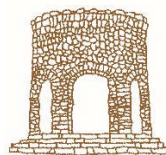
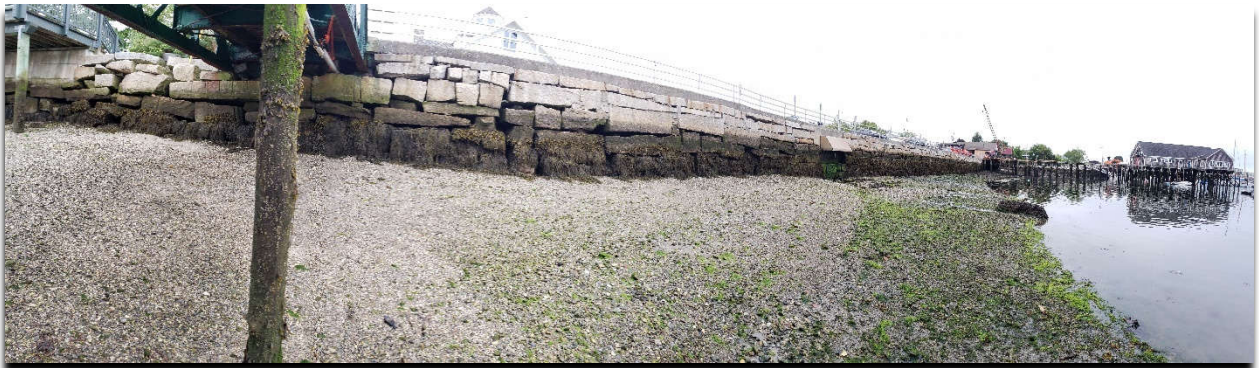


PRELIMINARY ENGINEERING REPORT

MARCH 15, 2023

DOWNTOWN WATERFRONT INFRASTRUCTURE PROJECT ROCKLAND, MAINE



LANDMARK CORPORATION

SURVEYORS & ENGINEERS

16-012

CITY OF ROCKLAND, MAINE
DOWNTOWN WATERFRONT INFRASTRUCTURE
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Preliminary Engineering Report

Downtown Waterfront Infrastructure

1.1 DESCRIPTION OF PROJECT COMPONENTS

The City of Rockland (City) is located on Penobscot Bay in Knox County, Maine.

Rockland’s Downtown Waterfront Project involves redevelopment of two multi-use piers, nearly 7 acres, and more than 1,000 feet of shore frontage in the heart of the City. The Project is necessary because of age-related deterioration and safety issues. It also is an opportunity to rebuild with a more resilient design for sea level rise, make more efficient use of space, and incorporate amenities that will enhance commercial, recreational, and transient access to Rockland’s waterfront.

This Preliminary Engineering Report addresses the major marine structures that are part of the larger Project. Specifically, redevelopment of the two multi-use piers (the Public Landing and Middle Pier), the Harbor Park Seawall, and the bridge and boardwalk that will connect them. The planned improvements to marine structures will:

- Address age-related deterioration and safety issues,
- Increase elevations of the piers, seawall, and support facilities to ensure resilience at expected sea levels 2.7 feet higher than they are today – which aligns with the State’s Climate Action Plan for a 50-year planning horizon,
- Incorporate “flexible resiliency” design features to allow for adaptation over time, if sea levels rise is more than anticipated,
- Fill gaps in ADA accessibility and pedestrian connectivity
- Bring utilities up to code,
- Prepare for marine electrification, and
- Make more efficient use of space to allow for growth in usage over time.

The marine infrastructure components of this Preliminary Engineering Report are described below. Plans are included in Attachment A.

1. Public Landing - The Public Landing pier and floats serve recreational and commercial mooring holders, transient vessels, cruise ships, and more. The pier is at the end of its design life and needs to be replaced. This presents an opportunity to rebuild with a modified design that will be more resilient with rising sea levels, make better use of space, create public space on the pier for both boaters and non-boater to enjoy, and prepare for a future with electrification of marine vessels.

- ***Existing conditions.*** The existing pier is made of steel and cast-in-place concrete that has become corroded and needs replacement. The elevation of the existing pier is 17.2' MLLW (11.5 NAVD 88) and is not currently ADA accessible from land. The floats and some piles need repair and/or replacement. Utilities are not up to code.
- ***Structural improvements.*** This part of the project includes replacing and expanding the pier (3,800 sf), adding an ADA accessible gangway ramp, replacing and reorganizing the floats (12,280 sf for full replacement) and upgrading the utilities (water, sewer, power).
 - i. **Materials.** The pier will be constructed of pressure-treated sustainably sourced southern yellow pine piles, timbers, and decking.
 - ii. **Elevation and flexible resilience.** The elevation of the pier will be raised to elevation 18.4' MLLW (12.7' NAVD88) which will accommodate a 50-year intermediate sea level rise projection. To introduce flexibility into its resiliency, the framing of the pier will be made and fastened in sections. Should the future sea level projection increase, this will allow framing and decking to be removed, pile caps adjusted, and the framing and decking section to be re-set at a higher elevation.
 - iii. **Floats and Piles.** The plans include uniform replacement so that all floats are built with consistent floatation, framing, decking, cleats, fendering, and connection hardware. The inner floats will be oriented to mitigate prevailing summer seas and the outer float will be lengthened along the deeper water of the federal channel. Piles for the floats will be placed to an elevation of 24.0 (MLLW) which will allow for flexible resiliency in the event that current sea level rise projections are low.

- iv. Utilities. A sewer pump-out system, seven (7) domestic water and shore power pedestals, and code compliant fire extinguishers will be provided on the floats. Electrical service is intended to be scalable, and eventually support a 200 kW High Power DC Charger with a 600 amp, 3-phase electrical service.

2. Harbor Park Seawall – The existing seawall runs in front of the Public Landing, and along the length of Harbor Park’s shorefront.

- **Existing conditions.** The seawall is constructed of durable stacked granite blocks. It is stable, true, and has stood the test of time. The elevation of the existing wall ranges from 14.6’ to 16.2’ MLLW. The Harbor Trail Boardwalk currently crosses neighboring private property and stops short of this property –transitioning to dilapidated sidewalk along the Harbor Park parking area.
- **Structural improvements.** Improvements involve raising 360 linear feet of the seawall to a consistent elevation of 18.4’ MLLW (12.7’ NAVD88) with a combination of durable granite blocks and concrete. The wall will be back filled in conjunction with upland improvement to raise the elevation of the bottom of Harbor Park (to be addressed in a future Preliminary Engineering Report for upland landside improvements). The Harbor Trail boardwalk will be extended from the property line along the top of the seawall. This will include pedestrian space, seating areas, landscaped areas and a curved, pile-supported concrete pier/overlook. The pedestrian way will be plank-style pavers on a concrete base with dark shy compliant lighting. For resiliency, storm drain outfalls will be raised in conjunction with the previously mentioned upland improvements.

3. Bridge to Buoy Park– In cooperation with a private property owner, Joseph Reynolds, who owns a property between the shorefronts of Harbor and Buoy Parks, the Project includes a pedestrian bridge that will connect the Harbor Park Boardwalk to Buoy Park, crossing and connecting Mr. Reynolds’ pier in between. This would provide safe and uninterrupted access between the parks. Beyond the bridge is a walkway to Middle Pier along a rip rap slope, the riprap slope presents an opportunity to incorporate living shoreline plantings. The Project will also include pedestrian connection to the beach and 700 sf of floats to accommodate kayak access.

- **Existing conditions.** Pedestrian connections exist today. Currently pedestrians must navigate the parking lot and a driveway to reach the park from other areas of the waterfront to continue walking along the shoreline. A license agreement is needed for this pedestrian bridge connection. Mr. Reynolds has been part of project planning and supports this effort.
- **Structural improvements.** This work includes constructing new pile supported pier connection (1,920 sf), a concrete abutment, and placing an arched aluminum walkway.
 - i. **Materials.** The pier will be constructed of pressure-treated sustainably sourced southern yellow pine piles, timbers, and decking. An aluminum pedestrian bridge would connect the boardwalk where it crosses Mr. Reynold’s Pier to Middle Pier in Buoy Park.
 - ii. **Elevation and flexible resilience.** The pier will be constructed at elevation 18.4’ MLLW (12.7’ NAVD88) which will accommodate the 50-year intermediate sea level rise projection. To introduce flexibility into its resiliency, the framing of the pier will be made and fastened into sections. Should future sea level projection increase, this will allow framing and decking to be removed, pile caps adjusted, and the framing and decking section to be re-set at a higher elevation. Pending details of an agreement with Mr. Reynolds, the scope of work includes the City’s portion of a cohesive structure, and the assumption, based on collaborative planning work to date, that Mr. Reynolds will make corresponding changes on his property when the City improvements are made.

4. Middle Pier – Middle Pier provides docking space for commercial vessels, is used for transfer of supplies, and is an important facility for public safety in cases of marine emergency. The pier is in disrepair and replacement presents an opportunity to rebuild to be more resilient from seal level rise, better accommodate public safety needs, create public space, prepare for future electrification of marine vessels, and provide expansion of dingy docks.

- **Existing conditions.** Due to damage from the late December storm, Middle Pier is currently closed to the public. Deck and joist fasteners have failed due to rot and the structure needs to be replaced. The elevation of the existing pier is 16.4’ MLLW. The gangway is not currently ADA accessible. The floats are in poor condition. Utilities are unavailable, non-functioning, or not code compliant. There are no fire extinguishers.

- *Structural improvements.* This part of the project includes replacing and expanding the pier (5,425 sf), increasing commercial floats (3,535 sf for new and replacement), replacing the existing gangway ramp with one that is ADA accessible, adding a second ADA accessible gangway ramp to the expanded float system, and bringing coded compliant utilities to code (water, sewer, power) to both the pier and floats. An alternative dinghy access is proposed with a repurposed ramp and new floats (876 sf). Adding dinghy docks to Middle Pier will provide added capacity for accessing the City's mooring fields, while improving safe access during Harbor Park events.
 - i. Materials. The pier will be constructed of pressure-treated sustainably sourced southern yellow pine piles, timbers, and decking.
 - ii. Elevation and flexible resilience. The elevation of the pier will be raised to elevation 18.4' MLLW (12.7' NAVD88) which will accommodate a 50-year intermediate sea level rise projection. To introduce flexibility into its resiliency, the framing of the pier will be made and fastened into sections. Should future sea level projection increase, this will allow framing and decking to be removed, pile caps adjusted, and the framing and decking section to be re-set at a higher elevation.
 - iii. Floats and pilings. To create uniform maintenance and replacement, all floats will be built with consistent floatation, framing, decking, cleats, fendering, and connection hardware. The new floats and ramp can accommodate additional commercial use and would allow for a secure passenger terminal in compliance with the Coast Guard's Maritime Transportation Security Act. Piles for the floats will be cut to an elevation of 24.0 (MLLW) which will allow for flexible resiliency in the event sea level rise projections are low or storms and waves become more intense.
 - iv. Utilities. A sewer pump-out system and five (5) domestic water and shore power pedestals will be provided on the floats. Electrical service is intended to be scalable, and eventually support a 200 kW High Power DC Charger with a 600 amp, 3-phase electrical service.

Each of these components are integral to public access at the City's Downtown Waterfront and important for its overall community and sea level rise resiliency.

1.2. CONSISTENCY WITH GRANT REQUIREMENTS

This PER is funded with help from a Community Action Grant from the Governor’s Office of Policy Innovation and the Future, Application RFA# 202111178, and is consistent with the scope of work contained therein.

The level of detail included in this PER and related cost estimates is consistent with that required by the Economic Development Administration’s (EDA) for grant applications; EDA requirements were used as a proxy for the level of detail needed for successful federal grant applications.

1.3. PROJECT DRAWINGS

Refer to Attachment A for drawings showing the general layout of the project, existing site conditions, and the project components.

1.4 FEASIBILITY ANALYSIS

Initial discussions with permitting agencies did not raise any serious issues and the project appears to be feasible from a permitting perspective. See section 1.9.

The project as described is in accordance with local practices with use of typical materials. The design was accomplished by competent and experienced consultants and vetted by an Ad Hoc Downtown Waterfront Advisory Committee (appointed by City Council), City Staff, and interested members of the public in a series of publicly advertised meetings. The Preliminary Engineering was based on a Conceptual Design developed through a robust public process and incorporated ideas and recommendations from recent and past planning and assessment efforts by the City, City Committees, and related consultants.

1.5 PROPOSED METHOD OF CONSTRUCTION

This project will be a design-competitive bid-build construction project. The waterfront infrastructure, as described herein, is based on the Preliminary Engineering Design. The Preliminary Engineering for the upland portion of the project has also been funded and will be completed this summer. Considering the need to raise the elevation of the waterfront infrastructure, for sea level resiliency purposes, it would be prudent to conduct the final design for the waterfront and upland portions of the project together. Likewise, it would be prudent to bid the waterfront and upland portions of the project together. Depending on funding, however, the project may have to be split into phases.

1.6 ANTICIPATED CONSTRUCTION CONTRACTS

As mentioned above, it would be prudent to bid and construct the marine infrastructure components together with the landside/upland portions of the project. If necessary, the marine infrastructure work addressed in this PER could be split as follows (as long as the corresponding upland work were included):

1. Middle Pier
2. Public Landing and Harbor Park Seawall
3. Bridge to Buoy Park and Kayak Floats

1.7 CONSTRUCTION COST ESTIMATE

See Attachment B for the Construction Cost breakdown and Section 1.11 for overall budgets.

1.8 PROPERTY ACQUISITION

No property acquisition is required for the Downtown Waterfront Infrastructure. However, agreements and/or construction easements will be required:

- **Harbor Trail Boardwalk Connection.** Rockland Harbor Park, LLC owns the property to the South of the project area, and an agreement or construction easement will be needed to connect the Public Landing Pier and the Harbor Trail Boardwalk extension to the existing boardwalk owned by Rockland Harbor Park, LLC. Rockland Harbor Park, LLC currently allows public use of that boardwalk.
- **Pedestrian bridge and related connections.** As described in Bridge to Buoy Park above, an agreement, license, and/or construction easement will be required with Mr. Joseph Reynolds.

The City has been in cooperative communication with both parties.

1.9 REQUIRED PERMITS

Based on review of local ordinances and discussion with State and Federal regulators, the project will be subject to following permits:

a. **City of Rockland:**

Building, Plumbing, and Electrical Permits will be required for the Waterfront Infrastructure Project. A Flood Hazard Development Permit will also be required for work within a VE flood zone.

b. **State of Maine:**

Department of Environmental Protection (DEP)

Natural Resources Protection Act (NRPA): Wetland permitting for work impacting and work within 25 feet of the Coastal Wetland will be required for the Waterfront Infrastructure Project. The level of permitting will be Tier 3 (Individual), which may require a Functional Assessment and a Public Informational Meeting.

Department of Agriculture, Conservation, & Forestry

Bureau of Parks and Lands, Submerged Lands: Application will be required requesting a modification to the City's existing submerged land lease. This will be needed to accommodate expansion of Waterfront Infrastructure below mean

low water (Littoral Zone). Also, since there are multiple converging Littoral zones with abutting properties, Letters of No Objection may be necessary from the following entities:

- Mr. Joseph Reynolds, owner of the Pearl wharf, located in between the Public Landing and Middle Pier
- The Landings Properties, LLC, owner of the Landings Marina to the North of Buoy Park
- Safe Harbor – SHM Rockland, LLC, owner of the intertidal area to the South of Harbor Park

c. **US Army Corps of Engineers:**

A Maine General Permit (Section 404) will be required for the expansion of the Waterfront Infrastructure within the resource. This may also require a Section 408 permit for permission to occupy any existing U.S. Army Corps of Engineers constructed public works project, which in this case is the Federal Navigation Channel and its buffer.

d. **US Coast Guard:**

Per the Rivers and Harbors Act of 1899, a bridge permit will be required for the aluminum arch to Buoy Park for navigation considerations.

1.10 PROJECT SCHEDULE

The schedule for this project will be contingent on obtaining the necessary funding. The sources of funding and amounts will dictate how and if the project will be split into phases.

1.11 OVERALL PROJECT BUDGET

The project budget for the Waterfront Infrastructure broken down by component is as follows: Also, a more detailed itemized cost estimate is included in Attachment B.

Component 1: Public Landing

Item	Description	Estimated Cost
1	Construction	\$2,274,275.00
2	Site Work	\$90,000.00
3	Equipment	\$385,450.00
4	Design and Admin (8%)	\$241,975.80
5	Contingency (10%)	\$274,972.50
	Total	\$3,266,673.30

Component 2: Harbor Park Seawall

Item	Description	Estimated Cost
1	Construction	\$1,272,900.00
2	Site Work	\$642,468.00
3	Equipment	\$0.00
4	Design and Admin (8%)	\$168,552.38
5	Contingency (10%)	\$191,536.80
	Total	\$2,275,457.18

Component 3: Bridge to Buoy Park

Item	Description	Estimated Cost
1	Construction	\$550,100.00
2	Site Work	\$93,000.00
3	Equipment	\$0.00
4	Design and Admin (8%)	\$56,592.80
5	Contingency (10%)	\$64,310.00
	Total	\$764,002.80

Component 4: Middle Pier

Item	Description	Estimated Cost
1	Construction	\$2,227,900.00
2	Site Work	\$338,788.89
3	Equipment	\$328,100.00
4	Design and Admin (8%)	\$254,741.42
5	Contingency (10%)	\$289,478.89
	Total	\$3,439,009.20

Components 1-4: Total

Item	Description	Estimated Cost
1	Construction	\$6,325,175.00
2	Site Work	\$1,164,256.89
3	Equipment	\$713,550.00
4	Design and Admin (8%)	\$721,862.40
5	Contingency (10%)	\$820,298.19
	Total	\$9,745,142.48

ATTACHMENT A

PLANS

CITY OF ROCKLAND DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE AT HARBOR AND BUOY PARKS



SITE LOCATION MAP
SCALE: 1" = 200'



SHEET INDEX

<p>C0 COVER SHEET & LOCATION MAP</p> <p>C1 EXISTING CONDITIONS & REMOVAL PLAN</p> <p>C2 EXISTING CONDITIONS & REMOVAL PLAN</p> <p>C3 MARINE INFRASTRUCTURE SITE PLAN</p> <p>C4 MARINE INFRASTRUCTURE SITE PLAN</p> <p>E0.1 ELECTRICAL NOTES AND LEGENDS</p> <p>E0.2 ELECTRICAL DETAILS</p> <p>E0.3 ELECTRICAL DETAILS</p> <p>E1.0 ELECTRICAL SITE PLAN</p> <p>E1.1 PUBLIC LANDING – ELECTRICAL PLAN</p> <p>E1.2 MIDDLE PIER – ELECTRICAL PLAN</p> <p>E2.1 PANEL SCHEDULES</p> <p>E2.2 PANEL AND EQUIPMENT SCHEDULES</p> <p>L1 LANDSCAPE & MATERIALS PLAN</p> <p>L2 PLAN DETAILS</p> <p>L3 SITE & LANDSCAPE DETAILS</p>	<p>S1 PUBLIC LANDING PIER DECK PLANS</p> <p>S2 PUBLIC LANDING PIER PILE AND PILE CAP PLAN</p> <p>S3 PUBLIC LANDING SEAWALL PLAN</p> <p>S4 PUBLIC LANDING SEAWALL DETAILS</p> <p>S5 PEARL PIER AND BRIDGE DECK PLAN</p> <p>S6 PEARL PIER AND BRIDGE DECK FRAMING PLAN</p> <p>S7 PEARL PIER AND BRIDGE PILE AND PILE CAP PLAN</p> <p>S8 PEARL PIER AND BRIDGE – BRIDGE DETAILS</p> <p>S9 MIDDLE PIER DECK PLAN</p> <p>S10 MIDDLE PIER DECK FRAMING PLAN</p> <p>S11 MIDDLE PIER PILE AND PILE CAP PLAN</p> <p>S12 MIDDLE PIER TRANSVERSE SECTIONS</p> <p>S13 MIDDLE PIER LONGITUDINAL SECTIONS</p>
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PRELIMINARY ENGINEERING DRAWINGS (NOT FOR CONSTRUCTION)

FEBRUARY 28, 2023

AS AMENDED JULY 4, 2023 (SEE SHEET C3)
AS AMENDED NOVEMBER 1, 2023 (SEE SHEET C4)

CIVIL ENGINEER



135 ROCKLAND STREET ROCKPORT, MAINE 04856 PHONE: (207) 236-6757 WWW.LANDMARKMAINE.COM

ELECTRICAL ENGINEER



STRUCTURAL ENGINEER



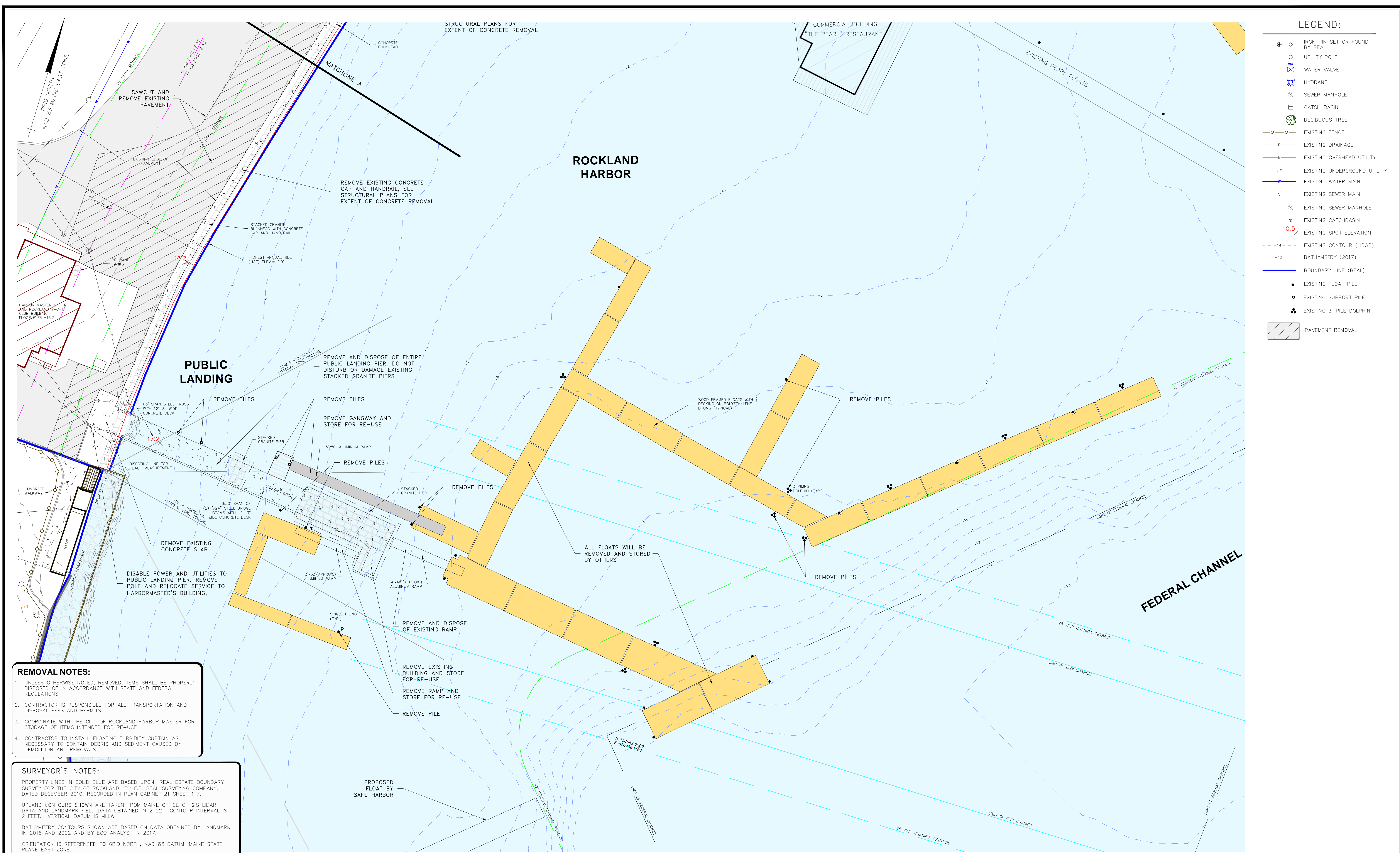
LANDSCAPE ARCHITECT



29 Bridge Street – Topsham, ME 04086
Tel. 207-450-9700 – www.rslld.com

SHEET DESIGNATION:

C0



- LEGEND:**
- ○ IRON PIN SET OR FOUND BY BEAL
 - ○ UTILITY POLE
 - ⊗ WATER VALVE
 - ⊗ HYDRANT
 - ⊗ SEWER MANHOLE
 - ⊗ CATCH BASIN
 - ⊗ DECIDUOUS TREE
 - ○ — EXISTING FENCE
 - ○ — EXISTING DRAINAGE
 - — — EXISTING OVERHEAD UTILITY
 - — — EXISTING UNDERGROUND UTILITY
 - — — EXISTING WATER MAIN
 - — — EXISTING SEWER MAIN
 - ⊗ EXISTING SEWER MANHOLE
 - ⊗ EXISTING CATCHBASIN
 - 10.5' EXISTING SPOT ELEVATION
 - - - - EXISTING CONTOUR (LIDAR)
 - - - - BATHYMETRY (2017)
 - — — BOUNDARY LINE (BEAL)
 - EXISTING FLOAT PILE
 - EXISTING SUPPORT PILE
 - EXISTING 3-PILE DOLPHIN
 - ▨ PAVEMENT REMOVAL

- REMOVAL NOTES:**
- UNLESS OTHERWISE NOTED, REMOVED ITEMS SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.
 - CONTRACTOR IS RESPONSIBLE FOR ALL TRANSPORTATION AND DISPOSAL FEES AND PERMITS.
 - COORDINATE WITH THE CITY OF ROCKLAND HARBOR MASTER FOR STORAGE OF ITEMS INTENDED FOR RE-USE.
 - CONTRACTOR TO INSTALL FLOATING TURBIDITY CURTAIN AS NECESSARY TO CONTAIN DEBRIS AND SEDIMENT CAUSED BY DEMOLITION AND REMOVALS.

SURVEYOR'S NOTES:

PROPERTY LINES IN SOLID BLUE ARE BASED UPON "REAL ESTATE BOUNDARY SURVEY FOR THE CITY OF ROCKLAND" BY F.E. BEAL SURVEYING COMPANY, DATED DECEMBER 2010, RECORDED IN PLAN CABINET 21 SHEET 117.

UPLAND CONTOURS SHOWN ARE TAKEN FROM MAINE OFFICE OF GIS LIDAR DATA AND LANDMARK FIELD DATA OBTAINED IN 2022. CONTOUR INTERVAL IS 2 FEET. VERTICAL DATUM IS MLLW.

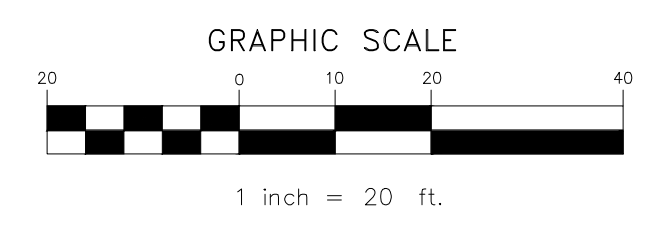
BATHYMETRY CONTOURS SHOWN ARE BASED ON DATA OBTAINED BY LANDMARK IN 2016 AND 2022 AND BY ECO ANALYST IN 2017.

ORIENTATION IS REFERENCED TO GRID NORTH, NAD 83 DATUM, MAINE STATE PLANE EAST ZONE.

LANDMARK CORPORATION
SURVEYORS & ENGINEERS

135 ROCKLAND STREET ROCKPORT, MAINE 04856 PHONE: (207) 236-6757 WWW.LANDMARKMAINE.COM

FIELD WORK DATE:	
FIELD WORK BY:	KMB/EST
DRAFTED BY:	KBM/MJS
CHECKED BY:	MJS
PLAN DATE:	FEBRUARY 28, 2023



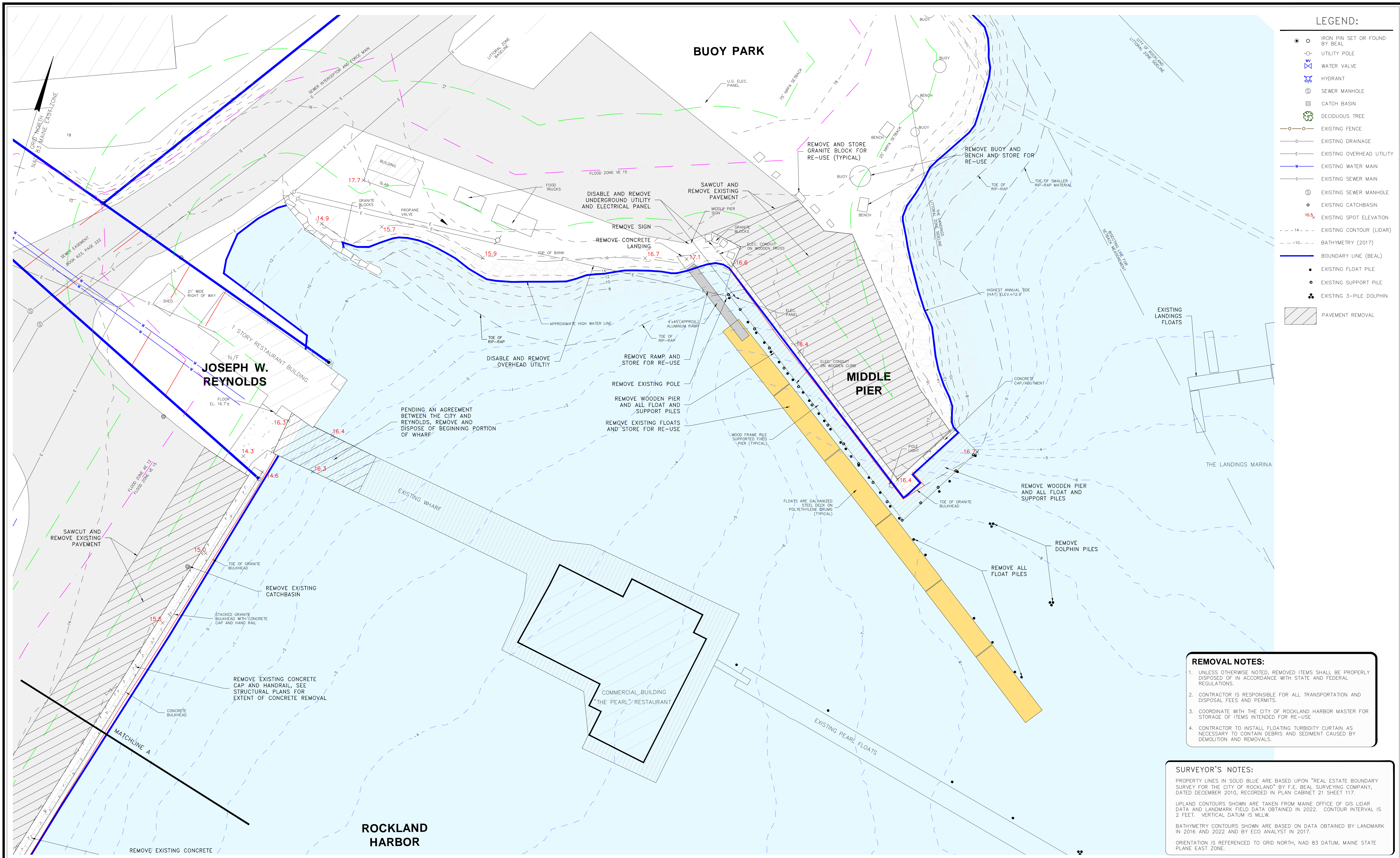
EXISTING CONDITIONS AND REMOVAL PLAN

MICHAEL J. SABATINI
9053
LICENSED PROFESSIONAL ENGINEER
2/28/23

CITY OF ROCKLAND
DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
AT HARBOR AND BUOY PARKS
ROCKLAND, MAINE
KNOX COUNTY

SCALE: **1" = 20'** JOB No.: **16-012**

SHEET DESIGNATION:
C1



LEGEND:

- IRON PIN SET OR FOUND BY BEAL
- UTILITY POLE
- ⊗ WATER VALVE
- ⊗ HYDRANT
- ⊗ SEWER MANHOLE
- ⊗ CATCH BASIN
- ⊗ DECIDUOUS TREE
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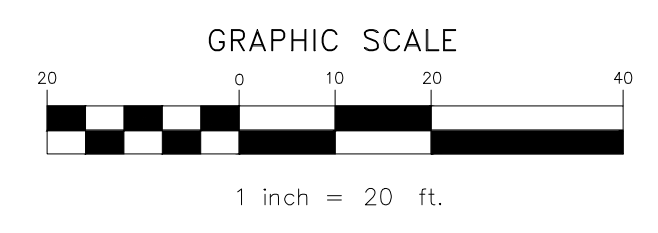
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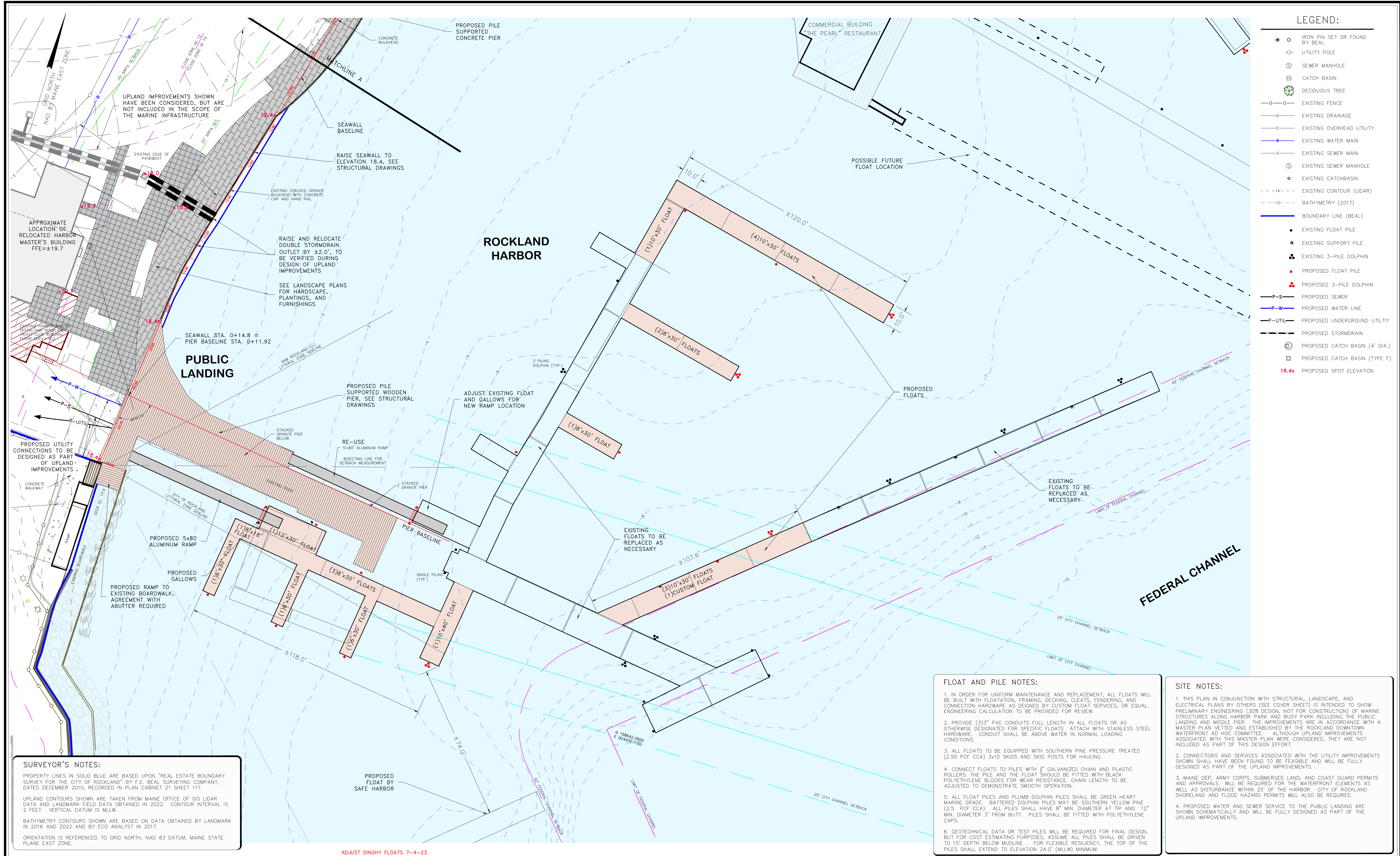


EXISTING CONDITIONS AND REMOVAL PLAN

MICHAEL J. SABATINI
9053
LICENSED PROFESSIONAL ENGINEER
2/28/23

CITY OF ROCKLAND
HARBOR AND BUOY PARK MARINE INFRASTRUCTURE
ROCKLAND, MAINE
KNOX COUNTY

SHEET DESIGNATION:
C2



LEGEND:

- IRON PIN SET OR FOUND BY BEAL
- UTILITY POLE
- ⊗ SEWER MANHOLE
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- EXISTING SUPPORT PILE
- EXISTING 3-PILE DOLPHIN
- PROPOSED FLOAT PILE
- PROPOSED 3-PILE DOLPHIN
- PROPOSED SEWER
- PROPOSED WATER LINE
- PROPOSED UNDERGROUND UTILITY
- PROPOSED STORMDRAIN
- ⊗ PROPOSED CATCH BASIN (4' DIA.)
- ⊕ PROPOSED CATCH BASIN (TYPE F)
- 18.4x PROPOSED SPOT ELEVATION

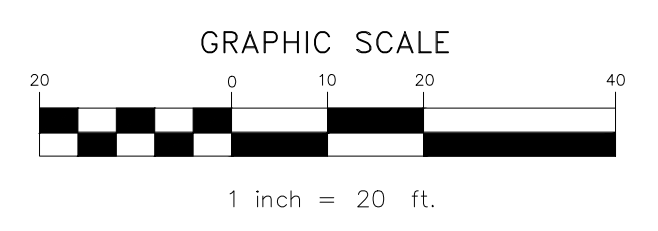
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 2. PROVIDE (3) 3" PVC CONDUITS FULL LENGTH IN ALL FLOATS OR AS OTHERWISE DESIGNATED FOR SPECIFIC FLOATS. ATTACH WITH STAINLESS STEEL HARDWARE. CONDUIT SHALL BE ABOVE WATER IN NORMAL LOADING CONDITIONS.
 3. ALL FLOATS TO BE EQUIPPED WITH SOUTHERN PINE PRESSURE TREATED (2.50 PCF CCA) 3x10 SKIDS AND SKID POSTS FOR HAULING.
 4. CONNECT FLOATS TO PILES WITH 1" GALVANIZED CHAIN AND PLASTIC ROLLERS. THE PILE AND THE FLOAT SHOULD BE FITTED WITH BLACK POLYETHYLENE BLOCKS FOR WEAR RESISTANCE. CHAIN LENGTH TO BE ADJUSTED TO DEMONSTRATE SMOOTH OPERATION.
 5. ALL FLOAT PILES AND PLUMB DOLPHIN PILES SHALL BE GREEN HEART MARINE GRADE. BATTERED DOLPHIN PILES MAY BE SOUTHERN YELLOW PINE (2.5 PCF CCA). ALL PILES SHALL HAVE 8" MIN. DIAMETER AT TIP AND 12" MIN. DIAMETER 3' FROM BUTT. PILES SHALL BE FITTED WITH POLYETHYLENE CAPS.
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SITE NOTES:
 1. THIS PLAN IN CONJUNCTION WITH STRUCTURAL, LANDSCAPE, AND ELECTRICAL PLANS BY OTHERS (SEE COVER SHEET) IS INTENDED TO SHOW PRELIMINARY ENGINEERING (30% DESIGN, NOT FOR CONSTRUCTION) OF MARINE STRUCTURES ALONG HARBOR PARK AND BUOY PARK INCLUDING THE PUBLIC LANDING AND MIDDLE PIER. THE IMPROVEMENTS ARE IN ACCORDANCE WITH A MASTER PLAN VETTED AND ESTABLISHED BY THE ROCKLAND DOWNTOWN WATERFRONT AD HOC COMMITTEE. ALTHOUGH UPLAND IMPROVEMENTS ASSOCIATED WITH THIS MASTER PLAN WERE CONSIDERED, THEY ARE NOT INCLUDED AS PART OF THIS DESIGN EFFORT.
 2. CONNECTIONS AND SERVICES ASSOCIATED WITH THE UTILITY IMPROVEMENTS SHOWN SHALL HAVE BEEN FOUND TO BE FEASIBLE AND WILL BE FULLY DESIGNED AS PART OF THE UPLAND IMPROVEMENTS.
 3. MAINE DEP, ARMY CORPS, SUBMERGED LAND, AND COAST GUARD PERMITS AND APPROVALS WILL BE REQUIRED FOR THE WATERFRONT ELEMENTS AS WELL AS DISTURBANCE WITHIN 25' OF THE HARBOR. CITY OF ROCKLAND SHORELAND AND FLOOD HAZARD PERMITS WILL ALSO BE REQUIRED.
 4. PROPOSED WATER AND SEWER SERVICE TO THE PUBLIC LANDING ARE SHOWN SCHEMATICALLY AND WILL BE FULLY DESIGNED AS PART OF THE UPLAND IMPROVEMENTS.

LANDMARK CORPORATION
 SURVEYORS & ENGINEERS
 135 ROCKLAND STREET ROCKPORT, MAINE 04856 PHONE: (207) 236-6757 WWW.LANDMARKMAINE.COM

FIELD WORK DATE:	
FIELD WORK BY:	KMB/EST
DRAFTED BY:	KBM/MJS
CHECKED BY:	MJS
PLAN DATE:	FEBRUARY 28, 2023



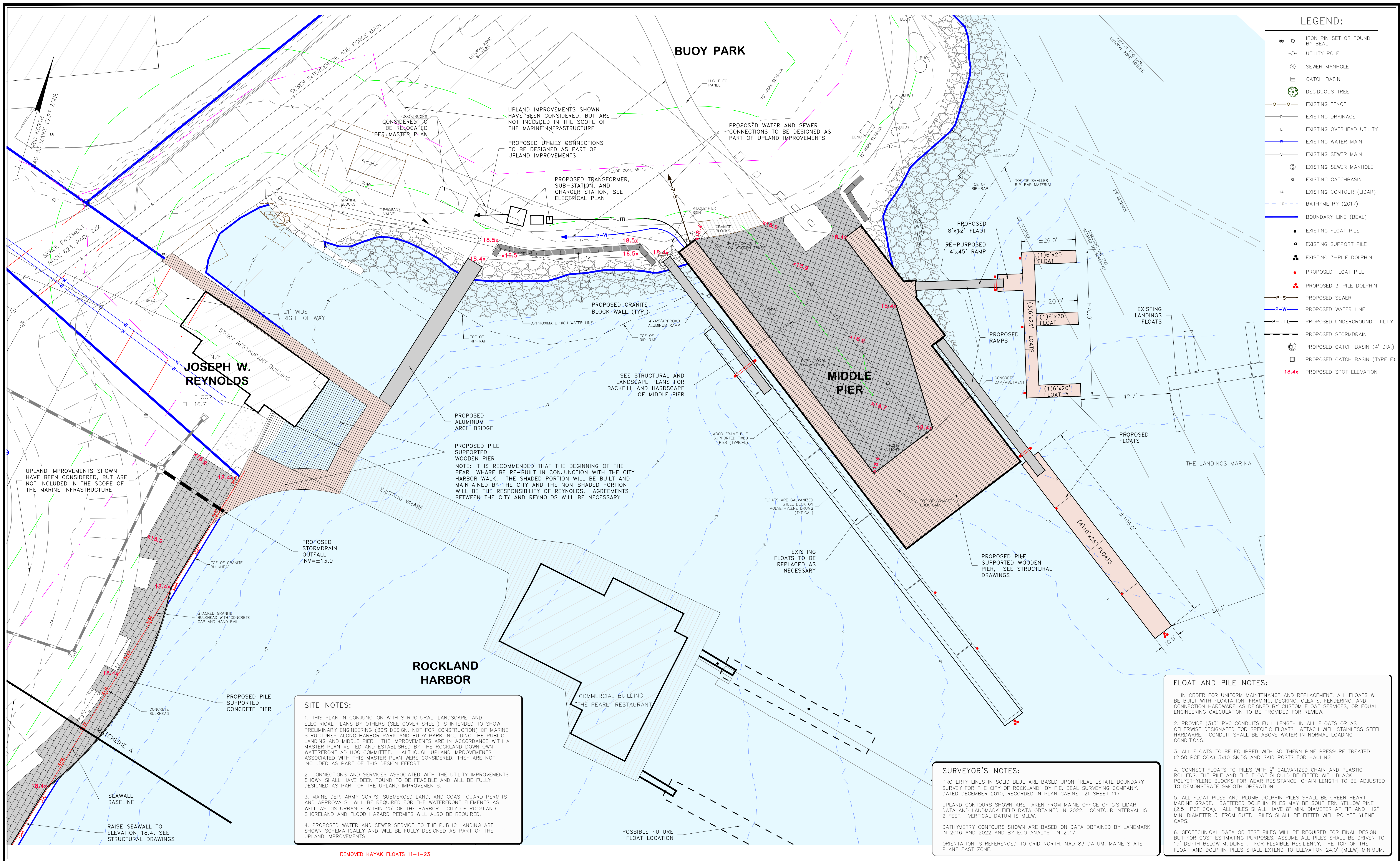
MARINE INFRASTRUCTURE SITE PLAN

MICHAEL J. SABATINI
 9053
 LICENSED PROFESSIONAL ENGINEER
 4/28/23

CITY OF ROCKLAND
 DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
 AT HARBOR AND BUOY PARKS
 ROCKLAND, MAINE
 KNOX COUNTY

SHEET DESIGNATION:
C3

SCALE: 1" = 20' JOB No.: 16-012



LEGEND:

- IRON PIN SET OR FOUND BY BEAL
- UTILITY POLE
- ⊙ SEWER MANHOLE
- ⊞ CATCH BASIN
- 🌳 DECIDUOUS TREE
- EXISTING FENCE
- EXISTING DRAINAGE
- EXISTING OVERHEAD UTILITY
- EXISTING WATER MAIN
- EXISTING SEWER MAIN
- ⊙ EXISTING SEWER MANHOLE
- ⊙ EXISTING CATCHBASIN
- - - EXISTING CONTOUR (LIDAR)
- - - BATHYMETRY (2017)
- BOUNDARY LINE (BEAL)
- EXISTING FLOAT PILE
- EXISTING SUPPORT PILE
- EXISTING 3-PILE DOLPHIN
- PROPOSED FLOAT PILE
- PROPOSED 3-PILE DOLPHIN
- P-S PROPOSED SEWER
- P-W PROPOSED WATER LINE
- P-UTIL PROPOSED UNDERGROUND UTILITY
- PROPOSED STORMDRAIN
- ⊙ PROPOSED CATCH BASIN (4' DIA.)
- ⊞ PROPOSED CATCH BASIN (TYPE F)
- 18.4x PROPOSED SPOT ELEVATION

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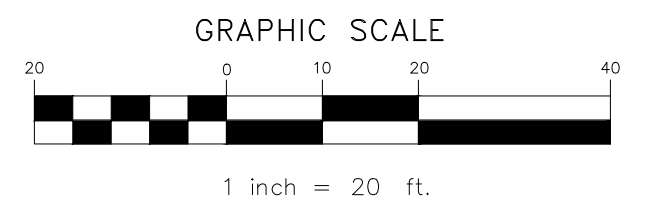
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REMOVED KAYAK FLOATS 11-23

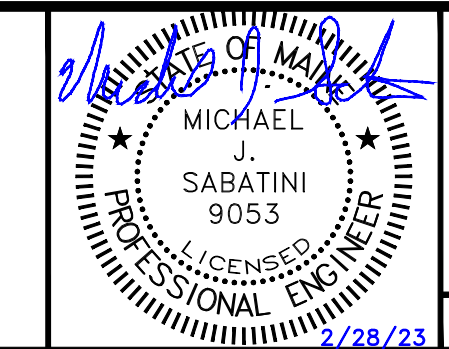


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MARINE INFRASTRUCTURE SITE PLAN



CITY OF ROCKLAND
HARBOR AND BUOY PARK MARINE INFRASTRUCTURE
ROCKLAND, MAINE
KNOX COUNTY

SHEET DESIGNATION:
C4

SCALE: **1" = 20'** JOB No.: **16-012**

ELECTRICAL LEGEND

Table with 2 columns: Symbol and Description. Includes GENERAL (PANEL, HOT LEG, etc.), POWER (NON-FUSED DISCONNECT, TRANSFORMER, etc.), and RECEPTACLE (RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER, etc.).

WIRING COLOR CODE

Table with 2 columns: Conductor and Color. Lists color codes for 120/208 (240) and 277/480 systems.

CALL BEFORE YOU DIG

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THE CONTRACTOR SHALL NOTIFY ALL UTILITIES INCLUDING AND NOT LIMITED TO GAS, WATER, ELECTRIC, CABLE, AND TELEPHONE COMPANIES PRIOR TO ANY EXCAVATION...



ELECTRICAL ABBREVIATIONS

Table with 2 columns: Abbreviation and Full Name. Lists abbreviations for components like ABOVE, AMPERE FRAME, ABOVE FINISHED FLOOR, etc.

ELECTRICAL NOTES

- 1. APPLICABLE CODES INCLUDE, BUT ARE NOT RESTRICTED TO, THE LATEST ADOPTED VERSIONS OF THE FOLLOWING CODES AT THE TIME OF THE PLAN DATE.
2. ELECTRICAL SYSTEM(S) SHALL BE INSTALLED COMPLETE WITH ALL WORK, MATERIALS, AND EQUIPMENT CUSTOMARILY CONSIDERED PART OF SUCH WORK FOR A FULLY OPERATIONAL, COMPLETE, AND CODE COMPLIANT SYSTEM.
3. PLANS ARE DIAGRAMMATIC AND ARE PROVIDED ONLY TO SHOW GENERAL SYSTEM. CONTRACTOR SHALL CONSIDER ACTUAL FIELD CONDITIONS DURING INSTALLATION...

MARINA GROUND FAULT COMMISSIONING NOTES

PER THE CONTRACT WITH THE CLIENT, THE ENGINEER'S SCOPE FOR THIS PROJECT INCLUDES THE ENGINEER AND/OR ENGINEER'S TEAM PERFORMING GROUND FAULT DEVICE COMMISSIONING. THE COMMISSIONING EFFORTS INCLUDE ONE SITE VISIT AT THE END OF THE CONSTRUCTION ADMINISTRATION PHASE TO TEST THE PROPER FUNCTION OF ALL FEEDER, BRANCH CIRCUIT, AND SHORE POWER RECEPTACLE GROUND FAULT DEVICES...

- THE COMMISSIONING PROCESS SHALL CONSIST OF THE FOLLOWING:
- VERIFY PARAMETERS OF ALL GROUND FAULT MONITORING DEVICES ARE SET TO THE SPECIFIED VALUES PROVIDED IN THE DESIGN PLANS AND SCHEDULES.
- TEST ALL GFCCI-PROTECTED RECEPTACLES.
- TEST TRIP TIMES OF ALL GFCCI DEVICES.
- TEST THE TRIP LEVEL OF ALL GFPE DEVICES PROTECTING SHORE POWER RECEPTACLES BY SAFELY INDUCING LEAKAGE CURRENT AT EACH SHORE POWER RECEPTACLE...

IT IS RECOMMENDED FOR THE ELECTRICAL CONTRACTOR TO CHECK ALL WIRING METHODS AND THE INSTALLATION OF THE GFPE SYSTEM'S CT'S AND SHUNT-TRIP BREAKERS AND TO PRE-TEST ALL GFPE DEVICES BEFORE THE ENGINEER TRAVELS TO THE SITE TO PERFORM THE COMMISSIONING EFFORTS. IF DEFICIENCIES ARE FOUND IN THE ELECTRICAL AND/OR GFPE SYSTEMS THAT CANNOT BE REMEDIATED WITHIN A REASONABLE TIME OF THE SAME-DAY VISIT, ADDITIONAL SITE VISITS SHALL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR...

THE CONTRACTOR SHALL PROVIDE ASSISTANCE TO THE ENGINEER FOR THE ENTIRE DURATION OF THE TESTING AND COMMISSIONING BY PROVIDING EXPERIENCED STAFF THAT INSTALLED AND HAS KNOWLEDGE OF THE ELECTRICAL SYSTEMS OF THE PROJECT. THIS ASSISTANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, OPENING AND CLOSING OF ELECTRICAL EQUIPMENT AND SHORE POWER PEDESTALS, TROUBLESHOOTING AND REPAIRING OF DEFICIENCIES SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR.

A DETAILED COMMISSIONING REPORT BY THE ENGINEER SHALL BE GENERATED DESCRIBING THE FINDINGS OF THE COMMISSIONING. THE COMMISSIONING SHALL NOT GUARANTEE THE SAFETY OR CODE COMPLIANCE OF THE SYSTEM, BUT WILL HELP MITIGATE OPERATIONAL AND SAFETY ISSUES.

SERVICE ENTRANCE CONDUCTOR & CONDUIT LEGEND

Table with 7 columns: Label, Grounding Electrode Conductor, Conductors per Conduit, Number of Runs, Minimum Conduit, Conductor Ampacity 75 °C, and Voltage Range. Lists specifications for various conductor and conduit sizes.

BRANCH CIRCUIT AND FEEDER LEGEND W/ EQUIP. GND.

ALL WIRE SIZED FOR THWN COPPER
ALL CONDUIT SIZED FOR RIGID PVC, SCHEDULE 40; RESIZE FOR DIFFERENT CONDUIT AS REQUIRED
FEEDER LABEL WITH * IN THE PLANS INDICATES NEUTRAL IS NOT REQUIRED

Table with 7 columns: Label, Conductors per Conduit, Number of Runs, Minimum Conduit, Conductor Ampacity 75 °C, Phi, and Voltage Range. Lists specifications for branch circuits and feeders.

PORTABLE POWER CABLE & CORD BRANCH CIRCUIT AND FEEDER LEGEND

ALL WIRE SIZED USING NEC 400.5(A)(2), WITH GREEN INSULATED GROUND ALL CONDUCTORS SHALL BE COPPER
WET LISTED
APPROVED FOR MARINA USE
SUITABLE FOR CONTINUOUS SUBMERSION IN WATER
ALL CONDUIT SIZED FOR RIGID PVC, SCHEDULE 40; RESIZE FOR DIFFERENT CONDUIT AS REQUIRED
FEEDER LABEL WITH * IN THE PLANS INDICATES NEUTRAL IS NOT REQUIRED

Table with 7 columns: Label, Cable for Marina / Boatyard Application, Number of Runs, Minimum Conduit, Conductor Ampacity 75 °C, Phi, and Voltage Range. Lists specifications for portable power cables and cords.

ELECTRICAL UPGRADES FOR CITY OF ROCKLAND DOWNTOWN WATERFRONT MARINA INFRASTRUCTURE ROCKLAND, MAINE

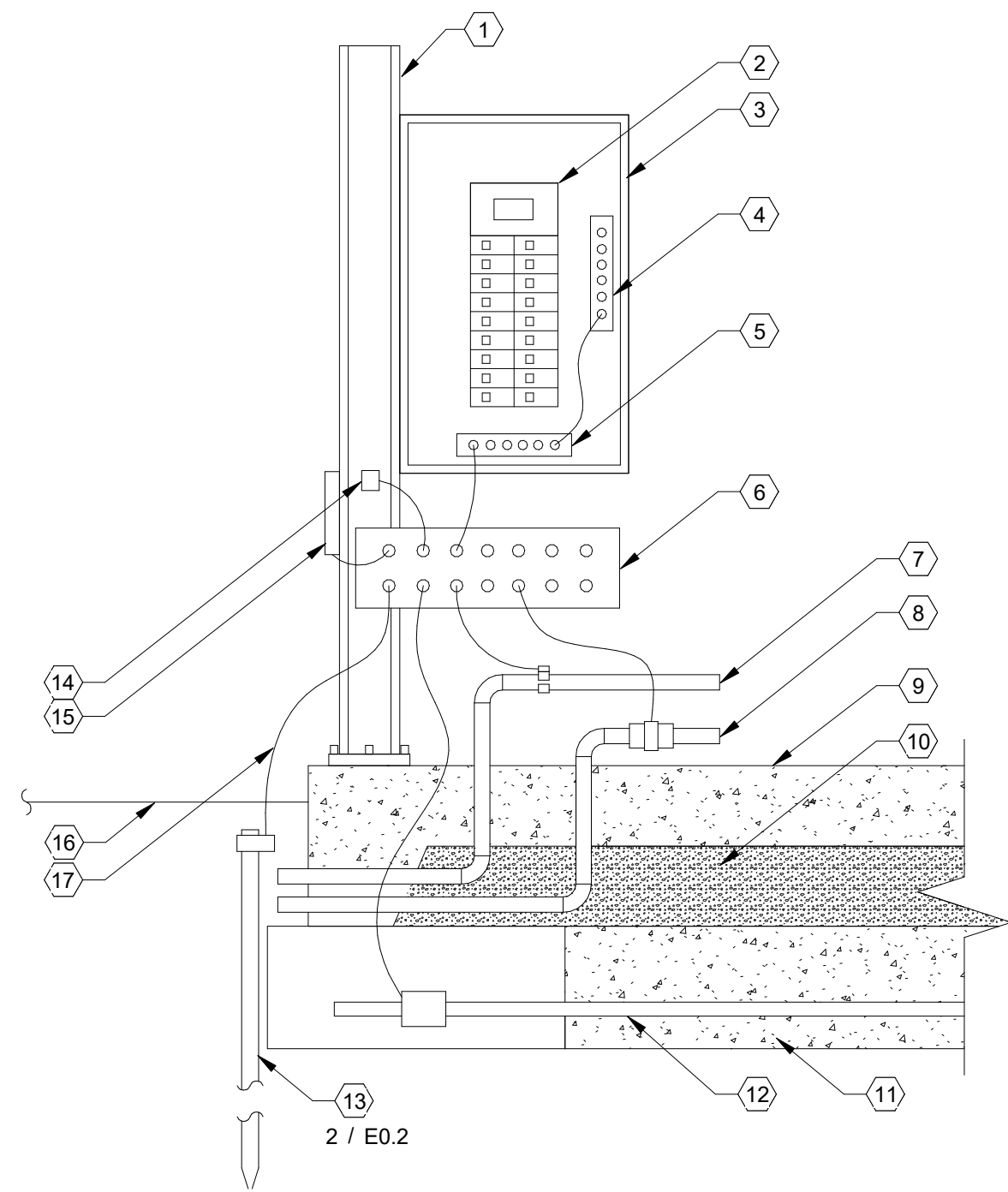


Revisions indicated w/ No. Date Description

E0.1 ELECTRICAL NOTES AND LEGENDS

Table with 2 columns: Title and Job No. / Date. Includes SHEET: E0.1, TITLE: ELECTRICAL NOTES AND LEGENDS, JOB NO.: 23008, DATE: 2-28-23.

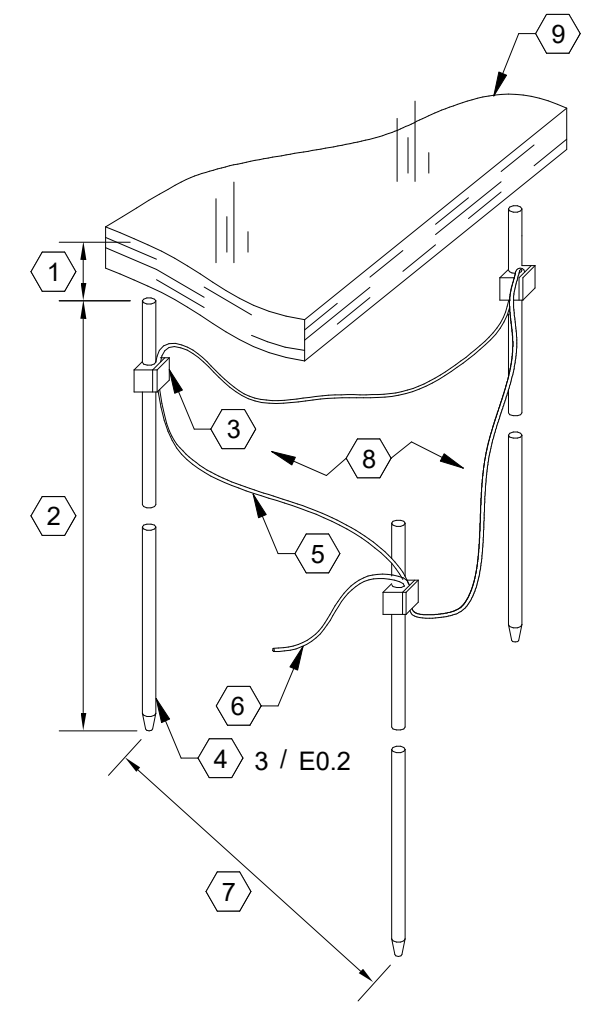
PRELIMINARY SET NOT FOR CONSTRUCTION



ELECTRICAL NOTES

- NUMBERED NOTES
- METAL FRAME OF BUILDING OR MOUNTING STRUCTURE.
 - MAIN DISCONNECT.
 - SERVICE EQUIPMENT.
 - NEUTRAL BAR.
 - GROUNDING BAR.
 - GROUNDING PLATE OR BONDING POINT AS REQUIRED.
 - WATER PIPING ON LOAD SIDE OF METER.
 - GAS PIPING ON LOAD SIDE OF METER.
 - FINISHED FLOOR.
 - FILL GRAVEL.
 - CONCRETE FOOTER.
 - CONCRETE-ENCASED ELECTRODE, 1/2" x 20' FOR NEW CONSTRUCTION.
 - GROUND ROD, SEE REFERENCED DETAIL.
 - BONDING POINT.
 - GROUND BAR FOR LOW VOLTAGE UTILITIES.
 - FINISHED GRADE.
 - GROUNDING ELECTRODE CONDUCTOR.
- GENERAL NOTES
- A SHALL BE PER NEC ARTICLE 250.
 - B ALL PROJECTS MAY NOT INCLUDE METAL WATER PIPE, GAS LINE, OR METAL CONSTRUCTION.
 - C CONFIGURATION OF SERVICE MAY DIFFER, COORDINATE INSTALLATION.

