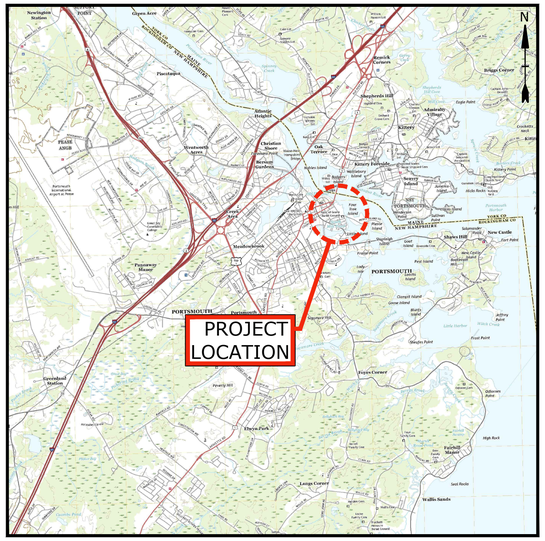
CITY OF PORTSMOUTH, NEW HAMPSHIRE

95 MECHANIC STREET SEAWALL & WHARF REPLACEMENT

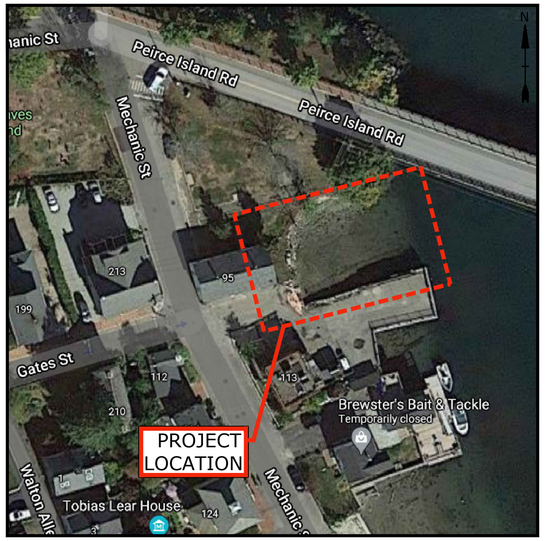
BID NO: 31-21

APRIL 29, 2021

LIST OF DRAWINGS	
SHEET NO.	SHEET TITLE
G-001	COVER, INDEX OF DRAWINGS, LOCATION AND VICINITY MAPS
G-002	LEGEND AND ABBREVATIONS
G-003	GENERAL NOTES - 1
G-004	GENERAL NOTES - 2
C-001	OVERALL SITE PLAN
C-002	EXISTING CONDITIONS PLAN
C-100	OVERALL IMPROVEMENTS PLAN
C-101	SEAWALL PLAN
C-301	SEAWALL ELEVATION
C-302	SEAWALL SECTIONS
C-303	SEAWALL DETAILS - 1
C-304	SEAWALL DETAILS - 2
C-401	WHARF PILE PLAN (ADD ALTERNATE)
C-402	WHARF FRAMING PLAN (ADD ALTERNATE)
C-403	WHARF SECTIONS AND DETAILS - 1 (ADD ALTERNATE)
C-404	WHARF SECTIONS AND DETAILS - 2 (ADD ALTERNATE)
C-501	EROSION AND SEDIMENT CONTROL DETAILS
C-900	HISTORICAL BORING AND LOGS



SITE VICINITY MAP
SCALE: 1" = 2,000'



SITE LOCATION MAP
SCALE: 1" =50'

PREPARED BY:

Tighe&Bond
Engineers | Environmental Specialists
177 Corporate Drive
Portsmouth, NH 03801
(603) 433-8818

DAVID A. MURPHY, PE

PREPARED FOR:

CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801

ISSUED FOR BIDDING

COMPLETE SET 18 SHEETS

Last Saved: 4/28/2021
Plotted On: Apr 29, 2021 - 11:50am By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings, Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-003-COVER.dwg

LEGEND

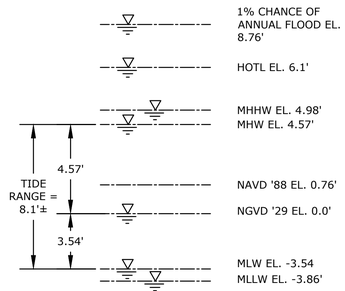
DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
LIMITS OF WORK		
INTERMEDIATE CONTOURS		
INDEX CONTOURS	25	
SPOT GRADE	X 141.2	+ 32.0
MAGNITUDE & DIRECTION OF SLOPE		0.0%
OVERHEAD ELECTRIC	OHE OHE	
FENCE - CHAIN LINK		
MEAN HIGH WATER		
MEAN LOW WATER		
FEMA FLOOD ZONE		
TURBIDITY BOOM		
TEMPORARY SUPPORT OF EXCAVATION		
TEMPORARY CONSTRUCTION FENCE		
TEMPORARY COFFERDAM		
GEOTEXTILE FABRIC		
BORING		
STORM DRAIN STRUCTURES	MANHOLE D; CATCH BASIN CB	
SANITARY SEWER MANHOLE	S	
WATER SERVICE STRUCTURES	HYDRANT; MANHOLE W; VALVE	
GAS SERVICE STRUCTURES	MANHOLE G; VALVE GG	
ELECTRIC SERVICE STRUCTURES	UTILITY CO. POLE #; LIGHT E	
TELECOMMUNICATIONS MANHOLE	MANHOLE T	
TREELINE		
TREE	EVERGREEN; DECIDUOUS	
H-PILE		
BATTER PILE		
TIMBER PILE		
AREA TO BE LOAM AND SEEDED		
PAVEMENT		
CRUSHED STONE		
LOAD RESTRICTION AREA		
STRUCTURE/BUILDING		
PILE LINE DESIGNATION		
SEAWALL		1

ABBREVIATIONS

ABDN('D)	ABANDON(ED)
AC	ASBESTOS CEMENT PIPE
BC	BITUMINOUS CURB
BFP	BACK FLOW PREVENTOR
BIT	BITUMINOUS
BL	BASELINE
BLDG	BUILDING
BND	BOUND
BOC	BOTTOM OF CURB
BOT	BOTTOM
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
CATV	CABLE TELEVISION
CB	CATCH BASIN
CEM	CEMENT
CI	CAST IRON PIPE
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CO	CLEAN OUT
CONS. JT.	CONSTRUCTION JOINT
CONC	CONCRETE
CPP	CORRUGATED POLYETHYLENE PIPE
CY	CUBIC YARD
DH	DRILL HOLE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
E	EAST
EF	EACH FACE
EG	EXISTING GRADE
EL/ELEV	ELEVATION
ELEC	ELECTRIC
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST.	EXISTING
EXP. JT.	EXPANSION JOINT
FES	FLARED END SECTION
FF	FINISH FLOOR
FM	FORCE MAIN
GALV.	GALVANIZED
G	GAS
GG	GAS GATE
GRAN	GRANITE
HC	HANDICAP
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HYD	HYDRANT
IN	INCHES
INV	INVERT
IP	IRON PIN
L	LENGTH OF CURB
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MJ	MECHANICAL JOINT

ABBREVIATIONS CONT'D

N	NORTH
NITC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
N/F	NOW OR FORMERLY
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
OH	OVERHEAD
PB	PLANT BED
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCPP	PERFORATED CORRUGATED POLYETHYLENE PIPE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE FOOT
PT	POINT OF TANGENCY
PVC	POLYVINYLCHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REV	REVISION
ROW	RIGHT OF WAY
RT	RIGHT
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
S	SOUTH
SAN	SANITARY
SCH	SCHEDULE
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SS	STAINLESS STEEL
STA	STATION
STL	STEEL
STRM	STORM
SYP	SOTUEHR YELLOW PINE
T	TANGENT LENGTH
TC	TOP OF CURB
TEL	TEL-DATA
TP	TEST PIT
TS	TOP OF STEP
TW	TOP OF WALL
TYP.	TYPICAL
UP	UTILITY POLE
UNO	UNLESS NOTED OTHERWISE
W	WATER
WG	WATER GATE
WV	WATER VALVE
XFMR	TRANSFORMER



VERTICAL DATUM CONVERSION DIAGRAM

VERTICAL DATUM NOTES:

1. THE TIDAL DATA ABOVE WAS TAKEN FROM THE U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) ONLINE VERTICAL DATUM TRANSFORMATION PROGRAM, DETERMINED AT THE FOLLOWING LOCATION:

   STATION ID: 8419870
   PID: NONE
   LOCATION: Seavey Island, ME
   LATITUDE: 43.08 N
   LONGITUDE: 70.758 W

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4-29-21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	General Notes.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

LEGEND AND ABBREVIATIONS

SCALE: AS SHOWN

G-002

Last Saved: 4/29/2021
Plotted on: Apr 29, 2021 - 12:05pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\General Notes.dwg

GENERAL NOTES

1. THE SITE IS LOCATED IN PORTSMOUTH, NEW HAMPSHIRE.

2. STANDARD SPECIFICATIONS, WHEN REFERENCED IN THESE DRAWINGS, SHALL MEAN THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT ED). PARTS OF THE STANDARD SPECIFICATIONS THAT ARE SPECIFICALLY REFERENCED SHALL BECOME PART OF THESE DRAWINGS AS THOUGH STATED HEREIN IN FULL. IN CASE OF A DISCREPANCY BETWEEN THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS STATED WITHIN THE DRAWINGS, THE REQUIREMENTS STATED WITHIN THE DRAWINGS SHALL PREVAIL.

3. THIS PROJECT IS OWNED AND FUNDED BY THE CITY OF PORTSMOUTH, NH. THEREFORE, SOME OF THE REFERENCES AND TERMINOLOGY OF THE STANDARD SPECIFICATIONS MAY SEEM OUT OF PLACE. THE ENGINEER FOR THIS PROJECT IS TIGHE & BOND. THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION IS NOT A PARTY TO THE PROJECT.

4. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. SAFETY PROVISIONS SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS. THESE REQUIREMENTS SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.

5. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE ORDERING ANY MATERIALS, COMMENCING ANY FABRICATION, OR PERFORMING ANY WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, OF ANY CONDITIONS OR DIMENSIONS WHICH VARY FROM THOSE SHOWN IN THE DRAWINGS AND INCORPORATE SUCH VARIATIONS IN THE CONSTRUCTION AS APPROVED BY THE ENGINEER.

6. THE CONTRACTOR SHALL NOTIFY DIGSAFE AT 1-888-344-7233 AND OTHER UTILITY OWNERS IN THE AREA NOT ON THE DIGSAFE LIST AT LEAST 3 BUSINESS DAYS PRIOR TO ANY DIGGING, TRENCHING, ROCK REMOVAL, DEMOLITION, BORING, BACKFILLING, GRADING, LANDSCAPING, PILE DRIVING, DRILLING, OR ANY OTHER BELOW GRADE OPERATIONS.

7. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. IN ADDITION, SOME UTILITIES MAY NOT BE SHOWN. DETERMINE THE EXACT LOCATION OF UTILITIES BY TEST PIT OR OTHER METHODS, AS NECESSARY TO PREVENT DAMAGE TO UTILITIES AND/OR INTERRUPTIONS IN UTILITY SERVICE. PERFORM TEST PIT EXCAVATIONS AND OTHER INVESTIGATIONS TO LOCATE UTILITIES, AND PROVIDE THIS INFORMATION TO THE ENGINEER, PRIOR TO CONSTRUCTING THE PROPOSED IMPROVEMENTS. LOCATE ALL EXISTING UTILITIES TO BE CROSSED BY HAND EXCAVATION.

8. SHORE UTILITY TRENCHES WHERE FIELD CONDITIONS DICTATE AND/OR WHERE REQUIRED BY LOCAL, STATE AND FEDERAL HEALTH AND SAFETY CODES.

9. NO OPEN TRENCHES WILL BE ALLOWED OVER NIGHT. THE USE OF ROAD PLATES TO PROTECT THE EXCAVATION WILL BE CONSIDERED UPON REQUEST, BUT BACKFILLING IS PREFERRED.

10. MAINTAIN EMERGENCY ACCESS TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES DURING CONSTRUCTION.

11. ALL PROPOSED WORK MAY BE ADJUSTED IN THE FIELD BY THE OWNER'S PROJECT REPRESENTATIVE TO MEET EXISTING CONDITIONS.

12. ALL WORK SHALL BE PERFORMED IN THE DRY, UTILIZING LOW TIDES AND/OR CONTRACTOR DESIGNED TEMPORARY COFFERDAMS, WHICH MAY ALSO BE UTILIZED AS EROSION AND SEDIMENT CONTROLS. THE EXCAVATION BACK SLOPES SHALL BE PROTECTED BY A CONTRACTOR DESIGNED SUPPORT-OF-EXCAVATION AND THE BOTTOM OF EXCAVATION SHALL HAVE CRUSHED STONE STABILIZATION.

13. THE SEAWALL TO BE REPLACED FUNCTIONS AS A RETAINING WALL AND IS NOT A DOCKING STRUCTURE.

14. OBTAIN, PAY FOR AND COMPLY WITH PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK. ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE JURISDICTIONAL AUTHORITIES.

15. SEAWALL REPLACEMENT AUTHORIZED UNDER NHDES WETLANDS PBN 2019-02630. TIMBER WHARF REPLACEMENT AUTHORIZED UNDER NHDES WETLANDS PERMIT 2016-02658. REFER TO SPECIFICATION SECTION 01040, COORDINATION AND SITE CONDITIONS FOR THE PERMITS.

16. BOLD TEXT AND LINES INDICATE PROPOSED WORK. LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.

17. TIGHE & BOND ASSUMES NO RESPONSIBILITY FOR ANY ISSUES, LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM TIGHE & BOND.

EXISTING CONDITIONS NOTES

1. THE PROJECT SITE IS WITHIN THE SPECIAL FLOOD HAZARD AREA ZONE AE, BASE FLOOD ELEVATION (B.F.E) DETERMINED (B.F.E. = 8.0, NAVD88) AS DEPICTED IN FLOOD INSURANCE RATE MAP 3301390278F PANEL 260 OF 681 DATED JANUARY 29, 2021.

2. THE EXISTING CONDITIONS WERE COMPILED FROM A SURVEY COMPLETED BY DOUCET SURVEY IN MAY 2009 AND WHARF MEASUREMENTS BY TAPE. EXISTING PAVEMENT SPOT ELEVATIONS WERE OBTAINED BY TIGHE & BOND IN 2019 BY AUTO LEVEL.

3. THE PROPOSED WORK IS WITHIN THE EXISTING WALL FOOTPRINT AND THE ADJACENT RESOURCE AREA HAS NO WETLAND VEGETATION, ENV-WT 301.01 (B).

PRE-CONSTRUCTION SURVEYS:

1. THE CONTRACTOR SHALL COMPLETE A PRE-CONSTRUCTION SURVEY OF THE INTERIOR AND EXTERIOR OF ALL STRUCTURES/UTILITIES WITHIN 100 FEET OF THE PROPOSED WORK PRIOR TO CONSTRUCTION. THE PRE-CONSTRUCTION SURVEYS SHALL BE COMPLETED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW HAMPSHIRE.

2. A PRE-CONSTRUCTION SURVEY REPORT SHALL BE PREPARED FOR EACH STRUCTURE/UTILITY AND SHALL DOCUMENT THE EXISTING CONDITION OF THE STRUCTURE/UTILITY VIA A NARRATED COLOR VIDEO THAT IS SUPPLEMENTED WITH STILL COLOR PHOTOGRAPHS AS REQUIRED. EACH PRE-CONSTRUCTION SURVEY REPORT SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW HAMPSHIRE.

3. EACH PRE-CONSTRUCTION SURVEY REPORT SHALL INCLUDE A STRUCTURE/ UTILITY LOCATION MAP AND SHALL DESCRIBE IN DETAIL THE EXISTING CONDITIONS OBSERVED, INCLUDING BUT NOT LIMITED TO THE LOCATION AND EXTENT OF CRACKS, SPALLS, THE OPERATION OF WINDOWS AND DOORS, SETTLEMENT, CORROSION, DETERIORATION, AND OTHER DEFICIENCIES AS APPROPRIATE.

4. STRUCTURES/UTILITIES THAT SHALL REQUIRE A PRE-CONSTRUCTION SURVEY ARE EXPECTED TO INCLUDE THE FOLLOWING:

   A. THE MECHANIC STREET PUMP STATION.
   B. THE PORTION OF THE PEIRCE ISLAND BRIDGE WITHIN 100 FEET OF THE WORK.
   C. EXISTING RIVERFRONT STRUCTURES INCLUDING BUT NOT LIMITED TO PIERS, DOCKS, AND SEAWALLS WITHIN 100' OF THE WORK.
   D. MECHANIC STREET SIDEWALK AND PAVEMENT WITHIN 100 FEET OF THE WORK.
   E. THE ADJACENT STORM WATER OUTFALL (INTERIOR ONLY).
   F. THE CITY OWNED BUILDING IMMEDIATELY ADJACENT TO THE SEAWALL.
   G. THE COMMERCIAL PROPERTY LOCATED AT 121 MECHANIC STREET.
   H. THE PORTION OF THE RESIDENTIAL PROPERTY LOCATED AT 213 GATES STREET.
   I. ANY OTHER MISC. STRUCTURES AND/OR SITE FEATURES (E.G., SHEDS, RETAINING WALLS, ASPHALT DRIVEWAYS, ETC.) WITHIN 100 FEET OF THE WORK.

BASIS OF DESIGN NOTES

SEAWALL DESIGN CRITERIA:

1. THE PROPOSED SEAWALL WAS DESIGNED UTILIZING APPLICABLE SOIL AND WATER LOADS USING THE LOAD COMBINATIONS SPECIFIED IN ASCE 7-10.

2. THE SOIL BACKFILL WAS ASSUMED TO HAVE AN INTERNAL ANGLE OF FRICTION (Φ) OF 34 DEGREES.

3. A MAXIMUM TIDAL LAG OF 2.5 FEET WAS ASSUMED.

4. A UNIFORM VERTICAL LIVE LOAD SURCHARGE OF 250 PSF WAS ASSUMED.

5. THE CONTROLLING CASE WAS DETERMINED TO BE GROUNDWATER AT ABOUT THE MID-HEIGHT ON THE BACKSIDE OF THE SEAWALL AND A TIDE LEVEL OF ABOUT 2.5 FEET BELOW THE GROUNDWATER LEVEL.

