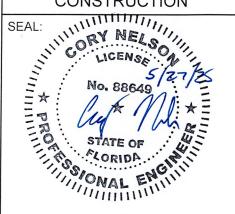
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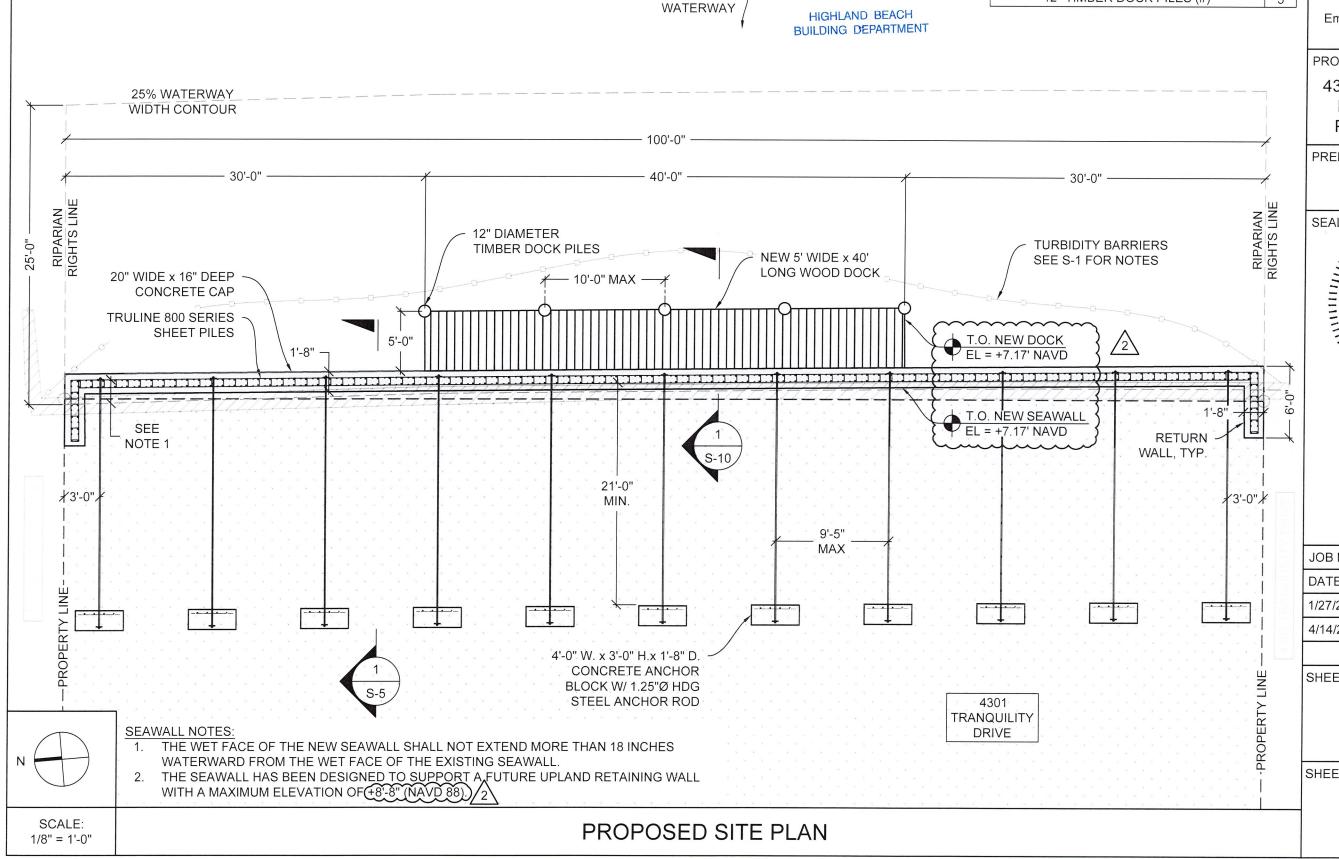


