SURVEY NOTES:	∧ 7. PILE TIP ELEVATIONS & CAPACITIES
<ol> <li>SURVEYOR: M. COUNT, J. HILL &amp; M. COUNT, H. CHOUINARD</li> <li>VESSEL: CLE OLAF</li> </ol>	$\frac{1}{24" \ \text{@ x } 34" \ \text{STEEL PIPE PILES}}{\frac{24" \ \text{@ x } 34" \ \text{STEEL PIPE PILES}}{\frac{34'' \ \text{GROUND ANCHORS}}{\frac{34'' \ \text{GROUND ANCHORS}}}$ $\frac{275 \ \text{TON ULTIMATE CAPACITY (EST. LENGTH = 75')}}{\frac{403.30 \ \text{KIPS DESIGN LOAD}}{\frac{36}{30} \ \text{KIPS DESIGN LOAD}}$
3. TRANS./FATH.: ODOM CVM, 200 KHZ TRANSDUCER, TRIMBLE RTK W/ KEYNET	AZ19-700 SHEET PILES AZ14-770 SHEET PILES MIN. TIP EL. = -35.50' MIN. TIP EL. = -28.75'
4. WEATHER COND: SUNNY, 63 DEGREES, WIND 0-5 KTS & SUNNY, 35 DEGREES, WIND 5-10 KTS	12"Ø GREENHEART NORTH FLOAT PILES MIN. TIP EL. = -27.00"
5. DATA REDUCTION: 1' DATA SORT	12"Ø GREENHEART BERTHING PILESMIN. TIP EL. = -27.00'12"Ø GREENHEART GANTRY PILESMIN. TIP EL. = -27.00'
<ol> <li>RESULTS OF HYDROGRAPHIC &amp; TOPOGRAPHIC SURVEY BY FOTH INFRASTRUCTURE &amp; ENVIRONMENT, LLC. (FOTH) ON 10/24/2019 (HYDRO), 10/25/2019, 4/2/2021, &amp; 5/10/2022 (TOPO).</li> </ol>	12"Ø GREENHEART FENDER PILES (FIXED TO BULKHEAD) MIN. TIP EL. = -23.70'
<ol> <li>ELEVATIONS AND SOUNDINGS ARE IN FEET AND TENTHS, AND REFER TO THE MLW DATUM.</li> <li>DATUM CONVERSIONS SHOWN WERE CALCULATED USING VDATUM 4.1.2 AT THE PROJECT SITE (LAT</li> </ol>	12"Ø CCA PIER PLUMB PILES       11 TON ULTIMATE CAPACITY (EST. LENGTH = 50')         12"Ø CCA PIER BATTERED PILES       6 TON ULTIMATE CAPACITY (EST. LENGTH = 50')
-70.00566, LONG: 41.80346) 9. COORDINATES ARE BASED ON NAD83 MASSACHUSETTS MAINLAND STATE PLANE GRID SYSTEM.	* CONTRACTOR SHALL CONFIRM REQUIRED PILE LENGTHS
<ol> <li>PROJECT BENCHMARK IS DISK LOCATED AT ROUTE 6 ROTARY STAMPED "424 G" PUBLISHED EL. +13.23' NAVD88 (+18.94' MLW).</li> </ol>	8. THE STRUCTURES HAVE BEEN DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER CONSTRUCTION IS COMPLETE. THE STABILITY OF THE STRUCTURES PRIOR TO COMPLETION IS
11. SITE BENCHMARK IS DRILLHOLE IN CONCRETE SIDEWALK EL. +9.81 NAVD88 (+15.52' MLW) (HELD) 12. RTK CORRECTIONS: RTK CORRECTIONS FOR THIS SURVEY PROVIDED BY KEYNET - VRS.	SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THIS RESPONSIBILITY EXTENDS TO RELATED ASPECTS OF THE CONSTRUCTION ACTIVITY INCLUDING, BUT NOT LIMITED TO, ERECTION METHODS,
<ol> <li>BENCHMARK / RTK TIDES: TIDES ARE RECORDED USING RTK TIDES IN HYPACK. ELEVATIONS FROM ELLIPSOID TO ORTHOMETRIC NAVD88 USE GEOID 12A.</li> </ol>	ERECTION SEQUENCE, CONNECTIONS, TEMPORARY BRACING, FORMS, SHORING, USE OF EQUIPMENT, AND SIMILAR CONSTRUCTION PROCEDURES. REVIEW OF CONSTRUCTION BY THE
<ol> <li>PROJECT SITE IS IN FEMA ZONE VE 17 AND ZONE AE 14 NAVD88 IN ACCORDANCE TO FEMA FIRM #25001C0417J, EFFECTIVE DATE JULY 16, 2014.</li> </ol>	OWNER AND ENGINEER OF RECORD IS FOR GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS ONLY. LACK OF COMMENT BY THE OWNER AND ENGINEER OF RECORD WITH REGARD
<ol> <li>PROPERTY LINES ARE REPRESENTED BY THE LATEST FROM THE DATABASE INFORMATION BASED ON MA GIS AS OF MARCH 31, 2021 AND HAVE NOT BEEN LOCATED BY SURVEY.</li> </ol>	TO CONSTRUCTION PROCEDURES SHALL NOT BE INTERPRETED AS APPROVAL OR ACCEPTANCE OF
<ol> <li>THE INFORMATION DEPICTED ON THIS PLAN SET REPRESENTS THE RESULTS OF SURVEYS ON THE DATES SHOWN, AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THAT</li> </ol>	SUCH PROCEDURES.
TIME.INTERPOLATED INFORMATION FROM BETWEEN SOUNDING RUNS IS NOT GUARANTEED.	
SHOALS, OBSTRUCTIONS OR OTHER DIFFERING CONDITIONS MAY EXIST BETWEEN THESE RUNS. CONSULT WITH FOTH ENGINEERING FOR MORE DETAILED INFORMATION.	<ol> <li>NO GUARANTEE TO THE ACCURACY OF THE REFERENCE DOCUMENTS IS PROVIDED HEREIN AND THE CONTRACTOR SHALL RELY ON HIS OWN FIELD VERIFICATION FOR ITEMS SO REQUIRED.</li> </ol>
17. POSSESSION AND USE OF THE MATERIAL CONTAINED ON THESE DRAWINGS IS GRANTED ONLY IN CONNECTION WITH ITS USE AS IT RELATES TO THE TITLED PROJECT, ANY OTHER USE,	<ol> <li>NOTES HEREIN ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS AND ADDITIONAL INFORMATION.</li> </ol>
REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED HEREON IS EXPRESSLY PROHIBITED WITHOUT THE WRITTEN CONSENT OF FOTH.	<ol> <li>DATA COLLECTED ASSOCIATED WITH THIS PROJECT IS CONTAINED WITH THE DOCUMENT ENTITLED "ROCK HARBOR COMMERCIAL WHARF IMPROVEMENTS" PROVIDED AS AN ATTACHMENT TO THE BID</li> </ol>
18. DIMENSIONS ARE IN FEET AND INCHES OR TENTHS OF A FOOT UNLESS OTHERWISE NOTED.	DOCUMENTS. 4. SEE ATTACHMENT "A" IN THE CONTRACT DOCUMENTS FOR GEOTECHNICAL BORING LOG
DESIGN CRITERIA:	INFORMATION PERFORMED BY FOTH ON DECEMBER 19-23, 2019, RH-2023-B1 TAKEN MARCH 16, 2023, AND RH-2023-B2 TAKEN AUGUST 22, 2023.
1. STRUCTURAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS BUILDING CODE, NINTH EDITION. WORK SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL PERMITS ISSUED	5. THE CONTRACTOR IS ADVISED THAT THE DRAWINGS AND SPECIFICATIONS FORM A PART OF THE CONTRACT DOCUMENTS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT
FOR THE PROJECT. 2. THE COMPLETED STRUCTURE HAS BEEN DESIGNED TO WITHSTAND THE FOLLOWING DESIGN LOADS	DOCUMENTS. THE CONTRACTOR SHALL KEEP A COPY OF THE DRAWINGS, SPECIFICATIONS, AND
APPLIED IN CONJUNCTION WITH DESIGN DREDGE/MUDLINE ELEVATIONS INDICATED ON THE CONTRACT DRAWINGS:	6. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND SUBMERGED UTILITIES WITHIN THE LIMITS OF THE WORK PRIOR TO COMMENCING ANY EXCAVATION OR GROUND
2.1. GENERAL BUILDING RISK CATEGORY II	PENETRATING WORK. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" (1-888-344-7223) AT LEAST 3 BUSINESS DAYS PRIOR TO COMMENCEMENT OF THE EXCAVATION OR GROUND PENETRATING
2.2. LIVE LOADS: COMMERCIAL WHARF: 640 PSF UNIFORM LOAD	ACTIVITY. 7. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS
CONCENTRATED LIVE LOAD: 32,000 LBS PUBLIC WHARF: 250 PSF UNIFORM LOAD	AS REQUIRED BY STATE, LOCAL, AND FEDERAL REGULATION AND LAW, AS WELL AS REQUIRED WITHIN EXISTING PERMITS AND APPROVALS.
CONCENTRATED LIVE LOAD: 8,000 LBS BULKHEAD: 250 PSF UNIFORM LOAD	<ol> <li>BASE PLAN COMPILED BY FOTH USING AVAILABLE MAGIS DATA.</li> <li>SECTIONS, DETAILS, NOTES, DIMENSIONS AND CONDITIONS ARE APPLICABLE AT ANY OTHER</li> </ol>
CONCENTRATED LIVE LOAD: 32,000 LBS TIMBER PIER: 100 PSF UNIFORM LOAD	LOCATION WHERE CONDITIONS AND DETAIL ARE SIMILAR BUT ARE NOT SPECIFICALLY NOTED AS SUCH OR ARE NOT SHOWN.
ACCESS GANGWAYS: 50 PSF FOR 4 FT WIDE 100 PSF FOR WIDER THAN 4 FT	10. THE CONTRACTOR SHALL PERFORM THE WORK IN A MANNER THAT DOES NOT IMPEDE THE OWNER'S
2.3. WIND LOAD BASIC WIND SPEED 140 MPH	OPERATIONS ON SITE OR THE OWNER'S ON-SITE OPERATING EQUIPMENT. 11. THE CONTRACTOR PRIOR TO CONSTRUCTION AND FABRICATION OF CONSTRUCTION MATERIALS
WIND EXPOSURE CATEGORY: D	SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS. LENGTHS SHOWN ON THE DRAWINGS ARE CONSIDERED APPROXIMATE, AND THE ACTUAL LENGTHS MAY VARY WHEN SO ACCEPTED BY THE
GROUND SNOW LOAD 50 PSF	ENGINEER. 12. IF, DURING THE PERFORMANCE OF THE WORK, THE CONTRACTOR FINDS A CONFLICT, ERROR, OR
SEISMIC IMPORTANCE FACTOR le=1.0	DISCREPANCY IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SO REPORT TO THE ENGINEER OF RECORD IN WRITING AT ONCE. BEFORE PROCEEDING WITH THE WORK AFFECTED
$\begin{array}{llllllllllllllllllllllllllllllllllll$	THEREBY, THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION OR CLARIFICATION FROM THE ENGINEER OF RECORD. WORK DONE BEFORE THE ENGINEER OF RECORD RENDERS HIS
SITE-MODIFIED SPECTRAL ACCELERATION S <sub>MS</sub> =0.239 SITE-MODIFIED SPECTRAL ACCELERATION S <sub>M1</sub> =0.115	DECISION IS AT THE CONTRACTOR'S SOLE RISK. 13. THE WORK SHALL BE PERFORMED IN A GENERAL SEQUENCE DEVELOPED BY THE CONTRACTOR AND
NUMERIC SEISMIC DESIGN VALUE AT 0.2S SASDS=0.16NUMERID SEISMIC DESIGN VALUE AT 1.0S SASD1=0.077	SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW, IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF
SITE CLASS D SEIMIC DESIGN CATEGORY B	CONSTRUCTION AND FOR THE SEQUENCES AND PROCEDURES TO BE USED. 14. THE CONTRACTOR SHALL FURNISH AND COORDINATE PLANT, LABOR, SUPERVISION, MATERIALS,
DESIGN PROCEDURE: EQUIVALENT LATERAL FORCE RESPONSE MODIFICATION FACTOR R=2	EQUIPMENT AND APPLIANCES FOR DEMOLITION AND/OR CONSTRUCTION WORK IN CONNECTION WITH THE DEMOLITION AND/OR CONSTRUCTION OF THE WATERFRONT FACILITIES.
2.6. VESSEL LOADS PILE MOORING LOAD: 1.1 KIP	15. THE OWNER HAS SECURED CERTAIN PERMITS REQUIRED BY FEDERAL, AND STATE AUTHORITIES FOR THE PROPOSED ACTIVITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM THE
2.7. ICE LOADS PILE PULLOUT LOAD: 8 KIP	WORK IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMITS. THIS INCLUDES BUT NOT LIMITED TO, THE CLEAN WATER ACT, THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL
3. FOUNDATION	SAFETY, HEALTH ACT, 401 WATER QUALITY CERTIFICATION, CHAPTER 91 LICENSE, STATE & LOCAL WETLAND REGULATIONS, AND U.S. ARMY CORP OF ENGINEERS PERMIT. THE CONTRACTOR SHALL
REQUIRED SOIL BEARING CAPACITY 1500 PSF SUCH BEARING STRATA IS ANTICIPATED AT THE BOTTOM OF FOOTING ELEVATIONS NOTED	POST COPIES OF THE PERMITS AT THE SITE THROUGHOUT THE COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN PERMITS ASSOCIATED WITH THE LEGAL DISPOSAL OF
ON THE FOUNDATION PLAN. A GEOTECHNICAL ENGINEER SHALL REVIEW ALL BEARING STRATA PRIOR TO CASTING CONCRETE IN ORDER TO VERIFY THE PRESUMPTIVE BEARING	CONSTRUCTION DEBRIS. THE CONTRACTOR SHALL SECURE REQUIRED LOCAL AUTHORIZATIONS AND PERMITS.
VALUE. 4. CONCRETE	16. SPECIAL INSPECTION REQUIREMENTS PER LOCAL AND/OR STATE BUILDING CODES SHALL BE FULFILLED AND SHALL BE COORDINATED BY THE OWNER. THE CONTRACTOR SHALL INFORM THE
CAST-IN-PLACE CONCRETEfc=5,000 PSI (UNLESS OTHERWISE NOTED)CONCRETE EXPOSURECLASSES F3, S1, W2, C2	OWNER OF THE PROGRESS OF WORK AND PROVIDE ADEQUATE NOTICE AS TO WHEN SPECIAL INSPECTIONS ARE TO OCCUR SUCH AS TO NOT DELAY THE SCHEDULE.
W/CM RATIO 0.40 REINFORCING BARS ASTM A615 GR. 60	17. THE CONTRACTOR SHALL FURNISH MATERIALS FOR INSTALLATION IN THE COMPLETED WORK AS SPECIFIED HEREINAFTER. THE CONTRACTOR SHALL HANDLE THESE MATERIALS AS THEY ARE
EPOXY COATING ASTM A775 WELDED WIRE REINFORCEMENT ASTM A1064	DELIVERED TO THE SITE OR OFF-SITE WORK AREAS AND SHALL STORE THEM IN A DESIGNATED STORAGE AREA.
PROVIDE THE FOLLOWING COVER FOR REINFORCEMENT: ALL STEEL REINFORCEMENT MUST HAVE A CLEAR COVER OF 3 INCHES.	<ol> <li>THE CONTRACTOR WILL INDEMNIFY AND SAVE HARMLESS THE OWNER AND ENGINEER OF RECORD FROM AND AGAINST ALL LOSSES AND ALL CLAIMS, DEMANDS, PAYMENTS, SUITS, ACTIONS,</li> </ol>
5. STEEL STEEL W AND WT SHAPES ASTM A992	RECOVERIES, AND JUDGMENTS OF EVERY NATURE AND DESCRIPTION BROUGHT OR RECOVERED AGAINST THE OWNER AND ENGINEER OF RECORD BY REASON OF ANY ACT OR OMISSION OF THE
OTHER STEEL SHAPES ASTM A572 GR 50 STEEL PLATES ASTM A572 GR 50	CONTRACTOR, OR OF ANY SUBCONTRACTOR TO THE CONTRACTOR, OR OF ANY PERSON DIRECTLY OR INDIRECTLY EMPLOYED BY THE CONTRACTOR OR ANY SUCH SUBCONTRACTOR, IN THE
STEEL HSSASTM A500 GR CSTEEL PIPEASTM A252, fy=50KSI OR API 5LX52	PERFORMANCE OF ANY WORK FOR, OR THE RENDERING OF ANY SERVICES TO, THE OWNER. 19. THE CONTRACTOR AGREES THAT, AT ITS OWN COST AND EXPENSE, IT SHALL PROCURE AND
STEEL SHEET PILEASTM A572 GR 60, fy=60KSIBOLTED CONNECTIONSASTM F3125 GR A325 TYPE 1	CONTINUE IN FORCE; INSURANCE COVERAGE AS REQUIRED BY THE OWNER. SUCH INSURANCE SHALL BE WRITTEN BY A COMPANY OR COMPANIES AUTHORIZED TO ENGAGE IN THE BUSINESS OF
SNUG TIGHT U.N.O. ANCHOR BOLTS ASTM F1554 GR 36 HDG OR HILTI KWIK BOLT #3	GENERAL LIABILITY INSURANCE IN THE STATE IN WHICH THE DEMISED PREMISES ARE LOCATED, AND THERE SHALL BE DELIVERED TO THE OWNER WITH THE BID CUSTOMARY CERTIFICATES EVIDENCING
NUTS ASTM A563 WASHERS (EXCEPT AGAINST TIMBER) ASTM F436,	SUCH PAID-UP INSURANCE, WHICH CERTIFICATES ARE TO BE ISSUED BY THE INSURANCE COMPANIES. GOOD AND RESPONSIBLE COMPANIES, REASONABLY ACCEPTABLE TO THE OWNER,
WASHERS AGAINST TIMBER COMMON DOCK WASHERS THREADBAR ASTM A615 GR. 100	SHALL WRITE SUCH INSURANCE. 20. THE ENGINEER AND ITS SUB CONSULTANTS SHALL BE ADDED TO THE CONTRACTOR'S GENERAL
WELDING ELECTRODES E70XX AWS D1.1, AWS A5.1 AND AWS A5.5	LIABILITY INSURANCE POLICY AS ADDITIONAL INSURED ON PRIMARY AND CON-CONTRIBUTORY BASIS. SUBMIT CERTIFICATES OF INSURANCE TO THE ENGINEER AS EVIDENCE OF THIS COVERAGE.
6. TIMBER TIMBER PILES - FENDER 12" Ø GREENHEART	21. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF LOCATIONS, DIMENSIONS, AND LEVELS AND NO PLEA AS TO INSTRUCTIONS OR ORDER RECEIVED FROM OTHER
TIMBER PILES - PIER12" Ø SOUTHERN YELLOW PINETIBER BRACESSYP NO. 2 OR BETTER	SOURCES OTHER THAN INFORMATION CONTAINED ON CONTRACT DRAWINGS, SPECIFICATIONS OR IN WRITTEN ORDERS OF THE OWNER OR ENGINEER OF RECORD SHALL JUSTIFY DEPARTURE FROM THE
TIMBER PILE CAPS SYP NO. 2 OR BETTER TIMBER STRINGERS SYP NO. 2 OR BETTER	DIMENSIONS AND ELEVATIONS REQUIRED BY THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SURVEY CONTROL AT ALL TIMES TO ESTABLISH AND MAINTAIN ALL LINES AND
TIMBER DECKING SYP NO. 2 PRESERVATIVES	ELEVATIONS SHOWN ON THE CONTRACT DRAWINGS. 22. THE CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE SITE, VERIFYING THE SAME WITH
PILES - PIER 2.5 PCF CCA BRACES 2.5 PCF CCA	THE CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE SITE, VERIFTING THE SAME WITH THE CONTRACT DRAWINGS AND EXISTING FACILITIES, AND WILL BE HELD RESPONSIBLE FOR THE PROPER FIT AND ALIGNMENT OF COMPLETED WORK W POSITION.
PILE CAPS AND STRINGERS 2.5 PCF CCA TIMBER RAILING 0.23 PCF MCA	23. THE CONTRACTOR SHALL GUARANTEE TO THE OWNER MATERIALS AND WORKMANSHIP AGAINST ORIGINAL DEFECTS, OR AGAINST INJURY FROM PROPER AND USUAL WEAR WHEN USED FOR THE
DECKING 0.23 PCF MCA HARDWARE	PURPOSE INTENDED, FOR TWELVE (12) MONTHS AFTER DATE OF FINAL PAYMENT CERTIFICATIONS. DEFECTS APPEARING DURING THE PERIOD OF GUARANTEE SHALL BE MADE GOOD BY THE
HARDWARE FOR TIMBER CONSTRUCTION SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL IN COMPLIANCE WITH AISI 316, U.N.O. SEE TIMBER CONSTRUCTION	CONTRACTOR AT HIS EXPENSE UPON DEMAND OF THE OWNER, IT BEING REQUIRED THAT WORK SHALL BE IN PERFECT CONDITION WHEN THE PERIOD OF GUARANTEE SHALL HAVE ELAPSED. IN THE
SECTION 061333.	EVENT OF DEFAULT BY THE CONTRACTOR, THE COMPANY SHALL HAVE THE RIGHT TO MAKE GOOD
	DEFECTS AND BILL THE CONTRACTOR COST PLUS 15% FOR ADMINISTRATION FEES. 24. AT THE CONTRACTOR'S EXPENSE, THE CONTRACTOR'S WORKING AREAS SHALL BE CLEAMED ON A DAY TO DAY BASIS, WITH PUBBISH DEMOVED EPOM THE SITE AND WORK AREAS CLEANED AT THE
3 0 1	DAY-TO-DAY BASIS, WITH RUBBISH REMOVED FROM THE SITE AND WORK AREAS CLEANED AT THE END OF EACH DAY. AT FINAL COMPLETION OF WORK THE CONTRACTOR SHALL LEAVE THE ENTIRE PREMISES, WITHIN THE SITE OF HIS OPERATIONS, CLEAN AND FREE FROM THE PURPISH RESULTING.
	PREMISES, WITHIN THE SITE OF HIS OPERATIONS, CLEAN AND FREE FROM THE RUBBISH RESULTING FROM HIS CONSTRUCTION OPERATIONS.
	<ol> <li>THE CONTRACTOR IS RESPONSIBLE TO PROVIDE AND MAINTAIN UTILITIES AS DEEMED NECESSARY TO AFFECT THE WORK.</li> </ol>