6. THE STRUCTURAL DESIGN OF THE SEAWALL WAS PERFORMED IN ACCORDANCE WITH ACI 318-14.

WHARF DESIGN CRITERIA:

1. THE FOLLOWING LOADS WERE UTILIZED TO DESIGN THE TIMBER WHARF:
   1.1. DEADLOAD = 20 PSF
   1.2. LIVE LOAD = 250 PSF (THE WHARF IS NOT DESIGNED FOR VEHICLE LOADING)
   1.3. SNOW LOAD = 50 PSF BASIC GROUND; 38 PSF ADJUSTED
   1.4. WIND LOAD = WIND LOADS WERE BASED ON ASCE 7-10, FIGURE 26.5, BASE WIND SPEED OF 130 MPH, BASE WIND PRESSURE OF 43 PSF (ALL K VALUES EQUAL TO 1). (2)
   1.5. LATERAL LOAD: THE WHARF HAS BEEN DESIGNED FOR A MAXIMUM WIND INDUCED LATERAL LOAD OF 660 POUNDS PER LINEAR FOOT (ALONG THE LONGITUDINAL OR TRANSVERSE AXIS), INCLUDING A NOMINAL WIND INDUCED OVERTURNING MOMENT, BASED ON AN ASSUMED BUILDING FOOTPRINT AND HEIGHT (SINGLE STORY, FLAT ROOF). THE ESTIMATED LATERAL DEFELECTION UNDER THE ASSUMED WIND LOAD WAS DETERMINED TO BE LESS THAN 1 INCH ALONG THE LONGITUDINAL AXIS OF THE WHARF AND UP TO 2 INCHES ALONG THE TRANSVERSE AXIS OF THE WHARF. ACCORDINGLY, CROSS BRACING WAS INCLUDED BETWEEN BENT NOS. 6 - 11 TO REDUCE THE ESTIMATED LATERAL DEFLECTION TO ABOUT 1 INCH. PRIOR TO CONSTRUCTING ANY BUILDINGS OR STRUCTURES ON THE WHARF, THE CITY SHOULD RETAIN A REGISTERED PROFESSIONAL ENGINEER TO CONFIRM THAT THE WHARF CAN SUPPORT THE ESTIMATED LATERAL LOADS, BASED ON THE ACTUAL BUILDING FOOTPRINT AND HEIGHT PROPOSED. (2)
   1.6. ASSUMED BUOYANCY = FULL SUBMERGENCE
   1.7. SEISMIC DESIGN CRITERIA: Ss=0.25g; S1=0.1g; Sm1=0.188; Sds=0.417g; Sd1 =0.223g

LAYOUT

1. THE HORIZONTAL CONTROL DATUM FOR THIS PROJECT IS SITE SPECIFIC.

2. THE VERTICAL CONTROL DATUM FOR THIS PROJECT IS THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL LAYOUT WORK FROM THE CONTROL MONUMENTATION PROVIDED.

AVAILABLE SUBSURFACE INFORMATION

1. GEOTECHNICAL INFORMATION UTILIZED TO PREPARE THESE DRAWINGS WAS OBTAINED FROM SOIL BORINGS AND/OR TEST PITS COMPLETED BY OTHERS IN THE COLLECTION OF GENERAL SITE INFORMATION RELATIVE TO SUBSURFACE CONDITIONS. THIS INFORMATION IS INCLUDED ON THE DRAWINGS.

2. IT IS INTENDED THAT THE GEOTECHNICAL INFORMATION BE USED ONLY AS AN INDICATION OF POSSIBLE SUBSURFACE CONDITIONS, AND THAT UPON THE CONTRACTOR'S REVIEW, FURTHER SUBSURFACE EXPLORATIONS MAY BE WARRANTED. SUCH EXPLORATIONS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

3. THE CONTRACTOR SHALL USE THE GEOTECHNICAL INFORMATION PROVIDED ON THE DRAWINGS AT ITS OWN RISK AND SHALL COMPLETELY HOLD HARMLESS THE CITY OF PORTSMOUTH AND TIGHE & BOND FROM ALL CONSEQUENCES AND/OR FAULT ARISING FROM ITS USE.

MOBILIZATION AND DEMOBILIZATION NOTES

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02005, MOBILIZATION/DEMOBILIZATION.

DEMOLITION AND REMOVAL

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02050, DEMOLITION AND REMOVAL.

EARTHWORK

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02200, EARTHWORK.

2. THE FINAL SLOPE GEOMETRY AND THE PROTECTION OF EXISTING STRUCTURES AND UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY.

STOCKPILE MANAGEMENT

1. THE CONTRACTOR SHALL MAINTAIN STOCKPILES AND THE AREAS AROUND THEM GRADED TO DRAIN AND TAKE ALL NECESSARY PRECAUTIONS TO MINIMIZE EROSION FROM THE STOCKPILES, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF HAY BALES OR SILT FENCE.

2. SOIL MATERIAL THAT MEETS THE SPECIFIED GRADATION REQUIREMENTS UNDER SECTION 02200, EARTHWORK AS DETERMINED IN ACCORDANCE WITH SECTION 01400, QUALITY CONTROL, MAY BE STOCKPILED ADJACENT TO THE WORK AREA FOR REUSE.

3. EXCESS SOIL MATERIAL THAT DOES NOT MEET THE SPECIFIED GRADATION REQUIREMENTS AND/OR EXCAVATED MATERIAL IN EXCESS OF THAT REQUIRED FOR COMPLETING THIS PROJECT MAY BE TRANSPORTED TO THE CITY OF PORTSMOUTH'S DEPARTMENT OF PUBLIC WORKS YARD FOR TEMPORARY STOCKPILING, BUT SHALL ULTIMATELY BE DISPOSED OF OFF SITE BY THE CONTRACTOR IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS. (2)

EROSION & SEDIMENT CONTROL AND RESOURCE AREA PROTECTION NOTES

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02270, EROSION AND SEDIMENT CONTROLS.

2. PROVIDE ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN, SPECIFIED, REQUIRED BY PERMIT, AND/OR REQUIRED BY THE ENGINEER PRIOR TO ANY CONSTRUCTION OR IMMEDIATELY UPON REQUEST. MAINTAIN SUCH CONTROL MEASURES UNTIL FINAL SURFACE TREATMENTS ARE IN PLACE AND/OR UNTIL PERMANENT VEGETATION IS ESTABLISHED. INSPECT AFTER EACH RAINSTORM AND DURING MAJOR STORM EVENTS TO CONFIRM THAT ALL SEDIMENTATION AND EROSION CONTROL MEASURES REQUIRED ARE IN PLACE AND EFFECTIVE.

3. PRIOR TO STARTING WORK, CLEARLY MARK WORK LIMITS. DO NOT DISTURB THE AREA BEYOND THE PROPOSED LIMITS. COORDINATE WITH THE ENGINEER FOR LOCATIONS OF TEMPORARY STOCKPILING OF TOPSOIL DURING CONSTRUCTION.

4. INSTALL SILT SACKS OR OTHER APPROVED SEDIMENTATION BARRIERS IN/AT ALL CATCH BASINS IN THE PROJECT AREA.

5. COMPACT, STABILIZE, AND LOAM AND SEED SIDE SLOPES, SHOULDER AREAS AND DISTURBED VEGETATED AREAS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS REQUIRED BY PERMITS. GRADE SIDE SLOPES, SHOULDER AREAS AND DISTURBED VEGETATED AREAS TO A MAXIMUM SLOPE OF 3 HORIZONTAL TO 1 VERTICAL (3H:1V), WHERE POSSIBLE. PROVIDE BIODEGRADABLE EROSION CONTROL BLANKETS TO PREVENT EROSION WHERE SLOPES ARE STEEPER THAN 3H:1V.

6. REMOVE AND PROPERLY DISPOSE OF SILT TRAPPED AT BARRIERS IN UPLAND AREAS OUTSIDE BUFFER ZONES. REMOVE MATERIALS DEPOSITED IN ANY TEMPORARY SETTLING BASINS AT THE COMPLETION OF THE PROJECT. RESTORE ALL DISTURBED AREAS TO THEIR PRECONSTRUCTION CONDITION.

7. SWEEP, COLLECT, REMOVE AND DISPOSE OF ANY SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS AT THE END OF EACH DAY.

8. ALL HYDRAULIC EQUIPMENT SHALL UTILIZE BIODEGRADEABLE, VEGETABLE BASED, NON-TOXIC AND NON-POLLUTING HYDRAULIC FLUID.

9. STORE FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS IN A SECONDARY CONTAINER AND REMOVE TO A SECURE LOCKED AND COVERED AREA DURING NON-WORK HOURS.

10. PROVIDE A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIALS SUCH AS BOOMS, BLANKETS, AND OIL ABSORBENT MATERIALS AT THE CONSTRICTION SITE AT ALL TIMES TO CLEAN UP POTENTIAL SPILLS OF HAZARDOUS MATERIALS. IMMEDIATELY REPORT SPILLS OF HAZARDOUS MATERIALS TO THE STATE ENVIRONMENTAL AGENCY AND THE MUNICIPALITY WHERE THE WORK IS OCCURRING.

STEEL H-PILES

CONCRETE SEAWALL

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02301, STEEL H-PILES.

2. THE SPECIFIED VERTICAL ULTIMATE CAPACITY FOR THESE STEEL H-PILES IS 293 KIPS (130 KIPS ALLOWABLE X 2.25), WHICH WILL BE VERIFIED VIA A WEAP TO BE COMPLETED BY THE ENGINEER AND PDA TESTING THAT SHALL BE COMPLETED BY THE CONTRACTOR AT TWO INDICATOR PILE LOCATIONS. (2)

3. THE SPECIFIED VERTICAL UPLIFT CAPACITY FOR THESE STEEL H-PILES IS 28 KIPS (12.5 KIPS ALLOWABLE X 2.25), WHICH SHALL BE VERIFIED BY PDA TESTING THAT SHALL BE COMPLETED BY THE CONTRACTOR AT TWO INDICATOR PILE LOCATIONS.

4. THE CONTRACTOR SHALL INSTALL THESE H-PILES TO THEIR SPECIFIED ULTIMATE CAPACITY, OR THE SPECIFIED TIP ELEVATION, WHICHEVER RESULTS IN THE GREATEST EMBEDMENT DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. (2)

5. THE ENGINEER WILL BE RESPONSIBLE FOR ESTABLISHING PILE DRIVING CRITERIA FOR THE REMAINING PRODUCTION PILES BASED ON THE INITIAL AND RESTRIKE DRIVE PDA TESTING.

6. THESE H-PILES SHALL BE DRIVEN WITH DRIVING SHOES AS SHOWN ON THE DRAWINGS.

7. IT IS RECOMMENDED THAT A DRIVING TEMPLATE BE USED TO INSTALL THESE H-PILES IN ORDER TO MEET THE SPECIFIED DRIVING TOLERANCES.

8. A VIBRATORY HAMMER MAY BE UTILIZED FOR THE INITIAL INSTALLATION, BUT AN IMPACT HAMMER SHALL BE UTILIZED FOR THE LAST 10 FEET OF DRIVING TO "PROOF" THESE PILES TO THEIR SPECIFIED ULTIMATE CAPACITY. (2)

9. ALL SPLICES SHALL BE FARBICATED AND TESTED AS SPECIFIED AND SHOWN IN THE CONTRACT DOCUMENTS.

10. THESE H-PILES SHALL BE UNCOATED.

WHARF

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02301, STEEL H-PILES.

2. THE SPECIFIED ULTIMATE CAPACITY FOR THESE STEEL H-PILES IS 110 KIPS (40 KIPS ALLOWABLE X 2.75), WHICH WILL BE VERIFIED VIA A WEAP TO BE COMPLETED BY THE ENGINEER.

3. THESE H-PILES ARE EXPECTED TO BE DRIVEN IN SEGMENTS AND SPLICED DUE TO OVERHEAD UTILITY LINE CLEARANCE CONSTRAINTS AND WITH DRIVING SHOES AS SHOWN ON THE DRAWINGS.

4. THE CONTRACTOR SHALL INSTALL THESE H-PILES TO THEIR SPECIFIED ULTIMATE CAPACITY, OR THE SPECIFIED TIP ELEVATION, WHICHEVER RESULTS IN THE GREATEST EMBEDMENT DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. (2)

5. IT IS RECOMMENDED THAT A DRIVING TEMPLATE BE USED TO INSTALL THESE H-PILES IN ORDER TO MEET THE SPECIFIED DRIVING TOLERANCES.

6. A VIBRATORY HAMMER MAY BE UTILIZED FOR THE INITIAL INSTALLATION, BUT AN IMPACT HAMMER SHALL BE UTILIZED FOR THE LAST 10 FEET OF DRIVING TO "PROOF" THESE H-PILES TO THEIR SPECIFIED ULTIMATE CAPACITY. (2)

7. ALL SPLICES SHALL BE FABRICATED AND TESTED AS SPECIFIED AND SHOWN IN THE CONTRACT DOCUMENTS.

8. THESE H-PILES SHALL BE COATED, COLOR BLACK, AS SPECIFIED IN SECTION 09900, COATINGS.

STEEL SHEET PILES

1. COORDINATE WITH THESE DRAWINGS AND SECTION 023671, STEEL SHEET PILES.

2. THE ALIGNMENT SHOWN FOR LAYOUT SHALL BE TAKEN AS THE INSIDE FACE OF THE STEEL SHEET PILES. LAYOUT IS BASED ON ARBED AZ 17-700 SHEET PILES. THE LAYOUT IS FOR GENERAL LOCATION. THE FINAL LAYOUT SHALL BE ADJUSTED BASED ON THE FINAL SHEET PILE SELECTED BY THE CONTRACTOR.

3. SHOULD THE CONTRACTOR PROPOSE, AND THE ENGINEER APPROVE AN ALTERNATE SHEET PILE TYPE FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE ALIGNMENT AND CONCRETE CAP AS REQUIRED TO ACCOMMODATE THE ALTERNATE SHEET PILE TYPE. NO ADJUSTMENT TO THE CONTRACT PRICE WILL BE MADE FOR THE USE OF AN ALTERNATE SHEET PILE TYPE.

4. STEEL SHEET PILES BETWEEN ABOUT STATION 0+70 AND 1+065 ARE EXPECTED TO BE DRIVEN FULL LENGTH WITHOUT SPLICES.

5. STEEL SHEET PILES BETWEEN ABOUT STATION 1+065 AND 1+30 ARE EXPECTED TO BE DRIVEN IN SEGMENTS AND SPLICED DUE TO OVERHEAD UTILITY LINE CLEARANCE CONSTRAINTS.

6. IT IS RECOMMENDED THAT A DRIVING TEMPLATE BE USED TO INSTALL THE SHEET PILES IN ORDER TO MEET THE SPECIFIED DRIVING TOLERANCES.

7. A VIBRATORY HAMMER MAY BE UTILIZED FOR THE INSTALLATION.

8. ALL SPLICES SHALL BE FARBICATED AND TESTED AS SPECIFIED AND SHOWN IN THE CONTRACT DOCUMENTS.

9. THE STEEL SHEET PILES SHALL BE UNCOATED.

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4-7-21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
2	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	General Notes.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

GENERAL NOTES - 1

SCALE: AS SHOWN

G-003

TIMBER PILES

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02368, TIMBER PILES.
2. THE SPECIFIED ULTIMATE CAPACITY FOR THE TIMBER PILES IS 110 KIPS (40 KIPS ALLOWABLE X 2.75), WHICH WILL BE VERIFIED VIA A WEAP TO BE COMPLETED BY THE ENGINEER.
3. IT IS RECOMMENDED THAT A DRIVING TEMPLATE BE USED TO INSTALL THE TIMBER PILES IN ORDER TO MEET THE SPECIFIED DRIVING TOLERANCES.
4. THE CONTRACTOR SHALL INSTALL THESE TIMBER PILES TO THEIR SPECIFIED ULTIMATE CAPACITY, OR THE SPECIFIED TIP ELEVATION, WHICHEVER RESULTS IN THE GREATEST EMBEDMENT DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. A VIBRATORY HAMMER MAY BE UTILIZED FOR THE INITIAL INSTALLATION, BUT AN IMPACT HAMMER SHALL BE UTILIZED FOR THE LAST 10 FEET OF DRIVING TO "PROOF" THE TIMBER PILES TO THEIR SPECIFIED ULTIMATE CAPACITY.

DEWATERING, CONTROL, AND DIVERSION OF WATER

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02400, DEWATERING, CONTROL, AND DIVERSION OF WATER.
2. WATER ELEVATIONS AT THE SITE ARE TIDAL AND ARE EXPECTED TO VARY. TEMPORARY EARTH RETAINING SYSTEMS AND TEMPORARY COFFERDAMS WITH SUMPS AND PUMPS ARE EXPECTED TO BE ADEQUATE TO CONTROL INFLOWS AND/OR THE ACCUMULATION OF PONDED WATER DUE TO SURFACE WATER RUN OFF.
3. THE CONTRACTOR SHALL ROUTE ALL PUMPED WATER TO DEWATERING BASINS OR OTHER SUITABLE DEVICES (E.G., DEWATERING BAGS) PRIOR TO ALLOWING THE PUMPED WATER TO FLOW OVER LAND.

DYNAMIC PILE TESTING

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02457, DYNAMIC PILE TESTING.

BITUMINOUS CONCRETE PAVEMENT

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02512, BITUMINOUS CONCRETE PAVEMENT.