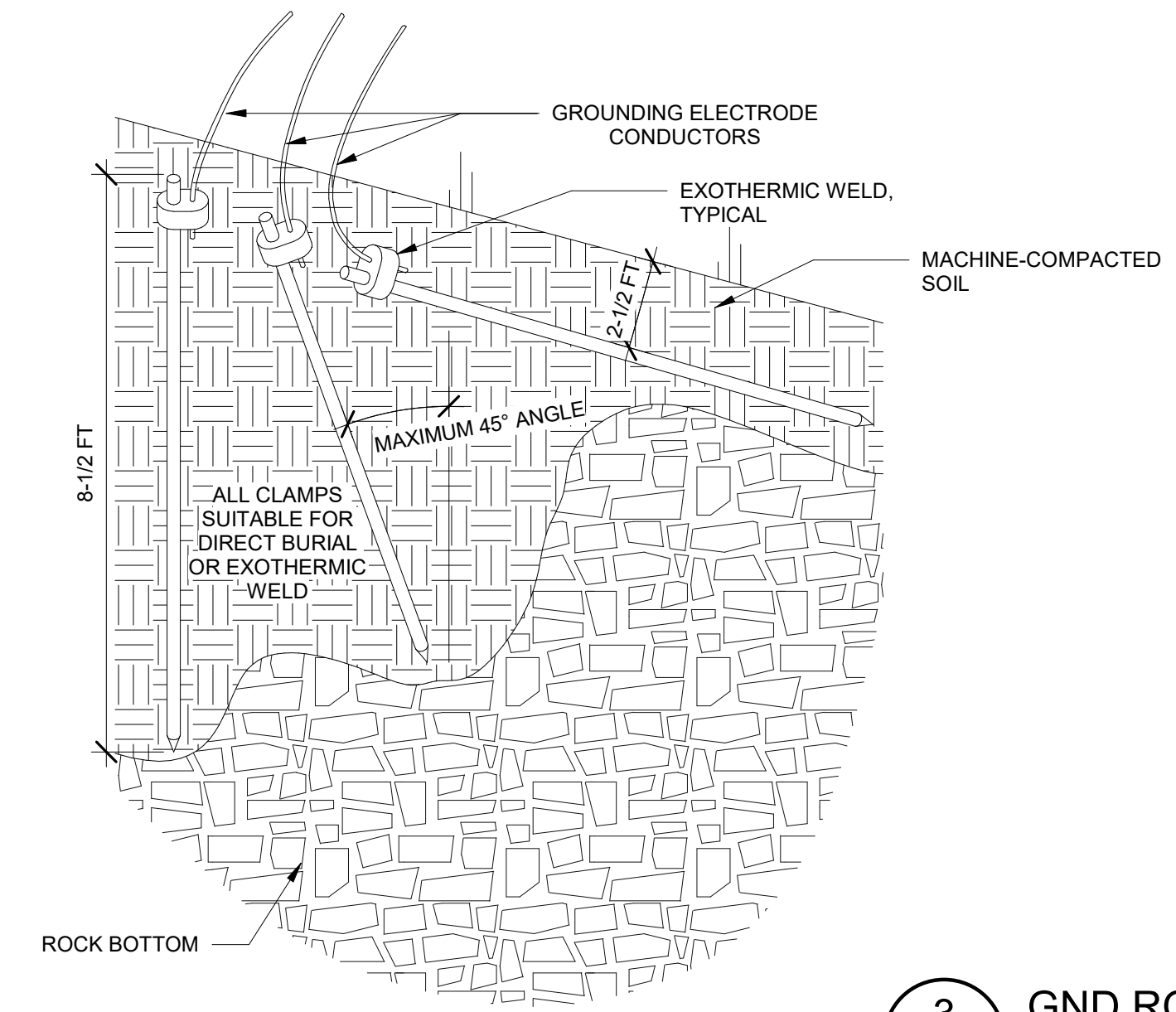
1 GROUNDING DTL
E0.2 NOT TO SCALE



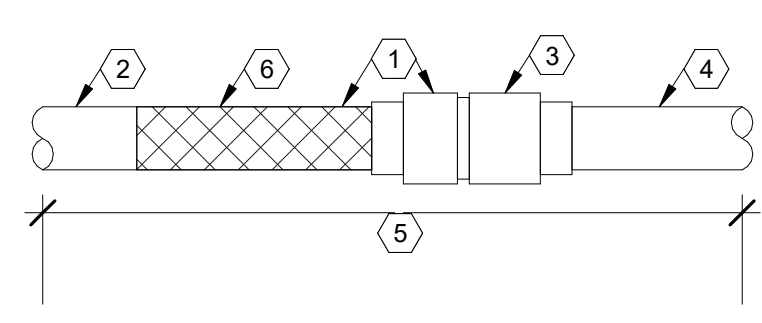
ELECTRICAL NOTES

- NUMBERED NOTES
- INSTALL GROUND ROD BELOW GROUND FREEZING DEPTH. COORDINATE DEPTH WITH AREA OF INSTALLATION.
 - GROUND ROD TO HAVE A MINIMUM OF 8' IN CONTACT WITH UNDISTURBED EARTH.
 - UL LISTED UNDERGROUND EXOTHERMIC WELD OR APPROVED CLAMP, TYP.
 - UL LISTED 5/8" Ø x 10' DRIVEN GROUND ROD, TYP. COORDINATE LOCATION WITH SITE. SEE REFERENCED DETAIL.
 - GROUNDING CONDUCTOR, TYP. SAME SIZE AS GROUNDING ELECTRODE CONDUCTOR.
 - GROUNDING ELECTRODE CONDUCTOR.
 - GROUND RODS TO BE INSTALLED IN A TRIANGULAR PATTERN WITH MIN. 6' APART, TYP.
 - VIRGIN EARTH.
 - FINISHED GRADE.

2 GROUND ROD DTL
E0.2 NOT TO SCALE



3 GND ROD INSTALL. DTL
E0.2 NOT TO SCALE



4 PVC TO LFNC CONNECTION DTL
E0.2 NOT TO SCALE

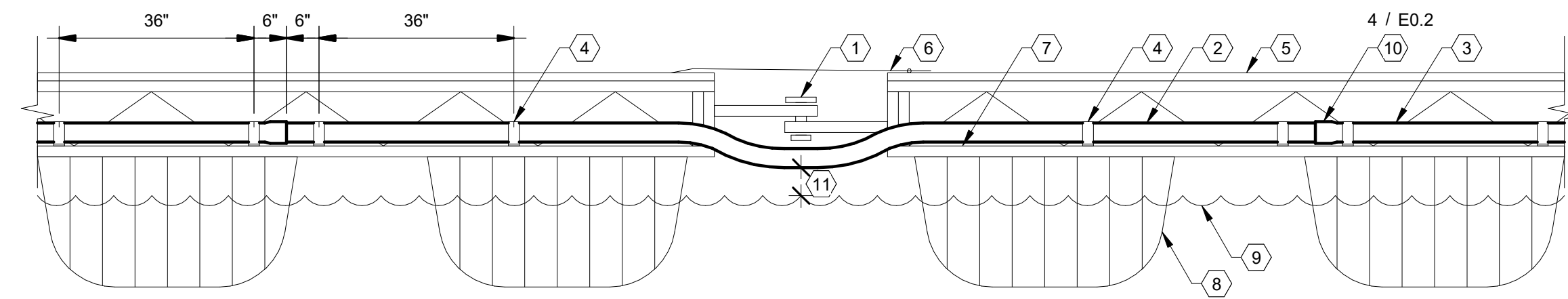
ELECTRICAL NOTES

- NUMBERED NOTES
- PVC FITTING WITH STAINLESS STEEL WIRE MESH STRAIN RELIEF, WET-LISTED, SHALL BE USED AT ALL CONNECTION POINTS.
 - LFNC CONDUIT WITH STRAIN RELIEF.
 - PVC FITTING AS REQUIRED.
 - PVC CONDUIT.
 - FINAL INSTALLATION OF CONDUITS ACROSS FITTINGS SHALL BE STRAIGHT SO THERE IS NO BEND AT CONNECTION POINT.
 - STAINLESS STEEL KELLEMS CABLE GRIP - SIZE FOR WIRE DIAMETER.

ELECTRICAL NOTES

- NUMBERED NOTES
- BONDING CONDUCTOR #3/0 GREEN INSULATION COPPER CABLE, MSHA ACCEPTED, WET LOCATIONS, RESISTANT TO OILS, ACIDS, ALKALINES, AND ABRASION-RESISTANT, OR 12" OF GREEN TAPE AT EACH END. CONDUCTOR STRANDS SHALL BE MINIMUM OF 448/24 STRANDS. ALLOW ENOUGH SLACK IN WIRE FOR STRUCTURE MOVEMENT AS PRACTICAL. INSTALLATION LOCATION SHALL BE SUCH THAT NO DAMAGE WILL OCCUR TO CONDUCTOR DURING STRUCTURE MOVEMENT.
 - (2) STAINLESS STEEL HEX BOLTS 5/16 - 18 MIN.
 - HEX STYLE CRIMP OR EQUAL, USING A MINIMUM OF 14 TON CRIMP TOOL.
 - CLEAN STRUCTURE METAL BEHIND CLAMP.

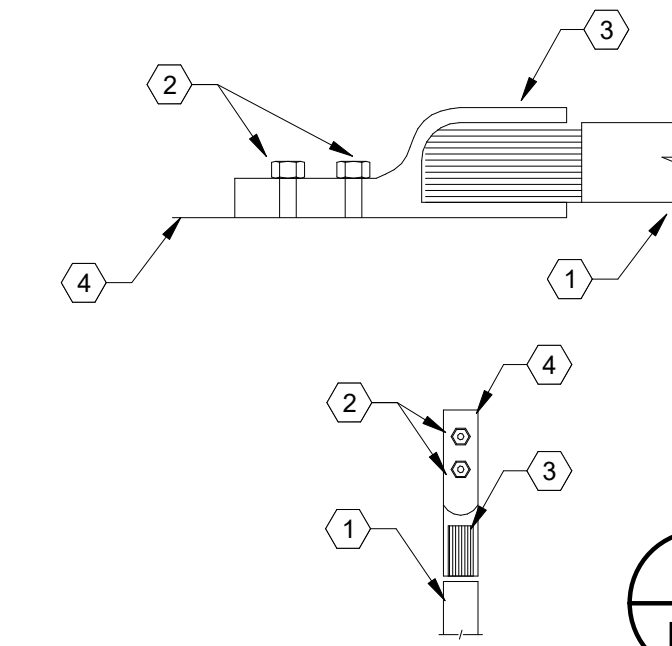
5 BONDING DTL
E0.2 NOT TO SCALE



6 DRY TRANSITION PVC TO LFNC DTL
E0.2 NOT TO SCALE

ELECTRICAL NOTES

- NUMBERED NOTES
- HINGE POINT/FIFTH-WHEEL/OTHER DOCK TRANSITION.
 - LFNC CONDUIT.
 - PVC CONDUIT.
 - GALVANIZED TWO-HOLE STRAPS BOLTED TO DOCK STRUCTURE, TYPICAL.
 - DECK.
 - COVER PLATE.
 - DOCK STRUCTURE.
 - FLOTATION.
 - WATER LINE.
 - PVC TO LFNC CONNECTION, SEE REFERENCED DETAIL.
 - CONDUIT SHALL MAINTAIN SEPARATION FROM WATER LINE. COORDINATE SLACK TO SATISFY REQUIREMENTS FOR FIFTH-WHEEL.



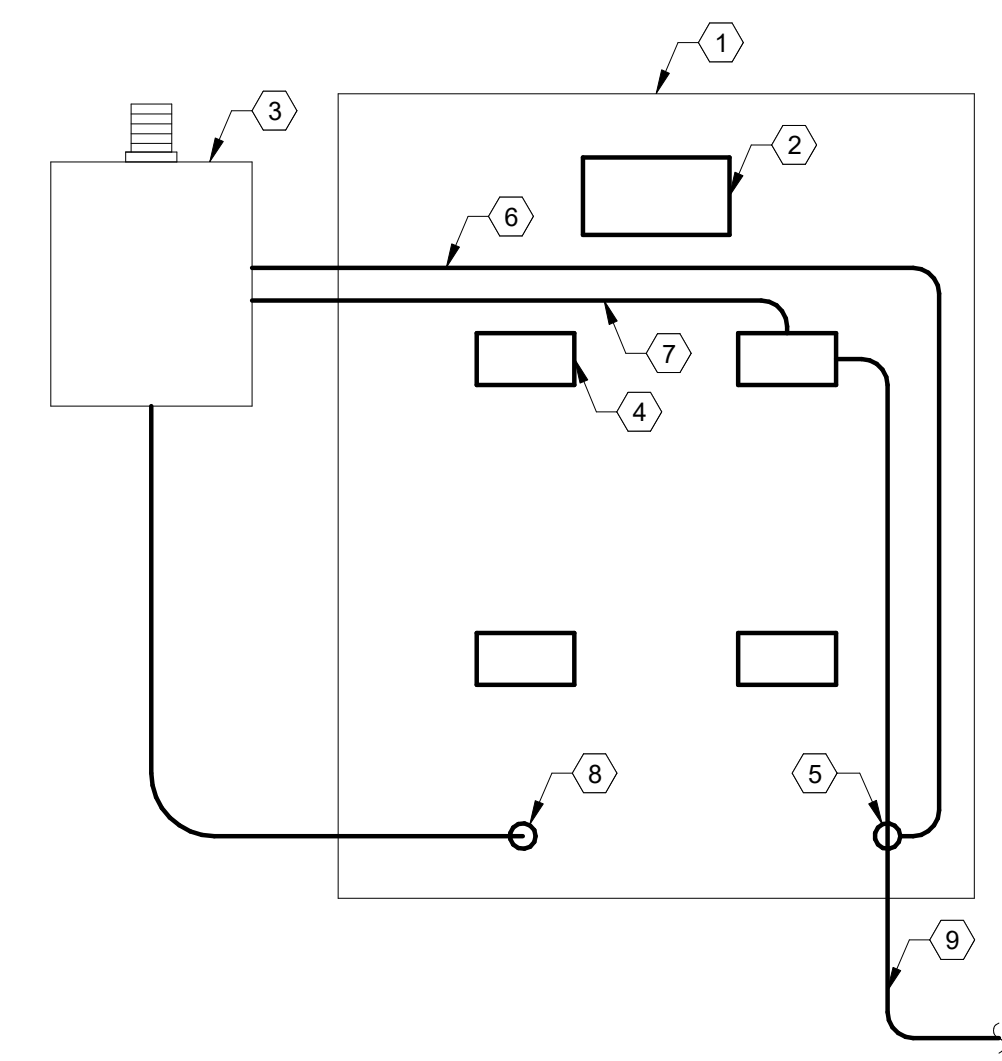
ELECTRICAL NOTES

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- FLOTATION.
 - WATER LEVEL.
 - DECK.
 - TRANSITION COVER PLATE.
 - DOCK STRUCTURE.
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 - BOND TO DOCK STRUCTURE, SEE REFERENCED DETAIL.
 - HINGE OR FIFTH WHEEL.

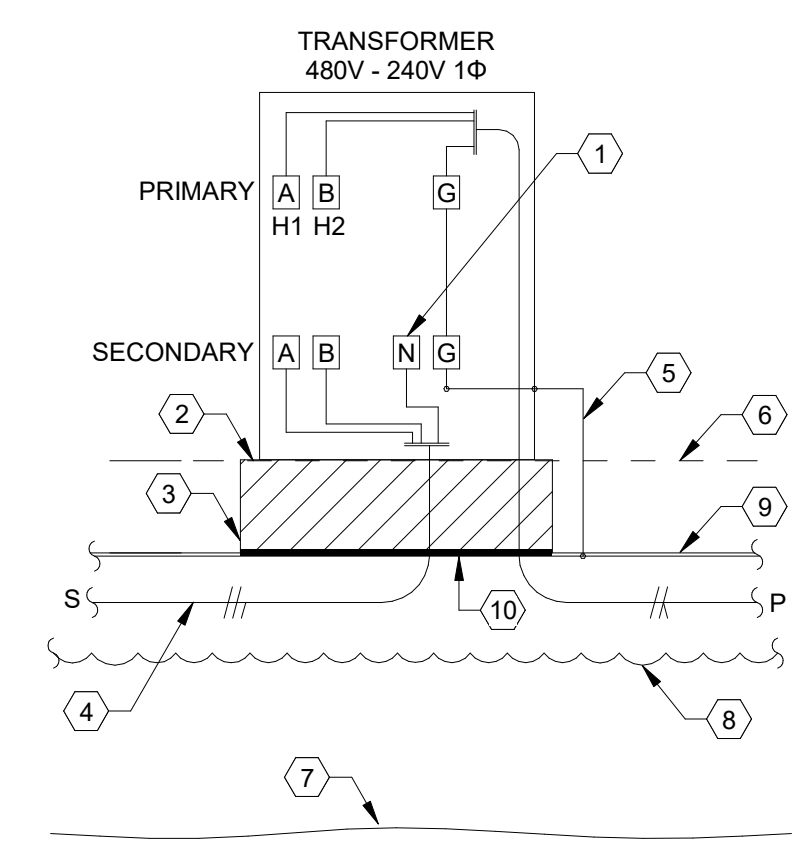
7 TRANSITION BONDING DTL
E0.2 NOT TO SCALE

ELECTRICAL NOTES

- NUMBERED NOTES
- ELECTRICAL PANEL.
 - MAIN CIRCUIT BREAKER.
 - GROUND FAULT MONITOR (GFM), COORDINATE WITH MANUFACTURER FOR WIRING AND INSTALLATION REQUIREMENTS. RED BEACON SHALL FLASH UPON ALL CIRCUIT TRIPS DUE TO GROUND FAULT ALARMS.
 - SHUNT TRIP BRANCH BREAKER, TYPICAL. SEE PANEL SCHEDULE FOR SIZE.
 - GFM CURRENT SENSOR, TYPICAL. SIZE PER WIRE AS SHOWN IN PANEL SCHEDULE. HOT AND NEUTRAL CONDUCTORS ROUTED THROUGH CT.
 - CURRENT SENSOR CONTROL WIRE, TYPICAL.
 - SHUNT TRIP CONTROL WIRE, TYPICAL.
 - TAP BUS ON LOAD SIDE OF THE MAIN BREAKER AND RUN TO GFM. UTILIZE A SUB-FEED LUG BLOCK OR SIMILAR MEANS TO MAKE TAP. TERMINATE CIRCUIT ON MANUFACTURER'S SUPPLIED OVERCURRENT DEVICE. CIRCUIT CONDUCTORS SHALL NOT EXTEND LONGER THAN 10 FEET.
 - BRANCH CIRCUIT TO MARINA PEDESTAL, TYPICAL.



8 GFM WIRING DTL
E0.2 NOT TO SCALE



9 MARINA TRANSFORMER DTL
E0.2 NOT TO SCALE

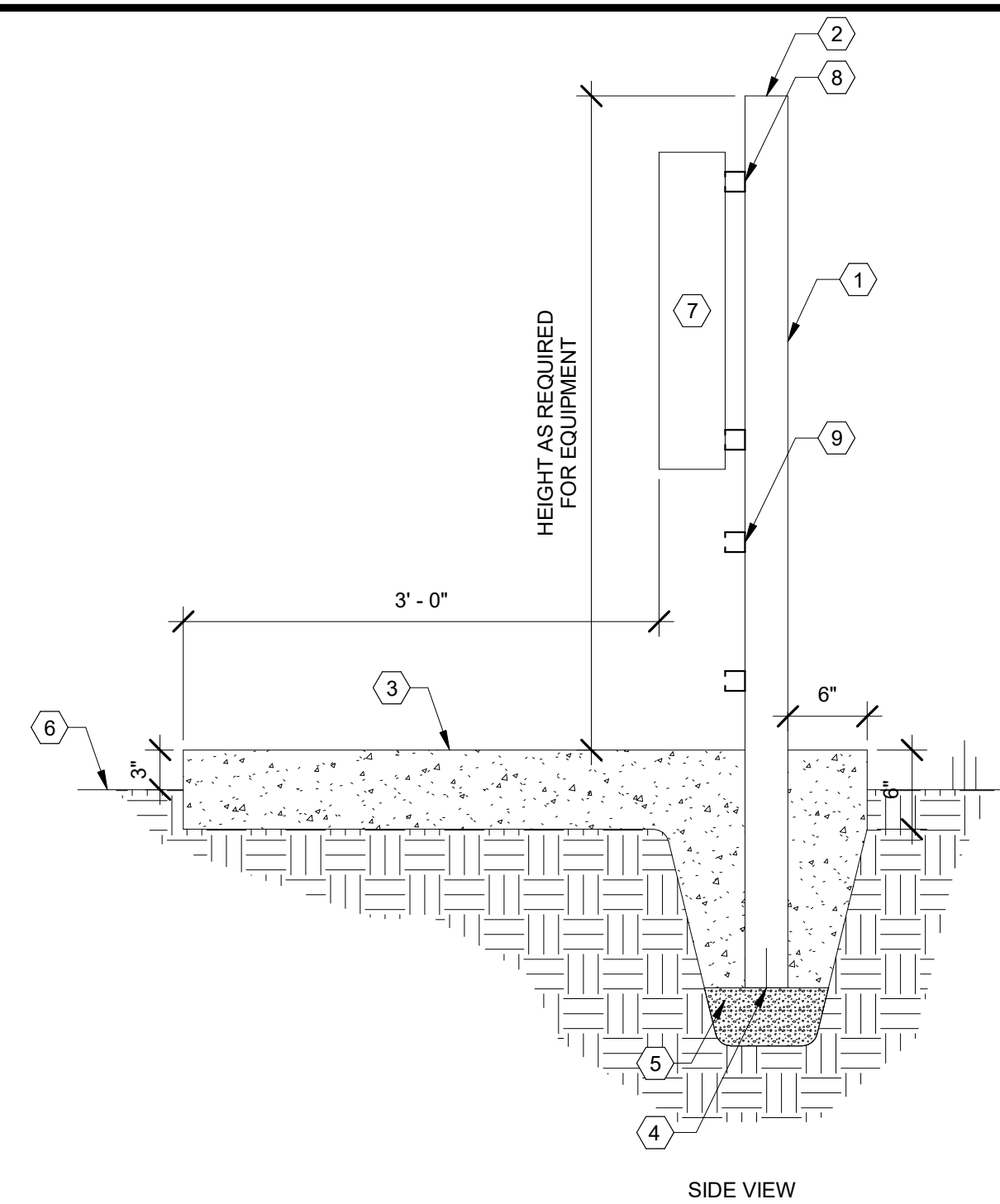
ELECTRICAL UPGRADES FOR
CITY OF ROCKLAND
DOWNTOWN WATERFRONT MARINA
INFRASTRUCTURE
ROCKLAND, MAINE



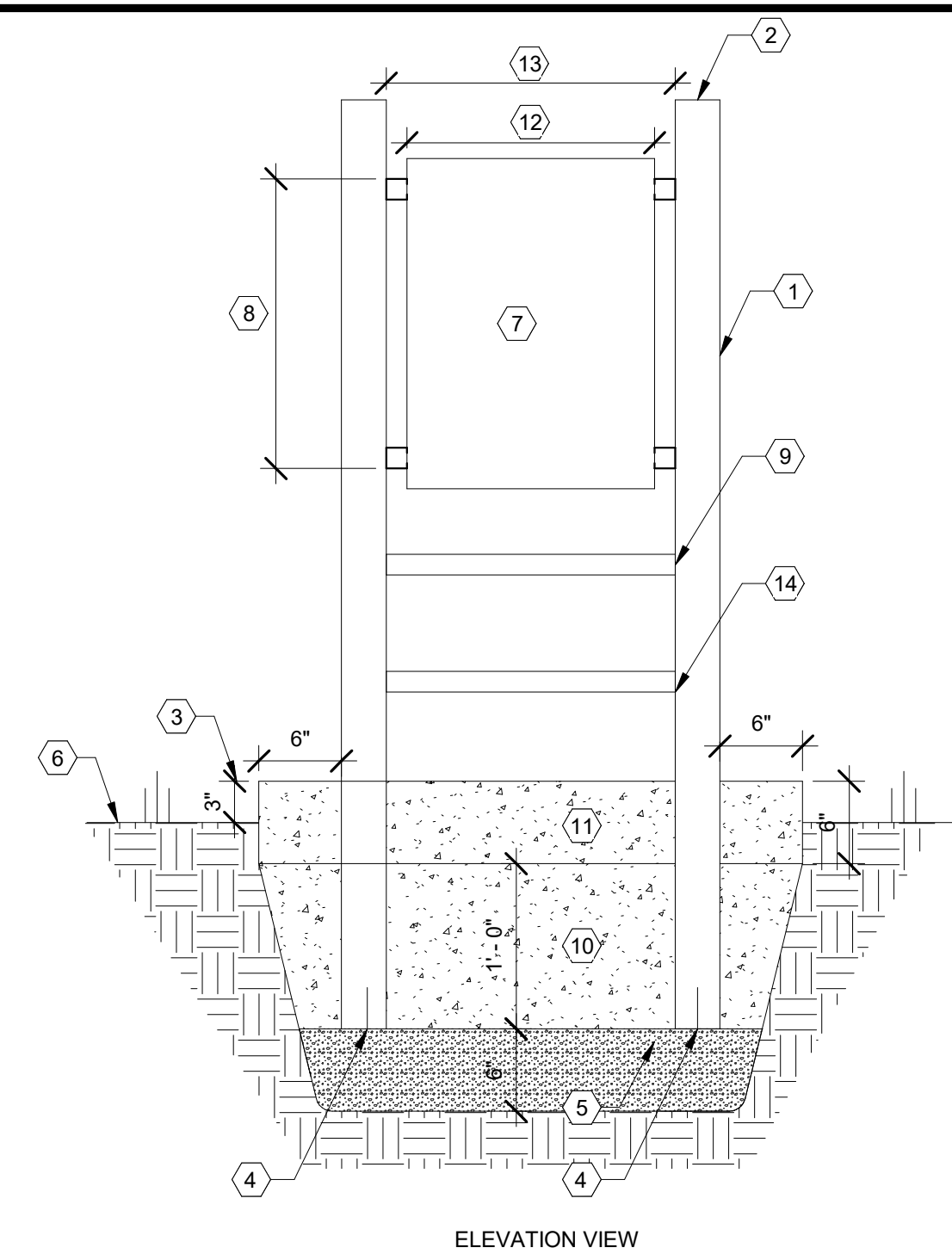
Revisions indicated w/ Δ	
No.	Description

SHEET: E0.2	ELECTRICAL DETAILS	
	TITLE:	DATE: 2-28-23
JOB NO: 23008	DWN BY: JLC	

PRELIMINARY
SET NOT FOR
CONSTRUCTION



SIDE VIEW

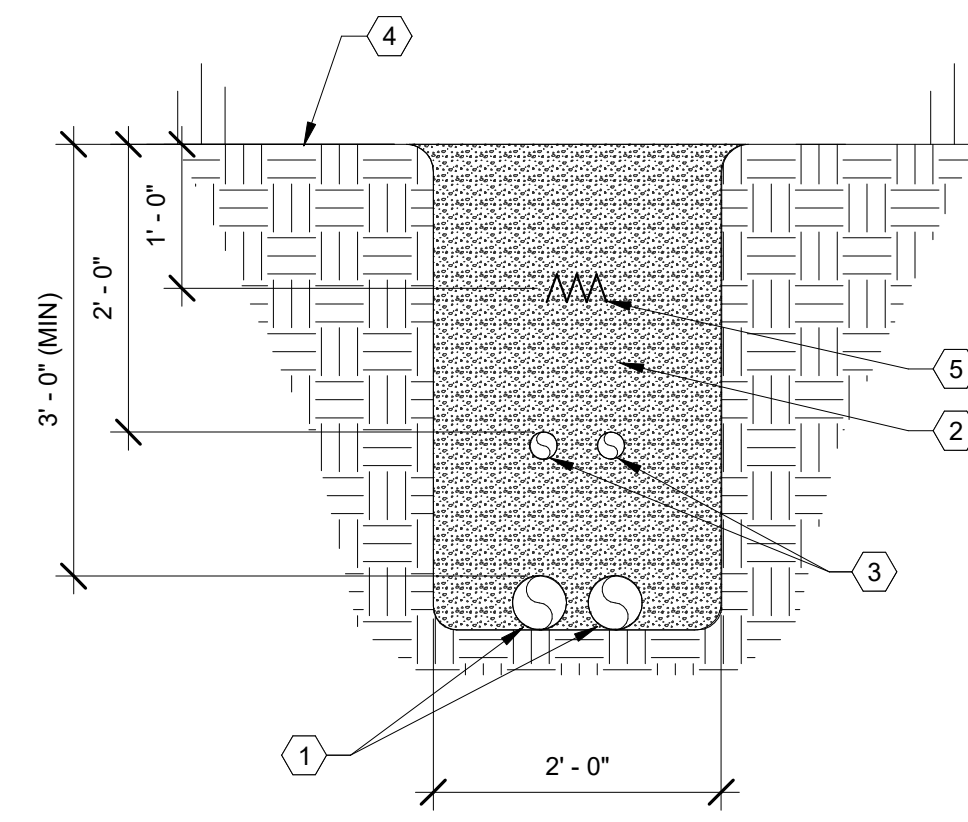


ELEVATION VIEW

ELECTRICAL NOTES

- NUMBERED NOTES
- 3-1/4" GALVANIZED SQUARE POST.
 - PLASTIC CAP.
 - EQUIPMENT PAD.
 - OPEN BOTTOM.
 - 6" OF GRADE #57 GRAVEL.
 - FINISHED GRADE.
 - ELECTRICAL EQUIPMENT PER PLANS.
 - UNISTRUT FOR EQUIPMENT MOUNTING AS REQUIRED. COORDINATE UNISTRUT SPACING WITH EQUIPMENT MOUNTING HOLES.
 - UNISTRUT FOR CONDUIT SUPPORT INSTALLED WITHIN 12" OF EQUIPMENT.
 - POLE BASE SUPPORT.
 - SLAB.
 - EQUIPMENT WIDTH VARIES.
 - STRUCTURE WIDTH SHALL BE 4" WIDER THAN WIDTH OF EQUIPMENT.
 - IF SPACE BETWEEN FIRST UNISTRUT AND SLAB IS GREATER THAN 36", INSTALL SECOND UNISTRUT EQUIDISTANT.

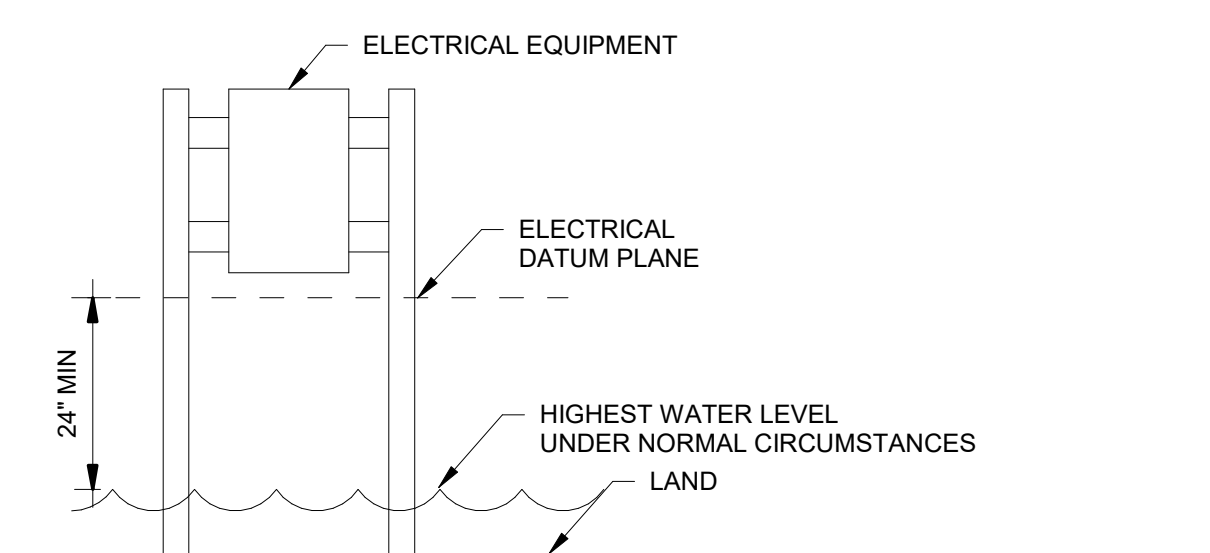
1 POST MOUNT DTL
E0.3 NOT TO SCALE



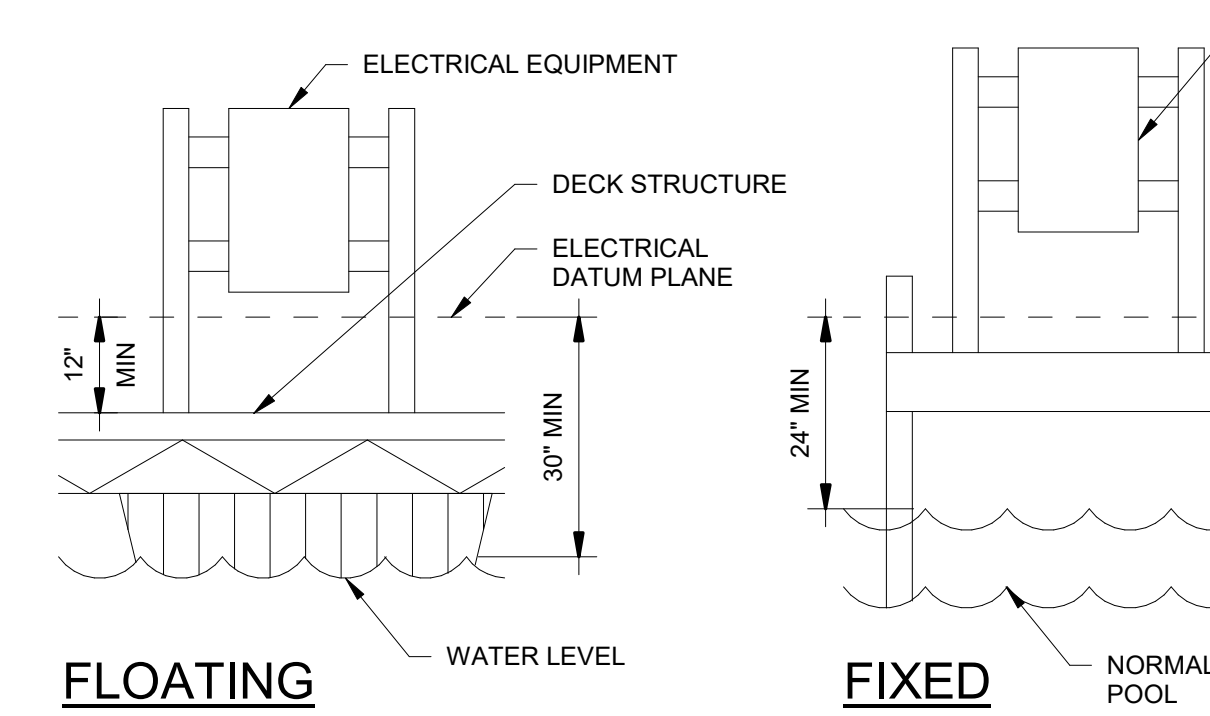
2 36" DITCH DTL
E0.3 NOT TO SCALE

ELECTRICAL NOTES

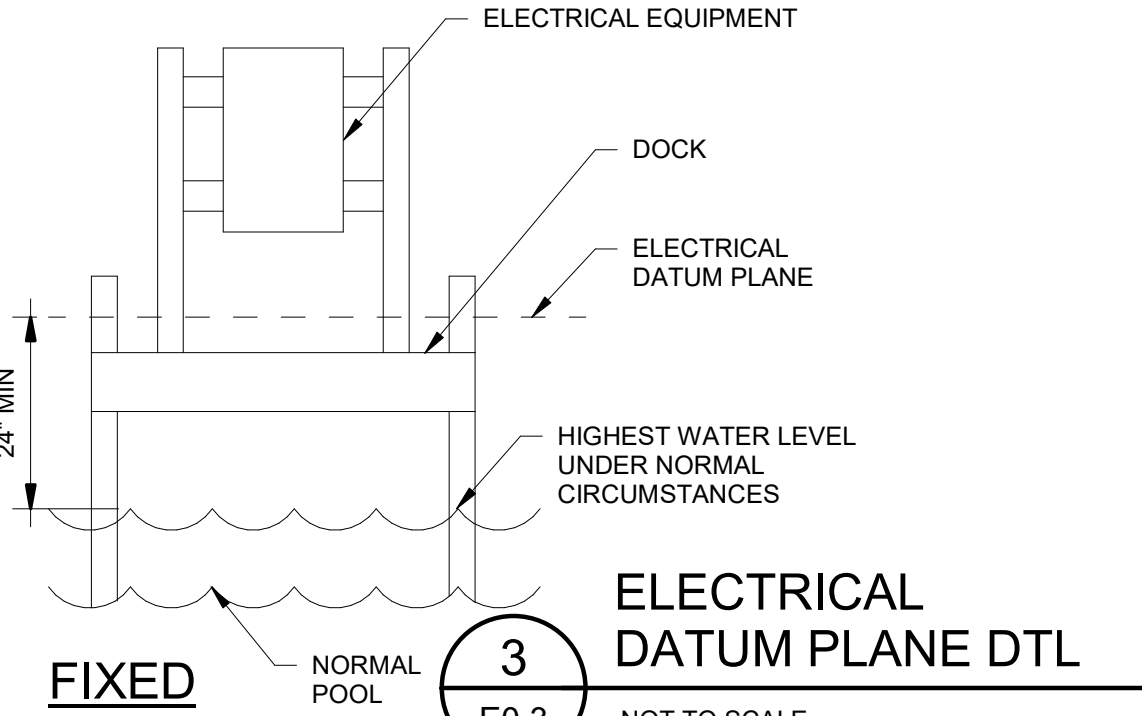
- NUMBERED NOTES
- SCHD 40 PVC SERVICE CONDUITS AS REQUIRED.
 - MACHINE COMPACTED GRAVEL FILL FOR AREAS WHEN CROSSING DRIVEWAYS, ROADS, AND PARKING LOTS. DIRT FILL AND COMPACT ALL OTHER AREAS.
 - COMMUNICATION CONDUITS AS REQUIRED.
 - FINISH GRADE.
 - WARNING TAPE.



