ROCK HARBOR COMMERCIAL WHARF IMPROVEMENTS
TOWNS OF ORLEANS, MA
ADDENDUM #5

AWARDING AUTHORITY:	**Town of Orleans**
PROJECT:	**Rock Harbor Commercial Wharf Improvements**
DATE:	**March 28, 2024**
TO:	**All Bidders**
CONSULTING ENGINEER:	**Foth Infrastructure & Environment, LLC** **15 Creek Road, Marion, MA 02738**

The following items shall modify or be added to the Contract Documents. This Addendum forms part of the Contract Documents and modifies the original bidding documents. Portions of the Contract Documents not altered by this Addendum remain in full force.

This Addendum forms part of the Contract Documents and as such, **ALL BIDDERS SHOULD ACKNOWLEDGE IT IN THE "BID PROPOSAL". FAILURE TO DO SO COULD RESULT IN THE REJECTION OF YOUR BID.**

Notice is hereby given to any and all plan holders of record with the Owner for the project herein captioned **"Rock Harbor Commercial Wharf Improvements"**, Owner of record being the Town of Orleans, of the following amendments to the Contract:

I. CONTRACT DOCUMENTS

ATTACHMENT B - DRAWINGS

The drawings entitled: *Rock Harbor Commercial Wharf Improvements*, Town of Orleans, Massachusetts, Department of Public Works; Issued for Bid on 03/08/2024 (57 total sheets, including cover sheet) and revised as part of Addendum #3 issued on 03/22/2024 and Addendum #4 issued on 03/27/2024 shall be **REVISED** as shown on Sheet G-002, Notes, attached herein.

The design load for ground anchors shall be 305 kips.

Attachments:
Revised Drawings – 1 sheet (total)

*****END OF ADDENDUM #5*****

SURVEY NOTES:

1.	SURVEYOR:	M. COUNT, J. HILL & M. COUNT, H. CHOUINARD
2.	VESSEL:	CLE OLAF
3.	TRANS./FATH.:	ODOM CVM, 200 KHZ TRANSDUCER, TRIMBLE RTK W/ KEYNET
4.	WEATHER COND:	SUNNY, 63 DEGREES, WIND 0-5 KTS & SUNNY, 35 DEGREES, WIND 5-10 KTS
5.	DATA REDUCTION:	1' DATA SORT

6. RESULTS OF HYDROGRAPHIC & TOPOGRAPHIC SURVEY BY FOTH INFRASTRUCTURE & ENVIRONMENT, LLC. (FOTH) ON 10/24/2019 (HYDRO) , 10/25/2019, 4/2/2021, & 5/10/2022 (TOPO).
7. ELEVATIONS AND SOUNDINGS ARE IN FEET AND TENTHS, AND REFER TO THE MLW DATUM.
8. DATUM CONVERSIONS SHOWN WERE CALCULATED USING VDATUM 4.1.2 AT THE PROJECT SITE (LAT: -70.00566, LONG: 41.80346)
9. COORDINATES ARE BASED ON NAD83 MASSACHUSETTS MAINLAND STATE PLANE GRID SYSTEM.
10. PROJECT BENCHMARK IS DISK LOCATED AT ROUTE 6 ROTARY STAMPED "424 G" PUBLISHED EL. +13.23' NAVD88 (+18.94' MLW).
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.
13. BENCHMARK / RTK TIDES: TIDES ARE RECORDED USING RTK TIDES IN HYPACK. ELEVATIONS FROM ELLIPSOID TO ORTHOMETRIC NAVD88 USE GEOID 12A.
14. PROJECT SITE IS IN FEMA ZONE VE 17 AND ZONE AE 14 NAVD88 IN ACCORDANCE TO FEMA FIRM #25001C0417J, EFFECTIVE DATE JULY 16, 2014.
15. 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.
16. 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 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.
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, REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED HEREON IS EXPRESSLY PROHIBITED WITHOUT THE WRITTEN CONSENT OF FOTH.
18. DIMENSIONS ARE IN FEET AND INCHES OR TENTHS OF A FOOT UNLESS OTHERWISE NOTED.

