

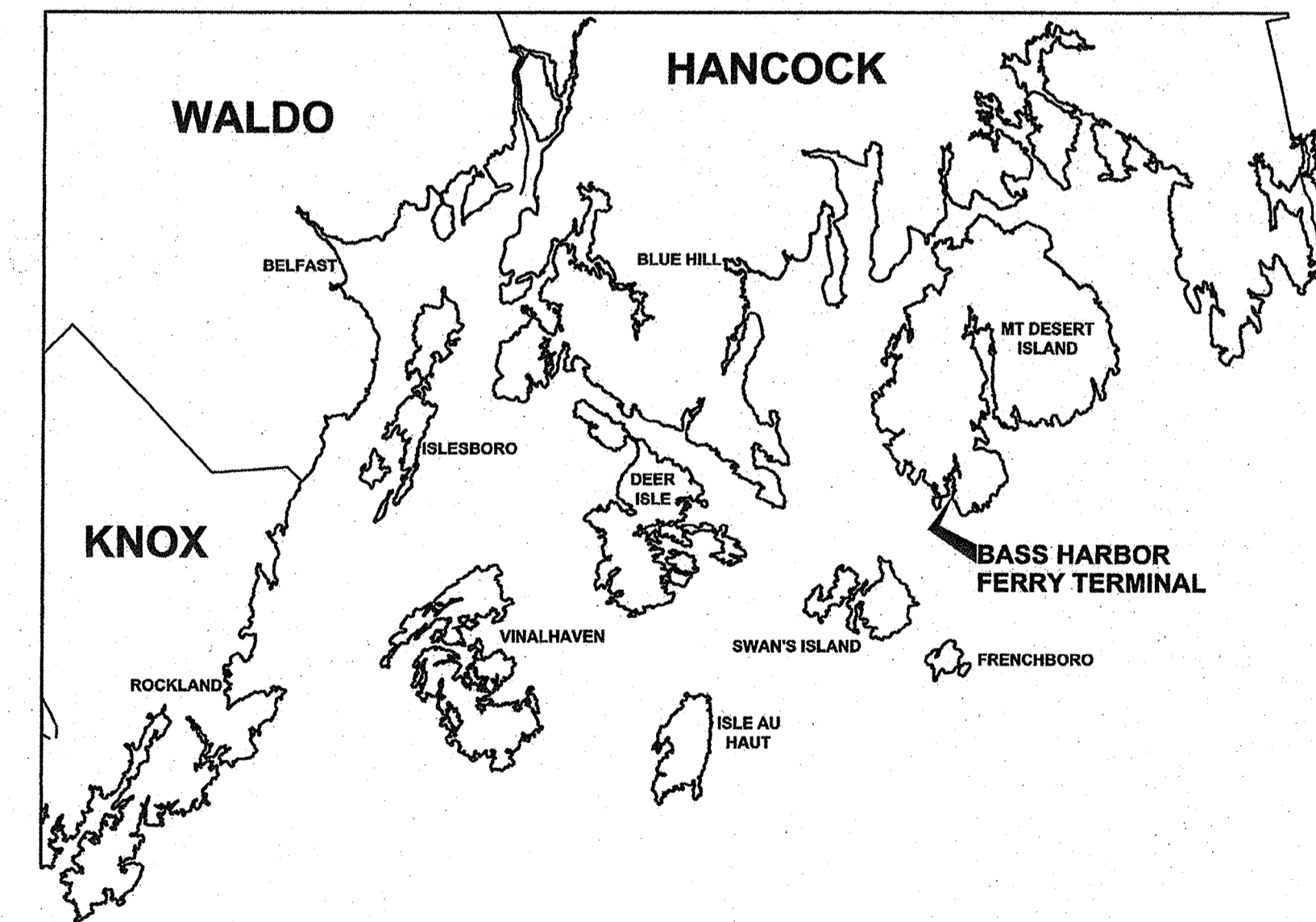
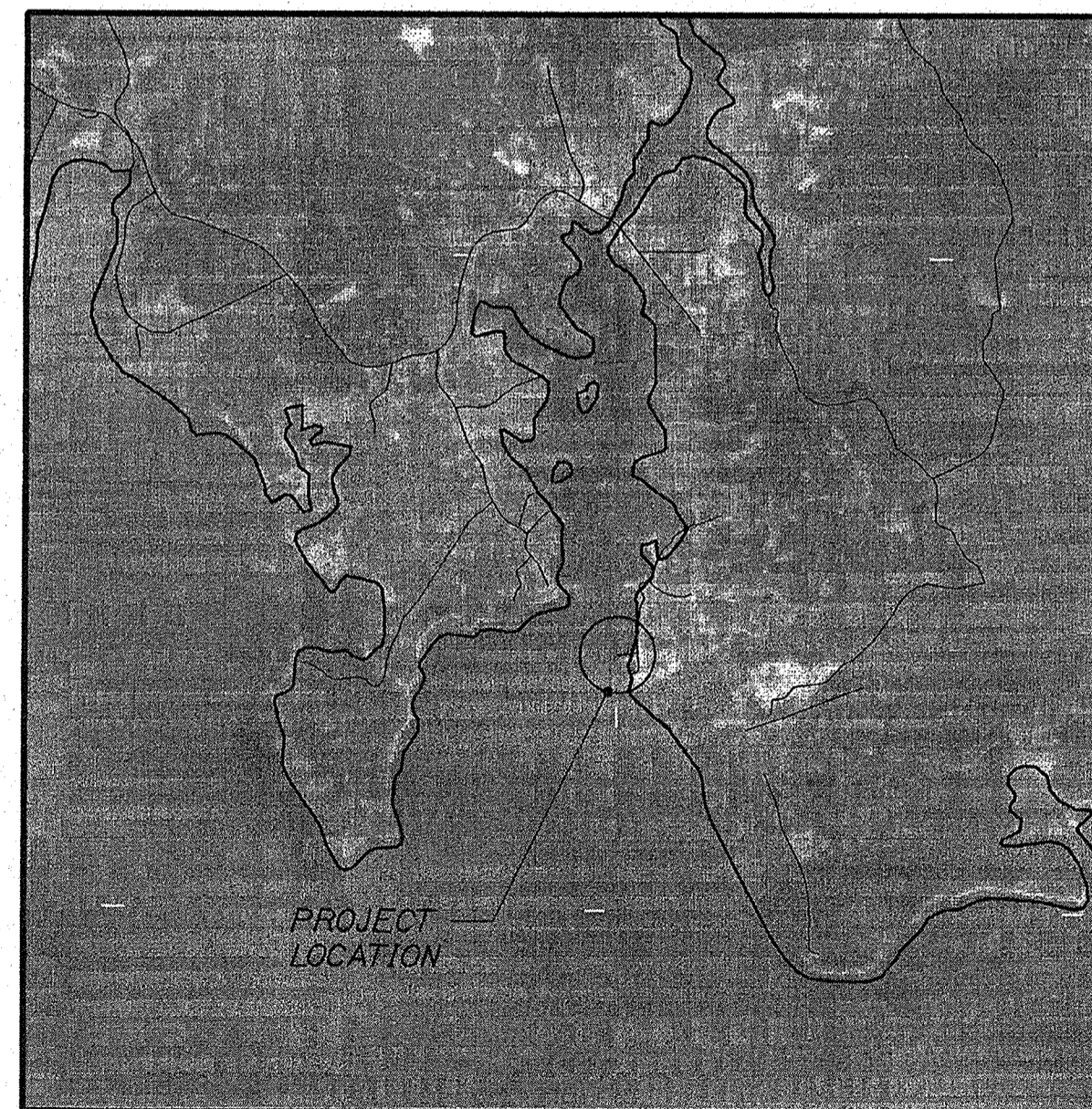
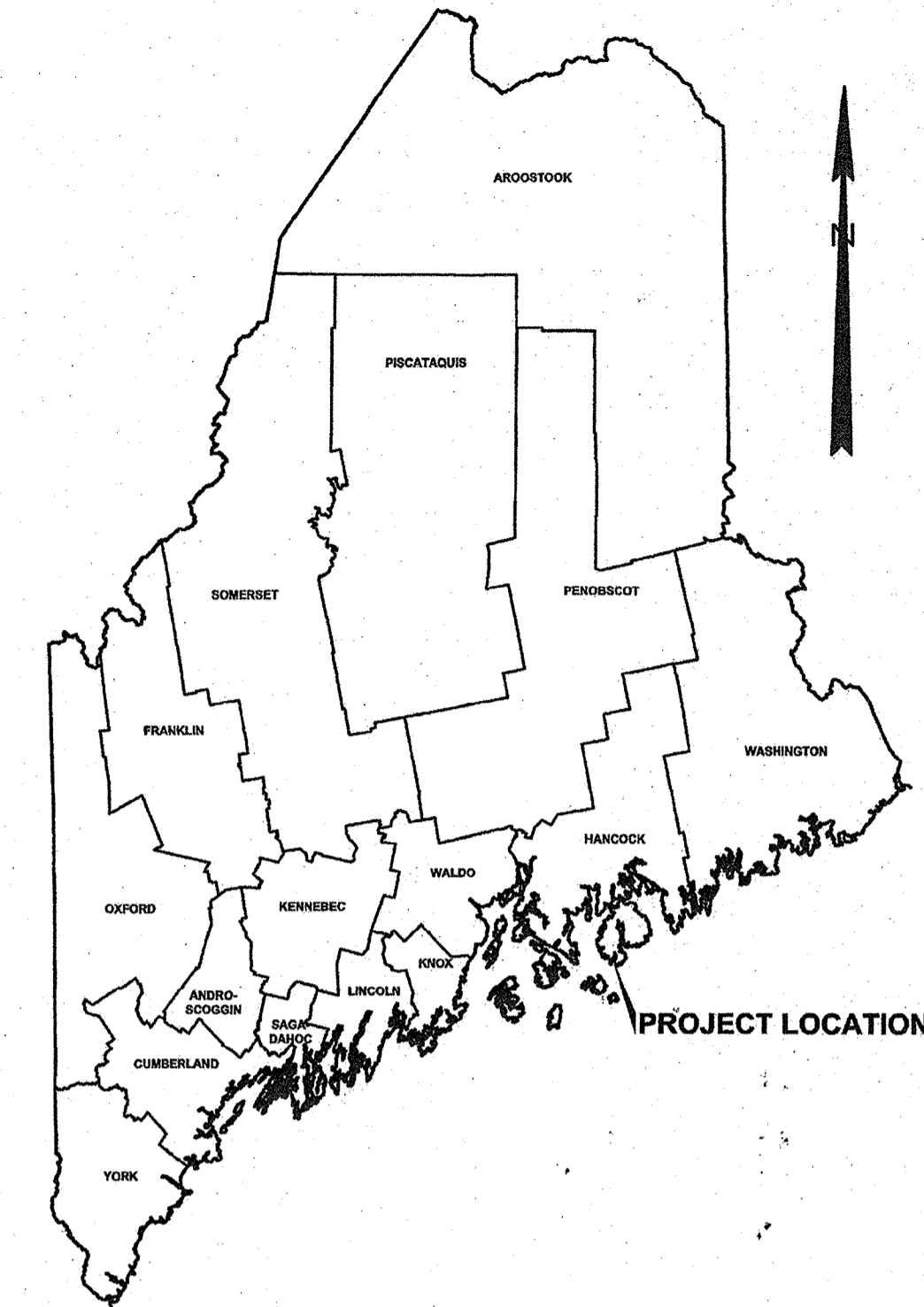
# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## VILLAGE OF BASS HARBOR HANCOCK COUNTY

### BASS HARBOR FERRY TERMINAL FENDER SYSTEM MODIFICATIONS

**FEDERAL PROJECT NO. 02347600  
MAINEDOT WIN: 023476.00**



**INDEX OF SHEETS**

**SHEET NO. TITLE**

**GENERAL**

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G03	3	EXISTING CONDITIONS
G04	4	BORING LOGS

**MARINE PLANS**

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**ELECTRICAL PLANS**

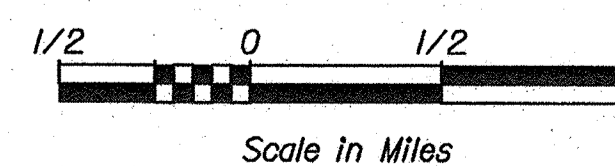
E01	17	ELECTRICAL PLAN
E02	18	ELECTRICAL DETAILS

THE PROFESSIONAL ENGINEER WHOSE STAMP APPEARS ON THIS COVER SHEET BEARS RESPONSIBILITY FOR THE FOLLOWING SHEETS WITHIN THIS DRAWING SET:  
GENERAL PLANS G01-G03  
STRUCTURAL PLANS S01-S12

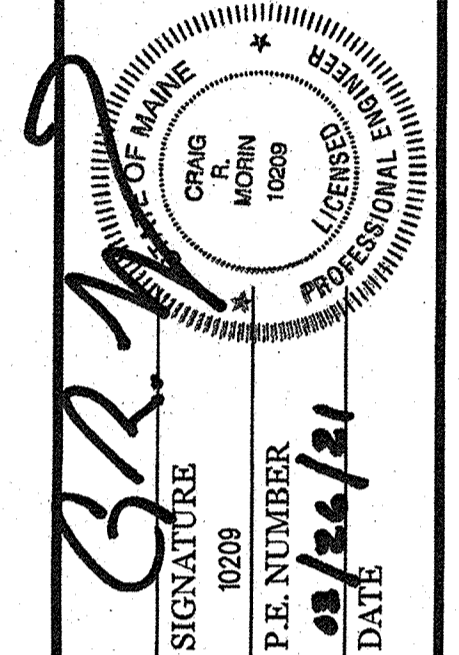
ADDITIONAL WORK APPEARS WITHIN THIS DRAWING SET AND IS THE RESPONSIBILITY OF THE FOLLOWING ORGANIZATIONS, WHOSE STAMP APPEARS ON THOSE INDIVIDUAL SHEETS:

GENERAL PLANS	G04	GEOTECHNICAL BORING LOGS	SCHONEWALD ENGINEERING
ELECTRICAL PLANS	E01-E02	ELECTRICAL DESIGN	BARTLETT DESIGN, INC.

LOCATION MAP



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>	APPROVED	4-30-21
CHIEF ENGINEER: <i>[Signature]</i>	APPROVED	4-26-21



PROJECT INFORMATION	MULTIMODAL	PROGRAM
PROJECT MANAGER	AURELE CORNEAU II	DESIGNER
CONSULTANT	CRAG R. MORIN P.E.	DESIGNER
PROJECT RESIDENT	HNTB CORPORATION	CONSULTANT
CONTRACTOR	HNTB CORPORATION	CONTRACTOR
PROJECT COMPLETION DATE		

BASS HARBOR FERRY TERMINAL FENDER SYSTEM MODIFICATIONS	HANCOCK COUNTY
BASS HARBOR	TITLE SHEET

SHEET NUMBER
G01
1 OF 18

WIN 023476.00 FEDERAL PROJECT NO. 02347600



Date: 3/22/2021

Username:

Division:

Filename: 001\_Title.dgn

Date: 4/6/2021

Username:

Division:

Filename: 002\_GeneralNotes.dgn

GENERAL NOTES

- 1. These notes contain general information and are not complete for construction purposes. Contractor shall verify information given here with specifications and other drawings and bring any conflicts to the Engineer's attention before beginning work.
2. All geotechnical and electrical notes may be found on Sheets G04 and E01, respectively.
3. All dimensions and details shall be verified by the Contractor prior to construction.
4. Contractor shall provide and maintain horizontal and vertical controls in the Maine state plane coordinate system.
5. The MaineDOT field office shall be placed on terminal property near the crew's quarters at a location approved/determined by the Resident. The Contractor shall make accommodations off-site for their field office, lay down area, restroom facilities, etc.
6. The contractor shall be aware of the eelgrass limit which is approximated based on a June 27, 2019 dive survey by MaineDOT. All actions during construction, including but not limited to demolition, installation, and equipment setup and storage, shall not affect these environmental resources.

SPECIFICATIONS AND CODES

- 1. Project specifications titled, "Special Provisions For: Bass Harbor Ferry Terminal Fender System Modifications", dated March 26, 2021.
2. State of Maine, Department of Transportation, Standard Specifications, November 2014. Including all supplemental specifications and special provisions.
3. Codes and other references
A. Unified Facilities Criteria Manuals:
UFC 4-150-06 Military Harbors and Coastal Facilities, with Change 1
UFC 4-150-07 Maintenance and Operation: Maintenance of Waterfront Facilities, with Change 1
UFC 4-150-08 Inspection of Mooring Hardware
UFC 4-151-10 General Criteria for Waterfront Construction, with Change 1
UFC 4-152-01 Design: Piers and Wharves
UFC 4-159-03 Design: Moorings, with Change 2
B. US Army Corps of Engineers: Coastal Engineering Manual, current edition
C. AASHTO LRFD specifications, 8th edition, 2017 with Interims
D. AWS, D1.1, "Structural Welding Code Steel", current edition
E. AWS, D1.2, "Structural Welding Code Aluminum", current edition

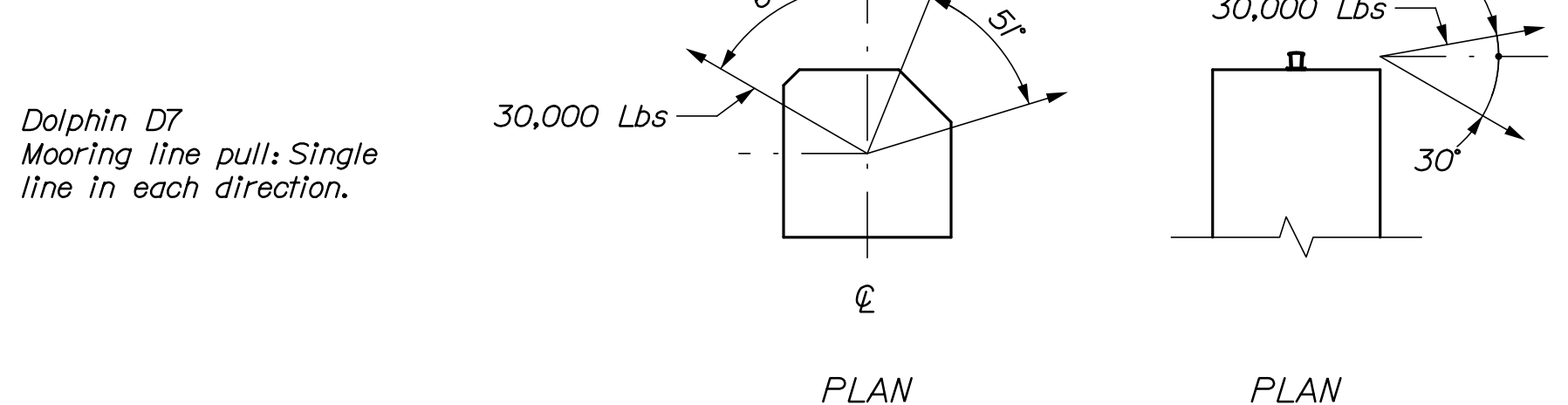
SURVEY CONTROL

- 1. Vertical control for marine structures is in reference to MLLW (Mean Lower Low Water). To convert to National Geodetic Vertical Datum (NGVD), use the following formula:
EI (NGVD) = EI (MLLW) - 9.28 ft
2. Horizontal control is the Maine state plane coordinate system (east zone), NAD 27.

BERTHING LOADS

Table with columns: Dolphin, Berthing Velocity (Ship Velocity, to Fender), App. Angle, Energy to Fender, Minimum Fender Design Energy, Max. Reaction on Dolphin. Rows include Turning Dolphins: Normal and Extreme.

MOORING LOADS



FENDER NOTES

- 1. All dimensions, details and existing conditions shall be verified by the Contractor prior to construction.
2. Contractor's steel manufacturer shall design the fender panels for the indicated loads.
3. Embedded anchors for chains shall be set by chemical/adhesive material with 9 inch minimum edge distance and a minimum embedment of 12 times the diameter of the anchor. Strength of existing concrete is 3,000 psi.
4. Anchors shall be set by template.

DOLPHIN/FENDER DESIGN LOADS

Design Vessel: MV Margaret Chase Smith\*
Length = 166'-6"
Beam = 40'-0"
Max. Displacement = 633 long tons
\* This vessel was chosen as the design vessel since it envelopes the existing vessel fleet as well as the new ferry currently in design (LOA = 154 ft).
Current Vessel: MV Captain Henry Lee
Length = 130'-0"
Beam = 36'-0"
Max. Displacement = 500 long tons (est.)
New Vessel: New Ferry (TBD)
Length = 154'-0"
Beam = 38'-0"
Max. Displacement = 600 long tons (est.)

STEEL PIPE PILES

- 1. Steel pipe piles shall conform to ASTM A252, Grade 3, Fy = 45 ksi minimum. Per standard specification 711.01, Concrete fill shall be MaineDOT class "A".
2. Piles shall be coated with fusion bonded epoxy in accordance with the specifications.
3. Pile splices shall not be allowed without prior approval of the Engineer of record.
4. Any portion of pile cracked, deformed, or otherwise damaged by pile driving shall be replaced.
5. Piles shall not be out of position shown by more than 2" longitudinally along the pile cap, and 2" transversely across the width of the pile cap.
6. The distance from the side of any pile to the nearest edge of concrete shall not be less than 9".
7. Piles shall be 16" dia, 5/8" wall steel pipe piles with concrete fill. Piles shall be fabricated of seamless or straight-seamed material. Spiral welded pipe pile is not permitted.

DEMOLITION NOTES

1. Demolition shall be conducted to prevent debris from falling into the ocean. To the maximum extent practicable, all construction debris, including any liquids or slurries that are produced as part of the demolition, shall be captured and disposed of properly. The Contractor shall comply with applicable permit conditions and environmental regulations listed in the specifications. Work shall include removal of any construction debris from the river and installation and maintenance of appropriate turbidity controls during demolition and construction such that no turbidity escapes the immediate work area. Underwater inspections may be conducted by the Owner's representative to ensure all demolition and construction debris is removed from the ocean.

ENVIRONMENTAL CONDITIONS

- 1. Wind: Transverse 50 plf, Longitudinal 12 plf
Wind on Live Load: Transverse 100 plf
Wind on Structure: 40 psf
Thermal: Temp. Range for Concrete Structure = 80F
2. Railings: Vertical 50 plf, Horizontal 50 plf (acting simultaneously)
3. Tidal ranges (elevations in feet):

Tidal Datums table for Bass Harbor. Columns: NGVD29, MSL, MLW, MLLW, STND. Rows include Top of Dolphin, Highest Observed Tide, MHHW, MHW, NGVD29\*\*, MSL, MLW, MLLW, Lowest Observed Tide, and STND (Station Datum).

\*Along top edge of dolphin at corner nearest pen. Station ID: 8413320, Bar Harbor, ME
\*\*NGVD29 conversion taken from archive project drawings. Tidal Epoch: 1983-2001

LEGEND:

- Baseline
Plate
Centerline
Washboring
Flood Light
Navigation Marker Light
Site Light - Existing
Site Light - Proposed
Curbing
Diameter
Double Bitt
Chock
Ladder

ABBREVIATIONS:

- CY Cubic Yard
EA Each
EL Elevation In Feet
HSS Hollow Structural Sections
ID Inside Diameter
K (KIP) 1000 Pounds
LBS Pounds
LF Linear Feet
MAX. Maximum
MIN. Minimum
NA Not Applicable
N.T.S. Not To Scale
OC On Center
PSF Pounds Per Square Foot
R Radius
REF Reference
SCHED. Schedule
SF Square Feet
TYP. Typical
UON Unless Otherwise Noted
USACOE United States Army Corps of Engineers

STRUCTURAL STEEL AND MISCELLANEOUS STEEL FABRICATIONS

- 1. Steel shapes and plates shall be ASTM A709, Grade 36 typical, ASTM A709 Grade 50 where noted.
2. Steel pipes shall be ASTM A53, Grade B.
3. Steel tubing shall be ASTM A500, Grade B.
4. All bolts and nuts for steel connections shall conform to ASTM A325 and be hot-dip galvanized in accordance with ASTM A153. Set anchor bolts by template only. All bolts and nuts for timber connections shall conform to ASTM A307 and be hot-dip galvanized.
5. All miscellaneous steel, including all fasteners, chains, shackles, and u-bolts unless noted otherwise, shall be hot-dip galvanized. Galvanize items after fabrication. Stress relieve bends before galvanizing. Galvanizing damaged accidentally or due to field welding shall be restored with a field applied galvanizing compound.
6. Welding Electrodes: E70XX, Low Hydrogen
7. All welding shall be in accordance with the requirements of the structural welding code, D1.1 and D3.6, of the American Welding Association (AWS).

ALUMINUM ANODES

1. Cathodic protection for steel pipe piles and fender panels shall be 80 lb aluminum alloy. Dimensions shall conform to the general configuration shown on the Plans.

ALUMINUM GANGWAYS

- 1. The design and construction of the aluminum gangways shall be in accordance with the special provisions for the item "Aluminum Gangway". The Contractor's manufacturer shall design the gangways in accordance with the plans, specifications, and loads shown below.
2. Vertical Loads: Uniform Live Load 85 psf, Additional Dead Load 50 psf
3. Horizontal Loads: Wind - Transverse 50 plf, Wind - Longitudinal 12 plf
4. The minimum support seat width, measured perpendicular to the edge of the concrete support shall be 18 inches.
5. Handrail shall be designed for a concentrated horizontal load of 200 pounds acting at the top of the railing.

CONCRETE

- 1. Concrete basic design stresses shall be:
- Fill for Pipe Piles: Class "A"
- Fill for Double Bitts: Class "A"
- Cast-in-place (uon): Class "LP"
2. Concrete shall contain 5.0 gal/cy of calcium corrosion inhibitor admixture.
3. Clearances for reinforcement shall be 3" unless otherwise noted.
4. Chamfer all concrete edges 1" @ 45° unless otherwise noted.
5. All reinforcing shall be fully supported on non-metallic approved chairs. Reinforcing shall not be supported on timber blocks, bricks, concrete blocks, miscellaneous rebar, etc.
6. Construction joints shall be made only as shown unless approved otherwise.
7. All existing concrete surfaces to receive concrete shall be roughened to a minimum amplitude of 1/4" and coated with a product listed on the MaineDOT pre-qualified list of concrete bonding agents.
8. Wet curing of concrete is to begin within 30 minutes after concrete finishing, or as soon as possible without damaging finished surface.
9. All formwork for concrete shall be left in place and concrete surfaces shall be covered and kept moist for a period of not less than seven (7) full days after concrete placements.
10. Contractor shall submit detailed reinforcing drawings including bar and bending schedules to the Engineer for review and approval prior to delivery of any reinforcing steel.

11. All ferrous metal handling/lifting devices and existing embedded metals/anchors no longer in use shall be recessed or removed to a depth of one inch below the surface of the concrete and patched with an approved polymer-modified cementitious mortar. Devices located in areas to be totally encased in cast-in-place concrete shall be galvanized. Devices located in areas not to be encased in cast-in-place concrete shall be stainless steel, unless otherwise noted.

STEEL REINFORCEMENT

- 1. Reinforcing Steel: ASTM A775, unless noted otherwise.
2. Rock Anchors: ASTM A722, Grade 150, deformed, with triple corrosion protection.
3. Splicing of reinforcing steel is permitted. Stagger splices one splice length minimum. No more than 50 percent of the reinforcing steel shall be spliced at any location. Provide a minimum splice length of 50 bar diameters, unless noted otherwise on the drawings.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
BASS HARBOR FERRY TERMINAL
GENERAL NOTES AND DESIGN CRITERIA
SHEET NUMBER G02
2 OF 18
WIN 023476.00

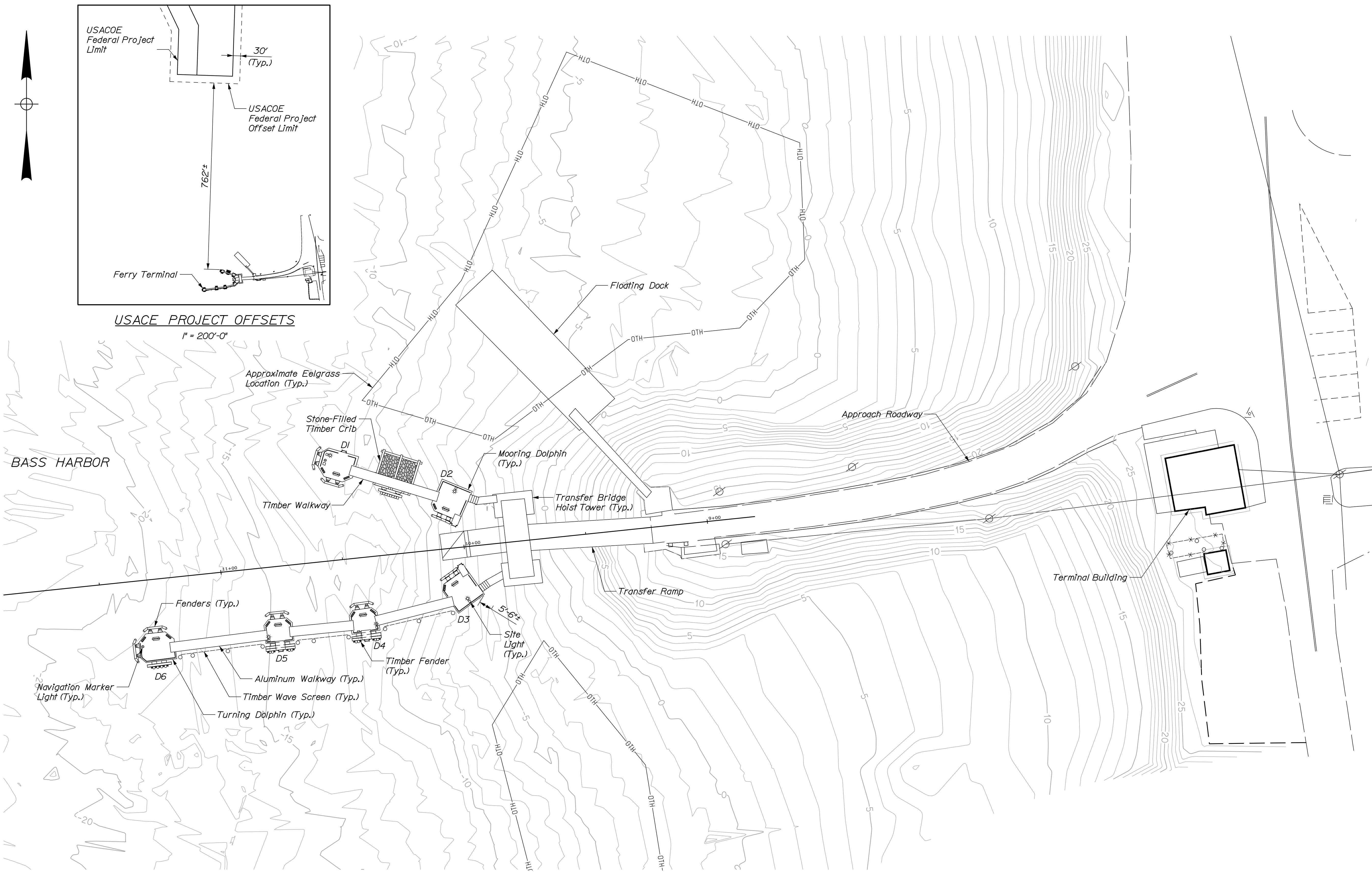


Date: 4/6/2021

Username:

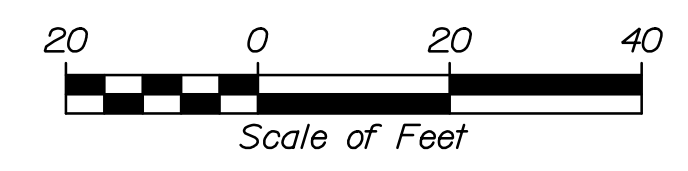
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Filename: 003\_Existing Conditions.dgn



**USACE PROJECT OFFSETS**  
1" = 200'-0"

**SITE PLAN**  
1" = 20'-0"



**NOTES:**

1. For existing electrical details, see Sheet E01.
2. USACE project limit per <https://www.nae.usace.army.mil/Missions/Navigation/Maine-Projects/>. Offset limit dimension determined by 3x water depth (MLLW).
3. Eelgrass limits are approximate boundaries, based on a June 27, 2019 dive survey by MaineDOT. Contractor shall avoid disturbance to eelgrass areas; no spudding.



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SIGNATURE 10209		P.E. NUMBER 10209		DATE	
BASS HARBOR FERRY TERMINAL		PROJ. MANAGER	BY	DATE	FIELD CHANGES		
EXISTING CONDITIONS		DESIGN-DETAILED N. Willey	P. Bishop	03/21	REVISIONS 1		
SHEET NUMBER		CHECKED-REVIEWED C. Morin	C. Morin	03/21	REVISIONS 2		
G03		DESIGN-DETAILED			REVISIONS 3		
3 OF 18		REVISIONS 1			REVISIONS 4		
WIN 023476.00							



DOLPHIN COORDINATES

EXISTING D1		
LOCATION	NORTHING	EASTING
A	207178.93	1023857.59
B	207174.79	1023871.95
C	207166.18	1023869.39
D	207164.47	1023865.22
E	207166.69	1023857.77
F	207170.86	1023855.26

EXISTING D2		
LOCATION	NORTHING	EASTING
A	207165.68	1023906.03
B	207160.60	1023918.36
C	207148.44	1023913.05
D	207153.54	1023900.77

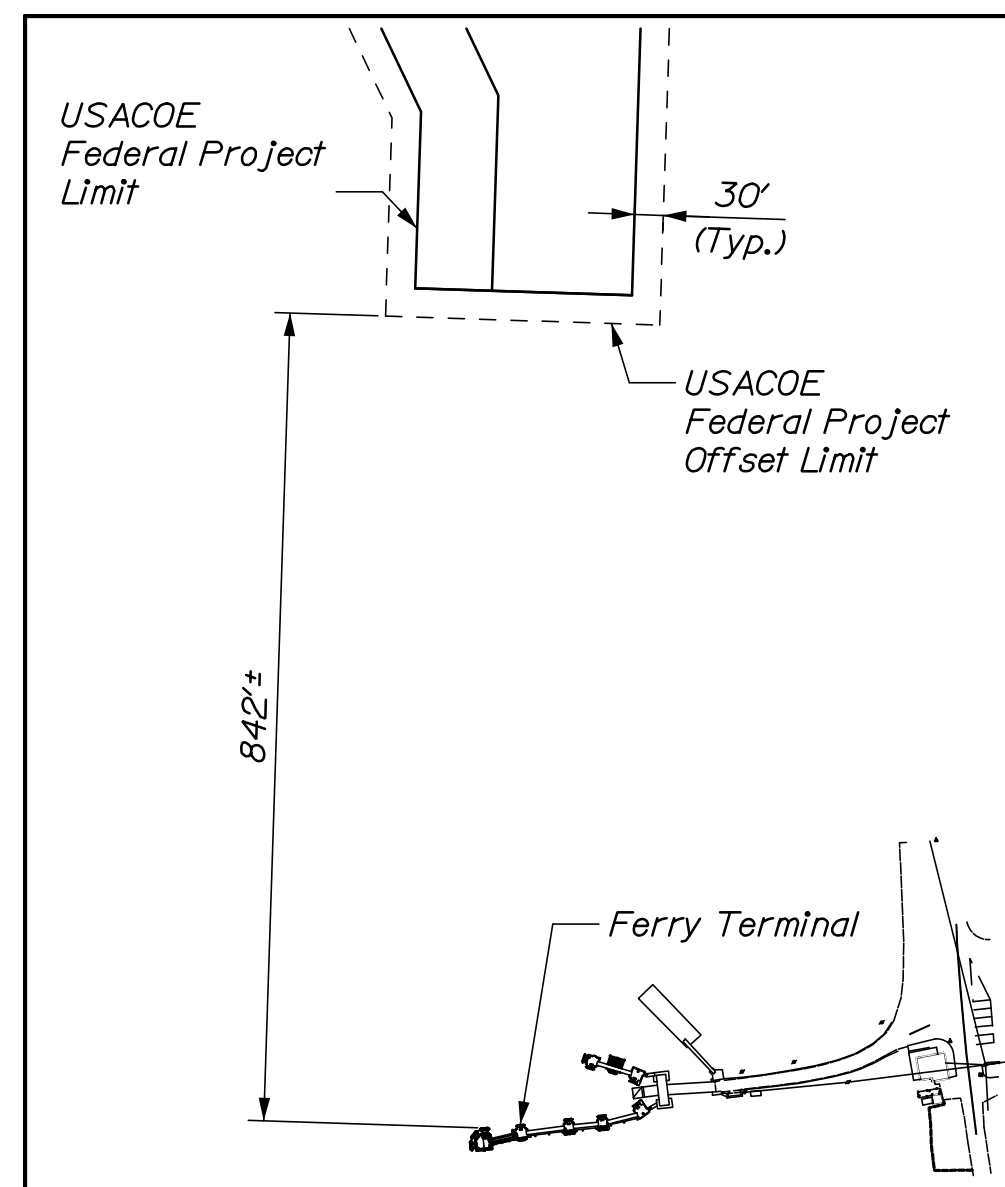
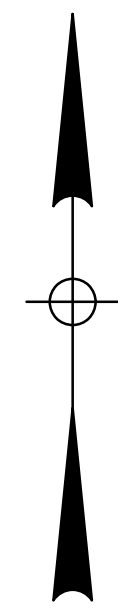
EXISTING D3		
LOCATION	NORTHING	EASTING
A	207129.11	1023915.84
B	207118.50	1023923.39
C	207110.74	1023912.78
D	207121.52	1023905.10

EXISTING D4		
LOCATION	NORTHING	EASTING
A	207113.34	1023879.07
B	207103.86	1023880.71
C	207102.15	1023869.20
D	207111.72	1023867.72

EXISTING D5		
LOCATION	NORTHING	EASTING
A	207109.10	1023844.55
B	207099.57	1023845.44
C	207098.35	1023834.01
D	207107.88	1023832.93

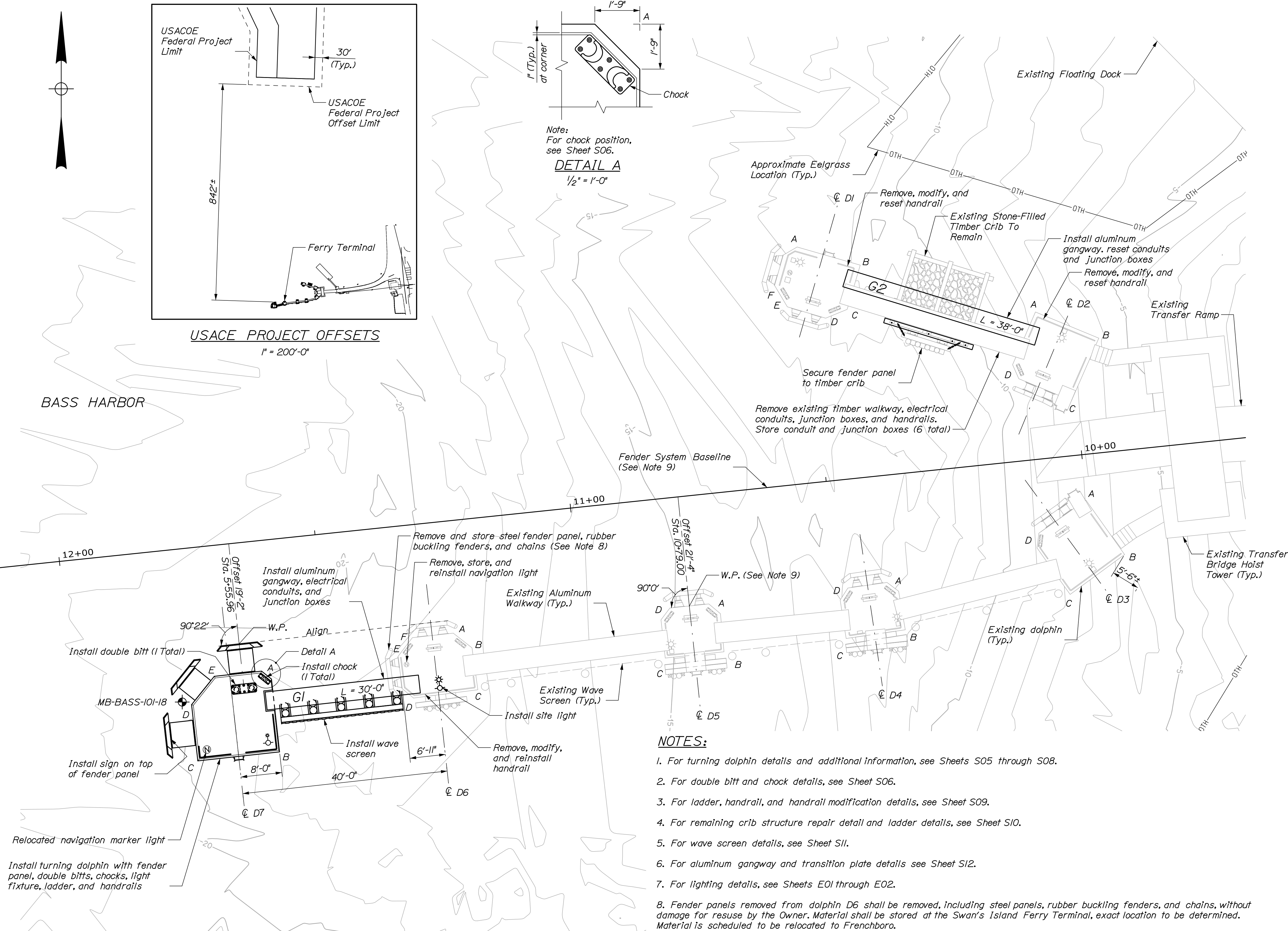
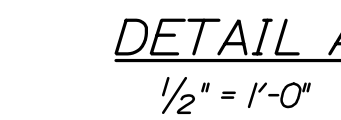
EXISTING D6		
LOCATION	NORTHING	EASTING
A	207103.20	1023792.75
B	207100.34	1023796.41
C	207092.19	1023797.55
D	207090.58	1023785.02
E	207098.70	1023782.02
F	207102.32	1023784.80

PROPOSED D7		
LOCATION	NORTHING	EASTING
A	207096.01	1023757.19
B	207080.11	1023758.96
C	207078.34	1023743.05
D	207089.28	1023741.84
E	207094.80	1023746.26



USACE PROJECT OFFSETS  
1" = 200'-0"

Note:  
For chock position,  
see Sheet S06.  
**DETAIL A**  
1/2" = 1'-0"

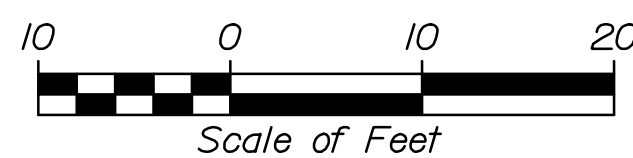


**NOTES:**

- For turning dolphin details and additional information, see Sheets S05 through S08.
- For double bitt and chock details, see Sheet S06.
- For ladder, handrail, and handrail modification details, see Sheet S09.
- For remaining crib structure repair detail and ladder details, see Sheet S10.
- For wave screen details, see Sheet S11.
- For aluminum gangway and transition plate details see Sheet S12.
- For lighting details, see Sheets E01 through E02.
- Fender panels removed from dolphin D6 shall be removed, including steel panels, rubber buckling fenders, and chains, without damage for reuse by the Owner. Material shall be stored at the Swan's Island Ferry Terminal, exact location to be determined. Material is scheduled to be relocated to Frenchboro.
- Alignment was developed using information from As-built plans. For more information refer to sheet M-004 of the As-built plans project number FBD-7826(10).
- The Contractor shall repair existing concrete as directed by the Resident. Concrete repairs shall be measured for payment under pay items, 518.50, 518.51, and 518.60, Repair of Upward Facing Surfaces - Reinforcing Steel < 8 inches, Repair of Upward Facing Surfaces - below Reinforcing Steel, and Repair of Vertical Surfaces < 8 inches, respectively.
- Eelgrass limits are approximate boundaries, based on a June 27, 2019 dive survey by MaineDOT. Contractor shall avoid disturbance to eelgrass areas; no spudding.

**SITE PLAN**

1" = 10'-0"



Date: 4/6/2021

Username:

Division:

Filename: 005\_Site Plan.dgn

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

PROJ. MANAGER: N. Willey  
DESIGN-DETAILED: C. Morr  
CHECKED-REVIEWED: C. Morr  
DESIGNS-DETAILED: C. Morr  
REVISIONS: 1  
REVISIONS: 2  
REVISIONS: 3  
REVISIONS: 4  
FIELD CHANGES

BY: P. Bishop, C. Morr  
DATE: 03/21, 03/21  
SIGNATURE: 10209  
P.E. NUMBER  
DATE

BASS HARBOR  
FERRY TERMINAL  
**SITE PLAN**

SHEET NUMBER

**S01**

5 OF 18

WIN  
023476.00

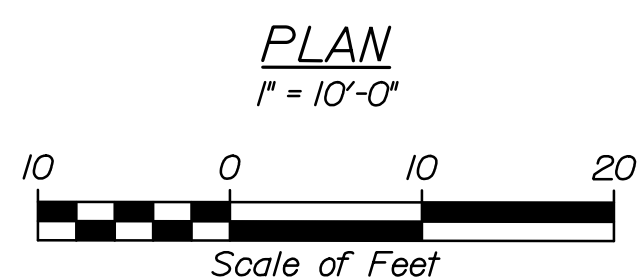
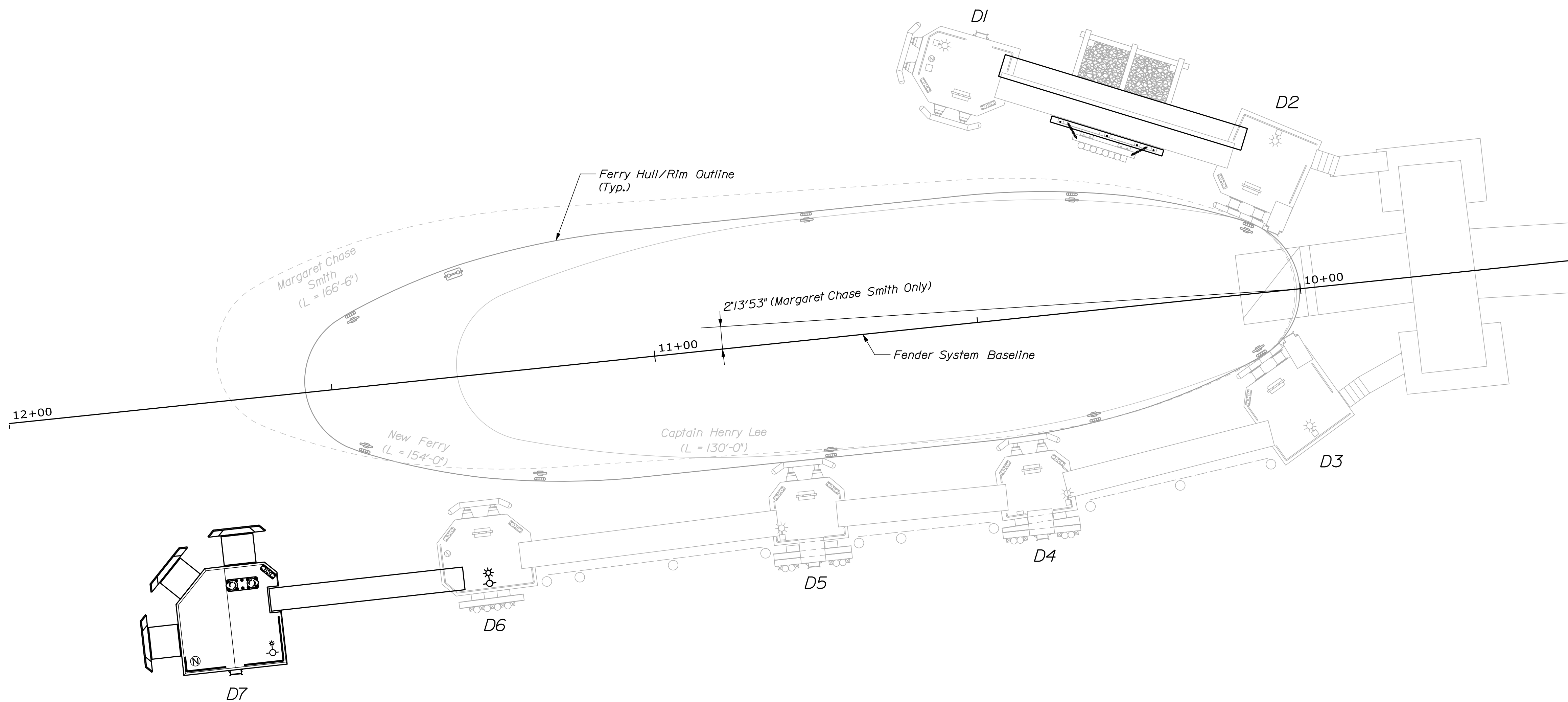


Date: 4/6/2021

Username:

Division:

Filename: 006\_Berth\_Plan.dgn



**NOTES:**  
 1. MV Captain Henry Lee is currently in operation. New ferry is proposed. Margaret Chase Smith is shown for comparative purposes.

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION

BY: P. Bishop, C. Morin  
 DATE: 03/21, 03/21  
 SIGNATURE: 10209  
 P.E. NUMBER: 10209  
 DATE:

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	N. Willey	03/21
CHECKED-REVIEWED	C. Morin	03/21
DESIGN-DETAILED2		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

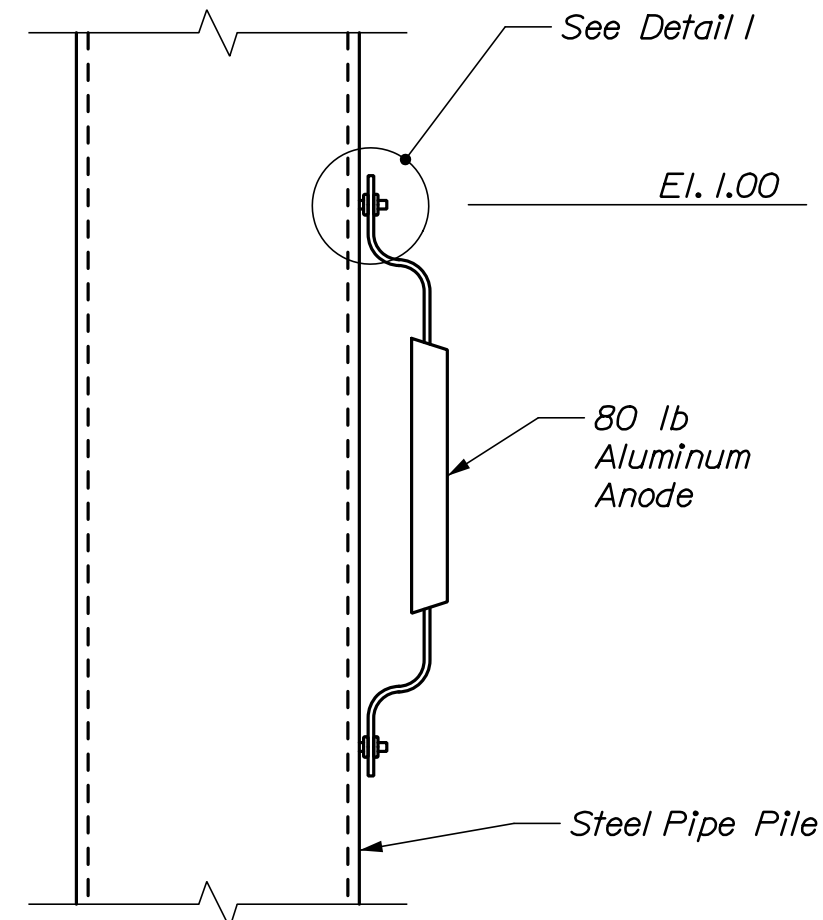
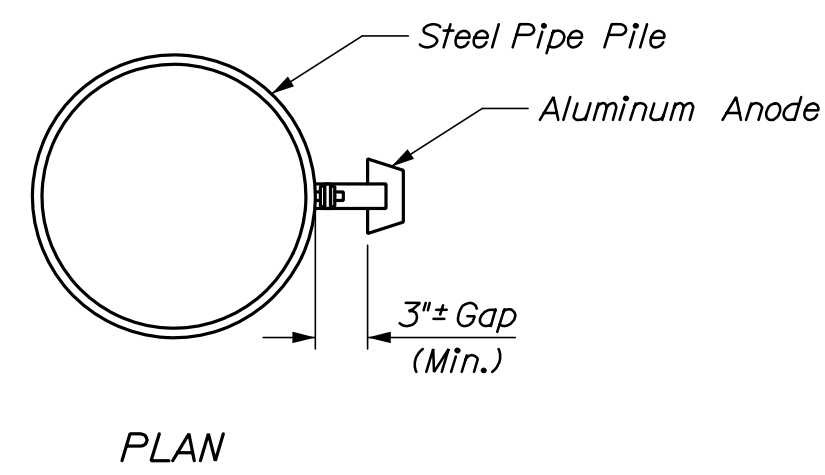
BASS HARBOR  
 FERRY TERMINAL  
 BERTH PLAN

SHEET NUMBER  
**S02**  
 6 OF 18



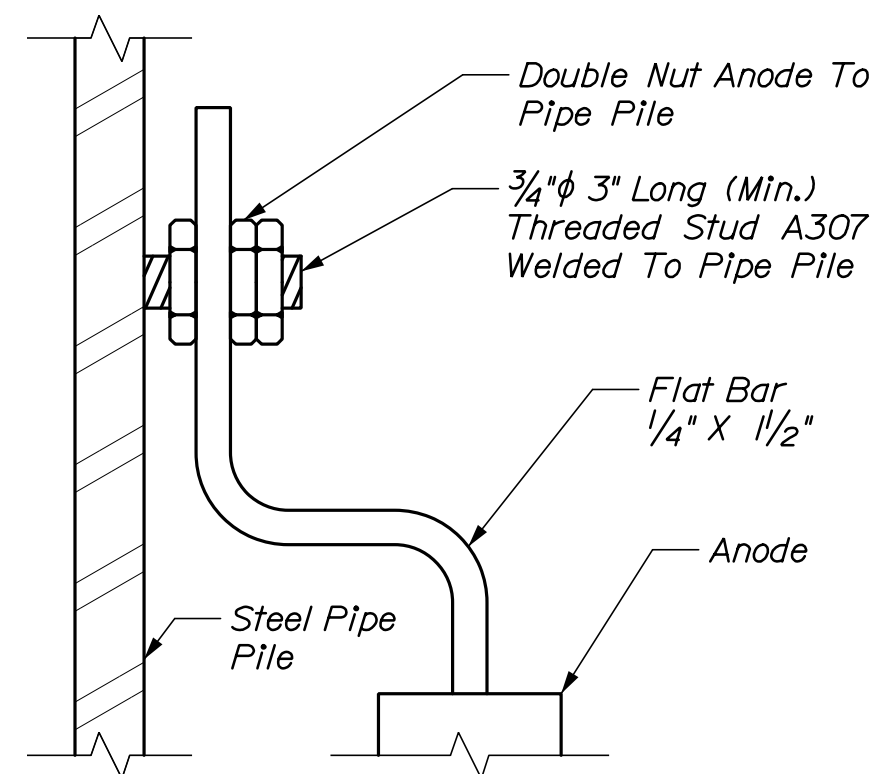
WIN  
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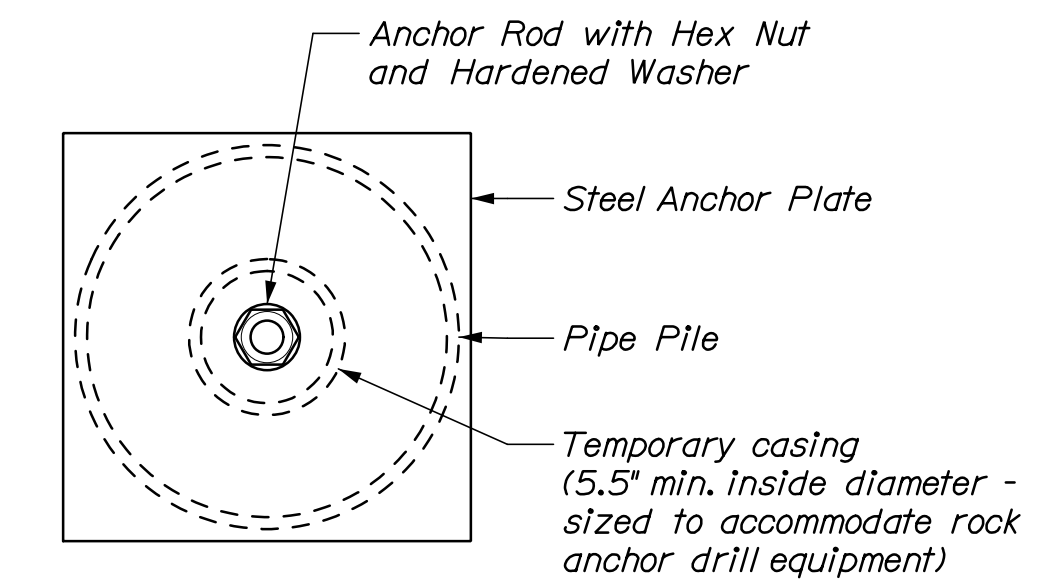
Note: Anode shall be positioned along the inshore face of piles.

ANODE DETAIL  
N.T.S.