LAND NOT SUBJECT TO TIDES



FLOATING

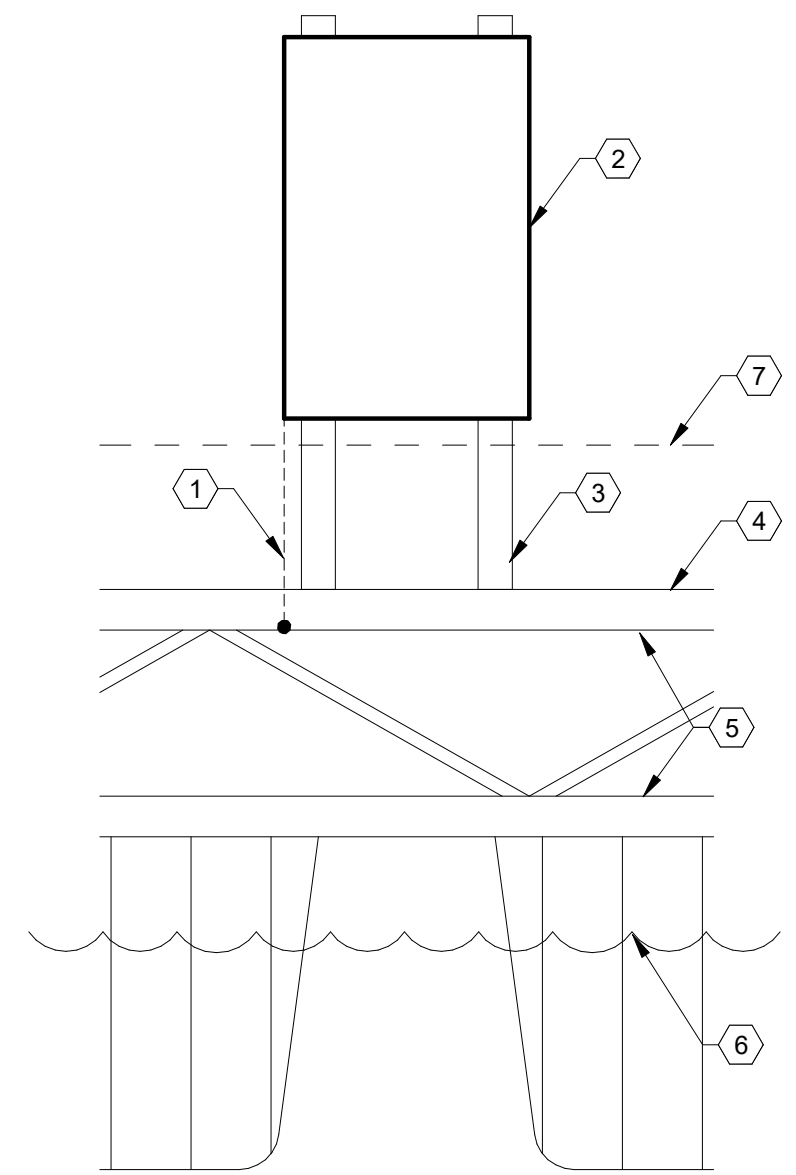


FIXED

3 ELECTRICAL DATUM PLANE DTL
E0.3 NOT TO SCALE

ELECTRICAL NOTES

- GENERAL NOTES
- A ALL ELECTRICAL CONNECTIONS (WITH EXCEPTION TO GROUND BONDING TO DOCK STRUCTURE), ON FLOATING OR FIXED PIERS, SHALL BE ABOVE THE ELECTRICAL DATUM PLANE. BOTTOMS OF TRANSFORMERS SHALL NOT BE BELOW THE ELECTRICAL DATUM PLANE.



4 EQUIPMENT BONDING DTL
E0.3 NOT TO SCALE

ELECTRICAL NOTES

- NUMBERED NOTES
- BOND METAL DOCK STRUCTURE TO GROUND BUS OF EQUIPMENT INCLUDING SHORE POWER PEDESTALS.
 - ELECTRICAL EQUIPMENT.
 - SUPPORT STRUCTURE.
 - DECK.
 - DOCK STRUCTURE.
 - WATER LEVEL.
 - ELECTRICAL DATUM PLANE, SEE REFERENCED DETAIL.

ELECTRICAL UPGRADES FOR
CITY OF ROCKLAND
DOWNTOWN WATERFRONT MARINA
INFRASTRUCTURE
ROCKLAND, MAINE



Revisions Indicated w/ Δ

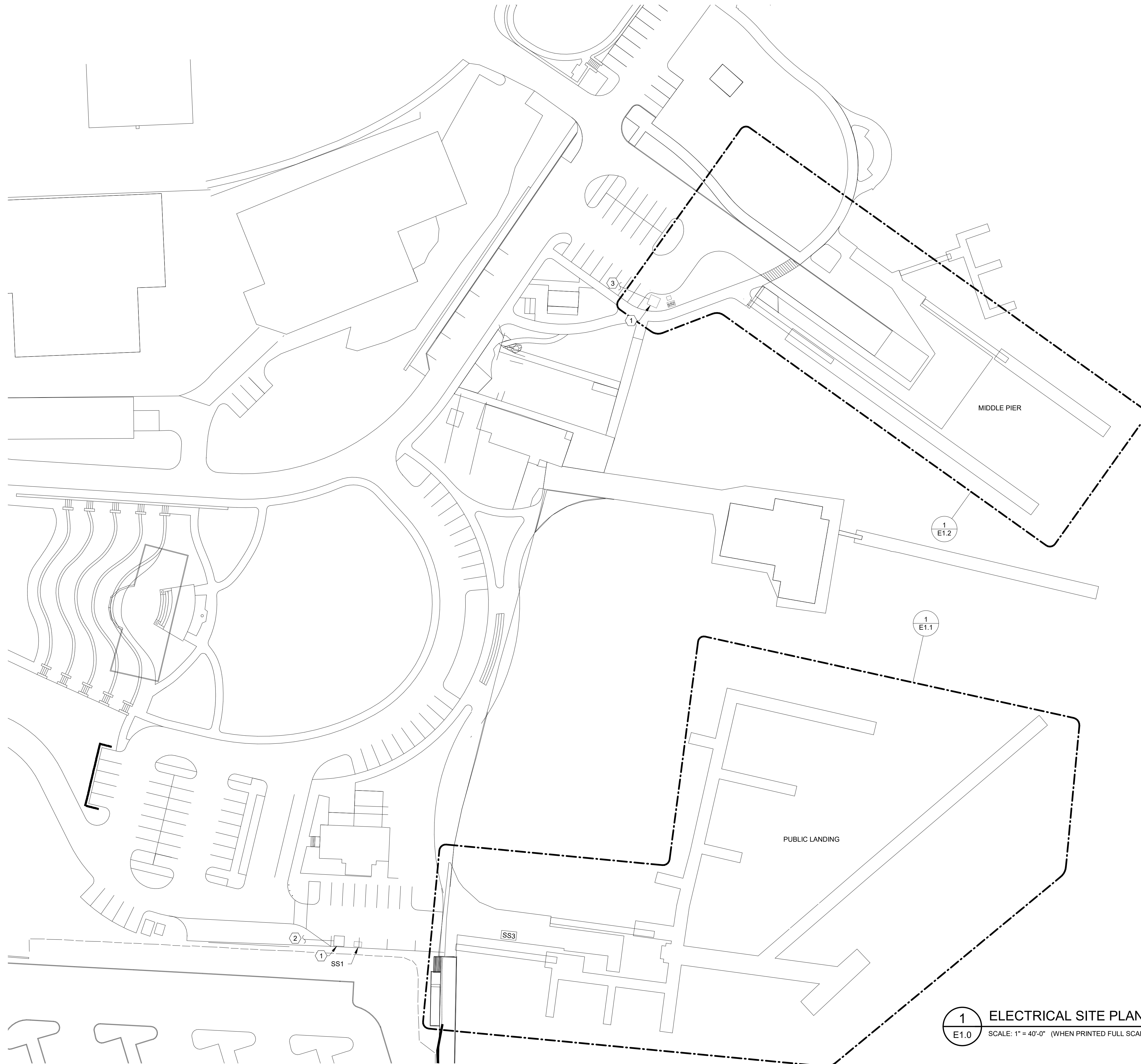
No.	Date	Description

E0.3	SHEET: ELECTRICAL DETAILS
	TITLE: ELECTRICAL DETAILS
JOB NO: 23008	DATE: 2-28-23
DWN BY: JJC	

PRELIMINARY
SET NOT FOR
CONSTRUCTION

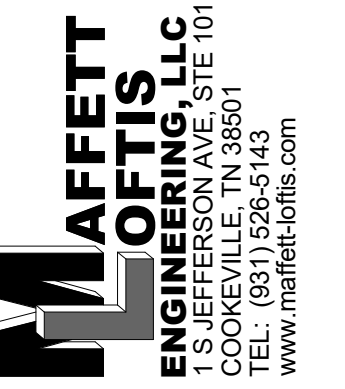
ELECTRICAL NOTES

- NUMBERED NOTES
 1 PROPOSED UTILITY TRANSFORMER LOCATION.
 2 TO 3Φ PRIMARY ON MAIN STREET.
 3 TO 3Φ PRIMARY IN HARBOR PARK.



1 ELECTRICAL SITE PLAN
 E1.0 SCALE: 1" = 40'-0" (WHEN PRINTED FULL SCALE ON 24"X36")

ELECTRICAL UPGRADES FOR
 CITY OF ROCKLAND
 DOWNTOWN WATERFRONT MARINA
 INFRASTRUCTURE
 ROCKLAND, MAINE



Revisions Indicated w/ Δ	
No.	Date Description

E1.0	SHEET: ELECTRICAL SITE PLAN
	TITLE: ELECTRICAL SITE PLAN
JOB NO: 23008	DATE: 2-28-23
DWN BY: JJC	

PRELIMINARY
 SET NOT FOR
 CONSTRUCTION

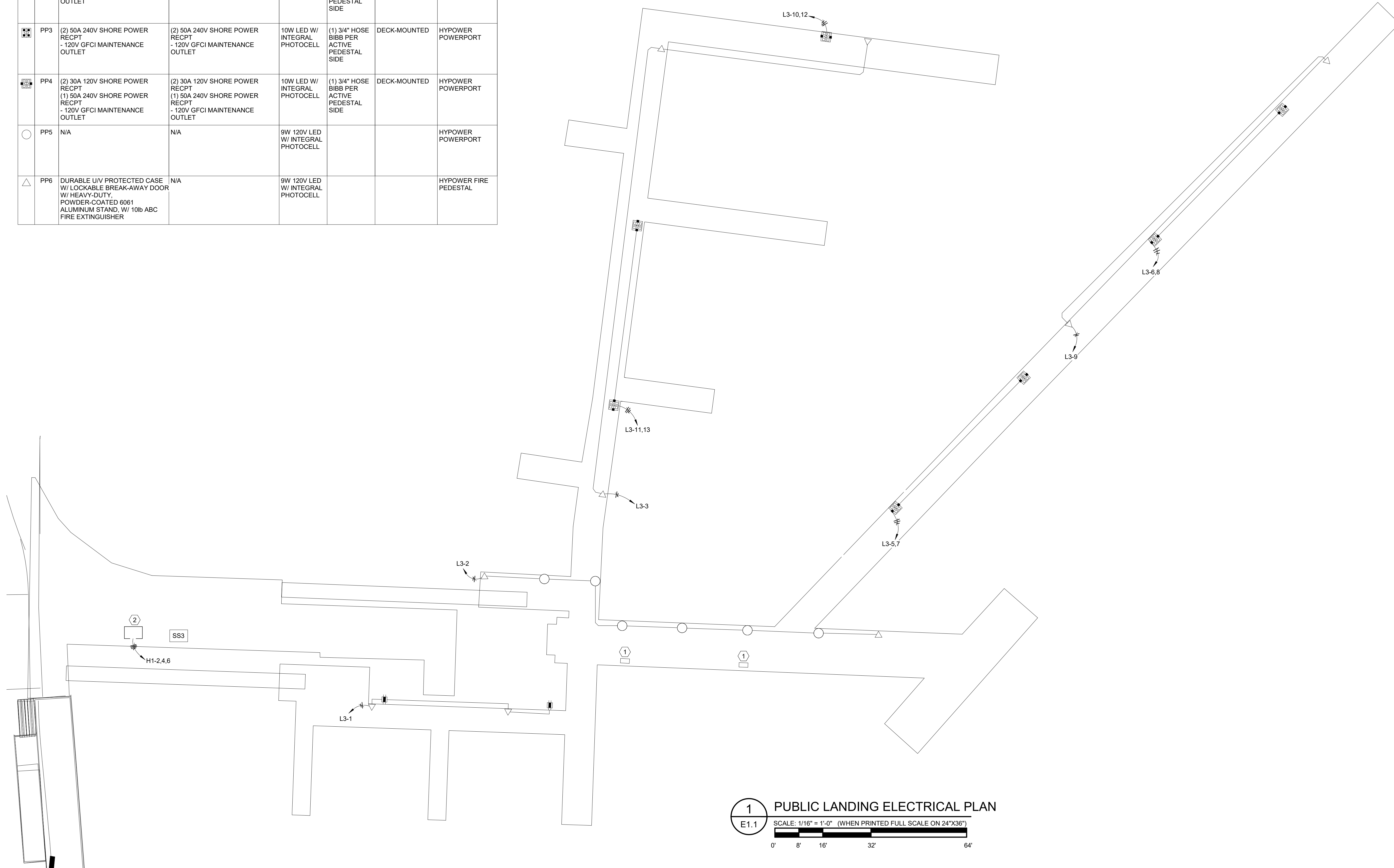
MARINA POWER PEDESTAL LEGEND

- OTHER NOTES:
- (1) KWH METER INCLUDED PER ACTIVE PEDESTAL SIDE UNLESS OTHERWISE NOTED
 - ALL SHORE POWER BREAKERS SHALL BE PROTECTED BY A LISTED INDIVIDUAL GFPE DEVICE SET TO TRIP BETWEEN 25mA - 30mA AND 250ms OR FASTER LOCATED IN THE SHORE POWER PEDESTAL
 - COORDINATE LIGHT COLOR AND/OR LENS COLOR WITH OWNER AND LOCAL REQUIREMENTS

LABEL	SIDE 1	SIDE 2	LIGHTING	OTHER UTILITIES	MOUNTING	MODEL #
PP1	(1) 50A 240V SHORE POWER RECPT (1) 30A 120V SHORE POWER RECPT - 120V GFCI MAINTENANCE OUTLET	(1) 50A 240V SHORE POWER RECPT (1) 30A 120V SHORE POWER RECPT - 120V GFCI MAINTENANCE OUTLET	10W LED W/ INTEGRAL PHOTOCELL	(1) 3/4" HOSE BIBB PER ACTIVE PEDESTAL SIDE	DECK-MOUNTED	HYPOWER POWERPORT
PP2	(1) 50A 240V RV RECPT (1) 30A 120V RV RECPT - 120V GFCI MAINTENANCE OUTLET	N/A	10W LED W/ INTEGRAL PHOTOCELL	(1) 3/4" HOSE BIBB PER ACTIVE PEDESTAL SIDE	PAD-MOUNTED	HYPOWER POWERPORT
PP3	(2) 50A 240V SHORE POWER RECPT - 120V GFCI MAINTENANCE OUTLET	(2) 50A 240V SHORE POWER RECPT - 120V GFCI MAINTENANCE OUTLET	10W LED W/ INTEGRAL PHOTOCELL	(1) 3/4" HOSE BIBB PER ACTIVE PEDESTAL SIDE	DECK-MOUNTED	HYPOWER POWERPORT
PP4	(2) 30A 120V SHORE POWER RECPT (1) 50A 240V SHORE POWER RECPT - 120V GFCI MAINTENANCE OUTLET	(2) 30A 120V SHORE POWER RECPT (1) 50A 240V SHORE POWER RECPT - 120V GFCI MAINTENANCE OUTLET	10W LED W/ INTEGRAL PHOTOCELL	(1) 3/4" HOSE BIBB PER ACTIVE PEDESTAL SIDE	DECK-MOUNTED	HYPOWER POWERPORT
PP5	N/A	N/A	9W 120V LED W/ INTEGRAL PHOTOCELL			HYPOWER POWERPORT
PP6	DURABLE UV PROTECTED CASE W/ LOCKABLE BREAK-AWAY DOOR W/ HEAVY-DUTY, POWDER-COATED 6061 ALUMINUM STAND, W/ 10lb ABC FIRE EXTINGUISHER	N/A	9W 120V LED W/ INTEGRAL PHOTOCELL			HYPOWER FIRE PEDESTAL

ELECTRICAL NOTES

- NUMBERED NOTES
- 100KW DC FAST CHARGING DISPENSER. ROUTE 2000V RATED DC CIRCUIT TO POWER BOX.
 - 200KW POWER BOX FOR DUAL DC CHARGING DISPENSERS.



1 PUBLIC LANDING ELECTRICAL PLAN
 E.1.1 SCALE: 1/16" = 1'-0" (WHEN PRINTED FULL SCALE ON 24"X36")
 0' 8' 16' 32' 64'

**ELECTRICAL UPGRADES FOR
 CITY OF ROCKLAND
 DOWNTOWN WATERFRONT MARINA
 INFRASTRUCTURE
 ROCKLAND, MAINE**

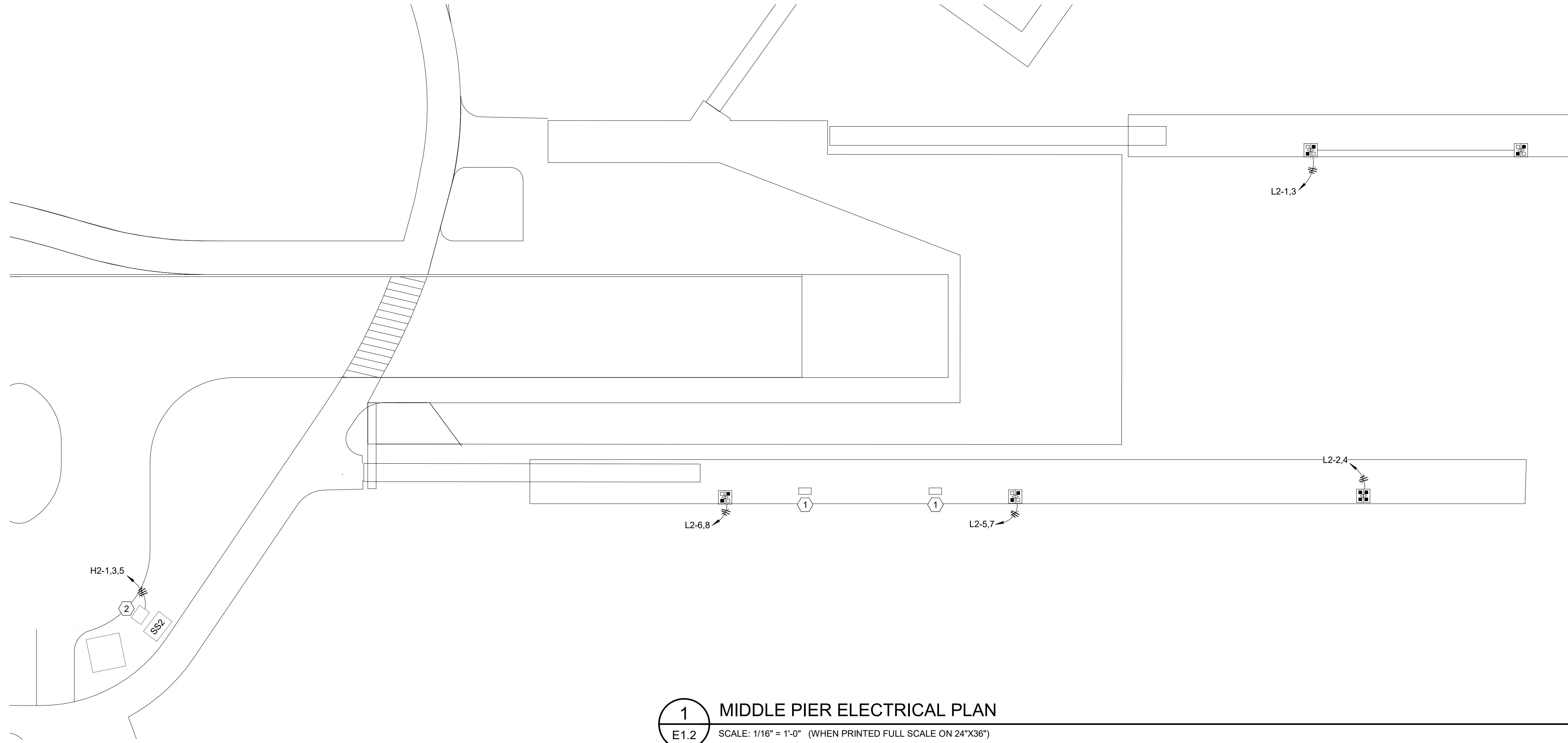


Revisions: Revisions indicated w/

No.	Date	Description

E1.1	SHEET:	PUBLIC LANDING - ELECTRICAL PLAN
	TITLE:	ELECTRICAL PLAN
	JOB NO:	23008
	DATE:	2-28-23
	DWN BY:	JLC

**PRELIMINARY
 SET NOT FOR
 CONSTRUCTION**



ELECTRICAL NOTES

- NUMBERED NOTES
- 100kW DC FAST CHARGING DISPENSER. ROUTE 2000V RATED DC CIRCUIT TO POWER BOX.
 - 200kW POWER BOX FOR DUAL DC CHARGING DISPENSERS.

1 MIDDLE PIER ELECTRICAL PLAN
 E1.2 SCALE: 1/16" = 1'-0" (WHEN PRINTED FULL SCALE ON 24"X36")

ELECTRICAL UPGRADES FOR
 CITY OF ROCKLAND
 DOWNTOWN WATERFRONT MARINA
 INFRASTRUCTURE
 ROCKLAND, MAINE



Revisions Indicated w/ Δ

No.	Date	Description

E1.2	SHEET: MIDDLE PIER - ELECTRICAL PLAN
	TITLE: MIDDLE PIER - ELECTRICAL PLAN
JOB NO: 23008	DATE: 2-28-23
DWN BY: JLC	

PRELIMINARY
 SET NOT FOR
 CONSTRUCTION

BRANCH PANEL: H1

LOCATION:
SUPPLY FROM:
MOUNTING: SURFACE
ENCLOSURE: SS1

TYPE: SQUARE - D I-LINE SER
VOLTS: 277/480 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: COORDINATE
MAINS TYPE: MCB
MAINS RATING: 600 A
MCB RATING: 600 A

TRIP AMPS	POLES	FEED	NOTES	CIRCUIT DESCRIPTION	CKT	A	B	C	CKT	CIRCUIT DESCRIPTION	NOTES	FEED	POLES	TRIP AMPS	
300 A	2	B300		T1	1	48.8	66.7		2	DC FAST CHARGER		C300	3	300 A	
					3				4						
					5			85.8	66.7		6				
300 A	2	1G300	3	M3	7	85.4			8						
					9				10						
					11				12						
					13				14						
					15				16						
					17				18						
					19				20						
					21				22						
					23				24						
					25				26						
					27				28						
					29				30						
					31				32						
					33				34						
					35				36						
					37				38						
					39				40						
					41				42						

LOAD CLASSIFICATION	CONNECTED (kVA)	DEMAND FACTOR	EST. DEMAND (kVA)	PANEL TOTALS
Receptacle	0.4 kVA	100.00%	0.4 kVA	TOTAL CONN. LOAD (kVA): 468.6 kVA TOTAL EST. DEMAND (kVA): 471.6 kVA TOTAL CONN.: 564 A TOTAL EST. DEMAND: 567 A
Continuous	200.3 kVA	125.00%	250.3 kVA	
Non-Continuous	96.0 kVA	100.00%	96.0 kVA	
Metered Shore Power	168.0 kVA	72.00%	121.0 kVA	
Maint. Recept.	4.0 kVA	100.00%	4.0 kVA	

- BREAKER NOTES (REFERENCED IN NOTES COLUMN):**
- GFCI
 - COMBINATION AFCI
 - SHUNT TRIP - REFER TO GFM WIRING DETAIL
 - 30mA GFPE
 - TAP BLOCK

- CIRCUIT NOTES (REFERENCED IN NOTES COLUMN):**
- A. CONTINUOUS METAL RACEWAY

CIRCUIT SCHEDULE

CKT #	DESCRIPTION	VD %	GFPE TRIP (mA)	GFPE TIME (ms)
1,3	T1	0.05%	N/A	N/A
2,4,6	DC FAST CHARGER	0.43%	90-100	400
5,7	M3	0.90%	90-100	400

BRANCH PANEL: L1

LOCATION:
SUPPLY FROM: T1
MOUNTING: SURFACE
ENCLOSURE: SS1

TYPE: SQUARE - D I-LINE
VOLTS: 120/240 Single
PHASES: 1
WIRES: 3

A.I.C. RATING: COORDINATE
MAINS TYPE: MCB
MAINS RATING: 600 A
MCB RATING: 600 A

TRIP AMPS	POLES	FEED	NOTES	CIRCUIT DESCRIPTION	CKT	A	B	CKT	CIRCUIT DESCRIPTION	NOTES	FEED	POLES	TRIP AMPS
20 A	1	A20		G1	1	0.1	12.2	2	RV PEDESTAL		B100	2	100 A
100 A	2	B100		RV PEDESTAL	3		12.2	12.2	4				
					5	12.2	12.2		6				
100 A	2	B175		RV PEDESTAL	7		12.2	12.2	8		B150	2	100 A
					9	12.2			10				
					11				12				
					13				14				
					15				16				
					17				18				
					19				20				
					21				22				
					23				24				
					25				26				
					27				28				
					29				30				
					31				32				
					33				34				
					35				36				
					37				38				
					39				40				
					41				42				

LOAD CLASSIFICATION	CONNECTED (kVA)	DEMAND FACTOR	EST. DEMAND (kVA)	PANEL TOTALS
Continuous	0.1 kVA	125.00%	0.1 kVA	TOTAL CONN. LOAD (kVA): 97.5 kVA TOTAL EST. DEMAND (kVA): 97.5 kVA TOTAL CONN.: 406 A TOTAL EST. DEMAND: 406 A
Non-Continuous	96.0 kVA	100.00%	96.0 kVA	
Maint. Recept.	1.4 kVA	100.00%	1.4 kVA	

- BREAKER NOTES (REFERENCED IN NOTES COLUMN):**
- GFCI
 - COMBINATION AFCI
 - SHUNT TRIP - REFER TO GFM WIRING DETAIL
 - 30mA GFPE
 - TAP BLOCK

- CIRCUIT NOTES (REFERENCED IN NOTES COLUMN):**
- A. CONTINUOUS METAL RACEWAY

CIRCUIT SCHEDULE

CKT #	DESCRIPTION	VD %	GFPE TRIP (mA)	GFPE TIME (ms)
2,4	RV PEDESTAL	1.61%	90-100	400
3,5	RV PEDESTAL	3.36%	90-100	400
6,8	RV PEDESTAL	3.56%	90-100	400
7,9	RV PEDESTAL	3.72%	90-100	400

BRANCH PANEL: L3

LOCATION:
SUPPLY FROM: T3
MOUNTING: SURFACE
ENCLOSURE: SS3

TYPE: SQUARE - D I-LINE
VOLTS: 120/240 Single
PHASES: 1
WIRES: 3

A.I.C. RATING: COORDINATE
MAINS TYPE: MCB
MAINS RATING: 600 A
MCB RATING: 600 A

TRIP AMPS	POLES	FEED	NOTES	CIRCUIT DESCRIPTION	CKT	A	B	CKT	CIRCUIT DESCRIPTION	NOTES	FEED	POLES	TRIP AMPS
20 A	1	1G60		MAINT RECEPES AND FIRE PEDESTALS	1	0.4	0.1	2	LIGHT BOLLARDS		1G60	1	20 A
20 A	1	1G60		FIRE PEDESTALS	3		0.0	0.1	4	G3	A20	1	20 A
200 A	2	1G250		METERED SHORE POWER	5	24.4	24.4	6	METERED SHORE POWER				
					7		24.4	24.4	8				
20 A	1	1G60		FIRE PEDESTALS	9	0.0	12.2	10	METERED SHORE POWER				
					11			12					
200 A	2	1G175		METERED SHORE POWER	13	24.4	24.4	12.2	14				
					15				16				
					17				18				
					19				20				
					21				22				
					23				24				
					25				26				
					27				28				
					29				30				
					31				32				
					33				34				
					35				36				
					37				38				
					39				40				
					41				42				