26. THE CONTRACTOR SHALL PROVIDE FIELD ENGINEERING SERVICES REQUIRED FOR PROPER COMPLETION OF THE WORK INCLUDING, BUT NOT NECESSARILY LIMITED TO: ESTABLISHING AND MAINTAINING LINES AND LEVELS; STRUCTURAL DESIGN OF SHORES, FORMS, AND SIMILAR ITEMS PROVIDED BY THE CONTRACTOR AS PART OF HIS MEANS AND METHODS OF CONSTRUCTION.

- 27. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT HIS EXPENSE REQUIRED FIRE PROTECTION SYSTEMS AND DEVICES AS NECESSARY TO SAFELY PERFORM THE WORK IN ACCORDANCE WITH THE APPLICABLE REGULATIONS. IT SHALL BE OPERATIONAL THROUGHOUT THE PERIOD OF CONSTRUCTION.
- 28. THE OWNER SHALL HAVE THE RIGHT TO WITHHOLD WITHOUT PENALTY PAYMENT DESCRIBED ABOVE, OR SECTIONS REFERENCED HEREIN, FOR COMPLETED WORK SHOULD THE CONTRACTOR FAIL TO MEET OBLIGATIONS OR REQUIREMENTS OF THE CONTRACT. WITHHELD PAYMENT SHALL BE PROMPTLY MADE UPON THE CONTRACTOR'S FULL COMPLIANCE WITH THE CONTRACT.
- 29. COMPLY WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR PROTECTION OF THE ENVIRONMENT DURING THE WORK. ENSURE THAT PERSONNEL ARE PROPERLY TRAINED AND THAT SUFFICIENT EQUIPMENT AND MATERIALS ARE READILY AVAILABLE FOR USE IF REQUIRED. ABIDE BY STATE AND FEDERAL SPILL REPORTING REQUIREMENTS. NO LATER THAN 21 DAYS FOLLOWING AWARD OF CONTRACT. SUBMIT A COMPREHENSIVE PLAN DESCRIBING THE MEANS AND METHODS TO BE EMPLOYED FOR PROTECTION, CONTAINMENT, AND CLEAN UP.
- 30. THE OWNER RESERVES THE RIGHT TO CHARGE THE CONTRACTOR FOR ADDITIONAL ENGINEERING SERVICES IF REQUIRED DUE TO THE CONTRACTOR'S ACTIONS OR INACTIONS.
- 31. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF HIS OPERATIONS. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY, OR LOSS TO PERSONS EMPLOYED BY THE CONTRACTOR IN PERFORMANCE OF THE WORK, AND PERSONS NEARBY THAT MAY BE AFFECTED BY THE CONTRACTOR'S OPERATIONS OR THE WORK, INCLUDING EQUIPMENT AND MATERIALS WHICH WILL BE INCORPORATED IN THE WORK, AND OTHER PROPERTIES AND
- STRUCTURES AT THE SITE, OR ON ADJACENT PROPERTIES. 32. OBSTRUCTIONS ARE DEFINED AS UNFORESEEN OBJECTS, WHICH IMPEDE PROGRESS. OBJECTS, WHICH ARE MADE KNOWN TO THE CONTRACTOR, WILL NOT BE CONSIDERED TO BE OBSTRUCTIONS. NOTIFY THE ENGINEER OF RECORD IMMEDIATELY UPON ENCOUNTERING OBSTRUCTIONS. NO CONSIDERATION WILL BE GIVEN FOR ADDITIONAL COMPENSATION ON THIS ACCOUNT WITHOUT THIS TIMELY NOTIFICATION.
- 33. SUBSTITUTIONS MAY BE FURNISHED FOR MATERIALS SPECIFIED HEREIN PROVIDED THE CONTRACTOR SECURES ACCEPTANCE FROM THE ENGINEER OF RECORD.

# ALUMINUM GANGWAY

- 1. ALUMINUM RAMP AND ALL INCIDENTAL PARTS INCLUDING FASTENERS AND CONNECTORS SHALL BE MANUFACTURED BY ALUMINDOCK, RANDOLF, NY, OR AN EQUIVALENT ACCEPTED BY THE ENGINEER OF RECORD. THE RAMP SHALL HAVE A MINIMUM CLEAR WALKWAY OF 48 INCHES AND BY 40 FEET IN TOTAL WALKWAY LENGTH.
- ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ALLOY 6061-T6 EXTRUDED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF FEDERAL SPECIFICATION QQ-A-200. BOLTS, RODS, NUTS, WASHERS, SCREWS, AND OTHER FASTENERS SHALL BE TYPE 304 STAINLESS
- STEEL 4. ROLLERS FOR RAMP SHALL BE UHMW POLYURETHANE WITH BLACK ULTRAVIOLET LIGHT INHIBITOR
- ADDED, OR AN EQUIVALENT ACCEPTED BY THE ENGINEER OF RECORD. METAL FOR DECKING AND HANDRAILS SHALL BE 6063-T6 ALUMINUM ALLOY. EXTRUDED PIPE FOR
- HANDRAILS AND STRUCTURES SHALL BE 1-1/2" DIAMETER MINIMUM PIPE. 6. DECKING SHALL BE EXTRUDED ALUMINUM SLATS, EMBOSSED TO PROVIDE A NON-SLIP SURFACE, AND SHALL NOT EXCEED NINE (9) INCHES IN WIDTH WITH NOT MORE THAN 3/8-INCH AIR SPACE
- BETWEEN ADJACENT SLATS. THE LEGS OF EACH DECKING SLAT SHALL BE WELDED TO THE SIDE MEMBERS AND TO ANY LONGITUDINAL MEMBERS WITH A MINIMUM OF 1-1/4 INCHES OF WELD PER LEG. THE DECKING SLATS SHALL BE PLACED TRANSVERSELY ON THE GANGWAY OR DOCK.
- HANDRAILS ARE REQUIRED ALONG EACH SIDE OF EACH GANGWAY. REMOVABLE HANDRAILS SHALL BE MOUNTED WITHIN SLEEVES FASTENED TO THE GANGWAY, SECURED WITH STAINLESS STEEL BOLTS.
- 8. GANGWAYS SHALL HAVE A DETACHABLE HINGE MOUNT FOR SECURING THE GANGWAY TO A WALL OR FIXED STRUCTURE. HINGE MOUNT EXTRUSIONS SHALL BE WELDED TO THE FRAME OF THE GANGWAY WITH A CONTINUOUS FILLET WELD UNLESS OTHERWISE SHOWN ON THE DRAWINGS. NON-HINGED DECK MODULE CONNECTORS SHALL BE SHOWN ON THE DRAWINGS.
- 9. ANY INSTALLATION OF DISSIMILAR MATERIALS SHALL BE PROPERLY INSULATED TO AVOID CONTACT OF DISSIMILAR METALS AND TO MINIMIZE OR ELIMINATE CORROSION IN A MARINE ENVIRONMENT.
- 10. GANGWAYS SHALL BE SECURELY FASTENED TO CERTAIN FIXED STRUCTURES. DETAIL SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS AND BE PROVIDED TO THE OWNERS REPRESENTATIVE FOR APPROVAL. UTILITIES RUNNING ON THE GANGWAY SHALL BE INSTALLED SO AS NOT TO INTERFERE WITH THE ACCESS AREA OF THE GANGWAY OR TO BE DAMAGED DURING NORMAL OPERATION.

#### BITUMINOUS CONCRETE PAVING:

- 1. BITUMINOUS CONCRETE PAVING SHALL CONFORM TO THE REQUIREMENTS OF THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR HIGHWAYS AND BRIDGES.
- 2. ASPHALT MIXTURE SHALL MATCH EXISTING.

