STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

LUBEC, WASHINGTON COUNTY
LUBEC BREAKWATER
FEDERAL PROJECT NO. 02682400
STATE WIN 026824.00

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THE PROFESSIONAL ENGINEER WHOSE STAMP APPEARS ON THIS COVER SHEET BEARS RESPONSIBILITY FOR THE FOLLOWING SHEETS WITHIN THIS DRAWING SET:

GENERAL PLANS	*G-001 THROUGH G-101*
CIVIL PLANS	*C-100 THROUGH C-401*
BUILDING PLANS	*U-100*
STRUCTURAL PLANS	*S-001 THROUGH S-343*

ADDITIONAL WORK APPEARS WITHIN THIS DRAWING SET AND IS THE RESPONSIBILITY OF THE FOLLOWING PROFESSIONAL ENGINEERS, WHOSE STAMP APPEARS ON THOSE INDIVIDUAL SHEETS:

BORING PLANS	*B-100 THROUGH B-134*	*PHILIP LANERGAN*
MONITORING PLANS	*MN-100 THROUGH MN-120*	*PHILIP LANERGAN*
ELECTRICAL PLANS	*E-101 THROUGH E-120*	*RYAN BEIKES*

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER: [signature] DATE 12-13-24

CHIEF ENGINEER: Angela Ward Taylor DATE 12-12-2024

STATE OF MAINE — CRAIG R. MORIN 10209 — PROFESSIONAL ENGINEER

PROJECT INFORMATION		SIGNATURE	P.E. NUMBER	DATE
PROGRAM	MULTIMODAL			
PROJECT MANAGER	AURELE GORNEAU II			
DESIGNER	CRAIG MORIN			
CONSULTANT	JACOBS			
PROJECT RESIDENT				
CONTRACTOR				
PROJECT COMPLETION DATE				

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

TITLE SHEET AND DRAWING LIST

SHEET NUMBER

G-001

1 OF 99

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DESIGN CODES

1. GENERAL MARINE DESIGN
   CIRIA - C683 - THE USE OF ROCK IN HYDRAULIC ENGINEERING
   UFC 4-152-07 - SMALL BOAT BERTHING FACILITIES UNIFIED FACILITIES CODE: DESIGN OF PIERS AND WHARVES (UFC 4-152-01), 2017
2. STRUCTURAL DESIGN
   AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) - STEEL CONSTRUCTION MANUAL MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2016 (ASCE 7-16) STRUCTURAL WELDING CODE (AWS D1.1-2020) AMERICAN CONCRETE INSTITUTE. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY (ACI 318-19) MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC)
3. WAVE OVERTOPPING
   EUROTOP 2018 - MANUAL ON WAVE OVERTOPPING OF SEA DEFENCES AND RELATED STRUCTURES

PROJECT DATUM

HORIZONTAL: NORTH AMERICAN DATUM OF 1983 (NAD83)
VERTICAL: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

DATUM	DESCRIPTION	ELEVATION (FT NAVD88)
100 - YR RP EWL	100 - YEAR RETURN PERIOD EXTREME WATER LEVEL	14.6
1 - YR RP EWL	1 - YEAR RETURN PERIOD EXTREME WATER LEVEL	13
HIGHEST OBSERVED TIDE	HISTORIC HIGHEST WATER LEVEL OBSERVED (04/10/2020 08:54)	14.440
MHHW	MEAN HIGHER-HIGH WATER	9.340
MHW	MEAN HIGH WATER	8.860
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988	0.000
MSL	MEAN SEA LEVEL	-0.230
MLW	MEAN LOWER WATER	-9.490
MLLW	MEAN LOWER-LOW WATER	-9.930
LOWEST OBSERVED TIDE	HISTORIC LOWEST WATER LEVEL OBSERVED (-8/09/1972 00:00)	-14.610

AN ESTIMATED 50-YEAR SEA LEVEL RISE OF 2 FT WAS ADDED TO THE EXTREME WATER LEVELS TO DETERMINE THE DESIGN WATER LEVELS.

PROJECT TOLERANCES

ROCK CLASS	ABOVE OR BELOW WATER	DESIGN PROFILE TO ACTUAL MEAN PROFILE (BASED ON AVERAGE DIFFERENCES OVER EACH 50 FT ALONG THE STRUCTURES AXIS)
CLASS A1	DRY (I.E. ABOVE WATER)	-0.7 TO +0.7 FT
	BELOW WATER	N/A
CLASS A2	DRY (I.E. ABOVE WATER)	-0.7 TO +0.7 FT
	BELOW WATER	-1.0 TO +1.6 FT
CLASS B	DRY (I.E. ABOVE WATER)	-0.4 TO +0.4 FT
	BELOW WATER	-0.7 TO +0.7 FT
CLASS C	DRY (I.E. ABOVE WATER)	-0.8 TO +0.8 FT
	BELOW WATER	-1.3 TO +1.3 FT

NOTE:
CLASS A1: STONE FOR FRENCH DRAINS (703.24)
CLASS A2: PLAIN AND HANDLAID RIPRAP (703.26)

MATERIALS

1. CONCRETE
   ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF). CAST-IN-PLACE CONCRETE AND PRECAST NON-PRESTRESSED CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. PRECAST PRESTRESSED CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 6,000 PSI AT 28 DAYS. REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 EPOXY COATED PER ASTM A775. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A416, GRADE 270 LOW RELAXATION. CAST-IN-PLACE CONCRETE COVER SHALL BE 3" MINIMUM, UNLESS NOTED OTHERWISE. PRECAST CONCRETE COVER SHALL BE 2" MINIMUM, UNLESS NOTED OTHERWISE. CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE STRUCTURES WITH 45 DEGREE 1" CHAMFER, UNLESS NOTED OTHERWISE.
2. STEEL PIPE PILES
   ALL STEEL PIPE PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A252, GRADE 3 (MOD). WITH MINIMUM YIELD STRENGTH OF 50 KSI.
3. STEEL SHEET PILING
   ALL STEEL SHEET PILES, CONNECTORS/CORNER PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A572 GRADE 50. SPLICING OF SHEET PILES/CONNECTORS/CORNER PILES SHALL NOT BE PERMITTED.
4. STRUCTURAL STEEL AND MISCELLANEOUS STEEL
   ALL STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. ALL STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1.
   STRUCTURAL STEEL SHAPES:
   WIDE FLANGE SHAPES - ASTM A992
   HP, CHANNEL AND ANGLE SHAPES - ASTM A572, GRADE 50
   MISCELLANEOUS PLATES, BARS AND SHAPES, UNLESS OTHERWISE NOTED, SHALL BE GALVANIZED PER ASTM A123.
   ALL BOLTS SHALL BE PER ASTM F3125 GRADE A325 AND GALVANIZED PER ASTM A153 (U0N).
   ALL BOLTS, ANCHOR RODS, NUTS AND WASHERS SHALL BE GALVANIZED PER ASTM A153 (U0N).
   HEADED SHEAR STUDS SHALL BE MADE FROM COLD DRAWN STEEL GRADE C-1010 THROUGH C-1020 PER ASTM A108 AND SHALL BE WELDED PER THE MANUFACTURER'S SPECIFICATIONS.
   FIELD TREAT DAMAGED GALVANIZED FINISH WITH TWO COATS OF HIGH ZINC DUST OXIDE PAINT, COLD GALVANIZING COMPOUNDS, OR APPROVED EQUAL CONFORMING TO THE REQUIREMENTS OF ASTM A780. IN ADDITION, ALL EXPOSED THREADED SURFACES SHALL BE PAINTED WITH TWO COATS OF HIGH ZINC DUST OXIDE PAINT AFTER INSTALLATION OF UNIT.
5. TIMBER AND HARDWARE
   ALL TIMBER MEMBERS SHALL BE SOUTHERN PINE OR APPROVED EQUAL. PRESSURE-TREATED IN ACCORDANCE WITH AWPA USE CATEGORY SYSTEM CLASSIFICATION UC5A.
   THE TIMBER MEMBERS SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS OF 1,500 PSI.
   HARDWARE: ALL THREADED RODS SHALL BE PER ASTM F1554, GRADE 55. ALL THREADED ROADS AND HARDWARE SHALL BE HOT-DIP GALVANIZED PER ASTM A153. ALL THREADED RODS SHALL INCLUDE OGEE WASHERS AND HEX NUTS.
   PROVIDE COUNTERSINK HARDWARE TIMBER FACING AND OUTBOARD TIMBER WALE FACE WHERE CONNECTED TO FENDER PILES.COUNTERSUNK HOLES SHALL BE FILLED WITH AN APPROVED BITUMASTIC PASTE AFTER ANCHOR ROD INSTALLATION.

DELEGATED DESIGN

THE TIMBER FLOATING DOCK, PILE GUIDES, MOORING HARDWARE, AND ALUMINUM GANGWAY ARE DELEGATED DESIGN TO BE PERFORMED BY THE APPROVED MANUFACTURER AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MAINE.

DESIGN CRITERIA

1. DEAD LOAD:
   SELF-WEIGHT OF STRUCTURAL ELEMENTS BASED ON FOLLOWING DENSITIES:
   CONCRETE: 150 PCF
   STEEL: 490 PCF
2. LIVE LOADS:
   LIVE LOAD ON TIMBER FLOATS = 50 PSF UNIFORMLY DISTRIBUTED
   LIVE LOAD ON GANGWAY = 60 PSF UNIFORMLY DISTRIBUTED
   LIVE LOAD ON PILE SUPPORTED PLATFORM AND RUBBLE MOUND ROADWAY = 250 PSF UNIFORMLY DISTRIBUTED
   VEHICLE LOAD = H20 BOX TRUCK, FRONT AXLE 8 KIPS. REAR AXLE 32 KIPS
3. SNOW:
   GROUND SNOW LOAD = 50 PSF
4. WAVE
   RUBBLE-MOUND BREAKWATER:
   100-YEAR RETURN PERIOD WAVE EVENTS

H_{MO} (FT)	T_P (S)	MWD ($^{33}/_{64}$N)
6.8	4.7	7.3

   SCOUR PROTECTION ROCKS:
   1-YEAR RETURN PERIOD WAVE EVENTS

H_{MO} (FT)	T_P (S)	MWD ($^{33}/_{64}$N)
3.0	3.7	25.0

   WAVE SCREEN:
   DESIGN WAVE:

H_{MO} (FT)	T_P (S)	MWD ($^{33}/_{64}$N)
7.4	4.7	17.8

   WAVE FORCES ON WAVE SCREEN:

PEAK WAVE PRESSURE (KIPS/SQFT)	PEAK WAVE FORCE (KIPS/FT)
0.52	15.11

5. WIND
   BASIC WIND SPEED (3-SECOND GUST), V = 108 MPH
   BUILDING RISK CATEGORY = II
   FORCE COEFFICIENT = 0.7
   IMPORTANCE FACTOR = 1.0
   GUST FACTOR = 0.85
6. CURRENTS AT MAIN FLOATING DOCKS:
   SERVICE CURRENT SPEED = 0.15 FPS
   EXTREME CURRENT SPEED = 0.45 FPS
7. ARMOR STABILITY OF THE RUBBLE-MOUND BREAKWATER IS DESIGNED FOR NO DAMAGE S_d = 2
8. DESIGN VESSEL FOR FLOATING DOCKS AND BOAT RAMP
   40 FT LOA
   16 FT MAXIMUM BEAM
   4.1 FT DRAFT
   MAXIMUM BERTHING ENERGY = 1.8 KIP-FT
   NORMAL BERTHING ENERGY = 1.0 KIP-FT
9. MEAN OVERTOPPING DISCHARGE OVER THE RUBBLE-MOUND BREAKWATER TO BE <0.01 $FT^3/S/FT$ FOR SAFE PEDESTRIAN USE, AND < 0.1 FT3/S/FT FOR SAFE VEHICULAR OPERATION.
10. THE BREAKWATER AND PILE SUPPORTED PLATFORM HAVE BEEN DESIGNED TO PROVIDE A "MODERATE" WAVE CLIMATE IN THE HARBOR, AS DEFINED BY UFC 4-152-07. THE CRITERIA FOR A "MODERATE" WAVE CLIMATE IN THE HARBOR HAS BEEN TABULATED BELOW.

CRITERIA FOR A "MODERATE" WAVE CLIMATE IN LUBEC BREAKWATER BERTHING AREAS		
DIRECTION AND PEAK PERIOD OF SIGNIFICANT WAVE	SIGNIFICANT WAVE HEIGHT EXCEEDANCE	
	50 YEARS	1 YEAR
HEAD SEAS LESS THAN 2S	CONDITIONS NOT LIKELY TO OCCUR DURING THIS EVENT	< 1.25 FT
HEAD SEAS GREATER THAN 2S	< 2.5 FT	< 1.25 FT
BEAM SEAS LESS THAN 2S	CONDITIONS NOT LIKELY TO OCCUR DURING THIS EVENT	< 0.63 FT
BEAM SEAS GREATER THAN 2S	< 1.0 FT	< 0.63 FT

GENERAL NOTES

1. CLEARING LIMITS SHALL BE 10' BEYOND AND PARALLEL TO THE CONSTRUCTION SLOPE LINES OR AS SHOWN ON THE PLANS UNLESS OTHERWISE AUTHORIZED BY THE MAINEDOT DEPARTMENT.
2. STUMPS HAVE BEEN ESTIMATED TO BE REMOVED UNDER ITEM 203.20 COMMON EXCAVATION.
3. GRUBBING LIMITS ARE APPROXIMATE AND HAVE BEEN USED FOR ESTIMATING PURPOSES ONLY. ACTUAL GRUBBING LIMITS MAY VARY BASED ON FIELD CONDITIONS AS DIRECTED BY THE DEPARTMENT.
4. ALL INSLOPE AND DITCHES IN CUT AREAS SHALL BE GRADED AS SHOWN ON THE PLANS OR FLATTER, OR AS DIRECTED BY THE DEPARTMENT.
5. DRIVEWAY FILL SLOPES SHALL BE THE SAME AS THE NON-GUARDRAIL FILL SLOPES UNLESS OTHERWISE NOTED ON THE PLANS.
6. ALL WASTE MATERIAL NOT USED ON THE PROJECT SHALL BE DISPOSED OF OFF THE PROJECT SITE IN ACCEPTABLE WASTE AREAS REVIEWED BY THE RESIDENT. GRADING, SEEDING AND MULCHING OF WASTE AREAS SHALL BE CONSIDERED INCIDENTAL.
7. ANY NECESSARY CLEARING OF EXISTING PAVEMENT PRIOR TO PAVING SHALL BE INCIDENTAL TO THE RELATED PAVING ITEMS. THIS INCLUDES KILLING AND REMOVAL OF ALL VEGETATIVE MATTER.
8. GUARDRAIL END TREATMENTS SHALL BE INSTALLED CONCURRENTLY WITH THE PLACEMENT OF EACH SECTION OF BEAM GUARDRAIL.
9. TWO REFLECTORIZED FLEXIBLE GUARDRAIL MARKERS (ITEM 606.353) WILL BE INSTALLED AT EACH GUARDRAIL END.
10. ANY BASE PAVEMENT NOT SURFACED BEFORE WINTER WILL REQUIRE TEMPORARY PAVEMENT MARKINGS OF PAINT, BOTH YELLOW CENTERLINE AND WHITE EDGE LINES AND WILL BE CONSIDERED PART OF ITEM 627.733.
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING MAILBOXES TO ENSURE THAT THE MAIL WILL BE DELIVERABLE. PAYMENT FOR THIS WORK WILL BE MADE UNDER THE APPROPRIATE RENTAL ITEMS.
12. AREAS REQUIRING FILL ON THE PROJECT WILL RECEIVE SUITABLE EXCAVATED MATERIALS OR SUITABLE MATERIALS OBTAINED FROM OFF SITE SOURCE.
13. ESTIMATED QUANTITIES FOR REQUIRED EXCAVATION AND MINOR STRUCTURES ARE INFORMATIONAL ONLY AND REPRESENT THE APPROXIMATE MINIMUM QUANTITY REQUIRED. ADDITIONAL EXCAVATION FOR THE CONTRACTOR'S CONVENIENCE OR TO COMPLY WITH BACKSLOPING REQUIREMENTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO THE RELATED ITEMS.
14. NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT AND LAYOUT OF WORK PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.
15. FINAL STRIPING AND MARKING FOR THE PROJECT SHALL BE DONE BY THE CONTRACTOR PER THE LAYOUT PLAN. ACTUAL MARKING LOCATIONS SHALL BE DETERMINED BY THE DEPARTMENT. PAYMENT SHALL BE MADE UNDER APPROPRIATE PAY ITEMS.
16. GEOTECHNICAL INFORMATION FURNISHED OR REFERRED TO IN THE DOCUMENTS IS FOR THE USE OF THE BIDDERS. NO ASSURANCE GIVEN THAT THE INFORMATION OR INTERPRETATIONS WILL BE REPRESENTATIVE OF THE ACTUAL SUBSURFACE CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. MAINEDOT WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN FROM THE GEOTECHNICAL INFORMATION. THE TEST PITS PROVIDED IN THE DOCUMENTS PRESENT FACTUAL AND INTERPRETIVE SUBSURFACE INFORMATION COLLECTED AT THE SPECIFIED LOCATIONS. DATA PROVIDED MAY NOT BE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN TEST PIT LOCATIONS.
17. FOR RUBBLE-MOUND BREAKWATER CONSTRUCTION SEQUENCE, SEE DWG S-118.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

GENERAL NOTES - 1

SHEET NUMBER

G-002

2 0F 99

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ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
AUX	AUXILIARY
AX	AMPERE RATING PLUG
AWG	AMERICAN WIRE GAUGE
AFF	ABOVE FINISHED FLOOR
AS	AMPERE SWITCH SIZE
BATT	BATTERY
BC	BARE COPPER
BD	BUS DUCT
BCKP	BACKUP
BKR	BREAKER
C	CONDUIT
CAT	CATEGORY
CB	CIRCUIT BREAKER
CFG	CONFIGURATION
CKT	CIRCUIT
CLOS	CLOSET
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONVENIENCE RECEPTACLE
CT	CURRENT TRANSFORMER, CABLE TRAY
D	DIGITAL
DC	DIRECT CURRENT, DATA COPPER
DEMO	DEMOLITION
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DP	DISTRIBUTION PANEL
DWG	DRAWING
DS	DISCONNECT SWITCH
EHH	ELECTRICAL HANDHOLE
ELEC	ELECTRIC
EMERG	EMERGENCY
EMH	ELECTRICAL MANHOLE
EPO	EMERGENCY POWER OFF SWITCH
ER	EXISTING TO BE RELOCATED
EQ	EQUIPMENT
EX	EXISTING TO REMAIN
FDR	FEEDER
FLA	FULL LOAD AMPERES
FT	FEET
GND	GROUND
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
HH	HAND HOLE
HOA	HAND-OFF-AUTOMATIC
HZ	HERTZ
J	JUNCTION BOX
KA	KILOAMPERES
KCMIL	THOUSAND CIRCULAR MILLS
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES-REACTIVE
KW	KILOWATT
LF	LINEAR FOOT
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTION
MCS	MOLDED CASE SWITCH
MDF	MAIN DISTRIBUTION FRAME
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MVA	MEGAVOLT AMPERE
MTR	MOTOR
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
QTY	QUANTITY
P	POLE
PB	PULL BOX
PDU	POWER DISTRIBUTION UNIT
PF	POWER FACTOR
PH	PHASE
PNL	PANELBOARD
PR	PAIR
PT	POTENTIAL TRANSFORMER
PWR	POWER
REC	RECEPTACLE
SW	SWITCH
SPD	SURGE PROTECTION DEVICE
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TR	TRANSFORMER
TYP	TYPICAL
UFC	UNIFIED FACILITIES CRITERIA
UON	UNLESS OTHERWISE NOTED
U/G	UNDERGROUND
V	VOLT, VOLTAGE, VOICE
VA	VOLT AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
Y	WYE
Z	IMPEDANCE

LEGEND

LIGHTING FIXTURES

LIGHT POLE

R2 — R2: INDICATES FIXTURE TYPE

I2 — I2: INDICATES CIRCUIT NUMBER

N-##### — N: INDICATES NORTHING COORDINATE

E-##### — E: INDICATES EASTING COORDINATE

DOCK LIGHT

WIRING DEVICES

JB — ELECTRIC JUNCTION BOX

P — ELECTRIC PULLBOX

EHH — ELECTRICAL HANDHOLE

T — TRANSFORMER

RACEWAYS AND WIRES

PVC CONDUIT U.O.N. (REFER TO NOTE "D" ON PLAN DRAWINGS).

EXISTING CONDUIT UNDERGROUND

CONDUIT UP

CONDUIT DOWN

MDP-1 — HOMERUN. "MDP" DENOTES PANELBOARD DESIGNATION. "1" DENOTES BRANCH CIRCUIT NUMBERS. PROVIDE MINIMUM (2) #12 AWG + #12 AWG GROUND FOR EACH BRANCH CIRCUIT INDICATED. INCREASE BRANCH CIRCUIT CONDUCTOR WIRE AND CONDUIT SIZE AS REQUIRED FOR CIRCUIT LENGTH. MINIMUM CONDUIT SIZE SHALL BE 1/2".

a — SWITCH LEG CONNECTED TO SWITCH "a"

DISTRIBUTION EQUIPMENT

PANELBOARD

EQUIPMENT CONTROLS

COMBINATION REDUCED VOLTAGE SOFT STARTER DISCONNECT SWITCH (NON-FUSIBLE)

MISCELLANEOUS

HEAVY LINE WEIGHT INDICATES NEW WORK

LIGHT LINE WEIGHT INDICATES EXISTING TO REMAIN

SHEET NOTE. (SEE NOTE ON DRAWING)

ELECTRICAL SHOCK HAZARD SIGNAGE. REFER TO NEC ARTICLE 555.10 FOR REQUIREMENTS.

GENERAL NOTES

1. ALL WORK, INCLUDING BUT NOT LIMITED TO WIRING METHODS, MOUNTING HEIGHTS, GROUND FAULT PROTECTION, SIGNAGE AND BONDING SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS, DRAWINGS, LATEST EDITION OF THE MAINE ELECTRICAL CODE, NATIONAL ELECTRIC CODE (NFPA 70) INCLUDING THE SPECIFIC REQUIREMENTS OF ARTICLE 555, NATIONAL ELECTRIC SAFETY CODE (NESC), AND THE REGULATIONS OF OTHER AUTHORITIES HAVING JURISDICTION.
2. ALL ELECTRICAL WORK MUST BE DONE ON DE-ENERGIZED ELECTRICAL EQUIPMENT UNLESS ABSOLUTELY NECESSARY.
3. APPROVED EQUALS FOR SPECIFIED PRODUCTS WILL BE EVALUATED BY MAINE DOT AND THE ENGINEER.
4. PROVIDE AND LOCATE OUTLETS, WIRING, AND CONTROLS, AS INDICATED OR REQUIRED FOR EQUIPMENT FURNISHED UNDER OTHER SECTIONS OR PER EQUIPMENT SUPPLIER'S REQUIREMENT. MAKE ALL NECESSARY CONNECTIONS TO EQUIPMENT AND ASSOCIATED CONTROLS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. VERIFY EQUIPMENT LOCATION, AND ELECTRICAL CHARACTERISTICS TO BE FURNISHED AND/OR INSTALLED. REFER TO THE EQUIPMENT OR SYSTEM SPECIFICATIONS AND PLAN DRAWINGS TO DETERMINE THE SCOPE OF WORK REQUIRED.
5. DIMENSIONS MUST NOT BE SCALED FROM THE DRAWING. DIMENSIONS SHOWN ON THE DRAWINGS MUST BE VERIFIED BY ACTUAL FIELD MEASUREMENTS. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS AND THE FIELD CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PERFORMING WORK.
6. FINAL TESTING OF THE BREAKER SETTINGS, GROUNDING SYSTEM, GROUND RODS, AND NEW WIRING SHALL BE PERFORMED BY A THIRD PARTY TESTING AGENCY.
7. ELECTRICAL CONTRACTOR SHALL HAVE A MINIMUM OF 5 YEARS EXPERIENCE WITH FRE INSTALLATIONS AND SUBMIT A LIST OF RELEVANT PROJECTS. IF THE ELECTRICAL CONTRACTOR DOES NOT MEET THE EXPERIENCE REQUIREMENTS, THE CONTRACTOR SHALL RECIEVE TRAINING FROM THE FRE VENDOR.
8. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLANS, PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
9. THE LOCATION OF EXISTING POLES, GUY WIRES, SPAN WIRES OR OTHER ABOVE GRADE AND UNDERGROUND UTILITIES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
10. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL ABOVE GRADE AND UNDERGROUND UTILITIES.
11. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER: — CHIEF ENGINEER:

PROJECT INFORMATION		SIGNATURE	DATE
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU, II		
DESIGNER	RYAN BEIKES	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

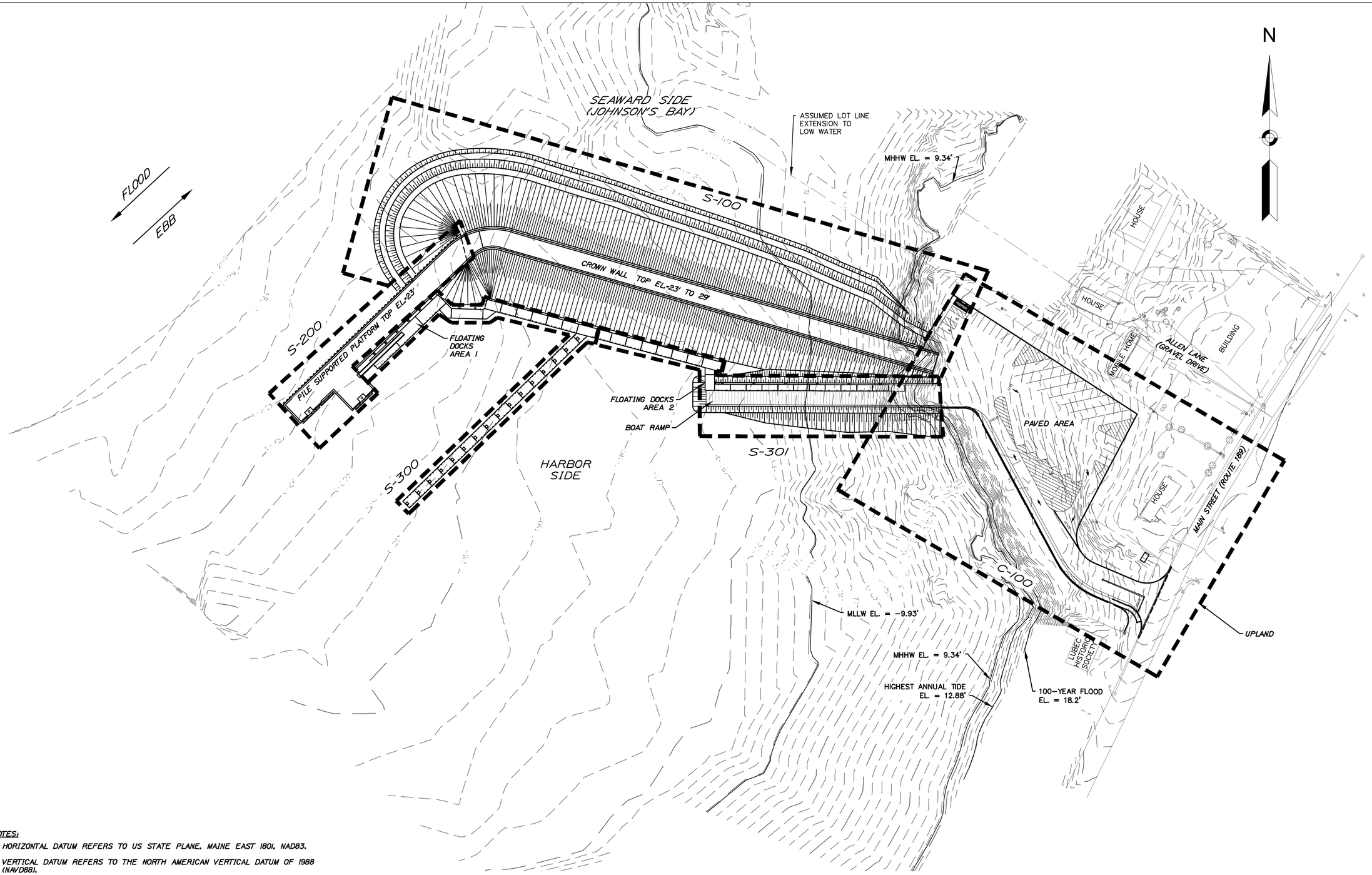
GENERAL NOTES - 2

SHEET NUMBER

G-003

3 0F 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\03-G-003 (General Utility Notes).; Plotted: 11/5/2024 9:09 AM by MAGUIRC; CASEY.; Saved: 11/5/2024 8:49 AM by MAGUIRC



NOTES:

1. HORIZONTAL DATUM REFERS TO US STATE PLANE, MAINE EAST 1801, NAD83.
2. VERTICAL DATUM REFERS TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON EVIDENCE VISIBLE AT GROUND LEVEL. THIS MAPPING DOES NOT SUPPORT TO SHOW ALL UNDERGROUND UTILITIES ON SITE AND IS SUBJECT TO VERIFICATION BY EXCAVATION.
4. INFORMATION SHOWN HEREON IS FROM A FIELD SURVEY CONDUCTED BY DOW TO EARTH PROFESSIONAL LAND SERVICES INC ON SEPTEMBER 1, 2020.
5. DESIGN VESSELS ARE SHOWN SCHEMATICALLY AND ARE INTENDED TO ILLUSTRATE MARITIME PRACTICES ONLY. DESIGN VESSEL IS SHOWN AS 40 FT. LOA.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

PROJECT INFORMATION			
PROJECT			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU III	SIGNATURE	
DESIGNER	C. MAGUIRE		
CONSULTANT	JACOBS	P.E. NUMBER	
PROJECT RESIDENT			
CONTRACTOR		DATE	
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

OVERALL SITE PLAN

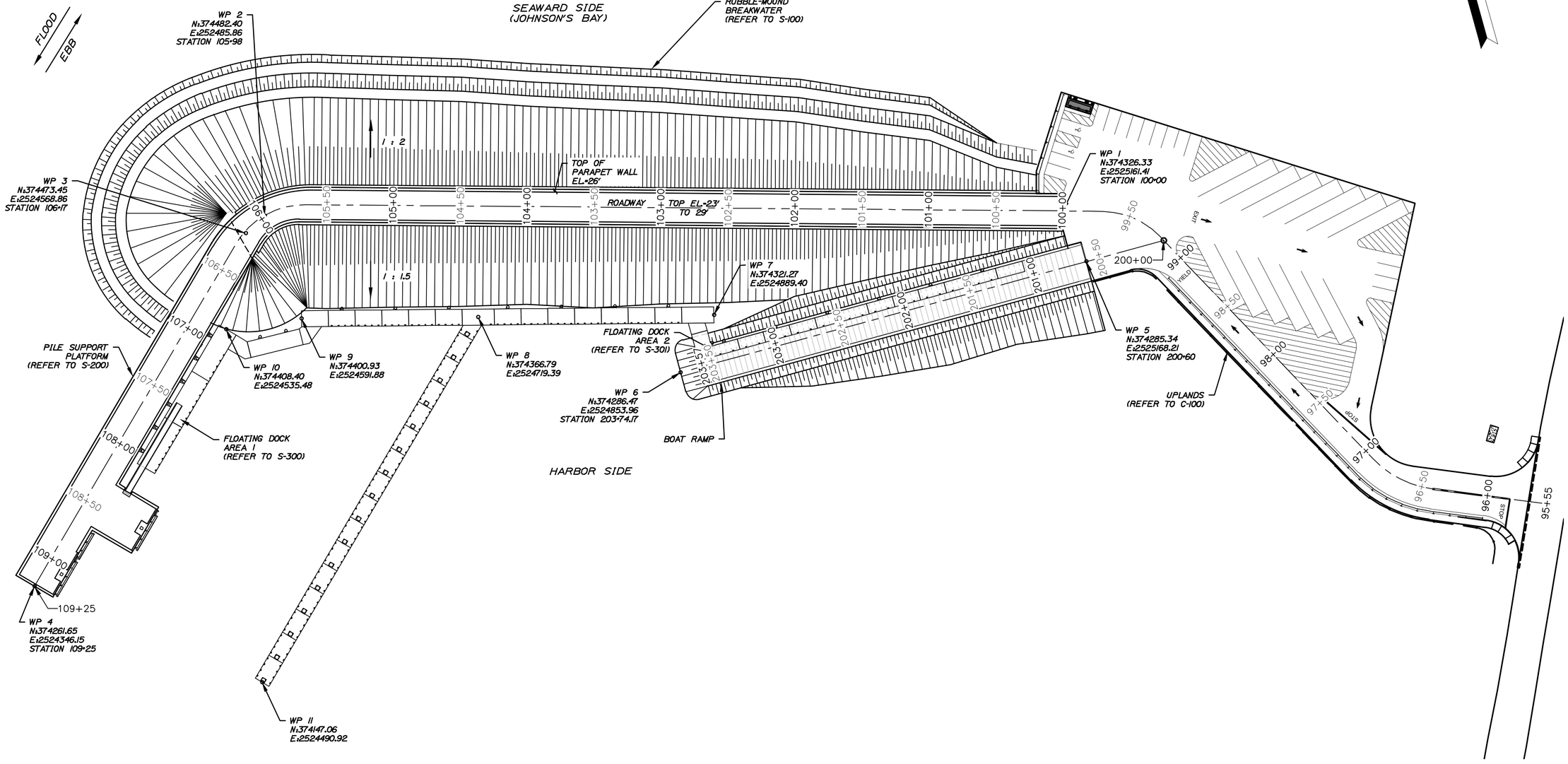
SHEET NUMBER

G-100

4 0F 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings - 100% Submission\04-G-100 (Overall Site Plan) - Plotted: 10/17/2024 9:55 AM by MAGUIRE, CASEY - Saved: 8/30/2024 8:39 AM by MAGUIRC

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\05-G-101 (Project Working Points and Layout).dgn; Plotted: 10/17/2024 10:07 AM by MAGUIRE, CASEY; Saved: 8/30/2024 8:57 AM by MAGUIRC



NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. SEE GUIDE PILE SCHEDULE AND DETAILS S-310 THROUGH S-320.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

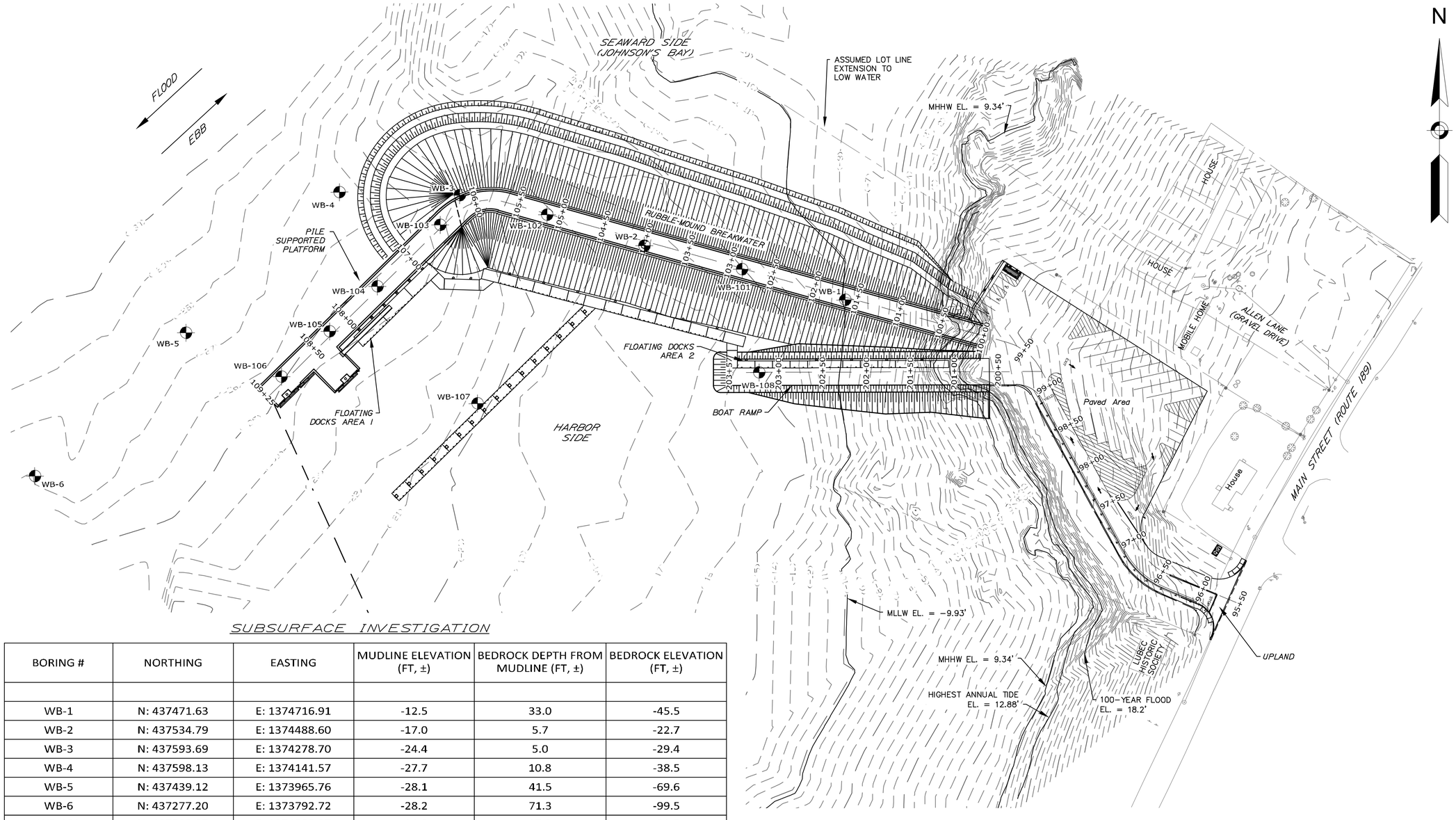
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN		
CONSULTANT	JACOBS	P.E. NUMBER	
PROJECT RESIDENT			
CONTRACTOR		DATE	
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

ROJECT WORKING POINTS AND LAYOUT

SHEET NUMBER

G-101



PLAN
1"=15'-0"

SUBSURFACE INVESTIGATION

BORING #	NORTHING	EASTING	MUDLINE ELEVATION (FT, ±)	BEDROCK DEPTH FROM MUDLINE (FT, ±)	BEDROCK ELEVATION (FT, ±)
WB-1	N: 437471.63	E: 1374716.91	-12.5	33.0	-45.5
WB-2	N: 437534.79	E: 1374488.60	-17.0	5.7	-22.7
WB-3	N: 437593.69	E: 1374278.70	-24.4	5.0	-29.4
WB-4	N: 437598.13	E: 1374141.57	-27.7	10.8	-38.5
WB-5	N: 437439.12	E: 1373965.76	-28.1	41.5	-69.6
WB-6	N: 437277.20	E: 1373792.72	-28.2	71.3	-99.5
WB-101	N: 437502.87	E: 1374598.97	-14.8	17.0	-31.8
WB-102	N: 437564.92	E: 1374376.94	-19.1	5.8	-24.9
WB-103	N: 437553.41	E: 1374255.24	-23.2	5.7	-28.9
WB-104	N: 437483.34	E: 1374183.77	-24.8	9.5	-34.3
WB-105	N: 437432.25	E: 1374129.25	-24.8	8.0	-32.8
WB-106	N: 437380.63	E: 1374074.35	-25.3	13.5	-38.8
WB-107	N: 437349.97	E: 1374297.60	-20.5	18.5	-39.0
WB-108	N: 437385.50	E: 1374618.51	-15.3	29.0	-44.3

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. HORIZONTAL DATUM REFERS TO US STATE PLANE, MAINE EAST 1801, NAD83.

LEGEND

WB-# WATER BORING LOCATION

0 60 120 FT.
1"=60'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

STATE OF MAINE — PHILLIP LANERGAN — No. 14068 — REGISTERED PROFESSIONAL ENGINEER

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

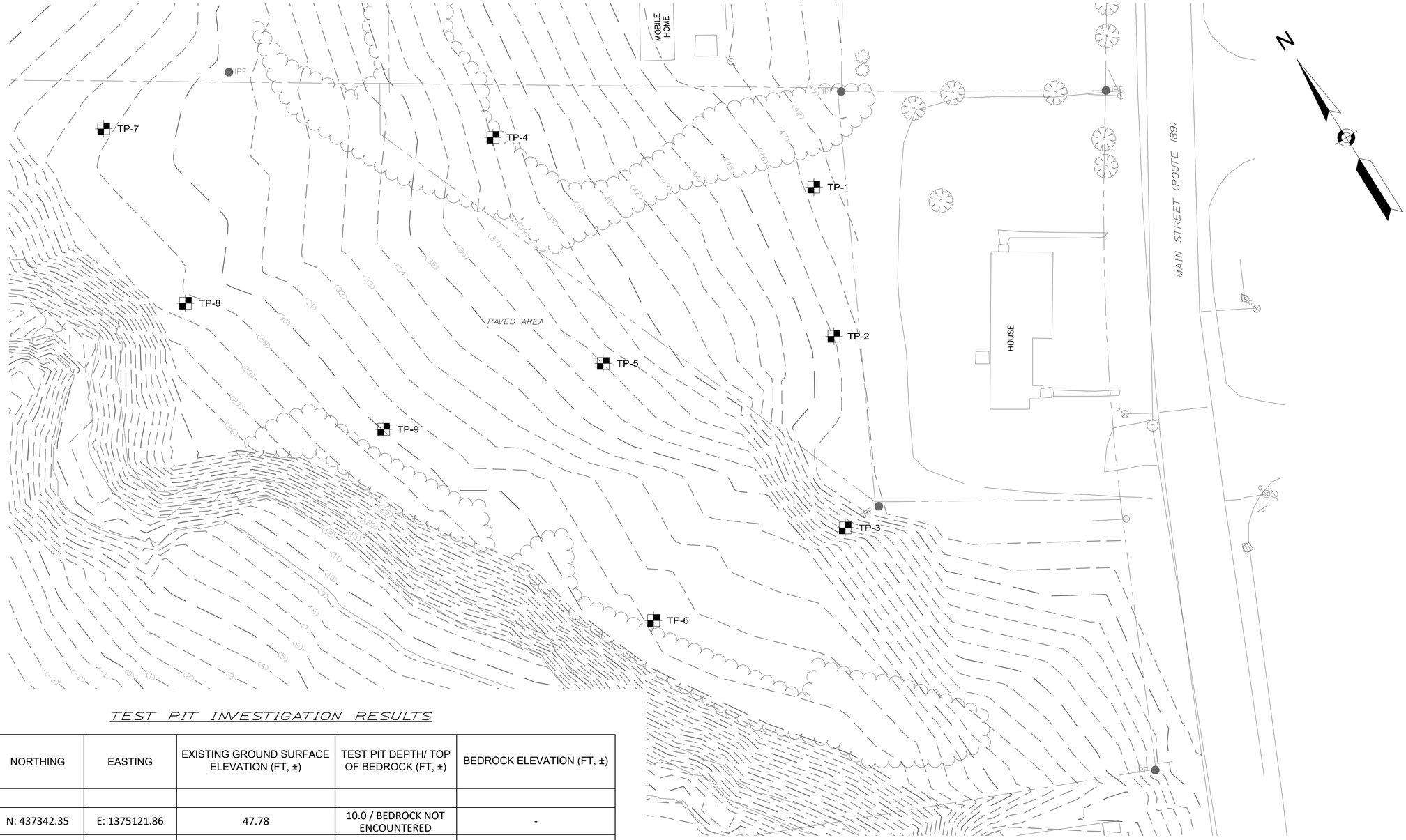
BORING LOCATION PLAN

SHEET NUMBER

B-100

6 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\06-B-100 (Boring Location Plan) ; Plotted: 10/17/2024 10:17 AM by MAGUIRE, CASEY ; Saved: 8/30/2024 12:10 PM by MAGUIRC



PLAN
1"=15'-0"

TEST PIT INVESTIGATION RESULTS

TEST PIT #	NORTHING	EASTING	EXISTING GROUND SURFACE ELEVATION (FT, ±)	TEST PIT DEPTH/ TOP OF BEDROCK (FT, ±)	BEDROCK ELEVATION (FT, ±)
TP-1	N: 437342.35	E: 1375121.86	47.78	10.0 / BEDROCK NOT ENCOUNTERED	-
TP-2	N: 437290.50	E: 1375098.44	45.80	7.5	38.30
TP-3	N: 437226.76	E: 1375063.56	37.47	5.5	31.97
TP-4	N: 437422.68	E: 1375028.80	38.91	10.5 / BEDROCK NOT ENCOUNTERED	-
TP-5	N: 437328.04	E: 1375018.88	37.21	10.0	27.21
TP-6	N: 437235.48	E: 1374983.51	31.97	10.0	21.97
TP-7	N: 437503.54	E: 1374905.65	29.64	8.0	21.64
TP-8	N: 437431.17	E: 1374896.87	26.03	9.5	16.53
TP-9	N: 437350.92	E: 1374935.19	29.66	6.0-9.0	23.66

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. HORIZONTAL DATUM REFERS TO US STATE PLANE, MAINE EAST 1801, NAD3.

LEGEND

TP-# TEST PIT LOCATION

0 20 40 FT.
1"=20'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

TEST PIT LOCATION PLAN

SHEET NUMBER

B-101

7 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\07-B-101 (Test Pit Plan) - Plotted: 10/17/2024 10:18 AM by MAGUIRC
10/17/2024 10:18 AM by: MAGUIRE, CASEY ; Saved: 8/30/2024 3:53 PM by: MAGUIRC

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-1
		LOCATION	Johnson Bay				SHEET 1 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				
INSPECTOR	Dan Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-12.5
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft) REMARKS	SPT HAMMER	140 lb Auto	GRID N	437471.63
40.3	Terminated					COORD E	1374716.91
						DATE START	7/14/23
						DATE END	7/17/23

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		7 5 1/12"	6	S-1	0 – 2	24/4		OH	S-1: Wet, medium stiff, 5Y 3/1 very dark gray, ORGANIC SILT, trace fine to coarse Sand, trace Shells, strong organics odor (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
									2	
		3 3 4 6	7	S-2	2 – 4	24/6			S-2: Wet, medium soft, 5Y 3/1 very dark gray, Silty CLAY, little fine to coarse Sand, trace fine subangular to subrounded Gravel (CL); PP: 0.0 kg/cm2; TV: 0.0 kg/cm2	
		3 3 3 2	6	S-3	4 – 6	24/8			S-3: Wet, medium soft, 2.5Y 5/1 gray, CLAY, trace fine Sand (CL); PP: 2.0 kg/cm2; TV: 0.15 kg/cm2	
				U-1	6 – 8	24/24			U-1: Wet 5Y 4/1 dark gray, CLAY (CL)	
		3 5 6 7	10	S-4	8 – 10	24/24			S-4: Wet, stiff, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.4 kg/cm2	
		3 5 6 7	11	S-5	10 – 12	24/24		CL	S-5A (Top 22"): Wet, stiff, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), trace fine subangular to subrounded Gravel, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.15 kg/cm2	
									S-5B (Bottom 2"): Wet, 5Y 4/1 dark gray, CLAY, some fine to coarse Sand, some fine subangular to subrounded Gravel (CL); Till-like	
		WOH WOH WOH 4	0	S-6	15 – 17	24/24			S-6: Wet, very soft, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown, bottom 9" exclusively 5Y 3/1 very dark gray (CL); PP: 2.25 kg/cm2; TV: 0.2 kg/cm2	
									18.5	
		15 11 13 13	24	S-7	20 – 22	24/11			S-7: Wet, medium dense, 7.5YR 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some fine to coarse Sand, some Silty Clay (GC)	2
		10 18 34 45	52	S-8	25 – 27	24/3		TILL	S-8: Wet, very dense, 7.5YR 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
		65 45 30 40	75	S-9	30 – 32	24/8			S-9: Wet, very dense, 7.5YR 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
									33	

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 07/17/23, 1020: Water Column Depth measured at 18.1 feet; All sample depths feet below mudline
2. Top of Glacial Till at 18.50 ft; Clay and fine subangular to subrounded Gravel observed in return water

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-1
		LOCATION	Johnson Bay				SHEET 2 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		54 100//5"	> 100	S-10	35 – 35.9	11/11		BR	S-10: Wet, very dense, N3 dark gray, completely weathered SHALE, decomposed or disintegrated to a soil with discernible rock fabric [QUODDY FORMATION]	3
		100/4"	> 100	S-11	40 – 40.33	4/4			40.33 S-11: Wet, very dense, N3 dark gray, highly weathered SHALE, greater than half of the rock is decomposed or disintegrated to a soil with discernible rock fabric, fresh rock present at corestones [QUODDY FORMATION] Bottom of Borehole at 40.33 feet.	

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

3. Top of Weathered Bedrock at 33.0 feet below mudline

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION	
PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE | P.E. NUMBER | DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-1

SHEET NUMBER

B-110

8 OF 99

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LOG OF TEST BORING

PROJECT	Lubec Breakwater			BORING NO.	WB-2
LOCATION	Johnson Bay				SHEET 1 OF 1
OWNER	Maine DOT				
JOB NUMBER	E2X95900				
INSPECTOR	Don Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto
7.0	NX Rock Core				
12.0	Wash Boring – Open Hole				

ELEVATION	-17		
DATUM	NAVD 88		
GRID	N	437534.79	
COORD	E	1374488.6	
DATE START	7/17/23		
DATE END	7/17/23		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	WATER LEVEL	SOIL AND ROCK DESCRIPTION	NOTES
		WOR WOR WOR WOR	0	S-1	0 – 2	24/20		OH	S-1: Wet, very soft, 5Y 3/1 very dark gray, ORGANIC SILT, some Shells (OH); Pocket Penetrometer: 0.0 kg/cm2; Torvane: 0.0 kg/cm2	1
		WOR 3 2 7	5	S-2	2 – 4	24/24		2.33 CL	S-2A (Top 4"): Wet, very soft, 5Y 3/1 very dark gray, ORGANIC SILT, some Shells (OH); PP: 0.0 kg/cm2; TV: 0.0 kg/cm2	
-20		1 7 30 100/2"	37	S-3	4 – 5.7	20/9		3.92 TL 5.7	S-2B (Middle 18"): Wet, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.1 kg/cm2	2
5									S-2C (Bottom 2"): Wet, 7.5YR 5/1 gray, fine to coarse subangular to subrounded GRAVEL and Silty Clay, little fine to coarse Sand (GC)	
				C-1	7 – 8.7	20/20			S-3: Wet, 10YR 5/1 gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	3
-25		RQD=0		C-2	8.7 – 12	40/40		BR	C-1: 7.0–8.7 ft, SHALE, N4 medium dark gray, silt to fine sand, moderately hard, medium strong, slightly weathered, very thinly to thinly bedded, moderately to steeply dipping bedding, steeply dipping to vertical quartz and calcite veining to 9 mm; very closely to closely spaced, steeply dipping bedding plane separations with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 8.5 – 4/8"	
	10	RQD=11							C-2: 8.7–12.0 ft, Siliceous SHALE, N4 medium dark gray, silt to fine sand, moderately hard, medium strong, slightly weathered, very thinly to thinly bedded, moderately to steeply dipping bedding, prominant horizontal to vertical quartz veining to > 50 mm; extremely closely to closely spaced, moderately to steeply dipping bedding plane separations with patchy quartz, calcite, and pyrite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3/4" – 8 – 8 – 7	
-30								12	Bottom of Borehole at 12 feet.	
	15									
-35										
	20									
-40										
	25									
-45										
	30									
-50										
	35									

Page 1: 0–35 feet. Each subsequent page displays 40 feet.

NOTES

1. All sample depths feet below mudline
2. Top of Bedrock at 5.7 feet below mudline
3. Core jammed likely due to high angle bedding plane separations

NOTE:
1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU III	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		DATE
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME — WASHINGTON, COUNTY

BORING LOGS - WB-2

SHEET NUMBER

B-111

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings - 100% Submission\09-B-111 (Boring Logs-2) ; Plotted: 10/17/2024 10:24 AM by MAGUIRC
10/17/2024 10:24 AM by MAGUIRE, CASEY ; Saved: 8/30/2024 9:03 AM by MAGUIRC

LOG OF TEST BORING

	PROJECT	Lubec Breakwater			BORING NO.	WB-3	
	LOCATION	Johnson Bay				SHEET 1 OF 1	
	OWNER	Maine DOT					
	JOB NUMBER	E2X95900					
INSPECTOR Don Melcher	CONTRACTOR	New England Boring		DRILLER	Sam Cooley	ELEVATION	-24.4
METHOD OF DRILLING	GROUNDWATER READINGS			DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER	140 lb Auto	GRID N	437593.69
5.0 NX Rock Core						COORD E	1374278.7
10.0 Terminated						DATE START	7/14/23
						DATE END	7/14/23

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	USCS/ MAW	SOIL AND ROCK DESCRIPTION	NOTES
-25		WOR WOR WOR WOR	0	S-1	0 - 2	24/10		OH	S-1: Wet, very soft, 5Y 3/1 very dark gray, ORGANIC SILT, little Shells (OH); Pocket Penetrometer: 0.0 kg/cm2; Torvane: 0.0 kg/cm2	1
		6 7 100/0"	> 100	S-2	2 - 3	12/12		TILL	S-2: Wet, hard, 2.5Y 4/1 dark gray, CLAY, some fine subangular to subrounded Gravel (CL)	
-30	5								3.0-5.0 ft: Angular fragments of gray and red rock	2
		RQD=40		C-1	5 - 7.9	35/31		BR	C-1: 5.0-7.9 ft, SANDSTONE, N5 medium gray, fine to medium sand, moderately hard, strong, slightly weathered, massive, steeply dipping bedding, horizontal to vertical quartz and calcite veining to 8 mm; closely to moderately spaced, steeply dipping bedding plane separations with patchy quartz and calcite, very closely to moderately spaced, shallow to moderately dipping joints with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 6.5 - 6.5 - 8.5	3
		RQD=64		C-2	7.9 - 10	25/25			C-2: 7.9-10.0 ft, SANDSTONE, N5 medium gray, fine to medium sand, moderately hard, strong, slightly weathered, massive, steeply dipping bedding, horizontal to vertical quartz and calcite veining to 10 mm, steeply dipping contact with ARGILLITE at 9.6-10.0 ft; closely to moderately spaced, steeply dipping bedding plane separations with patchy quartz and calcite, closely spaced, shallow dipping joints with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 9 - 8.5	
-35	10								Bottom of Borehole at 10 feet.	
-40	15									
-45	20									
-50	25									
-55	30									
	35									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 07/14/23, 0820: Water column depth measured at 23.75 feet; All samples depths feet below mudline.
2. Roller bit advancement
3. Top of bedrock at 5.0 ft below mudline

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-3

SHEET NUMBER

B-112

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\10-B-112 (Boring Logs-3): Plotted: 10/17/2024 10:26 AM by MAGUIRC
10/17/2024 10:26 AM by MAGUIRE, CASEY; Saved: 8/28/2024 7:45 AM by MAGUIRC

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\11-B-113 (Boring Logs-4).; Plotted: 10/17/2024 10:26 AM by MAGUIRC; Saved: 8/28/2024 7:45 AM by MAGUIRC

LOG OF TEST BORING

		PROJECT	Lubec Breakwater		BORING NO.	WB-4	
		LOCATION	Johnson Bay			SHEET 1 OF 2	
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				
INSPECTOR	Dan Melcher	CONTRACTOR	New England Boring Contractors	DRILLER	Sam Cooley	ELEVATION	-27.7
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID N	437598.13
13.5	NX Rock Core					COORD E	1374141.57
44.0	Terminated					DATE START	7/10/23
						DATE END	7/11/23

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-30	5	WOR WOR WOR WOR	0	S-1	0 – 2	24/22		OH	S-1: Wet, very soft, 5Y 3/1 very dark gray, ORGANIC SILT, some Shells (OH); Pocket Penetrometer (PP): 1.5 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
								2		
-35		WOR WOR WOR 3	0	S-2	5 – 7	24/24			S-2: Wet, very soft, 2.5Y 3/1 very dark gray, CLAY, little Shells (CL); PP: 4.75 kg/cm2; TV: 0.15 kg/cm2	
				U-1	7 – 8	12/3		CL	U-1: Wet, 2.5Y 3/1 very dark gray, CLAY and fine to coarse rounded Shale Gravel (CL)	2
	10	1 6 7 14	13	S-3	8 – 10	24/24			S-3A (Top 21"): Wet, 2.5Y 3/1 very dark gray, CLAY, trace fine rounded Gravel (CL); PP: > 4.5 kg/cm2; TV: 0.175 kg/cm2	
		5 100/3"	> 100	S-4	10 – 10.75	9/9		9.75	S-3B (Bottom 3"): Wet, 10YR 4/1 dark gray, CLAY, some fine to coarse rounded Gravel, some fine to coarse Sand (CL)	3
-40								10.75	S-4: Wet, very dense, 10YR 4/1 very dark gray, fine to coarse rounded GRAVEL, some Clay, some fine to coarse Sand (GC)	4
									10.75 – 13.5 ft: Angular fragments of gray rock [QUODDY FORMATION]	
	15	RQD=78		C-1	13.5 – 18.5	60/57			C-1: 13.5–18.25 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, moderately to steeply dipping calcite veining to 1 mm, irregular calcite spherules to 5 mm; extremely closely to moderately spaced, moderately to steeply dipping joints with patchy calcite to 0.15 mm and partial epidote coatings to 0.1 mm thick [QUODDY FORMATION]; Drilling Rate (min/ft): 11.5 – 5 – 5 – 3.75 – 6	
-45									18.25–18.5 ft, NO RECOVERY	
				C-2	18.5 – 23.5	60/60			C-2: 18.5–23.5 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, shallow to steeply dipping calcite veining to 7 mm, irregular calcite spherules to 6 mm; very closely to closely spaced, moderately to steeply dipping joints with patchy calcite to 0.15 mm and partial epidote coatings to 0.1 mm thick [QUODDY FORMATION]; Drilling Rate (min/ft): 4.5 – 5 – 5 – 5 – 5	
-50	20	RQD=43								
		RQD=0		C-3	23.5 – 24.5	12/8			C-3: 23.5–24.15 ft, TUFF, N5 medium gray to 5B 7/1 light bluish gray, coarse tuff to lapilli tuff, very soft to moderately hard, extremely weak to medium strong, highly to slightly weathered, massive, moderately dipping calcite veining to 3 mm; extremely closely to closely spaced, moderately to steeply dipping joints with patchy calcite to 0.1 mm [QUODDY FORMATION]; Drilling Rate (min/ft): 5	5
	25			C-4	24.5 – 29.5	60/55.5			24.15–24.50 ft, NO RECOVERY	
-55		RQD=56						BR	C-4: 24.5–29.1 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, steeply dipping calcite veining to 1 mm, irregular calcite spherules to 5 mm; very closely to moderately spaced, moderately dipping joints with patchy calcite to 2 mm and partial epidote coatings to 0.1 mm thick [QUODDY ORMATION]; Drilling Rate (min/ft): 4.5 – 4.5 – 4.5 – 5 – 6	
	30			C-5	29.5 – 33.5	48/48			29.1–29.5 ft, NO RECOVERY	6
-60		RQD=60							C-5: 29.5–33.5 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, shallow to steeply dipping calcite veining to 5 mm, irregular calcite spherules to 5 mm; very closely to closely spaced, moderately to steeply dipping joints with patchy calcite to 0.1 mm [QUODDY FORMATION]; Drilling	
	35			C-6	33.5 – 38.2	56/56				

Page 1: 0–35 feet. Each subsequent page displays 40 feet.

NOTES

1. 07/10/23, 1740: Water column depth 36.9 feet, High Tide; All sample depths feet below mudline
2. Piston sampler did not fire/engage; 12" penetrated; 3" recovered and placed in jar for characterization
3. Top of BEDROCK at 10.75 feet below mudline
4. Roller bit advancement
5. Core jammed at 24.5 ft
6. Bottom 4 inches recovered in C-6 core run

LOG OF TEST BORING

	PROJECT	Lubec Breakwater	BORING NO.	WB-4	
	LOCATION	Johnson Bay		SHEET 2 OF 2	
	OWNER	Maine DOT			
	JOB NUMBER	E2X95900			

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-65	40	RQD=63		C-7	38.2 – 41.95	45/45			Rate (min/ft): 3 – 4.25 – 5.75 – 6 C-6: 33.5–38.2 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, moderately dipping calcite veining to 6 mm, irregular calcite spherules to 4 mm; very closely to moderately spaced, moderately to steeply dipping joints with patchy calcite to 0.1 mm [QUODDY FORMATION]; Drilling Rate (min/ft): 5 – 25 – 5.5 – 6 – 6/8" C-7: 38.2–41.95 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, moderately dipping quartz veining to 15 mm, irregular calcite spherules to 5 mm; very closely to moderately spaced, steeply dipping to vertical joints with calcite coatings to 3 mm thick [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5 – 3.5 – 3.5 – 3.5 – 2.5 C-8: 41.95–43.95 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, moderately to steeply dipping calcite veining to 8 mm, steeply dippling quartz veining to 15 mm; closely to moderately spaced, steeply dipping joints with partial epidote coatings to 0.1 mm thick [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5 – 2.5 Bottom of Borehole at 43.95 feet.	
-70										
		RQD=84								
-75	45			C-8	41.95 – 43.95	24/24				
		RQD=92						43.95		
-80	50									
	55									
-85										
	60									
-90										
	65									
-95										
	70									
-100										

Page 1: 0–35 feet. Each subsequent page displays 40 feet.

NOTES

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-4

SHEET NUMBER

B-113

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-5
LOCATION	Johnson Bay		
OWNER	Maine DOT		SHEET 1 OF 3
JOB NUMBER	E2X95900		

INSPECTOR	Don Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-28.09
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID N	437439.12
45.0	NX Rock Core					COORD E	1373965.76
75.0	Terminated					DATE START	7/11/23
						DATE END	7/12/23

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		WOR WOR WOR WOR	0	S-1	0 - 2	24/15		OH	S-1: Wet, very loose, 5Y 3/2 dark olive gray, ORGANIC SILT, some Shells (OH); Pocket Penetrometer (FP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
-30		4 3 4 8	7	S-2	2 - 4	24/22			S-2A (Top 15"): Wet, 5Y 3/2 dark olive gray, ORGANIC SILT, some Shells (OH); PP: 0.0 kg/cm2; TV: 0.0 kg/cm2	
				U-1	4 - 4.85	10/10		3.25	S-2B (Bottom 7"): Wet, 10YR 5/2 grayish brown, CLAY (CL); PP: 4.5 kg/cm2; TV: 0.75 kg/cm2	2
	5	8 9 16 21	25	S-3	5 - 7	24/24			U-1: Wet, 5Y 3/2 dark olive gray, CLAY (CL); PP: > 4.5 kg/cm2; TV: 0.75 kg/cm2	
-35		3 7 10 13	17	S-4	7 - 9	24/24			S-3: Wet, very stiff, 10YR 5/2 grayish brown, CLAY, trace Shells (CL); PP: > 4.5 kg/cm2; TV: 0.35 kg/cm2	
									S-4: Wet, very stiff, 5Y 5/1 gray, CLAY, trace fine Sand (fine sand lenses to 0.1 mm thick) (CL); PP: > 4.5 kg/cm2; TV: 0.15 kg/cm2	
		8 8 11 10	19	S-5	9 - 11	24/24			S-5: Wet, very stiff, CLAY, trace fine Sand (fine sand lenses to 0.1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.15 kg/cm2	
	10	5 9 10 14	19	S-6	11 - 13	24/24			S-6: Wet, very stiff, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.75 kg/cm2	
-40		10 10 9 10	19	S-7	13 - 15	24/24			S-7: Wet, very stiff, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.30 kg/cm2	
	15									
-45		WOH 3 4 7	7	S-8	18 - 20	24/24			S-8: Wet, medium soft, CLAY, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.1 kg/cm2	
	20									
-50		2 4 5 7	9	S-9	23 - 25	24/24		CL	S-9: Wet, stiff, CLAY, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: 4.5 kg/cm2; TV: 0.15 kg/cm2	
	25									
-55		WOH 2 3 4	5	S-10	28 - 30	24/24			S-10: Wet, medium stiff, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: 4.5 kg/cm2; TV: 0.65 kg/cm2	
	30									
-60		WOH WOH 5	5	S-11	33 - 35	24/24			S-11: Wet, medium soft, CLAY, trace fine Sand (fine sand lenses to 3 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: 3.5 kg/cm2; TV: 0.2 kg/cm2	
	35									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 07/11/23, 0925: Water column depth 30.1 feet; All sample depths feet below mudline
2. Insufficient volume for testing

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-5
LOCATION	Johnson Bay		
OWNER	Maine DOT		SHEET 2 OF 3
JOB NUMBER	E2X95900		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		4								
-65		2 2 2 3	4	S-12	38 - 40	24/24			S-12: Wet, medium soft, CLAY, little fine Sand (fine sand lenses to 40 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: 4.25 kg/cm2; TV: 0.25 kg/cm2	
	40									
									41.5	
-70		100/3"	>100	S-13	43 - 43.25	3/0			41.5 - 43.0 ft: Angular fragments of gray rock; Glacial Till or Bedrock	3
									S-13: NO RECOVERY	4
	45								43.25 - 45.0 ft: Angular fragments of gray rock [QUODDY FORMATION]	
		RQD=0		C-1	45 - 47	24/24			C-1: 45.0-47.0 ft, SHALE, N3 dark gray, clay to silt, laminated to very thinly bedded, steeply dippling to vertical bedding, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 6.5 - 9.5	5
-75		RQD=0		C-2	47 - 48	12/12			C-2: 47.0-48.0 ft, SHALE, N3 dark gray, clay to silt, laminated to very thinly bedded, vertical bedding, extremely fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 7	5
		RQD=23		C-3	48 - 49.85	22/22			C-3: 48.0-49.85 ft, SHALE, N3 dark gray, clay to silt, moderately hard, medium strong, slightly weathered, very thinly bedded, steeply dipping bedding, moderately dipping quartz and calcite veining to 1 mm;	5
	50	RQD=0		C-4	49.85 - 50.85	12/12			extremely closely to closely spaced, steeply dipping bedding plane separations with patchy quartz and calcite, closely spaced, moderately dipping joints with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 7 - 9/10"	5
-80		RQD=0		C-5	50.85 - 51.85	12/12			C-4: 49.85-50.85 ft, SHALE, N3 dark gray, clay to silt, laminated, vertical bedding, extremely fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 10	5
		RQD=0		C-6	51.85 - 54.85	36/36			C-5: 50.85-51.85 ft, SHALE, N3 dark gray, clay to silt, laminated, vertical bedding, extremely fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 8	5
	55	RQD=67		C-7	54.85 - 56.85	24/24			C-6: 51.85-54.85 ft, SHALE, N3 dark gray, clay to silt, moderately hard, medium strong, slightly weathered, very thinly bedded, steeply dipping bedding, moderately dipping healed fractures with quartz and calcite infilling to < 1 mm with bedding displacement to 2 mm; closely spaced, steeply dipping bedding plane separations with patchy quartz and calcite, closely spaced, moderately dipping joints with patchy quartz and calcite, extremely fractured at 53.2-54.85 ft [QUODDY FORMATION]; Drilling Rate (min/ft): 6 - 6 - 5.5	
-85				C-8	56.85 - 58.85	24/24			C-7: 54.85-56.85 ft, SHALE, N3 dark gray, clay to silt, moderately hard, medium strong, slightly weathered, laminated to very thinly bedded, steeply dipping bedding, moderately dipping to vertical quartz veining to 30 mm, pyrite inclusions to 25 mm; closely to moderately spaced, steeply dipping bedding plane separations with patchy quartz [QUODDY FORMATION]; Drilling Rate (min/ft): 5.5 - 13	5
		RQD=19		C-9	58.85 - 63.85	60/60			C-8: 56.85-58.85 ft, SHALE, N3 dark gray, clay to silt, laminated to vey thinly bedded, steeply dipping to vertical bedding, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 7.25 - 12.5	5
	60	RQD=93							C-9: 58.85-63.85 ft, SHALE, N3 dark gray, clay to silt, hard, strong, fresh, laminated to very thinly bedded, steeply dipping bedding, prominant quartz veining to > 50 mm throughout; extremely closely to moderately spaced, steeply dipping bedding plane separations with fresh surfaces [QUODDY FORMATION]; Drilling Rate (min/ft): 4.5 - 4.5 - 5.75 - 6.5 - 6.5	
-90				C-10	63.85 - 68.4	60/55.5			C-10: 63.85-68.4 ft, Siliceous SHALE, N3 dark gray, clay to silt, hard, strong, fresh, laminated to very thinly bedded, steeply dipping bedding, moderately dipping to vertical quartz veining to > 50 mm; very closely to moderately spaced, moderately to steeply dipping bedding plane separations with patchy quartz and calcite [QUODDY FORMATION];	
	65	RQD=67								
-95				C-11	68.85 - 70.85	24/24				5
		RQD=19		C-12	70.85 - 72.85	24/24				
	70	RQD=42								
-100				C-13	72.85 - 75	26/26				
		RQD=88						BR		

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

3. Top of bedrock likely at 41.5 feet below mudline; Roller bit advancement
4. Roller bit advancement
5. Core jammed likely due to high angle bedding plane separations

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-5
LOCATION	Johnson Bay		
OWNER	Maine DOT		SHEET 3 OF 3
JOB NUMBER	E2X95900		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
	75							75	Drilling Rate (min/ft): 6 - 6 - 5.5 - 6.5 - 6.5	
-105									68.4-68.85 ft, NO RECOVERY	
									C-11: 66.85-70.85 ft, SHALE, N3 dark gray, clay to silt, laminated to very thinly bedded, steeply dipping to vertical bedding, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 8 - 8	
	80								C-12: 70.85-72.85 ft, SHALE, N3 dark gray, clay to silt, moderately hard, medium strong, fresh, laminated to very thinly bedded, steeply dipping to vertical bedding; extremely closely to moderately spaced, steeply dipping to vertical bedding plane separations with fresh surfaces, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 8.25 - 8.5	
-110									C-13: 72.85-75.0 ft, SHALE, N3 dark gray, clay to silt, moderately hard, medium strong, fresh, laminated to very thinly bedded, steeply dipping to vertical bedding, horizontal to shallow dipping quartz veining to 1 mm; closely spaced, steeply dipping bedding plane separations with fresh surfaces, closely spaced, moderately dipping joints with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 9 - 9.5 - 2/2"	
	85								Bottom of Borehole at 75 feet.	
-115										
	90									
-120										
	95									
-125										
	100									
-130										
	105									
-135										
	110									
-140										

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

BORING LOGS - WB-5

SHEET NUMBER

B-114

12 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\12-B-114 (Boring Logs-5).; Plotted: 10/17/2024 10:28 AM by MAGUIRC

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-6
LOCATION	Johnson Bay		
OWNER	Maine DOT		SHEET 1 OF 4
JOB NUMBER	E2X95900		

INSPECTOR	Don Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-28.2
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID N	437277.2
73.0	NX Rock Core					COORD E	1373792.72
105.0	Terminated					DATE START	7/12/23
						DATE END	7/13/23

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		WOR WOR WOR WOR	0	S-1	0 - 2	24/13		OH	S-1: Wet, very loose, 5Y 3/2 dark olive gray, ORGANIC SILT (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.05 kg/cm2	1
-30		WOH WOH WOH 2	0	S-2	2 - 4	24/24			S-2A (Top 18"): Wet, 5Y 3/2 dark olive gray, some Shells, ORGANIC SILT (OH); PP: 1.25 kg/cm2; TV: 0.05 kg/cm2	
								3.5	S-2B (Bottom 6"): Wet, 5Y gray, CLAY (CL); PP: 4.25 kg/cm2; TV: 0.15 kg/cm2	
	5			U-1	4 - 6	24/24			U-1: Wet, 5Y 5/1 gray, CLAY (CL)	
-35		3 4 4 7	8	S-3	6 - 8	24/24			S-3: Wet, medium soft, CLAY, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.15 kg/cm2	
		3 6 7 8	13	S-4	8 - 10	24/24			S-4: Wet, stiff, CLAY, little fine rounded Gravel, little Shells, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.20 kg/cm2	
	10	4 4 2 5	6	S-5	10 - 12	24/24			S-5: Wet, medium soft, CLAY, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: 3.75 kg/cm2; TV: 0.20 kg/cm2	
-40										
	15	1 2 3 4	5	S-6	15 - 17	24/24			S-6: Wet, medium soft, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.20 kg/cm2	
-45										
	20	WOH 3 4 6	7	S-7	20 - 22	24/24		CL	S-7: Wet, medium soft, CLAY, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.10 kg/cm2	
-50										
	25	WOH 3 5 6	8	S-8	25 - 27	24/24			S-8: Wet, stiff, CLAY, horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: 4.5 kg/cm2; TV: 0.175 kg/cm2	
-55										
	30	WOH 3 5 5	8	S-9	30 - 32	24/24			S-9: Wet, stiff, CLAY, trace fine Sand (fine sand lenses to 1 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.30 kg/cm2	
-60										
	35									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 07/12/23, 1328: Water column depth 19.7 feet, Low Tide; All sample depths feet below mudline

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-6
LOCATION	Johnson Bay		
OWNER	Maine DOT		SHEET 2 OF 4
JOB NUMBER	E2X95900		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		1 3 6 9	9	S-10	35 - 37	24/24			S-10: Wet, stiff, CLAY, little fine Sand (fine sand lenses to 20 mm thick), horizons of 5Y 4/1 dark gray, 5Y 3/1 very dark gray, and 7.5YR 5/2 brown (CL); PP: > 4.5 kg/cm2; TV: 0.25 kg/cm2	
-65										
	40	4 13 22 19	35	S-11	40 - 42	24/10			S-11A (Top 3"): Wet, 5Y 4/1 dark gray, CLAY (CL)	2
								40.25	S-11B (Bottom 7"): Wet, 5YR 5/1 gray, fine to coarse subangular to rounded GRAVEL, some fine to coarse Sand, some Silty Clay (GC)	
-70										
	45	16 22 26 23	48	S-12	45 - 47	24/6			S-12: Wet, dense, 5YR 5/1 gray, fine to coarse subangular to rounded GRAVEL, some fine to coarse Sand, little Silty Clay (GC)	
-75										
	50	22 22 33 33	55	S-13	50 - 52	24/6			S-13: Wet, dense, 7.5YR 5/1 gray, fine to coarse subangular to rounded GRAVEL, some fine to coarse Sand, some Silty Clay (GC)	
-80										
	55	41 28 20 34	48	S-14	55 - 57	24/0		TILL	S-14: NO RECOVERY	
-85										
	60	19 17 10 18	27	S-15	60 - 62	24/3			S-15: Wet, dense, 5YR 3/1 very dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
-90										
	65	7 5 4 4	9	S-16	65 - 67	24/2.5			S-16: Wet, loose, 5YR 3/1 very dark gray, fine to coarse subangular GRAVEL, some fine to coarse Sand, some Silty Clay (GC)	
-95										
	70	100/5"	100/5"	S-17	70 - 70.4	5/5			S-17A (Top 3"): Wet, dense, 5YR 3/1 very dark gray, fine to coarse subangular GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	3
-100								71.25	S-17B (Bottom 3"): SHALE, N1 black, highly weathered, discernible rock fabric [QUODDY FORMATION]	
		RQD=0		C-1	73 - 74.25	15/15			C-1: 73.0-74.25 ft, SHALE, N3 dark gray, clay to silt, extremely to moderately fractured, steeply dipping to vertical bedding plane	4

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

2. Top of Glacial Till at 40.25 ft
3. Top of bedrock at 71.25 feet below mudline
4. Core jammed likely due to high angle bedding plane separations

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-6
LOCATION	Johnson Bay		
OWNER	Maine DOT		SHEET 3 OF 4
JOB NUMBER	E2X95900		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
	75	RQD=35		C-2	74.25 - 76.15	23/23			separations [QUODDY FORMATION]; Drilling Rate (min/ft): 5.5 - 4.5/9" C-2: 74.25-76.15 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	4
-105				C-3	76.15 - 79.65	42/42			medium strong, slightly weathered, laminated to thinly bedded, steeply dipping to vertical bedding, steeply dipping epidote veining to 0.1 mm; very closely to closely spaced, steeply dipping to vertical bedding plane separations with patchy epidote [QUODDY FORMATION]; Drilling Rate (min/ft): 5/3" - 8 - 3/2" C-3: 76.15-79.65 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	4
		RQD=24								
	80			C-4	79.65 - 84	52/52			medium strong, slightly weathered, laminated to very thinly bedded, steeply dipping to vertical bedding, shallow to steeply dipping quartz and calcite veining to 6 mm, steeply dipping epidote veining to 1 mm; very closely to moderately spaced, steeply dipping to vertical bedding plane separations with patchy quartz, calcite, and epidote, very closely to closely spaced, moderately dipping joints with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 3.5/8" - 5 - 6 - 5 C-4: 79.65-84.0 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	4
-110		RQD=58								
				C-5	84 - 89	60/60			medium strong, fresh, laminated, moderately to steeply dipping bedding, steeply dipping quartz and calcite veining to 3 mm; extremely closely to moderately spaced, moderately to steeply dipping bedding plane separations with fresh surfaces [QUODDY FORMATION]; Drilling Rate (min/ft): 2/4" - 5 - 5 - 5 - 5 C-5: 84.0-89.0 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	
	85									
		RQD=82						BR		
-115									medium strong, fresh, laminated, moderately dipping to vertical bedding, shallow to moderately dipping quartz and calcite veining to 1 mm;	
				C-6	89 - 90.75	21/21			closely to moderately spaced, moderately dipping to vertical bedding plane separations with fresh surfaces [QUODDY FORMATION]; Drilling Rate (min/ft): 6 - 5 - 6 - 6 C-6: 89.0-90.75 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	4
	90	RQD=29								
-120				C-7	90.75 - 94.6	46/46			medium strong, fresh, laminated, steeply dipping to vertical bedding, steeply dipping quartz and calcite veining to 2 mm; extremely closely to closely spaced, steeply dipping to vertical bedding plane separations with fresh surfaces, moderately spaced, shallow to moderately dipping joints with iron oxide staining and patchy calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 5.5 - 5/9" C-7: 90.75-94.6 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	4
		RQD=76								
	95			C-8	94.6 - 97.5	35/35			medium strong, slightly weathered, laminated, steeply dipping to vertical bedding, shallow dipping to vertical dipping quartz and calcite veining to 6 mm; extremely closely to widely spaced, steeply dipping to vertical bedding plane separations with fresh surfaces, moderately spaced, shallow to moderately dipping joints with iron oxide staining and patchy calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 3/3" - 7 - 7 - 7 - 6.75/7" C-8: 94.6-97.5 ft, Siliceous SHALE, N3 dark gray, clay to fine sand,	4
-125		RQD=49								
				C-9	97.5 - 100	30/30			hard, strong, slightly weathered, laminated to very thinly bedded, steeply dipping to vertical bedding, horizontal to shallow dipping quartz, calcite, and pyrite veining to 1 mm, prominant vertical quartz veining to > 50 mm; very closely to closely spaced, horizontal to shallow dripping joints with partial calcite coatings to 0.1 mm thick, closely spaced, steeply dipping to vertical bedding plane separations with patchy pyrite and calcite, extremely fractured at 97.25-97.50 ft [QUODDY FORMATION]; Drilling Rate (min/ft): 2.25/5" - 7.25 - 5.25 - 4.5/6" C-9: 97.5-100.0 ft, SHALE, N3 black, clay to silt, laminated, extremely to	4
	100	RQD=0								
-130				C-10	100 - 102	24/24			moderately fractured, steeply dipping to vertical bedding plane separations with fresh surfaces [QUODDY FORMATION]; Drilling Rate (min/ft): 4.75/6" - 6.75 - 5 C-10: 100.0-102.0 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	
		RQD=42		C-11	102 - 103	12/12			medium strong, fresh, laminated, vertical bedding, shallow dipping to vertical quartz and calcite veining to 1 mm; extremely closely to moderately spaced, vertical bedding plane separations with fresh surfaces, very closely to closely spaced, shallow to moderately dipping joints with patchy quartz and calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 6.75 - 15 C-11: 102.0-103.0 ft, SHALE, N3 dark gray, clay to silt, moderately hard,	
	105	RQD=42		C-12	103 - 105	24/24			medium strong, slightly weathered, laminated to very thinly bedded, vertical bedding, shallow to moderately dipping quartz and calcite veining to 1 mm; extremely closely to closely spaced, vertical bedding	
-135		RQD=71								
	110									
-140										

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

4. Core jammed likely due to high angle bedding plane separations

NOTE:
1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-6 (SEET 1 OF 2)

SHEET NUMBER

B-115

13 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\13-B-115 (Boring Logs-6A) - Plotted: 10/17/2024 10:29 AM by MAGUIRC
Saved: 8/28/2024 7:48 AM by MAGUIRC, CASEY

LOG OF TEST BORING

PROJECT	Lubec Breakwater	BORING NO.	WB-6
LOCATION	Johnson Bay		SHEET 4 OF 4
OWNER	Maine DOT		
JOB NUMBER	E2X95900		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAB NAME	SOIL AND ROCK DESCRIPTION	NOTES
-115									plane separations with patchy calcite, very closely to closely spaced, moderately dipping joints with patchy calcite and quartz [QUODDY FORMATION]; Drilling Rate (min/ft): 9 C-12: 103.0-105.0 ft, SHALE, N3 dark gray, clay to fine sand, moderately hard, medium strong, slightly weathered, laminated to very thinly bedded, steeply dipping to vertical bedding, steeply dipping quartz, calcite, and pyrite veining to 1 mm; closely to moderately spaced, shallow to moderately dipping joints with patchy calcite, vertical bedding plane separations with fresh surface at 104.15 ft [QUODDY FORMATION]; Drilling Rate (min/ft): 8.25 - 8.25 Bottom of Borehole at 105 feet.	
-145	120									
-150	125									
-155	130									
-160	135									
-165	140									
-170	145									
-175	150									
-180										

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

NOTE:
1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-6 (SEET 2 OF 2)

SHEET NUMBER

B-116

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission 14-B-116 (Boring Logs-6B) ; Plotted: 10/17/2024 10:29 AM by MAGUIRE, CASEY ; Saved: 8/28/2024 7:49 AM by MAGUIRC

LOG OF TEST BORING

	PROJECT	Lubec Breakwater	BORING NO.	WB-101	
	LOCATION	Johnson Bay		SHEET 1 OF 1	
	OWNER	Maine DOT			
	JOB NUMBER	E2X95900			
INSPECTOR	Don Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto
17.0	NX Rock Core				
21.6	Terminated				

ELEVATION		-14.8
DATUM		NAVD 88
GRID	N	437502.87
COORD	E	1374598.97
DATE START		2/22/24
DATE END		2/22/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-15		WOR WOR WOR 1	0	S-1	0 – 2	24/15		OH	S-1A (Top 13"): Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, some Shells (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
		WOR WOR 6 6	6	S-2	2 – 4	24/17		CL	S-1B (Bottom 2"): Wet, very soft, 5Y 3/2 dark olive, gray, CLAY (CL)	
-20	5	3 2 7 8	9	S-3	4 – 6	24/7		3.1	S-2A (Top 13"): Wet, 5Y 3/2 dark olive gray, CLAY, trace fine to coarse Sand (CL); Pocket Penetrometer (PP): 4.5 kg/cm2; Torvane (TV): 0.05 kg/cm2	
		4 5 6 10	11	S-4	6 – 8	24/7			S-2B (Bottom 4"): Wet, 2.5Y 3/1 dark gray, fine to coarse subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
-25	10	14 15 9 7	24	S-5	8 – 10	24/5		TILL	S-3: Wet, loose, 5Y 3/2 dark grayish brown, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
		8 12 16 40	28	S-6	10 – 12	24/9			S-4: Wet, stiff, 2.5Y 4/2 dark grayish brown, SILTY CLAY, little fine to coarse subangular to subrounded Gravel, little fine to coarse Sand (CL)	
-30	15								S-5: Wet, medium dense, 2.5Y 4/2 dark grayish brown, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
									S-6: Wet, medium dense, 2.5Y 4/2 dark grayish brown, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand (GC)	
		19 100/0"	>100	S-7	14 – 14.5	6/3		14.5 W/R	S-7: Wet, very dense, 2.5Y 4/2 dark grayish brown and 2.5Y 3/1 dark gray, fine to coarse subangular to subrounded GRAVEL, little Silty Clay, little fine to coarse Sand (GC)	2
-35	20	RQD=0		C-1	17 – 18.6	19/19		17 BEDROCK	14.5 – 17.0 ft, weathered gray SHALE [QUODDY FORMATION]	
		RQD=29		C-2	18.6 – 20	17/17			C-1: 17.0–18.6 ft, SHALE, N3 dark gray, clay to very fine sand, moderately hard, medium strong, slightly weathered, laminated to very thinly bedded, steeply dipping bedding, plane separations with patchy calcite and pyrite; closely spaced, shallow to moderately dipping joints with patchy calcite and pyrite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 4.5 – 3.5/7"	3
-40	25	RQD=0		C-3	20 – 21.6	19/19			C-2: 18.6–20.0 ft, SHALE, N3 dark gray, clay to very fine sand, moderately hard, medium strong, slightly weathered, laminated to very thinly bedded, steeply dipping bedding, steeply dipping calcite fracture infilling to 1 mm; closely spaced, steeply dipping bedding plane separation with oxide staining, and patchy calcite; closely spaced vertical joints with patchy calcite and pyrite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3/5" – 4	4
-45	30							21.6	C-3: 20.0–21.6 ft, SHALE, N3 dark gray, clay to very fine sand, moderately hard, medium strong, slightly weathered, laminated to very thinly bedded, steeply dipping bedding, very closely to closely spaced, moderately dipping joints with patchy calcite, very closely spaced healed fractures parallel to joint set, extremely fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 4.5 – 4/7"	5
									Bottom of Borehole at 21.6 feet.	
-50	35									

Page 1: 0–35 feet. Each subsequent page displays 40 feet.