CONCRETE

1. COORDINATE WITH THESE DRAWINGS, SECTION 03200, REINFORCING STEEL, AND SECTION 03310, CONCRETE.

MASONRY

1. COORDINATE WITH THESE DRAWINGS AND SECTION 04400, STONE MASONRY.

COATINGS

1. COORDINATE WITH THESE DRAWINGS AND SECTION 09900, COATINGS.

CHAIN LINK FENCE

1. ALL FENCE MATERIALS SHALL BE NEW AND OF RECOGNIZABLE AND REPUTABLE MANUFACTURERS.
2. FENCING MATERIALS SHALL MEET THE REQUIREMENTS OF NHDOT STANDARD SPECIFICATIONS.
3. CHAIN LINK FENCE FABRIC SHALL BE BLACK VINYL COATED NO. 9-GAUGE WIRE WOVEN IN A 2-INCH DIAMOND-MESH PATTERN, AND SELVAGES TWISTED AND BARBED.
4. TENSION WIRE, IF REQUIRED, SHALL BE BLACK VINYL COATED SPRING STEEL WIRE NOT LESS THAN NO. 7 GAUGE (0.177 INCH DIAMETER). PROVIDE TIE CLIPS OF MANUFACTURER'S STANDARD AS APPROVED FOR ATTACHING THE WIRE TO THE FABRIC, AT INTERVALS NOT EXCEEDING 24 INCHES.
5. END, CORNER, ANGLE, AND PULL POSTS SHALL BE 2.875-INCH-DIAMETER (O.D.) SCHEDULE 40 STEEL PIPE, WEIGHT 5.80 POUNDS PER LINEAR FOOT, MEETING THE REQUIREMENTS OF ASTM F1043, GROUP 1A - HIGH STRENGTH (MINIMUM Fy = 83,000 PSI).
6. TOP RAIL SHALL BE 1.875-INCH OUTSIDE DIAMETER, WEIGHT 2.72 POUNDS PER LINEAR FOOT, MEETING THE REQUIREMENTS OF ASTM F1043 GROUP 1A - REGULAR STRENGTH (MINIMUM Fy = 30,000 PSI). COUPLINGS SHALL BE OUTSIDE-SLEEVE TYPE AND AT LEAST 6 INCHES LONG. PROVIDE SPRINGS AT ONE COUPLING IN FIVE TO PERMIT EXPANSION IN RAIL AS RECOMMENDED BY THE MANUFACTURER. TOP RAIL TO EXTEND THROUGH LINE POST TOPS TO FORM CONTINUOUS BRACE FROM END-TO-END OF EACH STRETCH OF FENCE.
7. BRACE PIPE SHALL BE OF THE SAME MATERIAL AND TYPE AS THE TOP RAIL, AND SHALL BE INSTALLED MIDWAY BETWEEN THE TOP RAIL AND EXTEND FROM THE TERMINAL POST TO THE FIRST ADJACENT LINE POST. BRACES SHALL BE SECURELY FASTENED TO THE POSTS BY HEAVY-PRESSED STEEL AND MALLEABLE FITTINGS.
8. FITTINGS SHALL BE MALLEABLE STEEL, CAST IRON, OR PRESSED STEEL. FITTINGS TO INCLUDE EXTENSION ARMS FOR BARBED WIRE, STRETCHER BARS AND CLAMPS, CLIPS, TENSION RODS, BRACE RODS, HARDWARE, FABRIC BANDS, FASTENINGS, AND ALL ACCESSORIES.
9. ALL FENCE POSTS, RAILS, FITTINGS AND HARDWARE SHALL BE GALVANIZED AND POWDER COATED, COLOR BLACK.
10. THE CONTRACTOR SHALL PROVIDE MANUFACTURER'S CUT SHEETS FOR ALL FENCING MATERIALS FOR REVIEW/APPROVAL BY THE ENGINEER.
11. FENCE POSTS INSTALLED IN SOIL SHALL BE INSTALLED A MINIMUM OF 48" BELOW GRADE WITH A 12" DIAMETER CONCRETE FOUNDATION.

ORNAMENTAL RAILING

1. THE ORNAMENTAL RAILING SYSTEM SHALL BE 42" HIGH INDUSTRIAL GRADE, SURFACE MOUNTED, HOT DIPPED GALVANIZED (HDG) 2-RAIL BALUSTRADE WITH PICKET/BALUSTER PANEL CONFIGURATION AS SHOWN. THE RAILING SHALL HAVE A HDG COMPATIBLE BLACK FINISH COATING, WHICH SHALL BE THE COLORGALV15 SYSTEM BY DUNCAN GALVANIZING OF EVERETT MA, OR APPROVED EQUAL (WITH EQUIVALENT WARRANTY). THE SELECTED SYSTEM SHALL COMPLY WITH THE IBC 2009 PEDESTRIAN GUARD CODE AND ADA RAIL GUIDELINES
2. RAILS, PANELS, POSTS, AND BASE PLATES SHALL BE FABRICATED TO WITHSTAND AT A MINIMUM THE LOADS SPECIFIED IN IBC 2009 AT OR BELOW THE ALLOWABLE STRESSES. RAIL POST MOUNTING ON TIMBER SHALL BE AS SHOWN, USING HOT DIP GALVANIZED LAG BOLTS AND WASHERS.
3. PROVIDE RAILING SYSTEM IN ACCORDANCE AS SPECIFIED WITH CONNECTIONS, INCLUDING POST BASE ANCHORAGE, TO COMPLY WITH IBC 2009 PEDESTRIAN GUARD CODE. POSTS AND PANELS SHALL BE PLUMB TO WITHIN 1/8" IN 2 FEET TOLERANCE. ALL JOINTS SHALL BE TRUE AND SMOOTH, WITH NO INCORRECT FIT GAPS AND WITH NO BURRS, SHARP EDGES OR PROTRUDING FASTENERS. REPAIR ANY COATING DAMAGE IN ACCORDANCE WITH THE COATING MANUFACTURER'S RECOMMENDATIONS SUCH THAT IT MATCHES AND IS CONSISTENT WITH THE ADJACENT COATING.
4. THE CONTRACTOR SHALL SUBMIT THE FOLLOWING SUBMITTALS FOR REVIEW AND APPROVAL BY THE ENGINEER:

   4.1. RAILING SYSTEM SHOP DRAWINGS, COATING SYSTEM, ANCHORING SYSTEM, AND SHIMMING PROCEDURE.

STRUCTURAL LUMBER

1. DECKING SHALL BE SOUTHERN YELLOW PINE, GRADE NO. 2; AND ALL CAP BEAMS, STRINGERS, BRACES, AND FASCIA BOARDS SHALL BE SOUTHERN YELLOW PINE, GRADE NO. 1. THIS LUMBER SHALL CONFORM TO THE FOLLOWING MINIMUM ALLOWABLE STRESSES IN ACCORDANCE WITH NDS.

ALLOWABLE STRESSES				
COMPONENT	BENDING Fb (psi)	HORIZONTAL SHEAR Fv (psi)	COMPRESSION PERPENDICULAR TO GRAIN Fcl (psi)	COMPRESSION PARALLEL TO GRAIN Fc (psi)
WHARF DECKING	925	175	565	1,350
STRINGERS/FASCIA BOARDS	1,350	165	375	825
CAP BEAMS	1,350	165	375	825
BRACES	925	175	565	1,350

2. ALL TIMBER DIMENSIONS SHOWN ARE NOMINAL AND ALL LUMBER SHALL BE SURFACED ON ALL FOUR SIDES (S4S).
3. ALL TIMBER PILES AND TIMBER CROSS-BRACING THAT IS IMMERSED IN SALTWATER SHALL BE TREATED TO 2.5 PCF CCA; TIMBER IN THE SLASH ZONE SHALL BE TREATED TO 0.60 PCF CCA AS SPECIFIED; AND THE TIMBER DECKING SHALL BE TREATED TO 0.6 PCF ACQ FOR HUMAN CONTACT.
4. ALL PRESSURE TREATED TIMBER THAT HAS BEEN FIELD CUT, DRESSED, AND/OR DRILLED SHALL BE COATED WITH TWO (2) COATS OF COPPER NAPTHENATE PRESERVATIVE, INCLUDING THE ENDS OF ANY SPLICED SEGMENTS.
5. ALL HORIZONTAL SURFACES BETWEEN TIMBER COMPONENTS SHALL BE COVERED WITH 30# TAR PAPER WITH A 1" OVERHANG ON ALL SIDES. TAR PAPER SHALL BE OVERLAPPED A MIN. OF 6-INCHES AT SEEMS.

MISCELLANEOUS METALS

1. ALL BOLTS, THREADED ROD, AND DRIFT PINS USED IN TIMBER CONSTRUCTION SHALL BE HOT-DIPPED GALVANIZED, ASTM A307.
2. ALL WASHERS SHALL BE HOT-DIPPED GALVANIZED, ASTM F436 OVERSIZED WASHERS.
3. ALL STEEL PILE CAP PLATES AND MISCELLANEOUS PLATE STEEL SHALL CONFORM TO ASTM A572, GR. 50 (f_y = 50 KSI MIN.).
4. ALL MISC. STEEL HARDWARE USED IN TIMBER CONSTRUCTION SHALL BE HOT-DIPPED GALVANIZED A36 STEEL (MIN).
5. ALL HOT-DIP GALVANIZING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM A123.
6. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS AND SHALL MEET AWS SPECIFICATION D1.1, LATEST EDITION. ELECTRODES SHALL BE E70XX LOW-HYDROGEN OR APPROVED EQUAL.
7. ALL HOLES AND/OR SLOTS SPECIFIED IN STEEL PLATES AND SHAPES SHALL BE FACTORY DRILLED/CUT OR MAG-DRILLED IN THE FIELD. NO BURNING SHALL BE ALLOWED. ANY CUTTING OR DRILLING PREFORMED AFTER THE FACTORY COATING HAS BEEN APPLIED SHALL BE TOUCH-UP COATED WITH THE MANUFACTURER'S COATING FIELD TOUCH-UP KITS.

GENERAL EXECUTION NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT CONSTRUCTION ACTIVITIES PROCEED IN A SMOOTH LOGICAL SEQUENCE AND IN A MANNER THAT WILL NOT CAUSE ANY DAMAGE TO OR CREATE EXCESSIVE STRESS, LOADS, OR VIBRATIONS ON EXISTING OR PROPOSED STRUCTURES UTILITIES.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE FENCING, BARRICADES, AND SIGNS TO ENSURE SAFETY.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A LEVEL AND STABLE SURFACE ON WHICH EQUIPMENT WILL OPERATE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING ITS OWN PICK/LIFT PROCEDURES INCLUDING, BUT NOT LIMITED TO SAFE PICKING RADII, LIFTING DEVICES, AND SLINGS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE WEIGHT OF EACH PICK AND FOR ENSURING THE STABILITY OF EACH PICK DURING ALL PHASES OF WORK.
7. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO LOCATE AND PROTECT EXISTING UTILITIES IN THE AREA AS REQUIRED. OVERHEAD POWER LINES ADJACENT TO WORK AREAS ARE TO BE SHUT DOWN DURING OPERATIONS WHEN THE CONTRACTOR BELIEVES THEY MAY INTERFERE, OR ARE TOO CLOSE TO THE WORK. WHEN POWER LINES IN THE WORK AREA CAN NOT BE DEENERGIZED, THE CONTRACTOR SHALL MAINTAIN A SAFE DISTANCE AS DETERMINED BY OSHA. ALL UTILITIES SHALL BE LOCATED AND MARKED IN ACCORDANCE WITH OSHA STANDARDS.

SURFACE RESTORATION NOTES

1. ALL PAVEMENT DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. PROTECT PROJECT FEATURES (E.G., WALLS, FENCES, MAIL BOXES, SIGNS, SIDEWALKS, CURBING, STAIRS, WALKWAYS, TREES, ETC.) FROM DAMAGE DURING CONSTRUCTION, INCLUDING PROVIDING TEMPORARY SUPPORTS, WHEN APPROPRIATE.
3. IF REMOVAL OF PROJECT FEATURES IS REQUIRED IN ORDER TO PERFORM THE PROPOSED WORK, REMOVE THOSE SITE FEATURES ONLY UPON APPROVAL OF THE ENGINEER. REPLACE ALL REMOVED PROJECT FEATURES; NEW ITEMS SHALL BE EQUAL OR BETTER IN QUALITY AND CONDITION TO THE ITEMS REMOVED.
4. EXISTING SURVEY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE REPLACED BY A LAND SURVEYOR LICENSED IN THE NEW HAMPSHIRE AT NO ADDITIONAL COST TO THE OWNER.
5. COORDINATE THE ADJUSTMENT OF EXISTING UTILITY STRUCTURES WITH EACH RESPONSIBLE UTILITY OWNER PRIOR TO RECONSTRUCTION AND/OR PAVING OPERATIONS. RAISE ALL STRUCTURES TO FINISHED GRADES PRIOR TO THE END OF THE CONSTRUCTION SEASON AND PRIOR TO FINISHED PAVING.
6. TRANSFER ALL TEMPORARY BENCHMARKS, AS NECESSARY.
7. RESTORE ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE PAYLINE LIMITS TO ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
8. REGRADE ALL UNPAVED AREAS DISTURBED BY THE WORK AS REQUIRED. REPAIR/REPLACE PAVED SURFACES DISTURBED BY THE WORK IN-KIND, UNLESS OTHERWISE NOTED. RESTORE SURFACES TO EXISTING OR PROPOSED CONDITIONS AS INDICATED ON THE DRAWINGS.

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED PROFESSIONAL ENGINEER
4/29/21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

CITY OF PORTSMOUTH INCORPORATED 1849 SEAL

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	General Notes.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

GENERAL NOTES - 2

SCALE: AS SHOWN

G-004

Last Saved: 4/29/2021
Plotted: Apr 29, 2021 - 2:26pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\General Notes.dwg

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Last Saved: 4/29/2021
Plotted: 04/29/2021 - 11:51am By: DGM
Tighe & Bond:J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714_003 C001-C002.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED
PROFESSIONAL ENGINEER
4/29/21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

CITY OF PORTSMOUTH
INCORPORATED
1849

Portsmouth,
New Hampshire

MARK	DATE	DESCRIPTION

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714_003 C001-C002.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

OVERALL SITE PLAN

SCALE: AS SHOWN

C-001

EXISTING CHAINLINK FENCE

EXISTING STONE RIPRAP SLOPE

APPROX. MHW, EL. 4.6

FORMER TIMBER WHARF DEMOLISHED AND REMOVED IN 2019, SEE NOTE 1

N

X -6.6

X -7.4

X -8.7

X -8.7

X -5.7

X -8.9

X -5.1

-5.5

FEMA FLOOD ZONE AE, EL. 8.76 (NGVD29)

APPROX. MLW, EL. -3.48

ABANDONED SEWER LINE

MUD & GRAVEL BEACH

EL. 2.78 1

EL. 2.25 1

EL. 2.05 1

EL. 2.43 1

EL. 2.48 1

EL. 2.12 1

EL. 2.67 1

EL. 3.25 1

EL. 3.17 1

EL. 3.24 1

EL. 1.75 1

EL. 1.50 1

EL. 1.58 1

EL. 0.92 1

EL. 0.33 1

EL. 0.17 1

EL. 0.25 1

EL. -0.17 1

EL. -0.42 1

EL. -0.92 1

EL. -1.75 1

EL. -1.50 1

EL. -1.79 1

EL. -4.38 1

PISCATAQUA RIVER

FLOOD

EBB

EX. OVERHEAD ELECTRICAL LINES (TYP.)

APPROXIMATE CONCRETE SLAB TO BE REMOVED

A

EXISTING CHAINLINK FENCE TO BE REMOVED (TYP.)

B1

RAILING GATE

EXISTING STONE SEAWALL (TYP.)

BIT. PAVEMENT

FEMA FLOOD ZONE AE, EL. 8.76 (NGVD29)

WV

PROJECT TBM MANHOLE FRAME ELEV= 10.5'

SMH#1358

SMH#1357

RESTRICTED LOAD AREA

B

MUD & GRAVEL BEACH

EX. CATCH BASIN, INV. = 0.5'

EXISTING BURIED PIPE, INV. = -9.2'

30"ø RCP OUTFALL

SCALE IN FEET

0 5' 10'

GRAPHIC SCALE

NOTES:

1. THE FORMER TIMBER WHARF AND FOUNDATION HAVE BEEN REMOVED AND ARE SHOWN FOR INFORMATION ONLY. HOWEVER, TIMBER PILE STUBS/REMNANTS MAY REMAIN BELOW THE MUDLINE.