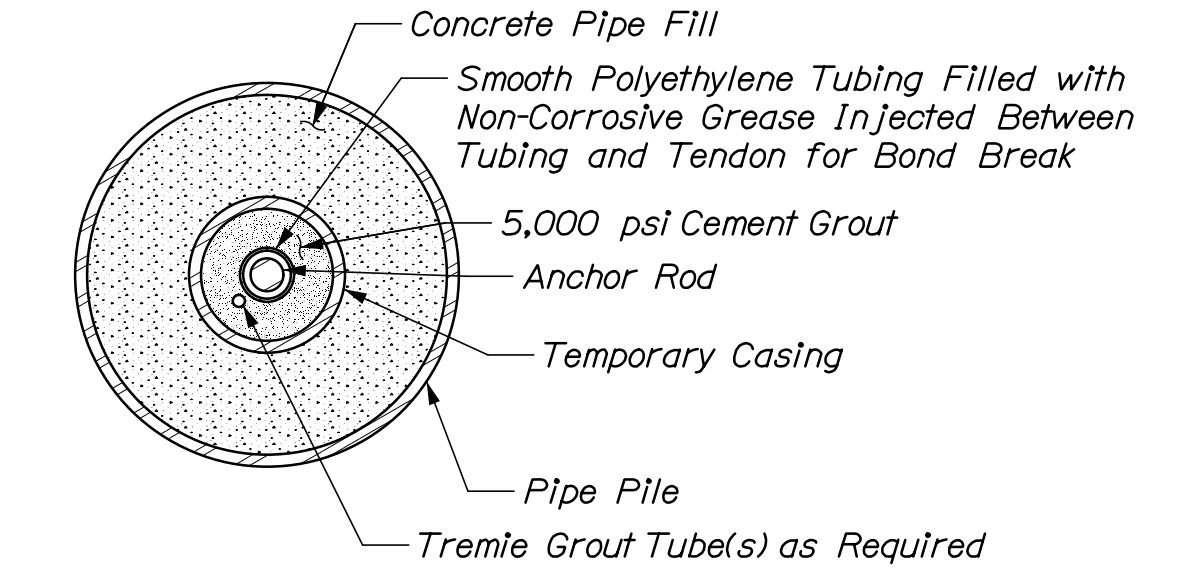


Note: Studs and hardware shall be A307.

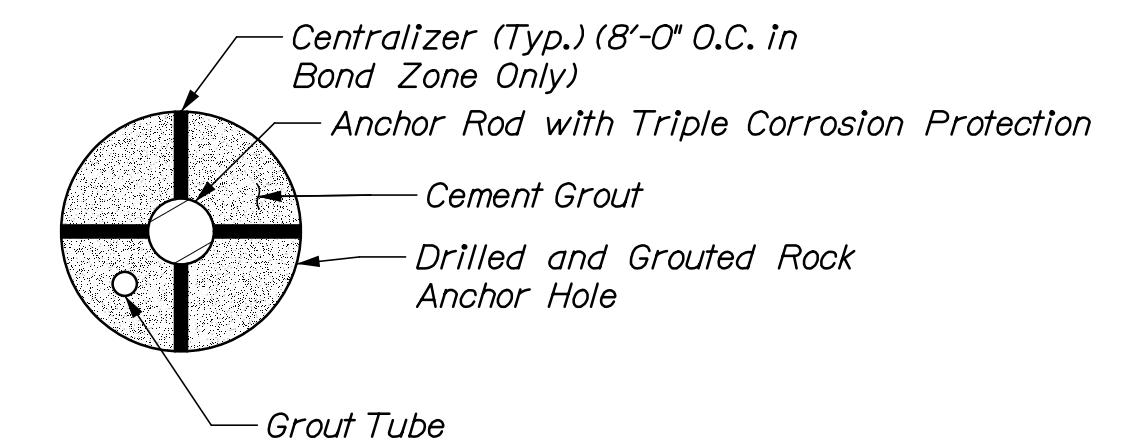
N.T.S.



N.T.S.



N.T.S.



N.T.S.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

WIN  
023476.00

PROJ. MANAGER	BY	DATE	SIGNATURE
DESIGN-DETAILED	P. Bishop	03/21	
CHECKED-REVIEWED	C. Morin	03/21	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BASS HARBOR  
FERRY TERMINAL  
DOLPHIN FOUNDATION  
DETAILS

SHEET NUMBER

S04

8 OF 18

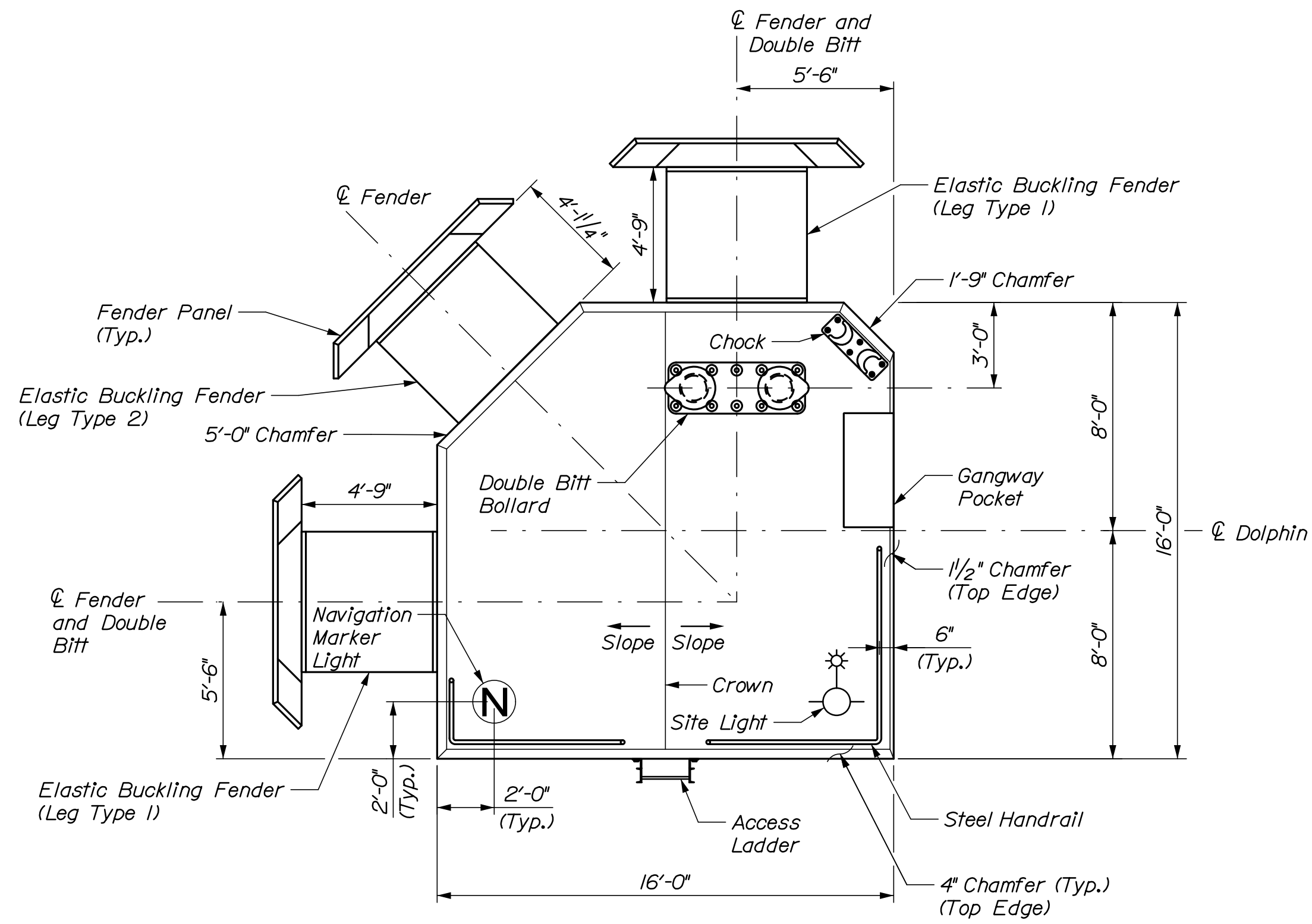
**HNTB**

Date: 3/25/2021

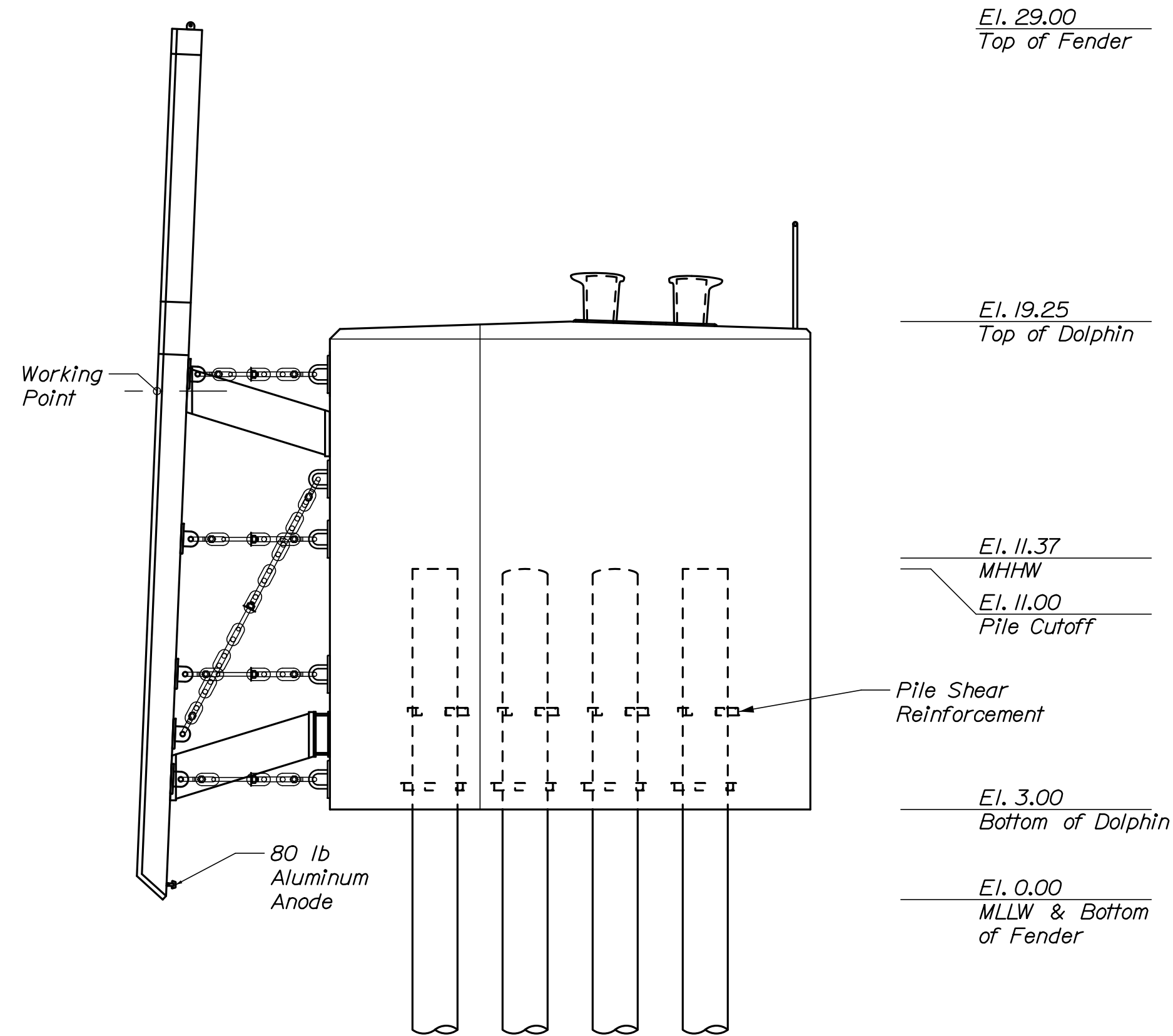
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Division:

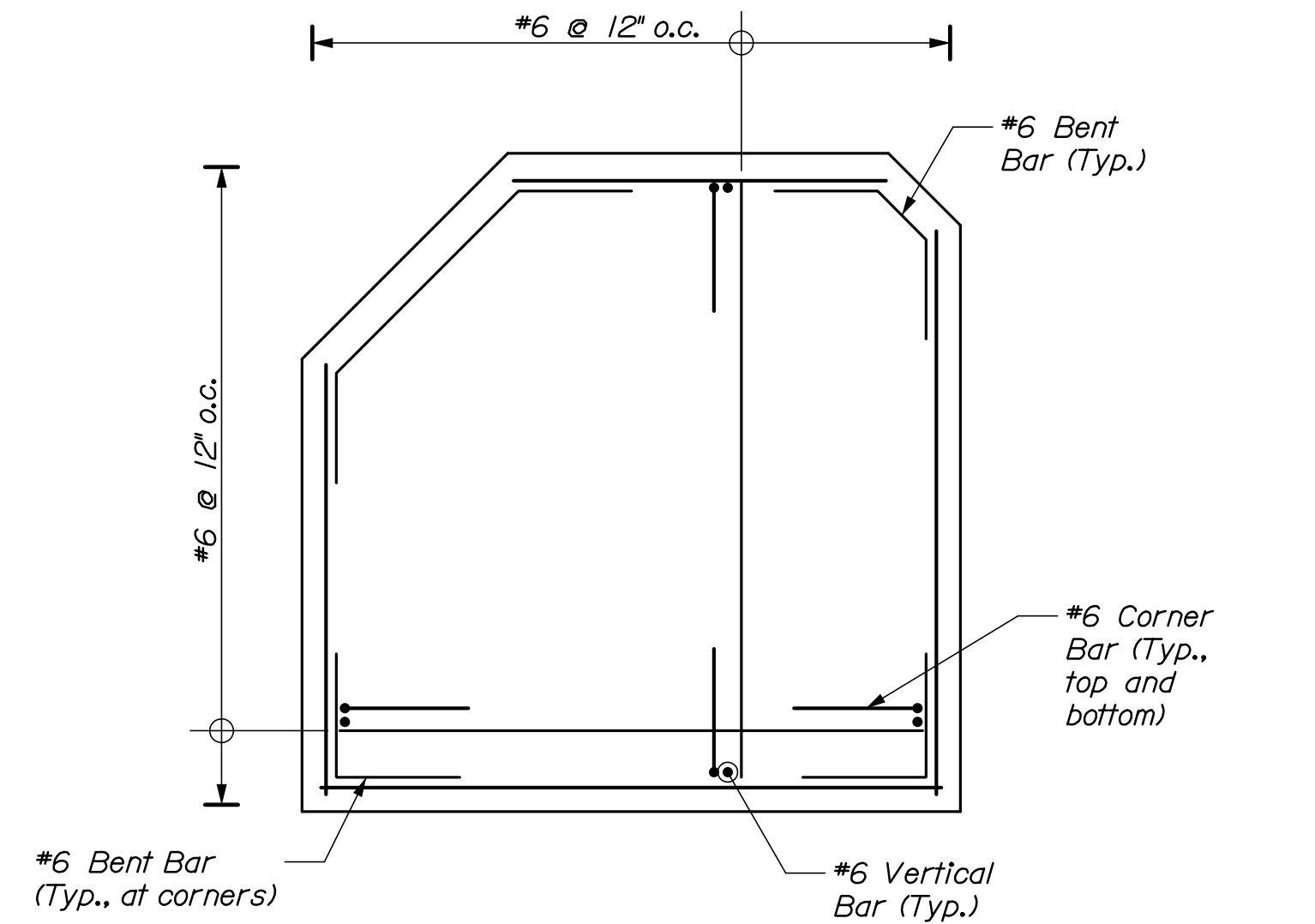
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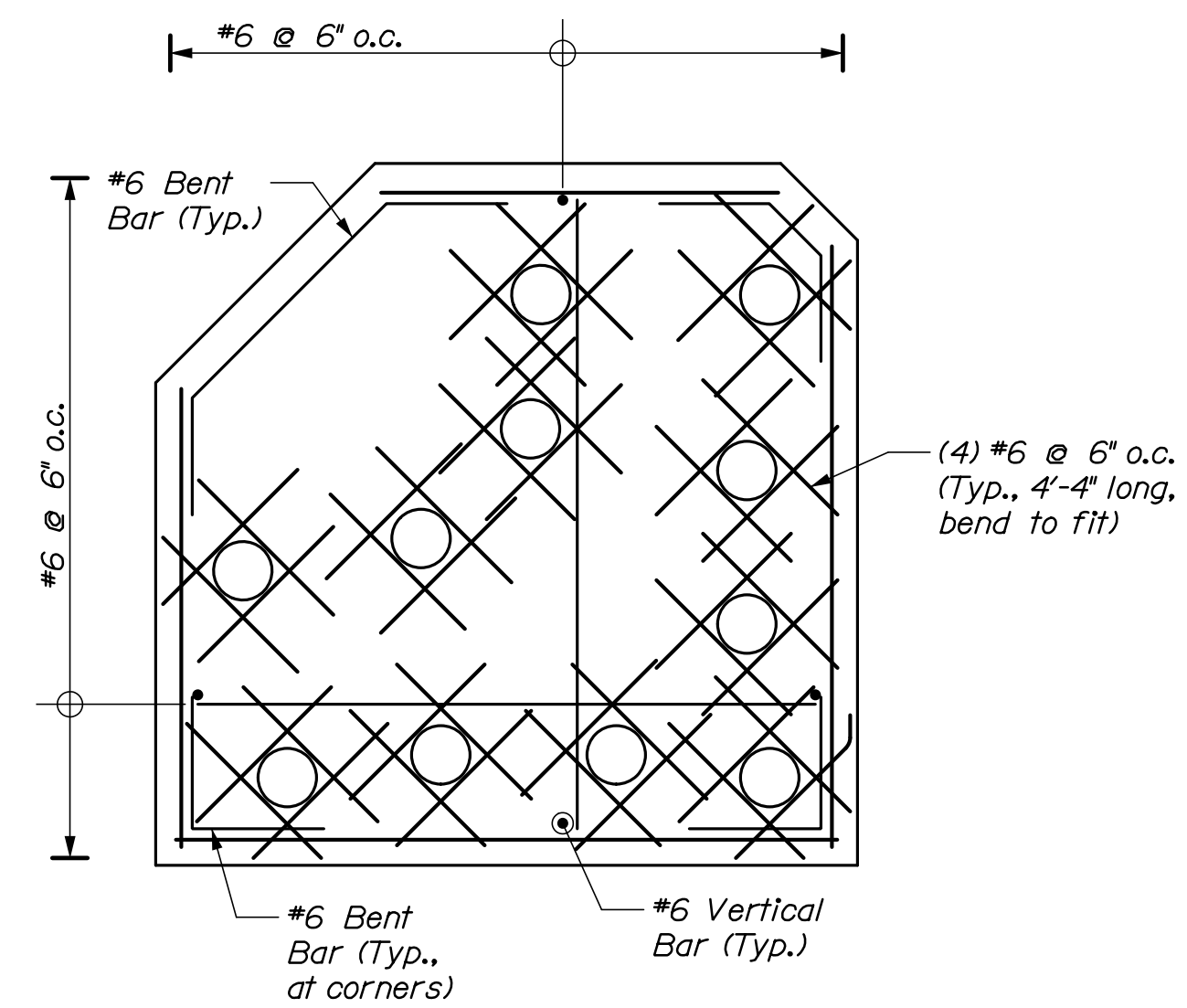
**TURNING DOLPHIN  
PLAN**  
1/4" = 1'-0"



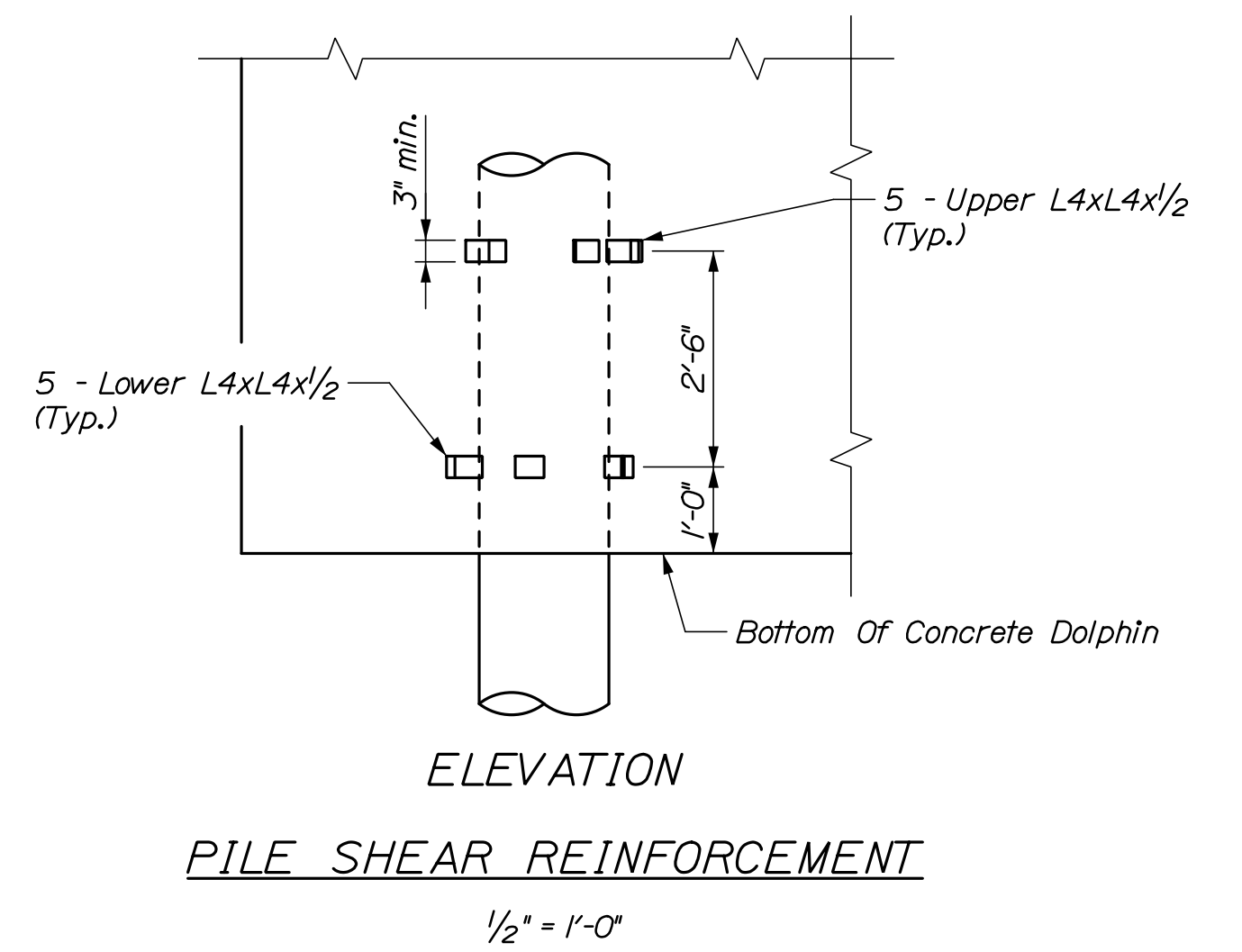
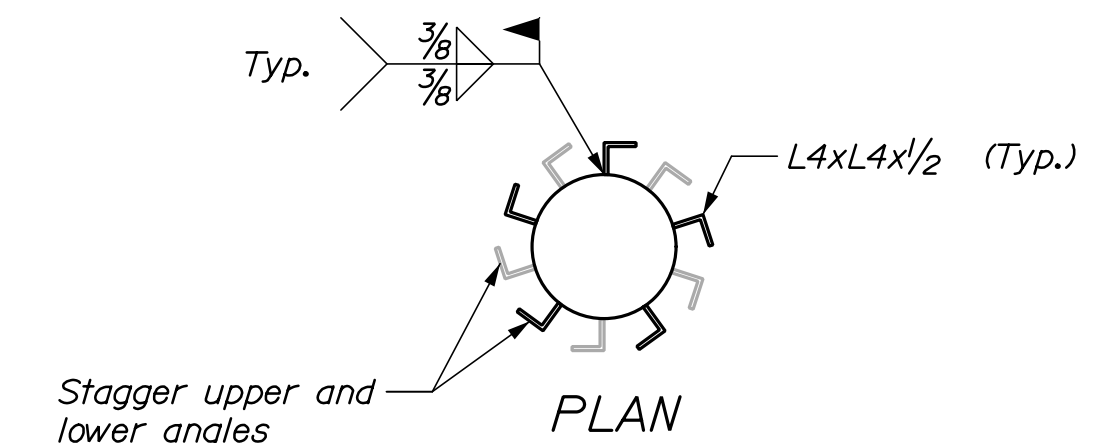
**TURNING DOLPHIN  
ELEVATION**  
(Select fenders and chocks not shown for clarity)  
1/4" = 1'-0"



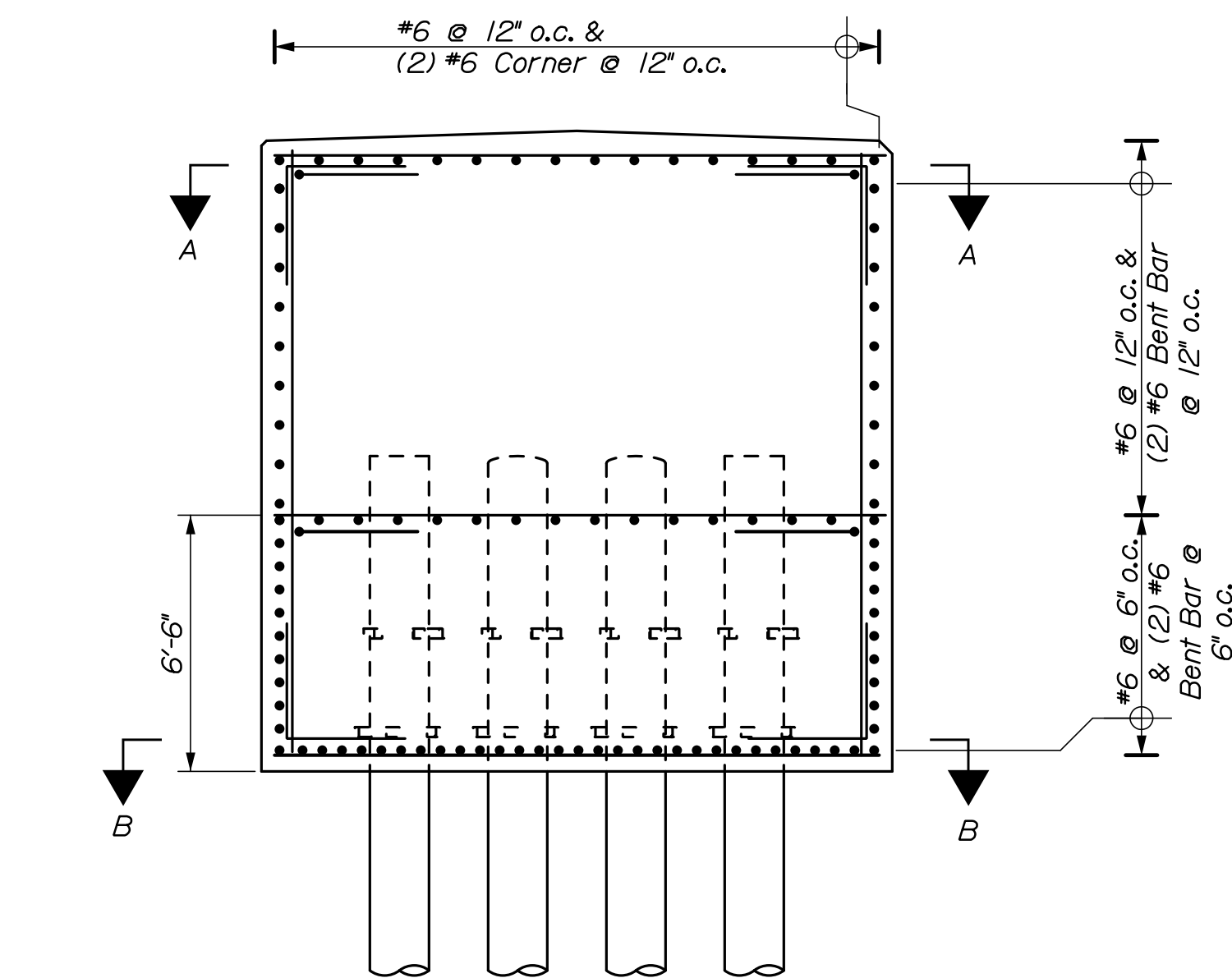
**SECTION A-A**  
(Same as shown for El. 9.50 - 11.00, but with pile cutouts)  
1/4" = 1'-0"



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



**PILE SHEAR REINFORCEMENT**  
1/2" = 1'-0"



**TURNING DOLPHIN REINFORCING TYPICAL SECTION**  
1/4" = 1'-0"

**NOTES:**

1. For anode details, see Sheet S04.
2. For double bitt and chock details, see Sheet S06.
3. For access ladder and handrail details, see Sheet S09.
4. For gangway pocket and transition plate detail, see Sheet S12.
5. All reinforcing shall be cut to maintain 2" clear from piles and 3" clear of concrete surfaces.
6. Reinforcing bars shall be adjusted to maintain 1" clear from anchor rods.
7. Crown slope at top of dolphin shall be 1/4"/Ft and pitched as shown.

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED N. Willey	P. Bishop	03/21			
CHECKED-REVIEWED C. Morin	C. Morin	03/21		10209	
DESIGN-DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

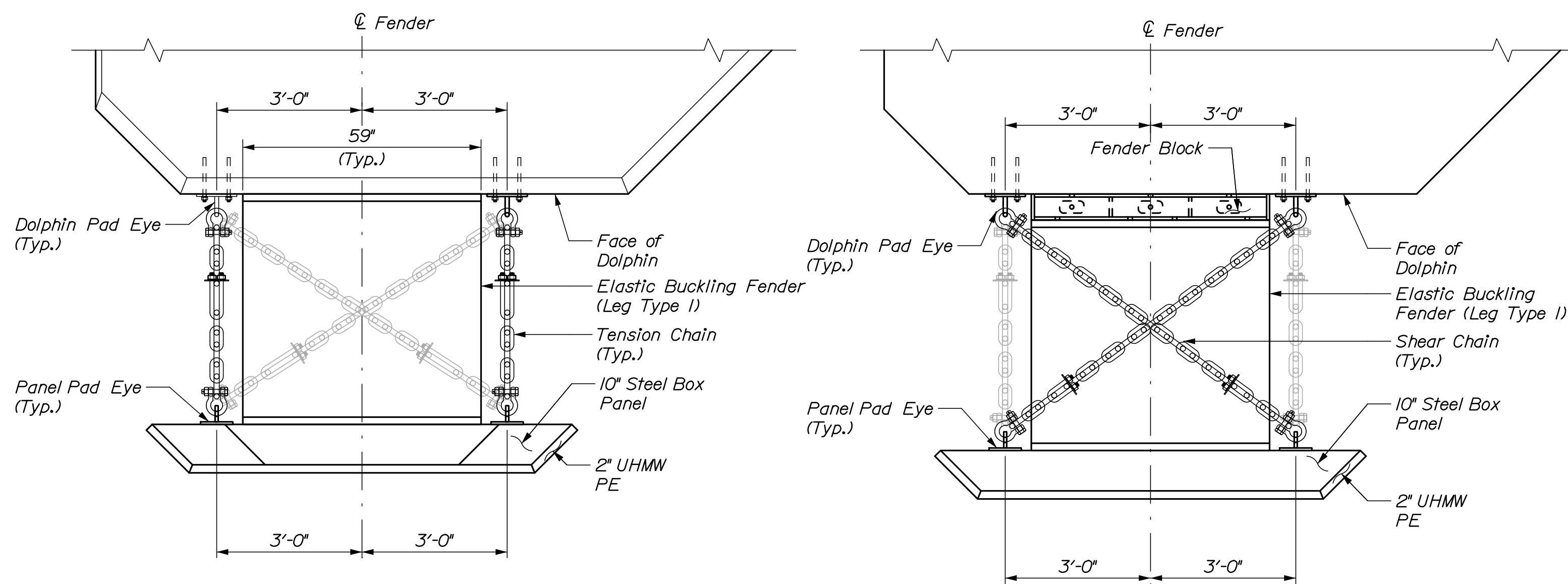


Date: 3/25/2021

Username:

Division:

Filename: 011\_Fender System Idgn

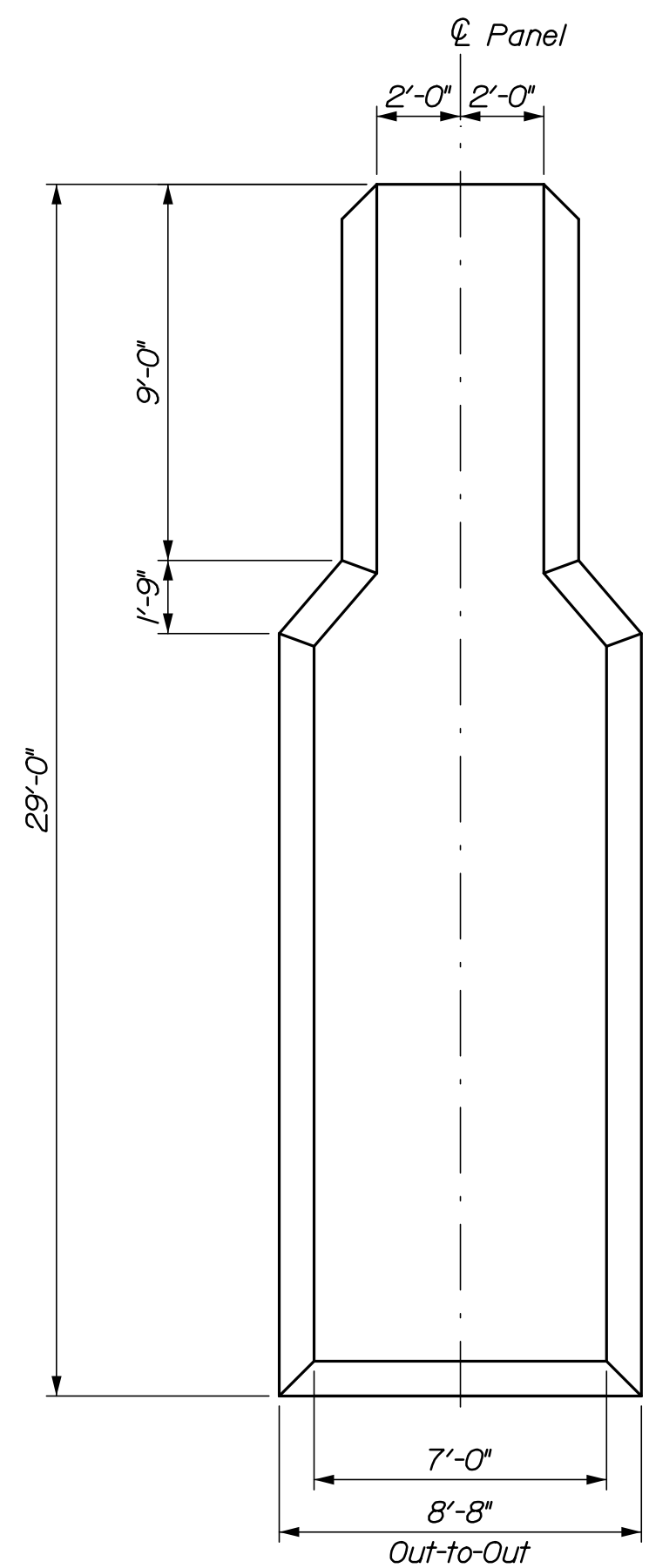


**PLAN - TOP OF FENDER PANEL**  
(Type 1 Leg Shown)  
1/2" = 1'-0"

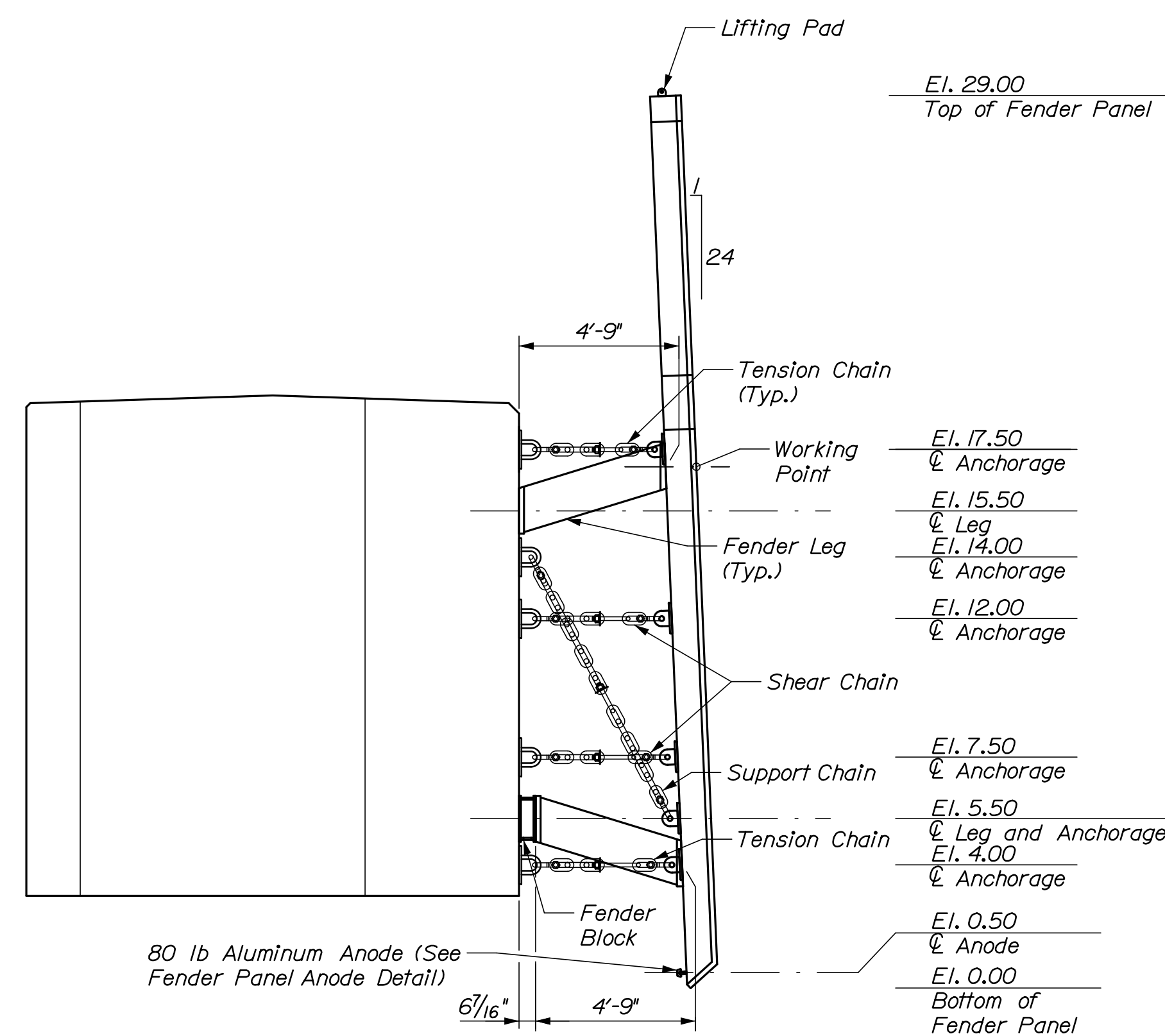
**PLAN - BOTTOM OF FENDER PANEL**  
(Type 1 Leg Shown)  
1/2" = 1'-0"

**NOTES:**

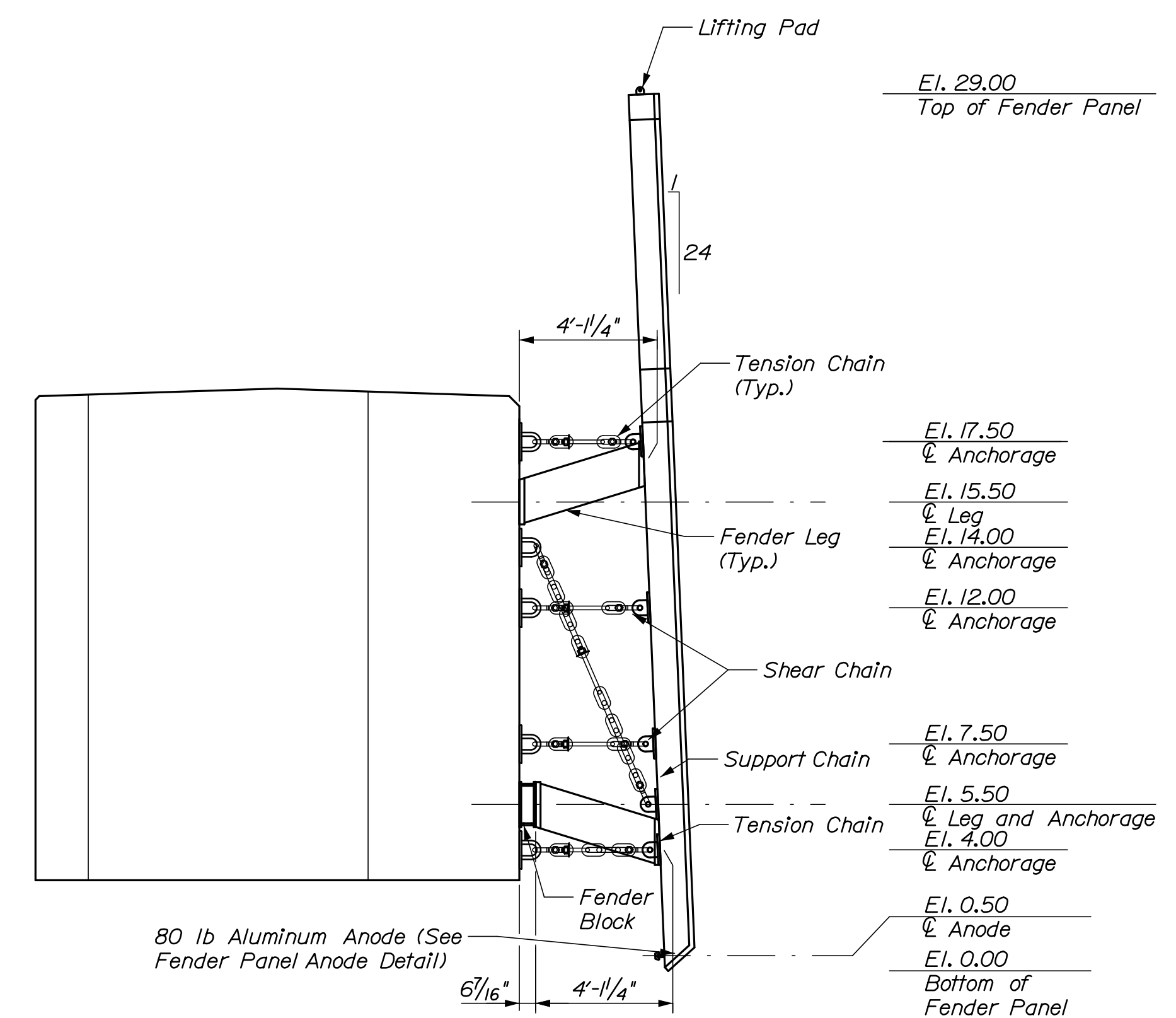
- Contractor shall use fender plate or fender block detail to maintain proposed fender panel alignment.
- For fender block, panel pad eye, panel anode, dolphin pad eye and spacer plate details, see Sheet S08.
- Elastic buckling fenders (Leg Type 1) shall be Trelleborg Compound B MV 1450x1500, or approved equal.
- Elastic buckling fenders (Leg Type 2) shall be Trelleborg Compound B MV 1250x1500, or approved equal.



**FENDER PANEL**  
1/4" = 1'-0"



**ELEVATION - FENDER PANEL WITH LEG TYPE 1**  
(Foundation piles and hardware not shown for clarity)  
1/4" = 1'-0"



**ELEVATION - FENDER PANEL WITH LEG TYPE 2**  
(Foundation piles and hardware not shown for clarity)  
1/4" = 1'-0"

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

WIN  
023476.00

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	P. Bishop	03/21
CHECKED-REVIEWED	C. Morin	03/21
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		
SIGNATURE		
P.E. NUMBER	10209	
DATE		

BASS HARBOR  
FERRY TERMINAL

DOLPHIN DETAILS  
FENDER SYSTEM I

SHEET NUMBER

S07

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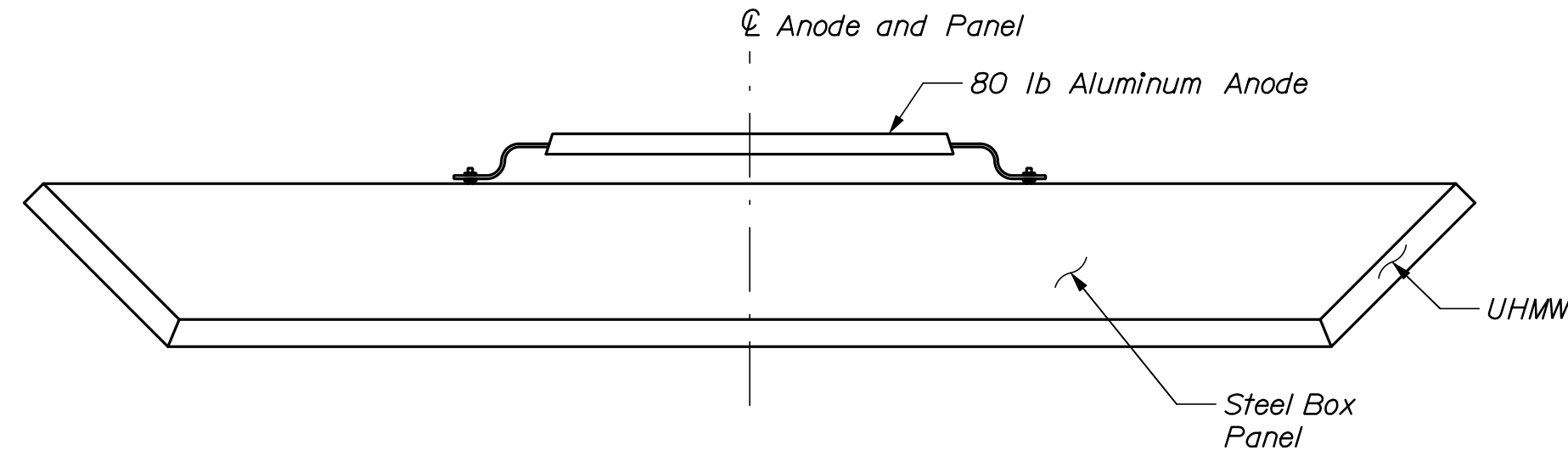


Date: 3/25/2021

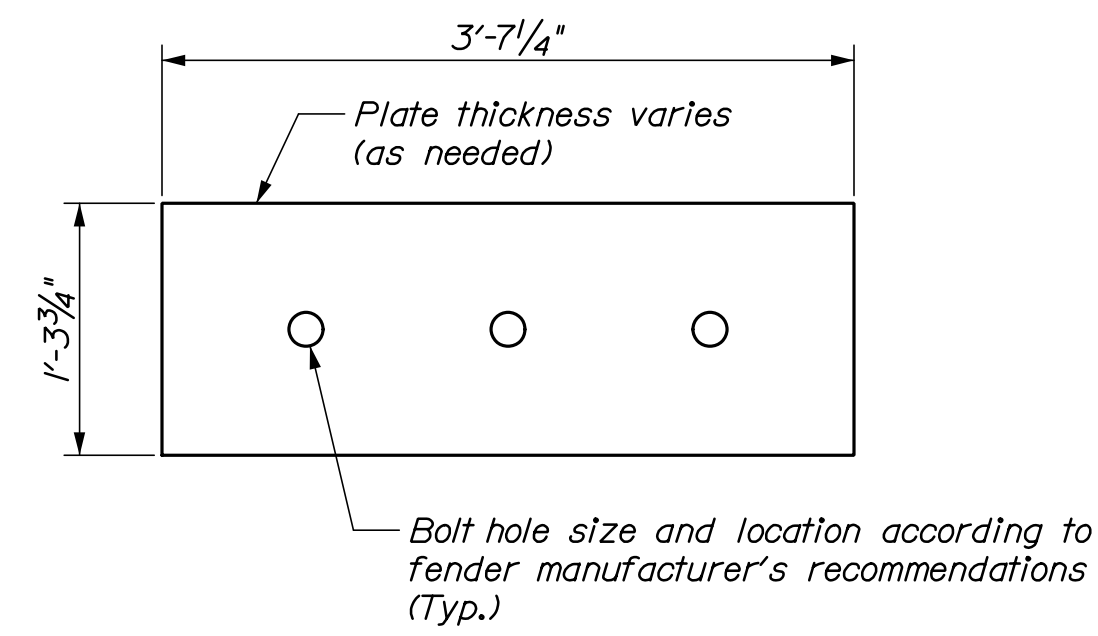
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Division:

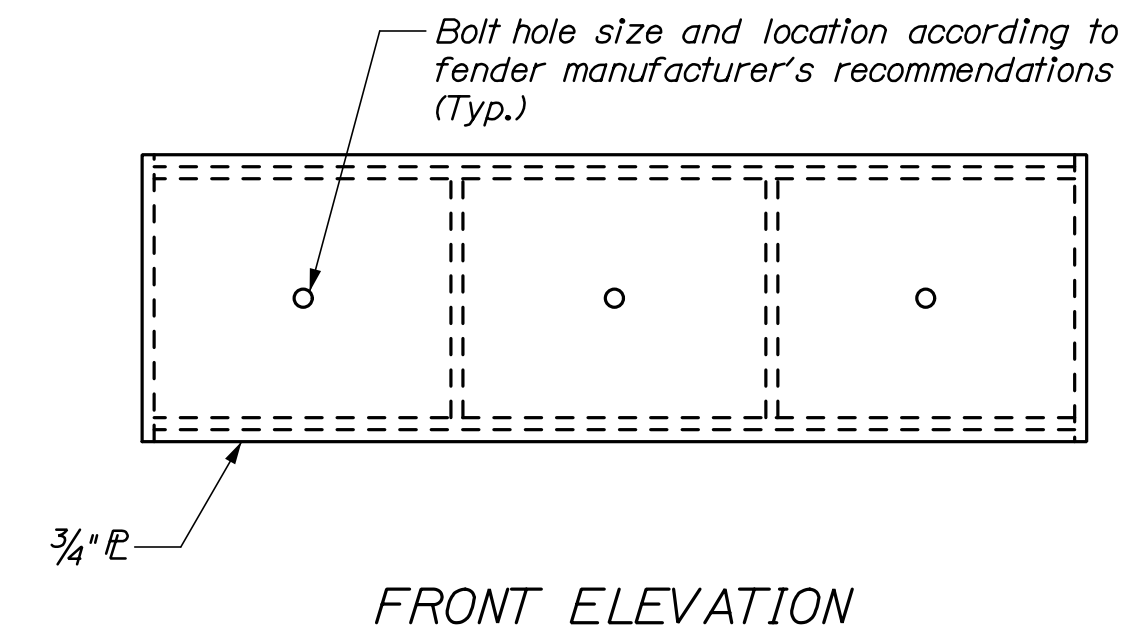
Filename: 012\_Fender System 11.dgn



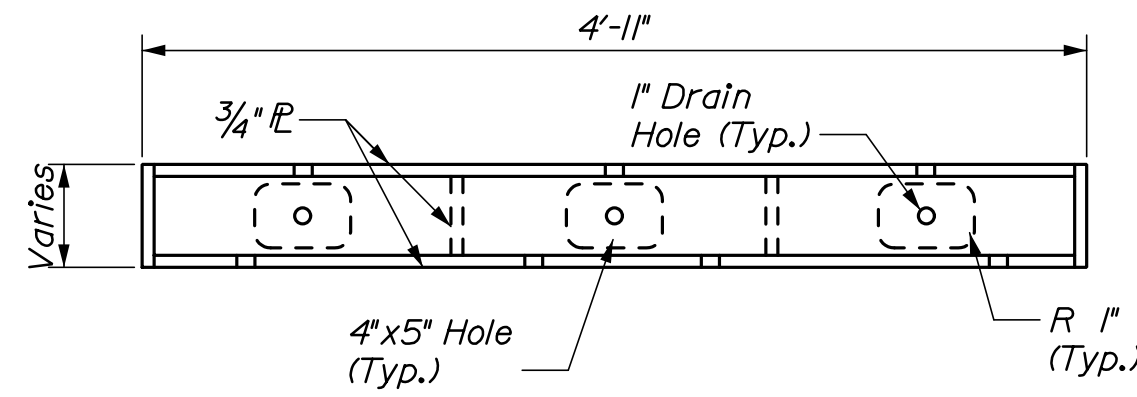
**FENDER PANEL ANODE DETAIL**  
1" = 1'-0"



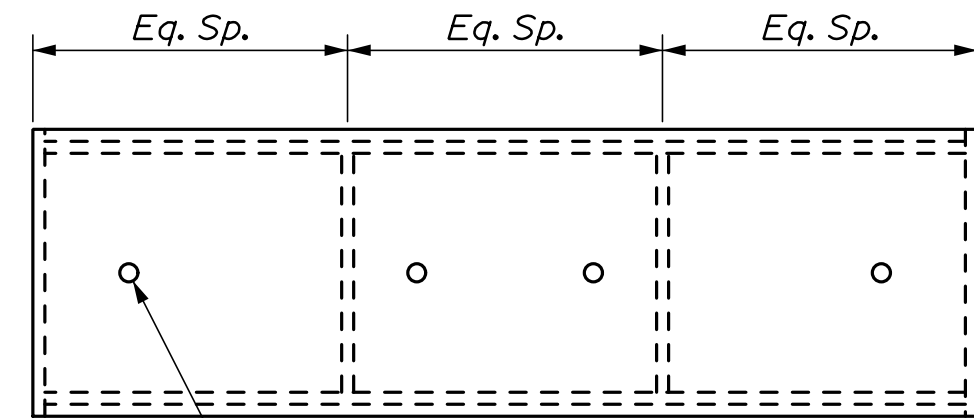
**TYPE I PANEL SPACER PLATE DETAIL**  
1" = 1'-0"



**FRONT ELEVATION**

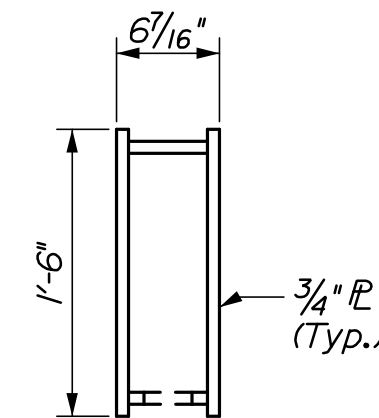


**PLAN**

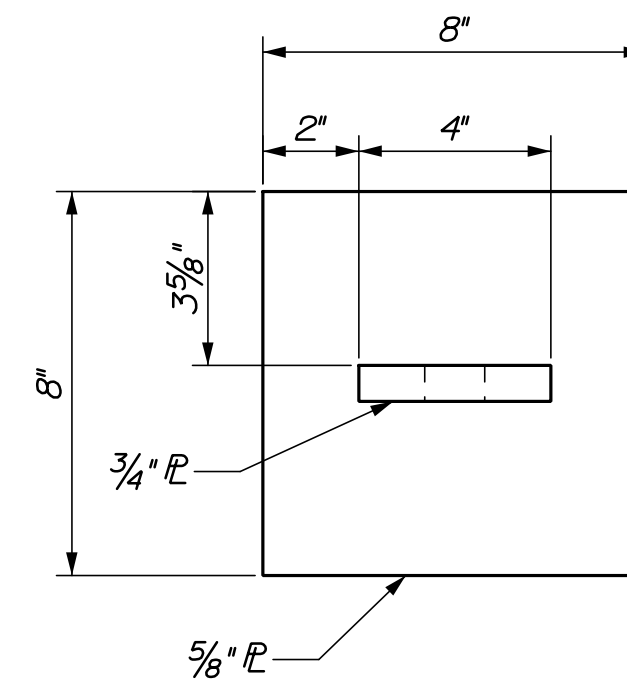


**BACK ELEVATION**

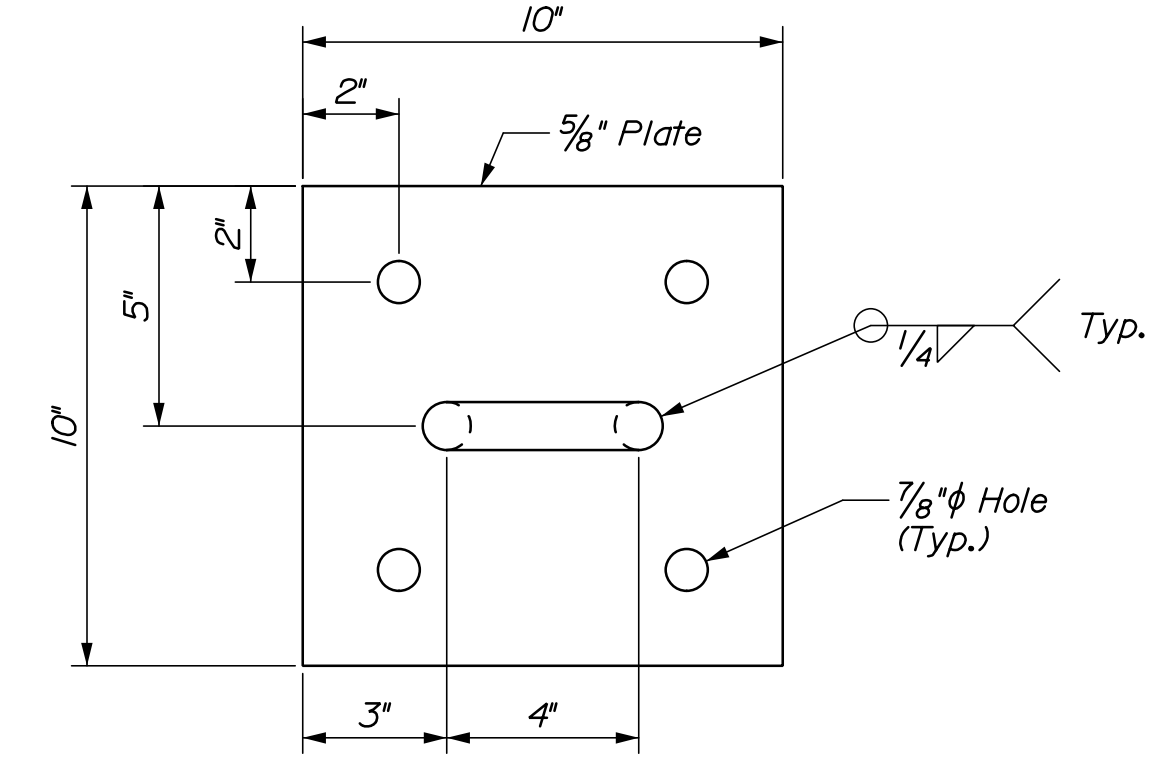
**STEEL FENDER BLOCK**  
1" = 1'-0"