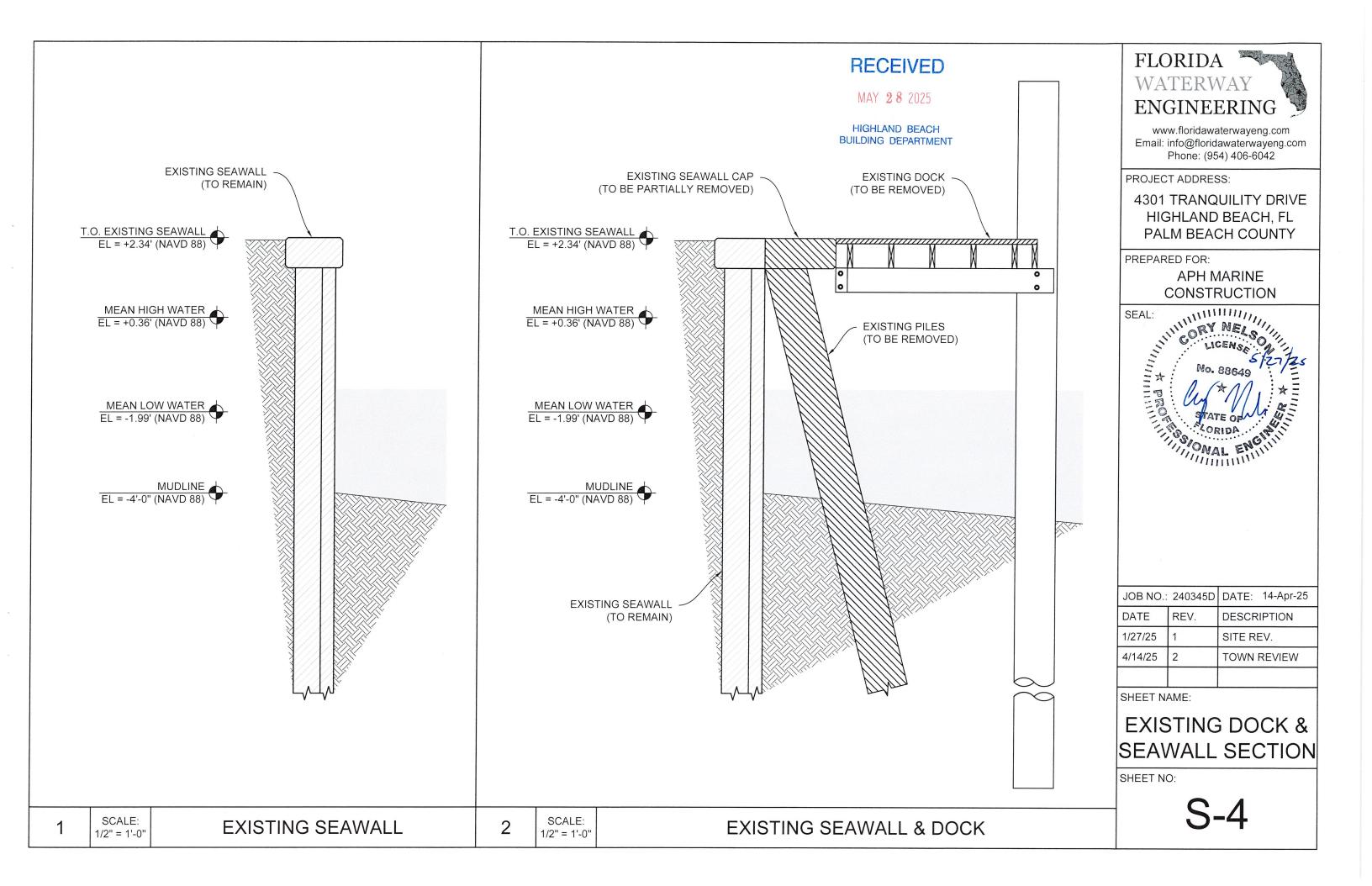
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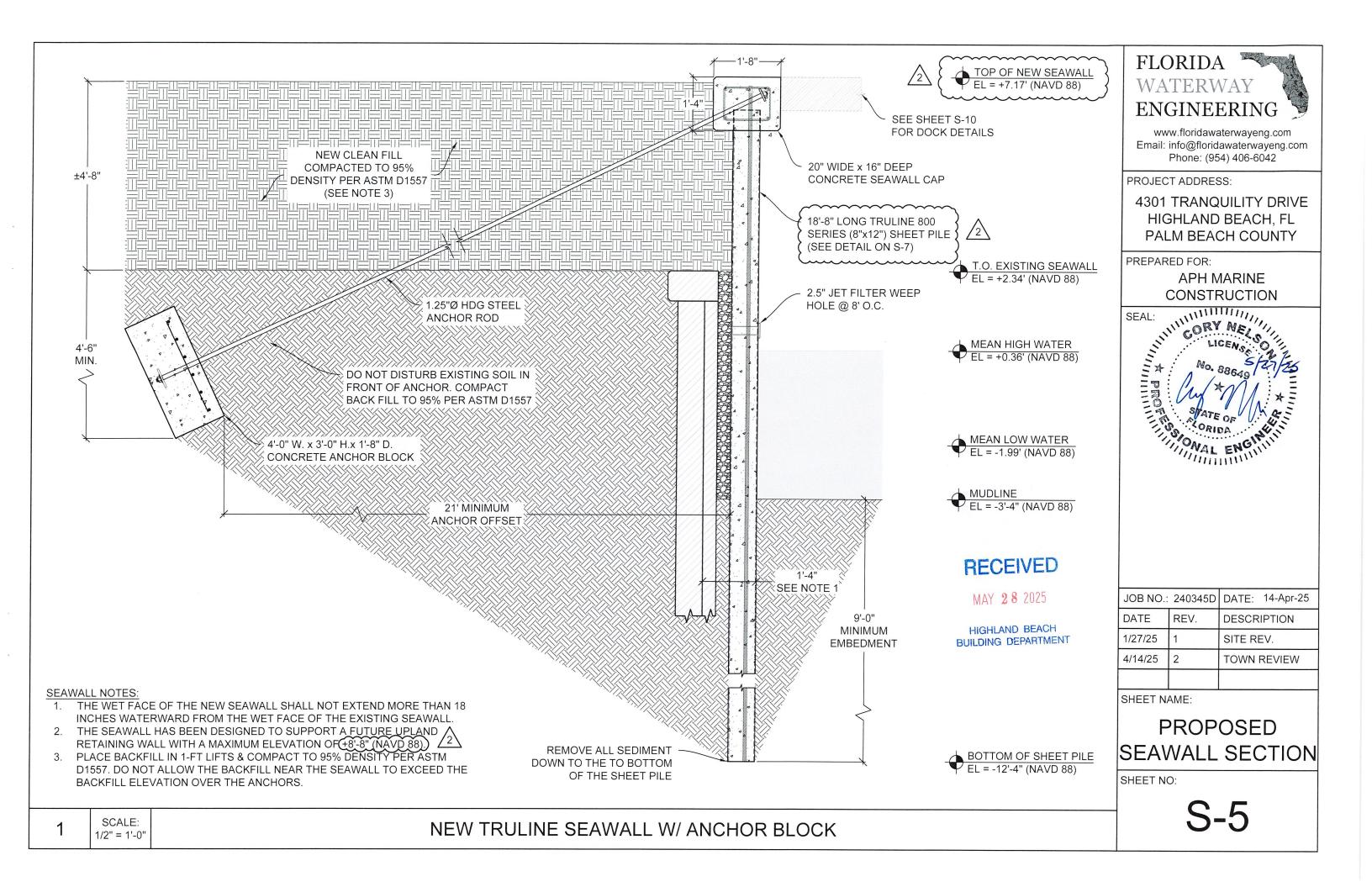
SHEET NAME:

PROPOSED SITE PLAN

SHEET NO:





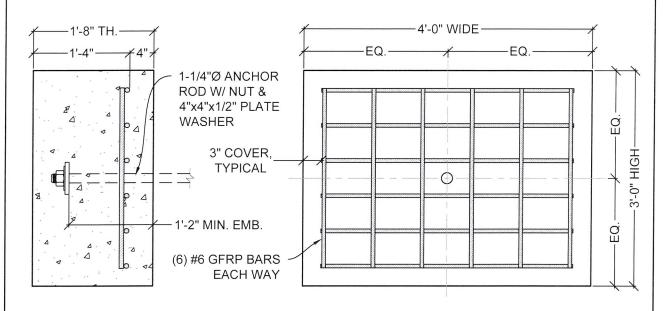


- 1. MATERIALS:
- 1.1. TIE-ROD

(ASTM F1554, GR. 55), HOT DIPPED GALVANIZED

- 1.2. PLATE WASHER
- (ASTM A36), HOT DIPPED GALVANIZED

2. ANCHOR RODS SHALL BE COATED WITH A COAL TAR EPOXY (8.0 - 10.0 MIL DFT) OR ENCASED INSIDE A GROUT FILLED PVC PIPE.



A SCALE: 3/4" = 1'-0'

ANCHOR BLOCK

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HIGHLAND BEACH BUILDING DEPARTMENT

MATERIAL SPECIFICATIONS:

- MATERIALS
 - 1.1. DEFORMED STEEL BARS

1.2. GFRP BARS

ASTM A615, GR60 ASTM D7957 Fy = 60 KSI Fu = 145 KSI

2. ALL STEEL REINFORCEMENT SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A767 AND ACI GUIDELINES FOR CORROSION PROTECTION.

