GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS FOUND IN THE CONTRACT DOCUMENTS AND/OR FIELD CONDITIONS.
2. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE OTHER PROJECT DRAWINGS AND SPECIFICATIONS.
3. REFER TO CIVIL, MECHANICAL, ELECTRICAL, AND OTHER DISCIPLINE'S DRAWINGS FOR ANCHORS, PIPE SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED IN OR THAT PASS THROUGH THE STRUCTURE. IN GENERAL, EMBEDMENTS AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
4. STANDARD DETAILS SHALL BE USED AT ALL APPLICABLE LOCATIONS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. PLANS ON THESE DRAWINGS ARE TREATED AS HORIZONTAL SECTIONS (I.E. “PLANS AT ELEVATION 100.00” SHOW ITEMS BELOW 100.00).
6. DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
7. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS FOUND IN THE CONTRACT DOCUMENTS AND/OR FIELD CONDITIONS.
8. SHOP DRAWINGS SHALL BE FURNISHED FOR REVIEW BEFORE ANY FABRICATION AND ERECTION IS STARTED. POORLY EXECUTED SHOP DRAWINGS SHALL BE REJECTED AND RESUBMITTED.

CONCRETE NOTES:

1. SPECIFIED MINIMUM COMPRESSIVE STRENGTH OF CLASS A STRUCTURAL CONCRETE SHALL BE 4500 PSI AT 28 DAYS UNLESS OTHERWISE NOTED. REFER TO THE SPECIFICATIONS.
2. CONCRETE WORK SHALL CONFORM TO ACI 301, ACI 318 AND ACI 350.
3. REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF ASTM A615 OR A706, "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", GRADE 60.
4. ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS, UNLESS OTHERWISE INDICATED, SHALL BE IN ACCORDANCE WITH ACI-315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.
5. REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE, A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.
6. UNLESS OTHERWISE SHOWN ON THE DRAWINGS CONCRETE COVER FOR REINFORCING BARS SHALL BE:
   3" CAST AGAINST ROCK/SOIL
   2" ALL OTHER LOCATIONS
7. UNLESS OTHERWISE NOTED, WALLS AND SLABS SHOWN WITH A SINGLE LAYER OF REINFORCEMENT SHALL HAVE THAT REINFORCEMENT CENTERED.
8. CHAMFER EDGES OF PERMANENTLY EXPOSED CONCRETE SURFACES WITH A 45 DEGREE BEVEL AS SHOWN IN THE STANDARD DETAILS.
9. ALL REINFORCEMENT BENDS, LAPS AND SPLICES UNLESS OTHERWISE NOTED, SHALL SATISFY THE MINIMUM REQUIREMENTS SHOWN IN THE STANDARD DETAILS.
10. DIMENSIONS ARE TO THE CENTERLINES OF THE BARS UNLESS SHOWN OTHERWISE.
11. BARS SHOWN WITH BENDS NOT DIMENSIONED SHALL BE ASSUMED TO END WITH A STANDARD HOOK AS SHOWN IN THE STANDARD DETAILS.
12. THE FIRST AND LAST BARS IN STRUCTURAL MEMBERS ARE TO START AND END AT A MAXIMUM OF ONE HALF OF THE ADJACENT BAR SPACING.
13. CONTRACTOR SHALL NOT BACKFILL AGAINST STRUCTURAL CONCRETE UNTIL CONCRETE HAS REACHED ITS DESIGN STRENGTH UNLESS OTHERWISE APPROVED IN WRITING BY ENGINEER. SEE SPECIFICATIONS.
14. PLACE BACKFILL EQUALLY ON ALL SIDES OF STRUCTURES.
15. LOCATE CONSTRUCTION JOINTS WHERE SHOWN OR NOTED ON DRAWINGS. CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL THE LOCATION OF PROPOSED CONSTRUCTION JOINTS.
16. MAXIMUM JOINT SPACING SHALL BE NO MORE THAN 40'.
17. MINIMUM TIME BETWEEN ADJACENT POURS SHALL BE 7 DAYS.

STRUCTURAL STEEL AND STAINLESS STEEL NOTES:

1. MATERIALS SHALL CONFORM TO THE STANDARDS LISTED:

- STEEL HSS	ASTM A500, GRADE C
- STEEL CHANNELS	ASTM A36
- STEEL PLATE	ASTM A36
- STEEL ANGLES	ASTM A36
- STEEL BEAMS	ASTM A992
- STEEL WT	ASTM A992
- HIGH STRENGTH STEEL BOLTS	ASTM F3125, GRADE A325
- STEEL BOLTS (ORDINARY USE)	ASTM A307, GRADE A
- STEEL ANCHOR BOLTS	ASTM F1554, GR 36
- STEEL HEADED ANCHOR STUDS (HAS)	TYPE A108
- STAINLESS STEEL SHAPES AND BARS	ASTM A276, TYPE 304L
- STAINLESS STEEL PLATE	ASTM A240, TYPE 304L
- STAINLESS STEEL HEADED ANCHOR STUDS (HAS)	TYPE 304L
- STAINLESS STEEL BOLTS	ASTM F593
- STAINLESS STEEL ANCHOR BOLTS	ASTM A193
- STAINLESS STEEL NUTS	ASTM F594

2. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS AND SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE AWS AND AISC. INSPECT ALL WELDING IN ACCORDANCE WITH THE SPECIFICATIONS.
3. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT ENGINEER'S WRITTEN APPROVAL.
4. ALL STRUCTURAL STEEL MEMBERS AND MISCELLANEOUS ITEMS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION UNO.

EXCAVATION AND ROCK TRIMMING:

1. PROVIDE ADEQUATE SURVEY CONTROL TO AVOID UNAUTHORIZED OVEREXCAVATION.
2. REMOVE THE ORGANIC AND LOOSE/WEATHERED MATERIAL DOWN TO SOUND ROCK.
3. EXCAVATE TO LINES, GRADES, AND DIMENSIONS SHOWN AND AS NECESSARY TO ACCOMPLISH WORK.
4. TRIM TO NEAT LINES WHERE CONCRETE IS TO BE PLACED AGAINST FOUNDATION MATERIAL.
5. EXCAVATION MATERIALS SHALL BE DISPOSED OF OFFSITE IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS AND AT A LOCATION DETERMINED BY THE CONTRACTOR.

ROCK SURFACE PREPARATION:

1. SUBMIT A ROCK SURFACE PREPARATION PLAN FOR REVIEW.
2. PREPARE A TEST SECTION FOR REVIEW BY THE ENGINEER PRIOR TO COMMENCEMENT OF PRODUCTION ROCK SURFACE PREPARATION.
3. ROCK SHALL BE PREPARED BY A COMBINATION OF ROCK TRIMMING AND CONCRETE FILL TO A SMOOTHNESS AND UNIFORMITY SUITABLE FOR CONCRETE PLACEMENT. REFER TO ROCK SURFACE PREPARATION STANDARD DETAIL.
4. ROCK SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED SHALL BE CLEAN, FREE OF LOOSE MATERIAL, AND FREE FROM STANDING OR RUNNING WATER.
5. ROCK SURFACES SHALL BE CLEAN AND SATURATED SURFACE DRY (SSD) DURING CONCRETE PLACEMENT.
6. ROCK SURFACES TO BE IN CONTACT WITH NEW CONCRETE SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONCRETE PLACEMENT.

GEOTECHNICAL DESIGN CRITERIA:

REFERENCE GEOTECHNICAL REPORT BY VERDANTAS DATED DECEMBER 20, 2024 REGARDING GEOTECHNICAL DATA AND SOIL PARAMETERS. THE FOLLOWING GEOTECHNICAL DESIGN PARAMETERS WERE USED TO COMPLETE THE DESIGN OF THE STRUCTURES AND ITEMS FOR WHICH THE ENGINEER OF RECORD WAS RESPONSIBLE FOR COMPLETION OF THE DESIGN.

1. CONCRETE WALLS:

- APPROVED STRUCTURAL FILL (ABOVE THE ASSUMED GROUNDWATER TABLE)	AT-REST EQUIVALENT FLUID PRESSURE = 60 PCF
APPROVED STRUCTURAL FILL (SATURATED)	AT-REST EQUIVALENT FLUID PRESSURE = 100 PCF

2. FOUNDATIONS:

   MAXIMUM ALLOWABLE NET BEARING PRESSURE = 16,000 PSF

INSPECTION TESTING AND QUALITY ASSURANCE NOTES:

1. SPECIAL INSPECTIONS AND TESTING IN ACCORDANCE WITH CHAPTER 17 OF THE IBC ARE REQUIRED AS PART OF THIS PROJECT. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH THESE OVERSIGHT AND QUALITY ASSURANCE REQUIREMENTS.
2. THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE WILL BE PROVIDING SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE IBC. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ADEQUATE TIME AND ACCESS FOR COMPLETION OF SPECIAL INSPECTIONS PRIOR TO COVERING THE WORK TO BE INSPECTED.
3. AS A MINIMUM, SPECIAL INSPECTIONS ARE TO BE COMPLETED FOR THE FOLLOWING AREAS OF CONSTRUCTION.

CONSTRUCTION TYPE	APPLICABLE CODE TABLE(S)
SOILS / FOUNDATIONS	IBC 1705.6
CONCRETE	IBC 1705.3
STRUCTURAL STEEL	AISC 360

DEFERRED SUBMITTAL ITEMS:

1. THE FOLLOWING PORTIONS OF THE PROJECT ARE DEFERRED SUBMITTAL ITEMS AND HAVE NOT BEEN DESIGNED BY THE ENGINEER OF RECORD.

   - ANCHORAGE OF EQUIPMENT AND APPURTENANCES
   - HOLDING TANK
   - HYDRAULIC GATES
   - LADDERS
   - PRE-ENGINEERED ELECTRICAL I&C BUILDING
   - HAND RAILING
   - WEDGE WIRE SCREEN
   - STOP LOGS

- PRE-FABRICATED ACCESS BRIDGE (ALTERNATIVE ACCESS)

2. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE ENGINEER OF RECORD HAS REVIEWED THE SUBMITTAL DOCUMENTS AND INDICATED AS A MINIMUM THAT THEY HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE STRUCTURE.
3. DEFERRED SUBMITTAL ITEMS SHALL BE PREPARED AND STAMPED BY A LICENSED CIVIL OR STRUCTURAL PROFESSIONAL ENGINEER UNLESS OTHERWISE NOTED ELSEWHERE IN THESE DOCUMENTS.

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

STRUCTURAL NOTES

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	63 OF 240
DRAWING:	S-001

GENERAL DESIGN CRITERIA:

1. THE FOLLOWING, DESIGN CODES, DESIGN CRITERIA AND STRUCTURE LOADS WERE USED TO COMPLETE THE STRUCTURAL DESIGN.

   - 2018 INTERNATIONAL BUILDING CODE
   - 2016 ASCE7 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
   - AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, FIFTEENTH EDITION.
   - ACI 318-14, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
   - ACI 350-06, CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY.
   - USACE EM 1110-2-2104 STRENGTH DESIGN FOR REINFORCED CONCRETE - HYDRAULIC STRUCTURES
   - USACE EM 1110-2-2100, STABILITY ANALYSIS OF CONCRETE STRUCTURES
   - USACE ETL 1110-2-584, DESIGN OF HYDRAULIC STEEL STRUCTURES

LOAD	DETAIL	MAGNITUDE	UNITS	NOTES
LIVE LOADS	FLOOR	100	PSF	
	WALKWAYS/PLATFORMS	100	PSF	
SNOW	GROUND SNOW LOAD (Pg)	70	PSF	
	EXPOSURE FACTOR (Ce)	0.9		FULLY EXPOSED
	IMPORTANCE FACTOR (Is)	1.0		
	THERMAL FACTOR (Ct)	1.0		
ICE	NOMINAL ICE THICKNESS	1	IN	
	IMPORTANCE FACTOR (I:)	1.0		
	STRUCTURE CATEGORY	II		
WIND	BASIC WIND SPEED	107	MPH	NOMINAL DESIGN 3-SECOND GUST
	IMPORTANCE FACTOR (Iw)	1.0		
	BUILDING OCCUPANCY CATEGORY	II		
	EXPOSURE	C		
WIND-ON-ICE	CONCURRENT WIND SPEED	107	MPH	NOMINAL DESIGN 3-SECOND GUST
	IMPORTANCE FACTOR (Iw)	1.0		
	BUILDING OCCUPANCY CATEGORY	II		
	EXPOSURE	C		
EARTHQUAKE	IMPORTANCE FACTOR (Ie)	1.0		STEEL TOWER STRUCTURE
	BUILDING OCCUPANCY CATEGORY	II		
	Ss	23.8	%g	
	S1	6.8	%g	
	SITE CLASS	C		
	SDS	20.6	%g	
	SD1	6.8	%g	
	SEISMIC DESIGN CATEGORY	B		
	R (TOWER)	1.5		ORDINARY CONCENTRICALLY BRACED FRAME
	R (CONCRETE)	3.0		ORDINARY REINFORCED CONC MOMENT FRAME
	Ω_0	1.0		
	C_d	1.5		
	HL	NL		
	ANALYSIS PROCEDURE	ELF		EQUIVALENT LATERAL FORCE

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

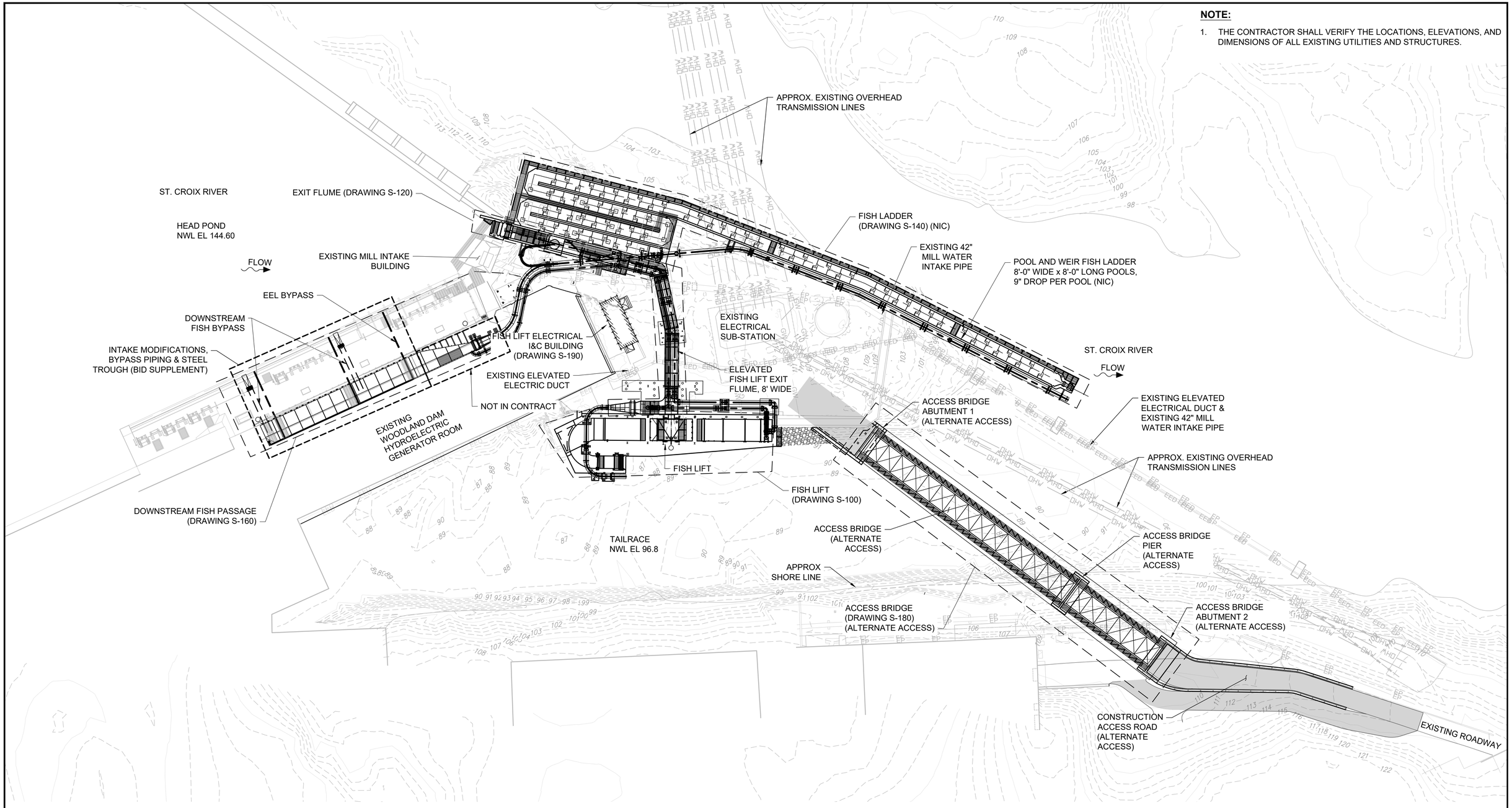
MAINE DEPARTMENT OF MARINE RESOURCES

STRUCTURAL DESIGN CRITERIA

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	64 OF 240
DRAWING:	S-002

NOTE:

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES AND STRUCTURES.



SITE PLAN
SCALE: 1"=30'

30' 0 30' 60'

N

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REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	65 OF 240
DRAWING:	S-003

NOTES:

1. MINIMUM TIME BETWEEN ADJACENT CONCRETE POURS SHALL BE 7 DAYS.
2. MAXIMUM CONCRETE CONSTRUCTION JOINT SPACING SHALL BE 40'-0"
3. 36" CAST IRON RING AND COVER. EMBED/CAST FLUSH WITH TOP OF CONCRETE SLAB.
4. INTERRUPT RAILING AND PROVIDE REMOVABLE SAFETY CHAIN AT WEIR/WALL EMBEDS.
5. SEE DRAWING S-210 FOR FISH LIFT TOWER COLUMN LOCATIONS.
6. SEE DRAWING S-310 FOR BYPASS PIPE SUPPORT COLUMN.

RAILING

KEYED NOTES:

1. 5PT20 FLUSH MOUNTED CRANE BASE (1 LOC).
2. 5PT20 WALL MOUNTED CRANE BASE (6 LOC).
3. POLYPROPYLENE (PP) MANHOLE RUNGS (LANE INTERNATIONAL P-14938).
4. 5PA5 FLUSH MOUNTED CRANE BASE (1 LOC).

MICROPILE (BELOW)
PILE CAP EL 110.0
EXISTING CONCRETE SLAB
EXISTING BLDG
EXISTING TOC EL 110.2
BYPASS PIPE SUPPORT COLUMN, TYP (NOTE 6)
EXISTING CONCRETE WALL (TOW EL 109.4±)
TOWER COLUMN, TYP (NOTE 5)
AWS PIPING
3'x3' CONC STRUT (TOC EL 110.0)
TOW EL 110.00
WALKWAY EL 110.0
TOC EL 81.5
HOPPER PIT
17'-3"
SLOPE
TOC EL 81.0
TOC SLOPE (EL 90.0 TO 88.5
2" CONCRETE BOND OUT FOR PIT ANTENNA
TOC EL 88.50
FLOW
TOC EL 90.00
FUTURE WALL LOCATION
FUTURE SECONDARY ENTRANCE
ENTRANCE GATE
WALKWAY EL 110.0
ELEVATED PLATFORM
ISOLATION GATE
STOP LOG SLOT
TOW EL 110.00
6"Ø DRAINPIPE
PERF-PLATE WALL
3' MANHOLE (NOTE 3)
WEIR CREST EL 91.5
CURTAIN WALL
NOTE 4 (TYP)
WEIR CREST EL 99.5
STILLING WALL
TOW EL 110.00
BYPASS PIPE SUPPORT COLUMN, TYP (NOTE 6)
TAILRACE NWL 96.8

4'-10 1/2" 4'-10 1/2" 12'-6" 12'-0" 14'-0" 10'-0" 7'-3"
3'-0" 6'-0" 14'-0" R5'-0" 13'-9 1/2" 8'-0" 3'-0" 4'-6" 10'-1 1/2" 3'-0" 14'-0" 3'-0"
32'-3 1/2" 18'-9 1/2" 77'-5 1/2"

PLAN AT EL 110.00
SCALE: 3/16" = 1'-0"
0 4' 8'

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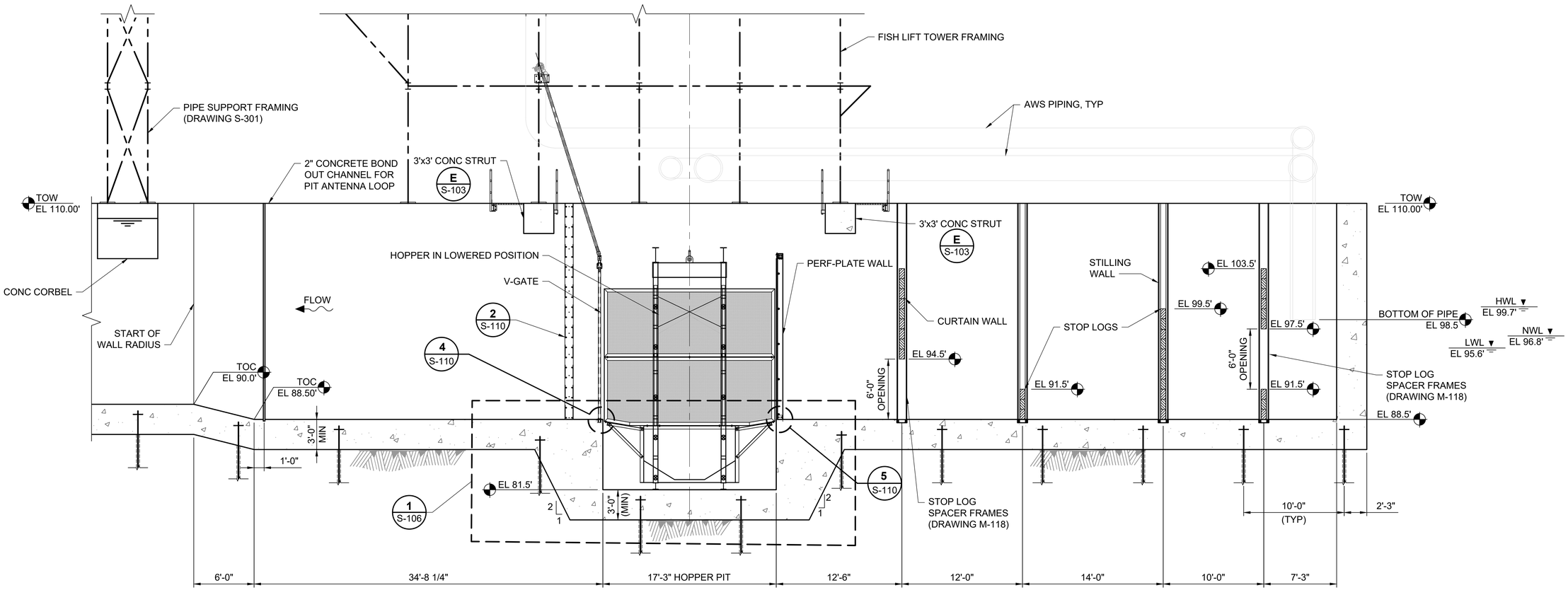
ALDEN a verdantas company

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT - STRUCTURAL CONCRETE EL 110.00

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	66 OF 240
DRAWING:	S-100



A S-100 **SECTION**
SCALE: 3/16"=1'-0"

0 4' 8'

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WOODLAND FISH LIFT PASSAGE DESIGN