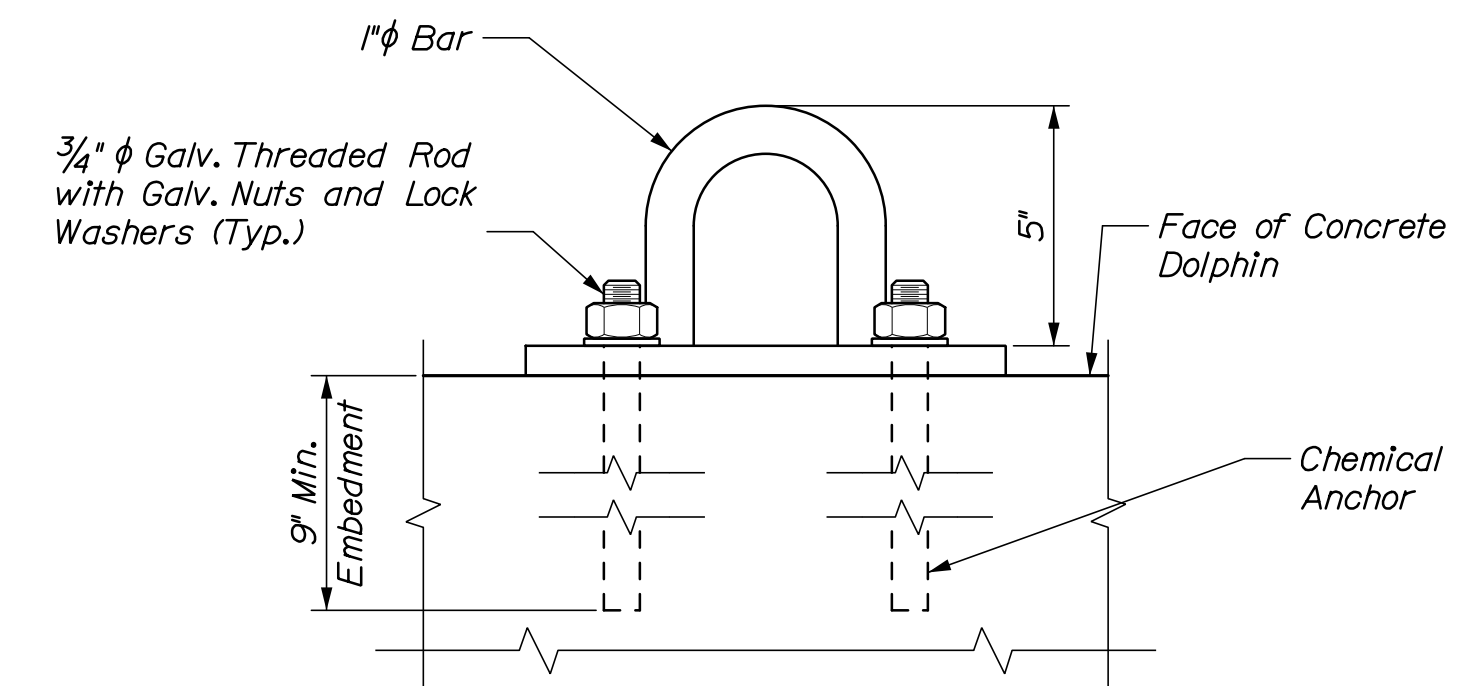
**SECTION**



**PANEL PAD EYE DETAIL**  
3" = 1'-0"



**DOLPHIN PAD EYE DETAIL**  
3" = 1'-0"



**NOTES:**  
1. For anode attachment details, see Sheet S04.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

WIN  
023476.00

PROJ. MANAGER	BY	DATE
N. Willey	P. Bishop	03/21
C. Morin	C. Morin	03/21
DESIGN DETAILED		SIGNATURE
REVISIONS 1		10/09
REVISIONS 2		P.E. NUMBER
REVISIONS 3		DATE
REVISIONS 4		
FIELD CHANGES		

BASS HARBOR  
FERRY TERMINAL  
DOLPHIN DETAILS  
FENDER SYSTEM II

SHEET NUMBER

**S08**

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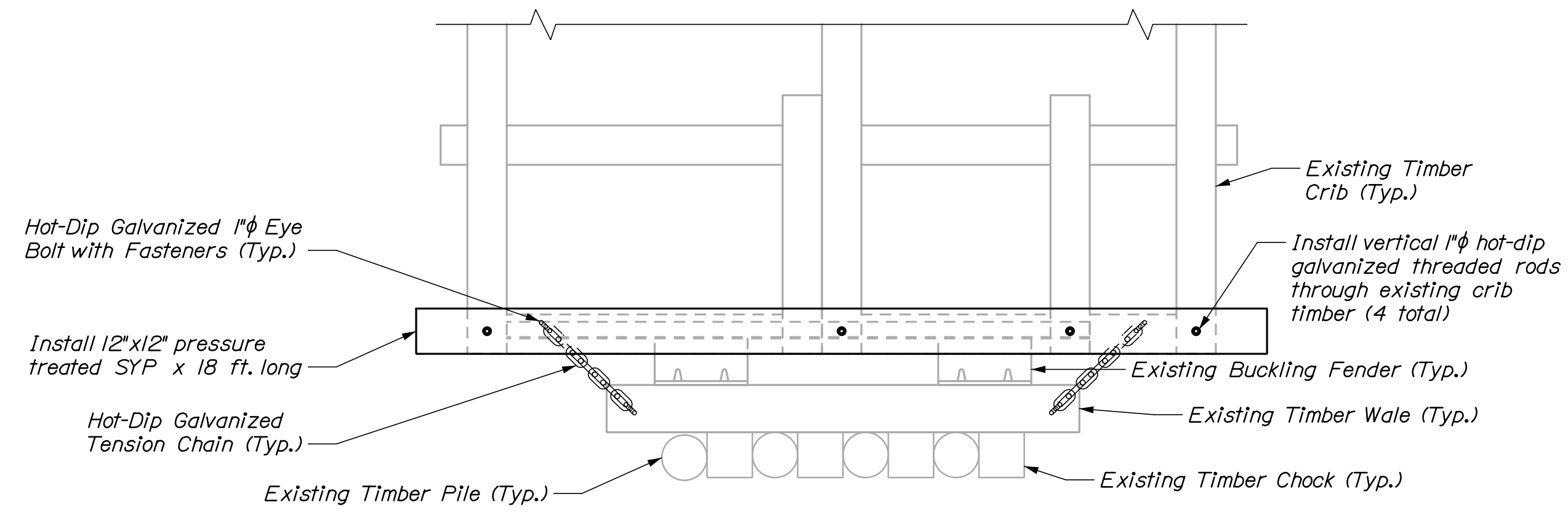


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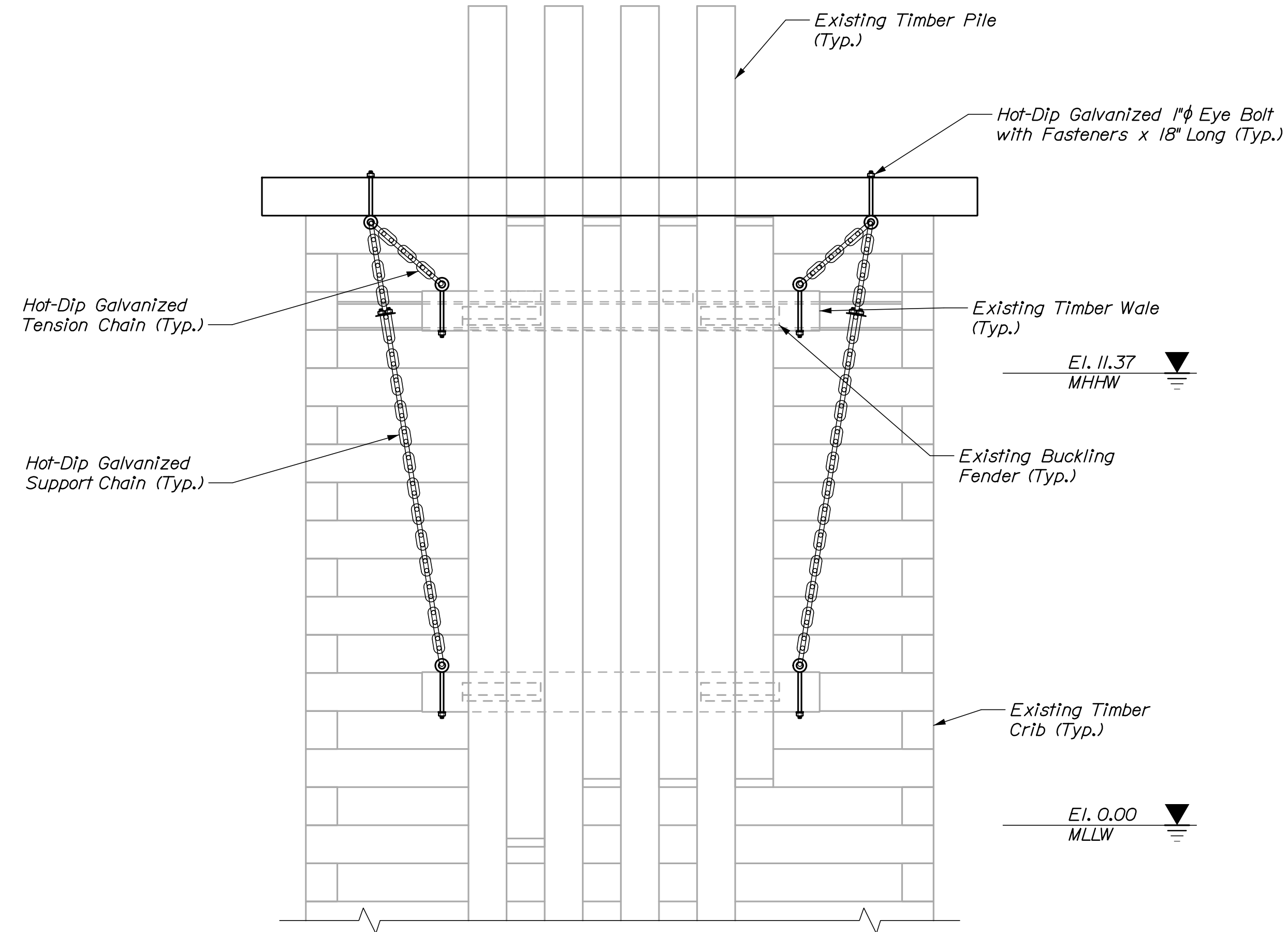
Username:

Division:

Filename: 014\_Miscellaneous Details II.dgn



REMAINING CRIB STRUCTURE REPAIR PLAN  
 $\frac{3}{8}'' = 1'-0''$



REMAINING CRIB STRUCTURE REPAIR ELEVATION  
 $\frac{3}{8}'' = 1'-0''$

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION

WIN  
 023476.00

PROJ. MANAGER  
 DESIGN-DETAILED  
 CHECKED-REVIEWED  
 DESIGN-DETAILED  
 REVISIONS 1  
 REVISIONS 2  
 REVISIONS 3  
 REVISIONS 4  
 FIELD CHANGES

BY	DATE	SIGNATURE	P.E. NUMBER	DATE
P. Bishop	03/21		10209	
C. Morin	03/21			

BASS HARBOR  
 FERRY TERMINAL  
 DOLPHIN DETAILS  
 MISCELLANEOUS II

SHEET NUMBER

S10

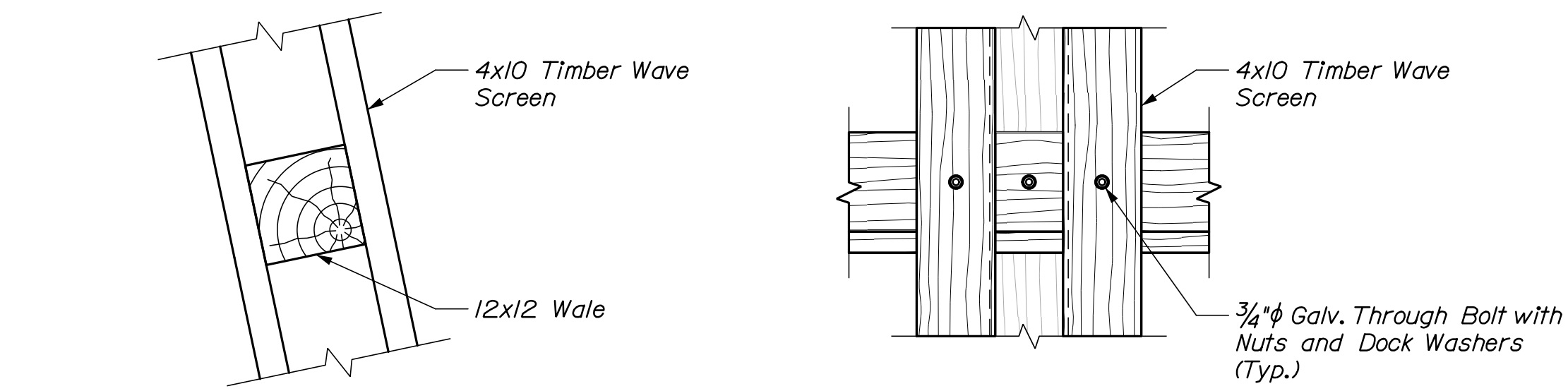
14 OF 18



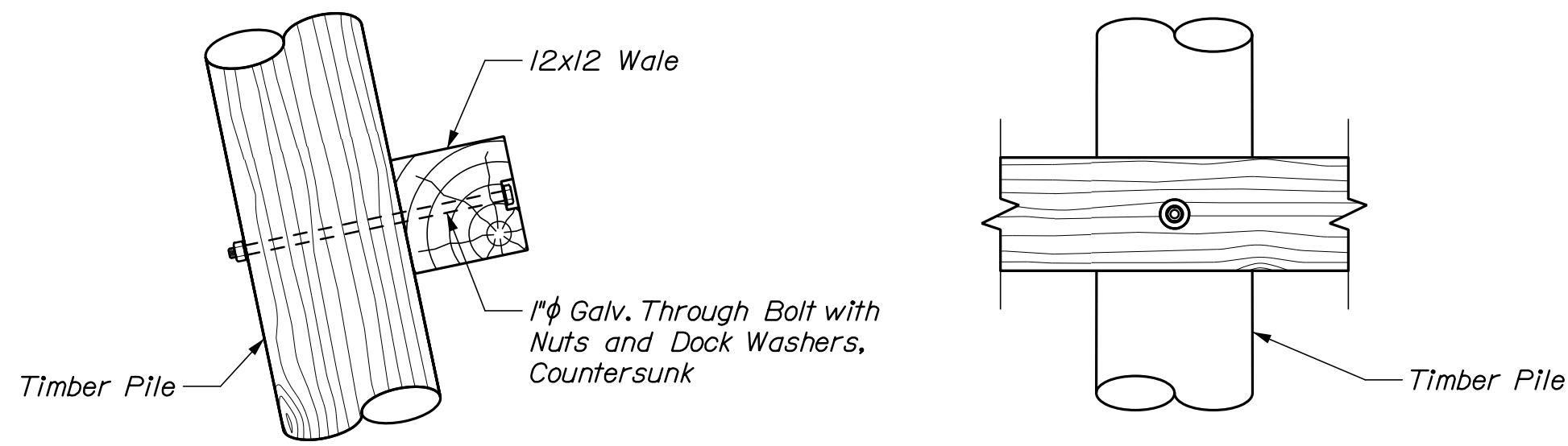
Date: 3/25/2021

Username:

Filename: 015\_Wave Screen Plan and Elevation.dgn Division:



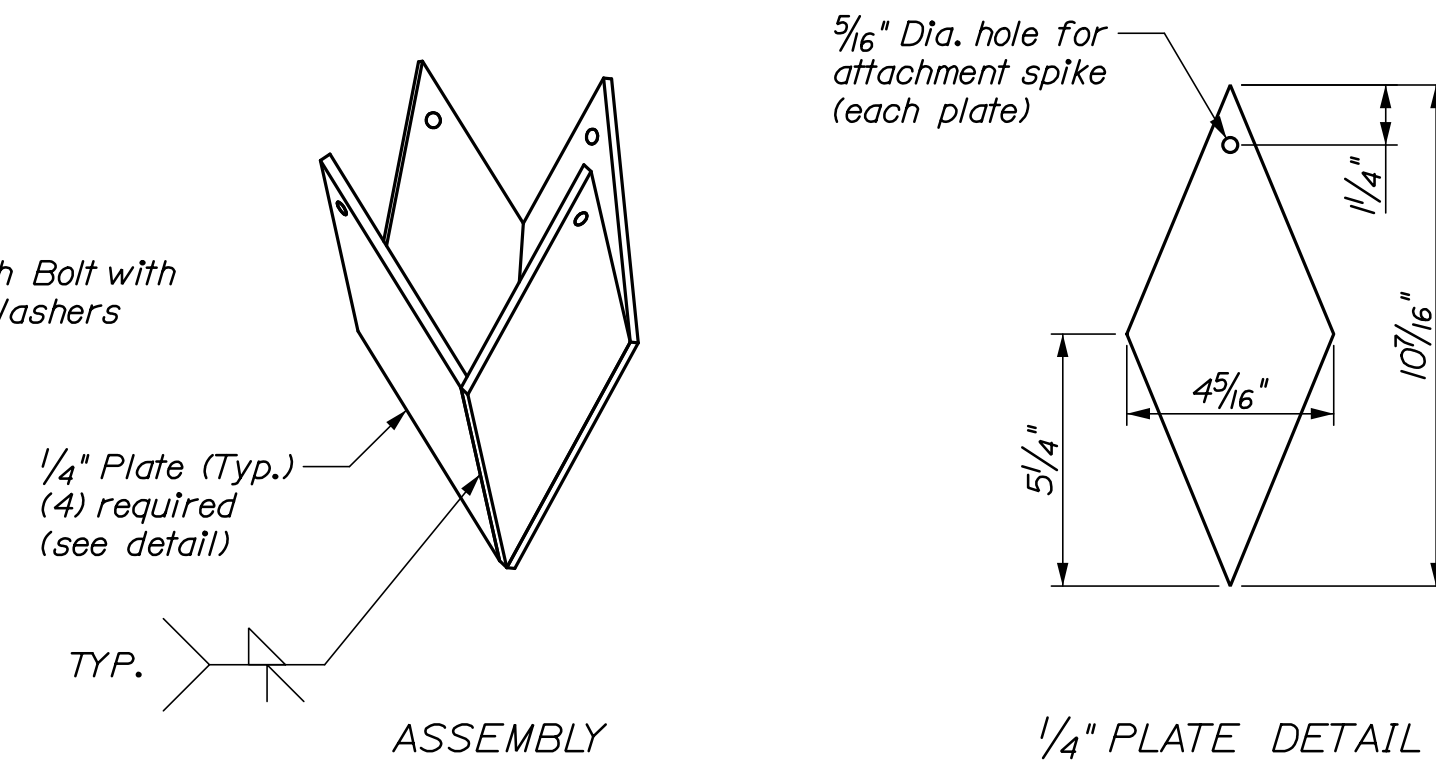
SCREEN CONNECTIONS



WALE CONNECTIONS

WAVE SCREEN CONNECTIONS

3/4" = 1'-0"



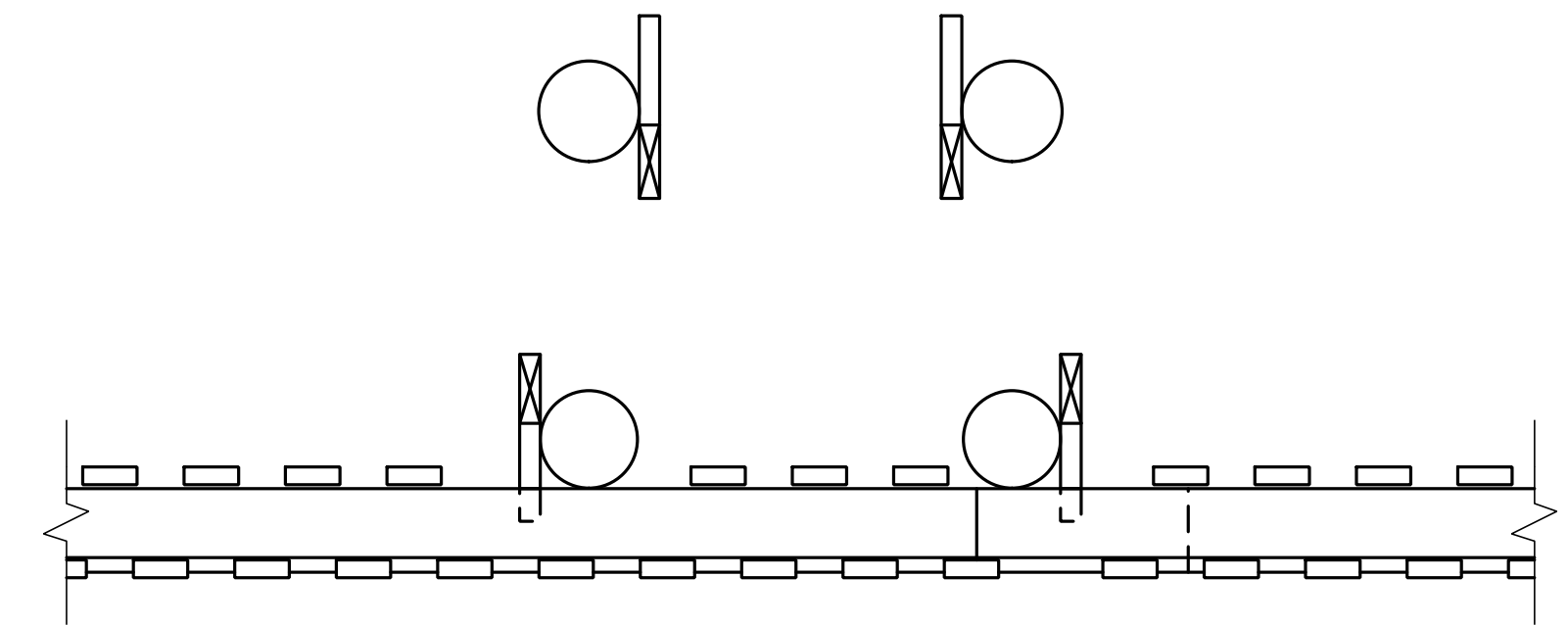
ASSEMBLY

1/4" PLATE DETAIL

Note: Dimensions shown similar to pile point manufactured by Associated Pile & Fitting. Pile point size shall be compatible with pile tip dimensions. Contractor shall confirm pile tip size prior to ordering or fabricating pile point.

TIMBER PILE POINT DETAIL

3" = 1'-0"

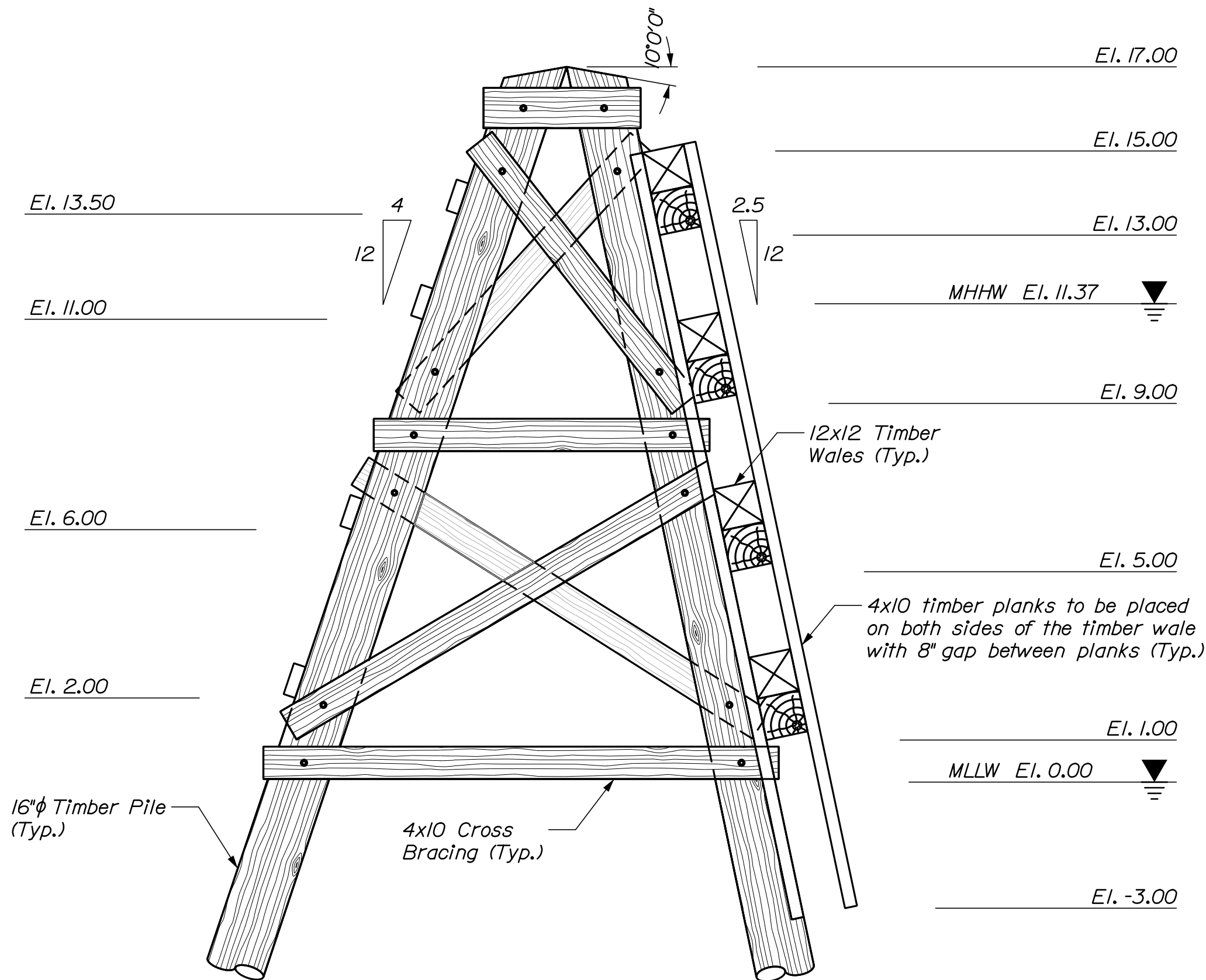


WAVE SCREEN PLAN VIEW

(View shown at El. 11.00)  
3/8" = 1'-0"

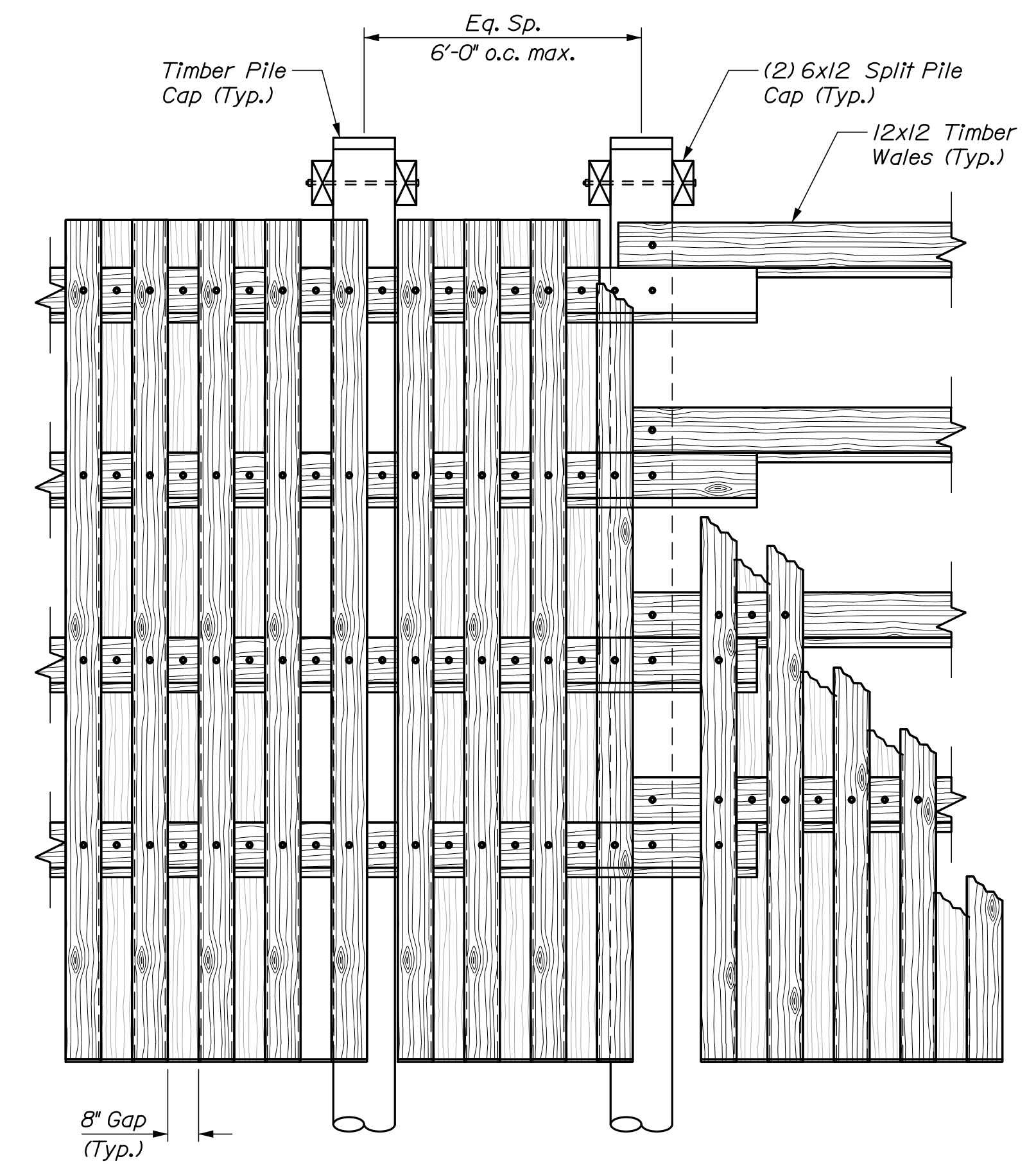
**NOTES:**

1. All threaded rods for timber connections are 1" dia. galv. with nuts and dock washers A307, except where noted.
2. All timber associated with wave screen shall be 2.5 cca treated.
3. All timber vertical and batter piles shall have a driven capacity of 16 tons or a minimum embedment length of 20 feet. See timber pile point detail.
4. All timber battered piles for wave screens facing towards the Pen shall be installed at a batter of 4 horiz. on 12 vert. All timber battered piles for wave screens with timber wales and planks facing away from the Pen shall have a batter of 2.5 horiz. on 12 vert.
5. Timber shall be southern pine with a stress rating of 1,200 psi. Timber shall be pressure treated in accordance with the specifications.
6. All timber construction shall conform to the national design specification for wood construction of the American Forest and Paper Association.
7. Field treat all cut and drilled timber surfaces with two coats of preservative containing copper naphthanate solution (min. 2% metallic solution) per specifications.
8. Wave screens shall be 6" minimum clear from dolphins.
9. Contractor shall take care while installing timber piles to avoid conflict with steel pipe piles.
10. Timber pile cap shall be white with flat top.



WAVE SCREEN END ELEVATION

3/8" = 1'-0"



WAVE SCREEN FRONT ELEVATION

3/8" = 1'-0"

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

WIN  
023476.00

DATE: 03/21/21  
SIGNATURE: [Blank]  
P.E. NUMBER: 10209  
DATE: [Blank]

PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
	N. Willey	C. Morin						
BY	P. Bishop	C. Morin						
DATE	03/21	03/21						

BASS HARBOR  
FERRY TERMINAL

WAVE SCREEN  
PLAN AND ELEVATION

SHEET NUMBER

S11

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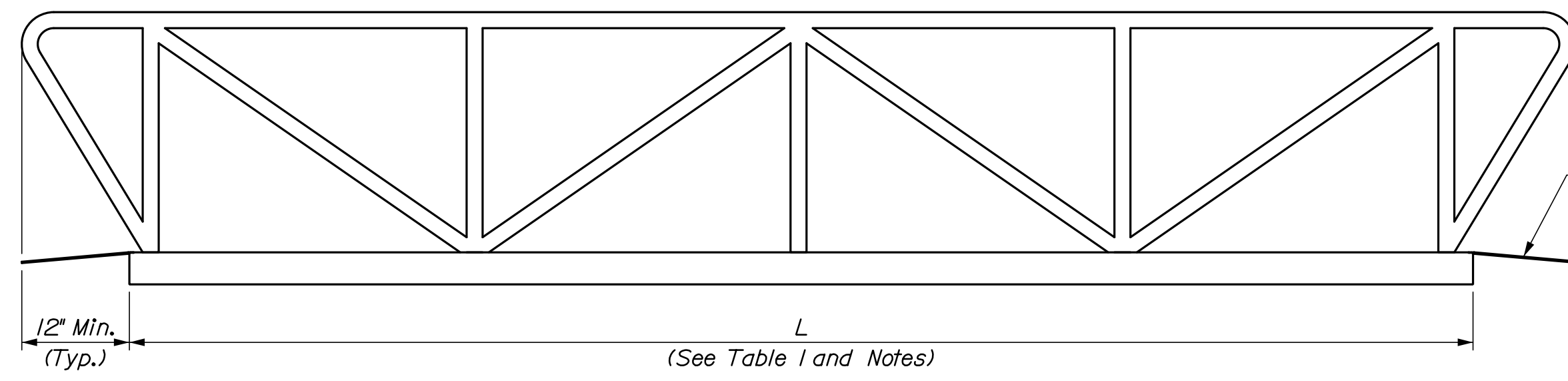


Date: 3/25/2021

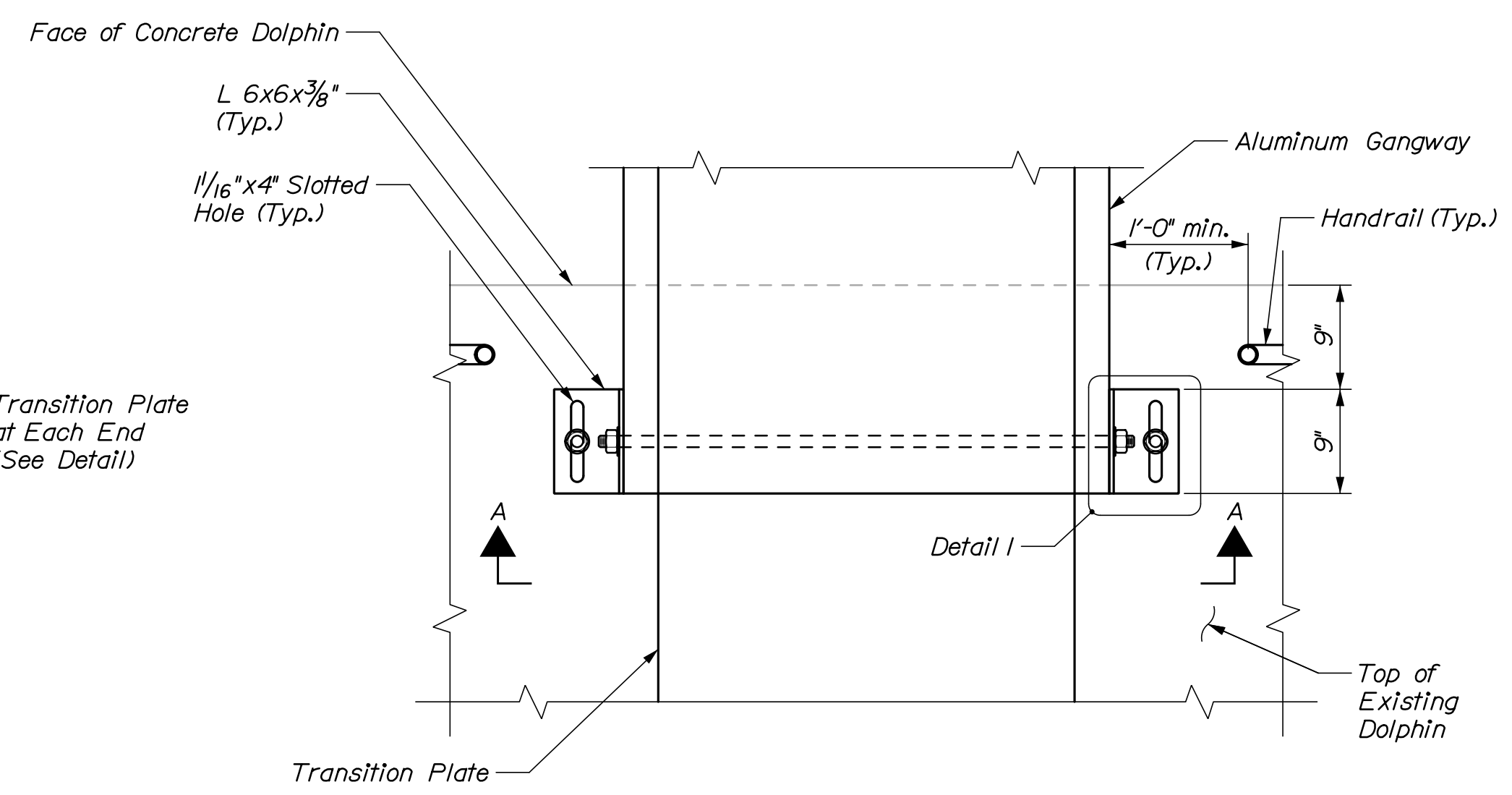
Username:

Division:

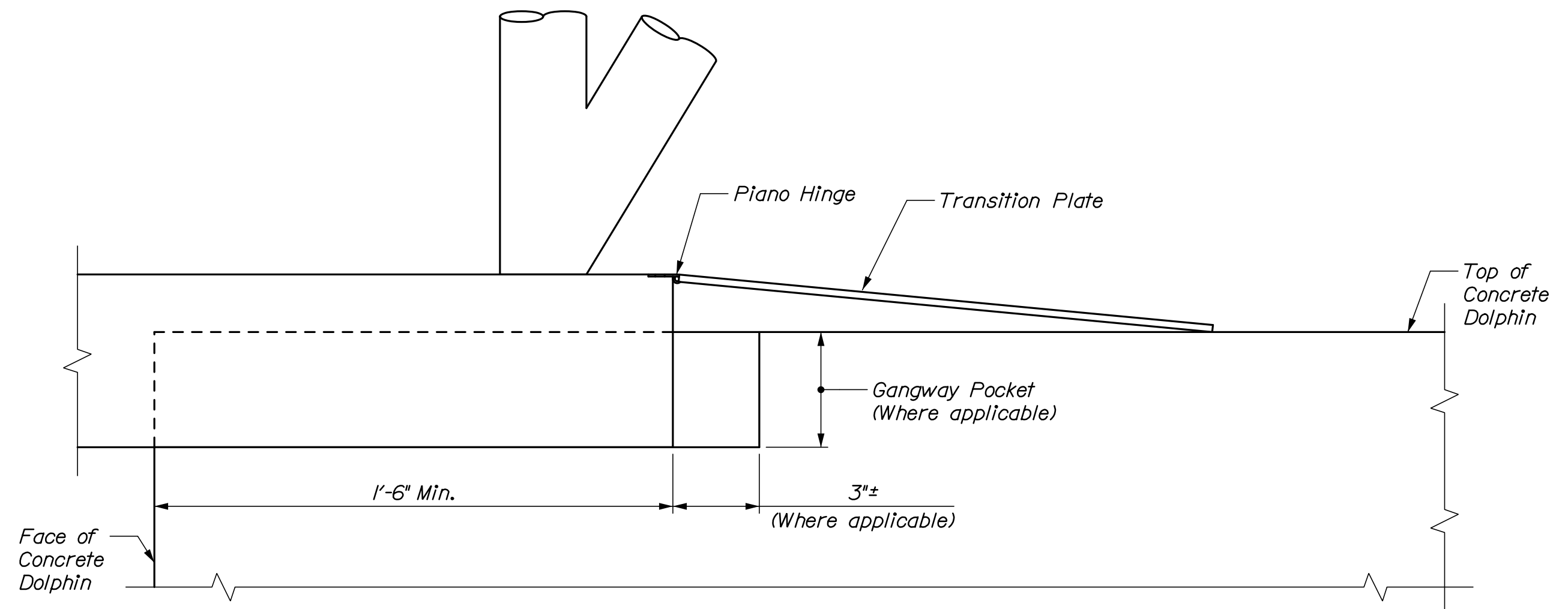
Filename: 016\_Gangway Plan and Elevation.dgn



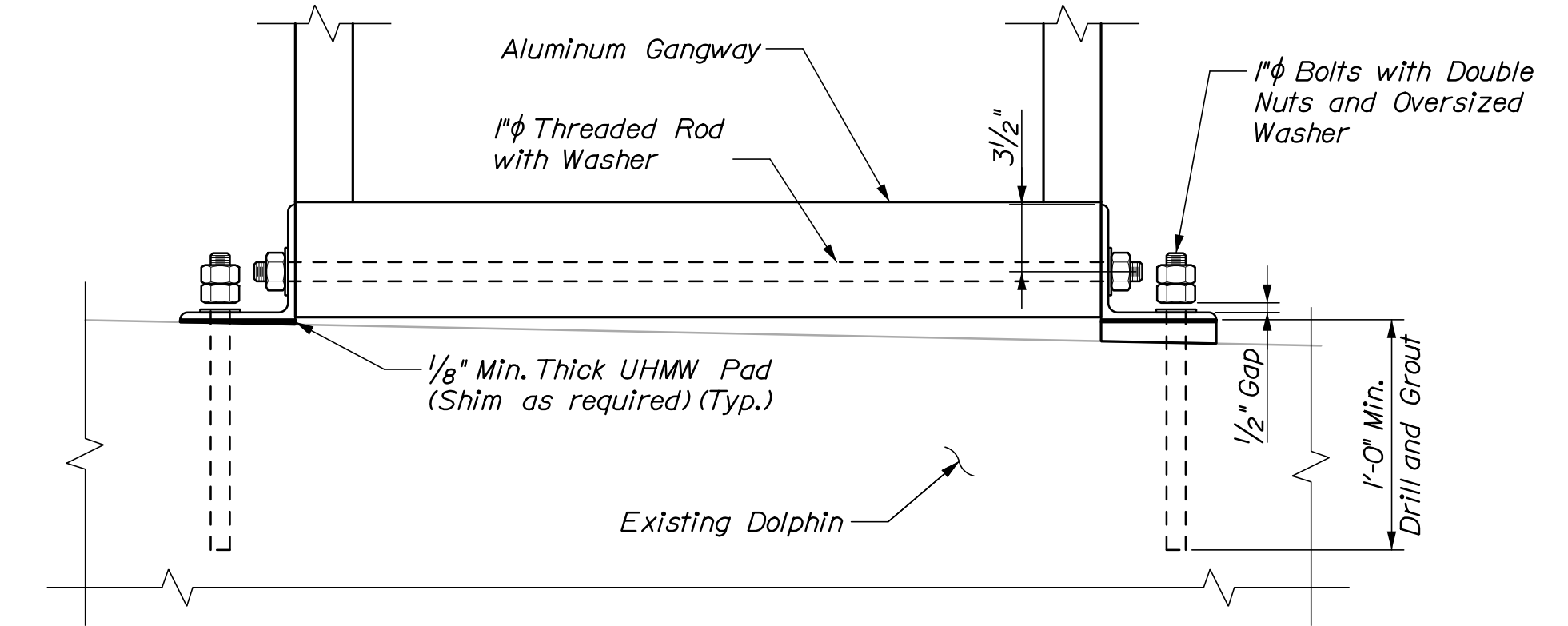
**GANGWAY ELEVATION**  
(Schematically Shown)  
1/2" = 1'-0"



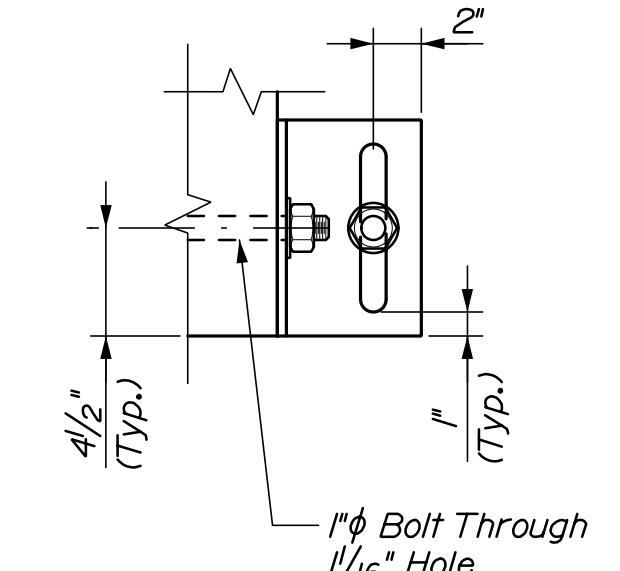
**EXISTING DOLPHIN GANGWAY CONNECTION**  
1" = 1'-0"



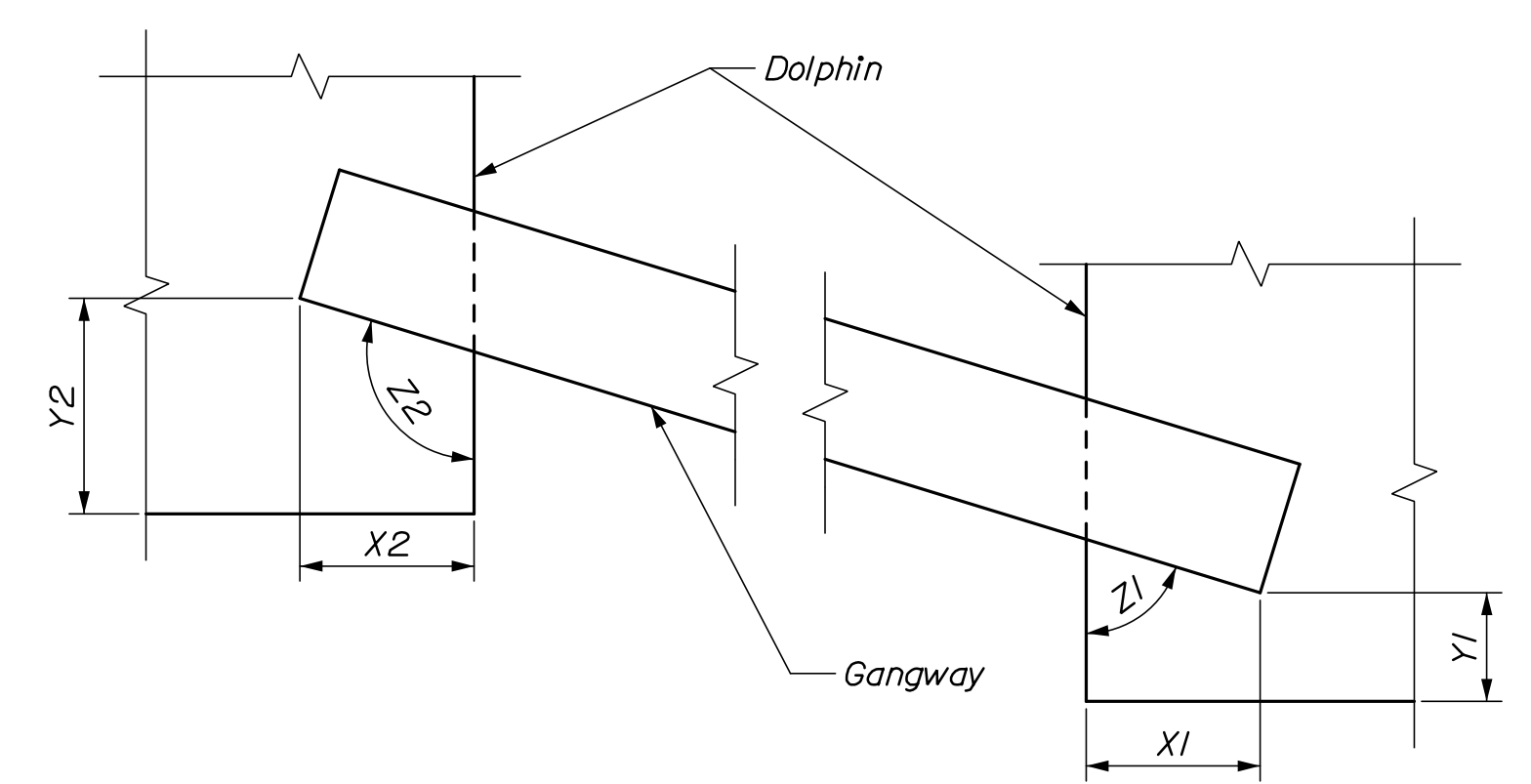
**TRANSITION PLATE DETAIL**  
3" = 1'-0"



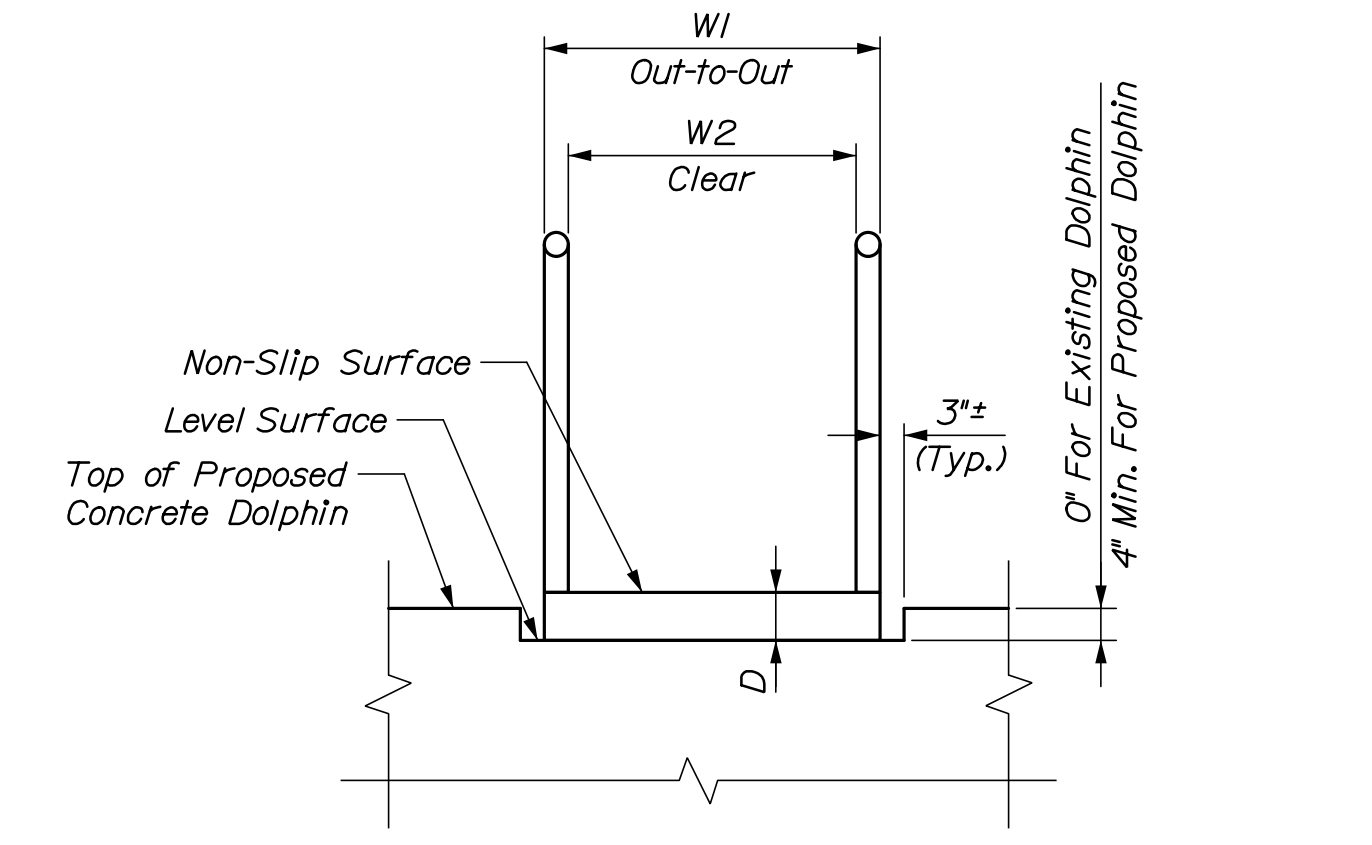
**SECTION A-A**  
1/2" = 1'-0"



**DETAIL I**  
1/2" = 1'-0"



**GANGWAY LAYOUT**  
N.T.S.



**PROPOSED DOLPHIN GANGWAY TYPICAL SECTION**  
1/2" = 1'-0"

**TABLE I  
GANGWAY DIMENSIONS**

Gangway I.D.	Dimensions											
	W1	W2	D	L	Dolphin 1	X1	Y1	Z1	Dolphin 2	X2	Y2	Z2
G1	42"	36"	6"	30'-0"	D6	2'-2"	0'-10"	45'-40"	D7	1'-6"	8'-0"	9'-0"
G2	42"	36"	6"	38'-0"	D2	2'-0"	2'-6"	83'-31'	D1	2'-0"	1'-6"	89'-34'

**NOTES:**

1. See Sheet G02 for design loads.
2. Gangway shall be truss type constructed, fabricated of aluminum grade 6061-T6 marine alloy.
3. Gangway length shall be confirmed or adjusted once dolphins are constructed.
4. Contractor shall field verify dimensions of dolphins for pocket sizes and distances between dolphins.
5. Install bolt through gangway prior to installing bolts into existing concrete.
6. Contractor shall provide UHMW shims at gangway ends.
7. A kick plate is not required along the bottom of the rail posts.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

PROJ. MANAGER  
DESIGN-DETAILED  
CHECKED-REVIEWED  
DESIGN-DETAILED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

DATE  
03/21  
03/21

BY  
P. Bishop  
C. Morin

SIGNATURE  
10209

P.E. NUMBER  
DATE

BASS HARBOR  
FERRY TERMINAL

**GANGWAY  
AND ELEVATION**

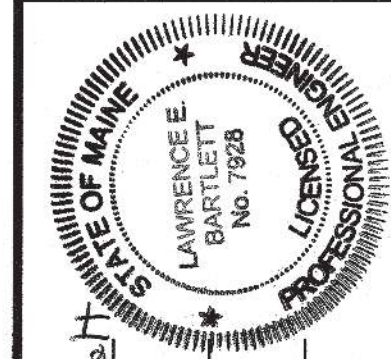
SHEET NUMBER

**S12**

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WIN  
023476.00



Lawrence E. Bartlett  
 SIGNATURE  
 P.E. NUMBER 7928  
 DATE 5/30/2019

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	P. Bishop	05/19
CHECKED-REVIEWED	C. Morr	05/19
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BASS HARBOR  
 FERRY TERMINAL

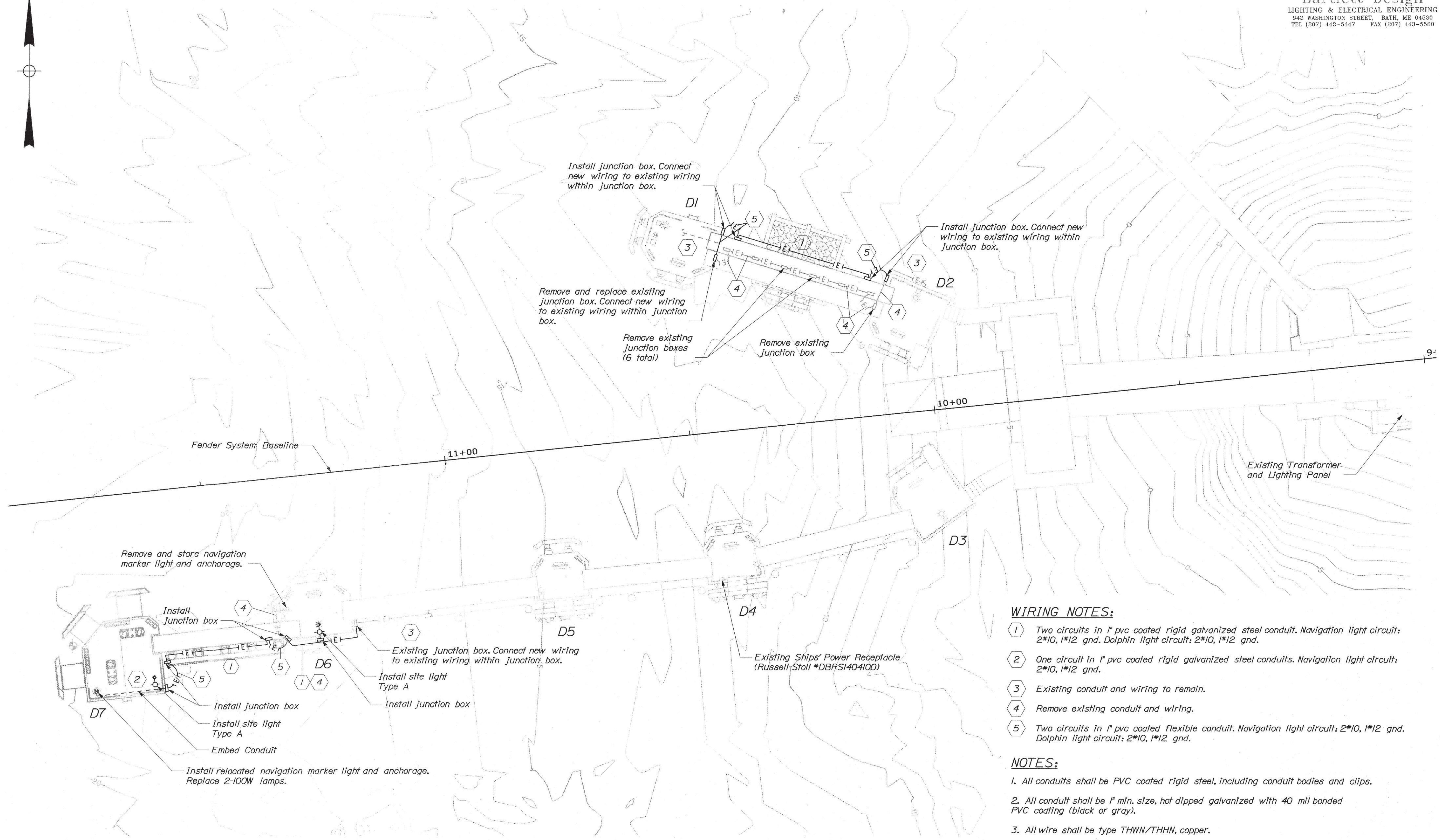
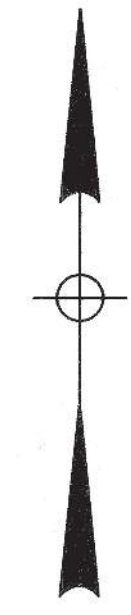
ELECTRICAL PLAN

SHEET NUMBER

E01

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WIN  
 023476.00



**WIRING NOTES:**

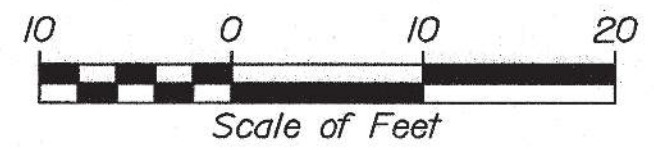
- 1 Two circuits in 1" pvc coated rigid galvanized steel conduit. Navigation light circuit: 2\*10, 1\*12 gnd. Dolphin light circuit: 2\*10, 1\*12 gnd.
- 2 One circuit in 1" pvc coated rigid galvanized steel conduits. Navigation light circuit: 2\*10, 1\*12 gnd.
- 3 Existing conduit and wiring to remain.
- 4 Remove existing conduit and wiring.
- 5 Two circuits in 1" pvc coated flexible conduit. Navigation light circuit: 2\*10, 1\*12 gnd. Dolphin light circuit: 2\*10, 1\*12 gnd.