#### CATHODIC PROTECTION:

- 1. ALUMINUM ANODES FOR PASSIVE CATHODIC PROTECTION OF STEEL STRUCTURES IN MARINE ENVIRONMENTS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM B418.
- 2. ANODES SHALL BE INSTALLED BY AN EXPERIENCED CONTRACTOR, MINIMUM 5 YEARS OF
- EXPERIENCE, UNDER THE SUPERVISION OF A CORROSION SPECIALIST CERTIFIED BY NACE. CATHODIC PROTECTION SYSTEM SHALL BE TESTED AFTER INSTALLATION. SUBMIT TEST RESULTS IN 3 A REPORT TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.
- 4 CONTRACTOR SHALL SUBMIT, FOR THE REVIEW OF THE ENGINEER, INSTALLER AND TESTER QUALIFICATIONS, NACE INTERNATIONAL CORROSION CERTIFICATIONS, METHODS, AND PROCEDURES FOR TESTING CORROSION CONTROL SYSTEM, INCLUDING DESCRIPTION OF INSTRUMENTS AND EQUIPMENT TO BE USED.
- ANODES SHALL BE ROTOMETALS ALUMANODE AHC20 (2" X 4" X 24") OR EQUIVALENT ACCEPTED BY THE ENGINEER.
- VANODES SHALL BE INSTALLED AS SHOWN ON SHEET S-703.

# CONCRETE:

- CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI-318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", & SECTION 13 OF ACI-320 FOR PRECAST CONCRETE AS ADOPTED BY THE AMERICAN CONCRETE INSTITUTE.
- NO WATER SHALL BE ADDED TO THE MIX AT THE JOB SITE.
- STRUCTURAL JOINTS SHOWN ON THE DRAWINGS ARE MANDATORY. ADDITIONAL STRUCTURAL JOINTS AND MODIFICATIONS AS REQUIRED TO EXECUTE THE CONSTRUCTION SHALL BE SUBMITTED
- TO THE ENGINEER FOR APPROVAL. DO NOT PLACE CONCRETE UNTIL REINFORCEMENT AND EMBEDDED ITEMS HAVE BEEN APPROVED BY THE ENGINEER AND/OR THE APPROVED TESTING AGENCY (IF/WHEN DIRECTED). PROVIDE A
- MINIMUM OF 24 HOURS NOTIFICATION TO THE ENGINEER. 5. THE SLABS FOR THE SIDEWALK SHALL BE SEPARATED BY TRANSVERSE PREFORMED EXPANSION JOINT FILLERS 1/2 INCH IN THICKNESS. THE SURFACE OF THE SIDEWALK SHALL BE UNIFORMLY

SCORED 4-FOOT SPACING LONGITUDINALLY & MAXIMUM 5-FOOT SPACING TRANSVERSE.

### DEMOLITION NOTES:

- 1. NOTIFY OWNER/OWNER'S PROJECT ENGINEER OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE PROCEEDING WITH DEMOLITION.
- 2. LIMITS DEPICTED ON THE CONTRACT PLANS CAN ONLY BE CONSIDERED AS APPROXIMATE FIELD CONDITIONS. IT IS NOT THE INTENT OF THE PLANS TO SHOW THE EXACT LOCATION OR EXTENT OF EXISTING DETERIORATION ON STRUCTURES. THE CONTRACTOR IS TO FULLY APPRISE HIMSELF OR HERSELF OF THE SITE CONDITIONS PRIOR TO START OF WORK.
- DO NOT BEGIN DEMOLITION UNTIL NOTIFIED TO PROCEED BY THE OWNER OR PROJECT ENGINEER AND ALL REQUIRED PERMITS & PERMISSIONS FROM THE TOWN OF ORLEANS ARE OBTAINS.
- SELECTIVE DEMOLITION AND DISPOSAL SHALL BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL PERMIT AND BUILDING CODE REQUIREMENTS.
- 5. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THOSE STRUCTURES AND DERELICT COMPONENTS AS REQUIRED TO PERFORM THE WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO TIMBER OR STEEL BULKHEAD, CONCRETE PLATFORMS, TIMBER PILES, CONCRETE AND TIMBER
- DEBRIS, STEEL DEBRIS, UTILITIES, AND OTHER ITEMS AS INDICATED ON THE DRAWINGS. SELECTIVE DEMOLITION INCLUDES BUT IS NOT LIMITED TO REMOVAL AND REUSE (WHERE POSSIBLE) OF EXISTING MATERIALS, UTILITIES, AND OTHER COMPONENTS ESSENTIAL FOR A COMPLETE
- PROJECT. ITEMS TO BE REMOVED AND REUSED SHALL BE PLACED IN A STAGING AREA ACCESSIBLE FOR INSPECTION BY THE OWNER.
- PRIOR TO COMMENCEMENT OF SELECTIVE DEMOLITION, THE CONTRACTOR SHALL SUBMIT A DISPOSAL PLAN FOR ITEMS TO BE DEMOLISHED. DEMOLITION MATERIAL DESIGNATED BY THE OWNER TO BE REMOVED FROM THE SITE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE DEBRIS DISPOSAL PLAN SHALL ACKNOWLEDGE THIS OWNERSHIP AND SHALL IDENTIFY THE MEANS AND METHODS AND FINAL DISPOSITION FOR DISPOSAL MATERIALS.

- 9. PRIOR TO COMMENCEMENT OF DEMOLITION, THE CONTRACTOR SHALL CLEARLY MARK THE LIMITS OF THE DEMOLITION FOR REVIEW AND APPROVAL BY THE OWNER.
- 10. COMPLETELY REMOVE ITEMS DESIGNATED LEAVING SURFACES CLEAN, SOUND, AND READY TO RECEIVE NEW MATERIALS AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- 11. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DUI THE COURSE OF DEMOLITION. 12. THE CONTRACTOR SHALL SUBMIT A DISPOSAL CERTIFICATE TO THE OWNER'S REPRESENTATIVE
- CERTIFYING LEGAL AND PROPER DISPOSAL 13. THE CONTRACTOR SHALL TAKE REASONABLE CARE IN REMOVING ELEMENTS SELECTED TO BE
- DEMOLISHED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IF THE CONTRACTOR'S EQUIPMENT OR METHODS RESULT IN DAMAGE TO ADJACENT STRUCTURES OR ELEMENTS TO REMAIN OR CAUSE DEMOLITION BEYOND INDICATED LIMITS OR ACCEPTABLE LIMITS NECESSARY COMPLETE SUCCESSFUL REPAIRS, OR RESULTS IN DAMAGE TO OTHER PROPERTY OF THE OWNER THEN THE PROJECT ENGINEER WILL DIRECT THE CONTRACTOR TO MODIFY DEMOLITION OPERATIONS. SUCH MODIFICATION SHALL BE PERFORMED AT NO ADDITIONAL EXPENSE TO THE OWNER AND/OR FOTH. DEMOLITION BEYOND ACCEPTED LIMITS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. DAMAGE OR DESTRUCTION BY THE CONTRACTOR TO EXISTING ELEMENTS DESIGNATED TO REMAIN SHALL BE REPAIRED OR REPLACE IN-KIND AT THE DISCRETION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER AND/OR FO
- 14. APPLICABLE FOR AREAS WHERE NEW CONCRETE ABUTS EXISTING CONCRETE SURFACES, CONTRACTOR SHALL COMPLETELY REMOVE ALL LOOSE, DELAMINATED AND WEAK CONCRETE, ( GREASE, LAITANCE, MARINE GROWTH AND OTHER CONTAMINANTS FROM THE SURFACE IN PREPARATION FOR NEW CONCRETE. PREPARE CONCRETE SURFACE USING ACCEPTABLE MECHANICAL MEANS AND CONCRETE CLEANERS AND DEGREASERS AS NECESSARY TO OBTAIN CLEAN, SOUND AND ROUGH SURFACES. COARSE AGGREGATE SHALL BE EXPOSED AND ALL MAR GROWTH REMOVED.

### EARTHWORK NOTES:

- 1. DO NOT BEGIN BACKFILLING UNTIL CONSTRUCTION BELOW FINISH GRADE HAS BEEN APPROVED THE EXCAVATION IS CLEAN OF TRASH AND DEBRIS.
- 2. HEAVILY SURFACE COMPACT SUBGRADE IN UPLAND AREA WITH A MINIMUM OF 6 PASSES OF A VIBRATORY ROLLER HAVING A DRUM WEIGHT OF AT LEAST 10,000 POUNDS AND A DYNAMIC FORCE OF AT LEAST 20,000 POUNDS PRIOR TO PLACING FILL.
- 3. PLACE AND COMPACT FILL AND BACKFILL TO INDICATED FINISH GRADE WITHIN A TOLERANCE OF ONE FOOT HORIZONTALLY AND 1 INCH VERTICALLY. STRUCTURAL FILL SHALL CONSIST OF BROKEN OR CRUSHED STONE, BANK OR CRUSHED GRAVE
- OR MIXTURES THEREOF. BROKEN OR CRUSHED STONE SHALL CONSIST OF WELL-GRADED, SOU TOUGH, DURABLE STONE. BANK OR CRUSHED GRAVEL SHALL CONSIST OF WELL-GRADED, SOUN TOUGH, DURABLE PARTICLES OF CRUSHED OR UNCRUSHED GRAVEL FREE FROM SOFT, THIN, ELONGATED OR LAMINATED PIECES AND ORGANIC OR OTHER DELETERIOUS SUBSTANCES. STRUCTURAL FILL SHALL WELL GRADED WITH 100% MASS PASSING THE 90 mm (3.5") SQUARE ME SIEVE. SUBMIT AN INDEPENDENT GRADATION ANALYSIS AND MODIFIED PROCTOR TEST FOR ENGINEER OF RECORD'S REVIEW. INCLUDE A REPRESENTATIVE SAMPLE OF THE FILL MATERIAL WITH THE SUBMITTAL.
- 5. THE CONTRACTOR SHALL EXCAVATE UNSUITABLE MATERIALS, BACKFILL, COMPACT AND GRADE SITE TO THE ELEVATIONS AND LIMITS SHOWN AND AS NEEDED TO MEET THE REQUIREMENTS OF CONSTRUCTION.
- 6. STRUCTURAL FILL SHALL BE PLACED IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH. DO NOT PLACE FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN OR CONTAINING FROST AND/OR PLACE FILL MATERIALS EVENLY ADJACENT TO STRUCTURES, TO REQUIRED ELEVATIONS. TAKE CARE TO PREVENT WEDGING ACTION OF BACKFILL AGAINST STRUCTURES BY CARRYING THE MATERIAL UNIFORMLY AROUND THE STRUCTURE TO APPROXIMATELY THE SAME ELEVATION IN I IFT
- 7. CONTROL STRUCTURAL FILL COMPACTION DURING CONSTRUCTION TO PROVIDE THE MINIMUM PERCENTAGE OF DENSITY SPECIFIED FOR EACH AREA AS DETERMINED ACCORDING TO ASTM D STRUCTURAL FILL AREAS SHALL NOT FALL BELOW 95% OF ITS DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ABOVE TEST.
- 8. GRADE THE AREAS ADJACENT TO BUILDINGS TO ACHIEVE DRAINAGE AWAY FROM THE STRUCTU AND TO PREVENT PONDING.

#### EROSION AND SEDIMENTATION CONTROL:

- 1. SITE WORK SHALL NOT BE PERFORMED UNTIL SEDIMENT AND EROSION CONTROL DEVICES ARE INSTALLED AND WRITTEN APPROVAL IS SECURED FROM THE TOWN OF ORLEANS AND/OR OWNER REPRESENTATIVE.
- 2. EROSION AND SEDIMENTATION CONTROL DEVICES AND PROVISIONS SHALL BE MAINTAINED IN OPERATIONAL CONDITION BY THE CONTRACTOR AND SHALL BE REMOVED AND LEGALLY DISPOS AT THE COMPLETION OF THE PROJECT.
- 3. STRAW WATTLES SHALL CONSIST OF BIOROLL FILLED WITH GRAIN STRAW FREE FROM SEED BEARING STALKS AND NOXIOUS GRASSES AND PLANTS.
- 4. HAY BALES SHALL CONSIST OF FIRM, NEW BALES OF SALT HAY OR SMALL GRAIN STRAW, JUTE T WITH AN AVERAGE DRY WEIGHT OF 10 TO 40 POUNDS PER BALE AND SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
- 5. SILT FENCE SHALL BE MIRAFI 600X AS MANUFACTURED BY MIRAFI INC., GEOTEX 300ST AS MANUFACTURED BY SYNTHETIC INDUSTRIES, INC., PROPEX 2004 AS MANUFACTURED BY AMOCO FABRICS & FIBERS CO. OR EQUIVALENT.
- 6. FABRIC FENCE MATERIAL SHALL BE SUPPLIED IN ROLLS WITH APPROVED STAKING ATTACHMENT FROM AN APPROVED SUPPLIER AND SHALL BE PLACED AS DIRECTED BY THE ENGINEER. 7. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSPECTED WEEKLY DUR
- THE CONSTRUCTION PERIOD. 8. STOCKPILING OF MATERIALS IS NOT PERMITTED.
- WORKING OR PLACING MATERIAL ON EXISTING WETLAND VEGETATION IS PROHIBITED. 10. VEGETATION PROTECTION FENCE SHALL BE SAFETY ORANGE FABRIC FENCE WITH TEMPORARY SUPPORT POSTS. POSTS MAY BE SUPPORTED ON THE LEDGE ROCK BY MEANS OF SANDBAGS O OTHER ACCEPTABLE METHOD. THE FENCE IS TO REMAIN IN PLACE AT ALL TIMES WHILE CONSTRUCTION IS UNDERTAKEN.

#### FLAGPOLE:

- FLAGPOLE SHALL BE A FIBERGLASS REINFORCED COMPOSITE (FRC) NAUTICAL DOUBLE MASTED FLAGPOLE WITH YARDARM/GAFF AS MANUFACTURED BY PLP COMPOSITE TECHNOLOGIES OR APPROVED EQUAL. COLOR SHALL BE STANDARD WHITE AND BASE TO BE PROVIDED PER MANUFACTURERS RECOMMENDATIONS. 2. FLAGPOLE SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 25-FEET, ALONG WITH A MINIMUM BUT
- DIAMETER OF 6-INCHES. 3. LOAD CALCULATIONS SHALL BE BASED ON AASHTO AND NAAMM STANDARDS DESIGNED FOR 150
- M.P.H. WINDS, UNFLAGGED WITH A 1.3 GUST FACTOR. 4. FLAGPOLE: FLAGPOLE SHALL BE MOUNTED TO THE CAST-IN-PLACE CONCRETE TOPPING SLAB DE IN THE LOCATION SHOWN ON THE CONTRACT DRAWINGS. INSTALLATION DETAIL SHOWN ON THE
- CONTRACT DRAWINGS SHALL BE USED TO SECURE THE ITEMS TO THE DECK SECTION AS REQUI OR WITH THE MANUFACTURERS RECOMMENDATIONS UPON COORDINATION AND APPROVAL WITI THE ENGINEER.

## GEOTEXTILE FABRIC:

- 1. GEOTEXTILE FABRIC SHALL BE MIRAFI FILTERWEAVE FW-700 GEOTEXTILE FABRIC OR AN EQUIVALENT ACCEPTED BY THE ENGINEER OF RECORD.
- 2. INSTALL GEOTEXTILE FABRIC IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- MAINTAIN MINIMUM 12-INCH LAP AT ADJACENT SECTIONS. 3. PROVIDE ADEQUATE SLACK IN FABRIC DURING INSTALLATION BY PROVIDING CONTINUOUS 12 INC FOLDS AT 15 FOOT CENTERS PARALLEL TO THE SHORELINE.
- 4. PROPERLY ANCHOR FABRIC TO PREVENT SLIDING OR TEARING DURING INSTALLATION OF OVERBURDEN MATERIAL.

