

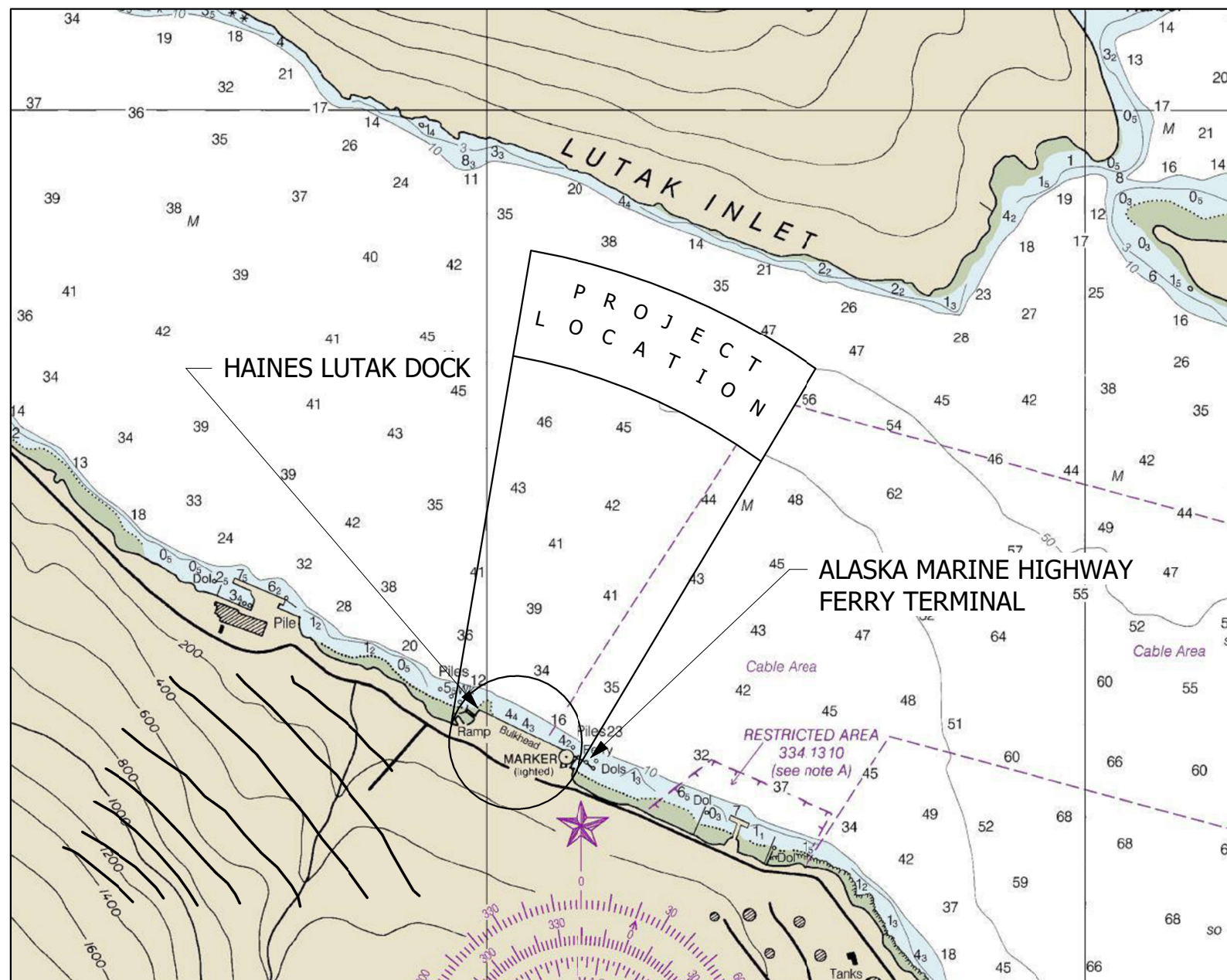
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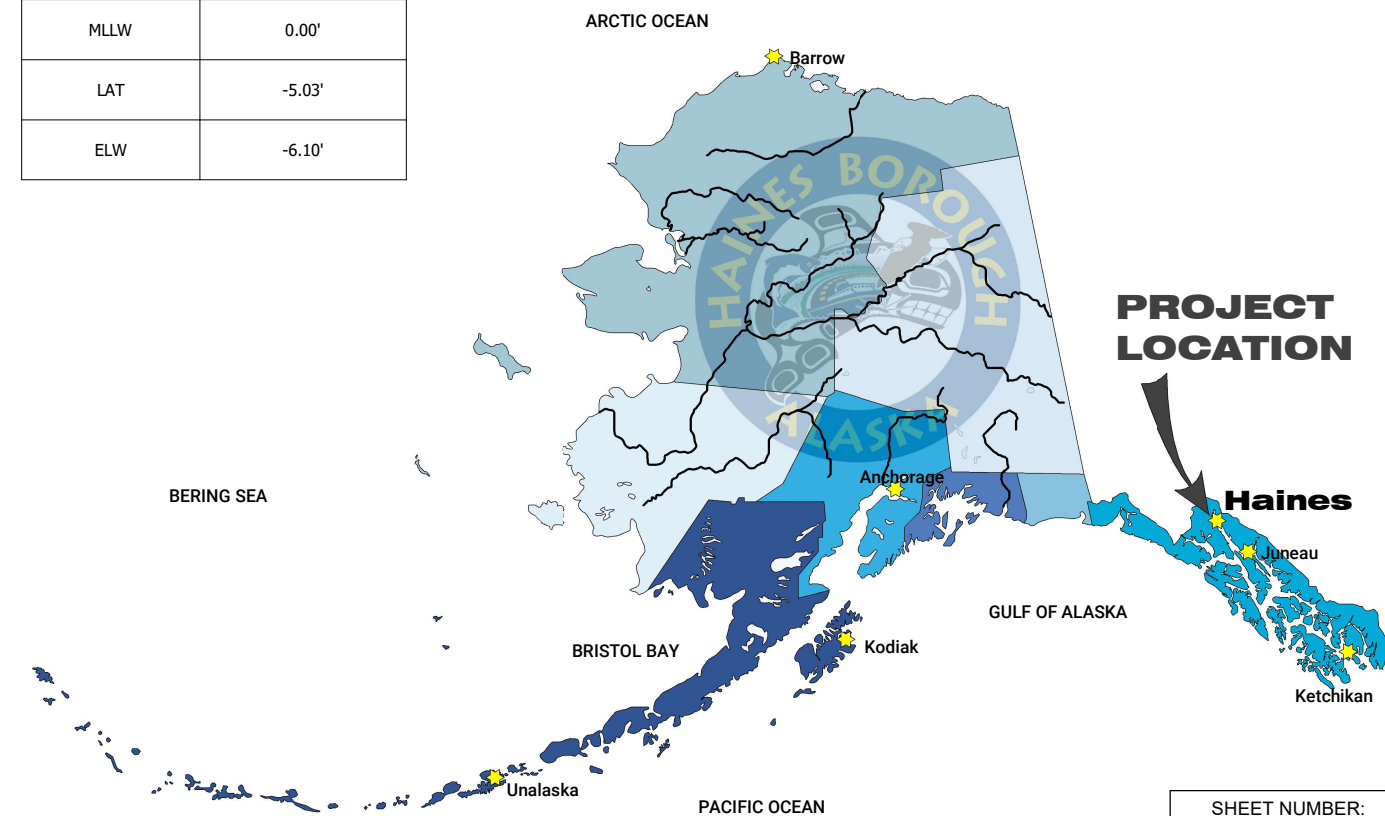
DECEMBER 8, 2022

LUTAK DOCK REPLACEMENT HAINES, ALASKA



TIDAL DATA	
EHW	26.82'
HAT	21.03'
MHHW	16.73'
MHW	15.73'
MLW	1.62'
MLLW	0.00'
LAT	-5.03'
ELW	-6.10'

DRAWING INDEX	
SHEET NUMBER	SHEET NAME
G100	COVER SHEET
G101	GENERAL NOTES
S100	OVERALL SITE PLAN
S101	LUTAK DOCK - EXISTING CONDITIONS
S102	LUTAK DOCK NEW CONSTRUCTION SITE PLAN
S103	AML BARGE LANDING
S200	O-PILE WALL DETAIL VIEW
S201	BULKHEAD SECTION
S202	BULKHEAD DETAILS
S203	VIBRACOMPACTION PLAN



SHEET NUMBER:
G100

LUTAK DOCK REPLACEMENT GENERAL NOTES

DESIGN LIFE = 50 YEARS

LOADING REQUIREMENTS:

UNIFORM LIVE LOAD = 2,000 PSF
DESIGN VEHICLE (UNRESTRICTED) = MANITOWOC 4000W
DESIGN VEHICLE (RESTRICTED) = LHM 420 MOBILE HARBOR CRANE
USE OF CRANE MATS REQUIRED FOR MOBILE HARBOR CRANE

DESIGN VESSEL CARGO = 60,000 TON MAX DISPLACEMENT
110 FT X 630 FT
DESIGN VESSEL CRUISE SHIP = 75,000 TON MAX DISPLACEMENT
155 FT X 1050 FT

MOORING BOLLARDS = 150 TONS
BERTHING FENDERS = 1435 KIP-FT / 534 KIP

BULKHEAD PILE FOUNDATIONS:

ALL BULKHEAD PILES WILL BE KEYED INTO BEDROCK

CORROSION PROTECTION SYSTEM:

COATING: ONE COAT INORGANIC ZINC PRIMER AND TWO COATS OF COAL TAR EPOXY (16 MILS TOTAL), OR AN EQUIVALENT CORROSION PROTECTION SYSTEM

ANODE SYSTEM TO BE INSTALLED BY OWNER AFTER 10 YEAR OF DOCK OPERATIONS

TOTAL ALLOWABLE STEEL WASTAGE IN ZONE OF HIGH ATTACK (TIDAL ZONE) = 2 MILS PER YEAR

SEISMIC PERFORMANCE REQUIREMENTS:

ASCE 7-16 RISK CATEGORY = IV (ESSENTIAL FACILITY)

ASCE 61-14 DESIGN CLASSIFICATION = HIGH

OPERATING LEVEL EARTHQUAKE (OLE)
PERFORMANCE LEVEL = MINIMAL DAMAGE
72 YEAR RETURN PERIOD
PEAK GROUND ACCELERATION = 0.072g

CONTINGENCY LEVEL EARTHQUAKE (CLE)
PERFORMANCE LEVEL = REPAIRABLE DAMAGE
475 YEAR RETURN PERIOD
PEAK GROUND ACCELERATION = 0.200g

DESIGN EARTHQUAKE (DE)
PERFORMANCE LEVEL = LIFE SAFETY PROTECTION
2250 YEAR RETURN PERIOD
PEAK GROUND ACCELERATION = 0.494g

LIQUEFACTION MITIGATION

CURRENT BULKHEAD SOILS ANALYSIS SHOWS THAT LIQUEFACTION OF SOILS WITHIN THE BULKHEAD WILL NOT OCCUR DURING THE OPERATING LEVEL EARTHQUAKE

GROUND IMPROVEMENT WILL BE PROVIDED BASED ON GEOTECHNICAL DESIGN REQUIREMENTS SO THAT LIQUEFACTION WITHIN THE BULKHEAD WILL NOT OCCUR DURING A CONTINGENCY LEVEL EARTHQUAKE

THE BULKHEAD IS DESIGNED TO MEET OLE, CLE AND DE PERFORMANCE LEVELS ASSUMING SUSCEPTABLE SOILS IN FRONT OF THE BULKHEAD ARE FULLY LIQUEFIED DURING THESE SEISMIC EVENTS

MATERIAL SPECIFICATIONS:

STRUCTURAL STEEL:

STRUCTURAL PLATES: ASTM A36 / A572 FY = 50 KSI
HSS SQUARE / RECT: ASTM A500 GR B FY = 42 KSI
HSS ROUND: ASTM A500 GR B FY = 46 KSI
BOLTS: ASTM A325
WELDING ELECTRODES E70XX

STEEL PIPE PILES:

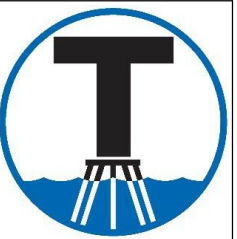
STEEL PIPE PILES: ASTM A252 GR 3 FY = 50KSI

STRUCTURAL CONCRETE:

MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS:
F'c = 5,000 PSI
REINFORCING STEEL = ASMT A615 OR A706, GRADE 60

GENERAL DESIGN CODES

INTERNATIONAL BUILDING CODE
ASCE 7-16 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
ASCE 61-14 - SEISMIC DESIGN OF PIERS AND WHARVES
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
UFC 4-152-01 DESIGN: PIERS AND WHARVES
UFC 4-159-03 DESIGN: MOORINGS
PIANC - GUIDELINES FOR THE DESIGN OF FENDER SYSTEMS
AMERICAN WELDING SOCIETY (AWS) D1.1 STRUCTURAL WELDING CODE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, 14TH EDITION
AMERICAN CONCRETE INSTITUTE CODE 318-19: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE



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LUTAK DOCK
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HAINES, ALASKA

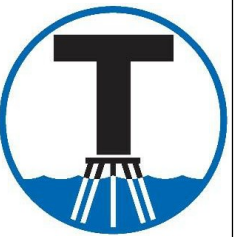
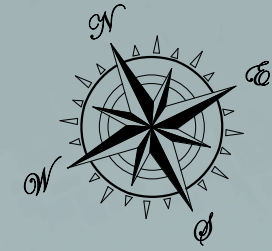


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ISSUE DATE:
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SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
G101



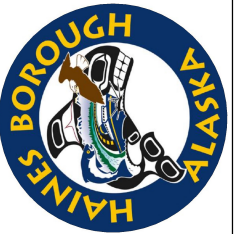
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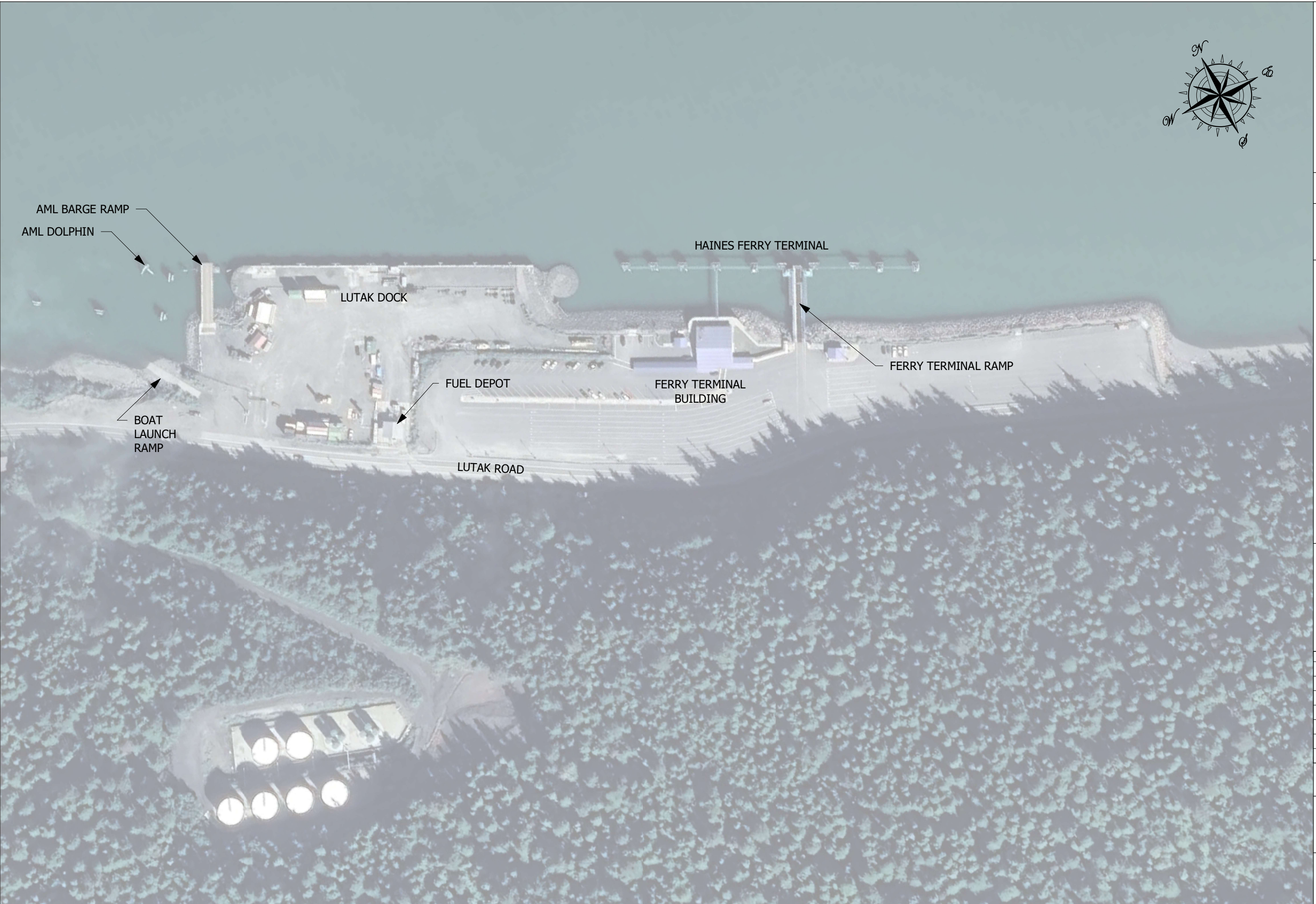
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OVERALL SITE PLAN

SHEET NUMBER:

S100



AML BARGE RAMP

AML DOLPHIN

LUTAK DOCK

FUEL DEPOT

FERRY TERMINAL BUILDING

HAINES FERRY TERMINAL

FERRY TERMINAL RAMP

BOAT LAUNCH RAMP

LUTAK ROAD



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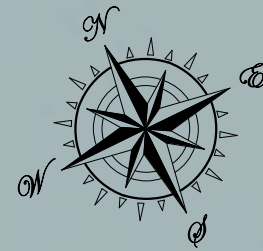
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SHEET TITLE:
LUTAK DOCK -
EXISTING
CONDITIONS

SHEET NUMBER:

S101





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HAINES, ALASKA**



REV#	DESCRIPTION	DATE

ISSUE DATE:
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SHEET TITLE:
LUTAK DOCK NEW
CONSTRUCTION SITE
PLAN

SHEET NUMBER:

S102





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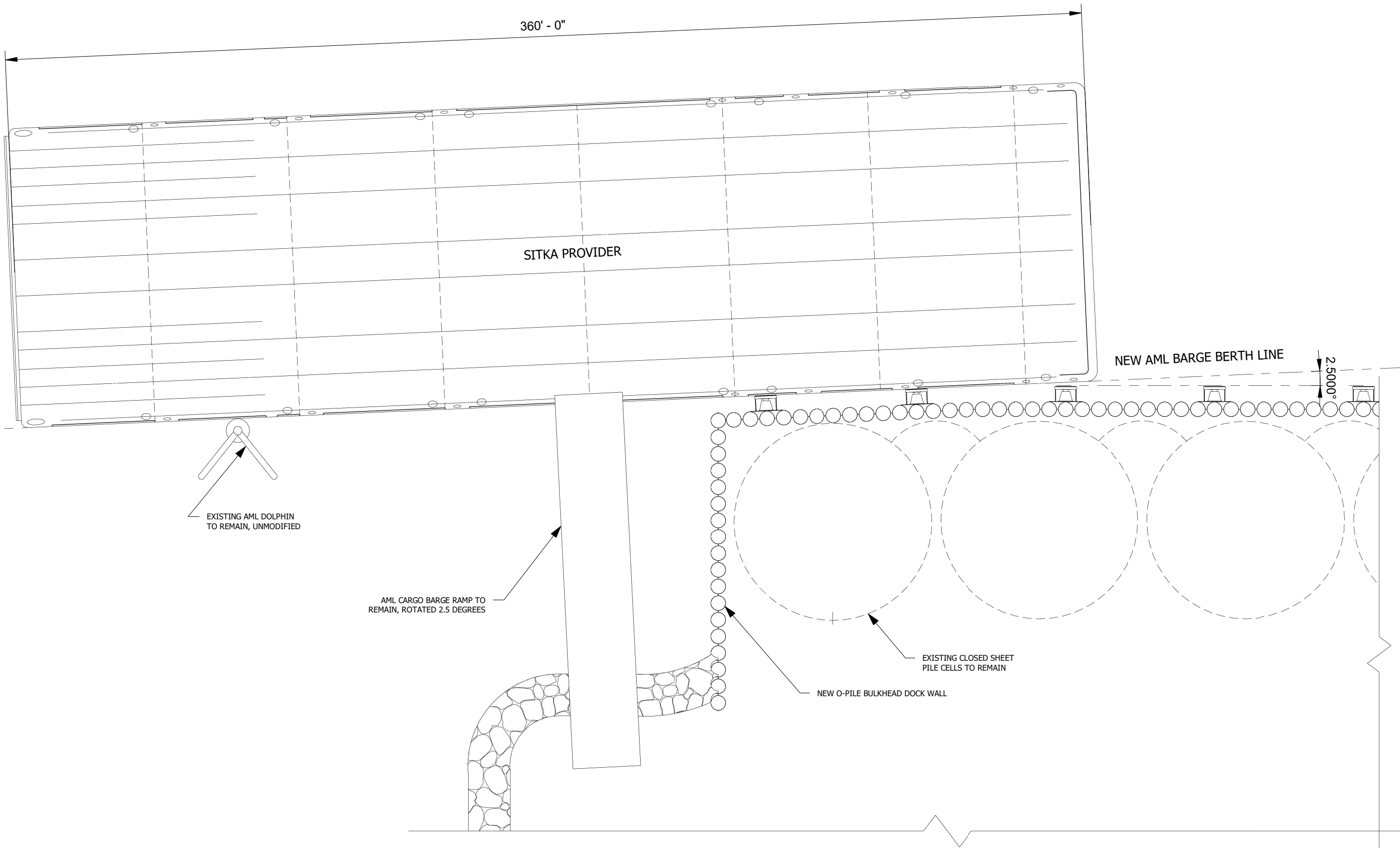
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SHEET TITLE:
AML BARGE LANDING

SHEET NUMBER:

S103



1 AML BARGE LANDING SITE PLAN
1 : 380



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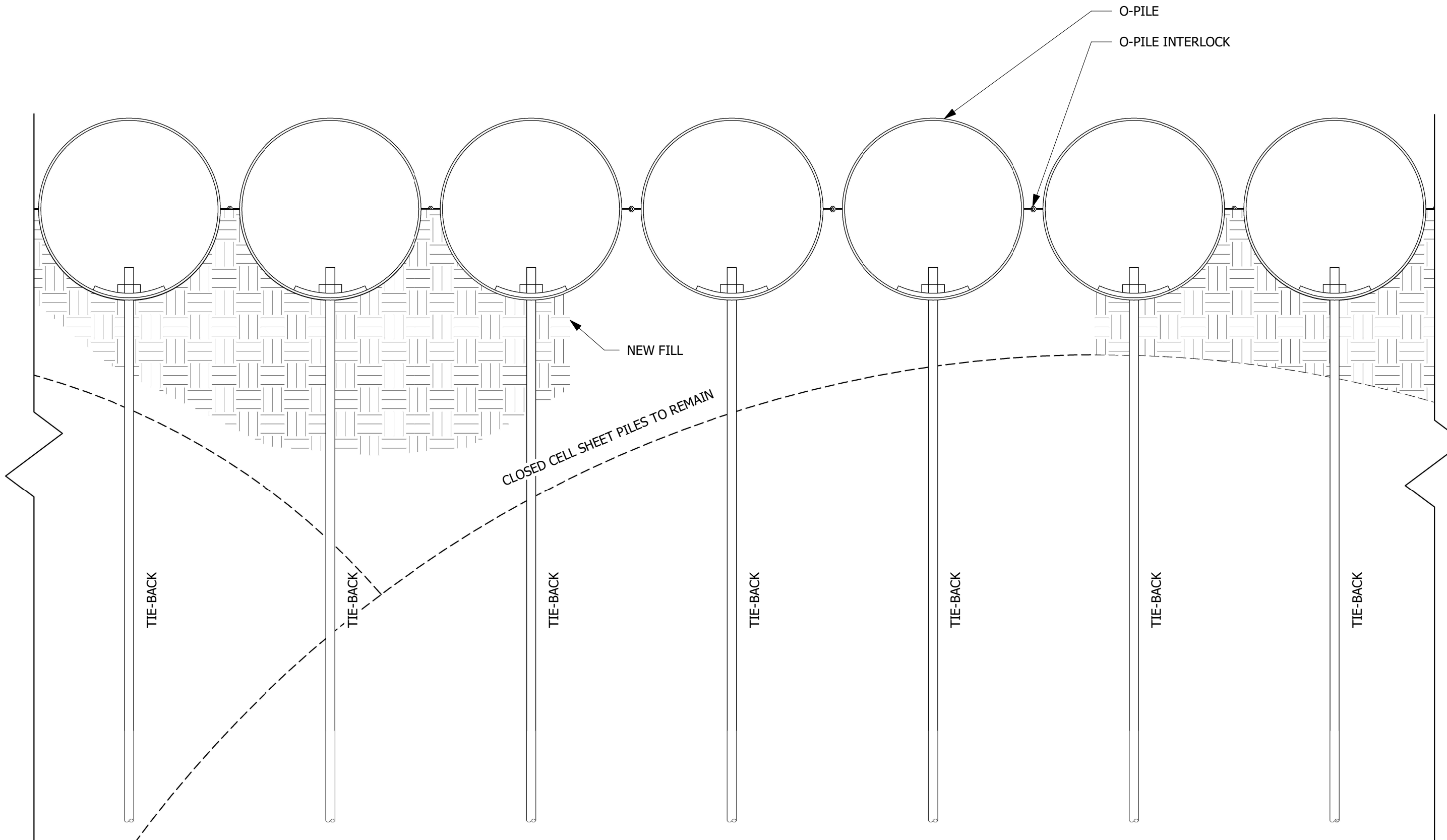
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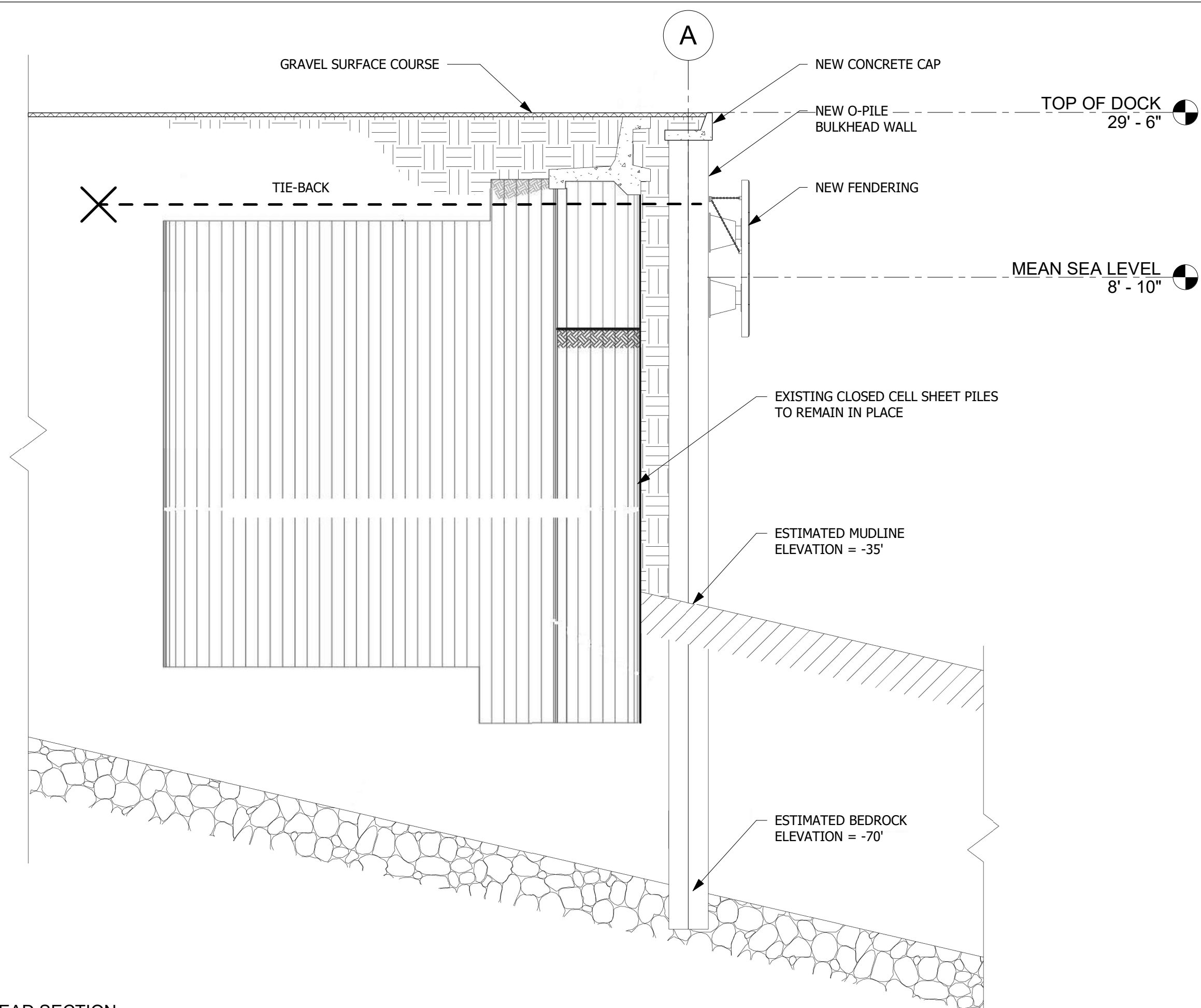
SHEET TITLE:
O-PILE WALL DETAIL
VIEW

SHEET NUMBER:

S200



1 O-PILE WALL PLAN VIEW
3/8" = 1'-0"



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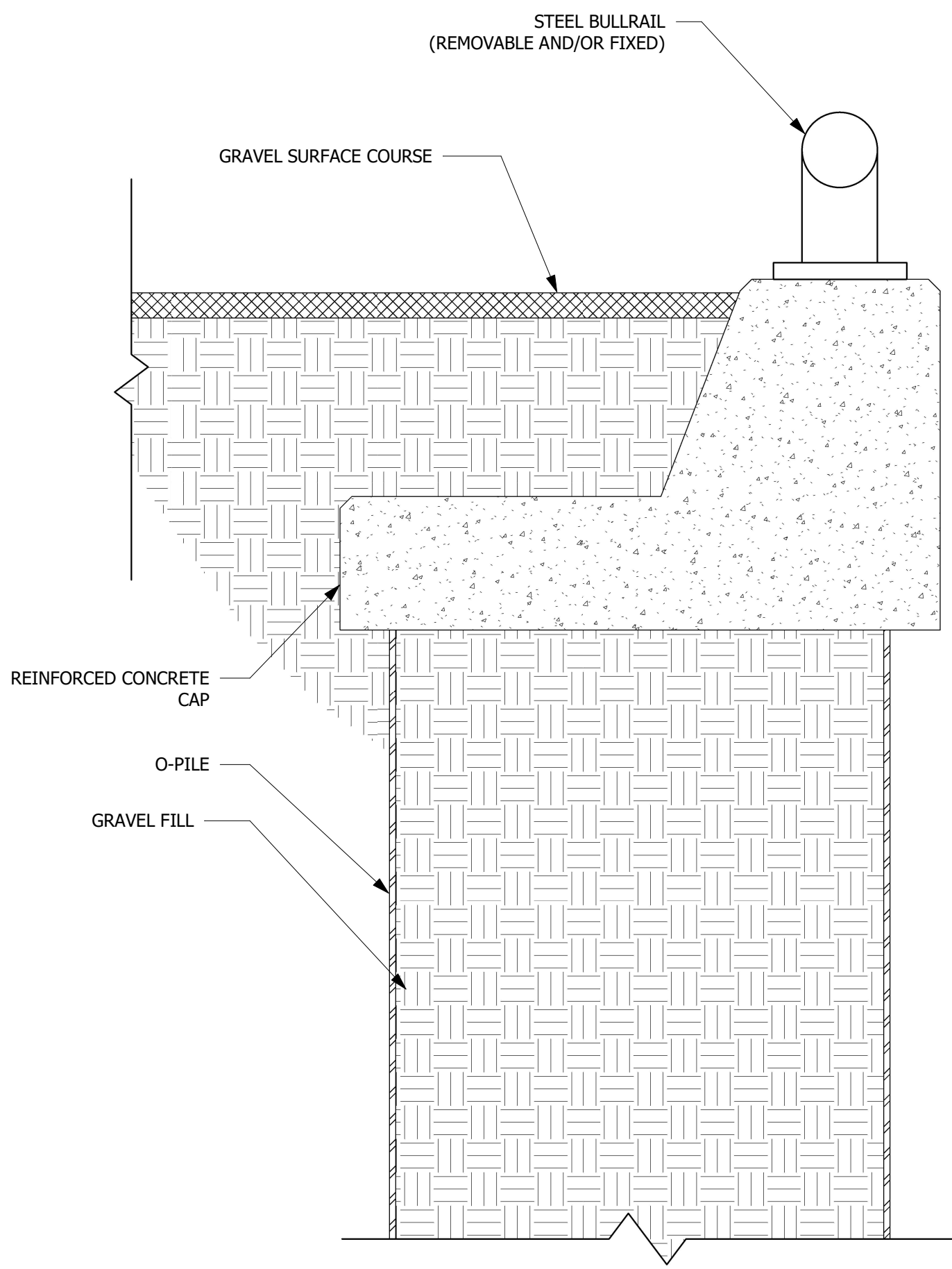
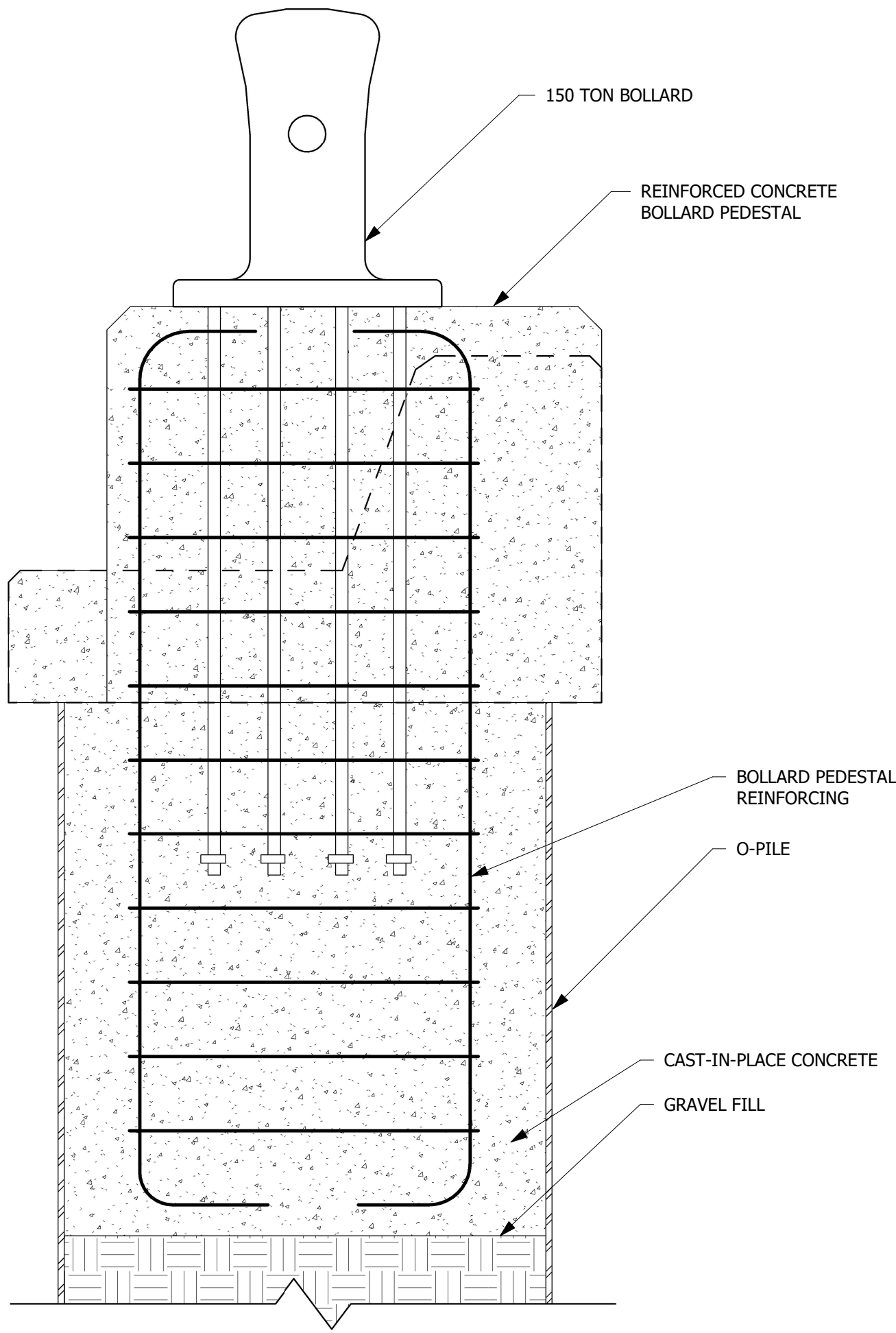
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SHEET TITLE:
 BULKHEAD SECTION

SHEET NUMBER:
S201

1 O-PILE BULKHEAD SECTION
 1 : 150



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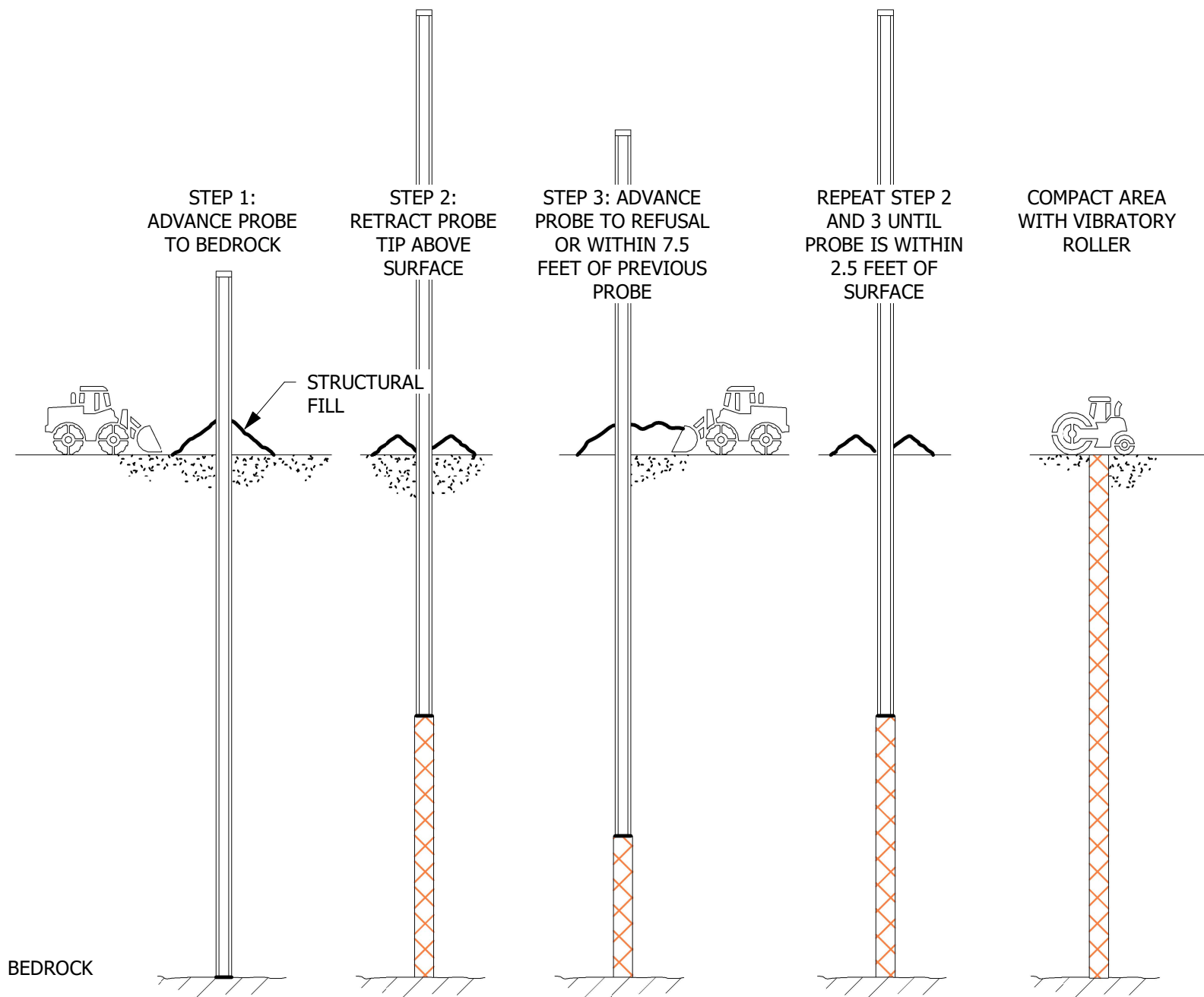
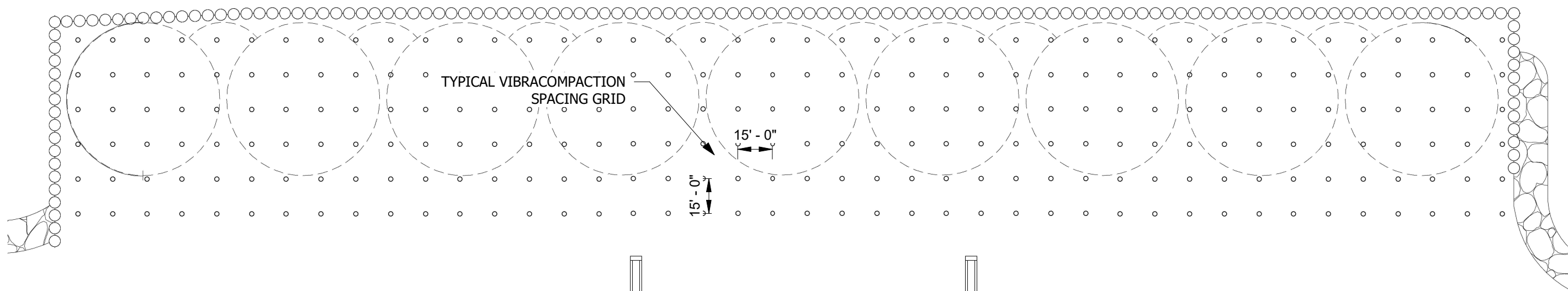
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ISSUE DATE:
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SHEET TITLE:
 BULKHEAD DETAILS

SHEET NUMBER:
S202

NEW O-PILE BULKHEAD DOCK



BULKHEAD DOCK VIBRACOMPACTION PLAN



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SHEET TITLE:
VIBRACOMPACTION
PLAN

SHEET NUMBER:

S203