NOTES

1. 23' 2" water column measured at 8:40 on 02/22/2024.
2. Angular fragments of gray weathered bedrock observed in return water.
3. Top of bedrock at 17.0 ft below mudline.
4. Core jammed likely due to high angle bedding.
5. Borehole total depth 21.6 ft.

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME — WASHINGTON, COUNTY

BORING LOGS - WB-101

SHEET NUMBER

B-117

15 OF 99

File: C:\Users\hs037482\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\15-B-117 (Boring Logs-101); Plotted: 11/14/2024 4:38 PM by SAYADFAR, HASTI; Saved: 10/17/2024 10:33 AM by MAGUIRC

LOG OF TEST BORING

	PROJECT	Lubec Breakwater			BORING NO.	WB-102	
	LOCATION	Johnson Bay				SHEET 1 OF 1	
	OWNER	Maine DOT					
INSPECTOR Don Melcher	JOB NUMBER	E2X95900					
	CONTRACTOR	New England Boring		DRILLER	Sam Cooley	ELEVATION	-19.1
METHOD OF DRILLING	GROUNDWATER READINGS			DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER	140 lb Auto	GRID N	437564.92
6.0 NX Rock Core						COORD E	1374376.94
11.0 Terminated						DATE START	2/22/24
						DATE END	2/23/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	WATER LEVEL MARK	SOIL AND ROCK DESCRIPTION	NOTES
-20		WOR WOR WOR WOR	0	S-1	0 – 2	24/15		OH	S-1: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, trace Shells (OH); Pocket Penetrometer (PP): 1.0 kg/cm2; Torvane (TV): 0.05 kg/cm2	1
		WOH WOH WOH WOH	0	S-2	2 – 4	24/15			S-2: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	
								4		
				U-1	4 – 5.1	13/0		CL	U-1: No recovery.	2
-25	5	WOH/7" 100/3"	>100	S-3	5.1 – 5.91	10/10		5.5	S-3A (Top 5"): Wet, 5Y 3/1 dark gray, SILTY CLAY (CL); Pocket Penetrometer (PP): 4.5 kg/cm2; Torvane (TV): 0.3 kg/cm2	3
				C-1	6 – 11	60/57.5			S-3B (Bottom 5"): Wet, 5Y 3/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, little fine to coarse Sand (GC)	4
								BEDROCK	5.91-6.0 ft, gray SHALE [QUODDY FORMATION]	
		RQD=72							C-1: 6-10.8 ft, SHALE, N5 medium gray, siliceous, silt to fine sand, moderately hard to hard, medium strong to strong, fresh, laminated to thinly bedded, steeply dipping to vertical bedding, steeply dipping to vertical quartz veining to 10 mm parallel to bedding; closely to mederately spaced, steeply dipping bedding plane separations with patchy calcite, vertical bedding plane separation with patchy calcite at 10.2 ft, very closely to moderately spaced, shallow to moderately dipping joints with patchy calcite and partial calcite coating to 0.1 mm, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-3.5-3.5-3.5-5.5	
-30	10							11	Bottom of Borehole at 11 feet.	
-35	15									
	20									
-40										
-45	25									
-50	30									
	35									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 11' 10" water column measured at 15:20 on 02/22/2024.
2. Shelby Tube refusal at 5.1', Shelby Tube bent during advancement.
3. Angular fragments of gray bedrock observed in return water; top of bedrock at 5.8 ft below mudline.
4. 10.8–11.0 ft: No recovery. Borehole total depth 11.0 ft.

NOTE:
1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-102

SHEET NUMBER

B-118

16 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\16-B-118 (Boring Logs-102) ; Plotted: 10/17/2024 10:34 AM by MAGUIRC
Saved: 8/28/2024 7:58 AM by MAGUIRE, CASEY ;

LOG OF TEST BORING

		PROJECT	Lubec Breakwater		BORING NO.	WB-103	
		LOCATION	Johnson Bay			SHEET 1 OF 2	
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				
INSPECTOR	Dan Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-23.2
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastor5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER	140 lb Auto	GRID N 437553.41
5.7	Rollerbit						COORD E 1374255.24
6.5	NX Rock Core						DATE START 2/26/24
37.0	Terminated						DATE END 2/26/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		WOR WOR WOR WOR	0	S-1	0 - 2	24/24		OH	S-1: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, little Shells (OH); Pocket Penetrometer (PP): 0.5 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
-25		WOR WOR WOR 2	0	S-2	2 - 4	24/24			S-2A (Top 20"): Wet, 5Y 3/1 dark gray, ORGANIC SILT, little Shells (OH); Pocket Penetrometer (PP): 1.5 kg/cm2; Torvane (TV): 0.15 kg/cm2;	
				U-1	4 - 5.6	19/16.5		3.67 CL	S-2B (Bottom 4"): Wet, 5Y 3/1 dark gray, SILTY CLAY (CL)	
	5							5.6	U-1: Wet, 5Y 3/1 dark gray, SILTY CLAY (CL)	
		100/1"	>100	S-4	5.6 - 5.7	1/1		5.7	S-3: Wet, very dense, 5Y 3/2 dark olive gray, fine to coarse angular GRAVEL, some Silty Clay (GC)	2 3
-30				C-1	6.5 - 9.1	31/31			5.7-6.5 ft: Weathered gray TUFF [QUODDY FORMATION] C-1: 6.5-9.1 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, hard to moderately hard, medium strong, fresh, massive, shallow to vertical quartz and calcite veining to 7 mm, very closely to closely spaced, shallow to steeply dipping joints with partial calcite coatings to 0.5 mm thick, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3.5-5-6/7"	
		RQD=40								
	10			C-2	9.1 - 13.2	49/49			C-2: 9.1-13.2 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to steeply dipping quartz and calcite veining to 10 mm, very closely to moderately spaced, shallow to steeply dipping joints with patchy calcite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-3.5-3-3/13"	
-35		RQD=67								
				C-3	13.2 - 18.2	60/60			C-3: 13.2-18.2 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard to hard, medium strong to strong, slightly weathered, massive, prominant steeply dipping to vertical quartz and calcite veining to 30 mm, closely to widely spaced, moderately to steeply dipping joints with patchy calcite, moderately fractured to sound [QUODDY FORMATION]; Drilling Rate (min/ft): 1-3.5-4-3-3.5	
	15	RQD=100								
-40				C-4	18.2 - 23	58/56			C-4: 18.2-23.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to vertical quartz and calcite veining to 10 mm, elongated calcite spherules ranging 5-10 mm in length, very closely to moderately spaced, shallow to moderately dipping joints with calcite coating to 0.2 mm thick, moderately to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-2.5-2.5-3.5-3	4
	20	RQD=80						BEDROCK		
-45				C-5	23 - 28	60/57			C-5: 23.0-28.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to vertical quartz and calcite veining to 5 mm, elongated calcite spherules to 7 mm in length, closely to moderately spaced, shallow to moderately dipping joints with calcite coating to 0.1 mm thick [QUODDY FORMATION]; Drilling Rate (min/ft): 1.5-3-3-3-3	5
	25	RQD=89								
-50				C-6	28 - 33	60/60			C-6: 28.0-33.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to vertical quartz and calcite veining to 5 mm, extremely closely to moderately spaced, shallow to steeply dipping joints with patchy calcite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2.5-2-3-3	
-55	30	RQD=58								
				C-7	33 - 37	48/48			C-7: 33.0-37.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to steeply dipping quartz and calcite veining to 10 mm, very closely to moderately	6
	35									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 23' 9" water column measured at 9:05 on 02/26/2024.
2. Top of bedrock at 5.7 ft below mudline.
3. Angular fragments of gray rock observed in return water during rollerbit advancement.
4. 22.8-23.0 ft: No recovery.
5. 27.75-28.0 ft: No recovery.
6. Borehole terminated at 37.0 ft.

LOG OF TEST BORING

	PROJECT	Lubec Breakwater	BORING NO.	WB-103	
	LOCATION	Johnson Bay		SHEET 2 OF 2	
	OWNER	Maine DOT			
	JOB NUMBER	E2X95900			

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-60	40	RQD=82							spaced, shallow to moderately dipping joints with partial calcite coating to 2 mm thick, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2.5-2.5-2.5	
-65								37	Bottom of Borehole at 37 feet.	
-70	45									
-75	50									
-80	55									
-85	60									
-90	65									
-95	70									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-103

SHEET NUMBER

B-119

17 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\17-B-119 (Boring Logs-103).dwg Plotted: 10/17/2024 10:34 AM by MAGUIRC
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LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-104
		LOCATION	Johnson Bay				SHEET 1 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				
INSPECTOR	Dan Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-24.8
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastor5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID N	437483.34
9.5	NX Rock Core					COORD E	1374183.77
39.5	Terminated					DATE START	3/4/24
						DATE END	3/5/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-25		WOR WOR WOR WOR	0	S-1	0 - 2	24/19		OH	S-1: Wet, very soft, 2.5Y 3/1 dark gray, ORGANIC SILT, little Shells (OH); Pocket Penetrometer (PP): 1.25 kg/cm2; Torvane (TV): 0.05 kg/cm2	1
		WOR WOR WOR WOR	0	S-2	2 - 4	24/19			S-2A (Top 14"): Wet, 2.5Y 3/1 dark gray, ORGANIC SILT (OH); Pocket Penetrometer (PP): 1.25 kg/cm2; Torvane (TV): 0.05 kg/cm2	
		WOR WOR 2 5	2	S-3	4 - 6	24/14		3.79 CL	S-2B (Bottom 5"): Wet, 2.5Y 3/1 dark gray, SILTY CLAY, little fine to coarse Sand, liflle fine to coarse rounded Gravel, little shells (CL)	
-30	5	4 3 7 100/3"	10	S-4	6 - 7.75	21/7		6 TILL 7.6	S-3: Wet, 10YR 4/1 dark gray, SILTY CLAY, some fine to coarse Sand, little fine rounded Gravel (CL)	
									S-4A (Top 5"): Wet, 10YR 4/1 dark gray, SILTY CLAY and fine to coarse subrounded GRAVEL, trace fine to coarse Sand (CL)	2
								W/R 9.5	S-4B (Bottom 2"): Wet, gley 5/1 greenish gray, Weathered TUFF, rock fabric discernible	
-35	10	RQD=0		C-1	9.5 - 12.4	34/32			C-1: 9.5-12.4 ft, TUFF, N6 medium light gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, highly weathered at 11.8-11.9 ft, massive, shallow to vertical quartz and calcite veining to 3 mm, extremely closely to closely spaced, shallow to vertical joints with partial calcite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-3-3/10"	3
				C-2	12.4 - 14.5	26/26			C-2: 12.4-14.5 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, vertical quartz and calcite veining to 20 mm, irregular quartz and calcite spherules to 5 mm, very closely to moderately spaced, steeply dipping joints with banded appearance patchy calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 1/2"-3-3.5	
		RQD=92		C-3	14.5 - 19.5	60/60			C-3: 14.5-19.5 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, steeply dipping to vertical quartz and calcite veining to 30 mm, irregular calcite spherules to 5 mm, extremely closely to moderately spaced, moderately dipping to vertical joints with patchy calcite to partial calcite coatings to 3 mm thick, extremely to slightly fractured, extremely fractured at 18.8-19.5 ft with banded appearance [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2-3-3-3	
-40	15	RQD=60								
				C-4	19.5 - 24.5	60/60			C-4: 19.5-24.5 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, moderately soft to moderately hard, weak to medium strong, moderately to slightly weathered, massive, steeply dipping to vertical quartz and calcite veining to 20 mm, irregular calcite spherules to 10 mm, extremely closely to moderately spaced, steeply dipping to vertical joints with patchy calcite and disintegrated rock to 3 mm thick, extremely to slightly fractured with banded appearance [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2-3-3-3	
-45	20	RQD=42								
				C-5	24.5 - 27	30/30		BEDROCK	C-5: 24.5-27.0 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, soft to moderately hard, weak to medium strong, moderately to slightly weathered, massive, moderately dipping to vertical quartz and calcite veining to 7 mm, irregular calcite spherules to 4 mm, steeping dipping joint with banded appearance at 26.0-26.6 ft partially broken/pulverized into particals ranging 1-25 mm; extremely closely to closely spaced, steeply dipping to vertical joints with patchy calcite [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-3-2/6"	4
-50	25	RQD=0								
				C-6	27 - 29.5	30/30			C-6: 27.0-29.5 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, soft to moderately hard, weak to medium strong, moderately to slightly weathered, massive, steeply dipping to vertical quartz and calcite veining to 10 mm, closely to moderately spaced, steeply dipping joints with partial calcite coating to 1 mm thick, moderately to slightly fractured with banded appearance [QUODDY	
		RQD=20								
-55	30			C-7	29.5 - 34.5	60/60				
		RQD=73								
-60	35									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 26' 8" water column measured at 14:55 on 3/4/2024. 31' 11" water column measured at 6:20 on 3/5/2024.
2. 7.6-9.5 ft: Weathered Bedrock.
3. Top of bedrock at 9.5 ft below mudline.
4. Core jammed at 27 ft.
5. Borehole terminated at 39.5 ft.

LOG OF TEST BORING

					BORING NO.	WB-104
	PROJECT	Lubec Breakwater				
	LOCATION	Johnson Bay				SHEET 2 OF 2
	OWNER	Maine DOT				
	JOB NUMBER	E2X95900				

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-60				C-8	34.5 - 39.5	60/60			FORMATION]; Drilling Rate (min/ft): 2/6"-2-2.5 C-7: 29.5-34.5 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, soft to moderately hard, weak to medium strong, moderately to slightly weathered, massive, steeply dipping to vertical quartz and calcite veining to 40 mm, closely to moderately spaced, steeply dipping joints and disintegraded rock to 1 mm thick, moderately to slightly fractured with banded appearance [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2.5-2.5-2-2.5	5
	40	RQD=95						39.5	C-8: 34.5-39.5 ft, TUFF, N4 medium dark gray and 5G 6/1 greenish gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, steeply dipping to vertical quartz and calcite veining to 10 mm, irregular calcite spherules to 5 mm, closely to moderately spaced, steeply dipping joints with patchy calcite, widely spaced, vertical joints with patchy calcite to disintegraded rock to 5 mm thick, moderately to slightly fractured with banded appearance [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2-2-3-3 Bottom of Borehole at 39.5 feet.	
-65										
-70	45									
-75	50									
-80	55									
-85	60									
-90	65									
-95	70									

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE — DATE

P.E. NUMBER — DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

BORING LOGS - WB-104

SHEET NUMBER

B-120

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Saved: 8/29/2024 7:57 AM by MAGUIRC, CASEY ;

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-105
		LOCATION	Johnson Bay				SHEET 1 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				
INSPECTOR	Dan Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-24.8
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft) REMARKS	SPT HAMMER	140 lb Auto	GRID N	437432.25
7.9	Rollerbit					COORD E	1374129.25
10.0	NX Rock Core					DATE START	2/27/24
41.0	Terminated					DATE END	2/27/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-25		WOR WOR WOR WOR	0	S-1	0 - 2	24/14		OH	S-1: Wet, very soft, 2.5Y 4/1 dark gray, ORGANIC SILT, trace Shells (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
		WOR WOR WOR WOR	0	S-2	2 - 4	24/12			S-2: Wet, very soft, 2.5Y 4/1 dark gray, ORGANIC SILT, trace Shells (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	
-30	5	WOH WOH 1 3	1	S-3	4 - 6	24/17		4 CL	S-3: Wet, very soft, 5Y 3/1 dark gray and 7.5YR 5/2 brown CLAY, trace fine Sand (Sand lenses to 2 mm thick) (CL); Pocket Penetrometer (PP): >4.5 kg/cm2; Torvane (TV): 0.4 kg/cm2	
				U-1	6 - 7.6	19/18			U-1: Wet, 5Y 3/1 dark gray, CLAY (CL)	
		100/3"	>100	S-4	7.6 - 7.85	3/3		7.6 7.9 W/R 10	S-4: Wet, very dense, 5Y 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, some fine to coarse Sand, weathered Tuff [QUODDY FORMATION] (GC)	2 3
-35	10	RQD=72		C-1	10 - 15	60/60		BEDROCK	C-1: 10.0-15.0 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, irregular calcite spherules to 5 mm; very closely to closely spaced, moderately to steeply dipping joints with patchy calcite, extremely to moderately fractured, shallow to moderately dipping quartz and calcite veining to 1 mm, 13.9-15.0 ft recovered in C-2 core run [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2-2-2-2.5	
-40	15	RQD=59		C-2	15 - 19.6	55/55			C-2: 15.0-19.6 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to steeply dipping quartz and calcite veining to 4 mm, irregular calcite spherules to 10 mm, very closely to moderately spaced, shallow to steeply dipping joints with patchy calcite, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-3.5-3-2-2/7"	
-45	20	RQD=79		C-3	19.6 - 23	41/41			C-3: 19.6-23.0 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, moderately dipping to vertical quartz and calcite veining to 15 mm, very closely to moderately spaced, shallow to steeply dipping joints with patchy calcite to calcite coating to 1 mm, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2.5-2-4/4"	4
				C-4	23 - 28	60/57			C-4: 23.0-28.0 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to moderately dipping quartz and calcite veining to 10 mm, very closely to moderately spaced, shallow to steeply dipping joints with patchy calcite coating to 1 mm thick, irregular calcite to spherules to 5 mm, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2.5-2-4/4"	
-50	25	RQD=95								
-55	30	RQD=88		C-5	28 - 33	60/60			C-5: 28.0-33.0 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, moderately to steeply dipping quartz and calcite veining to 6 mm, irregular calcite spherules to 5 mm, very closely to moderately spaced, shallow to steeply dipping joints with fresh surface to patchy calcite, extremely to moderately fractured [QUODDY FORMATION]	
				C-6	33 - 38	60/60			C-6: 33.0-38.0 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, prominant moderately dipping quartz and calcite at 33.2 ft and 37.25 ft; very closely to	
-60	35									

NOTES

1. 16' 3" water column measured at 7:05 on 2/27/2024.
2. Top of bedrock likely at 8.0 ft below mudline.
3. 7.9-10.0 ft: Angular fragments of gray TUFF [QUODDY FORMATION]
4. Core jammed at 23.0 ft.

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-105
		LOCATION	Johnson Bay				SHEET 2 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-60		RQD=93							moderately spaced, shallow to moderately steeply dipping joints with partial calcite to 1 mm thick, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2.5-2.5-2.5-2.5	
	40			C-7	38 - 41	36/36			C-7: 38.0-41.0 ft, TUFF, N4 medium dark gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, prominant moderately dipping quartz and calcite veining at 37.9-38.45 ft; shallow dipping joint with patchy calcite at 40.8 ft, sound [QUODDY FORMATION]; Drilling Rate (min/ft): 2.5-2.5-2.5	6
-65		RQD=82						41	Bottom of Borehole at 41 feet.	
-70	45									
-75	50									
-80	55									
-85	60									
-90	65									
-95	70									

NOTES

6. Borehole terminated at 41.0 ft.

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

BORING LOGS - WB-105

SHEET NUMBER

B-121

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings - 100% Submission\19-B-121 (Boring Logs-105) ; Plotted: 10/17/2024 10:36 AM by MAGUIRC
Saved: 8/28/2024 7:56 AM by MAGUIRC, CASEY ;

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-106
		LOCATION	Johnson Bay				SHEET 1 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				
INSPECTOR	Don Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-25.3
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft)	REMARKS	SPT HAMMER 140 lb Auto	GRID N	437380.63
14.0	NX Rock Core					COORD E	1374074.35
41.0	Terminated					DATE START	2/27/24
						DATE END	3/4/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-30	5	WOR WOR WOR WOR	0	S-1	0 - 2	24/24		OH	S-1: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, trace fine rounded Gravel, trace Shells (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	1
		WOR WOR WOR WOR	0	S-2	2 - 4	24/14			S-2: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, trace fine subangular to subrounded Gravel, trace Shells (OH); Pocket Penetrometer (PP): 0.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	
				U-1	4 - 5.92	22/22			U-1: Wet, 5Y 3/1 dark gray, ORGANIC SILT to CLAY, trace Shells, trace fine subrounded Gravel (OH/CL)	
-35	10	8 12 14	20	S-3	6 - 8	24/24		CL	S-3: Wet, very stiff, 5Y 3/1 dark gray, and 7.5 YR 5/2 brown, CLAY, little fine sand (fine Sand lenses to 10 mm thick) (CL); Pocket Penetrometer (PP): >4.5 kg/cm2; Torvane (TV): 0.1 kg/cm2	
				U-2	8 - 10	24/24			U-2: Wet, 5Y 4/1 dark gray, CLAY, trace fine subrounded Gravel (CL)	
		6 8 13 24	21	S-4	10 - 12	24/15			S-4A (Top 5"): Wet, 5Y 3/1 dark gray, and 7.5 YR 5/2 brown, CLAY, little fine Sand (fine Sand lenses to 10 mm thick) (CL); Pocket Penetrometer (PP): >4.5 kg/cm2; Torvane (TV): 0.1 kg/cm2	2
									S-4B (Bottom 10"): Wet, 5Y 3/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, little fine to coarse Sand (GC)	
-40	15			C-1	14 - 19	60/60		BEDROCK	13.5-14.0 ft: Weathered gray TUFF [QUODDY FORMATION]	3
		RQD=95							C-1: 14.0-19.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard to hard, strong, fresh, massive, shallow to steeply dipping quartz and calcite veining to 5 mm, irregular calcite spherules to 13 mm; extremely closely to moderately spaced, dipping joints with patchy calcite and coating to 0.1 mm thick, extremely to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 4-3.5-3-2.5-4	
-45	20			C-2	19 - 24	60/60			C-2: 19.0-24.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard to hard, strong, fresh, massive, shallow to steeply dipping quartz and calcite veining to 15 mm, irregular calcite spherules to 10 mm; closely to moderately spaced, shallow to steeply dipping joints with patchy calcite to partial calcite coating to 2 mm thick, moderately to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-3-3-2.5-2	
		RQD=85								
-50	25			C-3	24 - 29	60/60			C-3: 24.0-29.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, strong, fresh, massive, shallow to moderately dipping quartz and calcite veining to 25 mm, irregular calcite spherules to 10 mm; very closely to moderately spaced, shallow to steeply dipping joints with partial calcite coatings to 1 mm thick, extremely to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2.5-3-3-2.5	
		RQD=83								
-55	30			C-4	29 - 34	60/60			C-4: 29.0-34.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, shallow to steeply dipping quartz and calcite veining to 55 mm, irregular calcite spherules to 20 mm; extremely closely to moderately spaced, shallow to steeply dipping joints with partial calcite coatings to 1 mm thick, extremely to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2.5-2.5-2.5-2.5	
		RQD=73								
-60	35			C-5	34 - 39	60/60			C-5: 34.0-39.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff,	4

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 34' 2" water column measured at 13:20 on 02/27/2024.
2. 4" casing refusal at 13.5 ft.
3. Top bedrock likely at 13.5 ft below mudline, angular fragments of gray TUFF observed in return water advancing roller bit at 13.5-14.0 ft.
4. 38.9-39.0 ft recovered in C-5 core run.

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-106
		LOCATION	Johnson Bay				SHEET 2 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-65	40	RQD=80		C-6	39 - 44	60/60			moderately hard, medium strong, slightly weathered, massive, shallow to vertical quartz and calcite veining to 60 mm, irregular calcite spherules to 5 mm, subrounded 10 YR 5/4 moderate yellowish brown clasts (weathered spherules) to 15 mm; extremely closely to moderately spaced, shallow to steeply dipping joints with patchy calcite and iron oxide staining, extremely to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-2.5-3-3-2.5 C-6: 39.0-44.0 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, slightly weathered, massive, shallow to vertical quartz and calcite veining to 18 mm, irregular calcite spherules to 10 mm, subrounded 10 YR 5/4 moderate yellowish brown clasts (weathered spherules) to 10 mm; extremely closely to moderately spaced, shallow to steeply dipping joints with patchy calcite, extremely to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2-2-2.5-2.5	5
-70	45	RQD=80								
-75	50									
-80	55									
-85	60									
-90	65									
-95	70									
-100									Bottom of Borehole at 44 feet.	

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

5. Borehole terminated at 44.0 ft.

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	PHIL LANERGAN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-106

SHEET NUMBER

B-122

20 OF 99

File: C:\Users\hs037482\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\20-B-122 (Boring Logs-106) ; Plotted: 11/14/2024 4:39 PM by SAIYADFAR, HASTI ; Saved: 10/17/2024 10:37 AM by MAGUIRC

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-107
		LOCATION	Johnson Bay				SHEET 1 OF 2
		OWNER	Maine DOT				
INSPECTOR	Dan Melcher	JOB NUMBER	E2X95900				
		CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION	-20.5
METHOD OF DRILLING		GROUNDWATER READINGS		DRILL RIG	GefcoStratastar5	DATUM	NAVD 88
0.0	Wash Boring w/Casing	DATE/TIME	DEPTH(ft) REMARKS	SPT HAMMER	140 lb Auto	GRID N	437349.97
18.5	NX Rock Core					COORD E	1374297.6
41.0	Terminated					DATE START	3/6/24
						DATE END	3/6/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		WOR WOR WOR WOR	0	S-1	0 - 2	24/20			S-1: Wet, very soft, 5Y 4/1 dark gray, ORGANIC SILT, trace Shells (OH); Pocket Penetrometer (PP): 0.75 kg/cm2; Torvane (TV): 0.05 kg/cm2	1
		WOR WOR WOR WOR	0	S-2	2 - 4	24/19		OH	S-2: Wet, very soft, 5Y 4/1 dark gray, ORGANIC SILT, trace Shells (OH); Pocket Penetrometer (PP): 1.25 kg/cm2; Torvane (TV): 0.10 kg/cm2	
-25	5	WOR WOR WOR WOR	0	S-3	4 - 6	24/19			S-3: Wet, very soft, 5Y 4/1 dark gray, ORGANIC SILT, little Shells, trace fine to coarse subrounded Gravel (OH); Pocket Penetrometer (PP): 0.5 kg/cm2; Torvane (TV): 0.025 kg/cm2	
		WOR WOR WOR WOH	0	S-4	6 - 8	24/9		6	S-4: Wet, very soft, 5Y 3/1 dark gray, and 7.5 YR 5/2 brown, SILTY CLAY, trace fine Sand (fine Sand lenses to 1 mm thick) (CL); Pocket Penetrometer (PP): >4.5 kg/cm2; Torvane (TV): 0.4 kg/cm2	
				U-1	8 - 9.83	20/16		CL	U-1: Wet, 5Y 4/1 dark gray, SILTY CLAY, trace Gravel (CL)	
-30	10	5 5 4 6	9	S-5	10 - 12	24/23		10.5	S-5A (Top 5"): Wet, 5Y 4/1 dark gray, SILTY CLAY, some fine to coarse subangular to subrounded Gravel (CL) S-5B (Bottom 18"): Wet, 7.5YR 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, and SILTY CLAY, little fine to coarse Sand (GC)	2
-35	15	5 4 6 7	10	S-6	14 - 16	24/18		TILL	S-6: Wet, medium dense, 7.5YR 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, and SILTY CLAY, little fine to coarse Sand (GC)	
								16		
-40	20	RQD=38		C-1	18.5 - 23.5	60/60			C-1: 18.5-23.5 ft, TUFF, 5G 4/1 dark greenish gray, coarse tuff to lapilli tuff; moderately hard, weak to medium strong, fresh, massive, moderately to steeply dipping quartz and calcite veining to 10 mm; extremely closely to closely spaced, shallow to steeply dipping joints with partial calcite coating to 2 mm, extremely to moderately fractured [QUODDY FORMATION]; breaks easily when handled, Drilling Rate (min/ft): 2-1.5-1.5-2.5-2.5	3
-45	25	RQD=53		C-2	23.5 - 28.5	60/60			C-2: 23.5-28.5 ft, TUFF, 6Y 4/1 dark greenish gray, coarse tuff to lapilli tuff, moderately hard, weak to medium strong, fresh, massive, moderately dipping to vertical quartz and calcite veining to 10 mm; extremely closely to moderately spaced, shallow to steeply dipping joints with patchy calcite to partial calcite coating to 1 mm thick, extremely to moderately fractured [QUODDY FORMATION]; breaks easily when handled, Drilling Rate (min/ft): 2-2-2-2-2	
-50	30	RQD=68		C-3	28.5 - 33.5	60/60			C-3: 28.5-33.5 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, weak to medium strong, fresh, massive, shallow to steeply dipping quartz and calcite veining to 25 mm; extremely closely to moderately spaced, moderately to steeply dipping joints with patchy calcite to calcite coatings to 5 mm thick, extremely to moderately fractured [QUODDY FORMATION]; breaks easily when handled, Drilling Rate (min/ft): 2-1.5-2-2.5-2.5	
-55	35			C-4	33.5 - 38.5	60/60		BEDROCK	C-4: 33.5-38.5 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, weak to medium strong, fresh, massive, shallow to	

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. Depth to seafloor measured at 29.75' from water surface on 3/6/2024 at 6:25.
2. Shelby tube refusal at 9.7', bottom of Shelby tube damaged during penetration.
3. Top of bedrock at 18.5 ft below mudline.

LOG OF TEST BORING

		PROJECT	Lubec Breakwater			BORING NO.	WB-107
		LOCATION	Johnson Bay				SHEET 2 OF 2
		OWNER	Maine DOT				
		JOB NUMBER	E2X95900				

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
-60	40	RQD=71							vertical quartz and calcite veining to 25 mm; extremely closely to moderately spaced, moderately to steeply dipping joints with patchy calcite, extremely to slightly fractured [QUODDY FORMATION]; breaks easily when handled, Drilling Rate (min/ft): 1.5-2-2-2-2	
				C-5	38.5 - 43.5	60/60			C-5: 38.5-43.5 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to vertical quartz and calcite veining to 10 mm; very closely to moderately spaced, shallow to steeply dipping joints with patchy calcite to calcite coatings to 1 mm thick, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2-2.5-2-2.5	
-65	45	RQD=76								
				C-6	43.5 - 48.5	60/60			C-6: 43.5-48.5 ft, TUFF, N5 medium gray, coarse tuff to lapilli tuff, moderately hard, medium strong, fresh, massive, shallow to vertical quartz and calcite veining to 10 mm; extremely closely to moderately spaced, shallow to steeply dipping joints with patchy calcite to calcite coating to 1 mm, extremely to slightly fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 2-2.5-2.5-3-2.5	4
-70	50	RQD=83								
								48.5	Bottom of Borehole at 48.5 feet.	
-75	55									
-80	60									
-85	65									
-90	70									
-95										

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

4. Borehole terminated at 48.5 ft.

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BORING LOGS - WB-107

SHEET NUMBER

B-123

21 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\21-B-123 (Boring Logs-107) - Plotted: 10/17/2024 10:37 AM by MAGUIRC
Saved: 8/29/2024 7:53 AM by MAGUIRE, CASEY

LOG OF TEST BORING

	PROJECT	Lubec Breakwater	BORING NO.	WB-108	
	LOCATION	Johnson Bay		SHEET 1 OF 2	
	OWNER	Maine DOT			
	JOB NUMBER	E2X95900			
INSPECTOR Dan Melcher	CONTRACTOR	New England Boring	DRILLER	Sam Cooley	ELEVATION -15.3
METHOD OF DRILLING	GROUNDWATER READINGS		DRILL RIG	GefcoStratastor5	DATUM NAVD 88
0.0 Wash Boring w/Casing	DATE/TIME	DEPTH(ft) REMARKS	SPT HAMMER	140 lb Auto	GRID N 437385.5
29.0 NX Rock Core					COORD E 1374618.51
34.5 Terminated					DATE START 3/5/24
					DATE END 3/5/24

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
		WOR WOR WOR WOR	0	S-1	0 – 2	24/8			S-1: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, little Shells (OH); Pocket Penetrometer (PP): 0.50 kg/cm2 Torvane (TV): 0.05 kg/cm2	1
		WOR WOR WOR WOR	0	S-2	2 – 4	24/12		OH	S-2: Wet, very soft, 5Y 3/1 dark gray, ORGANIC SILT, some Shells (OH); Pocket Penetrometer (PP): 1.0 kg/cm2; Torvane (TV): 0.0 kg/cm2	
-20	5			U-1	4 – 6	24/24		4	U-1: Wet, 5Y 3/1 dark gray, SILTY CLAY (CL); Pocket Penetrometer (PP): 4.5 kg/cm2; Torvane (TV): 0.4 kg/cm2	
		2 3 3 5	6	S-3	6 – 8	24/24			S-3: Wet, medium stiff, 5Y 3/1 dark gray and 7.5YR 5/2 little brown, SILTY CLAY, trace fine to coarse subangular to subrounded Gravel, trace Shells (CL); Pocket Penetrometer (PP): >4.5 kg/cm2; Torvane (TV): 0.4 kg/cm2	
				U-2	8 – 10	24/24			U-2: Wet, 5Y 3/1 dark gray, SILTY CLAY (CL)	
-25	10	1 3 4 5	7	S-4	10 – 12	24/24			S-4: Wet, medium stiff, 5Y 3/1 dark gray and 7.5YR 5/2 brown, SILTY CLAY, trace fine Sand (fine Sand lenses to 1 mm thick) (CL); Pocket Penetrometer (PP): >4.5 kg/cm2, Torvane (TV): 0.35 kg/cm2	
-30	15	WOH 3 3 3	6	S-5	14 – 16	24/24		CL	S-5: Wet, medium stiff, 5Y 3/1 dark gray and 7.5YR 5/2 brown, SILTY CLAY, trace fine Sand (fine Sand lenses to 10 mm thick) (CL); Pocket Penetrometer (PP): >4.5 kg/cm2, Torvane (TV): 0.35 kg/cm2	
-35	20	WOH 2 3 4	5	S-6	19 – 21	24/24			S-6: Wet, medium stiff, 5Y 3/1 dark gray and 7.5YR 5/2 brown, SILTY CLAY, some fine Sand (fine Sand lenses to 10 mm thick), trace fine subrounded Gravel (CL); Pocket Penetrometer (PP): >4.5 kg/cm2, Torvane (TV): 0.3 kg/cm2	
-40	25	6 4 8 11	12	S-7	24 – 26	24/19		25 TILL 27	S-7A (Top 11"): Wet, 5Y 3/1 dark gray and 7.5YR 5/2 brown, SILTY CLAY, little fine Sand (fine Sand lenses to 10 mm thick), (CL); Pocket Penetrometer (PP): >4.5 kg/cm2, Torvane (TV): 0.15 kg/cm2 S-7B (Bottom 8"): Wet, 5Y 4/1 dark gray, fine to coarse subangular to subrounded GRAVEL, some Silty Clay, little fine to coarse Sand (GC)	
								W/R 29	27-29 ft: Weathered gray TUFF [QUODDY FORMATION]	
-45	30	RQD=32		C-1	29 – 31.9	34/34			C-1: 29.0-31.9 ft, TUFF, N4 medium dark gray, fine tuff to coarse tuff, moderately hard, medium strong, fresh, massive, shallow to moderately dipping quartz and calcite veining to 1 mm; very closely to closely spaced, shallow to steeply dipping joints with partial calcite coating to 1 mm thick, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-3-3/10"	2
				C-2	31.9 – 34.5	31/31		BEDROCK	C-2: 31.9-34.5 ft, TUFF, N4 medium dark gray, fine tuff to coarse tuff, moderately hard, medium strong, fresh, massive, shallow to moderately dipping quartz and calcite veining to 5 mm; very closely to moderately	3
-50	35	RQD=42						34.5		

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

1. 8' 8" water column measured at 12:35 on 3/5/2024.
2. Top of bedrock at 29 ft below mudline.
3. Borehole terminated at 34.5 ft.

LOG OF TEST BORING

	PROJECT	Lubec Breakwater	BORING NO.	WB-108
	LOCATION	Johnson Bay		SHEET 2 OF 2
	OWNER	Maine DOT		
	JOB NUMBER	E2X95900		

ELEV. (ft)	DEPTH (ft)	SAMPLE DATA	N-VALUE	SAMPLE NO.	DEPTH INTERVAL (ft)	PEN/REC (in)/(in)	PID (ppm)	LAYER NAME	SOIL AND ROCK DESCRIPTION	NOTES
									spaced, shallow to steeply dipping joints with partial calcite coating to 1 mm thick, extremely to moderately fractured [QUODDY FORMATION]; Drilling Rate (min/ft): 3-3-2/7" Bottom of Borehole at 34.5 feet.	
-55	40									
-60	45									
-65	50									
-70	55									
-75	60									
-80	65									
-85	70									
-90										

Page 1: 0-35 feet. Each subsequent page displays 40 feet.

NOTES

NOTE:

1. REFER TO DRAWING B-100 FOR BORING LOCATIONS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	PHIL LANERGAN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

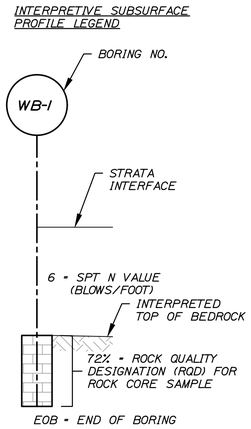
BORING LOGS - WB-108

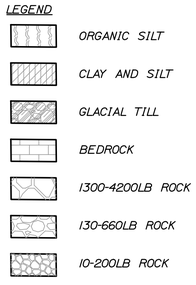
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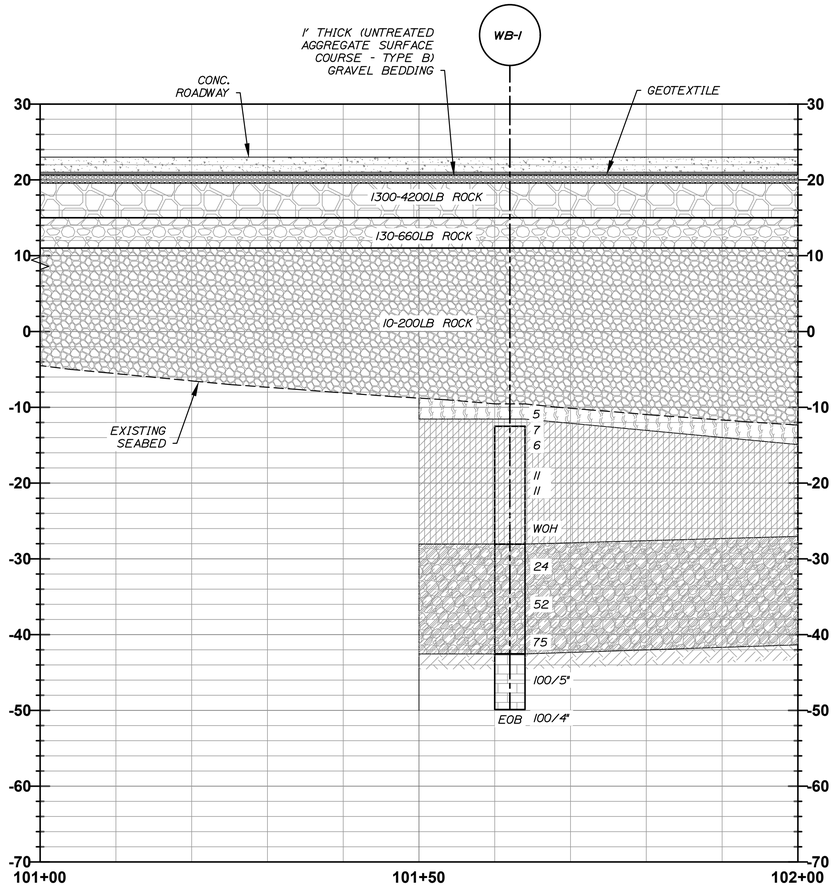
B-124

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PROFILE-1
1"=10'-0"

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. THIS GENERALIZED INTERPRETIVE SOIL PROFILE IS INTENDED TO CONVEY TRENDS IN SUBSURFACE CONDITIONS. THE BOUNDARIES BETWEEN STRATA ARE APPROXIMATE AND IDEALIZED, AND HAVE BEEN DEVELOPED BY INTERPRETATIONS OF WIDELY SPACED BORING EXPLORATIONS AND SAMPLES. ACTUAL SOIL AND BEDROCK TRANSITIONS MAY VARY IN THE FIELD AND MAY BE MORE ERRATIC. FOR SPECIFIC INFORMATION REFER TO THE BORING LOGS ON DRAWINGS B-110 THRU B-122.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

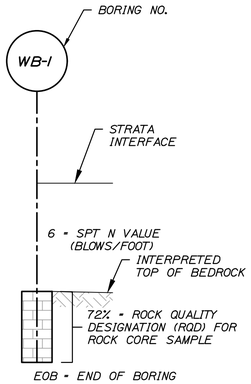
BREAKWATER PROFILE-1

SHEET NUMBER

B-130

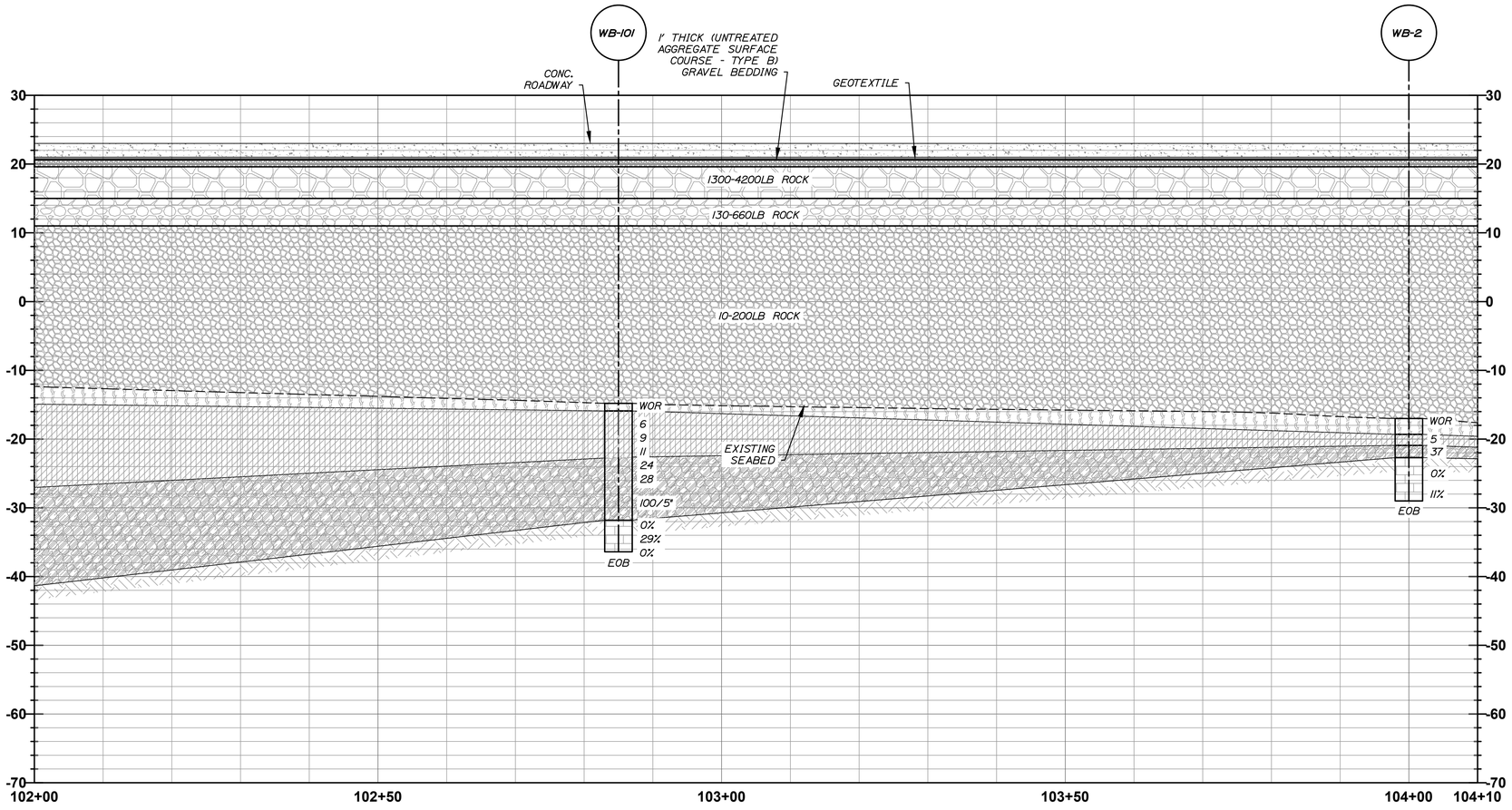
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INTERPRETIVE SUBSURFACE PROFILE LEGEND



LEGEND

- ORGANIC SILT
- CLAY AND SILT
- GLACIAL TILL
- BEDROCK
- 1300-4200LB ROCK
- 130-660LB ROCK
- 10-200LB ROCK



PROFILE-2
1"=10'-0"

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. THIS GENERALIZED INTERPRETIVE SOIL PROFILE IS INTENDED TO CONVEY TRENDS IN SUBSURFACE CONDITIONS. THE BOUNDARIES BETWEEN STRATA ARE APPROXIMATE AND IDEALIZED, AND HAVE BEEN DEVELOPED BY INTERPRETATIONS OF WIDELY SPACED BORING EXPLORATIONS AND SAMPLES. ACTUAL SOIL AND BEDROCK TRANSITIONS MAY VARY IN THE FIELD AND MAY BE MORE ERRATIC. FOR SPECIFIC INFORMATION REFER TO THE BORING LOGS ON DRAWINGS B-110 THRU B-122.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		DATE
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BREAKWATER PROFILE-2

SHEET NUMBER

B-131

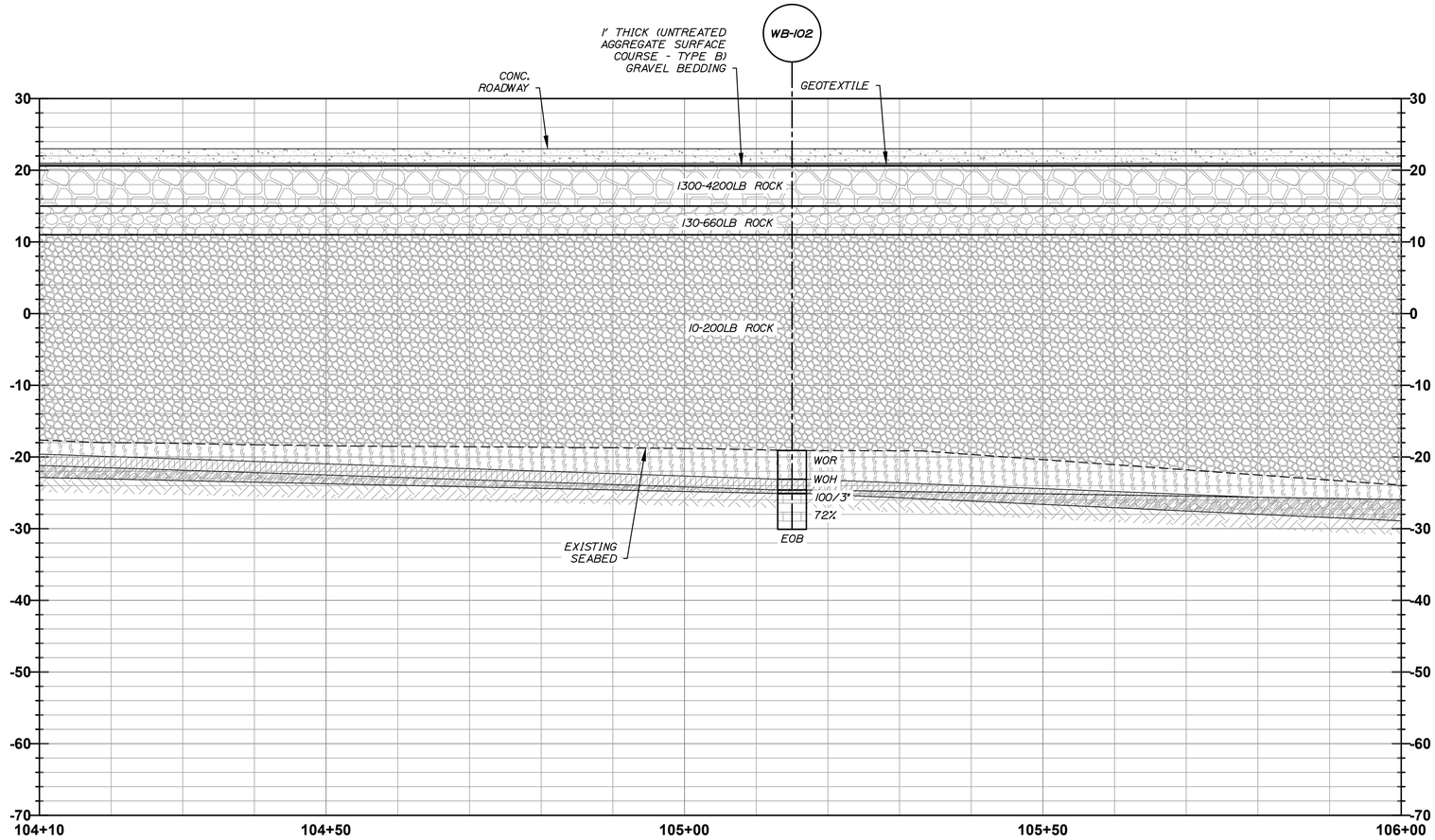
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INTERPRETIVE SUBSURFACE PROFILE LEGEND

- BORING NO. — WB-1
- STRATA INTERFACE
- 6 = SPT N VALUE (BLOWS/FOOT)
- INTERPRETED TOP OF BEDROCK
- 72% = ROCK QUALITY DESIGNATION (RQD) FOR ROCK CORE SAMPLE
- EOB = END OF BORING

LEGEND

- ORGANIC SILT
- CLAY AND SILT
- GLACIAL TILL
- BEDROCK
- 1300-4200LB ROCK
- 130-660LB ROCK
- 10-200LB ROCK



PROFILE-3
1"=10'-0"

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. THIS GENERALIZED INTERPRETIVE SOIL PROFILE IS INTENDED TO CONVEY TRENDS IN SUBSURFACE CONDITIONS. THE BOUNDARIES BETWEEN STRATA ARE APPROXIMATE AND IDEALIZED, AND HAVE BEEN DEVELOPED BY INTERPRETATIONS OF WIDELY SPACED BORING EXPLORATIONS AND SAMPLES. ACTUAL SOIL AND BEDROCK TRANSITIONS MAY VARY IN THE FIELD AND MAY BE MORE ERRATIC. FOR SPECIFIC INFORMATION REFER TO THE BORING LOGS ON DRAWINGS B-110 THRU B-122.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

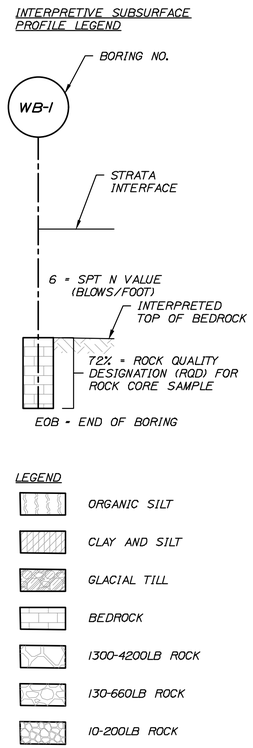
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PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE		DATE	

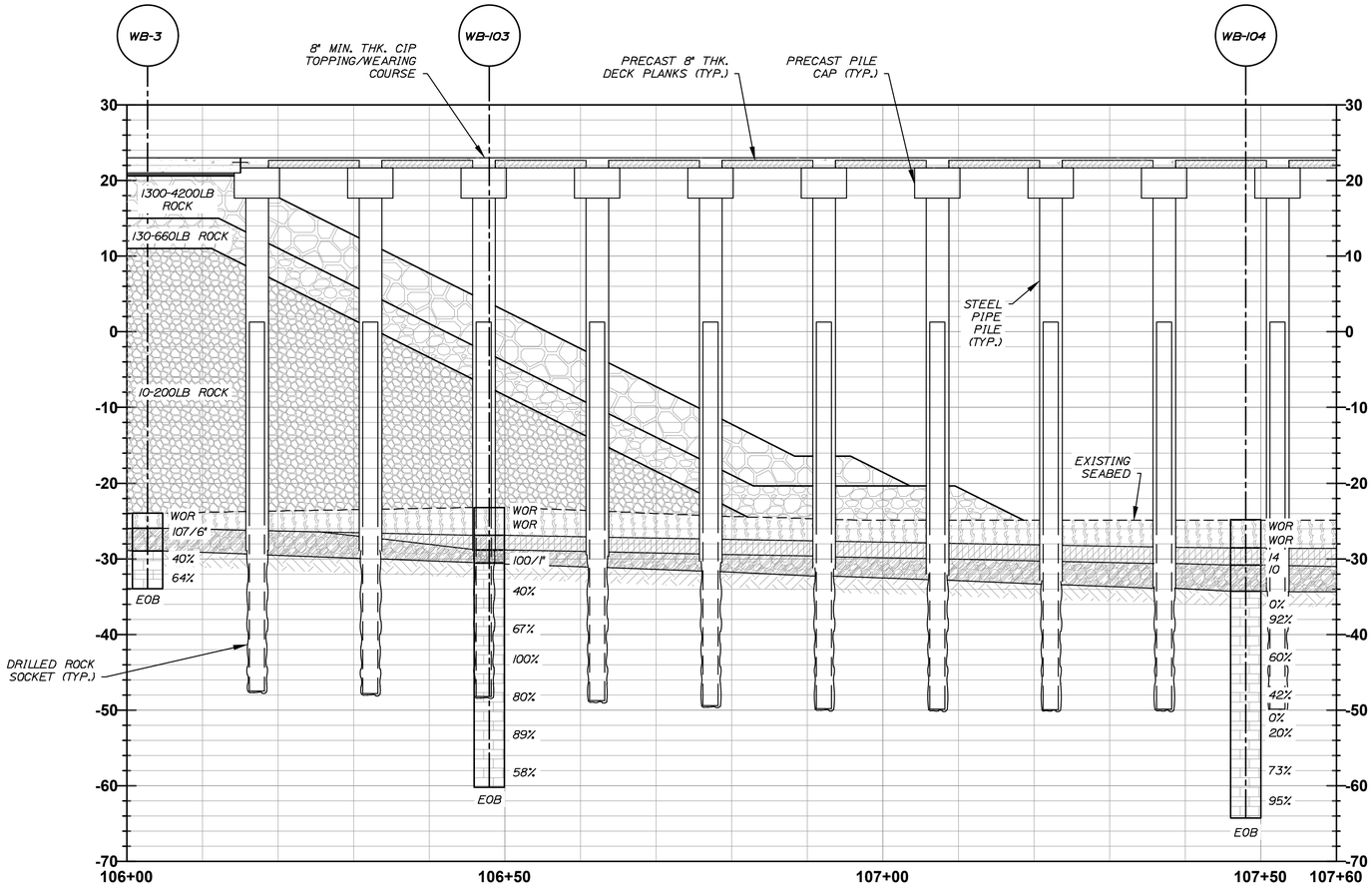
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BREAKWATER PROFILE-3

SHEET NUMBER

B-132





PROFILE-4
1"=10'-0"

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. THIS GENERALIZED INTERPRETIVE SOIL PROFILE IS INTENDED TO CONVEY TRENDS IN SUBSURFACE CONDITIONS. THE BOUNDARIES BETWEEN STRATA ARE APPROXIMATE AND IDEALIZED, AND HAVE BEEN DEVELOPED BY INTERPRETATIONS OF WIDELY SPACED BORING EXPLORATIONS AND SAMPLES. ACTUAL SOIL AND BEDROCK TRANSITIONS MAY VARY IN THE FIELD AND MAY BE MORE ERRATIC. FOR SPECIFIC INFORMATION REFER TO THE BORING LOGS ON DRAWINGS B-110 THRU B-122.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		DATE
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

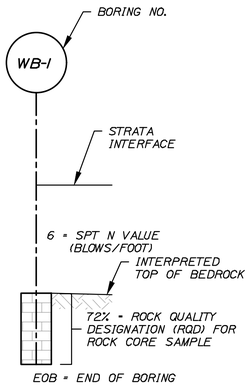
BREAKWATER PROFILE-4

SHEET NUMBER
B-133
26 OF 99

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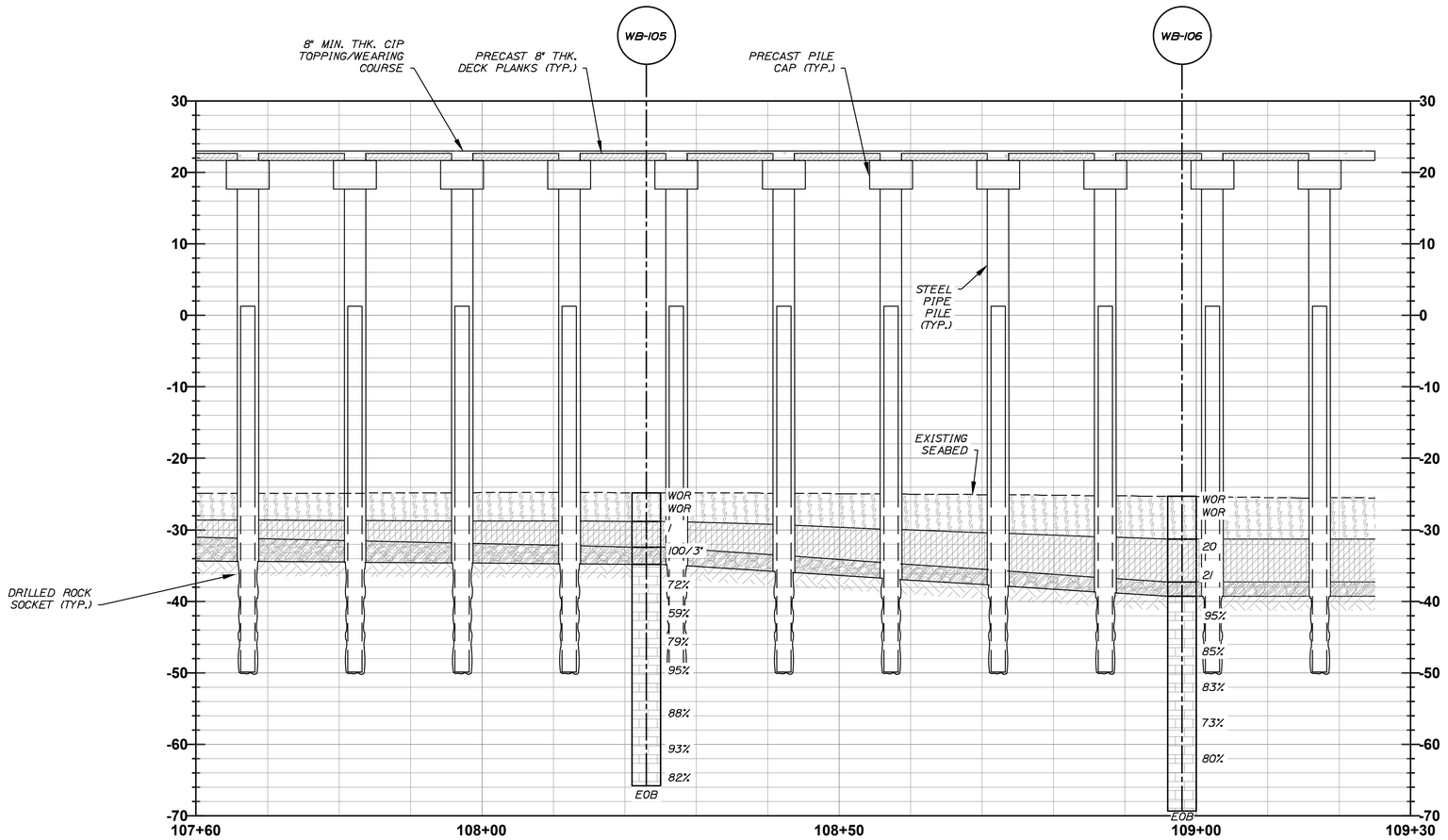
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INTERPRETIVE SUBSURFACE PROFILE LEGEND



LEGEND

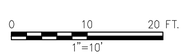
- ORGANIC SILT
- CLAY AND SILT
- GLACIAL TILL
- BEDROCK
- 1300-4200LB ROCK
- 130-660LB ROCK
- 10-200LB ROCK



PROFILE-5
1"=10'-0"

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. THIS GENERALIZED INTERPRETIVE SOIL PROFILE IS INTENDED TO CONVEY TRENDS IN SUBSURFACE CONDITIONS. THE BOUNDARIES BETWEEN STRATA ARE APPROXIMATE AND IDEALIZED, AND HAVE BEEN DEVELOPED BY INTERPRETATIONS OF WIDELY SPACED BORING EXPLORATIONS AND SAMPLES. ACTUAL SOIL AND BEDROCK TRANSITIONS MAY VARY IN THE FIELD AND MAY BE MORE ERRATIC. FOR SPECIFIC INFORMATION REFER TO THE BORING LOGS ON DRAWINGS B-110 THRU B-122.



Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

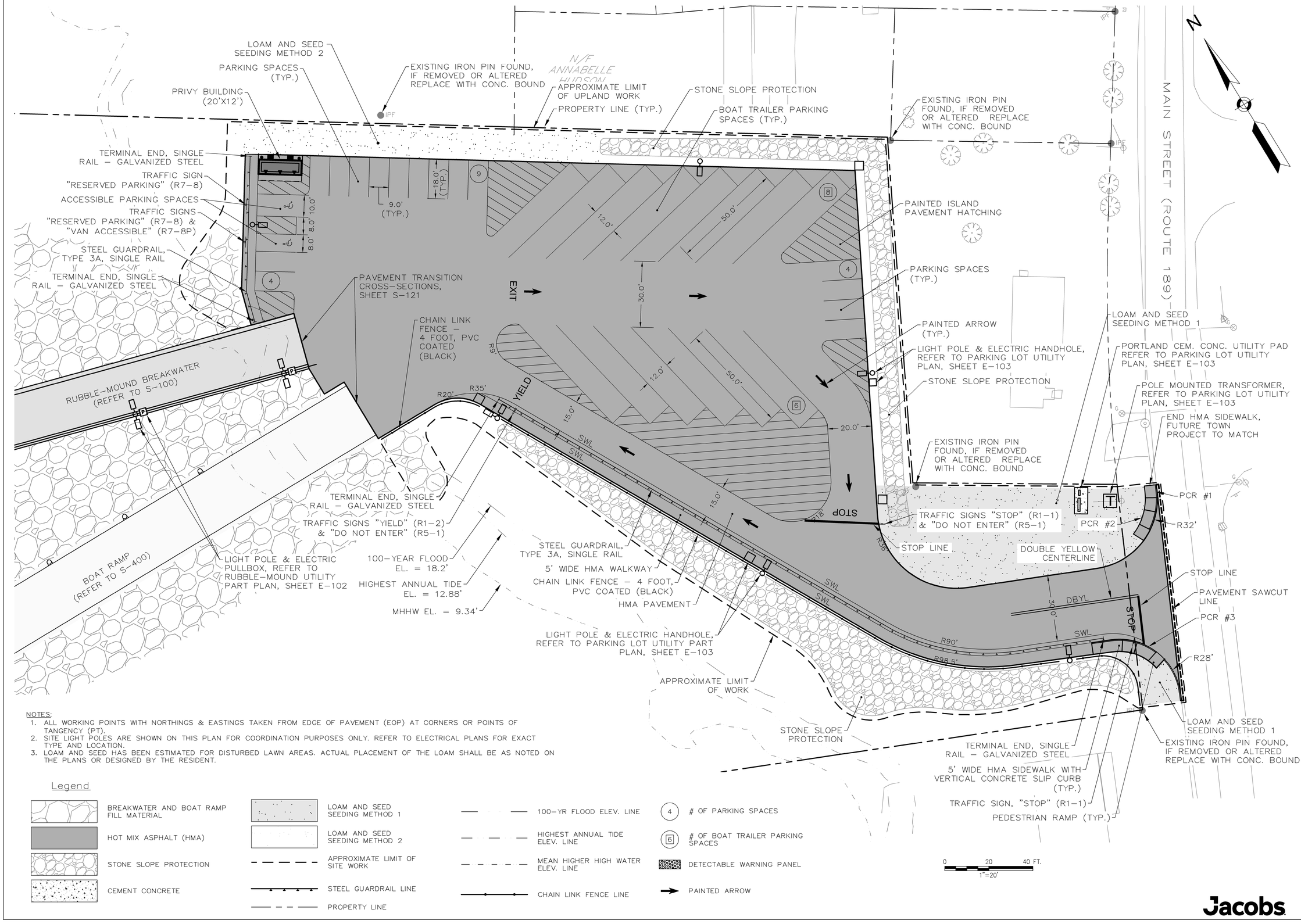
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PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	PHIL LANERGAN	P.E. NUMBER	
CONSULTANT	JACOBS		DATE
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BREAKWATER PROFILE-5

SHEET NUMBER

B-134



NOTES:
1. ALL WORKING POINTS WITH NORTHINGS & EASTINGS TAKEN FROM EDGE OF PAVEMENT (EOP) AT CORNERS OR POINTS OF TANGENCY (PT).
2. SITE LIGHT POLES ARE SHOWN ON THIS PLAN FOR COORDINATION PURPOSES ONLY. REFER TO ELECTRICAL PLANS FOR EXACT TYPE AND LOCATION.
3. LOAM AND SEED HAS BEEN ESTIMATED FOR DISTURBED LAWN AREAS. ACTUAL PLACEMENT OF THE LOAM SHALL BE AS NOTED ON THE PLANS OR DESIGNED BY THE RESIDENT.

Legend

- BREAKWATER AND BOAT RAMP FILL MATERIAL
- HOT MIX ASPHALT (HMA)
- STONE SLOPE PROTECTION
- CEMENT CONCRETE
- LOAM AND SEED SEEDING METHOD 1
- LOAM AND SEED SEEDING METHOD 2
- APPROXIMATE LIMIT OF SITE WORK
- STEEL GUARDRAIL LINE
- PROPERTY LINE
- 100-YR FLOOD ELEV. LINE
- HIGHEST ANNUAL TIDE ELEV. LINE
- MEAN HIGHER HIGH WATER ELEV. LINE
- CHAIN LINK FENCE LINE
- (4) # OF PARKING SPACES
- (6) # OF BOAT TRAILER PARKING SPACES
- DETECTABLE WARNING PANEL
- PAINTED ARROW

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU III	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

UPLAND LAYOUT PLAN

SHEET NUMBER

C-100

28 OF 99

File: C:\Users\SAMMONR\OneDrive - Jacobs\Drawings_ 100% Submission\28-C-100 (Upland Layout Plan).; Plotted: 11/7/2024 4:25 PM by SAMMONR, RICH ; Saved: 11/7/2024 4:13 PM by SAMMONR

File: C:\Users\SAMMONR\OneDrive - Jacobs\Drawings_100% Submission\29-C-200 (Upland Grading Plan).; Plotted: 11/7/2024 4:26 PM by SAMMONR; Saved: 11/7/2024 4:12 PM by SAMMONR

APPROXIMATE LIMIT OF UPLAND WORK

N/F ANNABELLE HUDSON

PROPERTY LINE (TYP.)

SLOPE 2:1

MAIN STREET (ROUTE 189)

N

29.96

30.15

29.83

29.59

ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED WITH SLOPES NO MORE THAN 1.5% IN ANY DIRECTION

SLOPE 2:1

REFER TO RUBBLE-MOUND BREAKWATER CROSS-SECTIONS SHEETS S-110 THROUGH S-118 FOR GRADING TRANSITION

RUBBLE-MOUND BREAKWATER (REFER TO S-100)

PAVEMENT TRANSITION CROSS-SECTIONS, SHEET S-121

BOAT RAMP (REFER TO S-400)

PAVEMENT TRANSITION CROSS-SECTIONS, SHEET S-121. SLOPE, TIE INTO BOAT RAMP SLOPES, SHEET S-100

SLOPE 2:1

SLOPE 2:1

SLOPE 2:1

100-YEAR FLOOD EL. = 18.2'

HIGHEST ANNUAL TIDE EL. = 12.88'

MHHW EL. = 9.34'

SLOPE 1.5:1

49.00

49.00

48.93

48.90

48.79

48.76

48.75

48.66

MATCH EXISTING PAVEMENT

47.24

46.28

47.39

47.31

46.23

47.29

47.47

47.39

NOTES:
1. SITE LIGHT POLES ARE SHOWN ON THIS PLAN FOR COORDINATION PURPOSES ONLY. REFER TO ELECTRICAL PLANS FOR EXACT TYPE AND LOCATION.