DESIGN CRITERIA:

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 FOR THE PROJECT.
2. THE COMPLETED STRUCTURE HAS BEEN DESIGNED TO WITHSTAND THE FOLLOWING DESIGN LOADS APPLIED IN CONJUNCTION WITH DESIGN DREDGE/MUDLINE ELEVATIONS INDICATED ON THE CONTRACT DRAWINGS:

2.1.	GENERAL	
	BUILDING RISK CATEGORY	II
2.2.	LIVE LOADS:	
	COMMERCIAL WHARF:	640 PSF UNIFORM LOAD
	CONCENTRATED LIVE LOAD:	32,000 LBS
	PUBLIC WHARF:	250 PSF UNIFORM LOAD
	CONCENTRATED LIVE LOAD:	8,000 LBS
	BULKHEAD:	250 PSF UNIFORM LOAD
	CONCENTRATED LIVE LOAD:	32,000 LBS
	TIMBER PIER:	100 PSF UNIFORM LOAD
	ACCESS GANGWAYS:	50 PSF FOR 4 FT WIDE 100 PSF FOR WIDER THAN 4 FT
2.3.	WIND LOAD	
	BASIC WIND SPEED	140 MPH
	WIND EXPOSURE CATEGORY:	D
2.4.	SNOW LOAD	
	GROUND SNOW LOAD	50 PSF
2.5.	EARTHQUAKE LOAD	
	SEISMIC IMPORTANCE FACTOR	Ie=1.0
	MCE_R GROUND MOTION (PERIOD=0.2s)	S_S=0.15
	MCE_R GROUND MOTION (PERIOD=1.0s)	S_1=0.048
	SITE-MODIFIED SPECTRAL ACCELERATION	S_{MS}=0.239
	SITE-MODIFIED SPECTRAL ACCELERATION	S_{M1}=0.115
	NUMERIC SEISMIC DESIGN VALUE AT 0.2S SA	SDS=0.16
	NUMERID SEISMIC DESIGN VALUE AT 1.0S SA	SD1=0.077
	SITE CLASS	D
	SEIMIC DESIGN CATEGORY	B
	DESIGN PROCEDURE:	EQUIVALENT LATERAL FORCE
	RESPONSE MODIFICATION FACTOR	R=2
2.6.	VESSEL LOADS	
	PILE MOORING LOAD:	1.1 KIP
2.7.	ICE LOADS	
	PILE PULLOUT LOAD:	8 KIP

3. FOUNDATION

REQUIRED SOIL BEARING CAPACITY	1500 PSF

SUCH BEARING STRATA IS ANTICIPATED AT THE BOTTOM OF FOOTING ELEVATIONS NOTED ON THE FOUNDATION PLAN. A GEOTECHNICAL ENGINEER SHALL REVIEW ALL BEARING STRATA PRIOR TO CASTING CONCRETE IN ORDER TO VERIFY THE PRESUMPTIVE BEARING VALUE.

4. CONCRETE

CAST-IN-PLACE CONCRETE	f'c=5,000 PSI (UNLESS OTHERWISE NOTED)
CONCRETE EXPOSURE	CLASSES F3, S1, W2, C2
W/CM RATIO	0.40
REINFORCING BARS	ASTM A615 GR. 60
EPOXY COATING	ASTM A775
WELDED WIRE REINFORCEMENT	ASTM A1064

PROVIDE THE FOLLOWING COVER FOR REINFORCEMENT:
ALL STEEL REINFORCEMENT MUST HAVE A CLEAR COVER OF 3 INCHES.

5. STEEL

STEEL W AND WT SHAPES	ASTM A992
OTHER STEEL SHAPES	ASTM A572 GR 50
STEEL PLATES	ASTM A572 GR 50
STEEL HSS	ASTM A500 GR C
STEEL PIPE	ASTM A252, fy=50KSI OR API 5LX52
STEEL SHEET PILE	ASTM A572 GR 60, fy=60KSI
BOLTED CONNECTIONS	ASTM F3125 GR A325 TYPE 1 SNUG TIGHT U.N.O.
ANCHOR BOLTS	ASTM F1554 GR 36 HDG OR HILTI KWIK BOLT #3
NUTS	ASTM A563
WASHERS (EXCEPT AGAINST TIMBER)	ASTM F436,
WASHERS AGAINST TIMBER	COMMON DOCK WASHERS
THREADBAR	ASTM A615 GR. 100
WELDING ELECTRODES	E70XX AWS D1.1, AWS A5.1 AND AWS A5.5