- 3. GFRP BAR REINFORCEMENT SHALL HAVE A GUARANTEED MINIMUM TENSILE STRENGTH OF 145 KSI AND A GUARANTEED MODULUS OF ELASTICITY OF 8,702 KSI PER ASTM D7957.
- 4. STEEL REINFORCEMENT SHALL NOT BE SUBSTITUTED WITH GFRP OR OTHER TYPES OF REINFORCEMENT WITHOUT APPROVAL FROM THE ENGINEER OF RECORD (EOR).
- 5. CONCRETE SHALL BE NORMAL WEIGHT WITH A MAXIMUM WATER/CEMENT RATIO OF 0.40 AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH (F'C) OF 5,000 P.S.I AT 28 DAYS.

REINFORCEMENT DETAILING:

- 6. ALL REINFORCING SHALL BE SUPPORTED BY AND SECURED TO PLASTIC BOLSTERS. THE USE OF BRICKS OR ROCKS TO SUPPORT REINFORCING IS NOT ACCEPTED.
- 7. A MINIMUM OF 3" CLEAR CONCRETE COVER IS REQUIRED AROUND ALL REINFORCING.
- WHERE SEAWALL CAPS, WALLS, BEAMS, OR FOOTINGS CHANGE DIRECTION, PROVIDE CORNER BARS OF SAME SIZE AND QUANTITY AS THE SPECIFIED STEEL.
- 9. PROVIDE DOWELS OR LAP SPLICES TO MAINTAIN CONTINUITY. BAR REINFORCEMENT LAP SPLICE LENGTH SHALL BE A MINIMUM OF 48 TIMES THE BAR DIAMETER U.N.O.

PREPARATION AND PLACEMENT:

- 10. THE CONTRACTOR SHALL NOTIFY THE SPECIAL INSPECTOR PRIOR TO PLACING CONCRETE TO ALLOW FOR THE INSPECTION OF REINFORCING AND FORM WORK.
- 11. WET WOOD FORMS IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.
- 12. CONCRETE TICKETS SHALL BE TIME-STAMPED WHEN BATCHED AND SHALL BE PLACED WITHIN 90 MINUTES FROM BATCH TIME. CONCRETE BATCHES OLDER THAN 90 MINUTES WILL BE REJECTED.
- 13. CONCRETE SHALL BE PLACED WITH A TREMIE PIPE FOR DROPS GREATER THAN EIGHT FEET. FREE FALL OF CONCRETE GREATER THAN EIGHT FEET IS PROHIBITED.
- 14. CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND MAINTAINED WITH MINIMAL MOISTURE LOSS FOR THE PERIOD NECESSARY FOR CONCRETE HARDENING.

TESTING REQUIREMENTS:

15. AT THE OWNER'S DISCRETION, SIX (6) CONCRETE CYLINDERS SHALL BE TAKEN FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF AND SHALL BE TESTED AT 3, 7 AND 28 DAYS. SLUMP SHALL NOT EXCEED 5" (±1").