Legend

- BREAKWATER AND BOAT RAMP FILL MATERIAL
- PROPERTY LINE
- APPROXIMATE LIMIT OF SITE WORK
- 100-YR FLOOD ELEV. LINE
- HIGHEST ANNUAL TIDE ELEV. LINE
- MEAN HIGHER HIGH WATER ELEV. LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- 29.57 PROPOSED SPOT GRADE

0 20 40 FT.
1"=20'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

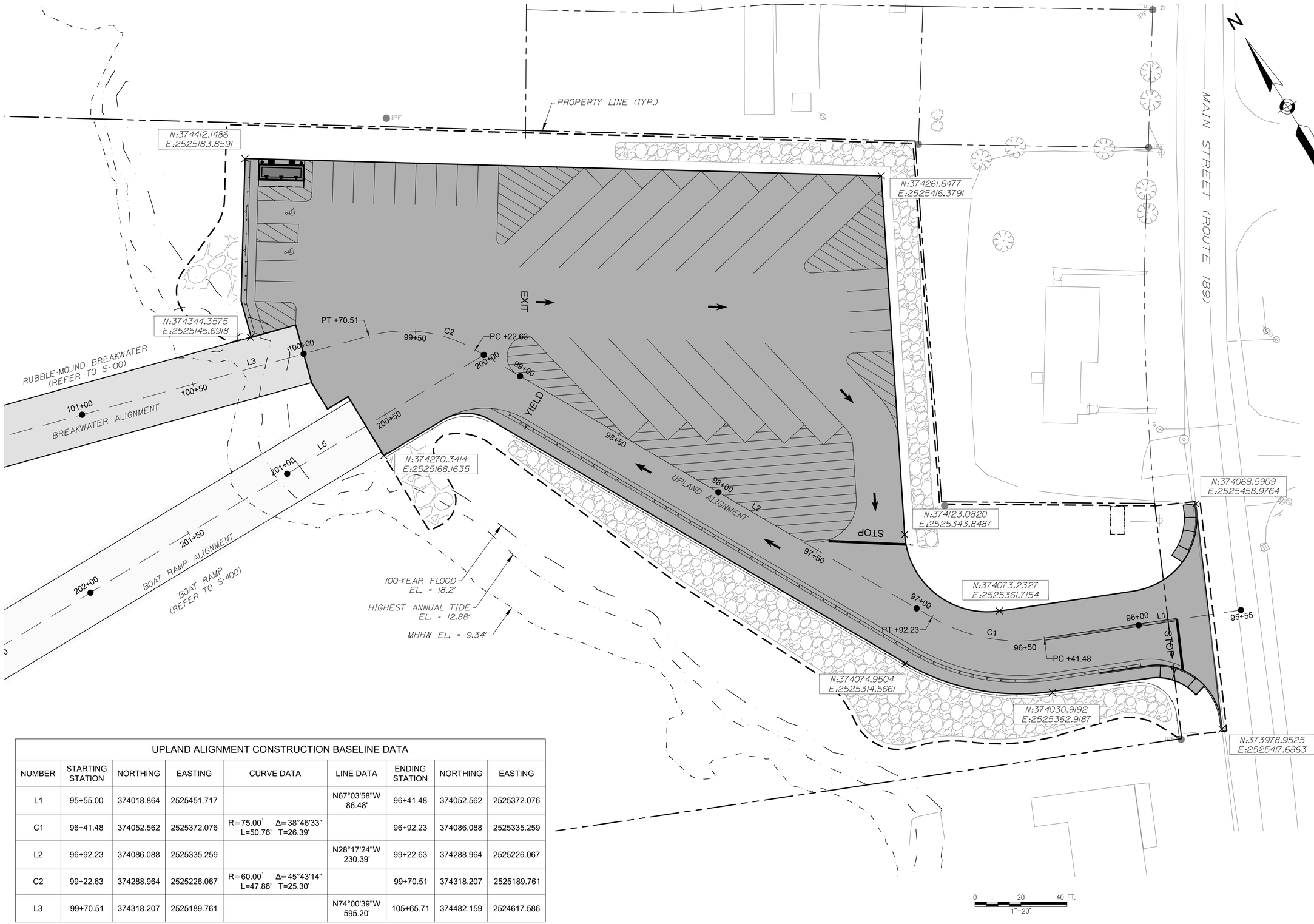
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PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

UPLAND GRADING PLAN

SHEET NUMBER

C-200



UPLAND ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	95+55.00	374018.864	2525451.717		N67°03'58"W 86.48'	96+41.48	374052.562	2525372.076
C1	96+41.48	374052.562	2525372.076	R=75.00' Δ=38°46'33" L=50.76' T=26.39'		96+92.23	374086.088	2525335.259
L2	96+92.23	374086.088	2525335.259		N28°17'24"W 230.39'	99+22.63	374288.964	2525226.067
C2	99+22.63	374288.964	2525226.067	R=60.00' Δ=45°43'14" L=47.88' T=25.30'		99+70.51	374318.207	2525189.761
L3	99+70.51	374318.207	2525189.761		N74°00'39"W 595.20'	105+65.71	374482.159	2524617.586

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

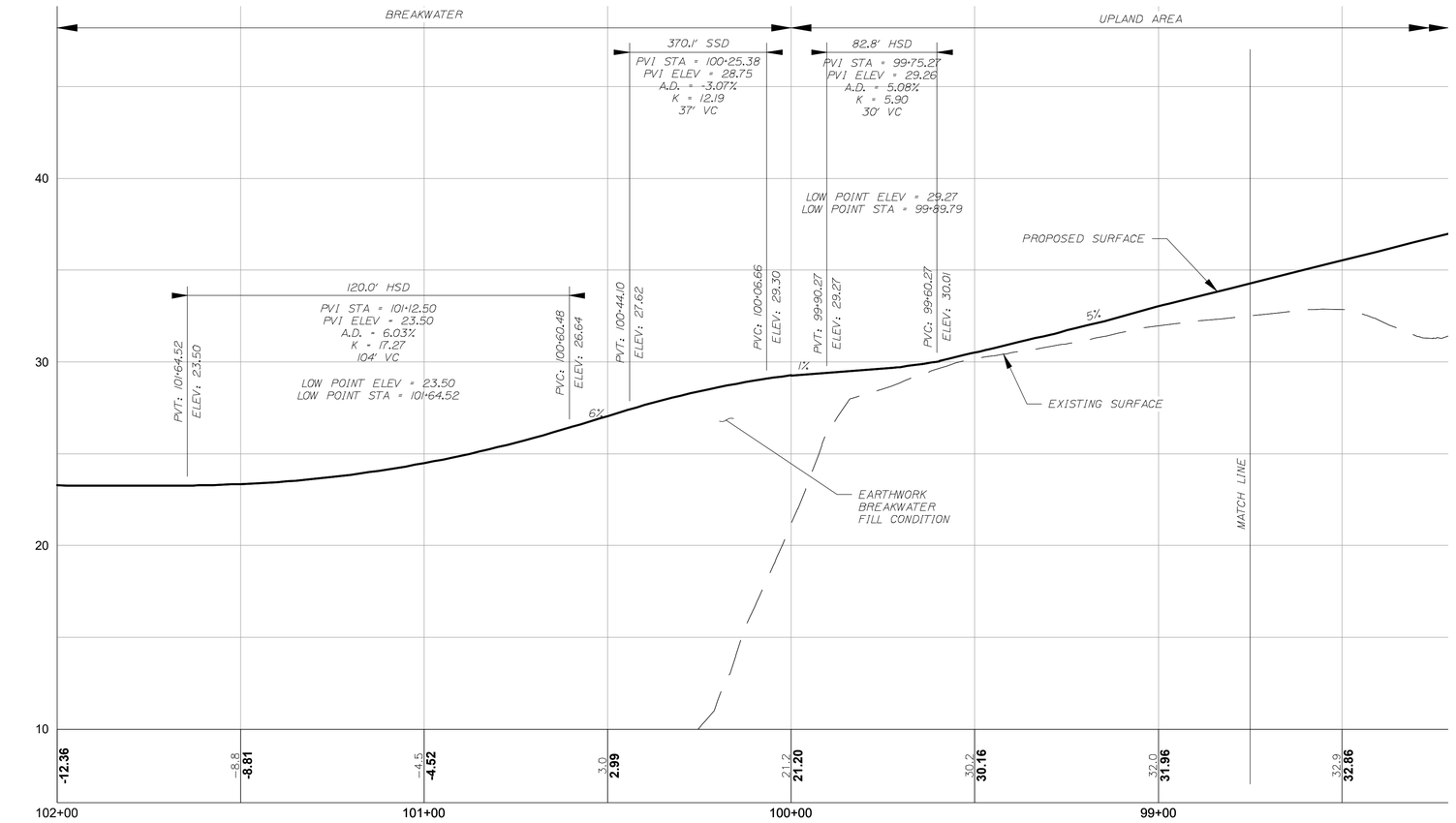
UPLAND ALIGNMENT PLAN

SHEET NUMBER

C-300

30 0F 99

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HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

NOTES:

1. ALL SLOPES SHOWN ON PROFILE ARE APPROXIMATE BASED ON CONTOUR INFORMATION SHOWN ON UPLAND GRADING PLAN C-200.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		
PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

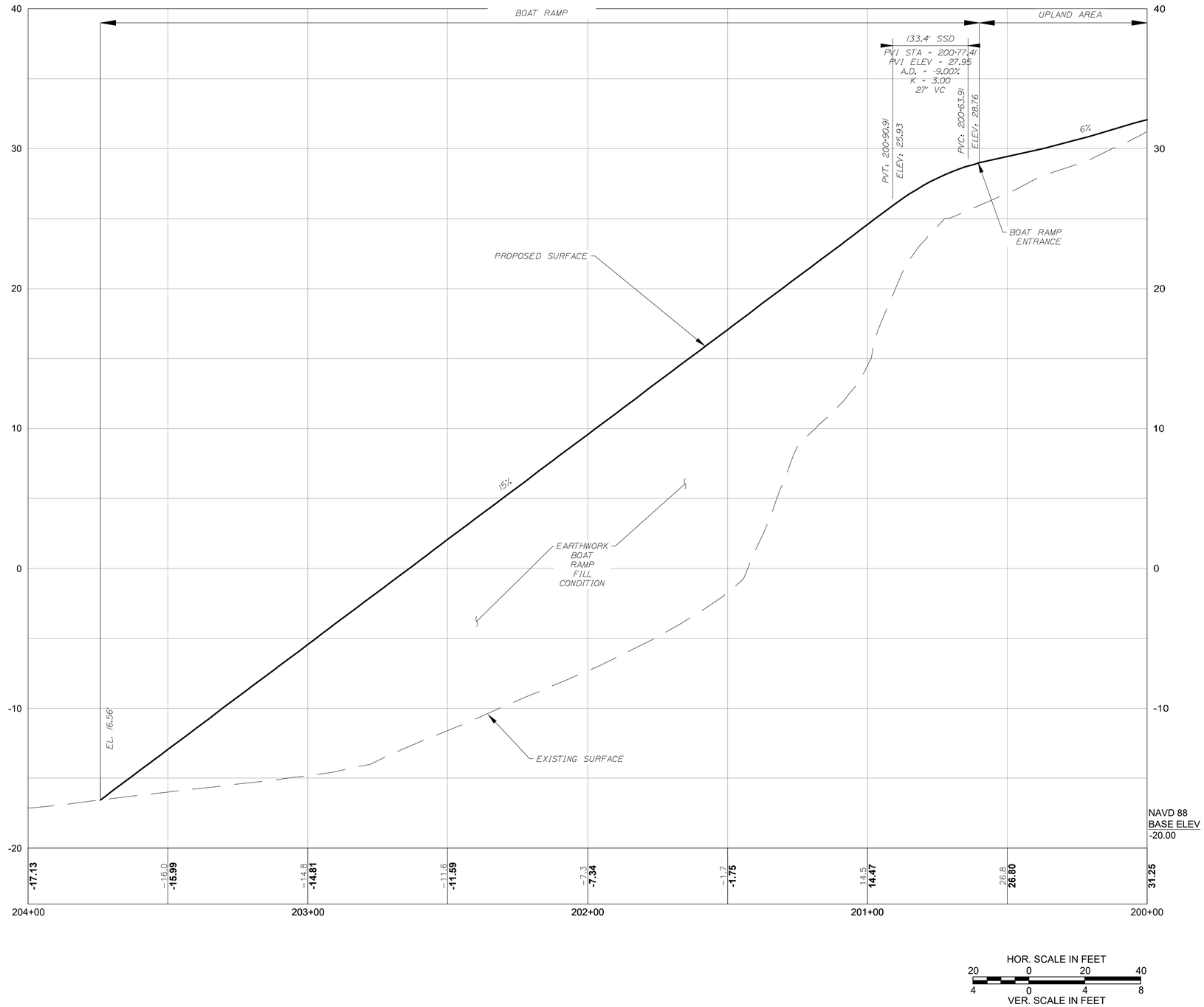
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

DRIVEWAY & BREAKWATER PROFILE

SHEET NUMBER
C-310
31 0F 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_(100% Submission)\31-C-310 (Driveway & Breakwater Profile Plan) ; Plotted: 10/17/2024 11:23 AM by MAGUIRE, CASEY ; Saved: 8/30/2024 2:53 PM by MAGUIRC

BOAT RAMP PROFILE



HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

NOTES:

1. ALL SLOPES SHOWN ON PROFILE ARE APPROXIMATE BASED ON CONTOUR INFORMATION SHOWN ON UPLAND GRADING PLAN C-200.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		
PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

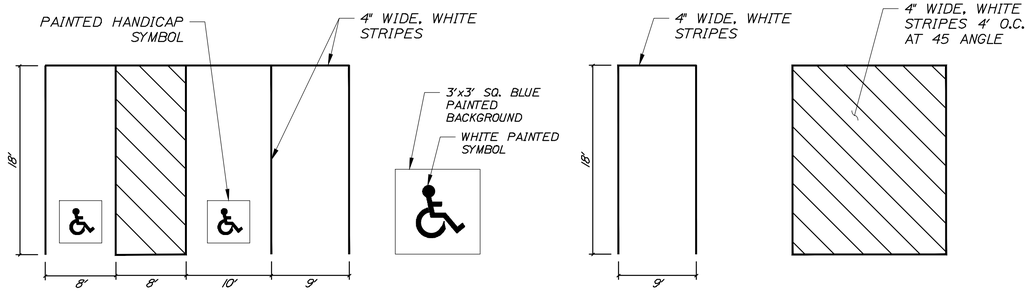
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BOAT RAMP PROFILE

SHEET NUMBER

C-311

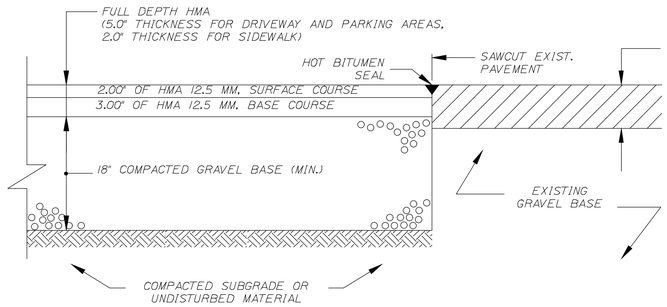
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ADA PARKING STALLS | PAINTED ADA SYMBOL | STANDARD PARKING STALL | STANDARD PAINTED ISLAND

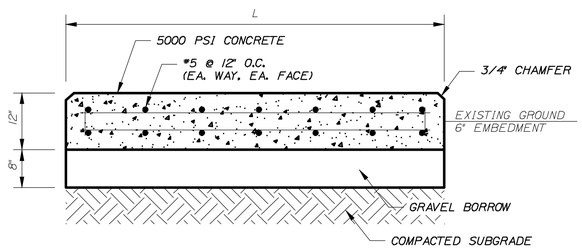
TYPICAL PARKING STALL STRIPING & ADA PARKING STALL STRIPING

N.T.S.



HOT MIX ASPHALT (HMA) PAVEMENT SECTION DETAIL

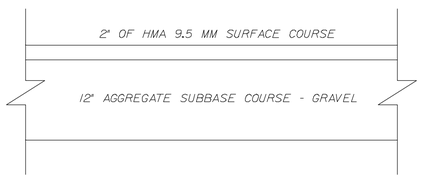
N.T.S.



NOTE:
1. EXACT PAD DIMENSIONS AND LOCATIONS OF ANCHOR BOLTS TO BE COORDINATED WITH EQUIPMENT SUPPLIERS AND ELECTRICAL PLANS. SEE SHEET E-103.
2. CONCRETE PAD TO BE DESIGNED BY A REGISTERED ENGINEER IN THE STATE OF MAINE BASED UPON THE REQUIREMENTS OF THE EQUIPMENT MANUFACTURER. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE PAD, FRAME & ANCHORAGE DESIGN WITH COMPUTATIONS FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.

TYPICAL CONCRETE UTILITY PAD DETAIL

N.T.S.



HOT MIX ASPHALT SIDEWALK SECTION DETAIL

N.T.S.

TRAFFIC SIGN SUMMARY

SIGN ID NUMBER	SIZE WIDTH (IN)	SIZE HEIGHT (IN)	MESSAGE	DIMENSIONS (IN) LETTER HEIGHT	DIMENSIONS (IN) VERTICAL SPACING	DIMENSIONS (IN) ARROW RTE. MKR.	NUMBER REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	TOTAL AREA (S.F.)
R1-1	30	30	STOP	/	/	/	2	RED	WHITE	WHITE	P5 / REQ'D	6.25	12.50
R1-2	30	30	YIELD	/	/	/	1	RED	WHITE	WHITE	P5 / REQ'D	6.25	6.25
R5-1	30	30	DO NOT ENTER	/	/	/	2	RED	WHITE	WHITE	P5 / REQ'D	6.25	12.50
R7-8	12	24	RESERVED PARKING	/	/	/	2	WHITE	GREEN	GREEN	P5 / REQ'D	2.00	4.00
R7-8P	12	6	VAN ACCESSIBLE	/	/	/	1	WHITE	GREEN	GREEN	PAIR W/ ABOVE SIGN	0.50	0.50

SIGN SUMMARY NOTES:

1. HIGH INTENSITY. LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" IITH EDITION SHALL GOVERN.

EARTHWORK TABLE

ITEM	QUANTITY (CY)	TOTAL (CY)
CUT CONDITION		
GRUBBING	1,146	
COMMON EXCAVATION	5,245	
TOTAL CUT		6,391
FILL CONDITION		
COMMON FILL	3,237	
TOTAL FILL		3,237
NET CONDITION		
TOTAL AVAILABLE NON-ROCK EXCAVATION	5,245	
BORROW REQUIRED	3,237	
TOTAL SURPLUS MATERIAL		2,008

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER: | CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

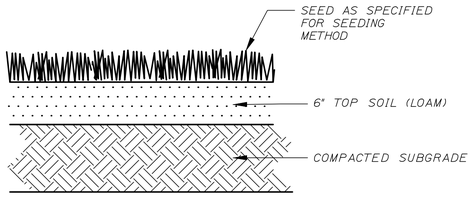
UPLAND DETAILS SHEET 1

SHEET NUMBER

C-400

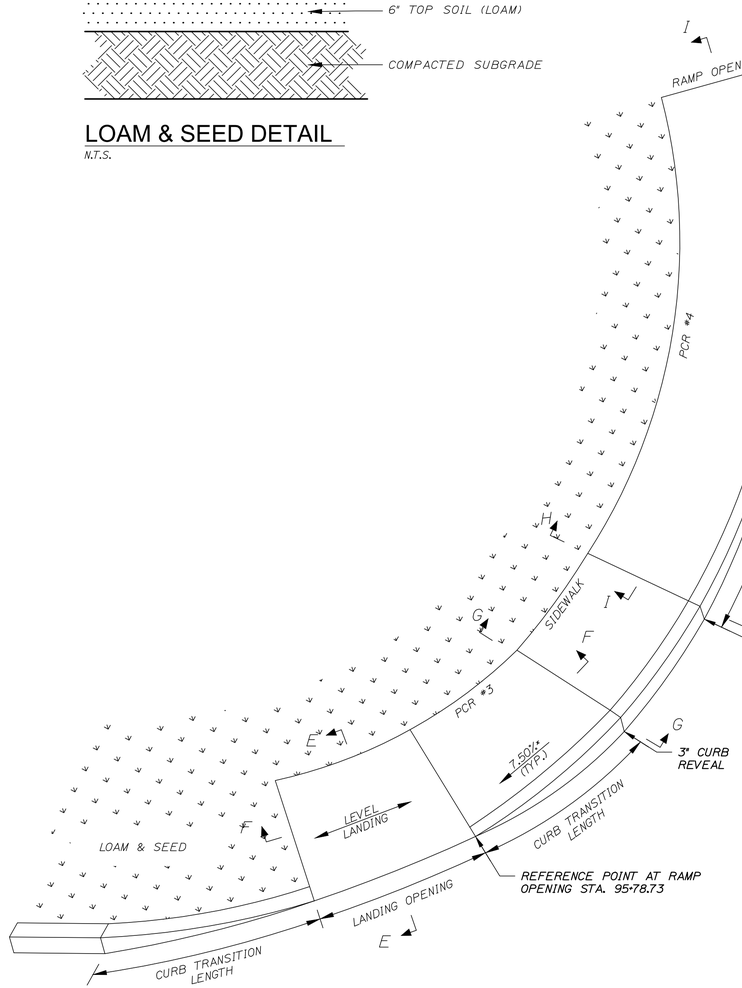
33 OF 99

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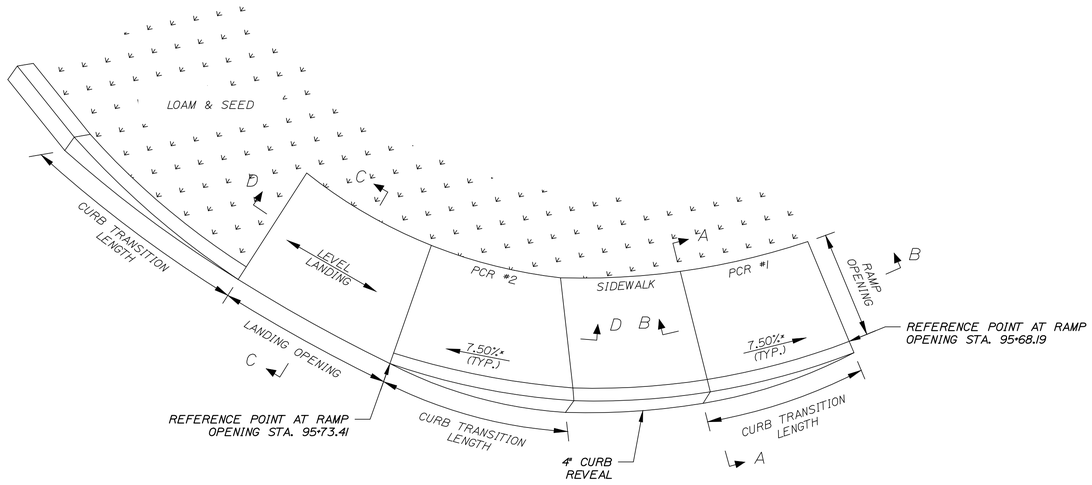
LOAM & SEED DETAIL

N.T.S.



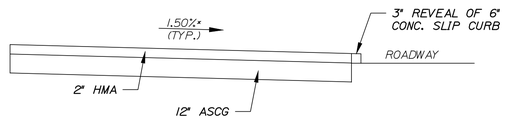
PEDESTRIAN CURB RAMPS (SOUTH SIDE OF DRIVEWAY)

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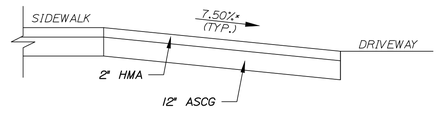


PEDESTRIAN CURB RAMPS (NORTH SIDE OF DRIVEWAY)

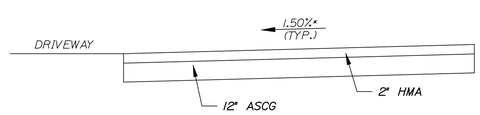
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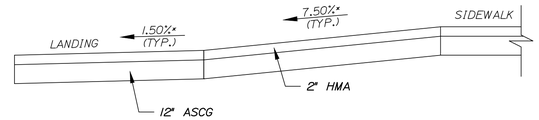
SECTION A-A



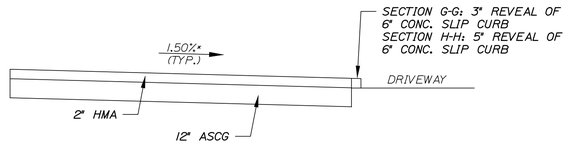
SECTION B-B



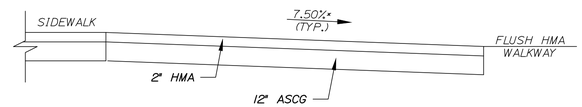
SECTION C-C & SECTION E-E



SECTION D-D & SECTION F-F



SECTION G-G & SECTION H-H



SECTION I-I

PEDESTRIAN CURB RAMP DATA TABLE

PEDESTRIAN CURB RAMP #	REFERENCE STATION	REFERENCE POINT OFFSET (FT)	CONSTRUCTION BASELINE	WIDTH OF SIDEWALK	RAMP/LANDING OPENING	CURB TRANSITION LENGTH		DRIVEWAY GUTTER
						LEFT SIDE	RIGHT SIDE	
PCR #1	95+68.19	48.64' (RT)	DRIVEWAY ALIGNMENT	5'-0"	5'-0"	6'-0"	N/A	N/A
PCR #2	95+73.41	28.86' (RT)	DRIVEWAY ALIGNMENT	5'-0"	5'-9"	N/A	8'-6"	-1.10%
PCR #3	95+78.73	26.36' (LT)	DRIVEWAY ALIGNMENT	5'-0"	5'-0"	9'-9"	N/A	-1.88%
PCR #4	96+07.33	18.50' (LT)	DRIVEWAY ALIGNMENT	5'-0"	5'-0"	N/A	15'-0"	N/A

* TOLERANCE FOR CONSTRUCTION ±0.50%
** ABSOLUTE CONSTRUCTION MAX OF 2.00% & 8.33% FOR ADA COMPLIANCE

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

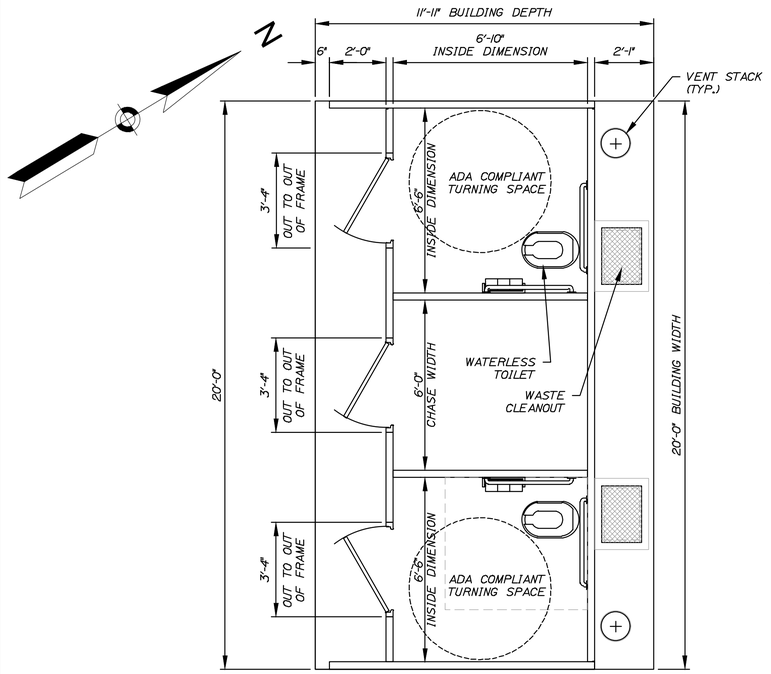
UPLAND DETAILS SHEET 2

SHEET NUMBER

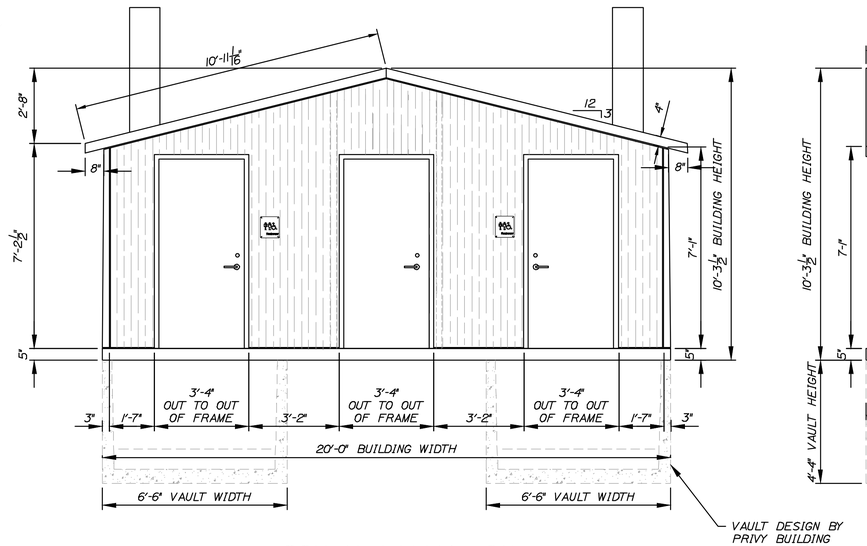
C-401

34 OF 99

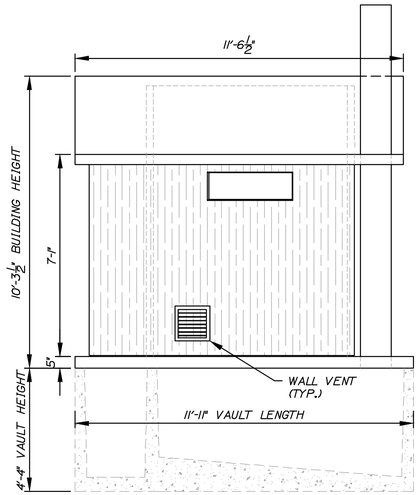
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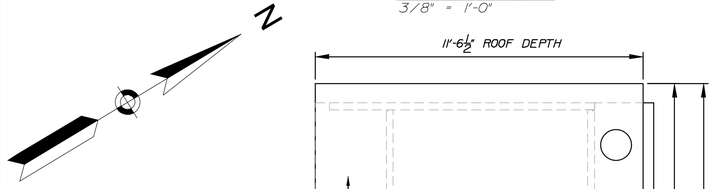
FLOOR PLAN
3/8" = 1'-0"

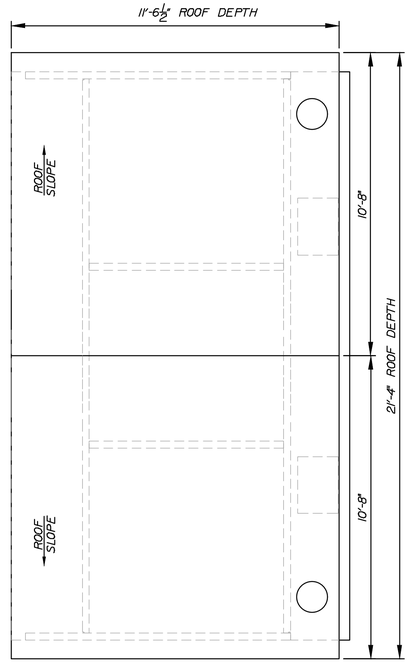


SOUTH ELEVATION
3/8" = 1'-0"

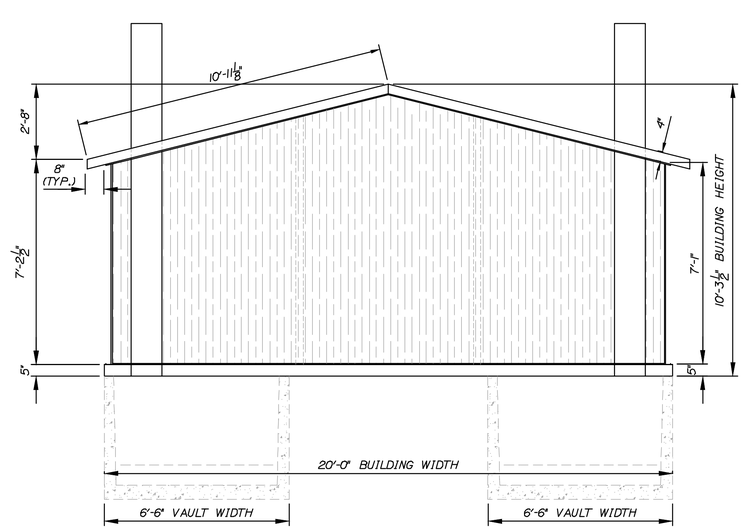


EAST ELEVATION
3/8" = 1'-0"

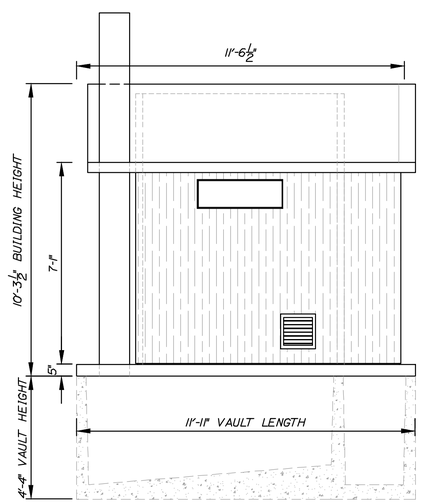




ROOF PLAN
3/8" = 1'-0"



NORTH ELEVATION
3/8" = 1'-0"



WEST ELEVATION
3/8" = 1'-0"

NOTES

1. ALL REQUIRED OPENINGS FOR ELECTRIC. MECHANICAL. LOUVERS. ETC. MUST BE SIZED AND LOCATED BY CONTRACTOR ON THIS DRAWING (OPENING SIZES AND LOCATION MAY HAVE TO BE ALTERED IF THEY INTERFERE WITH CONNECTIONS OR REINFORCING.
2. ALL VIEWS ARE FROM EXTERIOR.

0 1 5 FT.
3/8"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

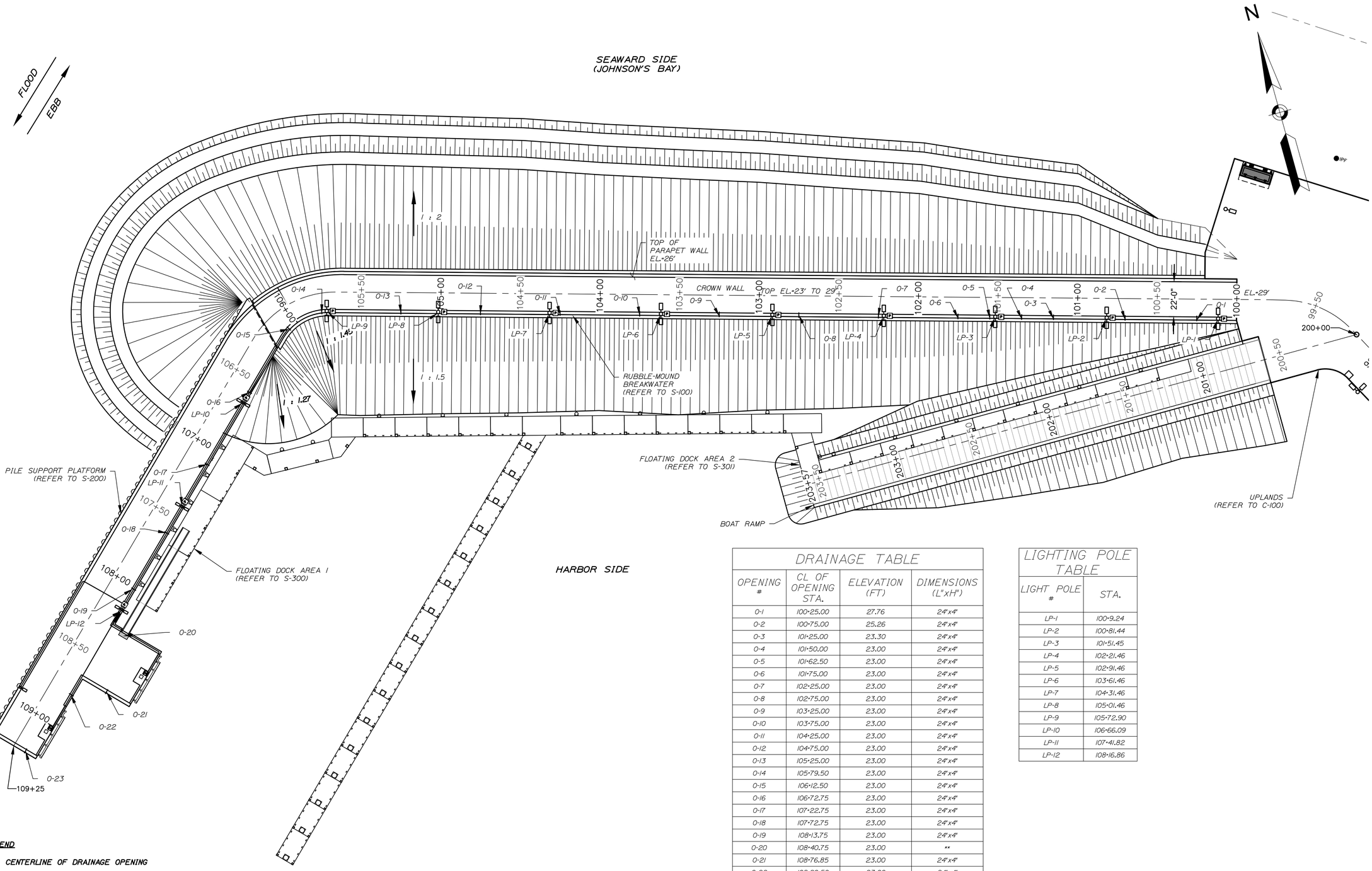
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PRIVY BUILDING PLAN AND ELEVATIONS

SHEET NUMBER

U-100

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LEGEND

0-11 CENTERLINE OF DRAINAGE OPENING

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. SEE GUIDE PILE SCHEDULE AND DETAILS S-310 THROUGH S-320.

DRAINAGE TABLE

OPENING #	CL OF OPENING STA.	ELEVATION (FT)	DIMENSIONS (L"xH")
0-1	100+25.00	27.76	24"x4"
0-2	100+75.00	25.26	24"x4"
0-3	101+25.00	23.30	24"x4"
0-4	101+50.00	23.00	24"x4"
0-5	101+62.50	23.00	24"x4"
0-6	101+75.00	23.00	24"x4"
0-7	102+25.00	23.00	24"x4"
0-8	102+75.00	23.00	24"x4"
0-9	103+25.00	23.00	24"x4"
0-10	103+75.00	23.00	24"x4"
0-11	104+25.00	23.00	24"x4"
0-12	104+75.00	23.00	24"x4"
0-13	105+25.00	23.00	24"x4"
0-14	105+79.50	23.00	24"x4"
0-15	106+12.50	23.00	24"x4"
0-16	106+72.75	23.00	24"x4"
0-17	107+22.75	23.00	24"x4"
0-18	107+72.75	23.00	24"x4"
0-19	108+13.75	23.00	24"x4"
0-20	108+40.75	23.00	**
0-21	108+76.85	23.00	24"x4"
0-22	108+90.50	23.00	24"x4"
0-23	109+34.75	23.00	24"x4"

** OPENING IS EQUIVALENT TO THE WIDTH OF THE BREAK IN THE PARAPET WALL FOR GANGWAY RAMP CONNECTIVITY.

LIGHTING POLE TABLE

LIGHT POLE #	STA.
LP-1	100+9.24
LP-2	100+81.44
LP-3	101+51.45
LP-4	102+21.46
LP-5	102+91.46
LP-6	103+61.46
LP-7	104+31.46
LP-8	105+01.46
LP-9	105+72.90
LP-10	106+66.09
LP-11	107+41.82
LP-12	108+16.86

0 30 60 FT.
1" = 30'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION	
PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

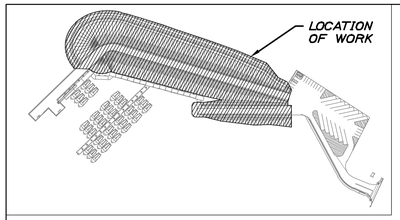
BREAKWATER GENERAL PLAN

SHEET NUMBER

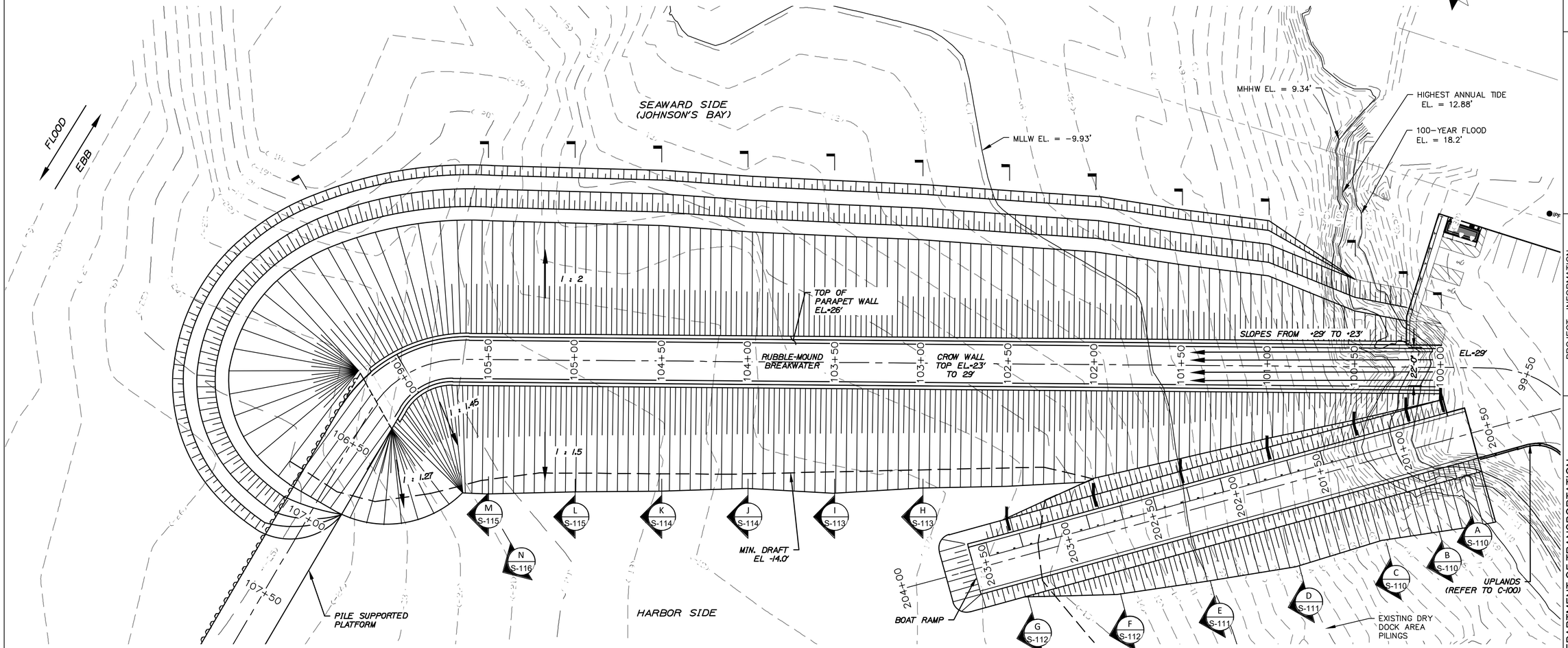
S-001

36 OF 99

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KEY PLAN
1"=240'-0"



NOTES:

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.

0 30 60 FT.
1"=30'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

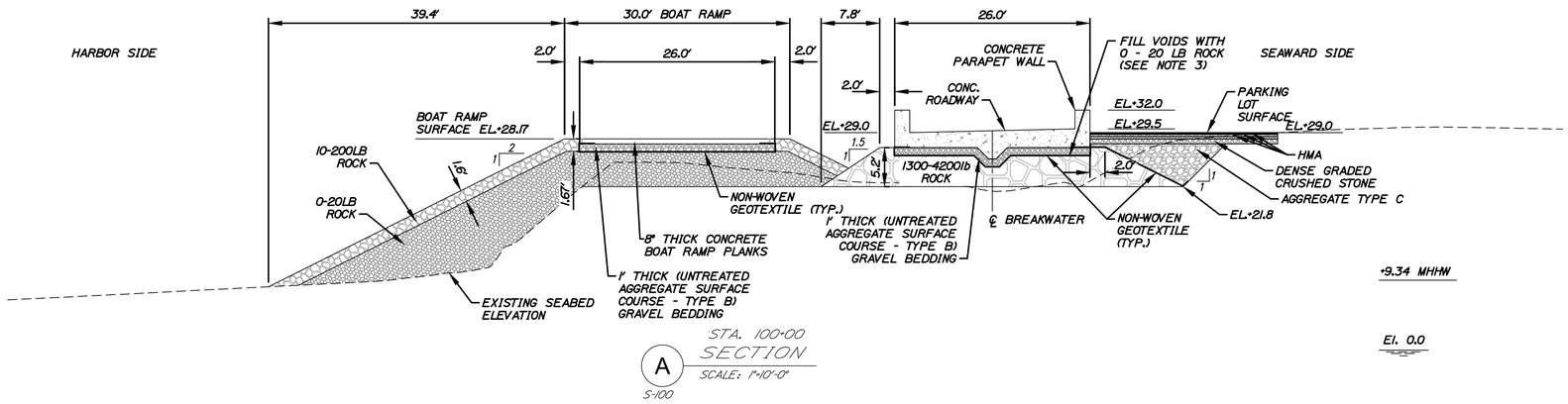
RUBBLE-MOUND BREAKWATER PLAN

SHEET NUMBER

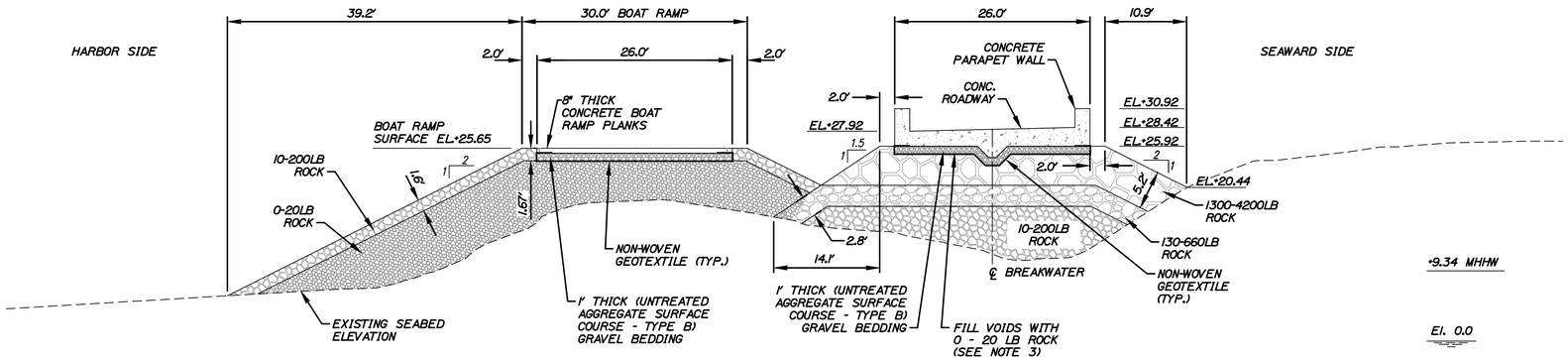
S-100

37 OF 99

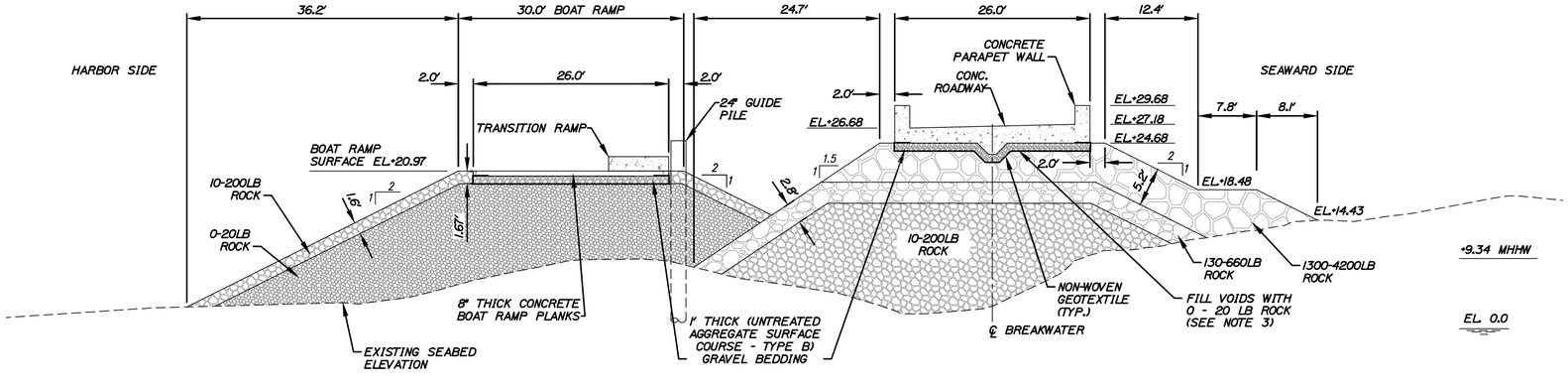
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STA. 100+00
A SECTION
SCALE: 1"=10'-0"
S-100



STA. 100+20
B SECTION
SCALE: 1"=10'-0"
S-100



STA. 100+50
C SECTION
SCALE: 1"=10'-0"
S-100

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

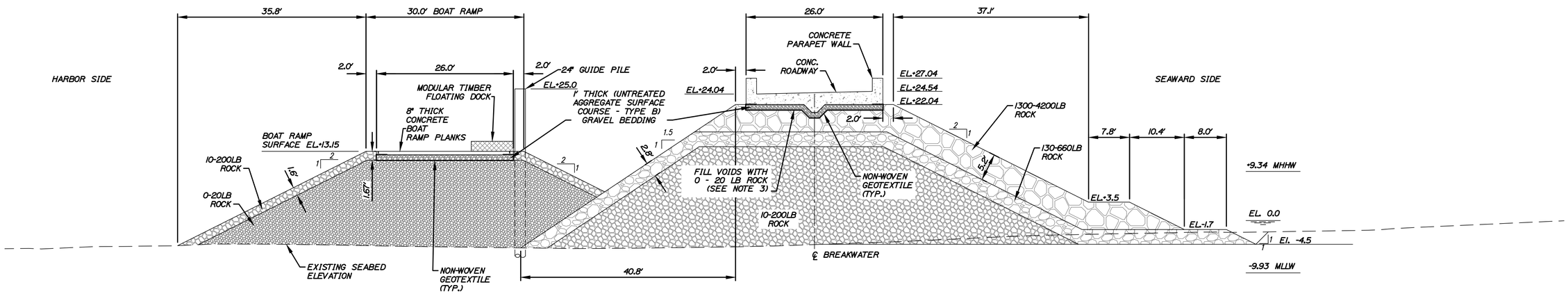
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

RUBBLE-MOUND BREAKWATER SECTIONS - 1

SHEET NUMBER
S-110
38 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\39-S-110 (Rubble-Mound Sections-1) ; Plotted: 11/26/2024 5:59 PM by KATNIK, MICHAL ; Saved: 11/26/2024 3:33 PM by KATNIKM

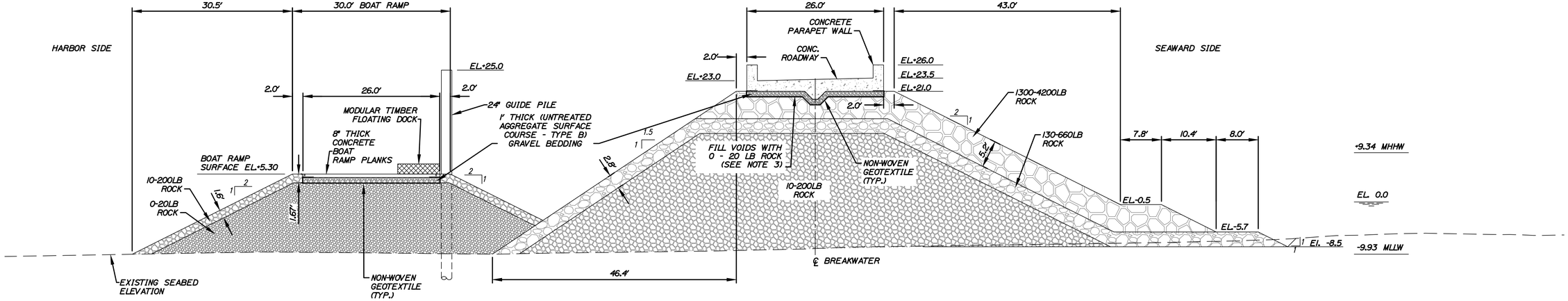


STA. 101+00

D SECTION

SCALE: 1"=10'-0"

S-100



STA. 101+50

E SECTION

SCALE: 1"=10'-0"

S-100

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER: | CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

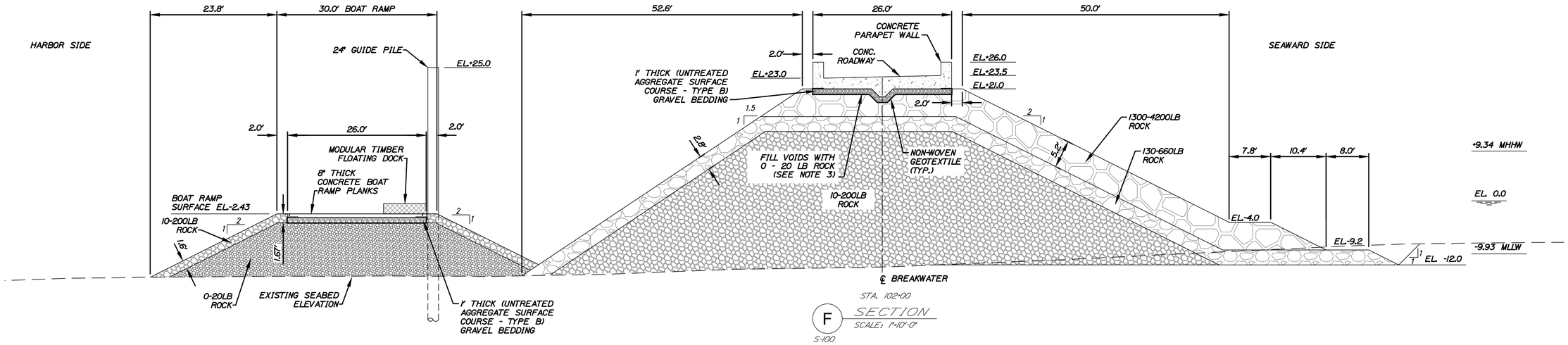
RUBBLE-MOUND BREAKWATER SECTIONS - 2

SHEET NUMBER

S-111

39 OF 99

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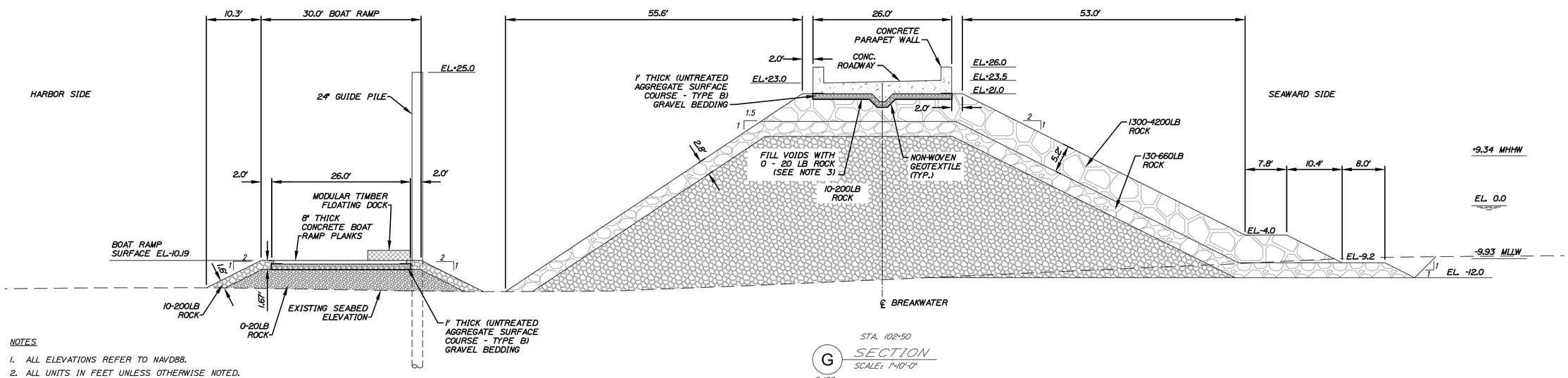
STA. 102+00

F

SECTION

SCALE: 1"=10'-0"

S-100



STA. 102+50

G

SECTION

SCALE: 1"=10'-0"

S-100

0 10 20 FT.

1"=10'

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

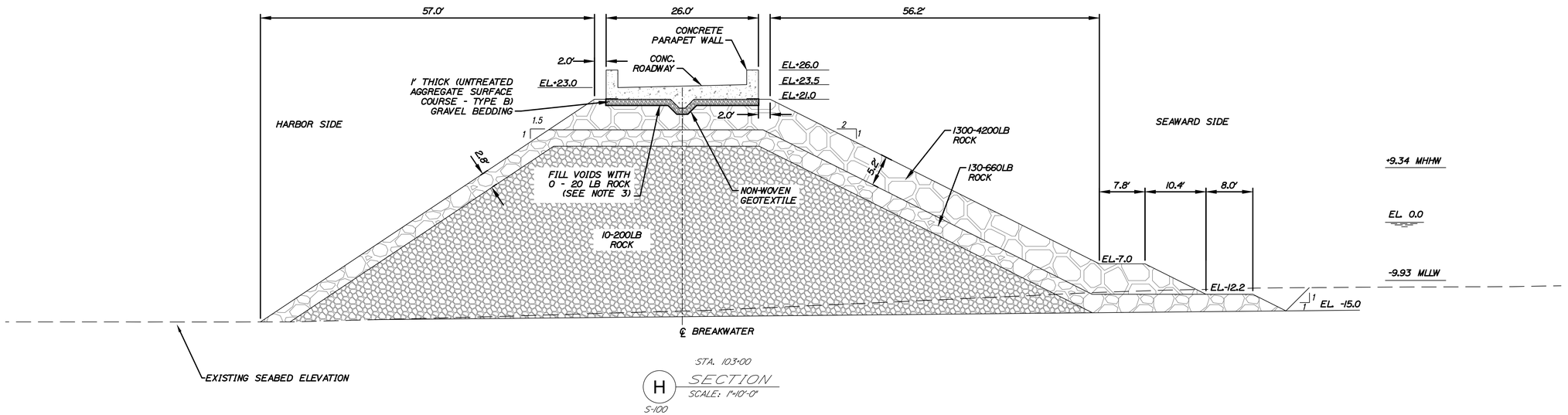
RUBBLE-MOUND BREAKWATER SECTIONS - 3

SHEET NUMBER

S-112

40 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\40-S-112 (Rubble-Mound Sections-3) ; Plotted: 11/26/2024 3:24 PM by KATNIKM
Saved: 11/26/2024 3:19 PM by KATNIKM

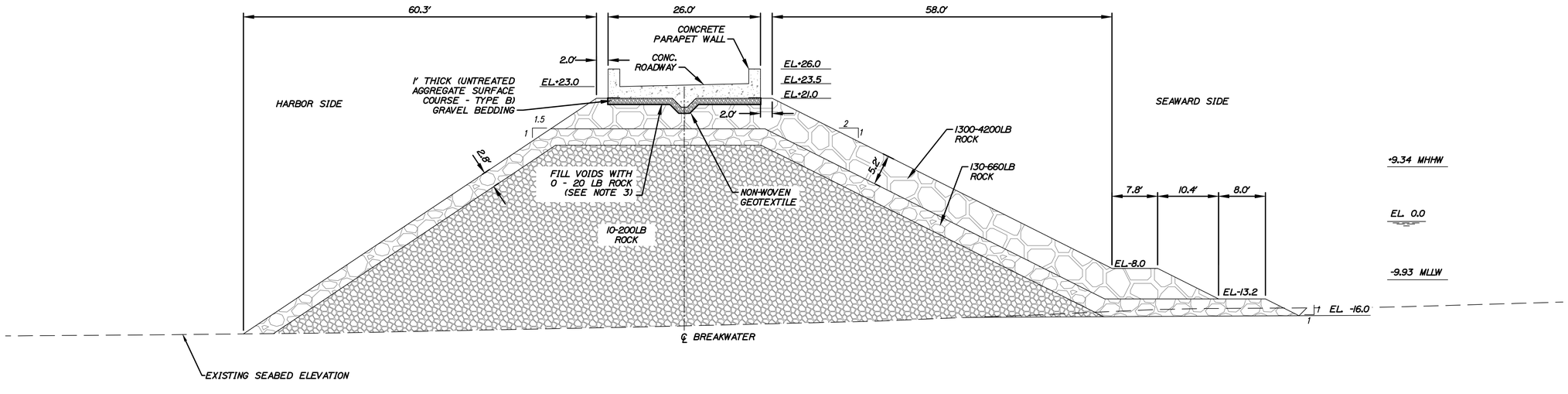


STA. 103+00

H SECTION

SCALE: 1"=10'-0"

S-100



STA. 103+50

I SECTION

SCALE: 1"=10'-0"

S-100

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

0 10 20 FT.

1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN		
CONSULTANT	JACOBS	P.E. NUMBER	
PROJECT RESIDENT			
CONTRACTOR		DATE	
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

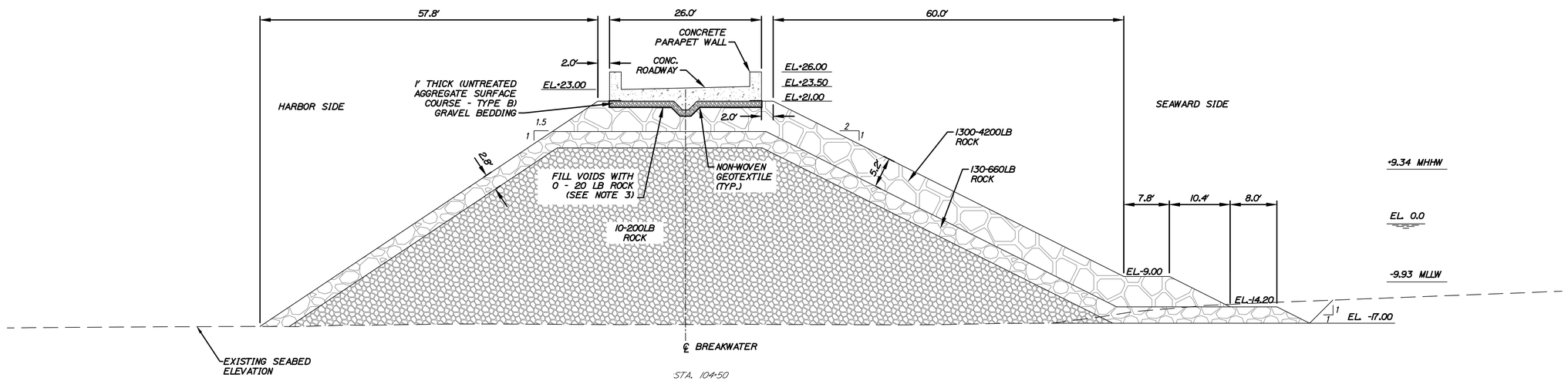
RUBBLE-MOUND BREAKWATER SECTIONS - 4

SHEET NUMBER

S-113

41 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\41-S-113 (Rubble-Mound Sections-4) ; Plotted: 11/26/2024 3:58 PM by KATNIKM
Saved: 11/23/2024 12:29 PM by KATNIKM

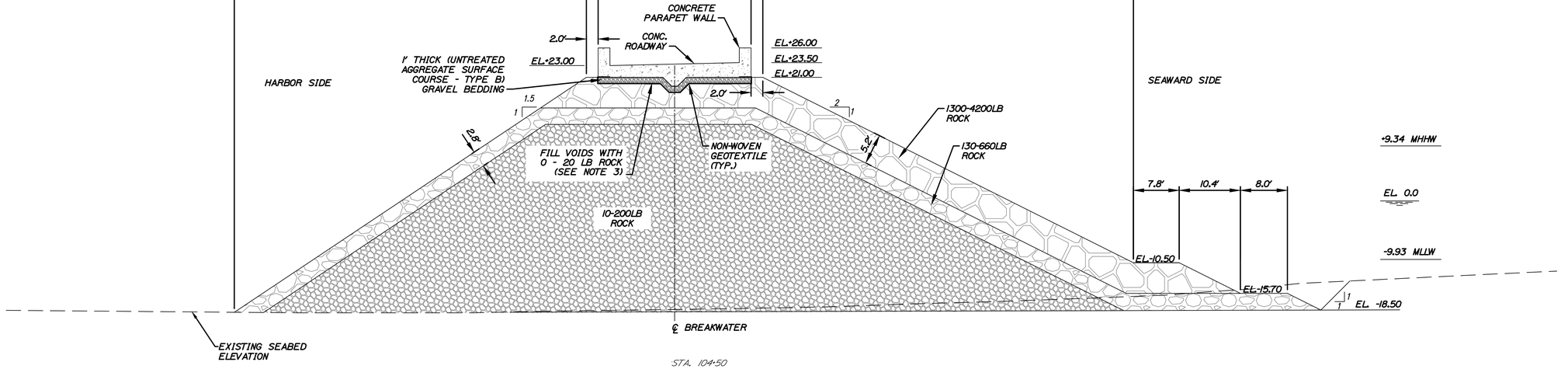


STA. 104+50

J SECTION

SCALE: 1"=10'-0"

S-100



STA. 104+50

K SECTION

SCALE: 1"=10'-0"

S-100

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

0 10 20 FT.

1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

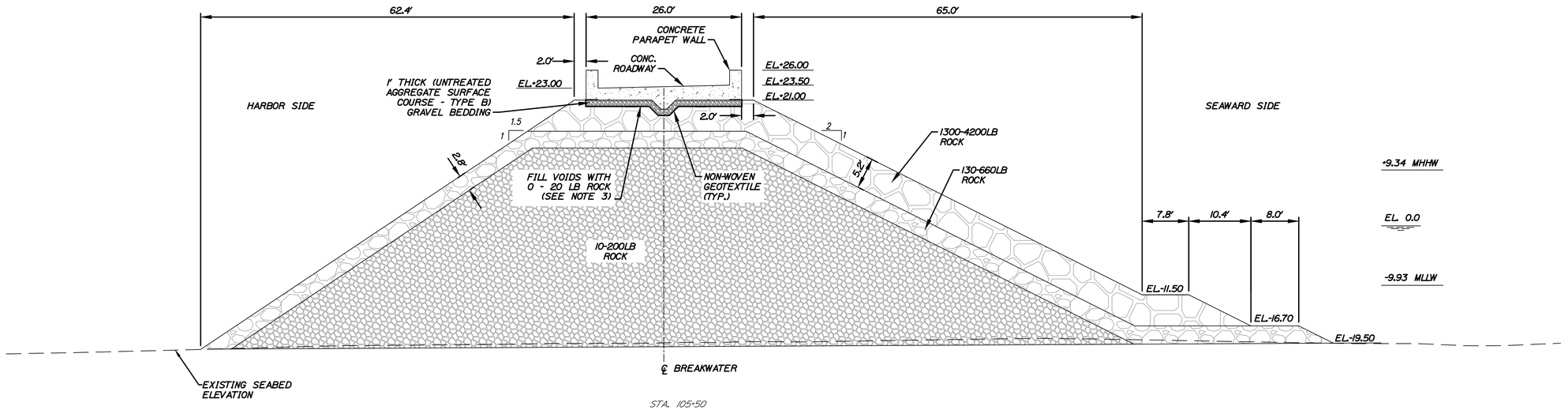
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

RUBBLE-MOUND BREAKWATER SECTIONS - 5

SHEET NUMBER

S-114

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\42-S-114 (Rubble-Mound Sections-5) ; Plotted: 11/26/2024 4:01 PM by KATNIK, MICHAL ; Saved: 11/23/2024 12:29 PM by KATNIKM

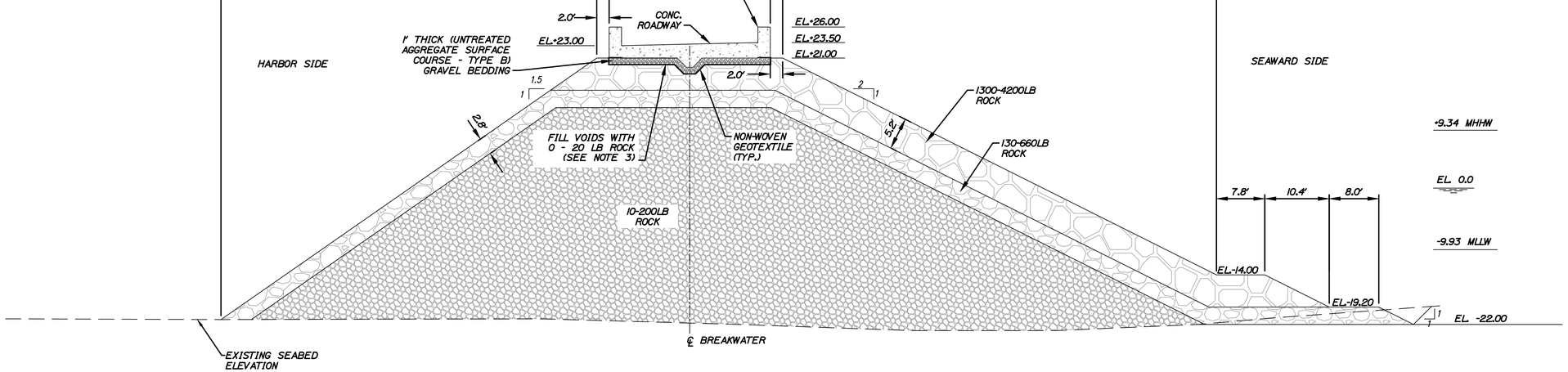


STA. 105+50

L SECTION

SCALE: 1"=10'-0"

S-100



STA. 106+00

M SECTION

SCALE: 1"=10'-0"

S-100

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

0 10 20 FT.

1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

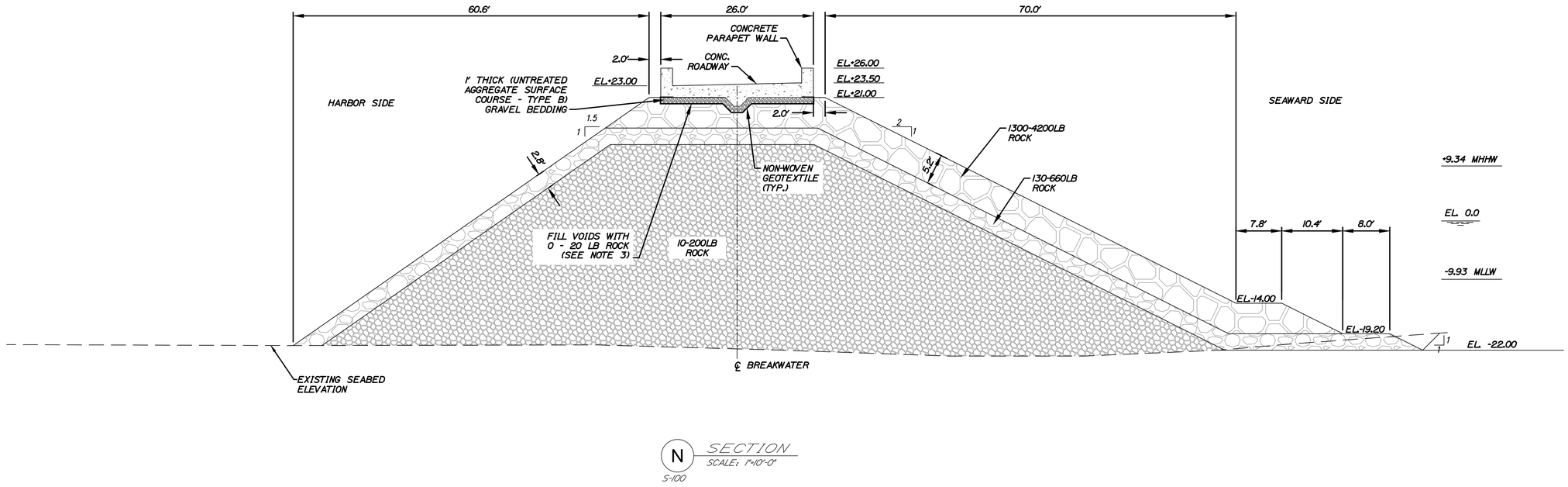
RUBBLE-MOUND BREAKWATER SECTIONS - 6

SHEET NUMBER

S-115

43 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\43-S-115 (Rubble-Mound Sections-6) ; Plotted: 11/26/2024 4:04 PM by KATNIK, MICHAL ; Saved: 11/23/2024 12:29 PM by KATNIKM



N

SECTION

SCALE: 1"=10'-0"

S-100

NOTES

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

0 10 20 FT.

1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

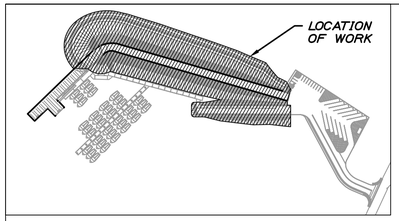
RUBBLE-MOUND BREAKWATER SECTIONS - 7

SHEET NUMBER

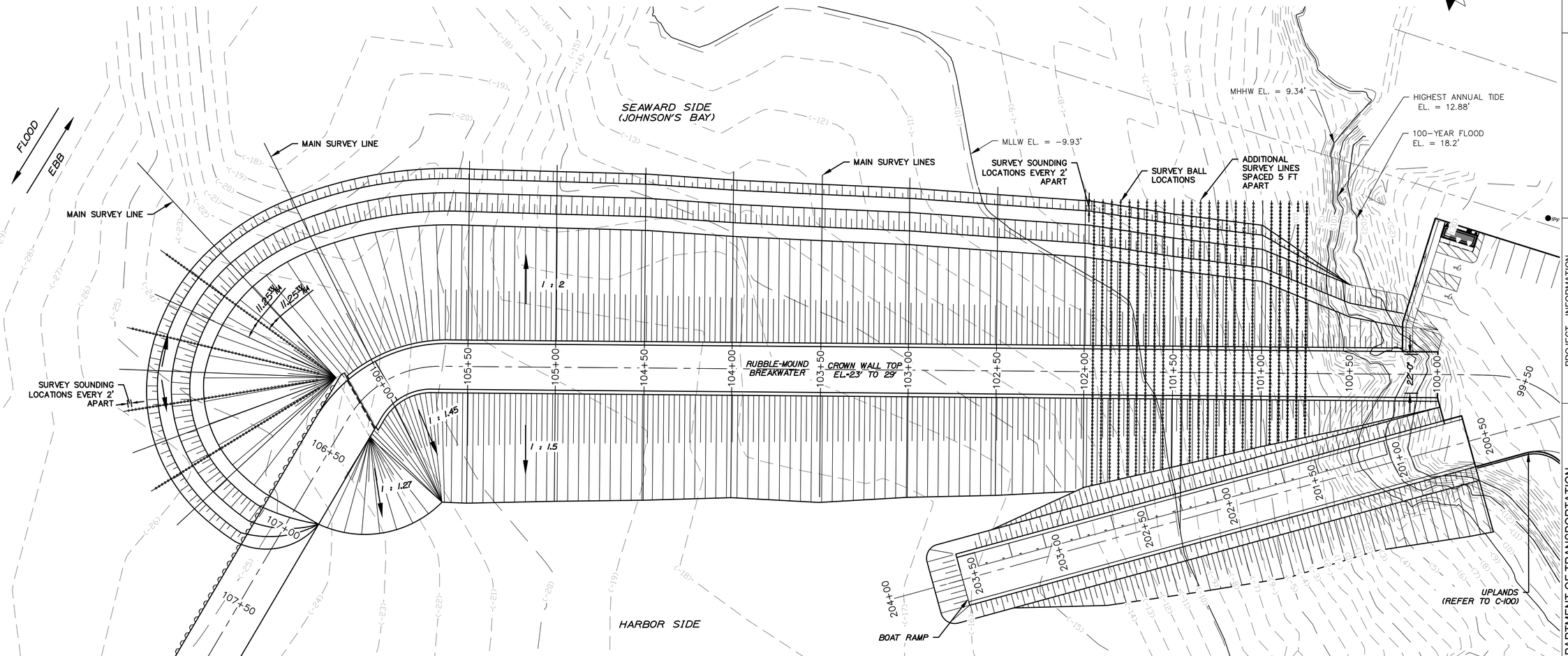
S-116

44 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\44-S-116 (Rubble-Mound Sections-7).; Plotted: 11/26/2024 4:08 PM by KATNIK, MICHAL ; Saved: 11/23/2024 12:29 PM by KATNIKM



KEY PLAN
1"=240'-0"



0 30 60 FT.
1"=30'

NOTES:

1. ALL ELEVATIONS REFER TO NAVD88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. SAME MEASUREMENT PATTERN SHOULD BE ADOPTED ALONG THE ENTIRE RUBBLE-MOUND BREAKWATER, INCLUDING THE ROUNDHEAD PORTION.
4. FOR THE HARBOR SIDE OF THE ROUNDHEAD, ADOPT A SIMILAR MEASUREMENT PATTERN AS THE SEAWARD SIDE OF THE ROUNDHEAD, AS ILLUSTRATED ABOVE.
5. CHECK SURVEYS TO BE PERFORMED, AND APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLACEMENT OF THE NEXT LAYER OF STONE.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

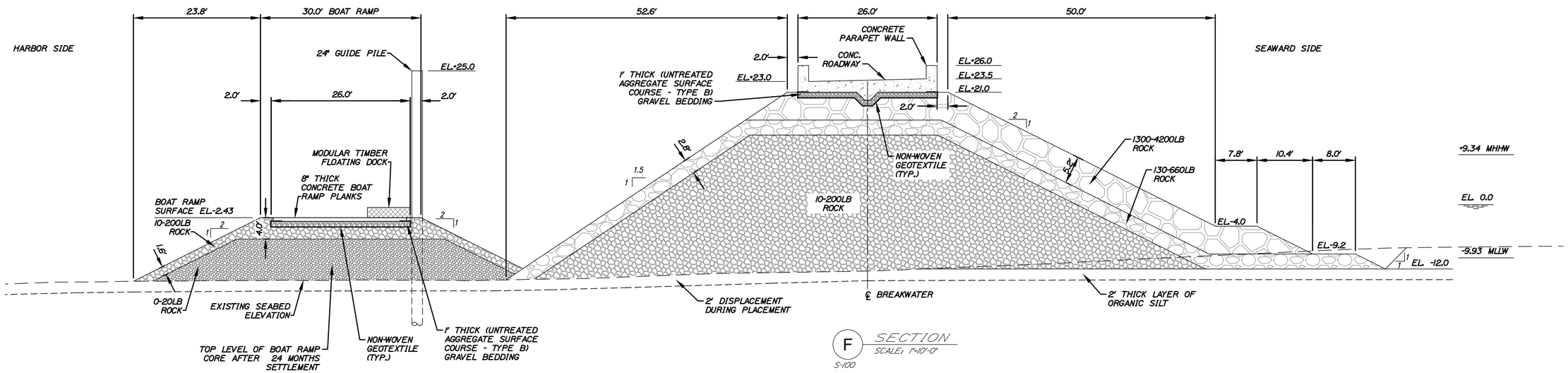
RUBBLE-MOUND BREAKWATER SURVEY LOCATIONS

SHEET NUMBER

S-117

45 OF 99

File: C:\Users\hs037482\Jacobs\Maine DOT Lubec Breakwater - Drawings_100% Submission\45-S-117 (Rubble-Mound Breakwater Survey Lines).; Plotted: 11/8/2024 4:53 PM by SAYADPAR, HASTI.; Saved: 11/5/2024 9:34 AM by MAGUIRC



F SECTION
SCALE: 1"=10'-0"
S-100

RUBBLE-MOUND BREAKWATER				
SECTION	DISPLACEMENT DUE TO UPPER ORGANIC SILT		24 - MONTH SETTLEMENT	
	TOTAL ADDITIONAL UNDERLAYER (130-660 lbs.) VOLUME (CF)	ADDITIONAL CORE (10-200 lbs.) VOLUME (CF)	TOTAL ADDITIONAL UNDERLAYER (130-660 lbs.) VOLUME (CF)	ADDITIONAL CORE (10-200 lbs.) VOLUME (CF)
100+20 - 101+00	3680[4]	12140[4]	0	0
101+00 - 102+00	7760[4]	23335[4]	4230[1]	4745[1]
102+00 - 104+00	15525[4]	54685[4]	3695[2]	4345[2]
104+00 - 106+00	30905[5]	123350[5]	1855[3]	2190[3]
ROUND HEAD	25755[6]	47695[6]	1995[3]	255[3]
TOTAL (CY)	3100	9675	440	430

BOAT RAMP				
SECTION	DISPLACEMENT DUE TO UPPER ORGANIC SILT		24 - MONTH SETTLEMENT	
	TOTAL ADDITIONAL ARMOR (10-200 lbs.) VOLUME (CF)	TOTAL ADDITIONAL CORE (5-40 lbs.) VOLUME (CF)	TOTAL ADDITIONAL ARMOR (10-200 lbs.) VOLUME (CF)	TOTAL ADDITIONAL CORE (5-40 lbs.) VOLUME (CF)
200+92.75 - 201+75.88	670[4]	10480[4]	0	0
201+75.88 - 202+79.79	790[4]	12915[4]	0	2715[7]
202+79.79 - 203+57.28	4425[5]	9770[5]	0	315[8]
TOTAL (CY)	220	1230	0	115

NOTES:

(1) VOLUME BASED ON 17.5 INCHES OF SETTLEMENT.
(2) VOLUME BASED ON 7.7 INCHES OF SETTLEMENT.
(3) VOLUME BASED ON 3.8 INCHES OF SETTLEMENT.
(4) VOLUME BASED ON DISPLACED 2 FEET OF SOFT SEDIMENT.
(5) VOLUME BASED ON DISPLACED 4 FEET OF SOFT SEDIMENT.
(6) VOLUME BASED ON DISPLACED 3 FEET OF SOFT SEDIMENT.
(7) VOLUME BASED ON 5.7 TO 11 INCHES (AVERAGE 8 INCHES) OF SETTLEMENT.
(8) VOLUME BASED ON 0.9 TO 2.5 INCHES (AVERAGE 1.7 INCHES) OF SETTLEMENT.