LOAD CLASSIFICATION	CONNECTED (kVA)	DEMAND FACTOR	EST. DEMAND (kVA)	PANEL TOTALS
Receptacle	0.4 kVA	100.00%	0.4 kVA	TOTAL CONN. LOAD (kVA): 171.1 kVA TOTAL EST. DEMAND (kVA): 124.1 kVA TOTAL CONN.: 713 A TOTAL EST. DEMAND: 517 A
Continuous	0.2 kVA	125.00%	0.3 kVA	
Non-Continuous	0.0 kVA	0.00%	0.0 kVA	
Metered Shore Power	168.0 kVA	72.00%	121.0 kVA	
Maint. Recept.	2.5 kVA	100.00%	2.5 kVA	

- BREAKER NOTES (REFERENCED IN NOTES COLUMN):**
- GFCI
 - COMBINATION AFCI
 - SHUNT TRIP - REFER TO GFM WIRING DETAIL
 - 30mA GFPE
 - TAP BLOCK

- CIRCUIT NOTES (REFERENCED IN NOTES COLUMN):**
- A. CONTINUOUS METAL RACEWAY

CIRCUIT SCHEDULE

DESCRIPTION	FEED	VD %	GFPE TRIP (mA)	GFPE TIME (ms)
MAINT RECEPES AND FIRE PEDESTALS	1G60	1.76%	90-100	200
LIGHT BOLLARDS	1G60	0.59%	90-100	200
FIRE PEDESTALS	1G60	0.36%	90-100	200
METERED SHORE POWER	1G250	3.76%	90-100	400
METERED SHORE POWER	1G300	3.97%	90-100	400
FIRE PEDESTALS	1G60	0.31%	90-100	200
METERED SHORE POWER	1G175	3.58%	90-100	400
METERED SHORE POWER	1G175	3.87%	90-100	400

ELECTRICAL UPGRADES FOR
CITY OF ROCKLAND
DOWNTOWN WATERFRONT MARINA
INFRASTRUCTURE
ROCKLAND, MAINE



Revisions indicated w/

No.	Date	Description

E2.1

SHEET: PANEL SCHEDULES
 TITLE:
 JOB NO: 23008
 DATE: 2-28-23
 DWN BY: JJC

PRELIMINARY
SET NOT FOR
CONSTRUCTION

BRANCH PANEL: H2

LOCATION:
SUPPLY FROM:
MOUNTING: SURFACE
ENCLOSURE: SS2

TYPE: SQUARE-D I-LINE SER
VOLTS: 277/480 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: COORDINATE
MAINS TYPE: MCB
MAINS RATING: 600 A
MCB RATING: 600 A

TRIP AMPS	POLES	FEED	NOTES	CIRCUIT DESCRIPTION	CKT	A	B	C	CKT	CIRCUIT DESCRIPTION	NOTES	FEED	POLES	TRIP AMPS
300 A	3	3G300		DC FAST CHARGER	1	66.7	73.0		2					
					3			66.7	4	T2		C300	2	300 A
					5				6					
					7				8					
					9			66.7	10					
					11				12					
					13				14					
					15				16					
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					35				36					
					37				38					
					39				40					
					41				42					

LOAD CLASSIFICATION	CONNECTED (kVA)	DEMAND FACTOR	EST. DEMAND (kVA)	PANEL TOTALS
Continuous	200.0 kVA	125.00%	250.1 kVA	
Non-Continuous	0.0 kVA	0.00%	0.0 kVA	
Metered Shore Power	144.0 kVA	72.00%	103.7 kVA	TOTAL CONN. LOAD (kVA): 345.8 kVA
Maint. Recept.	1.8 kVA	100.00%	1.8 kVA	TOTAL EST. DEMAND (kVA): 355.5 kVA
				TOTAL CONN.: 416 A
				TOTAL EST. DEMAND: 428 A

BREAKER NOTES (REFERENCED IN NOTES COLUMN):
 1. GFCI
 2. COMBINATION AFCI
 3. SHUNT TRIP - REFER TO GFM WIRING DETAIL
 4. 30mA GFPE
 5. TAP BLOCK

CIRCUIT NOTES (REFERENCED IN NOTES COLUMN):
 A. CONTINUOUS METAL RACEWAY

GROUND FAULT MONITOR SCHEDULE

- MANUFACTURER SHALL PROGRAM ALL PARAMETERS PER THE DESIGN AND SHALL SET TIME AND DATE FOR THE PROJECT'S TIME ZONE
- SEE CIRCUIT SCHEDULES FOR TRIP SETTINGS
- CT SENSORS TO BE USED AS REQUIRED TO CONTROL SHUNT TRIP BREAKERS
- SPARE CHANNELS SHALL BE DISABLED
- USE SPECIFIED EQUIPMENT OR APPROVED EQUAL
- SHALL HAVE LOCKABLE DOOR
- SEE GROUND FAULT MONITOR WIRING DETAIL

LABEL	LOCATION	MANUFACTURER	RELAY MODEL	INPUTS / OUTPUTS	ENCLOSURE	NOTES
G1	SS1	BENDER	RCM420	1	SS1	LISTED ASSEMBLY
G3	SS2	BENDER	RCMS490	12	SS3	LISTED ASSEMBLY
G2	SS3	BENDER	RCMS490	12	SS2	LISTED ASSEMBLY

TRANSFORMER SCHEDULE

- USE SPECIFIED EQUIPMENT OR EQUAL

LABEL	LOCATION	MODEL	KVA	ENCLOSURE	TYPE	DOUBLE LUG	PRIMARY		SECONDARY			
							VOLTS	Φ WINDING	VOLTS	Φ WINDING		
T1	PUBLIC LANDING	EE167S3H	167	SS1	DRY	N	480	1	1	240	1	CTR TAP
T2	MIDDLE PIER	EE167S3H	167	SS2	DRY	N	480	1	1	240	1	CTR TAP
T3	PUBLIC LANDING	EE167S3H	167	SS3	DRY	N	480	1	1	240	1	CTR TAP

SUB-STATION SCHEDULE

- NEMA 3R, ALUMINUM, WHITE
- USE AMERICAN MIDWEST POWER OR APPROVED EQUAL
- SEE ONE-LINE & SCHEDULES

SS1	TRANSFORMER	T1
	PANEL	H1
	PANEL	L1
	GFM	G1
SS2	TRANSFORMER	T2
	PANEL	H2
	PANEL	L2
	GFM	G2
SS3	TRANSFORMER	T3
	MCS	M3
	PANEL	L3
	GFM	G3

BRANCH PANEL: L2

LOCATION:
SUPPLY FROM: T2
MOUNTING: SURFACE
ENCLOSURE: SS2

TYPE: SQUARE - D I-LINE
VOLTS: 120/240 Single
PHASES: 1
WIRES: 3

A.I.C. RATING: COORDINATE
MAINS TYPE: MCB
MAINS RATING: 600 A
MCB RATING: 600 A

TRIP AMPS	POLES	FEED	NOTES	CIRCUIT DESCRIPTION	CKT	A	B	CKT	CIRCUIT DESCRIPTION	NOTES	FEED	POLES	TRIP AMPS
200 A	2	1G250	3	METERED SHORE POWER	1	24.4	24.2	2	METERED SHORE POWER	3	1G250	2	200 A
100 A	2	1G125	3	METERED SHORE POWER	5	12.2	12.2	6	METERED SHORE POWER	3	1G100	2	100 A
20 A	1	A20		G2	7		12.2	8					
					9	0.1		10					
					11			12					
					13			14					
					15			16					
					17			18					
					19			20					
					21			22					
					23			24					
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					31			32					
					33			34					
					35			36					
					37			38					
					39			40					
					41			42					

LOAD CLASSIFICATION	CONNECTED (kVA)	DEMAND FACTOR	EST. DEMAND (kVA)	PANEL TOTALS
Continuous	0.0 kVA	125.00%	0.1 kVA	
Non-Continuous	0.0 kVA	0.00%	0.0 kVA	
Metered Shore Power	144.0 kVA	72.00%	103.7 kVA	TOTAL CONN. LOAD (kVA): 145.8 kVA
Maint. Recept.	1.8 kVA	100.00%	1.8 kVA	TOTAL EST. DEMAND (kVA): 105.5 kVA
				TOTAL CONN.: 608 A
				TOTAL EST. DEMAND: 440 A

BREAKER NOTES (REFERENCED IN NOTES COLUMN):
 1. GFCI
 2. COMBINATION AFCI
 3. SHUNT TRIP - REFER TO GFM WIRING DETAIL
 4. 30mA GFPE
 5. TAP BLOCK

CIRCUIT NOTES (REFERENCED IN NOTES COLUMN):
 A. CONTINUOUS METAL RACEWAY

CIRCUIT SCHEDULE

CKT #	DESCRIPTION	VD %	GFPE TRIP (mA)	GFPE TIME (ms)
1.3	METERED SHORE POWER	3.44%	90-100	400
2.4	METERED SHORE POWER	3.89%	90-100	400
5.7	METERED SHORE POWER	3.52%	90-100	400
6.8	METERED SHORE POWER	3.07%	90-100	400

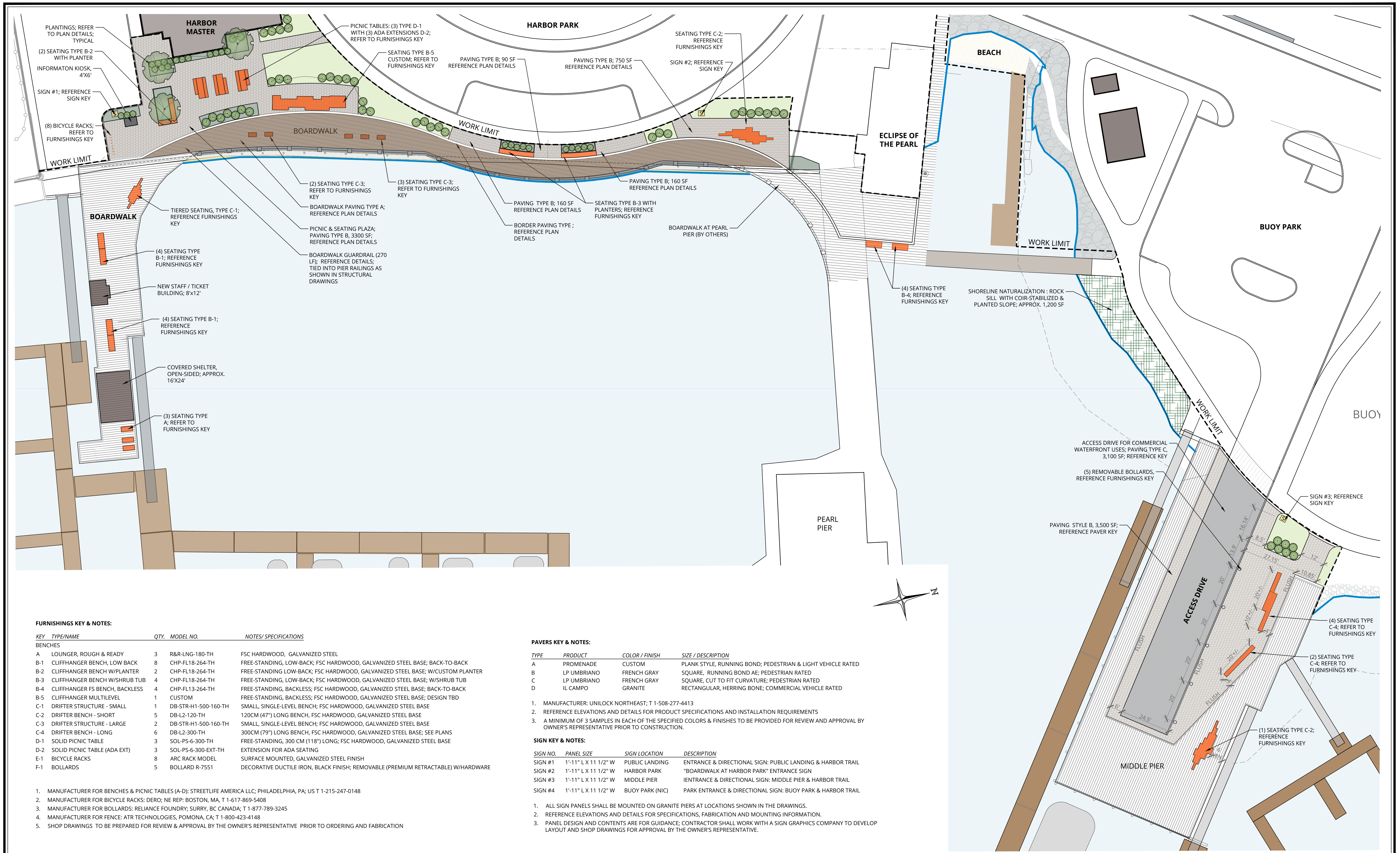
ELECTRICAL UPGRADES FOR
CITY OF ROCKLAND
DOWNTOWN WATERFRONT MARINA
INFRASTRUCTURE
ROCKLAND, MAINE



Revisions:	
No.	Date / Description

E2.2	SHEET: PANEL AND EQUIPMENT SCHEDULES	DATE: 2-28-23
	TITLE: PANEL AND EQUIPMENT SCHEDULES	DWN BY: JIC

PRELIMINARY
SET NOT FOR
CONSTRUCTION



FURNISHINGS KEY & NOTES:

KEY	TYPE/NAME	QTY.	MODEL NO.	NOTES / SPECIFICATIONS
BENCHES				
A	LOUNGER, ROUGH & READY	3	R&R-LNG-180-TH	FSC HARDWOOD, GALVANIZED STEEL
B-1	CLIFFHANGER BENCH, LOW BACK	8	CHP-FL18-264-TH	FREE-STANDING, LOW-BACK; FSC HARDWOOD, GALVANIZED STEEL BASE; BACK-TO-BACK
B-2	CLIFFHANGER BENCH W/PLANTER	2	CHP-FL18-264-TH	FREE-STANDING, LOW-BACK; FSC HARDWOOD, GALVANIZED STEEL BASE; W/CUSTOM PLANTER
B-3	CLIFFHANGER BENCH W/SHRUB TUB	4	CHP-FL18-264-TH	FREE-STANDING, LOW-BACK; FSC HARDWOOD, GALVANIZED STEEL BASE; W/SHRUB TUB
B-4	CLIFFHANGER FS BENCH, BACKLESS	4	CHP-FL13-264-TH	FREE-STANDING, BACKLESS; FSC HARDWOOD, GALVANIZED STEEL BASE; BACK-TO-BACK
B-5	CLIFFHANGER MULTILEVEL	1	CUSTOM	FREE-STANDING, BACKLESS; FSC HARDWOOD, GALVANIZED STEEL BASE; DESIGN TBD
C-1	DRIFTER STRUCTURE - SMALL	1	DB-STR-H1-500-160-TH	SMALL, SINGLE-LEVEL BENCH; FSC HARDWOOD, GALVANIZED STEEL BASE
C-2	DRIFTER BENCH - SHORT	5	DB-L2-120-TH	120CM (47") LONG BENCH; FSC HARDWOOD, GALVANIZED STEEL BASE
C-3	DRIFTER STRUCTURE - LARGE	2	DB-STR-H1-500-160-TH	SMALL, SINGLE-LEVEL BENCH; FSC HARDWOOD, GALVANIZED STEEL BASE
C-4	DRIFTER BENCH - LONG	6	DB-L2-300-TH	300CM (79") LONG BENCH; FSC HARDWOOD, GALVANIZED STEEL BASE; SEE PLANS
D-1	SOLID PICNIC TABLE	3	SOL-PS-6-300-TH	FREE-STANDING, 300 CM (118") LONG; FSC HARDWOOD, GALVANIZED STEEL BASE
D-2	SOLID PICNIC TABLE (ADA EXT)	3	SOL-PS-6-300-EXT-TH	EXTENSION FOR ADA SEATING
E-1	BICYCLE RACKS	8	ARC RACK MODEL	SURFACE MOUNTED, GALVANIZED STEEL FINISH
F-1	BOLLARDS	5	BOLLARD R-7551	DECORATIVE DUCTILE IRON, BLACK FINISH; REMOVABLE (PREMIUM RETRACTABLE) W/HARDWARE

1. MANUFACTURER FOR BENCHES & PICNIC TABLES (A-D): STREETLIFE AMERICA LLC; PHILADELPHIA, PA; US T 1-215-247-0148
2. MANUFACTURER FOR BICYCLE RACKS: DERO; NE REP: BOSTON, MA, T 1-617-869-5408
3. MANUFACTURER FOR BOLLARDS: RELIANCE FOUNDRY; SURRY, BC CANADA; T 1-877-789-3245
4. MANUFACTURER FOR FENCE: ATR TECHNOLOGIES, POMONA, CA; T 1-800-423-4148
5. SHOP DRAWINGS TO BE PREPARED FOR REVIEW & APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO ORDERING AND FABRICATION

PAVERS KEY & NOTES:

TYPE	PRODUCT	COLOR / FINISH	SIZE / DESCRIPTION
A	PROMENADE	CUSTOM	PLANK STYLE, RUNNING BOND; PEDESTRIAN & LIGHT VEHICLE RATED
B	LP UMBRIANO	FRENCH GRAY	SQUARE, RUNNING BOND AE; PEDESTRIAN RATED
C	LP UMBRIANO	FRENCH GRAY	SQUARE, CUT TO FIT CURVATURE; PEDESTRIAN RATED
D	IL CAMPO	GRANITE	RECTANGULAR, HERRING BONE; COMMERCIAL VEHICLE RATED

1. MANUFACTURER: UNILOCK NORTHEAST; T 1-508-277-4413
2. REFERENCE ELEVATIONS AND DETAILS FOR PRODUCT SPECIFICATIONS AND INSTALLATION REQUIREMENTS
3. A MINIMUM OF 3 SAMPLES IN EACH OF THE SPECIFIED COLORS & FINISHES TO BE PROVIDED FOR REVIEW AND APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

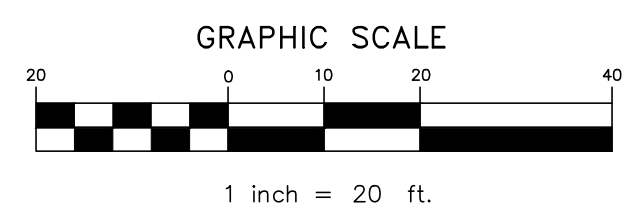
SIGN KEY & NOTES:

SIGN NO.	PANEL SIZE	SIGN LOCATION	DESCRIPTION
SIGN #1	1'-11" L X 11 1/2" W	PUBLIC LANDING	ENTRANCE & DIRECTIONAL SIGN: PUBLIC LANDING & HARBOR TRAIL
SIGN #2	1'-11" L X 11 1/2" W	HARBOR PARK	"BOARDWALK AT HARBOR PARK" ENTRANCE SIGN
SIGN #3	1'-11" L X 11 1/2" W	MIDDLE PIER	ENTRANCE & DIRECTIONAL SIGN: MIDDLE PIER & HARBOR TRAIL
SIGN #4	1'-11" L X 11 1/2" W	BUOY PARK (NIC)	PARK ENTRANCE & DIRECTIONAL SIGN: BUOY PARK & HARBOR TRAIL

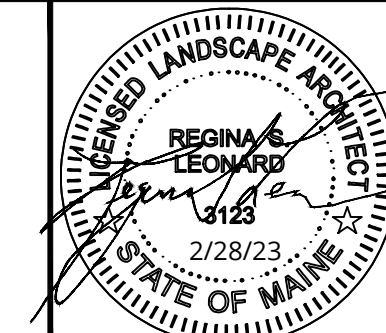
1. ALL SIGN PANELS SHALL BE MOUNTED ON GRANITE PIERS AT LOCATIONS SHOWN IN THE DRAWINGS.
2. REFERENCE ELEVATIONS AND DETAILS FOR SPECIFICATIONS, FABRICATION AND MOUNTING INFORMATION.
3. PANEL DESIGN AND CONTENTS ARE FOR GUIDANCE; CONTRACTOR SHALL WORK WITH A SIGN GRAPHICS COMPANY TO DEVELOP LAYOUT AND SHOP DRAWINGS FOR APPROVAL BY THE OWNER'S REPRESENTATIVE.



REVISIONS			
DRAFTED BY:	RSL	DATE:	XX
CHECKED BY:	MJS	DESCR.:	XX
PLAN DATE:	FEB 28, 2023		
		DESCR.:	



LANDSCAPE & MATERIALS PLAN

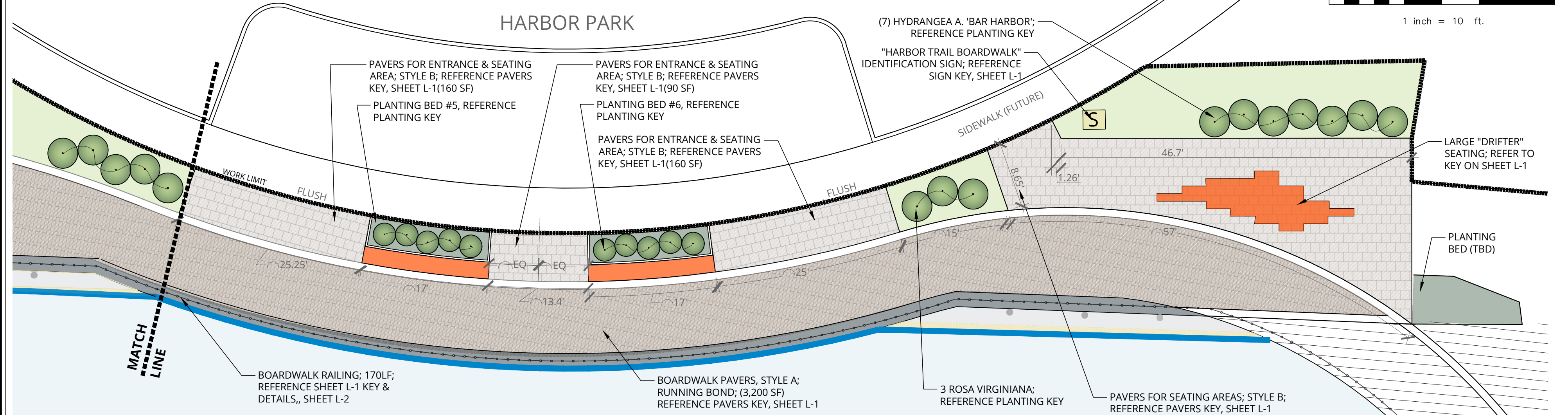


CITY OF ROCKLAND
 DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
 AT HARBOR AND BUOY PARKS
ROCKLAND, MAINE
 KNOX COUNTY

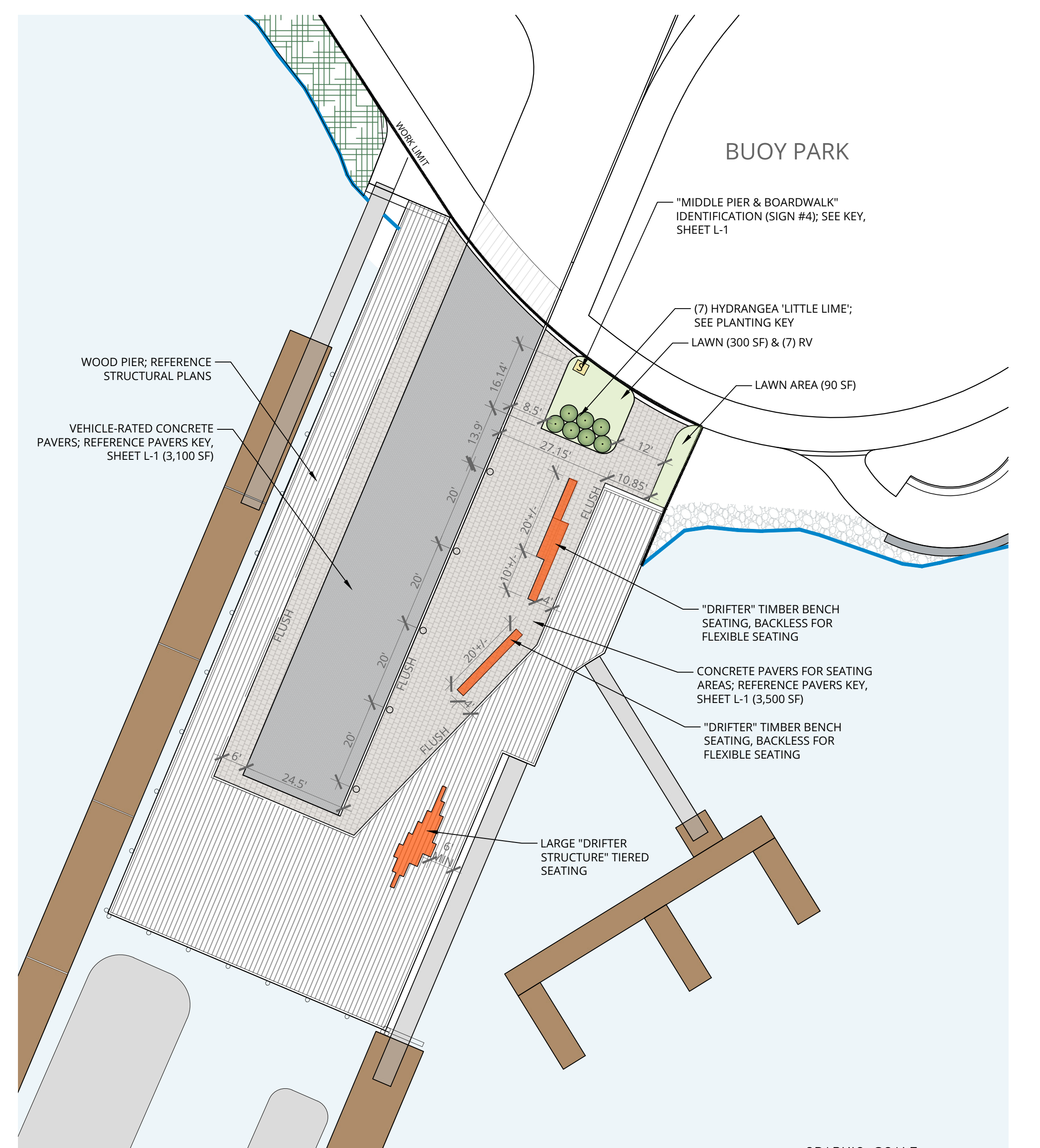
L1



PLAN DETAIL - BOARDWALK (SOUTH)



PLAN DETAIL - BOARDWALK (NORTH)



PLAN DETAIL - MIDDLE PIER

PLANTING NOTES

- ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- IN THE CASE OF ANY DISCREPANCIES BETWEEN SPECIES AND QUANTITIES CALLED OUT IN THE PLANTING KEY AND THOSE SHOWN ON THE PLAN, QUANTITIES AND SPECIES SHOWN ON THE PLAN SHALL OVER-RIDE.
- ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES.
- ALL PLANTS SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT. ALL SUBSTITUTIONS MUST BE SUBMITTED FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO ORDERING OR DELIVERY OF PLANT MATERIAL ON SITE. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTINGS THAT DO NOT CONFORM TO THE DRAWINGS OR SPECIFICATIONS OUTLINED HEREIN.
- LANDSCAPE ARCHITECT SHALL APPROVE FINAL PLACEMENT OF ALL PLANT MATERIALS AND RESERVES THE RIGHT TO MAKE FIELD ADJUSTMENTS TO PLANTINGS AS NECESSARY BASED ON SITE CONDITIONS.
- NO GRADING, SOIL DISTURBANCE, OR STORAGE OF MATERIALS OR EQUIPMENT SHALL OCCUR WITHIN THE DRIP-LINE OF EXISTING TREES UNLESS OTHERWISE SHOWN ON PLANS.
- ANY EXCAVATION WITHIN SUCH AREAS SHALL BE PERFORMED WITH SPECIAL CARE.
- PLANTING PITS AND BEDS SHALL CONSIST OF 3 PARTS FERTILE, FRIABLE LOAM AMENDED WITH 1 PART ORGANIC COMPOST, AS APPROVED BY THE LANDSCAPE ARCHITECT. PLANTING BEDS SHALL BE A MINIMUM DEPTH OF 12" OF PREPARED SOIL, AS NOTED.
- FINISH GRADE OF PLANTINGS SHALL MATCH ADJACENT FINISH GRADES UNLESS OTHERWISE NOTED ON DRAWINGS OR DIRECTED AND/OR APPROVED BY THE LANDSCAPE ARCHITECT.
- NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
- ALL PLANTS SHALL BE SET PLUMB UNLESS OTHERWISE SPECIFIED.
- ALL PLANTINGS SHALL BE TOPPED WITH 3" OF SCREENED, COMPOSTED PINE BARK MULCH. SEE WRITTEN SPECIFICATIONS.
- CONTRACTOR SHALL WATER ALL PLANTS THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS AND NEWLY GRASSED AREAS SHALL BE WATERED AS REQUIRED THEREAFTER TO ENSURE SURVIVAL AND GROWTH THROUGH THE FIRST GROWING SEASON.
- PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF INSTALLATION. DURING THE ONE YEAR GUARANTEE, THE CONTRACTOR SHALL REPLACE, IN KIND, ANY DEAD, DISEASED, OR SUBSTANDARD PLANT MATERIAL AT NO COST TO THE OWNER. THE CONTRACTOR SHALL RECEIVE FINAL ACCEPTANCE FROM THE OWNER FOLLOWING THE ONE YEAR GUARANTEE, PROVIDED THE PROVISIONS OF THE PLANT GUARANTEE HAVE BEEN SATISFACTORILY MET.
- THE CONTRACTOR SHALL ASSUME RESPONSIBILITY TO ENSURE THAT ALL WORK IS PERFORMED IN COMPLIANCE WITH ALL STATE AND LOCAL REQUIREMENTS.
- SPECIFIC DESIGN OF THE LIVING SHORELINE SEGMENT WILL BE DETERMINED DURING FINAL DESIGN IN CONSULTATION WITH THE MAINE STATE COASTAL PROGRAM AND GOVERNING AUTHORITIES.