LOAD LIMITATION:

1. LIVE LOADS IN AREA (A) SHALL BE LIMITED TO UNIFORM VERTICAL LIVE LOADS NO GREATER THAN 50 PSF.

2. LIVE LOADS IN AREA (B) SHALL BE LIMITED TO UNIFORM VERTICAL LIVE LOADS NO GREATER THAN 250 PSF.

3. THE SETBACKS SHOWN APPROXIMATELY CORRESPOND TO A DISTANCE EQUAL TO ONE TIMES THE EXPOSED HEIGHT OF SEAWALL.

Last Saved: 4/29/2021
Printed: Thursday, Apr 29, 2021 - 12:02pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714_003 C001-C002.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED PROFESSIONAL ENGINEER
4-29-21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

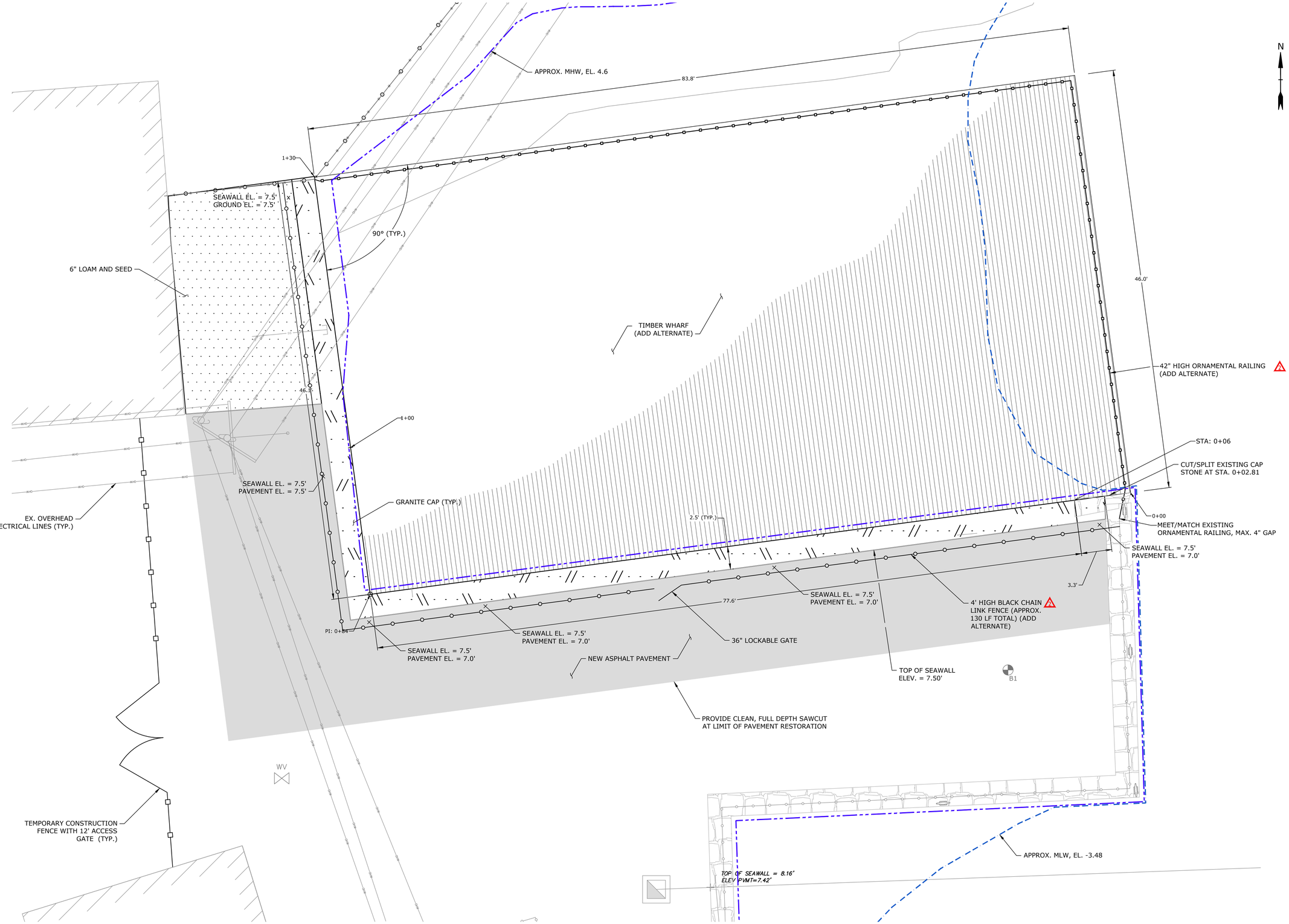
MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714_003 C001-C002.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

EXISTING CONDITIONS PLAN

SCALE: AS SHOWN

C-002



Last Saved: 4/29/2021
Plotted: Thursday, Apr 29, 2021 - 1:19pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED PROFESSIONAL ENGINEER
4/29/21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth,
New Hampshire

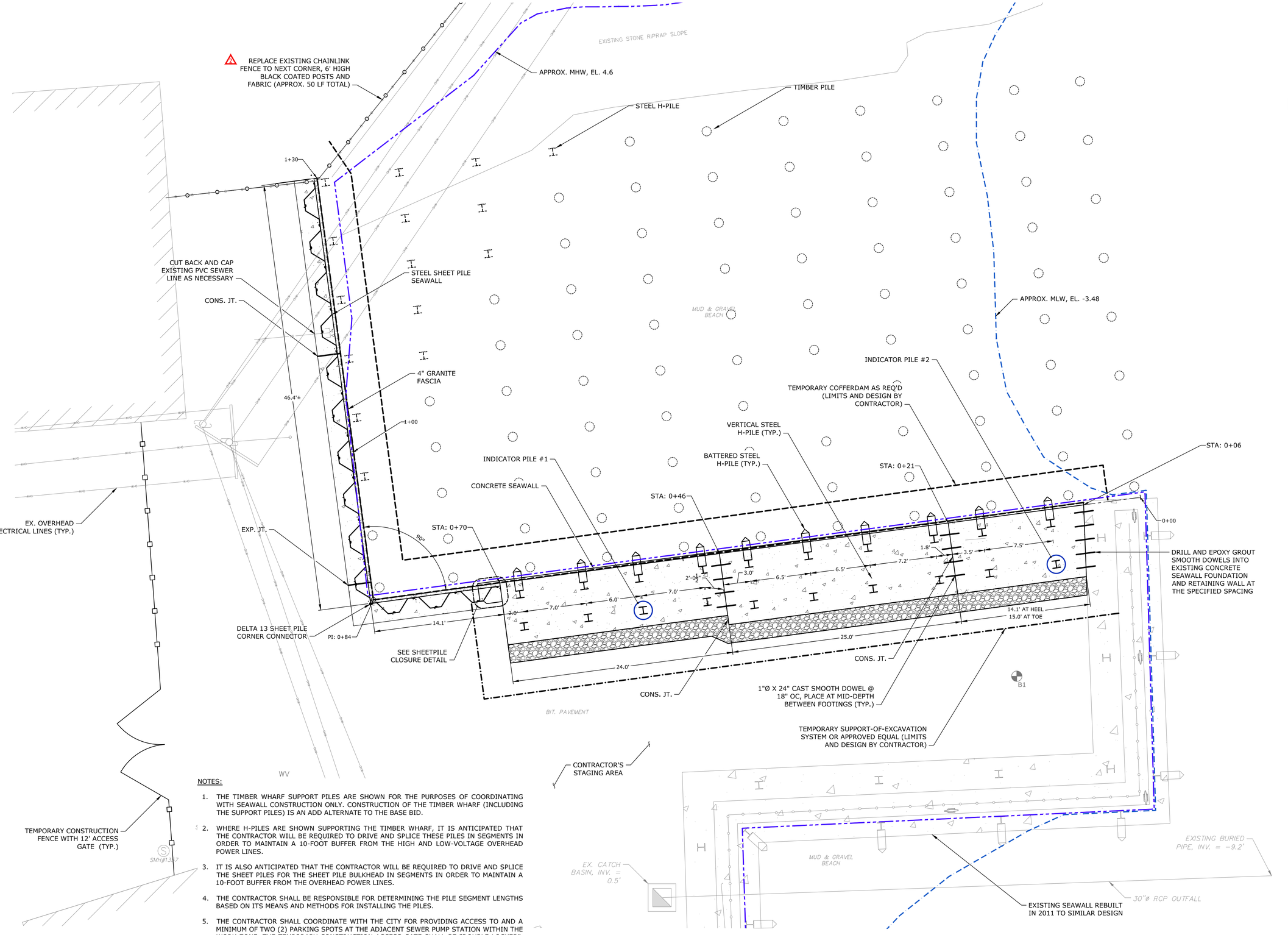
MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

OVERALL IMPROVEMENTS PLAN

SCALE: AS SHOWN

C-100



NOTES:

1. THE TIMBER WHARF SUPPORT PILES ARE SHOWN FOR THE PURPOSES OF COORDINATING WITH SEAWALL CONSTRUCTION ONLY. CONSTRUCTION OF THE TIMBER WHARF (INCLUDING THE SUPPORT PILES) IS AN ADD ALTERNATE TO THE BASE BID.
2. WHERE H-PILES ARE SHOWN SUPPORTING THE TIMBER WHARF, IT IS ANTICIPATED THAT THE CONTRACTOR WILL BE REQUIRED TO DRIVE AND SPLICE THESE PILES IN SEGMENTS IN ORDER TO MAINTAIN A 10-FOOT BUFFER FROM THE HIGH AND LOW-VOLTAGE OVERHEAD POWER LINES.
3. IT IS ALSO ANTICIPATED THAT THE CONTRACTOR WILL BE REQUIRED TO DRIVE AND SPLICE THE SHEET PILES FOR THE SHEET PILE BULKHEAD IN SEGMENTS IN ORDER TO MAINTAIN A 10-FOOT BUFFER FROM THE OVERHEAD POWER LINES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE PILE SEGMENT LENGTHS BASED ON ITS MEANS AND METHODS FOR INSTALLING THE PILES.
5. THE CONTRACTOR SHALL COORDINATE WITH THE CITY FOR PROVIDING ACCESS TO AND A MINIMUM OF TWO (2) PARKING SPOTS AT THE ADJACENT SEWER PUMP STATION WITHIN THE WORK ZONE. THE TEMPORARY CONSTRUCTION ACCESS GATE SHALL BE "DOUBLE LOCKED", AND THE CITY PROVIDED WITH A KEY TO ONE OF THE LOCKS SO THAT IT MAY ACCESS THE SITE AS REQUIRED.

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED PROFESSIONAL ENGINEER
4-7-21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

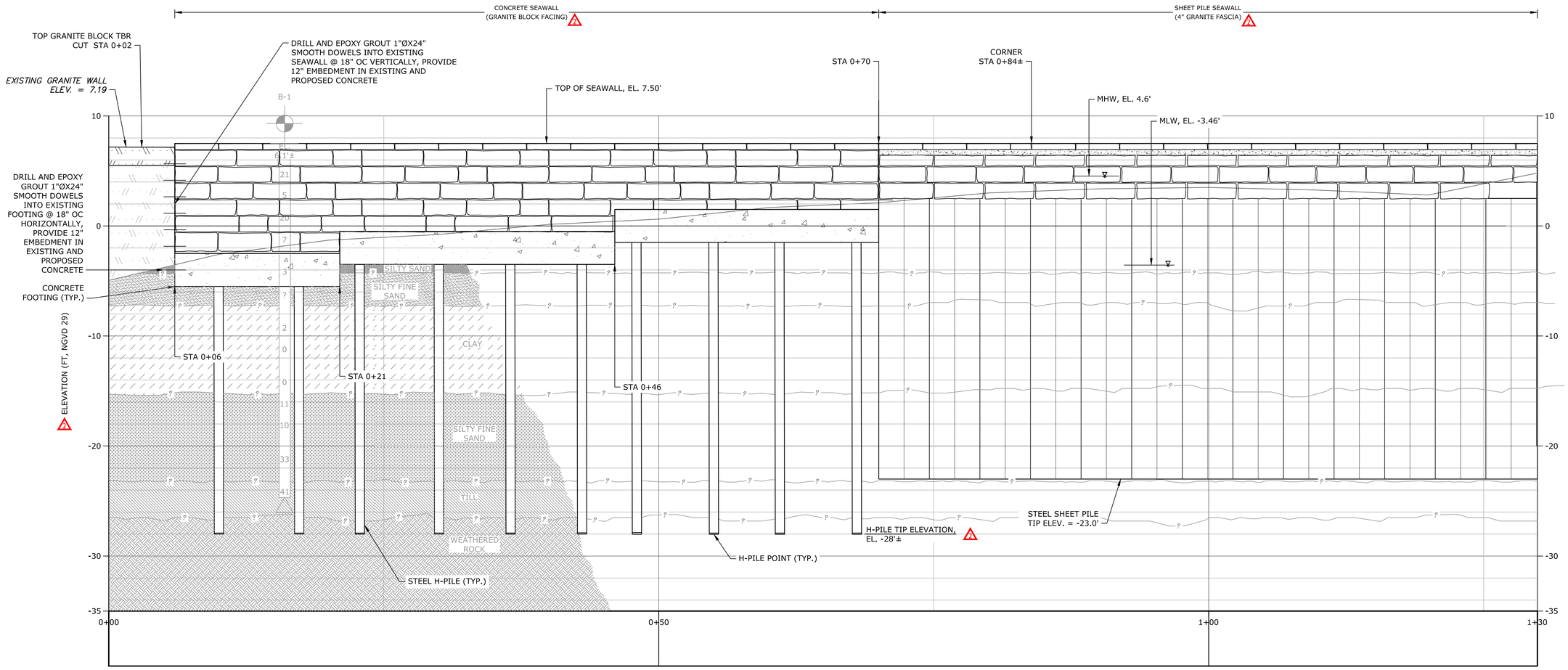
PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

SEAWALL PLAN

SCALE: AS SHOWN

C-101

Last Saved: 4/29/2021
Plotted On: Apr 29, 2021 - 1:20pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings, Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg



SEAWALL ELEVATION VIEW

NOTES:

1. THE SOIL PROFILE SHOWN IS BASED ON SOIL BORING NO. B-1, AS PROVIDED BY OTHERS.
2. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE ELEVATION AND SECTIONS WERE GENERALIZED FROM AND INTERPOLATED BETWEEN SOIL BORINGS. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE SPECIFIC LOCATION AND ON THE DATES INDICATED. SOIL AND ROCK CONDITIONS, AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THE SOIL BORING LOCATIONS.

0 5' 10'
GRAPHIC SCALE

Last Saved: 4/29/2021
Plotted On: Apr 29, 2021 - 1:20pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED
PROFESSIONAL ENGINEER
4/29/21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth,
New Hampshire

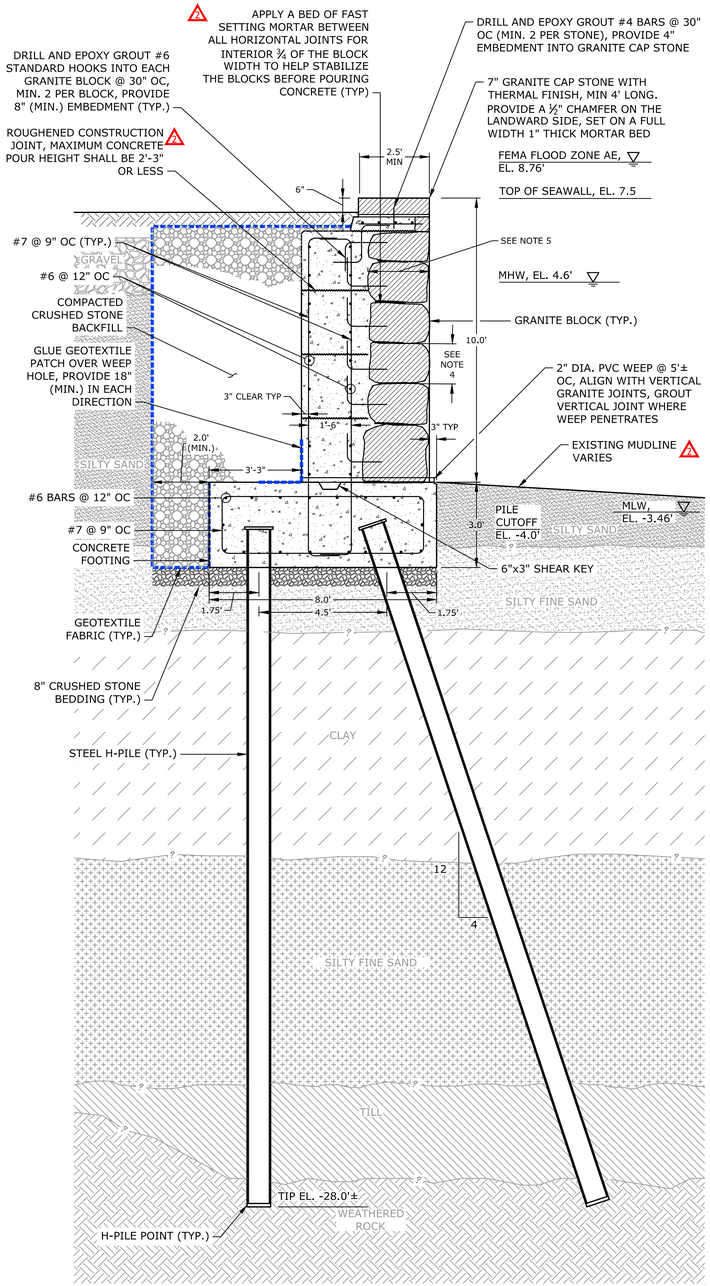
MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