# GROUND ANCHORS

- 1. GROUND ANCHORS SHALL BE INSTALLED TO A 45 DEGREE INCLINATION WITH RESPECT TO THE HORIZONTAL.
- 2. THE GROUND ANCHOR DESIGN LOAD IS 403.3 KIPS. THE SPACING OF THE GROUND ANCHOR IS 9.
- FEET +/- UNO. 3. GROUND ANCHORS AND THEIR COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS, LATEST EDITION, ADOPTED THE POST-TENSIONING INSTITUTE.
- 4. GROUND ANCHORS AND THEIR COMPONENTS SHALL BE PROTECTED FROM CORROSION. CORROSION PROTECTION SHALL INCLUDE DELIVERY AND STORAGE METHOD OF TENDONS OR BA ADEQUATE BOREHOLE DIAMETER, PVC SHEATHING IN FREE LENGTH, TEMPORARY AND PERMANEN LUBRICANTS, PERMANENT SHEATHING OF TENDON, COVER BOX FOR ANCHORAGE HEAD, CORRUGATED PVC PIPE FOR CASING, IF REQUIRED, AND CONSOLIDATION GROUT FOR ANCHOR ZONE
- 5. GROUND ANCHOR DESIGN IS BY CONTRACTOR. GROUND ANCHOR ASSEMBLY INCLUDING GROUND ANCHOR, STAND-OFF PLATES, AND CAP PLATES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS.

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## <u>GUARDRAIL:</u>

- STANDARD GUARDRAIL AND POST SHALL BE SINGLE FACE, AS SPECIFIED IN MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES 1988 EDITION, AND ALL AMENDMENTS; - CONSTRUCTION STANDARDS; SUBSECTION 601 GUARDRAIL AND SECTION E.401.1 - AND E.401.11.0.
- POSTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36. GALVANIZING SHALL MEET THE REQUIREMENTS OF M7.10.0: GALVANIZED COATINGS.
- POSTS SHALL BE SET PLUMB, IN HAND OR MECHANICALLY DUG HOLES, OR DRIVEN, THEN
- BACKFILLED WITH ACCEPTABLE MATERIAL PLACED IN LAYERS AND THOROUGHLY COMPACTED. STEEL BEAM RAIL: THE RAIL SHALL BE ERECTED SO AS TO FORM A SMOOTH CONTINUOUS RAIL CONFORMING TO THE REQUIRED LINE AND GRADE. THE RAIL ELEMENTS AND SPLICES SHALL BE PER THE PLANS. ALL BOLTS, EXCEPT WHERE OTHERWISE REQUIRED AT EXPANSION JOINTS, SHALL BE DRAWN TIGHT.
- THE STEEL RAIL ELEMENT, TRANSITION PANELS, TERMINAL SECTIONS AND CONNECTING
- HARDWARE SHALL CONFORM TO AASHTO M 180, TYPE II, CLASS A. GUARDRAIL END TREATMENT: PROPRIETARY END TREATMENT SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' SPECIFICATIONS AND RECOMMENDATIONS.
- EACH END OF THE STEEL RAIL FOR EVERY STRETCH OF GUARD SHALL BE FITTED WITH A
- TERMINAL SECTION AS SHOWN ON THE PLANS. 8. ALL STEEL COMPONENTS AND HARDWARE SHALL CONFORM TO M8.07.0: GUARDRAIL. ALL METAL WORK SHALL BE DONE IN THE SHOP.
- THE APPROACH END SHALL HAVE TYPE 3 OBJECT MARKER SHEETING THAT CONFORMS TO THE REQUIREMENTS OF THE MUTCD. THE SHEETING MATERIAL SHALL MEET THE REQUIREMENTS OF M9.30.0: RETROREFLECTIVE SHEETING.

#### JIB CRANE:

- LIFT CAPACITY: JIB CRANE SHALL HAVE A LIFT CAPACITY OF 1-TON.
- . MAST: MAST SHALL BE FREESTANDING WITH A CLEAR HEIGHT OF THE MAST SHALL BE 16'-0", MEASURED FROM THE BOTTOM OF THE BASE PLATE TO THE BOTTOM OF THE BOOM. BOOM: TOTAL BOOM LENGTH SHALL BE 12'-0", MEASURED FROM THE CENTERLINE OF THE MAST
- TO THE END OF THE BOOM. DISTANCE FROM THE FACE OF THE STOP TO THE END OF THE BOOM SHALL BE 11'-6". 4. ROTATION: JIB CRANE SHALL HAVE 180-DEGREE ROTATION; BOOM WILL NOT DRIFT WHEN AT
- REST. ROTATION STOPS: SHALL BE FIELD MOUNTED WELDED OR BOLTED AS APPROVED BY THE
- ENGINEER. DEFLECTION: DEFLECTION WHEN LOADED TO THE MAXIMUM CAPACITY AT THE FURTHEST PICK POINT SHALL BE LIMITED TO A DEFLECTION OF APPROXIMATELY L/150.
- ANCHOR BOLTS: SHALL BE 1-INCH DIAMETER J-BOLTS TO THE LENGTH RECOMMENDED BY THE MANUFACTURER. MATERIALS: JIB CRANE BOOM, MAST AND BASE SHALL BE FABRICATION FROM STEEL MEETING
- ASTM STANDARDS. 9. FINISH: JIB CRANE BOOM, MAST AND BASE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE
- WITH ASTM STANDARDS. 10. PROVIDE ALL ENGINEERING DESIGN, LABOR, MATERIALS, EQUIPMENT AND SUPERVISION NECESSARY TO MANUFACTURE AND INSTALL A 1-TON JIB CRANE.

### NON-SHRINK GROUT:

NON-SHRINK GROUT SHALL BE FIVE STAR GROUT, HIGH PERFORMANCE PRECISION GROUT OR EQUIVALENT ACCEPTED BY ENGINEER, CONFORMING TO ASTM C827 AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 8000 PSI, AS MANUFACTURED BY FIVE STAR PRODUCTS, INC., FAIRFIELD, CT.

#### REINFORCEMENT:

- REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60, OR 75
- AS CALLED FOR. DETAILING, FABRICATION, AND ERECTION OF REINFORCING STEEL SHALL BE EPOXY COATED AND CONFORM TO THE REQUIREMENTS OF ACI-318 AND ACI-315 'DETAILS AND DETAILING OF
- CONCRETE REINFORCEMENT'. REINFORCEMENT SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318), ACI DETAILING MANUAL (SP-66), CRSI MANUAL OF STANDARD PRACTICE (MSP) AND THE STRUCTURAL WELDING CODE-REINFORCING STEEL (AWS D1.4), ELECTRODES TO BE E-80.
- PROVIDE SUPPLEMENTAL BARS AND ACCESSORIES AS REQUIRED TO HOLD REINFORCEMENT SECURELY IN POSITION.
- 5. ALL CONTINUOUS REINFORCEMENT SHALL BE EXTENDED AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. USE STANDARD HOOKS UNLESS OTHERWISE INDICATED.
- LAPS SHALL BE CLASS B TENSION LAP SPLICES, UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS. PROVIDE MECHANICAL COUPLERS WHERE REQUIRED CONTINUOUS REINFORCEMENT EXCEEDS AVAILABLE LENGTHS.

#### STEEL:

- 1. STRUCTURAL STEEL SHALL COMPLY WITH THE "STEEL CONSTRUCTION MANUAL" FIFTEENTH
- EDITION PUBLISHED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE STEEL FABRICATOR EXCEPT FOR
- THOSE SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS.

#### PILES - TIMBER:

- TIMBER PILES SHALL BE DRIVEN TO A MINIMUM CAPACITY OR MINIMUM EMBEDMENT LENGTH AS INDICATED ON THE CONTRACT DRAWINGS.
- CUT AND DRILLED EXPOSED SURFACES SHALL BE LIBERALLY RECOATED BY BRUSH WITH A FIELD TREATMENT ACCEPTED BY THE ENGINEER OF RECORD.
- TIMBER PILES SHALL HAVE A MINIMUM BUTT DIAMETER OF 12 INCHES, MINIMUM TIP DIAMETER OF 8 INCHES (12-3-8), CLASS B PILE. MATERIAL, TAPER, STRAIGHTNESS, AND ALLOWABLE DEFECTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-25.
- TIMBER PILES SHALL BE FREE FROM DEFECTS THAT MAY IMPAIR STRENGTH, DURABILITY OR DRIVABILITY; CUT FROM SOLID, SOUND LINE, CLOSED GRAINED TREES, FREE FROM INJURIOUS RINGS AND LARGE UNSOUND KNOTS OR DECAY. USE TREES THAT HAVE A UNIFORM STRAIGHT TAPER FROM BUTT TO TIP.
- HANDLE TIMBER PILES CAREFULLY, WITHOUT SUDDEN DROPPING, BREAKING OF OUTER FIBERS, BRUISING OR PENETRATING THE SURFACE WITH TOOLS.

# PILE DRIVING:

- DRIVE PILES WITH AN AIR OR DIESEL OPERATED HAMMER WITH SUFFICIENT ENERGY AND ENERGY TRANSFER CHARACTERISTICS TO DRIVE THE PILES TO THE REQUIRED CAPACITY AND TOE ELEVATIONS WITHOUT DAMAGING THE PILE HEAD. USE CAUTION NOT TO DAMAGE THE PILES BY OVER DRIVING AS WOULD BE INDICATED BY REBOUND OF HAMMER OR STAGGERING OF PILE. CUT OFF HEADS OF PILES ACCURATELY IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AFTER COMPLETION OF DRIVING.
- DRIVE THE PILES STRAIGHT AND TRUE AT INDICATED LOCATIONS, WITH DEVIATION FROM THE LONGITUDINAL AXIS OF NOT MORE THAN 1/4 INCH PER FOOT.
- LOCATE THE PILES WITHIN 3 INCHES OF THE POSITIONS INDICATED ON THE DRAWINGS. CONTINUOUSLY DRIVE EACH PILE TO REACH THE CAPACITY AND/OR FULL EMBEDDED LENGTH CALLED FOR ON THE DRAWINGS.
- WITHDRAW PILES THAT ENCOUNTER UNDERGROUND OBSTRUCTIONS SUFFICIENT TO IMPEDE PILE DRIVING. REDRIVE AS CLOSE AS POSSIBLE TO ORIGINAL POSITION, SUBJECT TO REVIEW BY THE ENGINEER AND OWNER. REMOVE PILES WHICH SPLIT, BROOM, BREAK OR DRIVE OUT OF LINE. DRIVE ANOTHER PILE IN ITS PLACE. PROVIDE AND MAINTAIN NECESSARY LIGHTING AND BARRIERS TO ADEQUATELY ASSURE PUBLIC SAFETY. PROVIDE ADEQUATE SAFEGUARDS TO PROTECT FROM DAMAGE IMPROVEMENTS ON THE WORK SITE AND ON ADJACENT PROPERTIES.
- LENGTHS SHOWN ON THE DRAWINGS ARE CONSIDERED AVERAGE VALUES, AND THE ACTUAL LENGTHS MAY VARY WHEN SO ACCEPTED BY THE ENGINEER OF RECORD. PROVIDE DRIVING RESISTANCE PENETRATION AND REFUSAL VALUES AS ACCEPTED BY THE
- ENGINEER OF RECORD. ALL SHEET PILES AND PIPE PILES DRIVEN TO REFUSAL IN ROCK TO HAVE HARDENED CUTTING
- SHOES INSTALLED BEFORE DRIVING. USE SUITABLE CUSHIONS OR DRIVING HEADS TO AVOID DAMAGE TO THE PILES, DEVELOPING PROPER TOTAL DRIVING ENERGY, AND DIRECTING THE ENERGY ALONG THE LONGITUDINAL
- CENTER OF GRAVITY OF THE PILE. 10. DRIVE PILES TO THEIR FULL PENETRATION WITHOUT BENDING, RUPTURING, OR SEVERELY DAMAGING THE PILES. IF FAILURE IN THE ABOVE RESPECTS IS ENCOUNTERED, PULL THE PILE AND DRIVE A NEW PILE AT NO ADDITIONAL COST TO THE OWNER. IF A REPLACEMENT PILE FAILS TO DEVELOP FULL DRIVING RESISTANCE, PULL THE REPLACEMENT PILE AND DRIVE A NEW PILE WITH LARGER DIAMETER AT NO ADDITIONAL COST TO THE OWNER.

- 11. JETTING TO ASSIST PENETRATION WILL NOT BE ENGINEER OF RECORD. PRE-DRILLING WILL NO ENGINEER OF RECORD, WHEREBY ACCEPTED USED WHERE EXTREME DRIVING RESISTANCE DRIVING MAY BE DETRIMENTAL TO ADJACENT
- 12. WHERE PILES ARE PUSHED UP BY PRESSURE
- REQUIRED AND AT NO ADDITIONAL COST TO TH 13. THE CONTRACTOR SHALL PROVIDE THE OWNE DATE OF FINAL INSTALLATION AND TIP ELEVATI WEEKLY AND SIGNED BY A REPRESENTATIVE C KEEP AN ACCURATE SET OF PILE RECORDS IND INSTALLED LENGTH, TYPE OF HAMMER AND RA
- ELEVATION, AND CONTRACTOR'S REPRESENTA 14. STEEL PIPE PILES MUST BE DRIVEN TO AN ULTI PILES MUST BE TESTED WITH PILE DRIVING ANA REQUIREMENTS AND ULTIMATE CAPACITY. PRO AND ACCEPTANCE PRIOR TO CUTTING PILES TO SELECTED BY THE ENGINEER.

# PROTECTIVE COATING:

- ALL STEEL SHEET PILES EXPOSED TO SALT WA ACCORDANCE WITH SPECIFICATIONS AND TO 1 2. COATING SHALL BE APPLIED IN ACCORDANCE
- WITH SURFACE PREPARATION FOR IMMERSION WHITE FINISH (SSPC-SP10 OR NACE). 3. NO COATING SHALL BE APPLIED WITHIN THE LI
- REMAIN FREE SLIDING. MATERIAL USED FOR FACTORY EPOXY COATIN
- EPOXY COATING AS MANUFACTURED BY DEVO PROJECT ENGINEER FOR STEEL SHEET PILES. 5. MATERIAL USED FOR FACTORY EPOXY COATIN
- COATING 6233 AS MANUFACTURED BY 3M OR E ENGINEER FOR STEEL PIPE PILES.
- FIELD TOUCH\_UP COATING SHALL BE IDENTICA ACCORDANCE WITH THE MANUFACTURER'S RE
- PROTECTIVE COATING TOPCOAT SHALL BE BLA DRAWINGS OR BY THE OWNER.
- 8. SURFACES SHALL BE PREPARED IN STRICT AC SYSTEM MANUFACTURER'S WRITTEN INSTRUC ABRASION BLASTED TO A NEAR WHITE SURFA SSPC SP 10. BLAST PROFILE ON STEEL SHALL JAGGED NATURE AS OPPOSED TO A "PEEN" PA BE SOUND, DRY, CLEAN, FREE OF OIL, GREASE COMPOUNDS, LOOSE AND FLAKING PAINT, GRIT ROTO BLASTED SURFACES ARE NOT ACCEPTA 9. THE PROTECTIVE COATING SHALL BE INSTALLE
- MANUFACTURER'S WRITTEN INSTRUCTIONS. CO ACHIEVE A MINIMUM OVERALL DRY FILM THICK
- 10. ALL HOLIDAYS OR OTHER IMPERFECTIONS IN T AT THE CONTRACTORS EXPENSE PRIOR TO FIN

# TEMPORARY WORK:

- 1. LABOR, EQUIPMENT, AND MATERIALS REQUIRE COMPLETION, ARE NOT A PART OF THE WORK, SUBSEQUENTLY REMOVED FROM THE SITE BY
- 2. TEMPORARY WORK SHALL BE SUBJECT TO THE LOCAL BUILDING CODES.
- 3. THE CONTRACTOR SHALL SAFERGUARD AND P DURING EXECUTION OF THE WORK, THE CONTI REQUIRED SEDIMENTATION AND EROSION CON WATERWAYS, STREETS, AND PROPERTIES. MEA TEMPORARY BERMS, STRAW WATTLES, HAY BA TURBIDITY CURTAINS. IN ACCORDANCE WITH S CONTRACTOR SHALL FURNISH, INSTALL, MAINT CONSTRUCTION. TEMPORARY MATERIALS AND FOR TEMPORARY WORK.