FLORIDA WATERWAY ENGINEERING

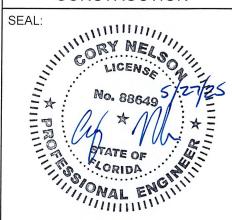
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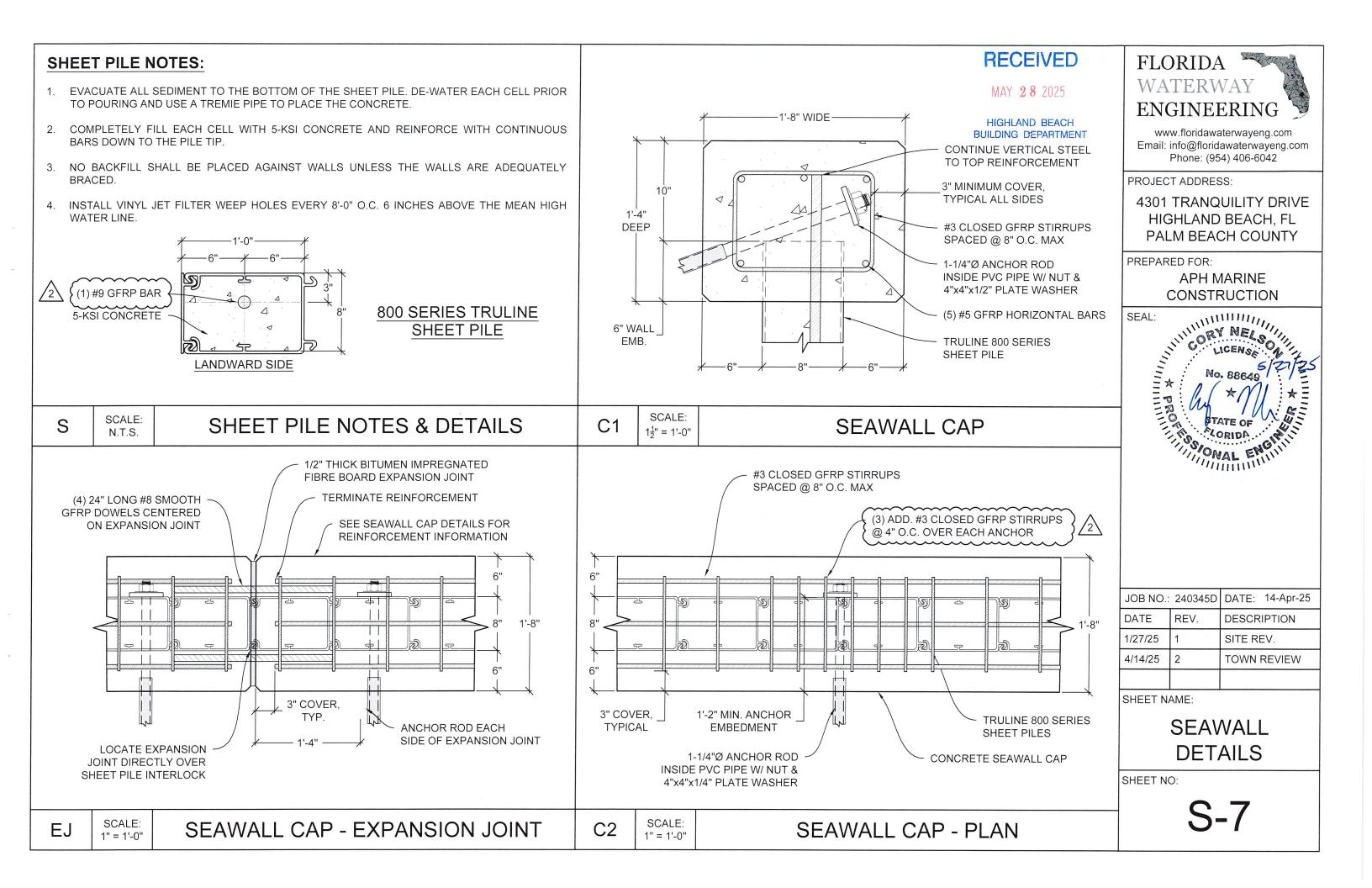
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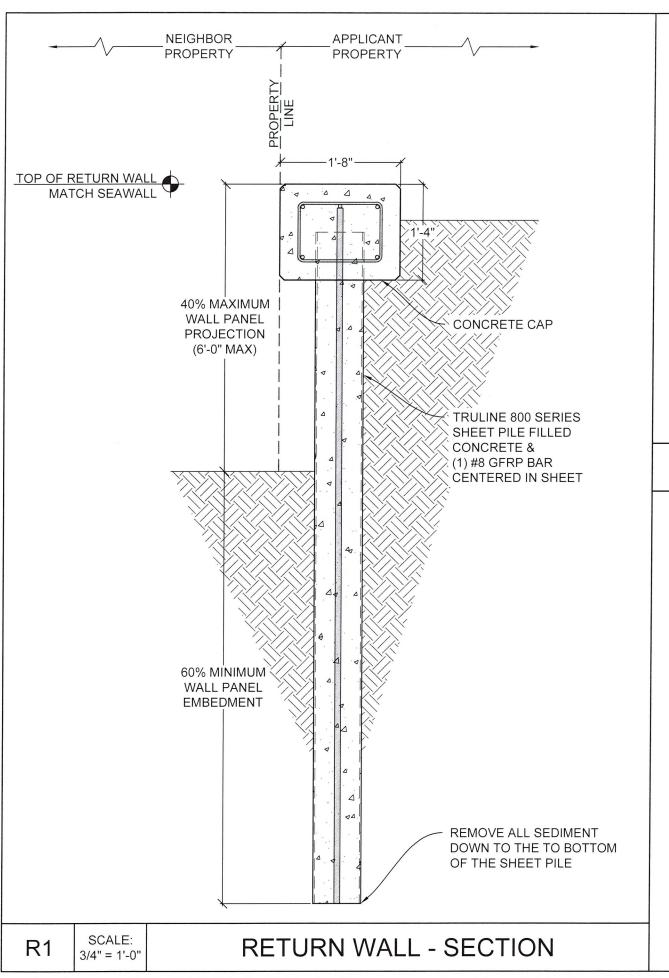
CONCRETE & ANCHOR NOTES