CONSTRUCTION SEQUENCING NOTES:

1. PLACE RUBBLE-MOUND BREAKWATER CORE ROCK (10 – 200 LBS.) STARTING FROM THE CENTERLINE OF THE BREAKWATER WORKING OUTWARD TO THE TWO SIDES OF THE BREAKWATER (I.E., SEAWARD SIDE AND HARBOR SIDE). SOFT ORGANIC SILTS PRESENT AT THE MUDLINE ARE EXPECTED TO DISPLACE OUTWARD DURING INSTALLATION OF THE CORE ROCK. DISPLACEMENTS ARE ESTIMATED AT 2 FT FOR THE MAJORITY OF THE BREAKWATER, INCREASING TO 3 FT AT THE START OF THE PLATFORM.
2. RUBBLE-MOUND BREAKWATER CORE SHALL BE OVERBUILT TO CORRECT FOR ESTIMATED SETTLEMENTS DOCUMENTED IN THE LUBEC BREAKWATER GEOTECHNICAL REPORT. LONG-TERM CONSOLIDATION SETTLEMENTS WERE ESTIMATED TO RANGE FROM 7 TO 17 INCHES AND ARE EXPECTED TO COMPLETE DURING THE ASSUMED 24 MONTH CONSTRUCTION PERIOD. THESE SETTLEMENTS ARE ESTIMATED MOSTLY FOR THE AREA FROM STA 101+00 TO 104+00, WHERE HIGHER SETTLEMENTS ARE EXPECTED CLOSER TO THE SHORELINE.
3. ESTIMATED VOLUMES TO ACCOUNT FOR THE NOTED DISPLACED SOILS AND EXPECTED SETTLEMENTS ARE LISTED IN THE TABLES ON THIS DRAWING.
4. INSTALL SETTLEMENT MONITORING PLATES AS SHOWN ON DRAWINGS MN-100 AND MN-120.
5. A CHECK SURVEY OF THE COMPLETED CORE LAYER SHALL BE PERFORMED, AND APPROVED BY THE RESIDENT ENGINEER/MAINE DOT PRIOR TO PLACEMENT OF THE UNDERLAYER.
6. FOLLOWING PLACEMENT OF CORE ROCK, PLACE UNDERLAYER ROCKS (130 – 660 LBS.) ALONG THE SIDE SLOPES IN A 2.8 FT THICK LAYER, PLACED OVER THE RUBBLE-MOUND BREAKWATER CORE LAYER.
7. IF THE CONTRACTOR IS UNABLE TO LAY THE ARMOR ROCKS (1300 - 4200 LBS.) THEY SHALL ADOPT PROTECTION MEASURES TO PREVENT ANY DAMAGE TO THE UNDERLAYER ROCK.
8. A CHECK SURVEY OF THE COMPLETED UNDERLAYER SHALL BE PERFORMED, AND APPROVED BY THE RESIDENT ENGINEER/MAINE DOT PRIOR TO PLACEMENT OF THE ARMOR LAYER.
9. PLACE RUBBLE-MOUND BREAKWATER ARMOR ROCK IN A 5.2 FT THICK LAYER OVER THE RUBBLE-MOUND BREAKWATER UNDERLAYER.
10. CONSTRUCT CONCRETE ROADWAY ON TOP OF RUBBLE-MOUND AS SHOWN. CONSTRUCTION OF CONCRETE ROADWAY SHALL COMMENCE ONCE LONG-TERM SETTLEMENTS ARE NEAR COMPLETION BASED ON THE ONGOING MONITORING AND AS DETERMINED BY THE RESIDENT. LONG-TERM SETTLEMENTS ARE CONSIDERED NEAR COMPLETION WHEN MONITORED SETTLEMENTS ARE LESS THAN 0.25 INCH AFTER 28 DAYS.
11. WAIT TIMES BETWEEN EACH STAGE MAY BE VARIED BASED ON MONITORING INSTRUMENTATION DATA RESULTS. SUCH DECISIONS WILL BE MADE BY RESIDENT ENGINEER.
12. RAMP CONSTRUCTION SHALL COMMENCE AFTER CONSTRUCTION OF THE INITIAL PORTION OF THE BREAKWATER, CONSISTING OF PLACEMENT OF THE CORE MATERIAL AND THE UNDERLAYER ON THE HARBOR SIDE.
13. ALONG THE BOAT RAMP AND ON THE HARBOR SIDE OF THE BREAKWATER, PLACE STEEL CASINGS TO FACILITATE THE FUTURE INSTALLATION OF PIPE PILES TO ACT AS GUIDE PILES FOR THE FLOATING DOCKS.
14. AT THE TRANSITION TO THE PILE SUPPORTED PLATFORM, PLACE STEEL CASINGS TO FACILITATE THE FUTURE INSTALLATION OF PIPE PILES.
15. FOLLOWING THE INSTALLATION OF BREAKWATER ROCKS, DISPLACED SOFT ORGANIC SILT ON THE MUDLINE MAY HAVE TO BE REPROFILED TO MEET THE REQUIRED WATER DEPTH.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE
COMMISSIONER:
CHIEF ENGINEER:

PROJECT INFORMATION

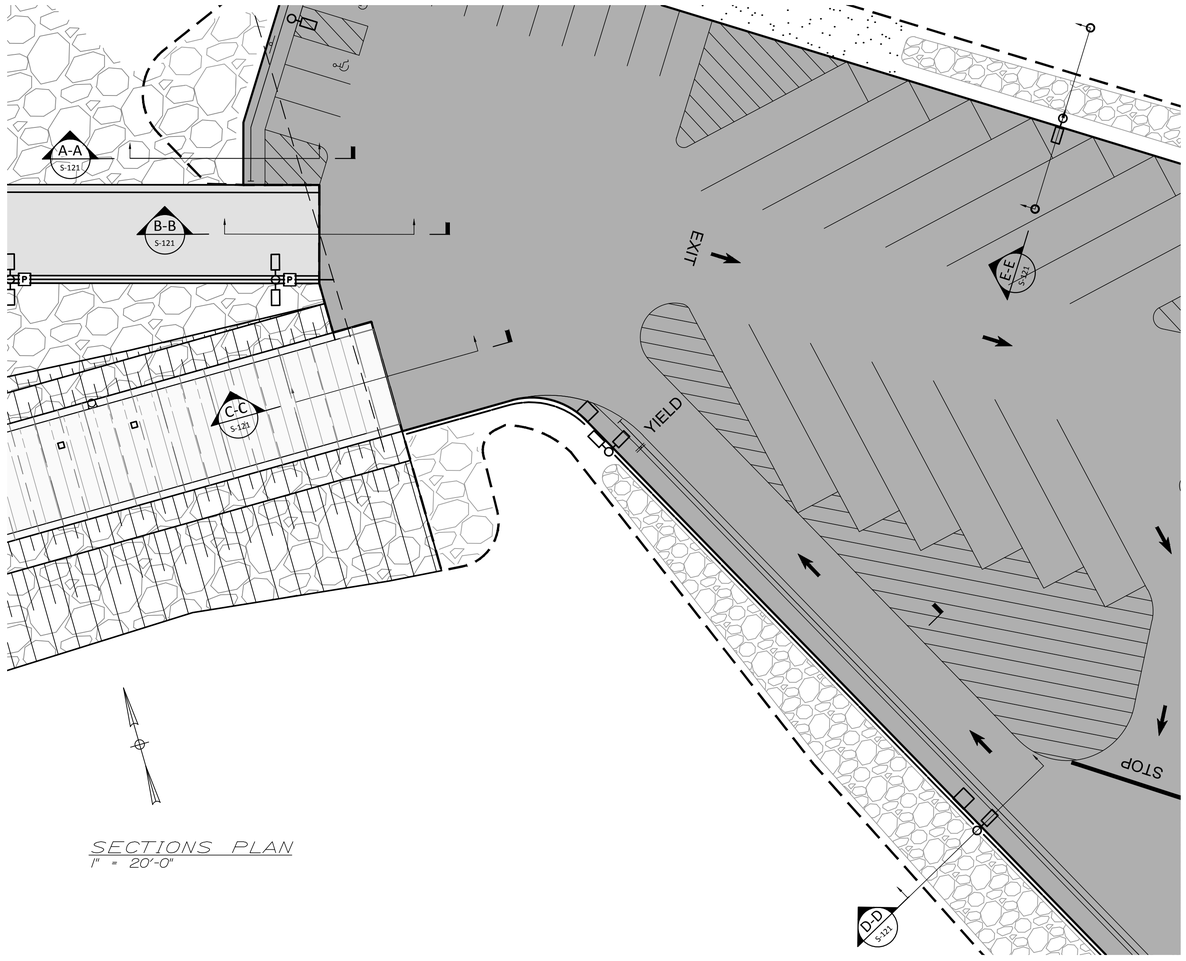
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

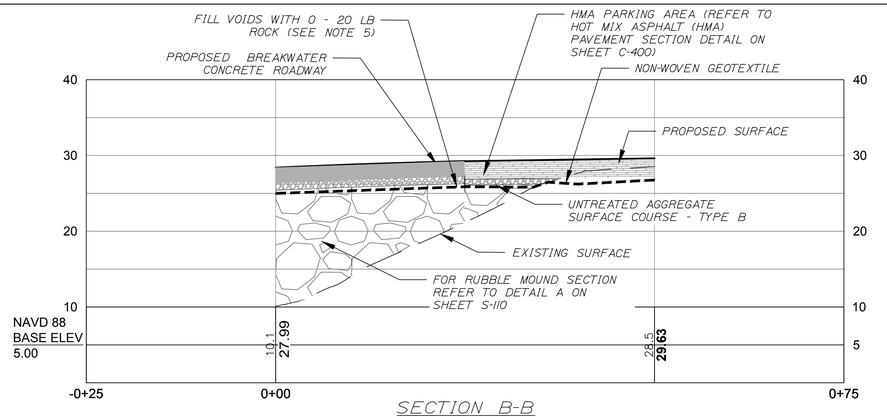
RUBBLE-MOUND BREAKWATER CONSTRUCTION SEQUENCE

SHEET NUMBER
S-118
46 OF 100

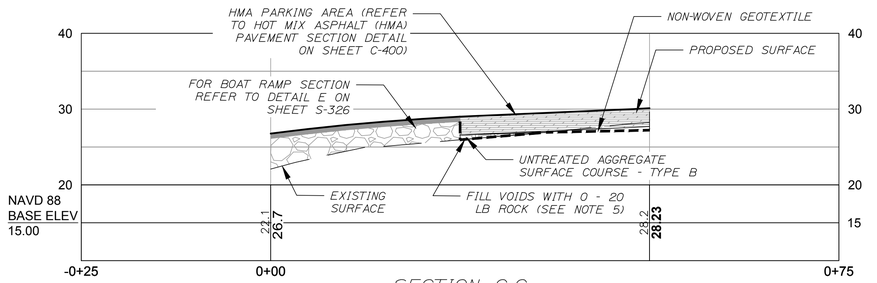
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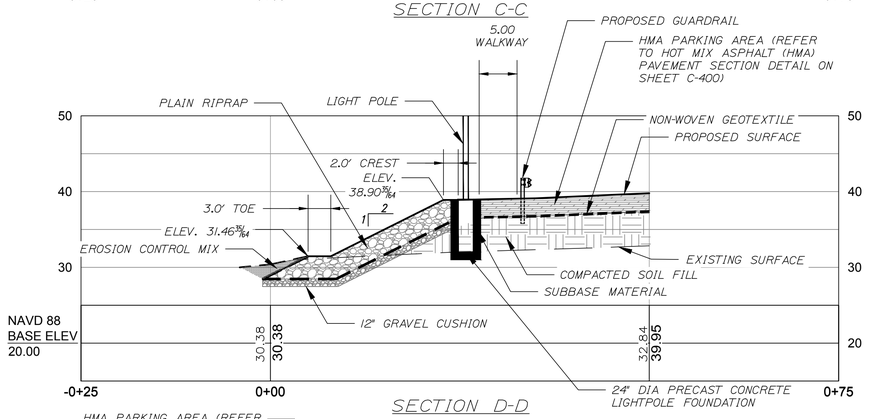
SECTIONS PLAN
1" = 20'-0"



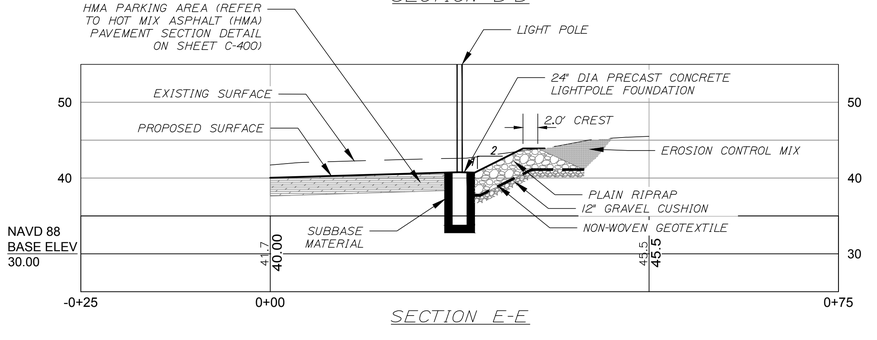
SECTION B-B



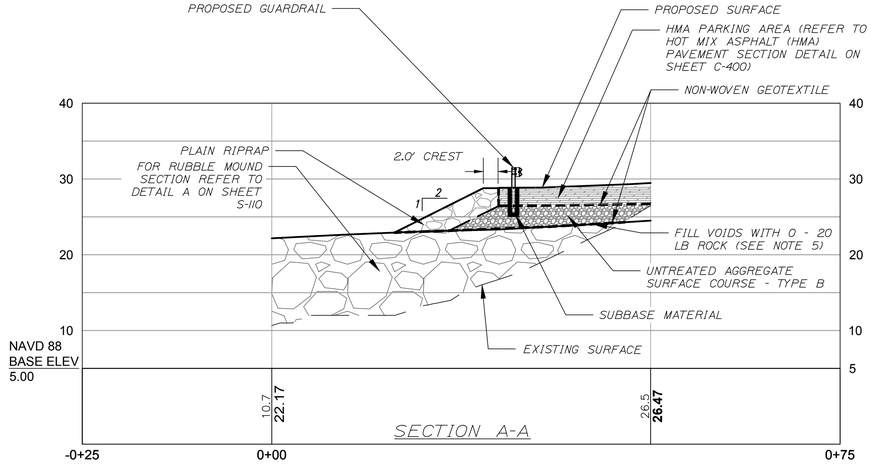
SECTION C-C



SECTION D-D



SECTION E-E



SECTION A-A

NOTES:

1. ALL SECTIONS HAVE HORIZONTAL SCALE 1"=10' AND VERTICAL SCALE 1"=10'.
2. ALL ELEVATIONS REFER TO NAVD 88.
3. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
4. HORIZONTAL DATUM REFERS TO US STATE PLANE, MAINE EAST 1801, NAD83.
5. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITH 0 - 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE SUBBASE, SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

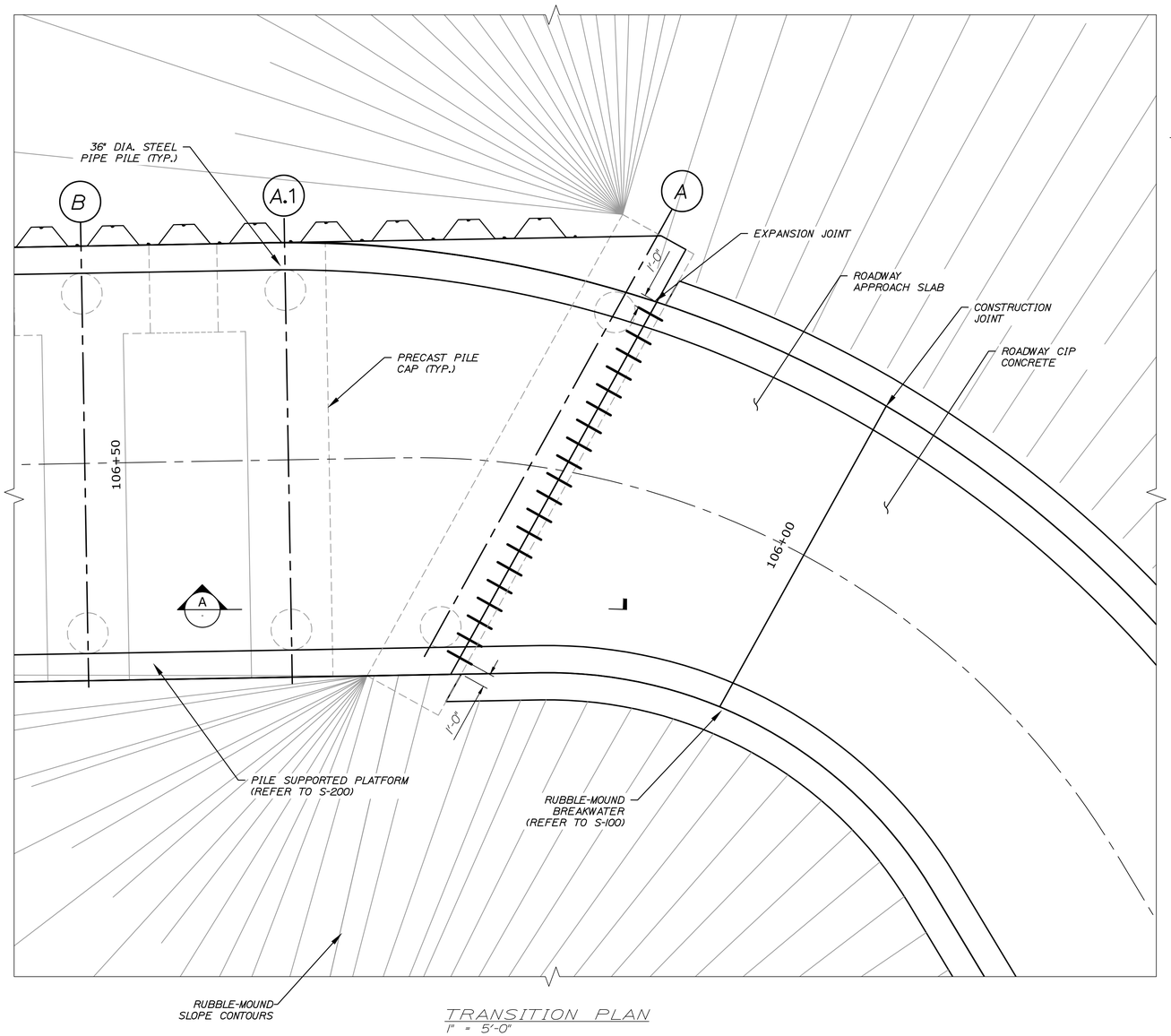
RUBBLE-MOUND BREAKWATER TO UPLAND TRANSITION DETAILS

SHEET NUMBER

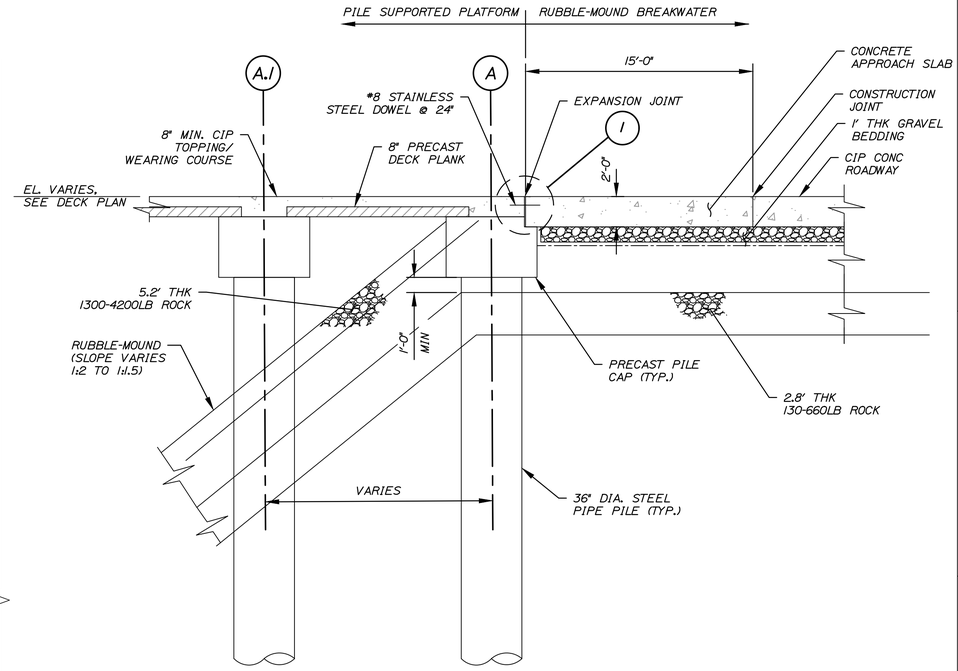
S-121

47 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\47-S-121 (Rubble-Mound to Upland Transition Details) ; Plotted: 11/26/2024 4:22 PM by KATNIK, MICHAL ; Saved: 11/26/2024 11:51 AM by KATNIKM

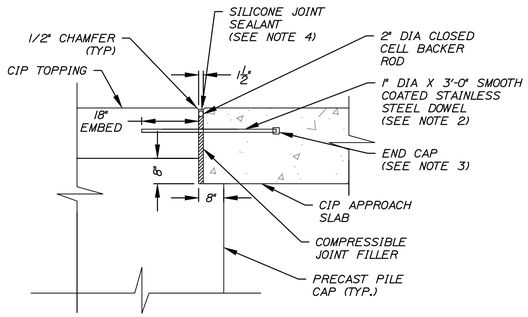


TRANSITION PLAN
1" = 5'-0"



A SECTION
1" = 5'-0"

NOTE: PROTECTIVE CASING FOR PIPE PILES NOT SHOWN FOR CLARITY.



1 EXPANSION JOINT DETAIL
1" = 2'-0"

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. 1" DIA SMOOTH STAINLESS STEEL BAR DOWELS TO BE LOCATED AT 1' FROM EACH END OF ROADWAY SLAB AND SPACED AT 2'-0".
3. 2" ID X 2" PLASTIC CAP WITH 1" POLYSTYRENE BETWEEN END OF DOWEL AND END CAP.
4. FILL RECESS WITH AN APPROVED MAINEDOT JOINT SEALANT.
5. REFER TO DWG S-201 FOR THE PILE PLAN AND S-202 FOR THE PILE CAP PLAN.

0 2 4 FT.
1"=2'-0"

0 5 10 FT.
1"=5'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

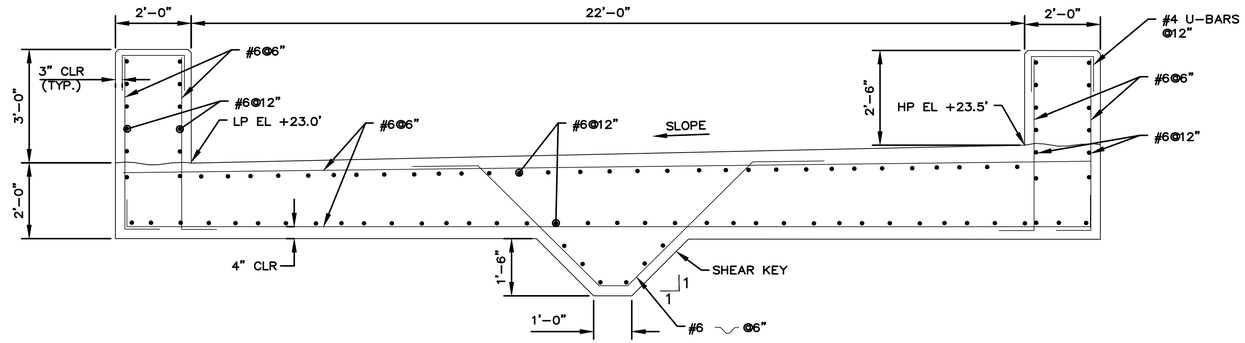
RUBBLE-MOUND TO PILE SUPPORTED PLATFORM TRANSITION DETAILS

SHEET NUMBER

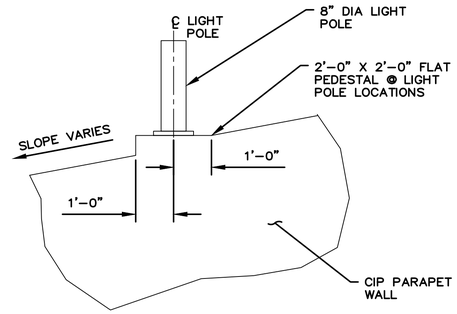
S-122

48 OF 99

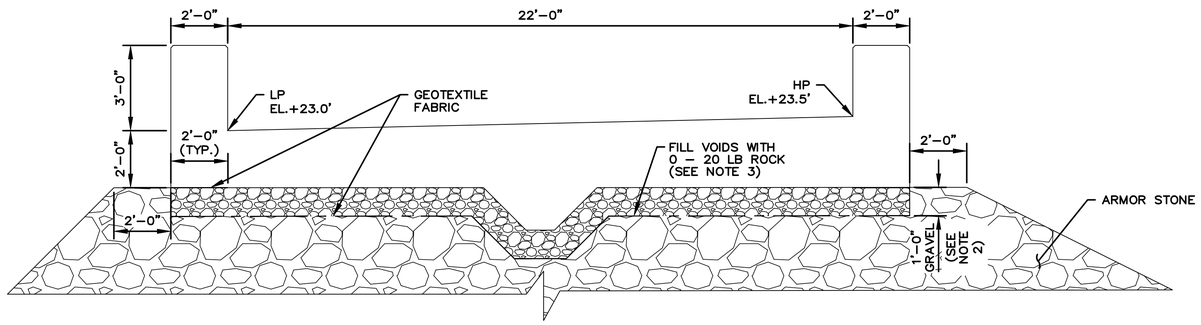
File: C:\Users\hs037482\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\48-S-122 (Rubble-Mound to Pile Supported Platform Transition Details) ; Plotted: 11/8/2024 4:57 PM by SAYADFAR, HASTI ; Saved: 11/5/2024 9:36 AM by MAGUIRC



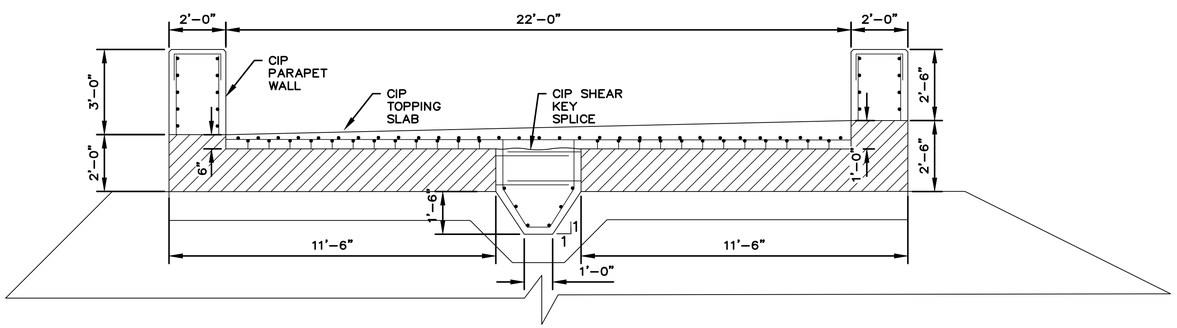
RUBBLE–MOUND ROADWAY REINFORCING SECTION
1/2" = 1'–0"



LIGHT POLE FOUNDATION @ SLOPED SECTION OF PARAPET WALL
1/2" = 1'–0"



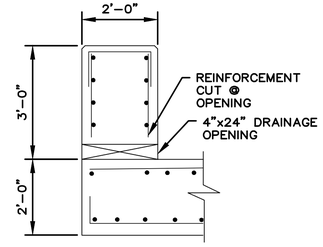
RUBBLE–MOUND ROADWAY BASE DETAIL
3/8" = 1'–0"



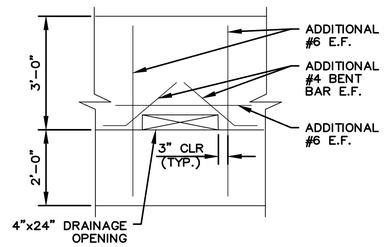
ALTERNATIVE RUBBLE–MOUND ROADWAY PRECAST REINFORCING SECTION
3/8" = 1'–0"

NOTE:

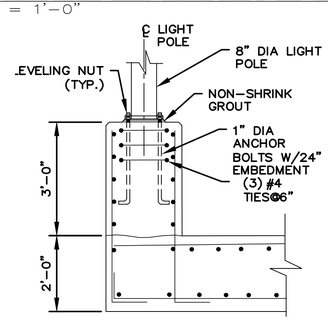
1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. GRAVEL BEDDING SHALL MEET SECTION 703.10, TYPE B OF THE MAINEDOT STANDARD SPECIFICATION, LATEST REVISION.
3. BEFORE PLACEMENT OF THE GEOTEXTILE FABRIC, FILL VOIDS OF THE ARMOR STONE WITHIN THE FOOTPRINT OF THE CONCRETE ROADWAY WITH 0 – 20 LB ROCK. CONTRACTOR MAY PROPOSE ALTERNATIVE DETAIL FOR THE CONCRETE ROADWAY SUBBASE SUBJECT TO THE DEPARTMENT AND ENGINEERS APPROVAL.



RUBBLE–MOUND ROADWAY PARAPET WALL @ DRAINAGE OPENING
1/2" = 1'–0"



RUBBLE–MOUND ROADWAY OPENING ADDITIONAL REINFORCEMENT – ELEVATION
1/2" = 1'–0"



RUBBLE–MOUND ROADWAY PARAPET WALL @ LIGHT POLE FOUNDATION
1/2" = 1'–0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

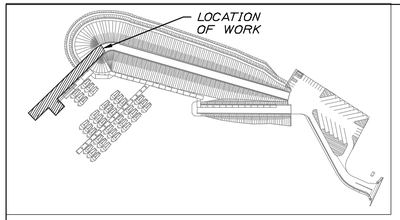
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

RUBBLE MOUND ROADWAY
REINFORCING SECTIONS AND DETAILS

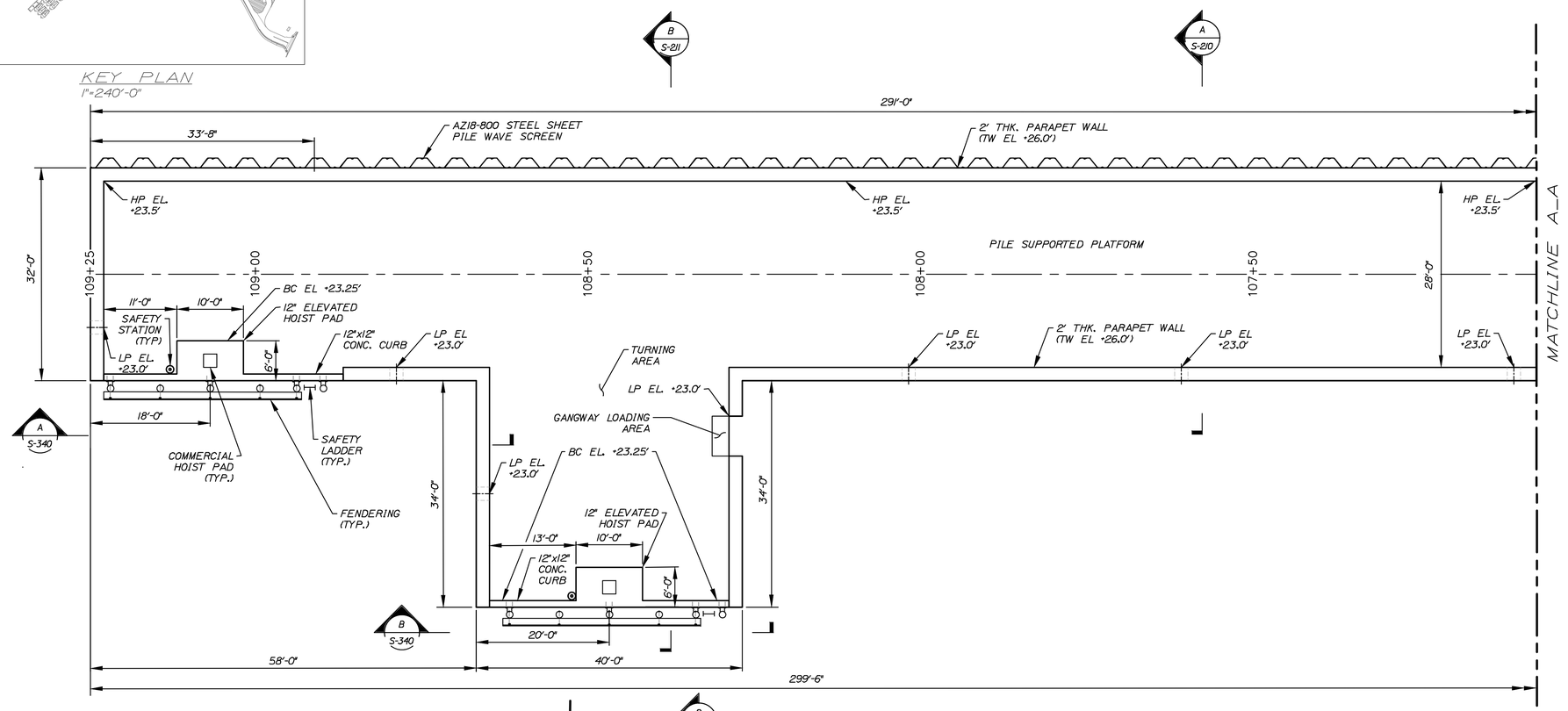
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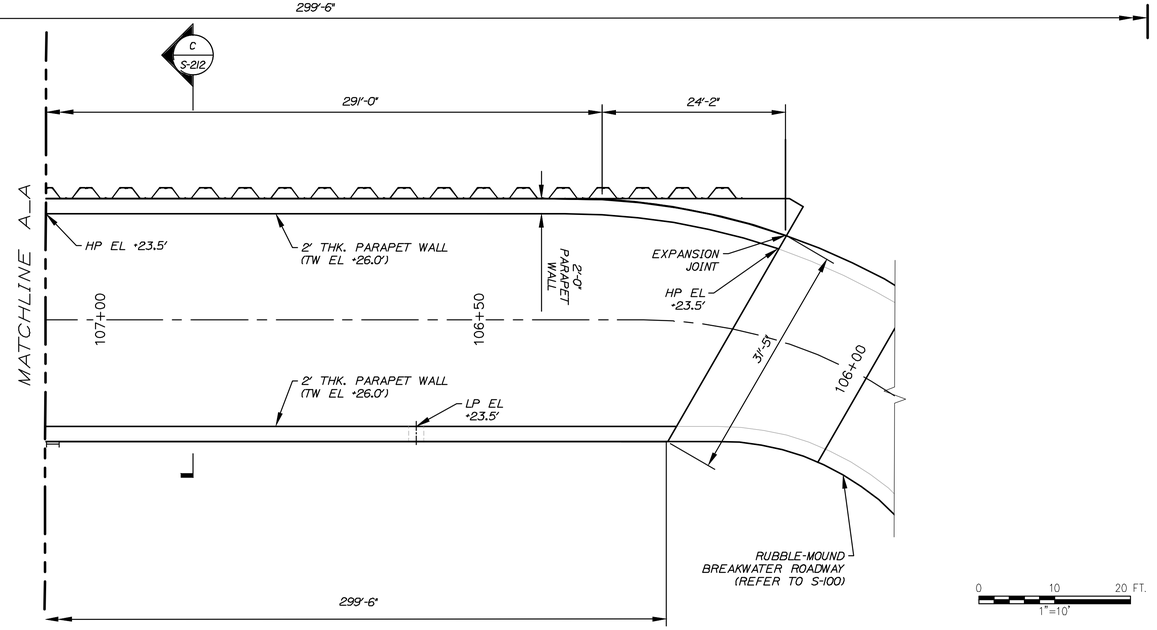
S-130

File: C:\Users\KatnikM\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\s9-S-130 (Rubble-Mound CIP Roadway Sections and Details).; Plotted: 11/21/2024 12:15 PM by KATNIK, MICHAL ; Saved: 11/5/2024 9:40 AM by KATNIKM



KEY PLAN
1"=240'-0"





PLAN
1"=10'-0"

0 10 20 FT.
1"=10'

LEGEND:

⊙	SAFETY STATION
HP	HIGH POINT
LP	LOW POINT
TW	TOP OF WALL
BC	BOTTOM OF CURB

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. WAVE SCREEN, FLOATING DOCKS AND ASSOCIATED GUIDE PILES, GANGWAYS AND HARDWARE NOT SHOWN FOR CLARITY.
4. REFER TO DRAWING E-101 FOR PILE SUPPORTED PLATFORM UTILITY PLAN.
5. REFER TO DRAWING S-001 FOR LIGHT POLE AND DRAINAGE OPENING LOCATIONS.

NOTE: FLOATING DOCKS NOT SHOWN FOR CLARITY

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM OVERALL PLAN

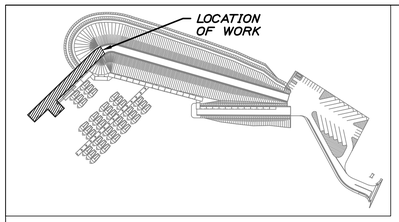
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S-200

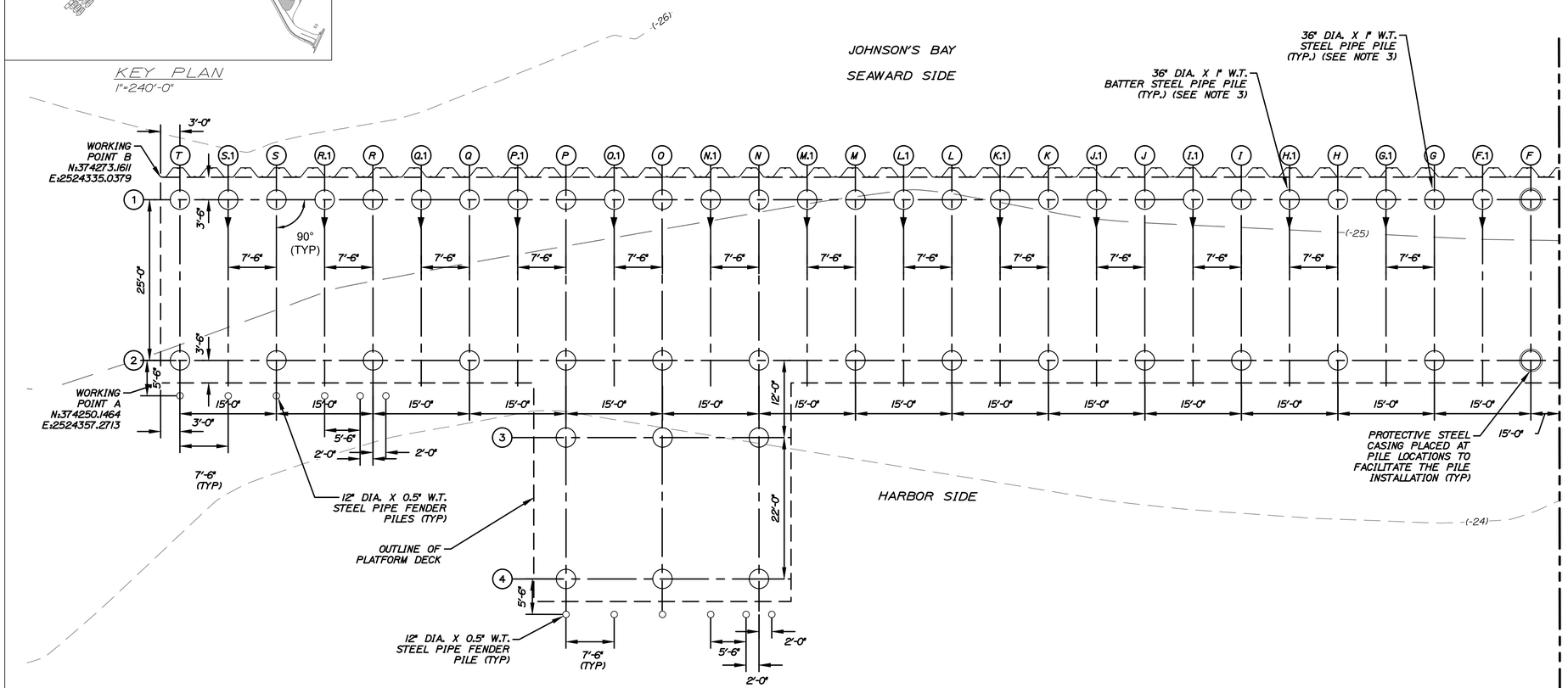
50 OF 99

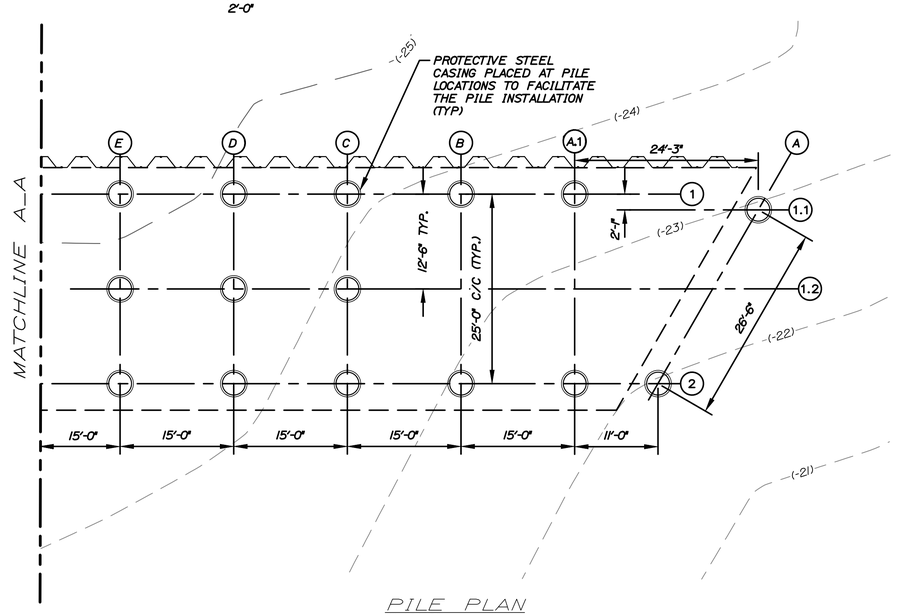
Jacobs

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\50-S-200 (Pile Supported Platform Arrangement Plan).rvt; Plotted: 10/21/2024 4:00 PM by MAGUIRE, CASEY; Saved: 10/17/2024 1:19 PM by MAGUIRC



KEY PLAN
1"=240'-0"





PILE PLAN
1"=10'-0"

LEGEND

- PLUMB STEEL PIPE PILE
- BATTER STEEL PIPE PILE
- EXISTING BATHYMETRIC CONTOURS
- STEEL PIPE PILES WITH PROTECTIVE CASINGS (SEE NOTE 5 & 6)
- PLUMB STEEL PIPE FENDER PILE

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. FLOATING DOCK GUIDE PILES NOT SHOWN FOR CLARITY.
4. REFER TO DRAWING S-230 FOR THE PIPE PILE SCHEDULE.
5. PROTECTIVE CASINGS ARE PROPOSED AT PILE LOCATIONS TO ASSURE SUCCESSFUL PILE INSTALLATION AND NO OBSTRUCTIONS CAUSED BY THE PLACEMENT OF THE BREAKWATER/BOAT RAMP ROCKFILL. PROTECTIVE CASINGS MAY BE 42" DIA. STEEL CASING, OR A SUITABLE DIAMETER PROPOSED BY THE CONTRACTOR.
6. PROTECTIVE CASINGS ARE REQUIRED FOR PILES A-1.1, A-2, A.1-1, A.1-2, B-1, B-2, C-1 AND C-2.
7. PROTECTIVE CASINGS CALLED FOR AT C.1-1, D-1, D-2, E-1, E-2, F-1 AND F-2 ARE OPTIONAL AND CONTRACTOR TO DECIDE IF HIS OPERATIONS REQUIRES THE PROTECTIVE CASINGS.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

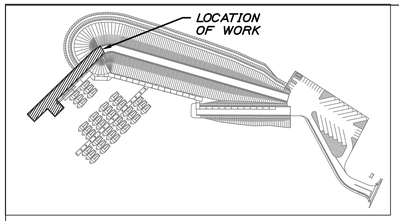
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN		
CONSULTANT	JACOBS	P.E. NUMBER	
PROJECT RESIDENT			
CONTRACTOR		DATE	
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

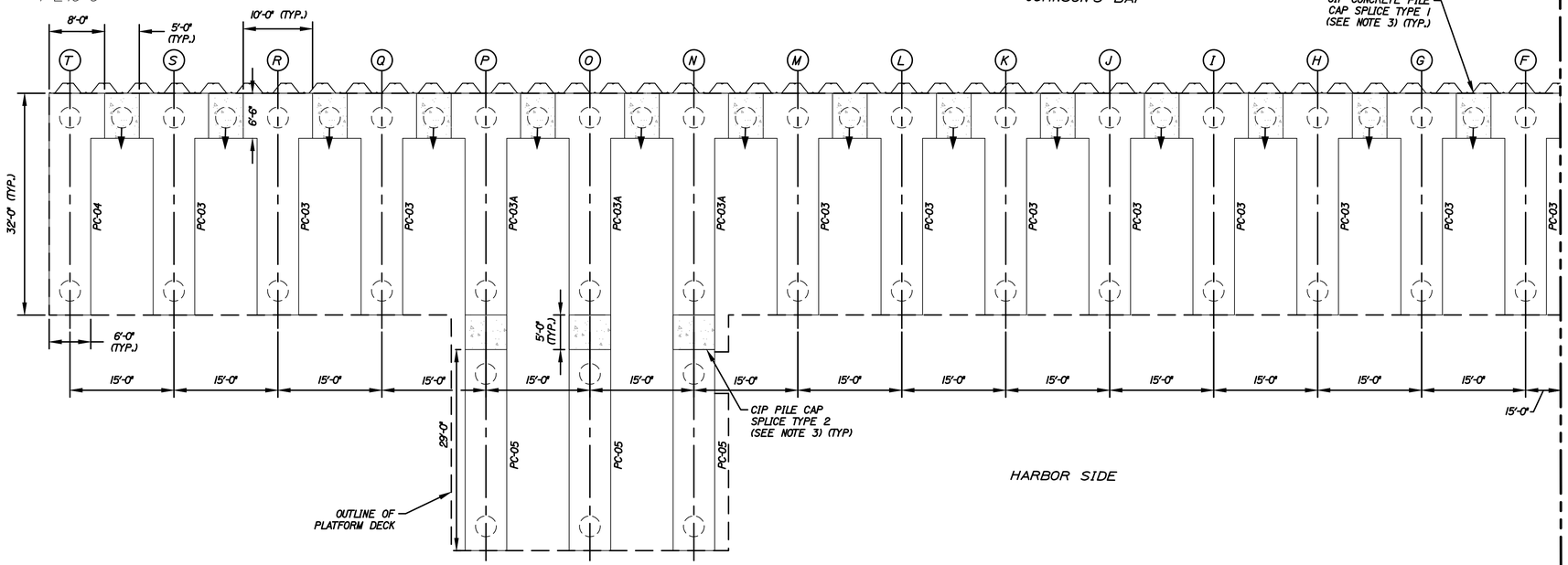
PILE SUPPORTED PLATFORM PILE PLAN

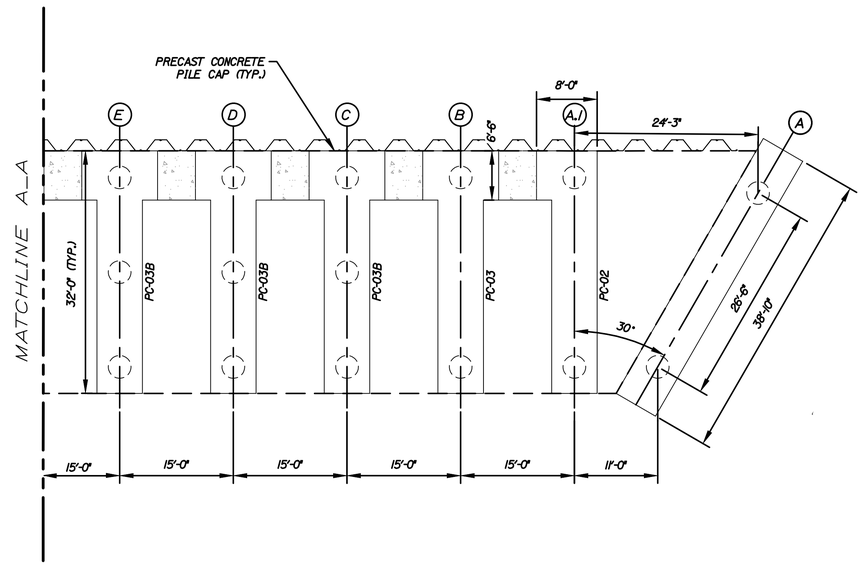
SHEET NUMBER
S-201
51 OF 99

File: C:\Users\KatnikM\Jacobs\Maine DOT\Lubec Breakwater - Drawings_ 100% Submission\51-S-201 (Pile Supported Platform Pile Plan) : Plotted: 11/26/2024 12:35 PM by KATNIKM



KEY PLAN
1"=240'-0"





PILE CAP PLAN
1"=10'-0"

0 10 20 FT.
1"=10'

NOTES:

1. REFER TO DWGS S-221 THROUGH S-226 FOR PRECAST PILE CAP DETAILS.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO DWG S-227 FOR PILE CAP SPLICE TYPE 1 AND TYPE 2 DETAILS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM
PILE CAP PLAN

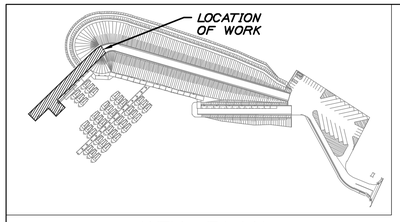
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S-202

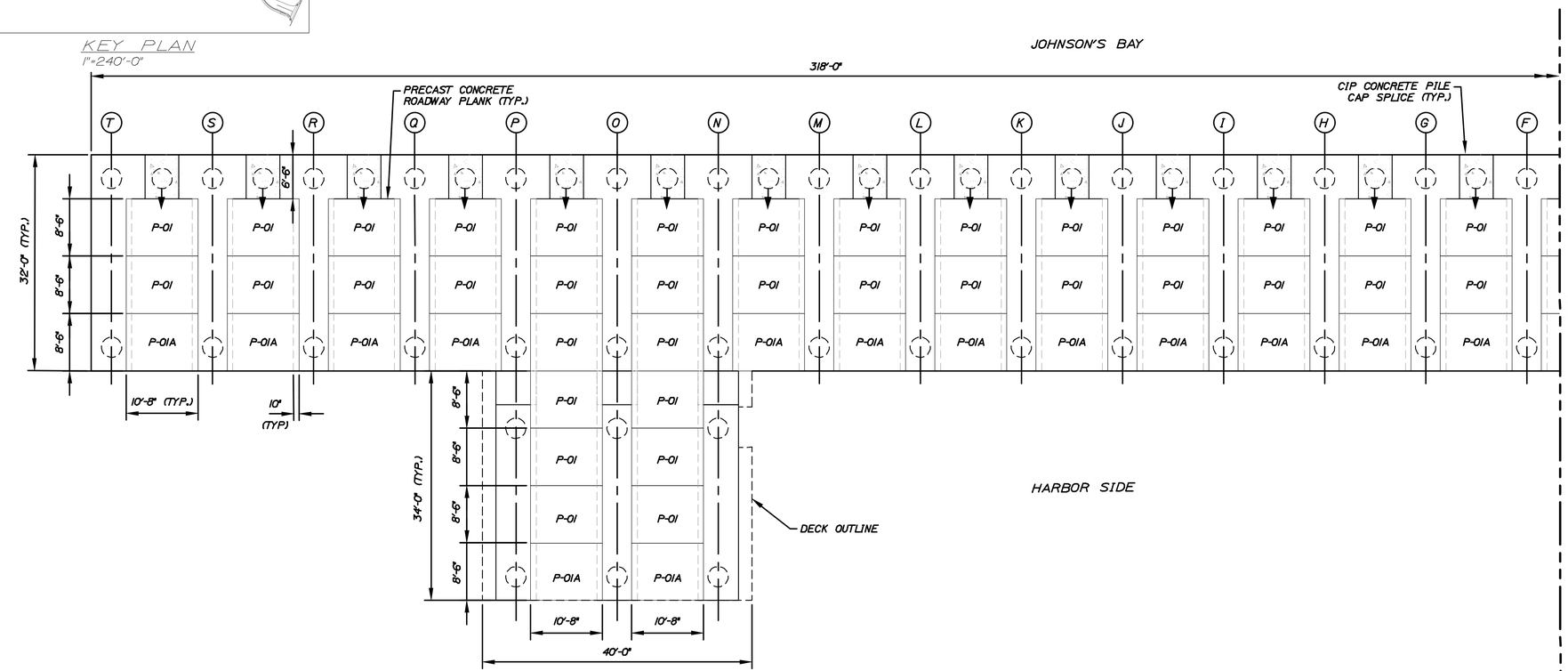
52 OF 99

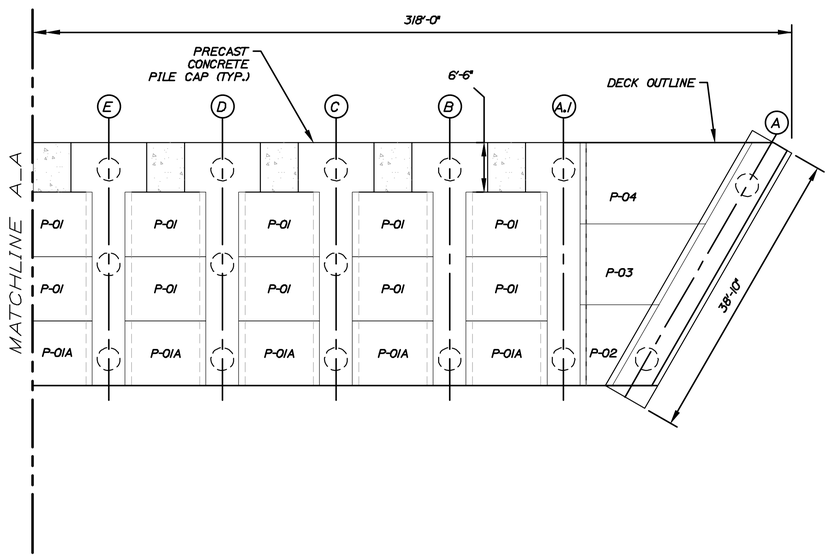
Jacobs

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\52-S-202 (Pile Supported Platform Pile Cap Plan) - Plotted: 11/5/2024 9:43 AM by MAGUIRE, CASEY - Saved: 10/17/2024 1:36 PM by MAGUIRC



KEY PLAN
1"=240'-0"





PRECAST DECK PLANK PLAN
1"=10'-0"

0 10 20 FT.
1"=10'

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. FOR PLANK DETAILS AND SCHEDULE. SEE DWG S-240 AND S-241.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

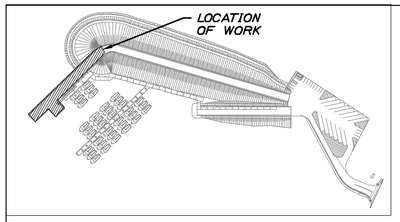
PILE SUPPORTED PLATFORM
PRECAST PLANK PLAN

SHEET NUMBER

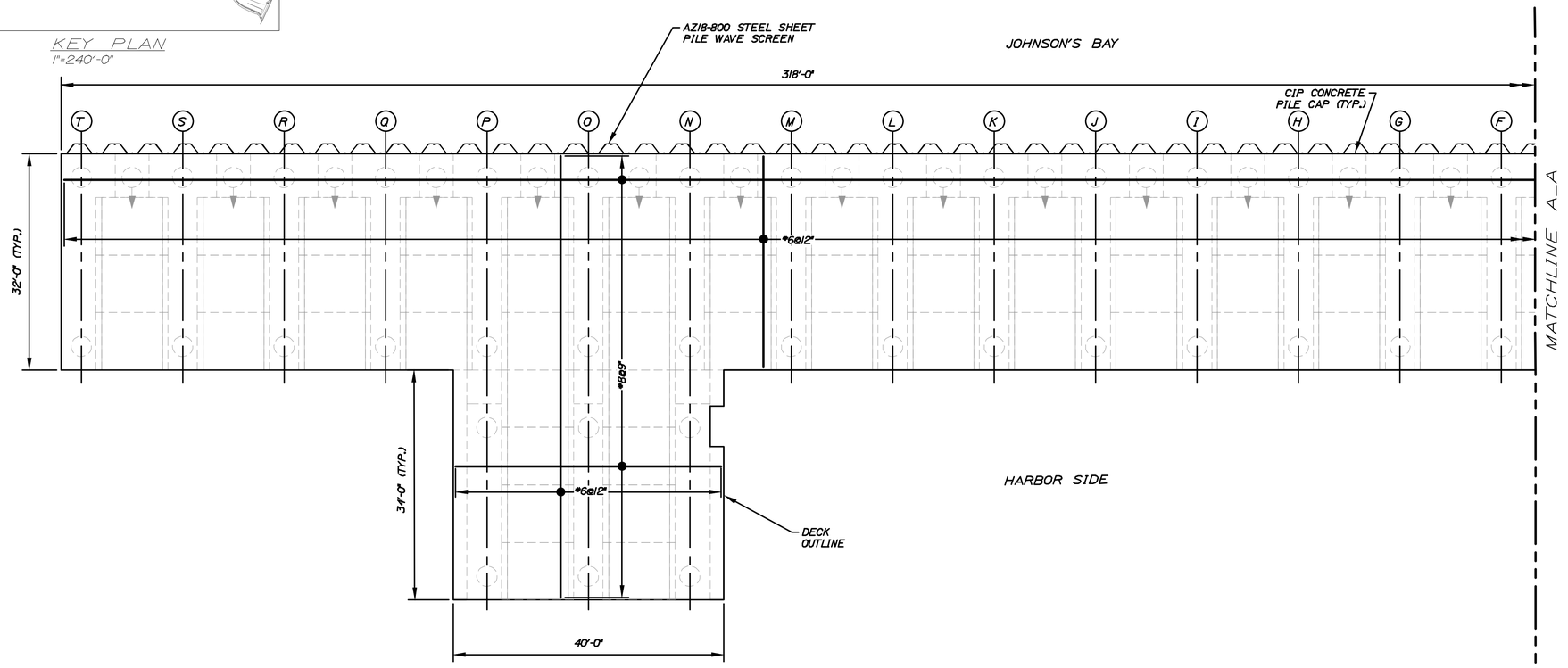
S-203

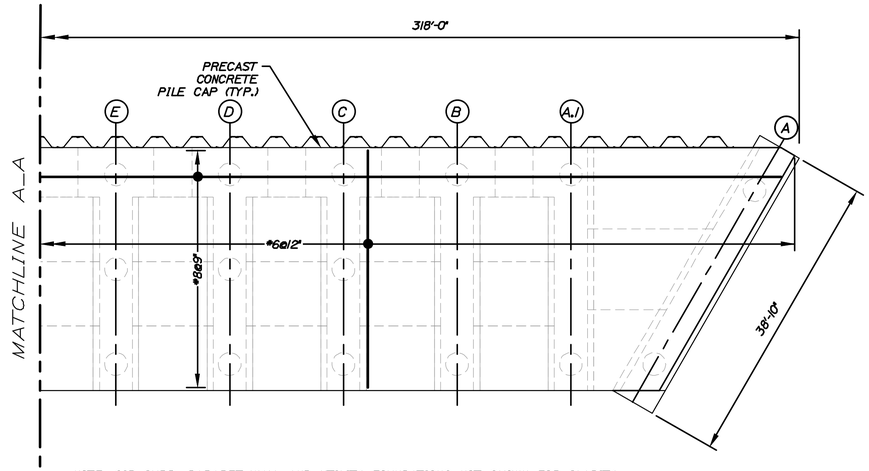
53 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\53-S-203 (Pile Supported Platform Plank Plan) - Plotted: 10/17/2024 1:48 PM by MAGUIRE, CASEY ; Saved: 10/17/2024 1:45 PM by MAGUIRC



KEY PLAN
1"=240'-0"





NOTE: CIP CURB, PARAPET WALL AND UTILITY FOUNDATIONS NOT SHOWN FOR CLARITY.

DECK REINFORCEMENT PLAN
1"=10'-0"

0 10 20 FT.
1"=10'

NOTE:

1. FOR MISCELLANEOUS CIP CONCRETE DECK/CURB/PARAPET/PLATFORM/UTILITY FOUNDATION REINFORCING DETAILS/SECTIONS, SEE DWGS S-227 THRU S-229.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

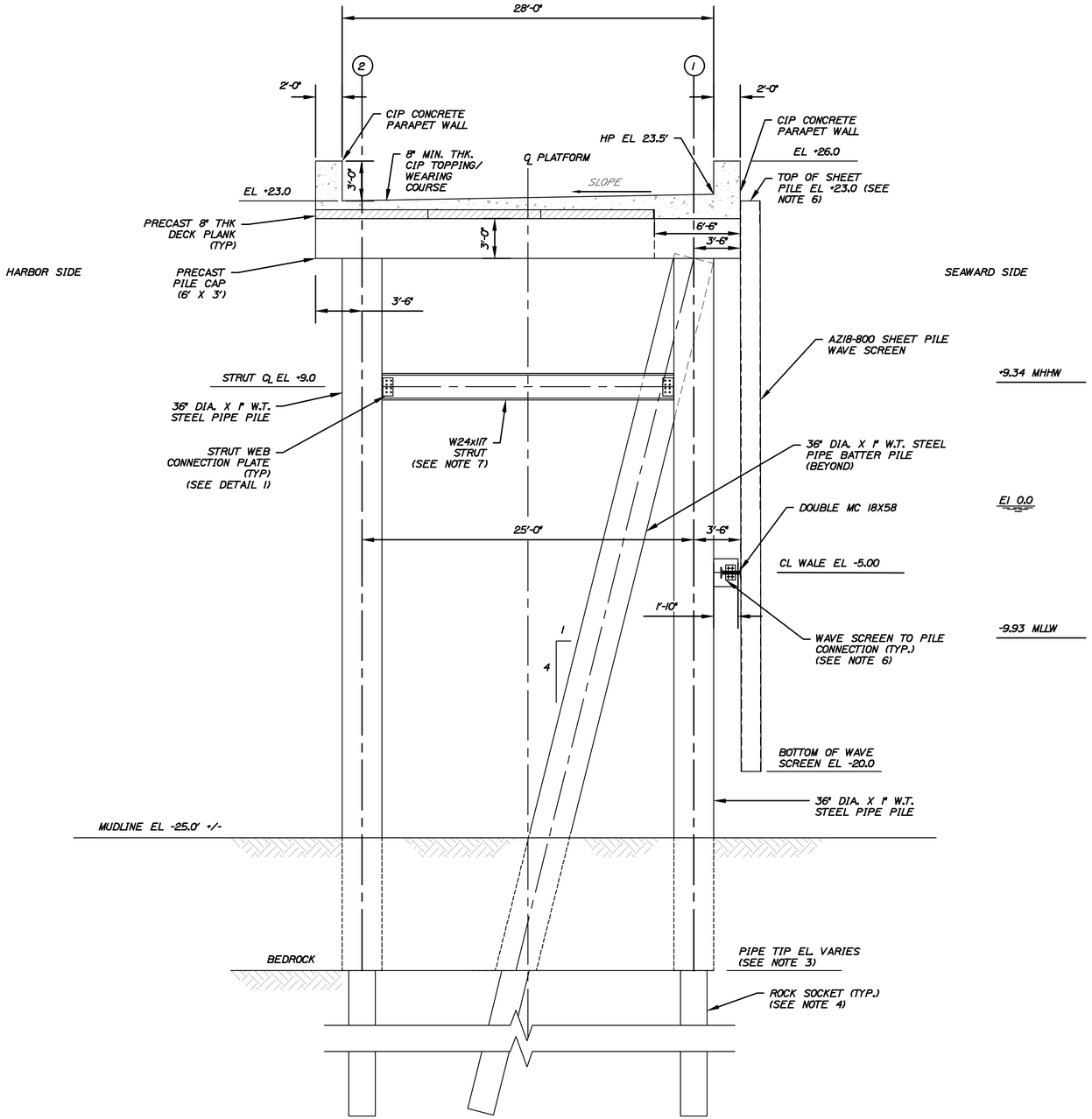
PILE SUPPORTED PLATFORM
DECK REINFORCEMENT PLAN

SHEET NUMBER

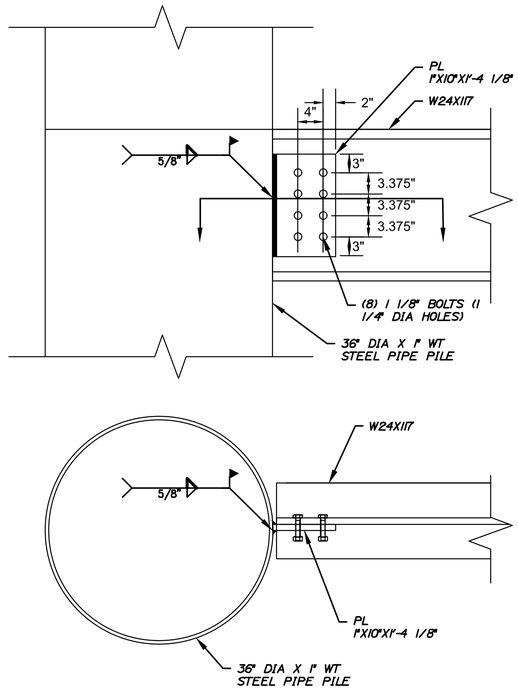
S-204

54 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\54-S-204 (Pile Supported Deck Reinforcement Plan) : Plotted: 10/21/2024 4:02 PM by MAGUIRE, CASEY ; Saved: 10/17/2024 1:56 PM by MAGUIRC



A SECTION
S-200
1" = 5'-0"



1 STRUCT CONNECTION DETAIL
1" = 1'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO DRAWING S-230 FOR THE PILE SCHEDULE.
4. REFER TO DRAWING S-220 FOR THE PILE DETAILS.
5. GUIDE PILES AND FLOATING DOCKS NOT SHOWN FOR CLARITY.
6. REFER TO DRAWING S-271 FOR WAVE SCREEN TO PILE CONNECTION DETAILS AND WAVE SCREEN TO PLATFORM DETAILS.
7. W24 STRUT SHALL BE PROVIDED AT EACH BENT.

0 10 20 FT.
1" = 10'

1"=5' 0 5 10 FT.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

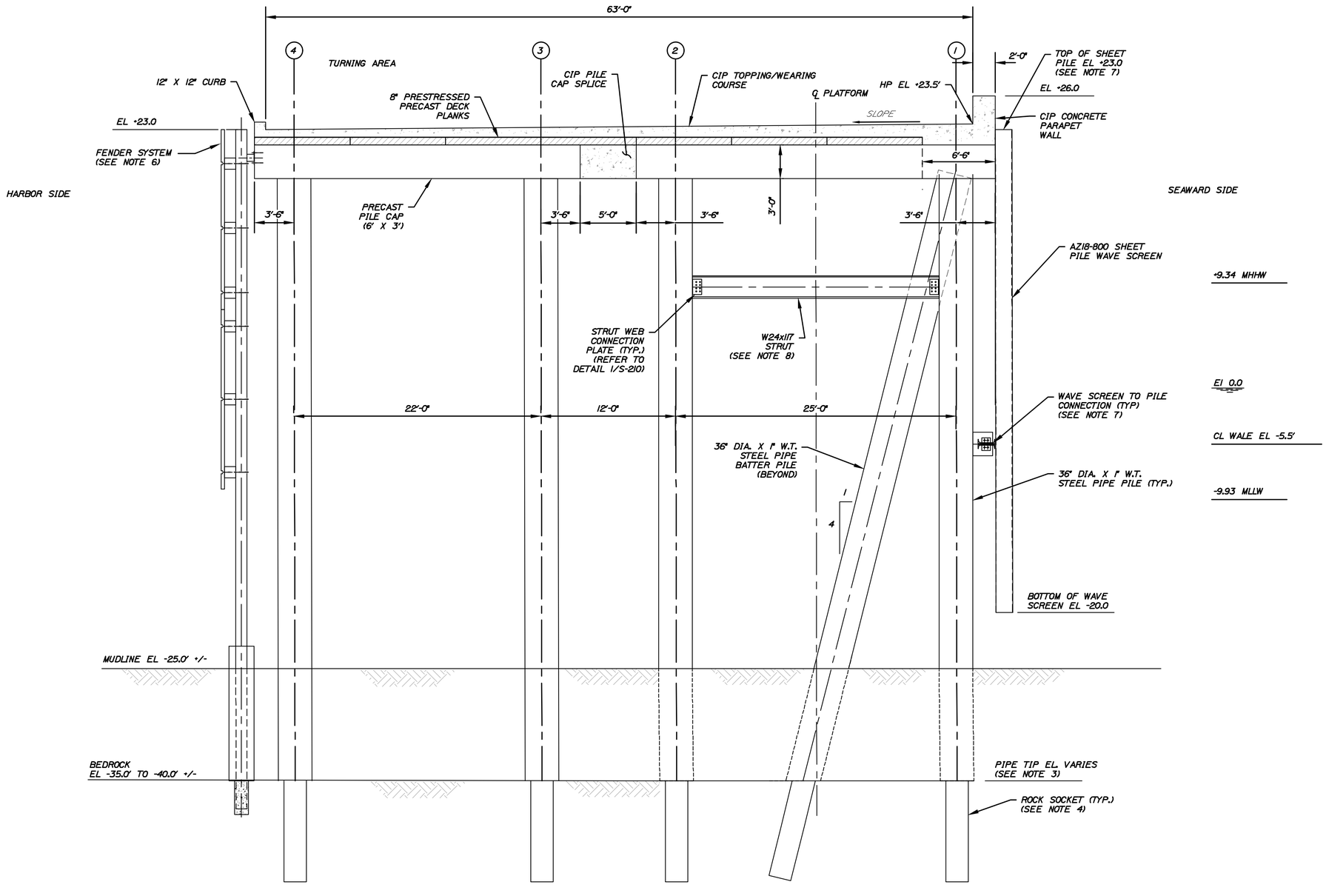
PILE SUPPORTED PLATFORM SECTION -1

SHEET NUMBER

S-210

55 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\55-S-210 (Pile Supported Platform Section - 1) - Plotted: 10/17/2024 2:03 PM by MAGUIRE, CASEY ; Saved: 8/30/2024 1:36 PM by MAGUIRC



NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. PIPE PILES SHALL BE DRIVEN OR DRILLED TO AND SEATED WITHIN BEDROCK. REFER TO DRAWING S-230 FOR THE PILE SCHEDULE.
4. REFER TO DRAWING S-220 FOR THE PILE AND ROCK SOCKET DETAILS.
5. GUIDE PILES AND FLOATING DOCKS NOT SHOWN FOR CLARITY.
6. REFER TO DRAWINGS S-340 - S-343 FOR FENDER SYSTEM DETAILS.
7. REFER TO DRAWING S-271 FOR WAVE SCREEN TO PILE CONNECTION DETAILS AND WAVE SCREEN TO PLATFORM DETAILS.
8. W24 STRUT SHALL BE PROVIDED AT EACH BENT.

B SECTION
S-200
1" = 5'-0"

1"=5' 0 5 10 FT.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

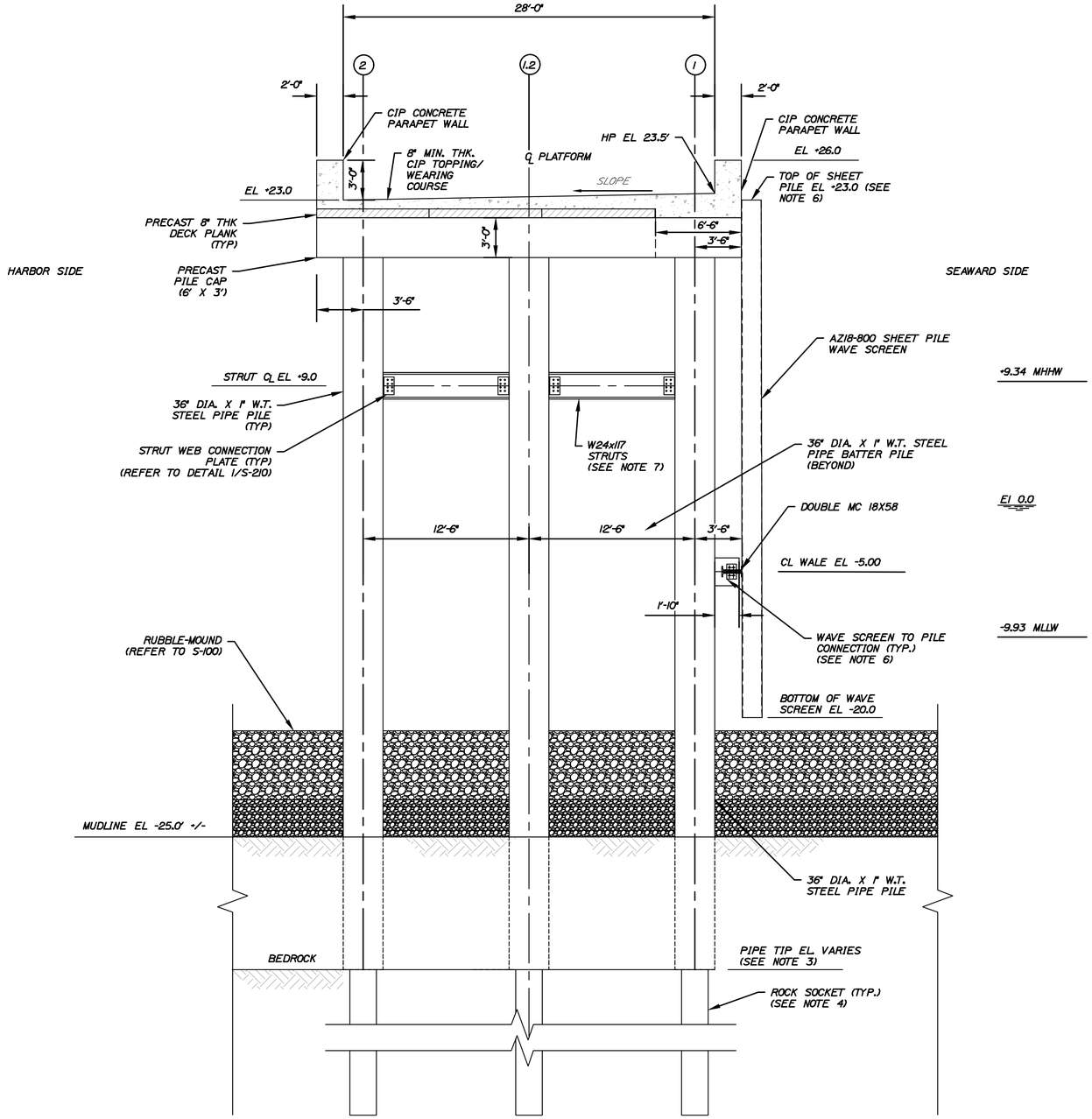
PILE SUPPORTED PLATFORM SECTION -2

SHEET NUMBER

S-211

56 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings_100% Submission\56-S-211 (Pile Supported Platform Section - 2) ; Plotted: 10/17/2024 2:02 PM by MAGUIRE, CASEY ; Saved: 8/30/2024 1:47 PM by MAGUIRC



NOTE: STEEL PIPE PILE PROTECTIVE CASINGS NOT SHOWN.

C SECTION
1" = 5'-0"
S-200

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO DRAWING S-230 FOR THE PILE SCHEDULE.
4. REFER TO DRAWING S-220 FOR THE PILE DETAILS.
5. GUIDE PILES AND FLOATING DOCKS NOT SHOWN FOR CLARITY.
6. REFER TO DRAWING S-271 FOR WAVE SCREEN TO PILE CONNECTION DETAILS AND WAVE SCREEN TO PLATFORM DETAILS.
7. TWO W24 STRUTS SHALL BE PROVIDED AT EACH BENT BETWEEN BENTS C THRU E.

0 10 20 FT.
1"=10'

1"=5' 0 5 10 FT.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

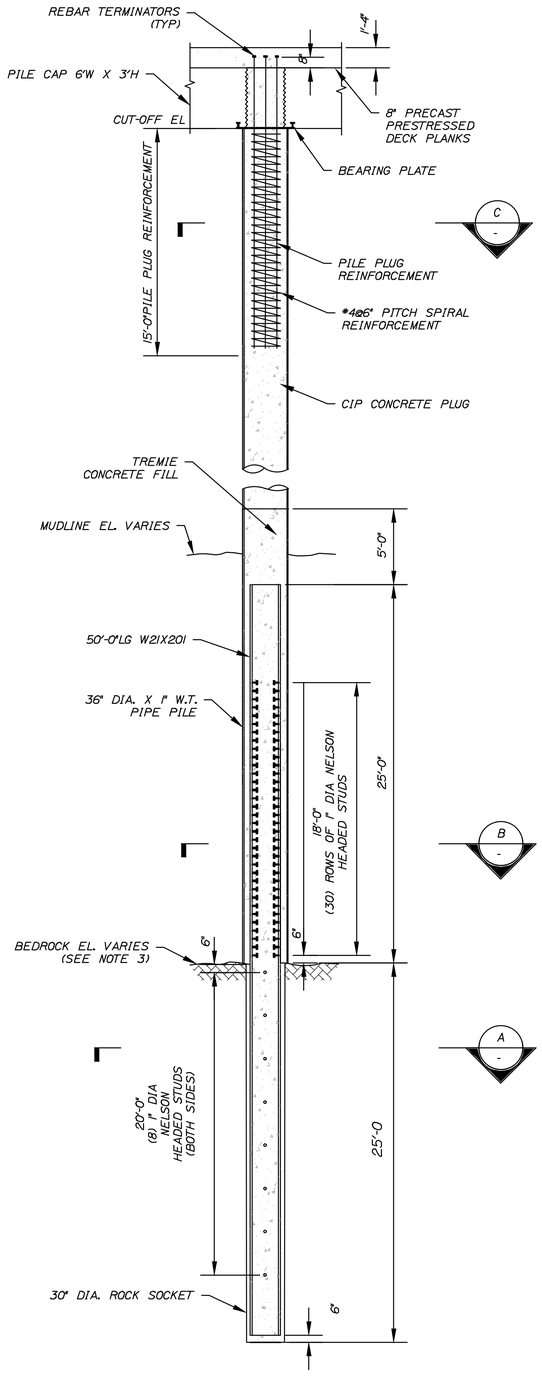
PILE SUPPORTED PLATFORM SECTION -3

SHEET NUMBER

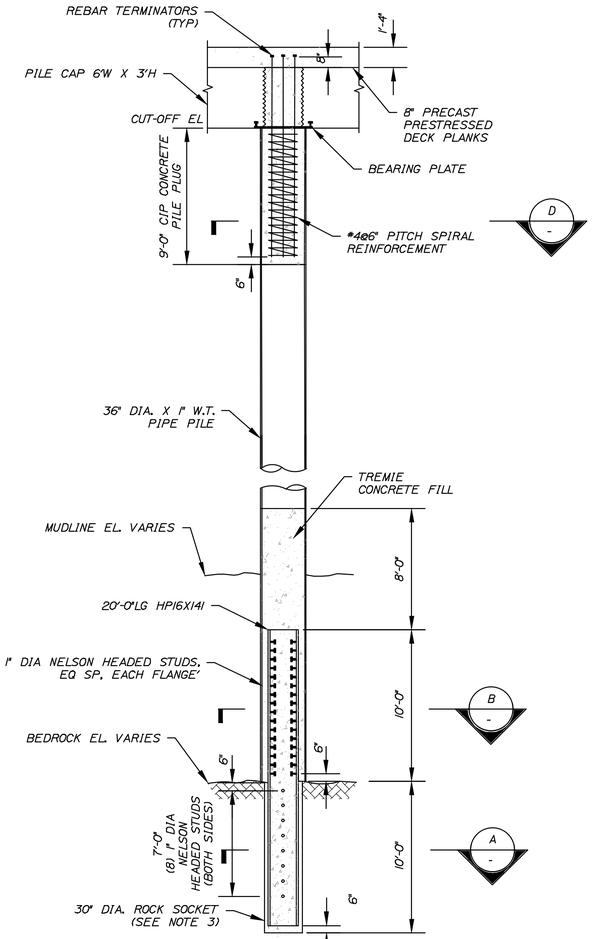
S-212

57 OF 99

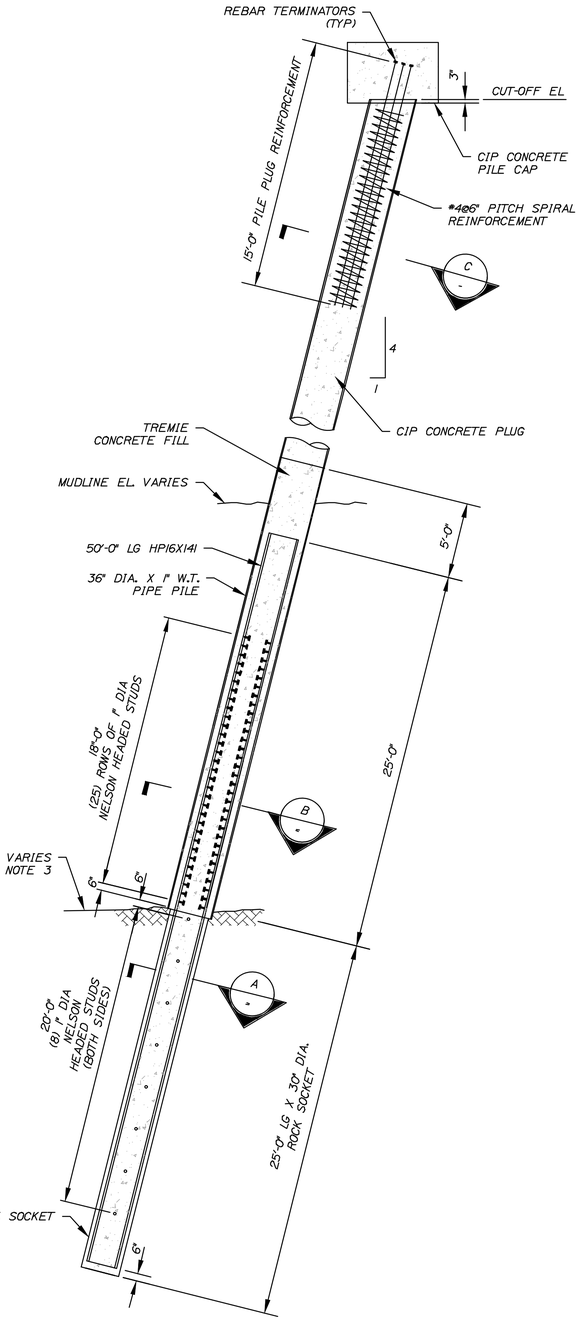
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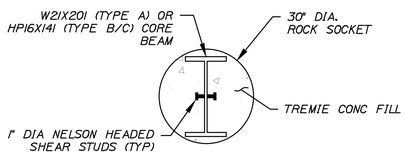
PILE-SUPPORTED PLATFORM PILE TYPE A DETAIL
N.T.S.



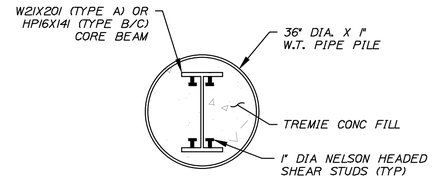
PILE-SUPPORTED PLATFORM PILE TYPE B DETAIL
N.T.S.



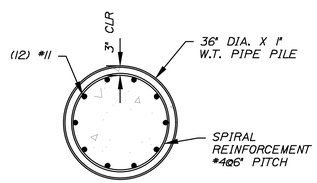
PILE-SUPPORTED PLATFORM PILE TYPE C DETAIL
N.T.S.



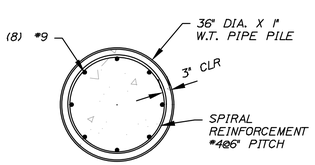
A SECTION
1" = 2'-0"



B SECTION
1" = 2'-0"



C SECTION
1" = 2'-0"



D SECTION
1" = 2'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. ROCK SOCKET SHALL BE CONSTRUCTED WITHIN COMPETENT BEDROCK.

0 2 4 FT.
1"=2'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

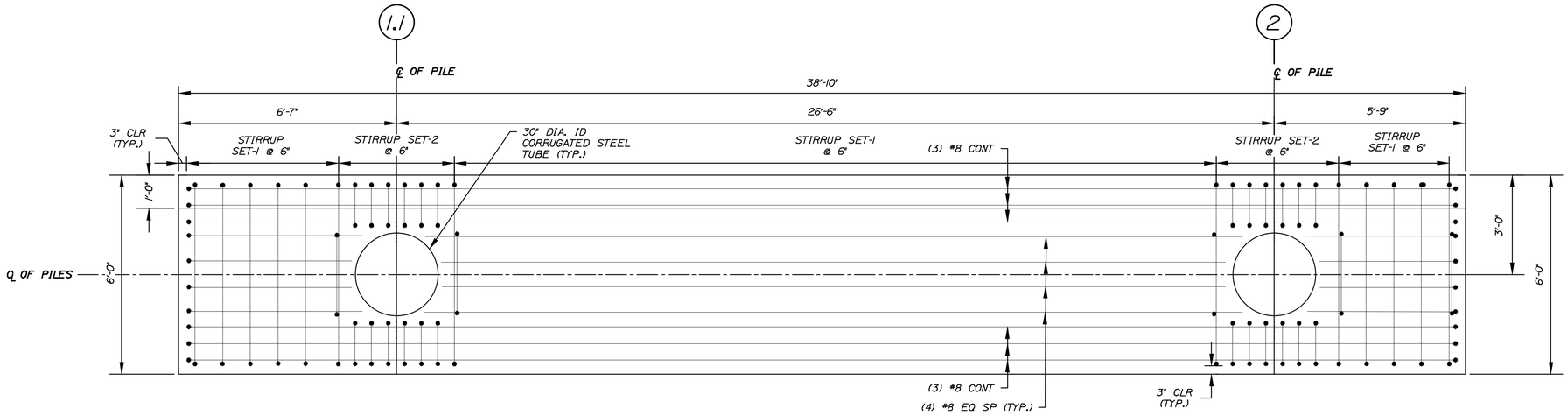
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

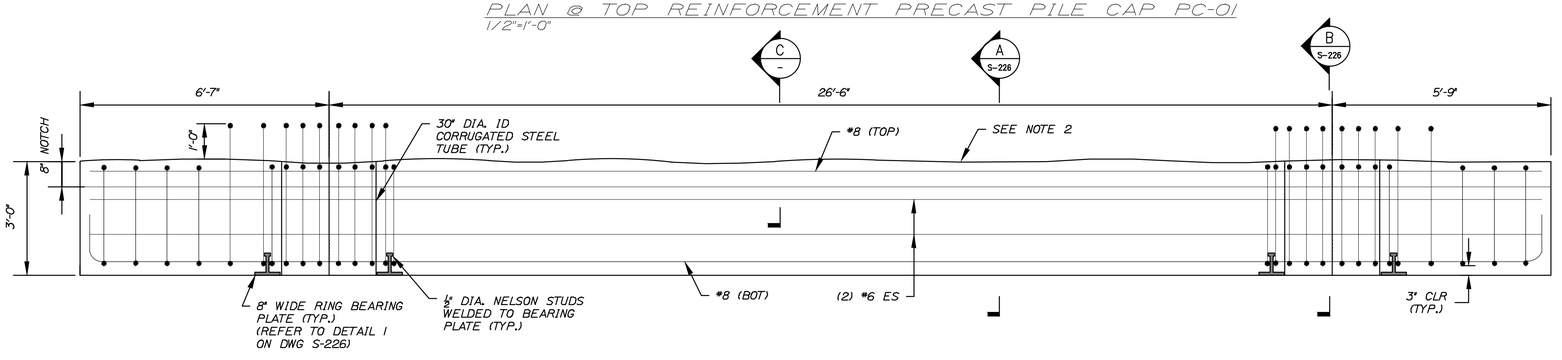
PILE-SUPPORTED PLATFORM PILE DETAILS

SHEET NUMBER
S-220
58 OF 99

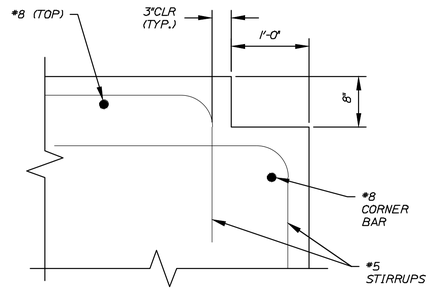
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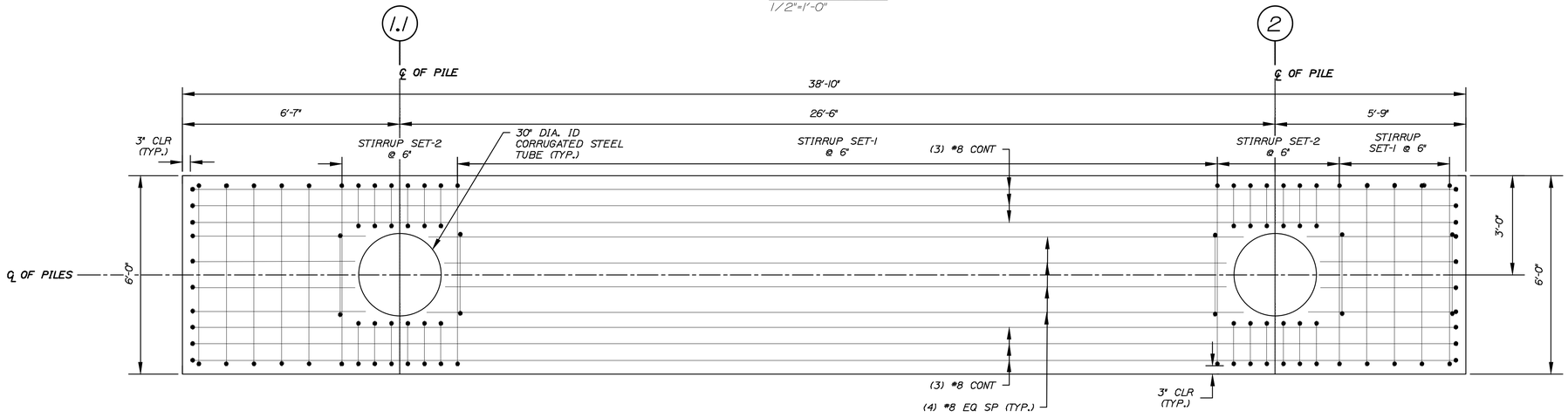
PLAN @ TOP REINFORCEMENT PRECAST PILE CAP PC-01
1/2"=1'-0"



ELEVATION
1/2"=1'-0"



C SECTION
1" = 1'-0"



NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

PLAN @ BOTTOM REINFORCEMENT PRECAST PILE CAP PC-01
1/2"=1'-0"

0 1 2 FT.
1"=1'-0"

0 1 4 FT.
1/2"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

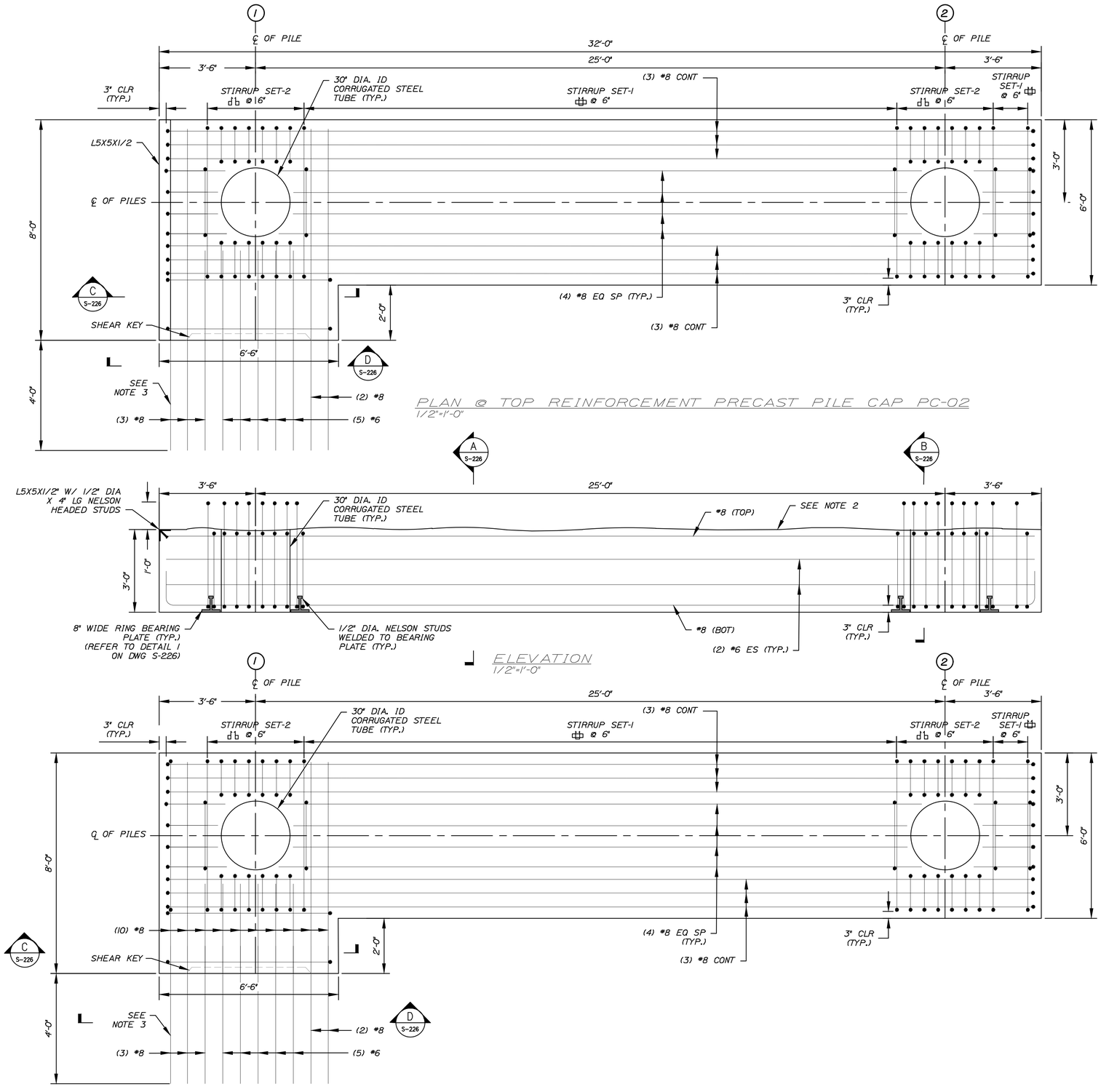
PILE SUPPORTED PLATFORM
PRECAST PILE CAP PC-01 DETAILS

SHEET NUMBER

S-221

59 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\S9-S-221 (Pile Supported Platform Precast Pile Cap PC-01 Details).dwg Plotted: 10/17/2024 1:59 PM by MAGUIRE, CASEY Saved: 8/29/2024 5:18 PM by MAGUIRC



NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM
PRECAST PILE CAP PC-02 DETAILS

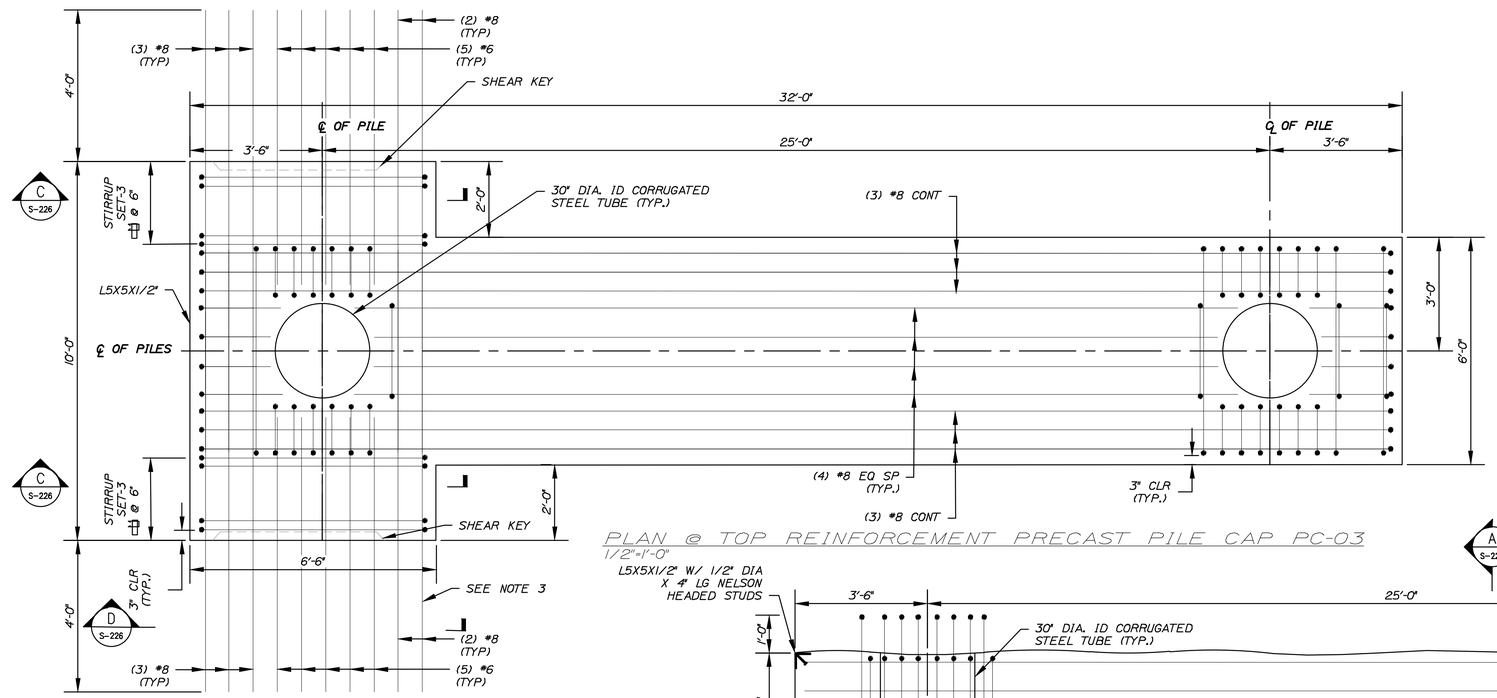
SHEET NUMBER

S-222

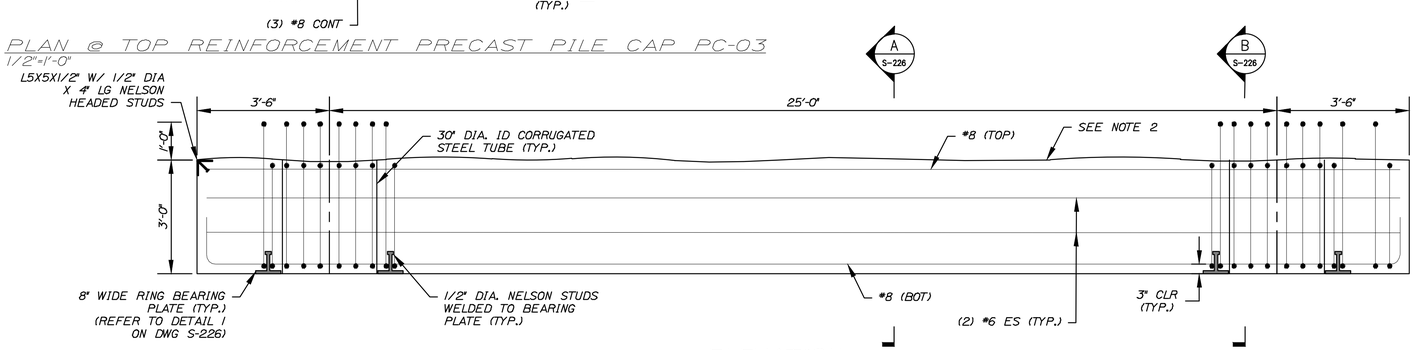
60 OF 99

Jacobs

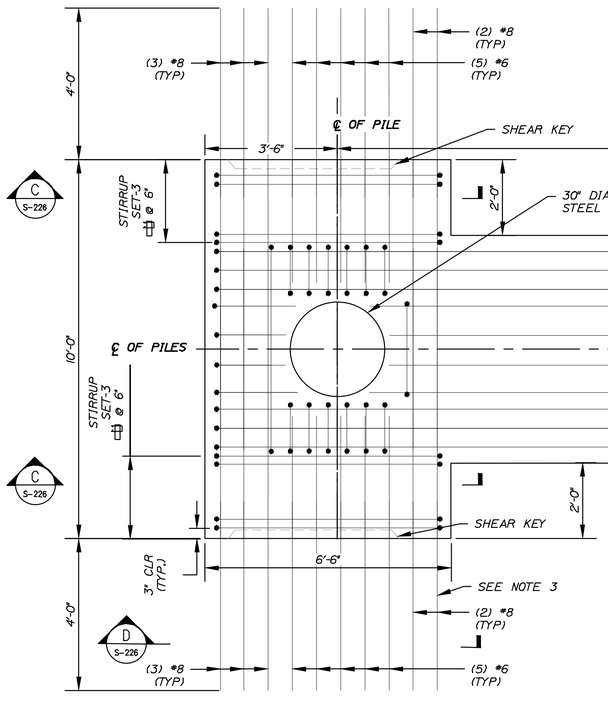
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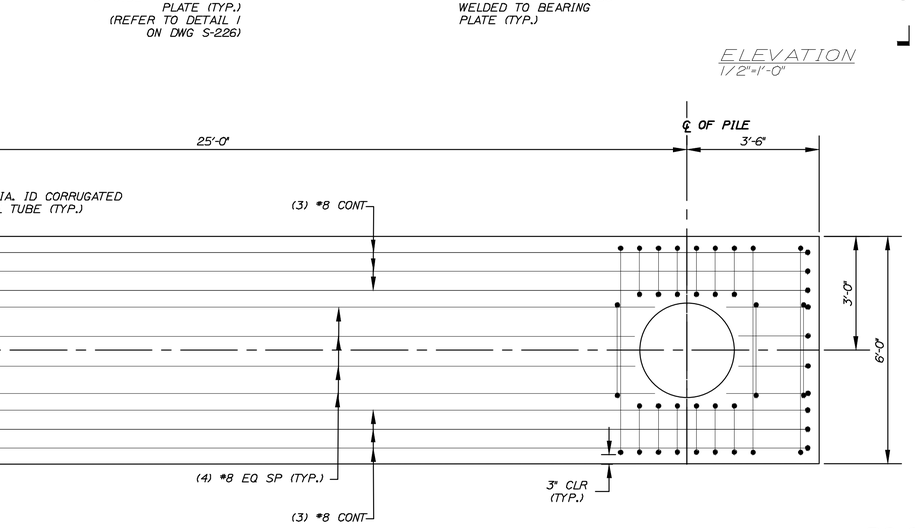


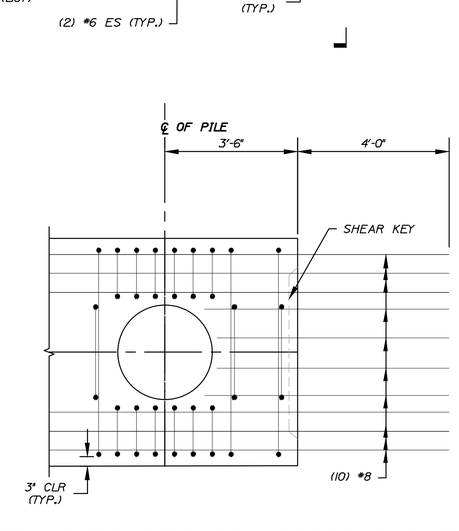
PLAN @ TOP REINFORCEMENT PRECAST PILE CAP PC-03
1/2"=1'-0"



ELEVATION
1/2"=1'-0"







PC-03A EXTENDED REINFORCEMENT DETAIL
1/2"=1'-0"

PLAN @ BOTTOM REINFORCEMENT PRECAST PILE CAP PC-03
1/2"=1'-0"

0 1 4 FT.
1/2"=1'-0"

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

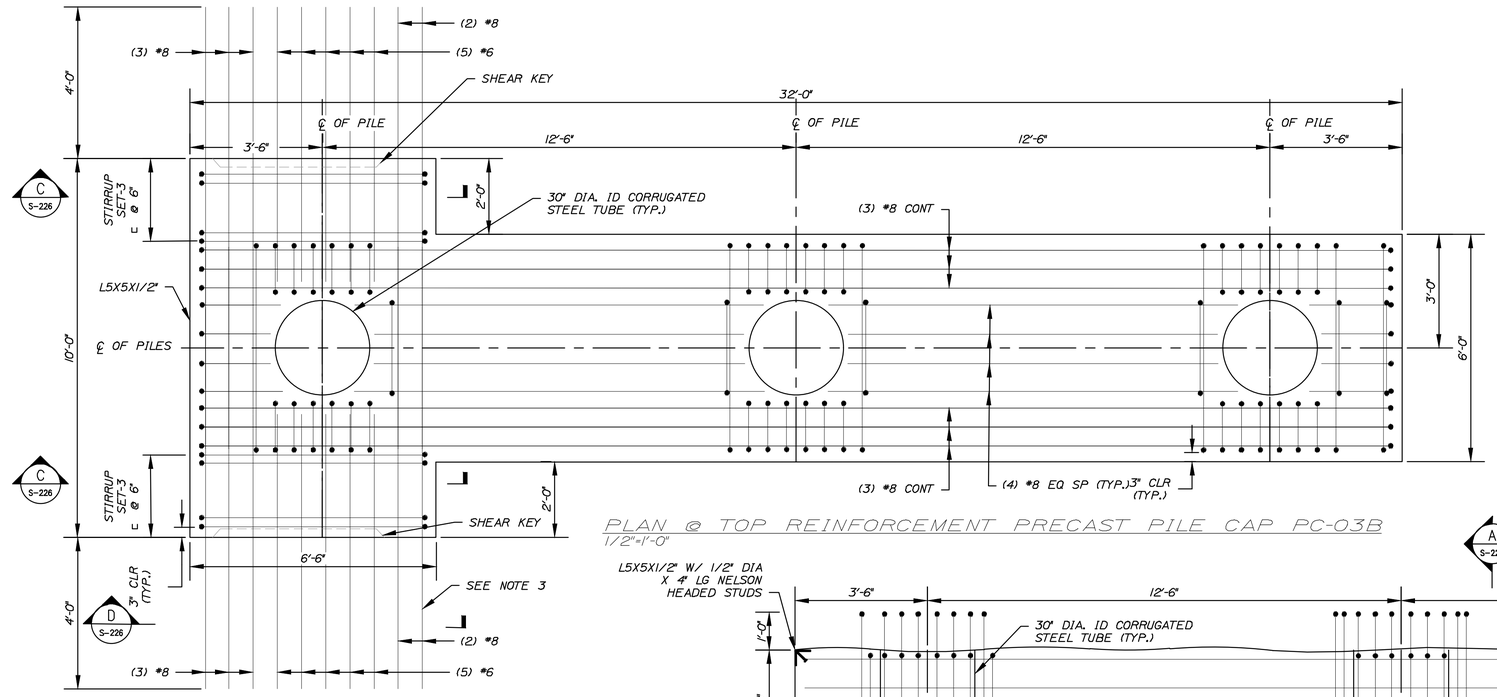
PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

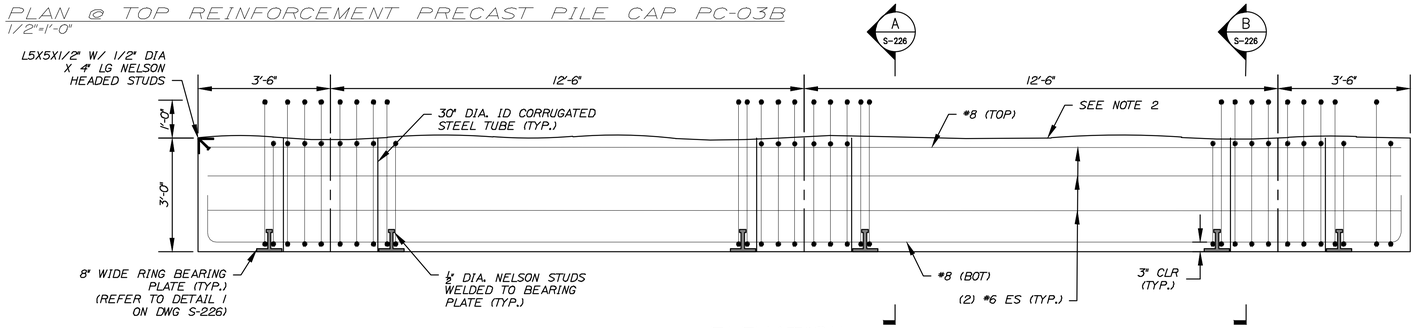
PILE SUPPORTED PLATFORM
PRECAST PILE CAP PC-03/03A DETAILS

SHEET NUMBER
S-223
61 OF 99

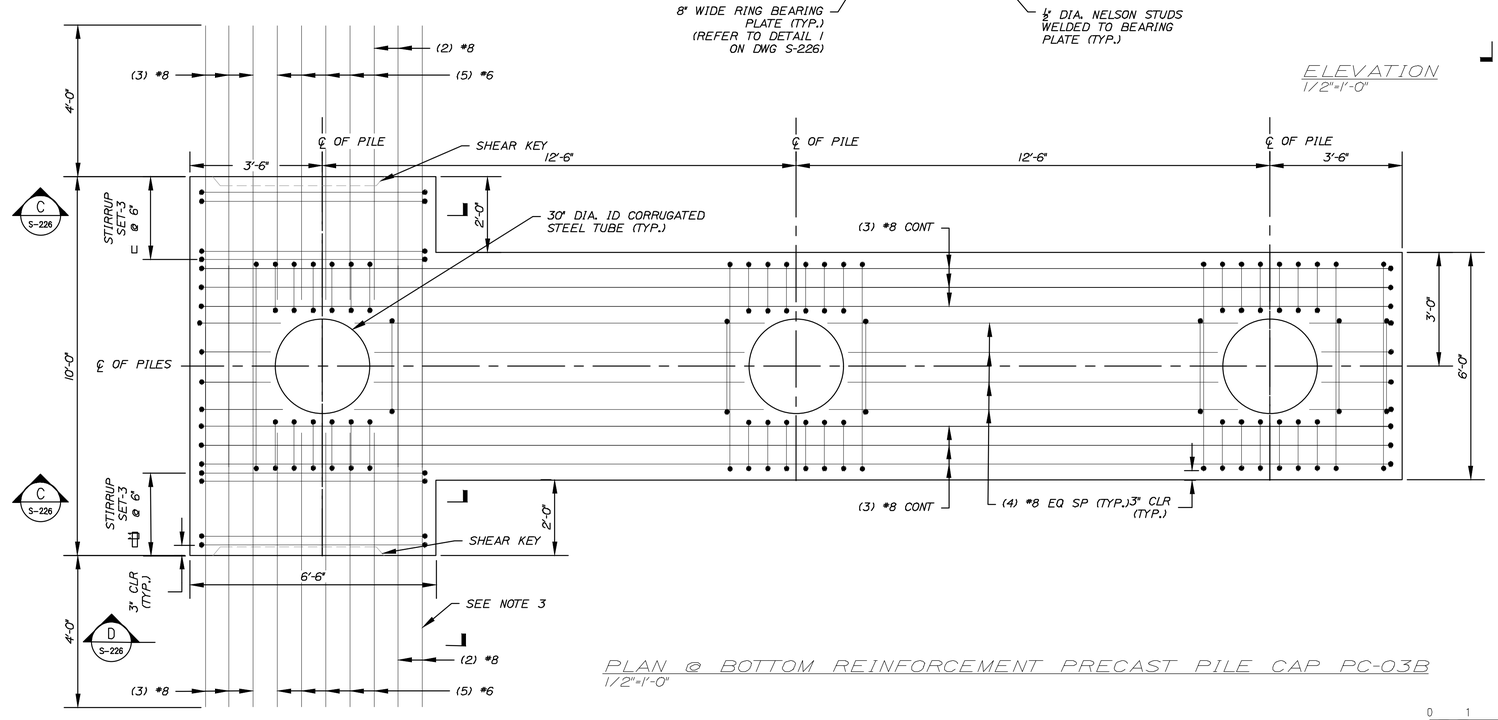
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PLAN @ TOP REINFORCEMENT PRECAST PILE CAP PC-03B
1/2"=1'-0"



ELEVATION
1/2"=1'-0"



PLAN @ BOTTOM REINFORCEMENT PRECAST PILE CAP PC-03B
1/2"=1'-0"

0 1 4 FT.
1/2"=1'-0"

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	NHPP	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

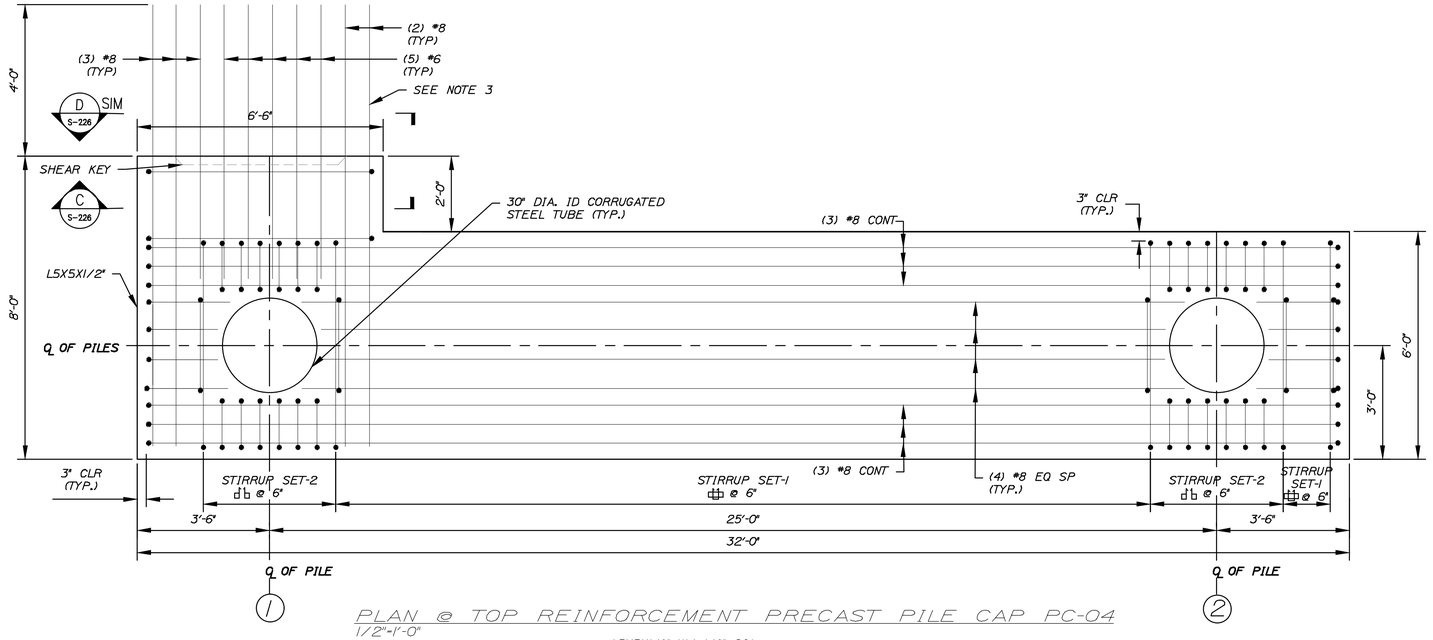
PILE SUPPORTED PLATFORM
PRECAST PILE CAP PC-03B DETAILS

SHEET NUMBER

S-223A

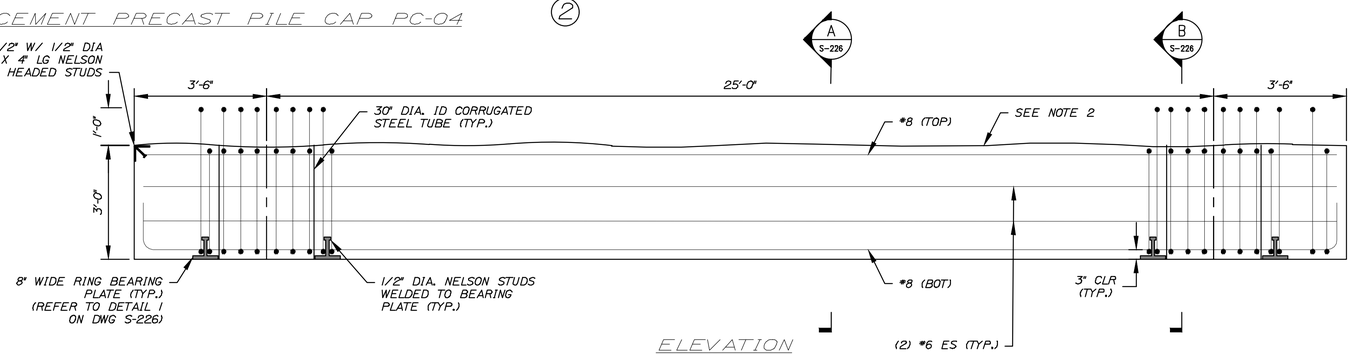
62 OF 99

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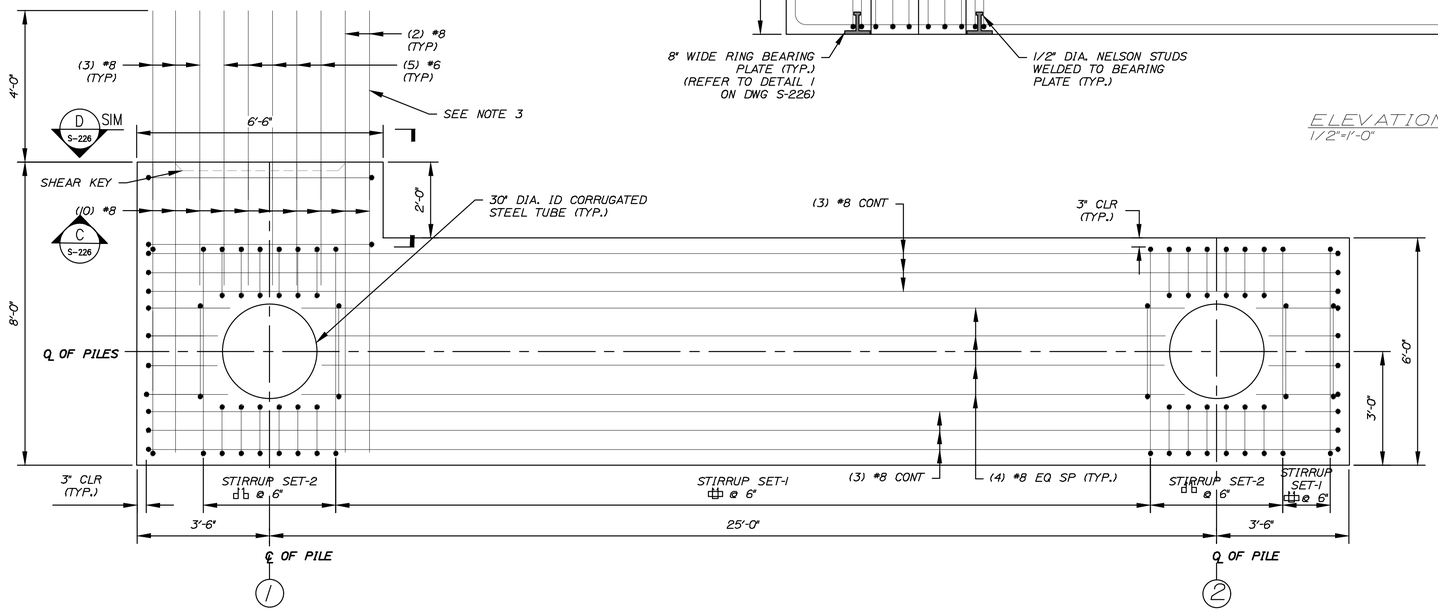
PLAN @ TOP REINFORCEMENT PRECAST PILE CAP PC-04

1/2"=1'-0"



ELEVATION

1/2"=1'-0"



PLAN @ BOTTOM REINFORCEMENT PRECAST PILE CAP PC-04

1/2"=1'-0"

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

0 1 4 FT.

1/2"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

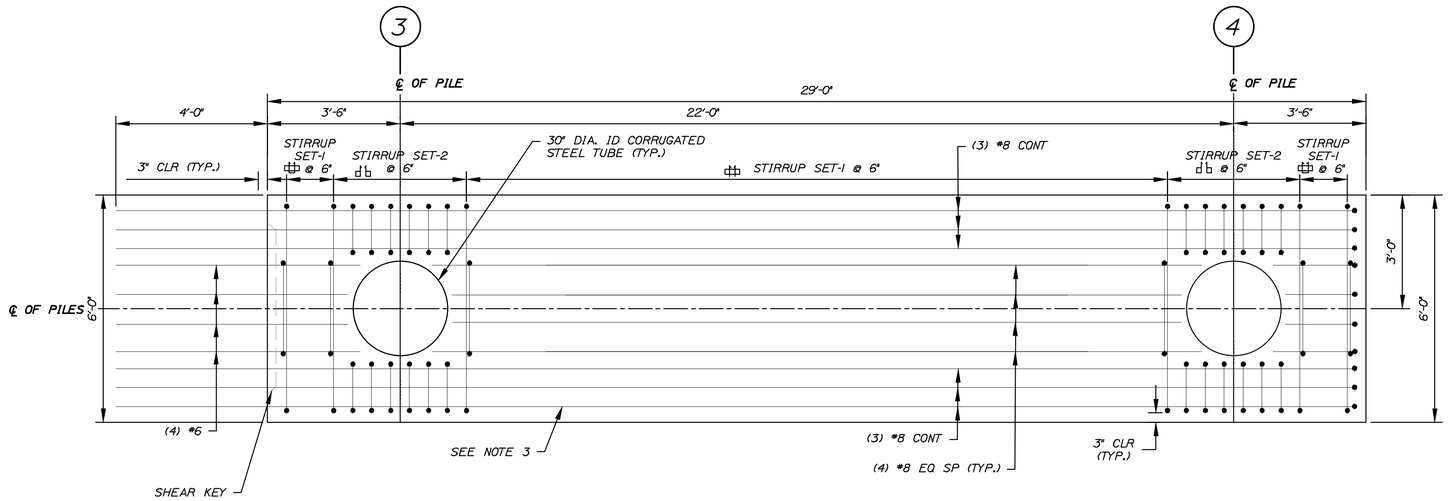
PILE SUPPORTED PLATFORM
PRECAST PILE CAP PC-04 DETAILS

SHEET NUMBER

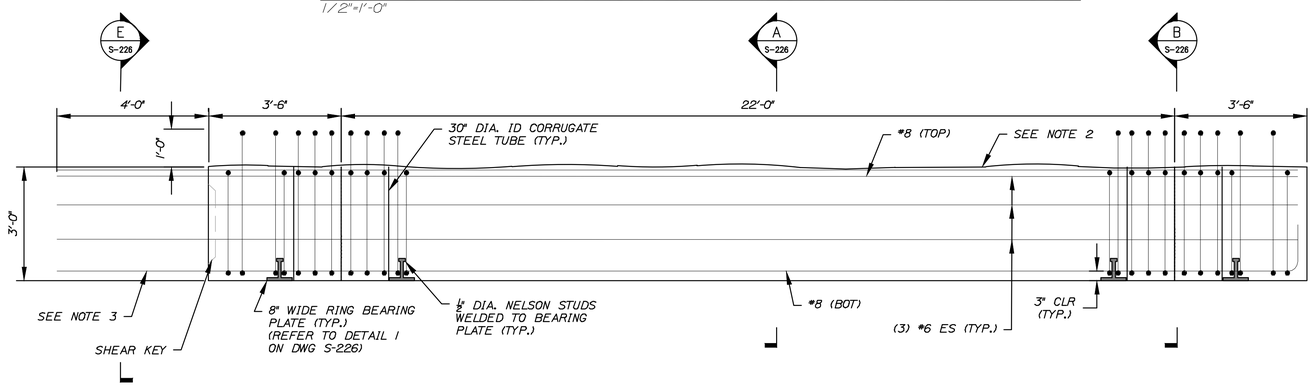
S-224

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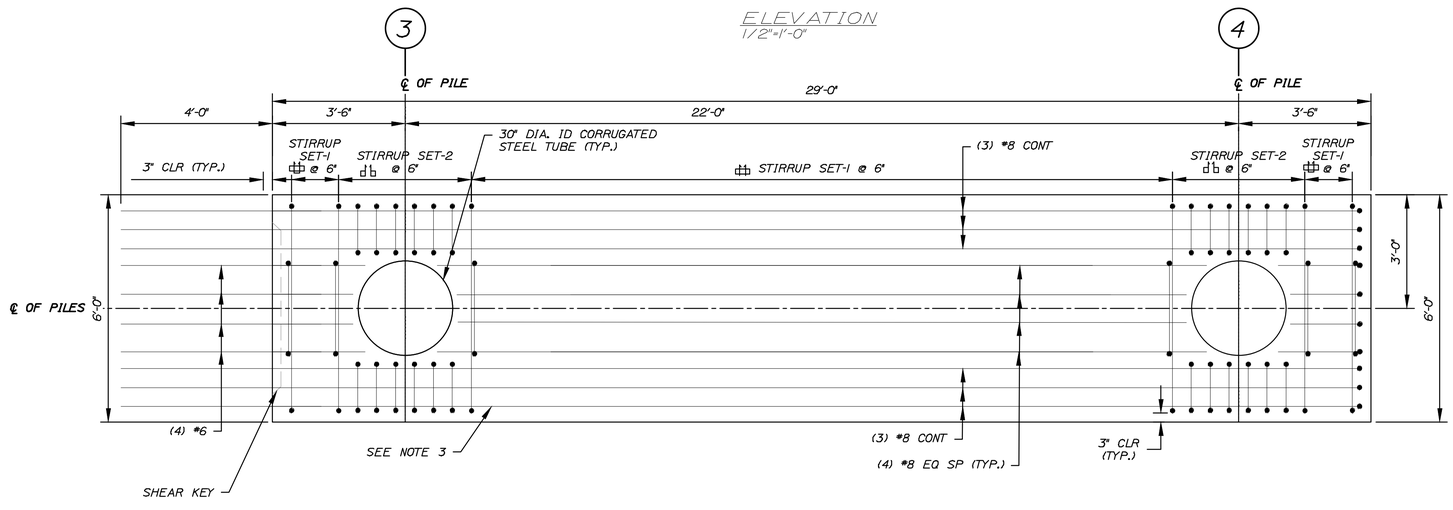
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PLAN @ TOP REINFORCEMENT PRECAST PILE CAP PC-05
1/2"=1'-0"



ELEVATION
1/2"=1'-0"



PLAN @ BOTTOM REINFORCEMENT PRECAST PILE CAP PC-05
1/2"=1'-0"

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

0 1 4 FT.
1/2"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

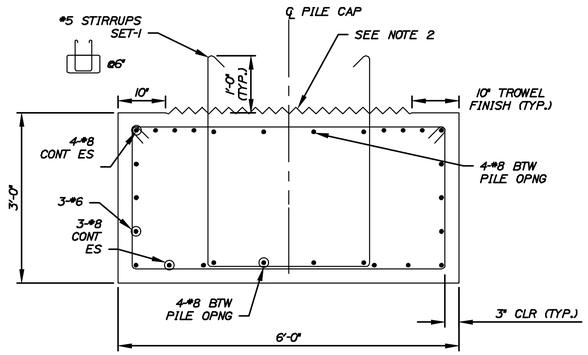
PILE SUPPORTED PLATFORM
PRECAST PILE CAP PC-05 DETAILS

SHEET NUMBER

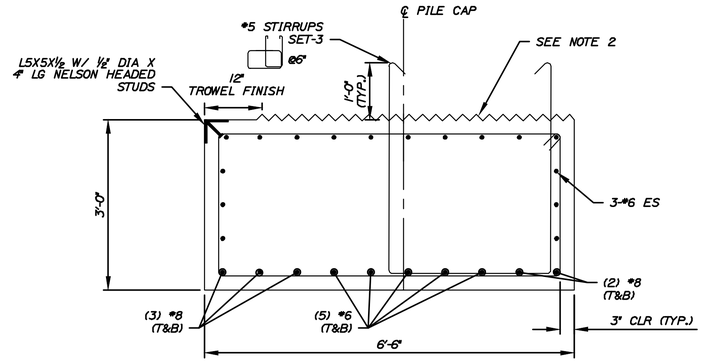
S-225

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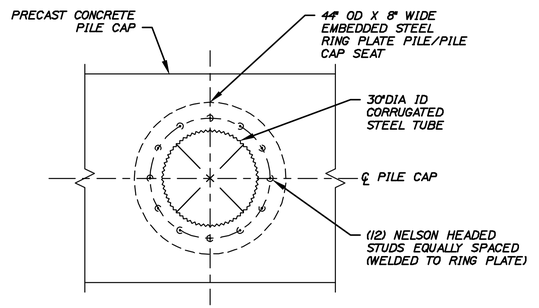
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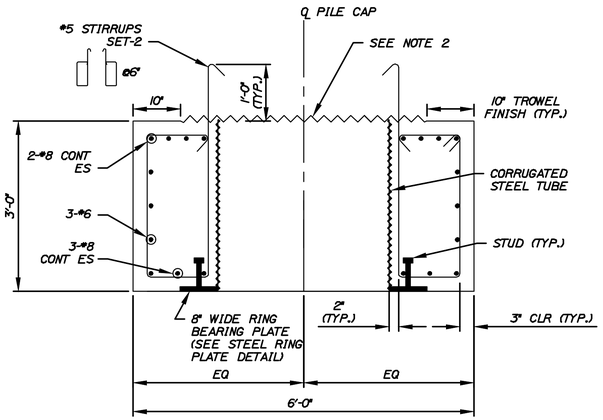
A SECTION
3/4"=1'-0"
S-221
S-222
S-223
S-223A
S-224
S-225



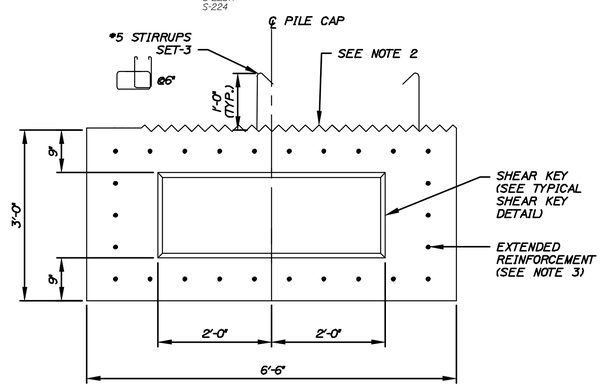
C SECTION
3/4"=1'-0"
S-222
S-223
S-223A
S-224



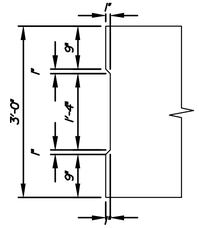
1 STEEL RING PLATE DETAIL
1/2"=1'-0"



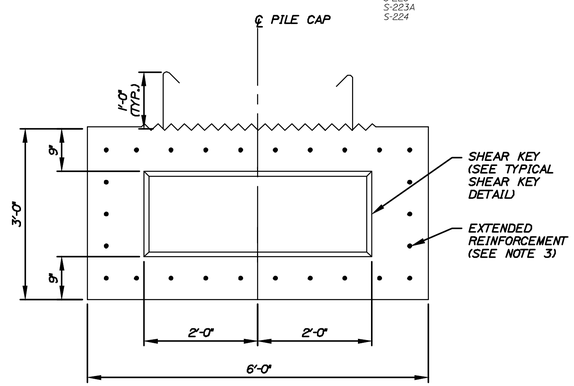
B SECTION
3/4"=1'-0"
S-221
S-222
S-223
S-223A
S-224
S-225



D SECTION
3/4"=1'-0"
S-222
S-223
S-223A
S-224



2 TYPICAL SHEAR KEY DETAIL
3/4"=1'-0"



E SECTION
3/4"=1'-0"
S-225

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. ROUGHEN TOP SURFACE OF PRECAST PILE CAP TO ¼" MIN. AMPLITUDE.
3. PRECASTER SHALL STAGGER DOWEL BARS IN TWO ADJACENT PILE CAPS THAT ARE CONNECTED WITH A CIP SPLICE TO ENSURE PROPER INSTALLATION OF PILE CAPS.

PRECAST CONCRETE PILE CAP SCHEDULE				
MARK	WIDTH	HEIGHT	LENGTH	QTY
PC-01	6'-0"	3'-0"	38'-10"	1
PC-02	6'-0"	3'-0"	32'-0"	1
PC-03	6'-0"	3'-0"	32'-0"	~~15~~ 12
PC-03A	6'-0"	3'-0"	32'-0"	3
PC-03B	6'-0"	3'-0"	32'-0"	3
PC-04	6'-0"	3'-0"	32'-0"	1
PC-05	6'-0"	3'-0"	29'-0"	3

0 1 4 FT.
1/2"=1'-0"

0 1 2 3 FT.
3/4"=1'-0"

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

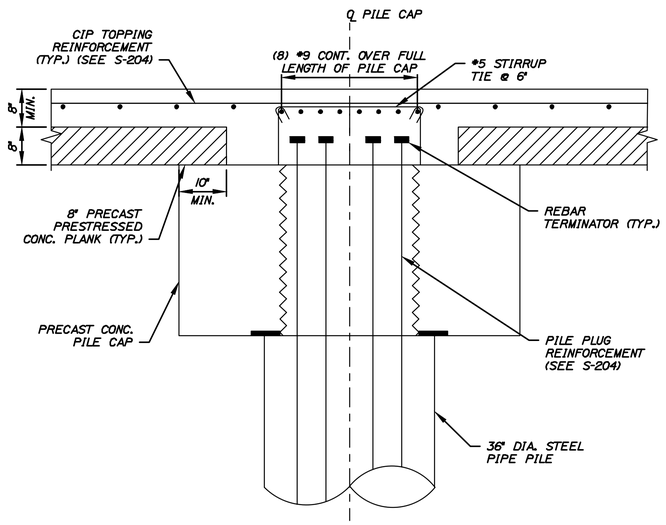
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM
PRECAST PILE CAP SECTIONS

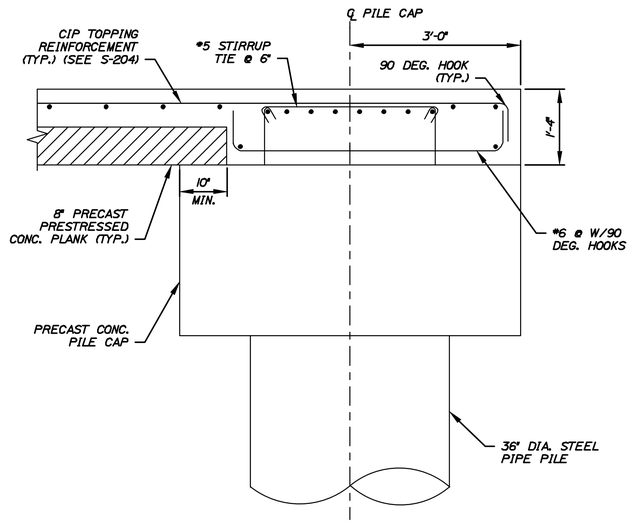
SHEET NUMBER
S-226
65 OF 99

File: C:\Users\MAGUIRCO\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\65-S-226 (Pile Supported Platform Reinforcing Sections and Details - 1).; Plotted: 10/17/2024 2:08 PM by MAGUIRE, CASEY.; Saved: 8/28/2024 6:37 PM by HS037462



TYPICAL PILE CAP CLOSURE POUR AT PILE

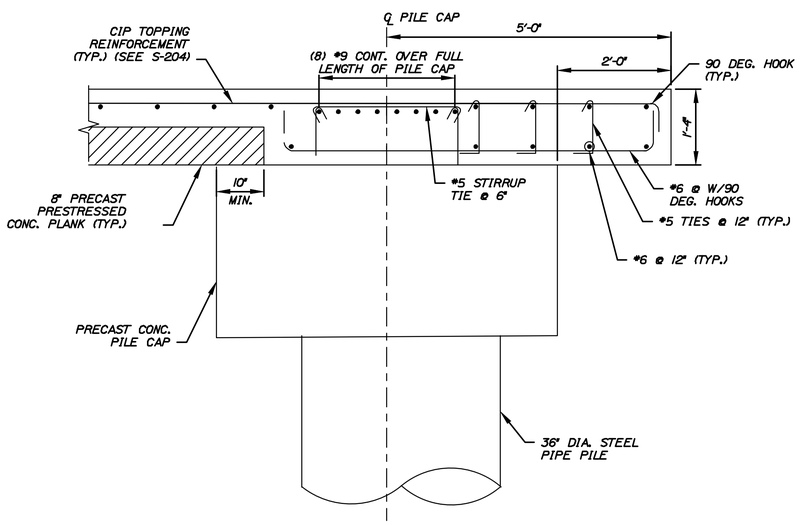
3/4"=1'-0"



TYPICAL DECK REINFORCING AT PILE CAP ROW BENT T

3/4"=1'-0"

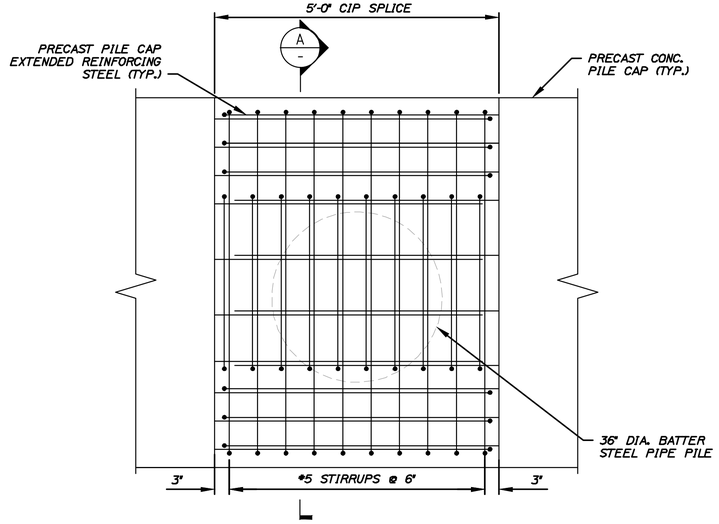
NOTE: CONCRETE PARAPET WALL/CURB NOT SHOWN FOR CLARITY.



TYPICAL DECK REINFORCING AT PILE CAP ROW BENT N & P AT PLATFORM DECK

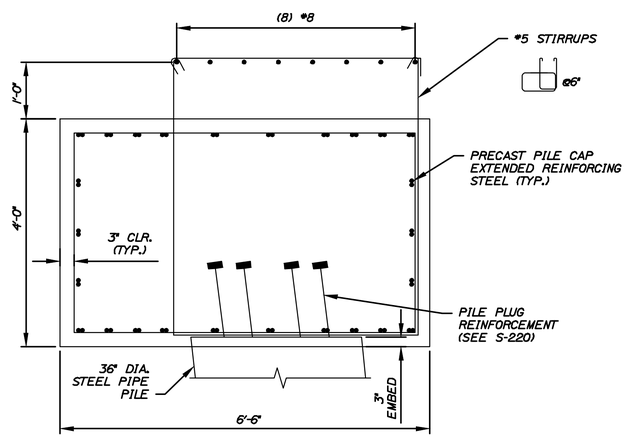
3/4"=1'-0"

NOTE: CONCRETE PARAPET WALL/CURB NOT SHOWN FOR CLARITY.



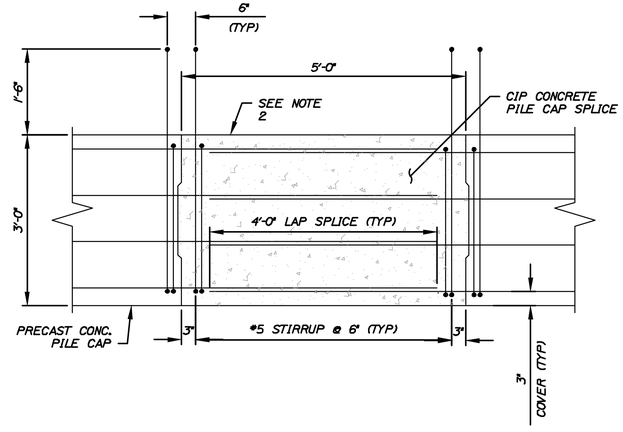
PLAN - CIP PILE CAP SPLICE - TYPE 1

3/4"=1'-0"



A SECTION

3/4"=1'-0"



CIP PILE CAP SPLICE - TYPE 2

3/4"=1'-0"

NOTES:

1. REFER TO S-220 FOR PILE PLUG REINFORCEMENT.
2. ROUGHEN TOP SURFACE TO 1/4" AMPLITUDE EXCEPT 10" PLANK BEARING SURFACE ON BOTH ENDS.
3. REFER TO DWGS S-221 THROUGH S-226 FOR PRECAST PILE CAP DETAILS.
4. REFER TO DWGS S-240 AND S-241 FOR PRECAST PRESTRESSED PLANK DETAILS.

0 1 2 3 FT.

3/4"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE — P.E. NUMBER — DATE

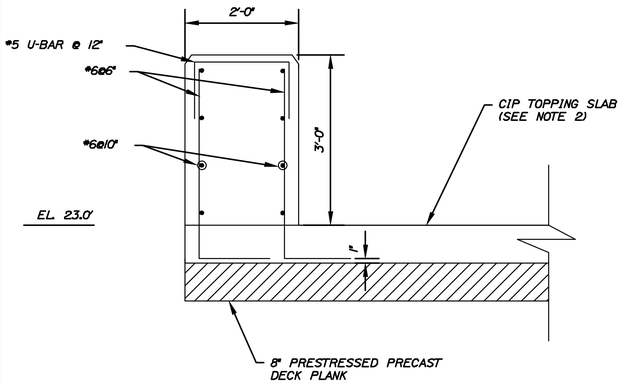
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

PILE SUPPORTED PLATFORM REINFORCING SECTIONS AND DETAILS - 1

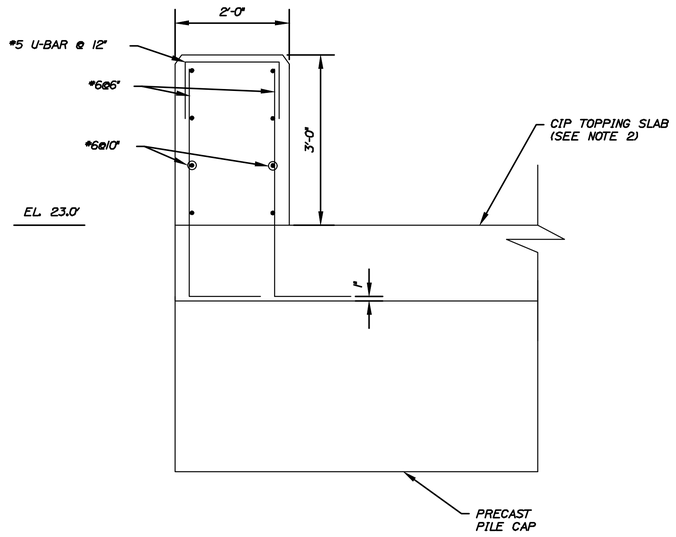
SHEET NUMBER

S-227

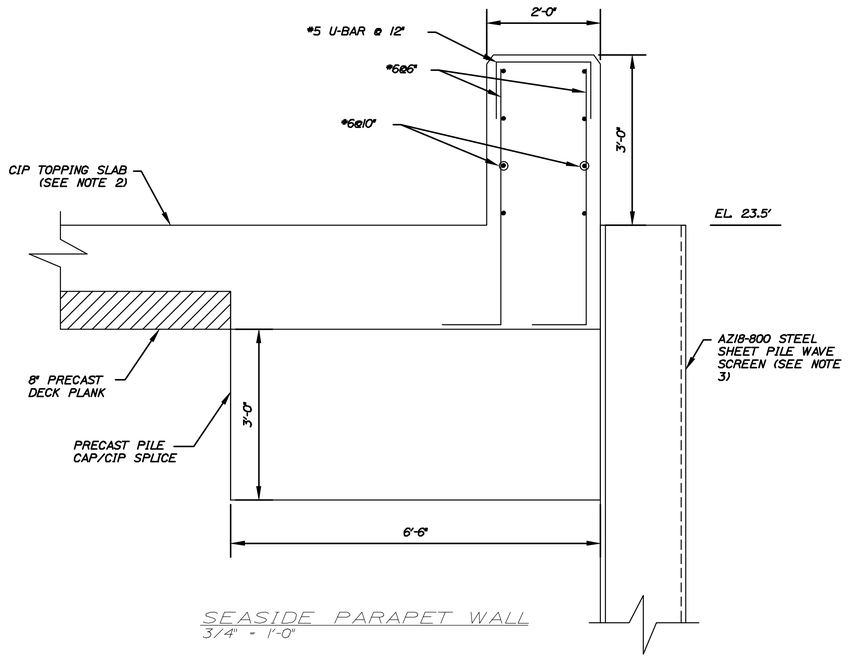
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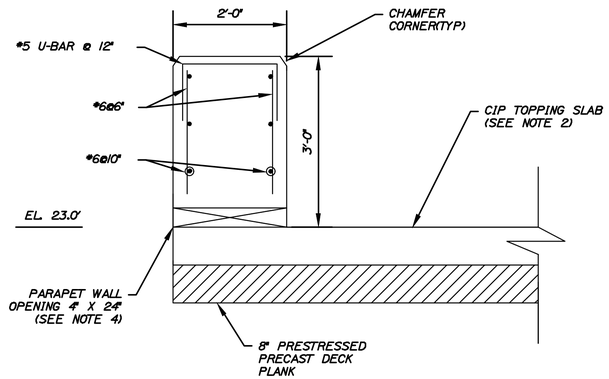
HARBORSIDE PARAPET WALL
@ PRECAST DECK PLANK
3/4" = 1'-0"



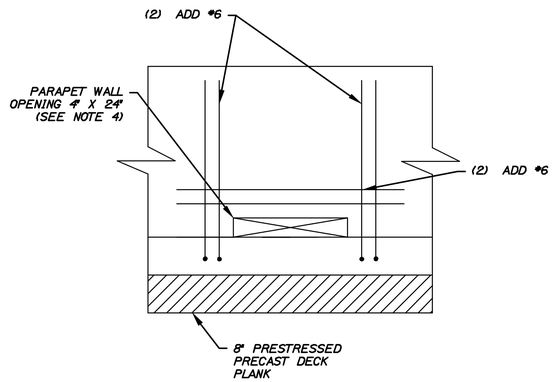
HARBOR SIDE PARAPET WALL
@ PRECAST PILE CAP
3/4" = 1'-0"



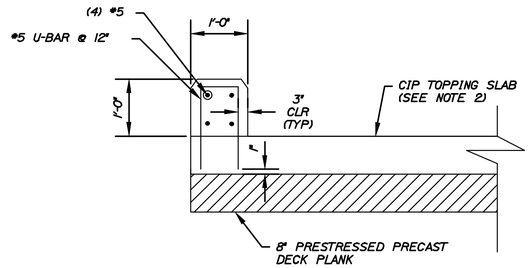
SEASIDE PARAPET WALL
3/4" = 1'-0"



HARBOR SIDE DRAINAGE OPENING DETAIL
3/4" = 1'-0"



HARBOR SIDE DRAINAGE
OPENING ELEVATION DETAIL
3/4" = 1'-0"



PILE SUPPORTED PLATFORM
CURB REINFORCING - SECTION
3/4" = 1'-0"

NOTES:

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. SEE DWG S-204 FOR CIP TOPPING REINFORCEMENT.
3. REFER TO DWG S-271 FOR PLATFORM TO WAVE SCREEN CONNECTION DETAILS.
4. SEE DWG S-001 FOR THE LOCATIONS OF THE PARAPET WALL OPENINGS.

0 1 2 3 FT.
3/4"=1'-0"

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

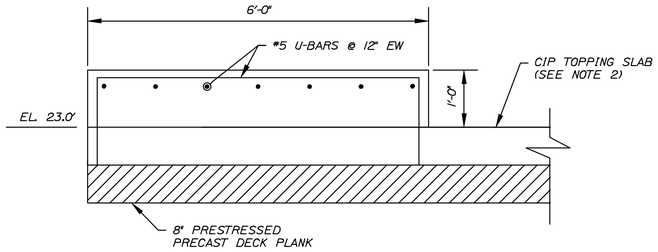
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

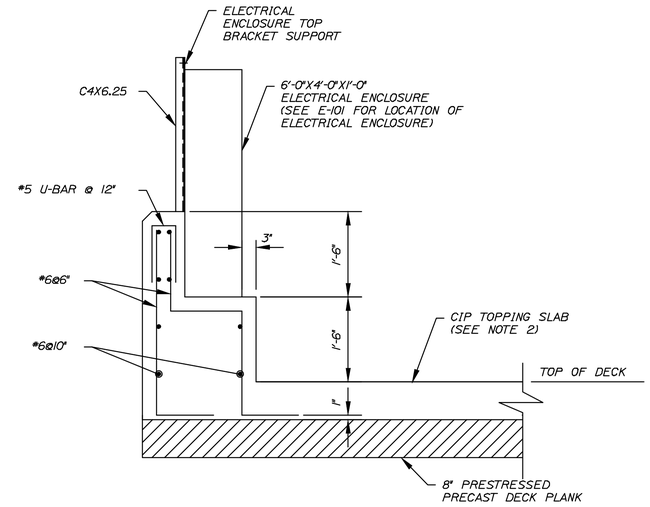
PILE SUPPORTED PLATFORM REINFORCING SECTIONS AND DETAILS - 2

SHEET NUMBER
S-228
67 OF 99

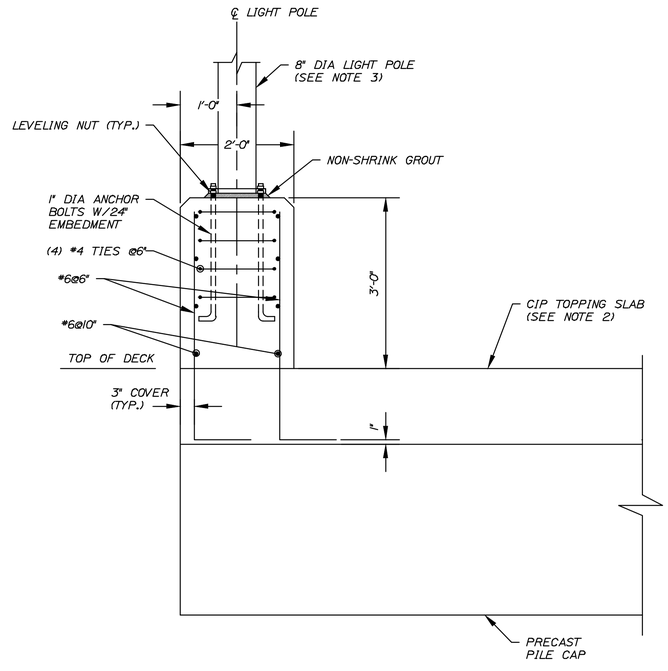
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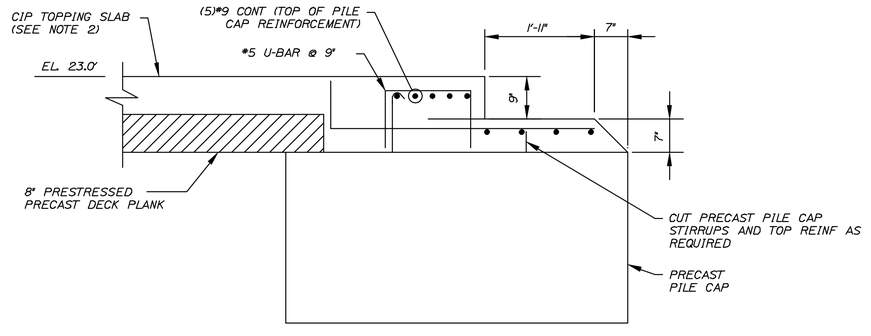
PILE SUPPORTED PLATFORM HOIST PLATFORM REINFORCING - SECTION
3/4" = 1'-0"



PILE SUPPORTED PLATFORM PARAPET REINFORCING AT ELECTRICAL ENCLOSURE
3/4" = 1'-0"



PILE SUPPORTED PLATFORM LIGHT POLE ANCHORAGE DETAIL
3/4" = 1'-0"



PILE SUPPORTED PLATFORM GANGWAY LANDING REINFORCING SECTION
3/4" = 1'-0"

0 1 2 3 FT.
3/4"=1'-0"

NOTES:

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" CHAMFER.
2. SEE DWG S-204 FOR CIP TOPPING REINFORCEMENT.
3. REFER TO DWG S-001 FOR THE LIGHT POLE LOCATIONS.

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		SIGNATURE
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN		P.E. NUMBER
CONSULTANT	JACOBS		
PROJECT RESIDENT			DATE
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM
REINFORCING SECTIONS AND DETAILS - 3

SHEET NUMBER
S-229
68 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\68-S-229 (PILE SUPPORTED PLATFORM REINFORCING SECTIONS AND DETAILS - 3).; Plotted: 10/17/2024 2:11 PM by MAGUIRE, CASEY; Saved: 8/29/2024 5:55 PM by MAGUIRC

PILE SUPPORTED PLATFORM PILE SCHEDULE						
PILE NO.	PILE SIZE	SERVICE LOAD COMP/TENSION (KIPS)	CUTOFF ELEVATION (FT)	TIP ELEVATION (FT)	PLUMB OR BATTER	PILE DETAIL TYPE
A-1.1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
A.2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
A.1-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
A.1-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
B-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
B-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
C-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
C-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
C-1.2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
D-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
D-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
D-1.2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
E-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
E-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
E-1.2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
F-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
F-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
F.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
G-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
G-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
G.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
H-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
H-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
H.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
I-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
I-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
I.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
J-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
J-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
J.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
K-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
K-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
K.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
L-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
L-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
L.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
M-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
M-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
M.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
N-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	A
N-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
N-3	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
N-4	36" DIA. X 1" W.T.	430 / 210	18.67	-35 ± (SEE NOTE 1)	PLUMB	B
N.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 ± (SEE NOTE 1)	1:4 BATTER	C
O-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	A
O-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
O-3	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
O-4	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B

PILE SUPPORTED PLATFORM PILE SCHEDULE						
PILE NO.	PILE SIZE	SERVICE LOAD COMP/TENSION (KIPS)	CUTOFF ELEVATION (FT)	TIP ELEVATION (FT)	PLUMB OR BATTER	PILE DETAIL TYPE
O.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 TO -40	1:4 BATTER	C
P-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	A
P-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
P-3	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
P-4	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
P.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 TO -40	1:4 BATTER	C
Q-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	A
Q-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
Q.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 TO -40	1:4 BATTER	C
R-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	A
R-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
R.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 TO -40	1:4 BATTER	C
S-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	A
S-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B
S.1-1	36" DIA. X 1" W.T.	375 / 225	18.92	-35 TO -40	1:4 BATTER	C
T-1	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	A
T-2	36" DIA. X 1" W.T.	430 / 210	18.67	-35 TO -40	PLUMB	B

NOTES

1. ALL PILES SHALL BE DRIVEN OR DRILLED TO BEDROCK LEVEL AND SEATED WITHIN THE BEDROCK. ROCK SOCKETS SHALL BE DRILLED WITHIN COMPETENT BEDROCK. BEDROCK ELEVATION VARIES.
2. REFER TO DRAWING B-100 FOR THE ESTIMATED BEDROCK ELEVATION.
3. REFER TO DRAWING S-220 FOR PILE TYPE DETAILS.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		SIGNATURE	
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	P.E. NUMBER	
DESIGNER	CRAIG MORIN		
CONSULTANT	JACOBS	DATE	
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

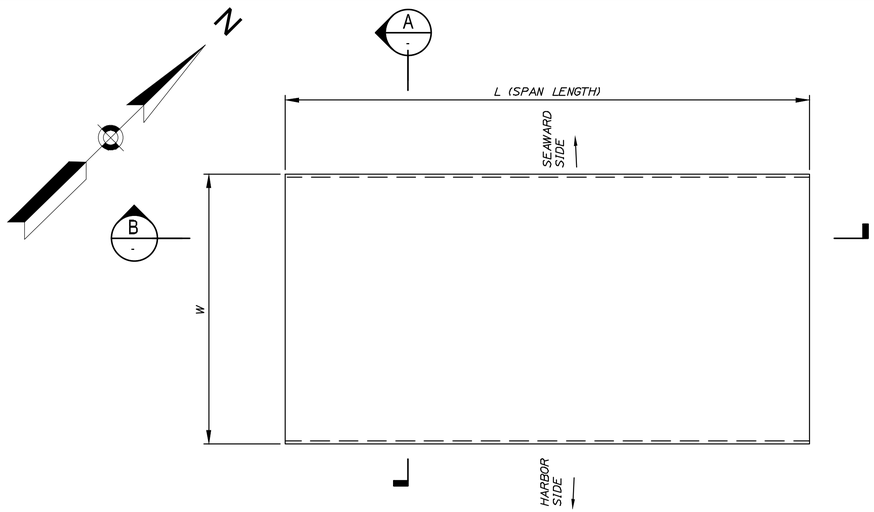
PILE SUPPORTED PLATFORM PILE SCHEDULE

SHEET NUMBER

S-230

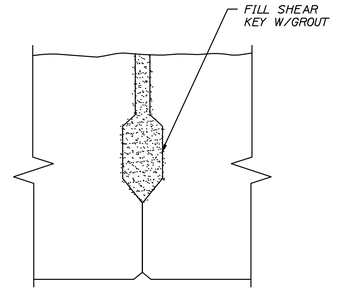
69 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings - 100% Submission\69-S-230 (Pile Supported Platform Pile Schedule).; Plotted: 10/17/2024 2:10 PM by MAGUIRE, CASEY ; Saved: 8/30/2024 3:53 PM by MAGUIRC



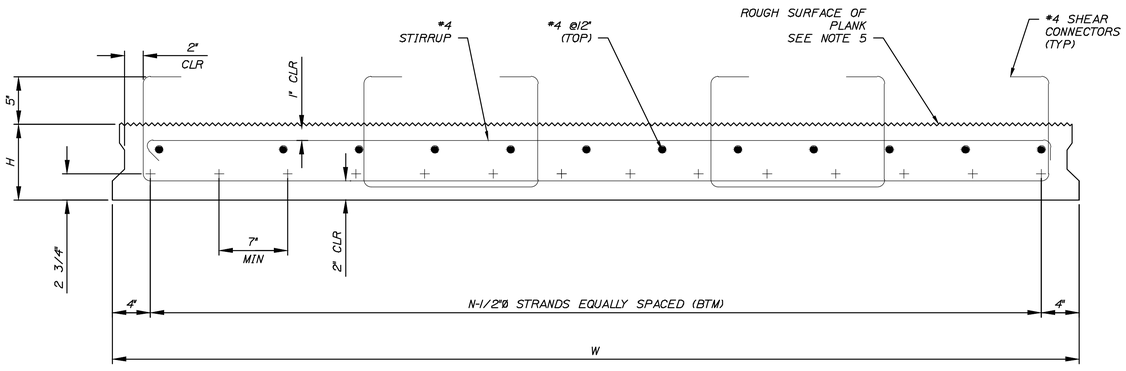
TYPICAL PRESTRESSED PRECAST CONCRETE PLANK
1/2"=1'-0"

DECK PLANK SCHEDULE / NOMINAL DIMENSIONS						
MARK	W	L	H	N	REQUIRED NUMBER	SHEAR KEYS
P-01	8' - 6"	10'-8"	8"	14	46	HARBOR SIDE, SEAWARD SIDE
P-01A	8' - 6"	10'-8"	8"	14	19	SEAWARD SIDE
P-02	SEE S-241	SEE S-241	8"	MILD STEEL, SEE S-241	1	SEAWARD SIDE
P-03	SEE S-241	SEE S-241	8"	20	1	HARBOR SIDE, SEAWARD SIDE
P-04	SEE S-241	SEE S-241	8"	20	1	HARBOR SIDE

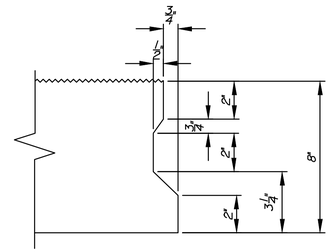


TYPICAL PLANK JOINT DETAIL
3"=1'-0"

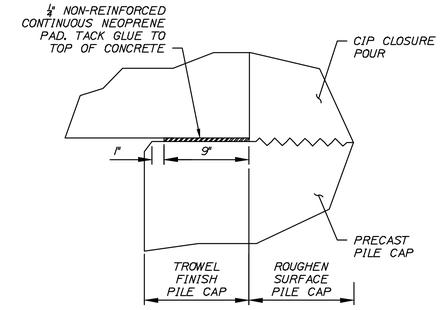
NOTE: REBAR/TENDONS EXTENDING FROM PRECAST PLANK NOT SHOWN.



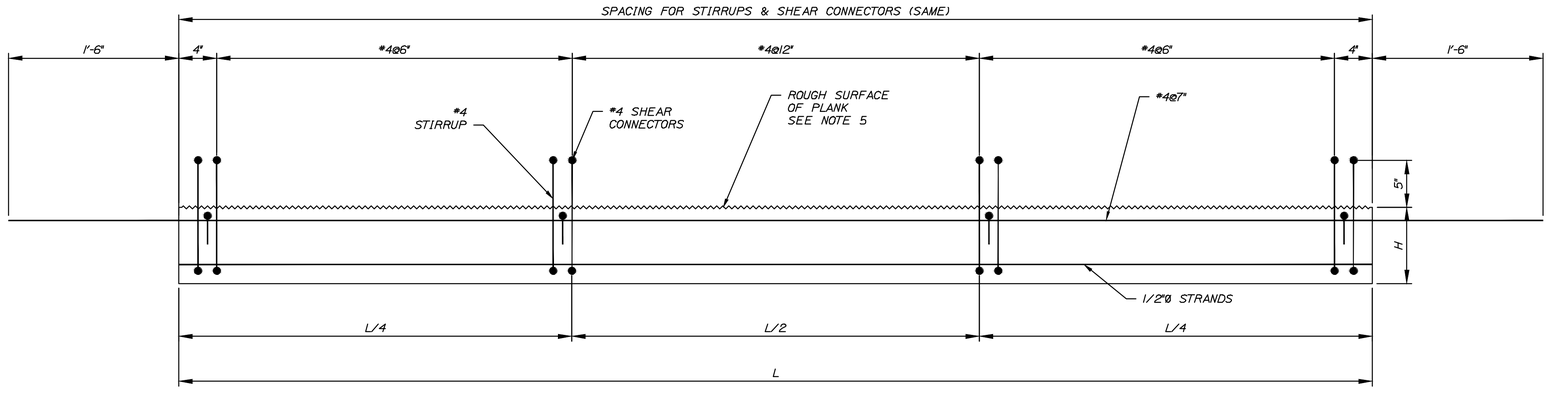
A TYPICAL FOR W>4' SECTION
1-1/2"=1'-0"



TYPICAL SHEAR KEY
3"=1'-0"



DECK PLANK BEARING DETAIL
1 1/2"=1'-0"



B SECTION
1-1/2"=1'-0"

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF f'c=6,000 PSI.
3. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A416, GRADE 270, UNCOATED, 7-WIRE, LOW RELAXATION.
4. THE SPACING OF STRANDS SHALL NOT BE LESS THAN 2".
5. PRIOR TO SHIPPING TO SITE, SAND BLAST TOP SURFACE OF PLANKS TO REMOVE ALL DIRT, DEBRIS, LAITANCE, CURING COMPOUND AND OTHER MATERIALS THAT MAY AFFECT BOND. PROVIDE INTENTIONALLY ROUGHENED SURFACE TO FULL AMPLITUDE OF APPROXIMATELY 1/4".
6. PLANK SURFACE SHALL BE IN A SURFACE SATURATED DRY (SSD) CONDITION IMMEDIATELY PRIOR TO DECK TOPPING CONCRETE PLACEMENT.
7. REFFER TO DRAWING S-203 FOR PRECAST PLANK PLAN.

0 3 6 9 IN.
3"=1'-0"

0 1 1 1/2 FT.
1 1/2" =1'-0"

0 1 4 FT.
1/2"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		SIGNATURE
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN		P.E. NUMBER
CONSULTANT	JACOBS		
PROJECT RESIDENT			DATE
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

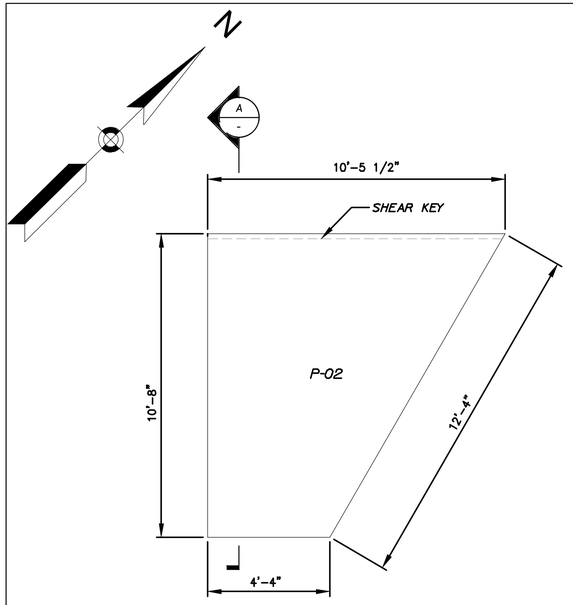
PILE SUPPORTED PLATFORM
PRECAST PLANK DETAILS - 1

SHEET NUMBER

S-240

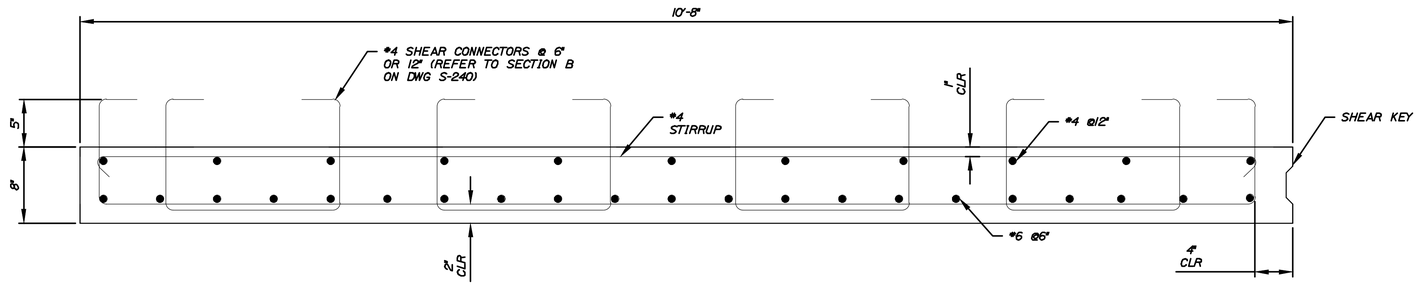
70 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\s30 WIP\Drawings\Drawings_100% Submission\70-S-240 (Pile Supported Platform Precast Plank Details-1).rvt; Plotted: 10/17/2024 2:12 PM by MAGUIRE, CASEY; Saved: 8/30/2024 10:50 AM by MAGUIRC

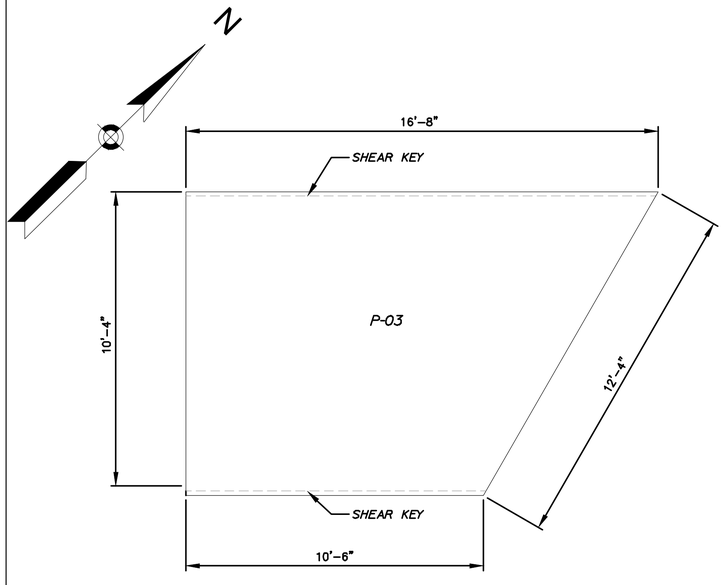


NOTE: SHEAR KEY ON SEAWARD SIDE

P-02 PRECAST DECK PLANK - PLAN
3/8"=1'-0"

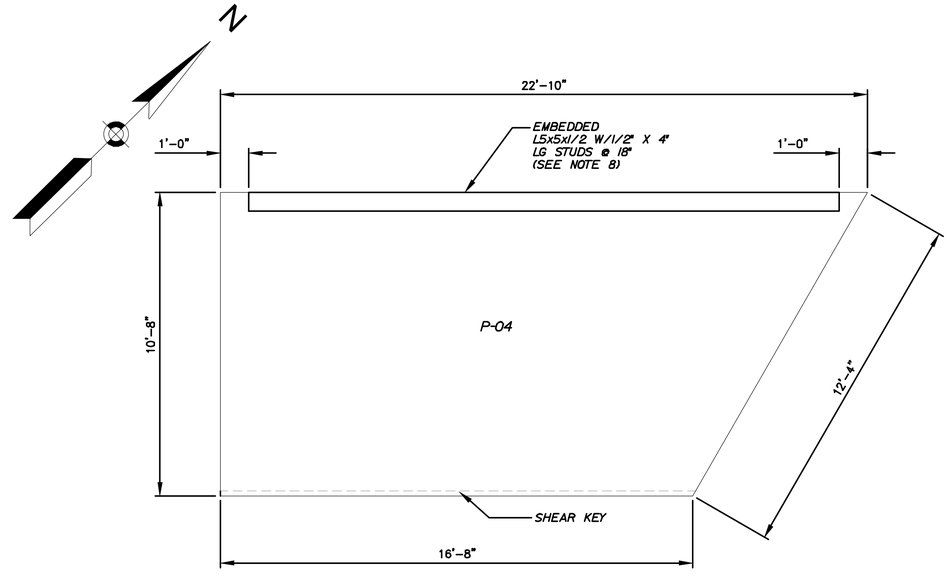


A P-02 SECTION - NON PRESTRESSED PLANK
1-1/2"=1'-0"



NOTE: SHEAR KEY ON HARBOR SIDE AND SEAWARD SIDE

P-03 PRECAST DECK PLANK - PLAN
3/8"=1'-0"



NOTE: SHEAR KEY ON HARBOR SIDE ONLY

P-04 PRECAST DECK PLANK - PLAN
3/8"=1'-0"

NOTES

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF f'c=6,000 PSI.
3. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A416, GRADE 270, UNCOATED, 7-WIRE, LOW RELAXATION.
4. THE SPACING OF STRANDS SHALL NOT BE LESS THAN 2".
5. PRIOR TO SHIPPING TO SITE, SAND BLAST TOP SURFACE OF PLANKS TO REMOVE ALL DIRT, DEBRIS, LAITANCE, CURING COMPOUND AND OTHER MATERIALS THAT MAY AFFECT BOND. PROVIDE INTENTIONALLY ROUGHENED SURFACE TO FULL AMPLITUDE OF APPROXIMATELY 1/4".
6. PLANK SURFACE SHALL BE IN A SURFACE SATURATED DRY (SSD) CONDITION IMMEDIATELY PRIOR TO DECK TOPPING CONCRETE PLACEMENT.
7. REFFER TO DRAWING S-203 FOR PRECAST PLANK PLAN.
8. REFER TO DRAWING S-271 FOR PLANK P-04 CONNECTION TO STEEL SHEET PILE WAVE SCREEN.

0 1 6 FT.
3/8"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

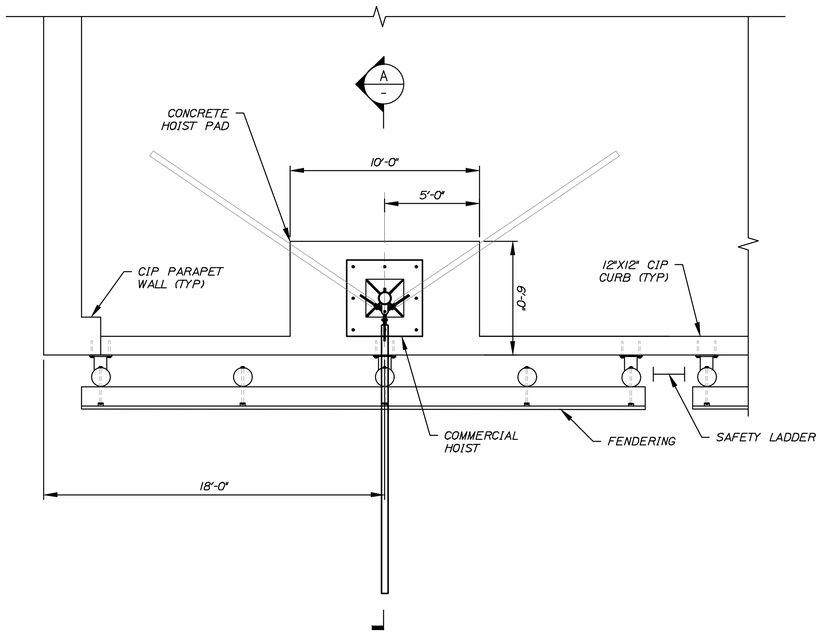
PILE SUPPORTED PLATFORM
PRECAST PLANK DETAILS - 2

SHEET NUMBER

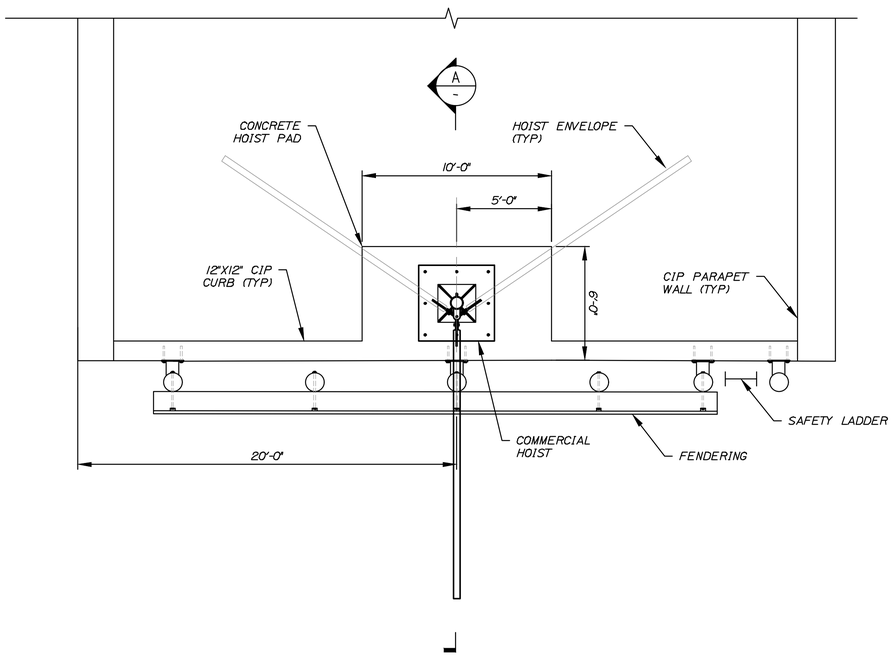
S-241

71 OF 99

File: C:\Users\MAGUIRCT\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings - 100% Submission\71-S-241 (Pile Supported Platform Precast Plank Details-2).dwg; Plotted: 10/17/2024 2:14 PM by MAGUIRE, CASEY; Saved: 8/29/2024 12:18 PM by HS037462



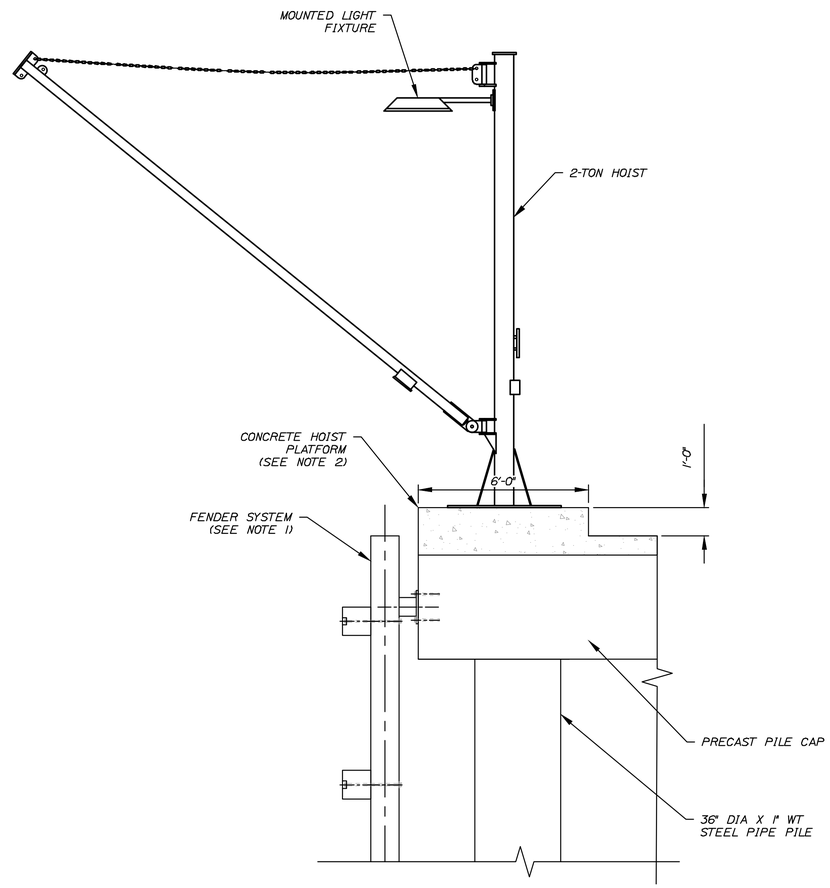
HOIST AREA 1 PLAN
1/4"=1'-0"



HOIST AREA 2 PLAN
1/4"=1'-0"

NOTES

1. REFER TO DWGS S-340 THRU S-343 FOR FENDERING DETAILS.
2. REFER TO DWG S-229 FOR HOIST PAD REINFORCING DETAILS.



A SECTION
3/8"=1'-0"

0 1 5 FT.
3/8"=1'-0"

0 4 8 FT.
1/4"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		
PROGRAM	MULTIMODAL	SIGNATURE
PROJECT MANAGER	AURELE GORNEAU II	
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

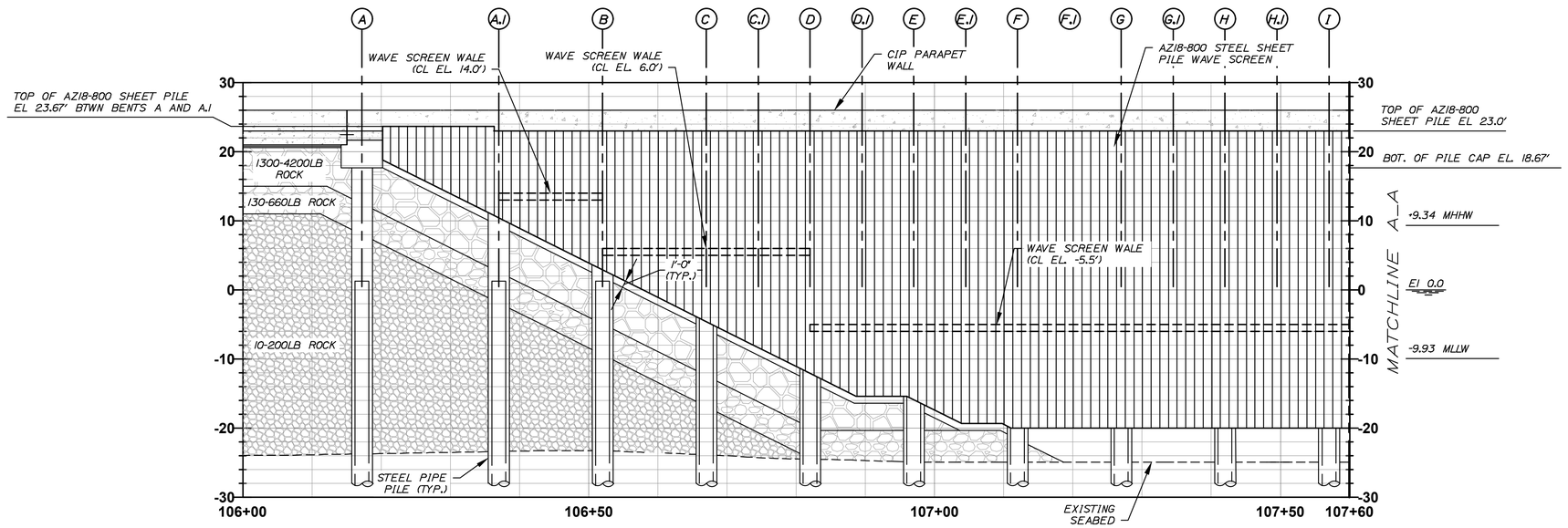
PILE SUPPORTED PLATFORM HOIST AREA ELEVATION & DETAILS

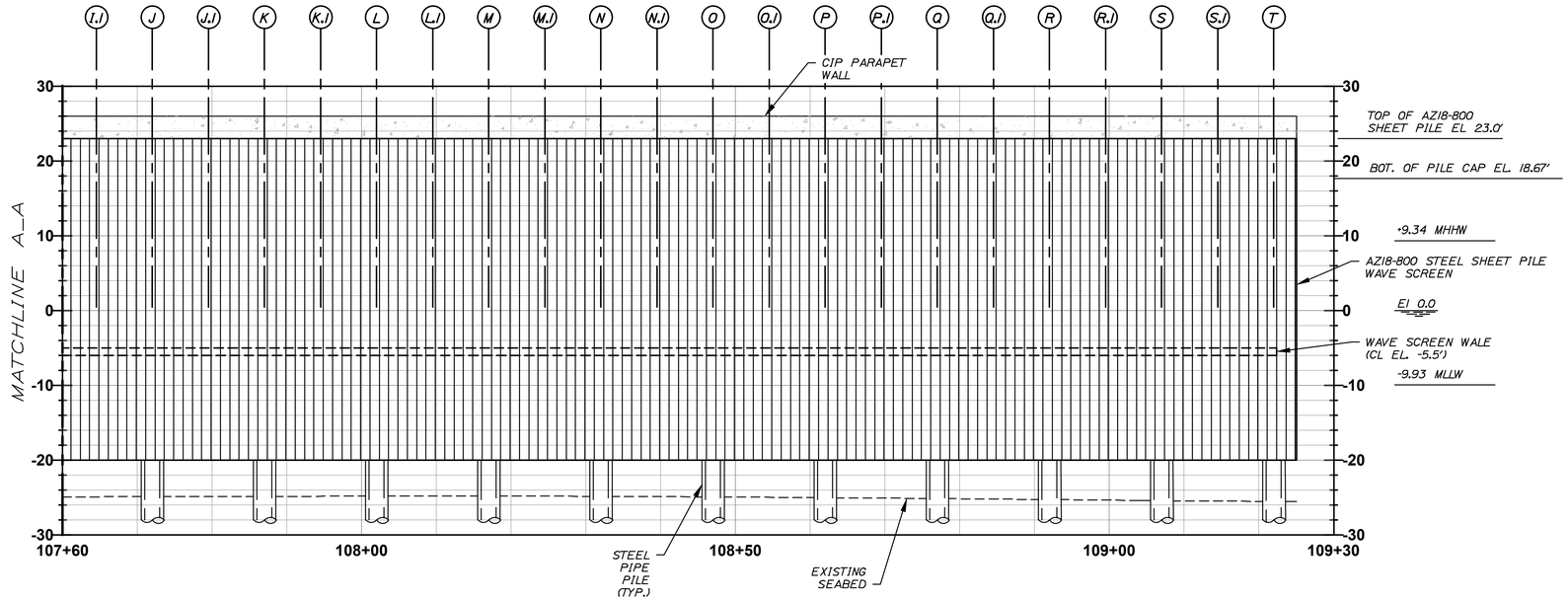
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S-260

72 0F 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\72-S-260 (Pile Supported Platform Hoist Area Elevation and Details).; Plotted: 10/17/2024 2:15 PM by MAGUIRE, CASEY ; Saved: 9/29/2024 1:48 PM by MAGUIRC





WAVE SCREEN PROFILE
1"-10'-0"

NOTES: BATTER PILES NOT SHOWN FOR CLARITY.

LEGEND

- 1300-4200LB ROCK
- 130-660LB ROCK
- 10-200LB ROCK

NOTES:

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO DWG S-271 FOR WAVE SCREEN CONNECTION DETAILS.

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		DATE
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

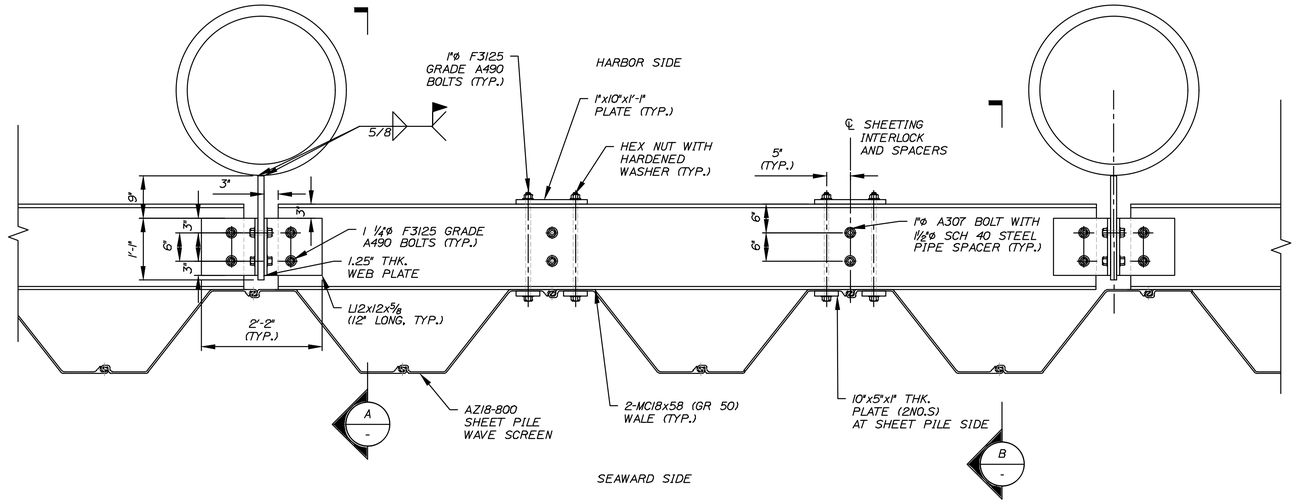
PILE SUPPORTED PLATFORM
WAVE SCREEN PROFILE

SHEET NUMBER

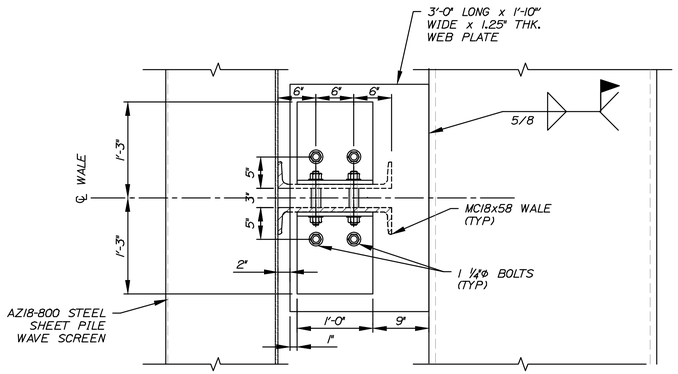
S-270

73 OF 99

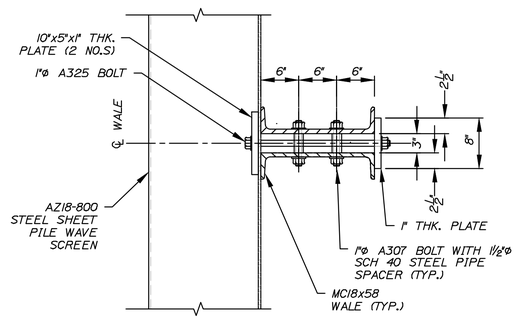
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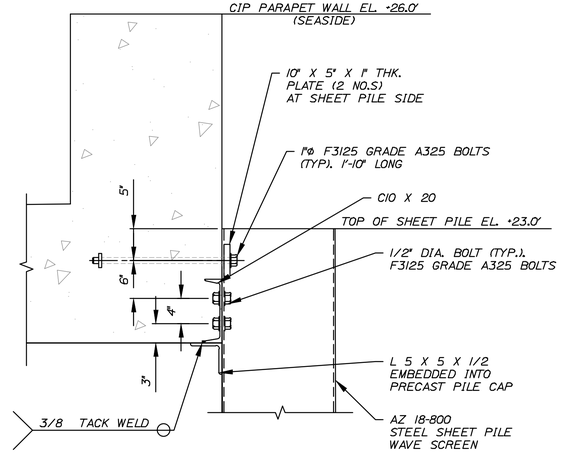
PARTIAL WALE PLAN AT WAVE SCREEN
3/4"=1'-0"



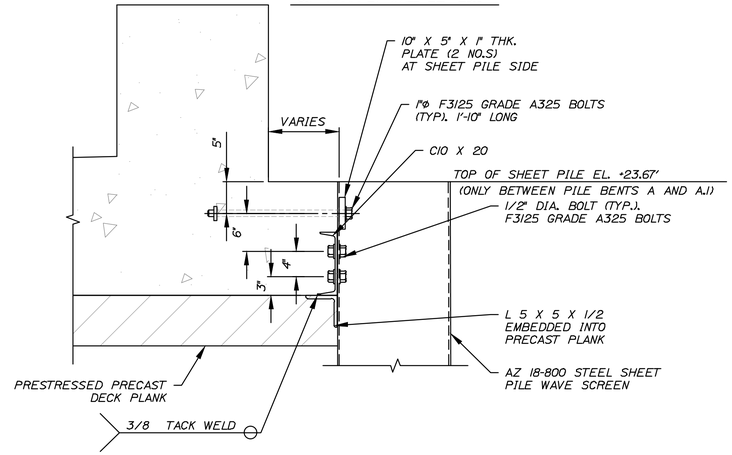
A SECTION
1" = 1'-0"



B SECTION
1" = 1'-0"



1 DETAIL
1" = 1'-0"
S-210



PLATFORM TO WAVE SCREEN CONNECTION DETAIL BTWN PILE BENTS A AND A.1
1"=1'-0"

0 1 2 FT.
1" = 1'-0"

0 1 2 3 FT.
3/4" = 1'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

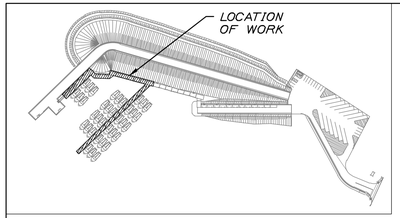
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM WAVE SCREEN DETAILS

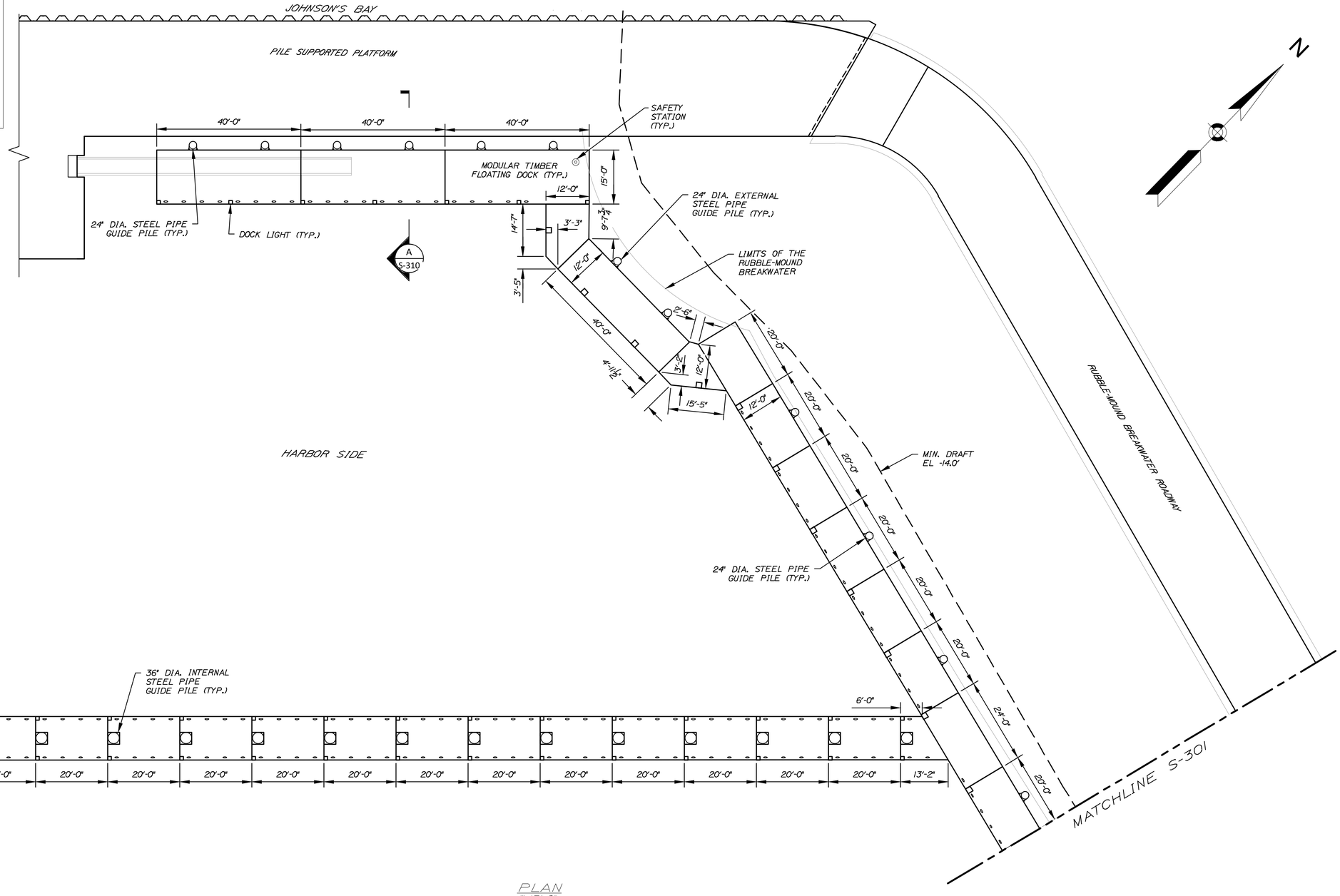
SHEET NUMBER

S-271

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\74-S-271 (Pile Supported Platform Wave Screen Details).; Plotted: 10/17/2024 2:17 PM by MAGUIRE, CASEY ; Saved: 8/30/2024 2:03 PM by MAGUIRC



KEY PLAN
1"=240'-0"



PLAN
1"=15'-0"

LEGEND:

- MINIMUM DRAFT EL. -14
- MOORING CLEAT
- GUIDE PILE
- DOCK LIGHT
- SAFETY STATION

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL MAINTAIN A MINIMUM WATER DEPTH OF -14.03'.

0 15 30 FT.
1"=15'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

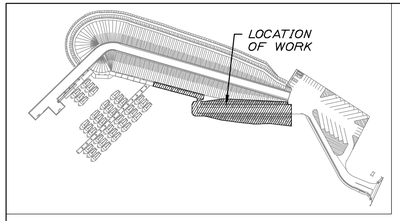
FLOATING DOCK
GENERAL ARRANGEMENT PLAN - 1

SHEET NUMBER

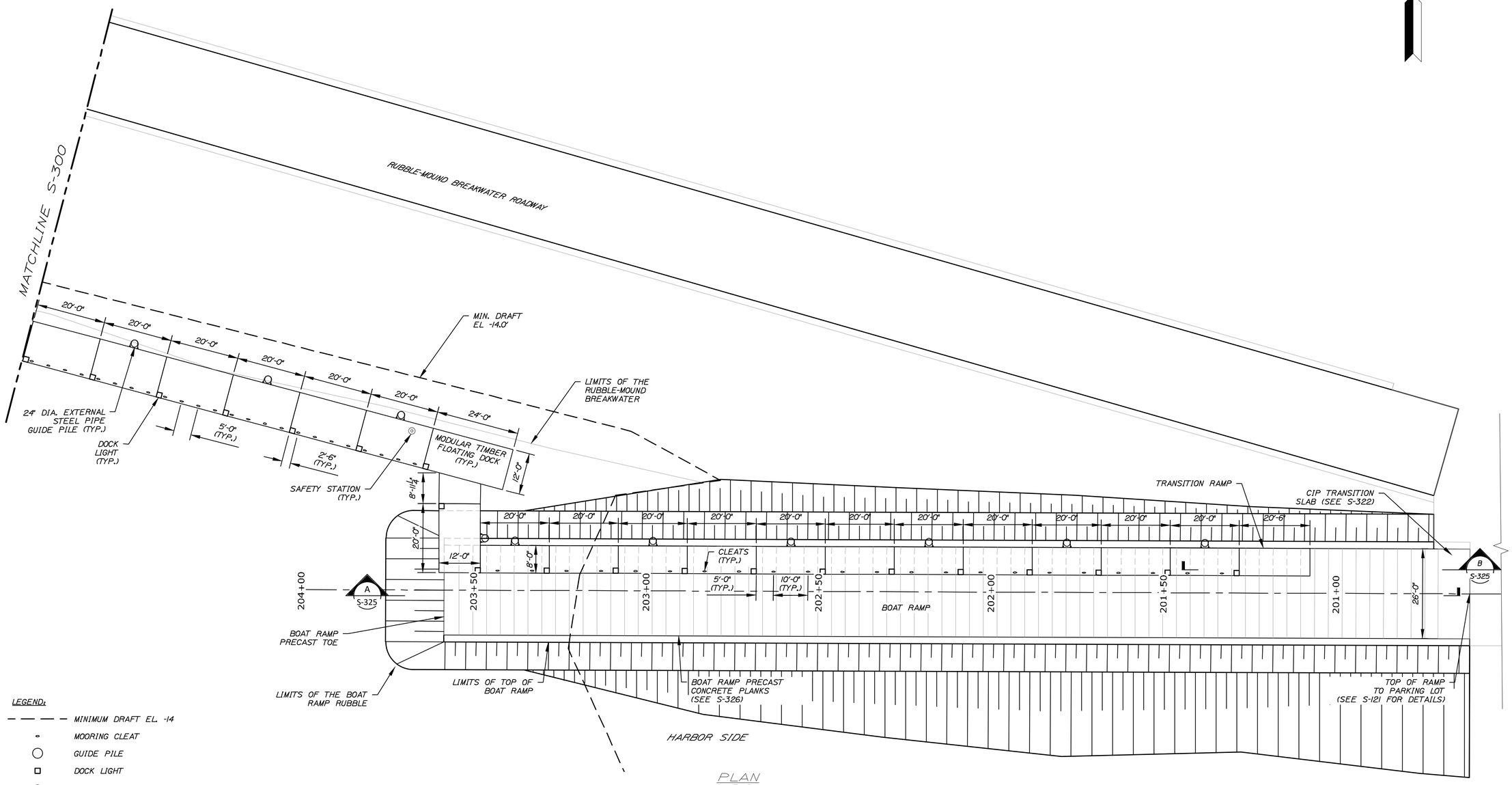
S-300

75 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\75-S-300 (Floating Dock Area 1 General Arrangement Plan).; Plotted: 10/17/2024 2:18 PM by MAGUIRE, CASEY.; Saved: 8/28/2024 10:00 AM by MAGUIRC



KEY PLAN
1"=240'-0"



PLAN
1"=15'-0"

LEGEND:

- MINIMUM DRAFT EL. -14
- MOORING CLEAT
- GUIDE PILE
- DOCK LIGHT
- SAFETY STATION

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.

N

0 15 30 FT.
1"=15'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

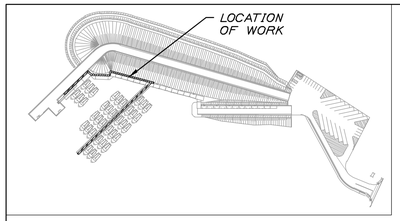
FLOATING DOCK
GENERAL ARRANGEMENT PLAN - 2

SHEET NUMBER

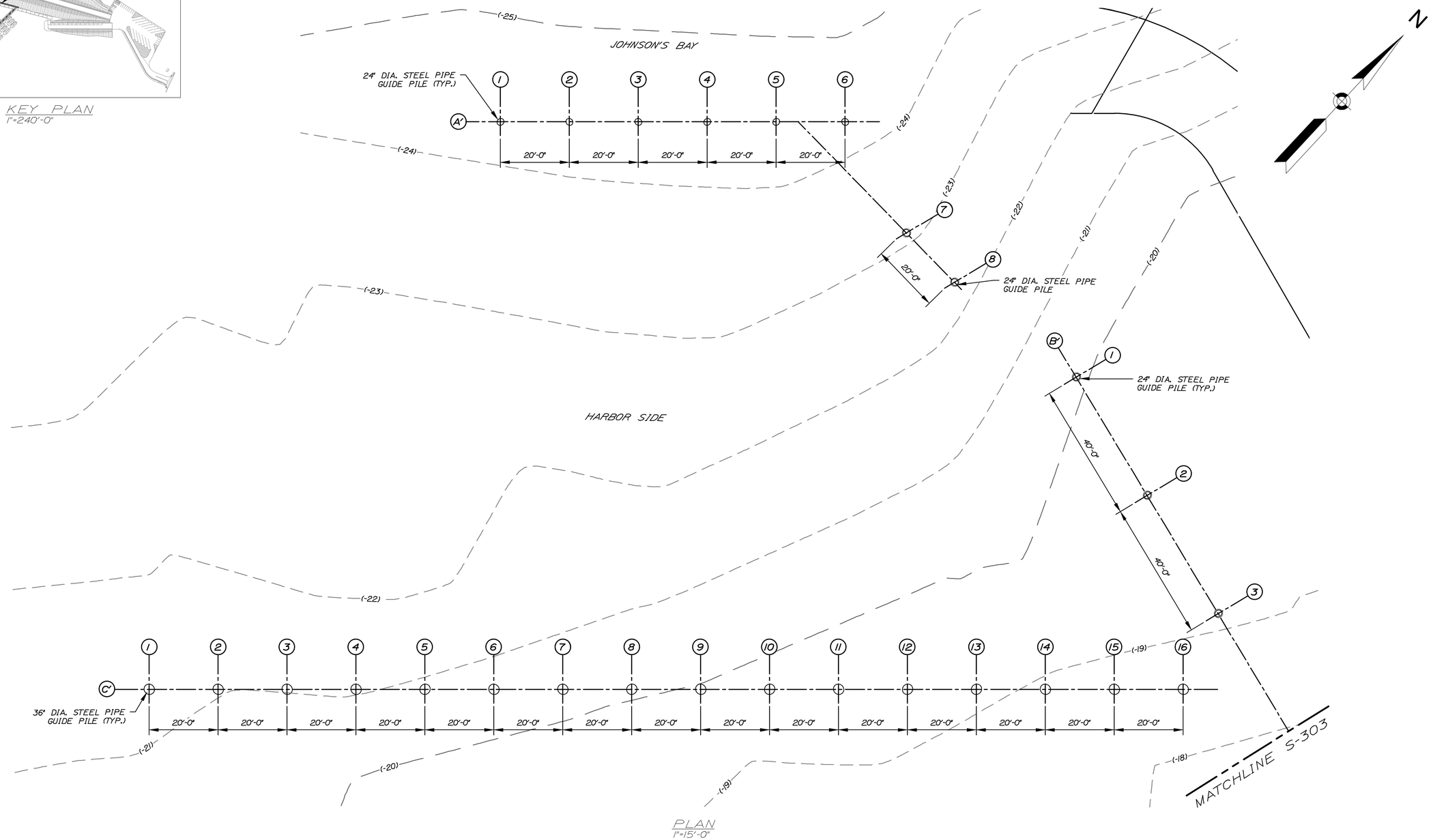
S-301

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File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\76-S-301 (Floating Dock Area 2 General Arrangement Plan).; Plotted: 10.17.2024 2:22 PM by MAGUIRE, CASEY.; Saved: 8.28.2024 10:01 AM by MAGUIRC



KEY PLAN
1"=240'-0"



PLAN
1"=15'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. SEE STEEL PIPE GUIDE PILE DETAILS ON DRAWINGS S-320 AND S-321.
4. SEE STEEL PIPE GUIDE PILE SCHEDULE ON DRAWING S-330.
5. PROTECTIVE CASINGS ARE PROPOSED AT PILE LOCATIONS TO ASSURE SUCCESSFUL PILE INSTALLATION AND NO OBSTRUCTIONS CAUSED BY THE PLACEMENT OF THE BREAKWATER/BOAT RAMP ROCKFILL. PROTECTIVE CASINGS MAY BE 30" DIA. STEEL CASING, OR A SUITABLE DIAMETER PROPOSED BY THE CONTRACTOR.
6. PROTECTIVE CASINGS CALLED FOR AT A'-7, A'-8, AND B'-1 THROUGH B'-7 ARE OPTIONAL, AND CONTRACTOR TO DECIDE IF HIS OPERATIONS REQUIRES THE PROTECTIVE CASINGS.

LEGEND

- PLUMB STEEL PIPE PILE
- EXISTING BATHYMETRIC CONTOURS
- STEEL PIPE PILES WITH PROTECTIVE CASINGS (SEE NOTE 5 & 6)

0 15 30 FT.
1"=15'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

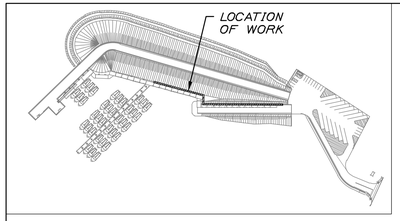
FLOATING DOCK PILE PLAN - 1

SHEET NUMBER

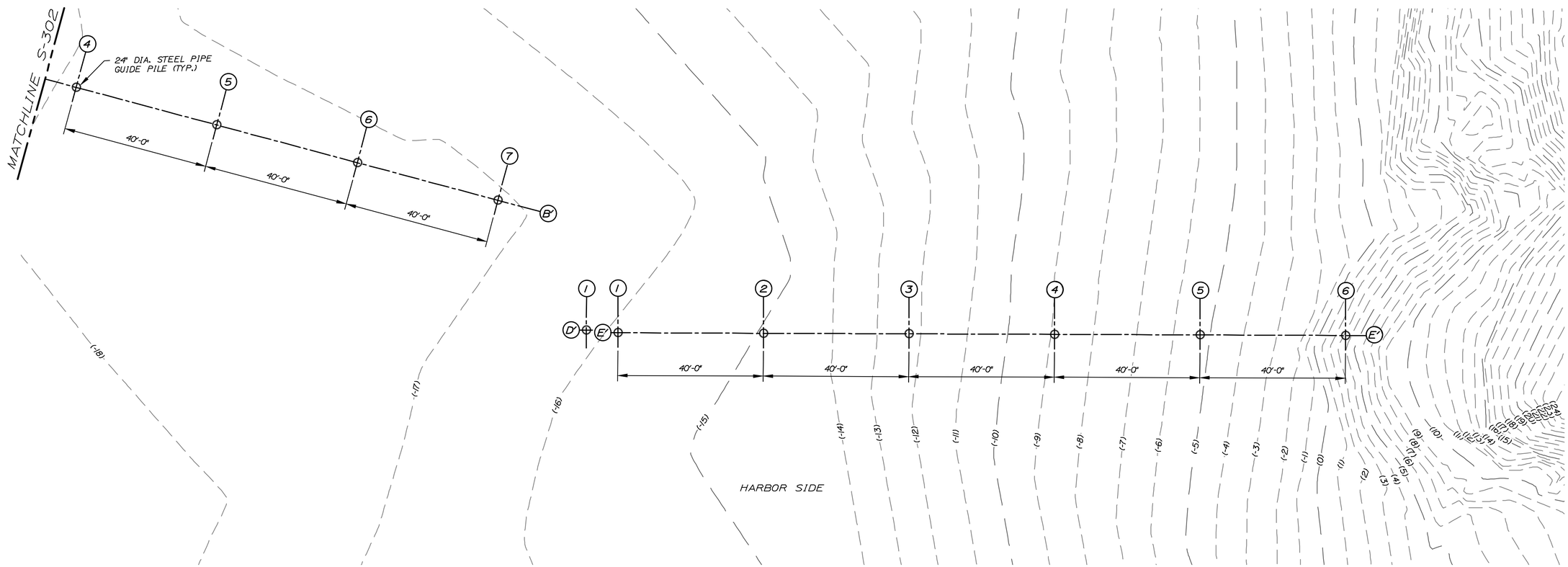
S-302

77 OF 99

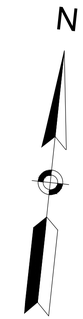
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KEY PLAN
1"=240'-0"



PLAN
1"=15'-0"



NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. SEE STEEL PIPE GUIDE PILE DETAILS ON DRAWINGS S-320 AND S-321.
4. SEE STEEL PIPE GUIDE PILE SCHEDULE ON DRAWING S-330.
5. PROTECTIVE CASINGS ARE PROPOSED AT PILE LOCATIONS TO ASSURE SUCCESSFUL PILE INSTALLATION AND NO OBSTRUCTIONS CAUSED BY THE PLACEMENT OF THE BREAKWATER/BOAT RAMP ROCKFILL. PROTECTIVE CASINGS MAY BE 30" DIA. STEEL CASING, OR A SUITABLE DIAMETER PROPOSED BY THE CONTRACTOR.
6. PROTECTIVE CASINGS CALLED FOR AT A'-7, A'-8, AND B'-1 THROUGH B'-7 ARE OPTIONAL, AND CONTRACTOR TO DECIDE IF HIS OPERATIONS REQUIRES THE PROTECTIVE CASINGS.

LEGEND

- PLUMB STEEL PIPE PILE
- EXISTING BATHYMETRIC CONTOURS
- STEEL PIPE PILES WITH PROTECTIVE CASINGS (SEE NOTE 5 & 6)

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION	
PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

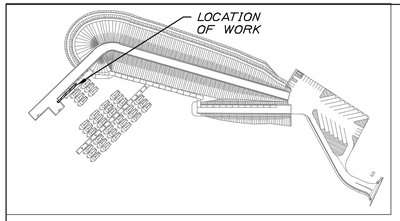
FLOATING DOCK PILE PLAN - 2

SHEET NUMBER

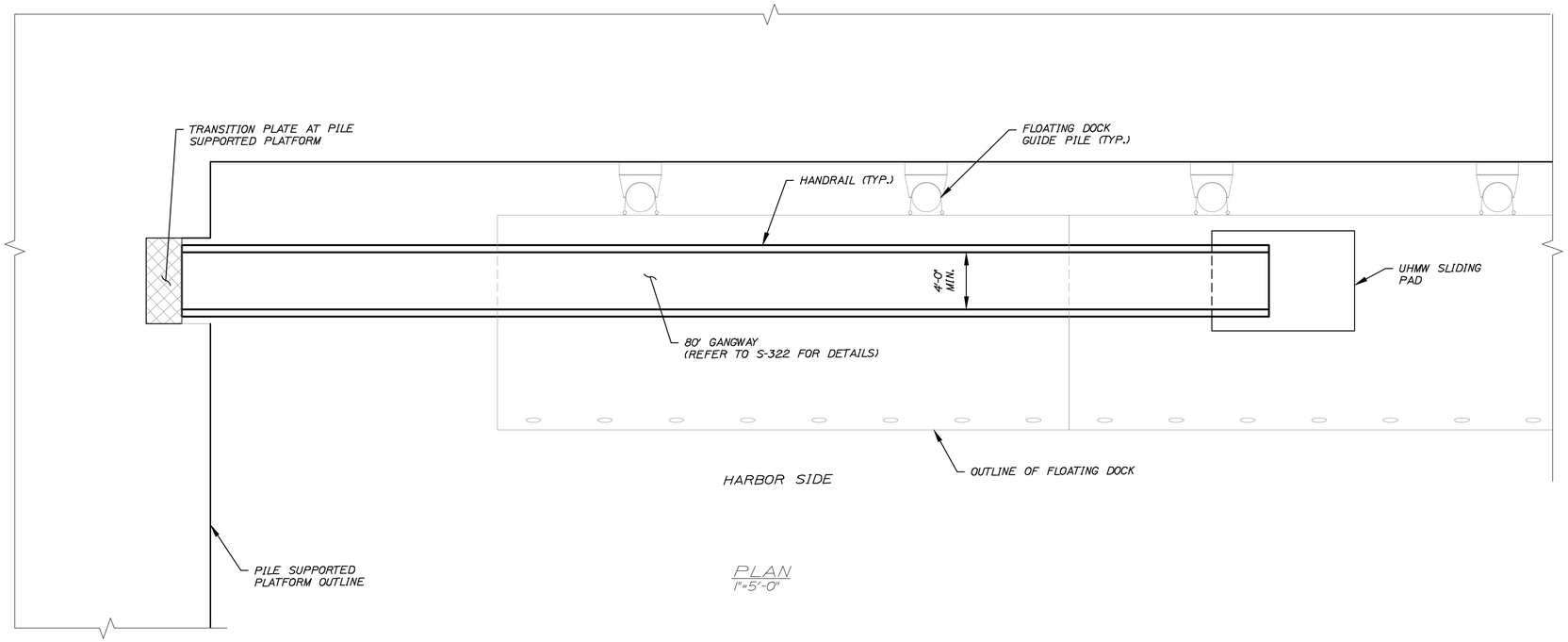
S-303

78 OF 99

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_100% Submission\78-S-303 (Floating Dock Pile Plan-2) ; Plotted: 10/17/2024 2:24 PM by MAGUIRE, CASEY ; Saved: 8/28/2024 10:05 AM by MAGUIRC



KEY PLAN
1"=240'-0"



PLAN
1"=5'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.

0 5 10 FT.
1"=5'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		
PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

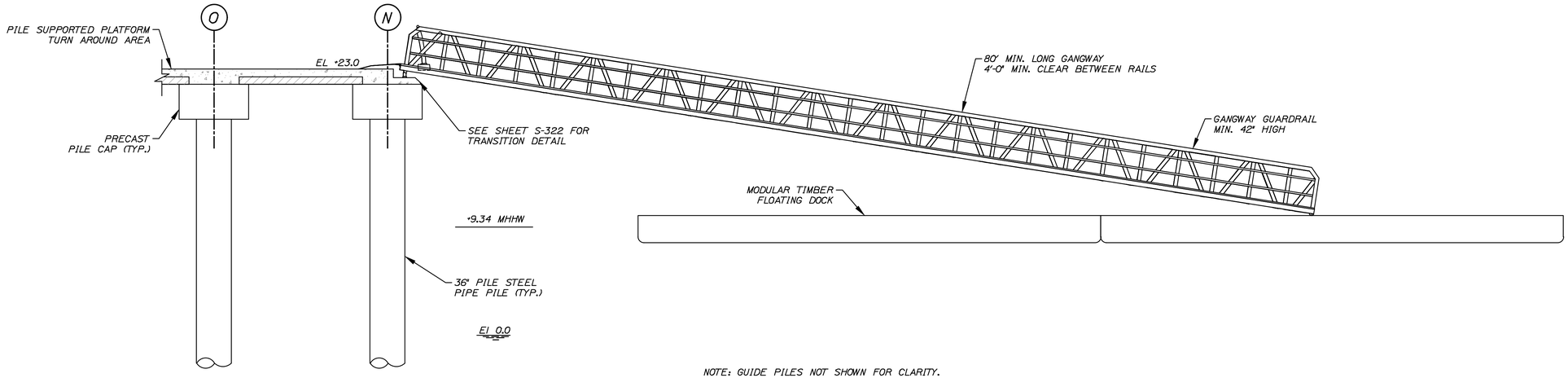
FLOATING DOCK GANGWAY PLAN

SHEET NUMBER

S-304

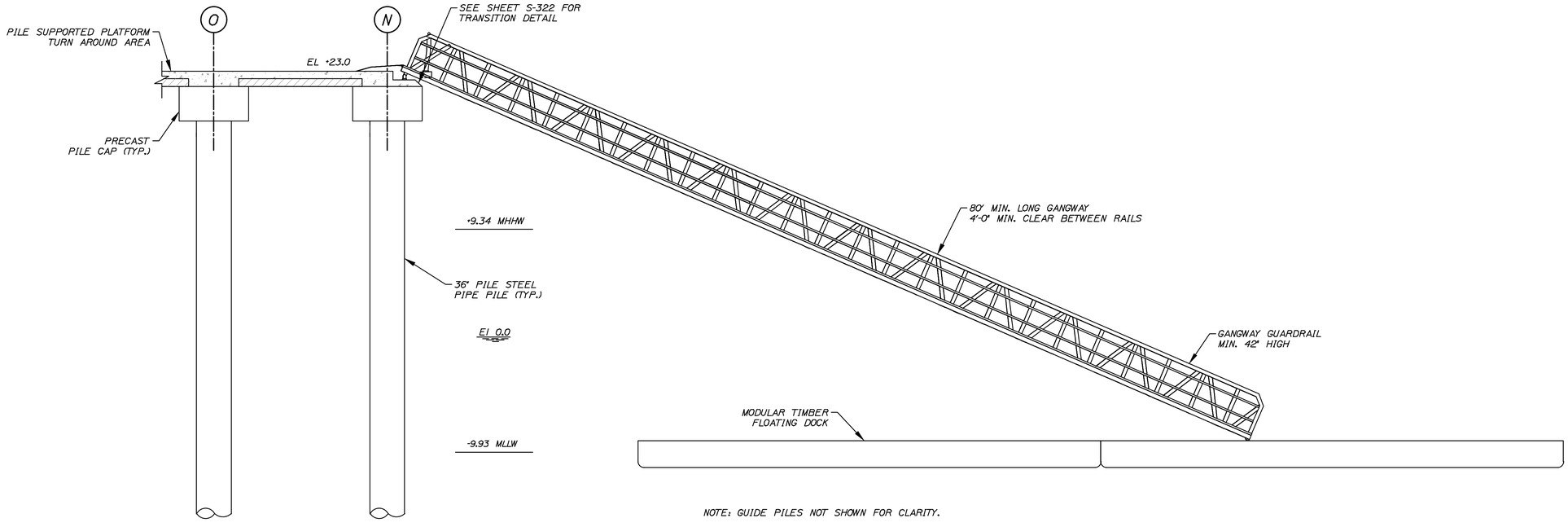
79 OF 99

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NOTE: GUIDE PILES NOT SHOWN FOR CLARITY.

GANGWAY - ELEVATION AT MHHW
3/16" = 1'-0"



NOTE: GUIDE PILES NOT SHOWN FOR CLARITY.

GANGWAY - ELEVATION AT MLLW
3/16" = 1'-0"

NOTES

1. ALL ELEVATION REFERS TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. HORIZONTAL DATUM REFERS TO US STATE PLANE, MAINE EAST 1801, NAD83.
4. PARAPET WALL ON PILE SUPPORTED PLATFORM NOT SHOWN FOR CLARITY.
5. SEE GANGWAY DETAILS ON S-322.

0 5 10 FT.
3/16"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

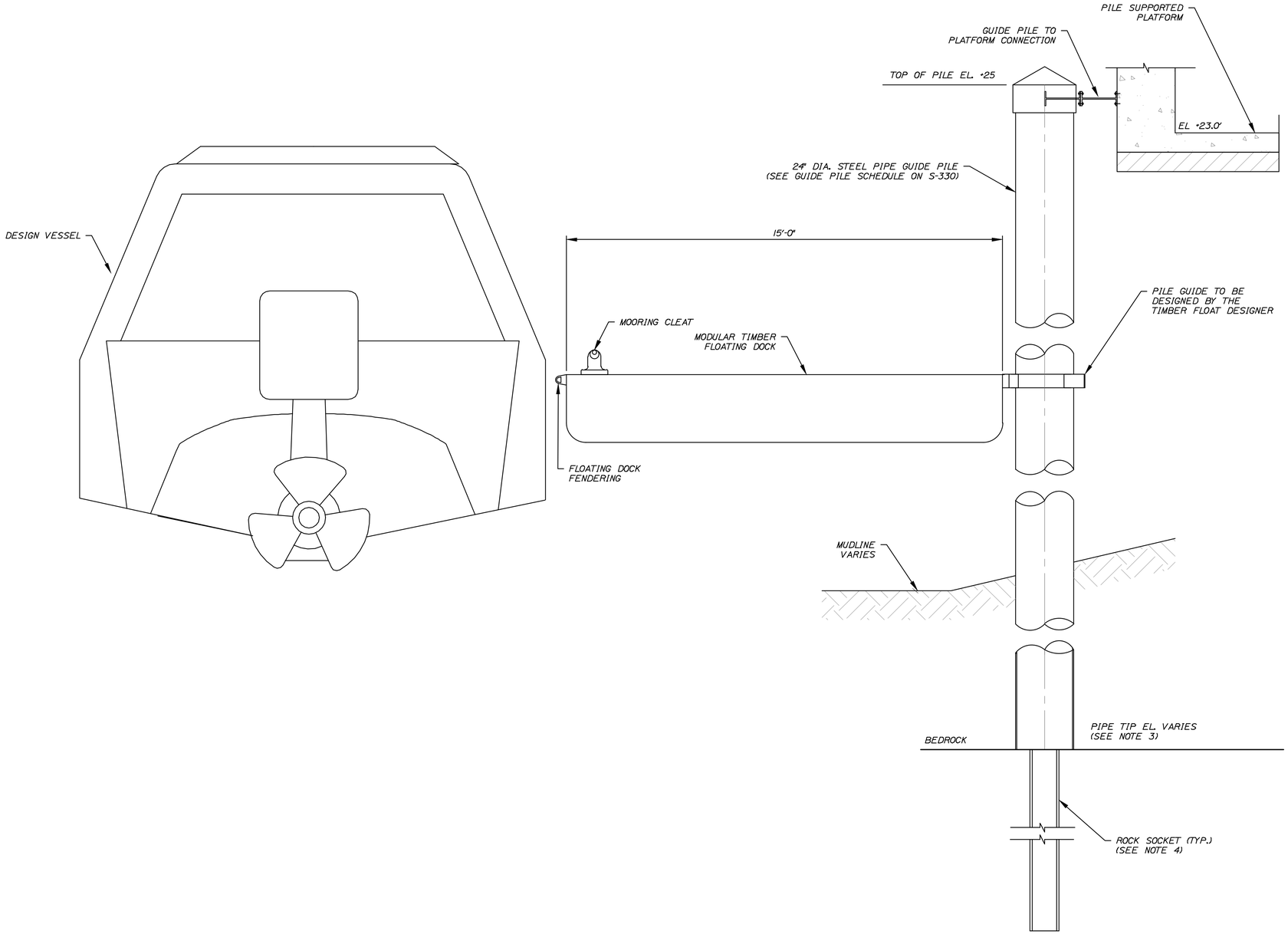
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

FLOATING DOCK GANGWAY SECTIONS

SHEET NUMBER

S-305

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\80-S-305 (Floating Dock Gangway Section) ; Plotted: 10/17/2024 2:32 PM by MAGUIRE, CASEY ; Saved: 8/28/2024 10:31 AM by MAGUIRC



A S-300 SECTION
1/2" = 1'-0"

0 1 4 FT.
1/2"=1'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO S-330 FOR GUIDE PILE SCHEDULE.
4. REFER TO S-320 FOR GUIDE PILE DETAILS

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

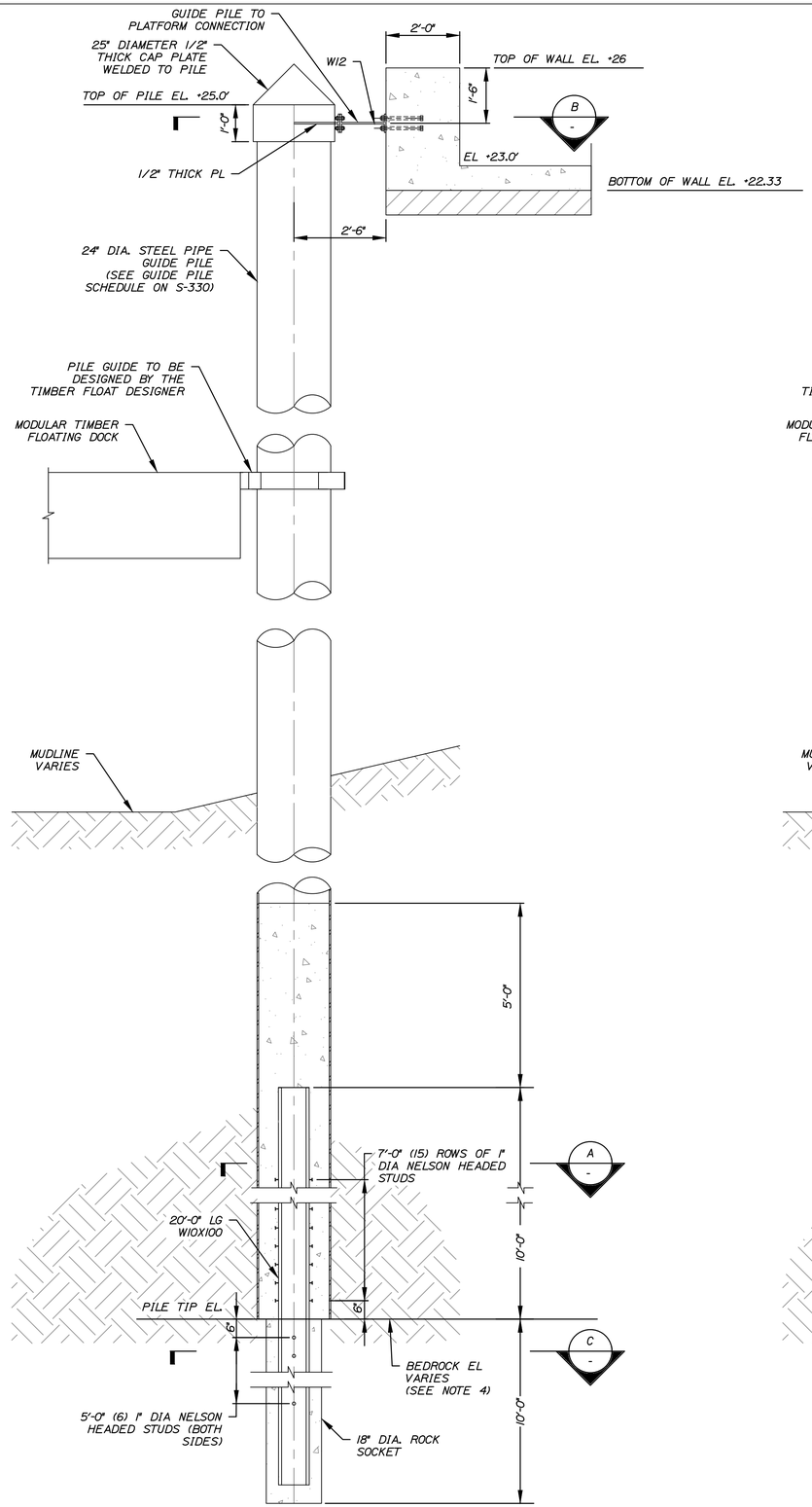
FLOATING DOCK SECTION

SHEET NUMBER

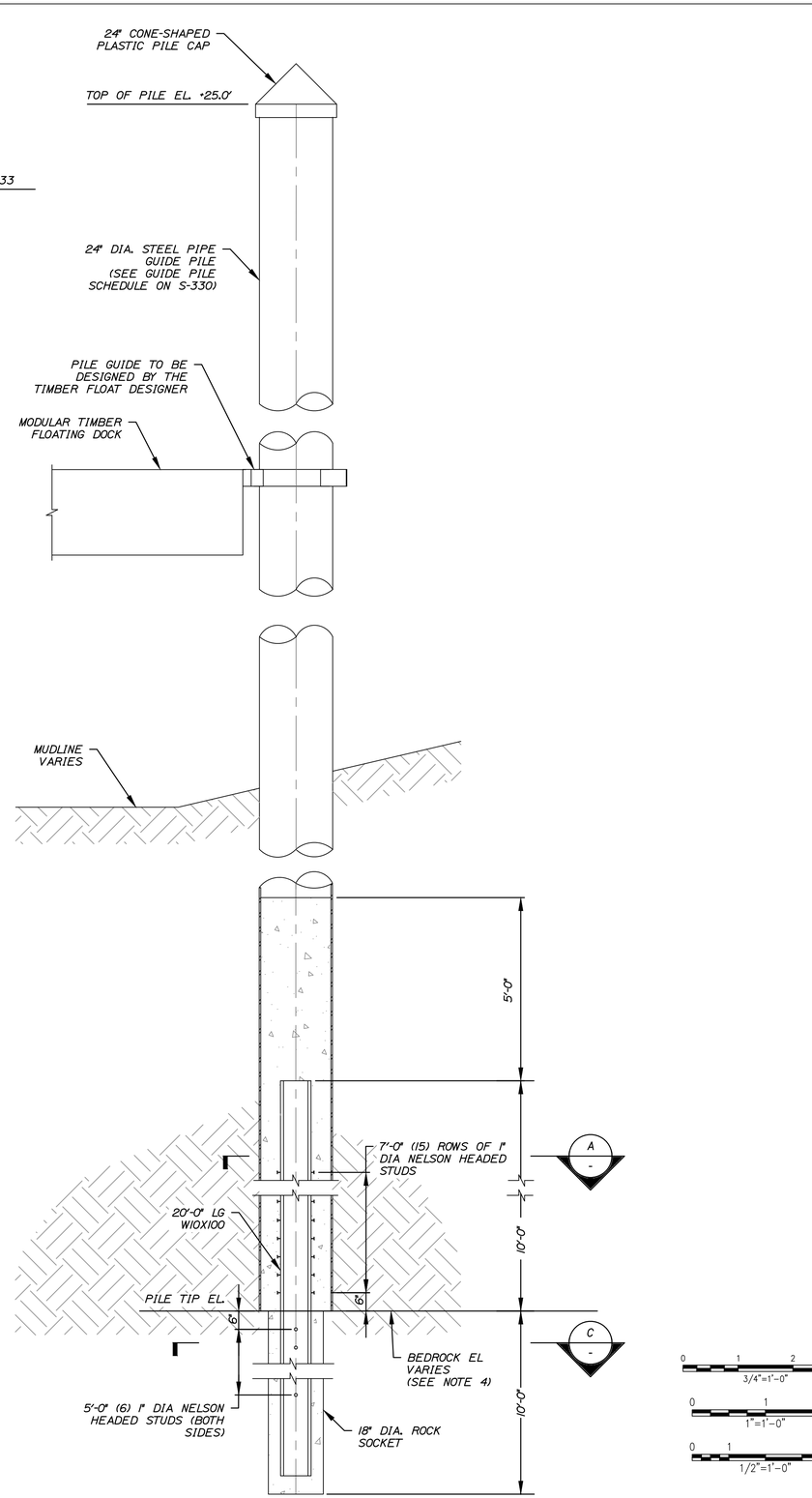
S-310

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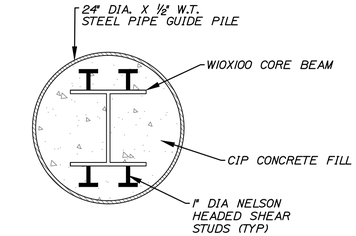
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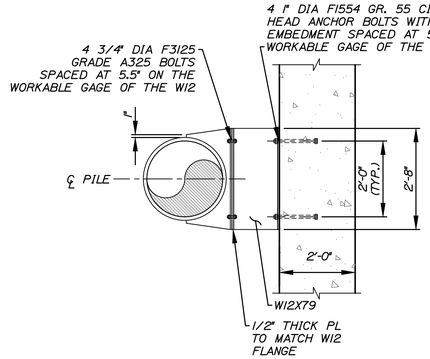
GUIDE PILE DETAIL TYPE A
1/2" = 1'-0"



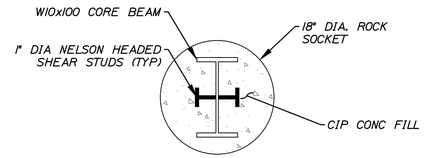
GUIDE PILE DETAIL TYPE B
1/2" = 1'-0"



A SECTION
1" = 1'-0"



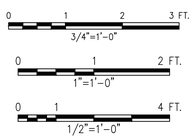
B SECTION
1/2" = 1'-0"



C SECTION
1" = 1'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. ROCK SOCKET SHALL BE CONSTRUCTED WITHIN COMPETENT BEDROCK.



Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

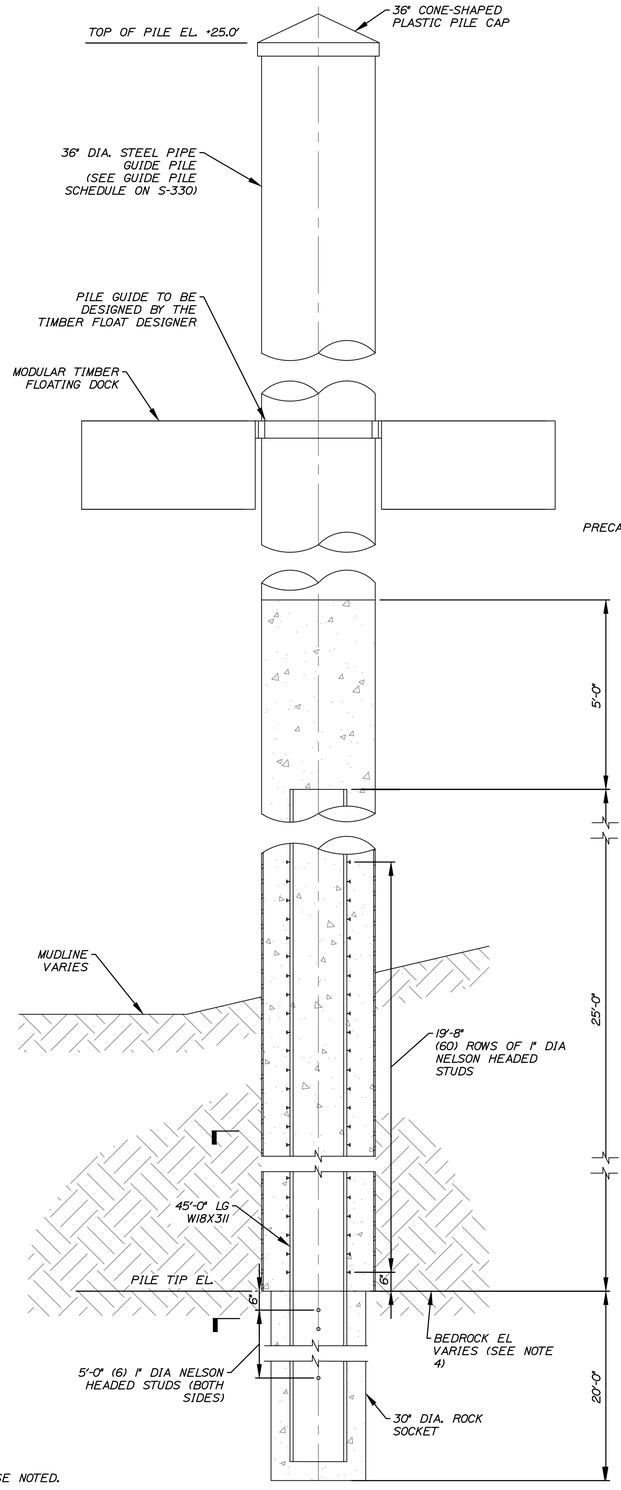
FLOATING DOCK GUIDE PILE DETAILS - 1

SHEET NUMBER

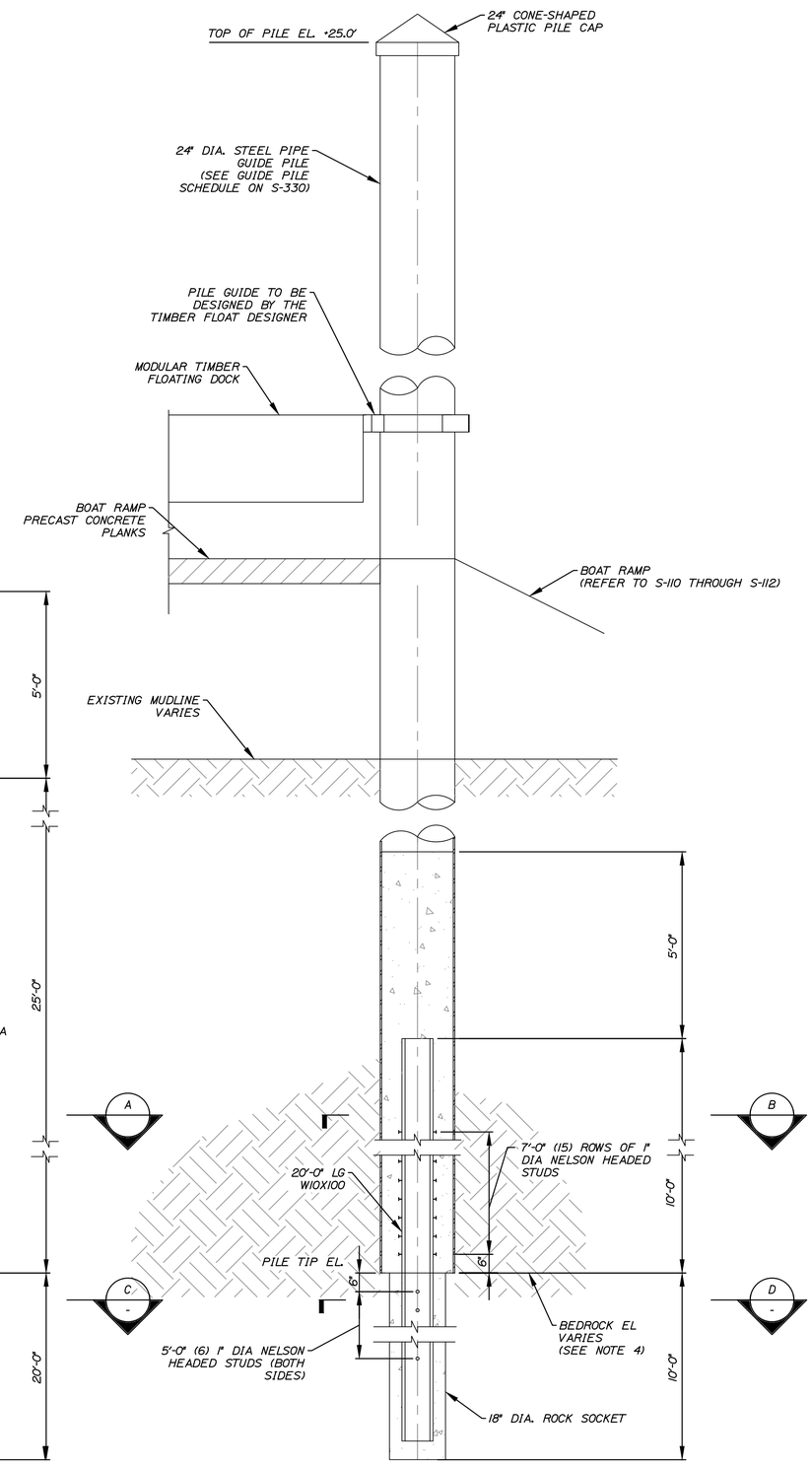
S-320

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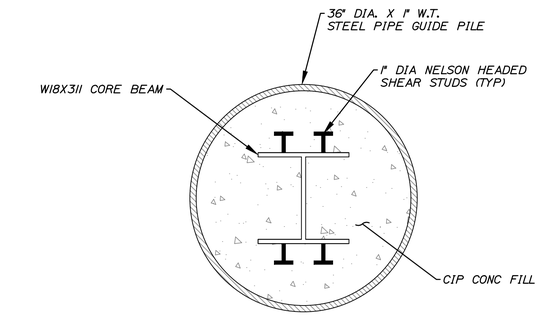
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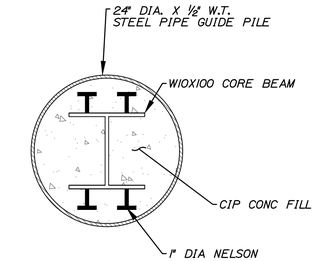
GUIDE PILE DETAIL C
1/2" = 1'-0"



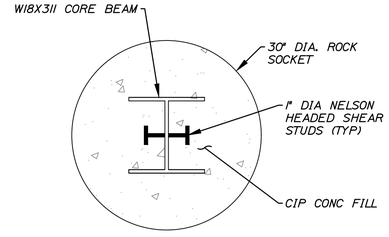
GUIDE PILE DETAIL D
1/2" = 1'-0"



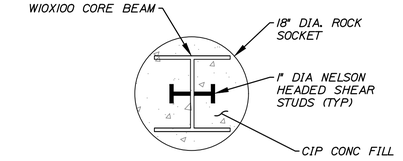
A SECTION
1" = 1'-0"



B SECTION
1" = 1'-0"



C SECTION
1" = 1'-0"



D SECTION
1" = 1'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. HORIZONTAL DATUM REFERS TO US STATE PLANE, MAINE EAST 1801, NAD83.
4. ROCK SOCKET SHALL BE CONSTRUCTED WITHIN COMPETENT BEDROCK.

0 1 2 FT.
1"=1'-0"

0 1 4 FT.
1/2"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

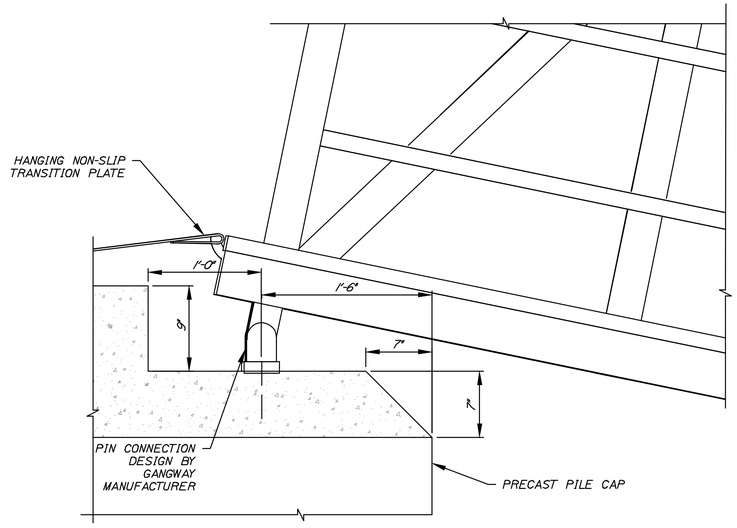
PROJECT INFORMATION		SIGNATURE	DATE
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT			
CONTRACTOR			
PROJECT COMPLETION DATE			

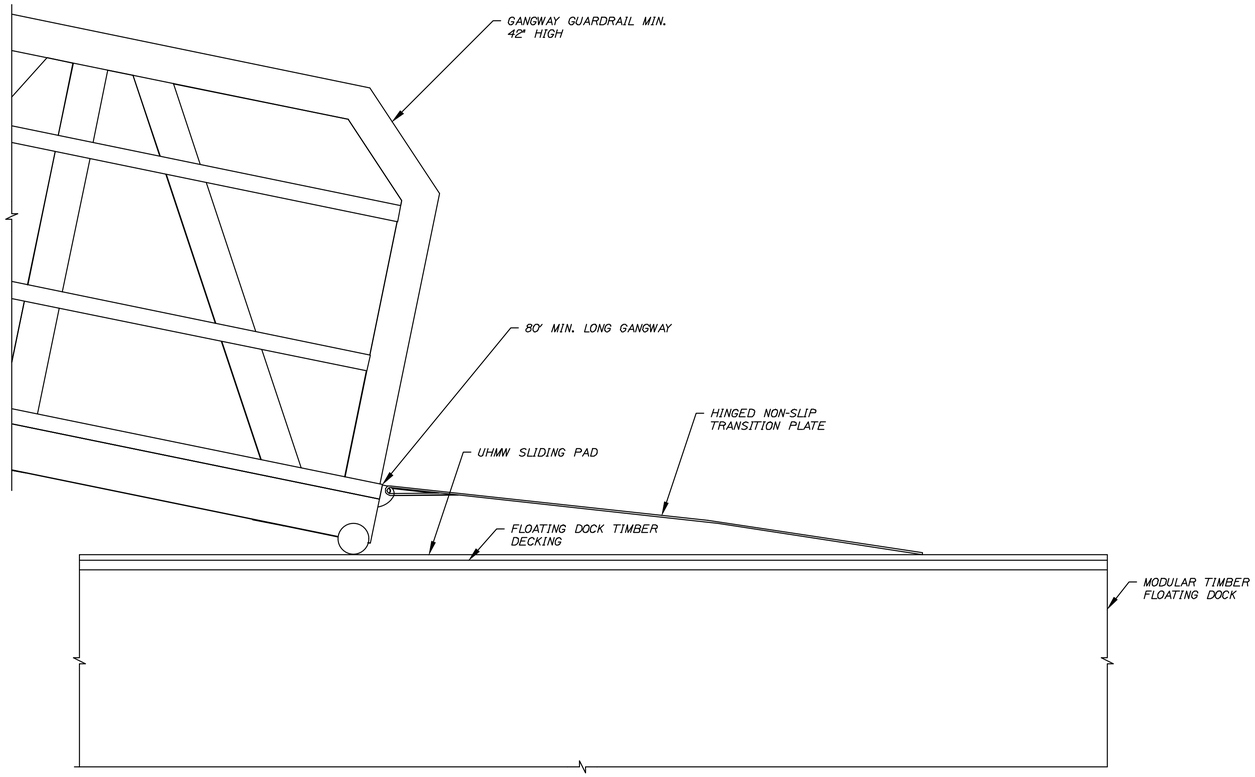
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME
WASHINGTON, COUNTY

FLOATING DOCK GUIDE PILE DETAILS - 2

SHEET NUMBER

S-321





GANGWAY TRANSITION DETAILS
1 1/2" - 1'-0"

NOTES

1. ALL ELEVATION REFERS TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.

0 1 1 1/2 FT.
1 1/2" =1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		
PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

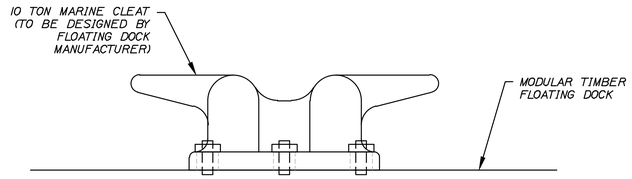
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

FLOATING DOCK GANGWAY DETAILS

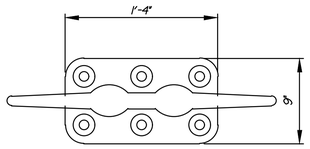
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S-322

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Mooring Cleat Elevation
1 1/2" = 1'-0"



Mooring Cleat Plan
1 1/2" = 1'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.

0 1 1 1/2 FT.
1 1/2" =1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		
PROGRAM	MULTIMODAL	
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE
DESIGNER	CRAIG MORIN	
CONSULTANT	JACOBS	P.E. NUMBER
PROJECT RESIDENT		
CONTRACTOR		DATE
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

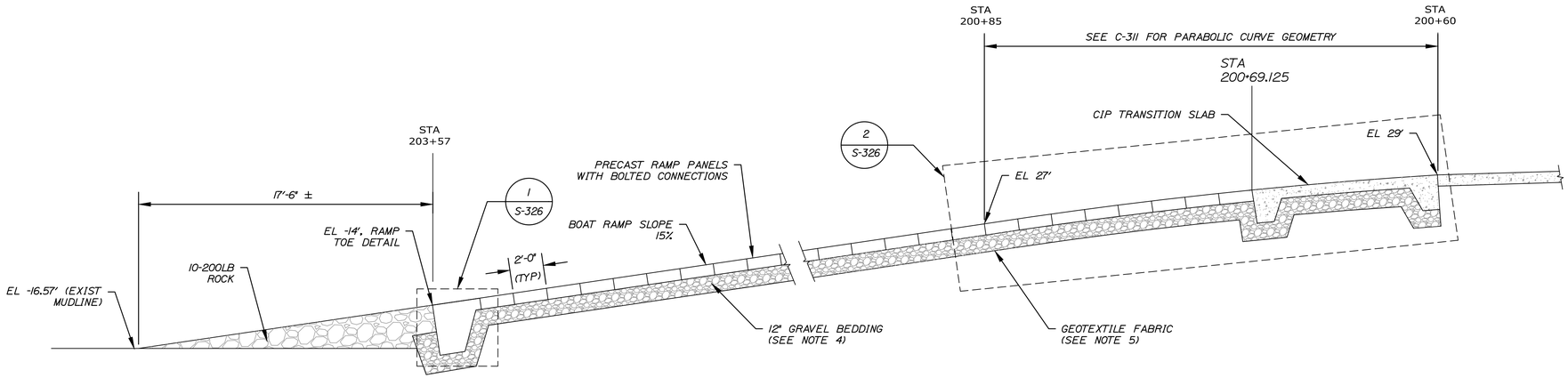
FLOATING DOCK CLEAT DETAILS

SHEET NUMBER

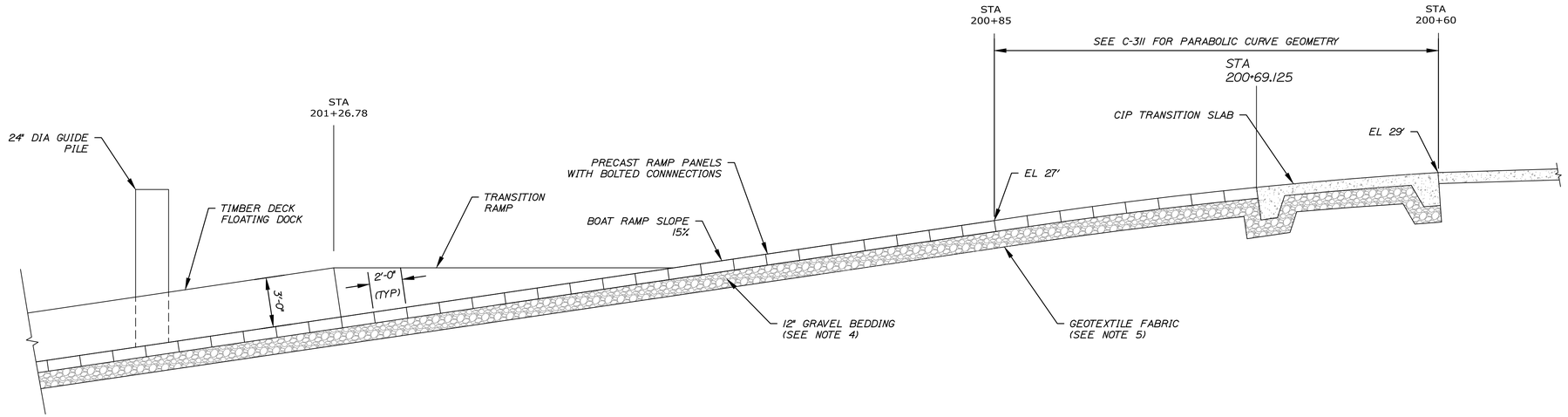
S-323

85 OF 99

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A SECTION
1/4" = 1'-0"
S-301



B SECTION
1/4" = 1'-0"
S-301

NOTES

1. PRECAST MANUFACTURER SHALL DETERMINE PICK POINTS FOR TRANSPORTATION DELIVERY & INSTALLATION. AFTER INSTALLATION, PICK POINT HARDWARE SHALL BE REMOVED AND GROUTED TO CREATE A LEVEL RAMP SURFACE.
2. PLACE BOAT RAMP PLANKS WITH TIGHT JOINTS BEGINNING AT BOTTOM END STOP AND WORKING UPSLOPE.
3. TIMBER DECK FLOATING DOCK AN TRANSITION RAMP TO BE DETAILED AND DESIGNED BY MANUFACTURER.
4. GRAVEL BEDDING SHALL MEET SECTION 703.10, TYPE B OF THE MAINEDOT STANDARD SPECIFICATION, LATEST REVISION.
5. GEOTEXTILE FABRIC SHALL WRAP AROUND THE TOP OF THE GRAVEL BEDDING ON EACH SIDE BY A MINIMUM LENGTH OF 2'-0".

0 4 8 FT.
1/4"=1'-0"

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

SIGNATURE

P.E. NUMBER

DATE

PROJECT INFORMATION	
PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

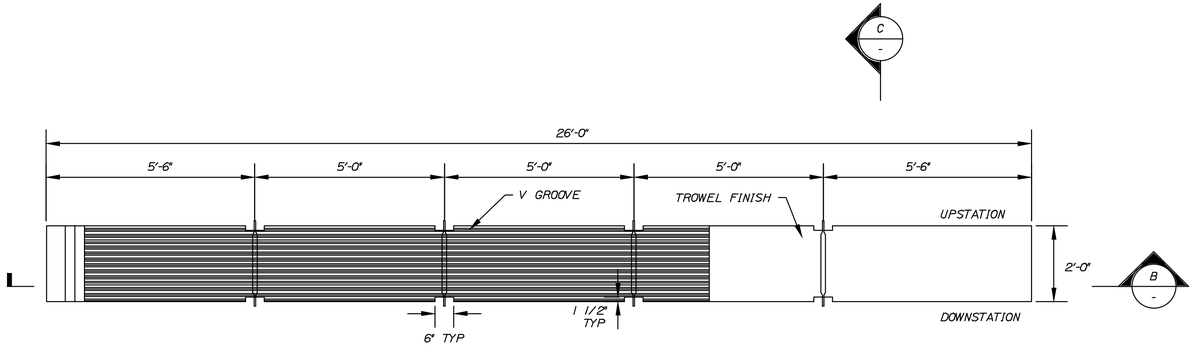
BOAT RAMP SECTION AND DETAILS - 1

SHEET NUMBER

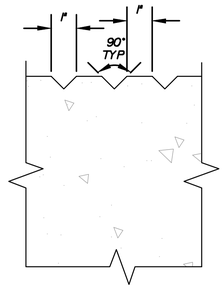
S-325

86 0F 99

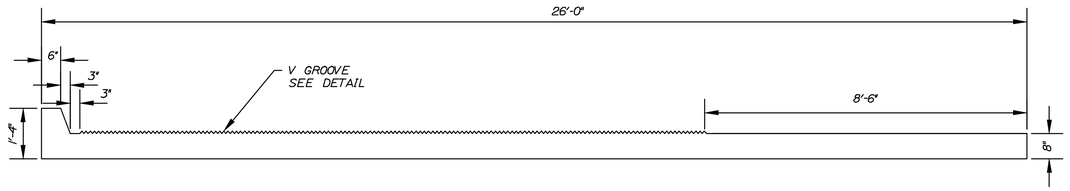
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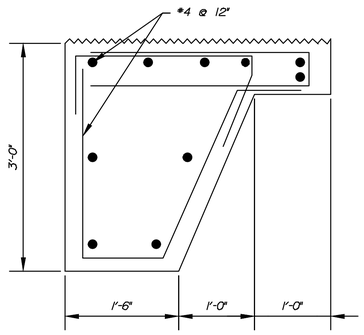
BOAT RAMP PLANK DETAIL - PLAN
1"=2'-0"



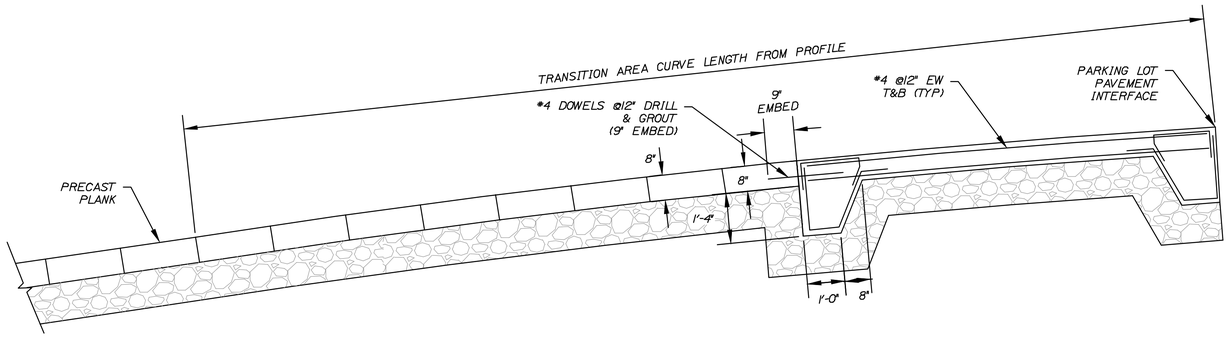
V-GROOVE FINISH DETAIL
4"=1'-0"



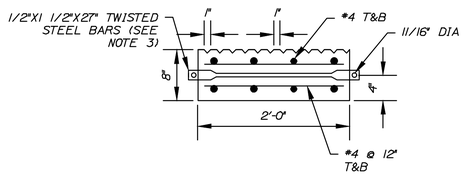
B SECTION
1"=2'-0"



1 DETAIL
1"=1'-0"
S-325



2 DETAIL
1"=2'-0"
S-325



C SECTION
1"=1'-0"

0 2 4 FT.
1"=2'-0"
0 4 8
4"=1'-0"
0 1 2 FT.
1"=1'-0"

NOTES

1. PRECAST MANUFACTURER SHALL DETERMINE PICK POINTS FOR TRANSPORTATION DELIVERY & INSTALLATION. AFTER INSTALLATION, PICK POINT HARDWARE SHALL BE REMOVED AND GROUTED TO CREATE A LEVEL RAMP SURFACE.
2. PLACE BOAT RAMP PLANKS WITH TIGHT JOINTS BEGINNING AT BOTTOM END STOP AND WORKING UPSLOPE.
3. TWISTED STEEL BARS CAST IN TO TIE BOAT RAMP PLANK SECTIONS TOGETHER.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL	SIGNATURE
PROJECT MANAGER	AURELE GORNEAU II	
DESIGNER	CRAIG MORIN	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

BOAT RAMP SECTION AND DETAILS - 2

SHEET NUMBER
S-326
87 0F 99

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GUIDE PILE SCHEDULE

PILE	PILE SIZE	CUTOFF ELEVATION (FT)	TIP ELEVATION (FT)	NORTHING	EASTING	PILE TYPE DETAIL
A'1	24" DIA. X 0.5" W.T.	25'	-35 ±	N: 374337.37	E: 2524451.16	A
A'2	24" DIA. X 0.5" W.T.	25'	-35 ±	N: 374351.26	E: 2524465.54	A
A'3	24" DIA. X 0.5" W.T.	25'	-35 ±	N: 374365.16	E: 2524479.93	A
A'4	24" DIA. X 0.5" W.T.	25'	-35 ±	N: 374379.06	E: 2524494.31	A
A'5	24" DIA. X 0.5" W.T.	25'	-35 ±	N: 374392.95	E: 2524508.69	A
A'6	24" DIA. X 0.5" W.T.	25'	-35 ±	N: 374406.85	E: 2524523.08	A
A'7	24" DIA. X 0.5" W.T.	25'	-37.5 ±	N: 374396.06	E: 2524558.22	B
A'8	24" DIA. X 0.5" W.T.	25'	-37.5 ±	N: 374395.46	E: 2524578.21	B
B'1	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374400.48	E: 2524622.82	B
B'2	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374390.13	E: 2524661.45	B
B'3	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374379.79	E: 2524700.09	B
B'4	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374368.41	E: 2524742.60	B
B'5	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374358.06	E: 2524781.24	B
B'6	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374347.72	E: 2524819.87	B
B'7	24" DIA. X 0.5" W.T.	25'	-40 ±	N: 374337.37	E: 2524858.51	B
C'1	36" DIA. X 1" W.T.	25'	-40 ±	N: 374148.22	E: 2524492.12	C
C'2	36" DIA. X 1" W.T.	25'	-40 ±	N: 374162.11	E: 2524506.50	C
C'3	36" DIA. X 1" W.T.	25'	-40 ±	N: 374176.10	E: 2524520.89	C
C'4	36" DIA. X 1" W.T.	25'	-40 ±	N: 374189.91	E: 2524535.27	C
C'5	36" DIA. X 1" W.T.	25'	-40 ±	N: 374203.80	E: 2524549.66	C
C'6	36" DIA. X 1" W.T.	25'	-40 ±	N: 374217.70	E: 2524564.04	C
C'7	36" DIA. X 1" W.T.	25'	-40 ±	N: 374231.59	E: 2524578.43	C
C'8	36" DIA. X 1" W.T.	25'	-40 ±	N: 374245.49	E: 2524592.81	C
C'9	36" DIA. X 1" W.T.	25'	-40 ±	N: 374259.38	E: 2524607.19	C
C'10	36" DIA. X 1" W.T.	25'	-40 ±	N: 374273.28	E: 2524621.58	C
C'11	36" DIA. X 1" W.T.	25'	-40 ±	N: 374287.18	E: 2524635.96	C
C'12	36" DIA. X 1" W.T.	25'	-40 ±	N: 374301.07	E: 2524650.35	C
C'13	36" DIA. X 1" W.T.	25'	-40 ±	N: 374314.97	E: 2524664.73	C
C'14	36" DIA. X 1" W.T.	25'	-40 ±	N: 374328.86	E: 2524679.11	C
C'15	36" DIA. X 1" W.T.	25'	-40 ±	N: 374342.76	E: 2524693.50	C
C'16	36" DIA. X 1" W.T.	25'	-40 ±	N: 374356.66	E: 2524707.89	C
D'1	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374301.40	E: 2524882.75	D
E'1	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374300.70	E: 2524891.41	D
E'2	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374300.56	E: 2524931.41	D
E'3	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374300.41	E: 2524971.41	D
E'4	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374300.26	E: 2525011.41	D
E'5	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374300.11	E: 2525051.41	D
E'6	24" DIA. X 0.5" W.T.	25'	-45 ±	N: 374299.96	E: 2525091.41	D

NOTES

1. ALL PILES SHALL BE DRIVEN OR DRILLED TO BEDROCK LEVEL AND SEATED WITHIN THE BEDROCK. ROCK SOCKETS SHALL BE DRILLED WITHIN COMPETENT BEDROCK. BEDROCK ELEVATION VARIES.
2. REFER TO S-320 AND S-321 FOR PILE DETAIL TYPE.
3. REFER TO B-100 FOR ESTIMATED BEDROCK ELEVATIONS.

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

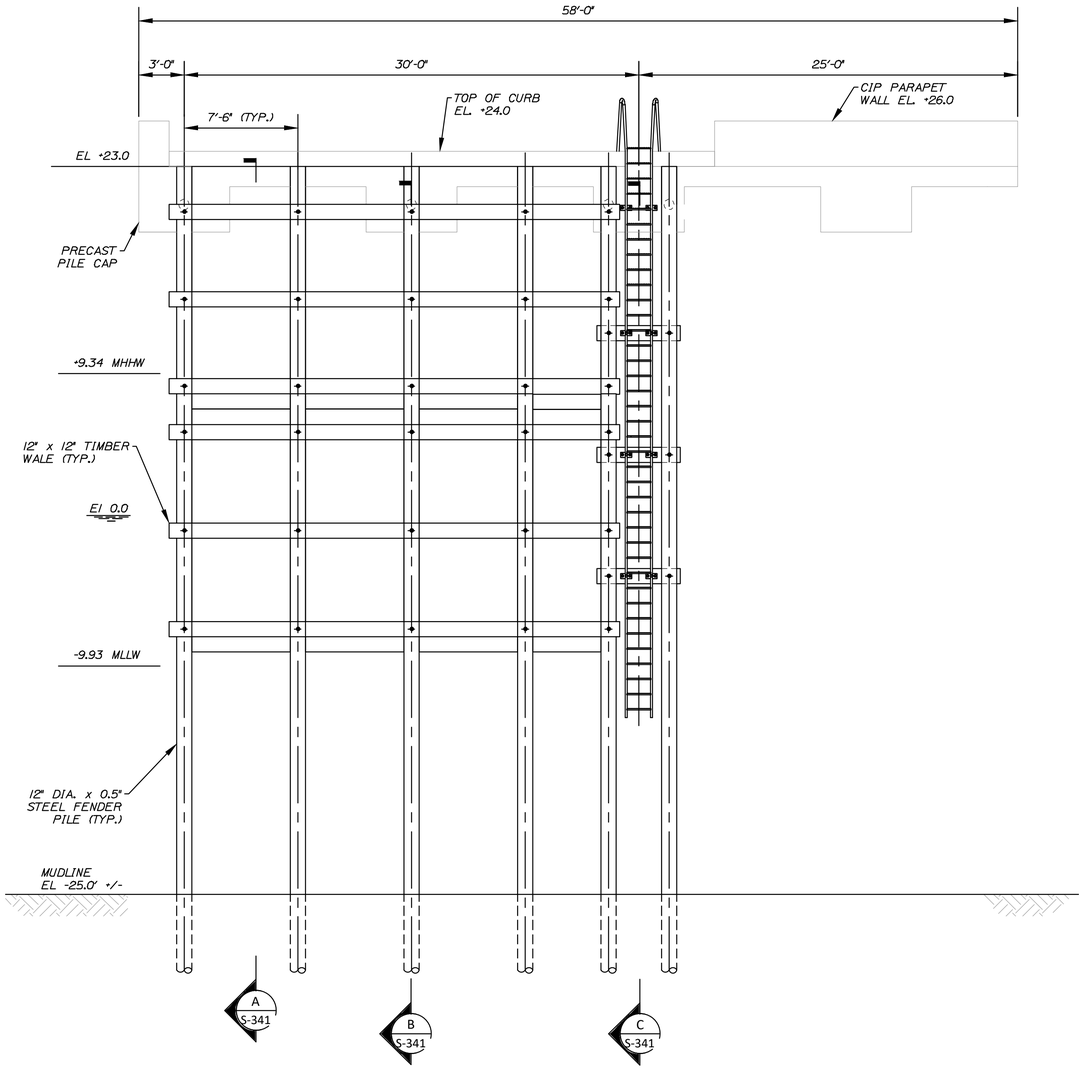
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PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME — WASHINGTON, COUNTY

FLOATING DOCK GUIDE PILE SCHEDULE

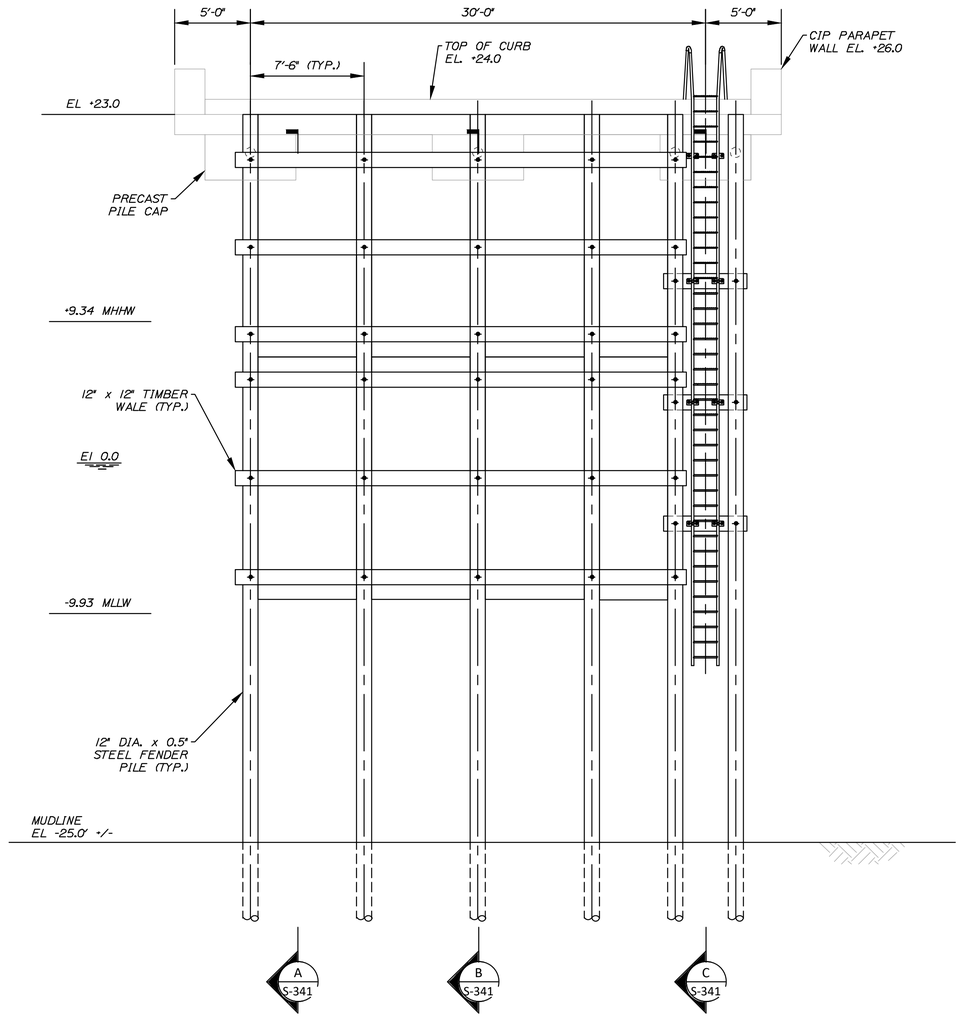
SHEET NUMBER

S-330



NOTE: PILE SUPPORTED PLATFORM STEEL PIPE PILES NOT SHOWN FOR CLARITY.

A ELEVATION
1" = 5'-0"
S-200



NOTE: PILE SUPPORTED PLATFORM STEEL PIPE PILES NOT SHOWN FOR CLARITY.

B ELEVATION
1" = 5'-0"
S-200

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO DRAWING S-230 FOR THE PILE SCHEDULE.
4. REFER TO DRAWING S-220 FOR THE PILE DETAILS.
5. GUIDE PILES AND FLOATING DOCKS NOT SHOWN FOR CLARITY.
6. PILE SUPPORTED PLATFORM STEEL PIPE PILES NOT SHOWN FOR CLARITY.

1"=5' 0 5 10 FT.

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM FENDER SYSTEM ELEVATIONS

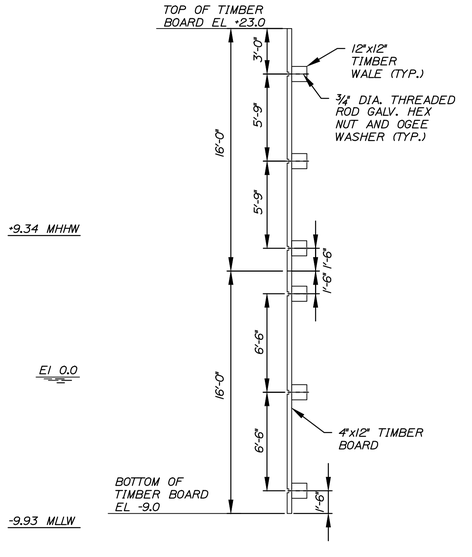
SHEET NUMBER

S-340

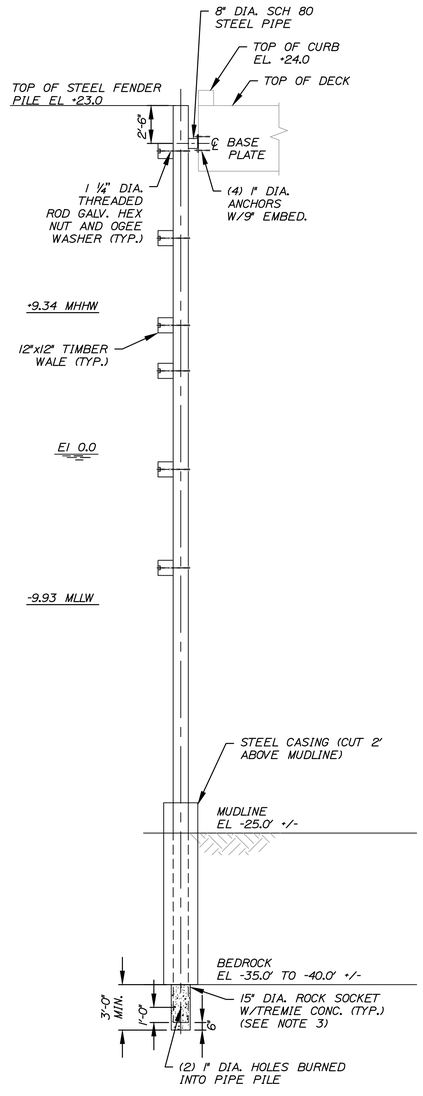
89 OF 99

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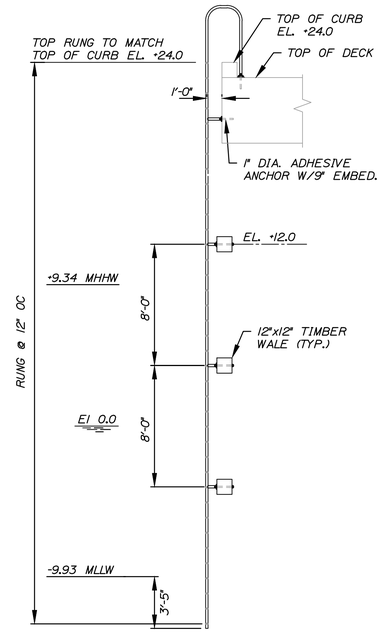
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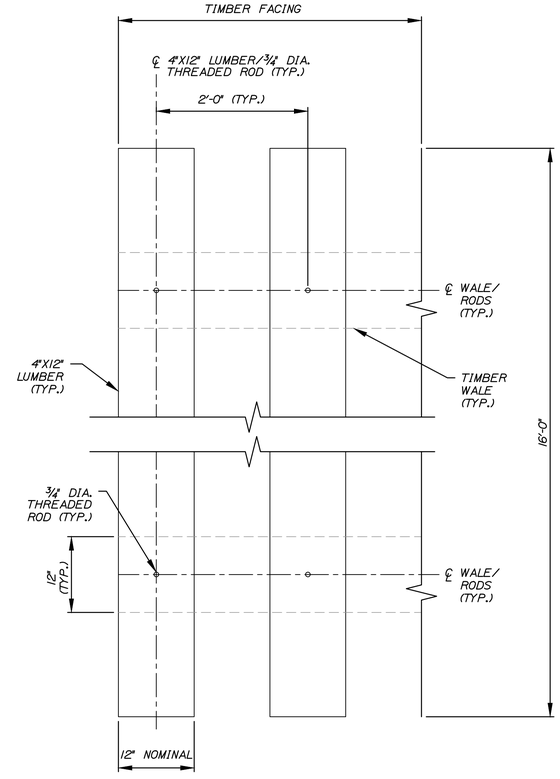
A SECTION
1" = 5'-0"
S-340



B SECTION
1" = 5'-0"
S-340



C SECTION
1" = 5'-0"
S-340



TIMBER FACING PANEL DETAIL - PARTIAL ELEVATION

1" = 1'-0"

TIMBER FACING PANEL NOTES

1. EACH TIMBER FACING PANEL CONSISTS OF 4"X12" SOUTHERN PINE PRESSURE-TREATED LUMBERS.
2. THE COUNTERSUNK THREADED RODS SHALL BE ¾" DIA. GALVANIZED.
3. REFER TO SECTION A ON S-341 FOR SIZE/LOCATION OF TIMBER WALES.
4. FENDER PILES BEYOND NOT SHOWN FOR CLARITY.
5. FIELD LOCATE THE THREADED ROD (CONNECTING PILE TO WALE) LOCATIONS PRIOR TO THREADED ROD INSTALLATION. IN CASE THE RODS INTERFERE WITH THREADED RODS, MOVE SUBJECT ROD 2" LATERALLY TO CLEAR.
6. COUNTERSUNK HOLES SHALL BE FILLED WITH AN APPROVED BITUMASTIC PASTE AFTER ANCHOR ROD INSTALLATION.

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. REFER TO DRAWING S-343 FOR TIMBER PILE TIP PIPE SLEEVE DETAIL.

0 5 10 FT.
1"=5'-0"

0 1 2 FT.
1"=1'-0"

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

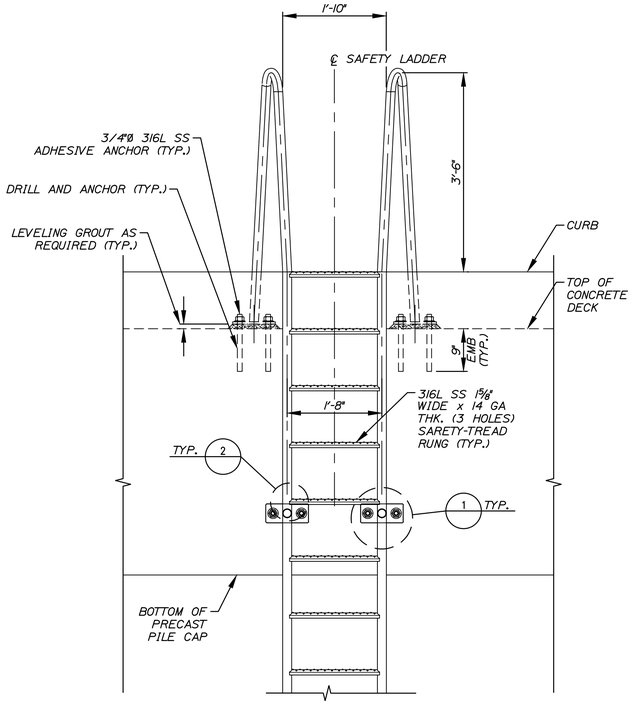
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PROGRAM	MULTIMODAL		SIGNATURE
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN		P.E. NUMBER
CONSULTANT	JACOBS		
PROJECT RESIDENT			DATE
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

PILE SUPPORTED PLATFORM FENDER SYSTEM SECTIONS

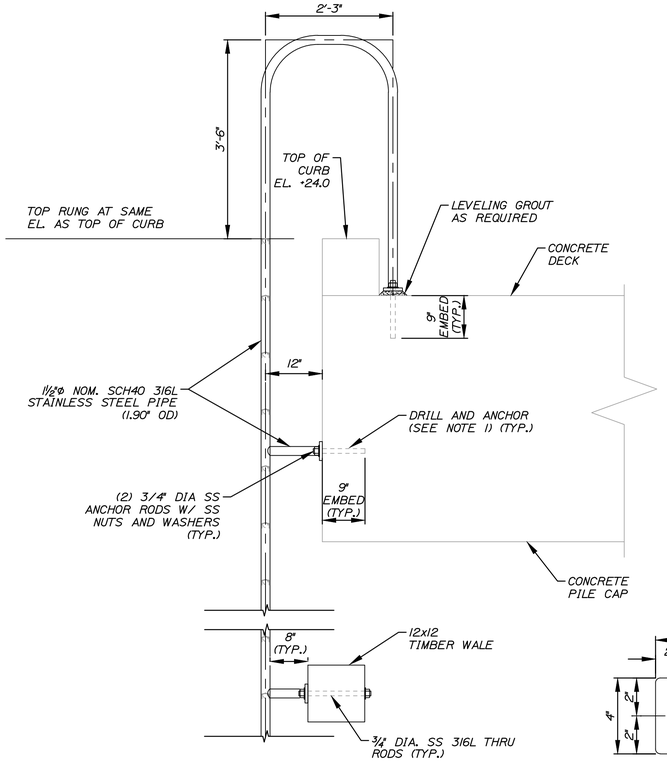
SHEET NUMBER

S-341

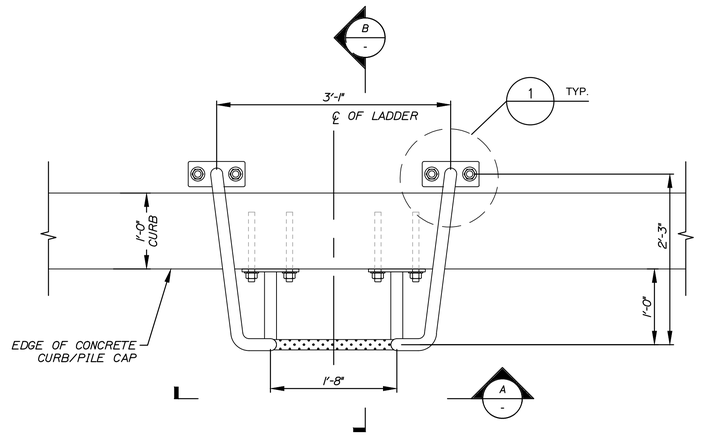


NOTE: BENT STEEL PLATE NOT SHOWN FOR CLARITY.

A ELEVATION
3/4" = 1'-0"

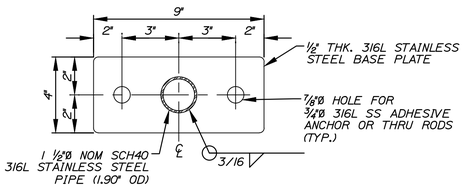


B SECTION
3/4" = 1'-0"

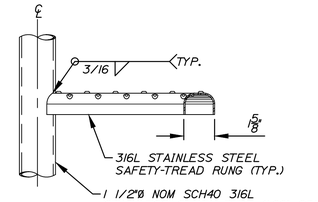


NOTE: BENT STEEL PLATE NOT SHOWN FOR CLARITY.

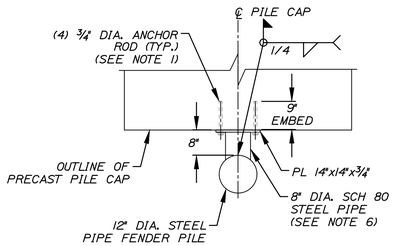
PARTIAL PLAN - TYPICAL SAFETY LADDER
1" = 1'-0"



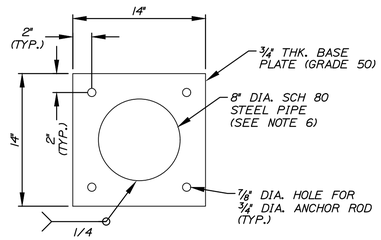
1 MOUNTING PLATE DETAIL
3" = 1'-0"
S-340



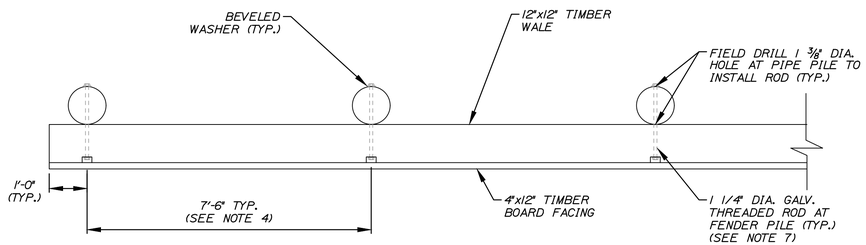
2 DETAIL
3" = 1'-0"
S-340



PLAN - FENDER PILE TO PILE CAP CONNECTION DETAIL
1/2" = 1'-0"



FENDER PILE SUPPORT ANCHOR PLATE DETAIL
1 1/2" = 1'-0"



PARTIAL PLAN - TYPICAL TIMBER WALE CONNECTION DETAIL
1/2" = 1'-0"

0 1 2 FT.
1"=1'-0"
0 3 6 9 IN.
3"=1'-0"
0 1 2 3 FT.
3/4"=1'-0"
0 1 4 FT.
1/2"=1'-0"

NOTES

1. DRILL HOLE AND INSTALL THREADED ANCHOR ROD WITH EPOXY ADHESIVE. ANCHOR RODS SHALL BE INSTALLED IN ACCORDANCE WITH EPOXY ADHESIVE MANUFACTURER'S SPECIFICATIONS. THE HOLE DRILLING METHOD/BIT SHALL BE APPLICABLE TO CRACKED CONCRETE CONDITION. THE CONCRETE SHALL BE DRY AT ANCHOR ROD LOCATION DURING ANCHOR ROD INSTALLATION.
2. FOR SAFETY LADDER LOCATIONS, SEE DWG. S-200.
3. ALL BOLTS, NUTS AND WASHERS FOR LADDER SHALL BE TYP.E 316 STAINLESS STEEL.
4. REFER TO S-201 FOR FENDER PILE SPACING.
5. REFER TO DRAWING S-343 FOR PILE TO WALE CONNECTION DETAIL.
6. 8" DIA. SCH 80 STEEL PIPE SHALL BE DELIVERED TO THE SITE WITH AN EXTRA 6" OF LENGTH AND UT TO MATCH IN THE FIELD.

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

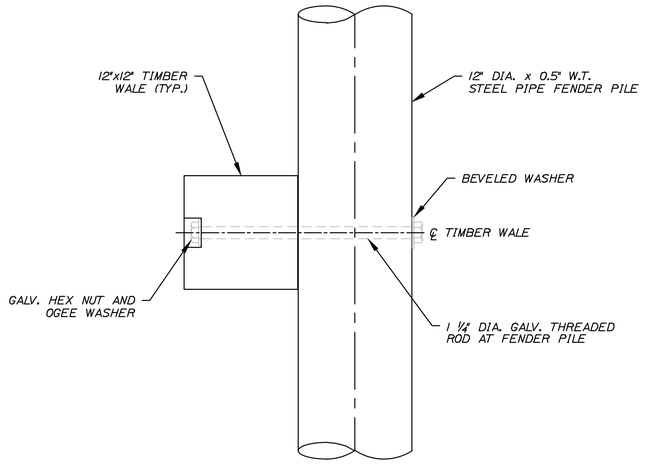
PROJECT INFORMATION			
PROGRAM	MULTIMODAL		SIGNATURE
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN		P.E. NUMBER
CONSULTANT	JACOBS		
PROJECT RESIDENT			DATE
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

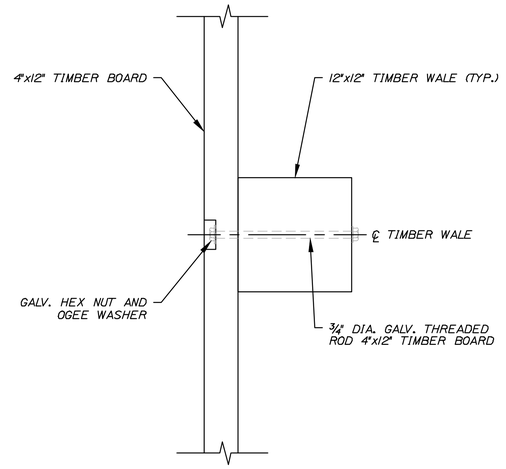
PILE SUPPORTED PLATFORM
FENDER SYSTEM DETAILS - 1

SHEET NUMBER
S-342
91 OF 99

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TYPICAL WALE TO FENDER PILE CONNECTION DETAIL
1 1/2" = 1'-0"



TYPICAL TIMBER BOARD TO WALE CONNECTION DETAIL
1 1/2" = 1'-0"

NOTES

1. COUNTERSUNK HOLES SHALL BE FILLED WITH AN APPROVED BITUMASTIC PASTE AFTER ANCHOR ROD/SCREW INSTALLATION.

0 1 4 FT.
1/2"=1'-0"
0 1 1 1/2 FT.
1 1/2" =1'-0"

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	CRAIG MORIN
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

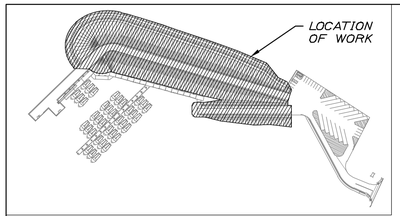
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE SUPPORTED PLATFORM FENDER SYSTEM DETAILS - 2

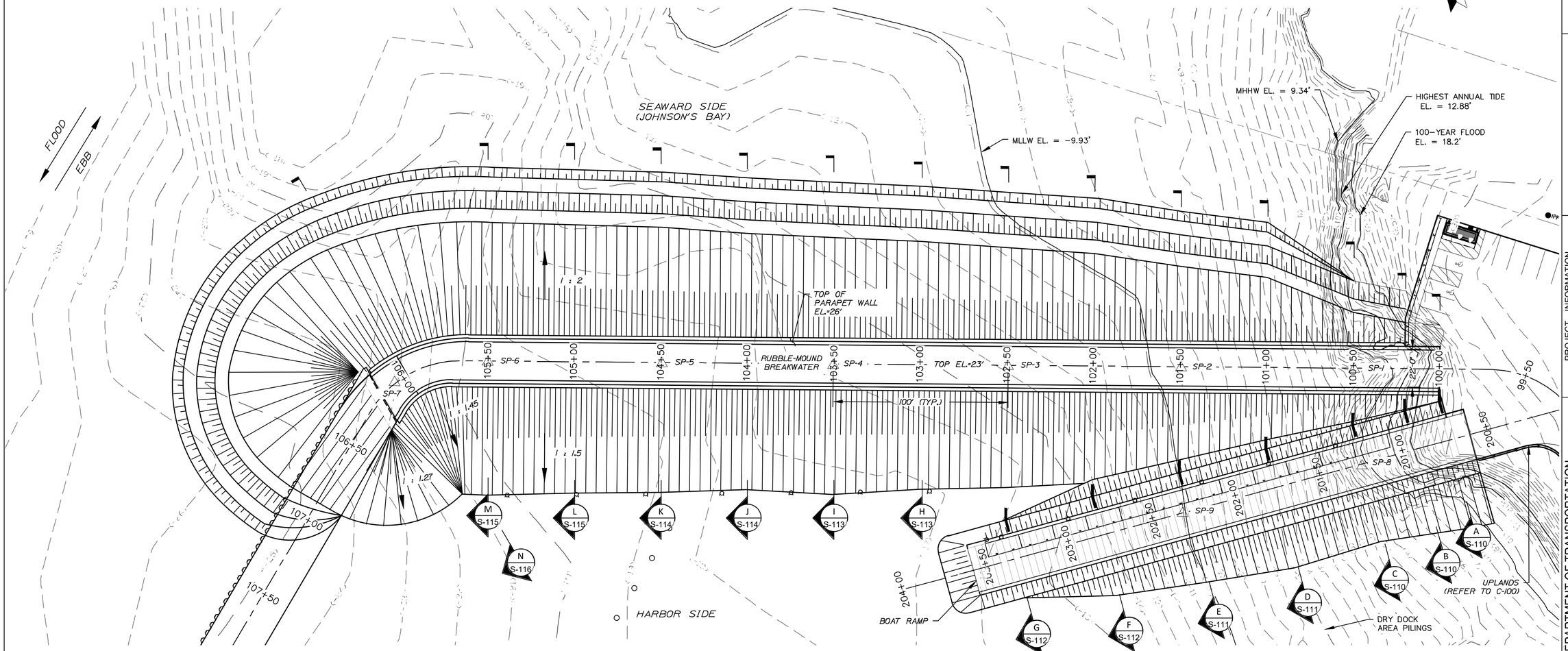
SHEET NUMBER

S-343

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\92-S-343 (Timber Fender System Details).; Plotted: 10/17/2024 3:09 PM by MAGUIRE, CASEY.; Saved: 8/30/2024 3:41 PM by HS037482



KEY PLAN
1"=240'-0"



PLAN
1"-30'-0"

NOTES

1. ALL ELEVATIONS REFER TO NAVD 88.
2. ALL UNITS IN FEET UNLESS OTHERWISE NOTED.
3. SETTLEMENT PLATES SHALL BE INSTALLED WITHIN RUBBLE-MOUND CORE LAYER AND AT LEAST 10FT BELOW TOP OF FINISHED GRADE FOR THE RUBBLE-MOUND BREAKWATER AS SHOWN ON THE CONTRACT DRAWING AND PLACED AT A SPACING OF 100FT, UNLESS OTHERWISE NOTED.
4. SETTLEMENT PLATES SHALL BE LOCATED AT THE STATIONS SHOWN IN DRAWING MN-100 AND AT THE CENTERLINE OF THE BREAKWATER.
5. THE SETTLEMENT PLATES SHALL BE MONITORED TWICE WEEKLY, OR MORE FREQUENTLY AS NEEDED, UNTIL THE START OF CONSTRUCTION OF THE CONCRETE ROADWAY.

LEGEND:

△ SP-1 SETTLEMENT PLATE LOCATION AND NUMBER

0 30 60 FT.
1"=30'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE
COMMISSIONER:	
CHIEF ENGINEER:	

PROJECT INFORMATION			
PROGRAM	MULTIMODAL	SIGNATURE	
PROJECT MANAGER	AURELE GORNEAU II		
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

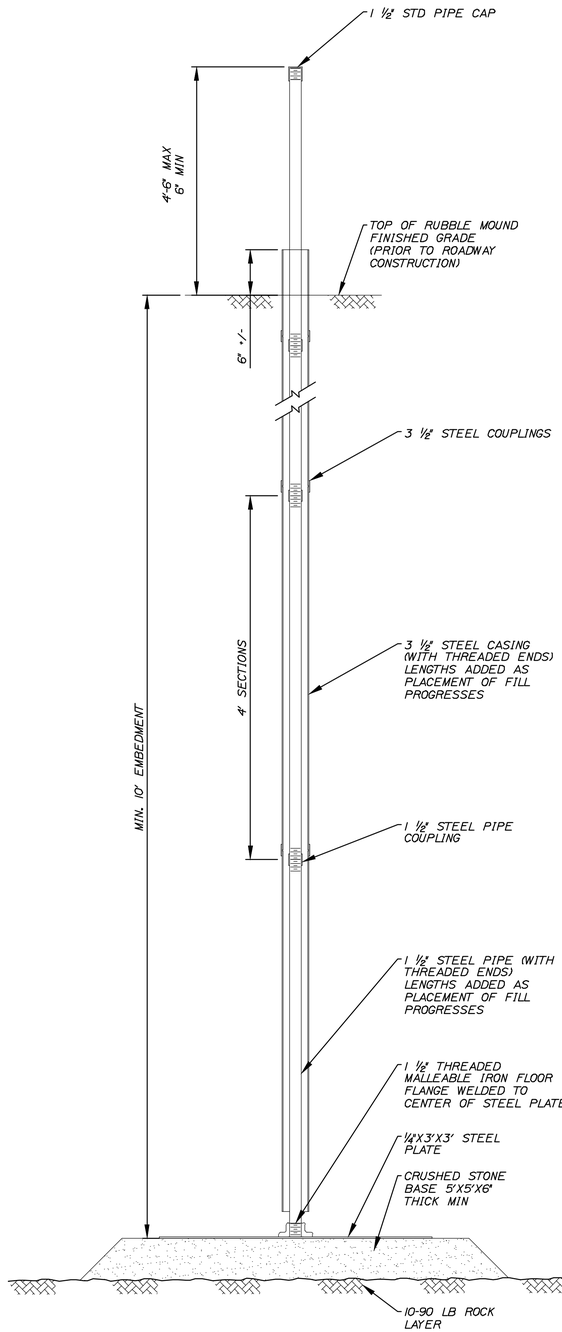
RUBBLE-MOUND BREAKWATER MONITORING PLAN

SHEET NUMBER

MN-100

93 OF 99

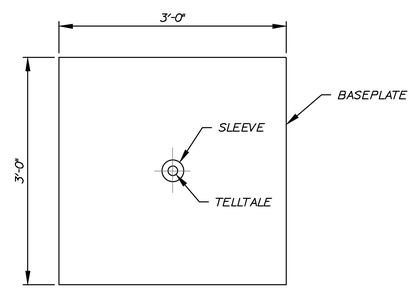
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ELEVATION
1"=10'

SETTLEMENT PLATE INSTALLATION NOTES

1. INSTALL THE SETTLEMENT MONITORING PLATES AS SHOWN ON THE CONTRACT DRAWINGS.
2. THE SETTLEMENT PLATES SHALL BE MONITORED TWICE WEEKLY, OR MORE FREQUENTLY AS NEEDED, UNTIL THE START OF CONSTRUCTION OF THE CONCRETE ROADWAYS. THE SETTLEMENT READINGS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER FOR ANALYSIS.
3. MONITORING FREQUENCY MAY BE INCREASED DEPENDING UPON ASSESSMENT OF THE RATE OF CONSOLIDATION BY THE RESIDENT ENGINEER.
4. INSTALL SETTLEMENT PLATES AND OBTAIN BASE LINE READINGS PRIOR TO INSTALLING THE RUBBLE-MOUND BREAKWATER UNDERLAYER. EXTEND THE OUTER CASING AS NEEDED WHILE CONSTRUCTING THE RUBBLE-MOUND UNDERLAYER AND ARMOR LAYER.
5. ADDITIONAL BREAKWATER ROCK PLACEMENT MAY BE REQUIRED DEPENDING ON FIELD SETTLEMENT DATA ANALYSIS AND AS DIRECTED BY THE RESIDENT ENGINEER.
6. UPON REACHING THE ANTICIPATED SETTLEMENT VALUES LISTED IN THE GEOTECHNICAL REPORT, NOTIFY THE RESIDENT ENGINEER BEFORE FURTHER ACTION.



PLAN

SETTLEMENT PLATE DETAIL (SP)
1"=1'-0"

0 1 2 FT.
1"=1'-0"

0 10 20 FT.
1"=10'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION			
PROGRAM	MULTIMODAL		
PROJECT MANAGER	AURELE GORNEAU II	SIGNATURE	
DESIGNER	CRAIG MORIN	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

RUBBLE-MOUND BREAKWATER MONITORING SECTIONS AND DETAILS

SHEET NUMBER

MN-120

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\Drawings\Drawings_ 100% Submission\94-MN-120 (Rubble-Mound Monitoring Sections and Details).; Plotted: 10/17/2024 3:32 PM by MAGUIRE, CASEY.; Saved: 8/29/2024 10:41 AM by MAGUIRC

GENERAL NOTES

A. CONTRACTOR SHALL OBTAIN AVAILABLE SHORT CIRCUIT CURRENT AT CONNECTION POINT FROM VERSANT AND SHALL VERIFY THAT ALL EQUIPMENT BEING INSTALLED IS PROVIDED WITH ADEQUATE AIC RATING.

B. ALL EQUIPMENT IS NEW, UNLESS CALLED OUT AS EXISTING.

C. USE STAINLESS STEEL STRUT AND HARDWARE FOR ALL EQUIPMENT & CONDUIT SUPPORT.

D. USE EXTRA HEAVY WALL FIBERGLASS CONDUIT SYSTEM FOR ALL EXPOSED CONDUIT RUNS, UNLESS OTHERWISE NOTED. ALL CONDUIT FITTINGS SHALL BE LISTED FOR WET LOCATIONS.

E. ALL WIRING SHALL BE XHHW-2, UNLESS OTHERWISE NOTED. ALL TYPE G CABLE SHALL BE RATED FOR CONTINUOUS SUBMERSION IN WATER.

F. USE 316 STAINLESS STEEL (NEMA 4X GASKETED SCREW COVER) FOR PULLBOXES AND JUNCTION BOXES, UNLESS OTHERWISE NOTED.

G. FOR ALL EXPOSED CONDUITS, PROVIDE CONDUIT SUPPORT INTERVAL THAT IS 50% GREATER THAN NEC MINIMUM.

H. PROVIDE NEW UPDATED, TYPEWRITTEN PANEL SCHEDULE FOR PANEL "DP" (SEALED IN PLASTIC).

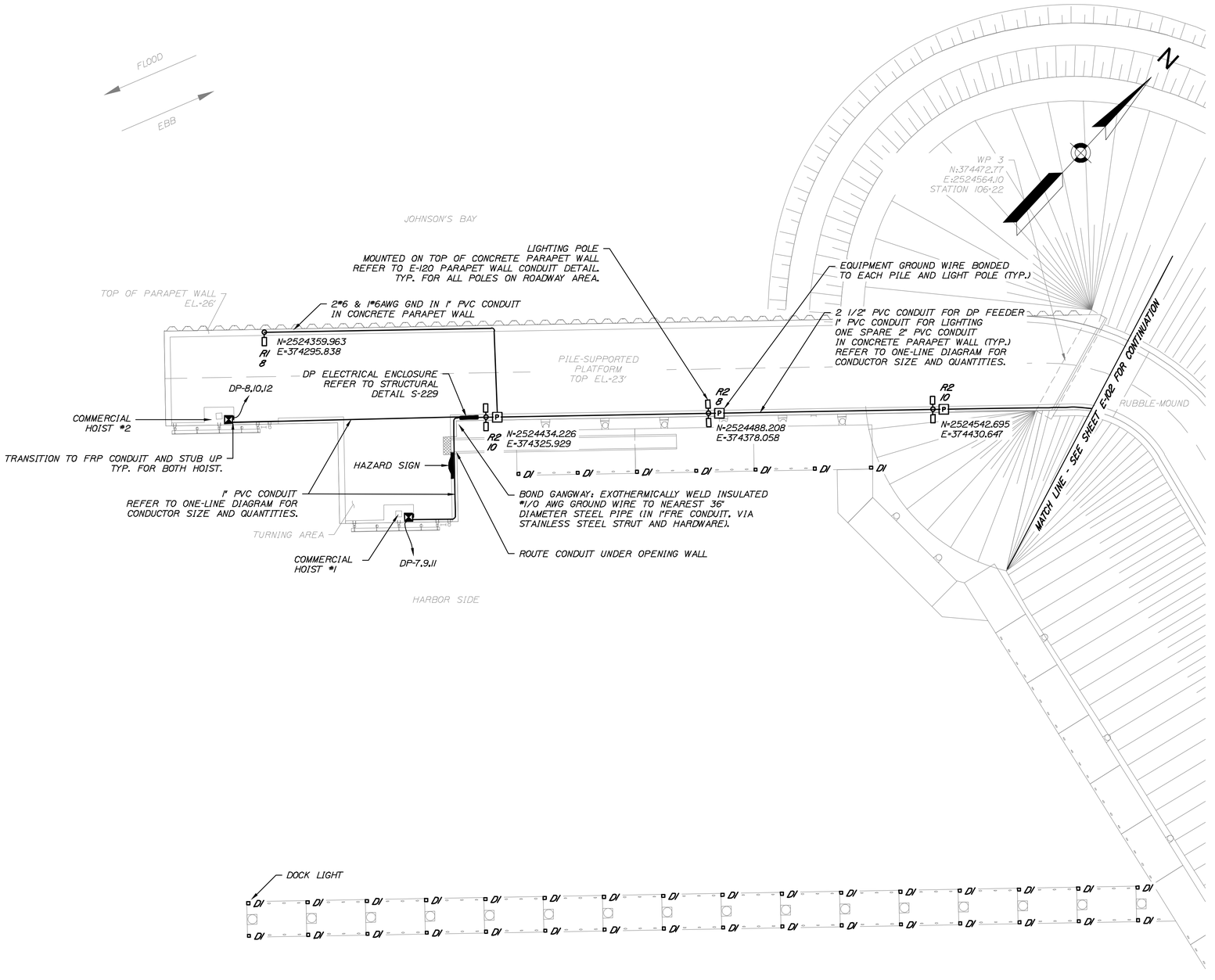
I. ALL STRUT CHANNEL, FASTENING SYSTEMS, CLAMPS AND RELATED HARDWARE SHALL BE STAINLESS STEEL.

J. PROVIDE DEDICATED NEUTRAL AND EQUIPMENT GROUNDING CONDUCTORS FOR EACH BRANCH CIRCUIT INDICATED ON THE PLAN DRAWINGS.

K. FOR EACH CONDUIT THAT IS TO BE LEFT IN PLACE FOR FUTURE USE, INSTALL A PULLWIRE AND SECURELY CAP EACH END. PERMANENTLY MARK THE END OF EACH CONDUIT WITH THE LOCATION OF THE OPPOSITE END'S TERMINATION POINT.

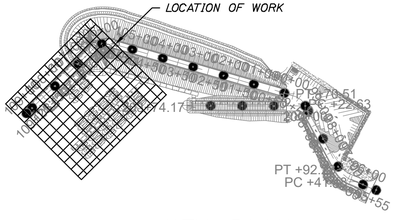
L. PROVIDE LABELS ON ALL RECEPTACLES, SWITCHES, ETC. INDICATING PANEL/CIRCUIT NUMBERS, AS APPLICABLE.

M. SPLICES MUST BE MADE ONLY AT OUTLETS, JUNCTION BOXES OR ACCESSIBLE RACEWAYS. SPLICING OF UNGROUNDED CONDUCTORS IN PANELBOARDS IS NOT PERMITTED. SPLICES MUST BE MADE WITH SOLDERLESS CONNECTORS CONFORMING TO UL 486A, UL 486C, AND UL 486E. INSULATED WIRE NUTS SHALL BE PRE-FILLED WITH SILICONE SEALANT AND MAY ONLY BE USED TO SPLICE CONDUCTORS SIZED NO.10 AWG AND SMALLER. COMPRESSION CONNECTORS MUST BE USED TO SPLICE CONDUCTORS NO.8 AWG AND LARGER. ALL SPLICES, INCLUDING THOSE MADE WITH INSULATED WIRE NUTS, MUST BE SUBMERSIBLE.



PLAN
1"=20'-0"

0 20 40 FT.
1"=20'



KEY PLAN

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

STATE OF MAINE
RYAN B. BEIKES
NO. 15561
REGISTERED PROFESSIONAL ENGINEER

SIGNATURE | P.E. NUMBER | DATE

PROJECT INFORMATION	
PROGRAM	MULTIMODAL
PROJECT MANAGER	A. GORNEAU, II
DESIGNER	R. BEIKES
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PILE-SUPPORTED PLATFORM UTILITY PART PLAN

SHEET NUMBER

E-101

95 OF 99

File: C:\Users\MAGUIRCH\OneDrive - Jacobs\Project Documents\30 W\PIDrawings\Drawings_ 100% Submission\96-E-101 (Pile Supported Utility Plan) - Plotted: 10/17/2024 3:33 PM by MAGUIRE, CASEY - Saved: 8/29/2024 9:11 PM by PHUNGHM

GENERAL NOTES

A. CONTRACTOR SHALL OBTAIN AVAILABLE SHORT CIRCUIT CURRENT AT CONNECTION POINT FROM VERSANT AND SHALL VERIFY THAT ALL EQUIPMENT BEING INSTALLED IS PROVIDED WITH ADEQUATE AIC RATING.

B. ALL EQUIPMENT IS NEW, UNLESS CALLED OUT AS EXISTING.

C. USE STAINLESS STEEL STRUT AND HARDWARE FOR ALL EQUIPMENT & CONDUIT SUPPORT.

D. USE EXTRA HEAVY WALL FIBERGLASS CONDUIT SYSTEM FOR ALL EXPOSED CONDUIT RUNS, UNLESS OTHERWISE NOTED. ALL CONDUIT FITTINGS SHALL BE LISTED FOR WET LOCATIONS.

E. ALL WIRING SHALL BE XHHW-2, UNLESS OTHERWISE NOTED. ALL TYPE G CABLE SHALL BE RATED FOR CONTINUOUS SUBMERSION IN WATER.

F. USE 316 STAINLESS STEEL (NEMA 4X GASKETED SCREW COVER) FOR PULLBOXES AND JUNCTION BOXES, UNLESS OTHERWISE NOTED.

G. FOR ALL EXPOSED CONDUITS, PROVIDE CONDUIT SUPPORT INTERVAL THAT IS 50% GREATER THAN NEC MINIMUM.

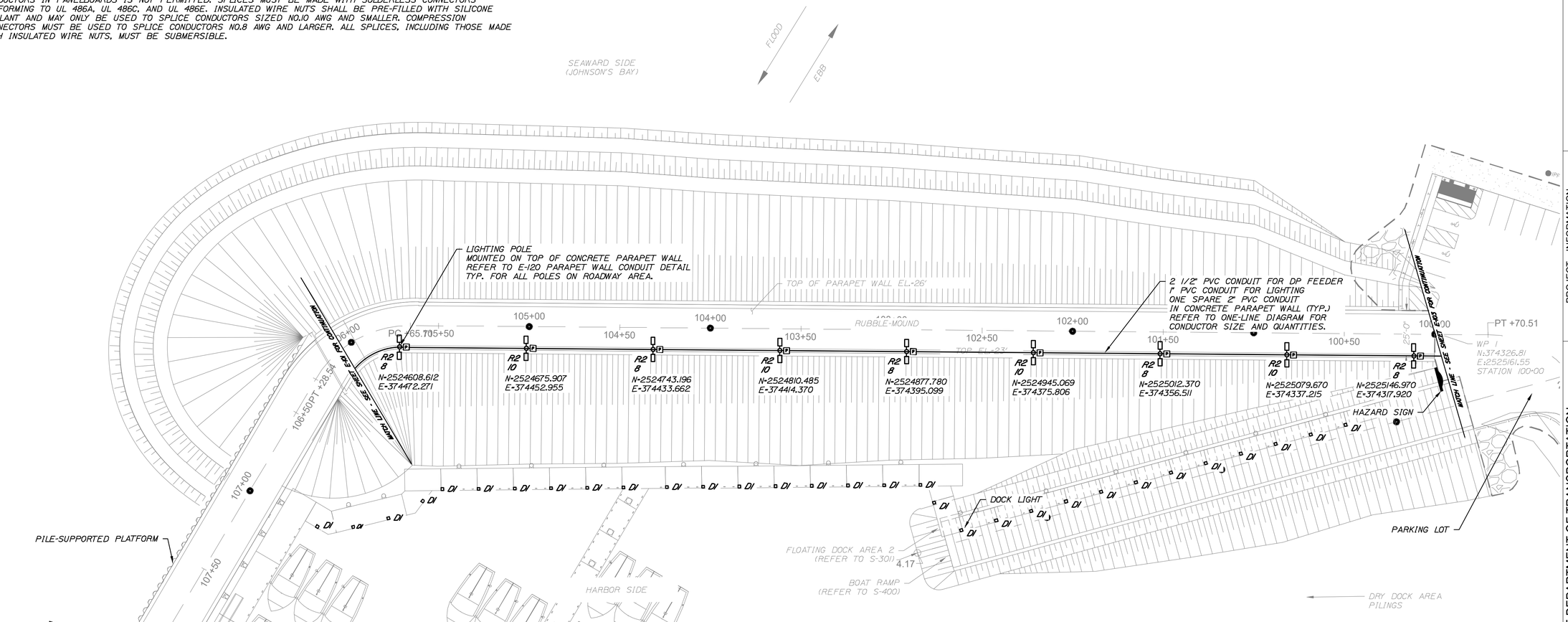
H. ALL STRUT CHANNEL, FASTENING SYSTEMS, CLAMPS AND RELATED HARDWARE SHALL BE STAINLESS STEEL.

I. PROVIDE DEDICATED NEUTRAL AND EQUIPMENT GROUNDING CONDUCTORS FOR EACH BRANCH CIRCUIT INDICATED ON THE PLAN DRAWINGS.

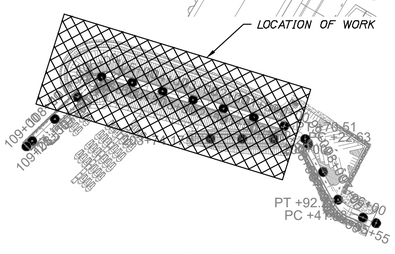
J. FOR EACH CONDUIT THAT IS TO BE LEFT IN PLACE FOR FUTURE USE, INSTALL A PULLWIRE AND SECURELY CAP EACH END. PERMANENTLY MARK THE END OF EACH CONDUIT WITH THE LOCATION OF THE OPPOSITE END'S TERMINATION POINT.

K. PROVIDE LABELS ON ALL RECEPTACLES, SWITCHES, ETC. INDICATING PANEL/CIRCUIT NUMBERS, AS APPLICABLE.

L. SPLICES MUST BE MADE ONLY AT OUTLETS, JUNCTION BOXES OR ACCESSIBLE RACEWAYS. SPLICING OF UNGROUNDED CONDUCTORS IN PANELBOARDS IS NOT PERMITTED. SPLICES MUST BE MADE WITH SOLDERLESS CONNECTORS CONFORMING TO UL 486A, UL 486C, AND UL 486E. INSULATED WIRE NUTS SHALL BE PRE-FILLED WITH SILICONE SEALANT AND MAY ONLY BE USED TO SPLICE CONDUCTORS SIZED NO.10 AWG AND SMALLER. COMPRESSION CONNECTORS MUST BE USED TO SPLICE CONDUCTORS NO.8 AWG AND LARGER. ALL SPLICES, INCLUDING THOSE MADE WITH INSULATED WIRE NUTS, MUST BE SUBMERSIBLE.



PLAN
1"=30'-0"



KEY PLAN

0 30 60 FT.
1"=30'

Jacobs

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION		SIGNATURE
PROGRAM	MULTIMODAL	
PROJECT MANAGER	A. GORNEAU, II	
DESIGNER	R. BEIKES	P.E. NUMBER
CONSULTANT	JACOBS	
PROJECT RESIDENT		DATE
CONTRACTOR		
PROJECT COMPLETION DATE		

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

RUBBLE-MOUND BREAKWATER UTILITY PART PLAN

SHEET NUMBER

E-102

96 OF 99

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GENERAL NOTES

A. CONTRACTOR SHALL OBTAIN AVAILABLE SHORT CIRCUIT CURRENT AT CONNECTION POINT FROM VERSANT AND SHALL VERIFY THAT ALL EQUIPMENT BEING INSTALLED IS PROVIDED WITH ADEQUATE AIC RATING.

B. ALL EQUIPMENT IS NEW, UNLESS CALLED OUT AS EXISTING.

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F. USE 316 STAINLESS STEEL (NEMA 4X GASKETED SCREW COVER) FOR PULLBOXES AND JUNCTION BOXES, UNLESS OTHERWISE NOTED.

G. FOR ALL EXPOSED CONDUITS, PROVIDE CONDUIT SUPPORT INTERVAL THAT IS 50% GREATER THAN NEC MINIMUM.

H. PROVIDE NEW UPDATED, TYPEWRITTEN PANEL SCHEDULE FOR PANEL "MDP" (SEALED IN PLASTIC).

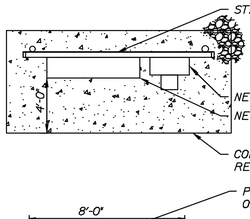
I. ALL STRUT CHANNEL, FASTENING SYSTEMS, CLAMPS AND RELATED HARDWARE SHALL BE STAINLESS STEEL.

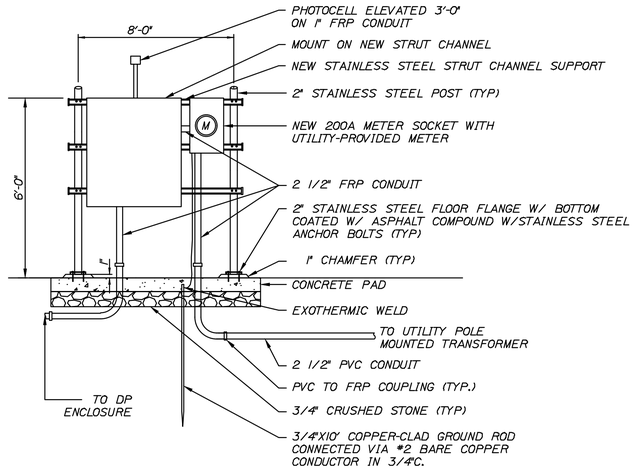
J. PROVIDE DEDICATED NEUTRAL AND EQUIPMENT GROUNDING CONDUCTORS FOR EACH BRANCH CIRCUIT INDICATED ON THE PLAN DRAWINGS.

K. FOR EACH CONDUIT THAT IS TO BE LEFT IN PLACE FOR FUTURE USE, INSTALL A PULLWIRE AND SECURELY CAP EACH END. PERMANENTLY MARK THE END OF EACH CONDUIT WITH THE LOCATION OF THE OPPOSITE END'S TERMINATION POINT.

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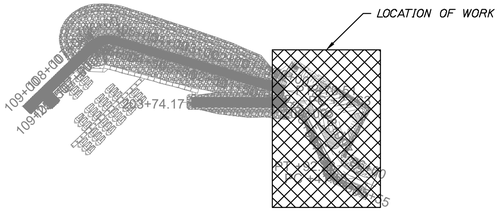




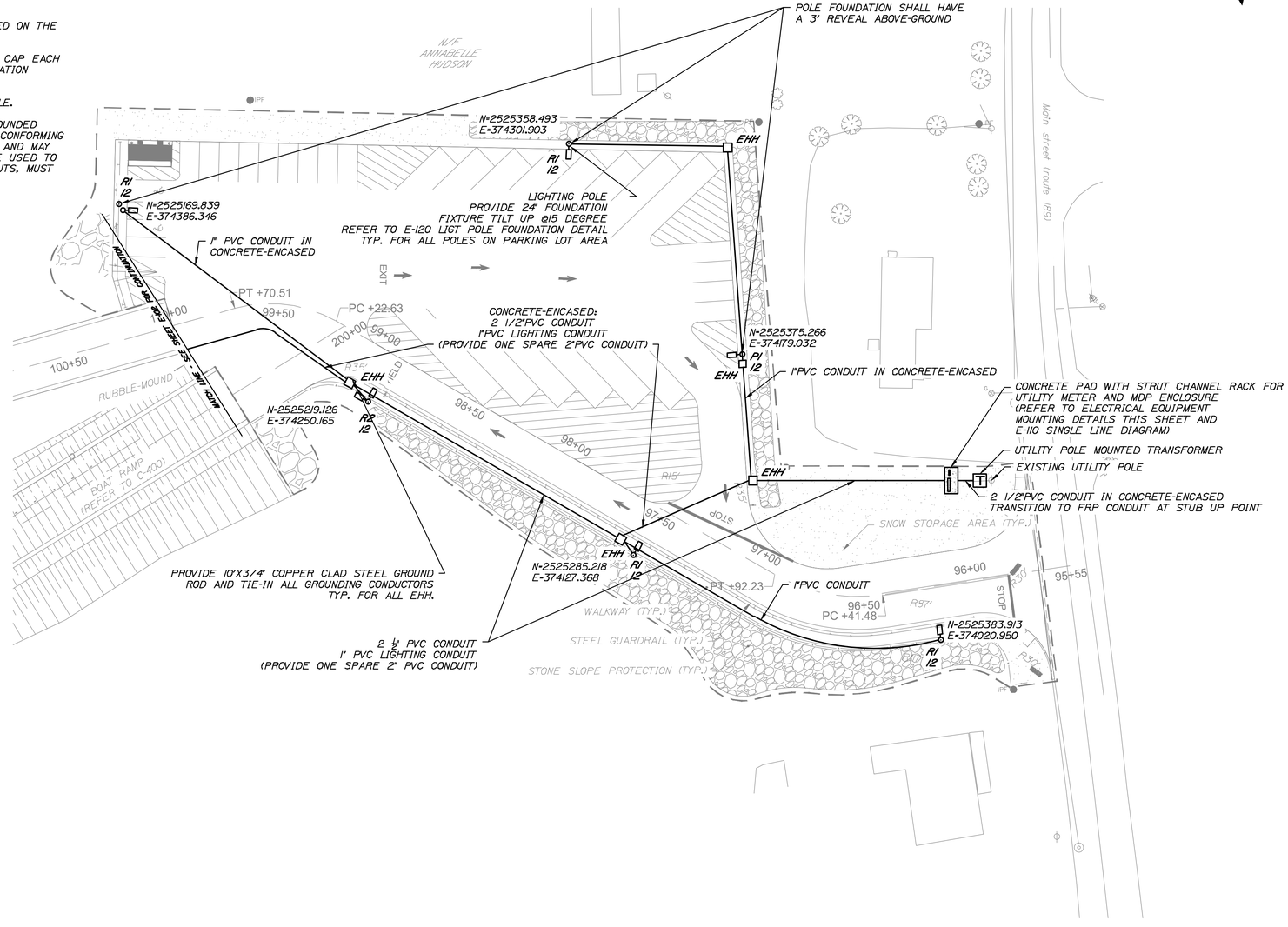
NOTES:
1. REFER TO E-110 SINGLE LINE DIAGRAM FOR CABLE SIZE, CONTENTS OF ENCLOSURE, AND CONDUIT TYPES.
2. REFER TO TYPICAL CONCRETE UTILITY PAD DETAIL ON DWG C-400.
3. GROUND PER STANDARD MAINE DOT SPECIFICATION REQUIREMENTS AND NEC. ADDITIONAL GROUND RODS MAY BE REQUIRED BASED ON TEST RESULTS AND LOCAL CONDITIONS.

ELECTRICAL EQUIPMENT MOUNT DETAILS

N.T.S.



KEY PLAN



PLAN

1"=30'-0"

0 30 60 FT.
1"=30'

N

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER:

CHIEF ENGINEER:

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	A. GORNEAU, II
DESIGNER	R. BEIKES
CONSULTANT	JACOBS
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SIGNATURE

P.E. NUMBER

DATE

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

PARKING LOT UTILITY PART PLAN

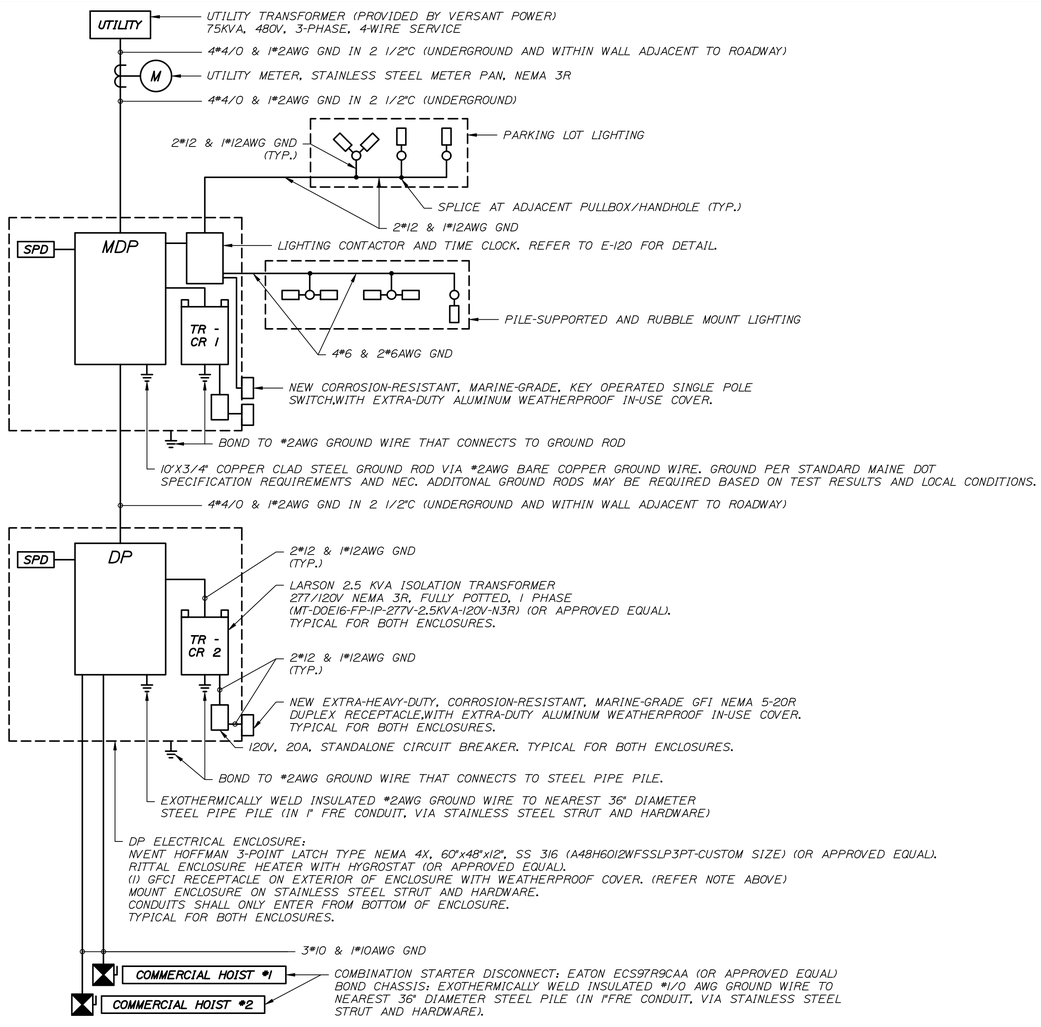
SHEET NUMBER

E-103

97 OF 99

Jacobs

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SINGLE LINE DIAGRAM

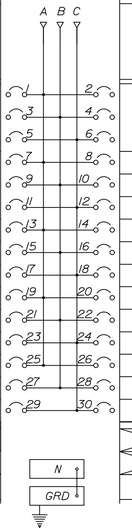
LIGHT FIXTURE SCHEDULE

SYMBOL	TYPE	MANUFACTURE/CATALOG NO.	WATTS	MOUNTING	REMARK
	RI	SINGLE LIGHT POLE LUMINARIES: NEMALUX XR8-40-T3-GY-GN-AC-XR-SFY POLE: VALMONT R-290845805T4XX313 (OR APPROVED EQUAL)	LED 60W	POLE	MARINE GRADE, LIGHT WITH 29.5' ALUMINUM POLE. PROVIDE GROUNDING TO NEAREST PILE (ON PILE-SUPPORTED PLATFORM) OR NEW GROUND ROD (ELSEWHERE). ANY EQUIVALENT FIXTURE MUST COMPLY WITH BABA, BE DARK SKY, CLASS I DIV 2, MARINE-GRADE.
	R2	DOUBLE LIGHT POLE LUMINARIES: NEMALUX XR8-40-T3-GY-GN-AC-XR-SFY POLE: VALMONT R-290845805T4XX313 BRACKET: VALMONT BULLHORN FLOODLIGHT #2BI80 (OR APPROVED EQUAL)	LED 2x60W	POLE	MARINE GRADE, LIGHT WITH 29.5' ALUMINUM POLE. PROVIDE GROUNDING TO NEAREST PILE (ON PILE-SUPPORTED PLATFORM) OR NEW GROUND ROD (ELSEWHERE). ANY EQUIVALENT FIXTURE MUST COMPLY WITH BABA, BE DARK SKY, CLASS I DIV 2, MARINE-GRADE.
	PI	SINGLE LIGHT POLE LUMINARIES: NEMALUX XR8-40-0C-GY-GN-AC-XR-SFY POLE: VALMONT R-290845805T4XX313 (OR APPROVED EQUAL)	LED 60W	POLE	MARINE GRADE, LIGHT WITH 29.5' ALUMINUM POLE. PROVIDE GROUNDING TO NEAREST PILE (ON PILE-SUPPORTED PLATFORM) OR NEW GROUND ROD (ELSEWHERE). ANY EQUIVALENT FIXTURE MUST COMPLY WITH BABA, BE DARK SKY, CLASS I DIV 2, MARINE-GRADE.
	DI	DOCK LIGHT LAKE LITE LL-SDL-DECK-W (OR APPROVED EQUAL)	0.4W	FLAT SURFACE	WHITE LED, BUILT-IN PHOTOCELL, REPLACEABLE RECHARGEABLE BATTERY

PANEL CIRCUIT AND LOAD SCHEDULE

SERVICE: PANEL DP & LIGHTING
DESIGNATION: PANEL MDP
LOCATION: PARKING LOT

LOAD DESCRIPTION	UNIT V.A.	VA PER PHASE A	VA PER PHASE B	VA PER PHASE C	TRIP	POLES
MAIN BREAKER	-	-			125	3
			-			
				-		
(1)PANEL DP	-	14140			100	3
			12040			
				11640		
CR TRANSFORMER (TR-CR 1)	-	2500			20	1
ENCLOSURE HEATER	-		400		20	1
SPARE	-			-	20	1
SPARE	-	-			20	1
SPARE	-		-		20	1
SPACE	-			-	-	-
SPACE	-	-			-	-
SPACE	-		-		-	-
SPACE	-			-	-	-
VA SUBTOTAL LEFT		16640	12440	11640		



POLES	TRIP	VA PER PHASE A	VA PER PHASE B	VA PER PHASE C	UNIT V.A.	LOAD DESCRIPTION
		-				
3	40		-		-	SPD(2)
				-		
1	20	780			-	PILE & RUBBLE MOUNT LIGHTING
1	20		720		-	PILE & RUBBLE MOUNT LIGHTING
1	20			420	-	PARKING LOT LIGHTING
1	20	-			-	LIGHTING CONTACTOR
1	20		-		-	SPARE
1	20			-	-	SPARE
1	20	-			-	SPARE
1	20		-		-	SPARE
-	-			-	-	SPACE
-	-	-			-	SPACE
-	-		-		-	SPACE
-	-			-	-	SPACE
		780	720	420		VA SUBTOTAL RIGHT
		SUBTOTAL: 42640				TOTAL CONNECTED LOAD: 51.3 AMP

VOLTAGE: 480Y/277V CYCLE: 60 Hz PHASE: 3 WIRES: 4

NOTES: ALL BREAKERS SHALL BE GROUND FAULT (GFCI) TYPE, UNLESS OTHERWISE NOTED

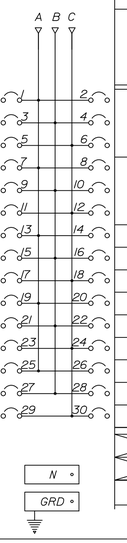
FEED FROM: UTILITY TRANS MAIN: MCB BUS: 125A AIC: 18 KA

NOTES: (1) 100MA GFPE (MAX RATING ALLOWED)
(2) GROUND FAULT PROTECTION NOT REQUIRED

PANEL CIRCUIT AND LOAD SCHEDULE

SERVICE: PILE-SUPPORTED PLATFORM
DESIGNATION: PANEL DP
LOCATION: PILE-SUPPORTED PLATFORM

LOAD DESCRIPTION	UNIT V.A.	VA PER PHASE A	VA PER PHASE B	VA PER PHASE C	TRIP	POLES
MAIN BREAKER	-	-			100	3
			-			
				-		
(1)COMMERCIAL HOIST #1	-	5820			30	3
			5820			
				5820		
CR TRANSFORMER (TR-CR 2)	-	2500			20	1
ENCLOSURE HEATER	-		400		20	1
SPARE	-			-	20	1
SPARE	-	-			20	1
SPARE	-		-		20	1
SPACE	-			-	-	-
SPACE	-	-			-	-
SPACE	-		-		-	-
SPACE	-			-	-	-
VA SUBTOTAL LEFT		8320	6220	5820		



POLES	TRIP	VA PER PHASE A	VA PER PHASE B	VA PER PHASE C	UNIT V.A.	LOAD DESCRIPTION
		-				
3	40		-		-	SPD(2)
				-		
		5820				
3	30		5820		-	COMMERCIAL HOIST #2(1)
				5820		
1	20	-			-	SPARE
1	20		-		-	SPARE
1	20			-	-	SPARE
1	20	-			-	SPARE
1	20		-		-	SPARE
-	-			-	-	SPACE
-	-	-			-	SPACE
-	-		-		-	SPACE
-	-			-	-	SPACE
		5820	5820	5820		VA SUBTOTAL RIGHT
		SUBTOTAL: 37820				TOTAL CONNECTED LOAD: 45.5 AMP

VOLTAGE: 480Y/277V CYCLE: 60 Hz PHASE: 3 WIRES: 4

NOTES: ALL BREAKERS SHALL BE GROUND FAULT (GFCI) TYPE, UNLESS OTHERWISE NOTED

FEED FROM: MDP MAIN: MCB BUS: 125A AIC: 18 KA

NOTES: (1) 100MA GFPE (MAX RATING ALLOWED)
(2) GROUND FAULT PROTECTION NOT REQUIRED

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE
COMMISSIONER:
CHIEF ENGINEER:

PROJECT INFORMATION
PROGRAM: MULTIMODAL
PROJECT MANAGER: A. GORNEAU, II
DESIGNER: R. BEIKES
CONSULTANT: JACOBS
PROJECT RESIDENT:
CONTRACTOR:
PROJECT COMPLETION DATE:

SIGNATURE
P.E. NUMBER
DATE

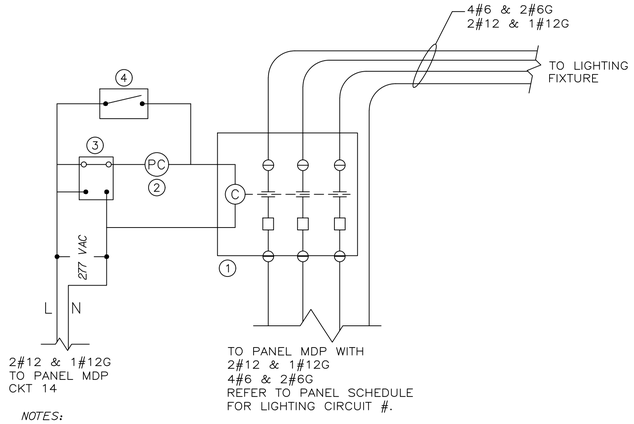
MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
LUBEC, ME WASHINGTON, COUNTY

ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES

SHEET NUMBER
E-110
98 OF 99

Jacobs

File: C:\Users\MAGUIRC\OneDrive - Jacobs\Project Documents\30 WIP\DrawingsDrawings_ 100% Submission\99-E-110 (Electrical One Line Diagram and Panel Schedules) - Plotted: 11/7/2024 3:12 PM by MAGUIRE, CASEY - Saved: 10/22/2024 9:55 AM by MAGUIRC



NOTES:

1. ALL CONTROL WIRING SHALL BE MINIMUM #12AWG XHHW.
2. ITEMS 1, 3 & 4 LOCATED IN MDP ELECTRICAL ENCLOSURE.
3. LIGHTING SCHEDULE: DUSK TO 10PM AND 4AM TO DAWN

LEGEND NOTES:

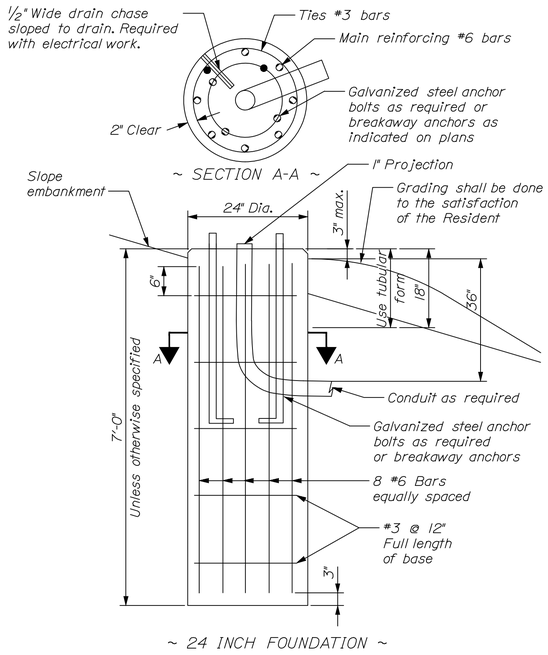
(1) MECHANICALLY HELD LIGHTING CONTACTOR - 277/480V, 20A, 3 POLE WITH 277V CONTROL COIL IN NEMA 3R BOX.

(2) PHOTOCELL (277V) OPERABLE WITH TURN ON RANGE OF .5 TP 2.5 FOOTCANDLES. LOCATION TO BE DETERMINE IN THE FIELD.

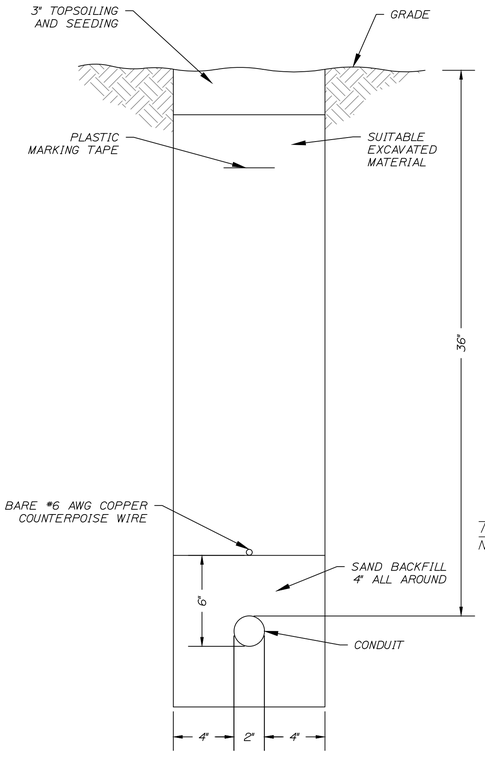
(3) TIME CLOCK - SHALL HAVE CONTACTS RATED FOR 20A, 277V. TIME CLOCK SHALL BE 7 DAY TYPE, ASTRONOMICAL, PROGRAMMABLE TYPE WITH OMITTING DAY CAPABILITY.

(4) KEYED LIGHT SWITCH (IN SINGLE GANG BOX - NEMA 3R WITH DEVICE PLATE) 20A, 277V RATED. LABEL "MANUAL SWITCH FOR LIGHT CIRCUITS".

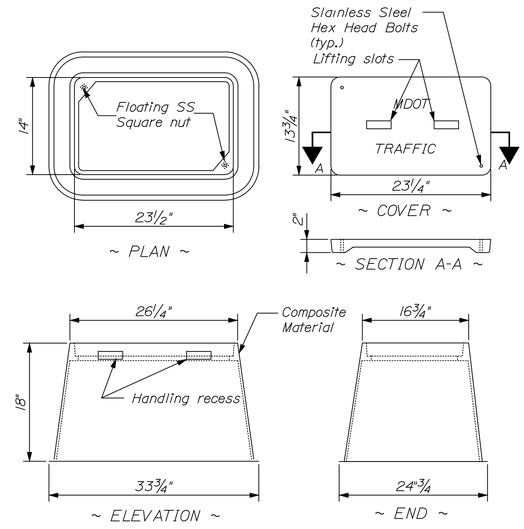
LIGHTING CONTROL SCHEMATIC DIAGRAM
N.T.S.



24" LIGHT POLE FOUNDATION DETAIL
N.T.S.



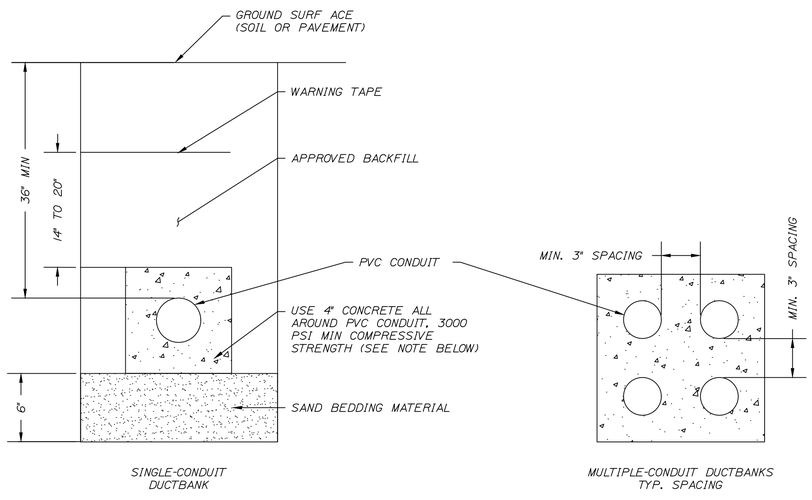
TYPICAL CONDUIT WITHOUT CONCRETE ENCASEMENT
N.T.S.



13" x 24" Flared Wall JUNCTION BOX

NOTE:
The Junction Box shall be capable of supporting incidental traffic loads of 20,000 pounds without distortion or failure.
Junction Boxes shall be as listed on MaineDOT's Qualified Products List of Traffic Signal and Lighting Materials.
Dimensions shown are representative and may have slightly different dimensions.

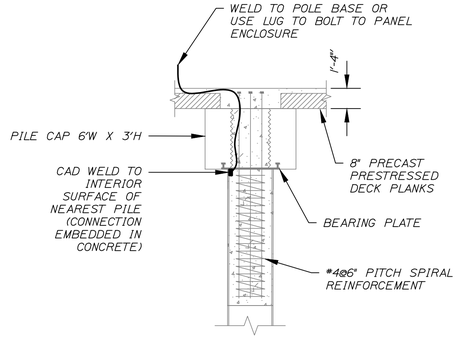
TYPICAL CONCRETE HANDHOLE DETAIL
N.T.S.



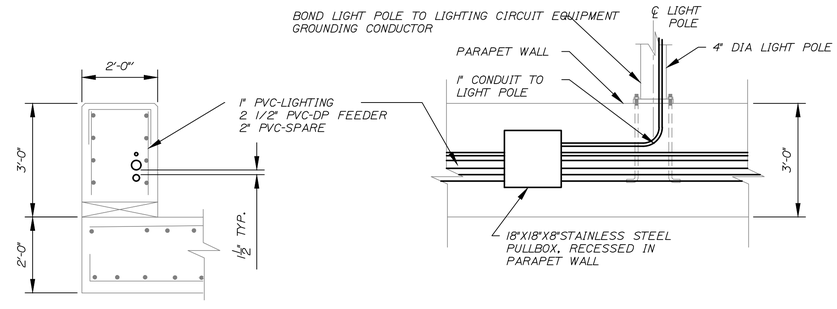
NOTE:

ALL PVC CONDUITS CONTAINING ELECTRICAL SUPPLY LINES FEEDING SECONDARY UTILITY POWER TO METER BREAKER PANELS OR DIRECTLY TO TRAFFIC SIGNALIZATION CONTROL CABINETS OR HIGHWAY LIGHTING BREAKER BOXES SHALL BE CONCRETE ENCASED.

TYPICAL CONCRETE DUCTBANK
N.T.S.



PILE SUPPORTED PLATFORM GROUNDING DETAIL
N.T.S.



PARAPET WALL - CONDUIT DETAIL
N.T.S.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED | DATE

COMMISSIONER: | CHIEF ENGINEER:

PROJECT INFORMATION		SIGNATURE	
PROGRAM	MULTIMODAL		
PROJECT MANAGER	A. GORNEAU, II		
DESIGNER	R. BEIKES	P.E. NUMBER	
CONSULTANT	JACOBS		
PROJECT RESIDENT		DATE	
CONTRACTOR			
PROJECT COMPLETION DATE			

MAINE DEPARTMENT OF TRANSPORTATION
LUBEC BREAKWATER
WASHINGTON, COUNTY
LUBEC, ME

UTILITY DETAILS

SHEET NUMBER
E-120
99 OF 99

Jacobs

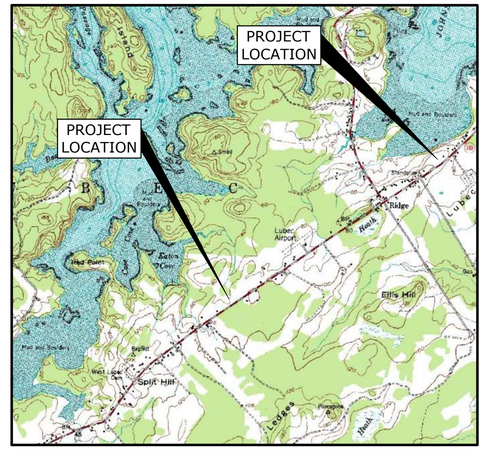
File: C:\Users\ths037482\Jacobs\Maine DOT Lubec Breakwater - Drawings_ 100% Submission\100-E-120 (Utility Details).; Plotted: 11/8/2024 2:20 PM by SAYADFAR, HASTI.; Saved: 11/7/2024 3:18 PM by MAGUIRC

LUBEC STORMWATER DESIGN

LUBEC, MAINE

PROJECT PARCEL SITE LUBEC ASSESSOR'S MAP & LOT NUMBERS	
MAP	LOT
025	19A
008	022

Applicant:
MAINE DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, ME 04333-0016



LOCATION MAP
N.T.S.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	BUILDING	
	RIGHT OF WAY	
	PROPERTY LINE	
	BUILDING SETBACK	
	ZONE LINE	
	WETLAND BOUNDARY	
	GUIDE RAIL	
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL DRIVE	
100	GRADING CONTOUR LINE	100
X 226.4	SPOT ELEVATION	100.31
	TREELINE	
	TREES & HEDGES	
	POLE WITH LIGHT FIXTURE(S)	
	UTILITY POLE	
	FREESTANDING SIGN	
	PAINTED DIRECTIONAL TRAFFIC ARROW	
OE	OVERHEAD ELECTRIC/TELEPHONE	OHE/T
UE	UNDERGROUND ELECTRIC/TELEPHONE	UGE/T
W	WATER LINE	8"W
D	STORM DRAIN LINE	18"SD
	CULVERT	18"CULVERT
	HYDRANT	
	WATER GATE VALVE	
	WATER SHUT OFF VALVE	
	MANHOLE	
	CATCH BASIN	
	TEST PIT	
	IRON ROD (SET)	
	IRON ROD (FOUND)	
	MONUMENT	
	RIPRAP	
	SILT FENCE – PERIMETER	
	STONE SEDIMENT BARRIER	
X	FENCE	
N	WELL	

GENERAL NOTES

GENERAL NOTES

1. TOPOGRAPHIC DATA AND EXISTING CONDITIONS WAS PROVIDED BY MAINEDOT.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

3. MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE TO THE OWNER AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTIONS OF THE OWNER, THE CITY OF AUGUSTA OR THEIR REPRESENTATIVES AT NO ADDITIONAL COST TO THE OWNER.

4. ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED UPON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.

5. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO A STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION SITE LOCATION OF DEVELOPMENT ACT GENERAL PERMIT FOR THE MAINE DEPARTMENT OF TRANSPORTATION.

2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.

LAYOUT NOTES

1. PROPERTY LINE AND R.O.W. MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTOR'S EXPENSE, BY A MAINE LICENSED LAND SURVEYOR.

UTILITY NOTES

1. CONTACT DIG SAFE PRIOR TO CONSTRUCTION.

CALL BEFORE YOU DIG
1-888-344-7233

GRADING AND DRAINAGE NOTES

1. UNLESS OTHERWSE NOTED, ALL STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603-- PIPE CULVERTS AND STORM DRAINS, LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS:

REINFORCED CONCRETE PIPE, CLASS III
POLYVINYL-CHLORIDE (PVC) PIPE
SMOOTH BORE POLYETHYLENE – ADS OR HANCOR

2. TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO BE DESIGNATED BY THE OWNER. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFF SITE.

3. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY. NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING.

EROSION CONTROL NOTES

1. LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE SITE.

2. PRIOR TO BEGINNING ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL THE PERIMETER SILT FENCES AND THE CONSTRUCTION ENTRANCE.

3. ALL GROUND AREAS DISTURBED FOR CONSTRUCTION WILL BE GRADED, LOAMED AND SEEDED AS SOON AS POSSIBLE. PERMANENT SEED MIXTURE SHALL CONFORM TO THE SEEDING PLAN CONTAINED IN THE EROSION CONTROL NOTES INCLUDED ON SHEET 404.

4. PRIOR TO PAVING, THE CONTRACTOR SHALL FLUSH SEDIMENT FROM ALL STORM DRAIN LINES, REMOVE ACCUMULATED SEDIMENT FROM SUMPS AND INVERTS AND PROPERLY DISPOSE OF.

5. SILT FENCES SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES.

6. THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCE AS IT BECOMES SATURATED WITH MUD TO ENSURE THAT IT WORKS AS PLANNED DURING CONSTRUCTION.

7. SILT REMOVED FROM AROUND INLETS AND BEHIND THE SILT FENCES SHALL BE PLACED ON A TOPSOIL STOCKPILE AND MIXED INTO IT FOR LATER USE IN LANDSCAPING OPERATIONS.

8. EROSION CONTROL NOTES ACCOMPANY THIS PLAN SET AND ARE CONTAINED ON DRAWING C404 OF THIS PLAN SET.

9. THE CONTRACTOR IS CAUTIONED THAT FAILURE TO COMPLY WITH THE SEQUENCE OF CONSTRUCTION, EROSION/SEDIMENT CONTROL PLAN, AND OTHER PERMIT REQUIREMENTS BASED UPON ANY THIRD PARTY REVIEW (ie MDEP) MAY RESULT IN MONETARY PENALTIES. THE CONTRACTOR SHALL BE ASSESSED ALL SUCH PENALTIES AT NO COST TO THE OWNER OR PERMITTEE.

10. ALL NON-PAVED AREAS DISTURBED DURING CONSTRUCTION SHALL BE LOAMED AND SEEDED, UNLESS OTHERWISE DIRECTED BY THE OWNER.

11. ALL DISTURBED AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL PRIOR TO PERMANENT SEEDING.

INDEX

C001	COVER SHEET, GENERAL NOTES, & LEGEND
C101	TOWN GARAGE GRADING, DRAINAGE & EROSION CONTROL PLAN
C102	TOWN GRAVEL PIT GRADING, DRAINAGE & EROSION CONTROL PLAN
C401	GRASSED UNDERDRAIN FILTER PLAN AND DETAILS
C402	DRAINAGE DETAILS
C403	EROSION CONTROL DETAILS

UTILITIES

NO KNOWN UTILITIES ARE LOCATED WITHIN THE PROJECT AREA. NO UTILITIES ARE PROPOSED.

PERMITS

TYPE OF PERMIT	GOVERNING BODY	STATUS
STORMWATER PERMIT	MAINE DEPARTMENT OF ENVIROMENTAL PROTECTION 17 STATE HOUSE STATION-0017 AUGUSTA, ME 04103 (207) 287-7688	SUBMITTED FEBRUARY 2020

STATE OF MAINE
WILLIAM C. HASKELL
No. 8518
12/4/24
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision

Issued For	Date	By

Design: TAL	Draft: GJH	Date: DEC 2024
Checked: WCH	Scale: NTS	Job No.: 4079.03
File Name: 4079.03-COVER.dwg		

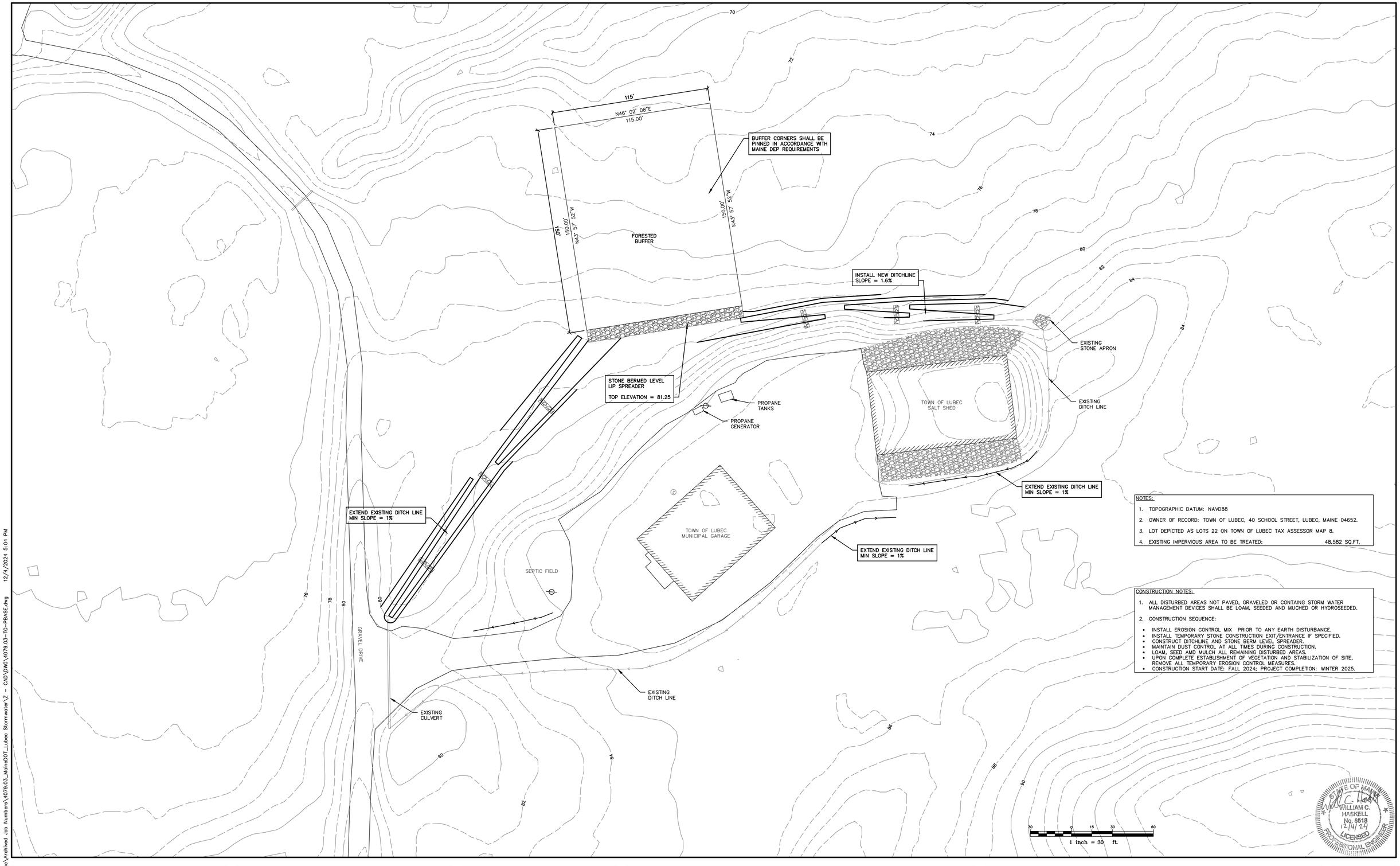
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Gorrill Palmer, an LJB Engineering Company
GorrillPalmer.com
(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name:	Cover Sheet, General Notes, & Legend
Project:	Lubec Breakwater Lubec, Maine
Client:	Maine Department of Transportation 16 State House Station, Augusta, Maine 04333-0016

Drawing No.
C001

\\gp-truenas\GP-Archive\Archived Job Numbers\4079.03_MaineDOT_Lubec Stormwater\Z - CAD\DWG\4079.03-COVER.dwg 12/4/2024 5:04 PM



NOTES:

1. TOPOGRAPHIC DATUM: NAVD88
2. OWNER OF RECORD: TOWN OF LUBEC, 40 SCHOOL STREET, LUBEC, MAINE 04652.
3. LOT DEPICTED AS LOTS 22 ON TOWN OF LUBEC TAX ASSESSOR MAP 8.
4. EXISTING IMPERVIOUS AREA TO BE TREATED: 48,582 SQ.FT.

CONSTRUCTION NOTES:

1. ALL DISTURBED AREAS NOT PAVED, GRAVELED OR CONTAING STORM WATER MANAGEMENT DEVICES SHALL BE LOAM, SEEDED AND MUCHED OR HYDROSEEDED.
2. CONSTRUCTION SEQUENCE:
   - INSTALL EROSION CONTROL MIX PRIOR TO ANY EARTH DISTURBANCE.
   - INSTALL TEMPORARY STONE CONSTRUCTION EXIT/ENTRANCE IF SPECIFIED.
   - CONSTRUCT DITCHLINE AND STONE BERM LEVEL SPREADER.
   - MAINTAIN DUST CONTROL AT ALL TIMES DURING CONSTRUCTION.
   - LOAM, SEED AMD MULCH ALL REMAINING DISTURBED AREAS.
   - UPON COMPLETE ESTABLISHMENT OF VEGETATION AND STABILIZATION OF SITE, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
   - CONSTRUCTION START DATE: FALL 2024; PROJECT COMPLETION: WINTER 2025.

STATE OF MAINE
WILLIAM C. HASKELL
No. 8518
12/4/24
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision

Issued For	Date	By

Design: TAL	Draft: GJH	Date: DEC 2024
Checked: WCH	Scale: 1"=30'	Job No.: 4079.03
File Name: 4079.03-TG-PBASE.dwg		

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South Portland, ME 04106

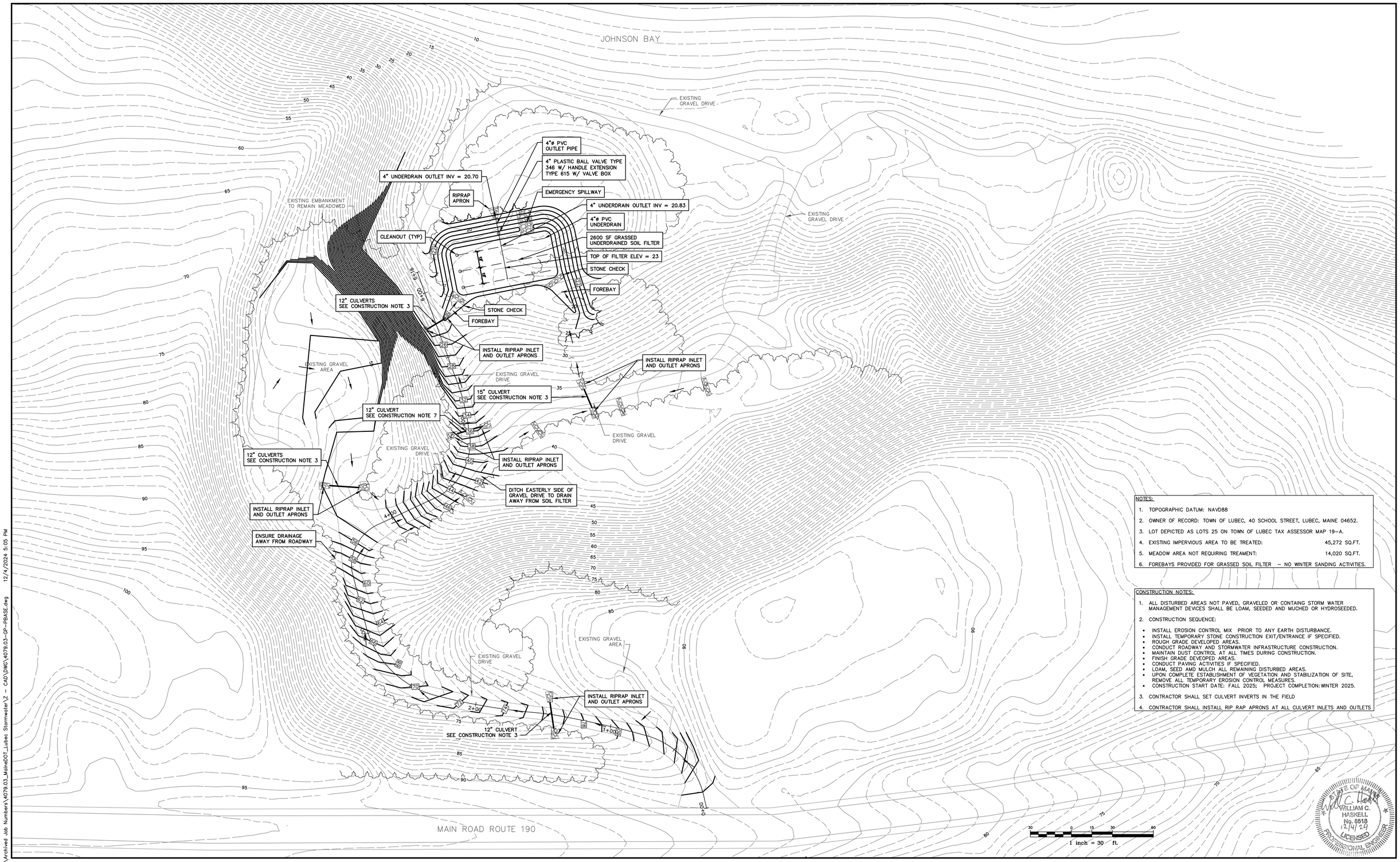
Drawing Name: **Town Garage Grading, Drainage, & Erosion Control Plan**

Project: **Lubec Breakwater**
Lubec, Maine

Client: **Maine Department of Transportation**
16 State House Station, Augusta, Maine 04333-0016

Drawing No. *C101*

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NOTES:

1. TOPOGRAPHIC DATUM: NAVD88
2. OWNER OF RECORD: TOWN OF LUBEC, 40 SCHOOL STREET, LUBEC, MAINE 04652.
3. LOT DEPICTED AS LOTS 25 ON TOWN OF LUBEC TAX ASSESSOR MAP 19–A.
4. EXISTING IMPERVIOUS AREA TO BE TREATED: 45,272 SQ.FT.
5. MEADOW AREA NOT REQUIRING TREAMENT: 14,020 SQ.FT.
6. FOREBAYS PROVIDED FOR GRASSED SOIL FILTER – NO WINTER SANDING ACTIVITIES.

CONSTRUCTION NOTES:

1. ALL DISTURBED AREAS NOT PAVED, GRAVELED OR CONTAING STORM WATER MANAGEMENT DEVICES SHALL BE LOAM, SEEDED AND MUCHED OR HYDROSEEDED.
2. CONSTRUCTION SEQUENCE:
   - INSTALL EROSION CONTROL MIX PRIOR TO ANY EARTH DISTURBANCE.
   - INSTALL TEMPORARY STONE CONSTRUCTION EXIT/ENTRANCE IF SPECIFIED.
   - ROUGH GRADE DEVELOPED AREAS.
   - CONDUCT ROADWAY AND STORMWATER INFRASTRUCTURE CONSTRUCTION.
   - MAINTAIN DUST CONTROL AT ALL TIMES DURING CONSTRUCTION.
   - FINISH GRADE DEVEOPED AREAS.
   - CONDUCT PAVING ACTIVITIES IF SPECIFIED.
   - LOAM, SEED AMD MULCH ALL REMAINING DISTURBED AREAS.
   - UPON COMPLETE ESTABLISHMENT OF VEGETATION AND STABILIZATION OF SITE, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
   - CONSTRUCTION START DATE: FALL 2025; PROJECT COMPLETION: WINTER 2025.
3. CONTRACTOR SHALL SET CULVERT INVERTS IN THE FIELD
4. CONTRACTOR SHALL INSTALL RIP RAP APRONS AT ALL CULVERT INLETS AND OUTLETS

STATE OF MAINE — WILLIAM C. HASKELL — No. 8518 — 12/4/24 — LICENSED PROFESSIONAL ENGINEER

Rev.	Date	Revision

Issued For	Date	By

Design: TAL	Draft: GJH	Date: DEC 2024
Checked: WCH	Scale: 1"=30'	Job No.: 4079.03
File Name: 4079.03-GP-PBASE.dwg		

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300 Southborough Drive - Suite 200
South Portland, ME 04106

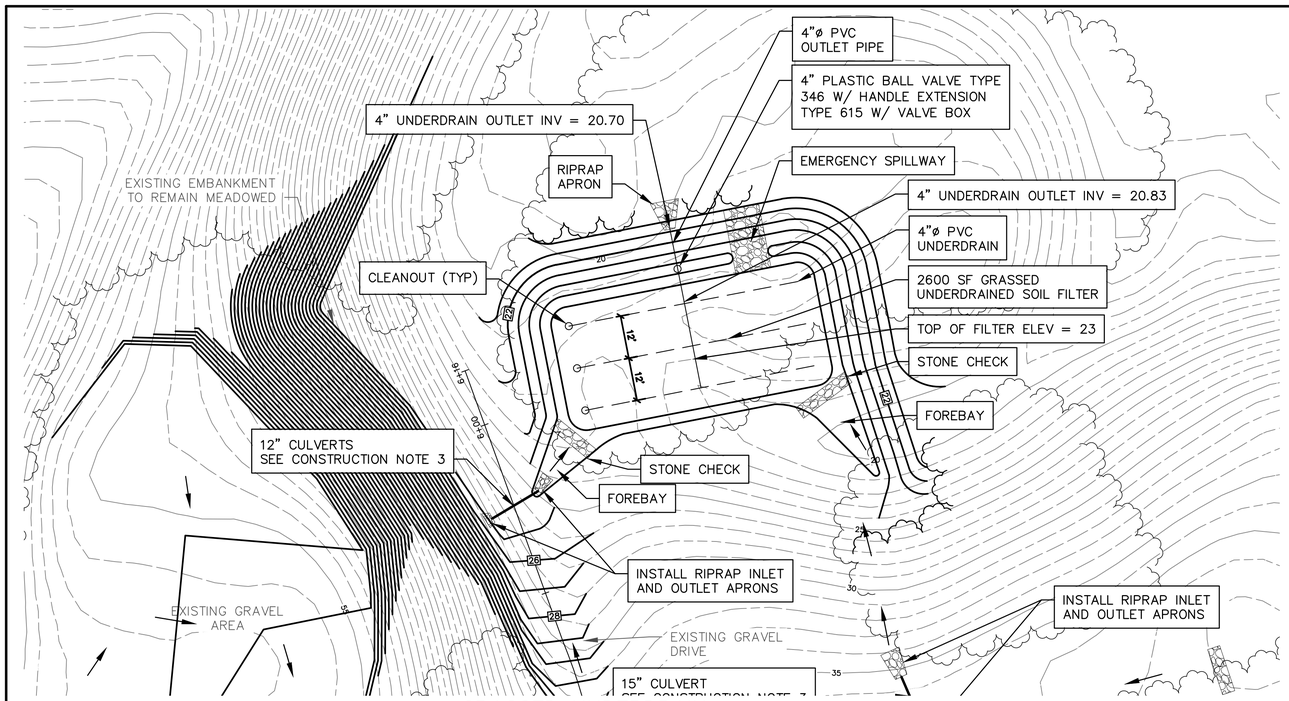
Drawing Name: **Town Gravel Pit Grading, Drainage, & Erosion Control Plan**

Project: **Lubec Breakwater**
Lubec, Maine

Client: **Maine Department of Transportation**
16 State House Station, Augusta, Maine 04333–0016

Drawing No. C102

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GRASSED UNDERDRAIN FILTER PLAN

1"=20'

Table 1
ENGINEERED SOIL MIX

MATERIAL	% BY WEIGHT
FINE AGGREGATE FOR CONRETE	50
LOAM	20
SUPERHUMUS	30

Table 2 MEDOT Specifications for Underdrain Type B (MEDOT #703.22)

SIEVE SIZE	% PASSING BY WEIGHT
1"	90–100
1/2"	75–100
#4	50–100
#20	15–80
#50	0–15
#200	0–5

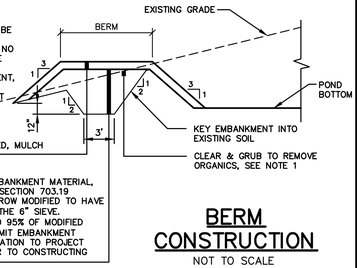
CONSTRUCTION OVERSIGHT

INSPECTION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER WITH REQUIRED REPORTING TO THE DEP. AT A MINIMUM, INSPECTIONS WILL OCCUR:

1. AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED.
2. AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA.
3. AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED.
4. AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS.
5. ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN WILL BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

NOTE: CONTRACTOR SHALL NOTIFY PROJECT ENGINEER 48 HOURS PRIOR TO THE MILESTONES LISTED ABOVE TO ALLOW FOR INSPECTION.

NOTES:
1. EMBANKMENT FOOTPRINT SHALL BE CLEARED OF TRASH/DEBRIS AND ANY ROCKS GREATER THAN 6", BE FREE OF ANY STANDING WATER, BE GRADED TO BE NO STEEPER THAN 1H:1V, BE SCARIFIED PRIOR TO EMBANKMENT FILL PLACEMENT, AND BE INSPECTED AND APPROVED BY THE PROJECT ENGINEER BEFORE FILL PLACEMENT BEGINS.

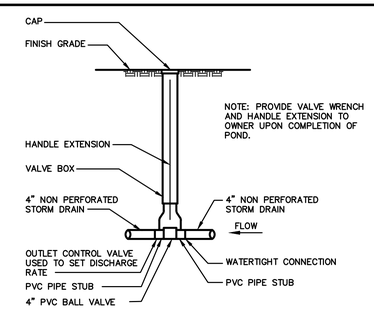


BERM CONSTRUCTION

NOT TO SCALE

TYPICAL POND CROSS SECTION

NOT TO SCALE



OUTLET VALVE

NOT TO SCALE

GRASSED UNDERDRAIN NOTES:

SOIL SPECIFICATIONS:

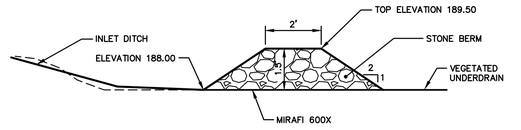
1. THE ENGINEERED SOIL MIX SHALL BE WELL MIXED BATCH CONTAINING THE FOLLOWING COMPONENTS AND PROPORTIONS MEASURE BY VOLUME.
   A. 50% FINE AGGREGATE FOR CONCRETE.
   B. 20% LOAM.
   C. 30% SUPERHUMUS..
2. THE ENGINEERED SOIL MIX SHALL HAVE 8–12% BY WEIGHT PASSING THE #200 SIEVE, A CLAY CONTENT OF LESS THAN 2% (DETERMINED HYDROMETER GRAIN SIZE ANALYSIS) AND 5–10% DRY WEIGHT OF ORGANIC MATTER.
3. ENGINEERED SOIL MIX MIXTURE SHALL HAVE A PERMEABILITY OF 2.4 IN./HR. TO 4 IN./HR UPON COMPACTION BETWEEN 90% AND 92% STANDARD PROCTOR (ASTM D698).

SUBMITTALS:

1. SUBMIT RESULTS OF FIELD AND LABORATORY TESTING TO PROJECT ENGINEER.
2. SUBMIT 75 lb. SAMPLE OF EACH TYPE OF MATERIAL: SUBMIT IN AIR TIGHT CONTAINERS TO PROJECT ENGINEER.
3. THE FOLLOWNG MATERIAL SHALL BE SUBMITTED:
   A. ENGINEERED SOIL MIX.
   B. UNDERDRAIN BEDDING MATERIAL.
4. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 – STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES; 1996a ON EACH TYPE OF THE SAMPLE MATERIAL AND SUBMIT RESULTS TO PROJECT ENGINEER.
5. PERFORM A PERMEABILITY TEST ON THE ENGINEERED SOIL MIX MIXTURE CONFORMING TO ASTM D2434 WITH THE MIXTURE COMPACTED TO 90% TO 92% OF MAXIMUM DRY DENSITY BASED ON ASTM D698. SUBMIT RESULTS TO THE PROJECT ENGINEER.
6. PERFORM ONE COMPACTION DENSITY TEST ON THE IN PLACE SOIL FILTER FOR EVERY 2,000 SQUARE FEET OF FILTER SURFACE AREA. TEST SHALL CONFORM TO ASTM D 2922 – STANDARD TEST METHODS FOR DENSITY OF SOIL AND SOIL–AGGREGATE IN PLACE BY NUCLEAR METHODS (SHALLOW DEPTH); 1996. SUBMIT RESULTS TO THE PROJECT ENGINEER.

CONSTRUCTION:

1. SOIL FILTER MEDIA AND UNDERDRAIN BEDDING MATERIAL SHALL BE COMPACTED TO BETWEEN 90% AND 92% STANDARD PROCTOR.
2. PERFORATED UNDERDRAIN PIPE SHALL BE 4" SCHEDULE 40 OR SDR 35 PVC PIPE. SPACED 15 FEET ON CENTER MAXIMUM.
3. TRIBUTARY AREAS SHALL BE STABILIZED PRIOR TO INSTALLATION OF THE SOIL FILTER MEDIA MIXTURE AND UNDERDRAIN. STABILIZED IS DEFINED AS PAVED IF IN A PARKING AREA OR ROADWAY, AND 90% GRASS CATCH IF IN A VEGETATED AREA.
4. OUTFLOW OF THE VEGETATED UNDERDRAIN SHALL BE CONTROLLED BY A 4" DUCTILE IRON GATE VALVE WITH VALVE WRENCH AND EXTENSION (AVAILABLE FROM E.J. PRESCOTT OR EQUIVALENT). A THREE PIECE VALVE BOX (AVAILABLE FROM E.J. PRESCOTT OR EQUIVALENT) SHALL BE INSTALLED OVER THE VALVE.
5. ALL EQUIPMENT USED WITHIN THE LIMITS OF THE VEGETATED UNDERDRAIN SHALL BE LOW GROUND PRESSURE VEHICLES (LESS THAN 2.0 PSI) WHEN FULLY LOADED.
6. UPON COMPLETION OF THE INSTALLATION OF THE SOIL FILTER MEDIA AND THE ESTABLISHMENT OF A 90% CATCH OF GRASS OVER THE FILTER MEDIA, THE CONTRACTOR SHALL FLOOD THE VEGETATED UNDERDRAIN TO THE DESIGN ELEVATION WITH CLEAN WATER AND ADJUST THE VALVE TO OBTAIN A 24 HOUR TO 32 HOUR RELEASE TIME.

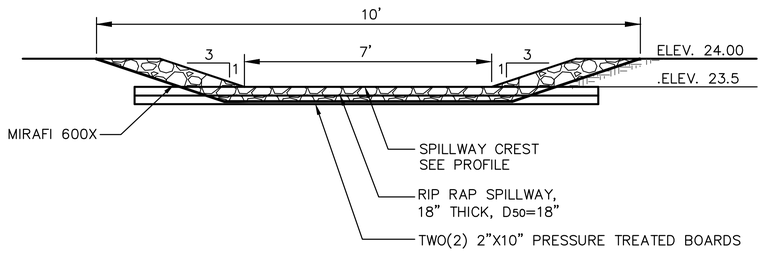


BERM STONE SIZE

SIEVE DESIGNATION (US CUSTOMARY)	PERCENT BY WEIGHT PASSING
12 IN	100
6 IN	84–100
3 IN	68–83
1 IN	42–55
NO. 4	8–12

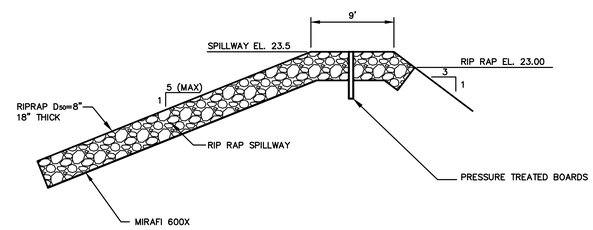
SEDIMENT FOREBAY – SECTION A–A

NOT TO SCALE



RIP RAP SPILLWAY CROSS–SECTION

NOT TO SCALE

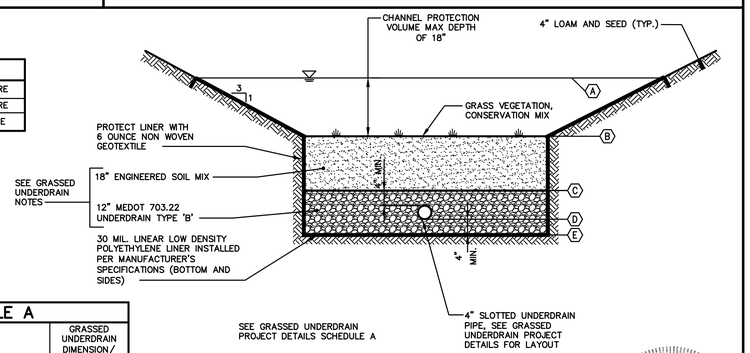


SPILLWAY PROFILE

NOT TO SCALE

GRASS VEGETATION

CREEPING RED FESCUE	20 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
BIRDSFOOT TREEFOIL	8 LBS/ACRE



SCHEDULE A

	ITEM DESCRIPTION	GRASSED UNDERDRAIN DIMENSION/ ELEVATION
A	CHANNEL PROTECTION VOLUME STAGE	24.00
B	TOP SOIL FILTER	23.00
C	TOP UNDERDRAIN BEDDING STONE	21.50
D	PIPE INVERT: 4" PERF. UD	20.83
E	BOTTOM UNDERDRAIN BEDDING	20.5

GRASSED UNDERDRAIN DETAIL

NOT TO SCALE

STATE OF MAINE — WILLIAM C. HASKELL — No. 8818 — 12/4/24 — LICENSED PROFESSIONAL ENGINEER

Rev.	Date	Revision

Issued For	Date	By

Design: TAL	Draft: GJH	Date: DEC 2024
Checked: WCH	Scale: NTS	Job No.: 4079.03
File Name: 4079.03–FILTER DETAIL.dwg		

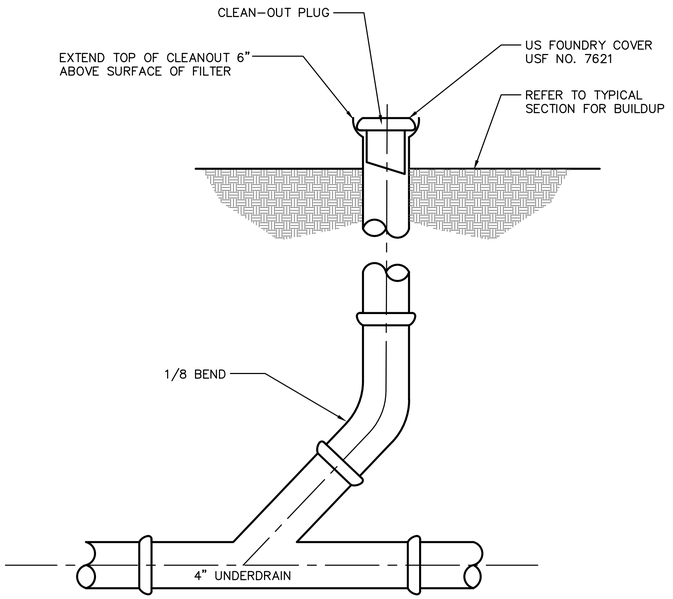
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GorrillPalmer.com
(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

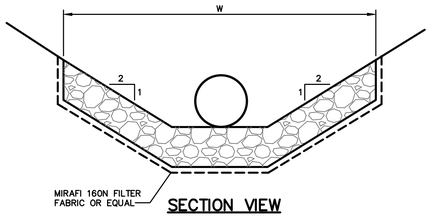
Drawing Name: Grassed Underdrain Filter Plan and Details
Project: Lubec Breakwater, Lubec, Maine
Client: Maine Department of Transportation, 16 State House Station, Augusta, Maine 04333–0016

Drawing No. C401

\\gp-truenas\GP-Archive\Archived Job Numbers\4079.03_MaineDOT_Lubec Stormwater\Z - CAD\DWG\4079.03-FILTER DETAIL.dwg 12/5/2024 8:53 AM

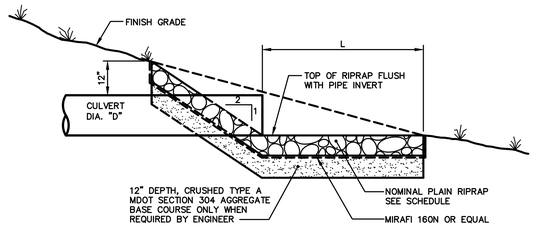


CLEANOUT
NOT TO SCALE



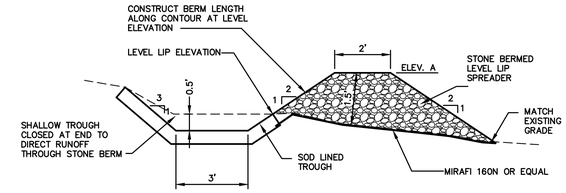
SECTION VIEW

SCHEDULE				
CULVERT DIAMETER (D)	LENGTH (L)	WIDTH (W)	STONE d50	RIPRAP THICKNESS
12"	7'	5'	8"	18"
15"	7'	5'	8"	18"



PROFILE VIEW

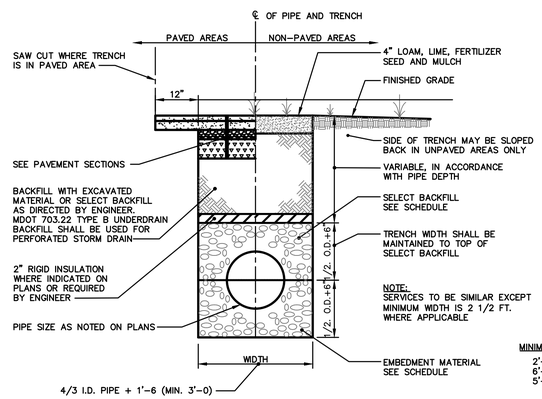
CULVERT INLET/OUTLET APRON
NOT TO SCALE



BERM STONE SIZE	
SIEVE DESIGNATION (US CUSTOMARY)	PERCENT BY WEIGHT PASSING
12 IN	100
6 IN	84–100
3 IN	68–83
1 IN	42–55
NO. 4	8–12

NOTE: PRIOR TO CONSTRUCTION OF ANY ONSITE DRAINAGE FEATURES, THE CONTRACTOR SHALL STAKE OUT THE LEVEL LIP SPREADERS FOR REVIEW BY GORRILL-PALMER. THE CONTRACTOR SHALL NOTIFY GORRILL-PALMER WHEN STAKE OUT IS COMPLETE, AND PROVIDE GROUND SURVEYD ELEVATIONS OF THE LEVEL LIP SPREADER LOCATION, GORRILL-PALMER WILL CONDUCT A SITE WALK WTHIN 48 HOURS TO CONFIRM LOCATION AND ORIENTATION TO VERIFY DESIGN INTENT.

STONE BERM LEVEL LIP SPREADER
NOT TO SCALE



SCHEDULE OF TRENCH BACKFILL

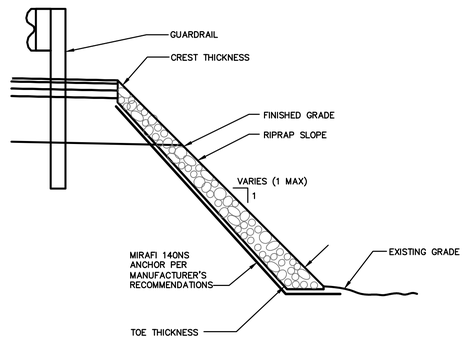
TYPE OF PIPE	EMBEDMENT MATERIAL	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC-SDR 35 HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
PERFORATED PVC-SDR35 HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

NOTE:
1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES, 12" BELOW FINISH GRADE.

MINIMUM COVER	PIPE
2'-0"	DRAIN (1)
6'-0"	WATER
5'-0"	SEWER

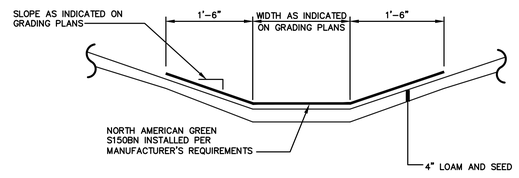
(1) COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION.

TRENCH SECTION
NOT TO SCALE



SLOPE HEIGHT	TOE THICKNESS	CREST THICKNESS	D_{100}	D_{50}
12' – 14'	30"	18"	24"	16"
10' – 12'	26"	18"	24"	12"
< 10'	20"	15"	16"	8"

TYPICAL RIPRAP SLOPE
NOT TO SCALE



VEGETATED DITCH
NOT TO SCALE

STATE OF MAINE
WILLIAM C. HASKELL
No. 8518
12/4/24
LICENSED PROFESSIONAL ENGINEER

Rev.	Date	Revision

Issued For	Date	By

Design: TAL	Draft: GJH	Date: DEC 2024
Checked: WCH	Scale: NTS	Job No.: 4079.03
File Name: 4079.03-DETAILS.dwg		

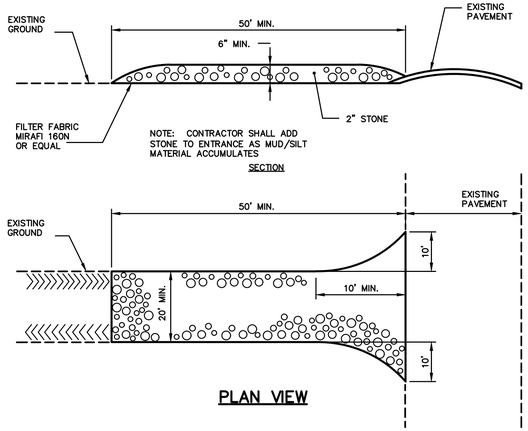
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GorrillPalmer.com
(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name:	Drainage Details
Project:	Lubec Breakwater Lubec, Maine
Client:	Maine Department of Transportation 16 State House Station, Augusta, Maine 04333-0016

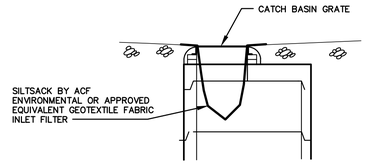
Drawing No.
C402

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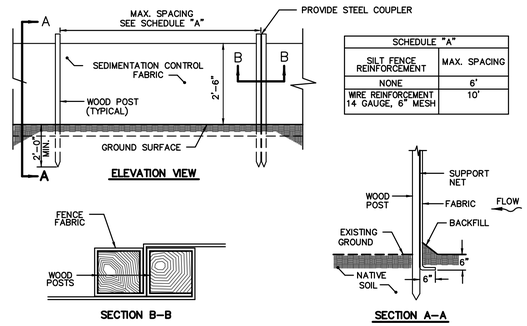
STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



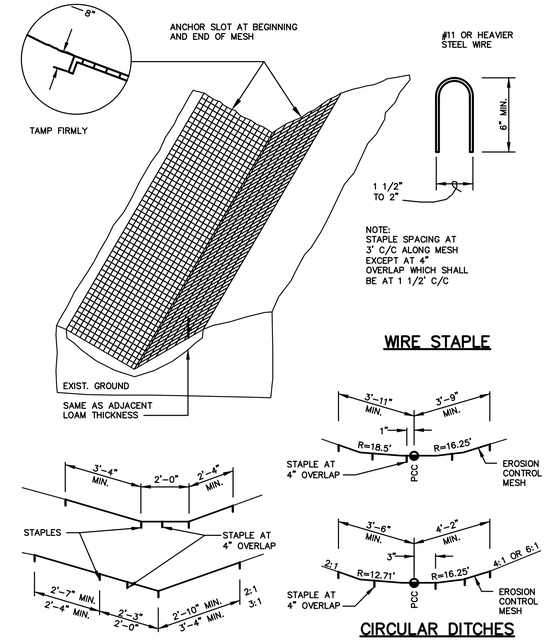
CATCH BASIN INLET FILTER

NOT TO SCALE



SILTATION FENCE

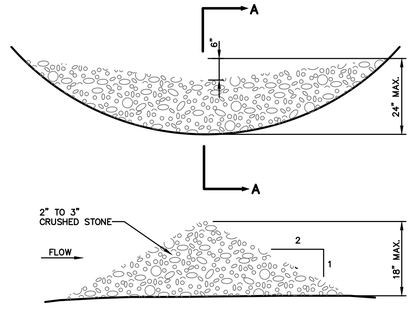
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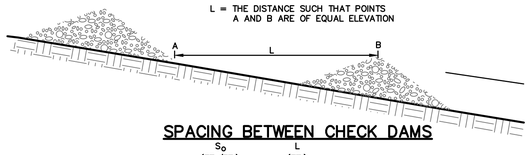
STAPLES AT EDGES, AT QUARTER POINTS, AT 4" OVERLAP

EROSION CONTROL MESH

NOT TO SCALE



SECTION A–A



SPACING BETWEEN CHECK DAMS

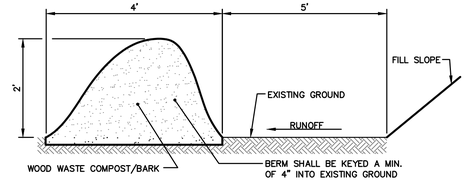
S_o (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

STONE CHECK DAM

NOT TO SCALE

NOTES:

1. THE WOOD WASTE COMPOST/BARK MIX SHALL CONFORM TO THE FOLLOWING STANDARDS:
   - A. MOISTURE CONTENT – 30–60%
   - B. pH – 5.0 – 8.0.
   - C. SCREEN SIZE – 100% LESS THAN 3", MAX. 70% LESS THAN 1".
   - D. NO LESS THAN 40% ORGANIC MATERIAL (DRY WEIGHT) BY LOSS OF IGNITION.
   - E. NO STONES LARGER THAN 2" IN DIAMETER.
   - F. SILTS, CLAYS OR SUGAR SANDS ARE NOT ACCEPTABLE IN THE MIX.
2. THE COMPOST BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.
3. THE WOOD WASTE COMPOST/BARK FILTER BERM MAY BE USED IN LIEU OF SILTATION FENCE, AT THE TOE OF SHALLOW SLOPES, ON FROZEN GROUND, LEDGE OUT CROPS, VERY ROOTED FORESTED AREA OR AT THE EDGE OF GRAVEL PARKING AREAS.
4. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS COMPLETED OR 70% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.
5. WOODWASTE COMPOST BARK FILTER SHALL NOT BE USED IN WETLAND AREAS.



WOOD WASTE COMPOST/BARK FILTER BERM DETAIL

NOT TO SCALE

STATE OF MAINE
WILLIAM C. HASKELL
No. 8518
12/4/24
LICENSED
PROFESSIONAL ENGINEER

Rev.	Date	Revision

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(207) 772-2515
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South Portland, ME 04106

Drawing Name:	Erosion Control Details
Project:	Lubec Breakwater Lubec, Maine
Client:	Maine Department of Transportation 16 State House Station, Augusta, Maine 04333–0016

Drawing No.
C403

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