#### TIMBER:

- 1. VISUALLY GRADED STRUCTURAL LUMBER AND ASTM D245-06 STANDARD PRACTICE FOR ESTA
- ALLOWABLE PROPERTIES FOR VISUALLY GRAD 2. MECHANICAL STRENGTH OF TIMBER SHALL BE D4761-16.
- 3. HARDWARE USED TO CONNECT CCA TREATED ETC., SHALL BE HOT DIP GALVANIZED STEEL CO GALVANIZING SHALL CONFORM TO THE REQUI
- 4. HARDWARE AND FASTENERS USED TO CONNE NUTS AND WASHERS, ETC., SHALL BE GRADE 3 REQUIREMENTS OF THE RESPECTIVE ASTM STA FINISH WHERE APPLICABLE.

### TIMBER FLOATS:

- 1. WOOD FRAMING SHALL BE SOUTHERN YELLOW MINIMUM CCA CONTENT OF 2.5 PCF AND SHALL MOISTURE CONTENT SHALL NOT EXCEED 19%
- 2. WOOD DECKING SHALL BE SOUTHERN YELLOW
- MINIMUM MCA CONTENT OF 0.23 PCF AND SHAL 3. CLEATS SHALL BE COMPOSED OF ALMAG 35 CA
- REQUIREMENTS OF THE FEDERAL SPECIFICATI 4. DECKING SHALL BE FASTENED TO THE FLOAT F
- WOOD SCREWS.
- 5. FLOATATION MATERIAL SHALL BE CONTAINED I PROPERTIES TO SUPPORT THE DEAD LOAD OF LOAD OF 20 PSF WITHOUT LIST.
- 6. REFER TO THE CONTRACT SPECIFICATIONS SE
- SYSTEM FOR APPLICABLE DESIGN & LOAD CON ALL STRUCTURAL STEEL CONNECTORS, BRACK
- TO BE FABRICATED FROM ASTM A 36 GRADE ST
- 8. PILE GUIDES SHALL BE REMOVABLE TO ALLOW FROM THE ANCHOR PILES FOR SEASONAL AND

#### UTILITY NOTES:

- 1. THE SUBSURFACE UTILITY INFORMATION SHOV SURVEY INFORMATION, RECORD INFORMATION COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE OWNER, IF ANY; THEREFORE NO UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.
- 2. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN THEIR ACTUAL LOCATIONS.
- 3. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED 4. THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED, IS AN UNKNOWN CONDITION AS FAR AS OUR COMPILATION OF THIS INFORMATION.
- 5. IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILING UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON
- VARYING PLAN INFORMATION RECEIVED AND ACTUAL LOCATIONS. 6. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER MATTERS.
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BE PERMITTED UNLESS ACCEPTED BY THE NOT BE PERMITTED UNLESS ACCEPTED BY THE D PRE_DRILLING TO ASSIST PENETRATION MAY BE E IS ENCOUNTERED, OR WHERE VIBRATIONS FROM T STRUCTURES.	LEGENE	<u>)</u>
E FROM DRIVING OF ADJACENT PILES, RE-DRIVE AS THE OWNER.	DESCRIPTION	CALLOUT
NER WITH A COMPLETE DRIVING RECORD WITH THE ATIONS. THIS RECORD SHALL BE SUBMITTED	CATCH BASIN	
E OF THE CONTRACTOR. THE CONTRACTOR SHALL INDICATING PILE NUMBER, PILE TYPE AND RATED ENERGY, DATE OF INSTALLATION, FINAL TIP	CABLE TELEVISION MANHOLE	©
TATIVE NAME AND SIGNATURE. LTIMATE CAPACITY OF 275 TONS. AT LEAST TWO	DRAIN MANHOLE	©
ANALYZER (PDA) TO CONFIRM PILE DRIVING ROVIDE PDA REPORT TO ENGINEER FOR REVIEW	ELECTRIC MANHOLE	Ē
TO GRADE. THE PILES FOR TESTING WILL BE	MISCELLANEOUS MANHOLE	 
	SEWER MANHOLE	 §
NATER TO BE EPOXY COATED (BOTH SIDES) IN D 10 FEET BELOW DREDGED MUDLINE.	TELEPHONE MANHOLE	 
E WITH THE MANUFACTURES RECOMMENDATION ON SERVICE WITH MINIMUM GRIT BLASTING TO NEAR	WATER MANHOLE	 @
LIMITS OF THE INTERLOCK. INTERLOCKS SHALL	GAS SHUT-OFF	0 GG
ING SHALL BE BAR-RUST 235 MULTI-PURPOSE /OE COATINGS OR EQUIVALENT ACCEPTED BY THE	WATER SHUT-OFF	0 88
S. ING SHALL BE SCOTCHKOTE FUSION BOND EPOXY & EQUIVALENT ACCEPTED BY THE PROJECT	WATER SHOT-OFF WATER GATE	
CAL TO FACTORY COATING AND APPLIED IN	CLEANOUT	O WG
REQUIREMENTS. BLACK UNLESS OTHERWISE INDICATED ON THE		
ACCORDANCE WITH THE PROTECTIVE COATING JCTIONS. SURFACES ARE TO BE	FIRE HYDRANT	Ŷ
FACE CLEANLINESS IN ACCORDANCE WITH ALL BE 1.5 TO 2.5 MILS IN DEPTH AND BE OF A SHARP,	GATE VALVE	$\bowtie$
PATTERN (FROM SHOT BLASTING). SURFACES MUST SE, DIRT, MILDEW, FORM RELEASE AGENTS, CURING		DP
RIT DUST, AND OTHER FOREIGN SUBSTANCES. FABLE. LED IN STRICT ACCORDANCE WITH	UTILITY POLE WITH CONDUIT LINE TO GRADE	UP W/ UE ©
COATING IS TO BE APPLIED IN TWO COATS TO CKNESS OF 15 MILS.	LIGHT POLE	*
N THE COATING SHALL BE REMOVED OR REPAIRED FINAL ACCEPTANCE OF THE WORK.	LIGHT BOLLARD	-∻ LB
	LANDSCAPE LIGHT	-∻ LL
RED TO PERFORM THE WORK THAT, UPON K, SHALL BE FURNISHED, INSTALLED, AND	HAND HOLE	□ HH
BY THE CONTRACTOR. THE REQUIREMENTS OF THE STATE AND APPLICABLE	TRASH CAN	тс О
) PROTECT EXCAVATIONS. ITRACTOR IS REQUIRED TO INSTALL AND MAINTAIN	FIRE ALARM CALL BOX	FACB
ONTROL MEASURES TO PROTECT ADJACENT //EASURES INCLUDE BUT ARE NOT LIMITED TO	METAL POST	• MP
BALES, SILT FENCES, CONTAINMENT BOOMS, AND I STATE REGULATORY AUTHORIZATIONS, THE NTAIN TEMPORARY TURBIDITY CURTAINS DURING	CONCRETE POST	• CP
ND EQUIPMENT SHALL CONFORM TO REQUIREMENTS	SIGN POST	• SP
	DECIDUOUS TREE WITH TRUNK DIAMETER	12" දී හි දි
ND WOOD CONSTRUCTION SHALL CONFORM TO TABLISHING STRUCTURAL GRADES AND RELATED	CONIFEROUS TREE WITH DIAMETER	12"
ADED LUMBER. BE DETERMINED IN ACCORDANCE WITH ASTM	HANDICAP PARKING	Ę,
D TIMBER, INCLUDING BOLTS, NUTS AND WASHERS,	SPOT ELEVATION	601×43
CONFORMING TO ASTM A307 GRADE A. UIREMENTS OF ASTM A153. IECT MCA TREATED TIMBER INCLUDING BOLTS,	BITUMINOUS CONCRETE BERM	BB
E 316 STAINLESS STEEL AND CONFORM TO THE STANDARD. HARDWARE SHALL PROVIDE A FLUSH	SLOPED GRANITE CURB	SGC
	VERTICAL GRANITE CURB	VGC
DW PINE NO. 1 STRUCTURAL STRESS GRADE WITH A	VERTICAL CONCRETE CURB	VCC
ALL BE KILN DRIED AFTER TREATMENT (KDAT).	WHEELCHAIR RAMP	WCR
DW PINE NO. 1 STRUCTURAL STRESS GRADE WITH A A A A A A A A A A A A A A A A A A A	LANDSCAPE TIMBER	LST
CAST ALUMINUM ALLOY CONFORMING TO THE ATION QQ-A-571F AND QQ-A-601E. T FRAMEWORK WITH 2-INCH LONG STAINLESS STEEL	SALT MARSH	* * * * * *
D IN A CLOSED CELL WITH SUFFICIENT MATERIAL	PHRAGMITES	┍╶╾╼╶╴╼╴╴╴ └╴╴╴╌
DF THE FLOAT AND RAMP PLUS A UNIFORM LIVE SECTION 35 51 13.23 TIMBER FLOATING DOCK ONDITIONS. CKETS, PILE GUIDES AND MISCELLANEOUS PARTS STEEL.		
W THE FLOATING DOCKS TO BE DISCONNECTED	LIST OF ABBREVIATIONS:	INFI
OWN HEREON IS COMPILED BASED ON FIELD	ALTERNATE - ALT	KIP
ON AS SUPPLIED BY THE APPROPRIATE UTILITY .IED BY THE OWNER, IF ANY; THEREFORE NO	AMERICAN ASSOCIATION OF STATE - AASH & HIGHWAY TRANSPORTATION OFFICIALS	TO LEN

GUARANTEE IS MADE AS TO THE ACCURACY OF SAID COMPILED SUBSURFACE INFORMATION TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB-SURFACE

DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM

APPRO)

BM

- BOS

- BOC

- BLDG

- CB

- CL

- C-C

- CLF

- CFS

- EOP

- FT

- GALV

- HDPE

- HDG

- IN

- CY

-

CLSM

CP

EL. ELEV

EPA

EX. EXIST

- C.I.P.

-

CONTROLLED LOW-STRENGTH MATERIAL -

ENVIRONMENTAL PROTECTION AGENCY -

APPROXIMATE

BOTTOM OF SLOPE

CENTER TO CENTER

EDGE OF PAVEMENT

CUBIC FEET PER SECOND

HIGH DENSITY POLYETHYLENE

HOT DIPPED GALVANIZED

CHAIN LINK FENCE

CONTROL POINT

CUBIC YARDS

ELEVATION

EXISTING

GALVANIZED

FEET

INCHES

BOTTOM OF CURB

BENCHMARK

CATCH BASIN

CENTERLINE

CAST IN PLACE

BUILDING

LEGEND				
UT	DESCRIPTION	CALLOUT		
]	RM ELEVATION EQUALS	R=		
	INVERT ELEVATION EQUALS	I=		
	TOP OF HOOD ELEVATION EQUALS	TH=		
	NO PIPES VISIBLE	NPV		
	TOP OF WATER	TOW=		
	TRAFFIC CONTROL BOX	ТСВ		
	UNDERGROUND LOOP DETECTOR	ULD		
	DETECTABLE WARNING PANEL	DWP		
	TOP OF WALL ELEVATION	601×43TW		
	TOP OF WATER ELEVATION	60☆43TOW		
	TOP OF PIPE ELEVATION	60†x43TP		
ANOUT	TOP OF RAILROAD TRACK ELEVATION	60た43TR		
	CHAIN LINK FENCE	x		
	STRAW WATTLE	<b>oo</b> o		
	EXISTING UNDERGROUND CABLE TV LINE	CATV		
	EXISTING UNDERGROUND DRAIN LINE	D		
	EXISTING UNDERGROUND ELECTRIC LINE	E		
	EXISTING UNDERGROUND GAS LINE	G		
	EXISTING UNDERGROUND SEWER LINE	S		
	EXISTING UNDERGROUND TELEPHONE LINE	T		
'	UNDERGROUND WATER LINE	W		
	PROPOSED STRAW WATTLE LINE			
	OVERHEAD WIRES	ОНW		
	UNDERGROUND LIGHTING CIRCUIT	UGE		
	MONITORING WELL			
	BENCHMARK			
	MEAN HIGH WATER			
;	MEAN LOW WATER			
;	ANNUAL HIGH TIDE LINE	·		
;	PROPOSED FUEL LINE	UGF		
R	PROPOSED WATER LINE	w		
-	PROPOSED STORM DRAIN LINE	SD		
* * *	HISTORICAL BORING	<u> </u>		

SL				-	
DEPARTMENT OF PUBLIC WORKS TOWN OF ORLEANS, MASSACHUSETTS ROCK HARBOR COMMERCIAL WHARF IMPROVEMENTS					
NO.     BY     DATE     DESCRIPTION       A     JSD     03/22/2024     ADDENDUM #3		\$			
ATE OF	3Y	[	DATE	3/2/21	
D SI	RS	10/24/19 & 3/2/21 12/05/2023 06/28/2021			
TES A BRE	5, LI Ane Ivi <i>a</i>	EGE ) ATI(	EN DN	D	
		Image: State of the second	Image: State of the second state o	Image: State of the state	

NFILTRATION CHAMBER	-	I.F.
KIPS PER SQUARE INCH	-	KSI
ENGTH	_	L
LINEAR FOOT	-	LF
MANHOLE	-	MH
MASS HIGHWAY DEPARTMENT	-	MHD
MAXIMUM	-	MAX
MEAN HIGH WATER	-	MHW
MEAN LOWER LOW WATER	-	MLLW
MINIMUM	-	MIN
MISCELLANEOUS	-	MISC.
NOT TO SCALE	-	NTS
ORGANIC MATERIAL	-	OL
OUTSIDE DIAMETER	-	OD
OVERDREDGE	-	OD
POUNDS PER SQUARE INCH	-	PSI
PROPOSED	-	PROP.
REMOVE & DISPOSE	-	R & D
REMOVE & RESET	-	R & R
SPECIFICATION	-	SPEC
STATION	-	STA
SQUARE FOOT	-	SF
TOP OF CURB	-	TOC
TOP OF SLOPE	-	TOS
TRENCH DRAIN	-	T.D.
TYPICAL	-	TYP