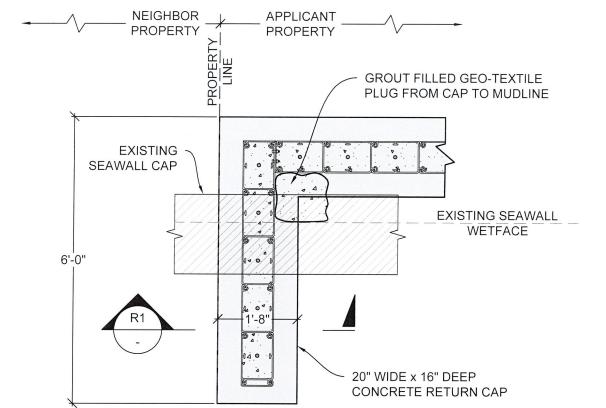
SHEET NO:

S-6

CONCRETE NOTES







SCALE: R 1/2" - 1'-0"

RETURN WALL - PLAN

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HIGHLAND BEACH BUILDING DEPARTMENT



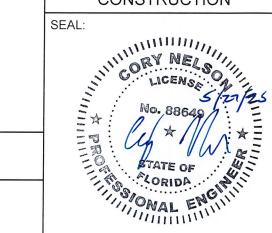
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SHEET NAME:

SEAWALL **DETAILS**

SHEET NO:

S-8

WOOD NOTES:

- MATERIALS:
- WOOD FRAMING: 1.1.

C.C.A. PRESSURE TREATED SOUTHERN PINE NO. 2

- CONNECTORS:
- SIMPSON 316 STAINLESS STEEL
- 1.3. FASTENERS:
- COUNTERSUNK 316 STAINLESS STEEL
- **BOLTS & ANCHORS:** 1.4.
- 316 STAINLESS STEEL
- BOLT HOLES SHALL BE 1/16" LARGER THAN THE BOLT DIAMETER. HOLES SHALL BE ACCURATELY ALIGNED IN MAIN AND SIDE MEMBERS.
- BOLTS THROUGH WOOD SHALL BE FITTED WITH STANDARD WASHERS AT HEAD AND NUT.
- 4. LUMBER SIZES SHOWN IN THE DRAWINGS ARE NOMINAL SIZE. ACTUAL SIZES SHALL CONFORM TO AMERICAN LUMBER STANDARD PS-20-99.
- 5. FRAMING LUMBER SHALL BE SOUND, FREE OF IMPERFECTIONS, THOROUGHLY SEASONED, SURFACED FOUR SIDES, WELL MANUFACTURED AND FREE FROM WARP NOT CORRECTABLE BY BRIDGING, BLOCKING OR NAILING, MOISTURE CONTENT SHALL BE A MAX OF 19 PERCENT. RECEIVED

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HIGHLAND BEACH BUILDING DEPARTMENT

ATTACH RIM BOARD TO EACH DECK BOARD W/ (1) #10 x 2.5" LONG FULL DEPTH BLOCKING REQUIRED AT MIDSPAN COUNTER SUNK SS DECK SCREW FOR ALL SPANS >8-FT. 5.5" WIDE CONNECT BLOCKING TO DECK EACH JOISTS W/ (2) #10 x 2.5" LONG CS SS SCREWS TYPICAL 1x6 COMPOSITE DECK **BOARD ATTACGED TO** EACH JOIST W/(2) #10 x 2.5" LONG COUNTER SUNK SS DECK SCREWS ATTACH RIM BOARD TO EACH JOIST W/ (2) #10 x 2.5" LONG **JOISTS**