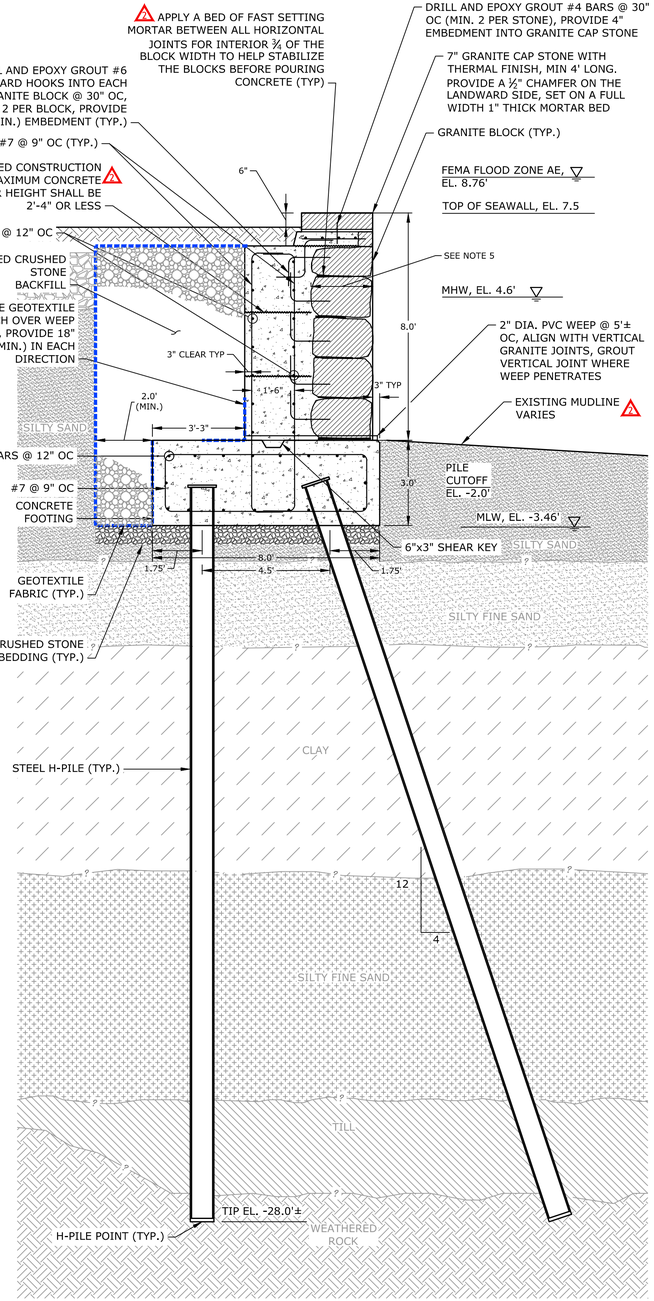
SEAWALL ELEVATION

SCALE: AS SHOWN

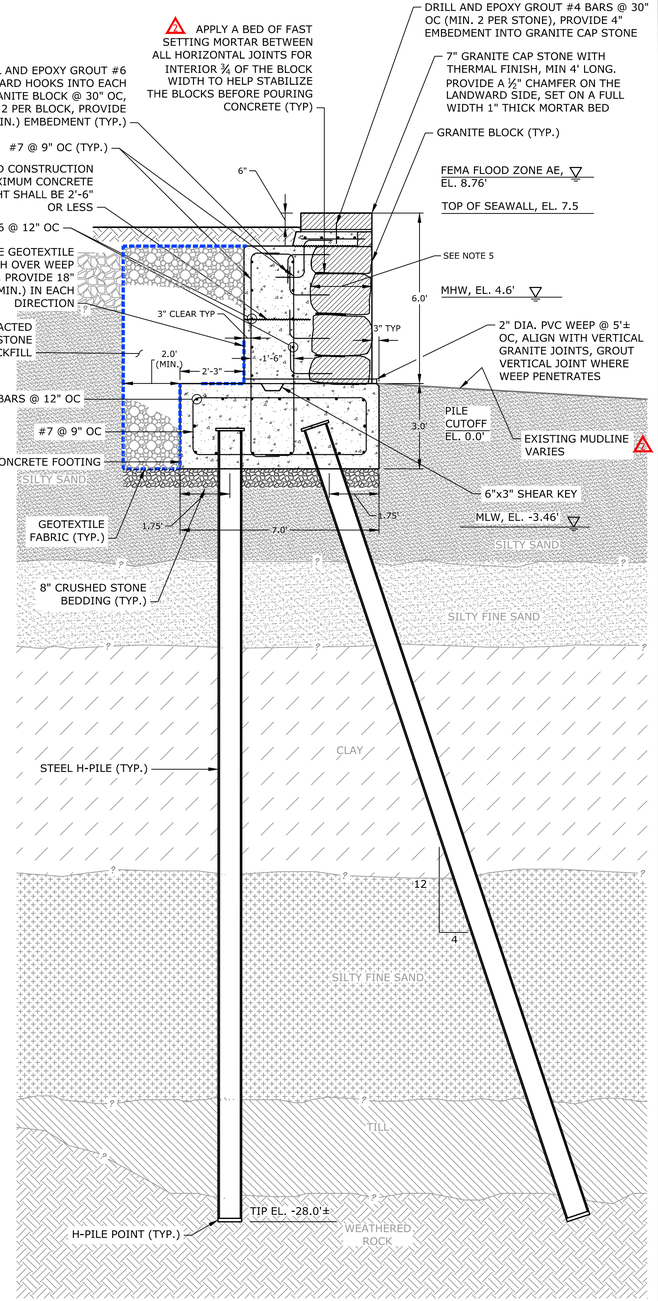
C-301



TYPICAL CONCRETE SEAWALL SECTION STA 0+06 TO STA 0+21



TYPICAL CONCRETE SEAWALL SECTION STA 0+21 TO STA 0+46



TYPICAL CONCRETE SEAWALL SECTION STA 0+46 TO STA 0+70

NOTE:

1. THE SOIL PROFILE SHOWN IS BASED ON SOIL BORING NO. B-1, AS PROVIDED BY OTHERS.
2. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE ELEVATION AND SECTIONS WERE GENERALIZED FROM AND INTERPOLATED BETWEEN SOIL BORINGS. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE SPECIFIC LOCATION AND ON THE DATES INDICATED. SOIL AND ROCK CONDITIONS, AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THE SOIL BORING LOCATIONS.
3. HORIZONTAL REBAR THAT ARE LOCATED AT THE SAME ELEVATION IN THE CONCRETE FOOTINGS AND STEM WALLS SHALL BE CONTINUOUS THROUGH THE CONSTRUCTION JOINTS AND LAP SPLICED WITH BARS IN THE ADJACENT CONCRETE POUR.
4. GRANITE BLOCK HEIGHT SHALL BE 1'- 6" ± 2".
5. GRANITE BLOCK WIDTH SHALL BE 1'-6" MINIMUM AND 2'-6" MAXIMUM.
6. GRANITE BLOCKS FOR CONSTRUCTING THE PROPOSED SEAWALL SHALL BE REUSED FROM THE EXISTING SEAWALL AS AVAILABLE, PROVIDED THAT THEY MEET THE SPECIFIED SIZES AND THE REQUIREMENTS OF SECTION 04400, STONE MASONRY OF THE CONTRACT DOCUMENTS. IF THE SUPPLY OF USEABLE BLOCKS AVAILABLE AT THE SITE IS EXHAUSTED, ADDITIONAL BLOCKS ARE AVAILABLE AT THE DPW'S DESIGNATED STOCKPILE AREA FOR THE CONTRACTOR'S USE. IF THE SUPPLY OF USEABLE BLOCKS AVAILABLE AT THE DPW'S DESIGNATED STOCKPILE AREA IS EXHAUSTED, THE CONTRACTOR SHALL IMPORT NEW BLOCKS THAT SATISFY THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE COST TO LOAD AND TRANSPORT BLOCKS FROM THE DPW'S STOCKPILE AREA, OR TO IMPORT NEW BLOCKS AS REQUIRED, SHALL BE BORNE BY THE CONTRACTOR.
7. THE FINAL APPEARANCE OF THE PROPOSED SEAWALL SHALL BE CONSISTENT WITH THE RECENTLY BUILT PORTIONS OF THE ADJACENT SEAWALL, SO AS TO PROVIDE A UNIFORM AESTHETIC BETWEEN THE OLD AND NEW SECTIONS.

0 2' 4' 6'
SCALE: 3/8"=1'-0"

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE – DAVID A. MURPHY No. 13893 LICENSED PROFESSIONAL ENGINEER

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
2	4/29/2021	ADDENDUM 2

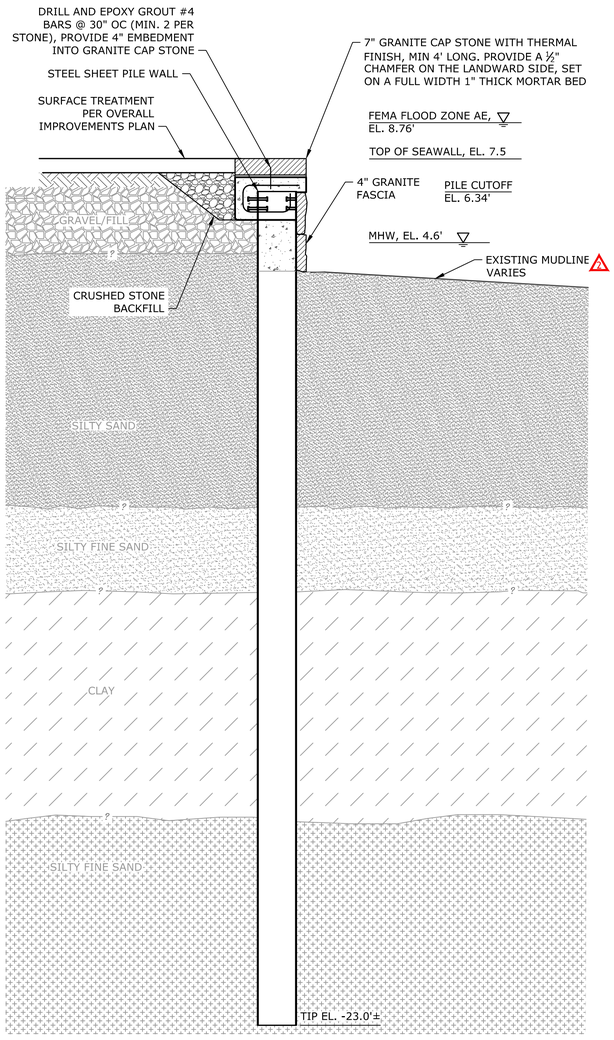
PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

SEAWALL SECTIONS

SCALE: AS SHOWN

C-302

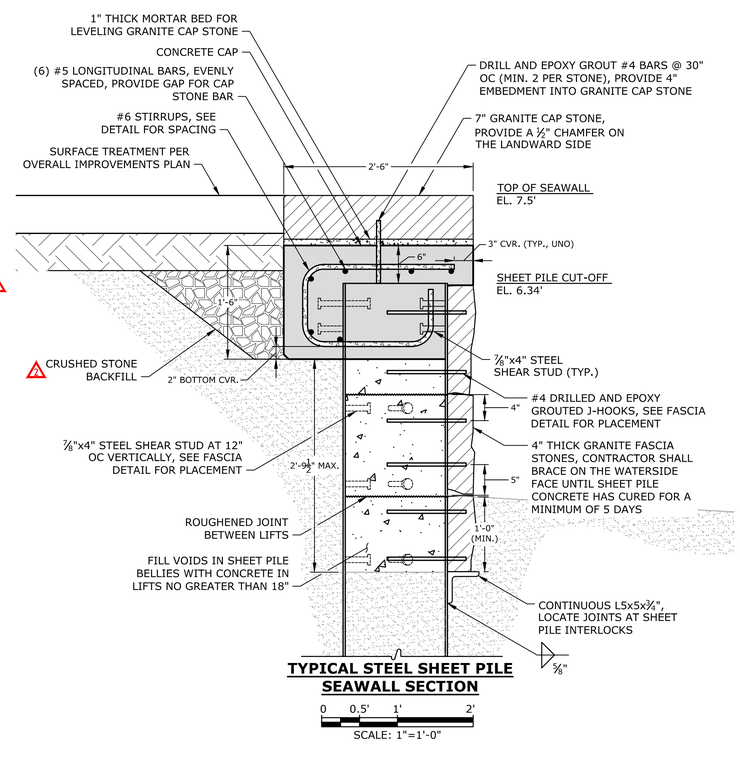
Last Saved: 4/29/2021
Print Date: Apr 29, 2021 - 2:58pm By: DGM
Tighe & Bond: J:\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_ Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg



TYPICAL STEEL SHEET PILE SEAWALL SECTION STA 0+70 TO STA 1+30

0 2' 4' 6'

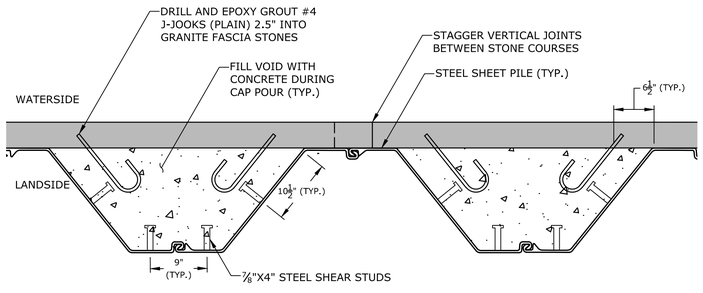
SCALE: 3/8"=1'-0"



TYPICAL STEEL SHEET PILE SEAWALL SECTION

0 0.5' 1' 2'

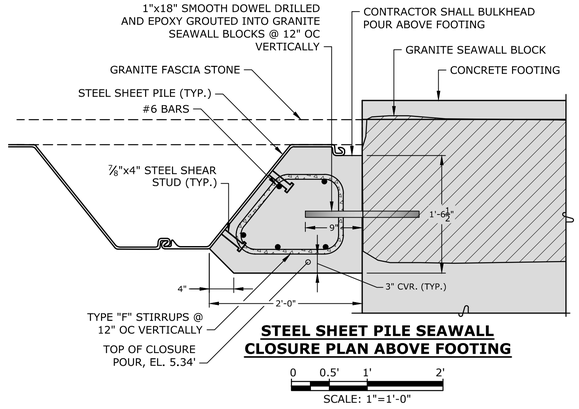
SCALE: 1"=1'-0"



STEEL SHEET PILE SEAWALL FASCIA DETAIL - PLAN

0 0.5' 1' 2'

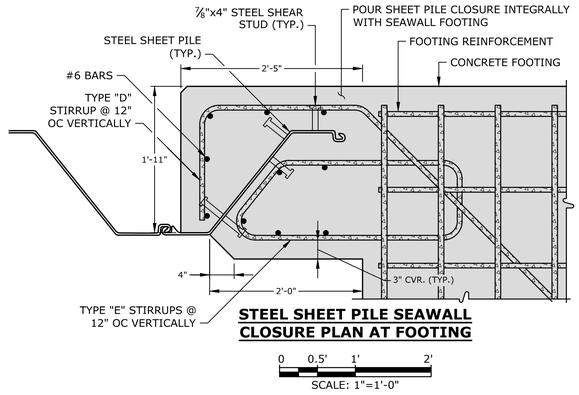
SCALE: 1"=1'-0"



STEEL SHEET PILE SEAWALL CLOSURE PLAN ABOVE FOOTING

0 0.5' 1' 2'

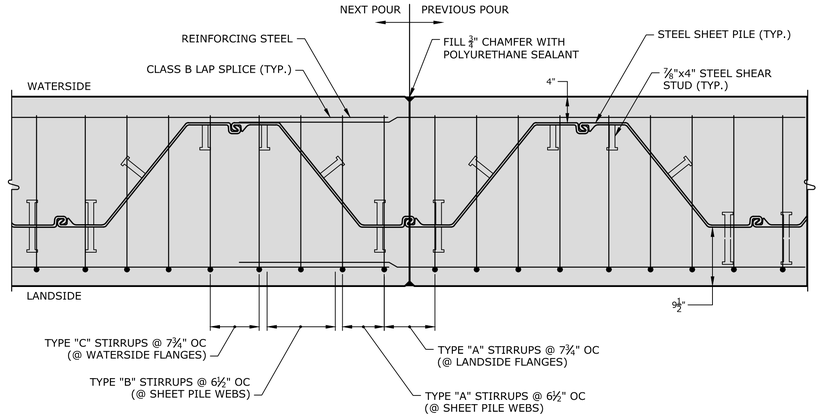
SCALE: 1"=1'-0"



STEEL SHEET PILE SEAWALL CLOSURE PLAN AT FOOTING

0 0.5' 1' 2'

SCALE: 1"=1'-0"



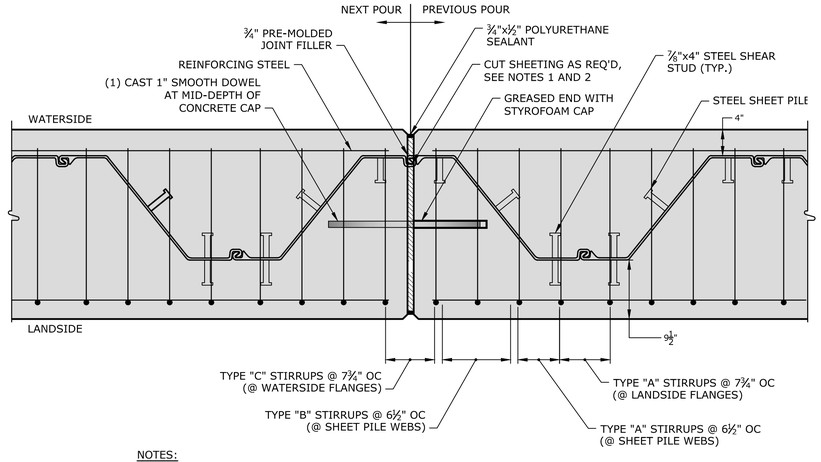
NOTE:

1. THE CONTRACTOR SHALL SAW CUT 1½" DEEP CONTRACTION JOINTS ALONG THE TOP AND VERTICAL FACES OF THE THE CONCRETE CAP AT 5'-0" O.C. BETWEEN ALL EXPANSION/CONSTRUCTION JOINTS. THE SAWCUT JOINTS SHALL BE CLEANED AND FILLED WITH POLYURETHANE SEALANT.

STEEL SHEET PILE SEAWALL CAP CONSTRUCTION JOINT DETAIL

0 0.5' 1' 2'

SCALE: 1"=1'-0"



NOTES:

1. THE CONTRACTOR SHALL CUT 2" WIDE SLOTS IN THE SHEETING FOR THE FULL DEPTH OF THE CONCRETE CAP AT ALL EXPANSION JOINT LOCATIONS.
2. THE CONTRACTOR SHALL PROVIDE A 24" WIDE (MIN) GEOTEXTILE FABRIC PATCH ON THE LANDWARD SIDE OF THE EXPANSION JOINTS TO PREVENT SOIL LOSS THROUGH THE EXPANSION JOINT/SLOT.
3. THE CONTRACTOR SHALL SPLIT THE GRANITE FASCIA STONES AT THE EXPANSION JOINT.