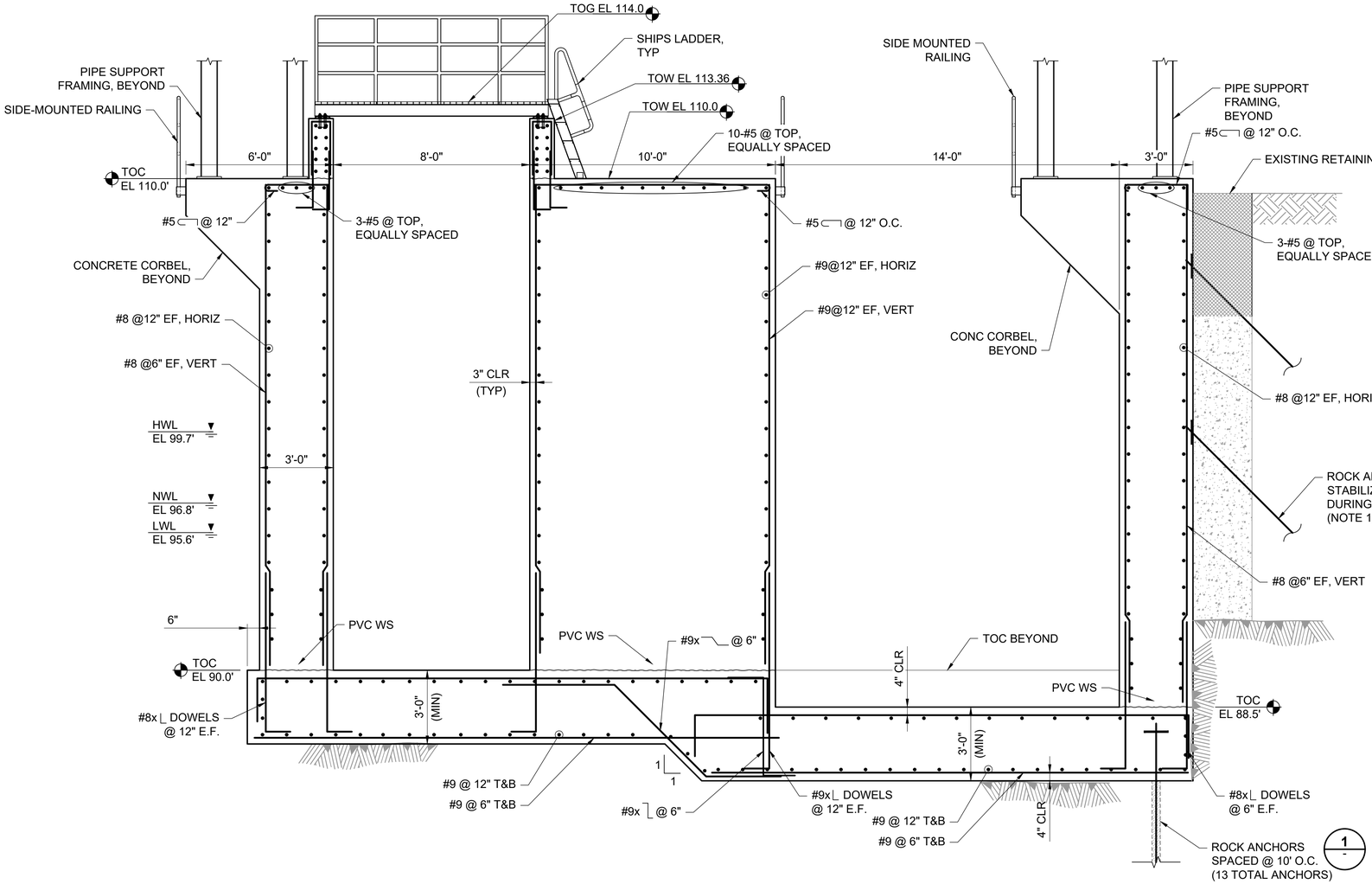
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT - STRUCTURAL CONCRETE SECTION

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	67 OF 240
DRAWING:	S-101

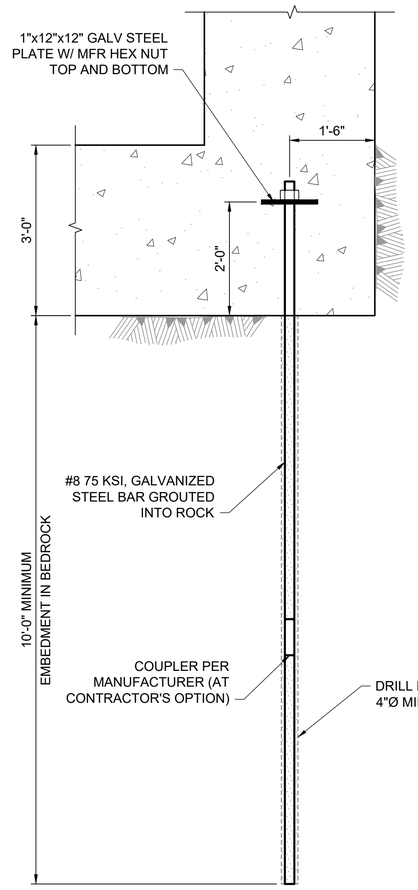
NOTE:

1. CONTRACTOR SHALL DESIGN POST-TENSION ROCK ANCHORS OR OTHER MEASURES TO KEEP EXISTING RETAINING WALL IN PLACE DURING ROCK EXCAVATION FOR THE NEW FISH LIFT FLUME.
2. EXISTING RETAINING WALL TO REMAIN UNTIL FLUME CONCRETE IS COMPLETED. THE TOP FIVE FEET OF THE EXISTING RETAINING WALL SHALL BE REMOVED FOR THE PIPE SUPPORT FOUNDATIONS.



B / S-100 **SECTION**
SCALE: 3/8"=1'-0"
S-105
S-106

0 2' 4'
3/8" = 1'-0



1 / - **ROCK ANCHOR DETAIL**
SCALE: 3/4"=1'-0"
S-103

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

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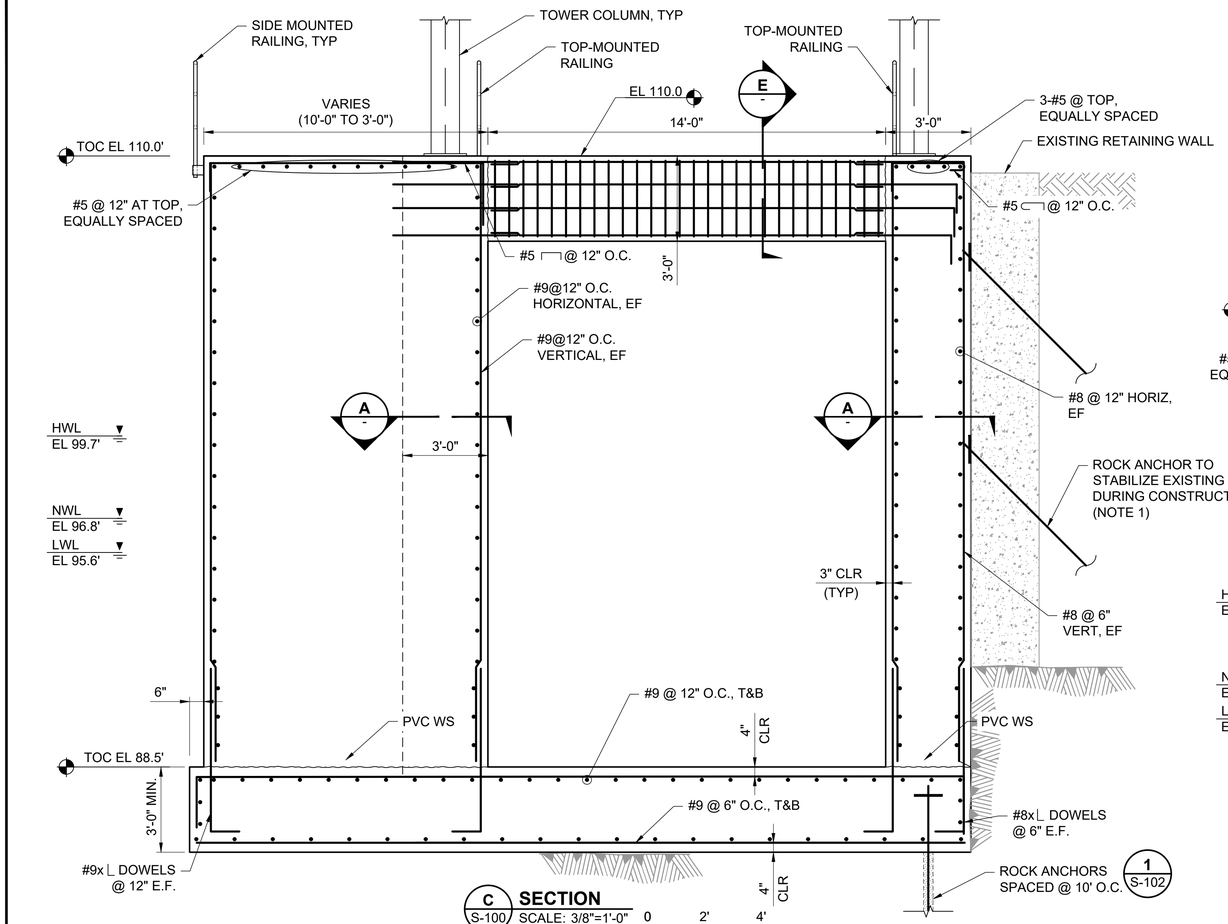
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT - STRUCTURAL CONCRETE SECTION

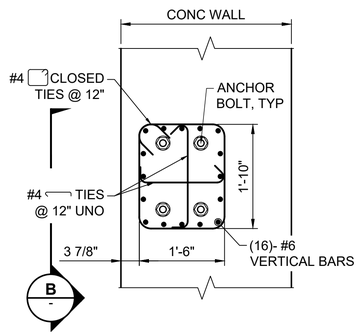
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DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	68 OF 240
DRAWING:	S-102

NOTE:

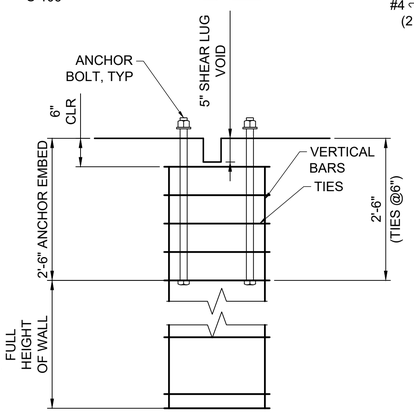
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2. 36" CAST IRON RING AND COVER, EMBED/CAST FLUSH WITH TOP OF CONCRETE SLAB.



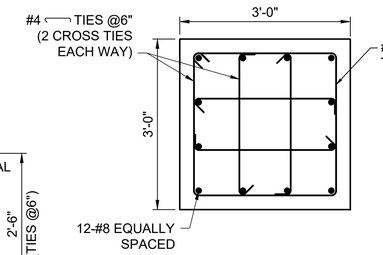
C S-100 **SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'
S-106



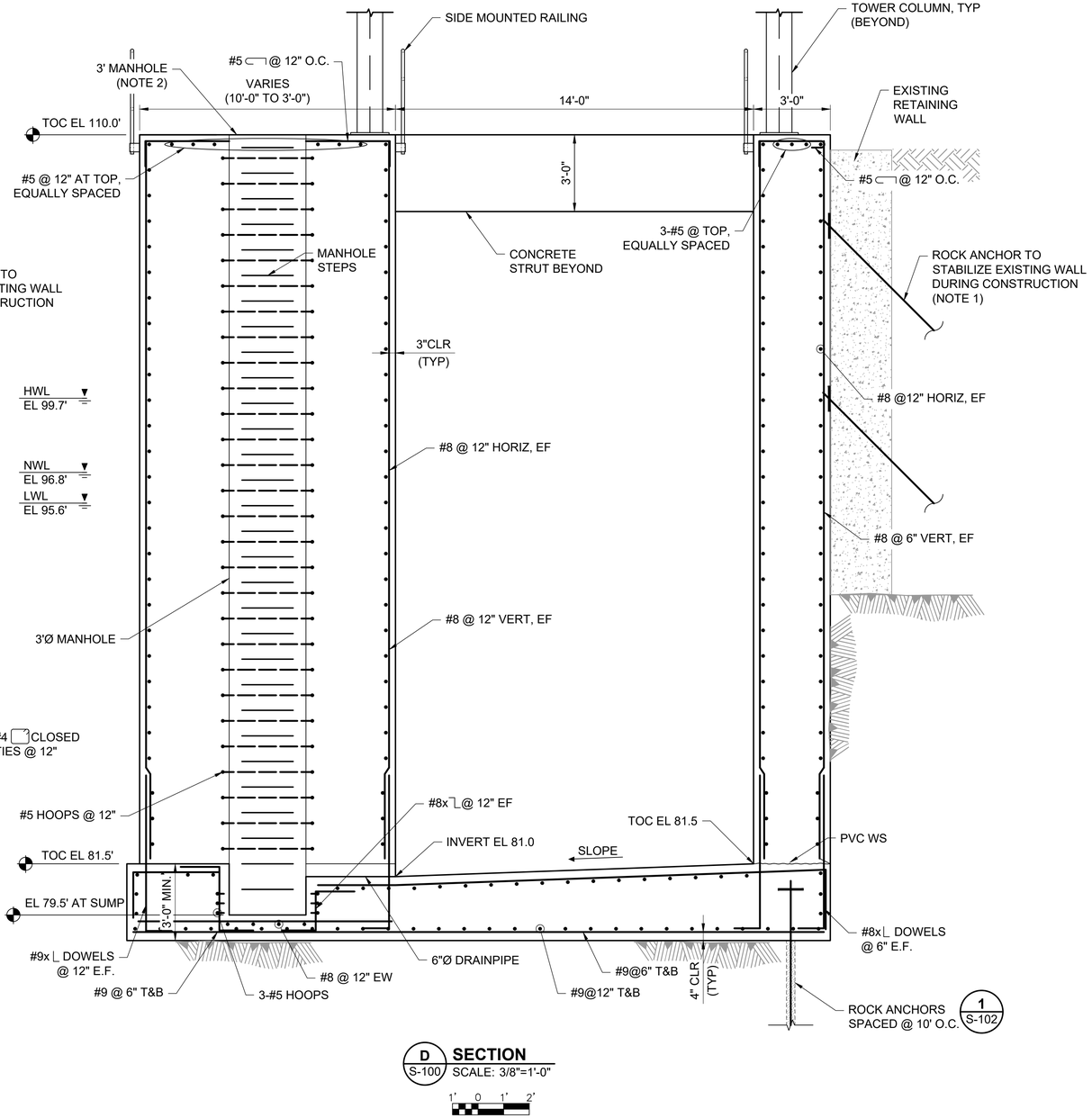
A - **SECTION AT COLUMN REINFORCEMENT**
SCALE: 3/4"=1'-0"
0 1' 2'



B - **SECTION AT COLUMN**
SCALE: 3/4"=1'-0"
0 1' 2'



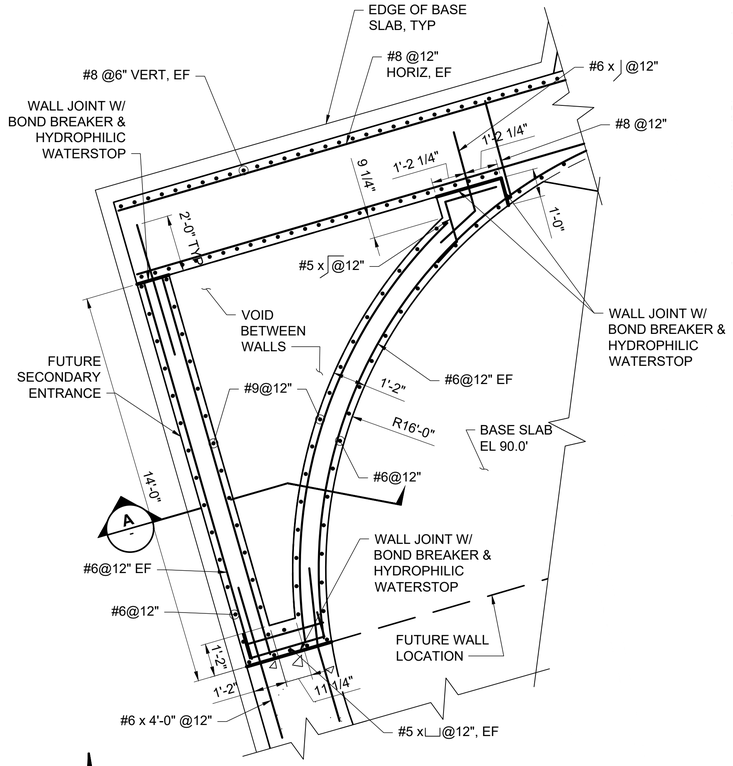
E - **SECTION AT STRUT**
SCALE: 3/4"=1'-0"
S-101
0 1' 2'



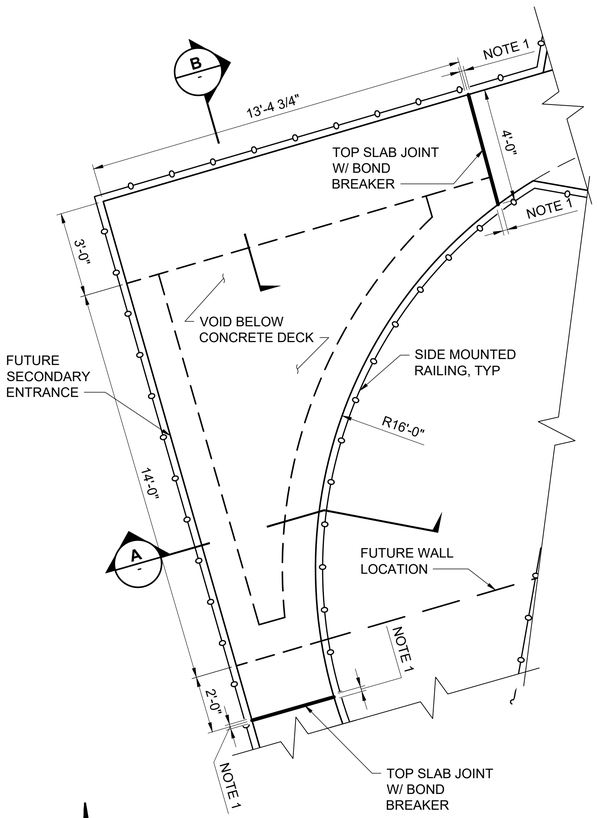
D S-100 **SECTION**
SCALE: 3/8"=1'-0"
1' 0 1' 2'

a verdantas company ALDEN	**ISSUED FOR BID** **NOT FOR CONSTRUCTION** **SEPTEMBER 3, 2025**	REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY	VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	WOODLAND FISH LIFT PASSAGE DESIGN MAINE DEPARTMENT OF MARINE RESOURCES	FISH LIFT - STRUCTURAL CONCRETE SECTIONS
		9/3/2025	ISSUED FOR BID	M. GRAESER			

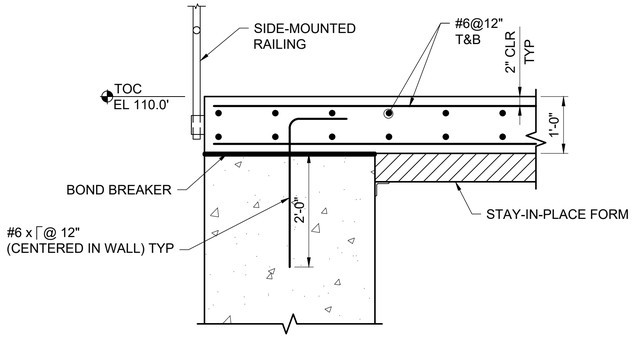
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	69 OF 240
DRAWING:	S-103



1 S-100 **SECONDARY ENTRANCE - LOWER PLAN**
SCALE: 3/8"=1'-0"
0 2' 4'



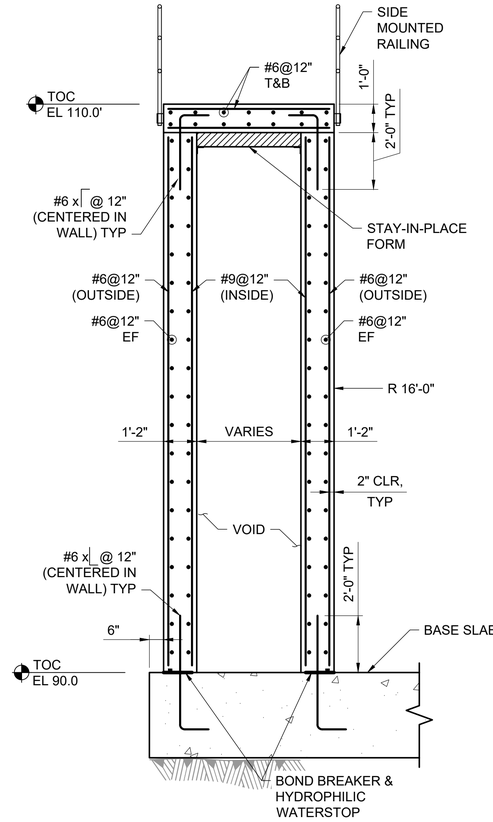
2 S-100 **SECONDARY ENTRANCE - UPPER PLAN**
SCALE: 3/8"=1'-0"
0 2' 4'



B - **SECTION**
SCALE: 3/4"=1'-0"
0 1' 2'

NOTE:

1. INTERRUPT RAILING AT CONSTRUCTION JOINT (PROVIDE 4" MAX GAP).



A - **SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'

9/3/2025	ISSUED FOR BID	M. GRAESER	
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY	

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

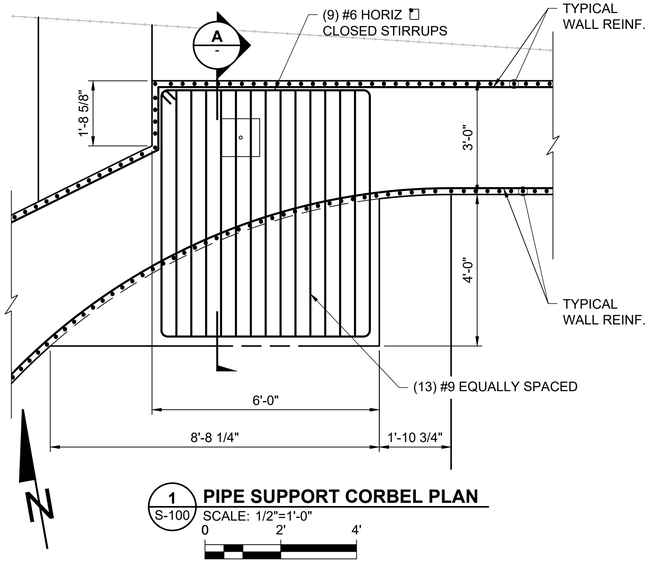
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

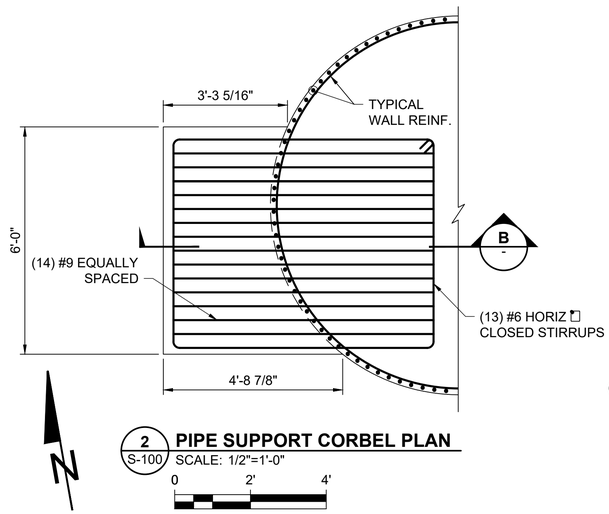
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT - SECONDARY ENTRANCE