**NOTES:**

- 1. All conduits shall be PVC coated rigid steel, including conduit bodies and clips.
- 2. All conduit shall be 1" min. size, hot dipped galvanized with 40 mil bonded PVC coating (black or gray).
- 3. All wire shall be type THWN/THHN, copper.
- 4. Provide stainless steel framing channel attached to the vertical side of the dolphin extending above the top of the dolphin for conduit and box support. Do not support from handrails.
- 5. New junction boxes shall be 16"x16" stainless steel.
- 6. All electrical work shall conform to NFPA 70.
- 7. Verify existing electrical conditions to determine proper installation means and methods.
- 8. Bond all new junction boxes and connectors to the equipment grounding conductor inside the box.

**PLAN**

1" = 10'-0"



Date: 5/30/2019

Username:

Division:

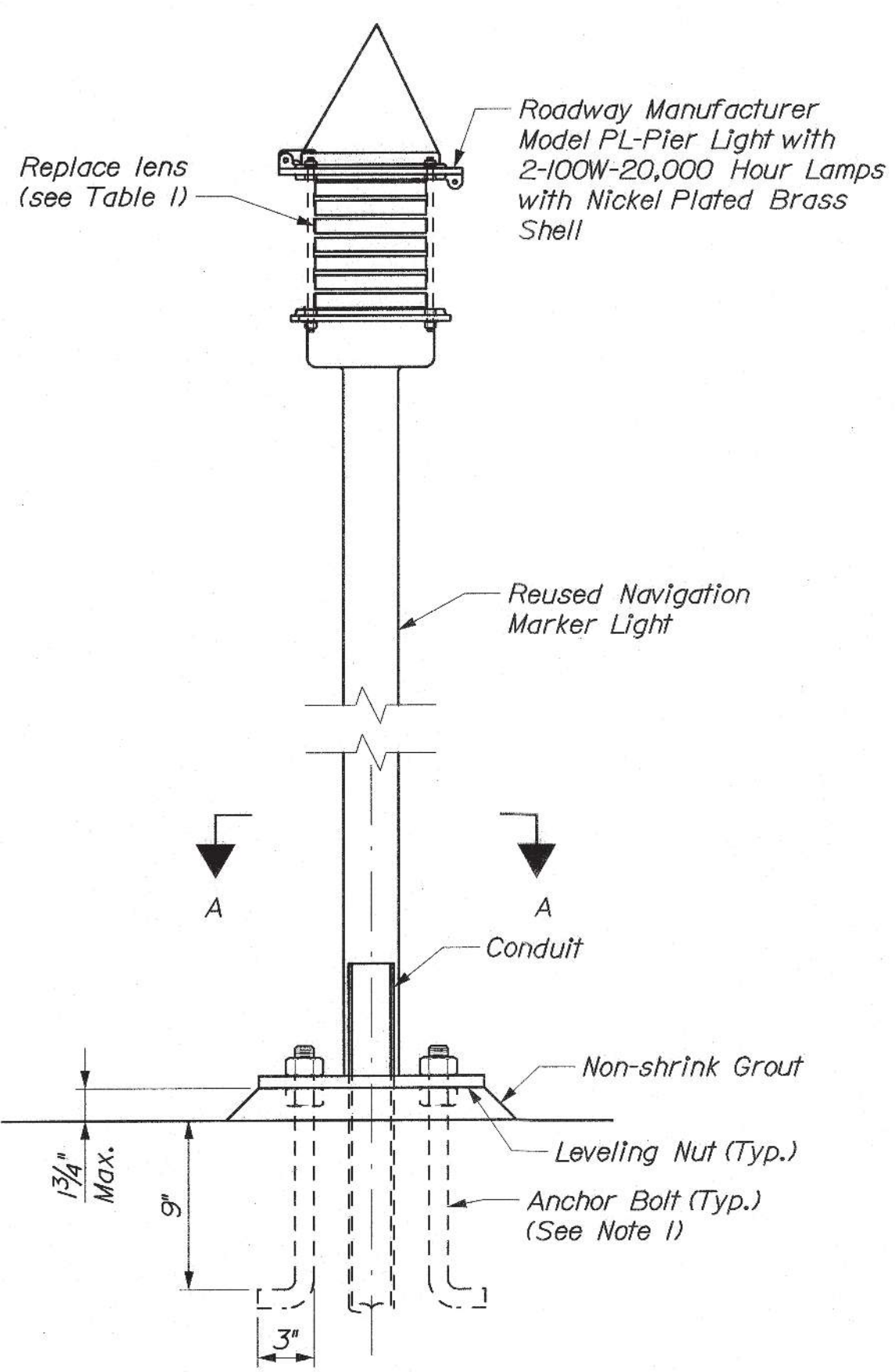
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Date: 5/30/2019

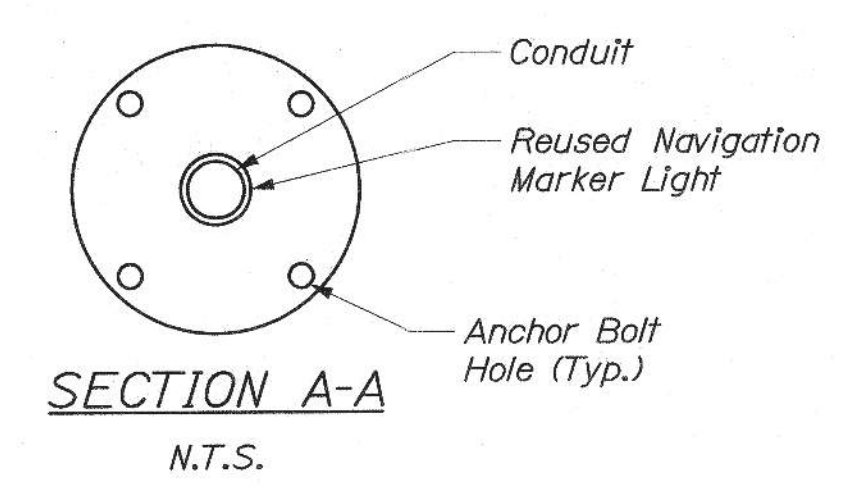
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Division:

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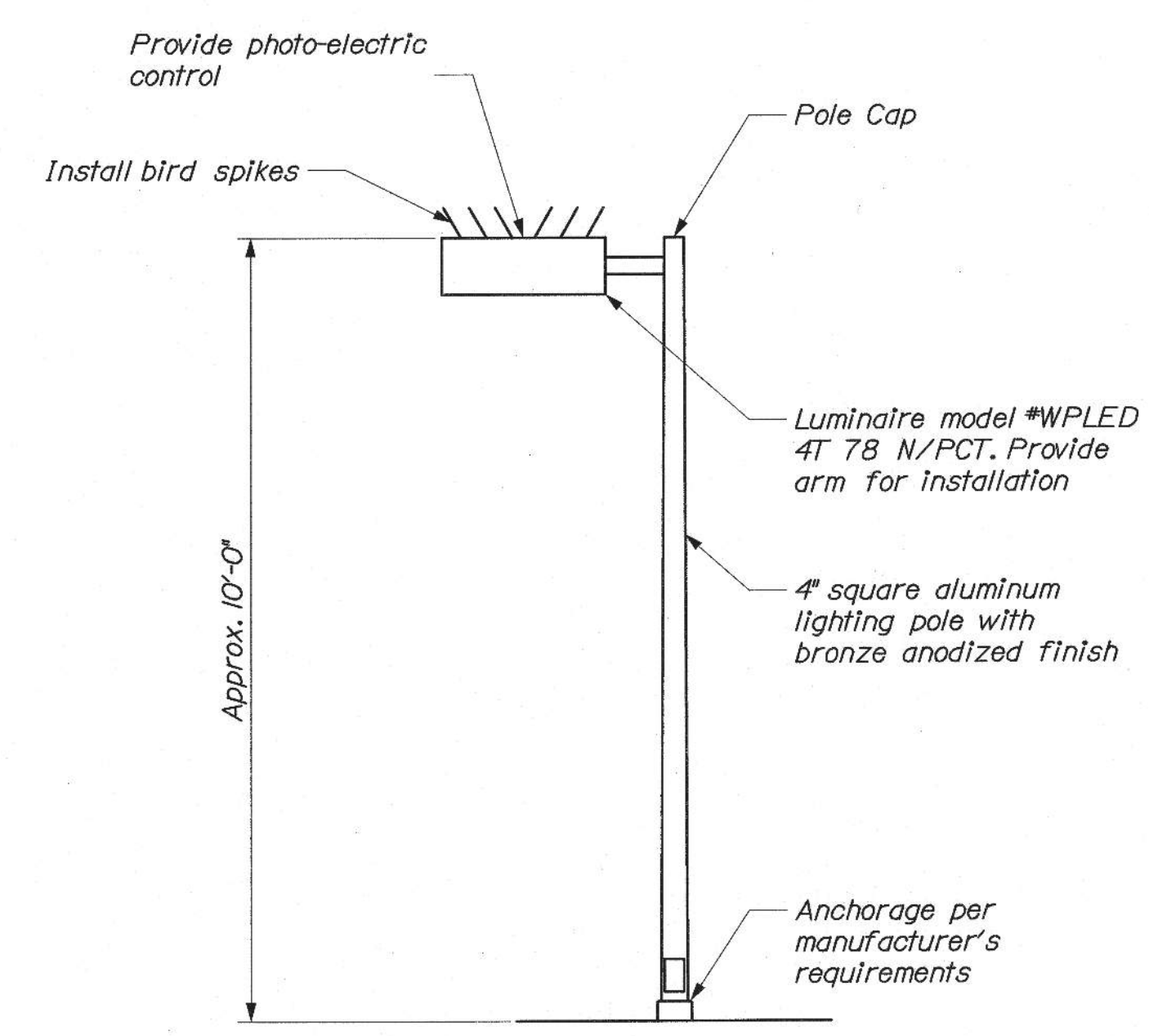
NAVIGATION MARKER INSTALLATION DETAIL  
N.T.S.



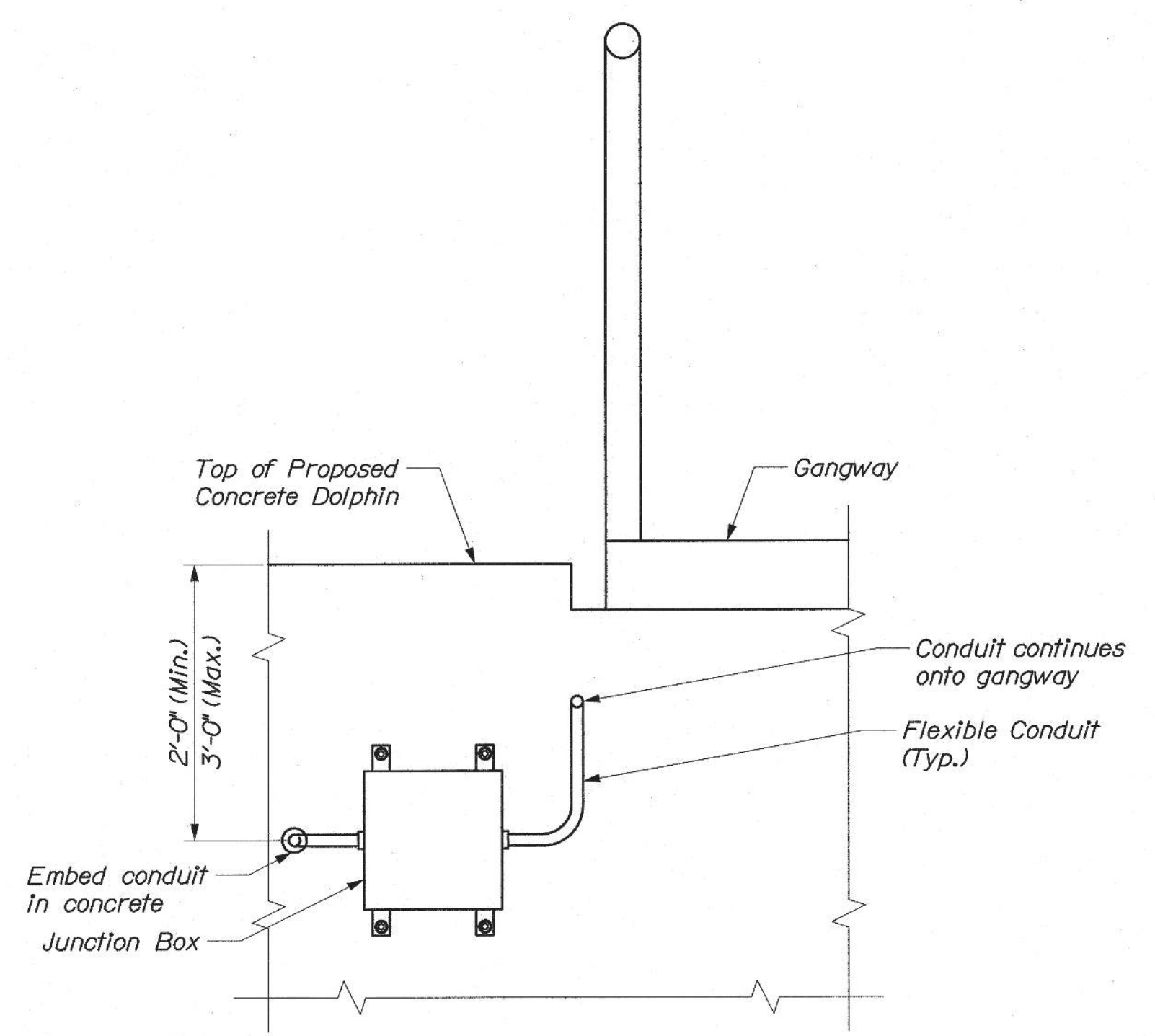
SECTION A-A  
N.T.S.

**TABLE 1**  
**NAVIGATIONAL MARKER LENS**  
**REPLACEMENT SUMMARY**

Location	* of Light Opening	Lamp Size	Lens
Dolphin D7	In Kind	2-100W A-19	In Kind



SITE LIGHT TYPE A DETAIL  
N.T.S.



EMBEDDED CONDUIT JUNCTION BOX DETAIL  
1" = 1'-0"

- NOTES:**
1. Anchor bolt size and pattern shall match the existing condition.
  2. Navigation marker wiring connection shall match the existing condition.
  3. Where anchorages are removed, bolts and rods shall be cut, ground flush to concrete, and filled with Sika 1A Flex self-leveling sealant, or approved equal.

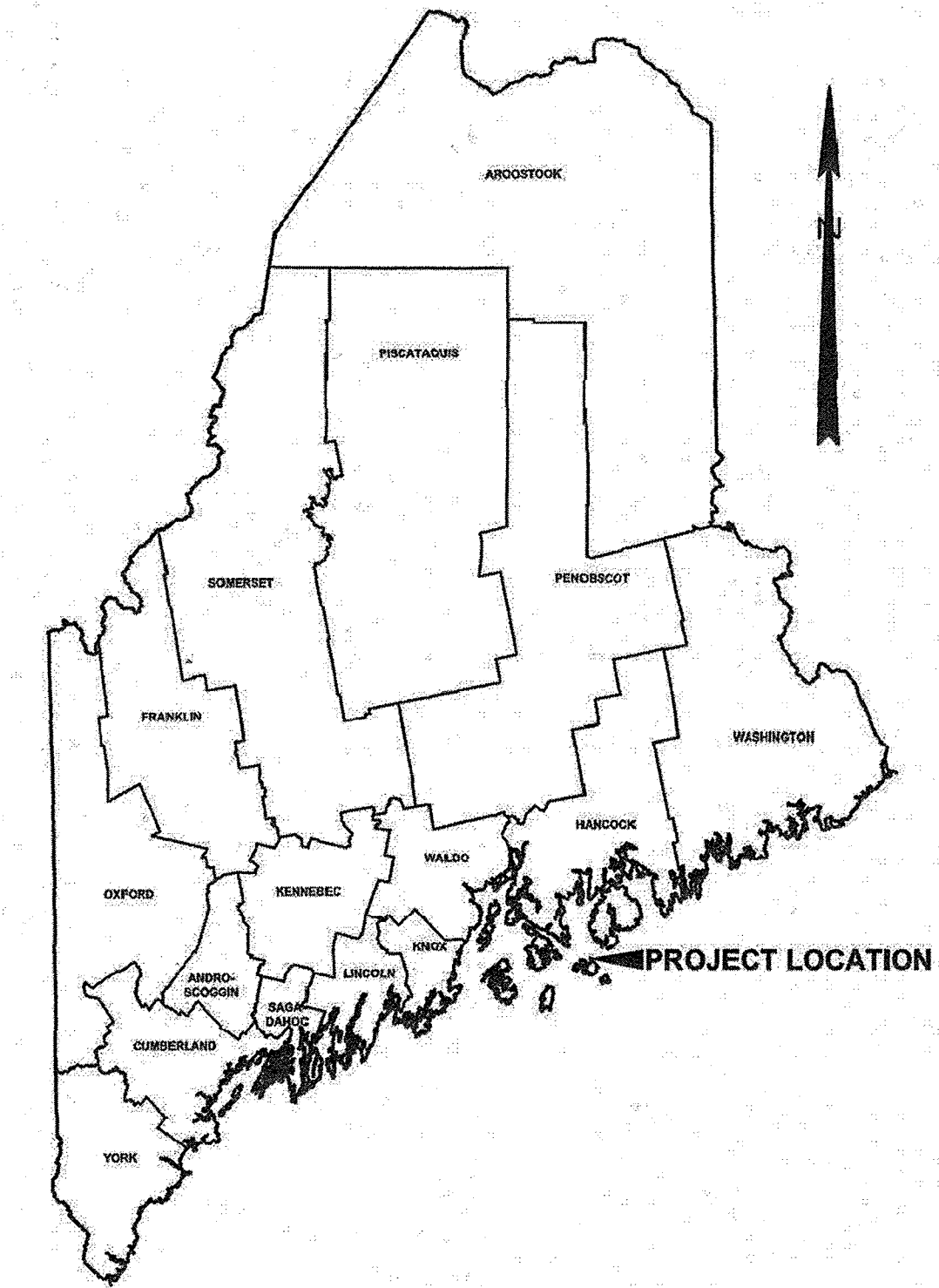
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		WIN 023476.00	
		LAWRENCE C. DOWD SIGNATURE P.E. NUMBER 7528 DATE 5/30/2019	
PROJ. MANAGER	BY	DATE	DATE
DESIGN-DETAILED	L. Barlett	05/18	05/19
CHECKED-REVIEWED	P. Bishop		
DESIGN-DETAILED	C. Morr		
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
BASS HARBOR FERRY TERMINAL		ELECTRICAL DETAILS	
SHEET NUMBER		E02	
		18 OF 18	



# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## TOWN OF SWAN'S ISLAND HANCOCK COUNTY SWAN'S ISLAND FERRY TERMINAL FENDER SYSTEM MODIFICATIONS FEDERAL PROJECT NO. 02348000 MAINEDOT WIN: 023480.00



### INDEX OF SHEETS

**SHEET NO. TITLE**

#### GENERAL

G01	1	TITLE SHEET
G02	2	GENERAL NOTES AND DESIGN CRITERIA
G03	3	EXISTING CONDITIONS
G04	4	BORING LOGS

#### MARINE PLANS

S01	5	SITE PLAN
S02	6	BERTH PLAN
S03	7	DOLPHIN FOUNDATION PLAN
S04	8	DOLPHIN FOUNDATION DETAILS
S05	9	DOLPHIN PLAN, ELEVATION, AND DETAILS
S06	10	DOLPHIN DETAILS MOORING HARDWARE
S07	11	DOLPHIN DETAILS FENDER SYSTEM I
S08	12	DOLPHIN DETAILS FENDER SYSTEM II
S09	13	DOLPHIN DETAILS MISCELLANEOUS
S10	14	DOLPHIN REPAIR DETAILS
S11	15	WAVE SCREEN PLAN AND ELEVATION
S12	16	GANGWAY PLAN AND ELEVATION

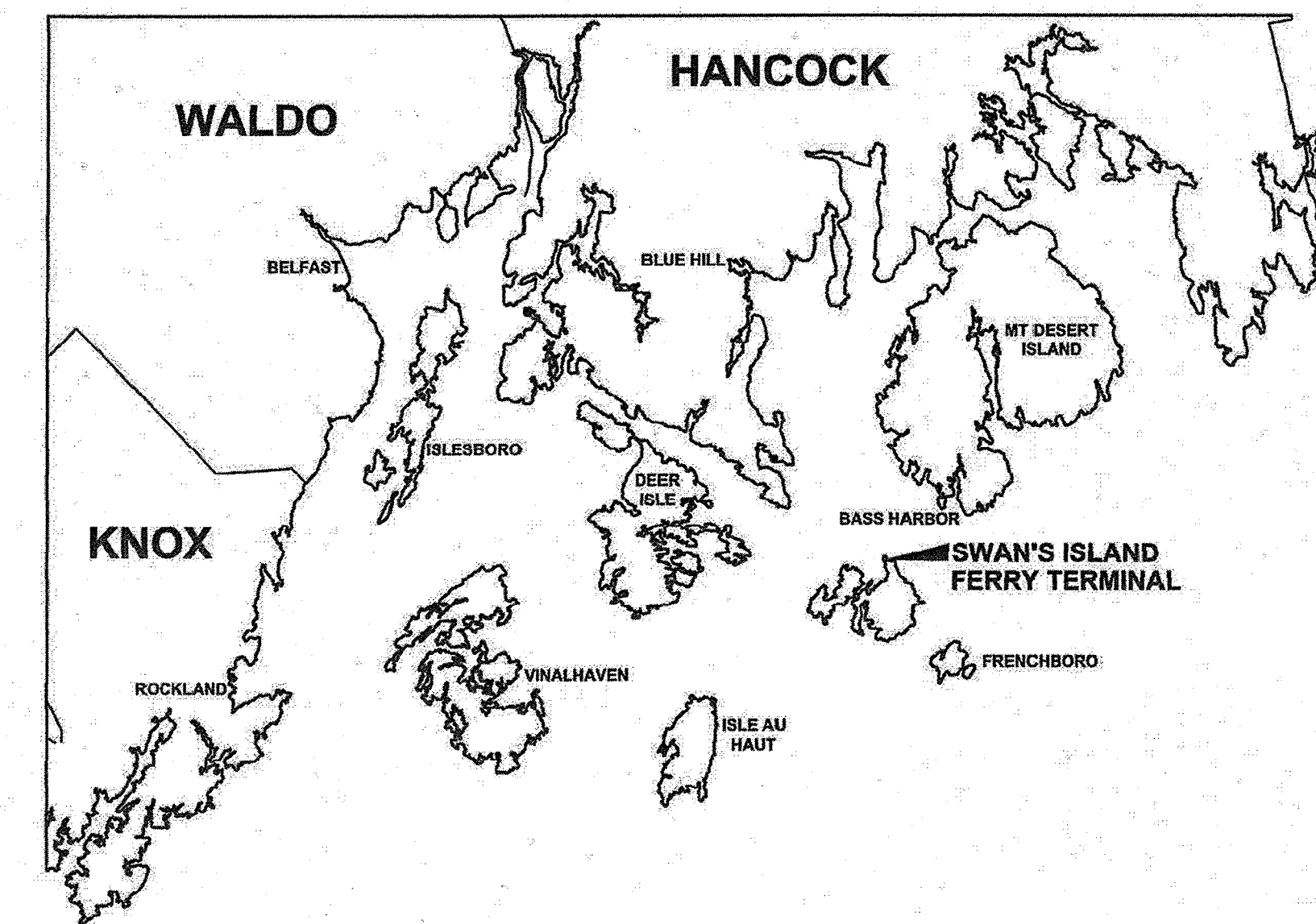
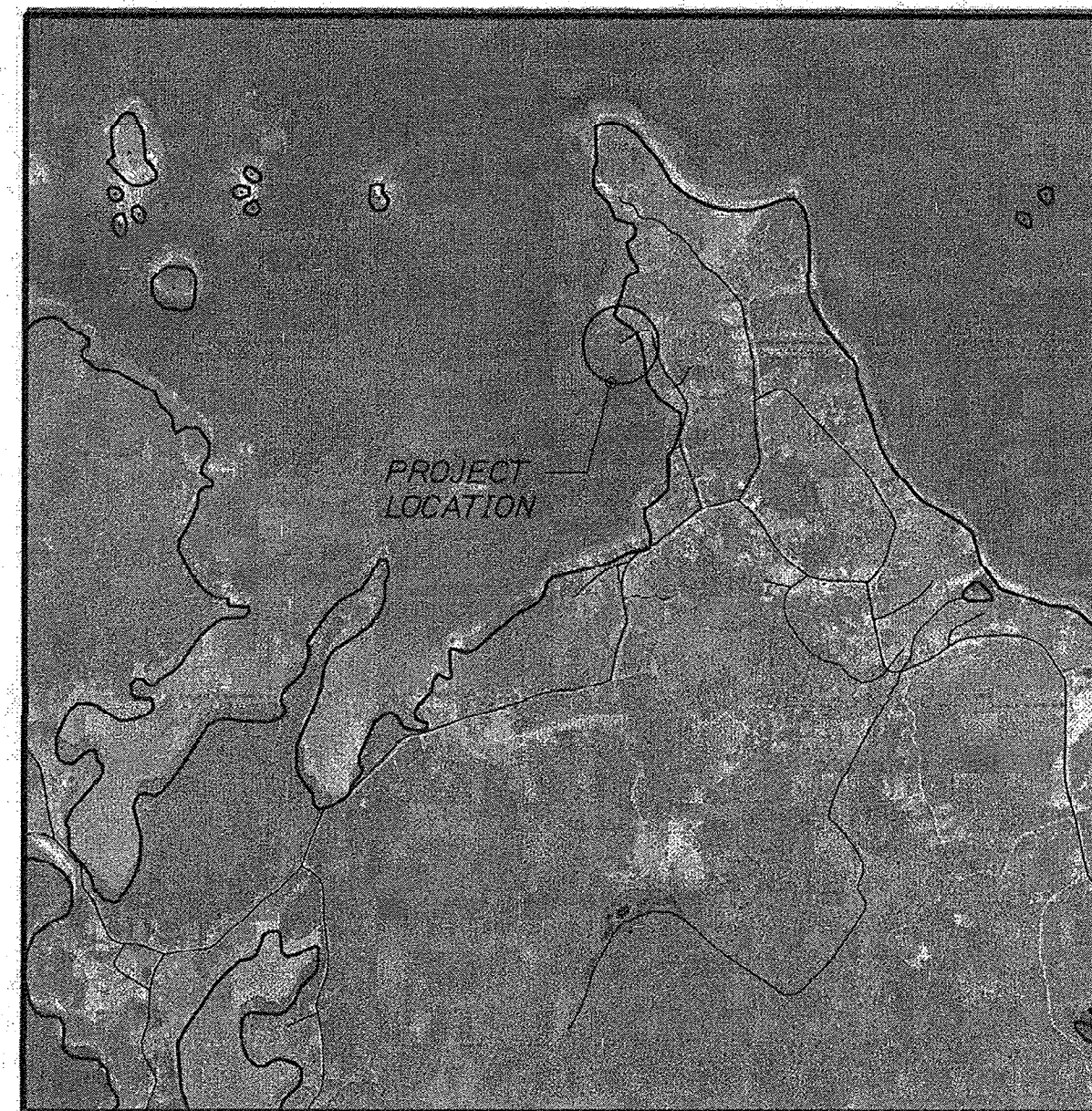
#### ELECTRICAL PLANS

E01	17	ELECTRICAL PLAN
E02	18	ELECTRICAL DETAILS

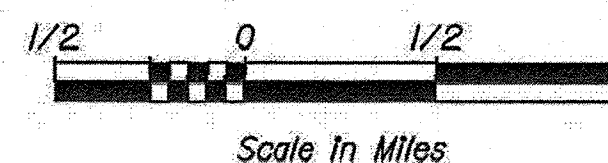
THE PROFESSIONAL ENGINEER WHOSE STAMP APPEARS ON THIS COVER SHEET BEARS RESPONSIBILITY FOR THE FOLLOWING SHEETS WITHIN THIS DRAWING SET:  
GENERAL PLANS G01-G03  
STRUCTURAL PLANS S01-S12

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

GENERAL PLANS	G04	GEOTECHNICAL BORING LOGS	SCHONEWALD ENGINEERING
ELECTRICAL PLANS	E01-E02	ELECTRICAL DESIGN	BARTLETT DESIGN, INC.



LOCATION MAP



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>	APPROVED	DATE: 4-20-21
CHIEF ENGINEER: <i>[Signature]</i>	APPROVED	DATE: 4-20-21

STATE OF MAINE DEPARTMENT OF TRANSPORTATION PROFESSIONAL ENGINEER	SIGNATURE: <i>[Signature]</i>	P.E. NUMBER: 4209	DATE: 03/26/21
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PROJECT INFORMATION	PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
MULTIMODAL	AURELE CORNEAU II	CRAIG R. MORIN, P.E.	HNTB CORPORATION	HNTB CORPORATION	HNTB CORPORATION	HNTB CORPORATION	

SWAN'S ISLAND FERRY TERMINAL FENDER SYSTEM MODIFICATIONS	HANTB
SWAN'S ISLAND	HANCOCK COUNTY
	TITLE SHEET

SHEET NUMBER
G01
1 OF 18



WIN 023480.00 FEDERAL PROJECT NO. 02348000

Date: 3/22/2021  
Username:   
Division:   
Filename: 001\_Title.dgn

Date: 3/22/2021

Username:

Division:

Filename: 002\_GeneralNotes.dgn

GENERAL NOTES

- 1. These notes contain general information and are not complete for construction purposes. Contractor shall verify information given here with specifications and other drawings and bring any conflicts to the Engineer's attention before beginning work.
2. All geotechnical and electrical notes may be found on Sheets G04 and E01, respectively.
3. All dimensions and details shall be verified by the Contractor prior to construction.
4. Contractor shall provide and maintain horizontal and vertical controls in the Maine state plane coordinate system.

SPECIFICATIONS AND CODES

- 1. Project specifications titled, "Special Provisions For: Swan's Island Ferry Terminal Fender System Modifications", dated March 26, 2021.
2. State of Maine, Department of Transportation, Standard Specifications, November 2014. Including all supplemental specifications and special provisions.
3. Codes and other references
A. Unified Facilities Criteria Manuals:
UFC 4-150-06 Military Harbors and Coastal Facilities, with Change 1
UFC 4-150-07 Maintenance and Operation: Maintenance of Waterfront Facilities, with Change 1
UFC 4-150-08 Inspection of Mooring Hardware
UFC 4-151-10 General Criteria for Waterfront Construction, with Change 1
UFC 4-152-01 Design: Piers and Wharves
UFC 4-159-03 Design: Moorings, with Change 2
B. US Army Corps of Engineers: Coastal Engineering Manual, current edition
C. AASHTO LRFD specifications, 8th edition, 2017 with Interims
D. AWS, D1.1, "Structural Welding Code Steel", current edition
E. AWS, D1.2, "Structural Welding Code Aluminum", current edition

SURVEY CONTROL

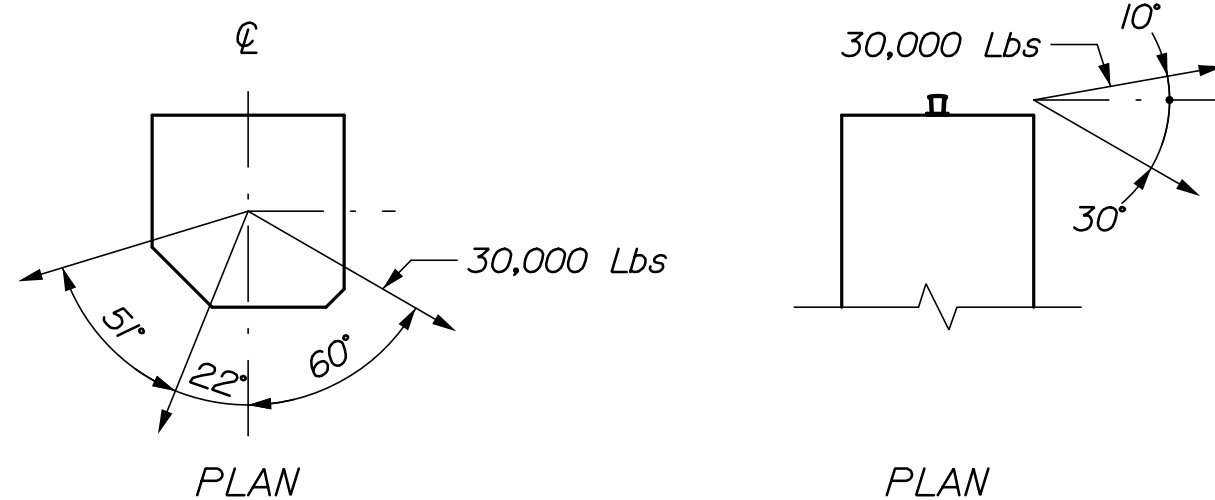
- 1. Vertical control for marine structures is in reference to MLLW (Mean Lower Low Water). To convert to National Geodetic Vertical Datum (NGVD), use the following formula:
E1 (NGVD) = E1 (MLLW) - 9.28 ft
2. Horizontal control is the Maine state plane coordinate system (east zone), NAD 27.

BERTHING LOADS

Table with 6 columns: Dolphin, Berthing Velocity (Ship Velocity, to Fender), App. Angle, Energy to Fender, Minimum Fender Design Energy, Max. Reaction on Dolphin. Rows include Turning Dolphins: Normal and Extreme.

MOORING LOADS

Dolphin D7 and D8 Mooring line pull: Single line in each direction.



FENDER NOTES

- 1. All dimensions, details and existing conditions shall be verified by the Contractor prior to construction.
2. Contractor's steel manufacturer shall design the fender panels for the indicated loads.
3. Embedded anchors for chains shall be set by chemical/adhesive material with 9 inch minimum edge distance and a minimum embedment of 12 times the diameter of the anchor. Strength of existing concrete is 3,000 psi.
4. Anchors shall be set by template.

DOLPHIN/FENDER DESIGN LOADS

Design Vessel: MV Margaret Chase Smith\*
Length = 166'-6"
Beam = 40'-0"
Max. Displacement = 633 long tons

\* This vessel was chosen as the design vessel since it envelopes the existing vessel fleet as well as the new ferry currently in design (LOA = 154 ft).

Current Vessel: Captain Henry Lee
Length = 130'-0"
Beam = 36'-0"
Max. Displacement = 500 long tons (est.)

New Vessel: TBD
Length = 154'-0"
Beam = 38'-0"
Max. Displacement = 600 long tons (est.)

STEEL PIPE PILES

- 1. Steel pipe piles shall conform to ASTM A252, Grade 3, Fy = 45 ksi minimum. Per standard specification 711.01, Concrete fill shall be MaineDOT class "A".
2. Piles shall be coated with fusion bonded epoxy in accordance with the specifications.
3. Pile splices shall not be allowed without prior approval of the Engineer of record.
4. Any portion of pile cracked, deformed, or otherwise damaged by pile driving shall be replaced.
5. Piles shall not be out of position shown by more than 2" longitudinally along the pile cap, and 2" transversely across the width of the pile cap.
6. The distance from the side of any pile to the nearest edge of concrete shall not be less than 9".
7. Piles shall be 16" dia, 5/8" wall steel pipe piles with concrete fill. Piles shall be fabricated of seamless or straight-seamed material. Spiral welded pipe pile is not permitted.

DEMOLITION NOTES

1. Demolition shall be conducted to prevent debris from falling into the ocean. To the maximum extent practicable, all construction debris, including any liquids or slurries that are produced as part of the demolition, shall be captured and disposed of properly. The Contractor shall comply with applicable permit conditions and environmental regulations listed in the specifications. Work shall include removal of any construction debris from the river and installation and maintenance of appropriate turbidity controls during demolition and construction such that no turbidity escapes the immediate work area. Underwater inspections may be conducted by the Owner's representative to ensure all demolition and construction debris is removed from the ocean.

ENVIRONMENTAL CONDITIONS

- 1. Wind: Transverse 50 plf, Longitudinal 12 plf
Wind on Live Load: Transverse 100 plf
Wind on Structure: 40 psf
Thermal: Temp. Range for Concrete Structure = 80°F
2. Railings: Aluminum Pedestrian Vertical 50 plf, Horizontal 50 plf (acting simultaneously)
3. Tidal ranges (elevations in feet):

Tidal Datums table for Swan's Island with columns for NGVD29, MSL, MLW, MLLW, STND and rows for Top of Dolphin, Highest Observed Tide, MHHW, MHW, NGVD29\*\*, MSL, MLW, MLLW, Lowest Observed Tide, STND (Station Datum).

\* Along top edge of dolphin at corner nearest pen. Station ID: 8413825, Swans Island, ME Tidal Epoch: 1983-2001
\*\* NGVD29 conversion taken from archive project drawings.

LEGEND:

- Baseline
Plate
Centerline
XX-XX-XX Washboring
Flood Light
Navigation Marker Light
Site Light - Existing
Site Light - Proposed
Curbing
Diameter
Double Bitt
Chock
Ladder

ABBREVIATIONS:

- CY Cubic Yard
EA Each
EL Elevation In Feet
HSS Hollow Structural Sections
ID Inside Diameter
K (KIP) 1000 Pounds
LBS Pounds
LF Linear Feet
MAX. Maximum
MIN. Minimum
NA Not Applicable
N.T.S. Not To Scale
OC On Center
PSF Pounds Per Square Foot
R Radius
REF Reference
SCHD. Schedule
SF Square Feet
TYP. Typical
UON Unless Otherwise Noted
USACOE United States Army Corps of Engineers

STRUCTURAL STEEL AND MISCELLANEOUS STEEL FABRICATIONS

- 1. Steel shapes and plates shall be ASTM A709, Grade 36 typical, ASTM A709 Grade 50 where noted.
2. Steel pipes shall be ASTM A53, Grade B.
3. Steel tubing shall be ASTM A500, Grade B.
4. All bolts and nuts for steel connections shall conform to ASTM A325 and be hot-dip galvanized in accordance with ASTM A153. Set anchor bolts by template only. All bolts and nuts for timber connections shall conform to ASTM A307 and be hot-dip galvanized.
5. All miscellaneous steel, including all fasteners, chains, shackles, and u-bolts unless noted otherwise, shall be hot-dip galvanized. Galvanize items after fabrication. Stress relieve bends before galvanizing. Galvanizing damaged accidentally or due to field welding shall be restored with a field applied galvanizing compound.
6. Welding Electrodes: E70XX, Low Hydrogen.
7. All welding shall be in accordance with the requirements of the structural welding code, D1.1 and D3.6, of the American Welding Association (AWS).

ALUMINUM ANODES

1. Cathodic protection for steel pipe piles and fender panels shall be 80 lb aluminum alloy. Dimensions shall conform to the general configuration shown on the Plans.

ALUMINUM GANGWAYS

- 1. The design and construction of the aluminum gangways shall be in accordance with the special provisions for the item "Aluminum Gangway". The Contractor's manufacturer shall design the gangways in accordance with the plans, specifications, and loads shown below.
2. Vertical Loads: Uniform Live Load 85 psf, Additional Dead Load 50 psf
3. Horizontal Loads: Wind - Transverse 50 plf, Wind - Longitudinal 12 plf
4. The minimum support seat width, measured perpendicular to the edge of the concrete support shall be 18 inches.
5. Handrail shall be designed for a concentrated horizontal load of 200 pounds acting at the top of the railing.

CONCRETE

- 1. Concrete basic design stresses shall be:
- Fill for Pipe Piles: Class "A"
- Fill for Double Bitts: Class "A"
- Cast-in-place (uon): Class "LP"
2. Concrete shall contain 5.0 gal/cy of calcium corrosion inhibitor admixture.
3. Clearances for reinforcement shall be 3" unless otherwise noted.
4. Chamfer all concrete edges 1" @ 45° unless otherwise noted.
5. All reinforcing shall be fully supported on non-metallic approved chairs. Reinforcing shall not be supported on timber blocks, bricks, concrete blocks, miscellaneous rebar, etc.
6. Construction joints shall be made only as shown unless approved otherwise.
7. All existing concrete surfaces to receive concrete shall be roughened to a minimum amplitude of 1/4" and coated with a product listed on the MaineDOT pre-qualified list of concrete bonding agents.
8. Wet curing of concrete is to begin within 30 minutes after concrete finishing, or as soon as possible without damaging finished surface.
9. All formwork for concrete shall be left in place and concrete surfaces shall be covered and kept moist for a period of not less than seven (7) full days after concrete placements.
10. Contractor shall submit detailed reinforcing drawings including bar and bending schedules to the Engineer for review and approval prior to delivery of any reinforcing steel.
11. All ferrous metal handling/lifting devices and existing embedded metals/anchors no longer in use shall be recessed or removed to a depth of one inch below the surface of the concrete and patched with an approved polymer-modified cementitious mortar. Devices located in areas to be totally encased in cast-in-place concrete shall be galvanized. Devices located in areas not to be encased in cast-in-place concrete shall be stainless steel, unless otherwise noted.

STEEL REINFORCEMENT

- 1. Reinforcing Steel: ASTM A775, unless noted otherwise.
2. Rock Anchors: ASTM A722, Grade 150, deformed, with triple corrosion protection.
3. Splicing of reinforcing steel is permitted. Stagger splices one splice length minimum. No more than 50 percent of the reinforcing steel shall be spliced at any location. Provide a minimum splice length of 50 bar diameters, unless noted otherwise on the drawings.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION

WIN 023480.00

Table with columns: DATE, BY, DESIGN-DETAILED, CHECKED-REVIEWED, DESIGNS-DETAILED, REVISIONS 1-4, FIELD CHANGES.

SWAN'S ISLAND FERRY TERMINAL GENERAL NOTES AND DESIGN CRITERIA

SHEET NUMBER

G02

2 OF 18

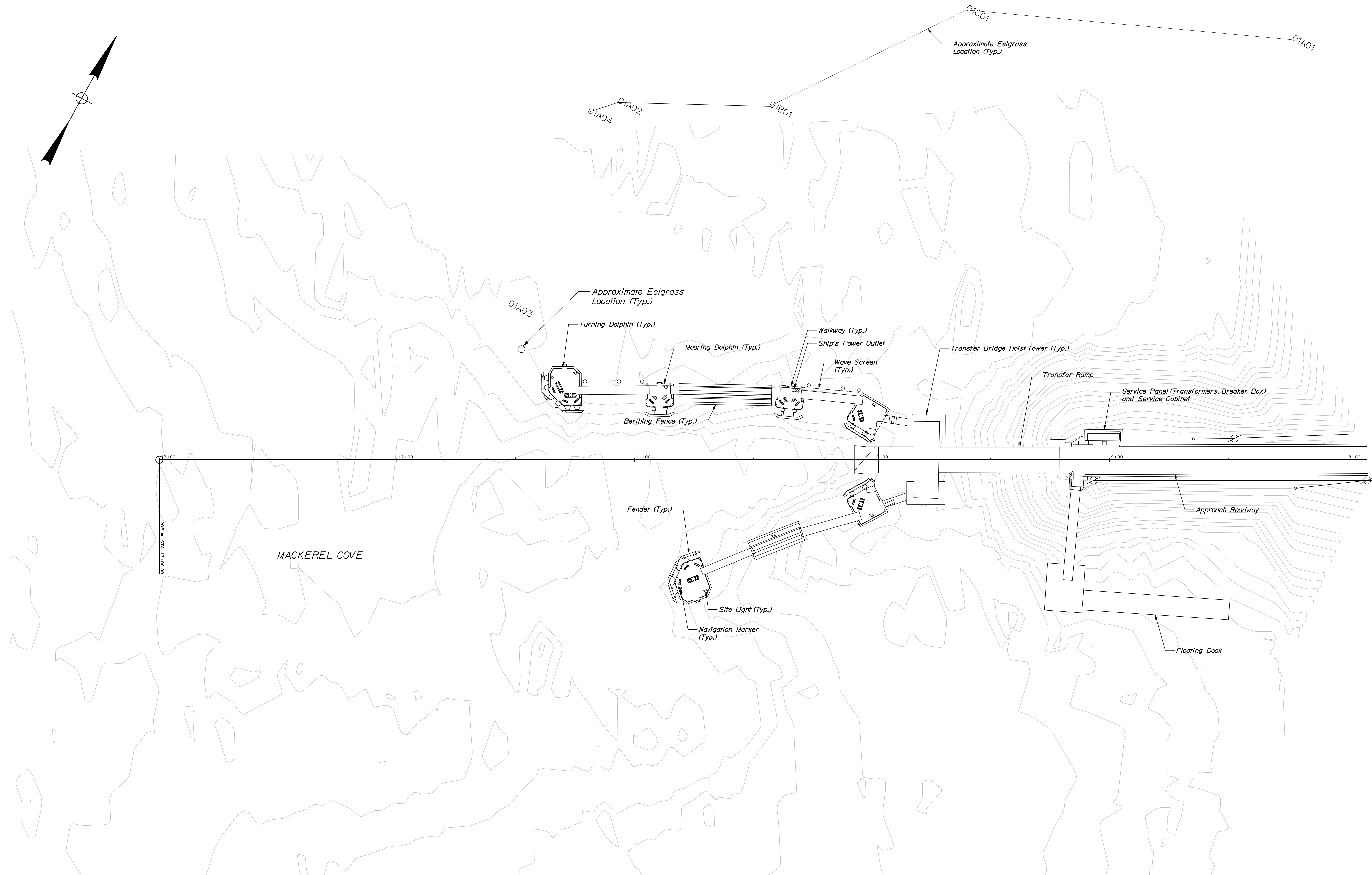
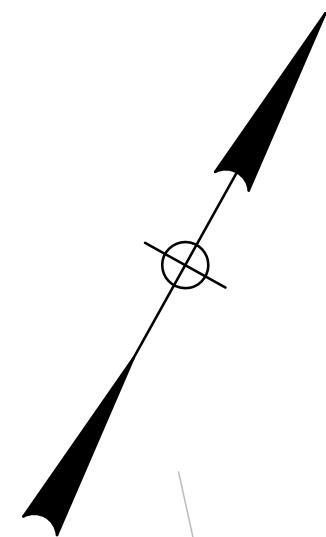


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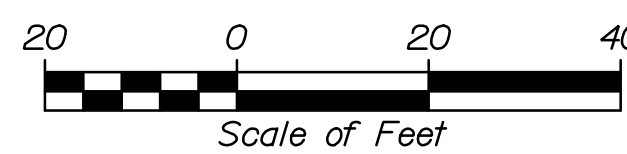
Division:

Filename: 003\_Existing Conditions.dgn



**SITE PLAN**

1" = 20'-0"



**NOTES:**

1. For existing electrical details, see Sheet E01.
2. Eelgrass limits are approximated boundaries based on dive surveys conducted in November 2019 and July 2020 dive survey by MaineDOT. Contractor shall avoid disturbance to eelgrass areas; no spudding.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

PROJ. MANAGER  
DESIGN-DETAILED  
CHECKED-REVIEWED  
DESIGN-DETAILED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

BY	DATE
P. Bishop	03/21
C. Morin	03/21

SWAN'S ISLAND  
FERRY TERMINAL

EXISTING CONDITIONS

SHEET NUMBER  
**G03**  
3 OF 18

WIN  
023480.00

SIGNATURE  
10209  
P.E. NUMBER  
DATE



SCHONWALD ENGINEERING ASSOCIATES, INC.		PROJECT: Fender System Modifications Maine State Ferry Terminal Swans Island, Maine		Boring No.: MB-SWAN-101-18 WIN: 023480.00	
Driller: New England Boring Contractors	Elevation (ft.): -12.4 ft (mudline)	Core Barrel: N02 (wireline)	Operator: Enos / Shore	Datum: MLLW	Sampler: standard split spoon
Logged By: Schonwald	Rig Type: Mobile Drill B-53	Hammer Wt./Fall: 140 lbs / 30 inches	Date Start/Finish: 8/13/18 0845-1300	Drilling Method: cased wash boring	Hammer Type: auto hammer
Boring Location: per plan (838) see remarks	Casing ID/OD: HW to 7.1 ft / NW to 7.8 ft	Hammer Efficiency: 0.906	Auger ID/OD: n/a	Water Level: n/a	
<b>IN-SITU SAMPLING AND TESTING:</b> S = Split Spoon Sample U = Unsuccessful Split Spoon Sample attempt T = Thin Wall Tube Sample M = Unsuccessful Thin Wall Tube Sample attempt V = In-situ Vane Shear Test W = Unsuccessful In-situ Vane Shear Test attempt R = Rock Core Sample BQ = Best Quality Designation (%) UCT @ = post-compressive strength of rock		<b>ADDITIONAL DEFINITIONS:</b> Unrecorded = n/a value N = value corrected for hammer efficiency N <sub>60</sub> = weight of 60lb hammer L <sub>50</sub> = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock		<b>SOILS ADVANCEMENT METHOD:</b> Standard stem auger/rotary low stem auger/rotary core <b>LABORATORY TEST RESULTS:</b> LL = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock	
Depth (ft.)	Sample No.	Pre-Record (ft.)	Sample Depth (ft.)	Blow Count (blows/ft)	Blow Count (blows/ft)
0					
5	10	24/8	0.0 - 2.0	WDH/18"-1	
10	10	24/8	5.0 - 7.0	2-3-4-4	7 11
15	R1	44/41	7.8 - 11.5	R0D: 11%@55%	
20	R2	60/60	11.5 - 16.5	R0D: 36%@60%	
25	R3	60/60	16.5 - 21.5	R0D: 48%@80%	
30	R4	60/60	21.5 - 26.5	R0D: 45%@55%	
<b>Visual Description and Remarks:</b> RECENT MARINE SEDIMENTS (organic silt) 2.7 ft: Gravel and cobbles noted. 10: 10' Brown, m. dense, Silty GRAVEL, little to some fine to coarse sand with chunks of gravels grading to Grey, Silty GRAVEL, some fine to coarse sand with chunks of basalt. 7.1 ft: HW refusal. Roller cone to 7.7 ft. Split NW casing to 7.8 ft. Top of bedrock at Elev. -19.8 ft. R1: Similar to R2, except close to moderately spaced breaks. 2150/ 2155/ 2155/ 2145 min/sec/ft ROCK QUALITY = GOOD R2: Similar to R1, except close to moderately spaced breaks. 2150/ 2155/ 2155/ 2145 min/sec/ft ROCK QUALITY = GOOD R3: Similar to R1, except close to moderately spaced breaks. 2150/ 2155/ 2155/ 2145 min/sec/ft ROCK QUALITY = GOOD R4: Similar to R1, except close to moderately spaced, low angle breaks. One 1-inch thick, moderately dipping zone at the inclusion at 22.7 ft; open fracture from 25.1 to 25.5 ft. 2150/ 2155/ 2155/ 2140 min/sec/ft ROCK QUALITY = FAIR TO GOOD					
<b>Remarks:</b> 8/13/18 0838 hrs: 16.9' top turn dolphin #1 to water 7.7' barge deck to water 21.0' barge deck to mudline top of turn dolphin #1 elev. 17.75 ft MLLW 38' center of turn dolphin #1 to borehole approx. 1.5' north of line along northerly rail of walkway between turn dolphin #1 and side dolphin #1.					
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.					

SCHONWALD ENGINEERING ASSOCIATES, INC.		PROJECT: Fender System Modifications Maine State Ferry Terminal Swans Island, Maine		Boring No.: MB-SWAN-101-18 WIN: 023480.00	
Driller: New England Boring Contractors	Elevation (ft.): -12.4 ft (mudline)	Core Barrel: N02 (wireline)	Operator: Enos / Shore	Datum: MLLW	Sampler: standard split spoon
Logged By: Schonwald	Rig Type: Mobile Drill B-53	Hammer Wt./Fall: 140 lbs / 30 inches	Date Start/Finish: 8/13/18 0845-1300	Drilling Method: cased wash boring	Hammer Type: auto hammer
Boring Location: per plan (838) see remarks	Casing ID/OD: HW to 7.1 ft / NW to 7.8 ft	Hammer Efficiency: 0.906	Auger ID/OD: n/a	Water Level: n/a	
<b>IN-SITU SAMPLING AND TESTING:</b> S = Split Spoon Sample U = Unsuccessful Split Spoon Sample attempt T = Thin Wall Tube Sample M = Unsuccessful Thin Wall Tube Sample attempt V = In-situ Vane Shear Test W = Unsuccessful In-situ Vane Shear Test attempt R = Rock Core Sample BQ = Best Quality Designation (%) UCT @ = post-compressive strength of rock		<b>ADDITIONAL DEFINITIONS:</b> Unrecorded = n/a value N = value corrected for hammer efficiency N <sub>60</sub> = weight of 60lb hammer L <sub>50</sub> = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock		<b>SOILS ADVANCEMENT METHOD:</b> Standard stem auger/rotary low stem auger/rotary core <b>LABORATORY TEST RESULTS:</b> LL = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock	
Depth (ft.)	Sample No.	Pre-Record (ft.)	Sample Depth (ft.)	Blow Count (blows/ft)	Blow Count (blows/ft)
0					
5	R5	60/60	26.5 - 31.5	R0D: 34%@51%	
10	R6	31/30	31.5 - 34.1	R0D: 8%@2%	
15					
20					
25					
30					
35	R3	57/57	35.3 - 40.1	R0D: 25%@45% sample 35.5-36.2	
40	R4	60/60	40.1 - 45.1	R0D: 46%@71%	
45	R5	60/60	45.1 - 50.1	R0D: 37%@2%	
50					
<b>Visual Description and Remarks:</b> R5: Similar to R1, except close to moderately spaced, low angle breaks. Near vertical fracture from 30.2 to 30.8 ft along granitic inclusion. 2105/ 2107/ 1155/ 2100/ 2120 min/sec/ft ROCK QUALITY = FAIR R6: Similar to R1, except predominately low angle breaks. 2100/ - min/sec/ft ROCK QUALITY = VERY POOR TO POOR Bottom of Exploration at 34.1 feet below ground surface. R3: Similar to R1, except zones of high lime concentration and close, low angle breaks typically disoriented with mud infilling. 1130/ 1125/ 1155/ 1125/ 1140 min/sec/ft ROCK QUALITY = POOR R4: Similar to R1, except moderately spaced, moderately dipping breaks typical fresh with occasional mud infilling. Occasional breaks along potassium feldspar-granite inclusions. 2150/ 2107/ 2105/ 2130/ 2115 min/sec/ft ROCK QUALITY = FAIR TO GOOD R5: Similar to R4, except breaks are close to moderately spaced. 1150/ 1145/ 1145/ 1125/ 1115 min/sec/ft ROCK QUALITY = FAIR					
<b>Remarks:</b> 8/13/18 0838 hrs: 16.9' top turn dolphin #1 to water 7.7' barge deck to water 21.0' barge deck to mudline top of turn dolphin #1 elev. 17.75 ft MLLW 38' center of turn dolphin #1 to borehole approx. 1.5' north of line along northerly rail of walkway between turn dolphin #1 and side dolphin #1.					
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.					