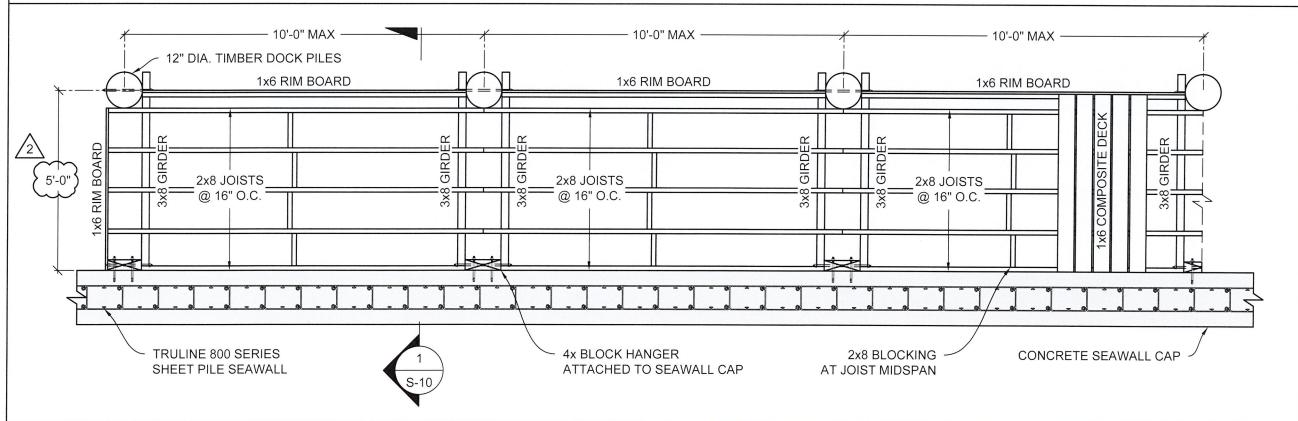
1/2" GAP MIN.

COUNTER SUNK SS DECK SCREWS

WOOD DECK W/ RIM JOISTS

WOOD NOTES

SCALE: D N.T.S.



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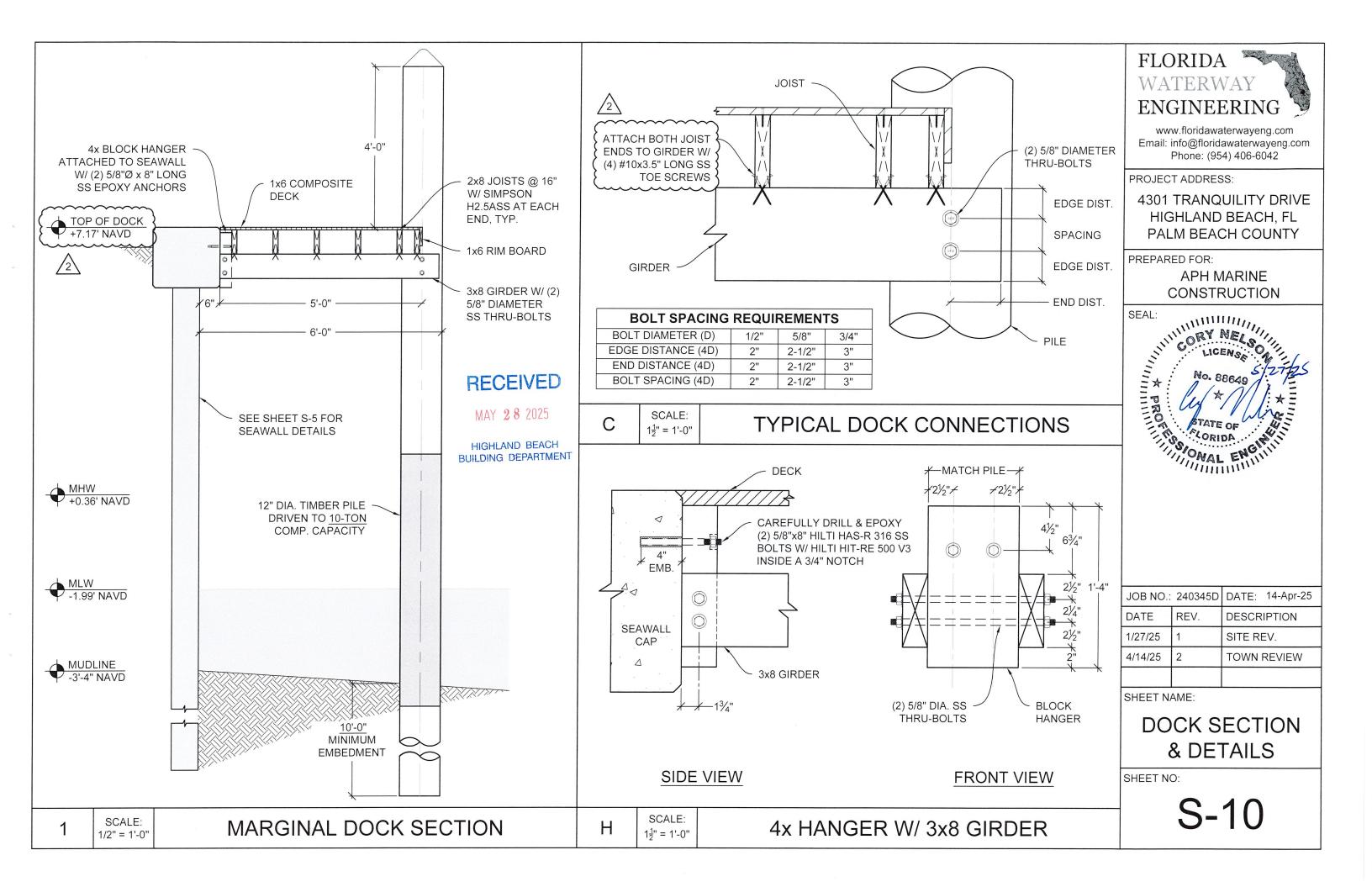
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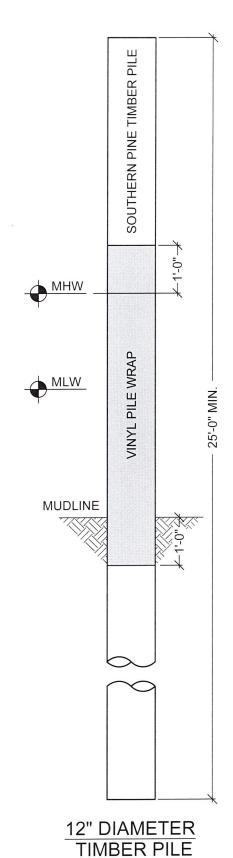
DOCK FRAMING & WOOD NOTES