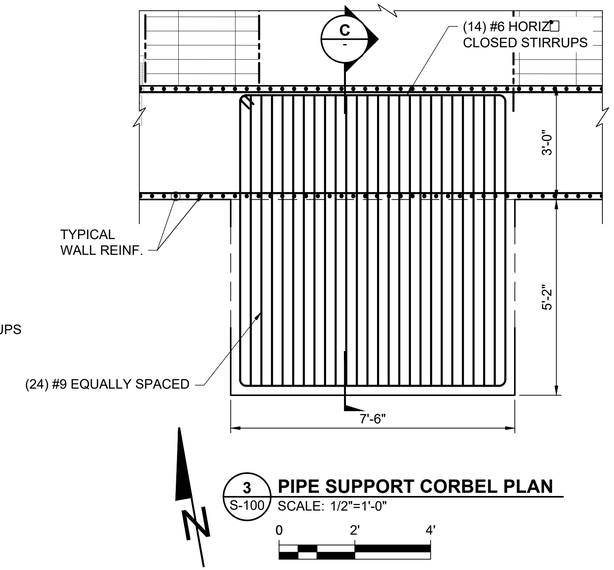
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	70 OF 240
DRAWING:	S-104



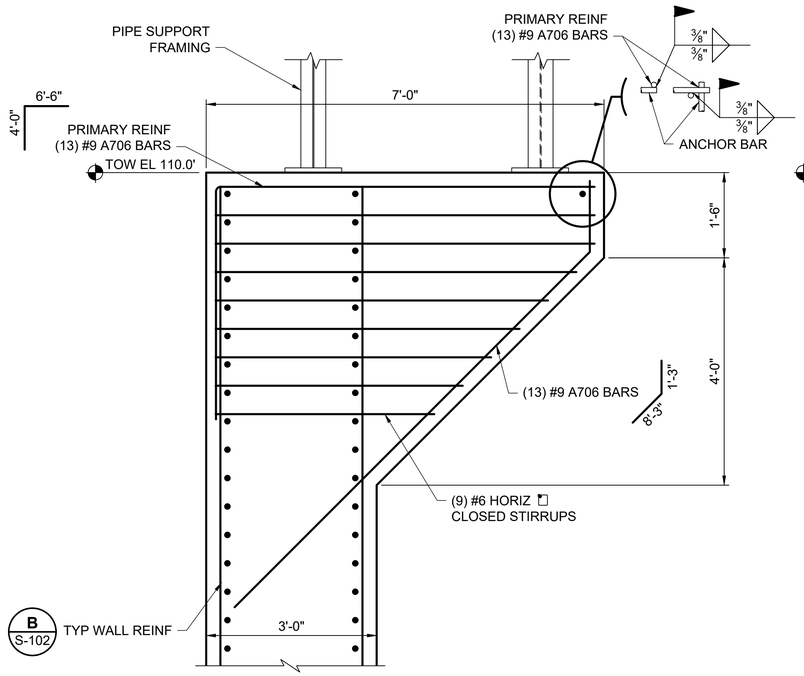
1 S-100 **PIPE SUPPORT CORBEL PLAN**
SCALE: 1/2"=1'-0"
0 2' 4'



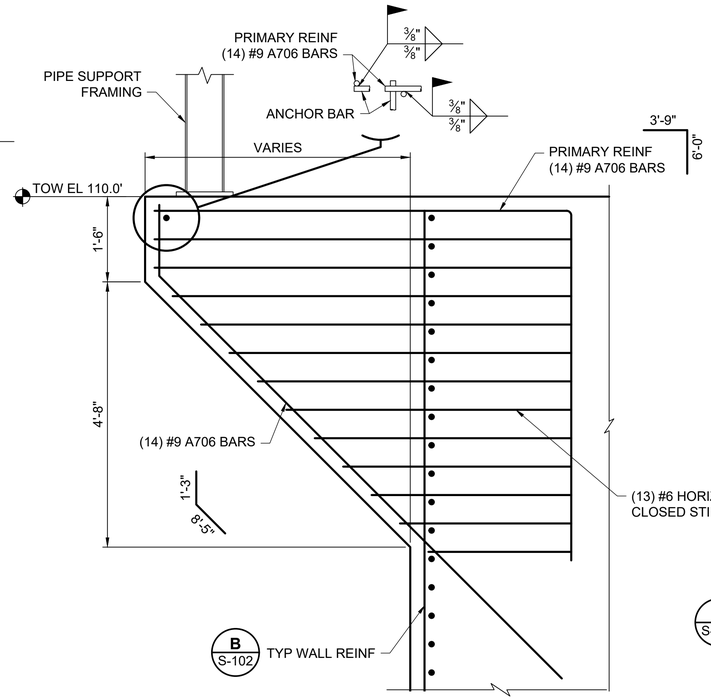
2 S-100 **PIPE SUPPORT CORBEL PLAN**
SCALE: 1/2"=1'-0"
0 2' 4'



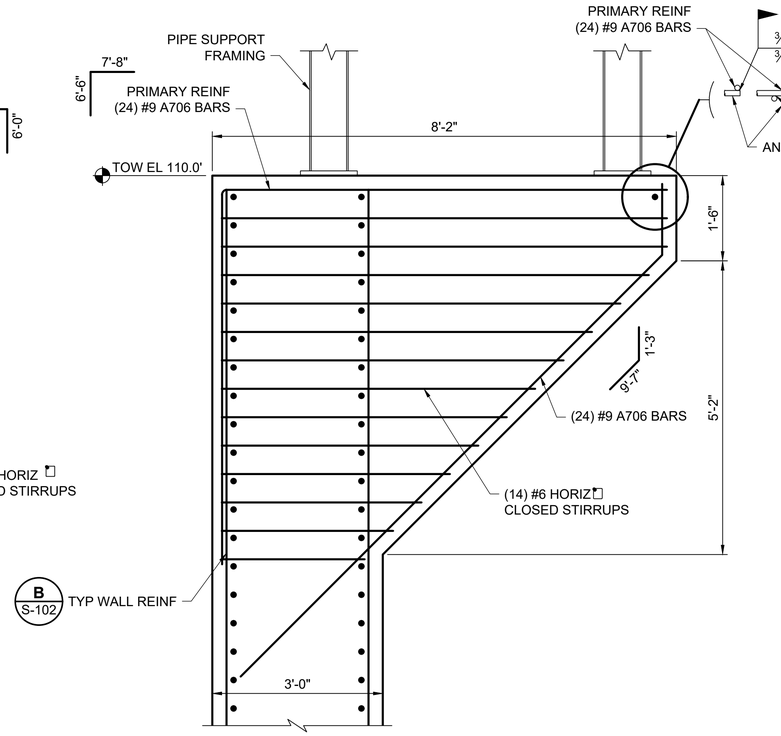
3 S-100 **PIPE SUPPORT CORBEL PLAN**
SCALE: 1/2"=1'-0"
0 2' 4'



A - **CORBEL DETAIL**
SCALE: 3/4"=1'-0"
0 1' 2'



B - **CORBEL DETAIL**
SCALE: 3/4"=1'-0"
0 1' 2'



C - **CORBEL DETAIL**
SCALE: 3/4"=1'-0"
0 1' 2'

a verdantas company
ALDEN

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

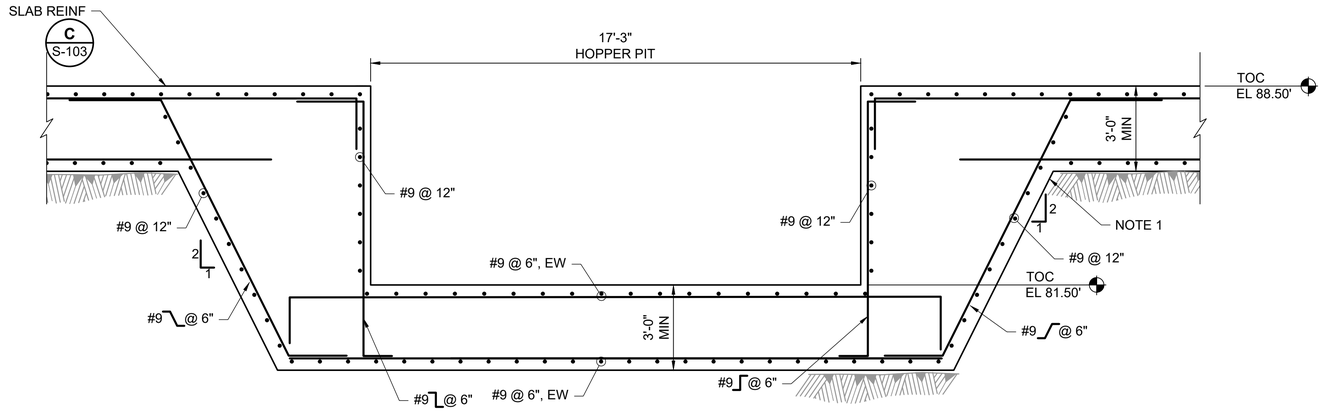
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT - CONCRETE CORBELS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	71 OF 240
DRAWING:	S-105

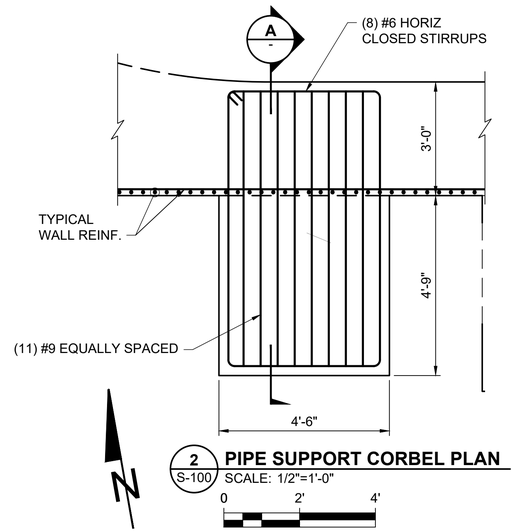
NOTE:

1. SLOPES SHOWN ARE APPROXIMATE. ACTUAL SLOPES WILL VARY BASED ON CONTRACTOR'S COMPLIANCE WITH APPLICABLE SAFETY REQUIREMENTS.



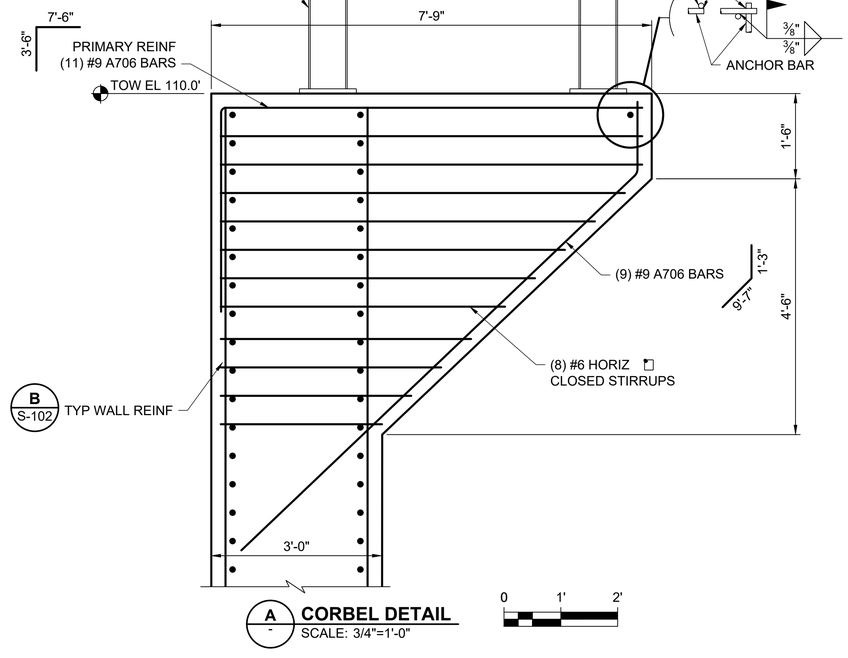
1 HOPPER PIT DETAIL (S-101)
SCALE: 3/8" = 1'-0"

0 2' 4'



2 PIPE SUPPORT CORBEL PLAN (S-100)
SCALE: 1/2"=1'-0"

0 2' 4'



A CORBEL DETAIL
SCALE: 3/4"=1'-0"

0 1' 2'

ALDEN — a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

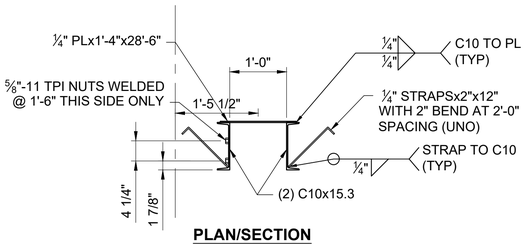
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT - CONCRETE SECTIONS

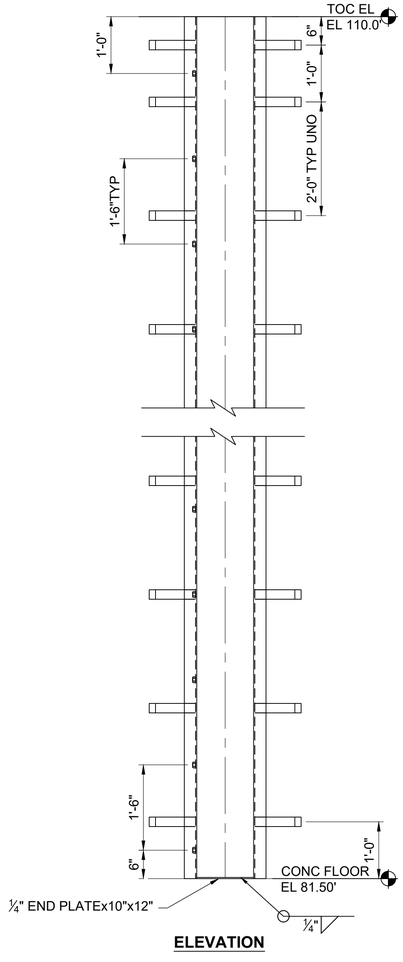
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	72 OF 240
DRAWING:	S-106

EMBEDMENT NOTES:

1. ALL EMBEDMENTS SHALL BE GALVANIZED.
2. WELDS FOR ¼" x 2" STRAPS TO STRUCTURAL MEMBERS SHALL BE ALL AROUND FILLET WELD.
3. NUTS WELDED TO STRUCTURAL MEMBERS SHALL BE ¾" DIAMETER, 10 TPI (UNO) - ALL AROUND FILLET WELD.
4. LENGTH OF STRAPS SHOWN ON DRAWING INCLUDE A 2" BEND AT THE END.
5. THREADS OF WELDED NUTS SHALL BE CHASED AFTER GALVANIZING.

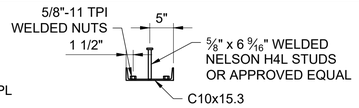


PLAN/SECTION

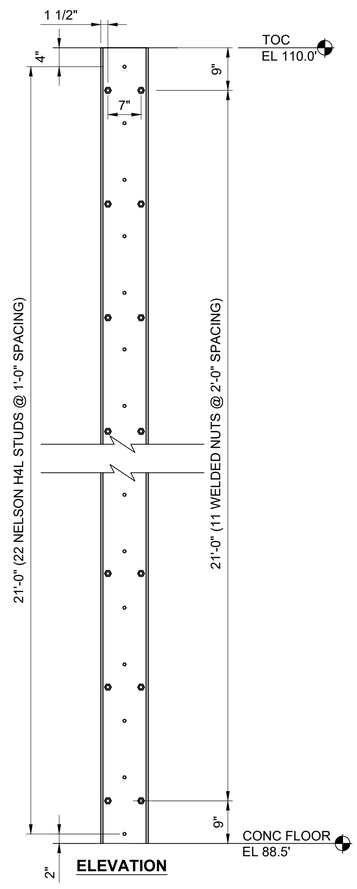


ELEVATION

1 S-100 **HOPPER RAIL WALL EMBEDMENTS (4 LOC)**
SCALE: 3/4"=1'-0"
M-115

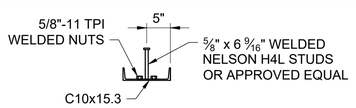


PLAN/SECTION

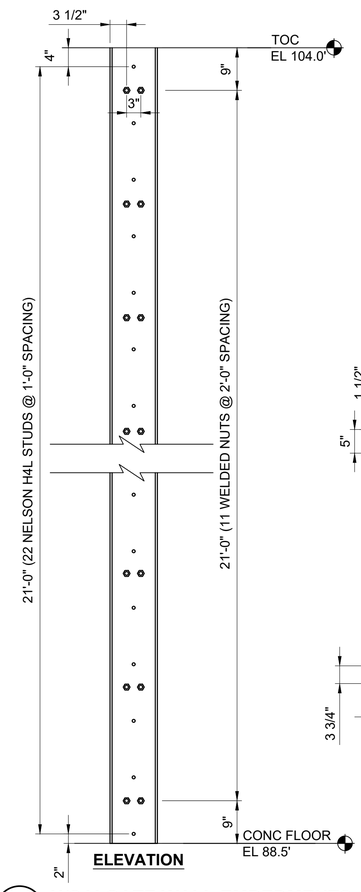


ELEVATION

2 S-100 **D/S V-GATE WALL EMBEDMENTS (2 LOC)**
SCALE: 3/4"=1'-0"
S-101
M-105

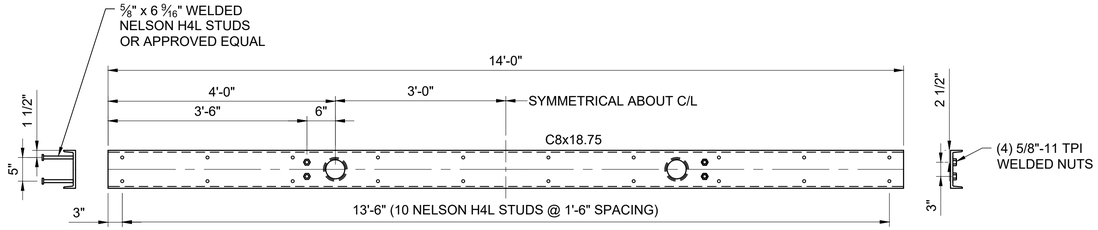


PLAN/SECTION

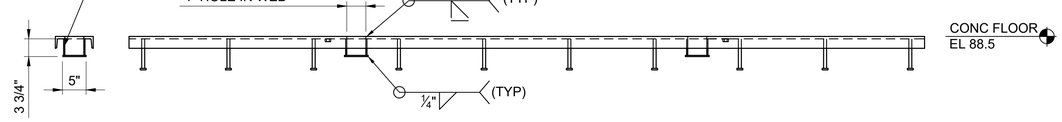


ELEVATION

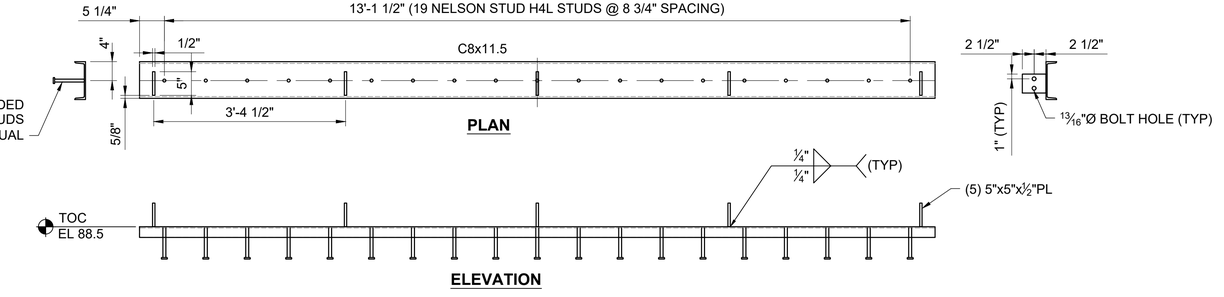
3 S-100 **U/S V-GATE WALL EMBEDMENTS (2 LOC)**
SCALE: 3/4"=1'-0"
M-105



PLAN



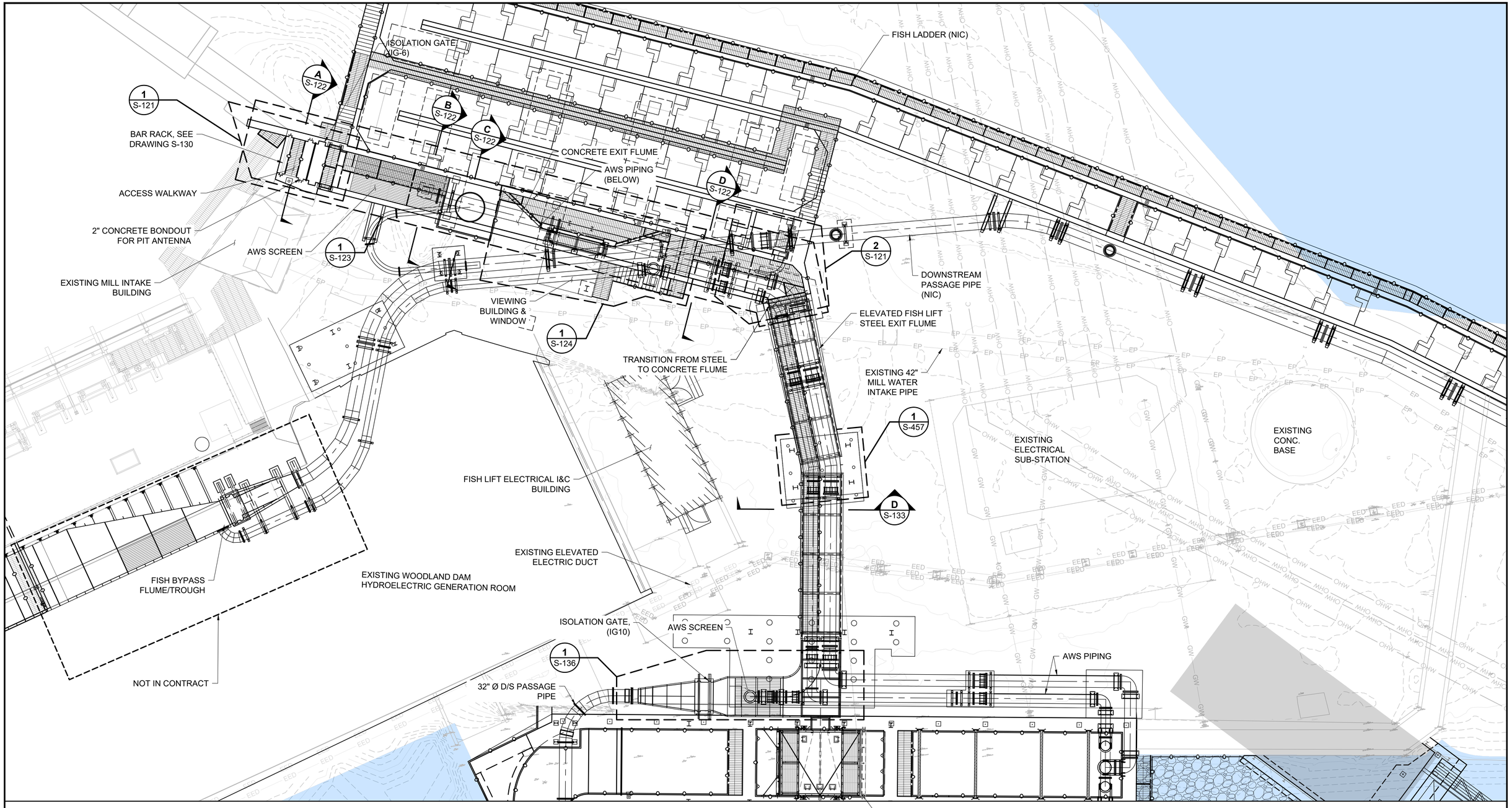
4 S-101 **V-GATE FLOOR EMBEDMENTS (1 LOC)**
SCALE: 3/4"=1'-0"
M-102



PLAN

ELEVATION

5 S-101 **UPSTREAM SCREEN FLOOR EMBEDMENT (1 LOC)**
SCALE: 3/4"=1'-0"
M-119



EXIT FLUME GENERAL ARRANGEMENT PLAN

SCALE: 1"=10'