PLANTING SCHEDULE (TOTAL SITE)

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE/COND.
3	CW	CRATAEGUS V. 'WINTER KING'	WINTER KING HAWTHORN	2-2.5" CAL
SHRUBS				
24	CX	CARYOPTERIS X. 'FIRST CHOICE'	FIRST CHOICE BLUE MIST SPIREA	#3 POT
12	HB	HYDRANGEA A. 'BAR HARBOR'	BAR HARBOR HYDRANGEA	#5 POT
9	HP	HYDRANGEA P. 'LITTLE LIME'	LITTLE LIME HYDRANGEA	#5 POT
6	HP	HYDRANGEA P. 'LITTLE QUICKFIRE'	LITTLE QUICKFIRE HYDRANGEA	#5 POT
10	PO	PHYSCARPUS O. 'LITTLE DEVIL'	LITTLE DEVIL DWARF NINEBARK	#5 POT
10	SB	SPIRAEA B. 'PINK SPARKLER'	PINK SPARKLER BIRCHLEAF SPIREA	#3 POT
22	RV	ROSA VIRGINIANA	VIRGINIA ROSE	#5 POT
HERBACEOUS				
14	DG	DESCHAMPسيا C. 'GOLDTAU'	GOLDEN DEW TUFTED HAIR GRASS	#1 POT
36	NX	NEPETA G. 'SUMMER MAGIC'	SUMMER MAGIC CATMINT	#1 POT
15	HB	HEMEROCALLIS 'BIG TIME HAPPY'	BIG TIME HAPPY DAYLILY	#1 POT
10	SH	STACHYS M. 'HUMMELO'	HUMMELO LAMBS EARS	#1 POT

SEED MIXES

TURF AREAS: PARK MIX; ALLEN, STERLING, & LOTHURP, FALMOUTH, ME. TEL. 207-781-4142

PLANTING SCHEDULE FOR NUMBERED BEDS

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE/COND.
BED #1				
5	DG	DESCHAMPسيا C. 'GOLDTAU'	GOLDEN DEW TUFTED HAIR GRASS	#1 POT
9	NX	NEPETA G. 'SUMMER MAGIC'	SUMMER MAGIC CATMINT	#1 POT
3	SB	SPIRAEA B. 'PINK SPARKLER'	PINK SPARKLER BIRCHLEAF SPIREA	#3 POT
BED #2				
1	CW	CRATAEGUS V. 'WINTER KING'	WINTER KING HAWTHORN	2-2.5" CAL
9	DG	DESCHAMPسيا C. 'GOLDTAU'	GOLDEN DEW TUFTED HAIR GRASS	#1 POT
10	HB	HEMEROCALLIS 'BIG TIME HAPPY'	BIG TIME HAPPY DAYLILY	#1 POT
15	NX	NEPETA G. 'SUMMER MAGIC'	SUMMER MAGIC CATMINT	#1 POT
BED #3				
2	CW	CRATAEGUS V. 'WINTER KING'	WINTER KING HAWTHORN	2-2.5" CAL
24	CX	CARYOPTERIS X. 'FIRST CHOICE'	FIRST CHOICE BLUE MIST SPIREA	#3 POT
5	HB	HEMEROCALLIS 'BIG TIME HAPPY'	BIG TIME HAPPY DAYLILY	#1 POT
2	HP	HYDRANGEA P. 'LITTLE LIME'	LITTLE LIME HYDRANGEA	#5 POT
12	NX	NEPETA G. 'SUMMER MAGIC'	SUMMER MAGIC CATMINT	#1 POT
7	SB	SPIRAEA B. 'PINK SPARKLER'	PINK SPARKLER BIRCHLEAF SPIREA	#3 POT
10	SH	STACHYS M. 'HUMMELO'	HUMMELO LAMBS EARS	#1 POT

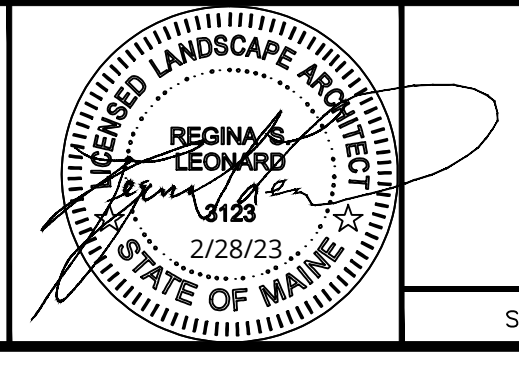
PLANTING SCHEDULE FOR NUMBERED BEDS, (CONT'D)

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE/COND.
BED #4				
7	CX	CARYOPTERIS X. 'FIRST CHOICE'	FIRST CHOICE BLUE MIST SPIREA	#3 POT
BED #5				
5	CX	CARYOPTERIS X. 'FIRST CHOICE'	FIRST CHOICE BLUE MIST SPIREA	#3 POT
BED #6				
5	CX	CARYOPTERIS X. 'FIRST CHOICE'	FIRST CHOICE BLUE MIST SPIREA	#3 POT



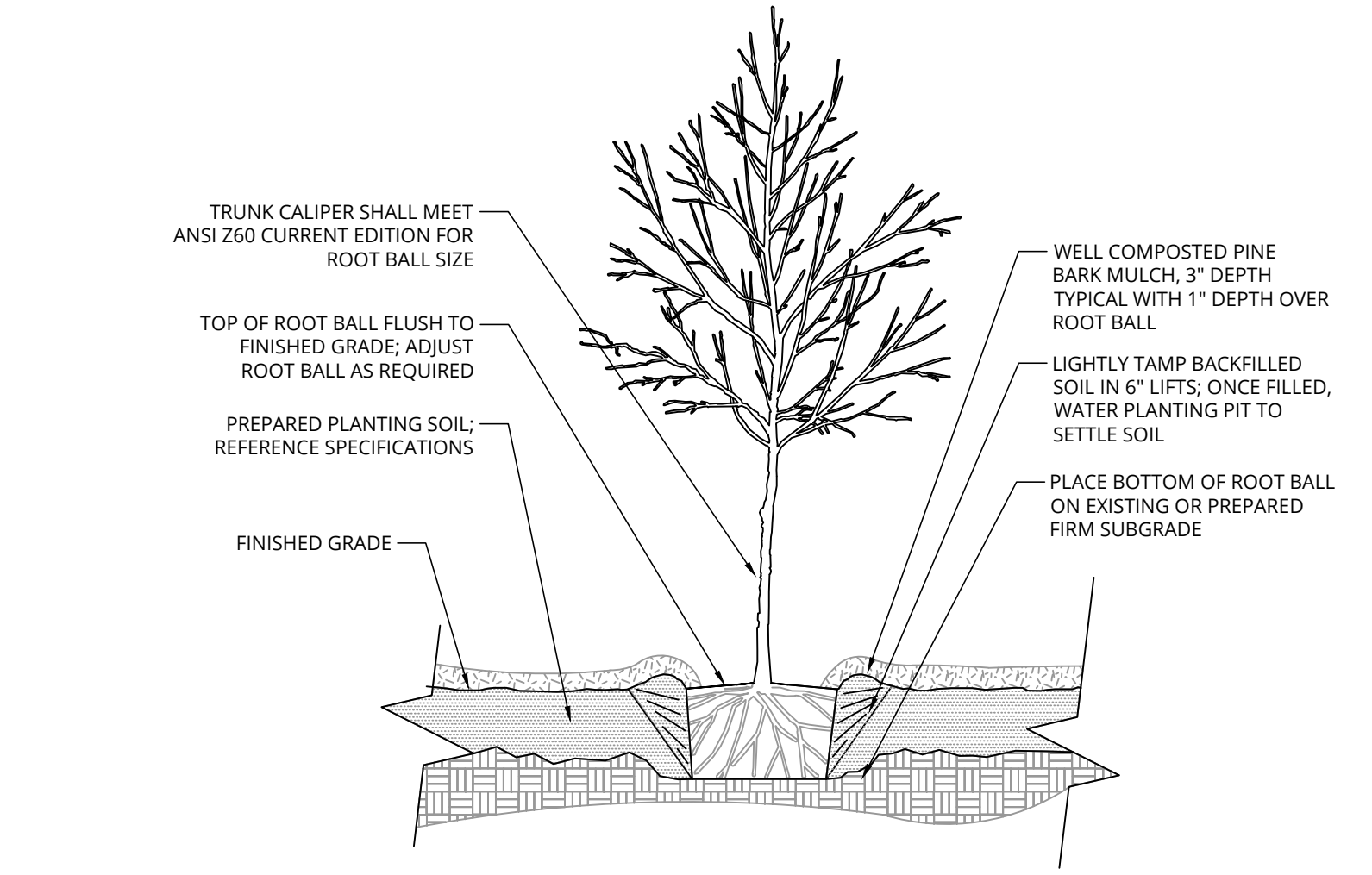
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CHECKED BY:	MJS	DESCR.:	XX
PLAN DATE:	DATE		
FEB 28, 2023			
		DESCR.:	

PLAN DETAILS

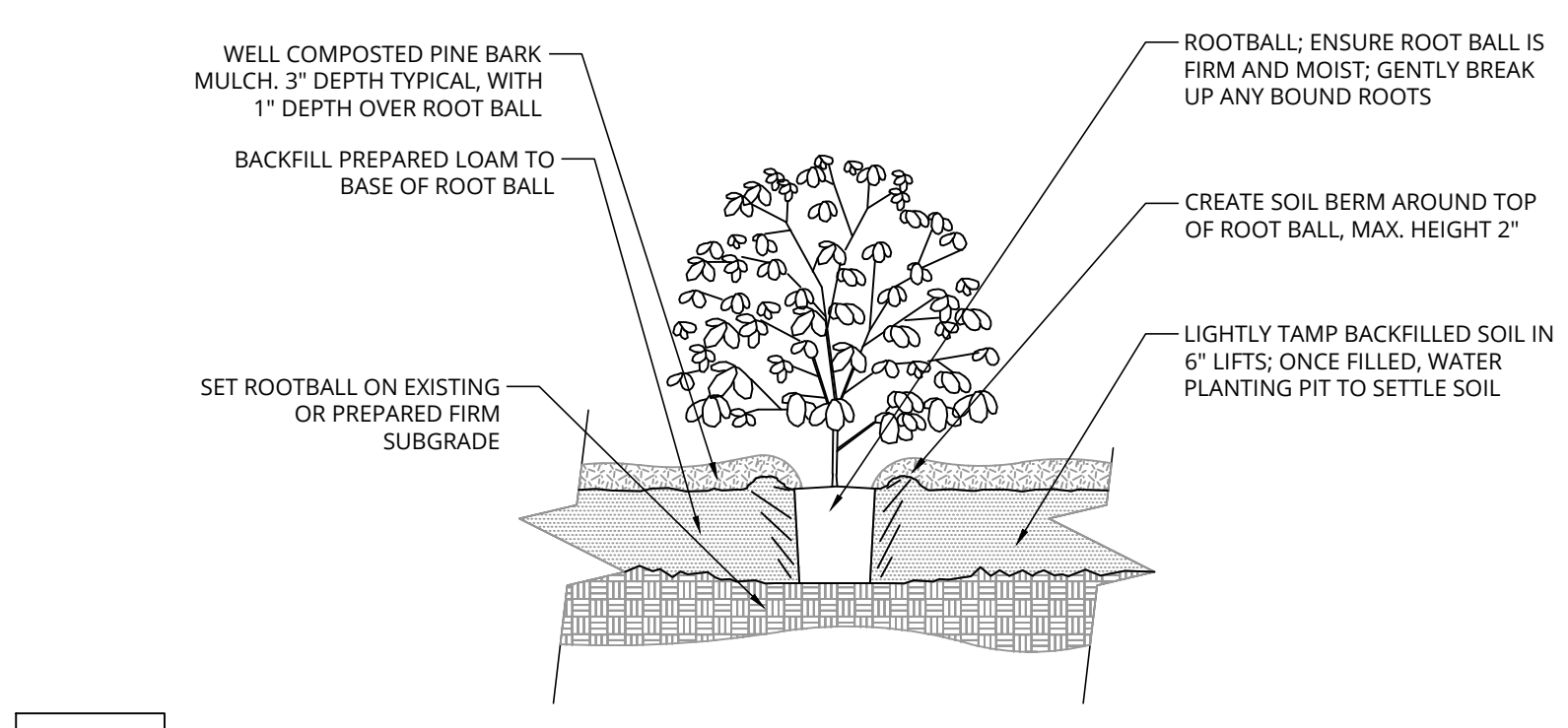


CITY OF ROCKLAND
DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
AT HARBOR AND BUOY PARKS
ROCKLAND, MAINE
KNOX COUNTY

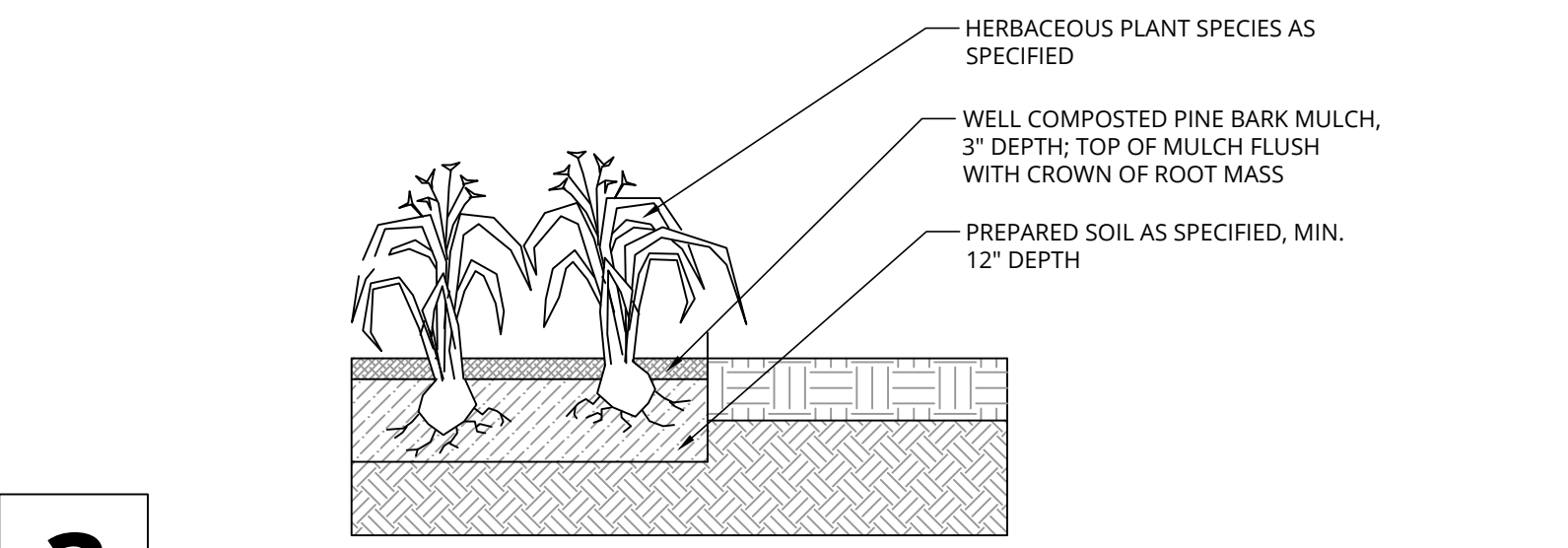
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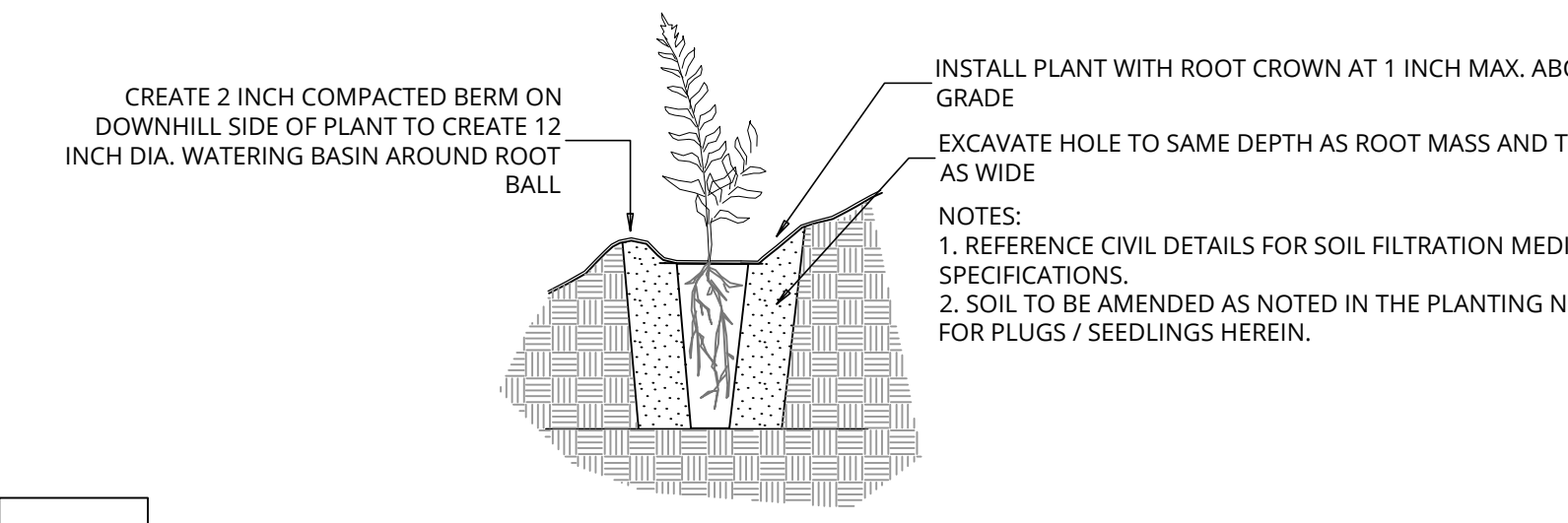
1 TREE INSTALLATION DETAIL N.T.S.



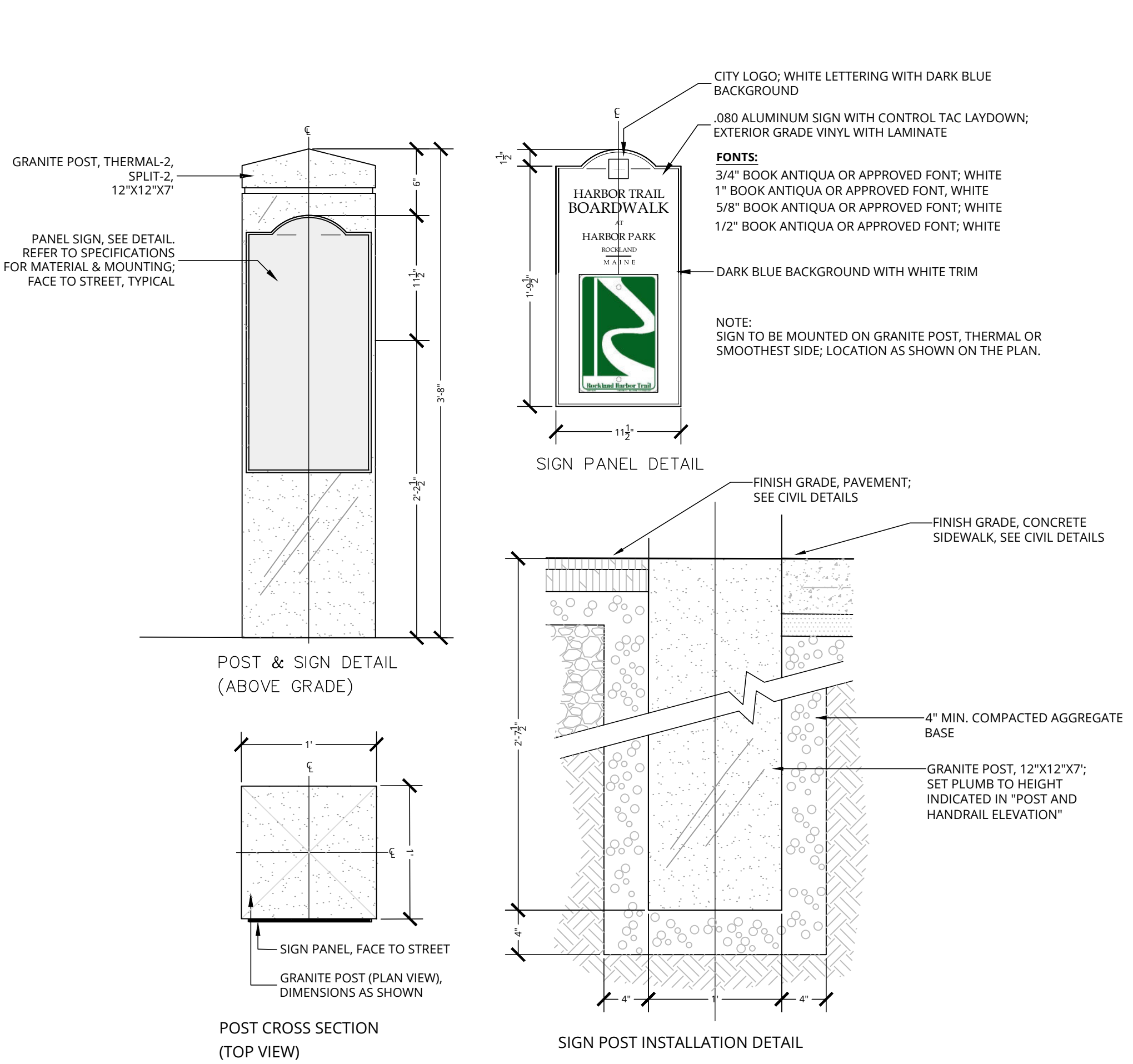
2 SHRUB INSTALLATION DETAIL N.T.S.



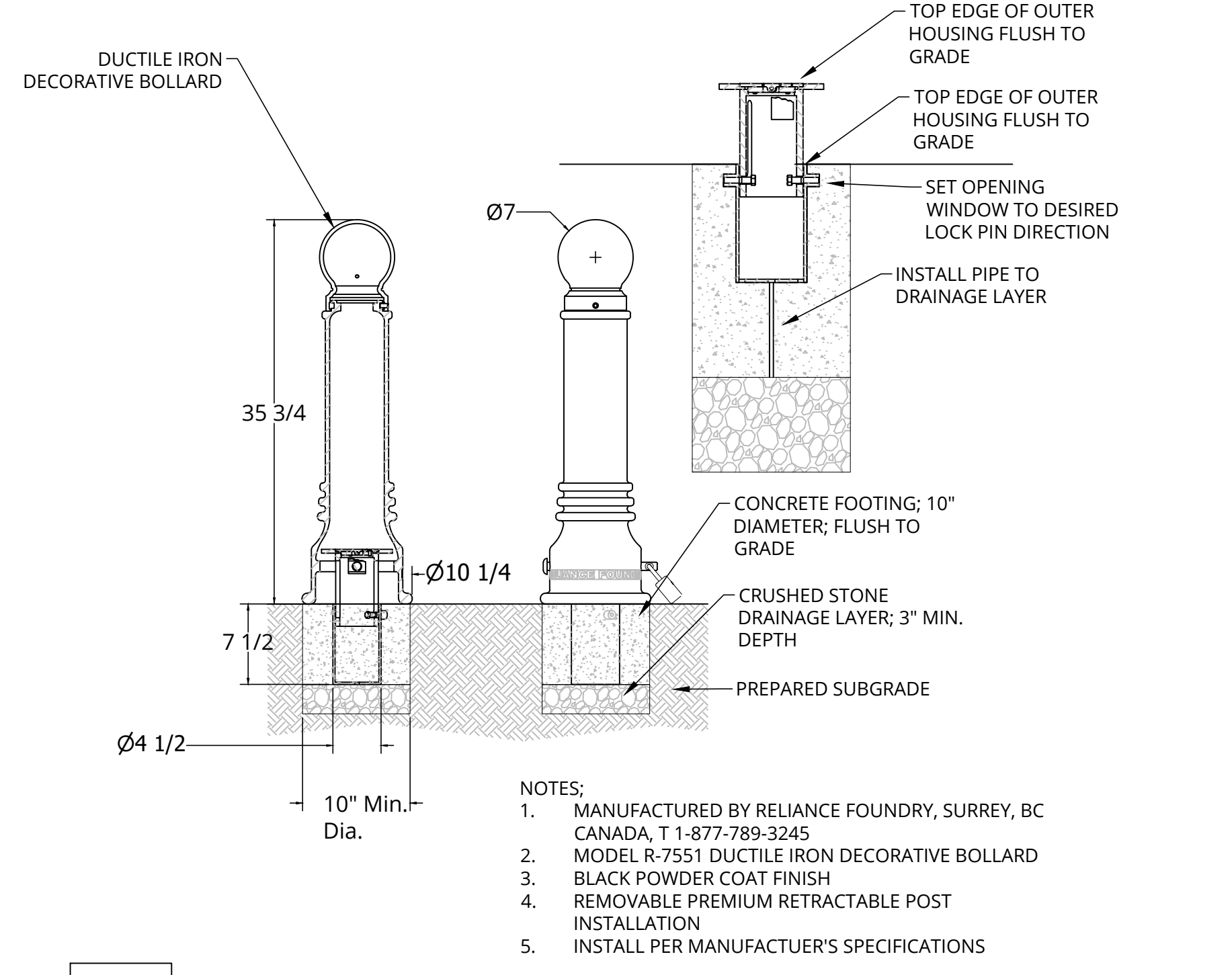
3 HERBACEOUS PLANT INSTALLATION DETAIL N.T.S.



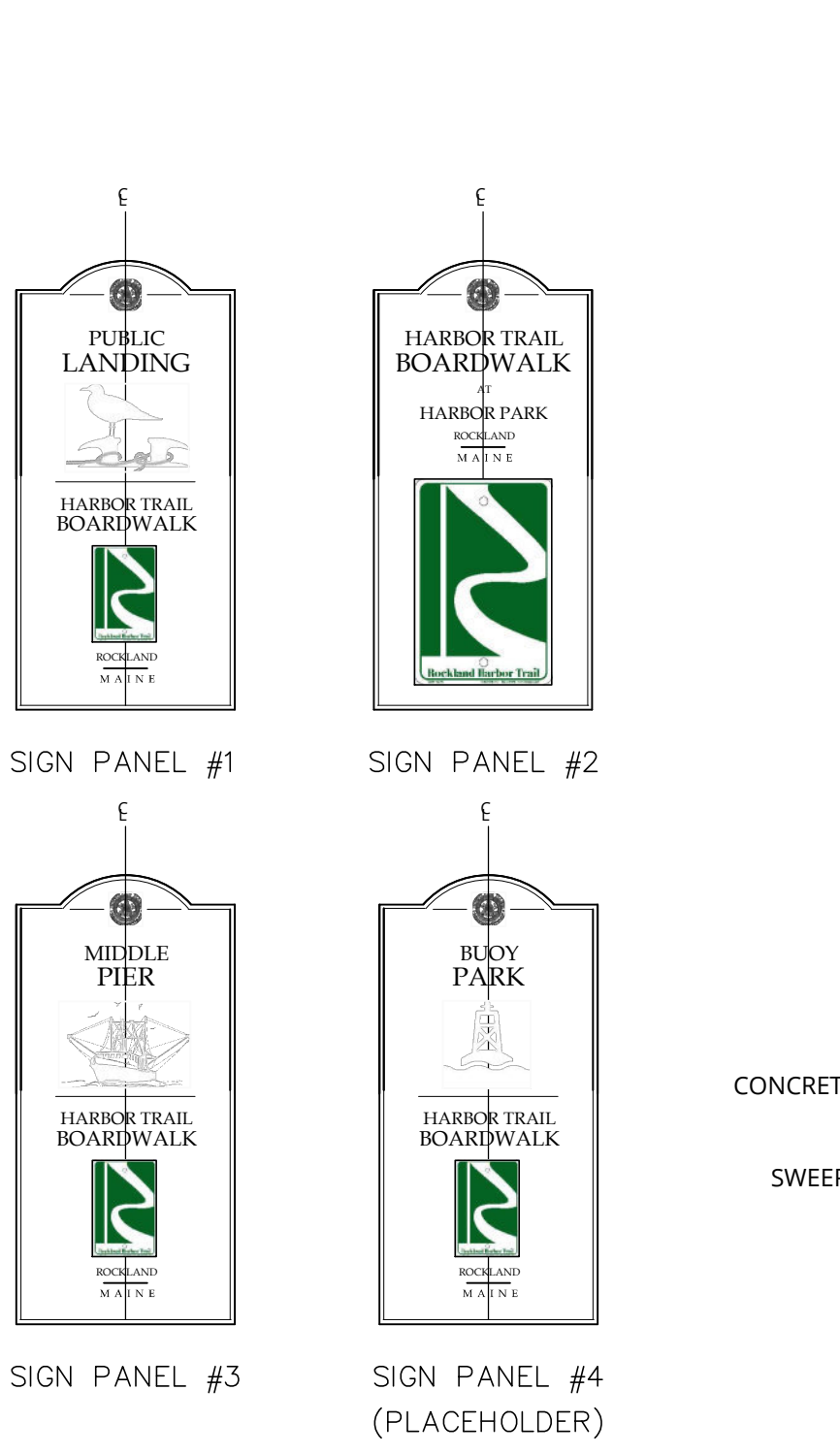
4 PLUG / SEEDLING INSTALLATION DETAIL N.T.S.



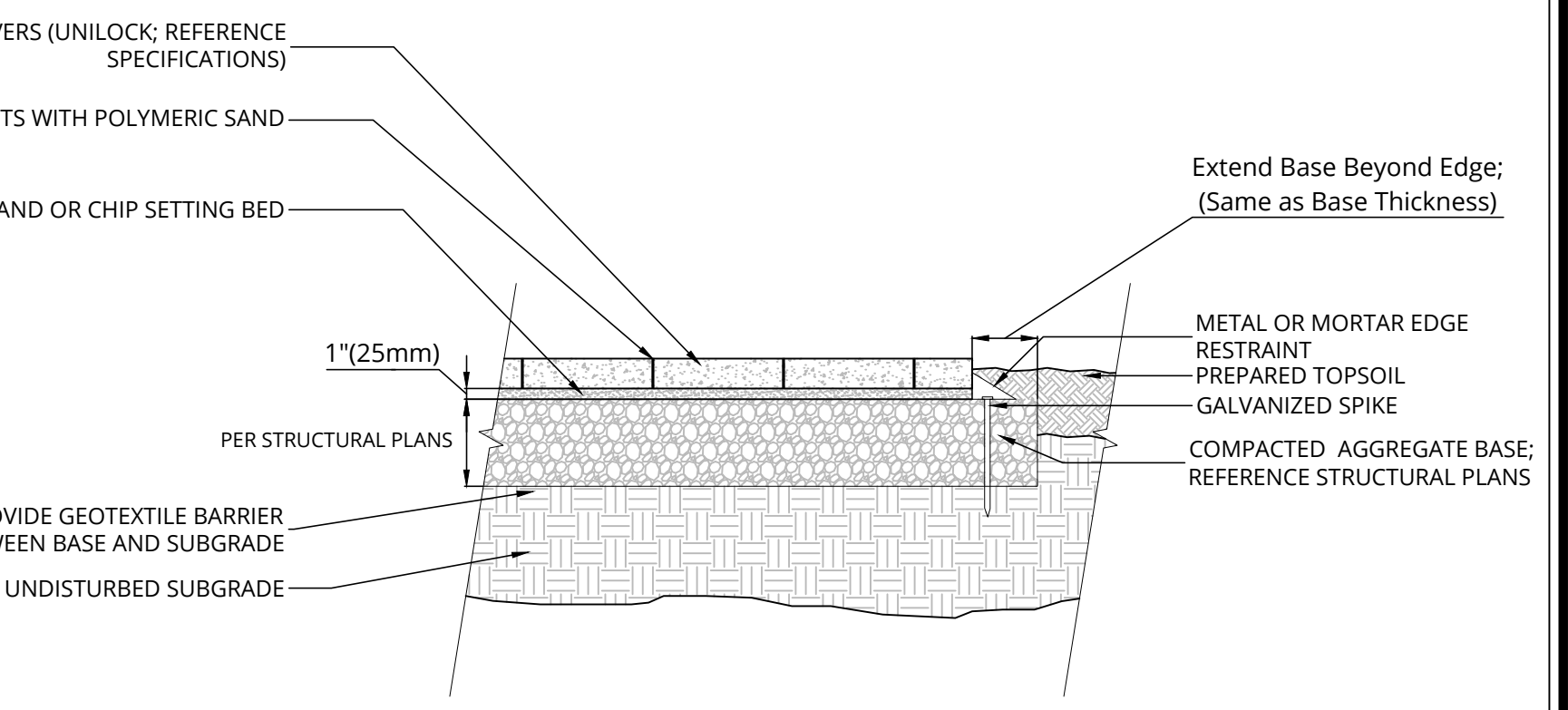
5 GRANITE SIGN POST & PANEL DETAILS N.T.S.



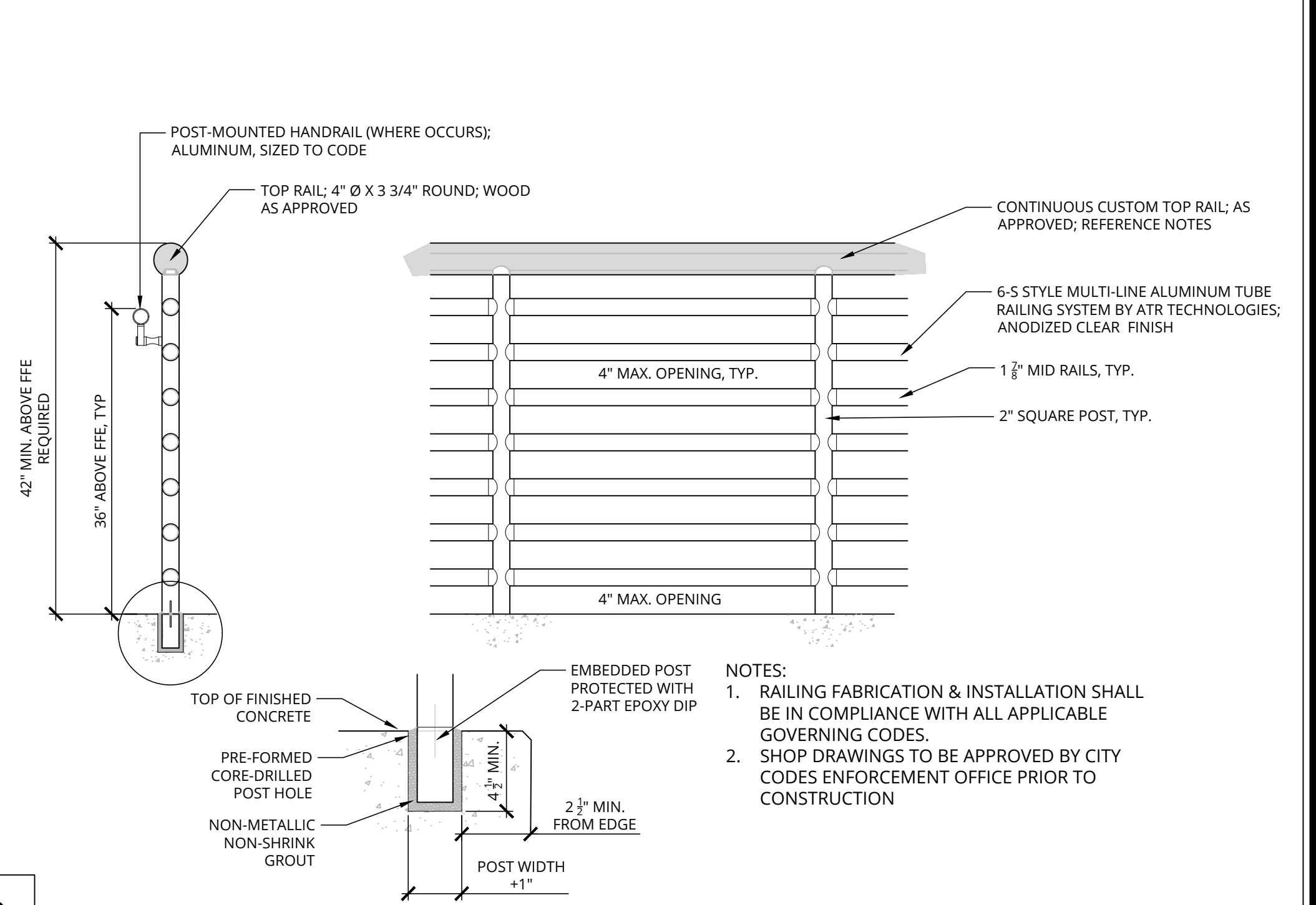
6 BOLLARD INSTALLATION DETAIL N.T.S.