STEEL SHEET PILE SEAWALL CAP EXPANSION JOINT DETAIL

0 0.5' 1' 2'

SCALE: 1"=1'-0"

ISSUED FOR BIDDING

Tighe&Bond
Engineers | Environmental Specialists

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

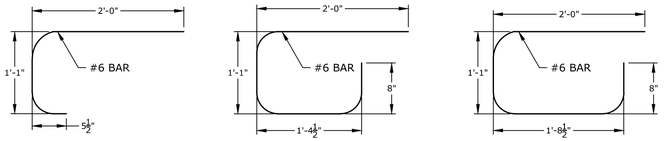
PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

SEAWALL DETAILS - 1

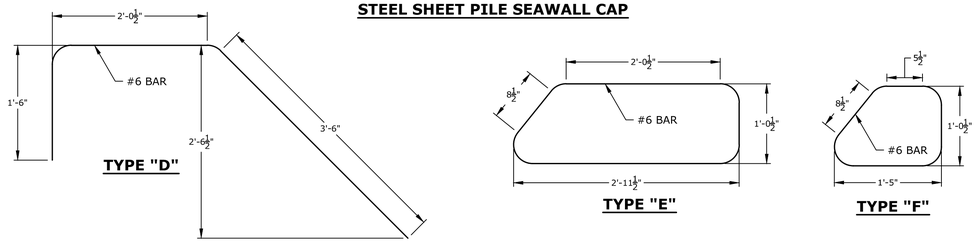
SCALE: AS SHOWN

C-303

Last Saved: 4/29/2021
Printed On: Apr 29, 2021 - 1:21pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings, Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg



STEEL SHEET PILE SEAWALL CAP



STEEL SHEET PILE SEAWALL CLOSURE

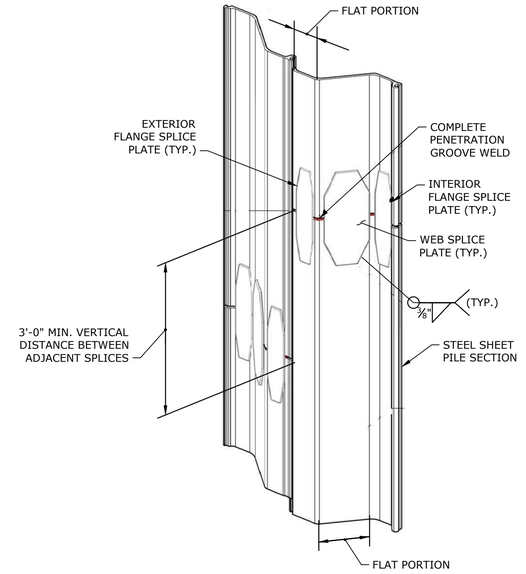
NOTES:

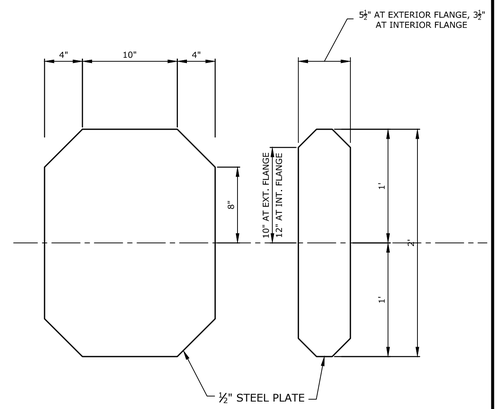
1. ALL DIMENSIONS SHOWN ARE "OUT-TO-OUT".

STEEL SHEET PILE SEAWALL STIRRUP DETAILS

0 0.5' 1' 2'

SCALE: 1"=1'-0"



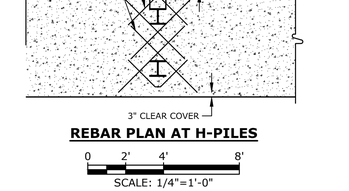


NOTES:

1. STEEL SHEET PILES DO NOT NEED TO BE SPLICED WHERE THE CONTRACTOR HAS SUFFICIENT OVERHEAD CLEARANCE TO INSTALL THE FULL LENGTH SHEET PILE.
2. IF SPLICING IS REQUIRED, THEN THE SHEETS SHOULD BE ORDERED FULL LENGTH FROM THE PRODUCTION MILL. THEY SHOULD BE CUT AND MATCH-MARKED AT THE SITE. THESE SECTIONS SHALL THEN BE SPLICED BACK TOGETHER TO RECONSTRUCT THE ORIGINAL SHEET. THIS PROCEDURE REDUCES THE MISMATCHING OF CROSS SECTIONS AND IMPROVES SECTION GEOMETRY MATCH.
3. IN ORDER TO AVOID CREATING A PLANE OF WEAKNESS IN THE WALL, THE SPLICES ON ADJACENT SHEETS MUST BE STAGGERED BY A MINIMUM OF 3 FEET OR MORE.
4. PROVIDE FLANGE AND WEB PLATES AS SHOWN. LIGHT "SEAL" WELDS AROUND THE PERIMETER OF THE INTERLOCKS WILL HELP PREVENT THE FLOW OF WATER AND SOIL THROUGH THE SPLICE.
5. IN LIEU OF THE DETAIL ABOVE, THE CONTRACTOR MAY UTILIZE A Z-30000 SPLICE KIT SIZED FOR THE SELECTED SHEET PILE, AS MANUFACTURED BY ASSOCIATED PILE OR APPROVED EQUAL. THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING DETAILING THE MANUFACTURED SPLICE, STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW HAMPSHIRE, FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO ORDERING THE SPLICE KITS. NOTES 1 THROUGH 3 SHALL STILL APPLY.

STEEL SHEET PILE SPLICE DETAIL

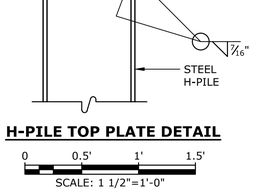
SCALE: NONE



REBAR PLAN AT H-PILES

0 2' 4' 8'

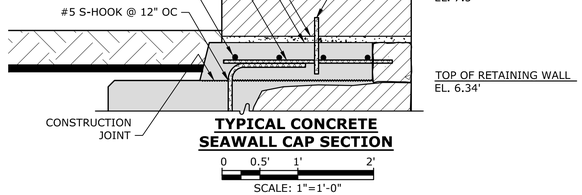
SCALE: 1/4"=1'-0"



H-PILE TOP PLATE DETAIL

0 0.5' 1' 1.5'

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



TYPICAL CONCRETE SEAWALL CAP SECTION

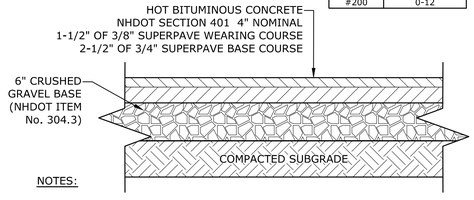
0 0.5' 1' 2'

SCALE: 1"=1'-0"

SEAWALL COATING SCHEDULE			
COMPONENT	COATING TYPE	POINT OF APPLICATION	LIMITS
STEEL H-PILES (SEAWALL)	NONE	N/A	N/A
STEEL H-PILES (WHARF)	BAR RUST 235 OR CORROPIPE, COLOR BLACK, SEE SECTION 09900	SHOP	UPPER ⅔
STEEL SHEET PILES	NONE	N/A	N/A
CHAMPION H-PILE SPLICERS	BAR RUST 235 OR CORROPIPE, COLOR BLACK, SEE SECTION 09900	SHOP	ENTIRE SURFACE
SHEET PILE SPLICE PLATES	NONE	N/A	N/A
GRANITE SUPPORT ANGLE	NONE	N/A	N/A

NHDOT ITEM No. 304.2 (GRAVEL)	
SIEVE SIZE	% PASSING
6"	100
#4	25-70
#200	0-12

NHDOT ITEM No. 304.3 (CRUSHED GRAVEL)	
SIEVE SIZE	% PASSING
3"	100
2"	95-100
1"	55-85
#4	27-52
#200	0-12

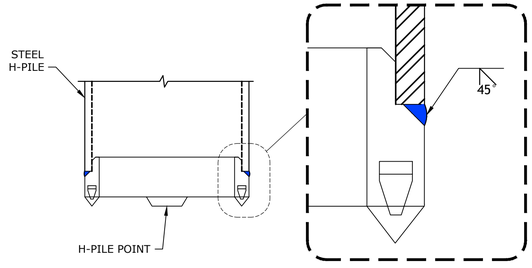


NOTES:

1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
3. REFER TO CITY SPECIFICATIONS FOR ASPHALT MIX DESIGN.

CITY RIGHT-OF-WAY PAVEMENT SECTION

NO SCALE

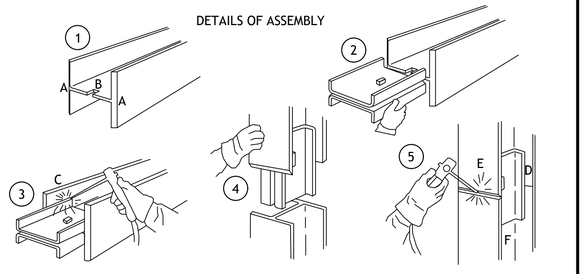


H-PILE POINT CONNECTION NOTES:

1. THE H-PILE POINT SHALL BE HARD-BITE MODEL NO. HP-77600-B, MADE OF CAST STEEL CONFORMING TO ASTM A148 80/80, AS MANUFACTURED BY ASSOCIATED PILE & FITTING, OR APPROVED EQUAL. H-PILE POINTS SHALL BE FLUSH MOUNTED (i.e., POINT DIMENSIONS LESS THAN OR EQUAL TO THE OUTSIDE PILE DIMENSIONS).
2. THE H-PILE SHALL BE TRIMMED TRUE AND SQUARE.
3. THE H-PILE POINT SHALL BE SHOP OR FACTORY INSTALLED.

H-PILE POINT DETAIL

SCALE: NONE



INSTALLATION PROCEDURE:

1. WITH THE PILE IN A HORIZONTAL POSITION ON THE GROUND, SCARF OUTSIDE EDGES OF FLANGES (A) AND TORCH CUT A ⅞" X 2½" NOTCH IN THE WEB (B) TO ACCOMMODATE THE KEY.
2. INSERT THE SPLICER SLEEVE BETWEEN THE PILE FLANGES WITH THE WEB BETWEEN THE CHANNELS. USING A SLEDGE HAMMER, DRIVE THE SLEEVE UNTIL THE KEY SEATS IN THE NOTCH.
3. WELD BOTH FLANGES OF THE CHANNEL (C) TO THE FLANGES OF THE PILE STARTING AT THE EXTREME END OF THE CHANNEL WITH A 5/16" FILLET WELD. ROTATE THE PILE 180 DEGREES AND REPEAT WELD ON THIS SIDE.
4. WHEN A SPLICE IS TO BE MADE, HOIST A PREPARED SECTION ONTO THE EXISTING H-PILE AND GUIDE THE SLEEVE INTO POSITION. TAP THE NEW PILE SECTION TO CLOSE THE GAP BETWEEN THE PILES.
5. WELD THE FLANGES OF THE CHANNEL (D) TO THE FLANGES OF THE PILE WITH A 5/16" FILLET WELD AS IN STEP 3 ON BOTH SIDES. WELD BOTH PILE FLANGES WITH A FULL PENETRATION GROOVE WELD (E). WELD THE WEB OF THE CHANNEL (F) TO THE WEB OF THE PILE WITH A 5/16" X 7" FILLET WELD. REPEAT THIS WELD ON THE TOP AND BOTTOM OF THE CHANNEL, BOTH SIDES OF THE PILE.
7. SPLICER SLEEVE SHALL BE MODEL NO. HP-30000, A572 GR. 50, AS MANUFACTURED/ SUPPLIED BY ASSOCIATED PILE AND FITTING, INC., AND SIZED FOR THE SPECIFIED PILES.

H-PILE SPLICE DETAIL

SCALE: NONE

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

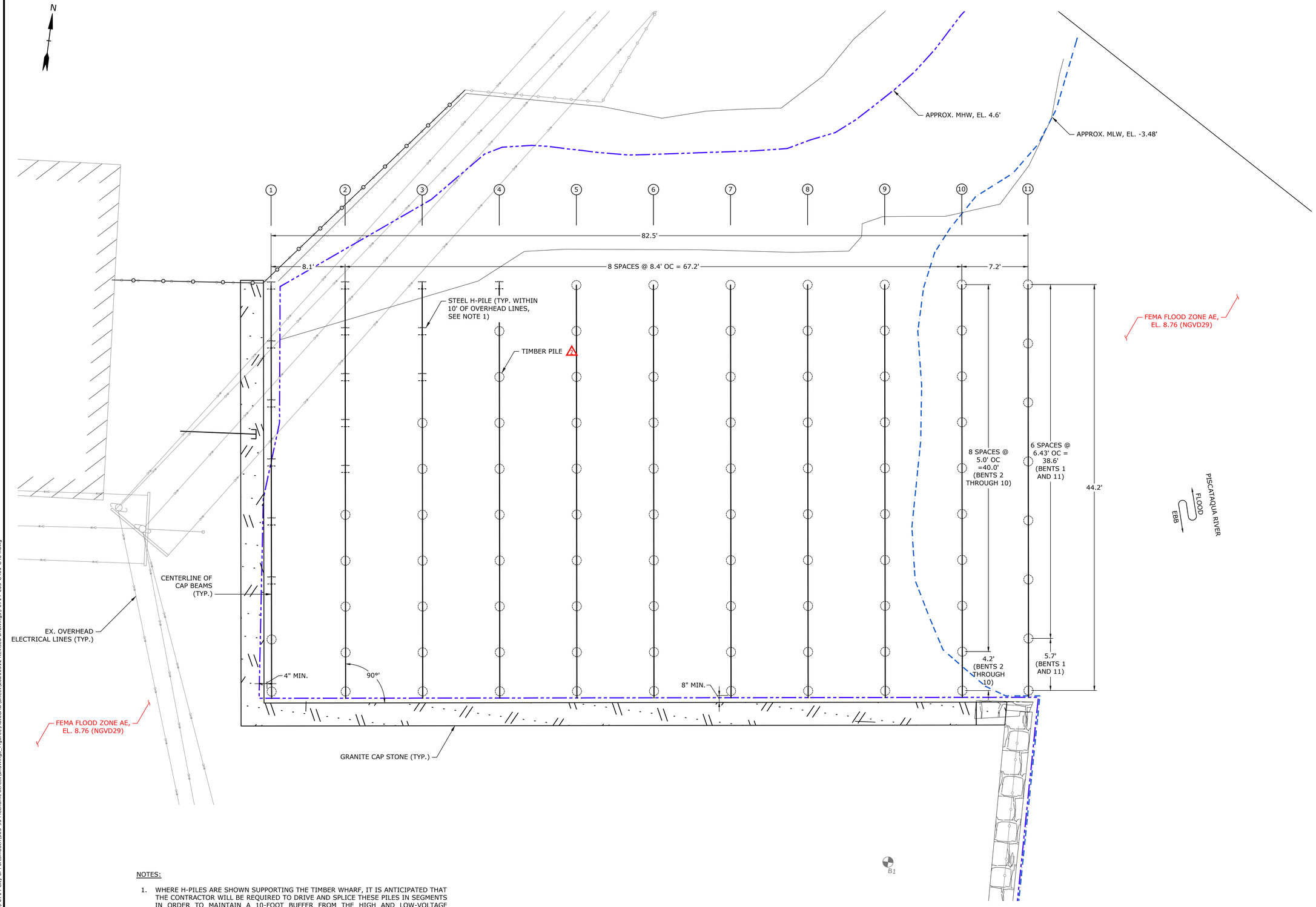
PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

SEAWALL DETAILS - 2

SCALE: AS SHOWN

C-304

Last Saved: 4/29/2021
Printed: Thu, Apr 29, 2021 - 1:22pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings, Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg



NOTES:

1. WHERE H-PILES ARE SHOWN SUPPORTING THE TIMBER WHARF, IT IS ANTICIPATED THAT THE CONTRACTOR WILL BE REQUIRED TO DRIVE AND SPLICE THESE PILES IN SEGMENTS IN ORDER TO MAINTAIN A 10-FOOT BUFFER FROM THE HIGH AND LOW-VOLTAGE OVERHEAD POWER LINES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE PILE SEGMENT LENGTHS BASED ON ITS MEANS AND METHODS FOR INSTALLING THE PILES.

0 5' 10'
GRAPHIC SCALE

Last Saved: 4/29/2021
Plotted On: Apr 29, 2021 - 2:23pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-003-C401-C404.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
4-29-21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

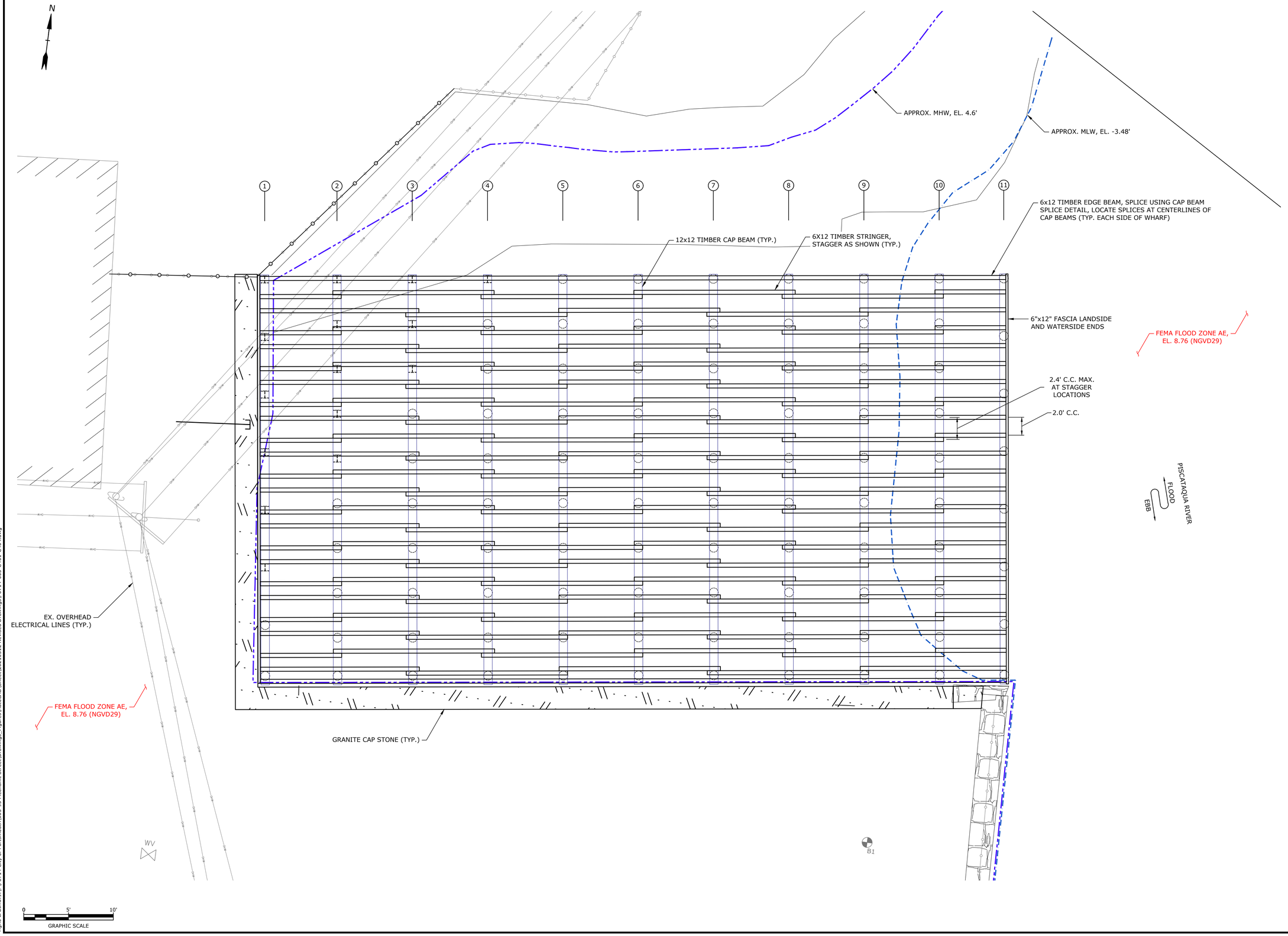
MARK	DATE	DESCRIPTION
2	4/29/2021	ADDENDUM 2