SCHONWALD ENGINEERING ASSOCIATES, INC.		PROJECT: Fender System Modifications Maine State Ferry Terminal Swans Island, Maine		Boring No.: MB-SWAN-102-18 WIN: 023480.00	
Driller: New England Boring Contractors	Elevation (ft.): -15.0 ft (mudline)	Core Barrel: N02 (wireline)	Operator: Enos / Shore	Datum: MLLW	Sampler: standard split spoon
Logged By: Schonwald	Rig Type: Mobile Drill B-53	Hammer Wt./Fall: 140 lbs / 30 inches	Date Start/Finish: 8/9/18 1430-8/10/18 1030	Drilling Method: cased wash boring	Hammer Type: auto hammer
Boring Location: per plan (838) see remarks	Casing ID/OD: HW to 25.1 ft / NW to 25.3 ft	Hammer Efficiency: 0.906	Auger ID/OD: n/a	Water Level: n/a	
<b>IN-SITU SAMPLING AND TESTING:</b> S = Split Spoon Sample U = Unsuccessful Split Spoon Sample attempt T = Thin Wall Tube Sample M = Unsuccessful Thin Wall Tube Sample attempt V = In-situ Vane Shear Test W = Unsuccessful In-situ Vane Shear Test attempt R = Rock Core Sample BQ = Best Quality Designation (%) UCT @ = post-compressive strength of rock		<b>ADDITIONAL DEFINITIONS:</b> Unrecorded = n/a value N = value corrected for hammer efficiency N <sub>60</sub> = weight of 60lb hammer L <sub>50</sub> = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock		<b>SOILS ADVANCEMENT METHOD:</b> Standard stem auger/rotary low stem auger/rotary core <b>LABORATORY TEST RESULTS:</b> LL = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock	
Depth (ft.)	Sample No.	Pre-Record (ft.)	Sample Depth (ft.)	Blow Count (blows/ft)	Blow Count (blows/ft)
0					
5	10	24/8	0.0 - 2.0	WDH/18"-1	
10	20	24/24	5.0 - 7.0	2-3-4-4	7 11
15	30	24/24	10.0 - 12.0	WDH/24"	
20	40	24/11	15.0 - 17.0	WDH/18"-1	
25	50	13/8	24.0 - 25.1	WDH-1-50/1"	
<b>Visual Description and Remarks:</b> 10: Grey brown, v. soft, GRANULIC SILT, some fine sand with shells gravel on top of spoon. RECENT MARINE SEDIMENTS 4.0 ft: Apparent change to olive grey, marine silt-clay. 20: Olive brown, slightly mottled grading to olive grey, m. stiff, SILT, some clay grading to Clayey SILT. MARINE SILT-CLAY CRUST 30: Dark grey with black, v. soft, Silty CLAY, trace very fine sand, MARINE SILT-CLAY 40: Dark grey, v. soft, Silty CLAY. Dark grey, Silty CLAY changing at 24.6 ft to:					
<b>Remarks:</b> 8/9/18 1420 hrs: 16.0' top turn dolphin #2 to water 7.7' barge deck to water 24.5' barge deck to mudline top of turn dolphin #2 elev. 17.71 ft MLLW 40' center of turn dolphin #2 to borehole approx. on line along southerly rail of walkway between turn dolphin #2 and southerly berthing fence.					
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.					

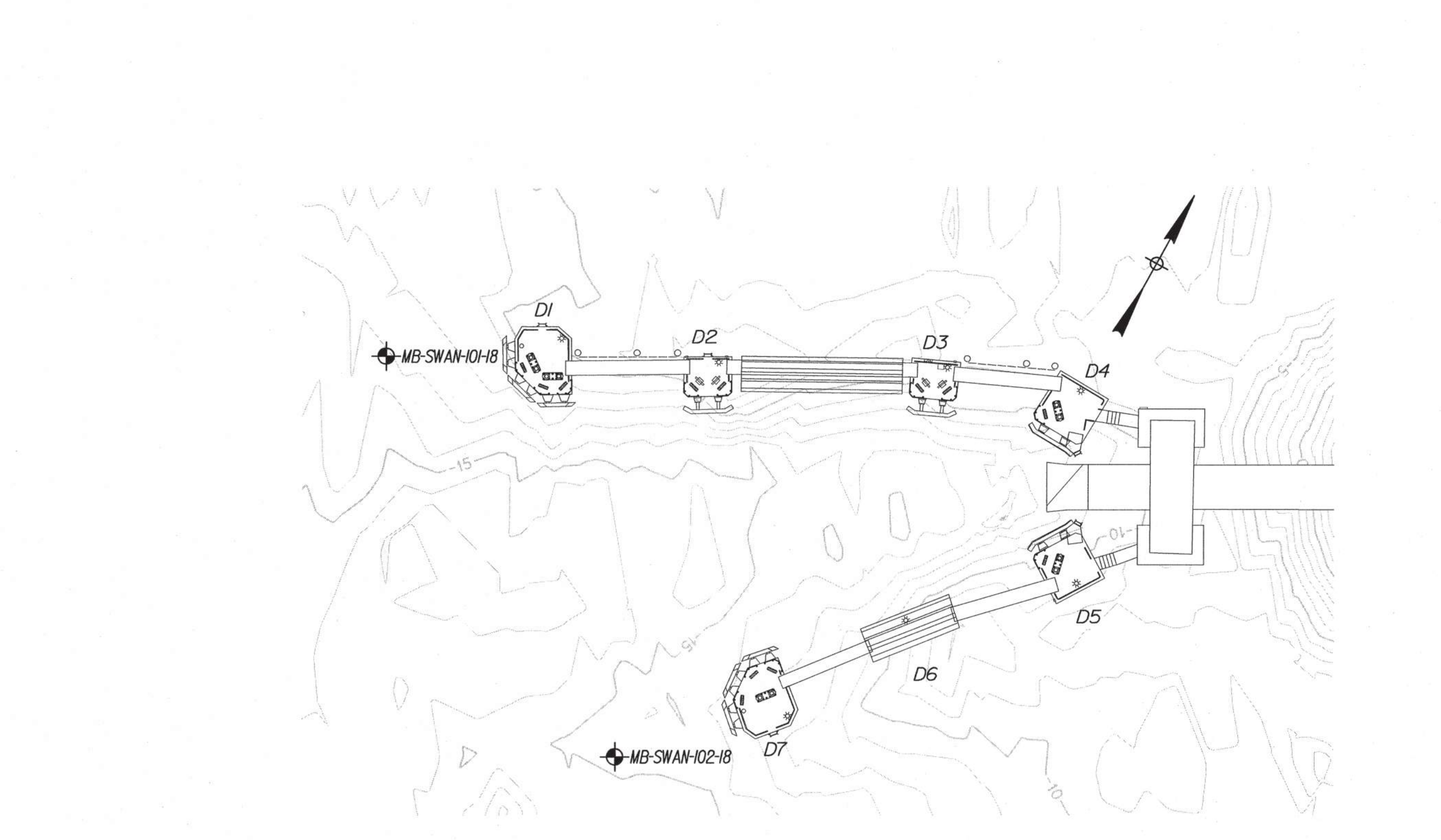
SCHONWALD ENGINEERING ASSOCIATES, INC.		PROJECT: Fender System Modifications Maine State Ferry Terminal Swans Island, Maine		Boring No.: MB-SWAN-102-18 WIN: 023480.00	
Driller: New England Boring Contractors	Elevation (ft.): -15.0 ft (mudline)	Core Barrel: N02 (wireline)	Operator: Enos / Shore	Datum: MLLW	Sampler: standard split spoon
Logged By: Schonwald	Rig Type: Mobile Drill B-53	Hammer Wt./Fall: 140 lbs / 30 inches	Date Start/Finish: 8/9/18 1430-8/10/18 1030	Drilling Method: cased wash boring	Hammer Type: auto hammer
Boring Location: per plan (838) see remarks	Casing ID/OD: HW to 25.1 ft / NW to 25.3 ft	Hammer Efficiency: 0.906	Auger ID/OD: n/a	Water Level: n/a	
<b>IN-SITU SAMPLING AND TESTING:</b> S = Split Spoon Sample U = Unsuccessful Split Spoon Sample attempt T = Thin Wall Tube Sample M = Unsuccessful Thin Wall Tube Sample attempt V = In-situ Vane Shear Test W = Unsuccessful In-situ Vane Shear Test attempt R = Rock Core Sample BQ = Best Quality Designation (%) UCT @ = post-compressive strength of rock		<b>ADDITIONAL DEFINITIONS:</b> Unrecorded = n/a value N = value corrected for hammer efficiency N <sub>60</sub> = weight of 60lb hammer L <sub>50</sub> = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock		<b>SOILS ADVANCEMENT METHOD:</b> Standard stem auger/rotary low stem auger/rotary core <b>LABORATORY TEST RESULTS:</b> LL = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock	
Depth (ft.)	Sample No.	Pre-Record (ft.)	Sample Depth (ft.)	Blow Count (blows/ft)	Blow Count (blows/ft)
0					
5	R1	60/60	25.3 - 30.3	R0D: 21%@55%	
10	R2	60/60	30.3 - 35.3	R0D: 30%@60%	
15					
20					
25					
30					
35	R3	57/57	35.3 - 40.1	R0D: 25%@45% sample 35.5-36.2	
40	R4	60/60	40.1 - 45.1	R0D: 46%@71%	
45	R5	60/60	45.1 - 50.1	R0D: 37%@2%	
50					
<b>Visual Description and Remarks:</b> 0: Grey, Silty GRAVEL, little to some sand, till 25.1 ft: Split-spoon and HW casing refusal. Top of bedrock at Elev. -40.1 ft. R1: Bedrock: Very hard, typically fresh, ophanitic to fine grained, green grey BASALT with numerous calcic veins (1/8-inch) typically moderately dipping and weathered. Very close to close, typically low angle breaks; undulating, occasionally blocky, rough, typically disoriented, and open with mud infilling. (Costline Formation) Core fines: 2145/ 2125/ 2155/ 1150/ 1150 min/sec/ft ROCK QUALITY = POOR R2: Similar to R1, except close to moderately spaced, low angle to moderately dipping breaks fresh to discolored and open with occasional mud infilling. 1130/ 1125/ 1155/ 1125/ 1140 min/sec/ft ROCK QUALITY = POOR TO FAIR R3: Similar to R1, except zones of high lime concentration and close, low angle breaks typically disoriented with mud infilling. 1130/ 1125/ 1155/ 1125/ 1140 min/sec/ft ROCK QUALITY = POOR R4: Similar to R1, except moderately spaced, moderately dipping breaks typical fresh with occasional mud infilling. Occasional breaks along potassium feldspar-granite inclusions. 2150/ 2107/ 2105/ 2130/ 2115 min/sec/ft ROCK QUALITY = FAIR TO GOOD R5: Similar to R4, except breaks are close to moderately spaced. 1150/ 1145/ 1145/ 1125/ 1115 min/sec/ft ROCK QUALITY = FAIR					
<b>Remarks:</b> 8/9/18 1420 hrs: 16.0' top turn dolphin #2 to water 7.7' barge deck to water 24.5' barge deck to mudline top of turn dolphin #2 elev. 17.71 ft MLLW 40' center of turn dolphin #2 to borehole approx. on line along southerly rail of walkway between turn dolphin #2 and southerly berthing fence.					
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.					

SCHONWALD ENGINEERING ASSOCIATES, INC.		PROJECT: Fender System Modifications Maine State Ferry Terminal Swans Island, Maine		Boring No.: MB-SWAN-102-18 WIN: 023480.00	
Driller: New England Boring Contractors	Elevation (ft.): -15.0 ft (mudline)	Core Barrel: N02 (wireline)	Operator: Enos / Shore	Datum: MLLW	Sampler: standard split spoon
Logged By: Schonwald	Rig Type: Mobile Drill B-53	Hammer Wt./Fall: 140 lbs / 30 inches	Date Start/Finish: 8/9/18 1430-8/10/18 1030	Drilling Method: cased wash boring	Hammer Type: auto hammer
Boring Location: per plan (838) see remarks	Casing ID/OD: HW to 25.1 ft / NW to 25.3 ft	Hammer Efficiency: 0.906	Auger ID/OD: n/a	Water Level: n/a	
<b>IN-SITU SAMPLING AND TESTING:</b> S = Split Spoon Sample U = Unsuccessful Split Spoon Sample attempt T = Thin Wall Tube Sample M = Unsuccessful Thin Wall Tube Sample attempt V = In-situ Vane Shear Test W = Unsuccessful In-situ Vane Shear Test attempt R = Rock Core Sample BQ = Best Quality Designation (%) UCT @ = post-compressive strength of rock		<b>ADDITIONAL DEFINITIONS:</b> Unrecorded = n/a value N = value corrected for hammer efficiency N <sub>60</sub> = weight of 60lb hammer L <sub>50</sub> = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock		<b>SOILS ADVANCEMENT METHOD:</b> Standard stem auger/rotary low stem auger/rotary core <b>LABORATORY TEST RESULTS:</b> LL = Liquid Limit / Plasticity Index / PI (Plasticity Index) W <sub>c</sub> = water content, percent I <sub>p</sub> = In-situ Field Vane Shear Strength (psf) I <sub>v</sub> = In-situ Vane Shear Test B = Best Core Sample RQD = Rock Quality Designation (%) UCT @ = post-compressive strength of rock	
Depth (ft.)	Sample No.	Pre-Record (ft.)	Sample Depth (ft.)	Blow Count (blows/ft)	Blow Count (blows/ft)
0					
5	R6	60/60	50.1 - 55.1	R0D: 28%@7%	
10	R7	58/58	55.1 - 59.9	R0D: 56%@9%	
15					
20					
25					
30					
35					
40					
45					
50					
<b>Visual Description and Remarks:</b> R6: Similar to R1, with zones of significant lime and potassium feldspar concentrations. Close to moderately spaced, low angle to moderately dipping breaks typical fresh with occasional mud infilling. 1110/ 1135/ 2107/ 2155/ 2145 min/sec/ft ROCK QUALITY = POOR TO FAIR R7: Similar to R6, except breaks are moderately spaced and low angle. 1155/ 2100/ 2155/ 2120/ - min/sec/ft. ROCK QUALITY = EXCELLENT Bottom of Exploration at 59.9 feet below ground surface.					
<b>Remarks:</b> 8/9/18 1420 hrs: 16.0' top turn dolphin #2 to water 7.7' barge deck to water 24.5' barge deck to mudline top of turn dolphin #2 elev. 17.71 ft MLLW 40' center of turn dolphin #2 to borehole approx. on line along southerly rail of walkway between turn dolphin #2 and southerly berthing fence.					
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.					

GEOTECHNICAL NOTES:

- The geotechnical report for the project is entitled "Geotechnical Design Report, Fender System Modifications, Maine State Ferry Terminal, Swans Island, Maine, MaineDOT WIN 023480.00," dated May 2019 and prepared by Schonwald Engineering Associates, Inc. The report is available on the MaineDOT website.
- Geotechnical information furnished or referenced in this plan set is for the Bidders' and Contractors' use. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the time of construction. The Department shall not be responsible for the Bidders' and Contractors' interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set and the referenced report present interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between widely-spaced boring locations.
- Grid north on the North American Datum 1983 (NAD83).
- Tidal datum is Mean Lower Low Water (MLLW).

BORING COORDINATES		
Location	Northing	Easting
MB-SWAN-101-18	187497.56	1004101.54
MB-SWAN-102-18	187439.61	1004197.27



KEY PLAN  
1" = 25'-0"

STATE OF MAINE DEPARTMENT OF TRANSPORTATION

SWAN'S ISLAND FERRY TERMINAL BORING LOGS

SHEET NUMBER G04 4 OF 18

WIN 023480.00

ISABEL V. SCHONWALD No. 7528 PROFESSIONAL ENGINEER LICENSED IN MAINE

PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGNED-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
N. Wilby	P. Bishop	C. Morin						
DATE	05/19	05/19						
SIGNATURE	7528							
P.E. NUMBER	5617							
DATE								

DOLPHIN COORDINATES

EXISTING D1

LOCATION	NORTHING	EASTING
A	187518.94	1004125.14
B	187511.34	1004145.32
C	187507.47	1004138.63
D	187509.71	1004130.46
E	187525.71	1004137.15

EXISTING D2

LOCATION	NORTHING	EASTING
A	187538.14	1004174.69
B	187529.81	1004179.33
C	187523.90	1004169.29
D	187532.48	1004164.54

EXISTING D3

LOCATION	NORTHING	EASTING
A	187563.79	1004223.83
B	187554.91	1004227.43
C	187550.29	1004216.89
D	187558.99	1004212.99

EXISTING D4

LOCATION	NORTHING	EASTING
A	187573.23	1004259.46
B	187560.02	1004258.93
C	187560.18	1004245.37
D	187573.66	1004245.98

EXISTING D5

LOCATION	NORTHING	EASTING
A	187541.78	1004268.87
B	187534.95	1004279.84
C	187523.85	1004272.69
D	187531.08	1004261.70

EXISTING D6

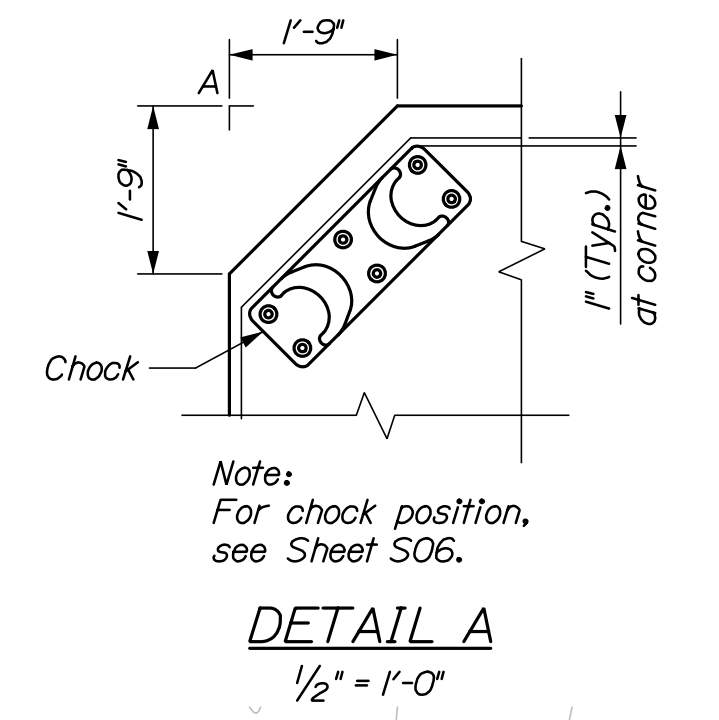
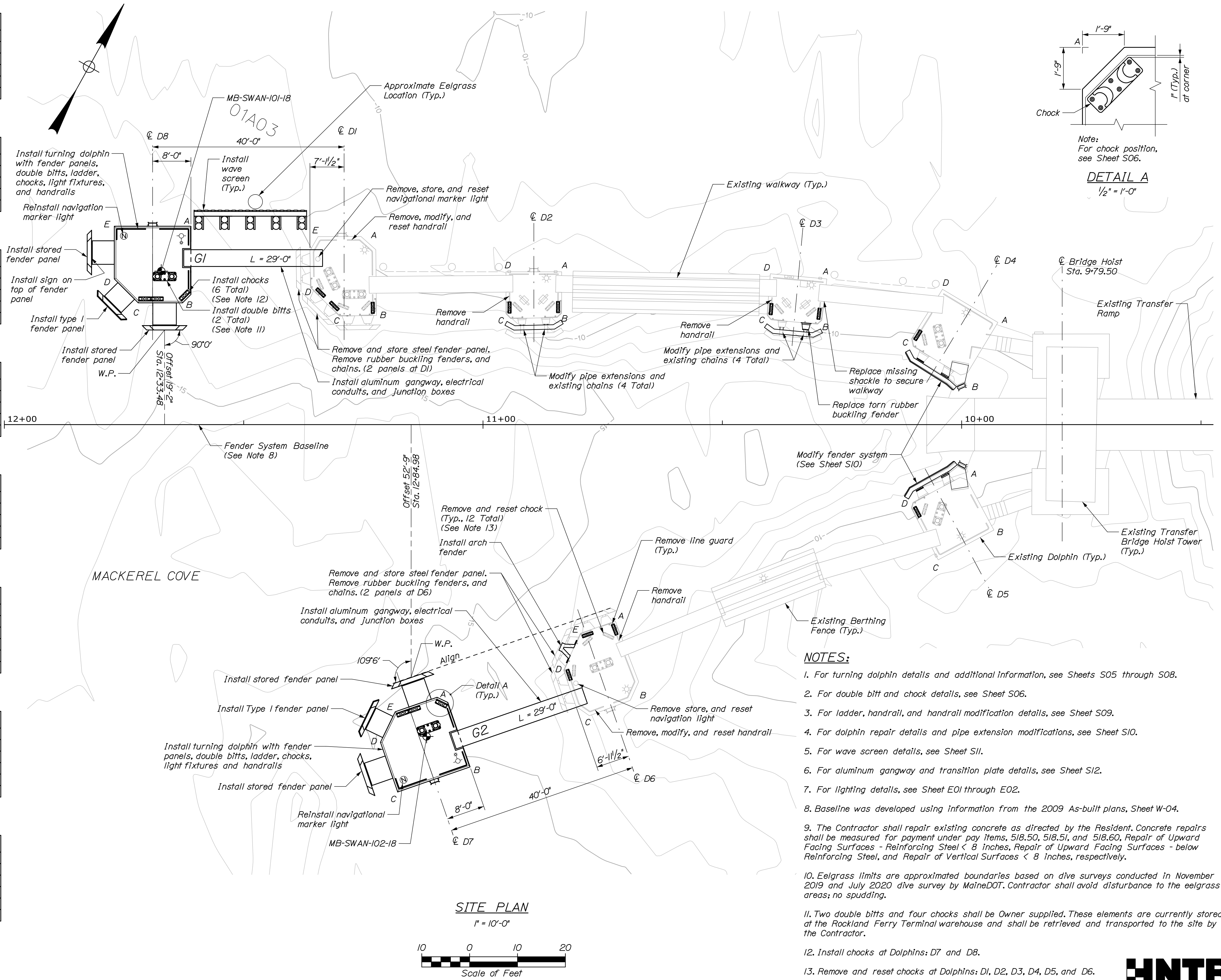
LOCATION	NORTHING	EASTING
A	187479.83	1004220.00
B	187469.20	1004232.73
C	187458.39	1004223.56
D	187465.64	1004215.55
E	187474.08	1004214.86

PROPOSED D7

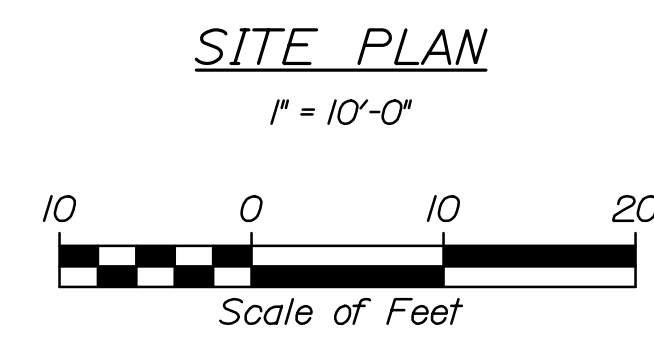
LOCATION	NORTHING	EASTING
A	187449.13	1004196.37
B	187438.47	1004208.30
C	187426.54	1004197.64
D	187433.87	1004189.44
E	187440.92	1004189.04

PROPOSED D8

LOCATION	NORTHING	EASTING
A	187508.76	1004102.40
B	187494.71	1004110.34
C	187489.43	1004100.57
D	187491.37	1004093.77
E	187500.98	1004088.42



- NOTES:**
1. For turning dolphin details and additional information, see Sheets S05 through S08.
  2. For double bitt and chock details, see Sheet S06.
  3. For ladder, handrail, and handrail modification details, see Sheet S09.
  4. For dolphin repair details and pipe extension modifications, see Sheet S10.
  5. For wave screen details, see Sheet S11.
  6. For aluminum gangway and transition plate details, see Sheet S12.
  7. For lighting details, see Sheet E01 through E02.
  8. Baseline was developed using information from the 2009 As-built plans, Sheet W-04.
  9. The Contractor shall repair existing concrete as directed by the Resident. Concrete repairs shall be measured for payment under pay items, 518.50, 518.51, and 518.60, Repair of Upward Facing Surfaces - Reinforcing Steel < 8 Inches, Repair of Upward Facing Surfaces - below Reinforcing Steel, and Repair of Vertical Surfaces < 8 Inches, respectively.
  10. Eelgrass limits are approximated boundaries based on dive surveys conducted in November 2019 and July 2020 dive survey by MaineDOT. Contractor shall avoid disturbance to the eelgrass areas; no spudding.
  11. Two double bits and four chocks shall be Owner supplied. These elements are currently stored at the Rockland Ferry Terminal warehouse and shall be retrieved and transported to the site by the Contractor.
  12. Install chocks at Dolphins: D7 and D8.
  13. Remove and reset chocks at Dolphins: D1, D2, D3, D4, D5, and D6.



Date: 4/6/2021  
Username:  
Division:  
Filename: 005\_Site Plan.dgn

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		WIN 023480.00
	SIGNATURE 10209	P.E. NUMBER DATE
BY P. Bishop C. Morin	DATE 03/21 03/21	
DESIGN-DETAILED N. Willey C. Morin		
CHECKED-REVIEWED		
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		
SWAN'S ISLAND FERRY TERMINAL		SITE PLAN
SHEET NUMBER		S01
		5 OF 18

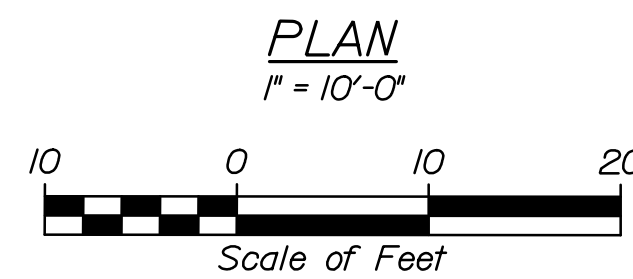
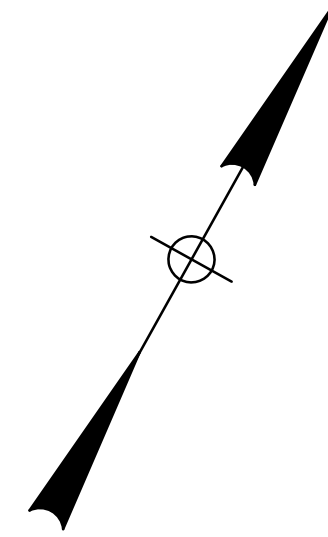
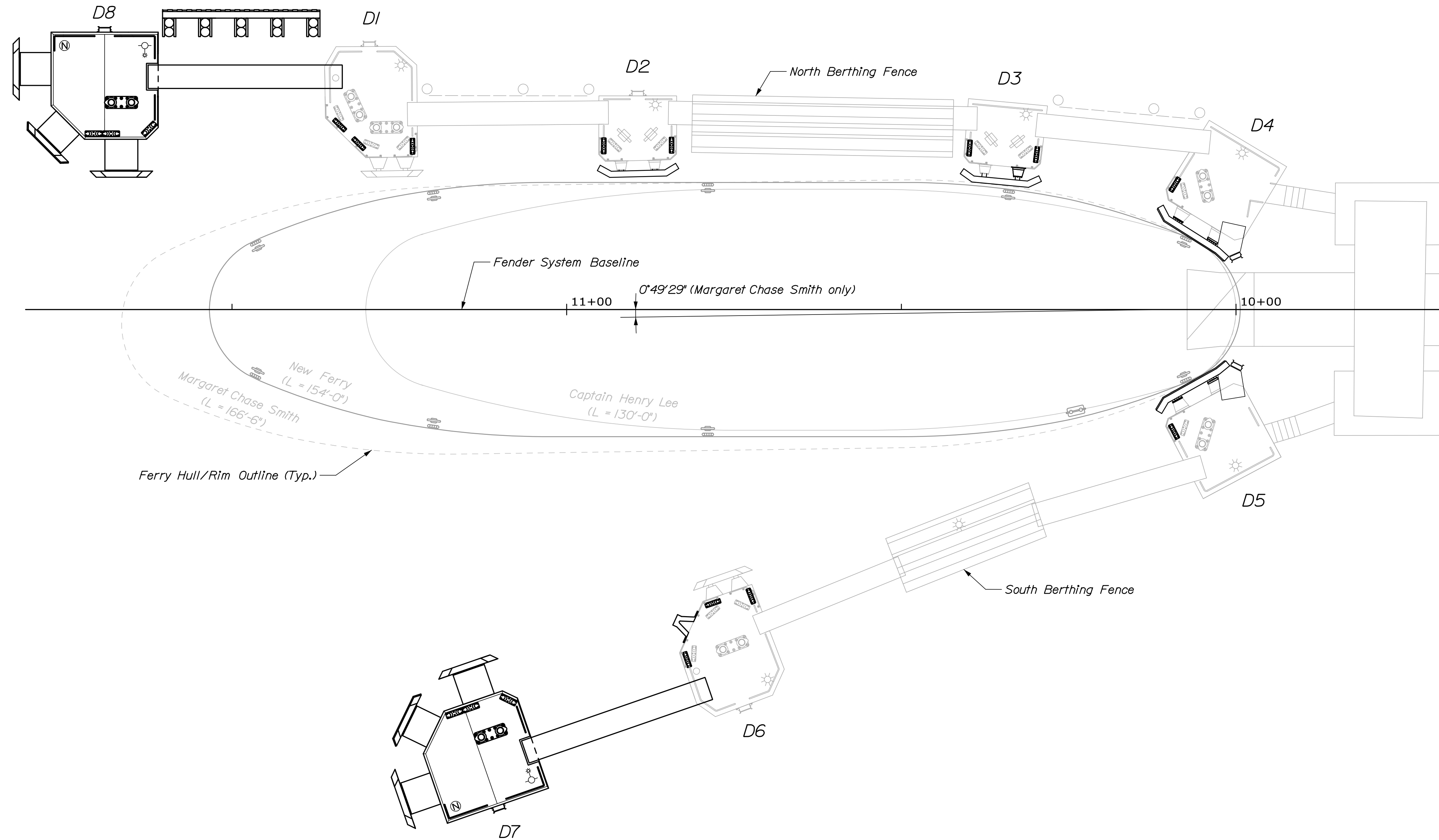


Date: 3/22/2021

Username:

Division:

Filename: 006\_Berth Plan.dgn



**NOTES:**  
 1. MV Captain Henry Lee is currently in operation. New Ferry is proposed. Margaret Chase Smith is shown for comparative purposes.

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION

WIN  
 023480.00

DATE: 03/21  
 BY: P. Bishop  
 CHECKED: C. Morin  
 DESIGN-REVIEWED: N. Willey  
 DESIGN-REVIEWED: C. Morin  
 DESIGN-DETAILED: C. Morin  
 DESIGN-DETAILED: C. Morin  
 REVISIONS 1  
 REVISIONS 2  
 REVISIONS 3  
 REVISIONS 4  
 FIELD CHANGES

SIGNATURE: 10209  
 P.E. NUMBER: 10209  
 DATE:

SWAN'S ISLAND  
 FERRY TERMINAL  
 BERTH PLAN

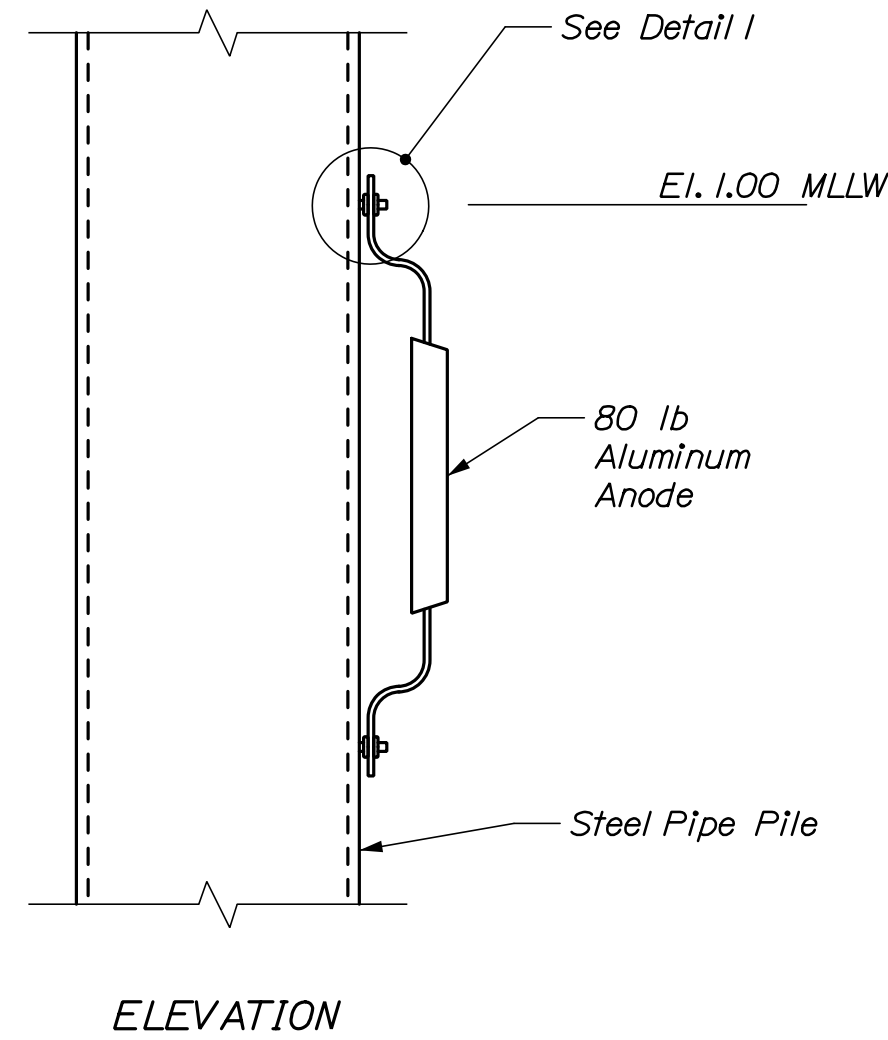
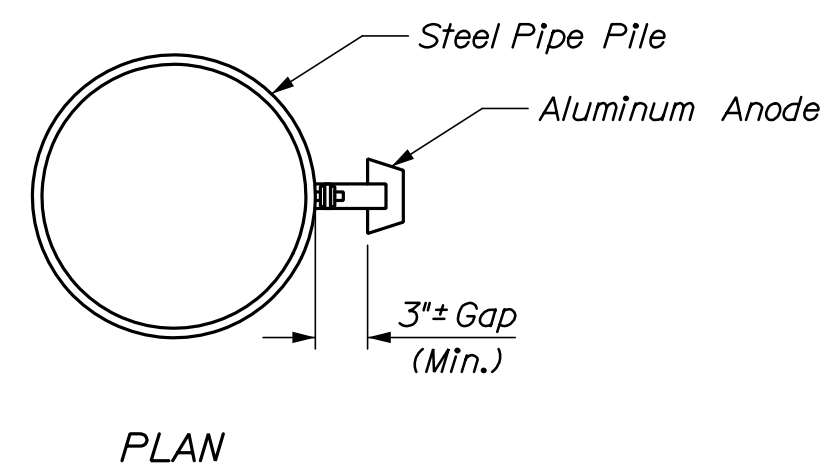
SHEET NUMBER

S02

6 OF 18

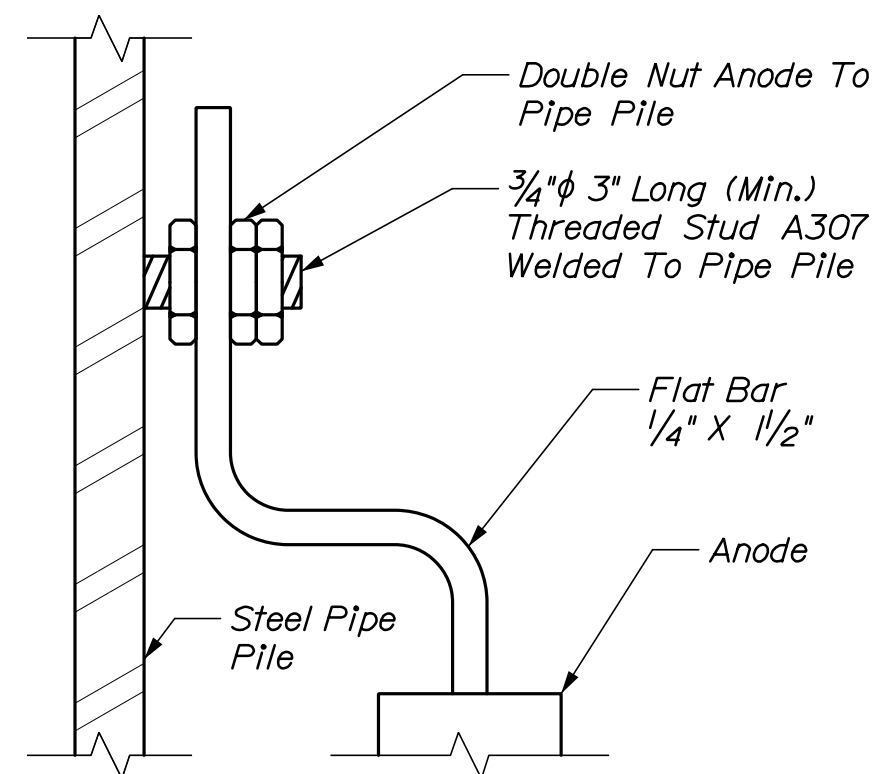






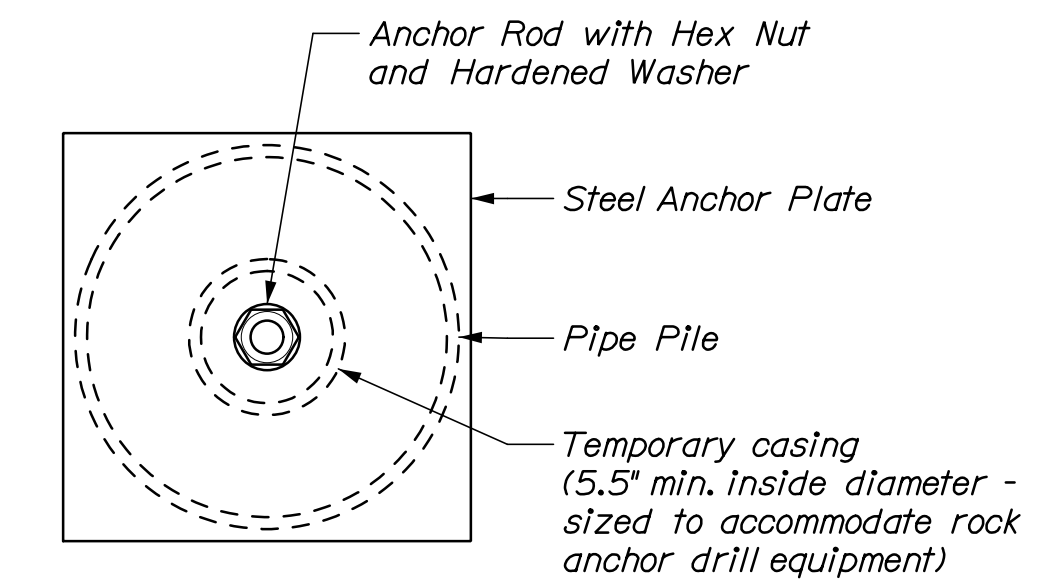
Note: Anode shall be positioned along the inshore face of piles. Set top of Anode at +1.00 MLLW

ANODE DETAIL  
N.T.S.

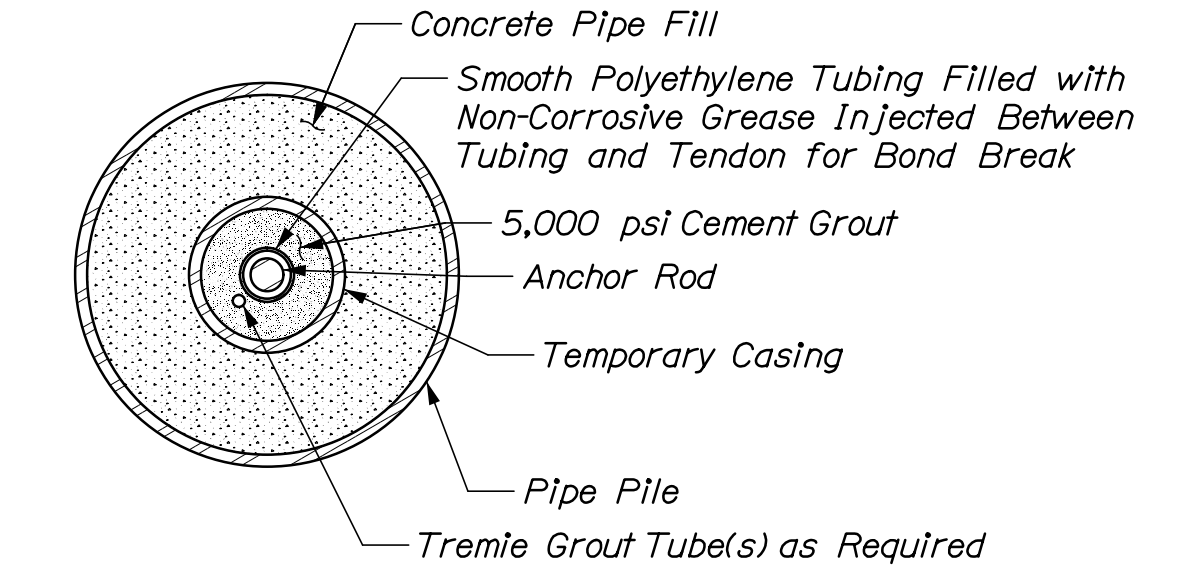


Note: Studs and hardware shall be A307.

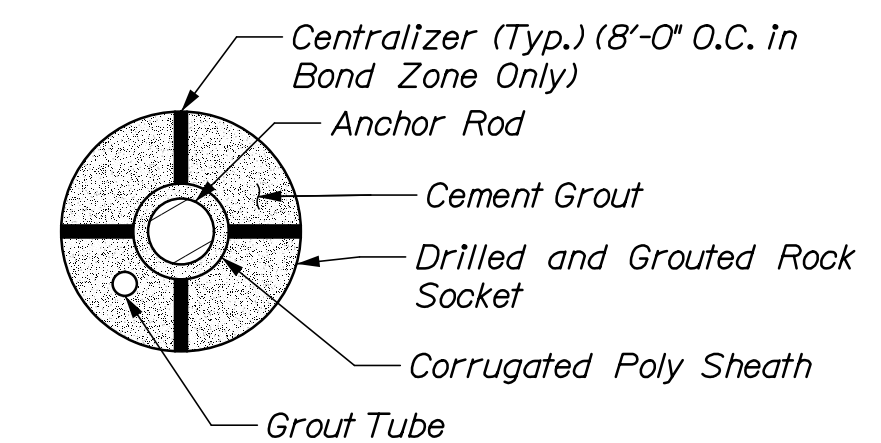
N.T.S.



N.T.S.



N.T.S.



N.T.S.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

WIN  
023480.00

PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	BY	DATE	SIGNATURE
	N. Willey	C. Morin	P. Bishop C. Morin	03/21 03/21	10/209
	DESIGN-DETAILED				P.E. NUMBER
	REVISIONS 1				DATE
	REVISIONS 2				
	REVISIONS 3				
	REVISIONS 4				
	FIELD CHANGES				

SWAN'S ISLAND  
FERRY TERMINAL  
DOLPHIN FOUNDATION  
DETAILS

SHEET NUMBER

S04

8 OF 18

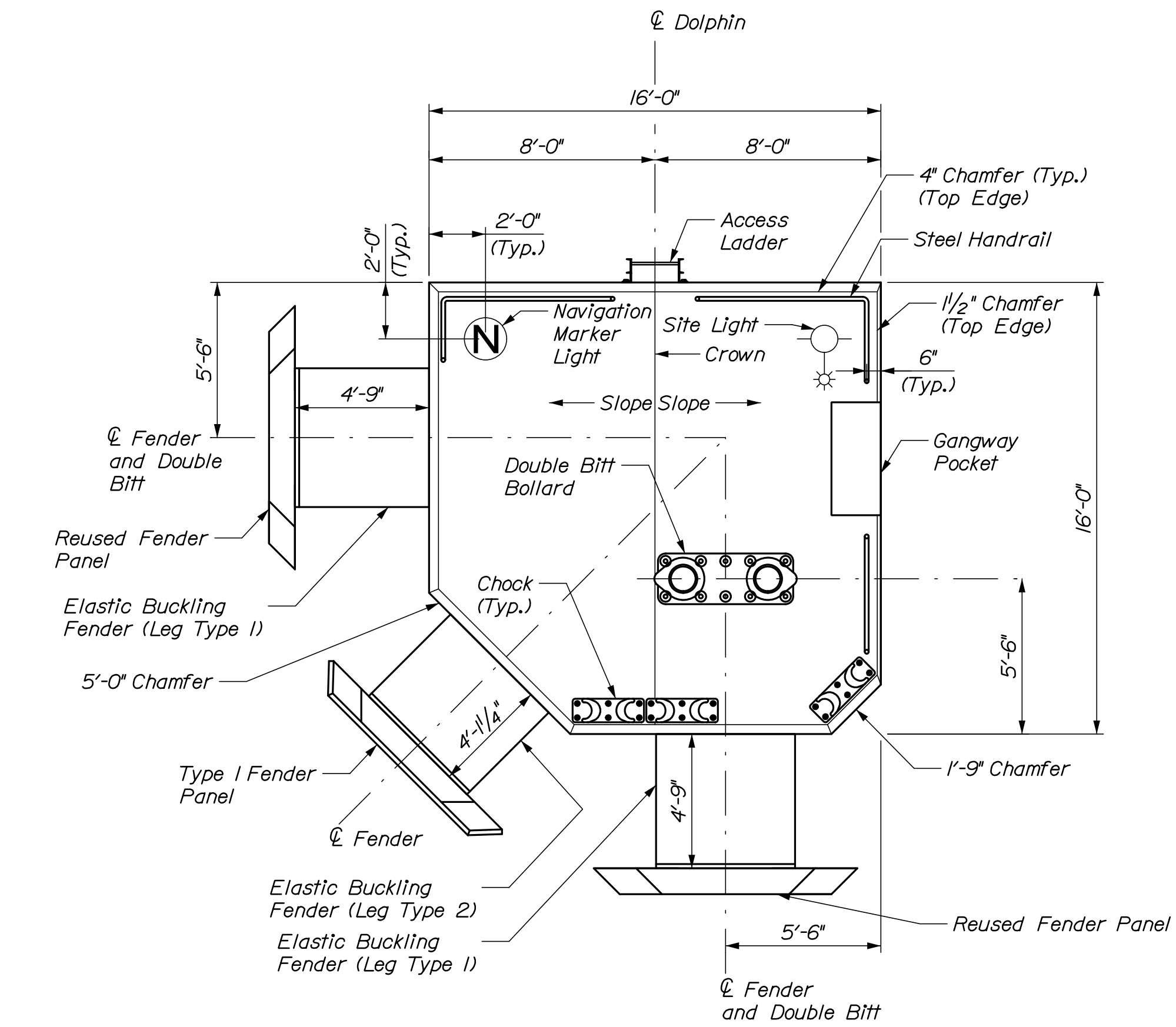
**HNTB**

Date: 3/22/2021

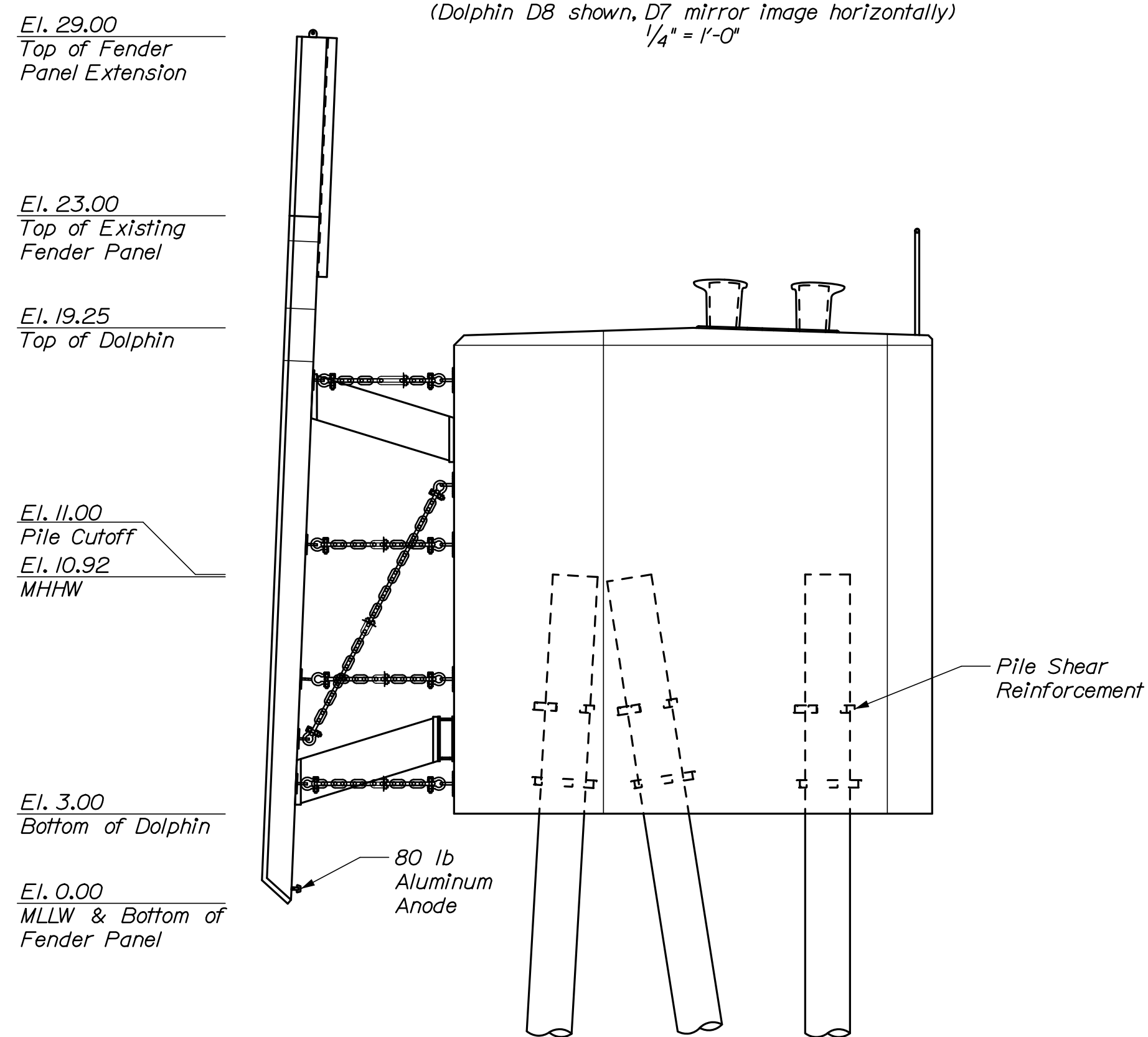
Username:

Division:

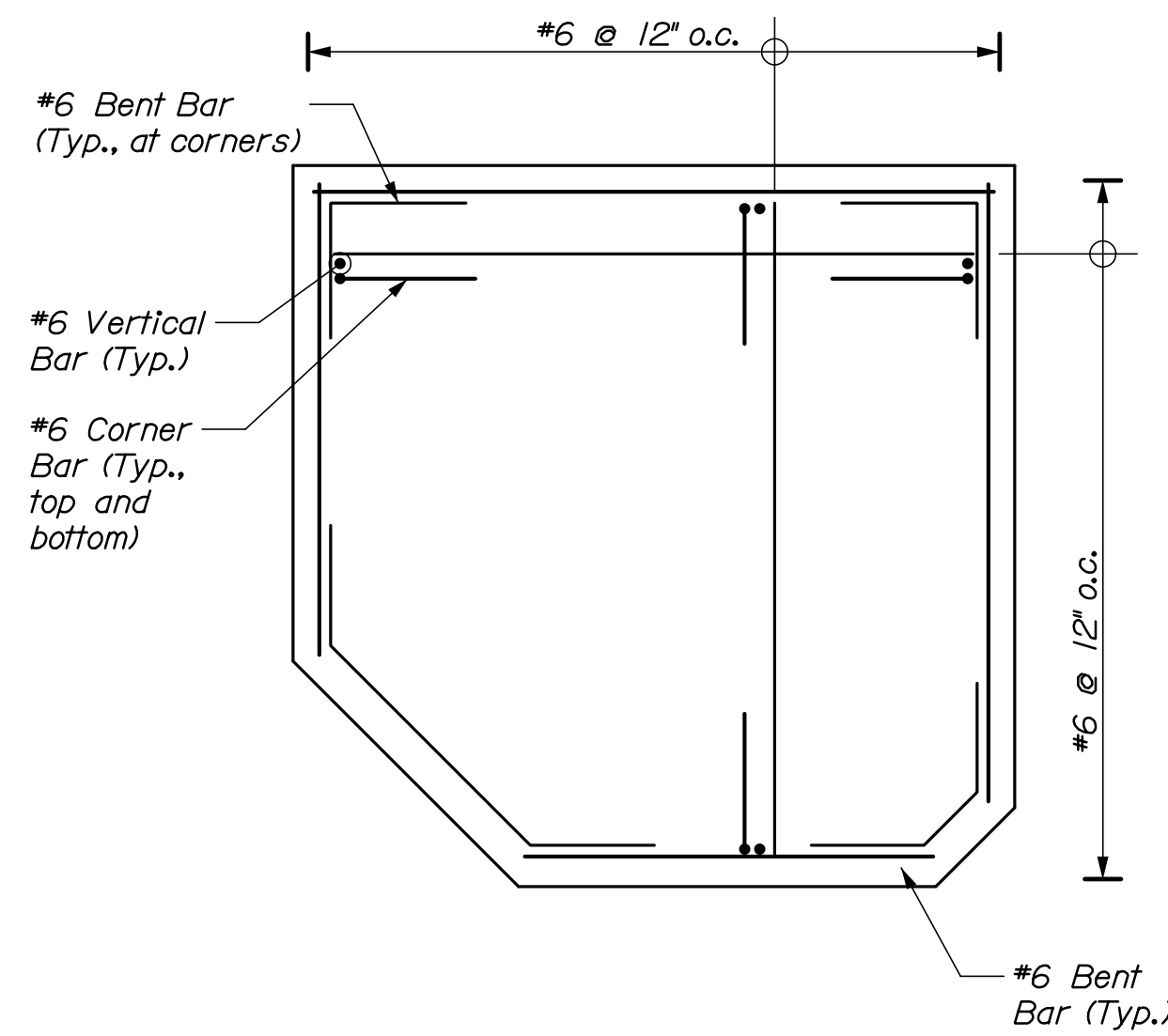
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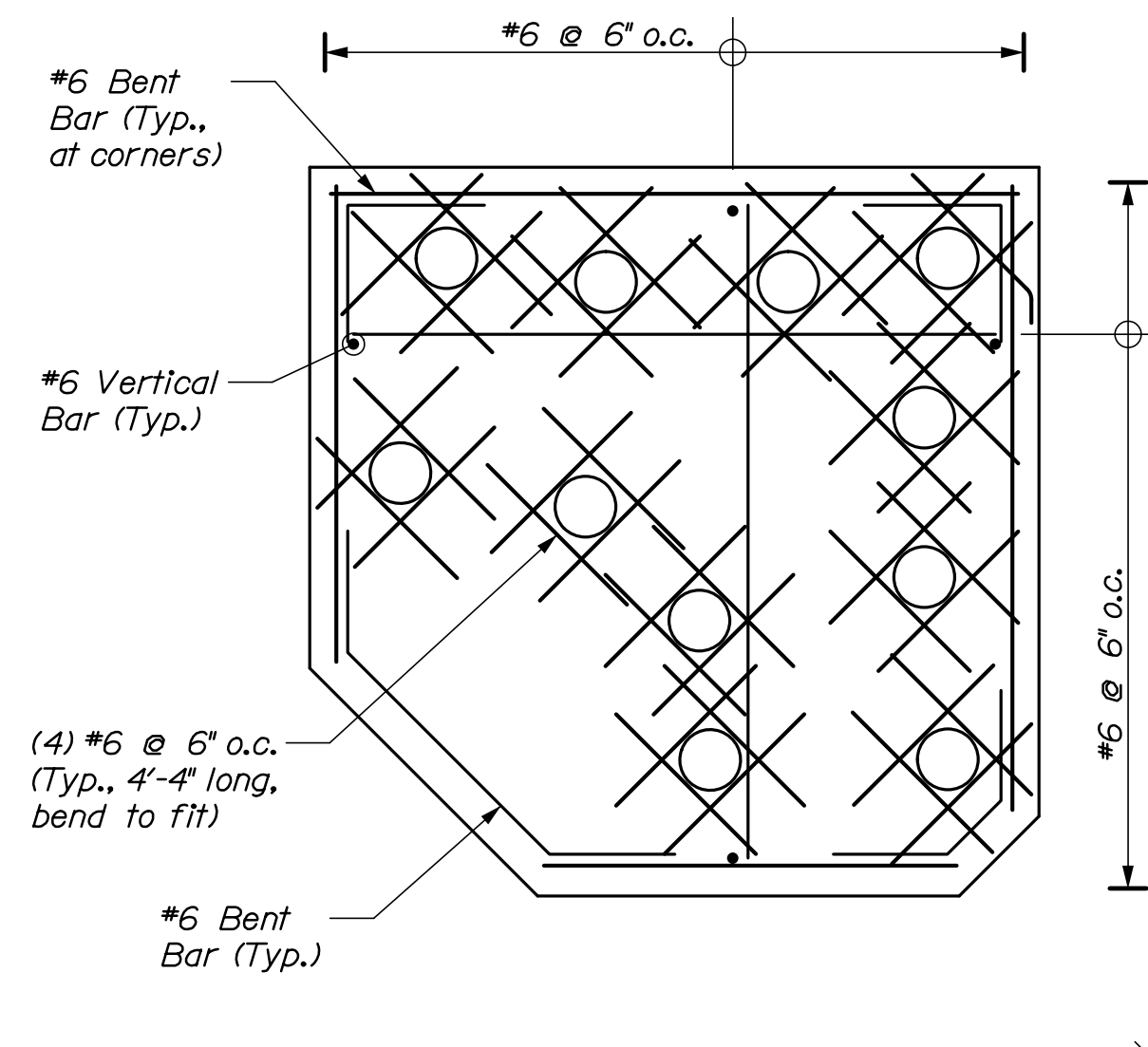
**TURNING DOLPHIN PLAN**  
(Dolphin D8 shown, D7 mirror image horizontally)  
 $1/4" = 1'-0"$



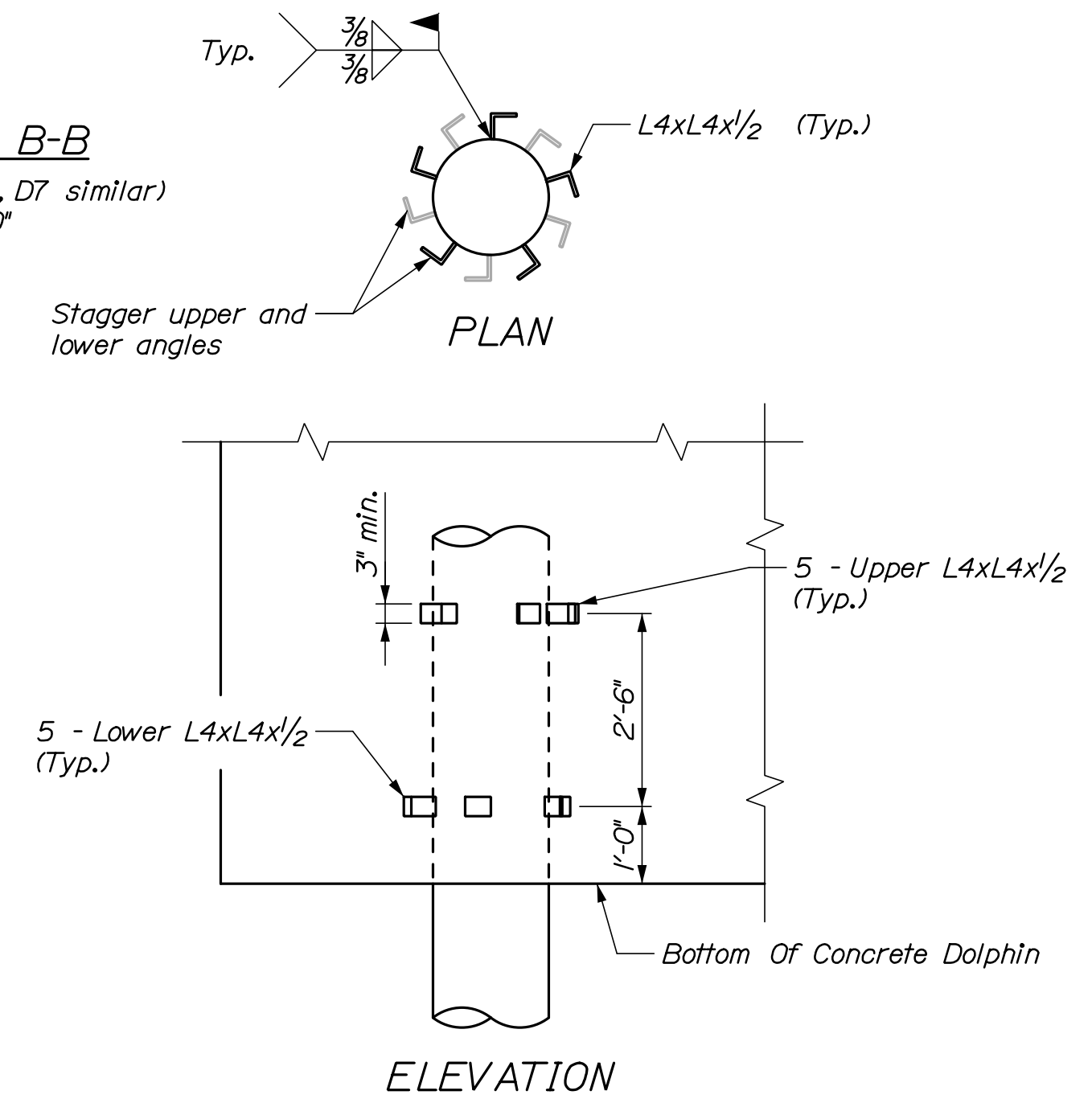
**TURNING DOLPHIN ELEVATION**  
(Select fenders and chocks not shown for clarity)  
 $1/4" = 1'-0"$



**SECTION A-A**  
(Dolphin D8 shown, D7 similar)  
(Same as shown for El. 9.50 - 11.00, but with pile cutouts)  
 $1/4" = 1'-0"$



**SECTION B-B**  
(Dolphin D8 shown, D7 similar)  
 $1/4" = 1'-0"$



**PILE SHEAR REINFORCEMENT**  
 $1/2" = 1'-0"$

**NOTES:**

1. For anode details, see Sheet S04.
2. For double bitt and chock details, see Sheet S06.
3. For handrail and access ladder details, see Sheet S09.
4. For gangway pocket and transition plate detail, see Sheet S12.
5. All reinforcing shall be cut to maintain 2" clear from piles and 3" clear of concrete surfaces.
6. Reinforcing bars shall be adjusted to maintain 1" clear from anchor rods.
7. Crown slope at top of dolphin shall be  $1/4"$  per foot and pitched as shown.