UGE

WT

-

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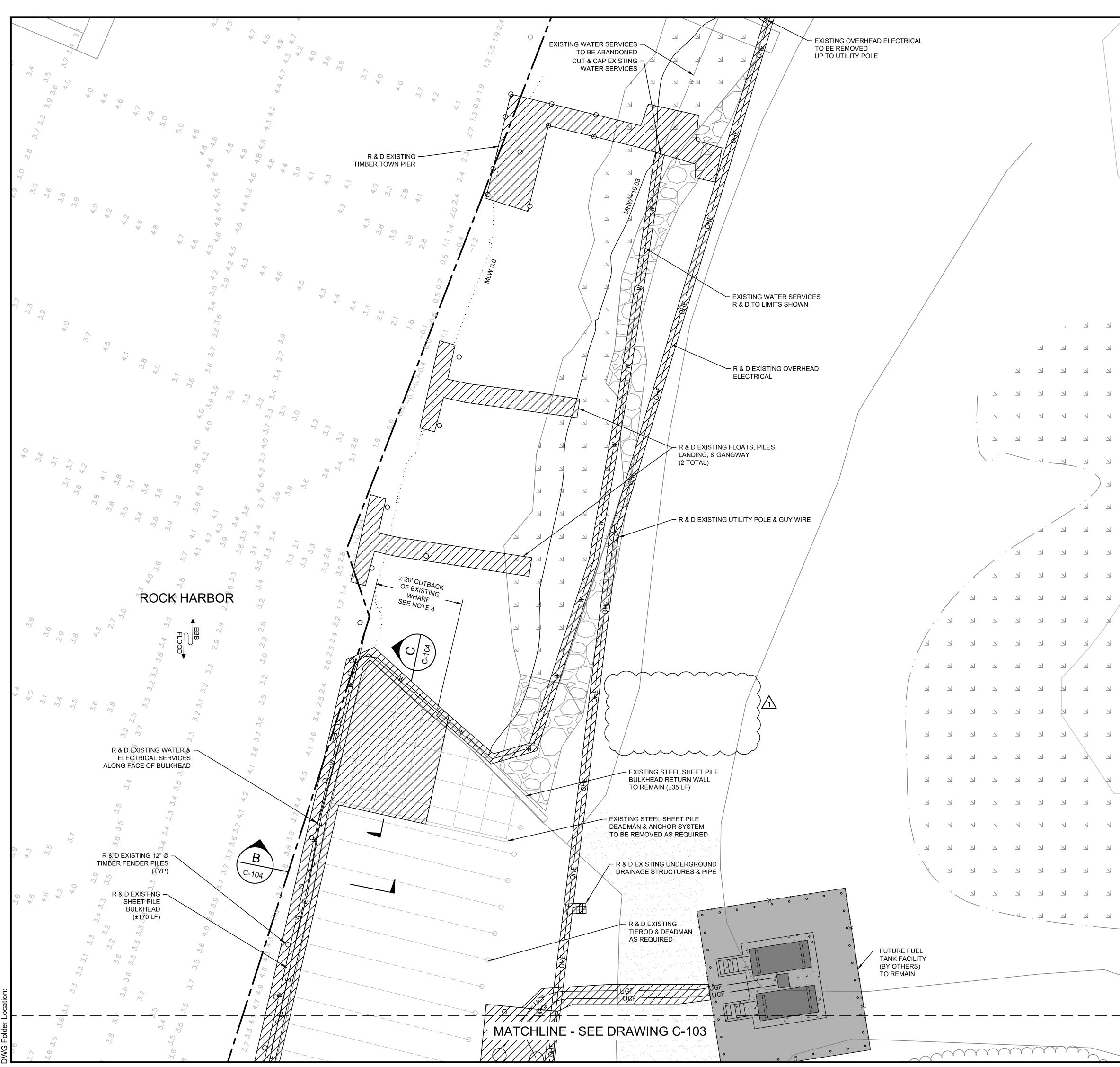
UNDERGROUND ELECTRICAL

WALL THICKNESS

2	TUM Sets	5
MLW _ 12.11 - 10.48 - 10.03 -	NAVE - 6.40 - 4.77 - 4.32	988 AHTL MHHW MHW
5.71 -	- 0	NA∨D88
0 – -0.31 – OFFSETS T NOAA TIDA BOSTON EPOCH 1 AND VDA	AKEN FI AL STAT #84439 983–20	10N 70 01

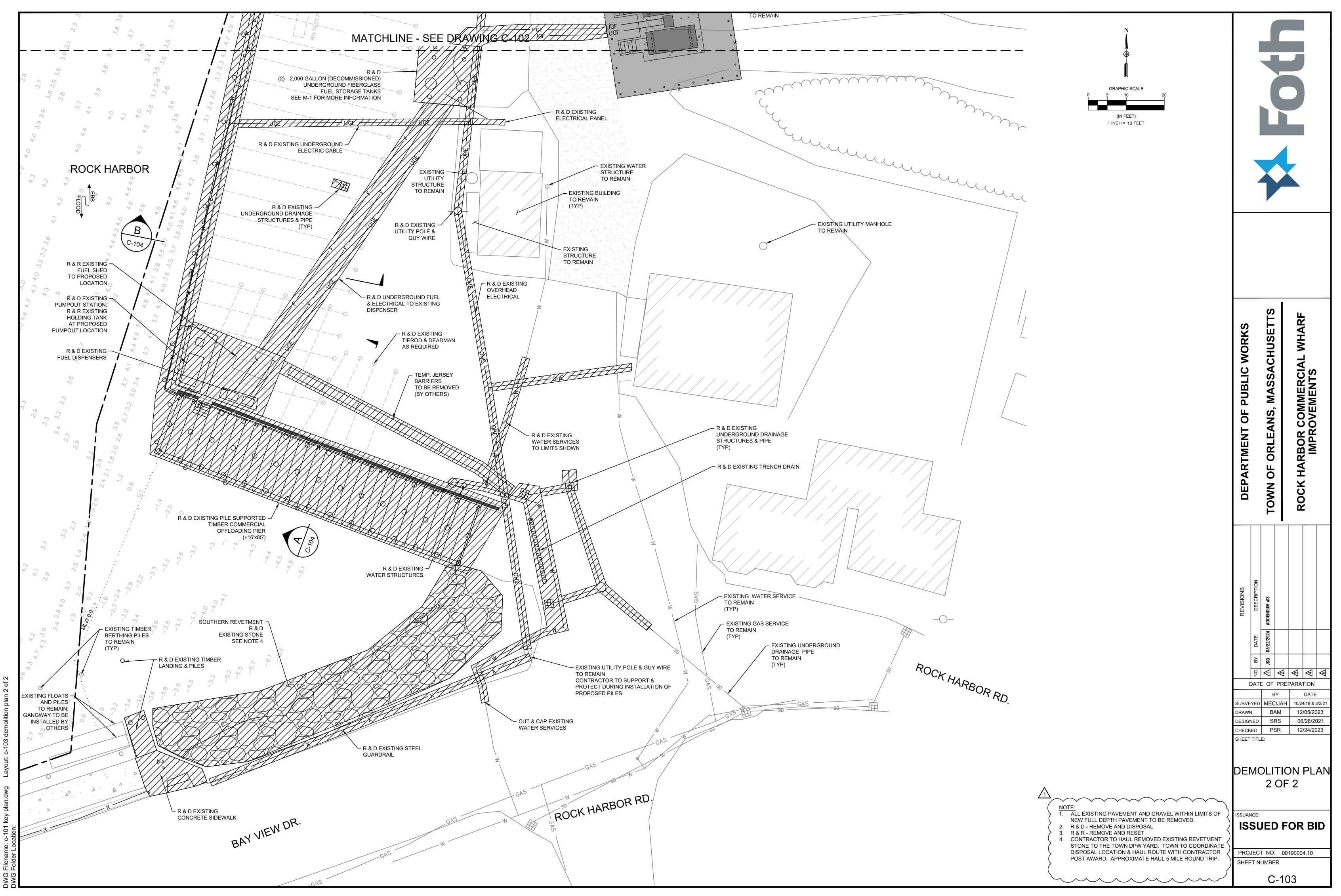
SHEET NUMBER

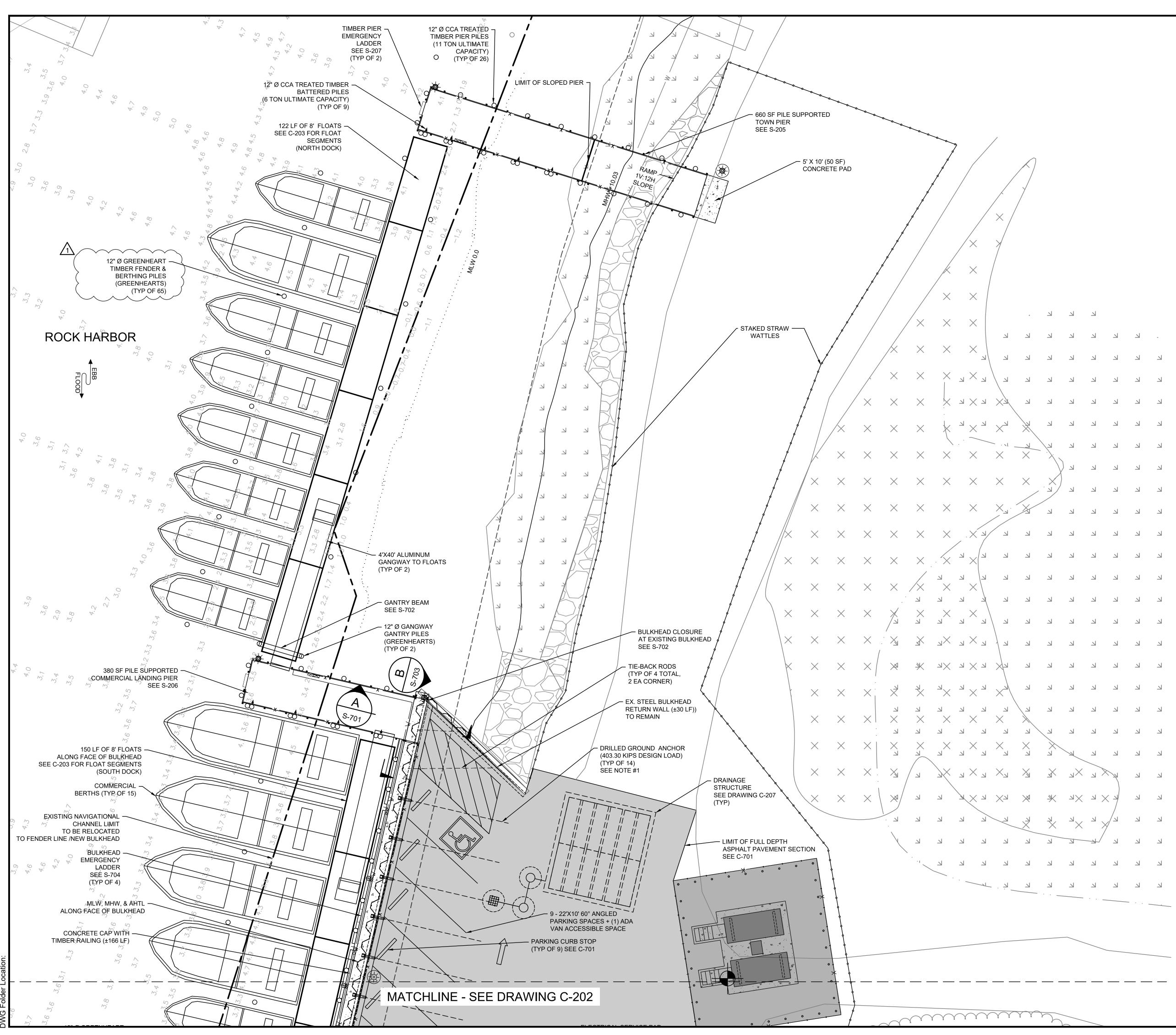
G-003



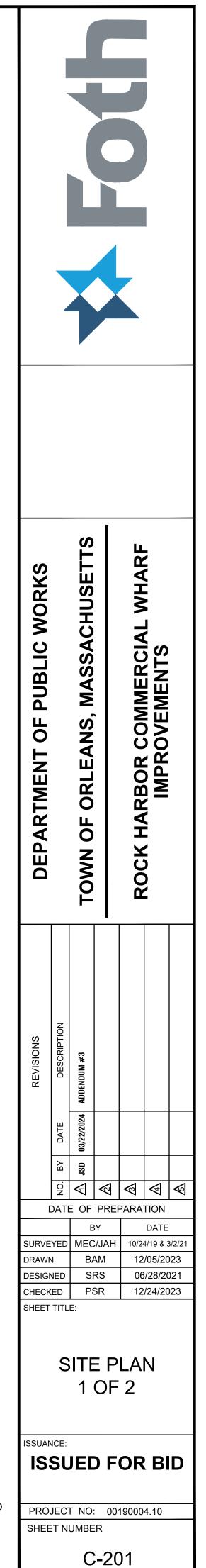
ursday, March 21, 2024 3:21:57 PM VG Filename: c-101 key plan.dwg Layou:

	Image: Construction of the construc						
		DEPARTMENT OF PUBLIC WORKS		TOWN OF ORLEANS, MASSACHUSETTS			
<ul> <li>・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・</li></ul>		SURVE DRAWN DESIGN CHECK SHEET	DATE	BY MEC/JA BAM SRS PSR	REPARA 10/2 12 00 12	Image: style="text-align: center;">Image: style="text-align: center;"/>Image: style="text-align: center;"///Image: style="text-align: center;"//Image: style="text-align: center;"/>Image: style="text-align: center;"/>Image: style="text-align: center;"//Image: style="text-align: center;"/>Image: style="text-align: style: style="text-align: center;"//Image: s	1
	<ol> <li><u>NOTE:</u></li> <li>ALL EXISTING PAVEMENT AND GRAVEL WITHIN LIMITS OF NEW FULL DEPTH PAVEMENT TO BE REMOVED.</li> <li>R &amp; D - REMOVE AND DISPOSAL .</li> <li>R &amp; R - REMOVE AND RESET.</li> <li>EXISTING BACKFILL TO BE REMOVED/DREDGED TO ELEVATION -3.0 MLW WITH 1' OF ALLOWABLE OVERDIG/OVERDREDGE TO -4 MLW (± 2,300 CY). SEE MADEP 401WQC 22-WW08-0018-AAP FOR REUSE/DISPOSAL REQUIREMENTS.</li> </ol>	PROJ	JECT	NO: (	0019000	<b>R BID</b> 04.10	-