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-003-C401-C404.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

WHARF PILE PLAN (ADD ALTERNATE)

SCALE: AS SHOWN

C-401



Last Saved: 4/29/2021
Plotted On: Apr 29, 2021 - 2:14pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-003-C401-C404.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

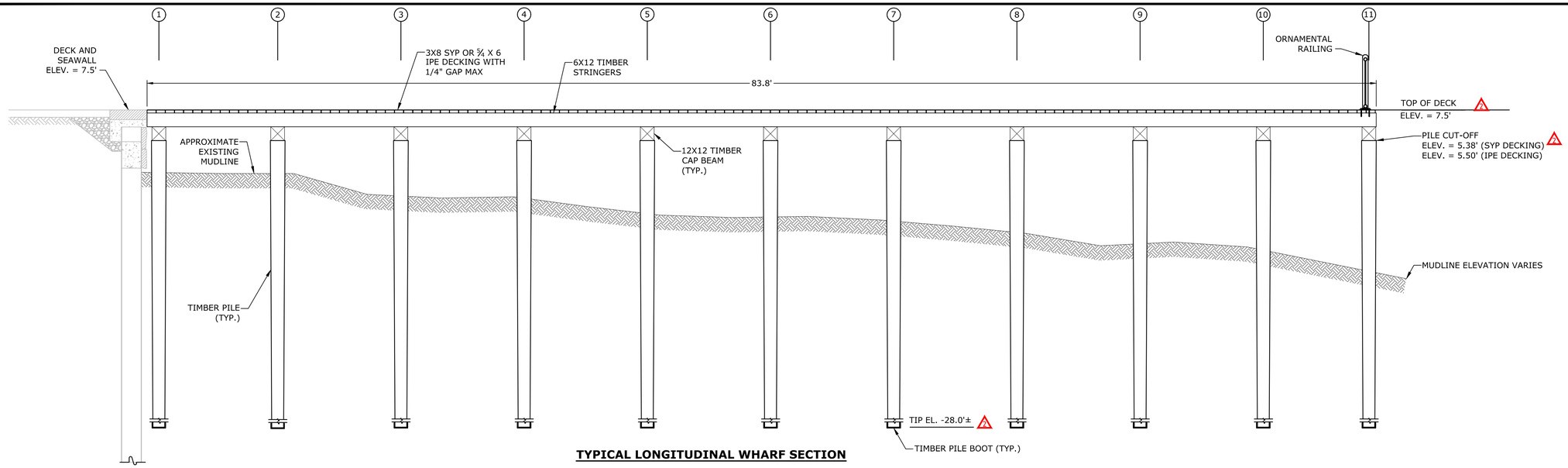
MARK	DATE	DESCRIPTION

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-003-C401-C404.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

WHARF FRAMING PLAN (ADD ALTERNATE)

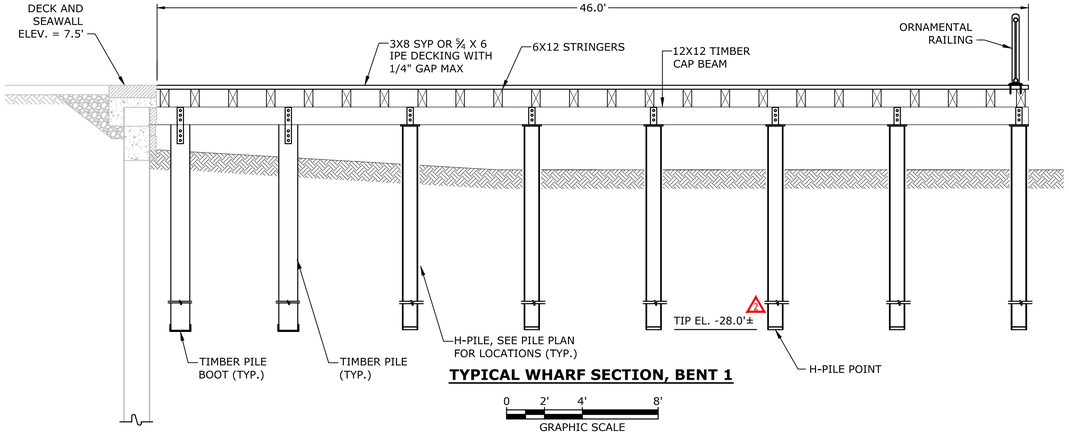
SCALE: AS SHOWN

C-402



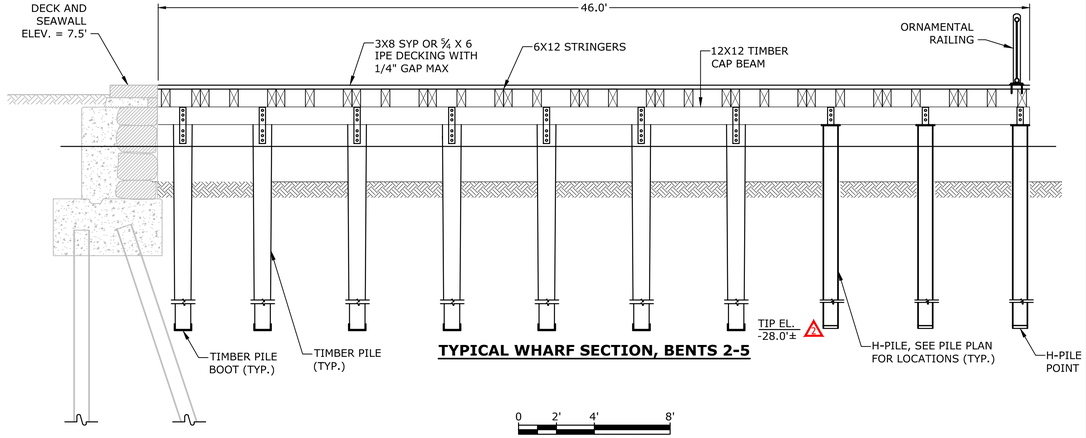
TYPICAL LONGITUDINAL WHARF SECTION

0 2' 4' 8'
GRAPHIC SCALE



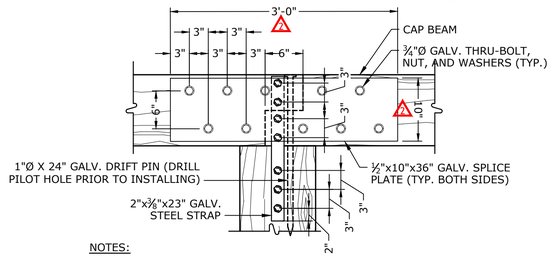
TYPICAL WHARF SECTION, BENT 1

0 2' 4' 8'
GRAPHIC SCALE



TYPICAL WHARF SECTION, BENTS 2-5

0 2' 4' 8'
GRAPHIC SCALE

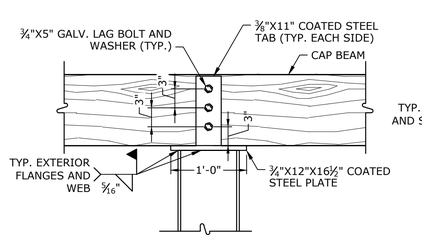


NOTES:

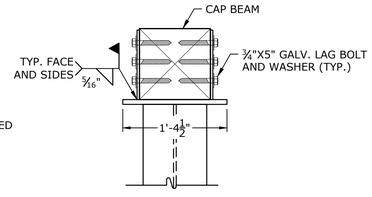
1. CAP BEAM SPLICES SHALL BE LOCATED AT THE WHARF SUPPORT PILES AT 15'-0" OC ALONG THE AXIS OF THE CAP BEAM. SPLICES SHALL BE STAGGERED BETWEEN BENTS.
2. THE GALV. STEEL STRAP, BOLT HEAD, AND WASHER SHALL BE RECESSING INTO THE PILE AND CAP BEAM IN ORDER TO CLEAR THE BACKSIDE OF THE SPLICE PLATE.

TIMBER CAP BEAM SPLICE DETAIL

0 0.5' 1' 2'
GRAPHIC SCALE



ELEVATION



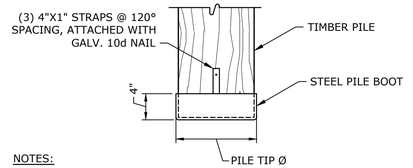
SECTION

NOTES:

1. PROVIDE AN EXTRA SET OF TABS AT CAP BEAM SPLICE LOCATIONS, SPACE 1" FROM THE EDGE OF THE H-PILE CAP PLATE ALONG THE AXIS OF THE CAP BEAM. OMIT STEEL SPLICE PLATE AT THESE LOCATIONS ONLY.

H-PILE TO TIMBER PILE CAP CONNECTION DETAIL

0 0.5' 1' 2'
GRAPHIC SCALE



NOTES:

1. PILE BOOTS SHALL BE MANUFACTURED BY ASSOCIATED PILE AND FITTING INC. OR APPROVED EQUAL, AND SIZED TO FIT THE TIMBER PILE TIP DIAMETER.
2. TIMBER PILE BOOTS SHALL HAVE A WALL THICKNESS OF ¼".

TIMBER PILE BOOT DETAIL

0 0.5' 1' 2'
GRAPHIC SCALE

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4/29/21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

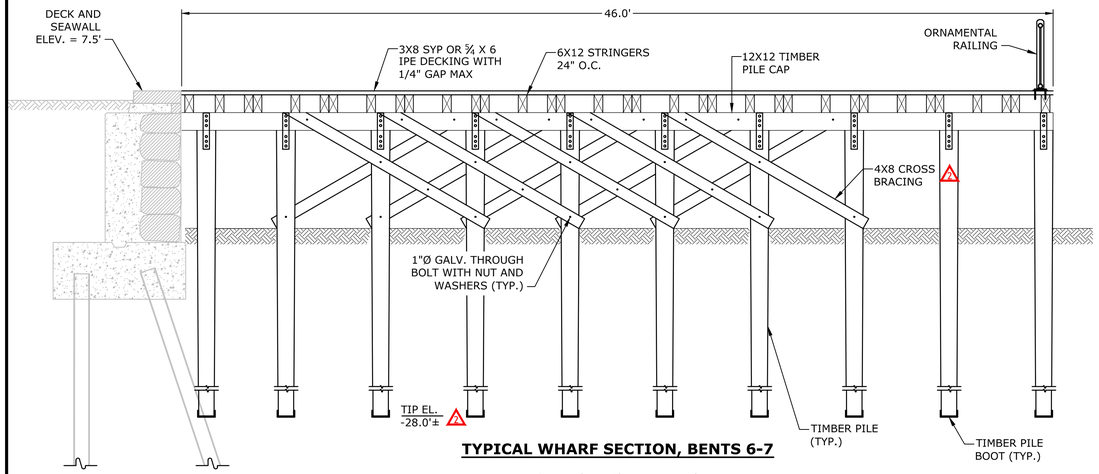
PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-003-C401-C404.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

WHARF SECTIONS AND DETAILS - 1 (ADD ALTERNATE)

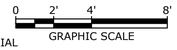
SCALE: AS SHOWN

C-403

Last Saved: 4/29/2021
Plotted: Apr 29, 2021 - 2:16pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-003-C401-C404.dwg

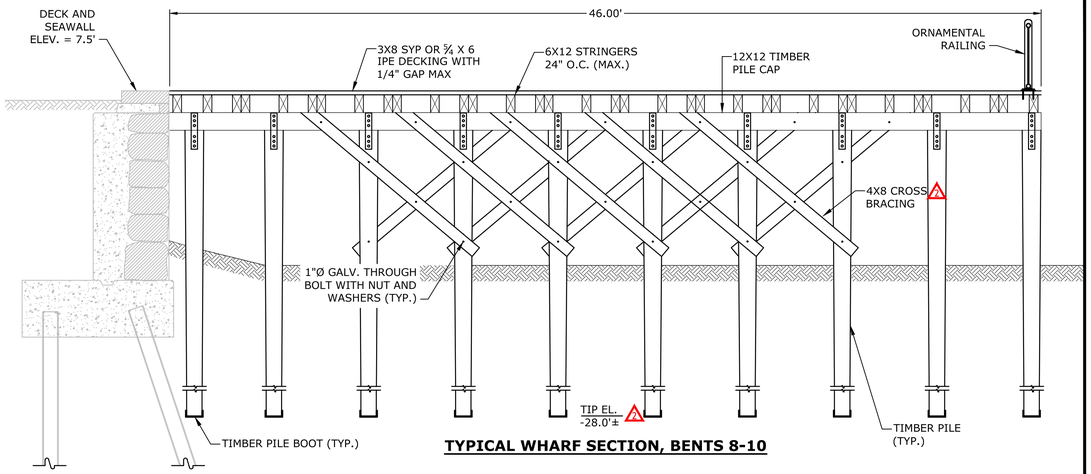


TYPICAL WHARF SECTION, BENTS 6-7

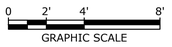


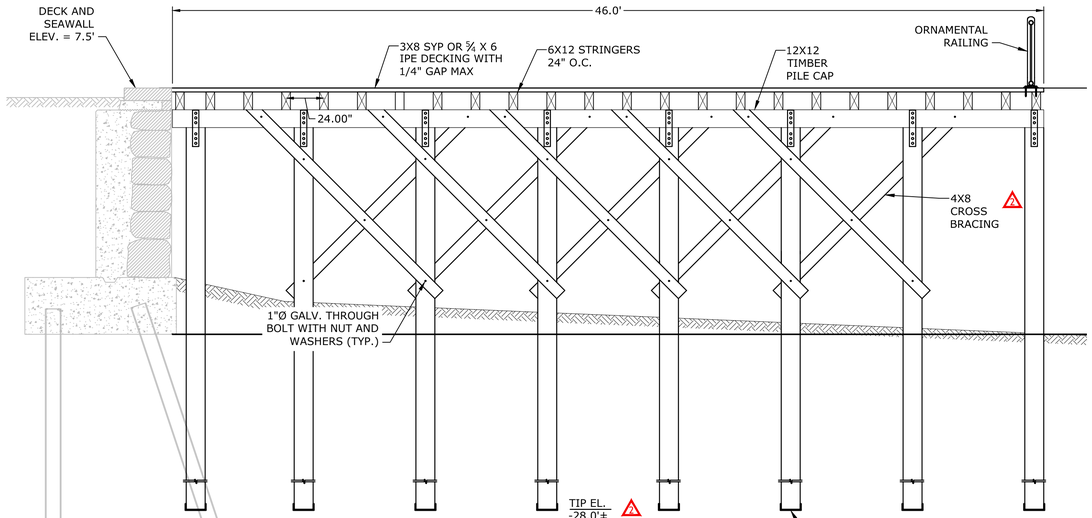
NOTE:

1. FINAL ELEVATION OF WHARF PILES WILL BE DICTATED BY DECKING MATERIAL SELECATION.

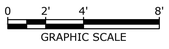


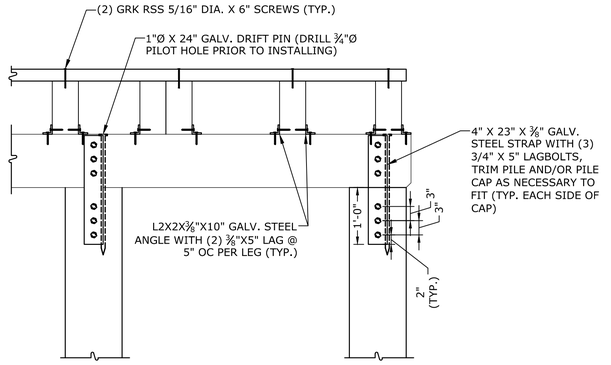
TYPICAL WHARF SECTION, BENTS 8-10



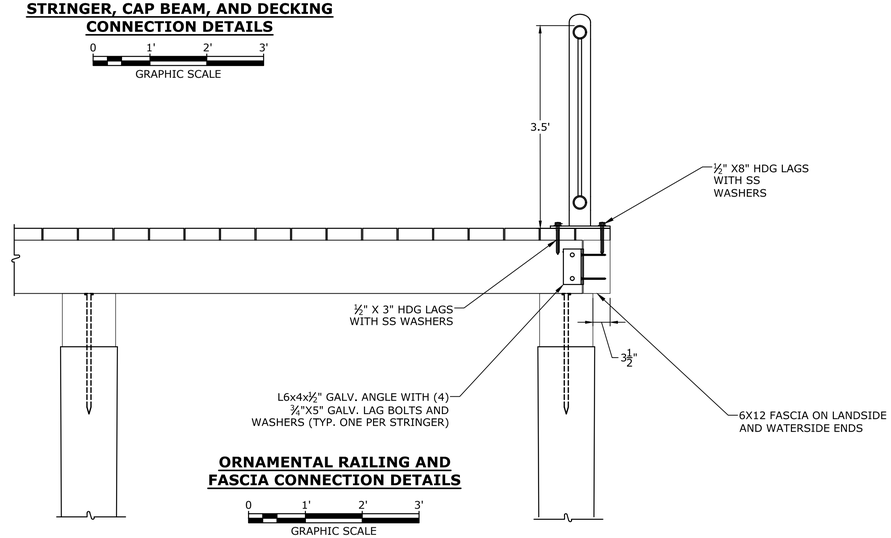


TYPICAL WHARF SECTION, BENT 11

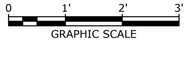


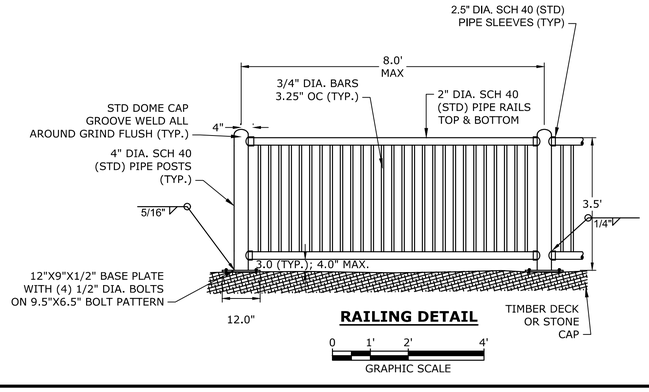


STRINGER, CAP BEAM, AND DECKING CONNECTION DETAILS



ORNAMENTAL RAILING AND FASCIA CONNECTION DETAILS





RAILING DETAIL

RAILING NOTES:

1. FABRICATE THE RAILINGS AS SHOWN. EASE ALL EXPOSED EDGES AND GRIND SMOOTH WELDS (GRIND FLUSH AT GROOVE WELDS) PRIOR TO COATING. IF 3/4" VERTICAL RODS ARE SET INTO HORIZONTAL RAILS, THEN SEAL WELD ALL AROUND. IF 3/4" VERTICAL RODS ARE BUTTED UP TO HORIZONTAL RAILS, THEN 1/4" FILLET WELD ALL AROUND.
2. ON STONE: EPOXY GROUT THE BASED PLATE ANCHORS INTO STONE, PROVIDE 6" EMBEDMENT (TYP). ON TIMBER, PREDRILL FOR LAG BOLTS.
3. PLUMB POSTS, SET RAIL PANELS AND GROUT UNDER BASE PLATES (TYP).
4. FOR HOT DIP GALVANIZED COLOR GALV. COATING BASE BID, PROVIDE ADEQUATE VENTING OF PIPES WHERE HIDDEN FROM VIEW AND SO AS NOT TO TRAP WATER.