6. TIMBER

TIMBER PILES - FENDER	12” Ø GREENHEART
TIMBER PILES - PIER	12” Ø SOUTHERN YELLOW PINE
TIBER BRACES	SYP NO. 2 OR BETTER
TIMBER PILE CAPS	SYP NO. 2 OR BETTER
TIMBER STRINGERS	SYP NO. 2 OR BETTER
TIMBER DECKING	SYP NO. 2
PRESERVATIVES	
PILES - PIER	2.5 PCF CCA
BRACES	2.5 PCF CCA
PILE CAPS AND STRINGERS	2.5 PCF CCA
TIMBER RAILING	0.23 PCF MCA
DECKING	0.23 PCF MCA

HARDWARE
HARDWARE FOR TIMBER CONSTRUCTION SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL IN COMPLIANCE WITH AISI 316, U.N.O. SEE TIMBER CONSTRUCTION SECTION 061333.

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7. PILE TIP ELEVATIONS & CAPACITIES

24" Ø x $\frac{3}{4}$" STEEL PIPE PILES	275 TON ULTIMATE CAPACITY (EST. LENGTH = 75')
GROUND ANCHORS	305 KIPS DESIGN LOAD
AZ19-700 SHEET PILES	MIN. TIP EL. = -35.50'
AZ14-770 SHEET PILES	MIN. TIP EL. = -28.75'
12"Ø GREENHEART NORTH FLOAT PILES	MIN. TIP EL. = -27.00'
12"Ø GREENHEART BERTHING PILES	MIN. TIP EL. = -27.00'
12"Ø GREENHEART GANTRY PILES	MIN. TIP EL. = -27.00'
12"Ø GREENHEART FENDER PILES (FIXED TO BULKHEAD)	MIN. TIP EL. = -23.70'
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')

* CONTRACTOR SHALL CONFIRM REQUIRED PILE LENGTHS

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 SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THIS RESPONSIBILITY EXTENDS TO RELATED ASPECTS OF THE CONSTRUCTION ACTIVITY INCLUDING, BUT NOT LIMITED TO, ERECTION METHODS, ERECTION SEQUENCE, CONNECTIONS, TEMPORARY BRACING, FORMS, SHORING, USE OF EQUIPMENT, AND SIMILAR CONSTRUCTION PROCEDURES. REVIEW OF CONSTRUCTION BY THE 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 TO CONSTRUCTION PROCEDURES SHALL NOT BE INTERPRETED AS APPROVAL OR ACCEPTANCE OF SUCH PROCEDURES.

GENERAL CONDITIONS:

1. 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.
2. NOTES HEREIN ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS AND ADDITIONAL INFORMATION.
3. DATA COLLECTED ASSOCIATED WITH THIS PROJECT IS CONTAINED WITH THE DOCUMENT ENTITLED "ROCK HARBOR COMMERCIAL WHARF IMPROVEMENTS" PROVIDED AS AN ATTACHMENT TO THE BID DOCUMENTS.
4. SEE ATTACHMENT "A" IN THE CONTRACT DOCUMENTS FOR GEOTECHNICAL BORING LOG INFORMATION PERFORMED BY FOTH ON DECEMBER 19-23, 2019, RH-2023-B1 TAKEN MARCH 16, 2023, AND RH-2023-B2 TAKEN AUGUST 22, 2023.
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 DOCUMENTS. THE CONTRACTOR SHALL KEEP A COPY OF THE DRAWINGS, SPECIFICATIONS, AND PERMITS ONSITE AT ALL TIMES DURING THE PROJECT.
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 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 ACTIVITY.
7. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY STATE, LOCAL, AND FEDERAL REGULATION AND LAW, AS WELL AS REQUIRED WITHIN EXISTING PERMITS AND APPROVALS.
8. BASE PLAN COMPILED BY FOTH USING AVAILABLE MAGIS DATA.
9. SECTIONS, DETAILS, NOTES, DIMENSIONS AND CONDITIONS ARE APPLICABLE AT ANY OTHER LOCATION WHERE CONDITIONS AND DETAIL ARE SIMILAR BUT ARE NOT SPECIFICALLY NOTED AS SUCH OR ARE NOT SHOWN.
10. THE CONTRACTOR SHALL PERFORM THE WORK IN A MANNER THAT DOES NOT IMPEDE THE OWNER'S OPERATIONS ON SITE OR THE OWNER'S ON-SITE OPERATING EQUIPMENT.
11. THE CONTRACTOR PRIOR TO CONSTRUCTION AND FABRICATION OF CONSTRUCTION MATERIALS 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 ENGINEER.
12. IF, DURING THE PERFORMANCE OF THE WORK, THE CONTRACTOR FINDS A CONFLICT, ERROR, OR 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 THEREBY, THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION OR CLARIFICATION FROM THE ENGINEER OF RECORD. WORK DONE BEFORE THE ENGINEER OF RECORD RENDERS HIS DECISION IS AT THE CONTRACTOR'S SOLE RISK.
13. THE WORK SHALL BE PERFORMED IN A GENERAL SEQUENCE DEVELOPED BY THE CONTRACTOR AND 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 CONSTRUCTION AND FOR THE SEQUENCES AND PROCEDURES TO BE USED.
14. THE CONTRACTOR SHALL FURNISH AND COORDINATE PLANT, LABOR, SUPERVISION, MATERIALS, EQUIPMENT AND APPLIANCES FOR DEMOLITION AND/OR CONSTRUCTION WORK IN CONNECTION WITH THE DEMOLITION AND/OR CONSTRUCTION OF THE WATERFRONT FACILITIES.
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 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 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 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 CONSTRUCTION DEBRIS. THE CONTRACTOR SHALL SECURE REQUIRED LOCAL AUTHORIZATIONS AND PERMITS.
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 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.
17. THE CONTRACTOR SHALL FURNISH MATERIALS FOR INSTALLATION IN THE COMPLETED WORK AS SPECIFIED HEREINAFTER. THE CONTRACTOR SHALL HANDLE THESE MATERIALS AS THEY ARE DELIVERED TO THE SITE OR OFF-SITE WORK AREAS AND SHALL STORE THEM IN A DESIGNATED STORAGE AREA.
18. 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, 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 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 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 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 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 SUCH PAID-UP INSURANCE, WHICH CERTIFICATES ARE TO BE ISSUED BY THE INSURANCE COMPANIES. GOOD AND RESPONSIBLE COMPANIES, REASONABLY ACCEPTABLE TO THE OWNER, SHALL WRITE SUCH INSURANCE.
20. THE ENGINEER AND ITS SUB CONSULTANTS SHALL BE ADDED TO THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY AS ADDITIONAL INSURED ON PRIMARY AND CON-CONTRIBUTORY BASIS. SUBMIT CERTIFICATES OF INSURANCE TO THE ENGINEER AS EVIDENCE OF THIS COVERAGE.
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 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 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 ELEVATIONS SHOWN ON THE CONTRACT DRAWINGS.
22. THE CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE SITE, VERIFYING THE SAME WITH THE CONTRACT DRAWINGS AND EXISTING FACILITIES, AND WILL BE HELD RESPONSIBLE FOR THE PROPER FIT AND ALIGNMENT OF COMPLETED WORK IN POSITION.

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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 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 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 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 CLEANED ON A 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 RUBBISH RESULTING FROM HIS CONSTRUCTION OPERATIONS.
25. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE AND MAINTAIN UTILITIES AS DEEMED NECESSARY TO AFFECT THE WORK.
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.
2. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ALLOY 6061-T6 EXTRUDED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF FEDERAL SPECIFICATION QQ-A-200.
3. 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.
5. 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.
7. 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.
3. CATHODIC PROTECTION SYSTEM SHALL BE TESTED AFTER INSTALLATION. SUBMIT TEST RESULTS IN 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.
5. ANODES SHALL BE ROTOMETALS ALUMANODE AHC20 (2" X 4" X 24") OR EQUIVALENT ACCEPTED BY THE ENGINEER.
6. ANODES SHALL BE INSTALLED AS SHOWN ON SHEET S-703.

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CONCRETE:

1. 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.
2. NO WATER SHALL BE ADDED TO THE MIX AT THE JOB SITE.
3. 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.
4. 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 ½ 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.
3. 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.
4. 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.
6. 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.
7. ITEMS TO BE REMOVED AND REUSED SHALL BE PLACED IN A STAGING AREA ACCESSIBLE FOR INSPECTION BY THE OWNER.
8. 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 DURING 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 TO 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 REPLACED IN-KIND AT THE DISCRETION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER AND/OR FOTH.
14. APPLICABLE FOR AREAS WHERE NEW CONCRETE ABUTS EXISTING CONCRETE SURFACES, CONTRACTOR SHALL COMPLETELY REMOVE ALL LOOSE, DELAMINATED AND WEAK CONCRETE, OIL, 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 MARINE GROWTH REMOVED.