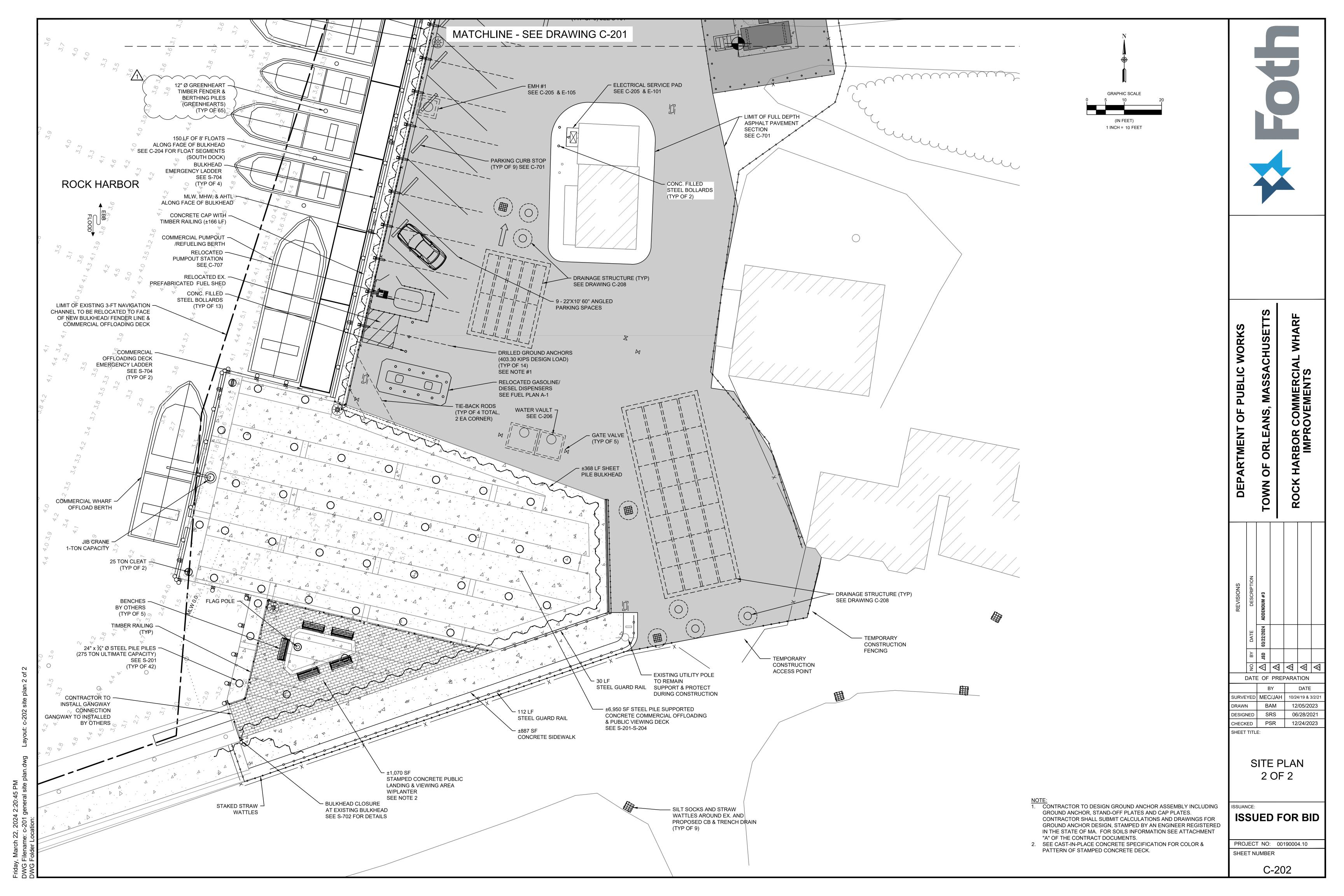


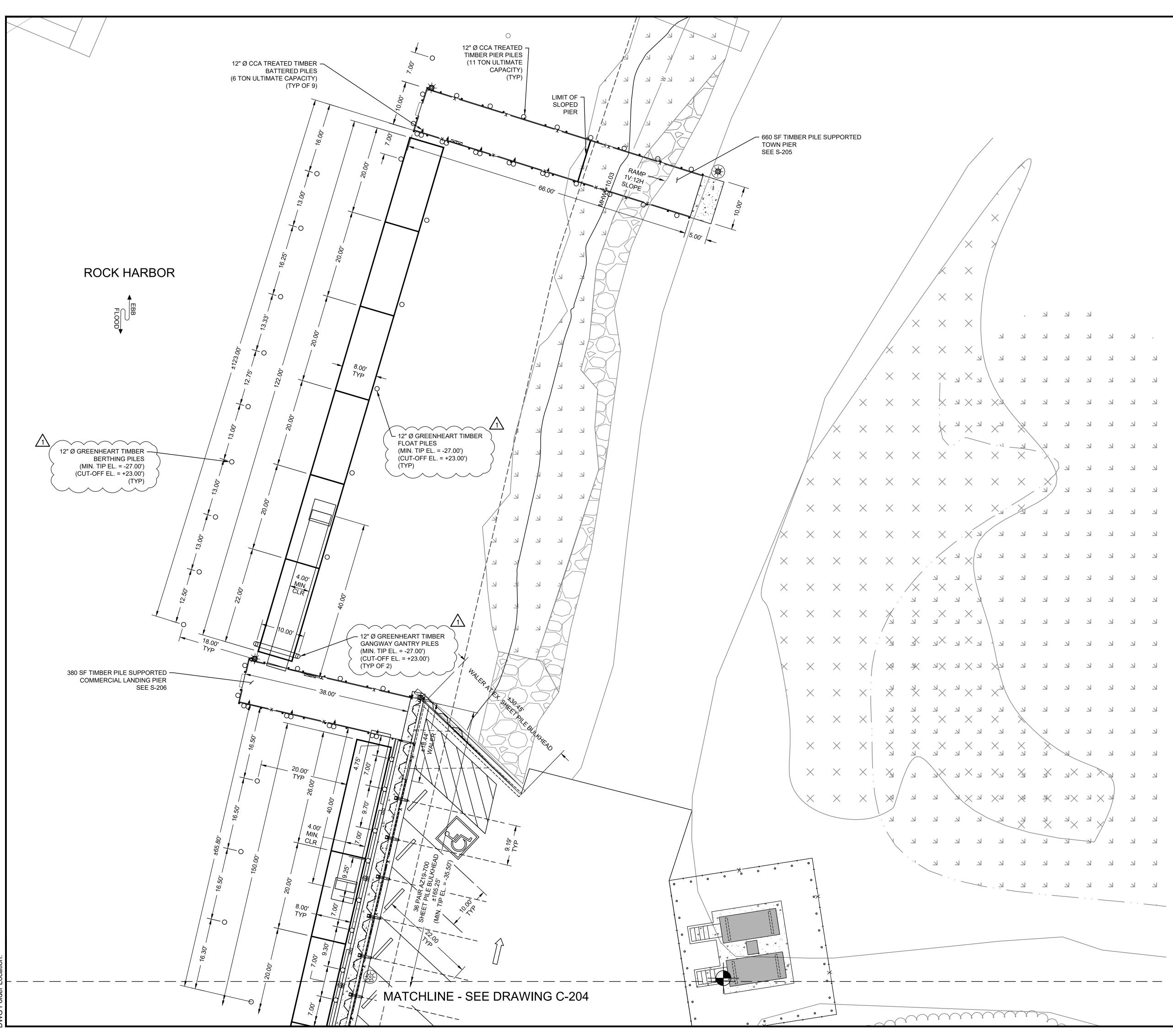
/, March 22, 2024 2:21:28 PM Filename: c-201 general site plan.dwg Layout: c-201

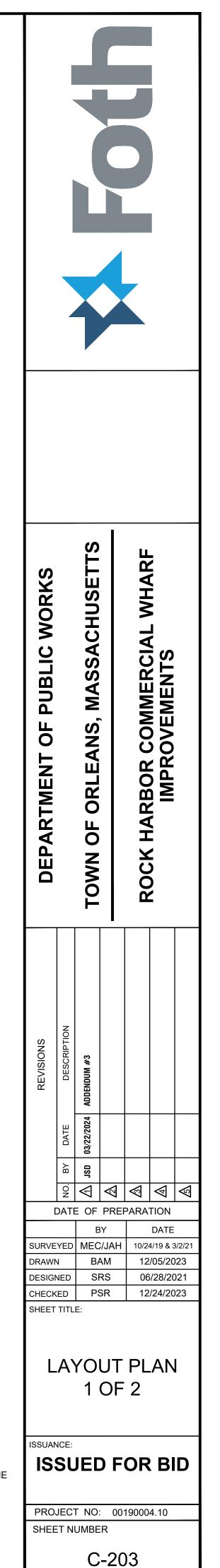


GRAPHIC SCALE (IN FEET) 1 INCH = 10 FEET

CONTRACTOR TO DESIGN GROUND ANCHOR ASSEMBLY INCLUDING GROUND ANCHOR, STAND-OFF PLATES AND CAP PLATES. CONTRACTOR SHALL SUBMIT CALCULATIONS AND DRAWINGS FOR GROUND ANCHOR DESIGN, STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF MA. FOR SOILS INFORMATION SEE ATTACHMENT "A" OF THE CONTRACT DOCUMENTS.



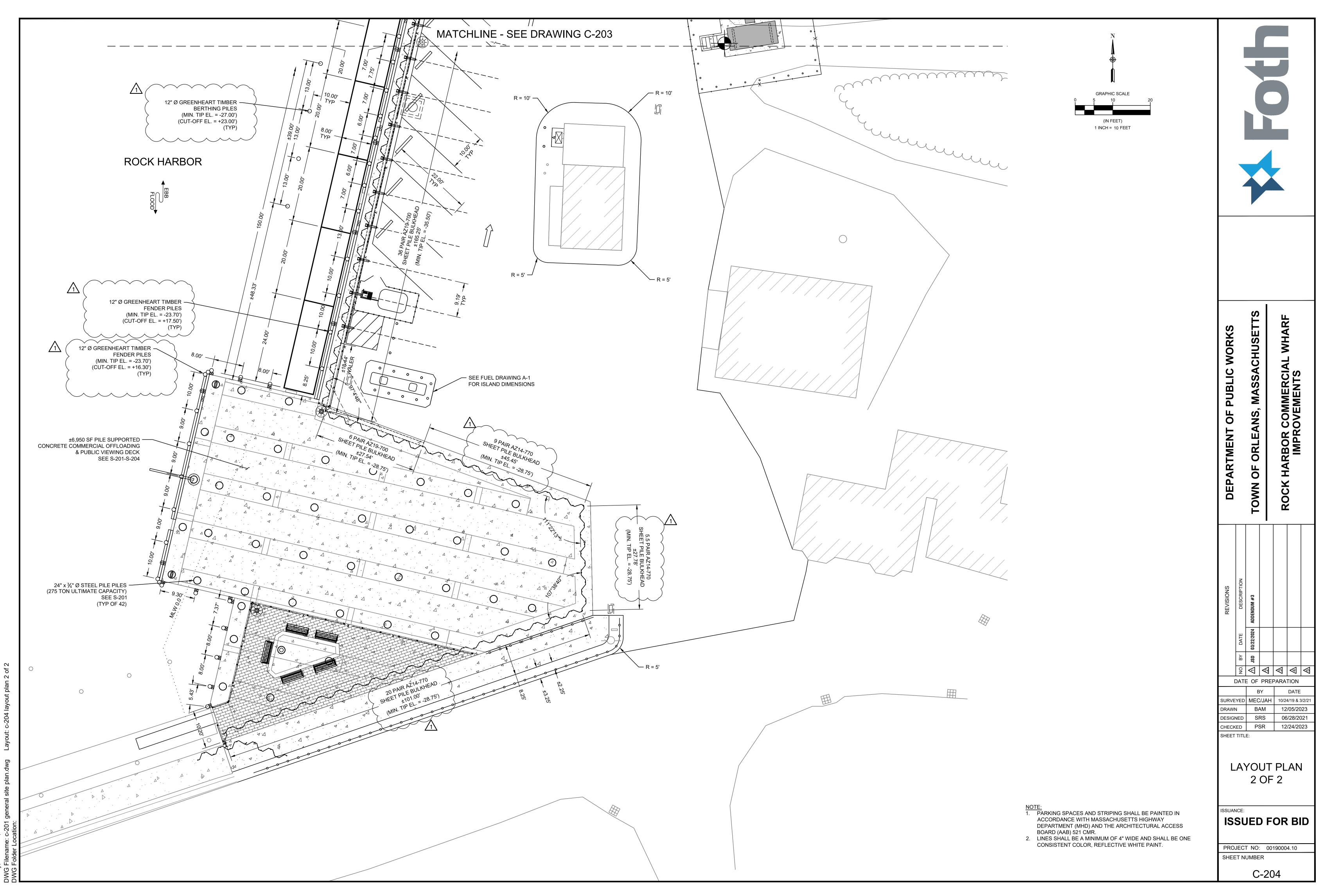




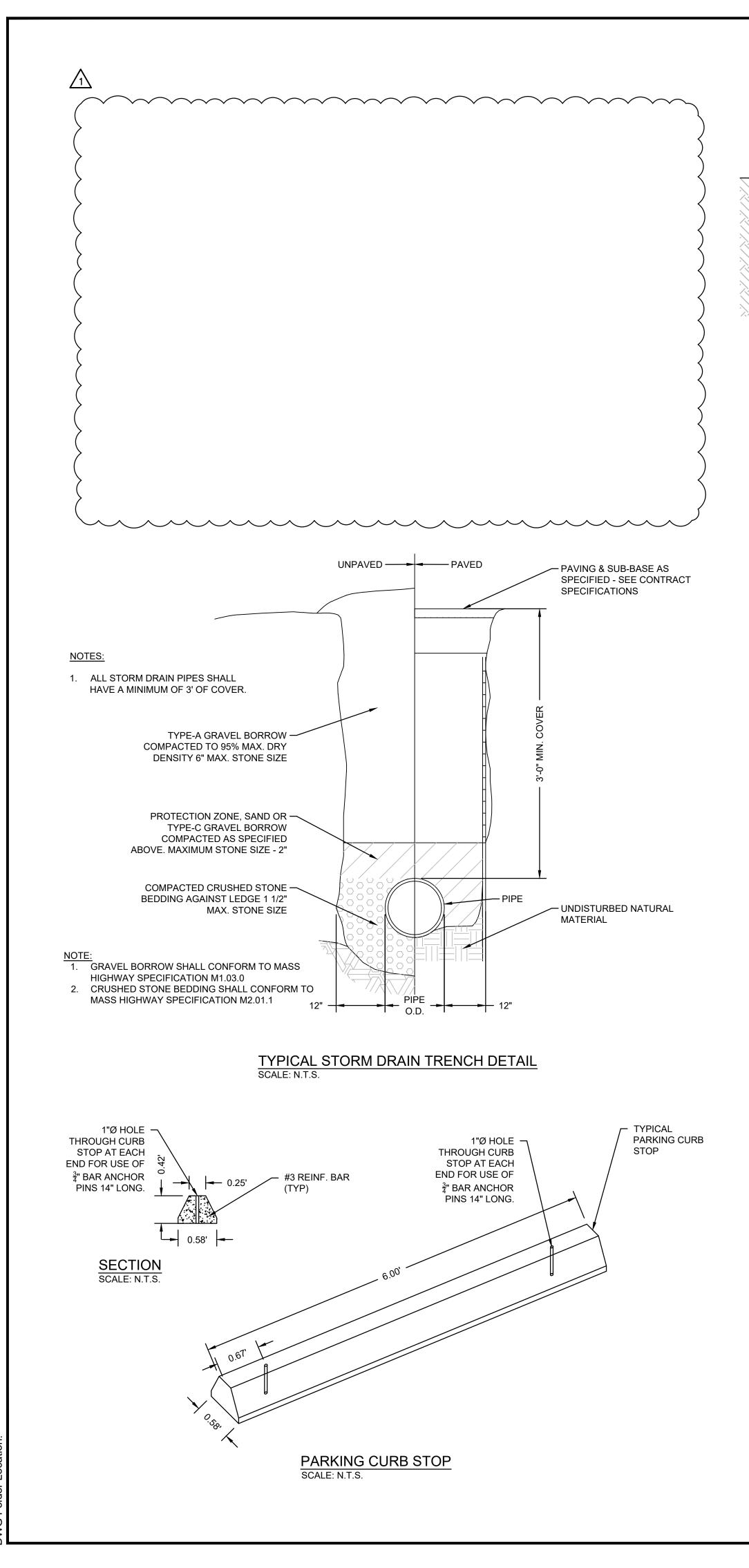
GRAPHIC SCALE (IN FEET) 1 INCH = 10 FEET