**TURNING DOLPHIN REINFORCING TYPICAL SECTION**  
 $1/4" = 1'-0"$

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED N. Willey	P. Bishop	03/21			
CHECKED-REVIEWED C. Morin	C. Morin	03/21		10209	
DESIGN-DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

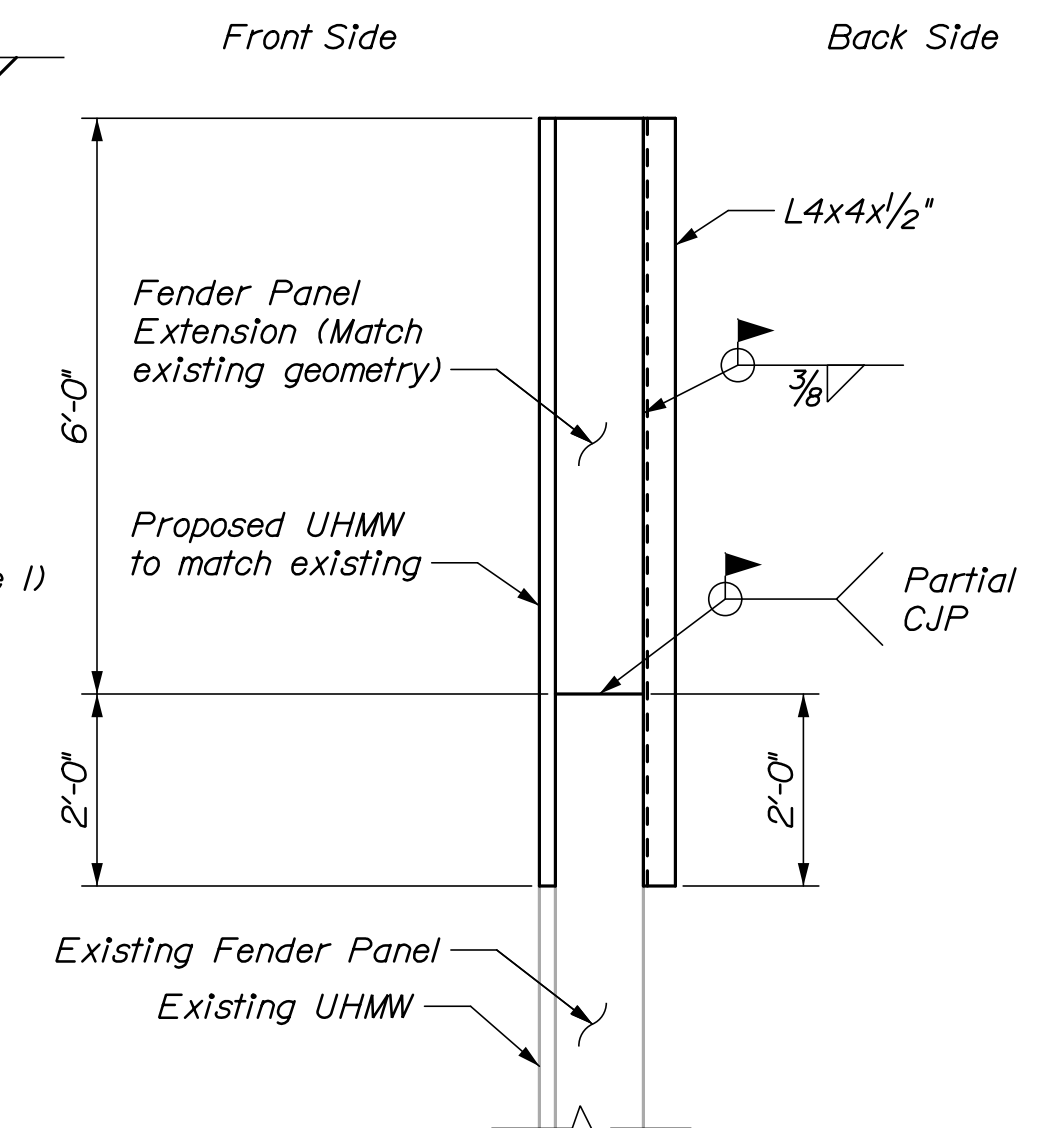
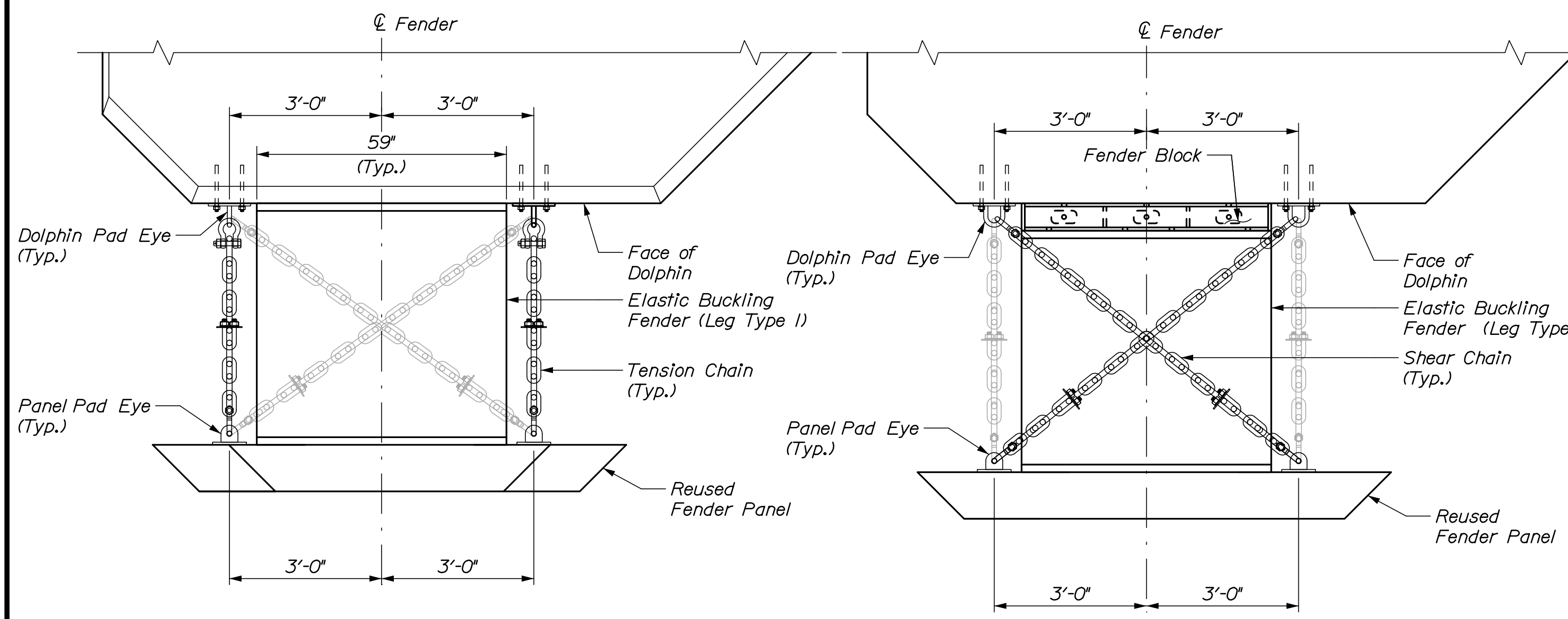


Date: 3/22/2021

Username:

Division:

Filename: 011\_Fender System 1.dgn

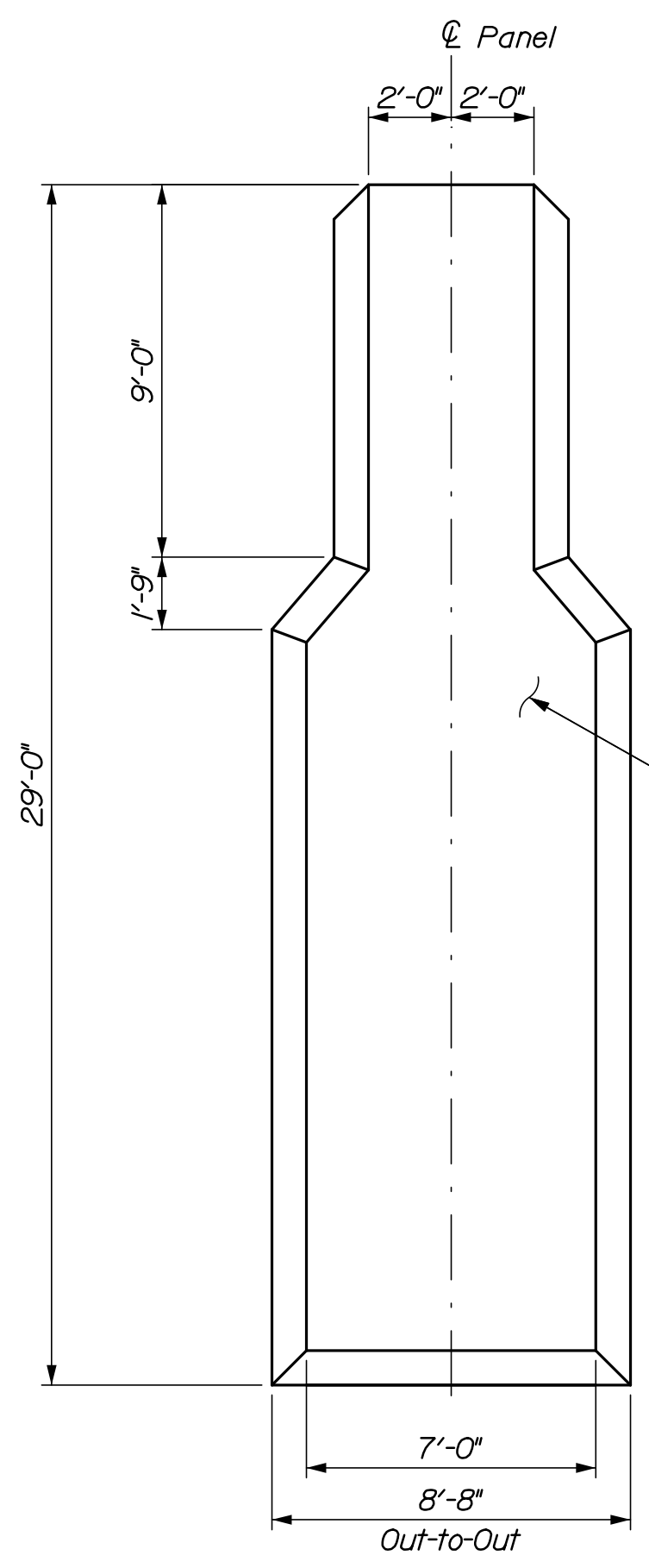


- NOTES:**
- Contractor shall use fender plate or fender block detail to maintain proposed fender panel alignment.
  - For dolphin pad eye, panel pad eye, steel fender block, panel anode, and spacer plate details, see Sheet S08.
  - Contractor shall remove obstructions or modify detail for panel extension.
  - Elastic buckling fenders (Leg Type 1) shall be Trelleborg Compound B MV 1450x1500, or approved equal.
  - Elastic buckling fenders (Leg Type 2) shall be Trelleborg Compound B MV 1250x1500, or approved equal.
  - Contractor shall verify geometry and dimensions of existing panels based on field measurements.

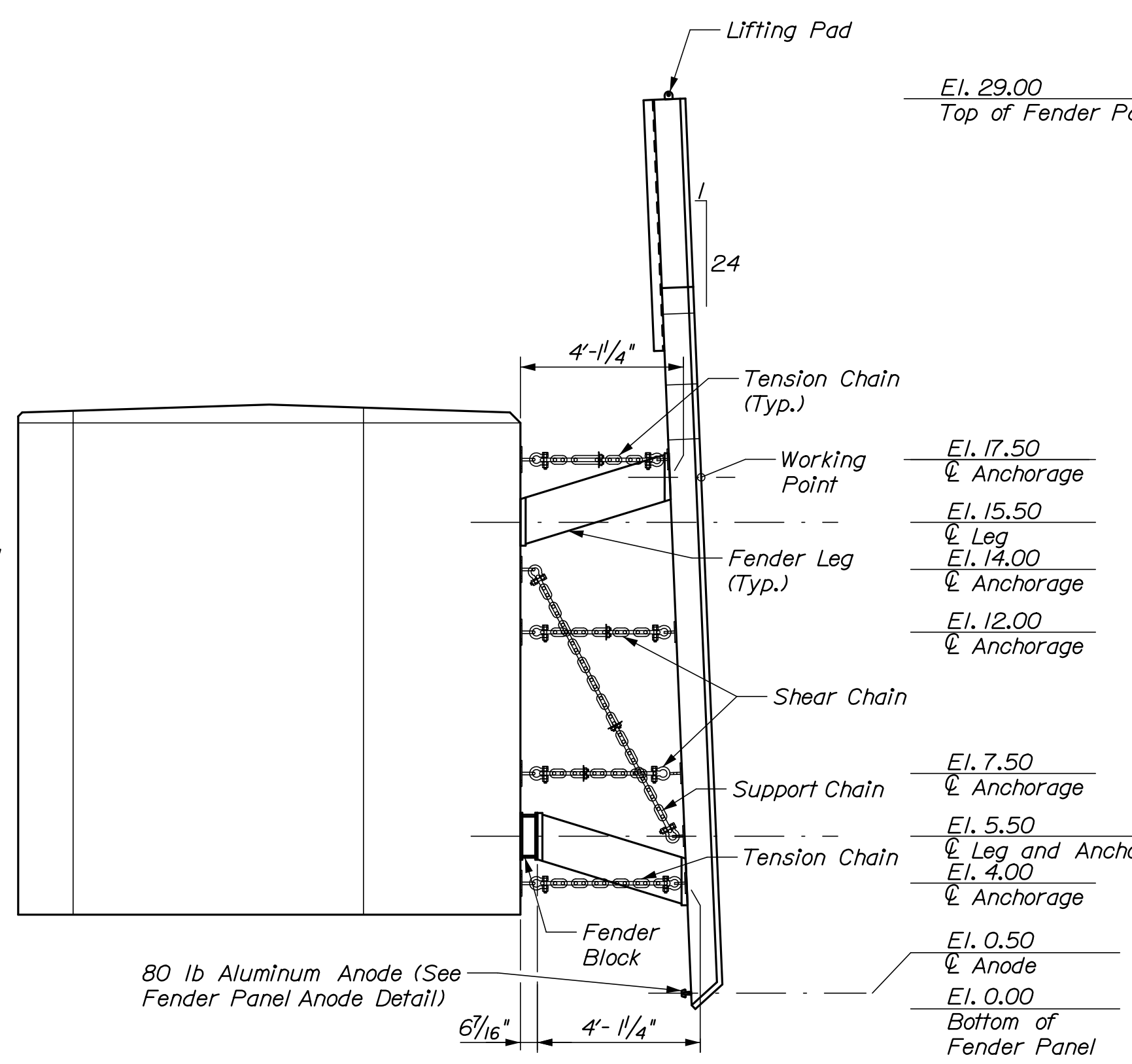
**PLAN - TOP OF FENDER PANEL**  
 (DT Pen facing fender with Leg Type 1 shown, others similar)  
 1/2" = 1'-0"

**PLAN - BOTTOM OF FENDER PANEL**  
 (DT Pen facing fender with Leg Type 1 shown, others similar)  
 1/2" = 1'-0"

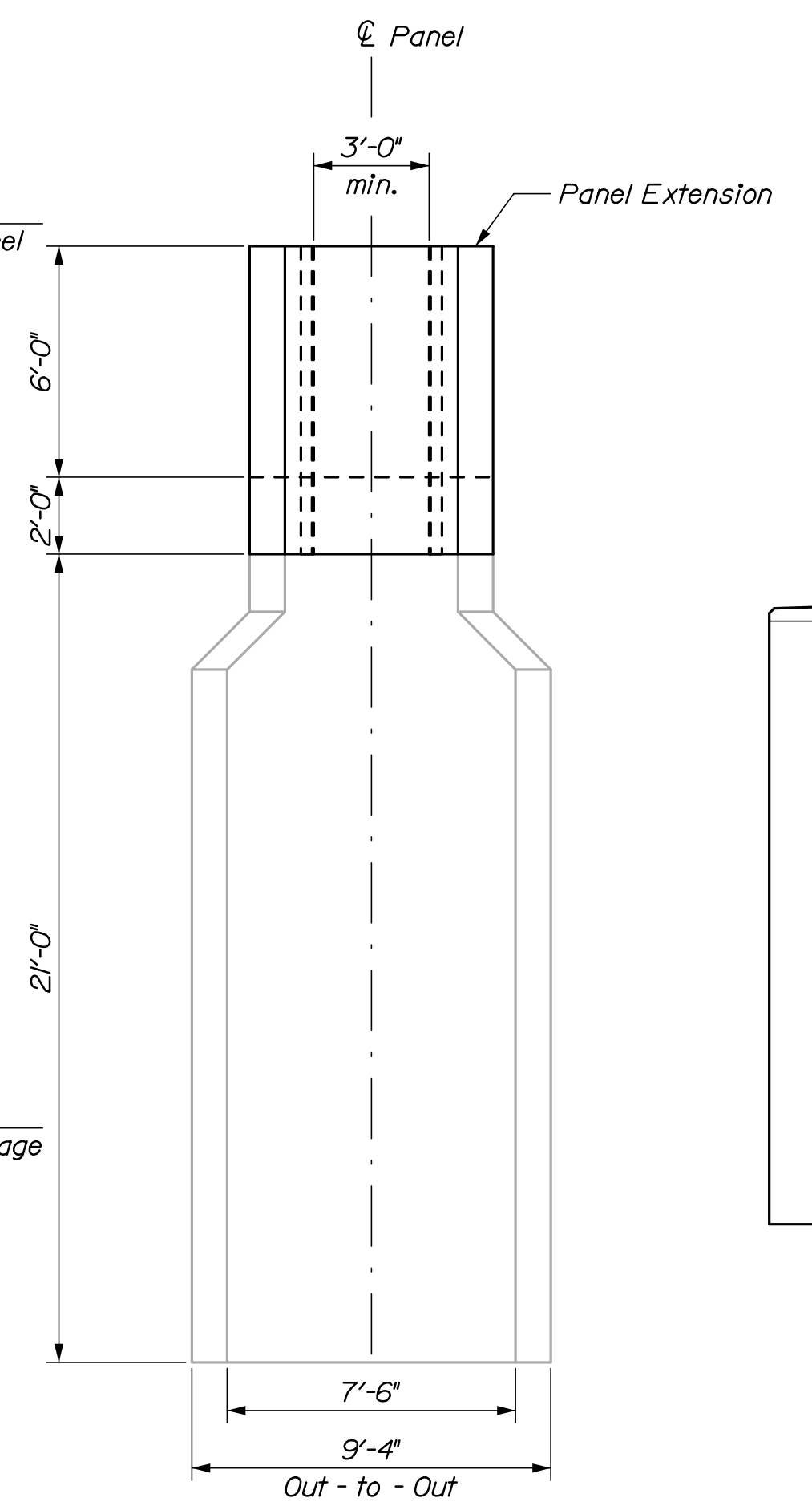
**TYPICAL PANEL EXTENSION DETAIL**  
 1/2" = 1'-0"



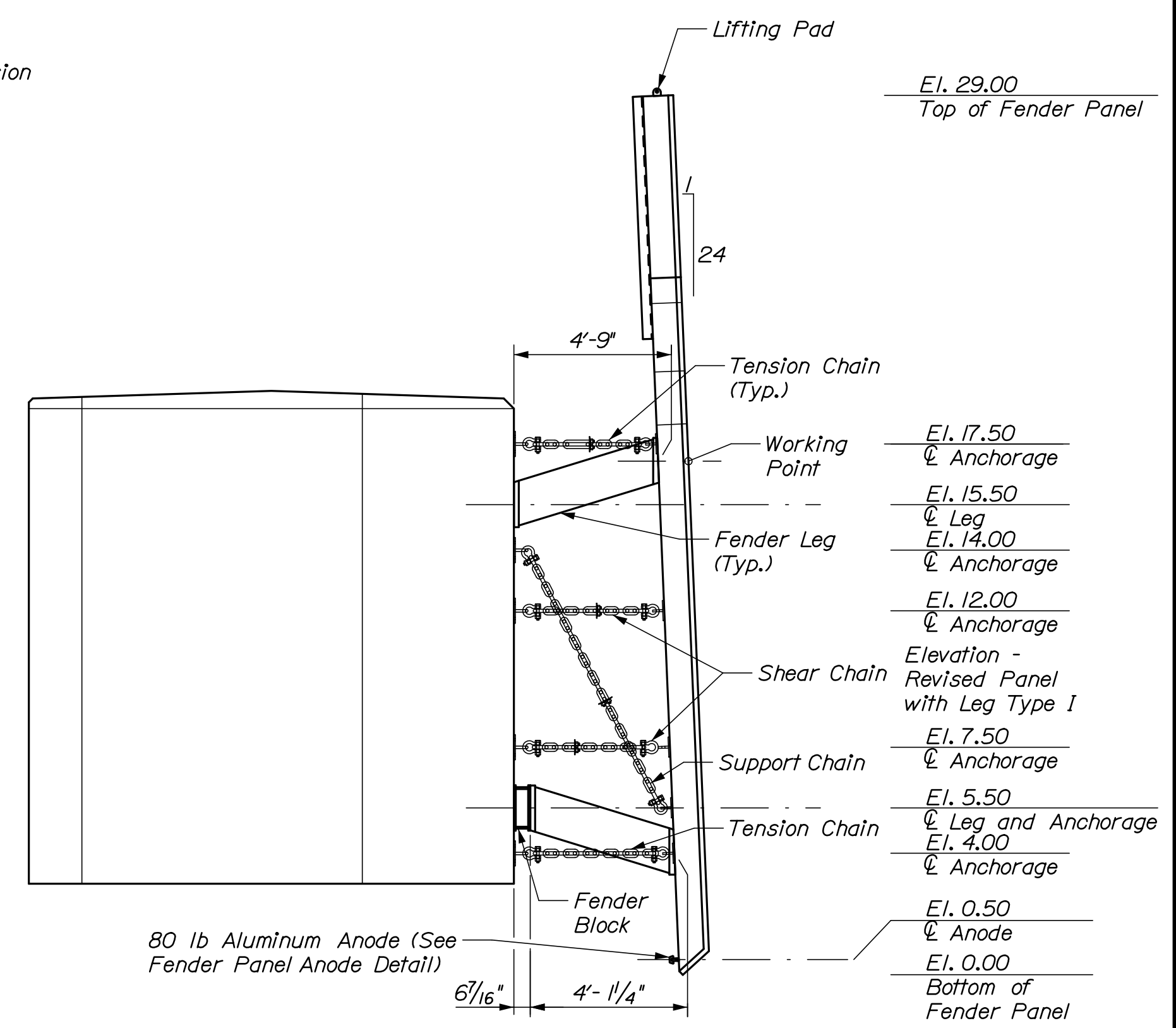
**TYPE I PANEL**  
 1/4" = 1'-0"



**ELEVATION - TYPE I PANEL WITH LEG TYPE 2**  
 (Foundation piles and hardware not shown for clarity)  
 1/4" = 1'-0"



**REUSED PANEL**  
 1/4" = 1'-0"



**ELEVATION - REUSED PANEL WITH LEG TYPE I**  
 (Foundation piles and hardware not shown for clarity)  
 1/4" = 1'-0"

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION

PROJ. MANAGER: N. Willey  
 CHECKED/REVIEWED: P. Bishop  
 DESIGN-DETAILED: C. Morin  
 DATE: 03/21

DESIGN-DETAILED: C. Morin  
 CHECKED/REVIEWED: P. Bishop  
 DATE: 03/21

DESIGN-DETAILED: C. Morin  
 CHECKED/REVIEWED: P. Bishop  
 DATE: 03/21

DESIGN-DETAILED: C. Morin  
 CHECKED/REVIEWED: P. Bishop  
 DATE: 03/21

SHEET NUMBER  
**S07**  
 11 OF 18

WIN 023480.00



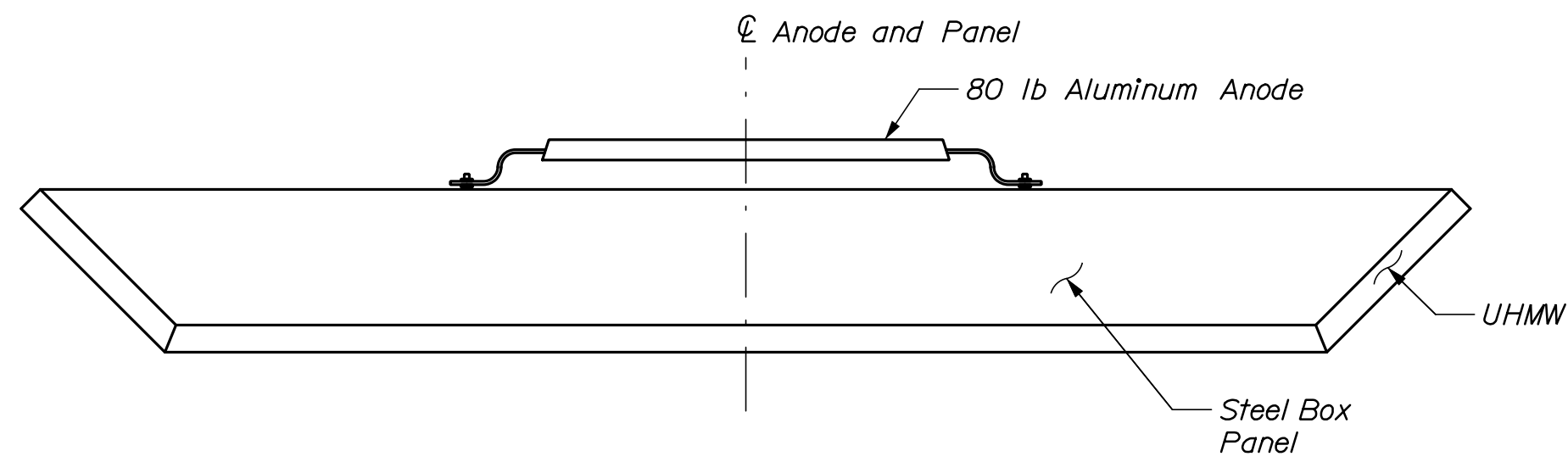
SWAN'S ISLAND  
 FERRY TERMINAL  
 DOLPHIN DETAILS  
 FENDER SYSTEM I

Date: 3/22/2021

Username:

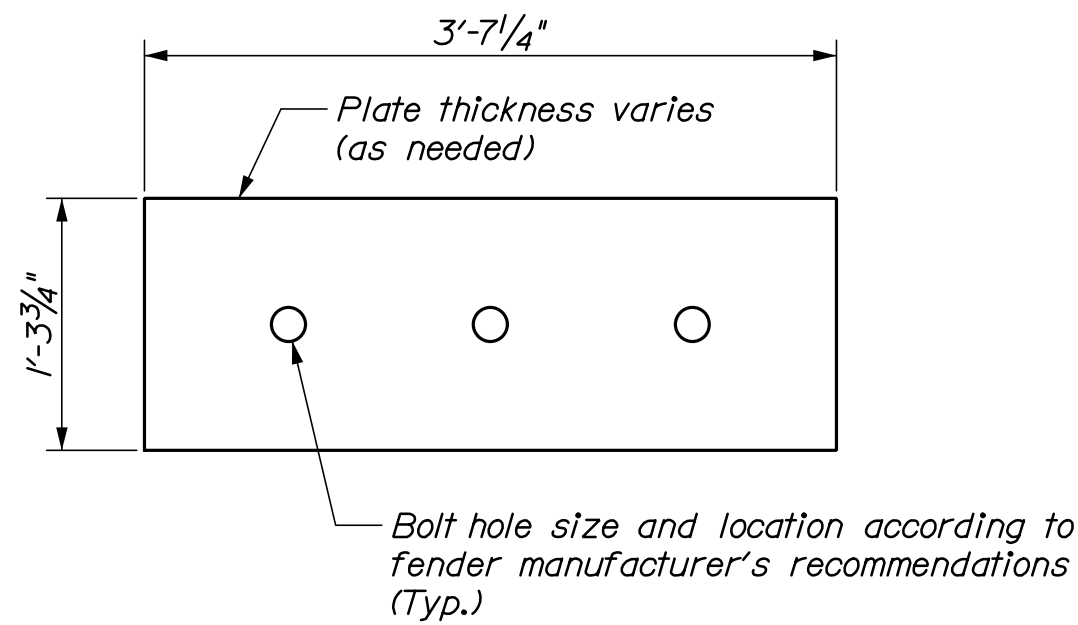
Division:

Filename: 012\_Fender System 2.dgn



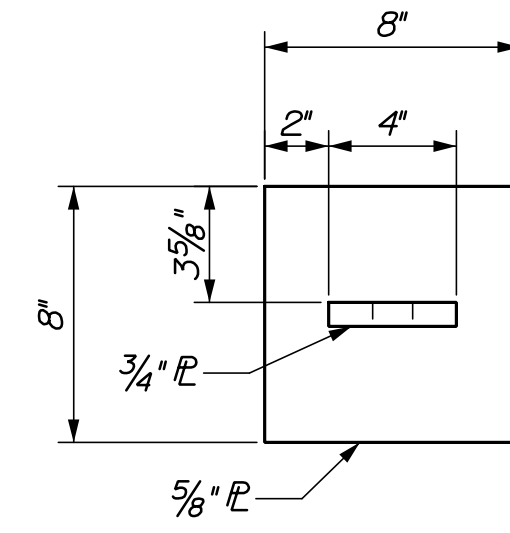
FENDER PANEL ANODE DETAIL

1" = 1'-0"



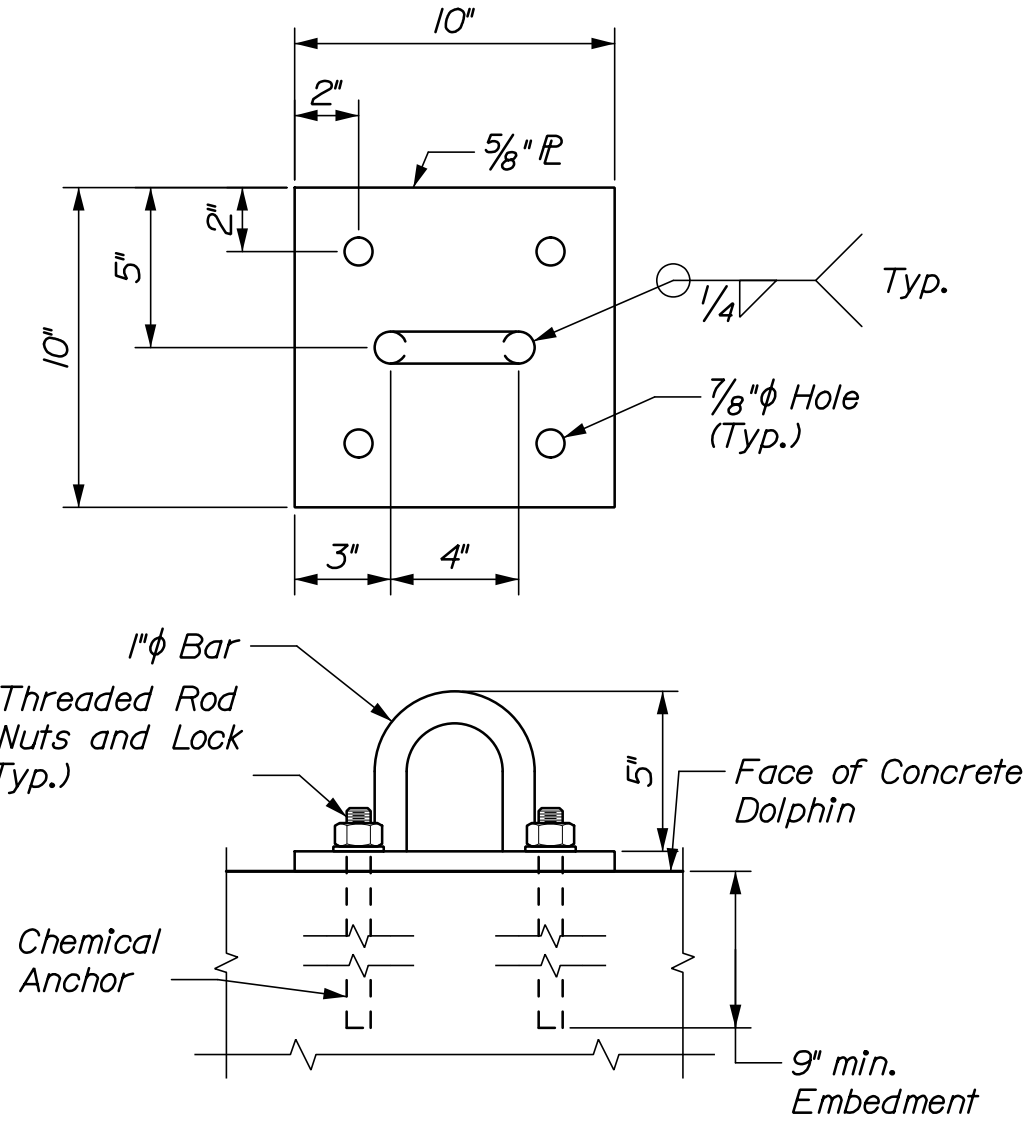
TYPE I PANEL SPACER PLATE DETAIL

1" = 1'-0"



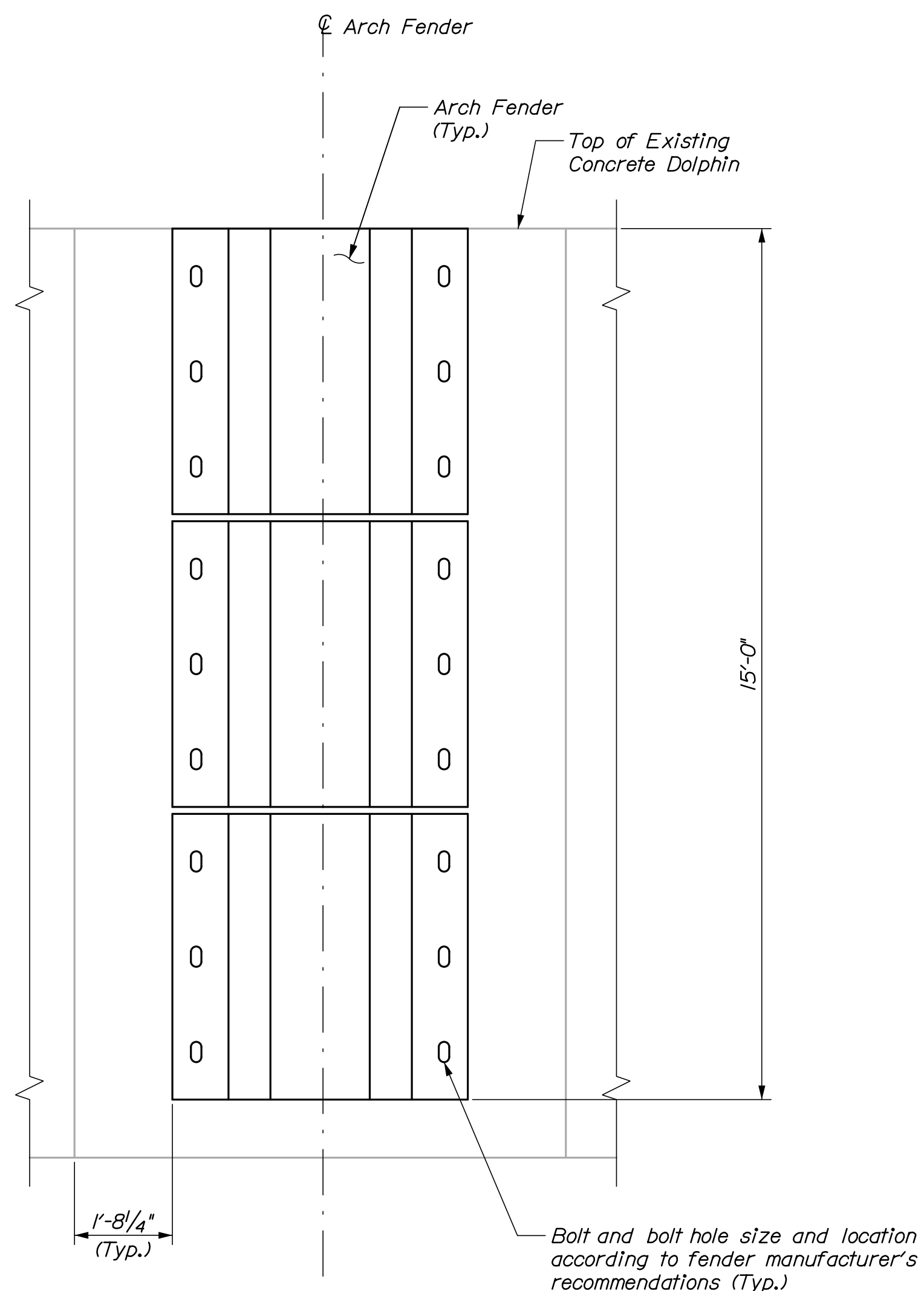
PANEL PAD EYE DETAIL

2" = 1'-0"



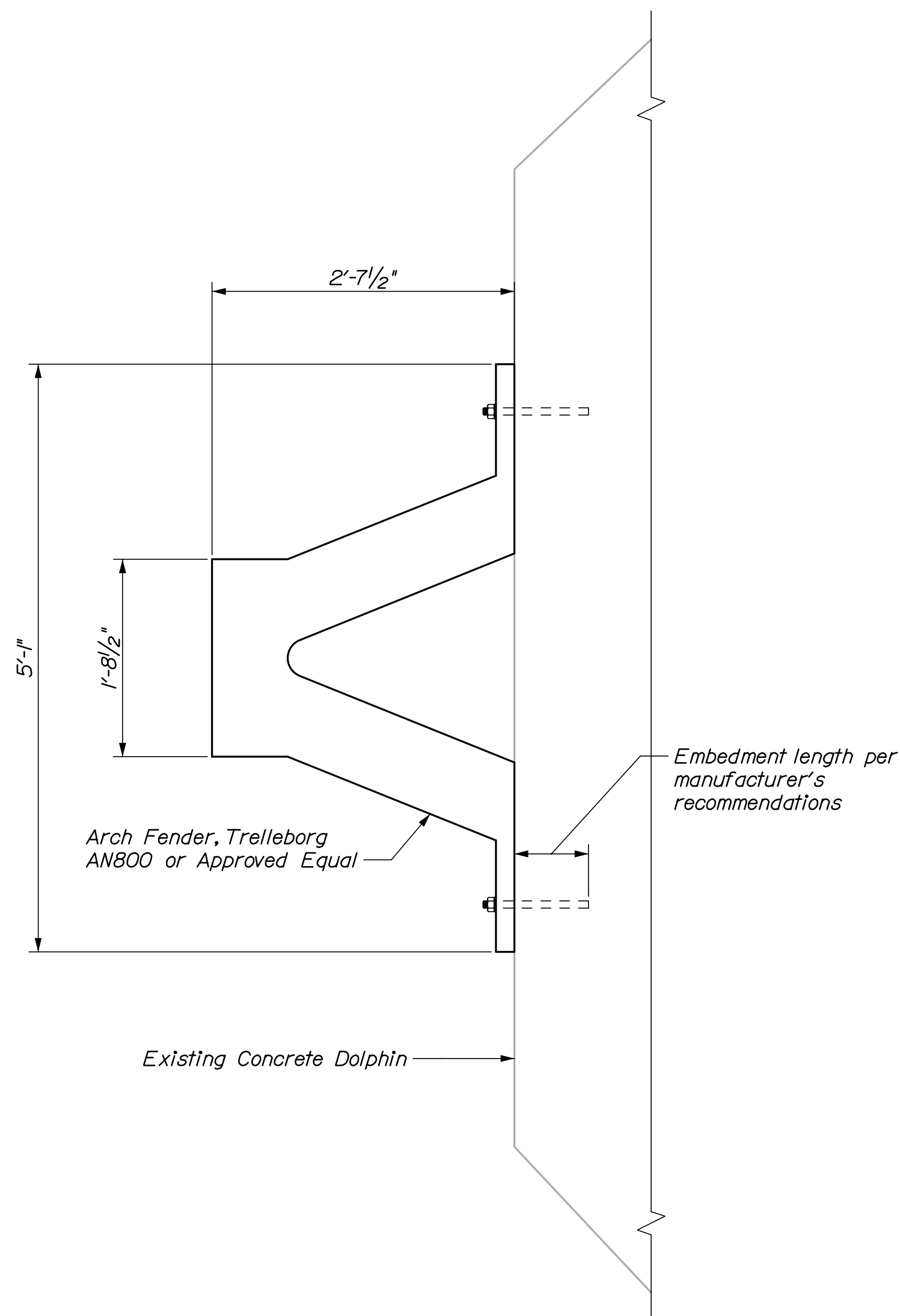
DOLPHIN PAD EYE DETAIL

2" = 1'-0"



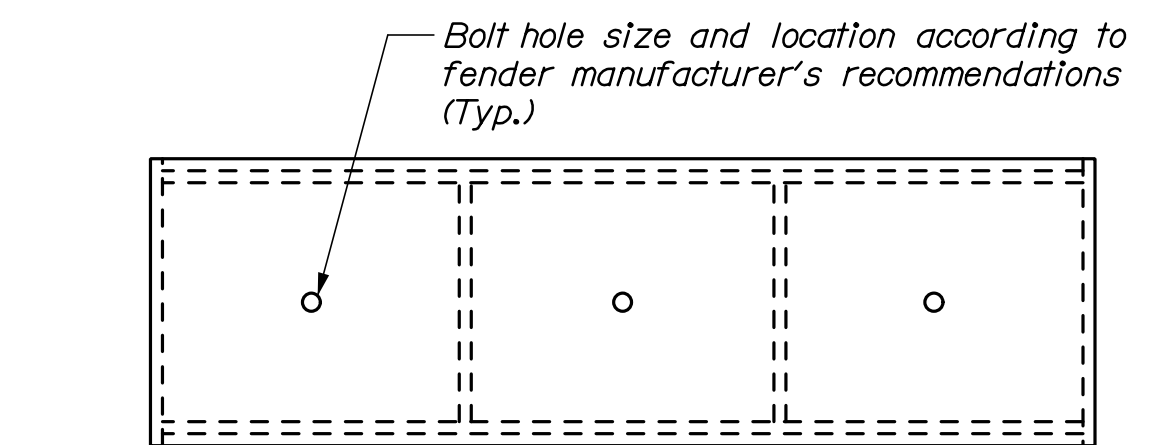
ELEVATION - ARCH FENDER

1" = 1'-0"

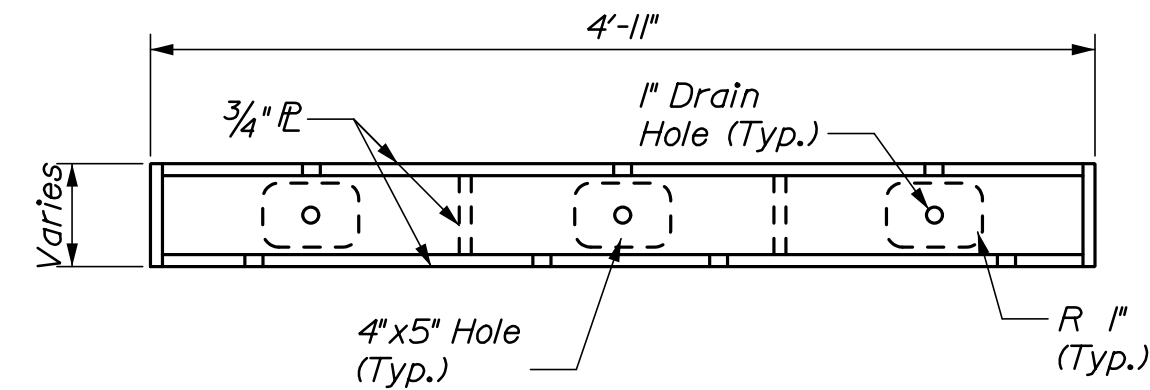


ARCH FENDER TYPICAL SECTION

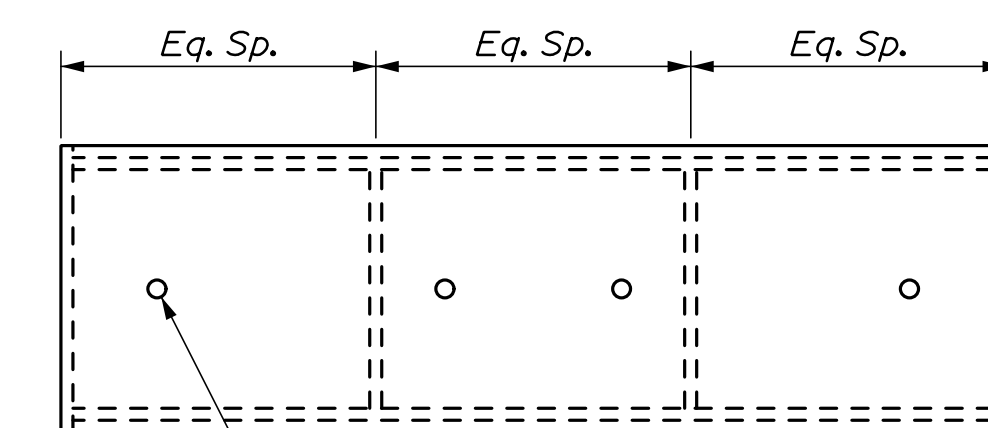
1" = 1'-0"



FRONT ELEVATION



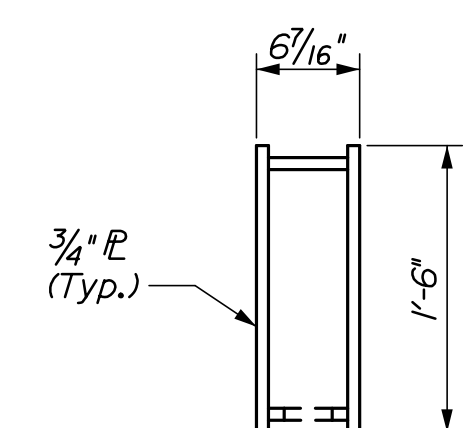
PLAN



BACK ELEVATION

STEEL FENDER BLOCK

1" = 1'-0"



SECTION

NOTES:

1. For anode attachment details, see Sheet S04.
2. All steel hardware shall be hot-dip galvanized.

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PROJ. MANAGER	BY	DATE	SIGNATURE
N. Willey	P. Bishop	03/21	
C. Morin	C. Morin	03/21	
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SWAN'S ISLAND  
FERRY TERMINAL

DOLPHIN DETAILS  
FENDER SYSTEM II

SHEET NUMBER

S08

12 OF 18

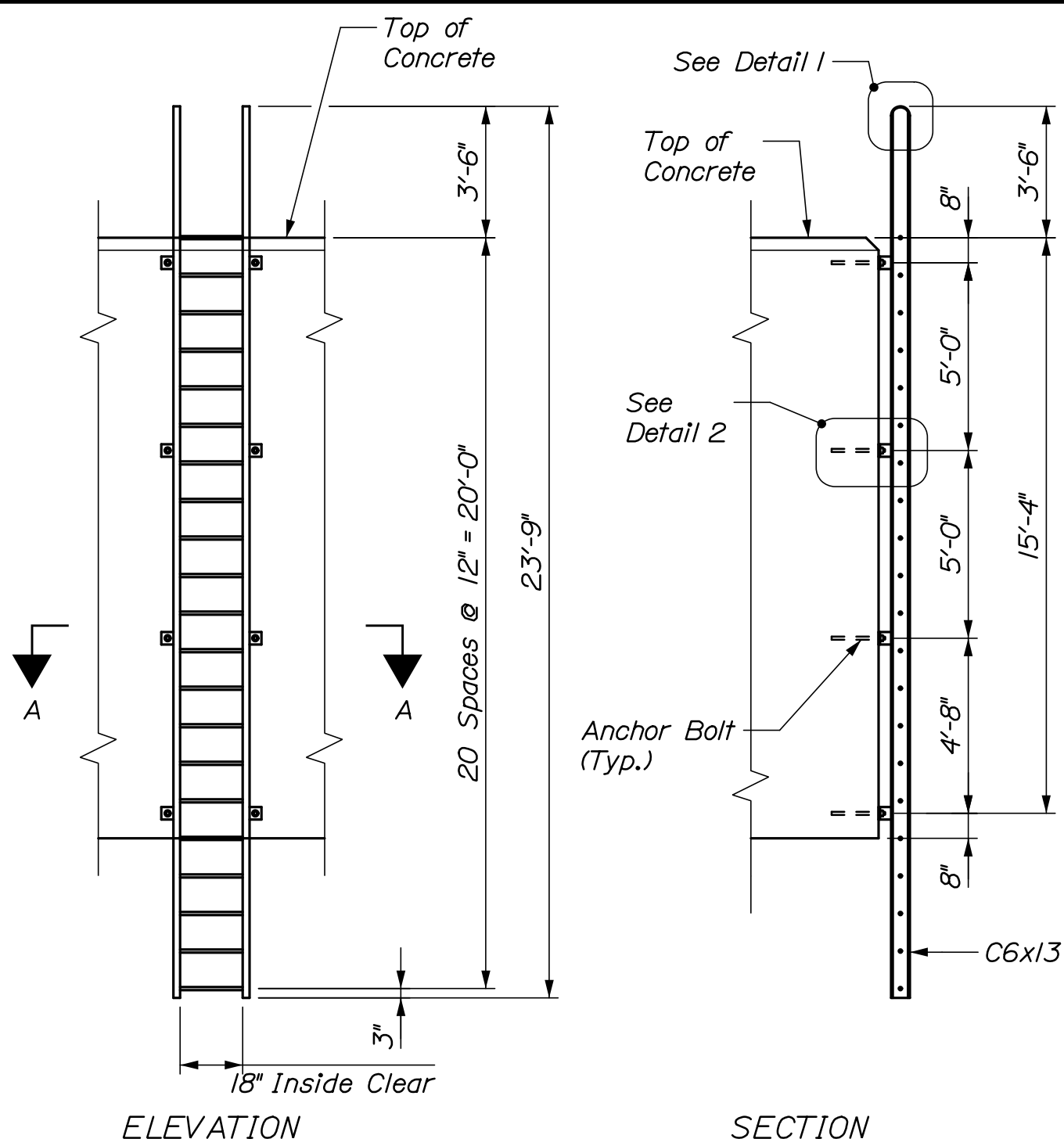
HNTB

Date: 3/22/2021

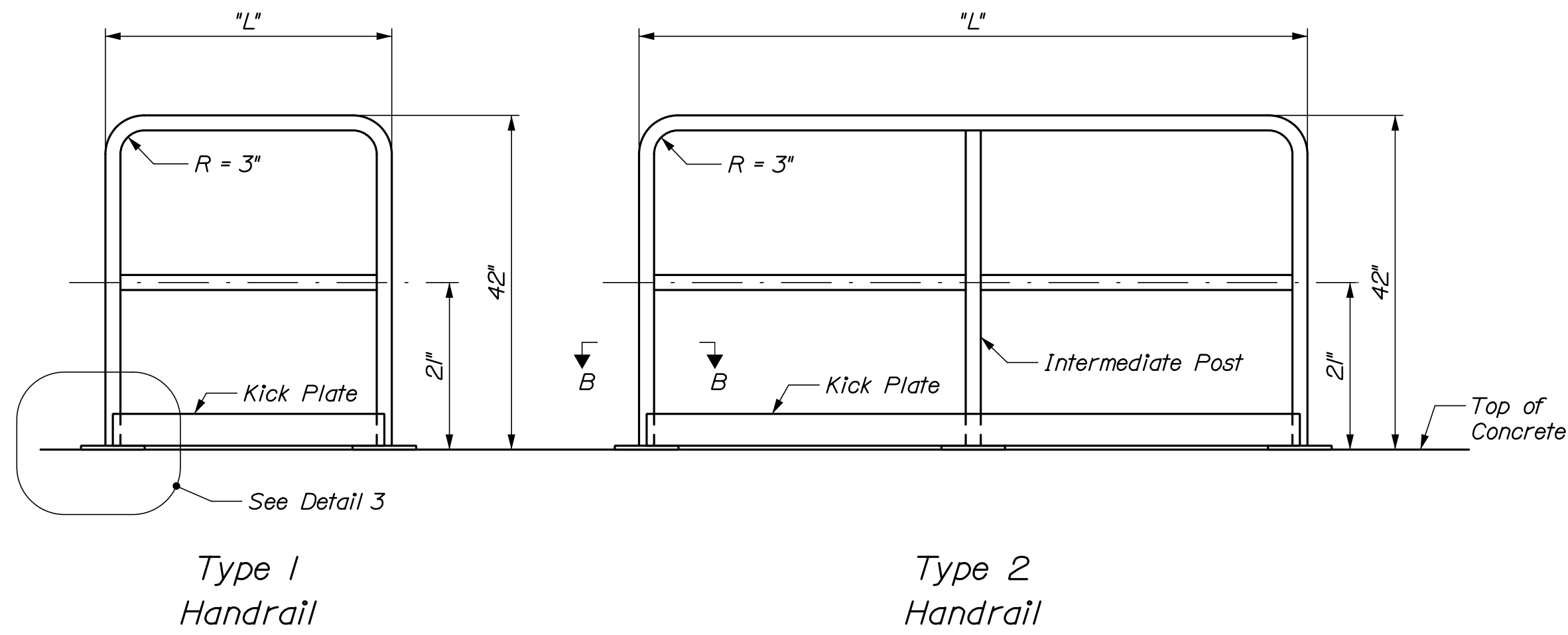
Username:

Division:

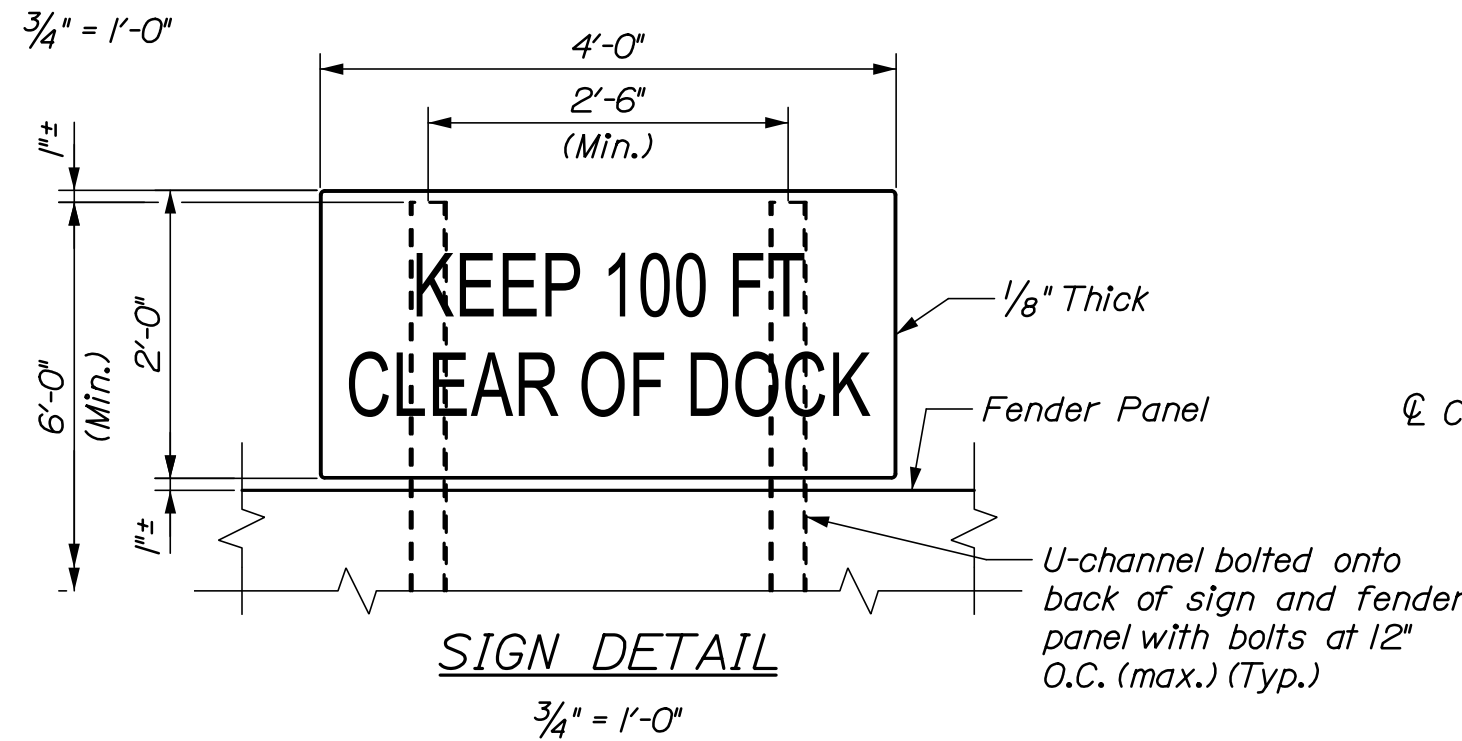
Filename: 013\_Miscellaneous Details.dgn



**DOLPHIN ACCESS LADDER**  
1/4" = 1'-0"



**HANDRAIL DETAIL**



**SIGN DETAIL**

**TABLE 1  
HANDRAIL SUMMARY TABLE**

Dolphin	Location	Identification
D7	S	T2 - 8'-2" - 2
D7	E	T2 - 9'-0" - 2
D7	N	T1 - 4'-2" - 0
D8	W	T2 - 8'-2" - 2
D8	N	T2 - 9'-4" - 2
D8	E	T1 - 3'-8" - 0

Railing Identification: T2 - L - X

Type	Length	Inter. Post Quantity
T2	L	X

**TABLE 2  
LINE GUARD REMOVAL SUMMARY**

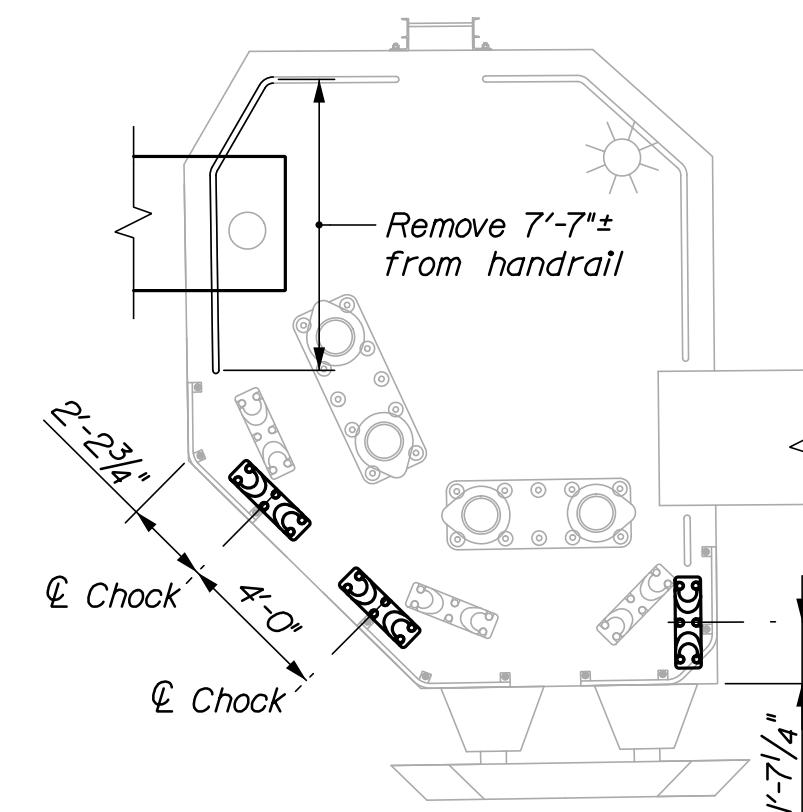
Dolphin	Length of Removal (ft)	No. of Bolts
D1	16	10
D2	13	8
D3	13	8
D4	7	4
D5	7	4
D6	16	10

**NOTES:**

1. Contractor to field verify dimensions of line guards & number of bolts to be removed.

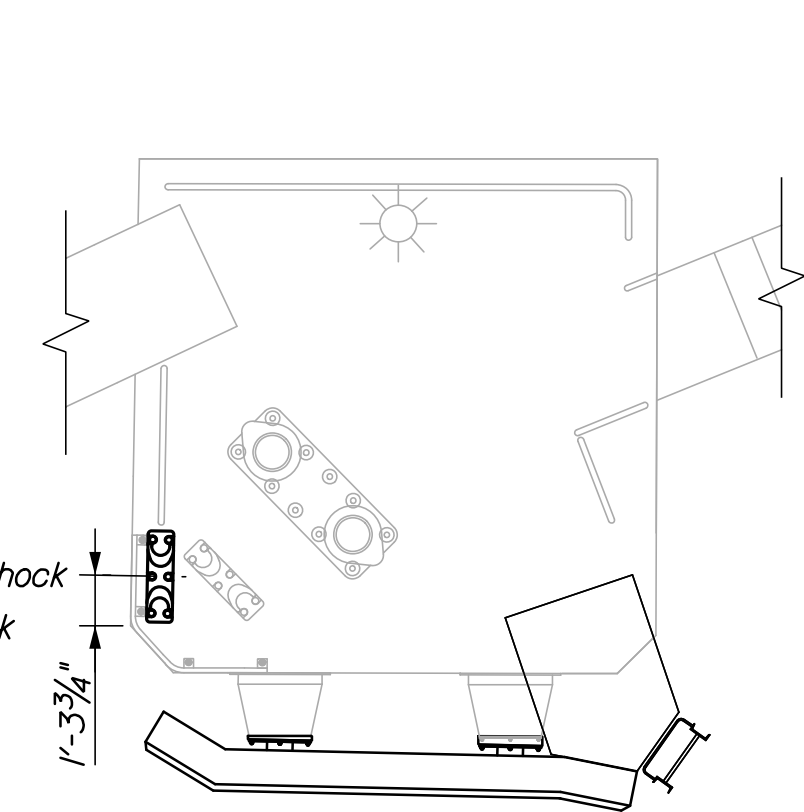
**NOTES:**

- The access ladder shall be designed by the Contractor for a 350 Lb concentrated vertical load acting at any point on the ladder. The ladder shall conform with all applicable provisions of OSHA regulations for ladders and with dimensions shown on the drawings. The ladder assembly shall be hot-dip galvanized after fabrication.
- Where handrail posts or line guard anchorages are removed, fill with Sika Flex IA self leveling sealant, or approved equal.
- For additional details on chock setting, see Sheet S06.
- Contractor shall grind smooth, cap ends of cut handrails, and galvanize exposed steel.
- Contractor shall support the navigation sign along the back of the fender panel with a pair of u-channels in accordance with Special Provision 645, Highway Signing.
- All steel components for ladder, handrails, and sign supports shall be hot-dip galvanized.



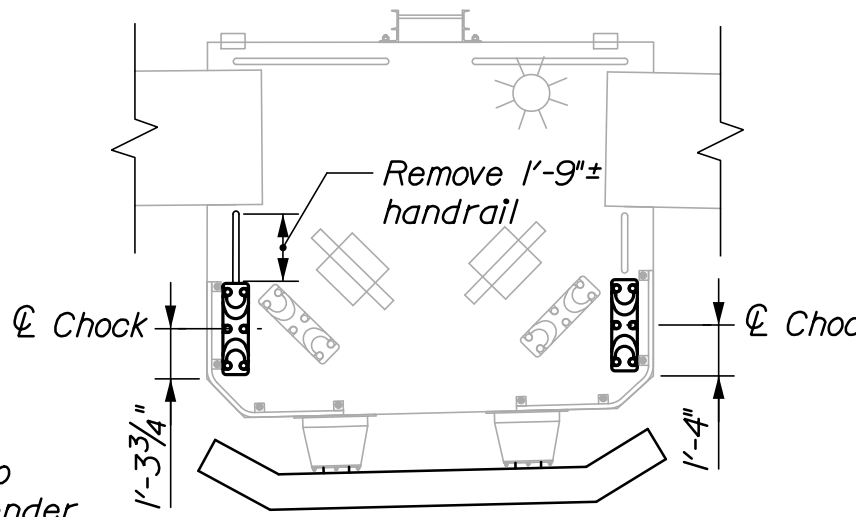
**D1 CHOCK  
MODIFICATION PLAN**

1" = 5'-0"



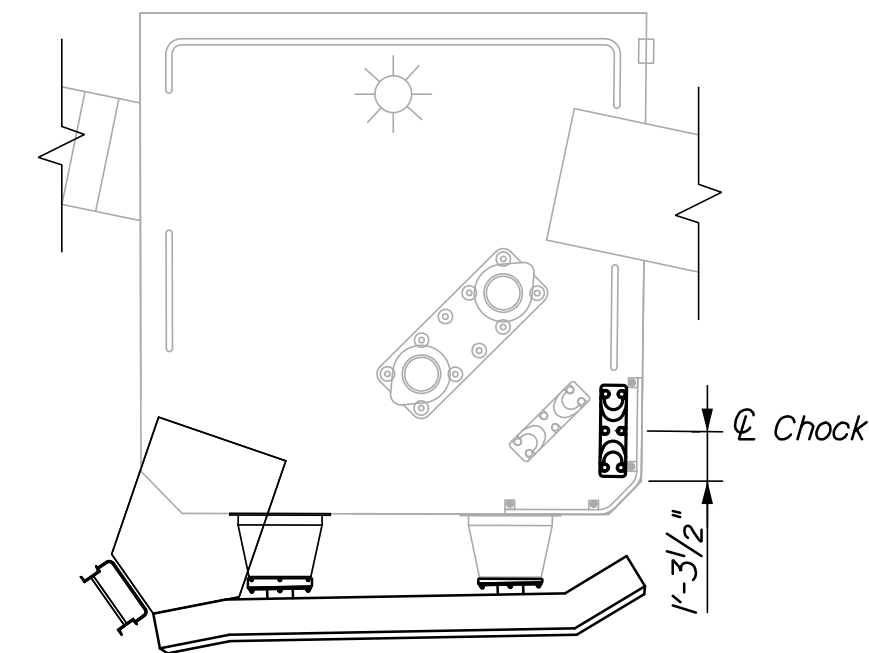
**D4 CHOCK  
MODIFICATION PLAN**

1" = 5'-0"



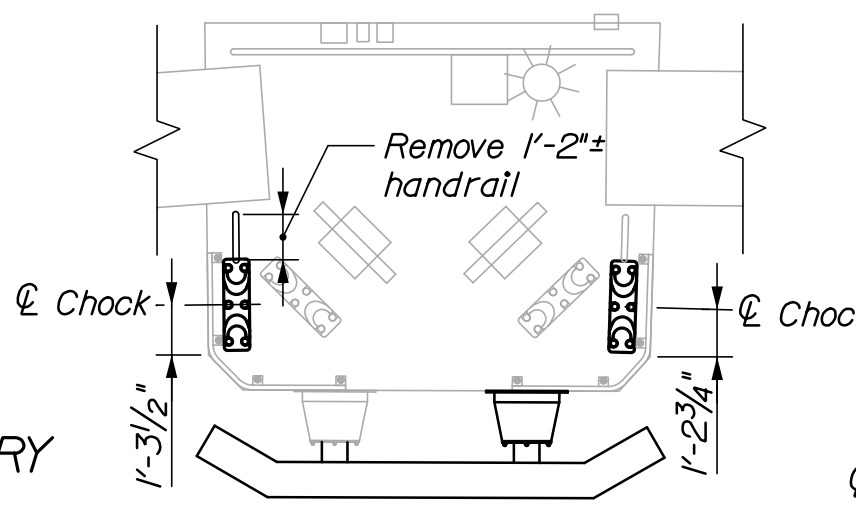
**D2 CHOCK  
MODIFICATION PLAN**

1" = 5'-0"



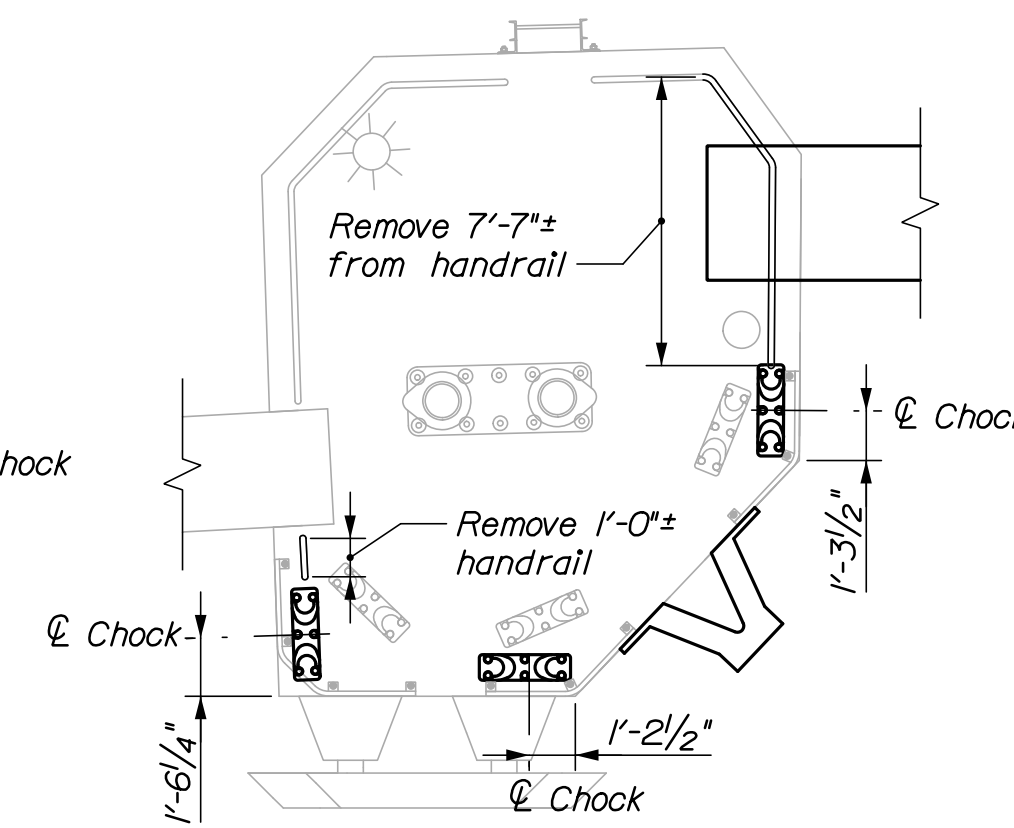
**D5 CHOCK  
MODIFICATION PLAN**

1" = 5'-0"



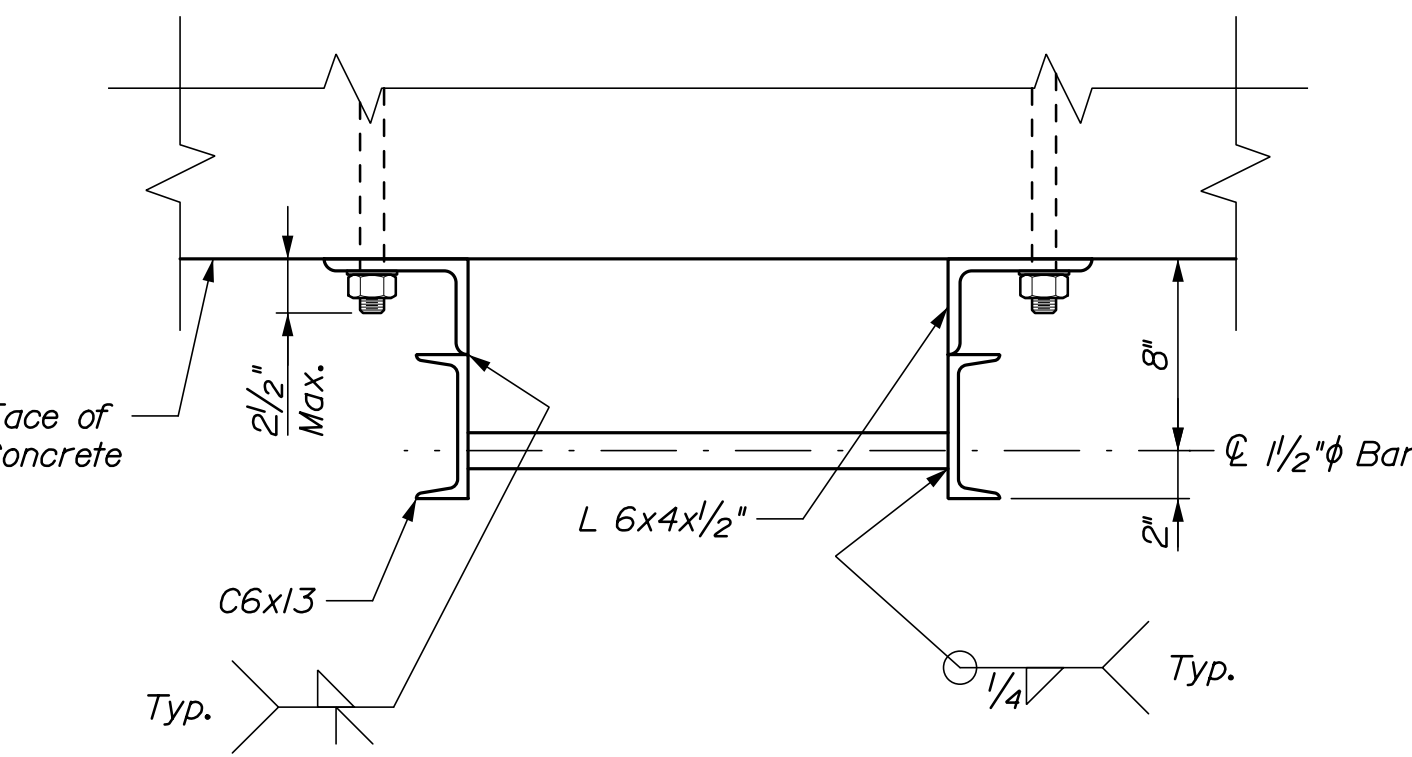
**D3 CHOCK  
MODIFICATION PLAN**

1" = 5'-0"

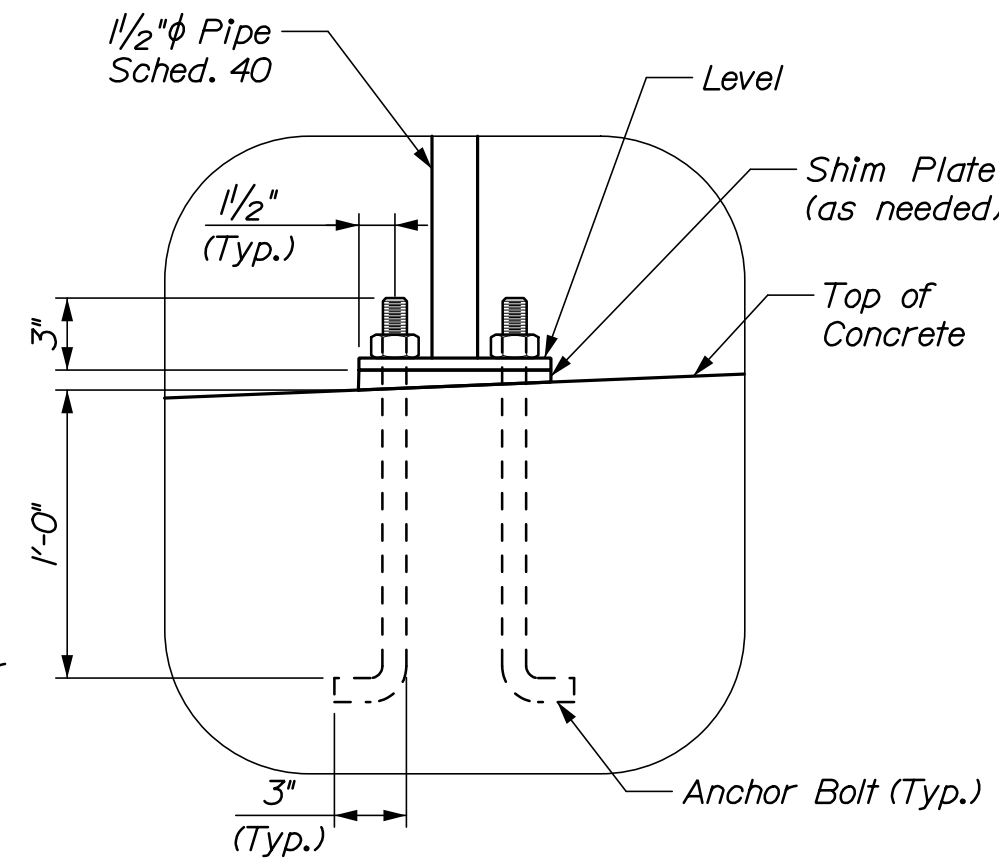


**D6 CHOCK  
MODIFICATION PLAN**

1" = 5'-0"



**SECTION A-A**  
1/2" = 1'-0"

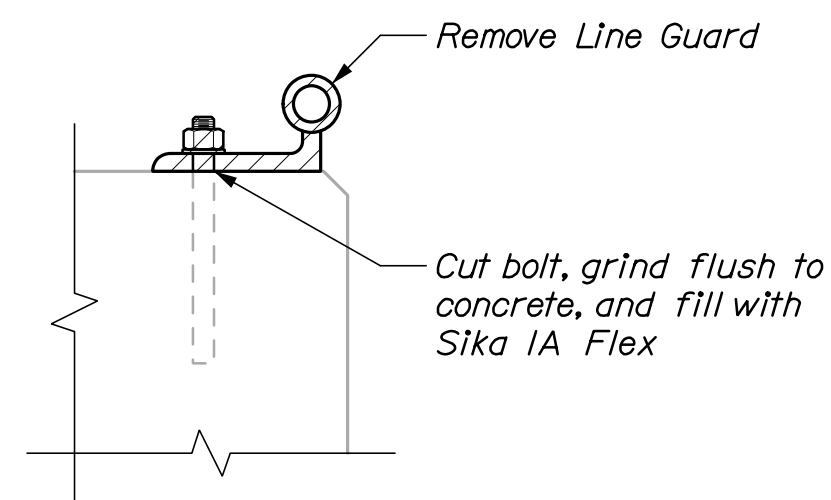


**DETAIL 3**

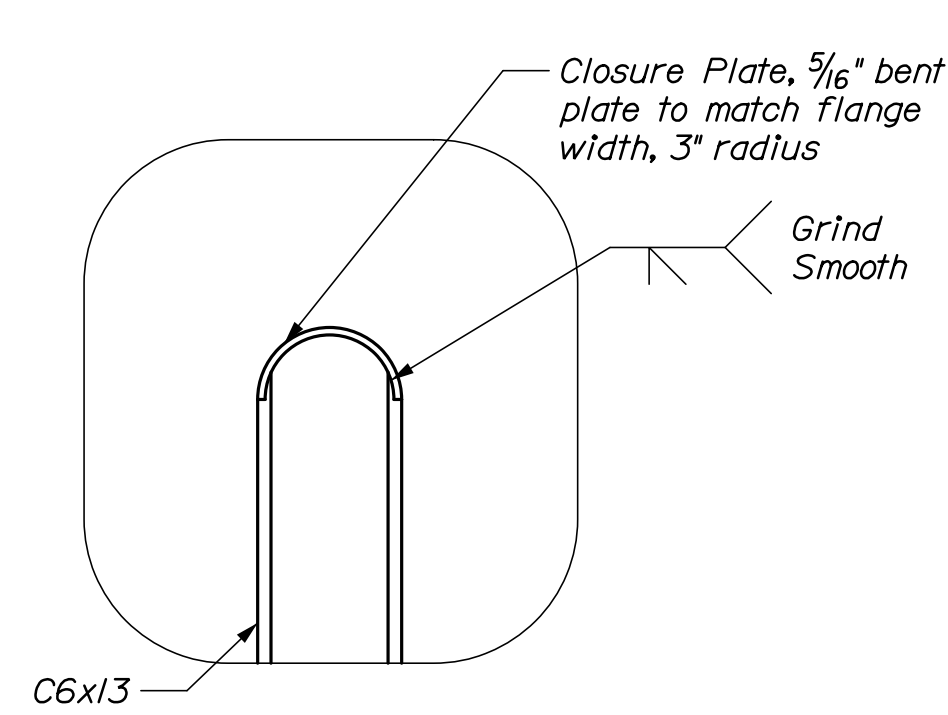
(Applies to all railing mounting locations. Kick plate not shown for clarity)  
1/2" = 1'-0"



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

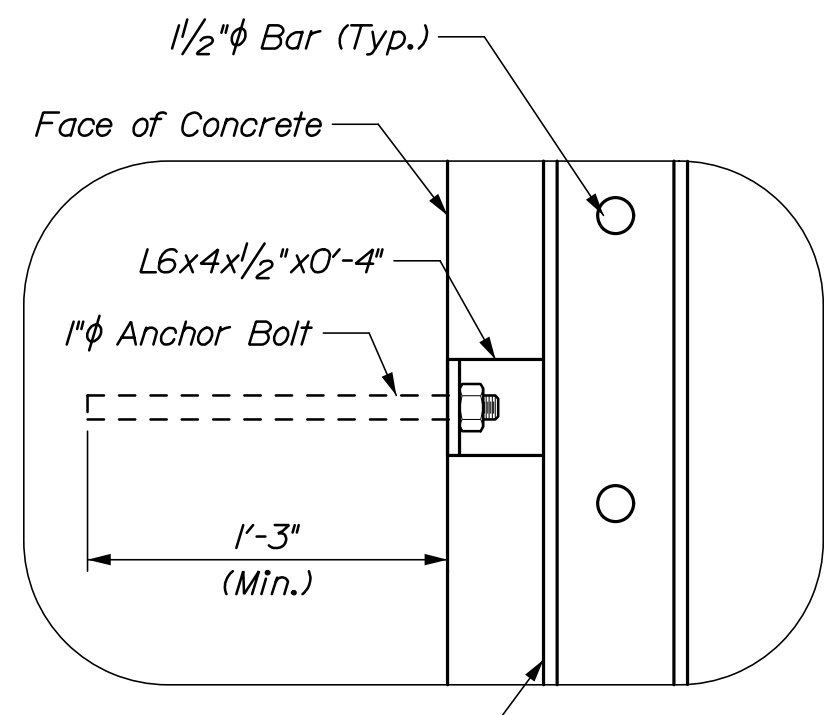


**LINE GUARD REMOVAL DETAIL**  
1/2" = 1'-0"



**DETAIL 1**

(Typical for all ladders)  
1/2" = 1'-0"



**DETAIL 2**

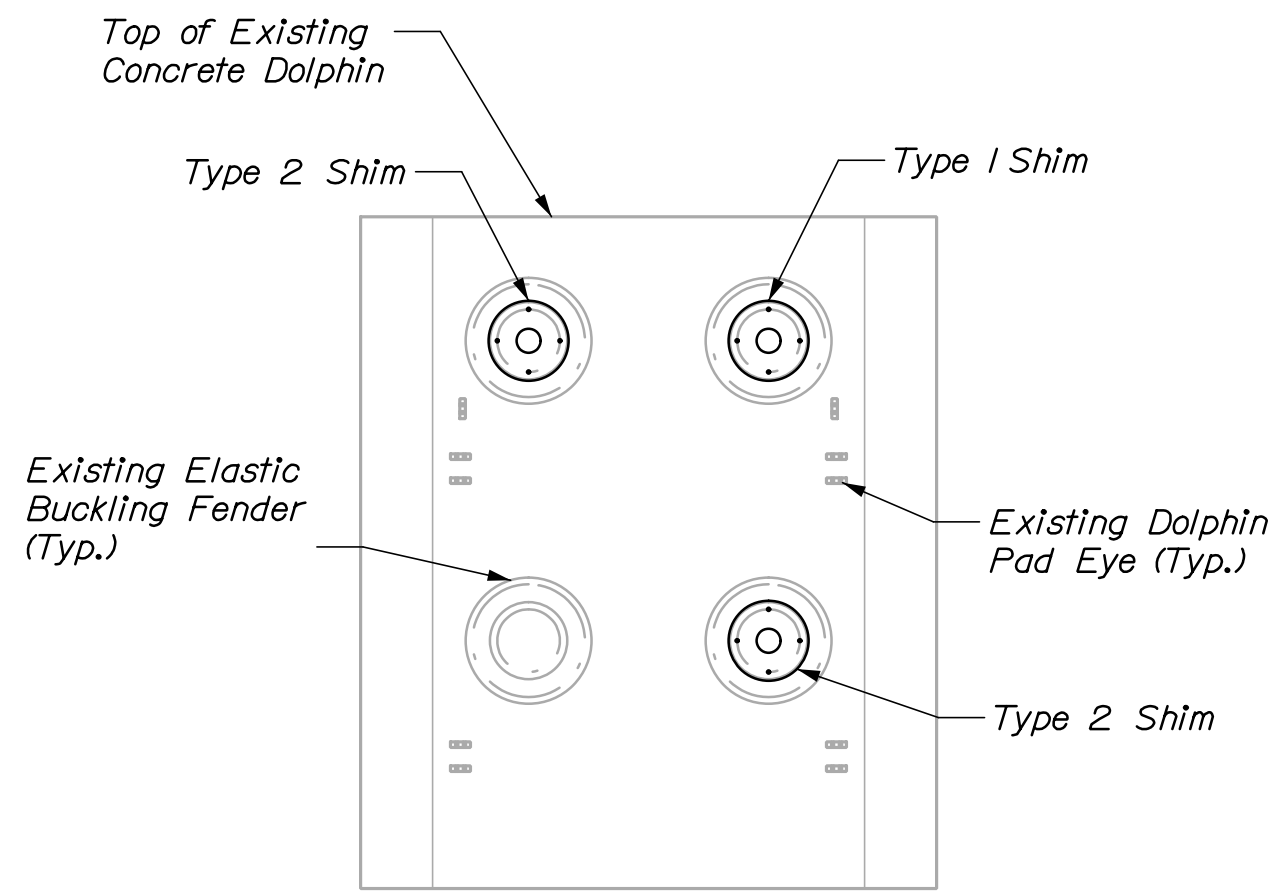
(Typical all ladder mounting locations)  
1/2" = 1'-0"

Date: 3/22/2021

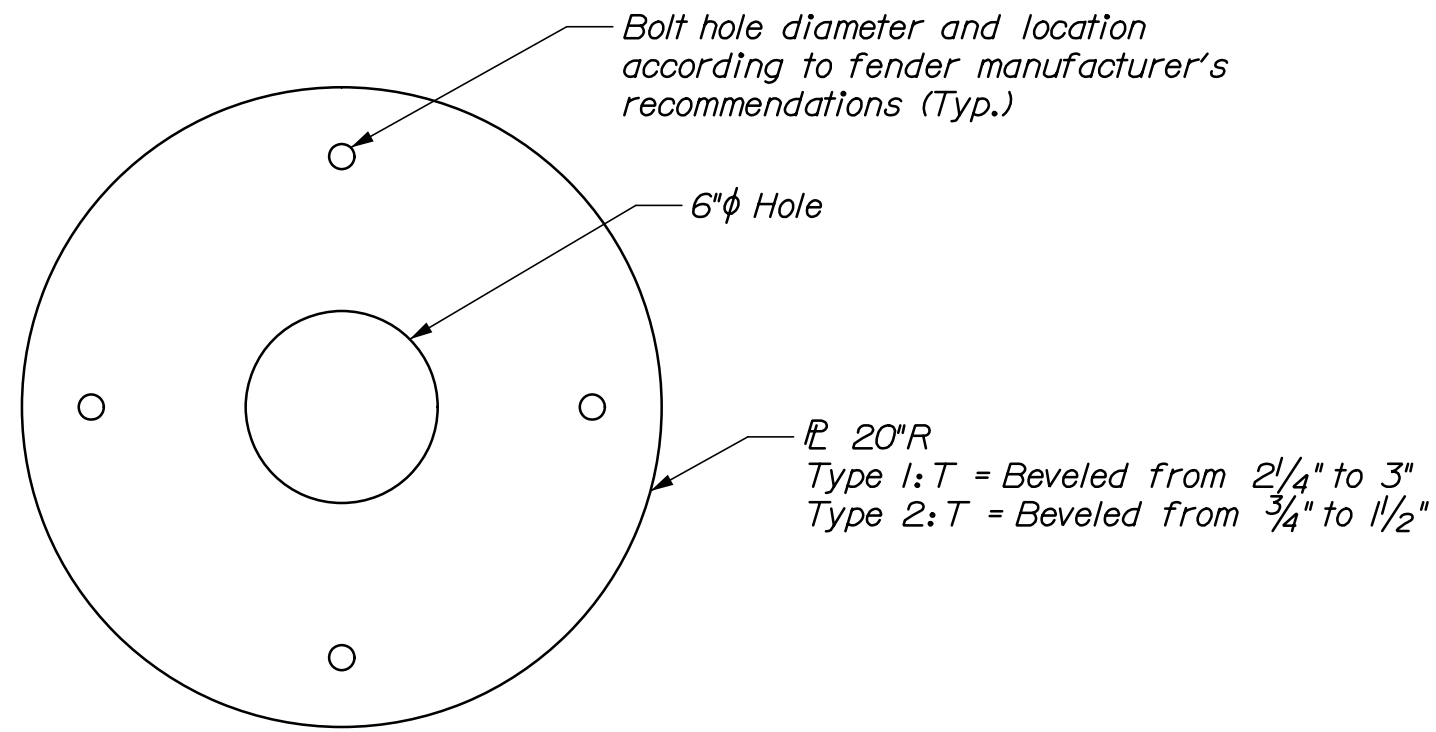
Username:

Division:

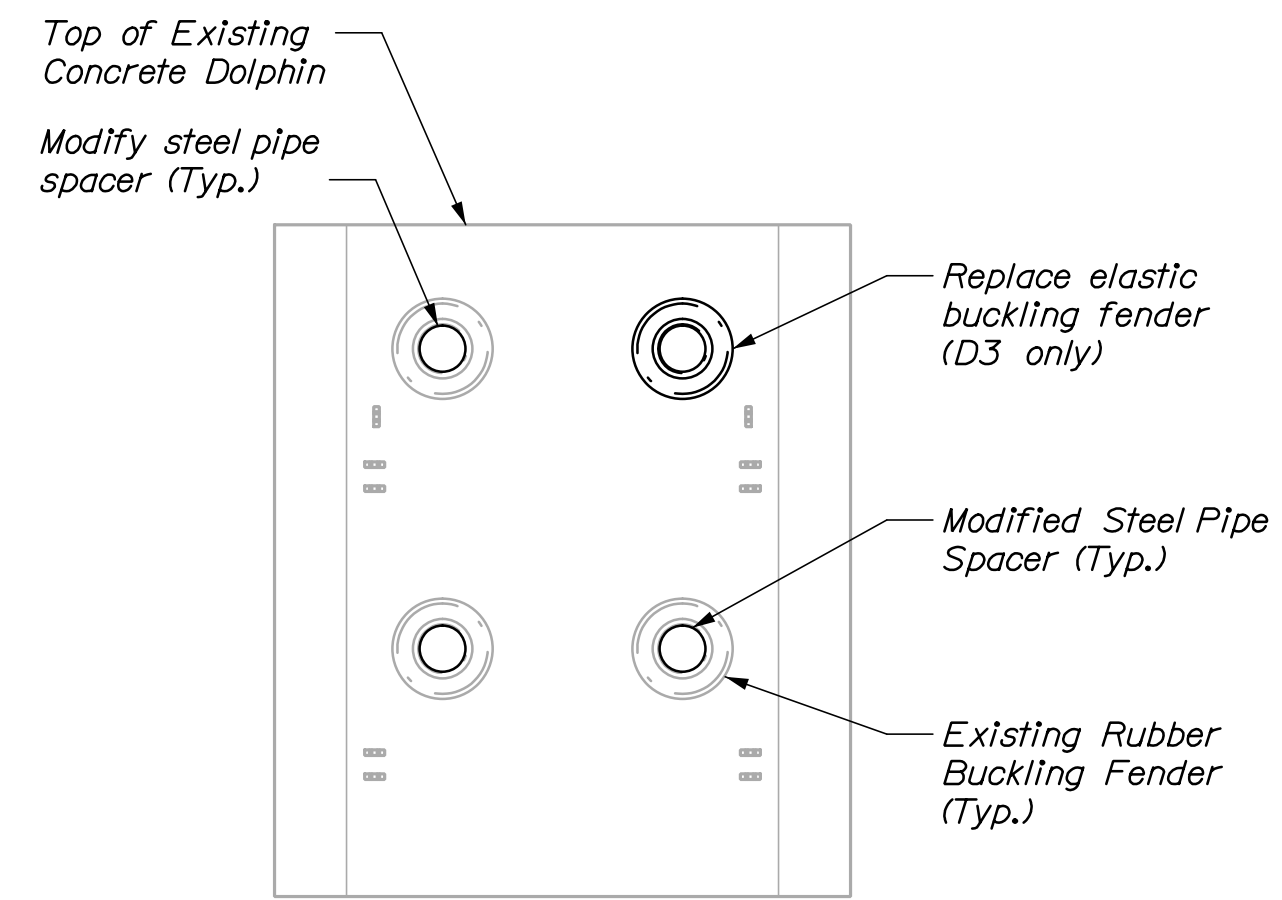
Filename: 014\_Dolphin Repair Details.dgn



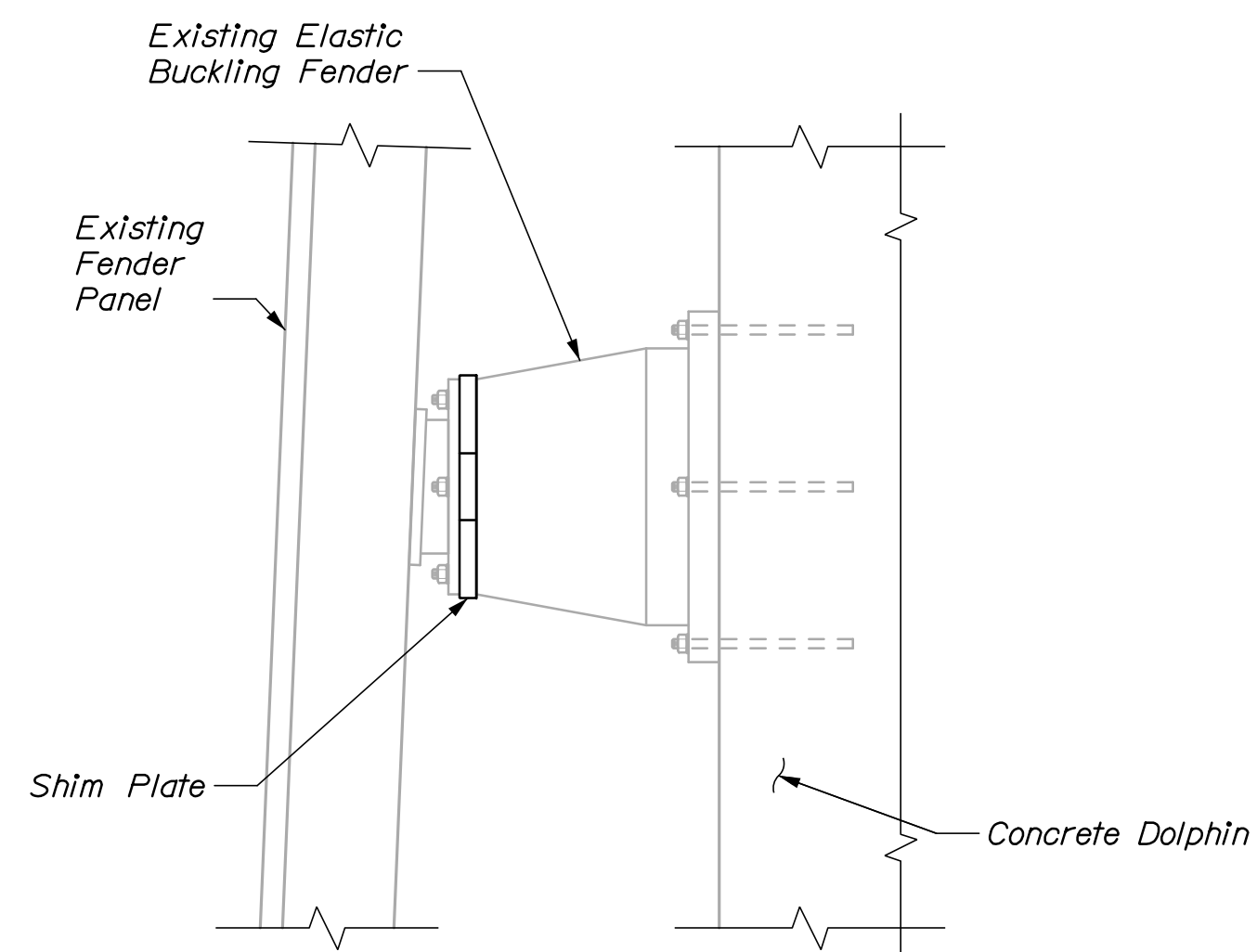
**ELEVATION - DOLPHIN D4**  
 (Dolphin D5 opposite hand)  
 1/4" = 1'-0"



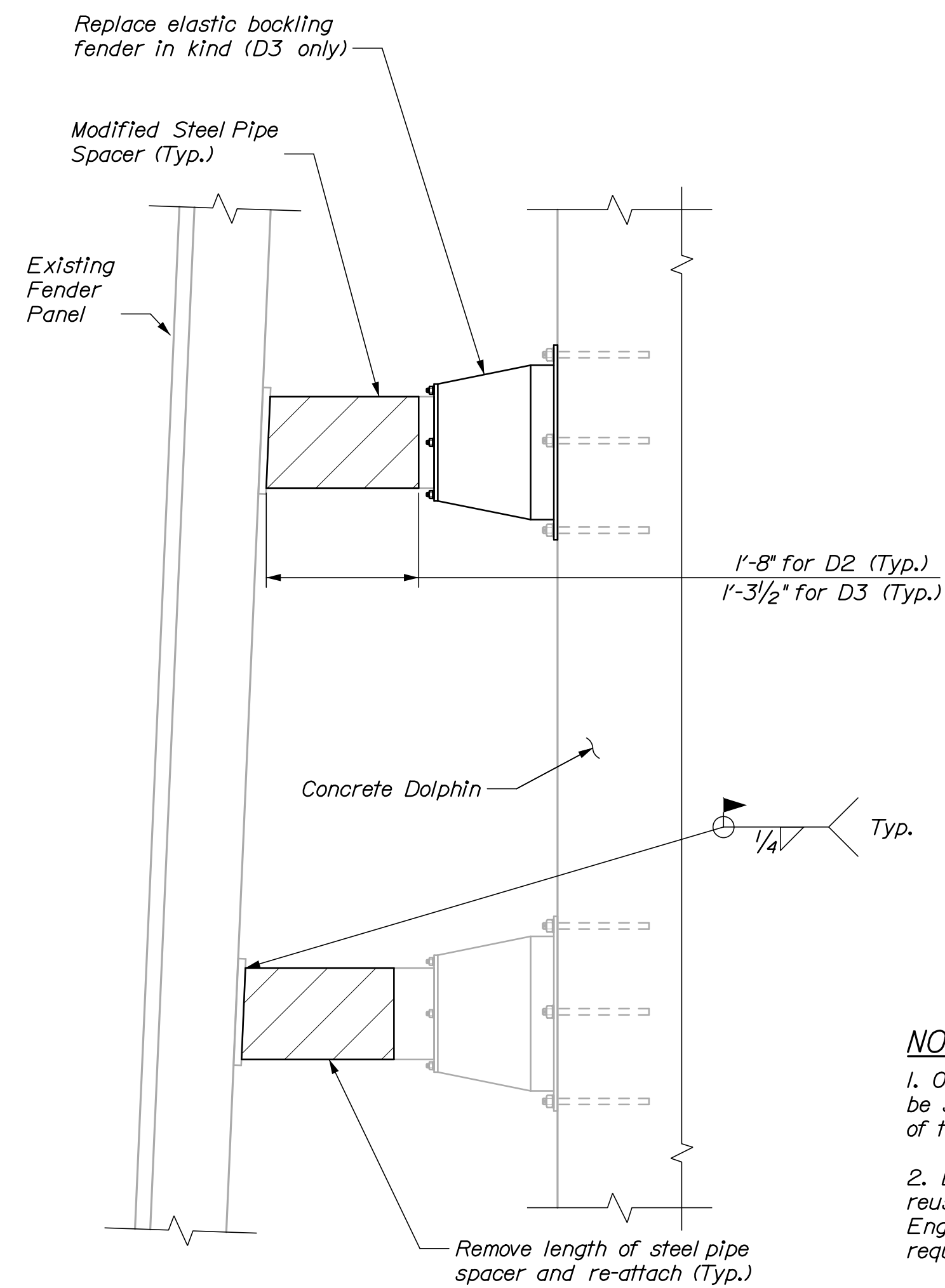
**SHIM DETAIL**  
 2" = 1'-0"



**ELEVATION - DOLPHIN D2**  
 (Dolphin D2 shown, D3 similar)  
 1/4" = 1'-0"



**TYPICAL DOLPHIN FENDER SHIM ATTACHMENT DETAIL**  
 3/4" = 1'-0"



**TYPICAL DOLPHIN D2 FENDER ATTACHMENT DETAIL**  
 (Dolphin D2 shown, D3 similar)  
 3/4" = 1'-0"

**NOTES:**

1. On dolphins D2 and D3, support chains shall be shortened to accommodate the change in length of the steel pipe spacers.
2. Existing chains and connectors shall be reused unless damaged or corroded. The Engineer shall determine if replacement is required and Contractor shall replace in kind.
3. Contractor shall field verify dimensions of steel pipe spacer.

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PROJ. MANAGER	BY	DATE
DESIGN-DETAILED N. Wiley	P. Bishop	03/21
CHECKED-REVIEWED C. Morin	C. Morin	03/21
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SWAN'S ISLAND  
 FERRY TERMINAL  
 DOLPHIN REPAIR DETAILS

SHEET NUMBER

S10

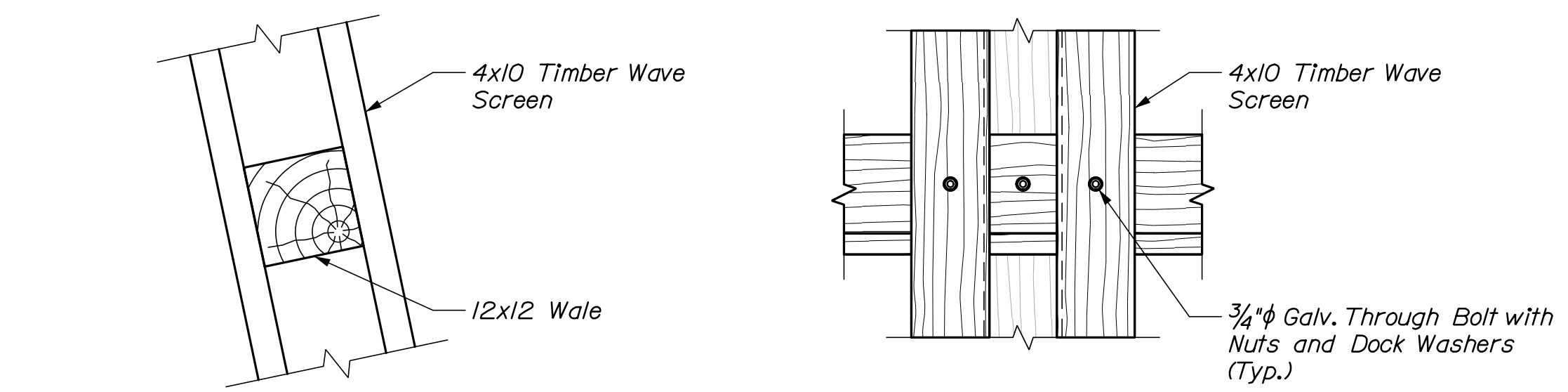
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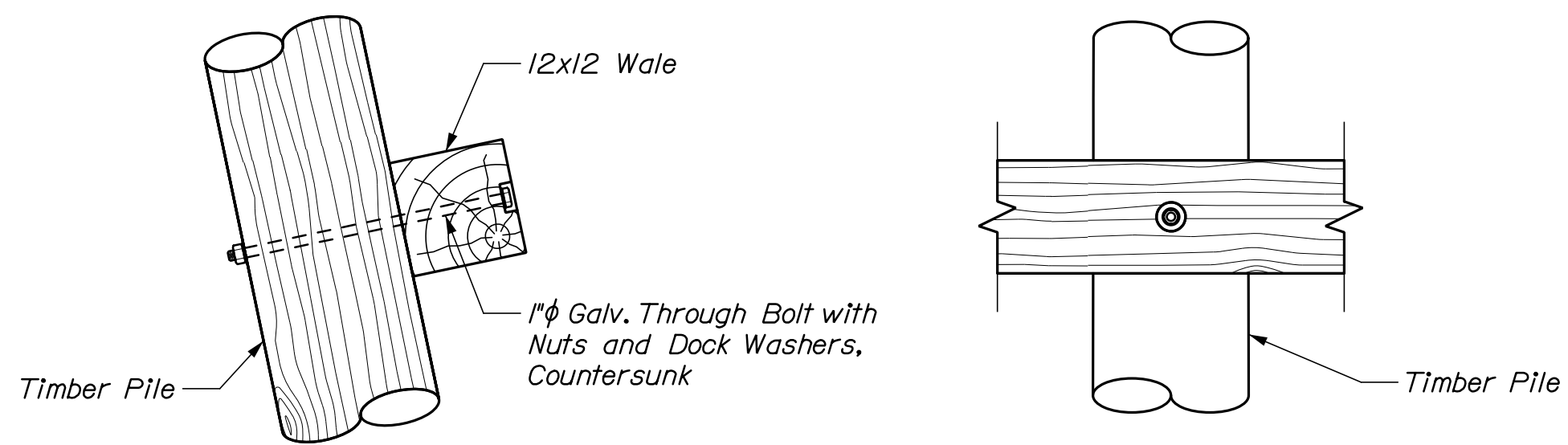
Date: 3/22/2021

Username:

Filename: 015\_Wave Screen Plan and Elevation.dgn Division:



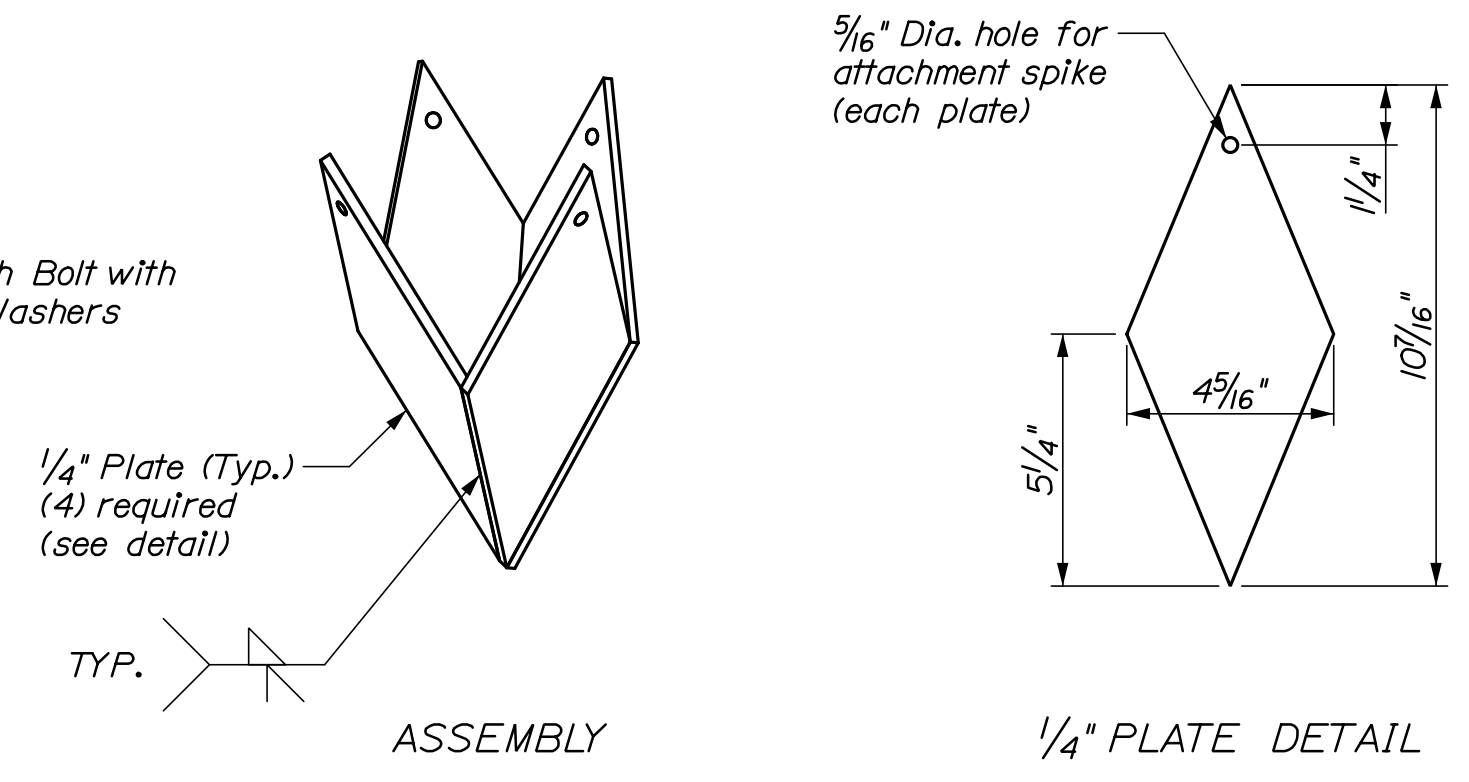
SCREEN CONNECTIONS



WALE CONNECTIONS

WAVE SCREEN CONNECTIONS

3/8" = 1'-0"



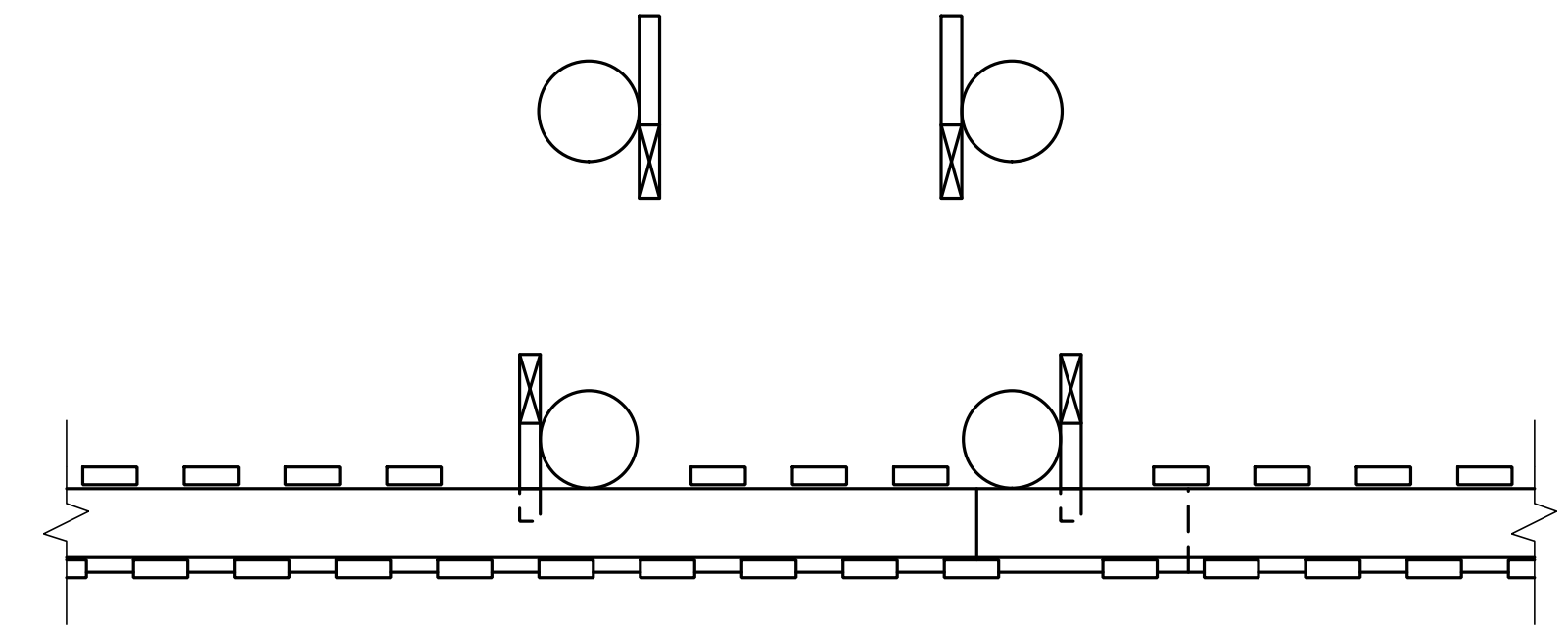
ASSEMBLY

1/4" PLATE DETAIL

Note: Dimensions shown similar to pile point manufactured by Associated Pile & Fitting. Pile point size shall be compatible with pile tip dimensions. Contractor shall confirm pile tip size prior to ordering or fabricating pile points.

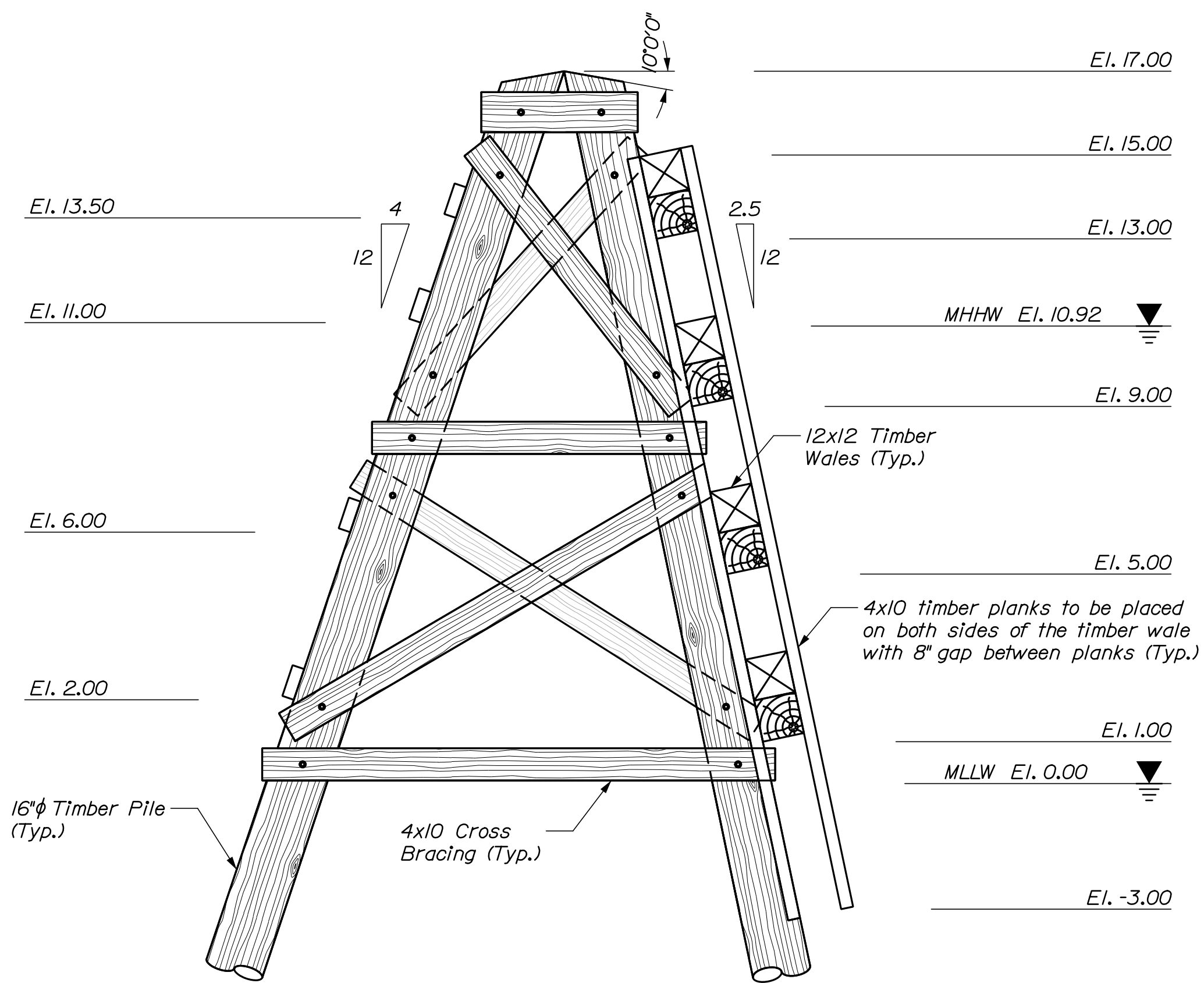
TIMBER PILE POINT DETAIL

3" = 1'-0"



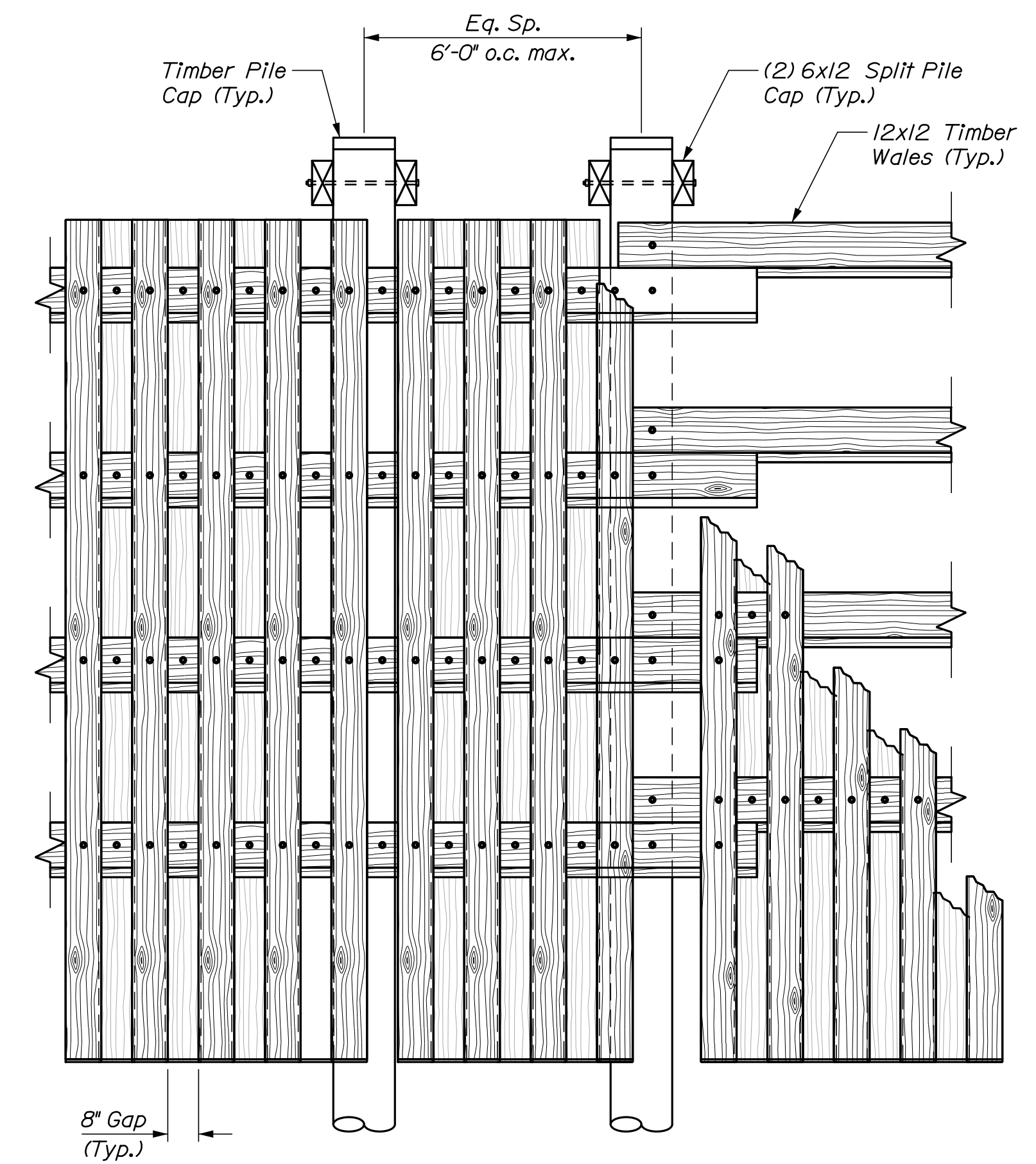
WAVE SCREEN PLAN VIEW

(View shown at El. 11.00)  
3/8" = 1'-0"



WAVE SCREEN END ELEVATION

3/8" = 1'-0"



WAVE SCREEN FRONT ELEVATION

3/8" = 1'-0"

NOTES:

- All threaded rods for timber connections are 1" dia. galv. with nuts and dock washers per ASTM A307, except where noted.
- All timber associated with wave screen shall be 2.5 cca treated.
- All timber vertical and batter piles shall have a driven capacity of 16 tons or a minimum embedment length of 20 feet. See timber pile point detail.
- All timber battered piles for wave screens facing towards the Pen shall be installed at a batter of 4 horiz. on 12 vert. All timber battered piles for wave screens with timber wales and planks facing away from the Pen shall have a batter of 2.5 horiz. on 12 vert.
- Timber shall be southern pine with a stress rating of 1,200 psi. Timber shall be pressure treated and branded in accordance with the specifications.
- All timber construction shall conform to the national design specification for wood construction of the American Forest and Paper Association.
- Field treat all cut and drilled timber surfaces with two coats of preservative containing copper naphthanate solution (min. 2% metallic solution) per specifications.
- Wave screens shall be 6' minimum clear from dolphins.
- Contractor shall take care while installing timber piles to avoid conflict with steel pipe piles.
- Timber pile cap shall be white with flat top.

STATE OF MAINE  
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DATE	SIGNATURE
03/21	10209
03/21	
	P.E. NUMBER
	DATE

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	P. Bishop	03/21
CHECKED-REVIEWED	C. Morin	03/21
DESIGN-DETAILED	N. Willey	
DESIGN-DETAILED	C. Morin	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SWAN'S ISLAND  
FERRY TERMINAL  
**WAVE SCREEN  
PLAN AND ELEVATION**

SHEET NUMBER

**S11**

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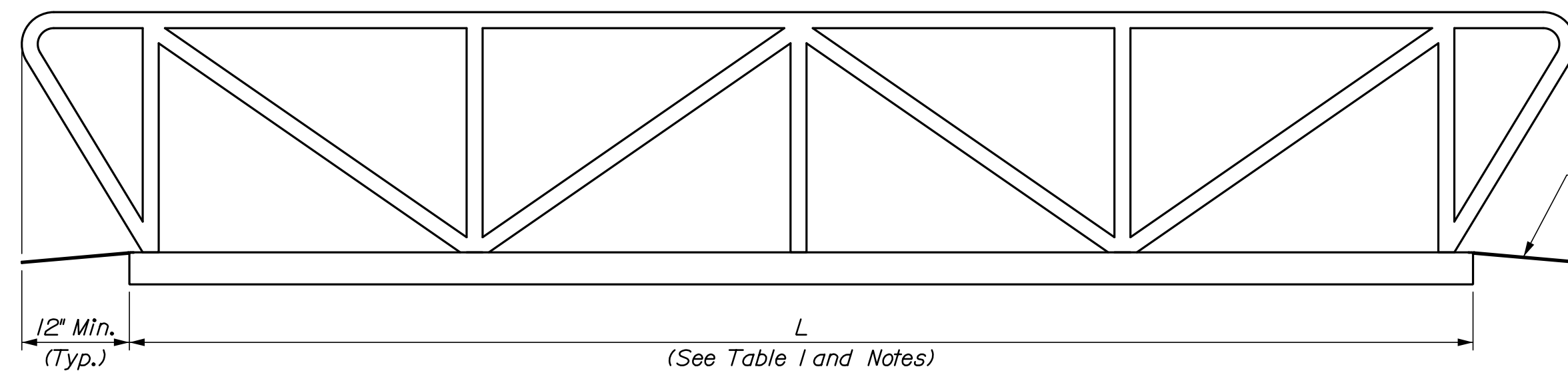


Date: 3/22/2021

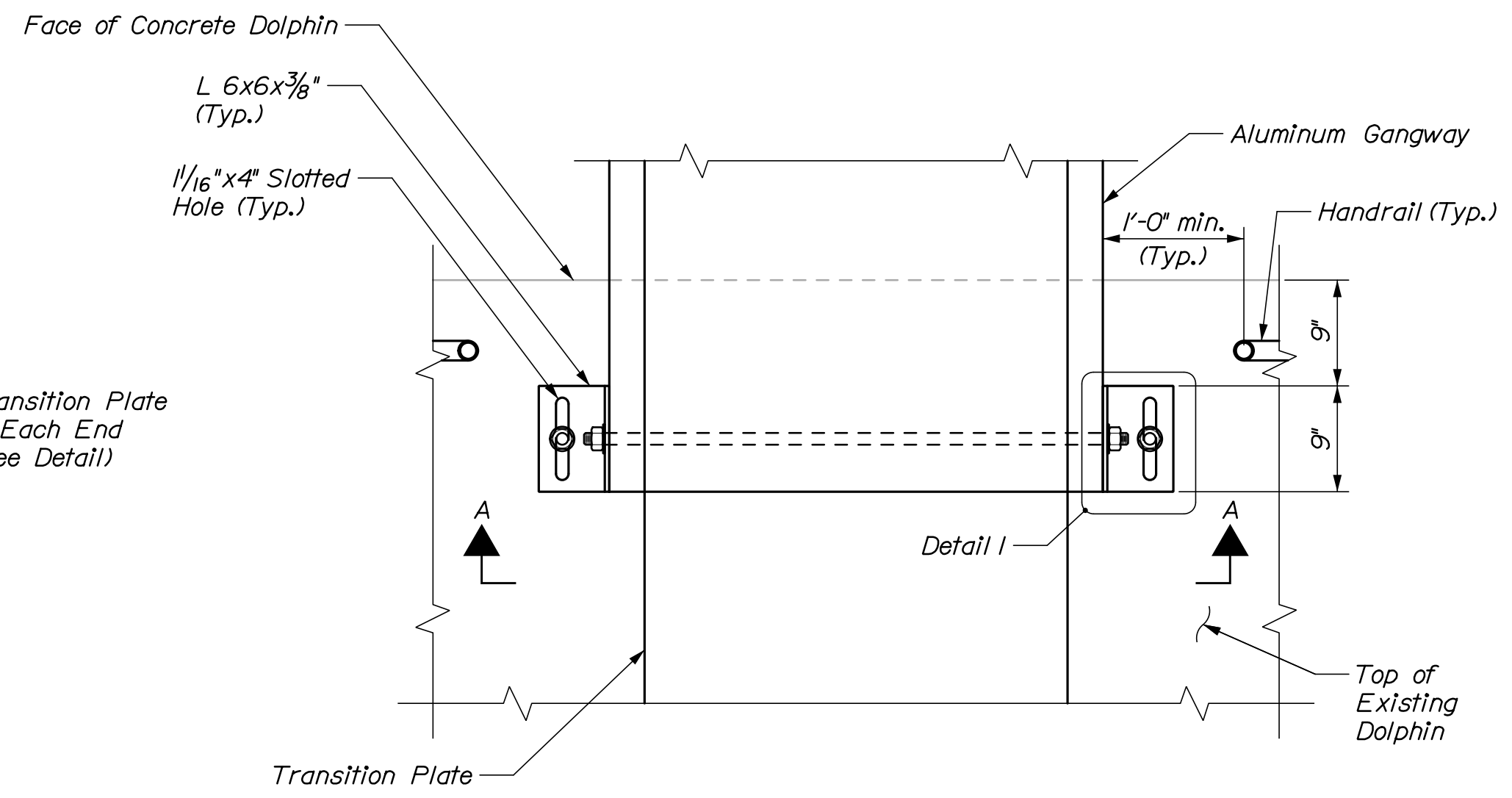
Username:

Division:

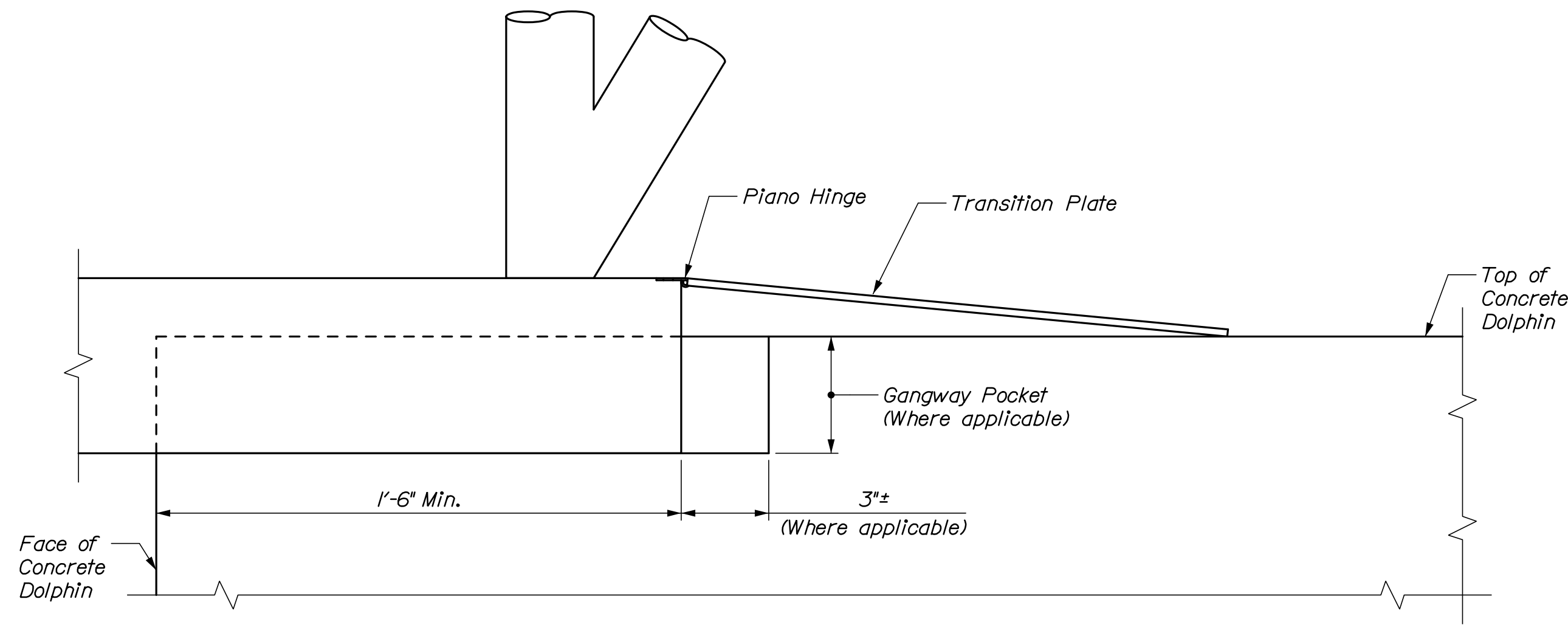
Filename: 016\_Gangway Plan and Elevation.dgn



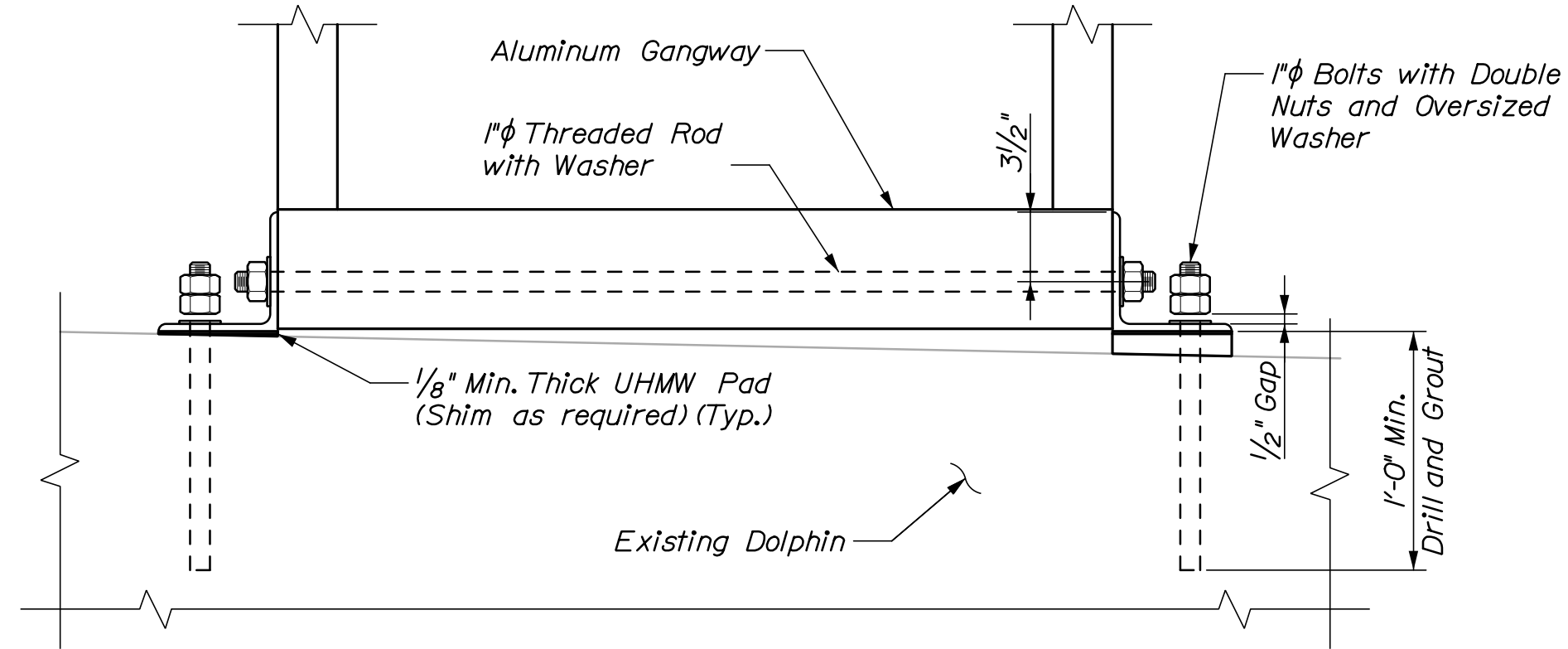
**GANGWAY ELEVATION**  
(Schematically Shown)  
1/2" = 1'-0"



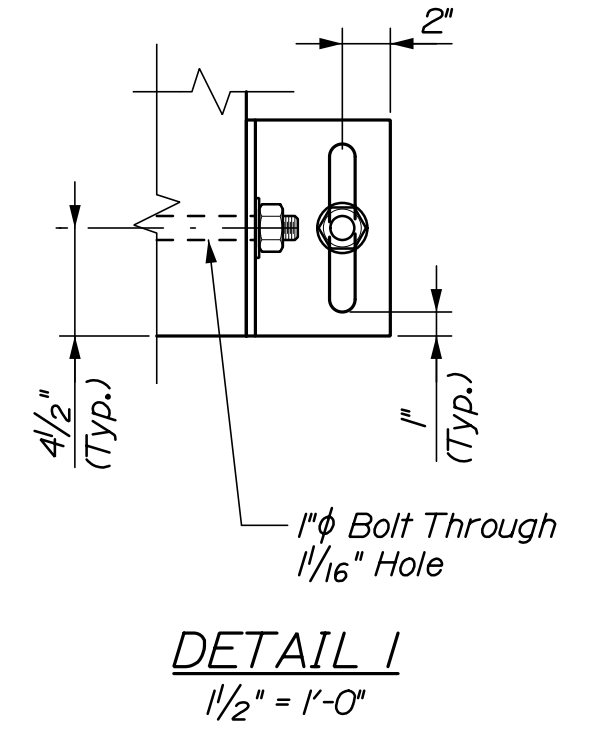
**EXISTING DOLPHIN GANGWAY CONNECTION**  
1" = 1'-0"



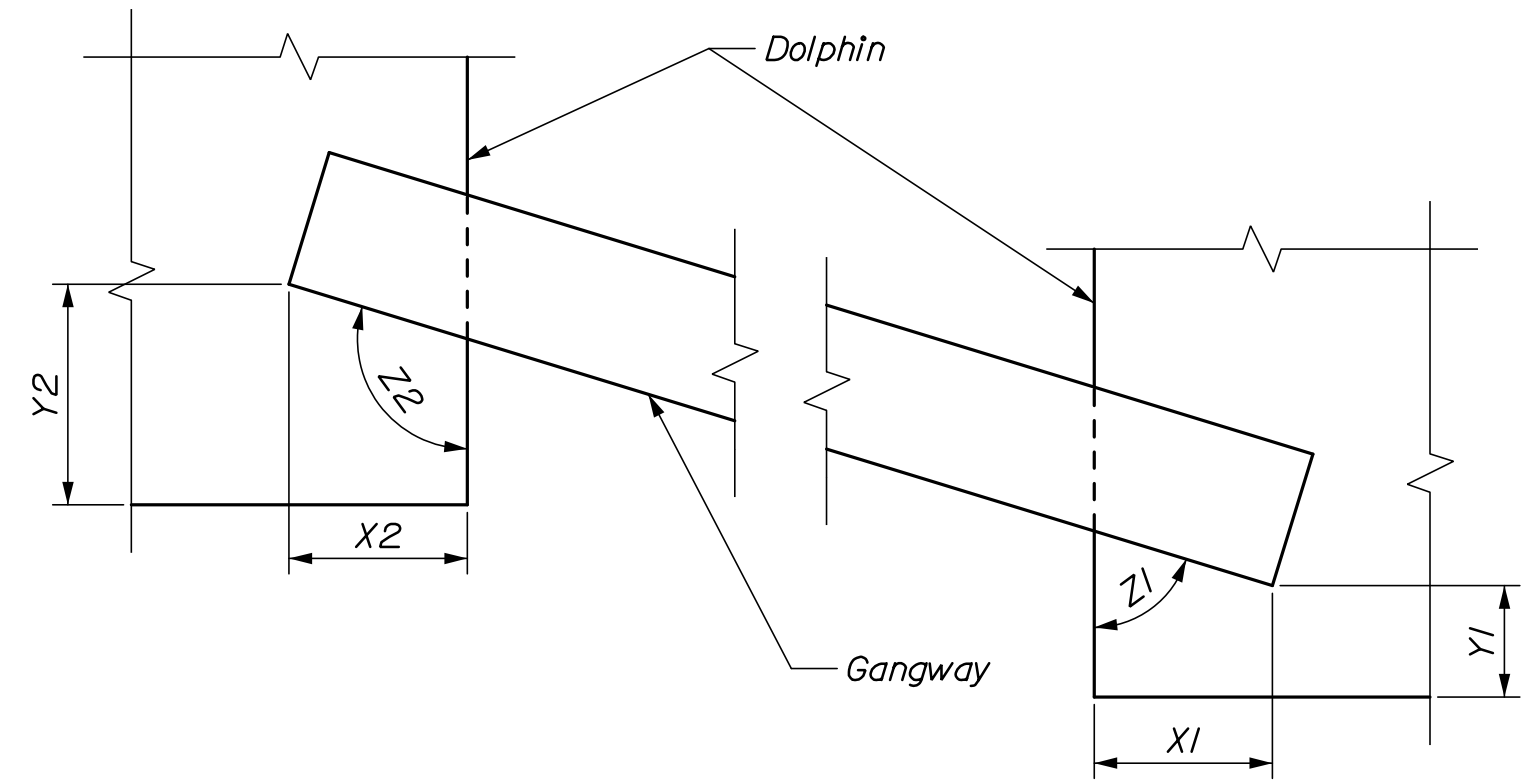
**TRANSITION PLATE DETAIL**  
3" = 1'-0"



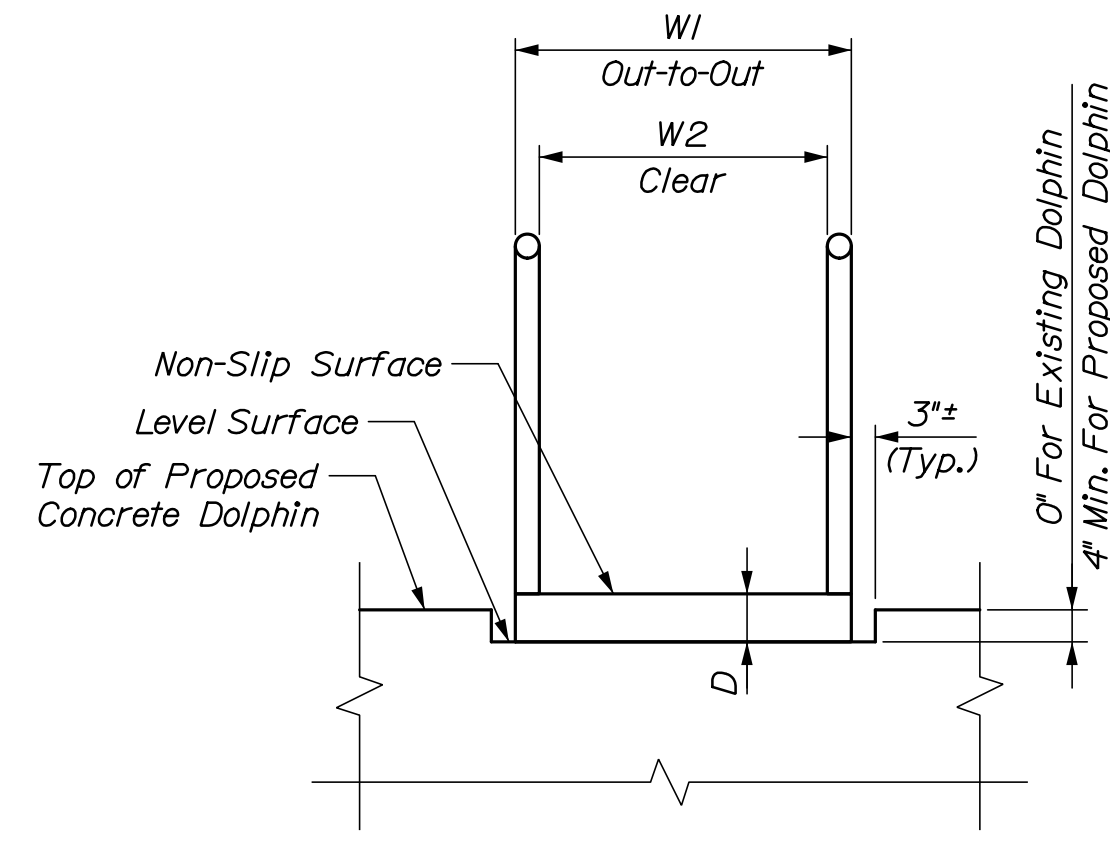
**SECTION A-A**  
1/2" = 1'-0"



**DETAIL 1**  
1/2" = 1'-0"



**GANGWAY LAYOUT**  
N.T.S.



**PROPOSED DOLPHIN GANGWAY TYPICAL SECTION**  
1/2" = 1'-0"

**TABLE 1  
GANGWAY DIMENSIONS**

Gangway I.D.	Dimensions											
	W1	W2	D	L	Dolphin 1	X1	Y1	Z1	Dolphin 2	X2	Y2	Z2
G1	42"	36"	6"	29'-0"	D8	1'-6"	4'-11"	90'0"	D1	7"	2'-9"	89'55"
G2	42"	36"	6"	29'-0"	D6	6"	2'-6"	90'22"	D7	1'-6"	4'-2"	90'0"

**NOTES:**

1. See Sheet G02 for design loads.
2. Gangway shall be truss type constructed, fabricated of aluminum grade 6061-T6 marine alloy.
3. Gangway length shall be confirmed or adjusted once dolphins are constructed.
4. Contractor shall field verify dimensions of dolphins for pocket sizes and distances between dolphins.
5. Install bolt through gangway prior to installing bolts into existing concrete.
6. Contractor shall provide shims at gangway ends as required.
7. A kick plate is not required along the bottom of the rail posts.

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PROJ. MANAGER  
DESIGN-DETAILED  
CHECKED-REVIEWED  
DESIGN-DETAILED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

DATE  
03/21  
03/21

BY  
P. Bishop  
C. Morin

SIGNATURE  
10209

P.E. NUMBER  
DATE

SWAN'S ISLAND  
FERRY TERMINAL

**GANGWAY  
AND ELEVATION**

SHEET NUMBER

**S12**

16 OF 18



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Date: 5/30/2019

Username:

Division:

Filename: ... \017\_Electrical Plan.dgn

Bartlett Design  
LIGHTING & ELECTRICAL ENGINEERING  
942 WASHINGTON STREET, BATH, ME 04630  
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STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



Lawrence S. Bartlett  
SIGNATURE  
P.E. NUMBER 7928  
DATE 5/30/2019

PROJ. MANAGER	DATE	BY
L. Bartlett	05/19	P. Bishop
CHECKED-REVIEWED	05/19	C. Morr
DESIGN2-REVIEWED		
DESIGN3-REVIEWED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

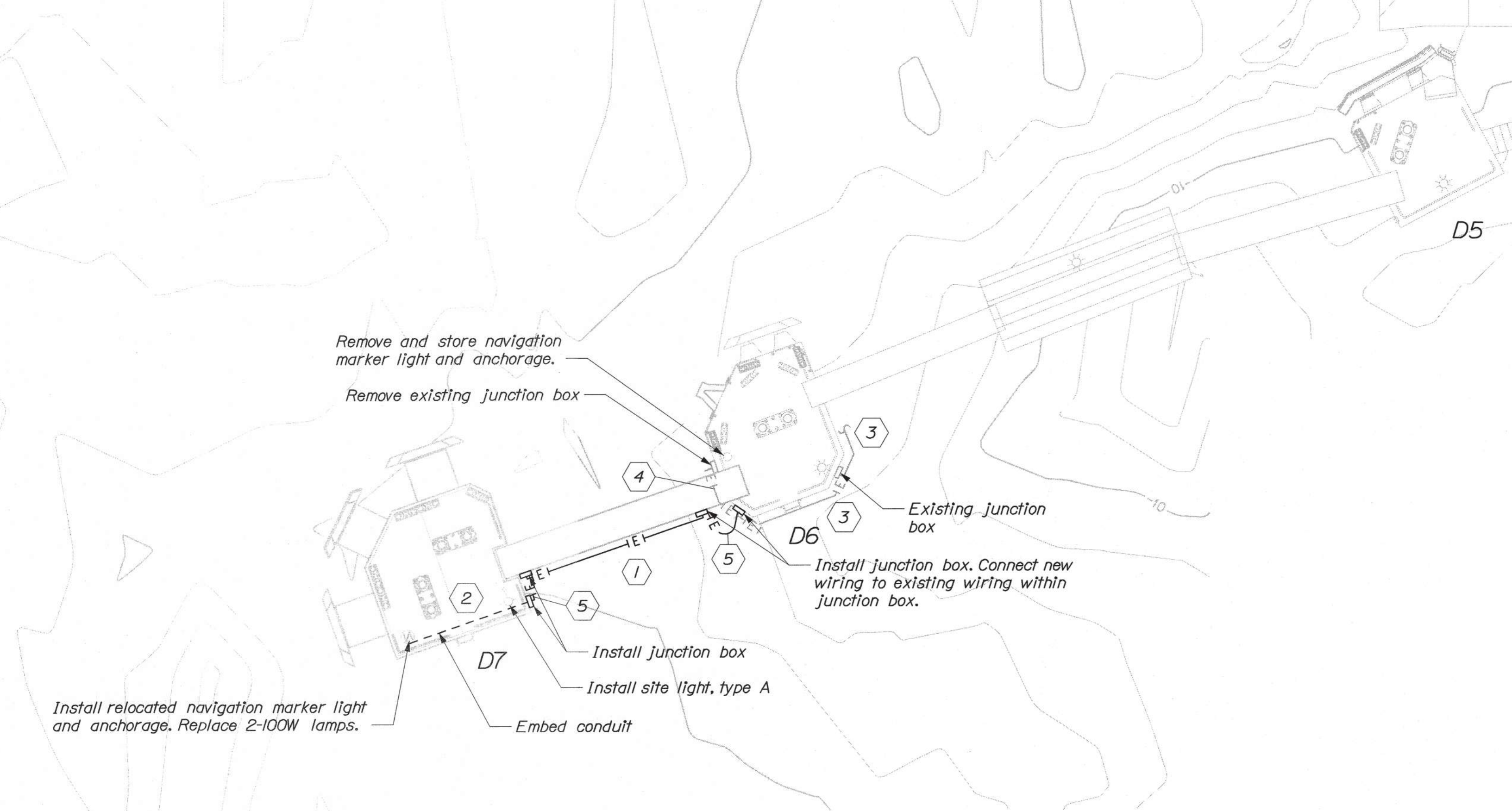
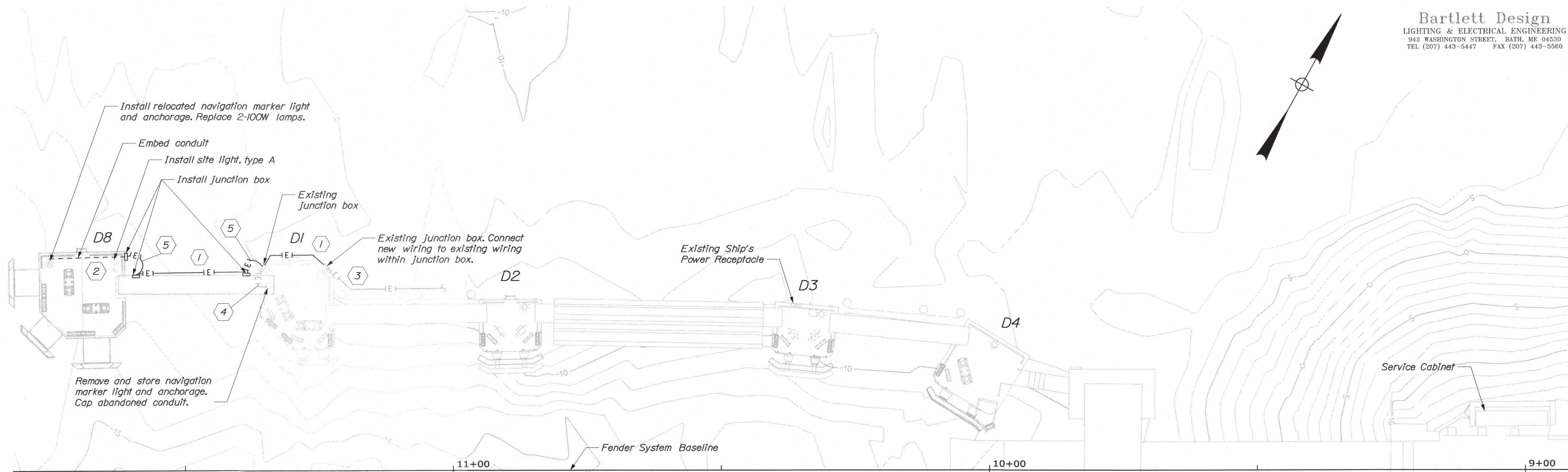
SWAN'S ISLAND  
FERRY TERMINAL

SHEET NUMBER

E01

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WIN  
023480.00



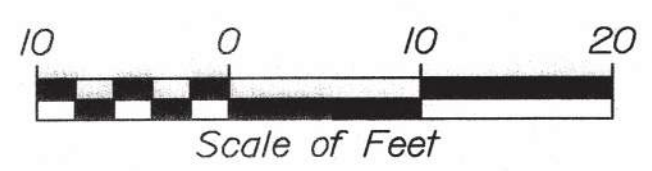
**WIRING NOTES:**

- 1 Two circuits in 1" pvc coated rigid galvanized steel conduit. Navigation light circuit: 2\*10, 1\*12 gnd. Dolphin light circuit: 2\*10, 1\*12 gnd.
- 2 One circuit in 1" pvc coated rigid galvanized steel conduits. Navigation light circuit: 2\*10, 1\*12 gnd.
- 3 Existing conduit and wiring to remain.
- 4 Remove existing conduit and wiring.
- 5 Two circuits in 1" pvc coated flexible conduit. Navigation light circuit: 2\*10, 1\*12 gnd. Dolphin light circuit: 2\*10, 1\*12 gnd.

**NOTES:**

- 1. All conduits shall be PVC coated rigid steel, including conduit bodies and clips.
- 2. All conduit shall be 1" min. size, hot dipped galvanized with 40 mil bonded PVC coating (black or gray).
- 3. All wire shall be type THWN/THHN, copper.
- 4. Provide stainless steel framing channel attached to the vertical side of the dolphin extending above the top of the dolphin for conduit and box support. Do not support from handrails.
- 5. New junction boxes shall be 16"x16" stainless steel.
- 6. All electrical work shall conform to NFPA 70.
- 7. Verify existing electrical conditions to determine proper installation means and methods.
- 8. Bond all junction boxes and connectors to the equipment grounding conductor inside the box.

PLAN  
1" = 10'-0"



Date: 5/30/2019

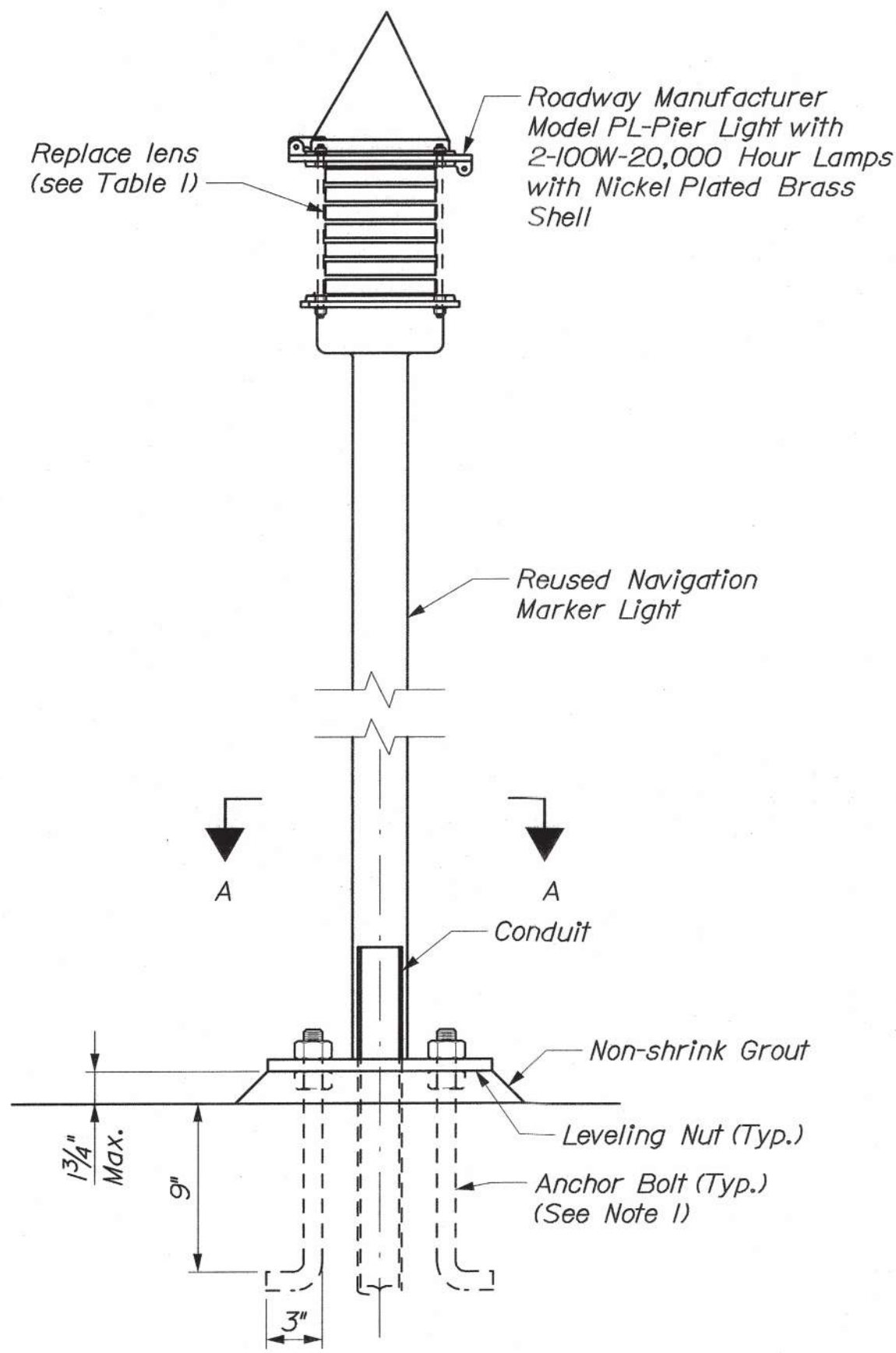
Username:

Division:

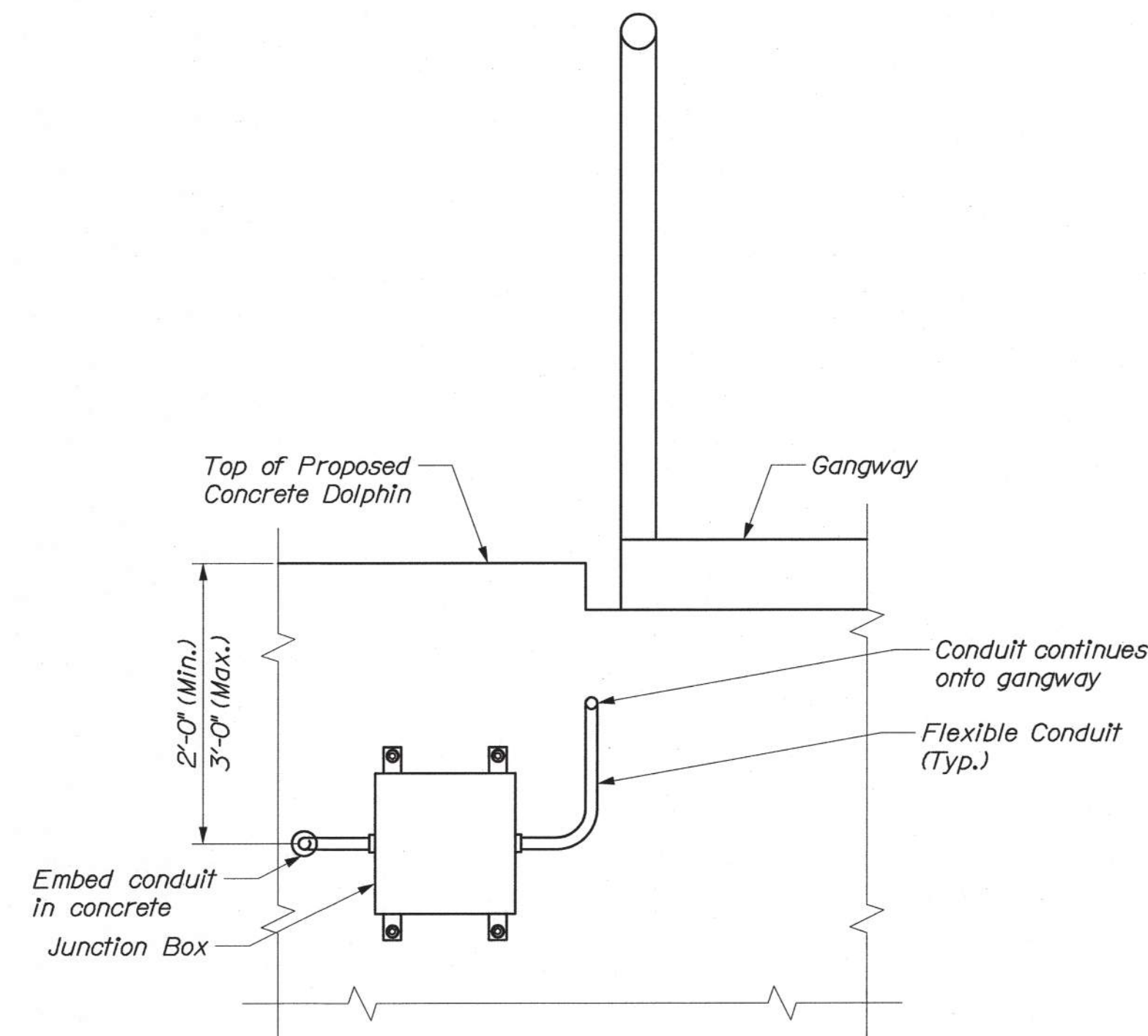
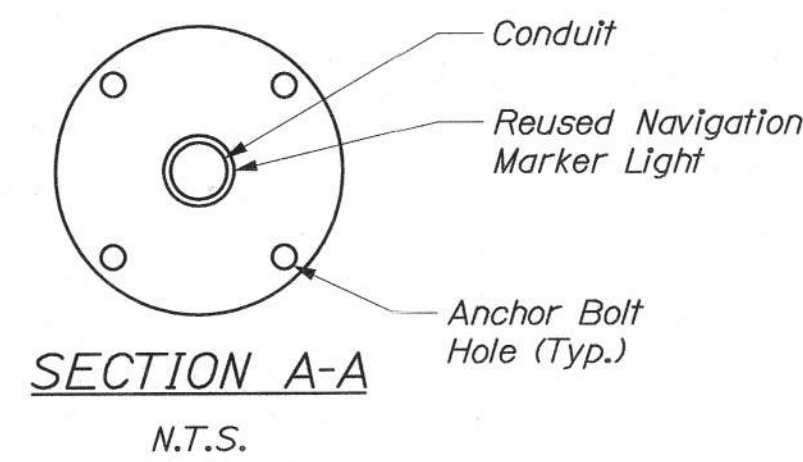
Filename: ... \018\_ElectricalDetails.dgn

**TABLE 1**  
**NAVIGATIONAL MARKER LENS**  
**REPLACEMENT SUMMARY**

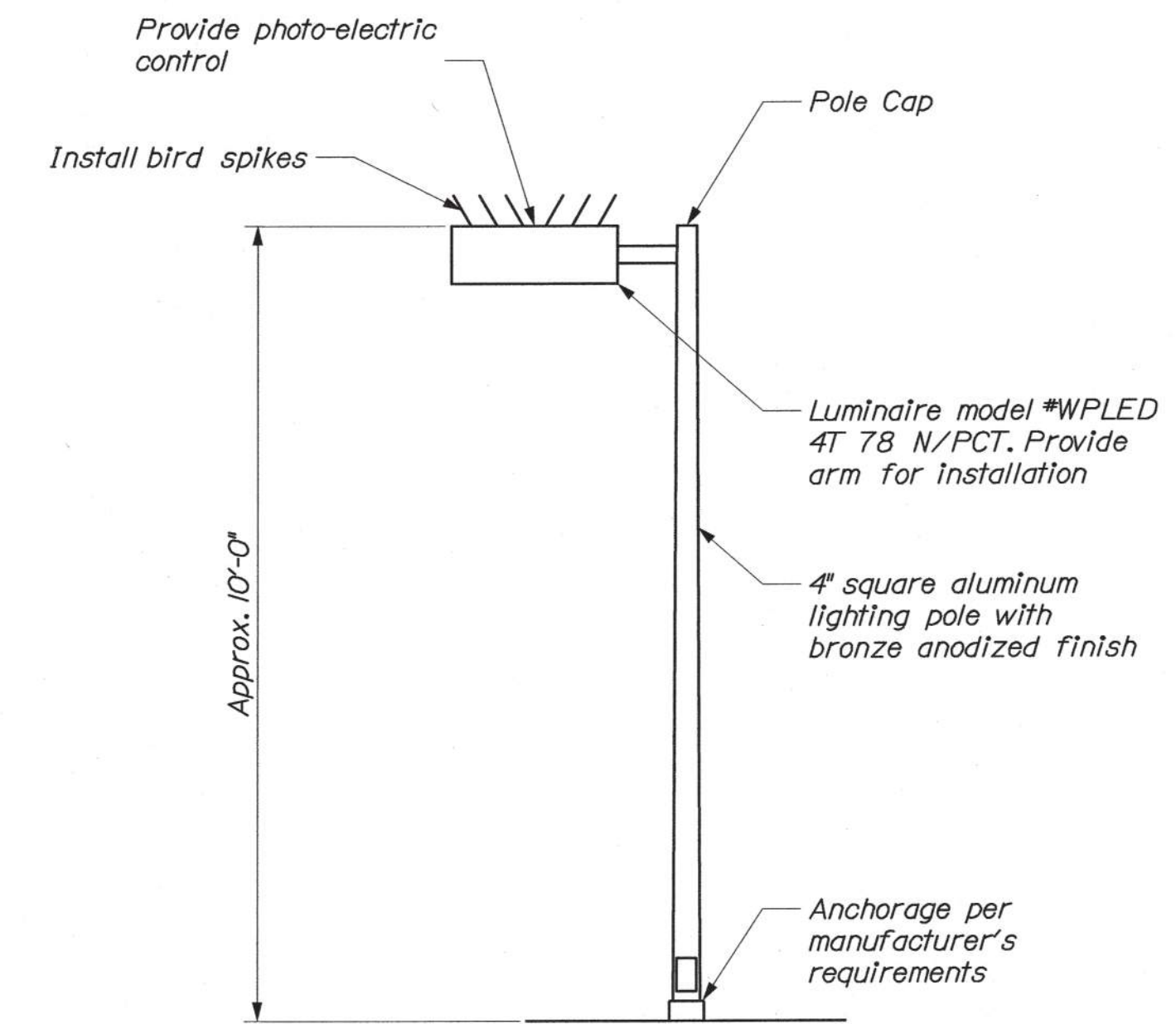
Location	° of Light Opening	Lamp Size	Lens
Dolphin D7	In Kind	2-100W A-19	In Kind
Dolphin D8	In Kind	2-100W A-19	In Kind



**NAVIGATION MARKER INSTALLATION DETAIL**  
N.T.S.



**EMBEDDED CONDUIT JUNCTION BOX DETAIL**  
1" = 1'-0"



**SITE LIGHT TYPE A DETAIL**  
N.T.S.

**NOTES:**

1. Anchor bolt size and pattern shall match the existing condition.
2. Navigation marker wiring connection shall match the existing condition.
3. Where anchorages are removed, bolts and rods shall be cut, ground flush to concrete, and filled with Sika 1A Flex self-leveling sealant, or approved equal.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



L. Bartlett  
SIGNATURE  
LAWRENCE E. BARTLETT  
No. 7928  
P.E. NUMBER  
7928  
DATE  
5/30/2019  
PROFESSIONAL

PROJ. MANAGER	DATE	BY	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
L. Bartlett	05/19	P. Bishop								
	05/19	C. Morin								

SWAN'S ISLAND  
FERRY TERMINAL

**ELECTRICAL DETAILS**

SHEET NUMBER

**E02**

18 OF 18



WIN  
023480.00