SHEET NO:

SCALE: 3/8" = 1'-0"

PARTIAL DOCK FRAMING PLAN





TIMBER PILE NOTES:

- 1. TIMBER PILES SHALL BE SOUTHERN YELLOW PINE (SYP) AND CONFORM TO ASTM D25 REQUIREMENTS.
- 2. SYP PILES SHALL BE PRESSURE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A MINIMUM FINAL RETENTION OF 2.5 PCF.
- 3. OPTIONAL TIMBER PILE VINYL WRAP SHALL BE INSTALLED 1-FT INTO MUDLINE AND 1-FT ABOVE MHW PER MANUFACTURER INSTRUCTIONS.

PILE DRIVING NOTES:

- 1. THE CONTRACTOR SHALL NOTIFY THE SPECIAL INSPECTOR PRIOR TO COMMENCING ANY PILE DRIVING ACTIVITIES.
- 2. THE CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS FOR EACH PILE DRIVEN, INCLUDING WIDTH, LENGTH, PENETRATION DEPTH, BLOW COUNTS, AND CUT-OFF LENGTHS.
- 3. PILES SHALL BE DRIVEN WITH A TOLERANCE OF NO MORE THAN 1/4" PER FOOT FROM VERTICAL OR FROM THE SPECIFIED BATTER LINE, WITH THE PILE HEAD POSITION NOT EXCEEDING A 3" DEVIATION FROM THE LOCATION SHOWN ON THE PLANS.
- 4. CARE MUST BE TAKEN TO AVOID EXCESSIVE VIBRATIONS. VIBRATION LEVELS SHALL BE MONITORED TO ENSURE COMPLIANCE WITH LOCAL REGULATIONS.
- 5. IN CASES WHERE PILES MUST PENETRATE HARD ROCK LAYERS, THE STRUCTURAL ENGINEER OF RECORD OR SPECIAL INSPECTOR MAY REQUIRE PRE-DRILLED OR PUNCHED HOLES. FINAL PENETRATION SHALL BE ACHIEVED BY DRIVING THE PILES TO THE SPECIFIED TIP ELEVATION.
- 6. THE PILE DRIVING HAMMER SHALL BE APPROPRIATELY SIZED TO MEET REQUIRED DRIVING RESISTANCE AND ENSURE PROPER PILE INSTALLATION.
- 7. SUITABLE ANVILS OR CUSHIONS, SELECTED BASED ON PILE SIZE AND MATERIAL, SHALL BE USED TO PREVENT DAMAGE WITHOUT SIGNIFICANTLY ABSORBING HAMMER ENERGY.

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HIGHLAND BEACH BUILDING DEPARTMENT

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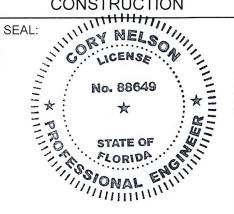
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PILE DETAILS

SHEET NO:

S-11

SCALE: N.T.S.

P

TIMBER PILE NOTES & DETAILS