EARTHWORK NOTES:

1. DO NOT BEGIN BACKFILLING UNTIL CONSTRUCTION BELOW FINISH GRADE HAS BEEN APPROVED AND 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.
4. STRUCTURAL FILL SHALL CONSIST OF BROKEN OR CRUSHED STONE, BANK OR CRUSHED GRAVEL, OR MIXTURES THEREOF. BROKEN OR CRUSHED STONE SHALL CONSIST OF WELL-GRADED, SOUND, TOUGH, DURABLE STONE. BANK OR CRUSHED GRAVEL SHALL CONSIST OF WELL-GRADED, SOUND, 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 MESH 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 THE SITE TO THE ELEVATIONS AND LIMITS SHOWN AND AS NEEDED TO MEET THE REQUIREMENTS OF THE 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 ICE. 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 EACH LIFT.
7. CONTROL STRUCTURAL FILL COMPACTION DURING CONSTRUCTION TO PROVIDE THE MINIMUM PERCENTAGE OF DENSITY SPECIFIED FOR EACH AREA AS DETERMINED ACCORDING TO ASTM D1557. 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 STRUCTURES, 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 OWNERS REPRESENTATIVE.
2. EROSION AND SEDIMENTATION CONTROL DEVICES AND PROVISIONS SHALL BE MAINTAINED IN OPERATIONAL CONDITION BY THE CONTRACTOR AND SHALL BE REMOVED AND LEGALLY DISPOSED 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 TIED, 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 ATTACHMENTS 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 DURING THE CONSTRUCTION PERIOD.
8. STOCKPILING OF MATERIALS IS NOT PERMITTED.
9. 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 OR OTHER ACCEPTABLE METHOD. THE FENCE IS TO REMAIN IN PLACE AT ALL TIMES WHILE CONSTRUCTION IS UNDERTAKEN.

FLAGPOLE:

1. 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 BUTT 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 DECK 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 REQUIRED, OR WITH THE MANUFACTURERS RECOMMENDATIONS UPON COORDINATION AND APPROVAL WITH 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 INCH 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:

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1. GROUND ANCHORS SHALL BE INSTALLED TO A 45 DEGREE INCLINATION WITH RESPECT TO THE HORIZONTAL.
2. THE GROUND ANCHOR DESIGN LOAD IS 305 KIPS. THE SPACING OF THE GROUND ANCHOR IS 9.2 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 BY 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 BARS, ADEQUATE BOREHOLE DIAMETER, PVC SHEATHING IN FREE LENGTH, TEMPORARY AND PERMANENT LUBRICANTS, PERMANENT SHEATHING OF TENDON, COVER BOX FOR ANCHORAGE HEAD, CORRUGATED PVC PIPE FOR CASING, IF REQUIRED, AND CONSOLIDATION GROUT FOR ANCHOR ZONE.

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5. GROUND ANCHOR DESIGN IS BY CONTRACTOR. GROUND ANCHOR ASSEMBLY INCLUDING GROUND ANCHOR, STAND-OFF PLATES, AND CAP PLATES SHALL BE DESIGNED, FOR THE TEST LOAD, BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS.

Foth

DEPARTMENT OF PUBLIC WORKS

TOWN OF ORLEANS, MASSACHUSETTS

ROCK HARBOR COMMERCIAL WHARF IMPROVEMENTS

REVISIONS

NO.	BY	DATE	DESCRIPTION
1	JSD	03/22/2024	ADDENDUM #3
2	PSR	03/27/2024	ADDENDUM #4
3	PSR	03/28/2024	ADDENDUM #5
4			
5			

DATE OF PREPARATION

	BY	DATE
SURVEYED	MEC/JAH	10/24/19 & 3/2/21
DRAWN	BAM	12/05/2023
DESIGNED	SRS	06/28/2021
CHECKED	PSR	12/24/2023

SHEET TITLE:

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ISSUANCE:

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PROJECT NO: 00190004.10

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