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

STATE OF NEW HAMPSHIRE
DAVID A. MURPHY
No. 13933
LICENSED PROFESSIONAL ENGINEER
4/29/21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION
1	4/29/2021	ADDENDUM 2

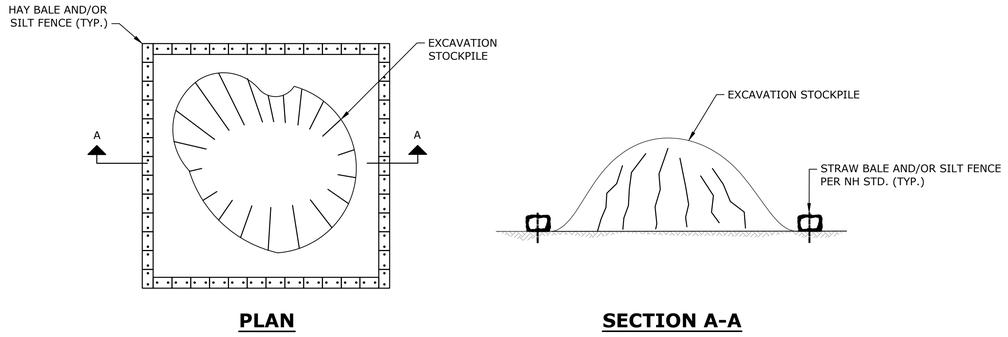
PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-003-C401-C404.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

WHARF SECTIONS AND DETAILS - 2

SCALE: AS SHOWN

C-404

Last Saved: 4/29/2021
Plotted On: Apr 29, 2021 - 2:17pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-003-C401-C404.dwg



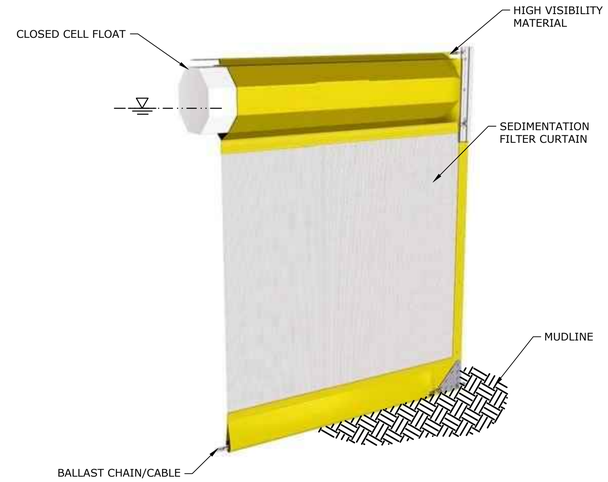
PLAN **SECTION A-A**

NOTES:

1. THE STOCKPILE DETAIL SHOWN IS CONSIDERED TYPICAL AND MAY VARY.
2. SILT SOCKS MAY BE USED IN LIEU OF HAY BALES AND/OR SILT FENCES AT THE CONTRACTOR'S DISCRETION.

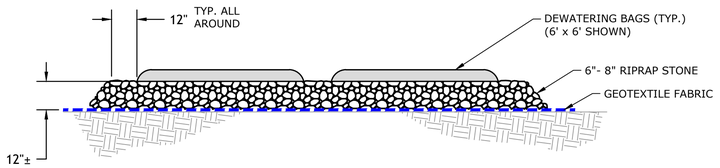
STOCKPILE DETAIL

SCALE: NONE



TURBIDITY BARRIER DETAIL

SCALE: NONE



NOTES:

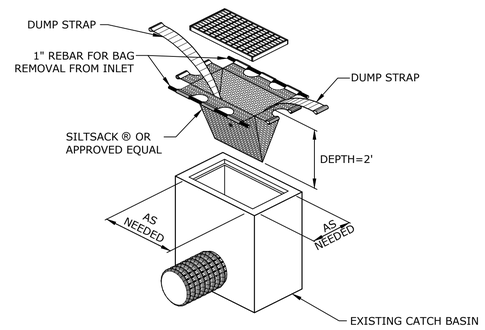
1. SIZE AND QUANTITY OF DEWATERING BAGS TO BE DETERMINED THE IN FIELD.
2. REMOVE DEWATERING BAGS, RIPRAP, AND GEOTEXTILE FABRIC IN THEIR ENTIRETY AT COMPLETION.

DEWATERING BAG DETAIL

SCALE: NONE

SUMP & PUMP DETAIL

SCALE: NONE

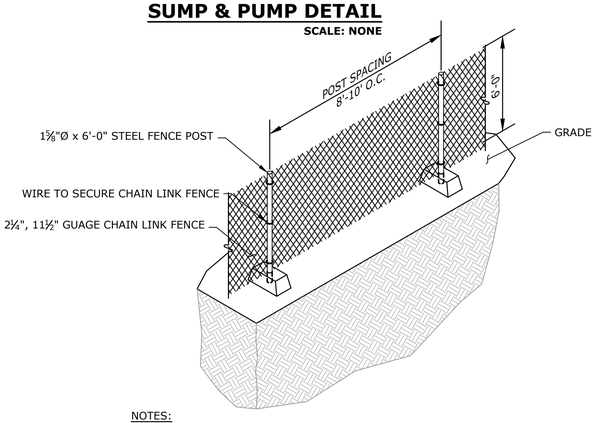


NOTE:

1. SILTSACK MANUFACTURED BY: ACF ENFIRONMENTAL 2831
   CARDWELL ROAD RICHMOND, VIRGINIA 23237

SILTSACK® DETAIL

SCALE: NONE



NOTES:

1. SUPPORT THE FENCE POSTS UTILIZING FENCE POST BASES AS REQUIRED.
2. DOUBLE GATES SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS. PROVIDE FENCE POSTS AS REQUIRED TO SUPPORT THE PROPOSED GATES.

TEMPORARY SECURITY FENCE DETAIL

SCALE: NONE

Last Saved: 4/29/2021
Plotted On: Apr 29, 2021 - 1:22pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings. Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
4-29-21

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth,
New Hampshire

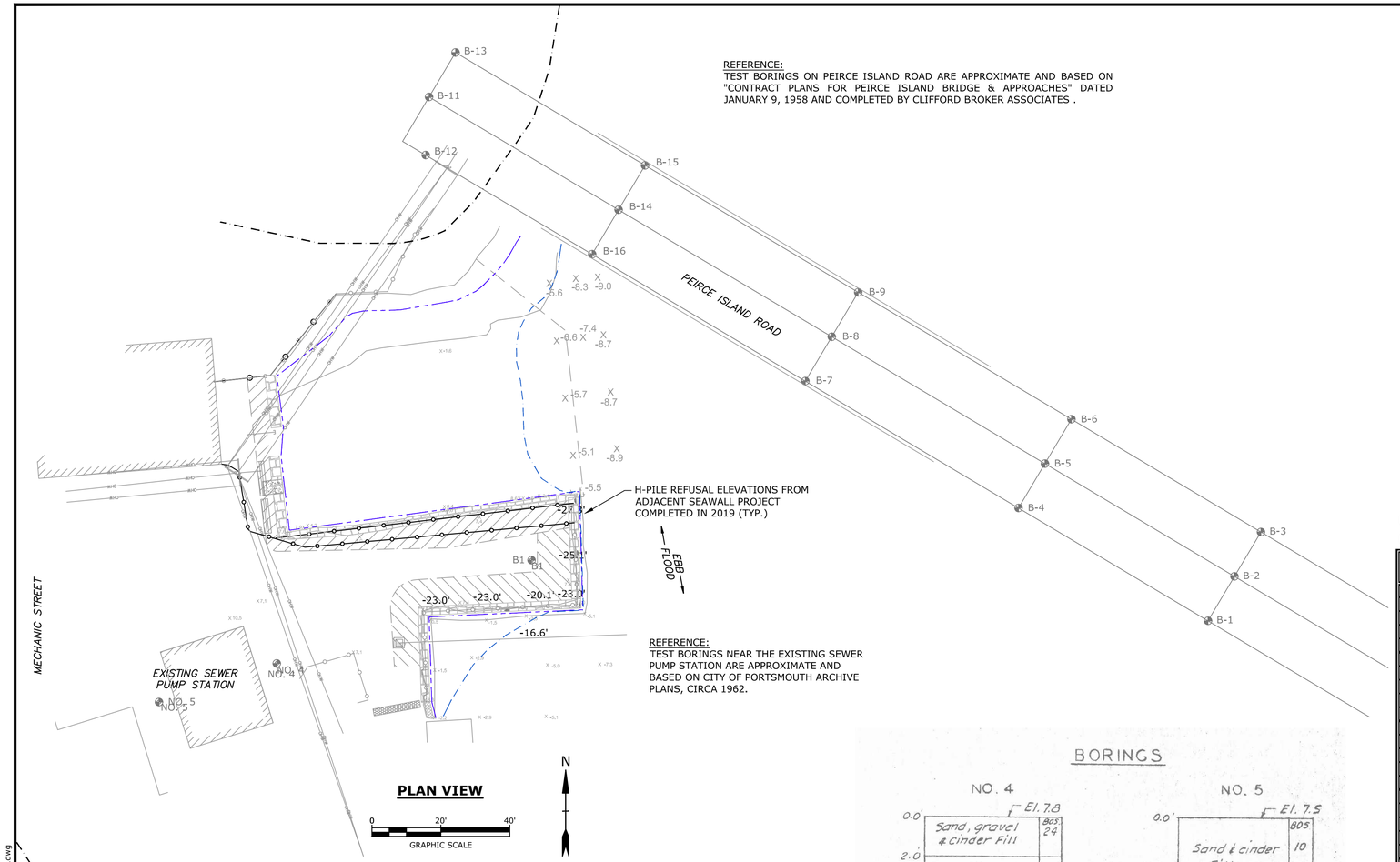
MARK	DATE	DESCRIPTION

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

EROSION AND SEDIMENT CONTROL DETAILS

SCALE: AS SHOWN

C-501

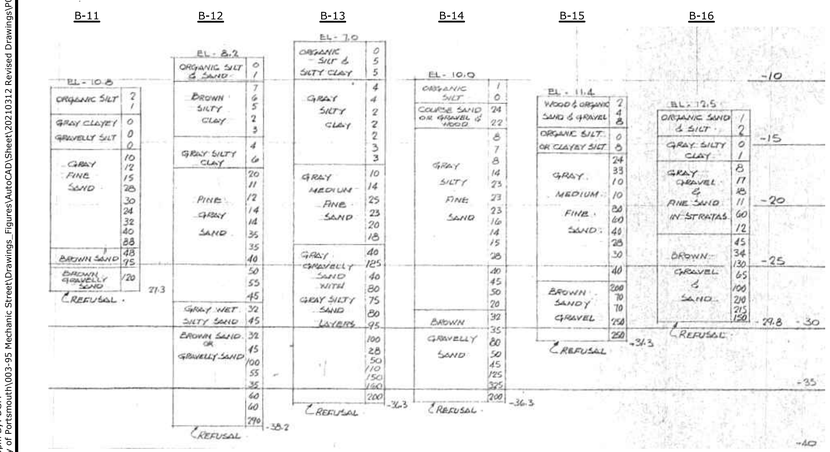


REFERENCE:
TEST BORINGS ON PEIRCE ISLAND ROAD ARE APPROXIMATE AND BASED ON "CONTRACT PLANS FOR PEIRCE ISLAND BRIDGE & APPROACHES" DATED JANUARY 9, 1958 AND COMPLETED BY CLIFFORD BROKER ASSOCIATES .

H-PILE REFUSAL ELEVATIONS FROM ADJACENT SEAWALL PROJECT COMPLETED IN 2019 (TYP.)

REFERENCE:
TEST BORINGS NEAR THE EXISTING SEWER PUMP STATION ARE APPROXIMATE AND BASED ON CITY OF PORTSMOUTH ARCHIVE PLANS, CIRCA 1962.

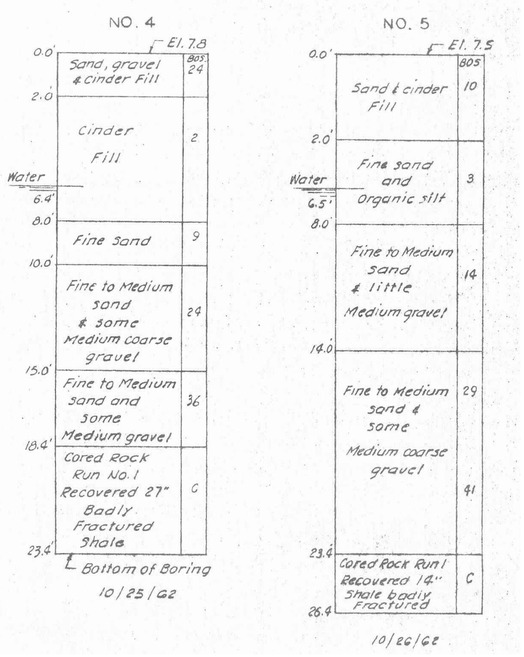
PLAN VIEW



TEST BORING DATA FOR PEIRCE ISLAND ROAD

REFERENCE:
TEST BORING DATA FOR PEIRCE ISLAND ROAD IS FROM "CONTRACT PLANS FOR PEIRCE ISLAND BRIDGE & APPROACHES" DATED JANUARY 9, 1958 AND COMPLETED BY CLIFFORD BROKER ASSOCIATES.

DISCLAIMER NOTE:
TEST BORINGS RENUMBERED ABOVE DUE TO TEST BORING #10 MISSING FROM PLAN IN ABOVE REFERENCE.



TEST BORING DATA FOR EXISTING SEWER PUMP STATION

RECORD OF SUBSURFACE EXPLORATION BY STANDARD PENETRATION TEST

Boring No.: **Test Boring B1 (outer)** Prepared by: **Waterfront Engineers LLC**

Project: **Mechanic St Seawall Replacement, Portsmouth** Date of Boring: **May 14, 2009**

Drilling Company: **Miller Engineering & Testing, Inc.** Engineer: D. Mellor

DESCRIPTION	DEPTH	BLOWS PER 6"	N	BEARING CAPACITY*	REMARKS
SURFACE GRAVEL		7,10			
BROWN GRAY GRAVEL & CRUSHED STONE		11,5	21		STONE IN TIP
FILL GRAY SILTY SAND TRACE ASH COAL		5,2			
		3,3	5		
	5'	5,9			
FILL BRICK CINDERS GRAVEL		11,8	20		
		28,5			
BLACK FILLORGANICS WOOD SHELL FRAGMENTS		2,2	7		SALT MARSH ORG
GRAY FINE SAND					
		1,2			
	10'	1,10	3	1 TSF	WOOD IN TIP
DARK GRAY SILTY FINE SAND		2,13			
ORGANICS TRACE WOOD		54,15	?	0.3 TSF	PUSHING STONE?
GRAY & YELLOW SILTY CLAY WITH FINE SAND LENSES		1,1		0.25 TSF	
SOFT GRAY BLUE CLAY	15'	1,1	2		
		WOR 24"	0		
		WOR,WOH			
	20'	WOH,1	0		
		WOH,3			
GRAY SILTY FINE SAND		8,8	11		
		WOR,3			
	25'	7,7	10		
		10,15			
GRAY FINE SAND TRACE COARSE SAND		18,21	33		
		9,14			
TILL YELLOW GRAY	30'	27,14	41		TOP WEATHERED ROCK
	35'				
	40'				
	45'				
	50'				
	55'				

* Approximate bearing capacity by pocket penetrometer on disturbed split spoon sample, tons/sf

TEST BORING DATA 2011 SEAWALL REPLACEMENT

Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR BIDDING

DAVID A. MURPHY No. 13933 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

95 Mechanic Street Seawall & Wharf Replacement

City of Portsmouth

Portsmouth, New Hampshire

MARK	DATE	DESCRIPTION

PROJECT NO:	P-0714-003
DATE:	MARCH 24, 2021
FILE:	P0714-008-C-SITE.dwg
DRAWN BY:	JAK
CHECKED:	GC
APPROVED:	DAM

HISTORICAL BORING AND LOGS

SCALE: AS SHOWN

C-900

Last Saved: 4/29/2021
Plotted: Apr 29, 2021 - 1:23pm By: DGM
Tighe & Bond: J:\P\P0714 City of Portsmouth\003-95 Mechanic Street\Drawings_Figures\AutoCAD\Sheet\20210312 Revised Drawings\P0714-008-C-SITE.dwg