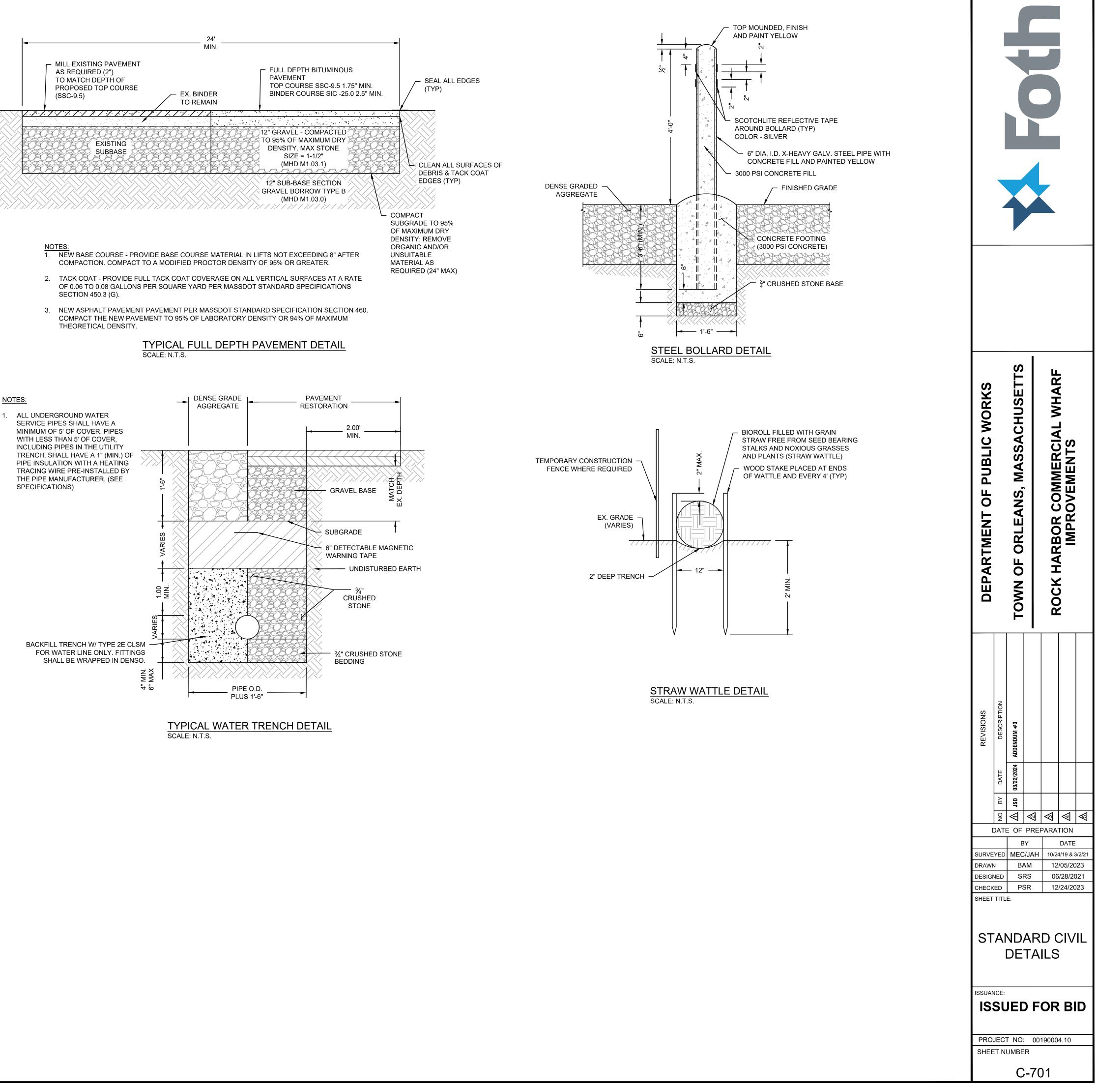
1. PARKING SPACES AND STRIPING SHALL BE PAINTED IN ACCORDANCE WITH MASSACHUSETTS HIGHWAY DEPARTMENT (MHD) AND THE ARCHITECTURAL ACCESS BOARD (AAB) 521 CMR.

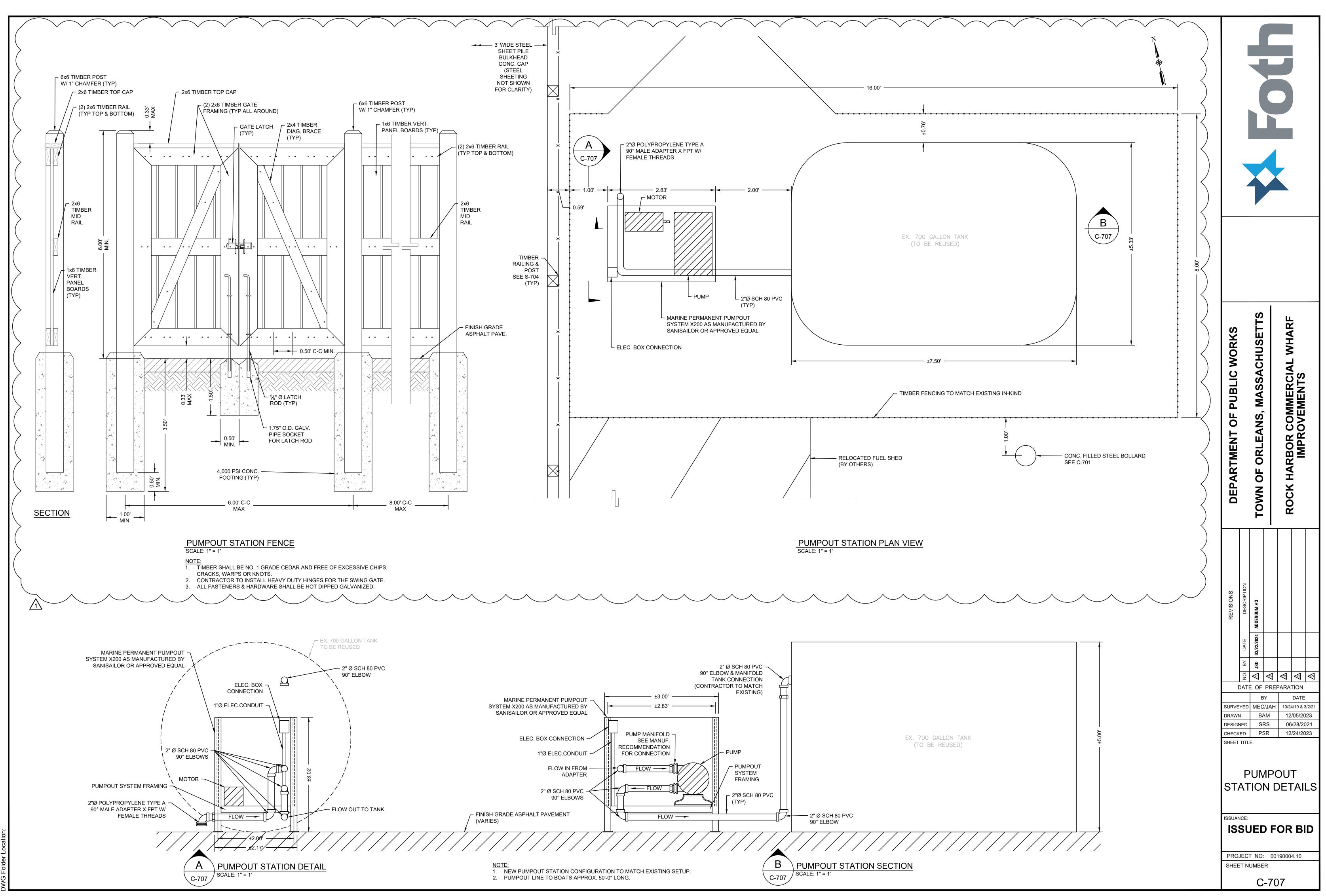
2. LINES SHALL BE A MINIMUM OF 4" WIDE AND SHALL BE ONE CONSISTENT COLOR, REFLECTIVE WHITE PAINT.



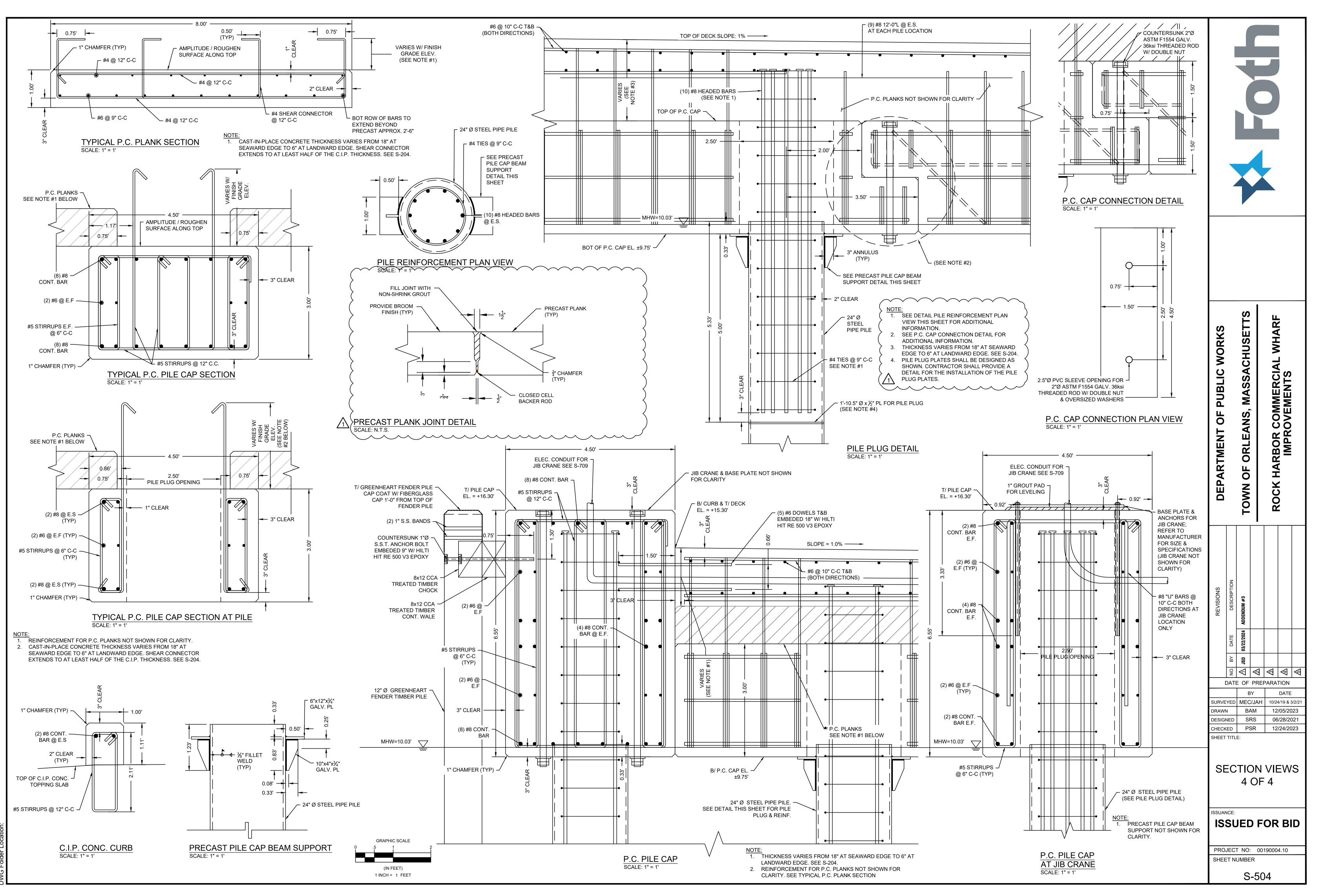
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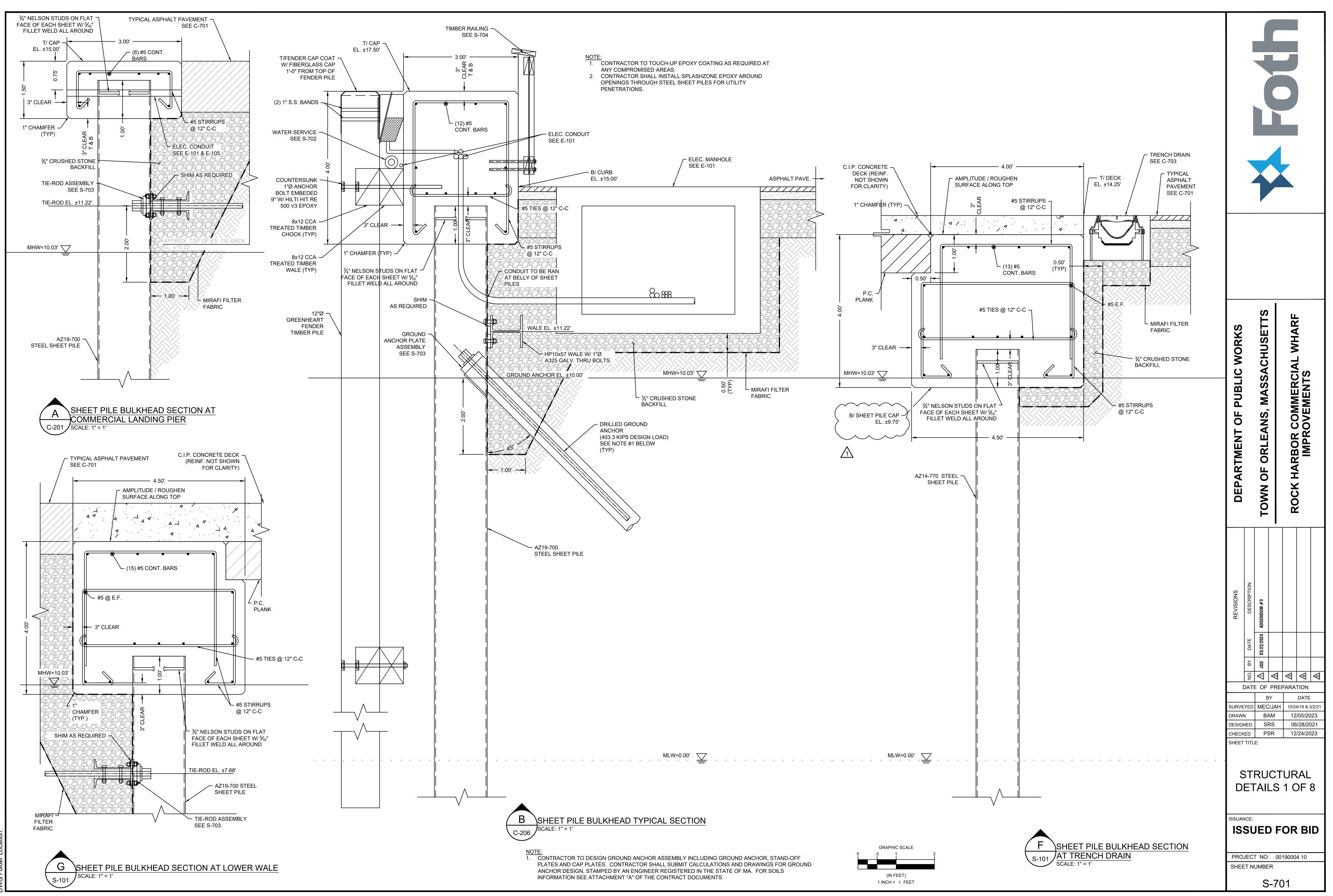




ЪΜ 23 12:13: details 024 civil 1, 2 701 2 Q C



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riday, March 22, 2024 12:55:59 PM WG Filename: s-701 structural details.dwg Layout: s-701 structural de MG Folder Location:

