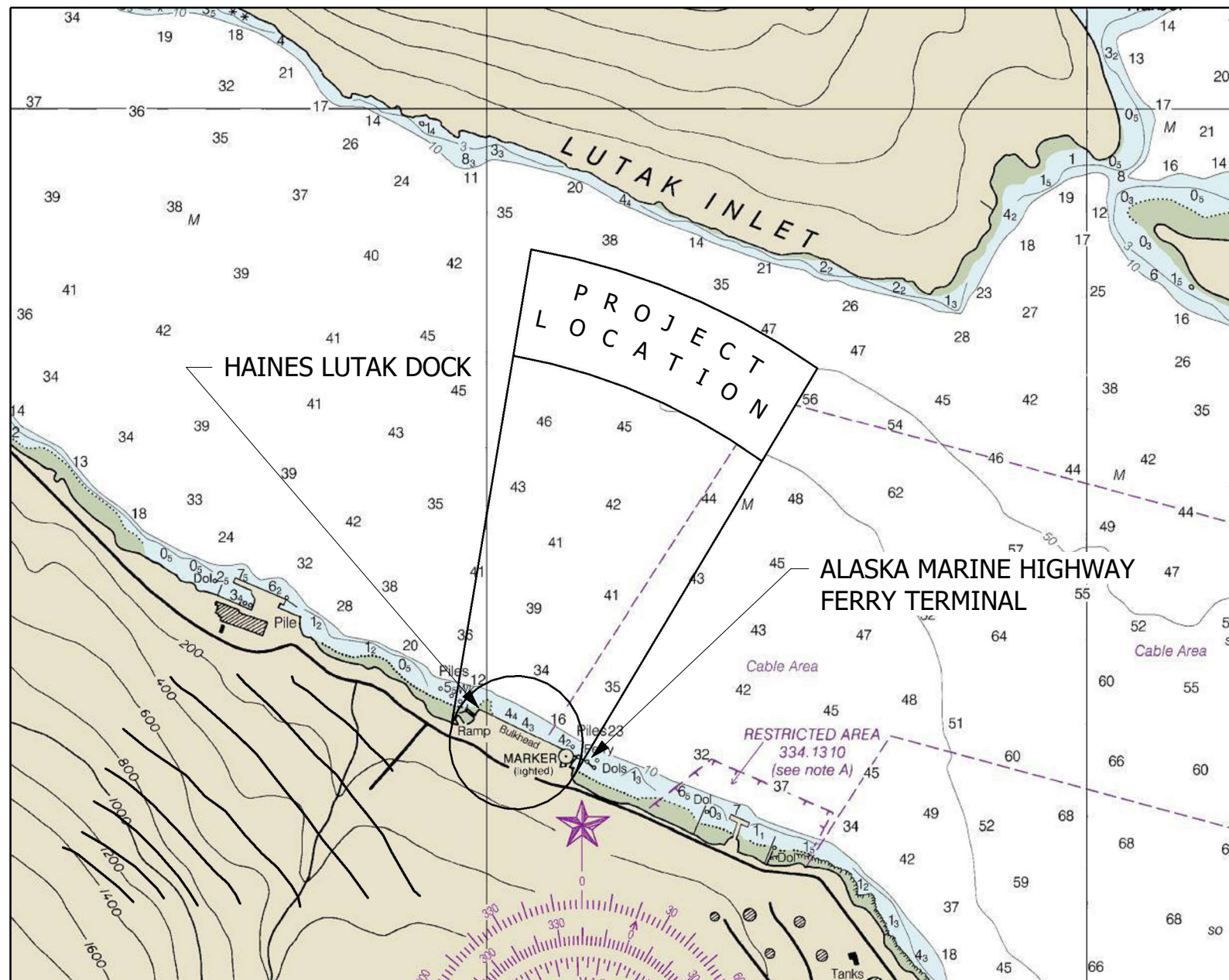


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## Marine Construction

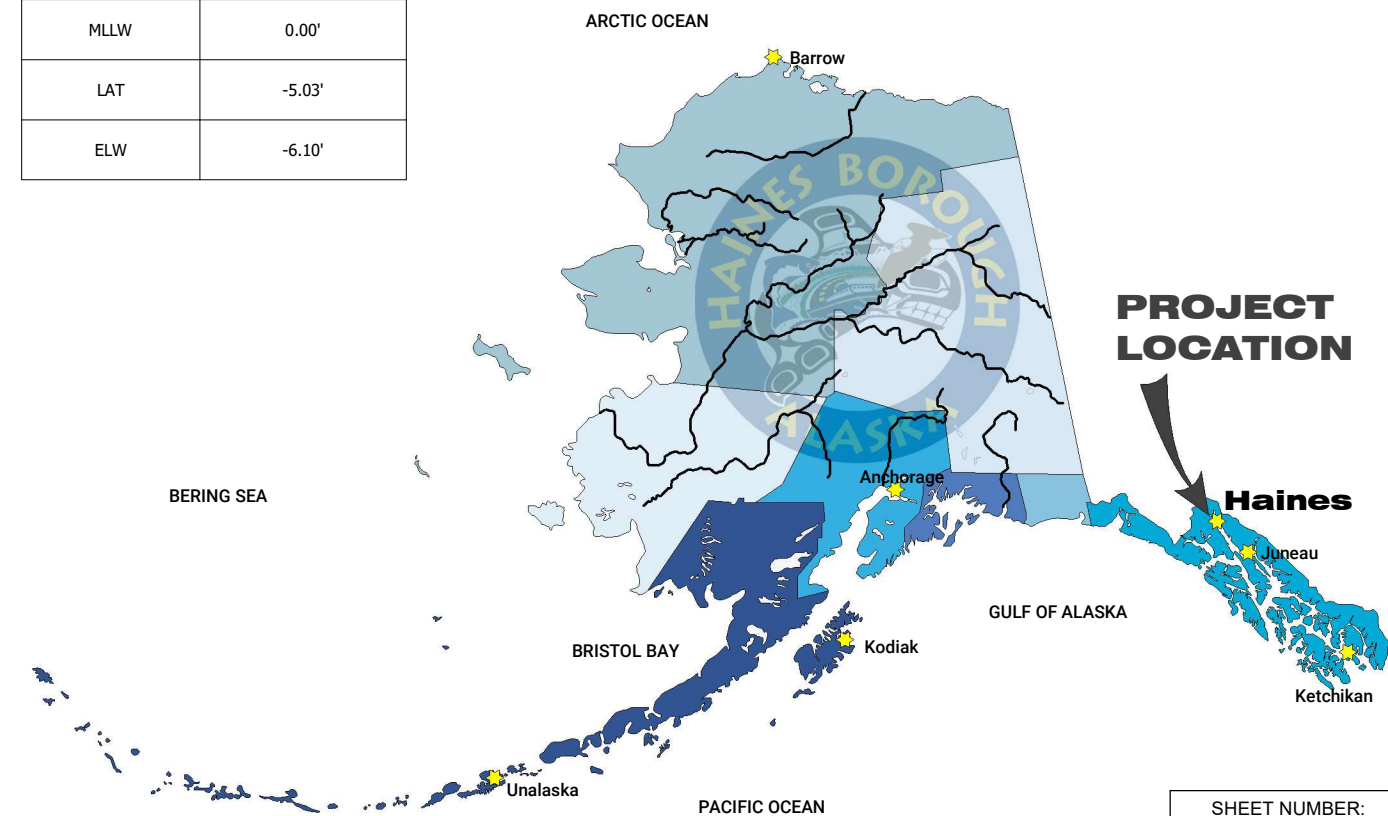
BASIS OF WORK DRAWINGS  
AUGUST 4, 2022

### 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	SITE PLANS
S101	AML BARGE LANDING
S102	O-PILE WALL DETAIL VIEW
S103	BULKHEAD SECTION
S104	BULKHEAD DETAILS



SHEET NUMBER:  
**G100**

# **BASIS OF DESIGN**

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



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Marine Construction  
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ANCHORAGE, AK 99507  
PHONE: (907) 261-8960

PROJECT NUMBER:  
20-003

**BASIS OF  
WORK  
DRAWINGS**

LUTAK DOCK  
REPLACEMENT  
HAINES, ALASKA

REV#	DESCRIPTION	DATE

ISSUE DATE:  
AUGUST 4, 2022

SHEET TITLE:  
GENERAL NOTES

SHEET NUMBER:

**G101**



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**BASIS OF  
WORK  
DRAWINGS**

**LUTAK DOCK  
REPLACEMENT  
HAINES, ALASKA**

REV#	DESCRIPTION	DATE

ISSUE DATE:  
AUGUST 4, 2022

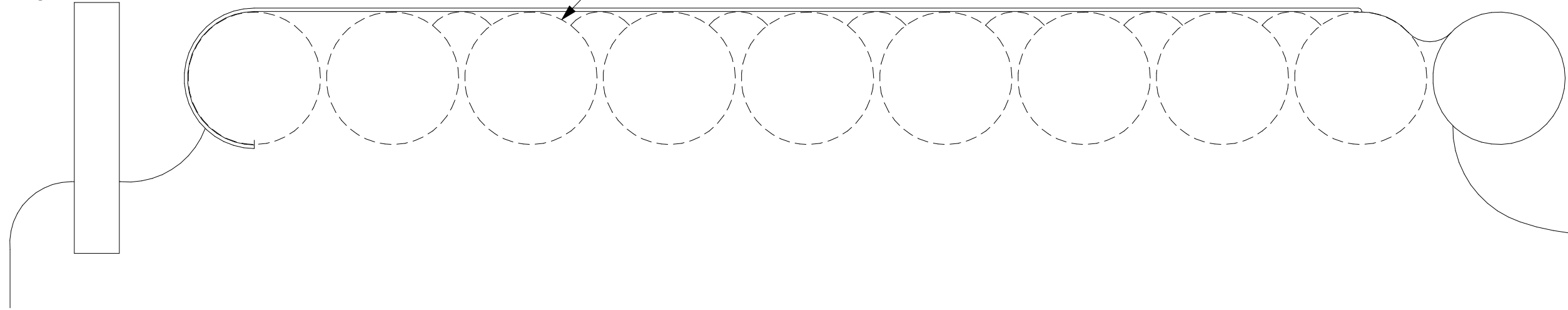
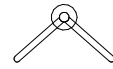
SHEET TITLE:  
SITE PLANS

SHEET NUMBER:

**S100**

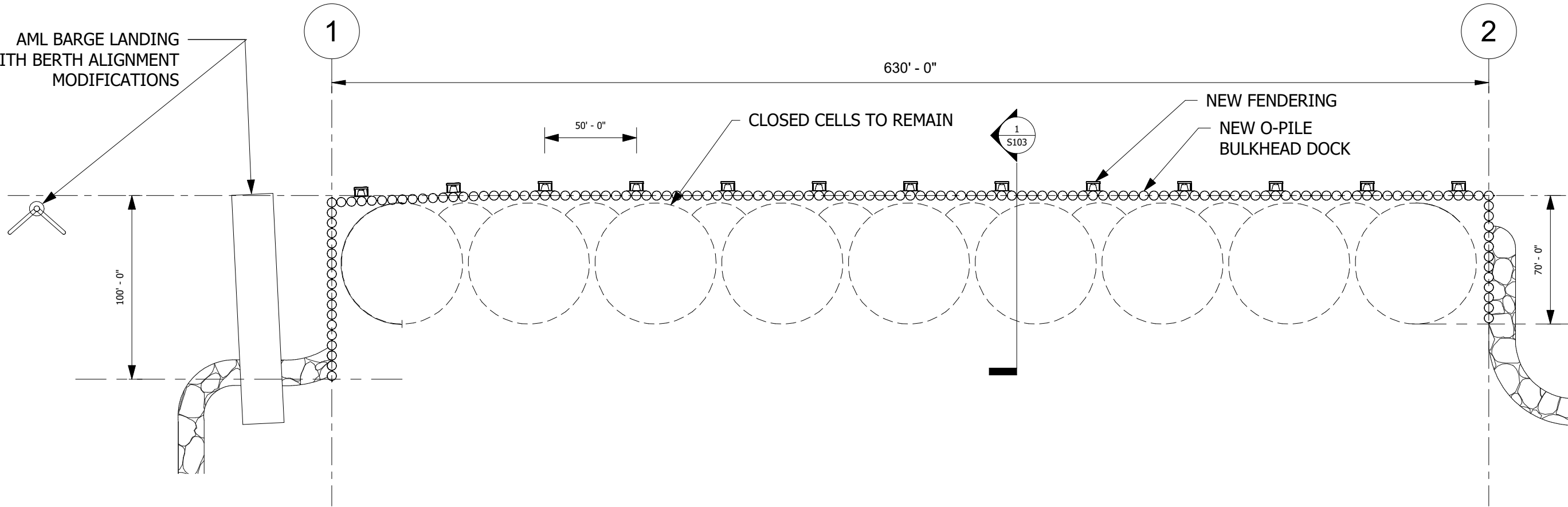
EXISTING AML  
BARGE LANDING

EXISTING CLOSED CELL BULKHEAD DOCK



**1** EXISTING CONDITIONS SITE PLAN  
1" = 60'-0"

AML BARGE LANDING  
WITH BERTH ALIGNMENT  
MODIFICATIONS



**2** NEW CONSTRUCTION SITE PLAN  
1" = 60'-0"



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**BASIS OF  
WORK  
DRAWINGS**

**LUTAK DOCK  
REPLACEMENT  
HAINES, ALASKA**

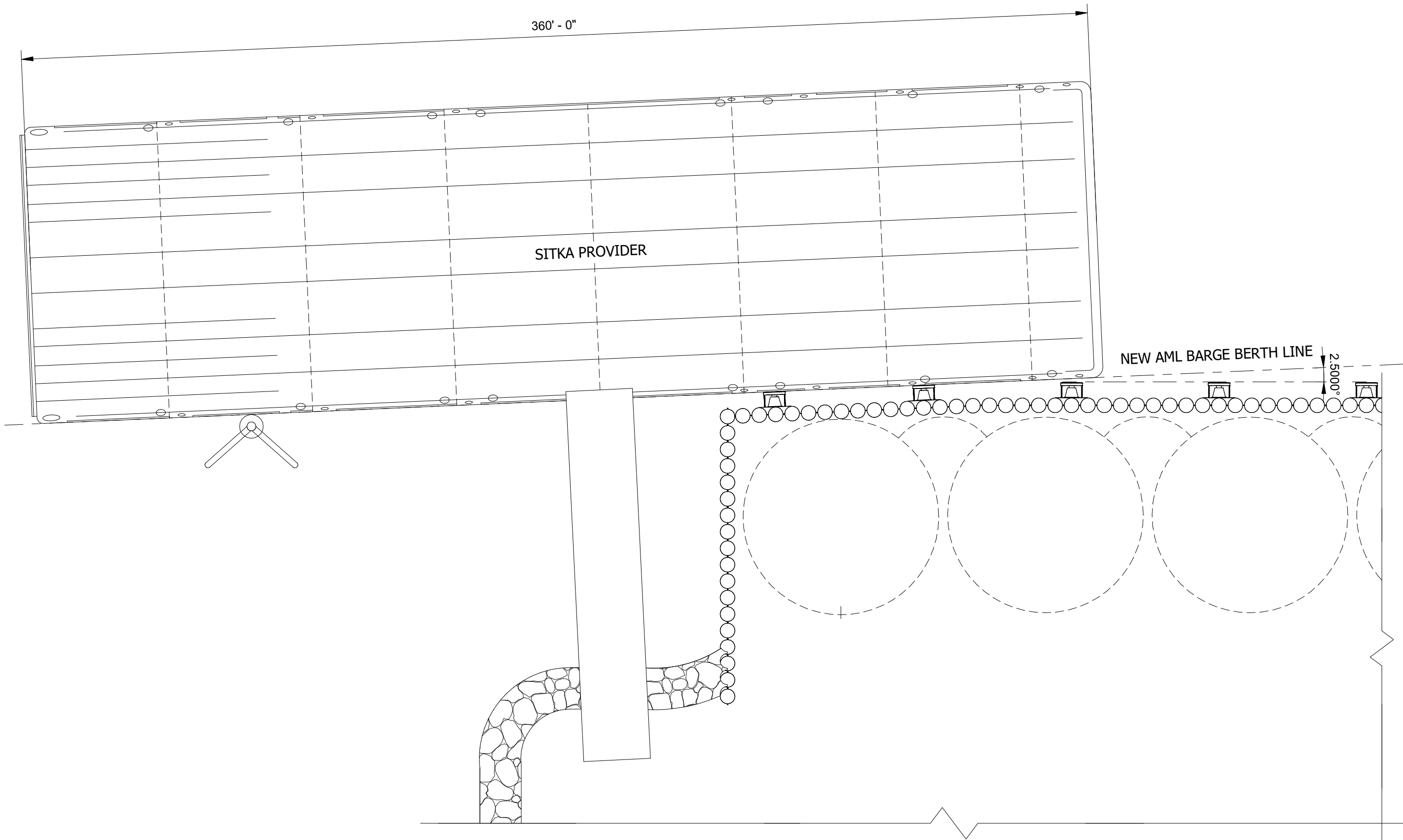
REV#	DESCRIPTION	DATE

ISSUE DATE:  
AUGUST 4, 2022

SHEET TITLE:  
AML BARGE LANDING

SHEET NUMBER:

**S101**



1 AML BARGE LANDING SITE PLAN  
1 : 380



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**BASIS OF  
WORK  
DRAWINGS**

**LUTAK DOCK  
REPLACEMENT  
HAINES, ALASKA**

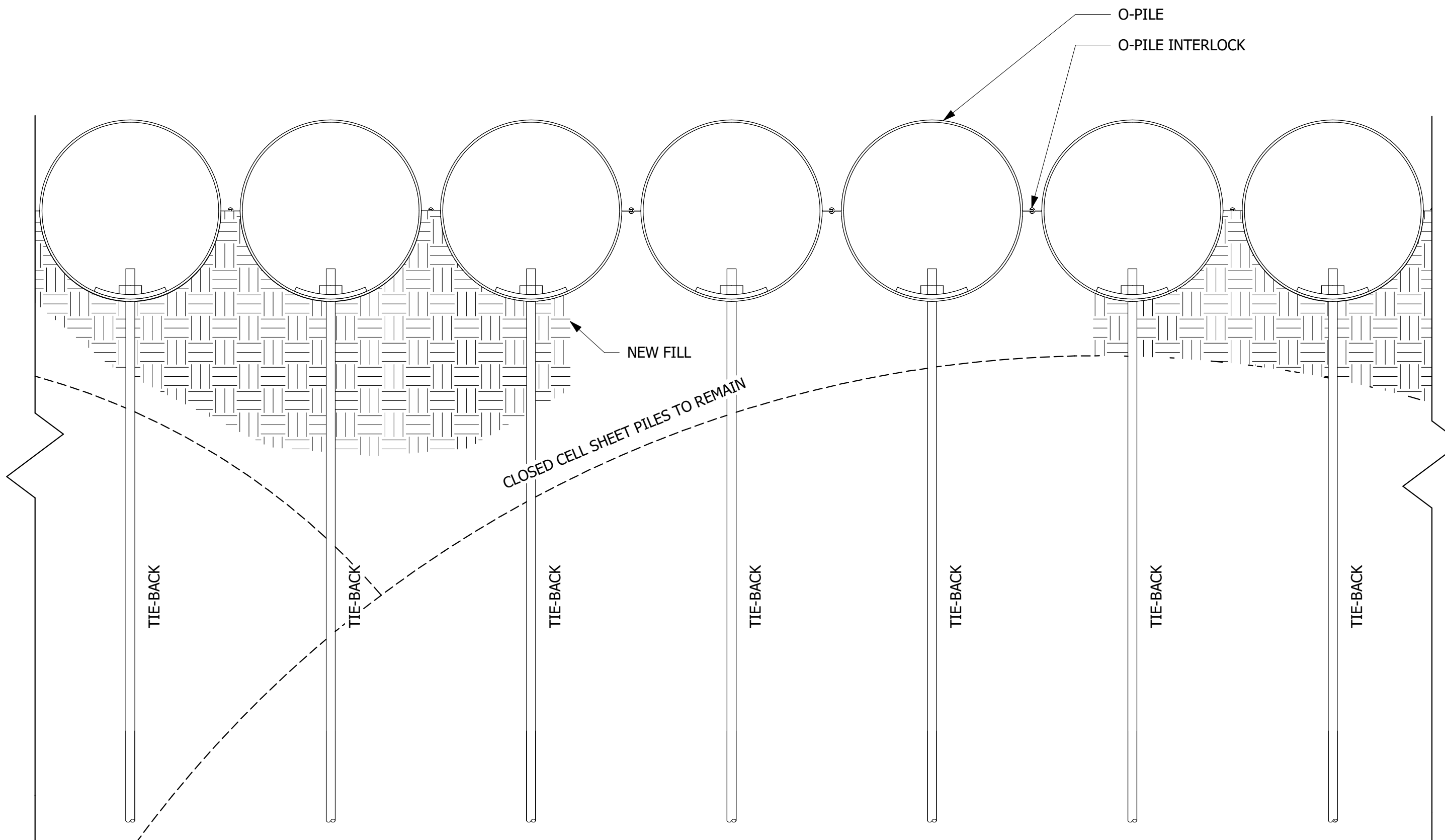
REV#	DESCRIPTION	DATE

ISSUE DATE:  
AUGUST 4, 2022

SHEET TITLE:  
O-PILE WALL DETAIL  
VIEW

SHEET NUMBER:

**S102**



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

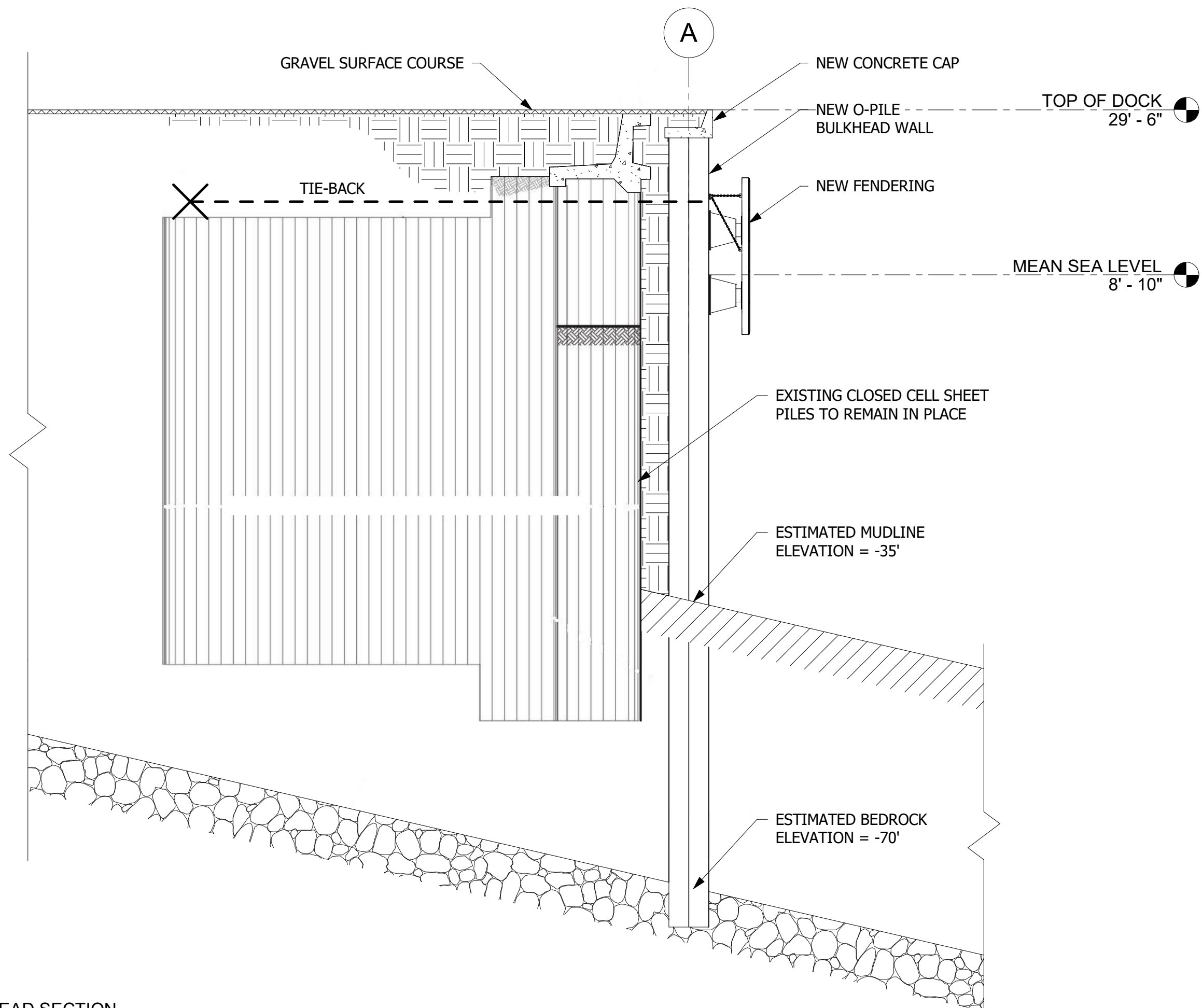


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**BASIS OF  
 WORK  
 DRAWINGS**

**LUTAK DOCK  
 REPLACEMENT  
 HAINES, ALASKA**



① O-PILE BULKHEAD SECTION  
 1 : 150

REV#	DESCRIPTION	DATE

ISSUE DATE:  
 AUGUST 4, 2022

SHEET TITLE:  
 BULKHEAD SECTION

SHEET NUMBER:  
**S103**



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**BASIS OF  
WORK  
DRAWINGS**

**LUTAK DOCK  
REPLACEMENT  
HAINES, ALASKA**

REV#	DESCRIPTION	DATE

ISSUE DATE:  
AUGUST 4, 2022

SHEET TITLE:  
BULKHEAD DETAILS

SHEET NUMBER:

**S104**