7 CONCRETE PAVERS ON CONCRETE BASE DETAIL N.T.S.

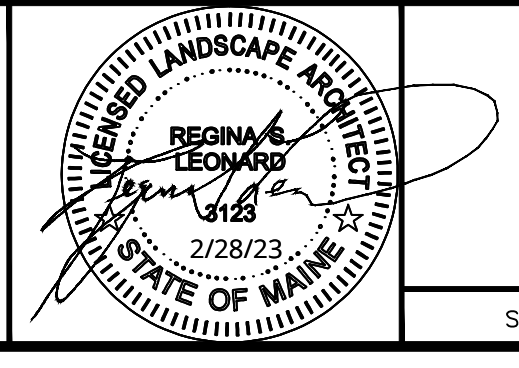


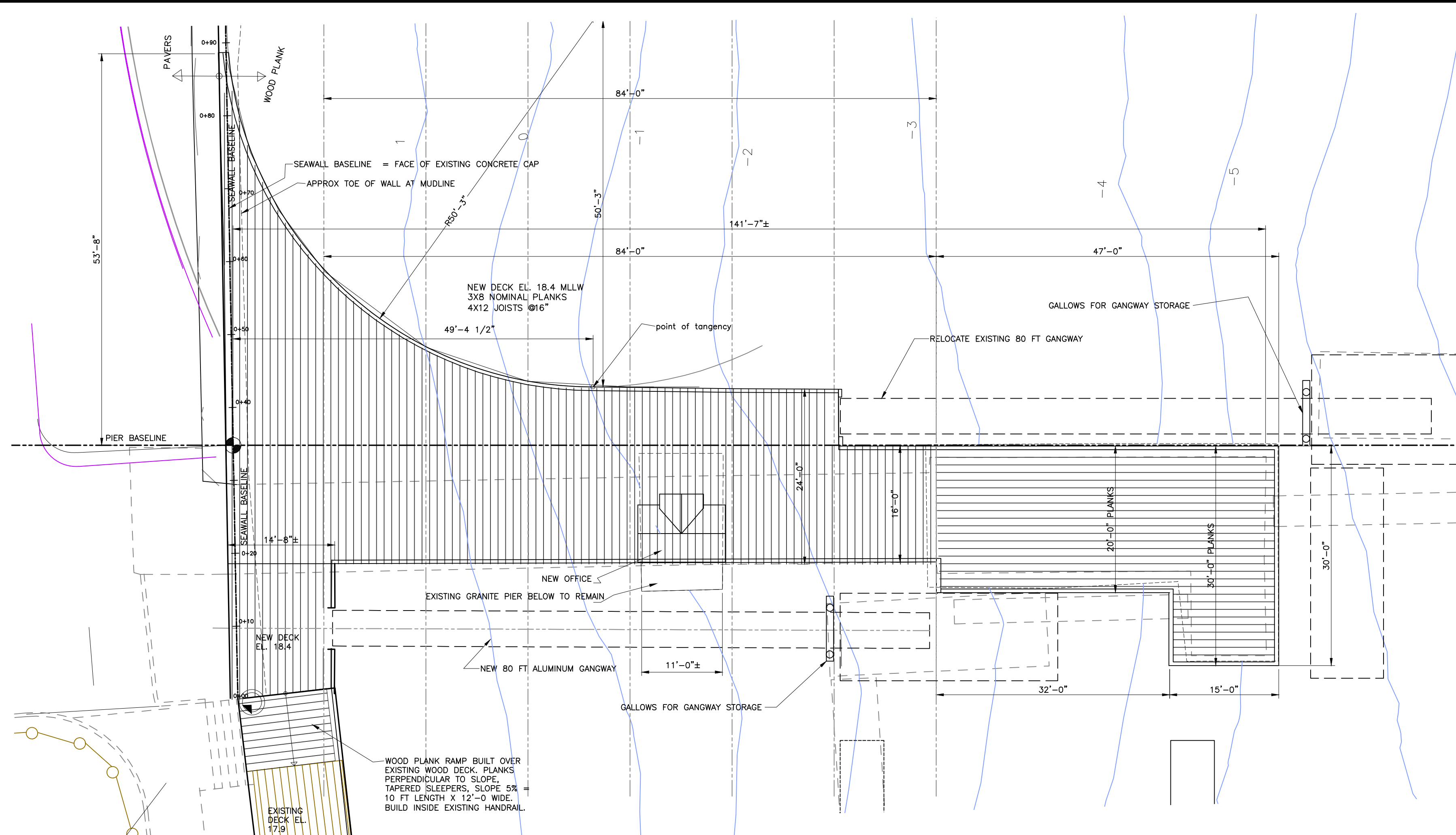
8 CONCRETE PAVERS ON AGGREGATE BASE DETAIL N.T.S.



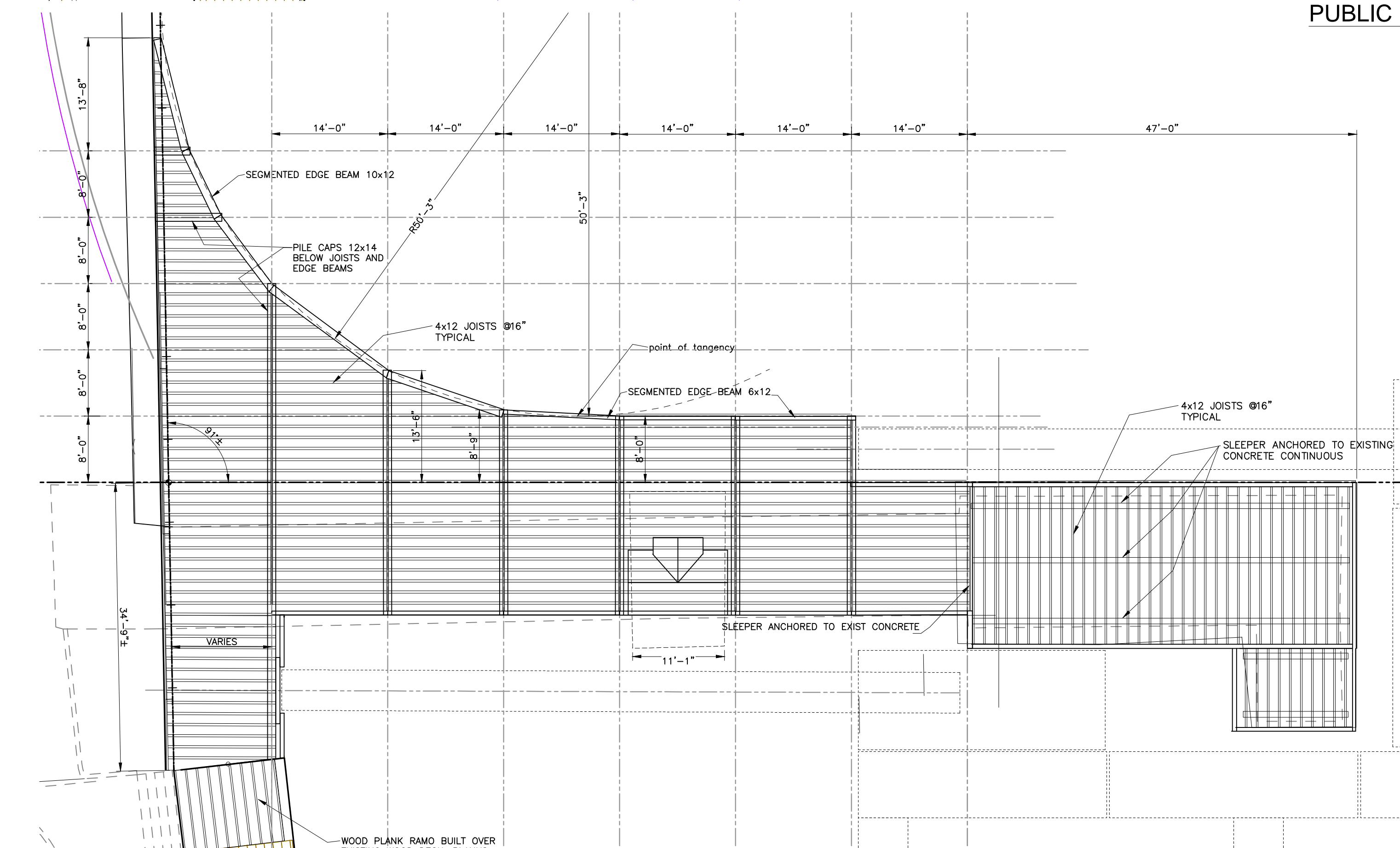
9 BOARDWALK RAILING DETAIL N.T.S.

REVISIONS	
DRAFTED BY: RSL	DATE: XX
CHECKED BY: MJS	DESCR: XX
PLAN DATE: FEB 28, 2023	DESCR:





PUBLIC LANDING PIER DECK PLAN



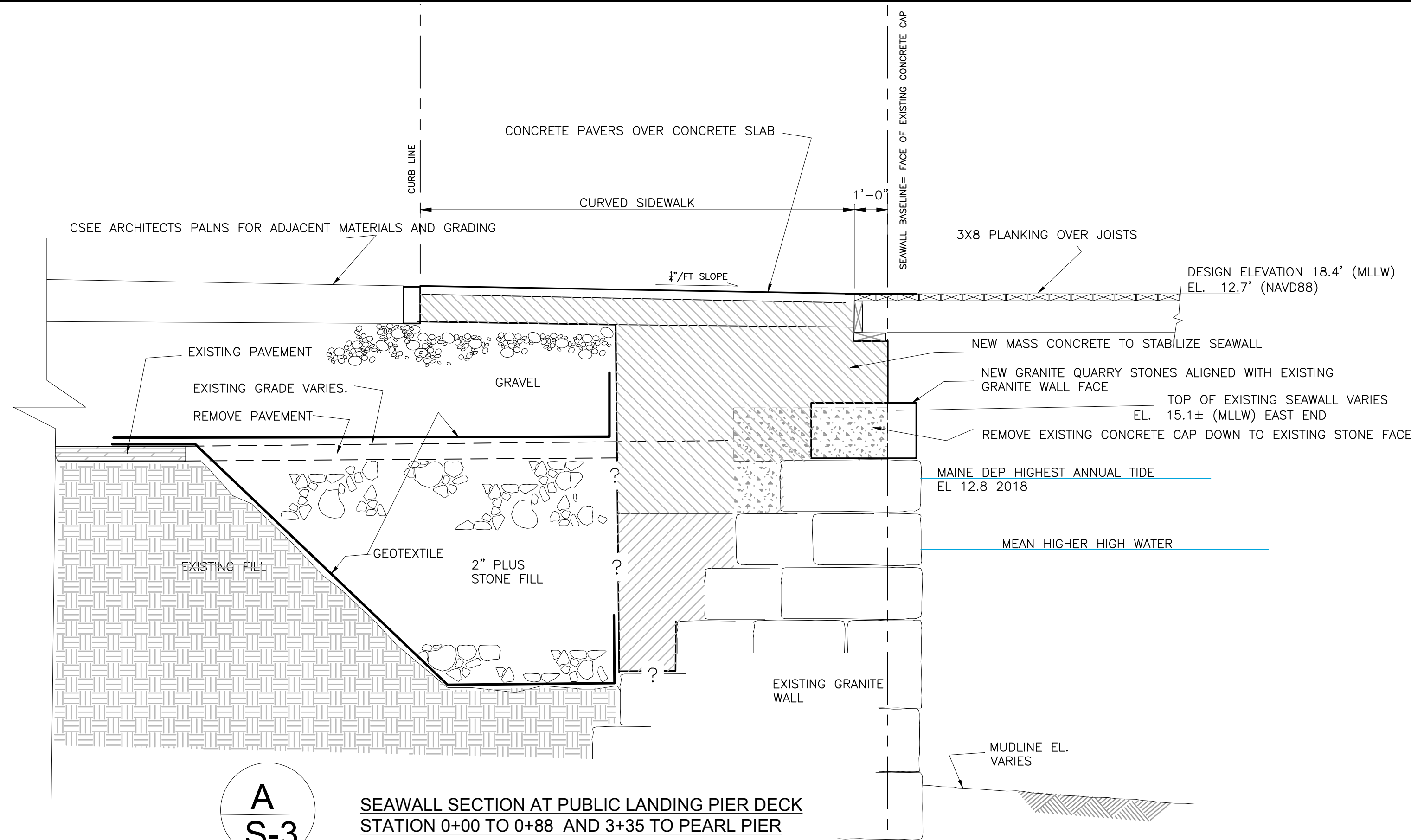
PUBLIC LANDING PIER DECK FRAMING PLAN

PRELIMINARY FOR REVIEW AND COMMENT

PRELIMINARY FOR REVIEW AND COMMENT

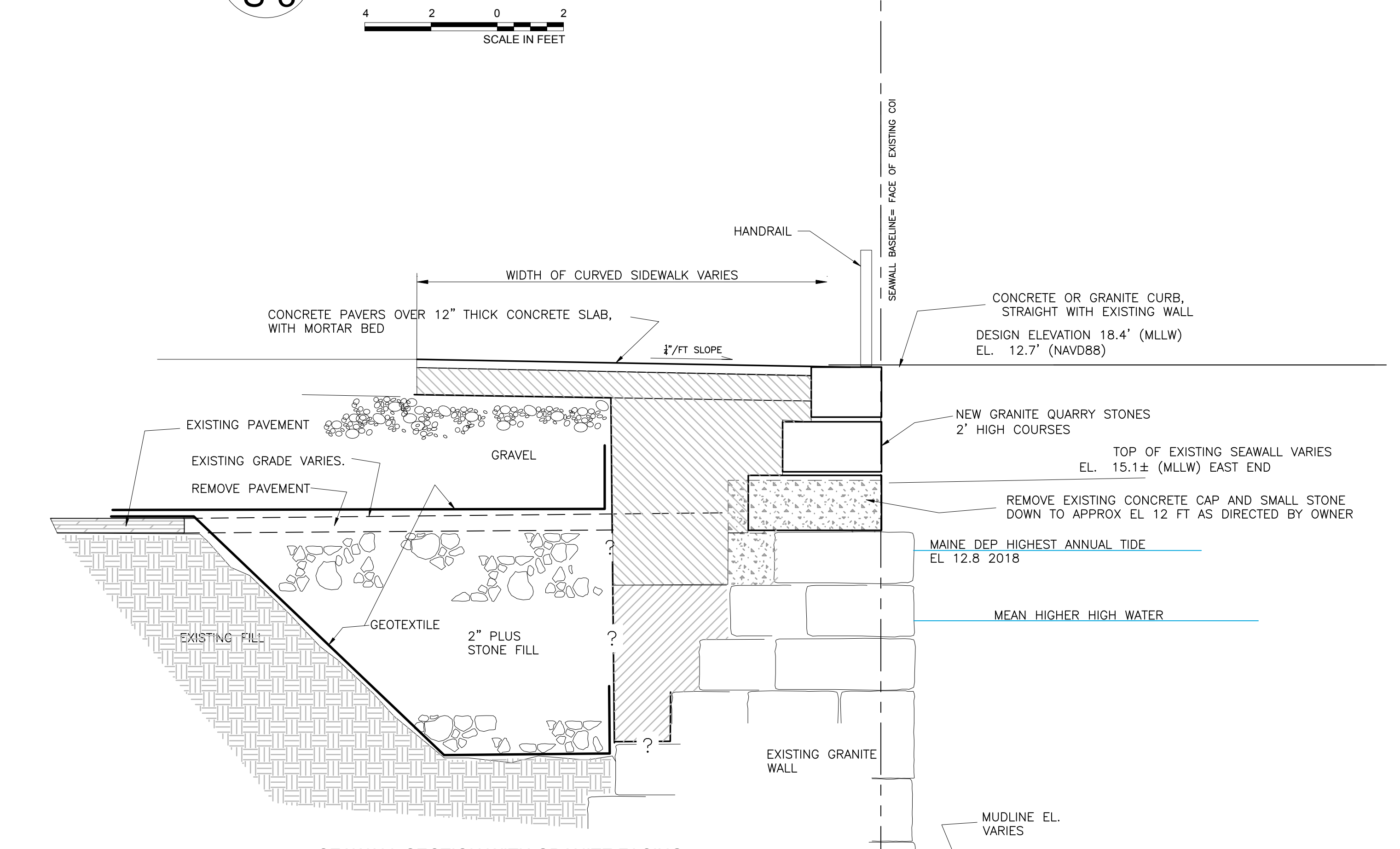
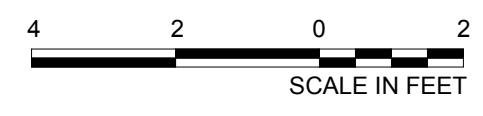
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NO.	REVISION	DATE	Designed By:
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			Checked By: STR
			Scale: 1/8"=1'-0"
			Date of Revision:
			2-25-2023



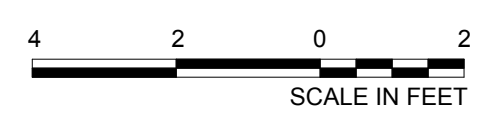
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S-3

SEAWALL SECTION AT PUBLIC LANDING PIER DECK
STATION 0+00 TO 0+88 AND 3+35 TO PEARL PIER



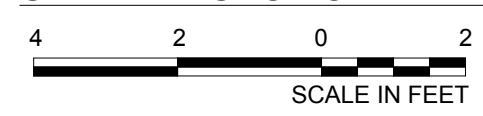
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S-3

SEAWALL SECTION WITH GRANITE FACING
STATION 0+88 TO 1+85
AND 3+00 TO 3+35

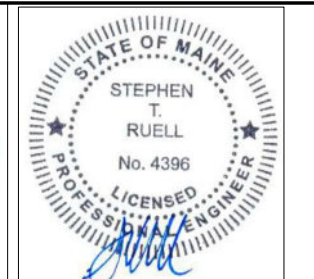


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S-3

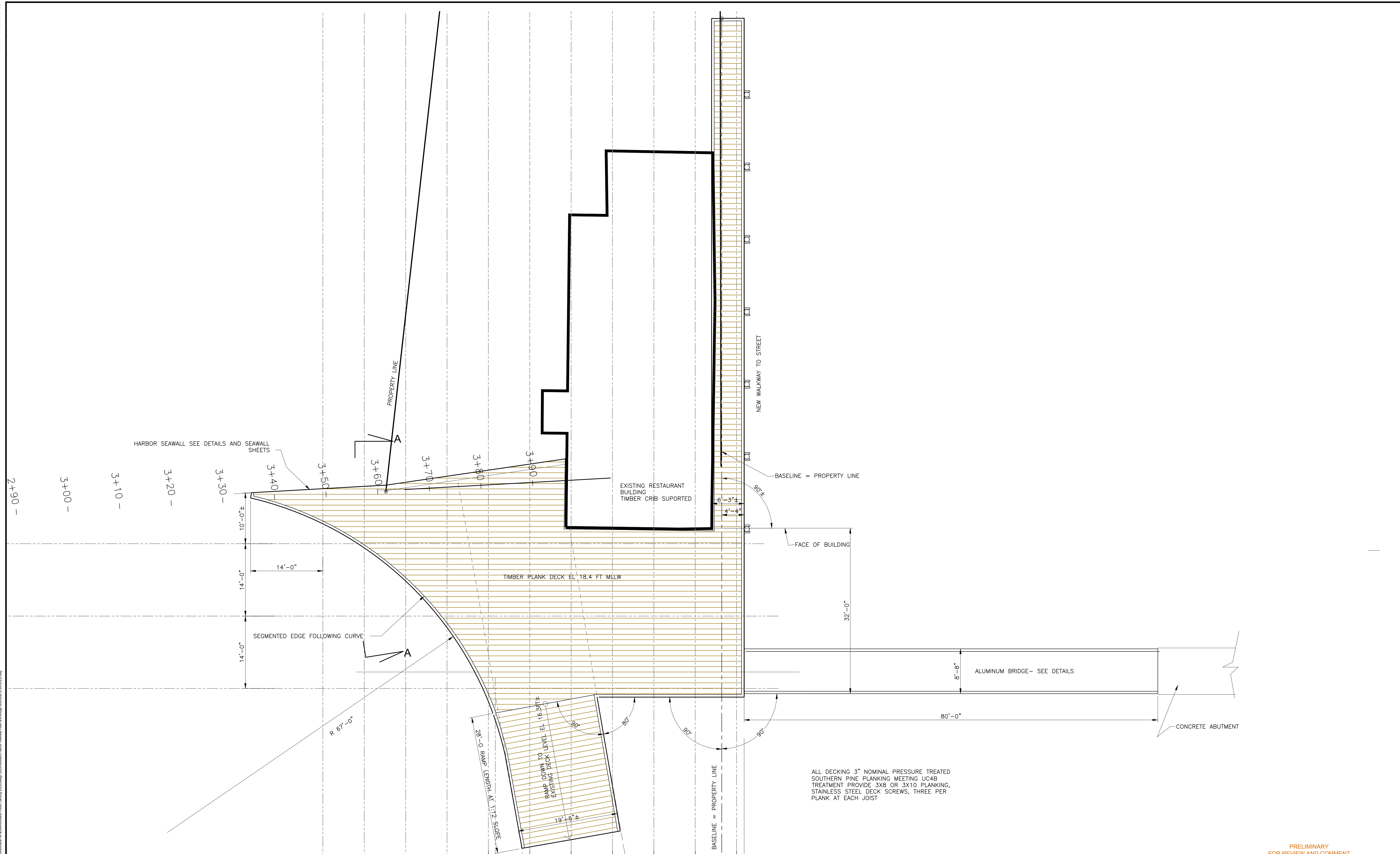
SEAWALL SECTION WITH CONCRETE DECK OVER WATER



PRELIMINARY
FOR REVIEW AND COMMENT

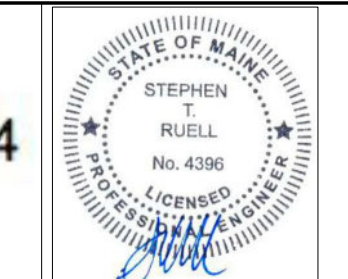


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			Drawn By: STR
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			Date of Revision:
			2-25-2023



PRELIMINARY FOR REVIEW AND COMMENT

Pinnacle Hill Engineering
 33 Pinnacle Road
 Canaan, ME 04924
 PinnacleHillEngineering@gmail.com



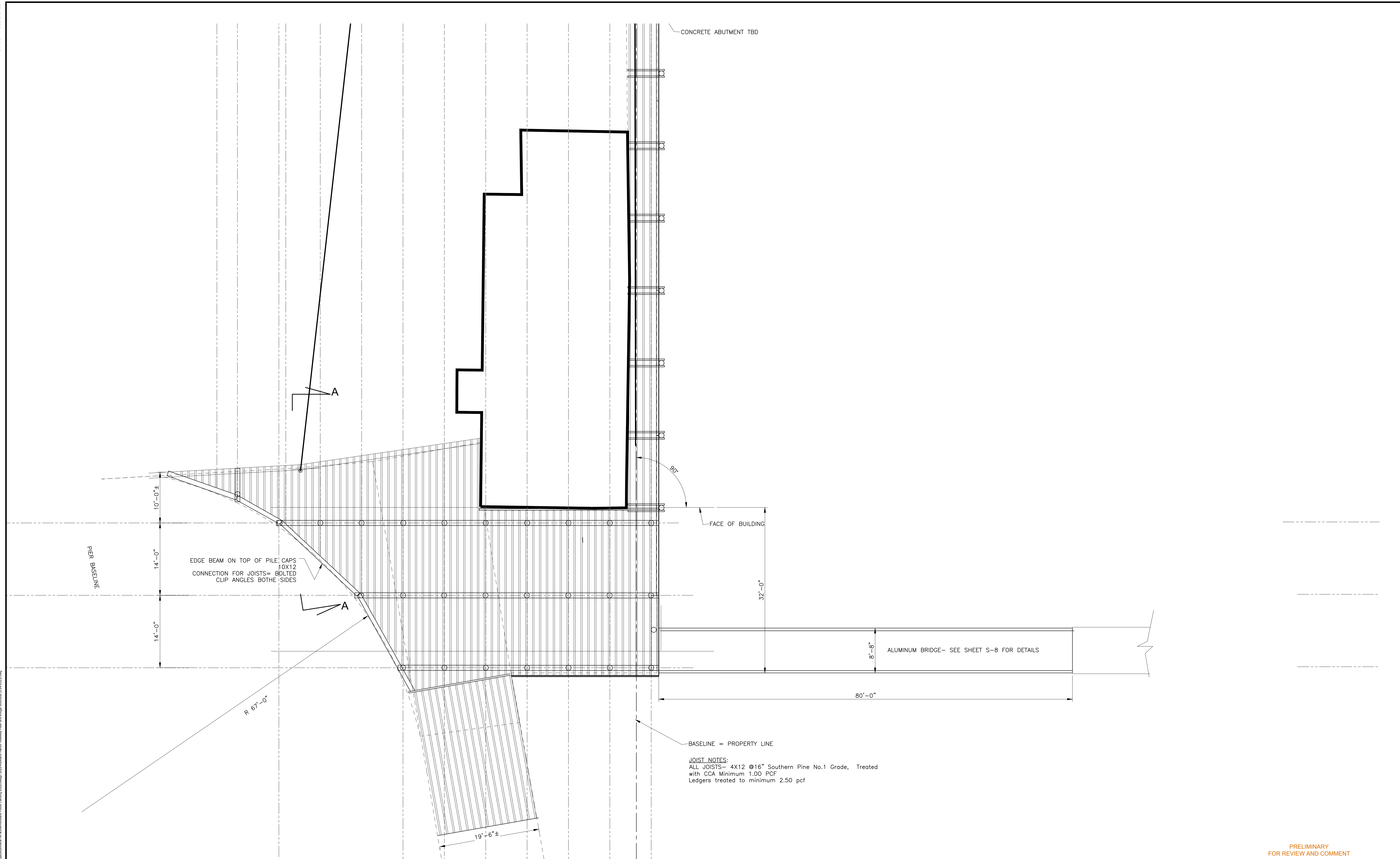
**PUBLIC LANDING CONCEPT
 PEARL PIER AND BRIDGE**

NO.	REVISION	DATE

DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
 AT HARBOR AND BUOY PARKS
 ROCKLAND, MAINE

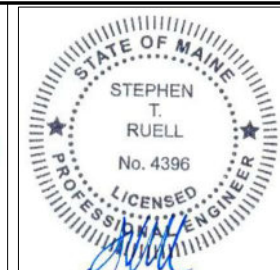
**PEARL PIER AND BRIDGE
 DECK PLAN**

S-5
 REV. 0



PRELIMINARY FOR REVIEW AND COMMENT

Pinnacle Hill Engineering
 33 Pinnacle Road
 Canaan, ME 04924
 PinnacleHillEngineering@gmail.com



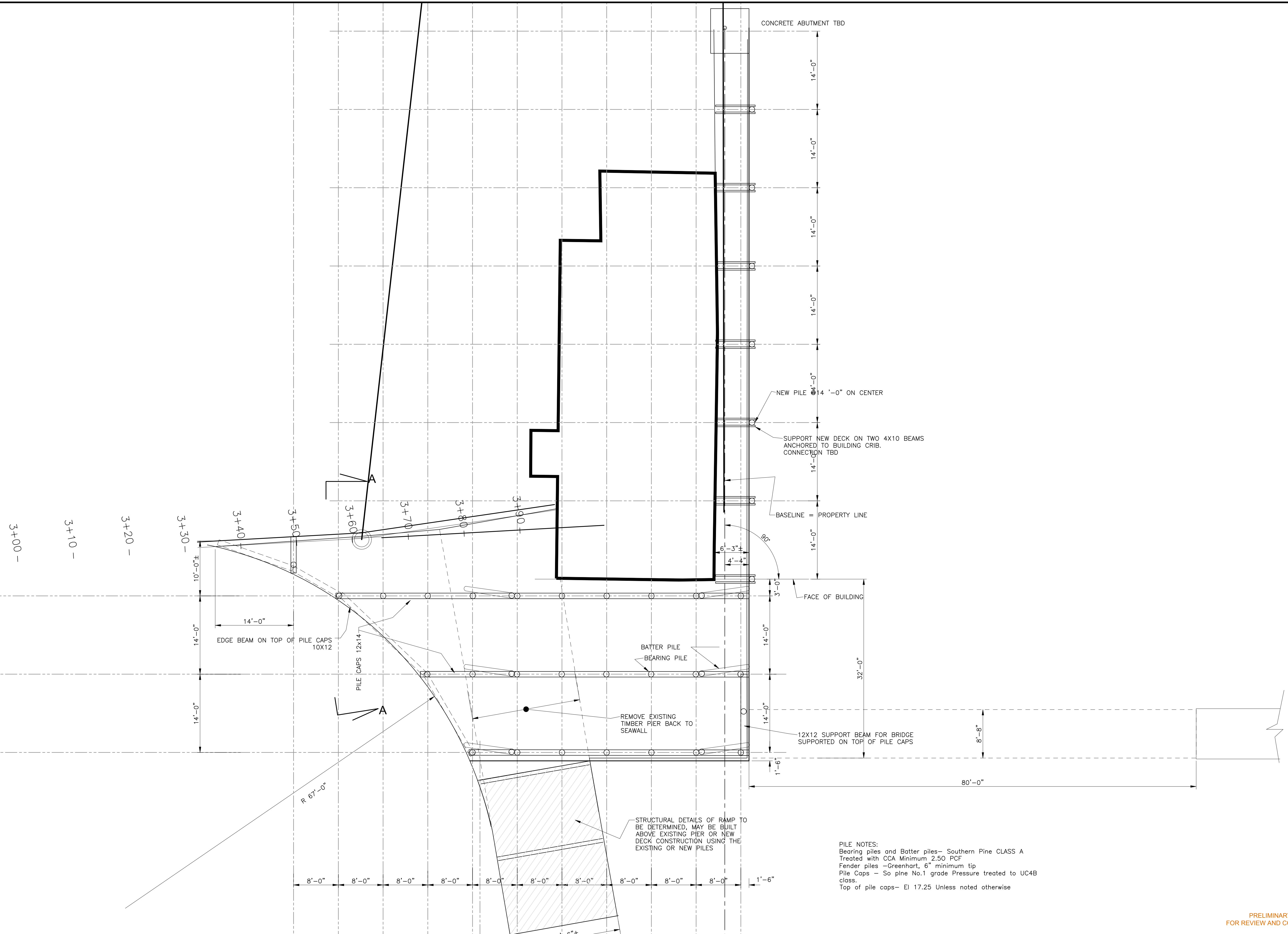
PUBLIC LANDING CONCEPT
 PEARL PIER AND BRIDGE STRUCTURES

NO.	REVISION	DATE	Designed By:
			Drawn By: STR
			Checked By: STR
			Scale: 1/8"=1'-0"
			Date of Revision:
			2-25-2023

DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
 AT HARBOR AND BUOY PARKS
 ROCKLAND, MAINE

**PEARL PIER AND BRIDGE
 DECK FRAMING PLAN**

S-6
 REV. 0



PILE NOTES:
 Bearing piles and Batter piles— Southern Pine CLASS A
 Treated with CCA Minimum 2.50 PCF
 Fender piles —Greenhart, 6" minimum tip
 Pile Caps — So pine No.1 grade Pressure treated to UC4B class.
 Top of pile caps— El 17.25 Unless noted otherwise

PRELIMINARY FOR REVIEW AND COMMENT

Pinnacle Hill Engineering
 33 Pinnacle Road
 Canaan, ME 04924
 PinnacleHillEngineering@gmail.com



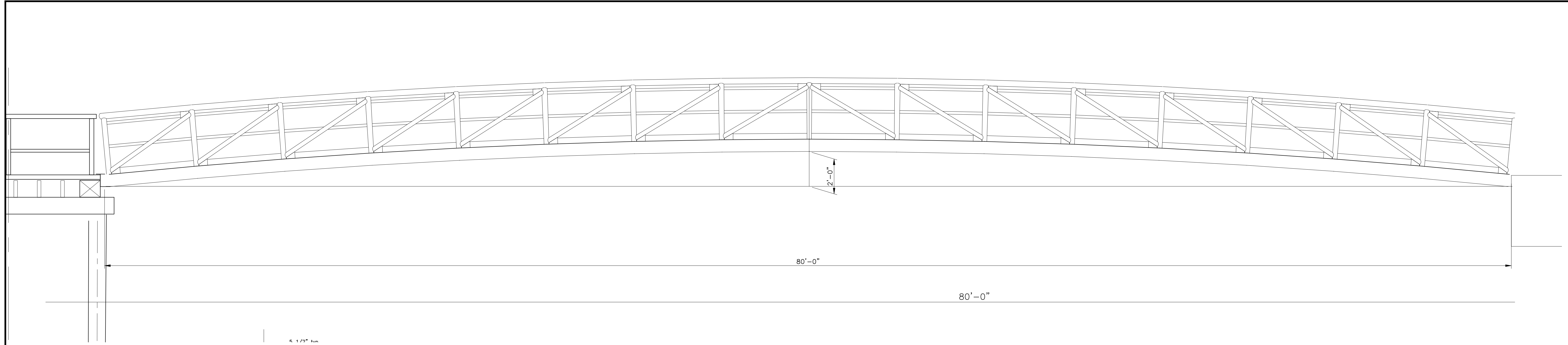
**PUBLIC LANDING CONCEPT
 PEARL PIER AND BRIDGE STRUCTURES**

NO.	REVISION	DATE	Designed By:

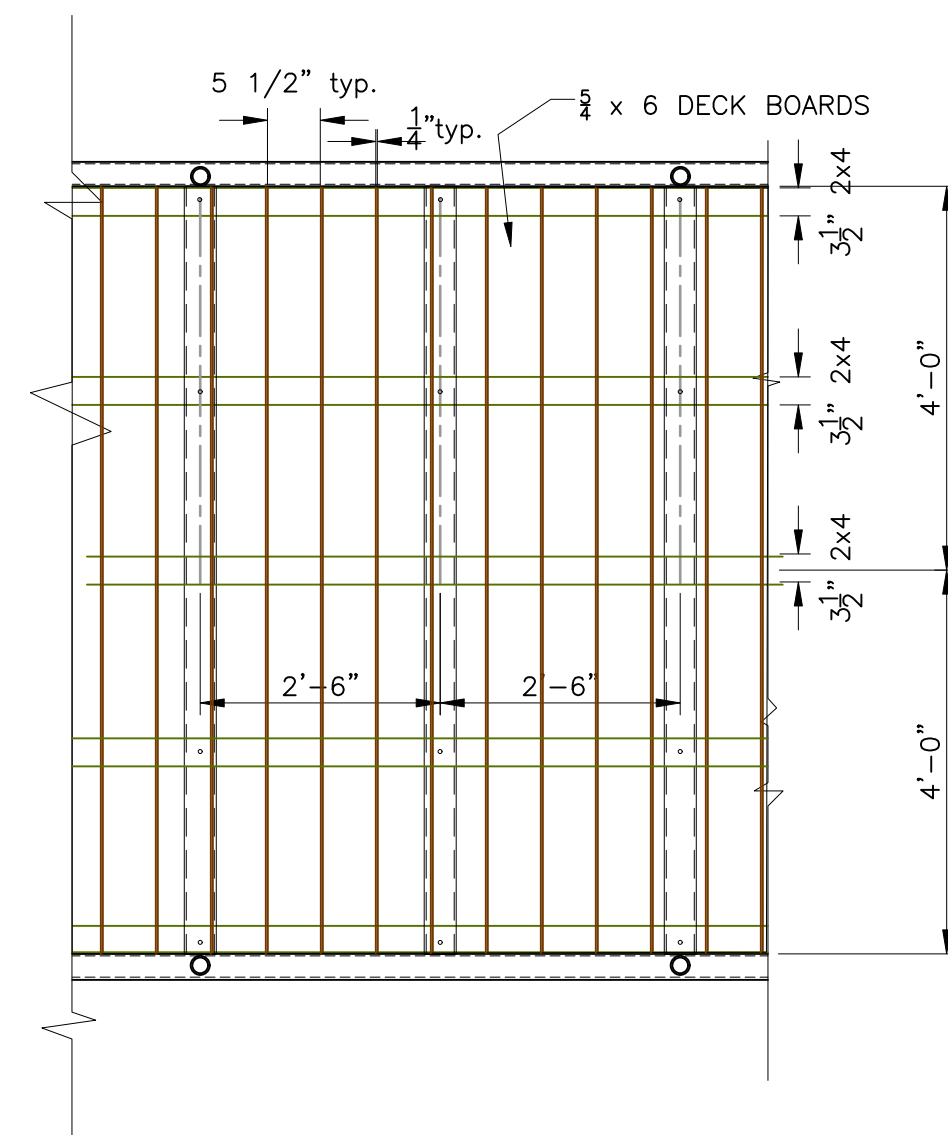
DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
 AT HARBOR AND BUOY PARKS
ROCKLAND, MAINE

**PEARL PIER AND BRIDGE
 PILE AND PILE CAP PLAN**

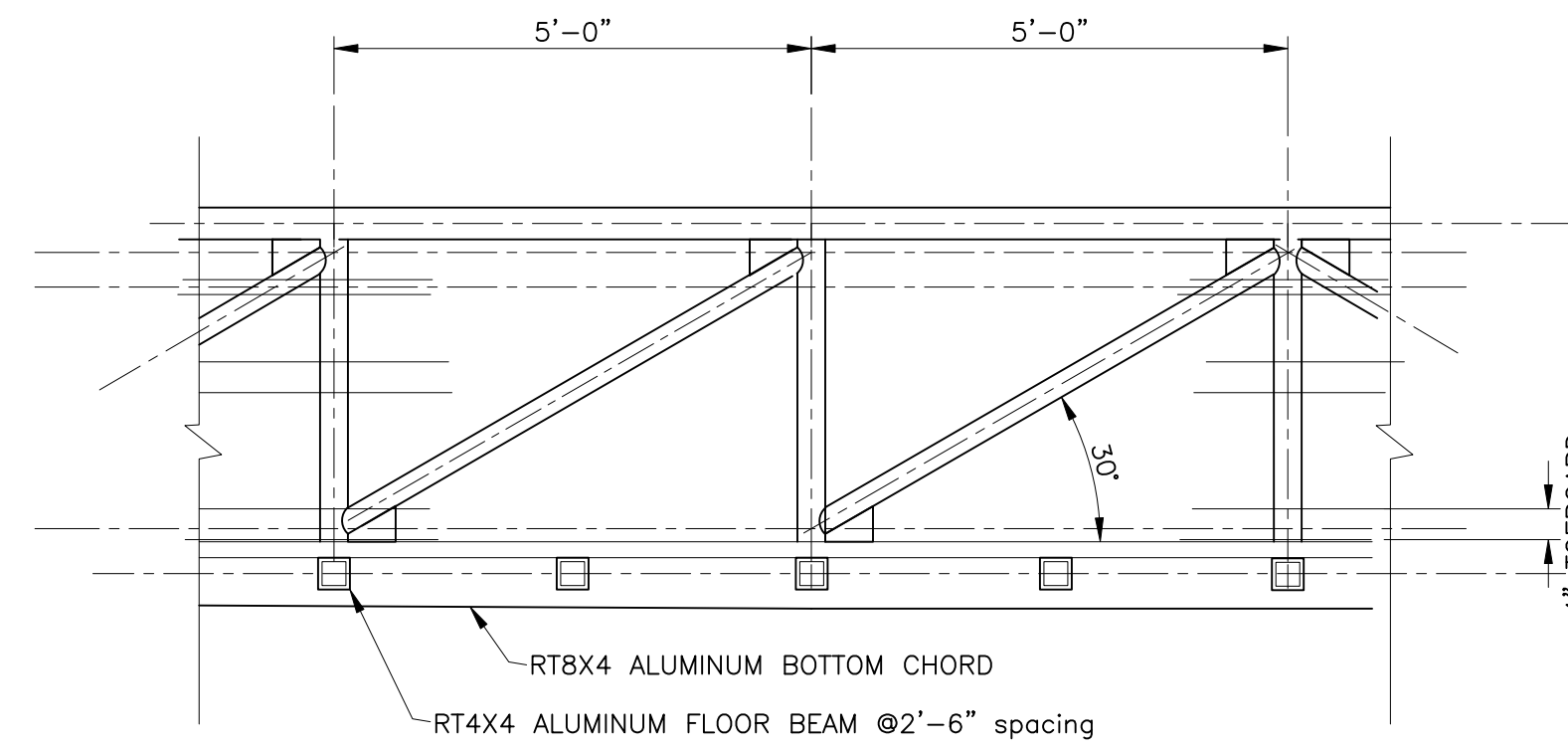
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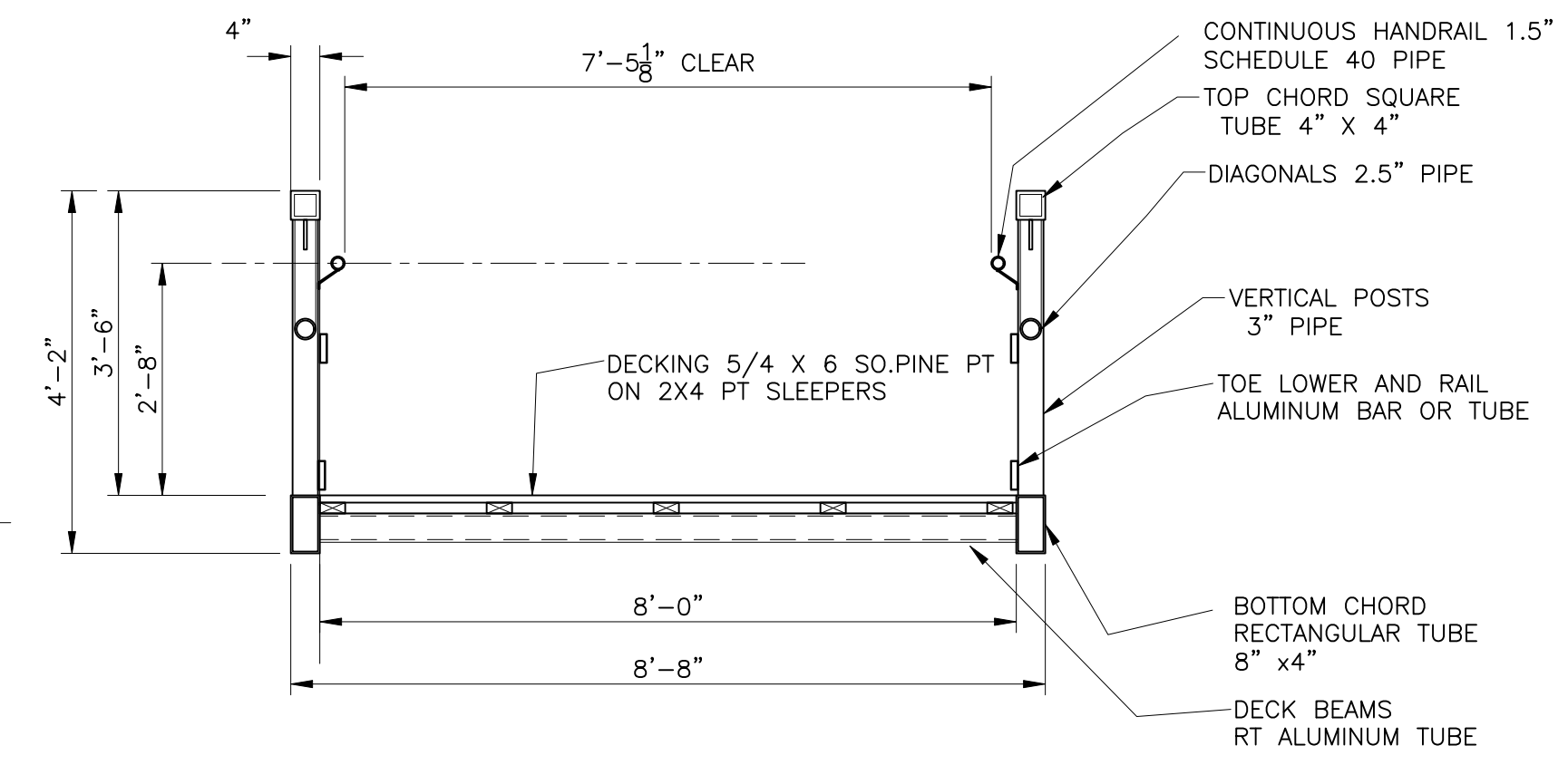
BRIDGE ELEVATION



BRIDGE DECK DETAIL



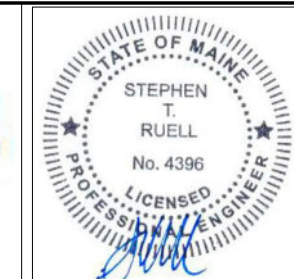
BRIDGE TRUSS DETAIL



BRIDGE CROSS SECTION

PRELIMINARY FOR REVIEW AND COMMENT

Pinnacle Hill Engineering
 33 Pinnacle Road
 Canaan, ME 04924
 PinnacleHillEngineering@gmail.com



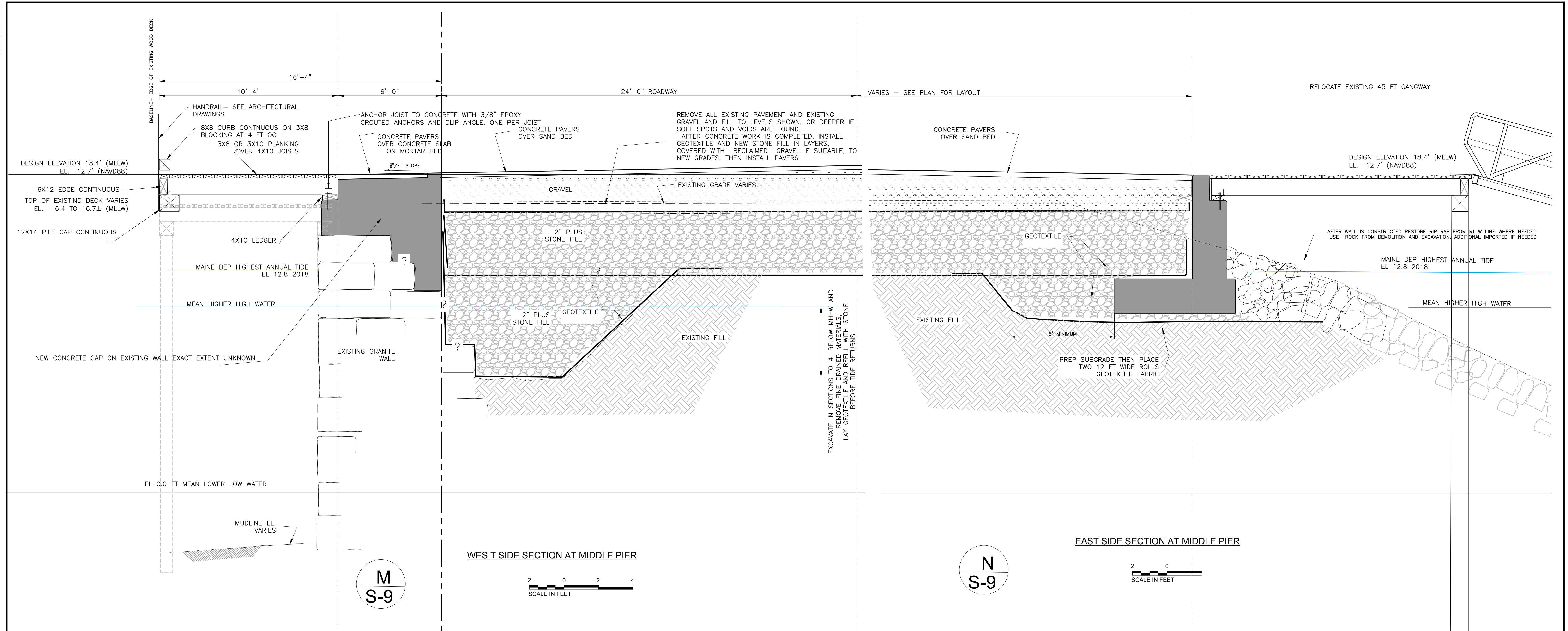
PUBLIC LANDING CONCEPT
 PEARL PIER AND BRIDGE STRUCTURES

NO.	REVISION	DATE	Designed By:
			Drawn By: STR
			Checked By: STR
			Scale: AS NOTED
			Date of Revision: 2-25-2023

DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
 AT HARBOR AND BUOY PARKS
 ROCKLAND, MAINE

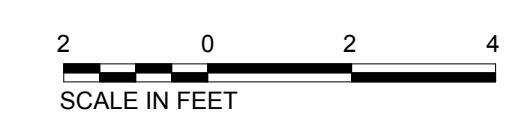
PEARL PIER AND BRIDGE
 BRIDGE DETAILS

S-8
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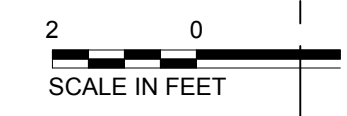
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WEST SIDE SECTION AT MIDDLE PIER

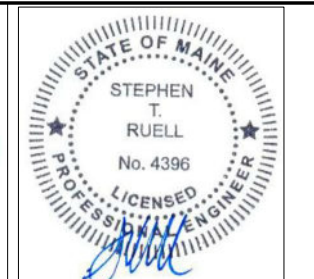


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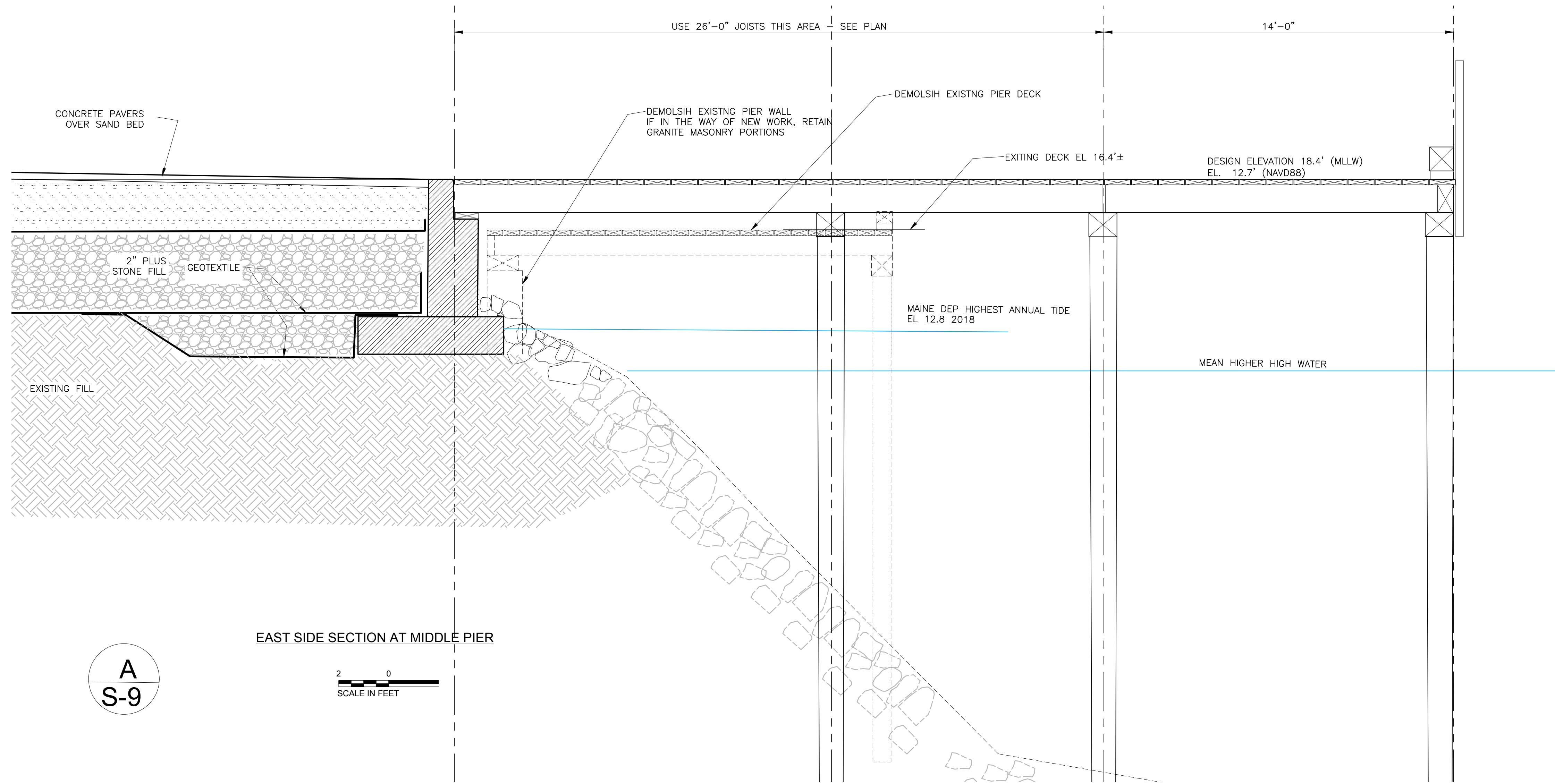
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PRELIMINARY FOR REVIEW AND COMMENT

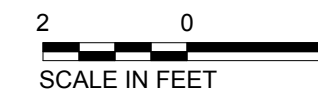


NO.	REVISION	DATE	Designed By:
			Drawn By: STR
			Checked By: STR
			Scale: 3/8"=1'-0"
			Date of Revision: 2-25-2023



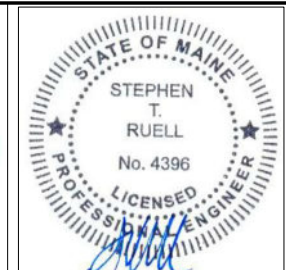
A
S-9

EAST SIDE SECTION AT MIDDLE PIER



PRELIMINARY
FOR REVIEW AND COMMENT

Pinnacle Hill Engineering
33 Pinnacle Road
Canaan, ME 04924
PinnacleHillEngineering@gmail.com



MIDDLE PIER CONCEPT
STRUCTURAL SECTIONS

NO.	REVISION	DATE	Designed By:
			Drawn By: STR
			Checked By: STR
			Scale: 3/8"=1'-0"
			Date of Revision: 2-25-2023

DOWNTOWN WATERFRONT MARINE INFRASTRUCTURE
AT HARBOR AND BUOY PARKS
ROCKLAND, MAINE

MIDDLE PIER
LONGITUDINAL SECTION

S-13
REV. 0

ATTACHMENT B
CONSTRUCTION COST ESTIMATE

DOWNTOWN WATERFRONT

City of Rockland, Maine

Opinion of probable design & construction costs based upon preliminary engineering design.

Date:

Mar-23

Waterfront Infrastructure

Estimated Hard and Soft Costs					
Item	Material	Quantity	Unit	Unit Cost	Subtotal
Public Landing					
Demolition	Allowance	1	ls	\$125,000.00	\$125,000.00
Pier Replacement and Expansion	Wood frame and decking	3800	sf	\$200.00	\$760,000.00
Piles	Wood	3420	lf	\$60.00	\$205,200.00
Floats	Wood	12800	sf	\$65.00	\$832,000.00
ADA Ramp	Aluminum	1	ea	\$60,000.00	\$60,000.00
Tenders & ticket building	Allowance	1	sf	\$25,000.00	\$25,000.00
Covered shelter	Allowance; 16x24 open wood structure	1	ls	\$40,000.00	\$40,000.00
Pier Railings	Allowance	286	lf	\$200.00	\$57,200.00
Pumpout Station	Allowance	1	ls	\$28,000.00	\$28,000.00
Utility Connections	Water and Sewer	1	ls	\$76,875.00	\$76,875.00
Substation	Equipment	1	ea	\$45,000.00	\$45,000.00
Dock Substation	Equipment	1	ea	\$38,000.00	\$38,000.00
DC Charging	Equipment and Materials	1	ea	\$200,000.00	\$200,000.00
Shore Power Pedestals	Equipment and Materials	7	ea	\$8,000.00	\$56,000.00
Light Bollard	Equipment and Materials	6	ea	\$1,000.00	\$6,000.00
Fire Extinguisher	Equipment and Materials	9	ea	\$1,200.00	\$10,800.00
Ground Fault Protection	Equipment and Materials	1	ls	\$29,650.00	\$29,650.00
Electrical Labor		1000	hr	\$65.00	\$65,000.00
Furnishings - Public Landing	Incldes Loungers, double-sided benches	1	ls	\$70,000.00	\$70,000.00
Lighting (Boardwalk)	Allowance	1	ls	\$20,000.00	\$20,000.00
Subtotal					\$2,749,725.00
Construction Contingency(10%)					\$274,972.50
Total Hard Cost					\$3,024,697.50
Design and Admin (8%)					\$241,975.80
Total Hard and Soft Costs - Public Landing					\$3,266,673.30

Harbor Park Seawall						
Granite Bulkhead (resiliency)	Granite and Concrete	360	lf	\$2,400.00	\$864,000.00	
Piles	Wood	360	lf	\$60.00	\$21,600.00	
Curved Concrete Pier	Allowance	115	lf	\$980.00	\$112,700.00	
Pier Railings	Allowance	263	lf	\$200.00	\$52,600.00	
Structural backfill settling resiliency	Allowance	1	ls	\$135,000.00	\$135,000.00	
Storm Drain	Allowance	105	lf	\$100.00	\$10,500.00	
Paver Surface - Boardwalk	Concrete Pavers, premium	400	sy	\$200.00	\$80,000.00	
Paver Surface - Plaza Spaces	Concrete Pavers	600	sy	\$200.00	\$120,000.00	
Boardwalk railings	Allowance; Alum. Multirail	265	lf	\$300.00	\$79,500.00	
Site signage	Allowance; Granite posts, full color pvc panel	3	ea	\$4,000.00	\$12,000.00	
Kiosk	Allowance, TBD	1	ls	\$7,500.00	\$7,500.00	
Furnishings - HM Plaza	Includes picnic tables, benches, planters	1	ls	\$52,000.00	\$52,000.00	
Furnishings - Boardwalk (Custom)	Allowance, sculptural seating, boardwalk (TBD)	1	ls	\$80,000.00	\$80,000.00	
Furnishings - Boardwalk	Includes benches, seating structures, planters	1	ls	\$130,000.00	\$130,000.00	
Bicycle Racks	Arc style, surface mounted	8	ea	\$800.00	\$6,400.00	
Loam & Seed	4" depth loam, seeding & mulching lawn areas	228	sy	\$6.00	\$1,368.00	
Planting bed soils	Based on 12" depth, amended loam	40	cy	\$75.00	\$3,000.00	
Trees	Installed, 2" caliper	3	ea	\$700.00	\$2,100.00	
Shrubs	Installed, #5 pots	68	ea	\$75.00	\$5,100.00	
Herbaceous	Installed, #1 pots	25	ea	\$5,000.00	\$125,000.00	
Lighting (Boardwalk)	Allowance, TBD	1	ls	\$15,000.00	\$15,000.00	
Subtotal					\$1,915,368.00	
Construction Contingency(10%)					\$191,536.80	
Total Hard Cost					\$2,106,904.80	
Design and Admin (8%)					\$168,552.38	
Total Hard and Soft Costs - Harbor Park Seawall						\$2,275,457.18

<i>Pier and Bridge to Buoy Park</i>					
Demolition	Allowance	1	ls	\$10,000.00	\$10,000.00
Concrete Abutments	Structural Concrete	16	cy	\$500.00	\$8,000.00
Pier Replacement and Expansion	Wood (City Only)	1920	sf	\$200.00	\$384,000.00
Piles	Wood (City Only)	120	lf	\$60.00	\$7,200.00
Floats - Dinghy	Wood	700	sf	\$65.00	\$45,500.00
Arch Bridge	Aluminum	1	ea	\$80,000.00	\$80,000.00
Railings	Allowance	77	lf	\$200.00	\$15,400.00
Signage, directional	Allowance; directional (TBD)	1	ls	\$1,000.00	\$1,000.00
Furnishings (Pier areas)	Backless benches, MP seating structure	1	ls	\$30,000.00	\$30,000.00
Living Shoreline and Granite Blocks	Allowance; Sill with plantings (NOAA)	1	ls	\$50,000.00	\$50,000.00
Lighting	Allowance, TBD	1	ls	\$12,000.00	\$12,000.00
Subtotal					\$643,100.00
Construction Contingency(10%)					\$64,310.00
Total Hard Cost					\$707,410.00
Design and Admin (8%)					\$56,592.80
Total Hard and Soft Costs - Pier and Bridge to Buoy Park					\$764,002.80

Middle Pier						
Demolition	Allowance	1	ls	\$130,000.00	\$130,000.00	
Concrete Retaining Walls & Backfill	Structural Concrete	550	cy	\$400.00	\$220,000.00	
Pier Replacement and Expansion	Wood	5800	sf	\$200.00	\$1,160,000.00	
Piles	Wood	3005	lf	\$60.00	\$180,300.00	
Floats	Wood	4800	sf	\$65.00	\$312,000.00	
ADA Ramps	Aluminum	2	ea	\$60,000.00	\$120,000.00	
Dinghy Ramp	Re-use Aluminum Ramp	1	ls	\$2,000.00	\$2,000.00	
Railings	Allowance	208	lf	\$200.00	\$41,600.00	
Ticket/Utility Building	Allowance	1	ea	\$10,000.00	\$10,000.00	
Pumpout Station and Sewer	Allowance	1	ls	\$20,000.00	\$20,000.00	
Substation	Equipment	1	ea	\$45,000.00	\$45,000.00	
DC Charging	Equipment and Materials	1	ea	\$200,000.00	\$200,000.00	
Shore Power Pedestals	Equipment and Materials	5	ea	\$8,200.00	\$41,000.00	
Light Bollard	Equipment and Materials	4	ea	\$1,000.00	\$4,000.00	
Fire Extinguisher	Equipment and Materials	3	ea	\$1,200.00	\$3,600.00	
Ground Fault Protection	Equipment and Materials	1	ls	\$14,500.00	\$14,500.00	
Electrical Labor		800	hr	\$65.00	\$52,000.00	
Structural backfill settling resiliency	Gravels and Fabric	1	ls	\$125,000.00	\$125,000.00	
Paver Surface	Concrete Pavers	771	sy	\$200.00	\$154,288.89	
Granite bollards	Pedestrian area	5	ea	\$1,500.00	\$7,500.00	
Signage, entrance & directional	Allowance	1	ls	\$5,000.00	\$5,000.00	
Benches	Allowance	1	ls	\$30,000.00	\$30,000.00	
Landscaping	Allowance	1	ls	\$5,000.00	\$5,000.00	
Lighting	Allowance	1	ls	\$12,000.00	\$12,000.00	
Subtotal						\$2,894,788.89
Construction Contingency(10%)						\$289,478.89
Total Hard Cost						\$3,184,267.78
Design and Admin (8%)						\$254,741.42
Total Hard and Soft Costs - Middle Pier						\$3,439,009.20

Grand Total Hard and Soft Costs

\$9,745,142.48