10' 0 10' 20'

ALDEN — a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

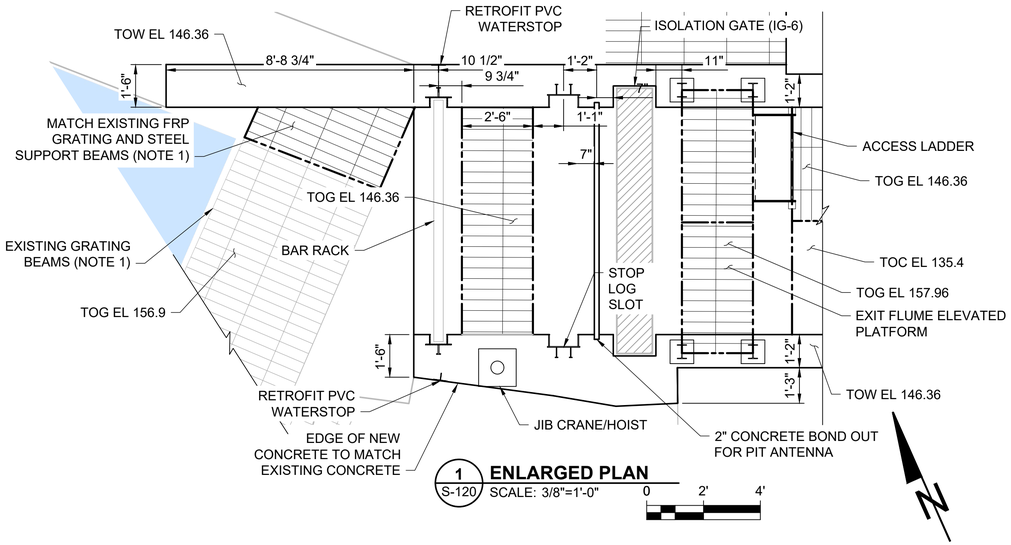
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

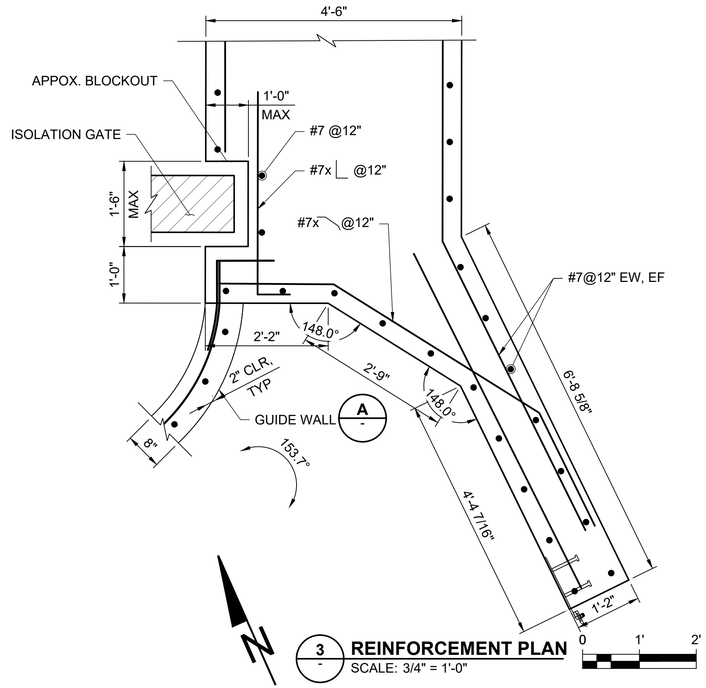
MAINE DEPARTMENT OF MARINE RESOURCES

EXIT FLUME PLAN

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	74 OF 240
DRAWING:	S-120



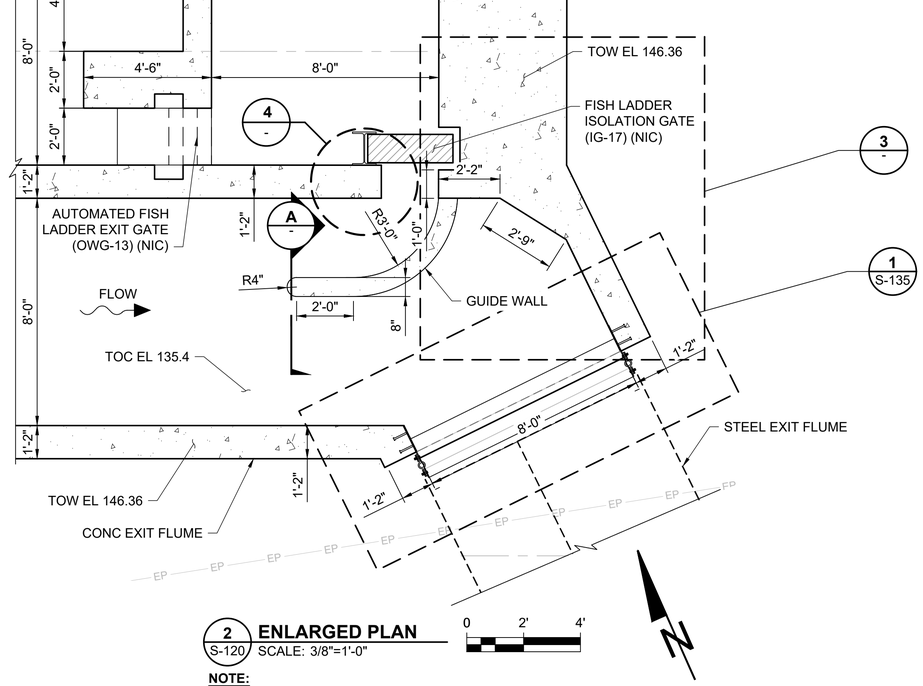
1 S-120 **ENLARGED PLAN**
SCALE: 3/8"=1'-0"
0 2' 4'



3 - **REINFORCEMENT PLAN**
SCALE: 3/4" = 1'-0"
0 1' 2'

NOTE:

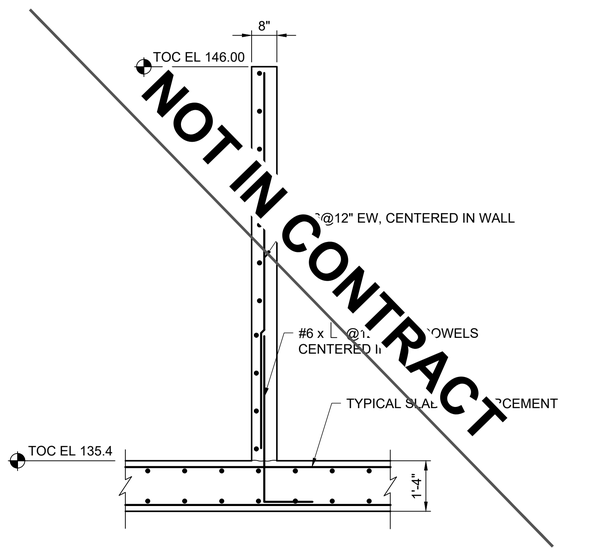
1. CCORDINATE WITH WOODLAND PULP AND ENGINEER FOR GRATING SUPPORT IN THIS AREA.



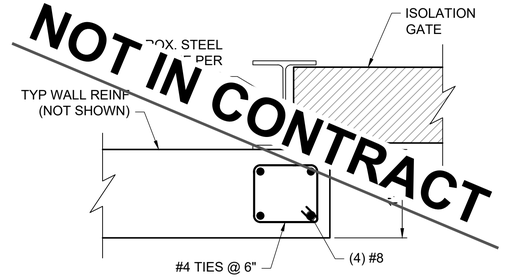
2 S-120 **ENLARGED PLAN**
SCALE: 3/8"=1'-0"
0 2' 4'

NOTE:

1. FRAMING, GRATING, PIPING AND HANDRAIL NOT SHOWN FOR CLARITY.



A - **GUIDE WALL SECTION**
SCALE: 1/2" = 1'-0"
0 2' 4'



4 - **REINFORCEMENT DETAIL**
SCALE: 1" = 1'-0"
0 1' 2'

a verdantas company

ALDEN

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

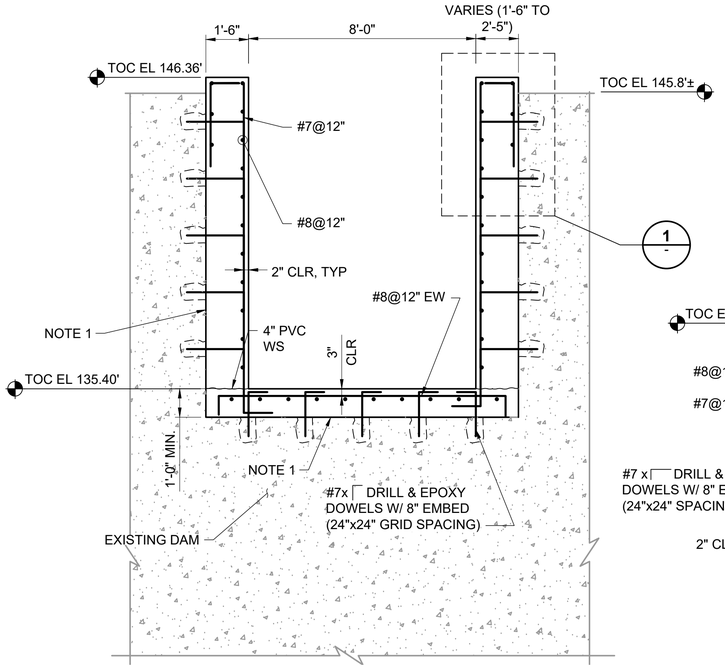
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

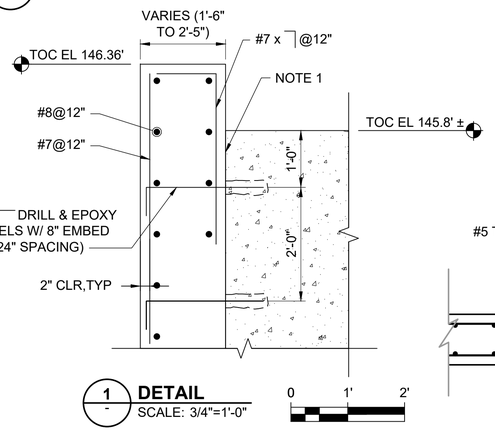
EXIT FLUME ENLARGED PLANS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	75 OF 240
DRAWING:	S-121



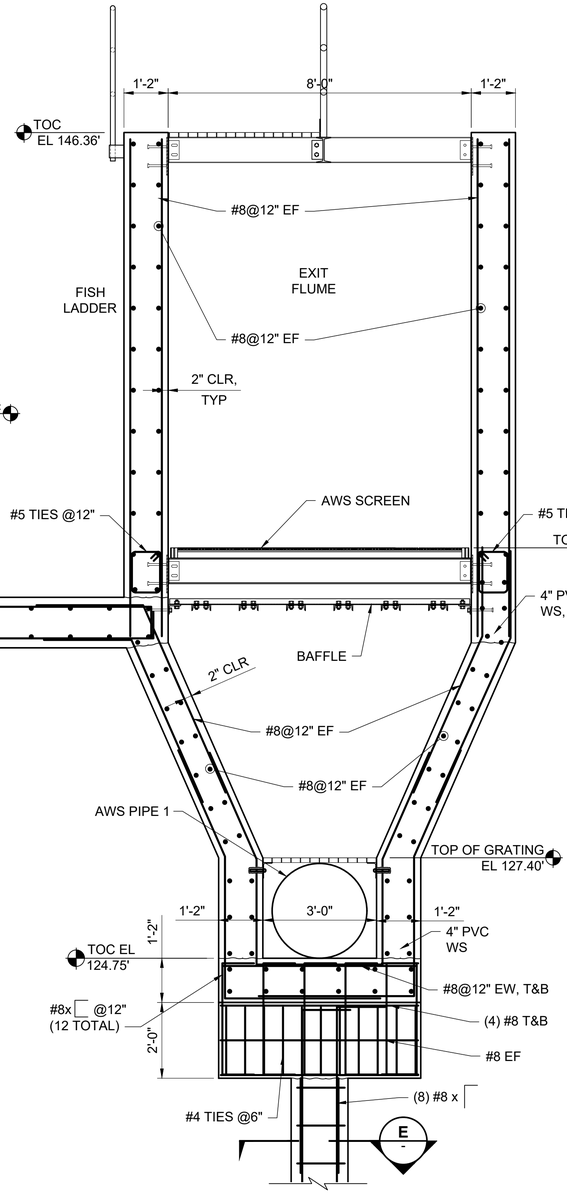
A S-120 **SECTION** SCALE: 3/8"=1'-0"

0 2' 4'



1 - **DETAIL** SCALE: 3/4"=1'-0"

0 1' 2'

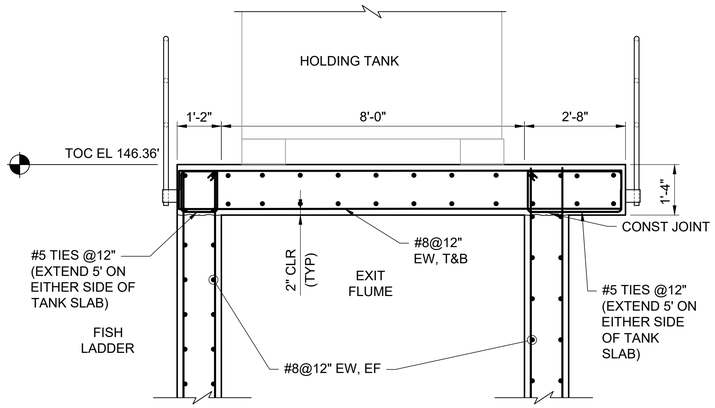


B S-120 **SECTION** SCALE: 1/2"=1'-0"

0 2' 4'

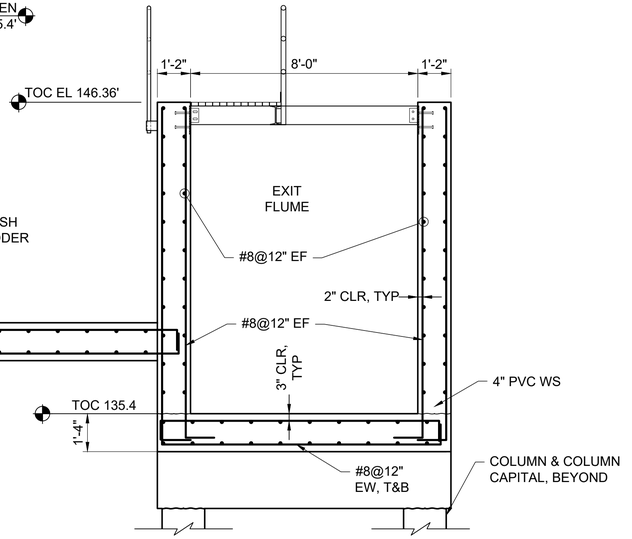
NOTE:

1. ROUGHEN EXISTING CONCRETE TO 1/4" AMPLITUDE.



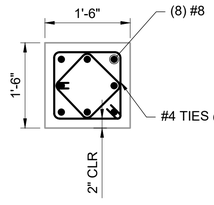
C S-120 **SECTION** SCALE: 1/2"=1'-0"

0 2' 4'



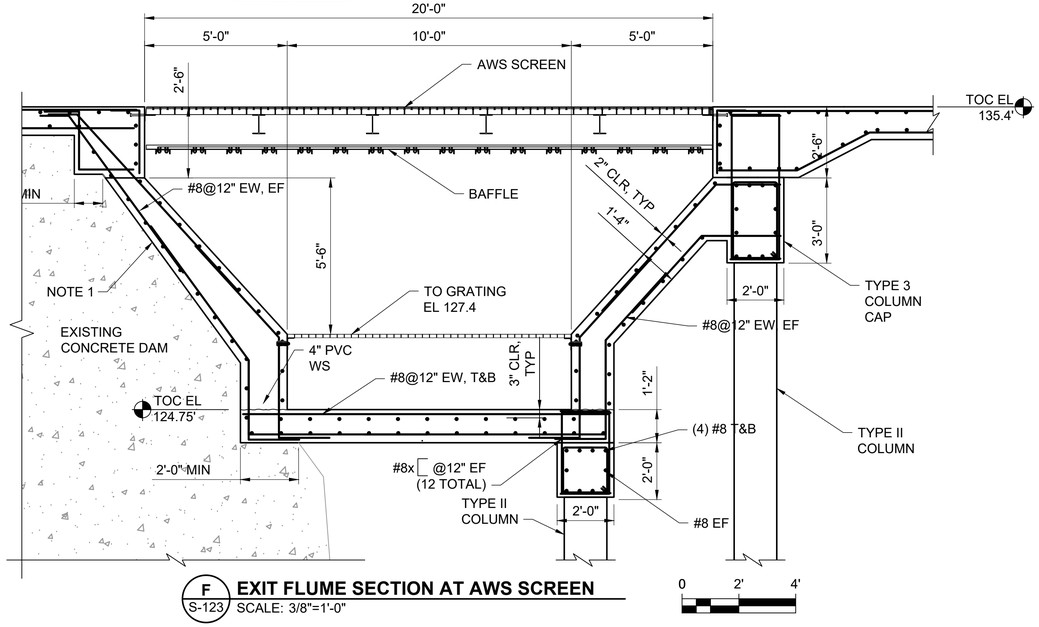
D S-120 **SECTION** SCALE: 3/8"=1'-0"

0 2' 4'



E - **COLUMN SECTION** SCALE: 3/4"=1'-0"

0 1' 2'



F S-123 **EXIT FLUME SECTION AT AWS SCREEN** SCALE: 3/8"=1'-0"

0 2' 4'

9/3/2025	ISSUED FOR BID	M. GRAESER
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

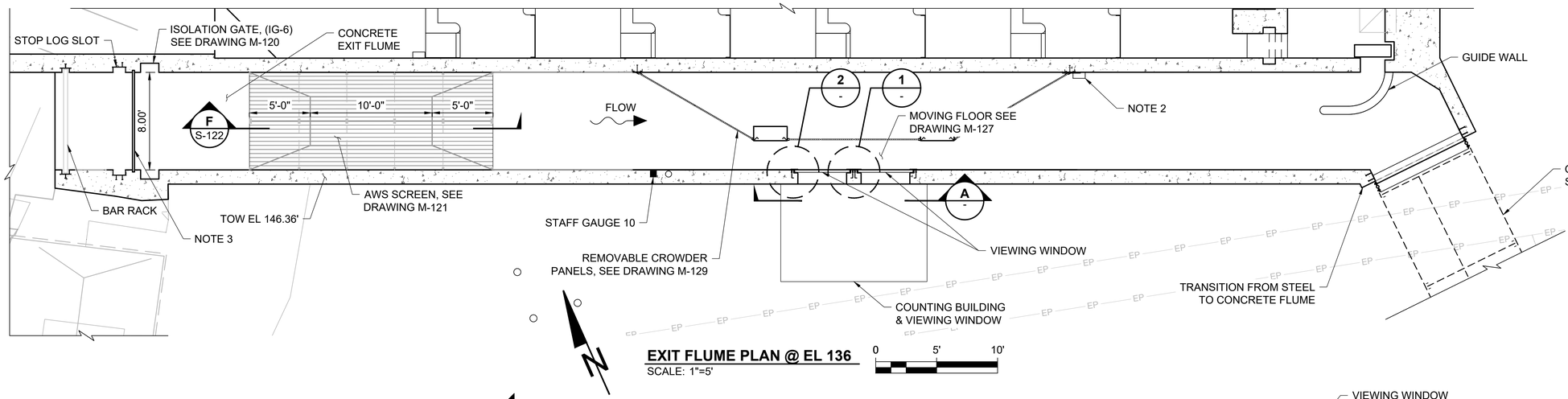
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

CONCRETE EXIT FLUME SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	76 OF 240
DRAWING:	S-122

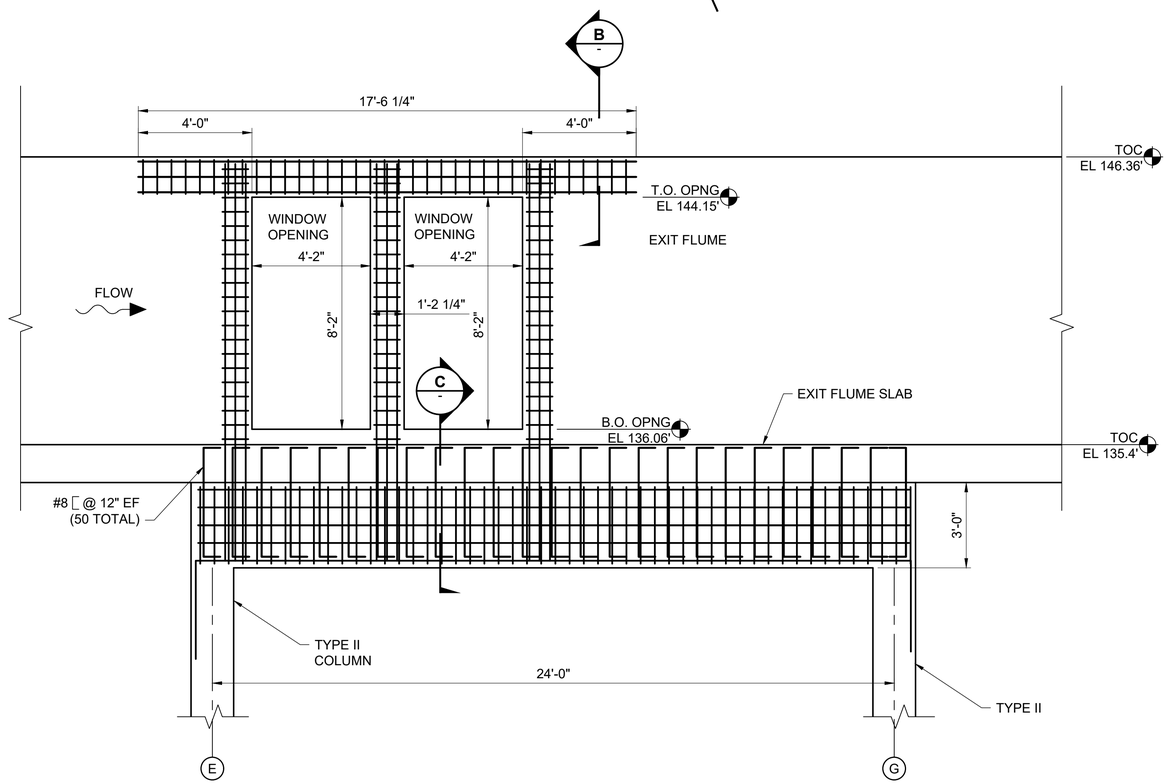


EXIT FLUME PLAN @ EL 136
SCALE: 1"=5'

0 5' 10'

NOTES:

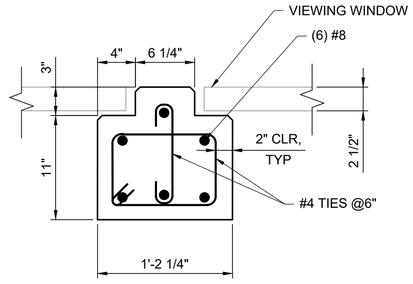
1. ROUGHEN EXISTING CONCRETE TO ¼" AMPLITUDE.
2. POLYPROPYLENE (PP) MANHOLE RUNGS (LANE INTERNATIONAL P-14938)
3. 2" CONCRETE BOND OUT FOR PIT ANTENNA.



A **WINDOW ELEVATION AT COUNTING AREA SIDE**
SCALE: 3/4"=1'-0"

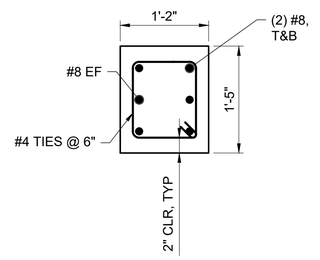
0 1' 2'

NOTE:
SLAB AND TYPICAL WALL
REINFORCEMENT NOT SHOWN.



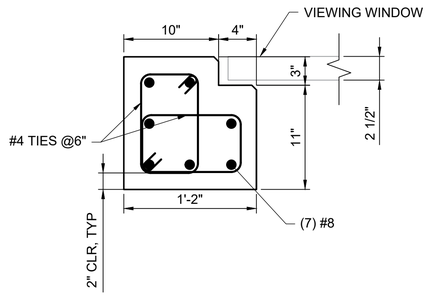
1 **SECTION**
SCALE: 1-1/2"=1'-0"

0 1' 2'



B **SECTION**
SCALE: 1"=1'-0"

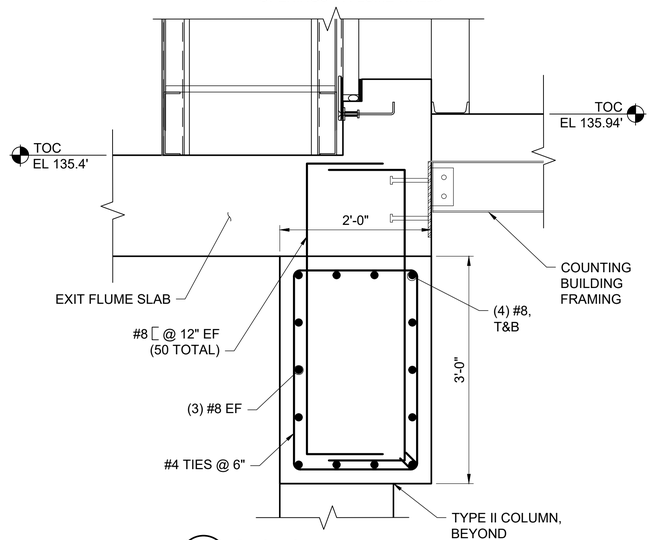
0 1' 2'



2 **SECTION**
SCALE: 1-1/2"=1'-0"

0 1' 2'

NOTE:
COLUMN REINFORCEMENT SHALL
BE PLACED EITHER SIDE OF ALL
OPENINGS IN FLUME WALLS



C **SECTION**
SCALE: 1"=1'-0"

0 1' 2'

ALDEN a verdantas company

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

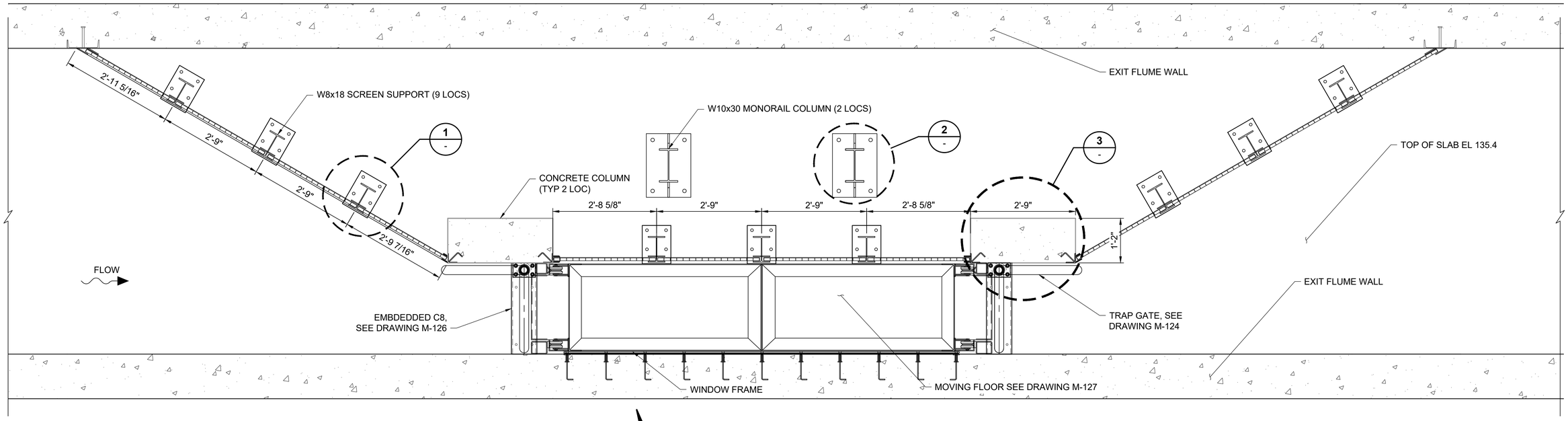
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

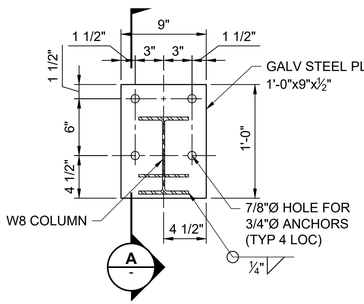
EXIT FLUME CONCRETE SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	76 OF 240
DRAWING:	S-123



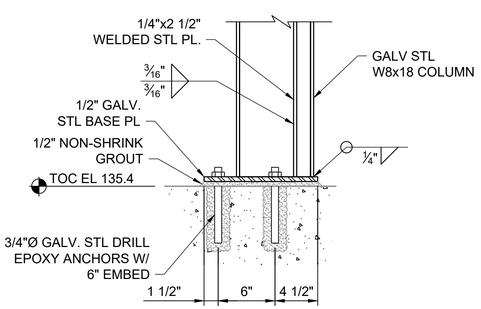
TRAP AND CROWDER PLAN AT EL 135.5
SCALE: 3/4"=1'-0"

0 1' 2'



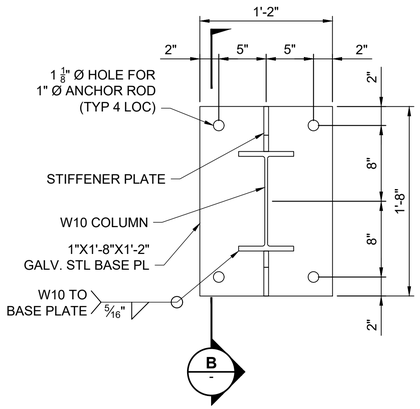
1 W8x18 BASE PLATE
SCALE: 1 1/2"=1'-0"

0 1' 2'



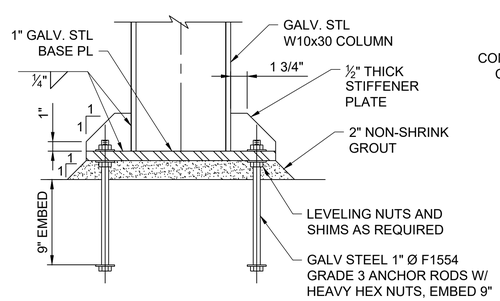
A SECTION
SCALE: 1 1/2"=1'-0"

0 1' 2'



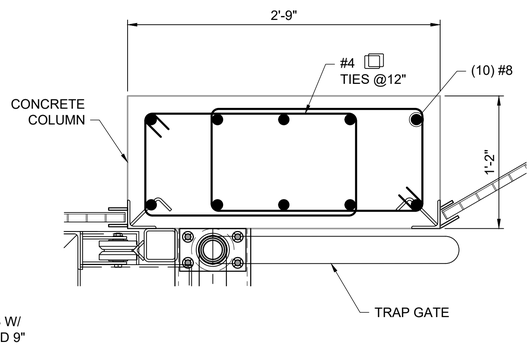
2 W10x30 BASE PLATE
SCALE: 1 1/2"=1'-0"

0 1' 2'



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

0 1' 2'



3 CONCRETE COLUMN
SCALE: 1 1/2"=1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

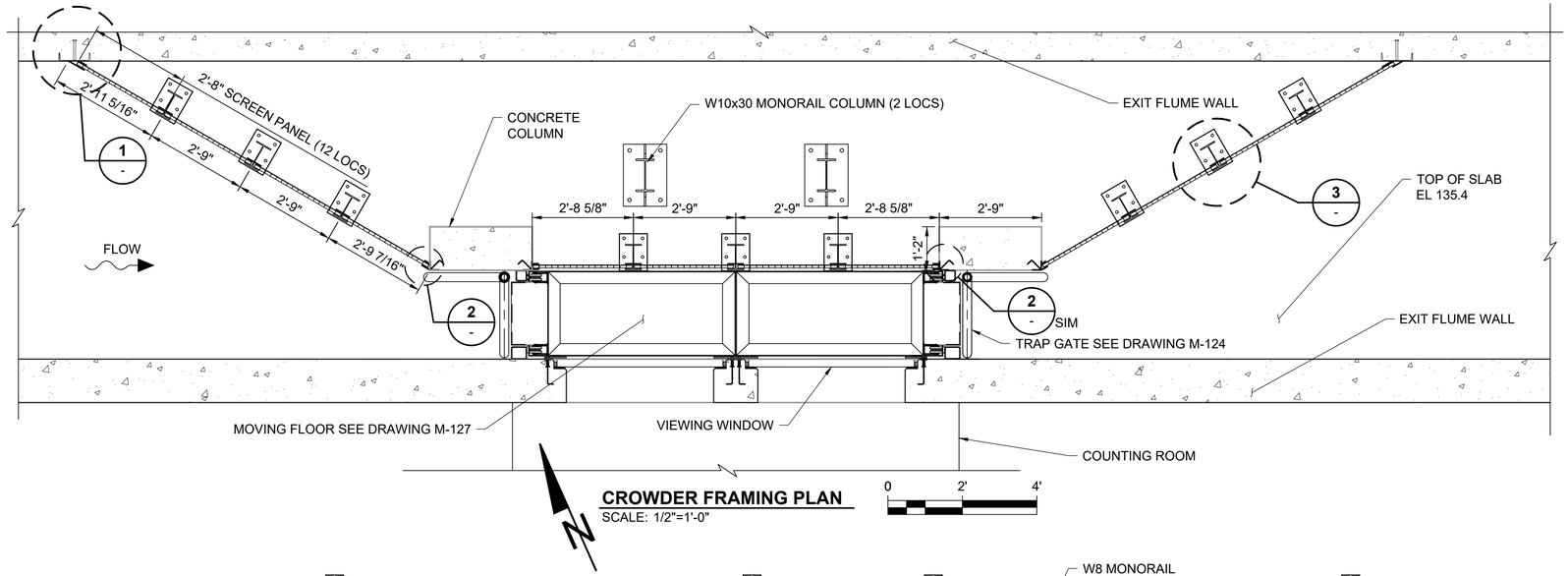
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

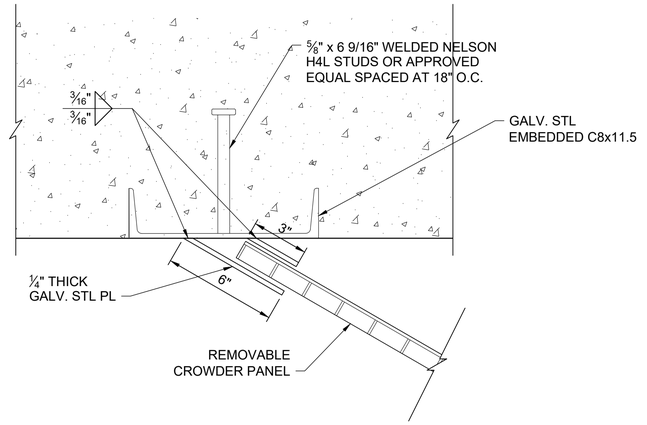
TRAP AND CROWDER FRAMING PLAN AT EL 135.5 AND DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	78 OF 240
DRAWING:	S-124



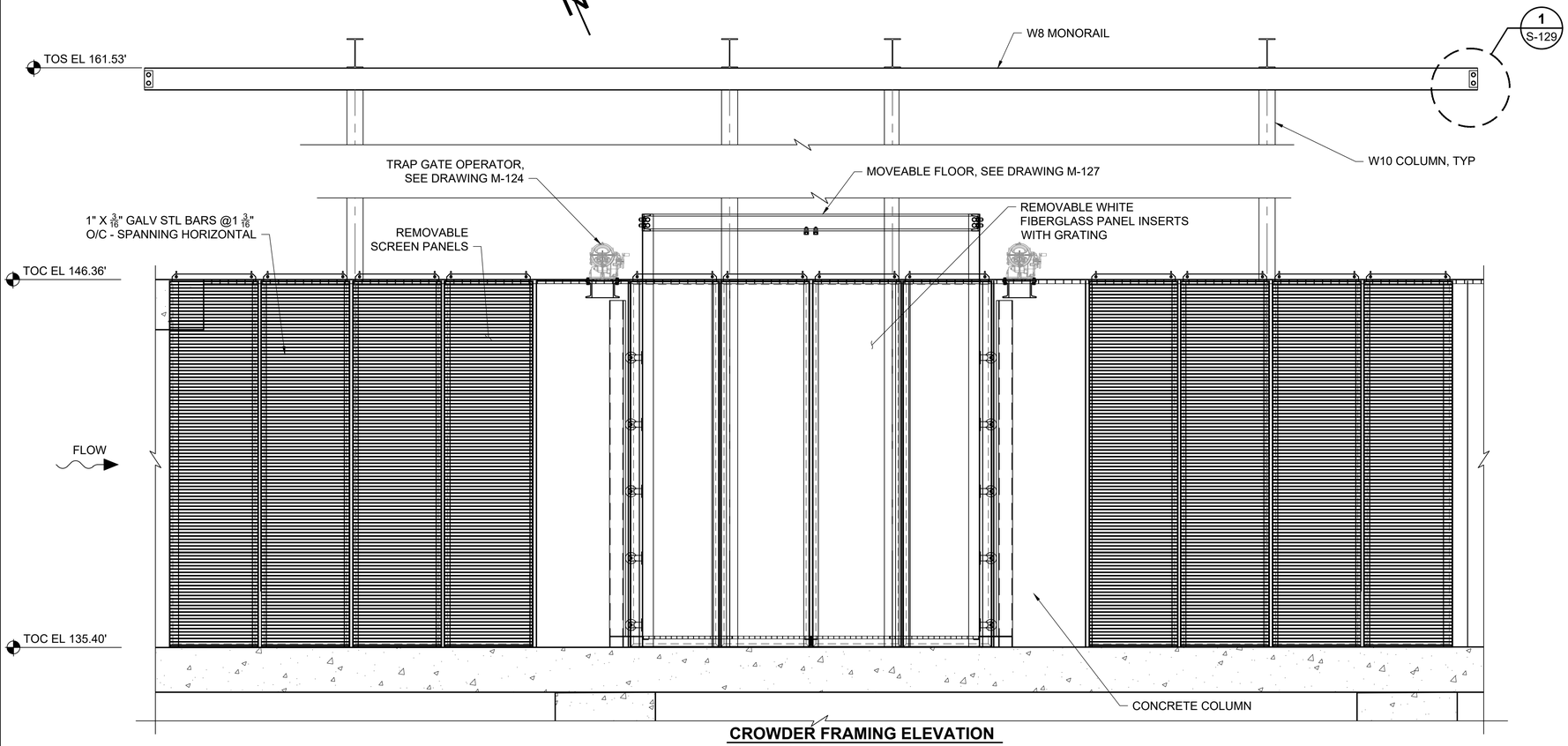
CROWDER FRAMING PLAN
SCALE: 1/2"=1'-0"

0 2' 4'



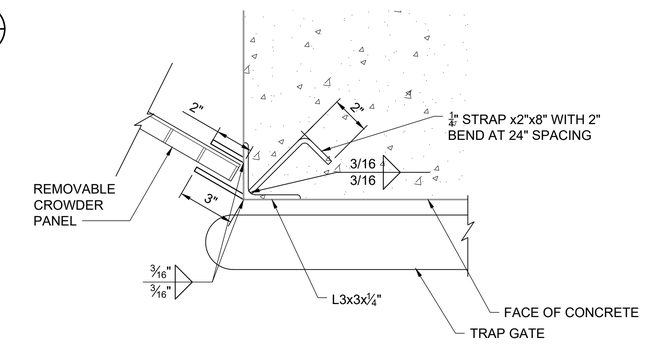
1 - **DETAIL**
SCALE: 3"=1'-0"

0 6" 1'



CROWDER FRAMING ELEVATION
SCALE: 1/2"=1'-0"

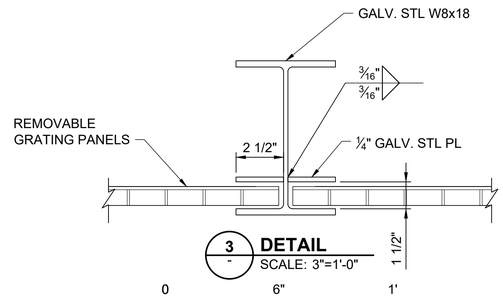
0 2' 4'



2 - **DETAIL**
SCALE: 3"=1'-0"

0 6" 1'

NOTE: PLATES ARE HORIZONTAL AT SIM



3 - **DETAIL**
SCALE: 3"=1'-0"

0 6" 1'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

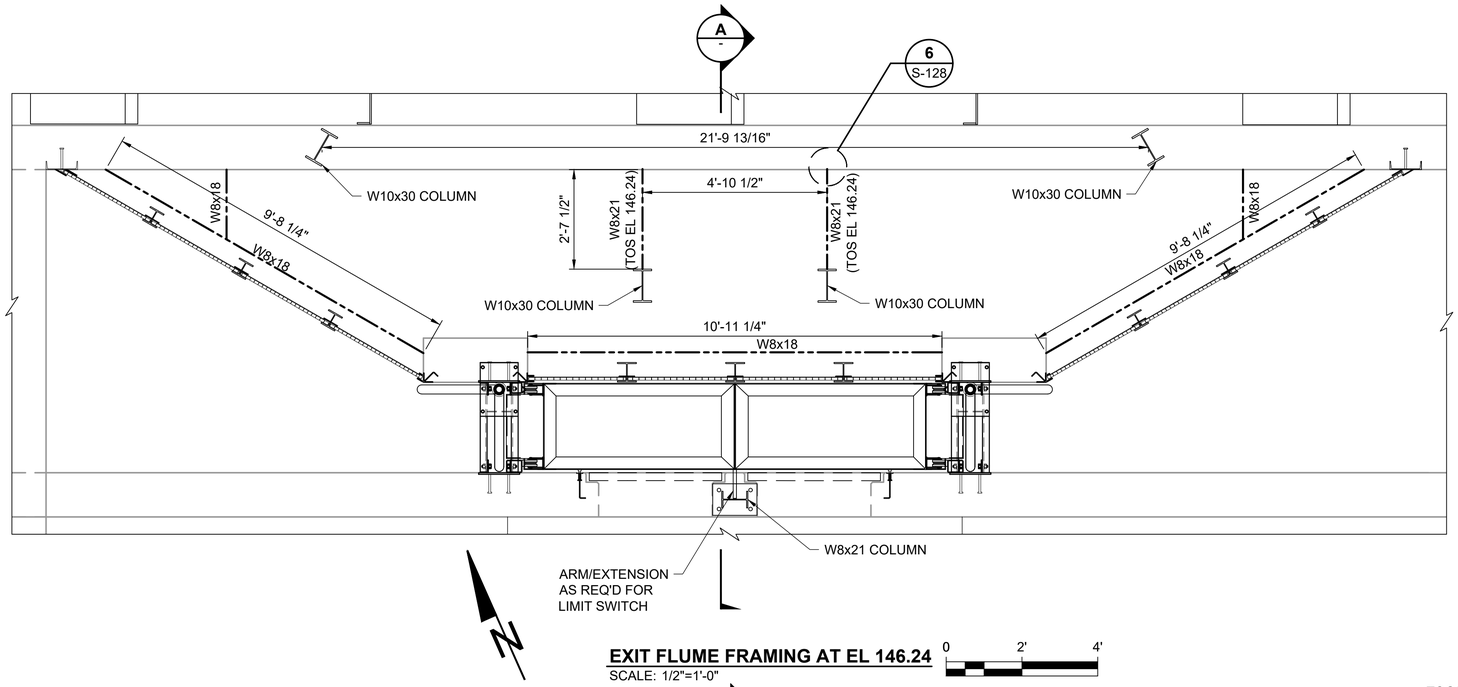
MAINE DEPARTMENT OF MARINE RESOURCES

TRAP AND CROWDER FRAMING PLAN AT EL 146.36 AND DETAILS

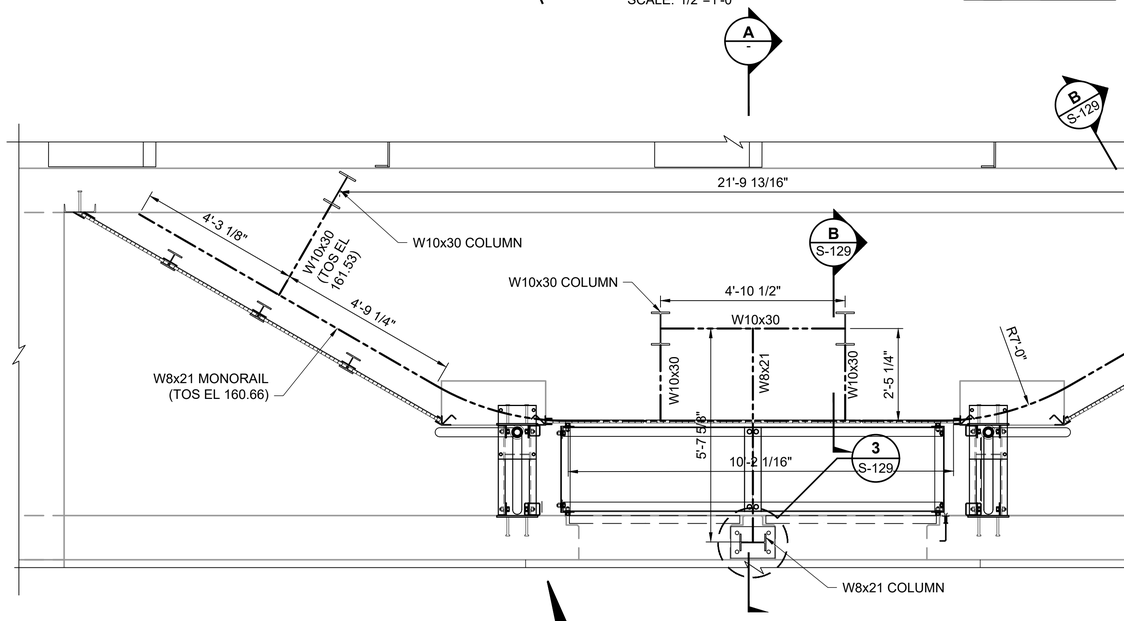
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	79 OF 240
DRAWING:	S-125

NOTE:

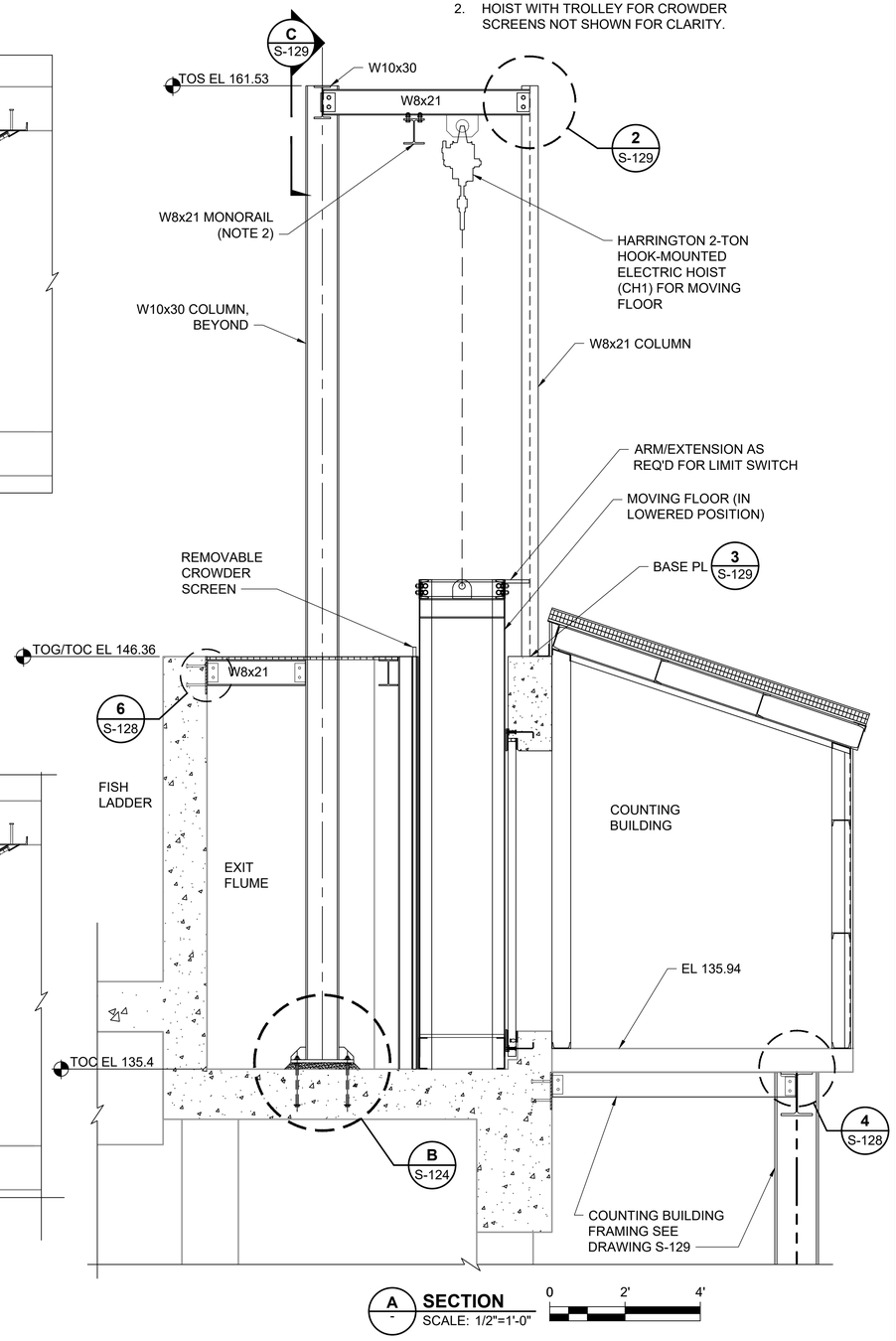
1. ALL MONORAIL FRAMING MEMBERS AND CONNECTIONS SHALL BE GALVANIZED STEEL.
2. HOIST WITH TROLLEY FOR CROWDER SCREENS NOT SHOWN FOR CLARITY.



EXIT FLUME FRAMING AT EL 146.24
SCALE: 1/2"=1'-0"



EXIT FLUME FRAMING AT EL 161.53
SCALE: 1/2"=1'-0"



A - SECTION
SCALE: 1/2"=1'-0"

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

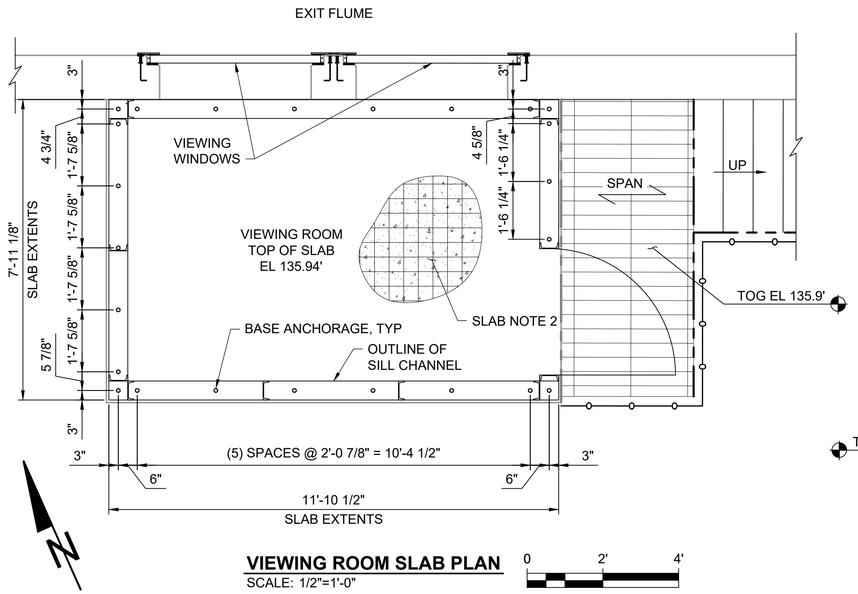
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

MONORAIL FRAMING PLAN AND SECTION

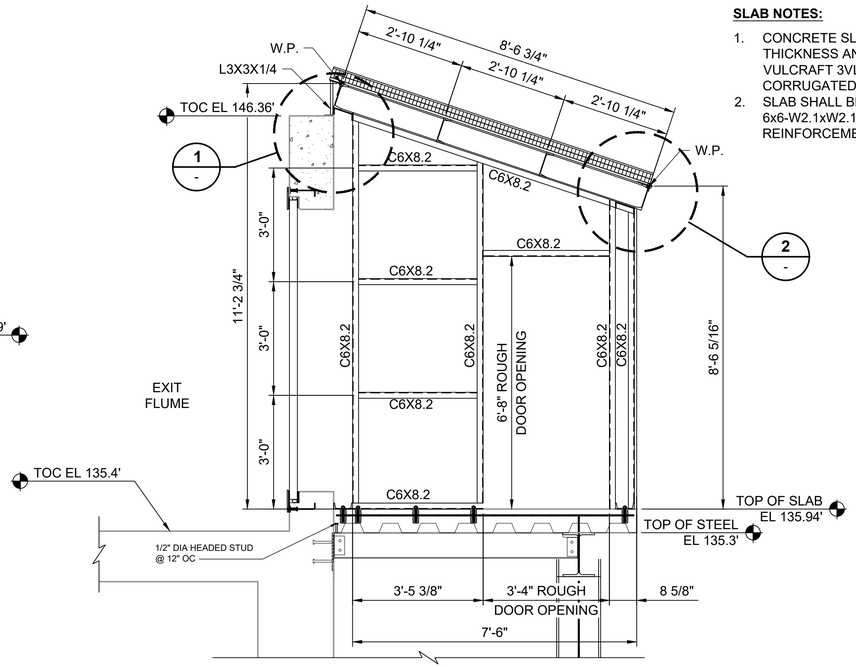
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	80 OF 240
DRAWING:	S-126



VIEWING ROOM SLAB PLAN

SCALE: 1/2"=1'-0"

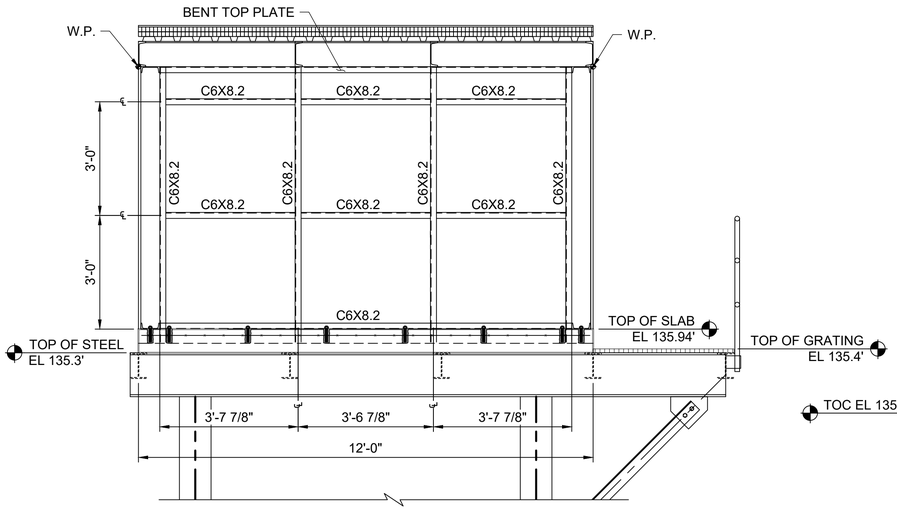
0 2' 4'



EAST WALL FRAMING ELEVATION

SCALE: 1/2"=1'-0"

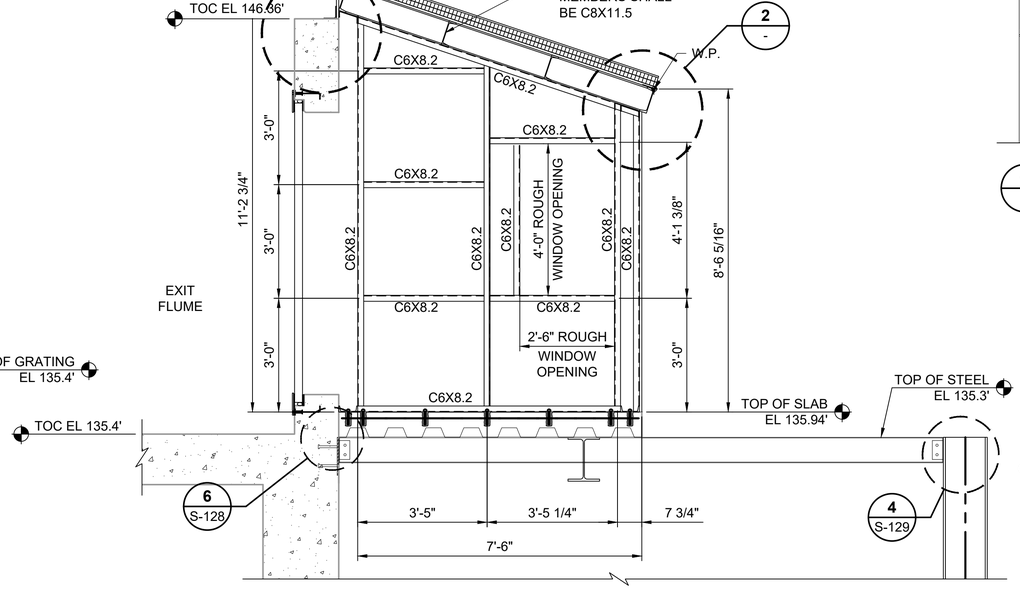
0 2' 4'



SOUTH WALL FRAMING ELEVATION

SCALE: 1/2"=1'-0"

0 2' 4'



WEST WALL FRAMING ELEVATION

SCALE: 1/2"=1'-0"

0 2' 4'

SLAB NOTES:

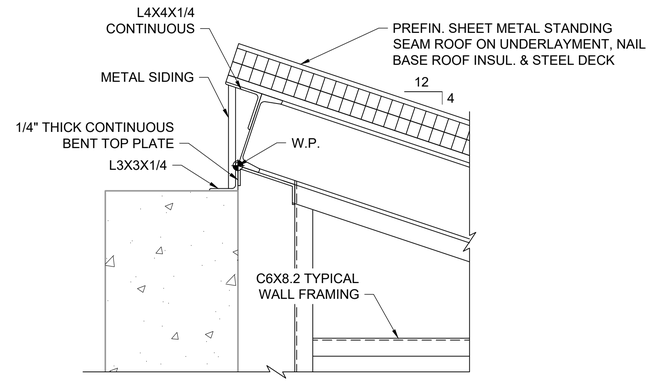
1. CONCRETE SLAB SHALL BE 7.5" TOTAL THICKNESS AND SHALL BE FORMED WITH VULCRAFT 3VLI-36 18 GAUGE COMPOSITE CORRUGATED METAL FLOOR.
2. SLAB SHALL BE REINFORCED WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCEMENT.

BUILDING NOTES:

1. STEEL TO STEEL CONNECTIONS SHALL BE DESIGNED BY THE CONTRACTOR.
2. METAL SIDING SHALL BE FABRAL GRANDRIB 3 OR EQUAL.
3. ROOF SHALL BE PREFIN. SHEET METAL
4. PROVIDE FLASHING, SEALANT TAPE, CAULKING AND OTHER MATERIALS AS REQUIRED TO OBTAIN A WATER TIGHT BUILDING.
5. PROVIDE FURRING STRIPS OR WOOD BLOCKING AS REQUIRED TO INSTALL INTERIOR SHEATHING. FASTENERS SHALL BE DETERMINED BY THE CONTRACTOR.
6. INTERIOR SHEATHING SHALL BE 3/4" PAINTED EXTERIOR GRADE PLYWOOD WITH AT LEAST ONE SMOOTH SIDE.
7. ANY OFFICE/STORAGE EQUIPMENT SHALL BE PROVIDED BY WOODLAND PULP.
8. ALL EQUIPMENT MOUNTING DETAILS SHALL BE DESIGNED BY THE CONTRACTOR.
9. 3'-0" X 7'-0" STEEL INSULATED DOOR WITH WINDOW AND CRASH BAR.
10. PROVIDE MINIMUM ROOF R-VALUE OF R-49 AND WALLS R-20.
11. ALL STEEL MEMBERS SHALL BE GALVANIZED.

LOADING:

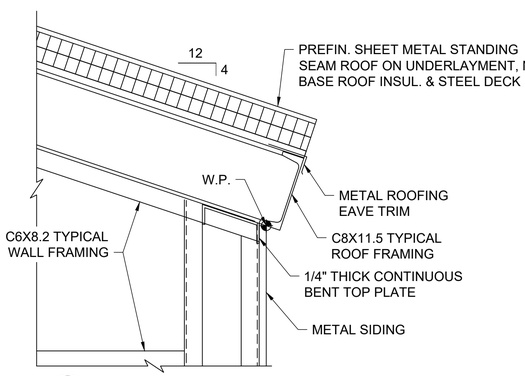
1. ALL STRUCTURE LOADS SHALL BE PER THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE AND ASCE 7.
2. MINIMUM ROOF LIVE LOAD, 20 PSF.
3. FLAT ROOF SNOW LOAD, 60 PSF.
4. ROOF WIND LOAD, -20 PSF (NEGATIVE).
5. WALL WIND LOAD , 17 PSF (POSITIVE).
6. EARTHQUAKE PARAMETERS
   - Ss = 23.8% g
   - S1 = 6.8% g
   - SITE CLASS C
   - IMPORTANCE FACTOR, 1.0
   - SEISMIC DESIGN CATEGORY B



1 - ROOF DETAIL

SCALE: 1 1/2"=1'-0"

0 1' 2'



2 - ROOF DETAIL

SCALE: 1 1/2"=1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

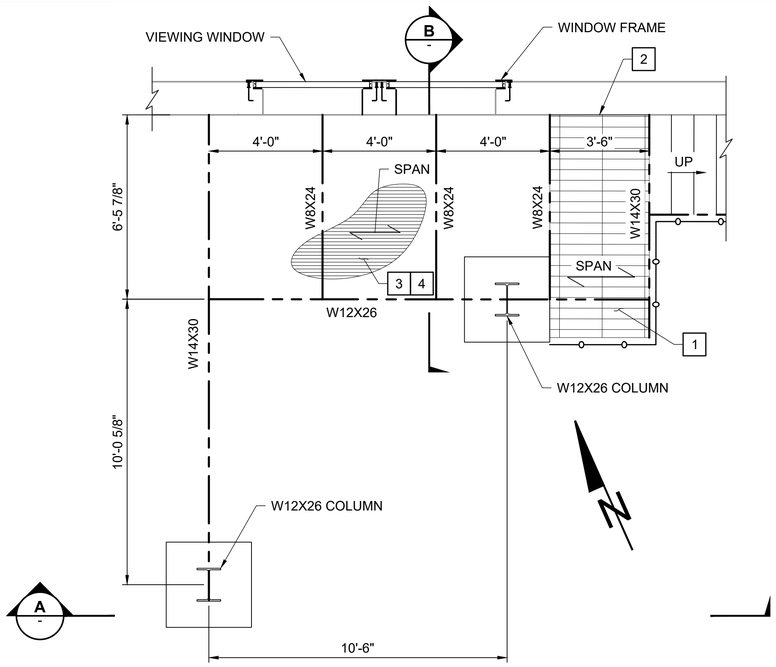
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

VIEWING ROOM PLAN AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	81 OF 240
DRAWING:	S-127

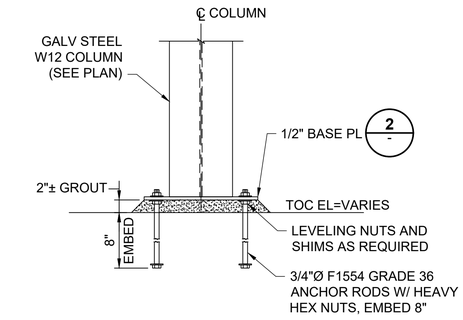


A

COUNTING ROOM FRAMING PLAN

SCALE: 3/8"=1'-0"

0 2' 4'

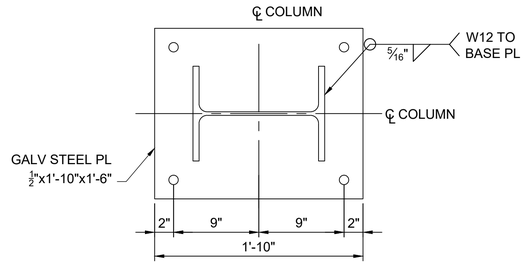


1

DETAIL

SCALE: 1"=1'-0"

0 1' 2'



2

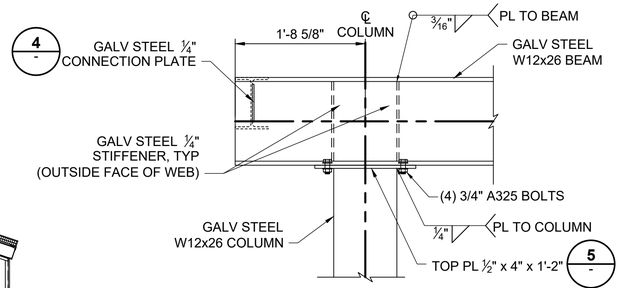
COLUMN BASE PLATE DETAIL

SCALE: 1 1/2"=1'-0"

0 1' 2'

KEYED NOTES:

1. GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.
2. GRATING SUPPORT TYPE II
3. CONCRETE SLAB SHALL BE 7.5" TOTAL THICKNESS AND BE FORMED WITH VULCRAFT 3VLI-36 18 GAUGE COMPOSITE CORRUGATED METAL FLOOR. SLAB SHALL BE REINFORCED WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCEMENT.
4. CONNECT METAL DECK USING 5/8" PUDDLE WELDS @ 36/7 PATTERN AT ALL SUPPORTS, 5/8" PUDDLE WELDS @ 6" O.C. AT ALL EDGE SUPPORTS, AND #10 TEK FASTENERS @ 12" O.C. AT SIDELAPS.

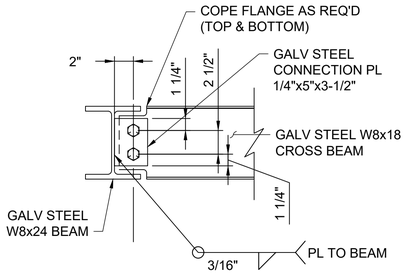


3

BEAM TO COLUMN DETAIL

SCALE: 1"=1'-0"

0 1' 2'

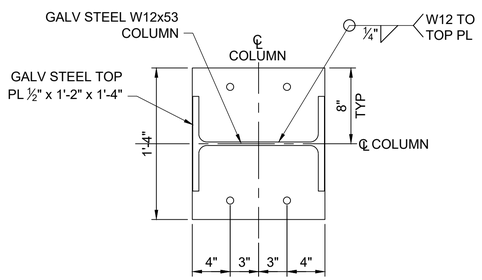


4

BEAM TO BEAM CONNECTION

SCALE: 1-1/2" = 1'-0"

0 1' 2'

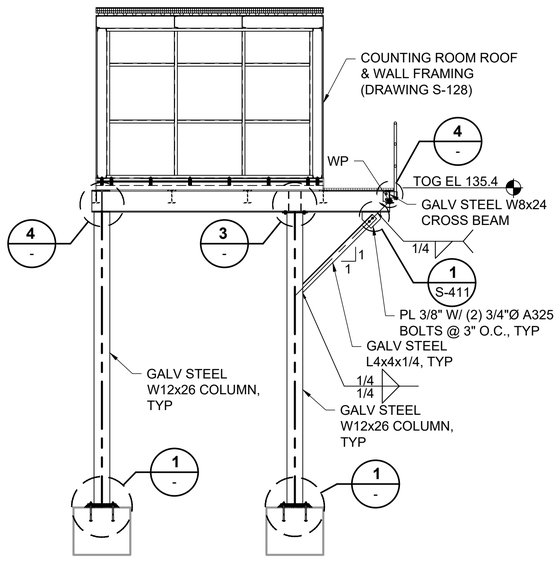


5

COLUMN TOP PLATE DETAIL

SCALE: 1 1/2"=1'-0"

0 1' 2'

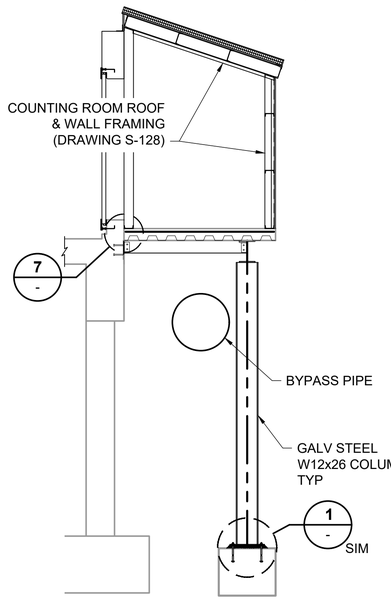


A

SECTION

SCALE: 3/8" = 1'-0"

0 2' 4'

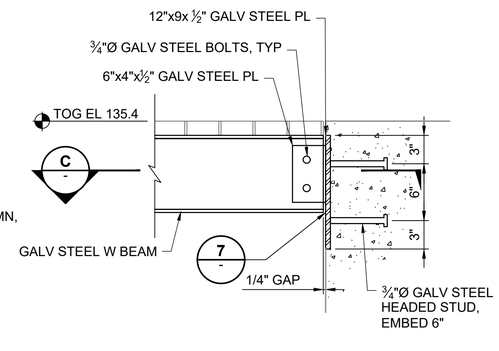


B

SECTION

SCALE: 3/8" = 1'-0"

0 2' 4'

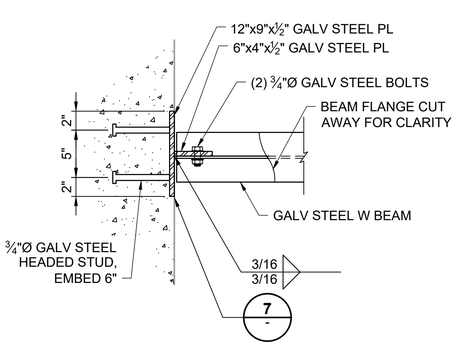


6

CONNECTION DETAIL

SCALE: 1-1/2" = 1'-0"

0 1' 2'

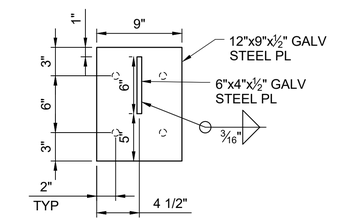


C

SECTION

SCALE: 1-1/2" = 1'-0"

0 1' 2'



7

END PLATE DETAIL

SCALE: 1-1/2" = 1'-0"

0 1' 2'

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

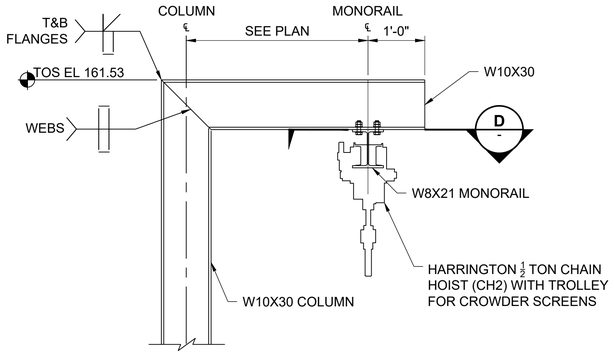
MAINE DEPARTMENT OF MARINE RESOURCES

VIEWING ROOM PLAN AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	81 OF 240
DRAWING:	S-128

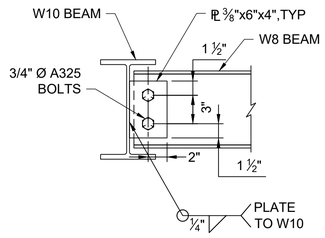
NOTE:

1. ALL MONORAIL FRAMING MEMBERS AND CONNECTIONS SHALL BE GALVANIZED STEEL.



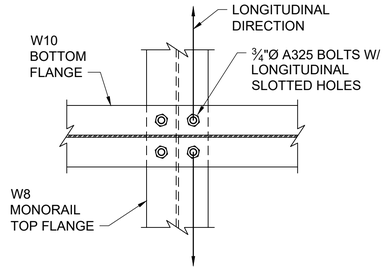
B MONORAIL SUPPORT SECTION
S-126 SCALE: 3/4"=1'-0"

0 1' 2'



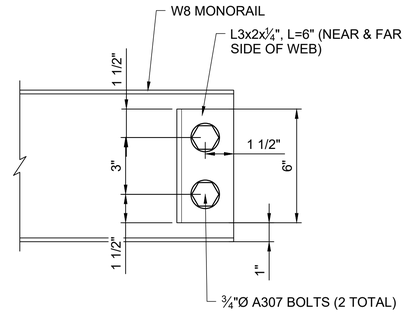
C BEAM CONNECTION
S-126 SCALE: 1 1/2"=1'-0"

0 1' 2'



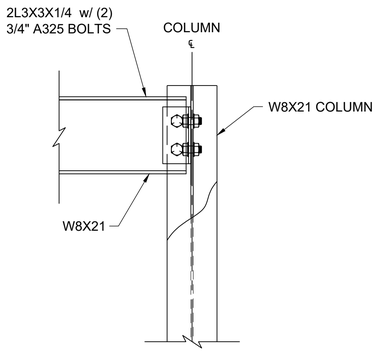
D MONORAIL CONNECTION
S-126 SCALE: 1 1/2"=1'-0"

0 1' 2'



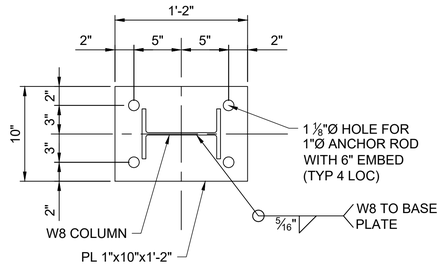
1 HOIST END-STOP DETAIL
S-125 SCALE: 3"=1'-0"

0 6" 1'



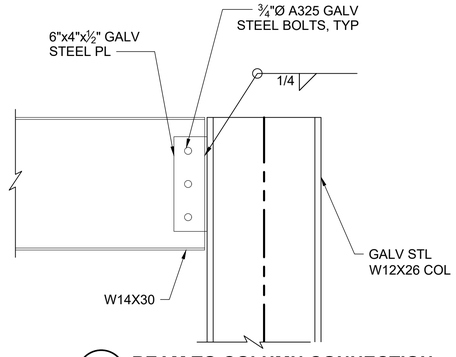
2 BEAM CONNECTION
S-126 SCALE: 1 1/2"=1'-0"

0 1' 2'



3 BASE PLATE FOR W8X21
S-126 SCALE: 1 1/2"=1'-0"

0 1' 2'



4 BEAM TO COLUMN CONNECTION
S-127 SCALE: 1 1/2"=1'-0"

0 1' 2'

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

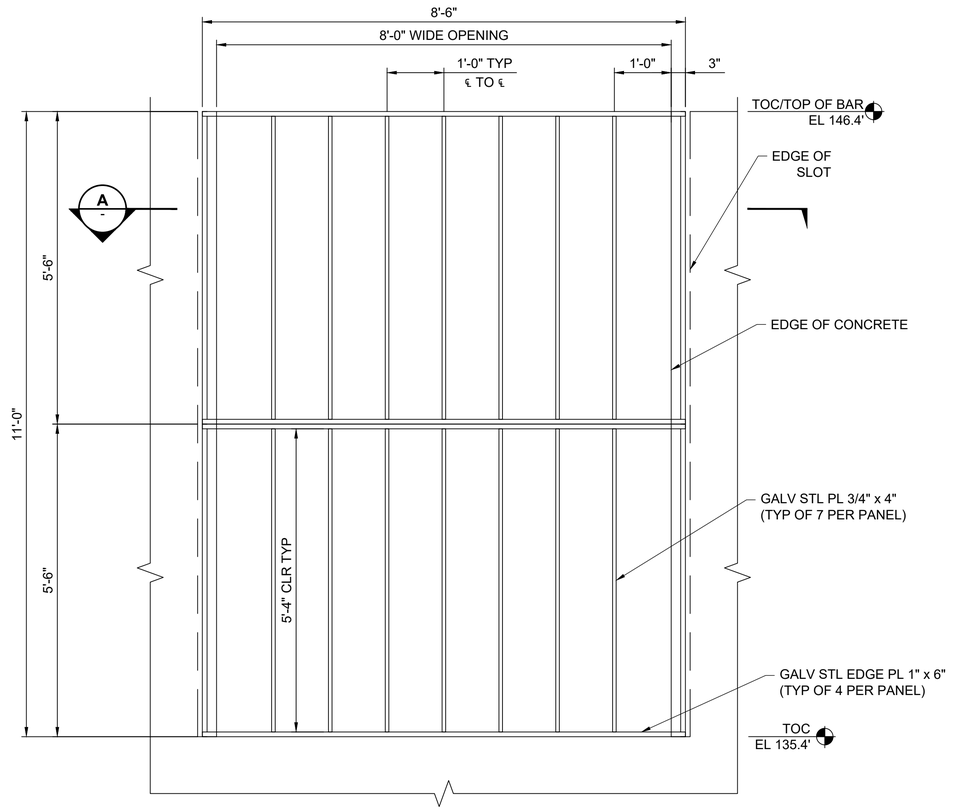
MAINE DEPARTMENT OF MARINE RESOURCES

MONORAIL FRAMING SECTIONS AND DETAILS

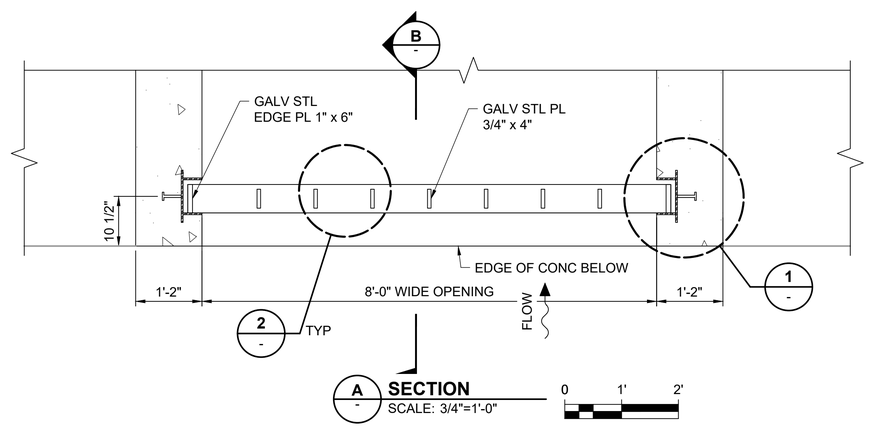
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	83 OF 240
DRAWING:	S-129

NOTES:

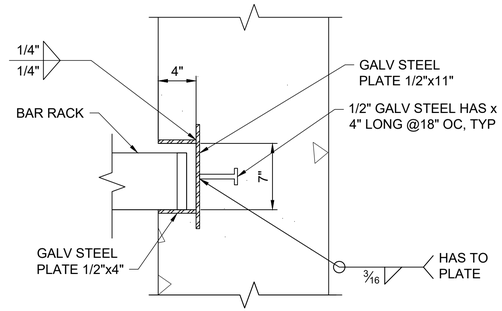
1. BAR RACK PANEL APPROXIMATE WEIGHT = 1000 LBS.
2. ALL METAL SHALL BE GALVANIZED STEEL,



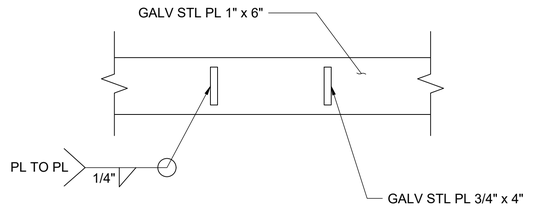
EXIT FLUME BAR RACK ELEVATION
SCALE: 3/4"=1'-0"



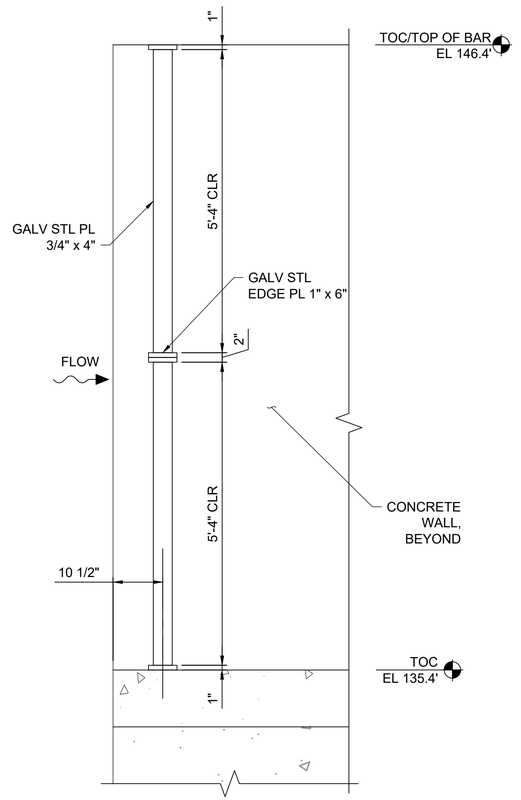
SECTION
SCALE: 3/4"=1'-0"



1 SLOT EMBED DETAIL
SCALE: 1-1/2"=1'-0"



2 WELD DETAIL
SCALE: 1-1/2"=1'-0"



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

9/3/2025	ISSUED FOR BID	M. GRAESER
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY

ALDEN — a verdantas company

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SEPTEMBER 3, 2025

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WOODLAND FISH LIFT PASSAGE DESIGN

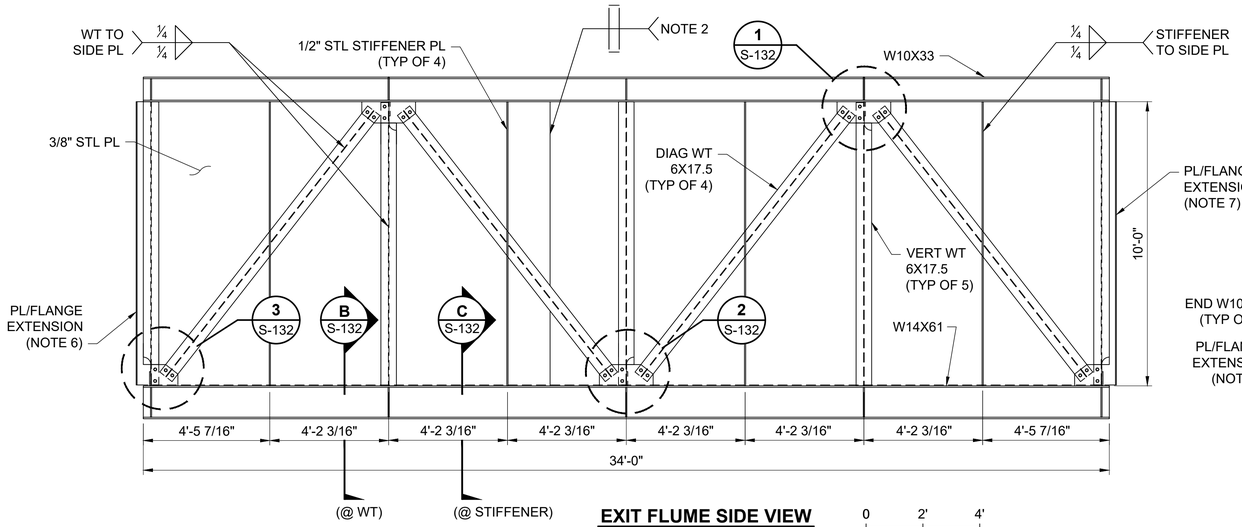
MAINE DEPARTMENT OF MARINE RESOURCES

BAR RACK ELEVATION AND DETAILS

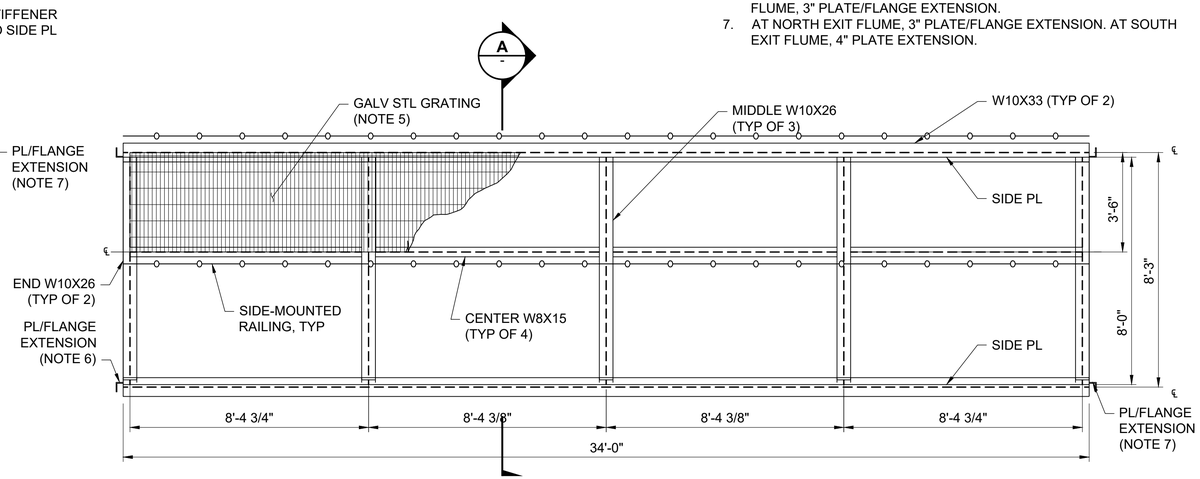
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	83 OF 240
DRAWING:	S-130

NOTES:

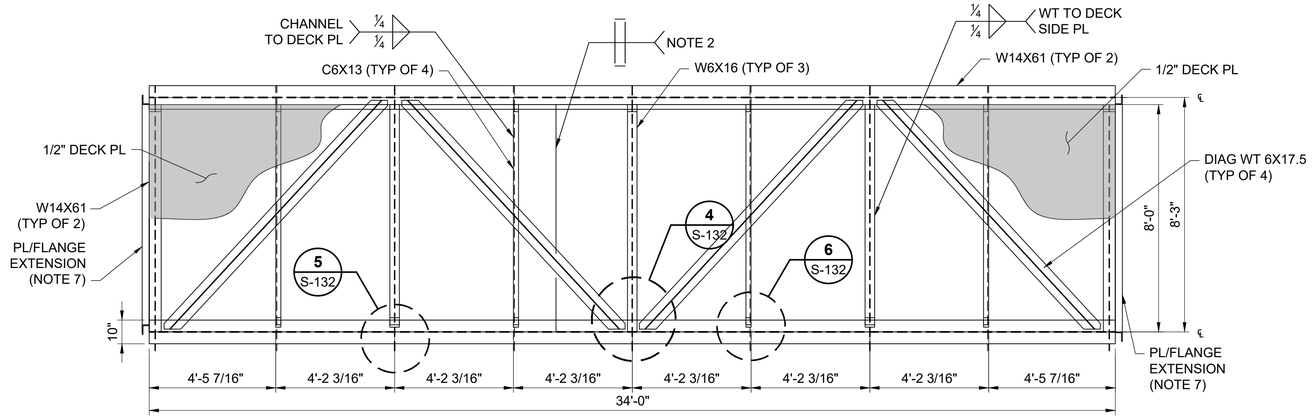
1. PROJECT INCLUDES 2 EXIT FLUME SECTIONS, EACH 34'-0" LONG.
   a. APPROXIMATE SIDE PANEL WEIGHT = 9,500 LBS.
   b. APPROXIMATE DECK PANEL WEIGHT = 15,000 LBS.
2. SKIN PLATES SHALL BE WELDED TOGETHER AT JOINTS. SHALL BE LOCATED AS REQUIRED BASED ON THE AVAILABLE SKIN PLATE SIZE.
3. SIDE PANELS AND DECK PANEL SHALL BE WELDED AND FULLY PAINTED AT THE SHOP. EXCEPTION IS THE SIDE PANELS SHALL BE FIELD BOLTED AND FIELD WELDED TO THE DECK. THE AREA NEAR THE FIELD WELD SHALL BE PAINTED IN THE FIELD.
4. THE EXIT FLUME SHALL BE PAINTED PER SPECIFICATION SECTION 09 90 00. ALL BOLTS SHALL BE GALVANIZED.
5. GALVANIZED STEEL GRATING, 1 1/2" x 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYPE CLIPS, MINIMUM 4 PER PANEL.
6. AT NORTH EXIT FLUME, 4" PLATE EXTENSION. AT SOUTH EXIT FLUME, 3" PLATE/FLANGE EXTENSION.
7. AT NORTH EXIT FLUME, 3" PLATE/FLANGE EXTENSION. AT SOUTH EXIT FLUME, 4" PLATE EXTENSION.



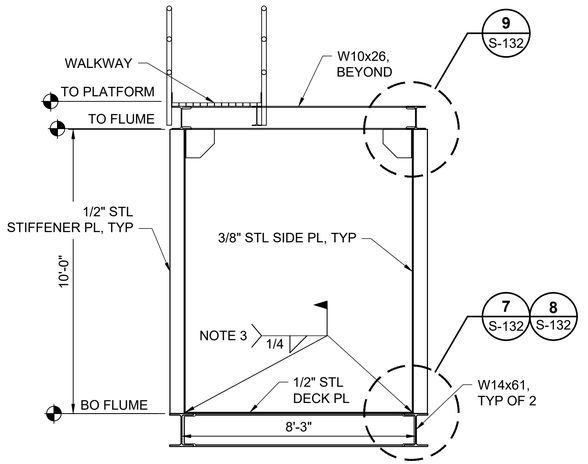
EXIT FLUME SIDE VIEW
SCALE: 3/8"=1'-0"
0 2' 4'



EXIT FLUME UPPER PLAN VIEW
SCALE: 3/8"=1'-0"
0 2' 4'



EXIT FLUME LOWER PLAN VIEW
SCALE: 3/8"=1'-0"
0 2' 4'



A - SECTION
SCALE: 3/8"=1'-0"
0 2' 4'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

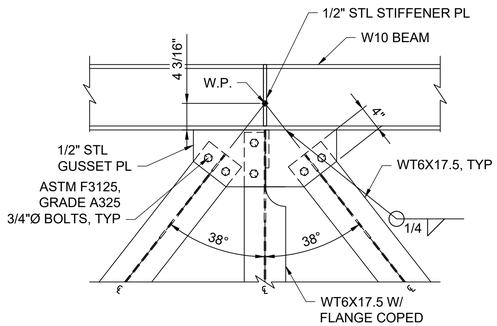
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

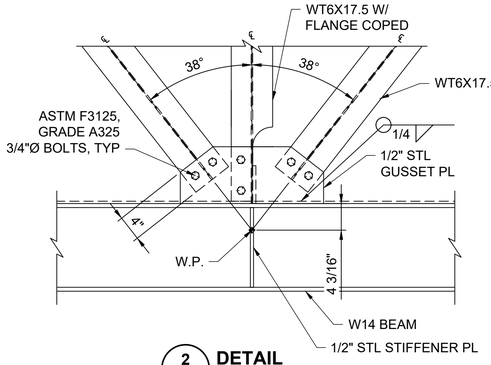
STEEL EXIT FLUME PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	85 OF 240
DRAWING:	S-131



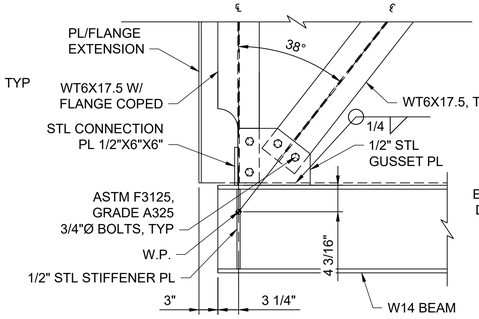
1 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'



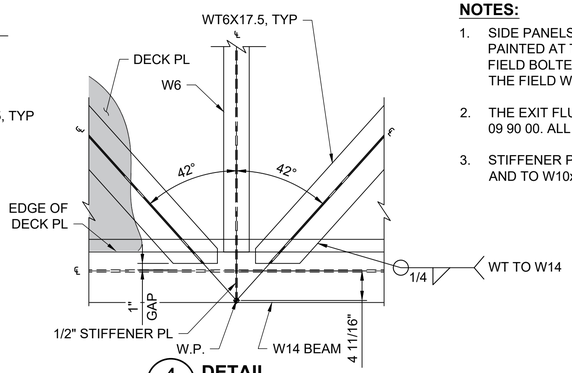
2 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'



3 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'

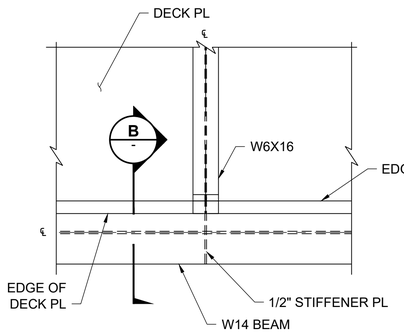


4 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'

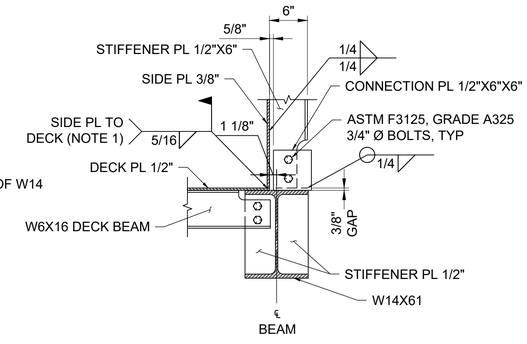
NOTES:

1. SIDE PANELS AND DECK PANELS SHALL BE WELDED AND FULLY PAINTED AT THE SHOP. EXCEPTION IS THE SIDE PANELS SHALL BE FIELD BOLTED AND FIELD WELDED TO THE DECK. THE AREA NEAR THE FIELD WELD SHALL BE PAINTED IN THE FIELD.
2. THE EXIT FLUME SHALL BE PAINTED PER SPECIFICATION SECTION 09 90 00. ALL BOLTS SHALL BE GALVANIZED STEEL.
3. STIFFENER PLATES SHALL BE ALIGNED WITH SIDE PANEL WT6x17.5 AND TO W10x26 (10 TOTAL PER FLUME.)



5 **DETAIL** S-131 SCALE: 1"=1'-0"

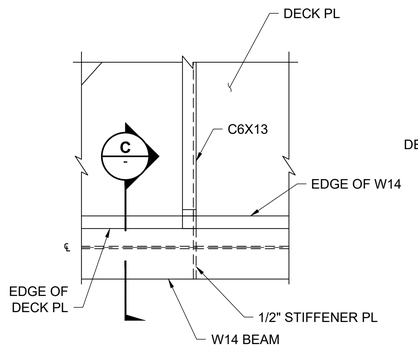
0 1' 2'



B **SECTION** S-131 SCALE: 1"=1'-0"

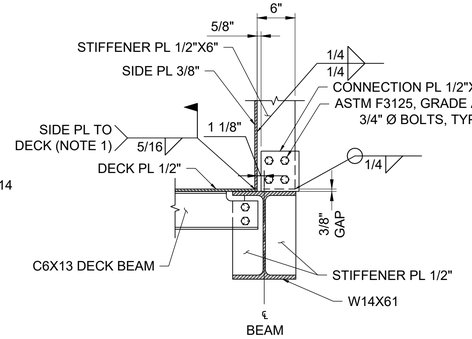
S-132

0 1' 2'



6 **DETAIL** S-131 SCALE: 1"=1'-0"

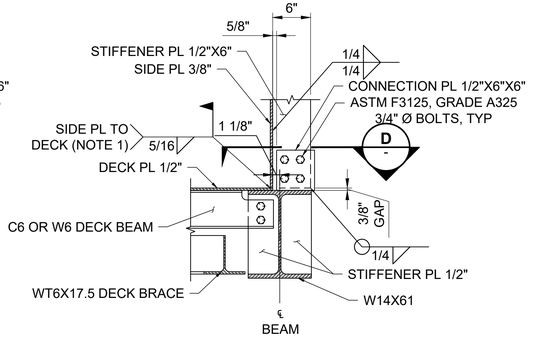
0 1' 2'



C **SECTION** S-131 SCALE: 1"=1'-0"

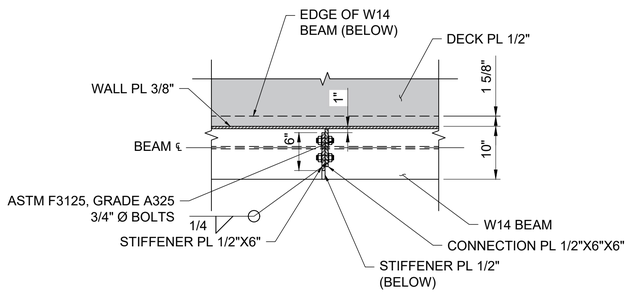
S-132

0 1' 2'



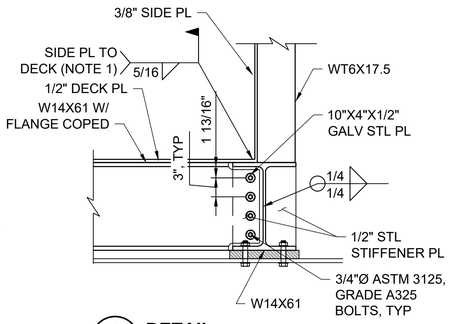
7 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'



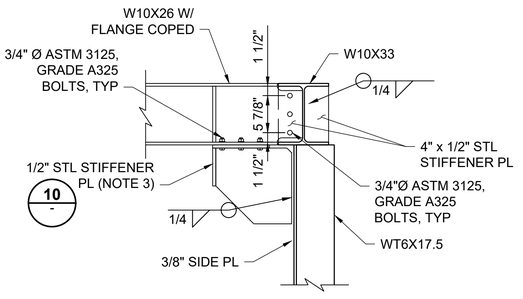
D **SECTION** SCALE: 1"=1'-0"

0 1' 2'



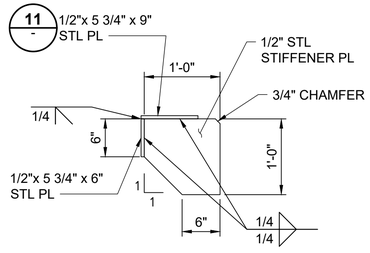
8 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'



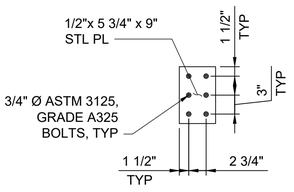
9 **DETAIL** S-131 SCALE: 1"=1'-0"

0 1' 2'



10 **STIFFENER PLATE DETAIL** SCALE: 1"=1'-0"

0 1' 2'



11 **CONNECTION PLATE DETAIL** SCALE: 1"=1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

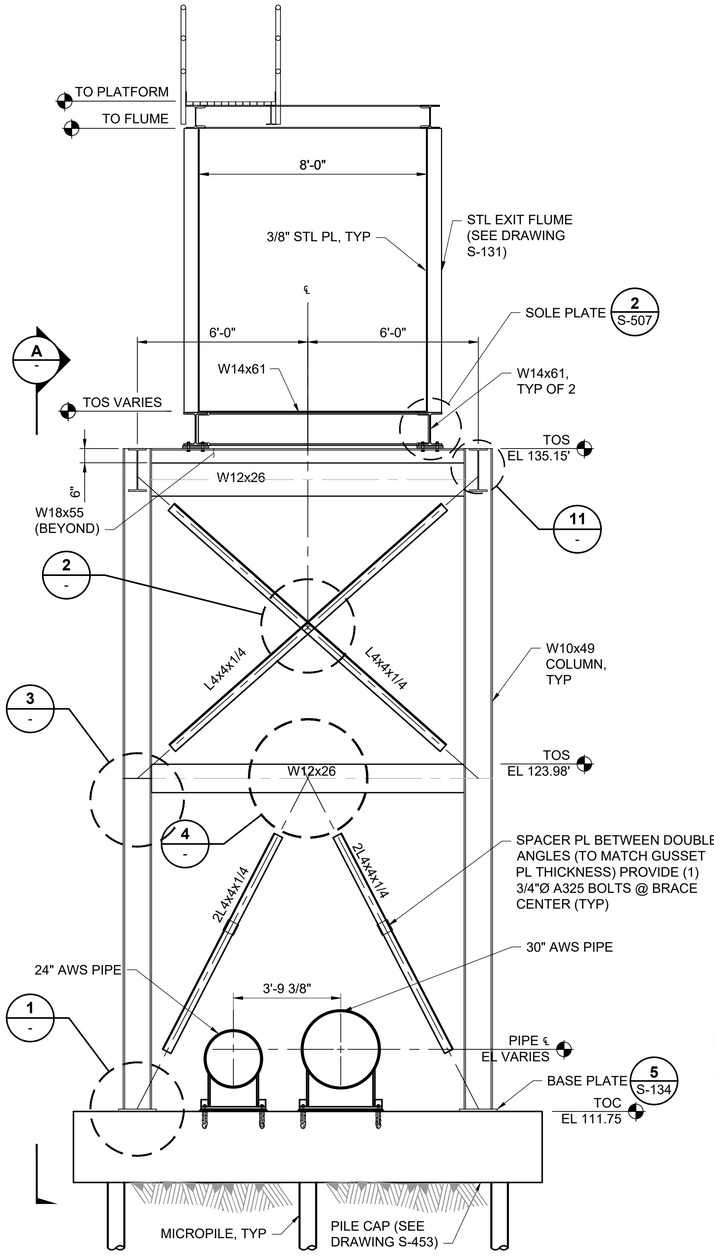
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

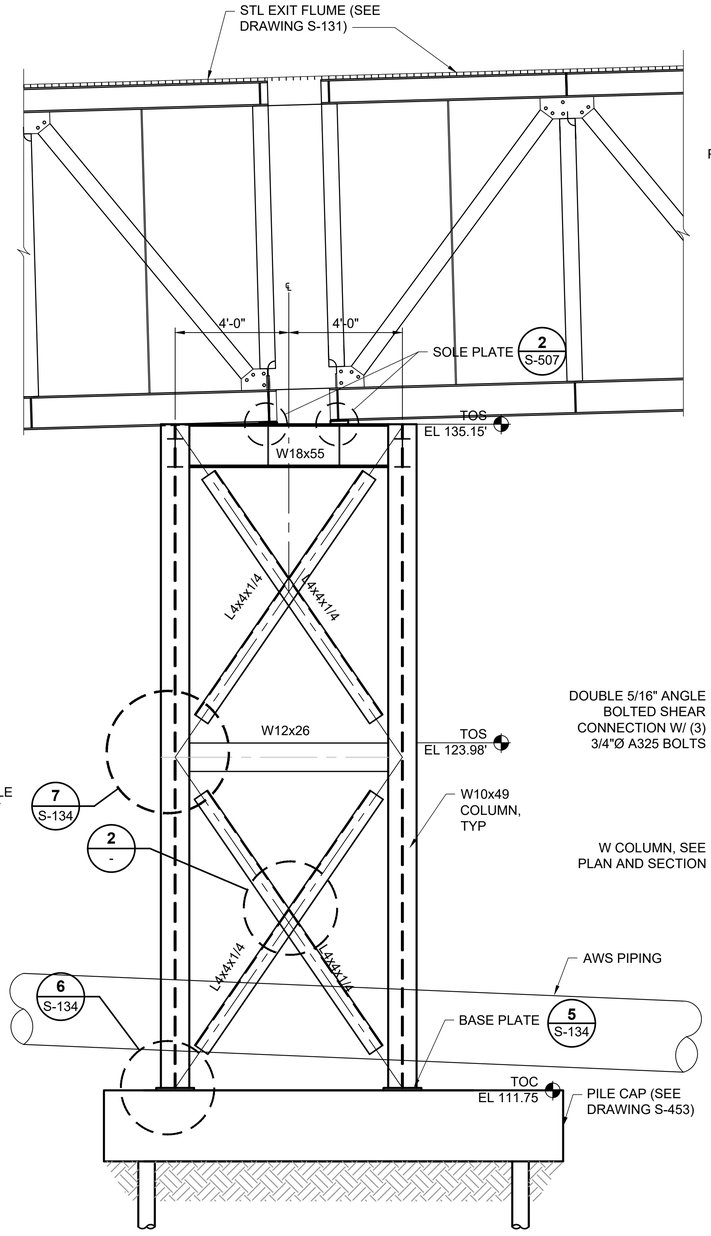
STEEL EXIT FLUME SECTIONS & DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	86 OF 240
DRAWING:	S-132



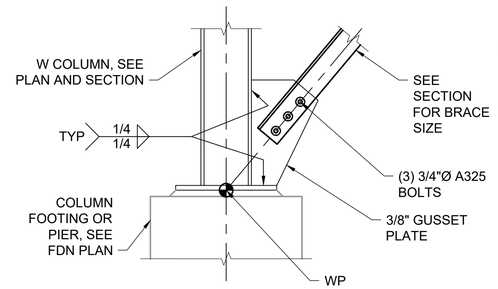
D S-120 **SECTION** SCALE: 3/8"=1'-0"

0 2' 4'



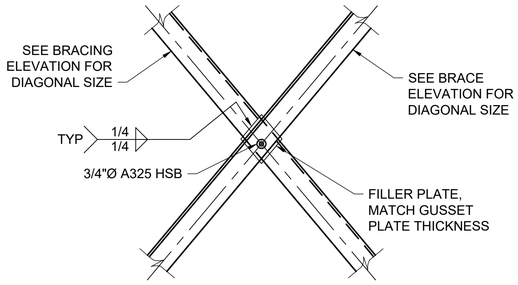
A - **SECTION** SCALE: 3/8"=1'-0"

0 2' 4'



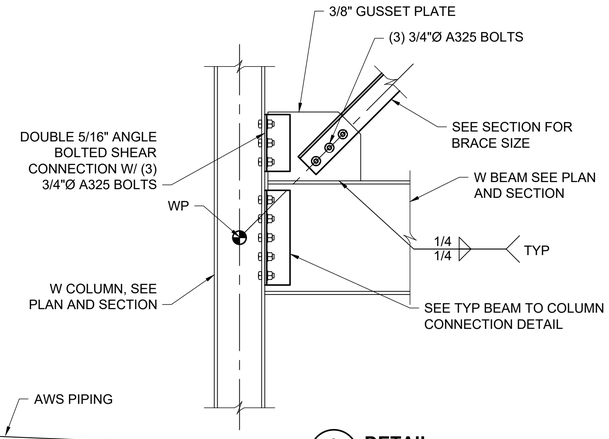
1 - **DETAIL** SCALE: 1"=1'-0"

0 1' 2'



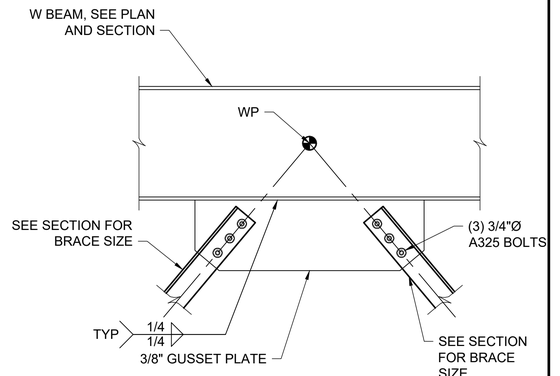
2 - **DETAIL** SCALE: 1"=1'-0"

0 1' 2'



3 - **DETAIL** SCALE: 1"=1'-0"

0 1' 2'



4 - **DETAIL** SCALE: 1"=1'-0"

0 1' 2'

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ISSUED FOR BID
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REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

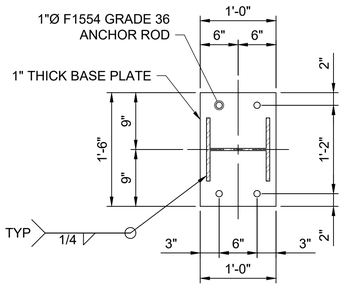
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

STEEL EXIT FLUME SUPPORT FRAMING SECTIONS & DETAILS

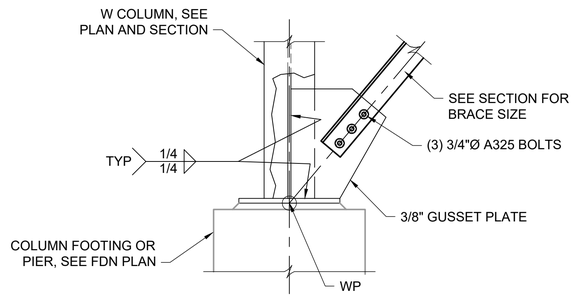
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	87 OF 240
DRAWING:	S-133



ANCHOR ROD EMBED = 18"
ANCHOR ROD PROJECTION = 5"

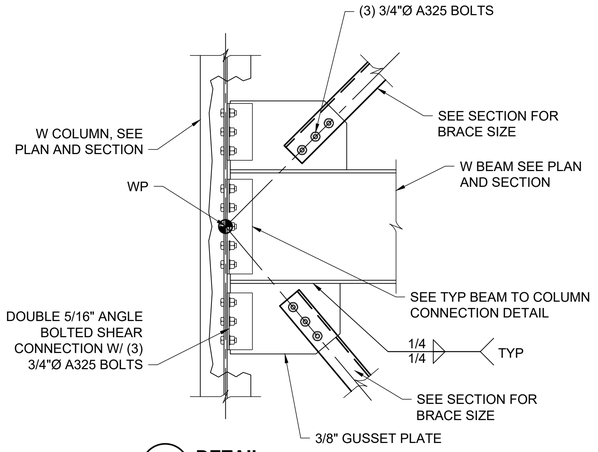
5 DETAIL
S-133 SCALE: 1"=1'-0"

0 1' 2'



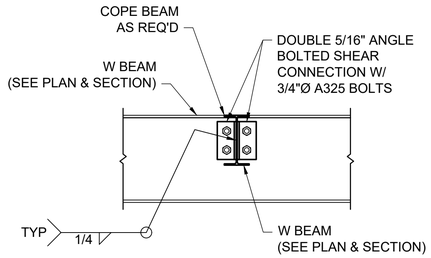
6 DETAIL
S-133 SCALE: 1"=1'-0"

0 1' 2'



7 DETAIL
S-133 SCALE: 1"=1'-0"

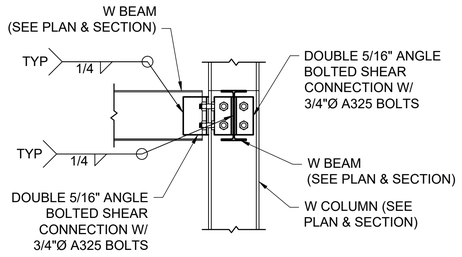
0 1' 2'



CONNECTION SCHEDULE:
W18 5 ROWS A325 BOLTS

8 DETAIL
- SCALE: 1"=1'-0"

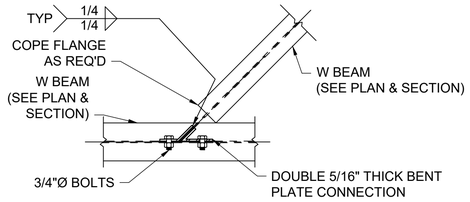
0 1' 2'



CONNECTION SCHEDULE:
W12 3 ROWS A325 BOLTS
W18 5 ROWS A325 BOLTS

9 DETAIL
- SCALE: 1"=1'-0"

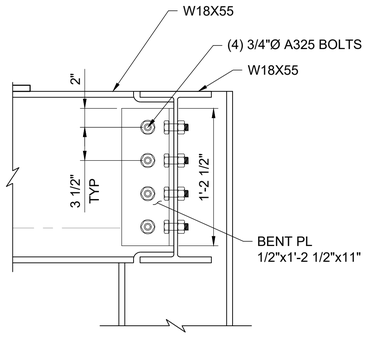
0 1' 2'



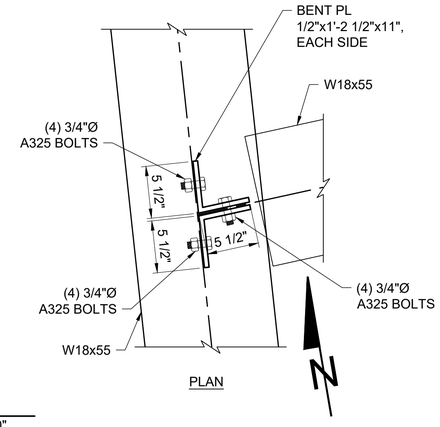
NOTES:
W18 5 ROWS A325 BOLTS

10 DETAIL
- SCALE: 1"=1'-0"

0 1' 2'



SECTION



PLAN

11 SECTION
- SCALE: 1-1/2"=1'-0"

0 1' 2'

a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

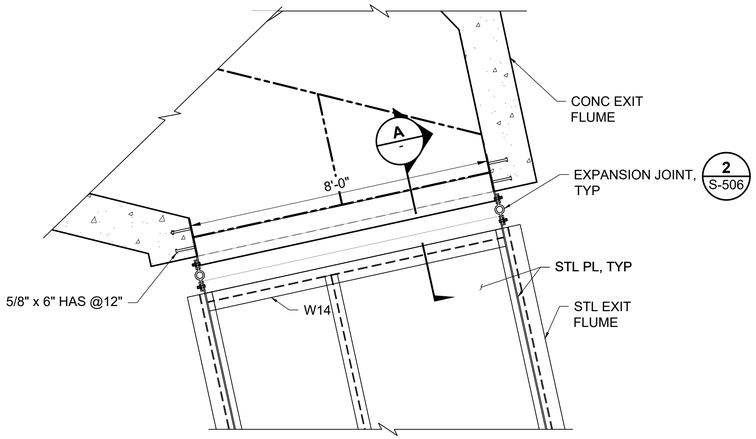
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

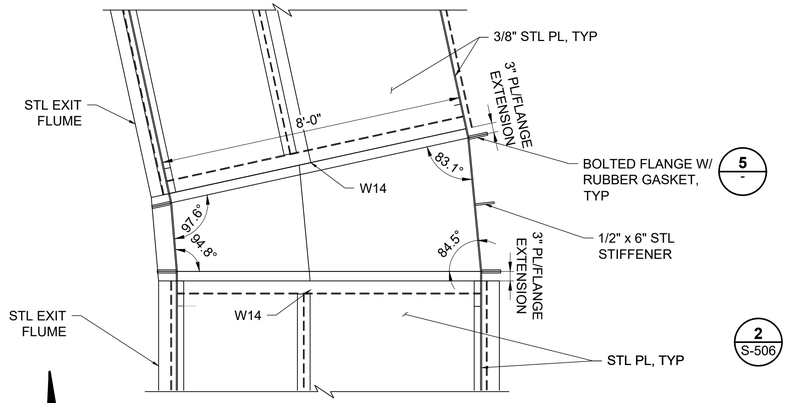
MAINE DEPARTMENT OF MARINE RESOURCES

STEEL EXIT FLUME SUPPORT FRAMING DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	88 OF 240
DRAWING:	S-134



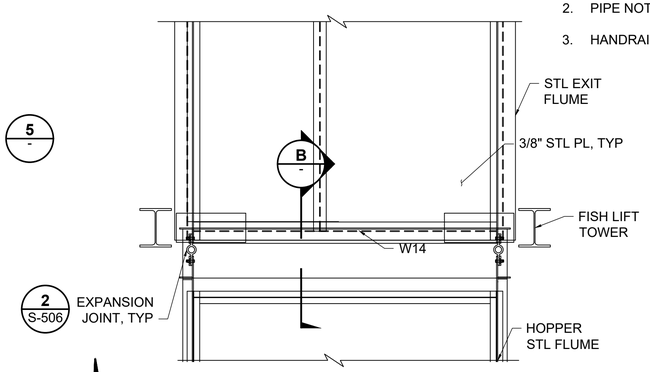
1 S-121 **EXIT FLUME TRANSITION DETAIL**
SCALE: 1/2"=1'-0"
0 2' 4'



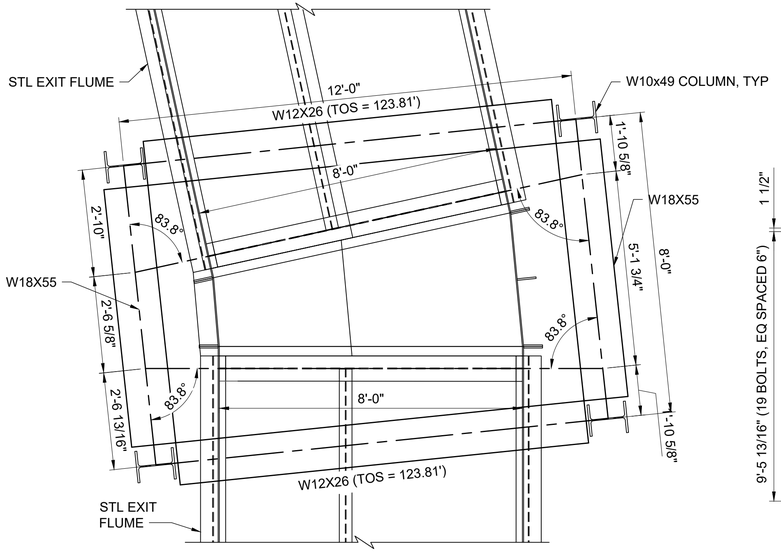
2 - **EXIT FLUME TRANSITION DETAIL**
SCALE: 1/2"=1'-0"
0 2' 4'

NOTE:

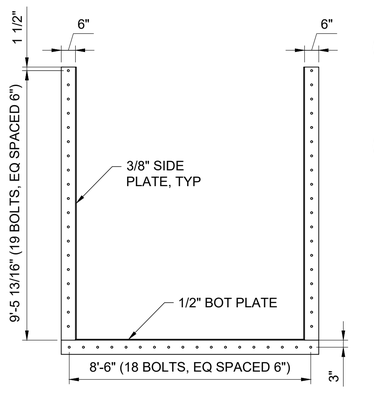
1. FRAMING FOUNDATIONS NOT SHOWN FOR CLARITY.
2. PIPE NOT SHOWN FOR CLARITY.
3. HANDRAIL NOT SHOWN FOR CLARITY.



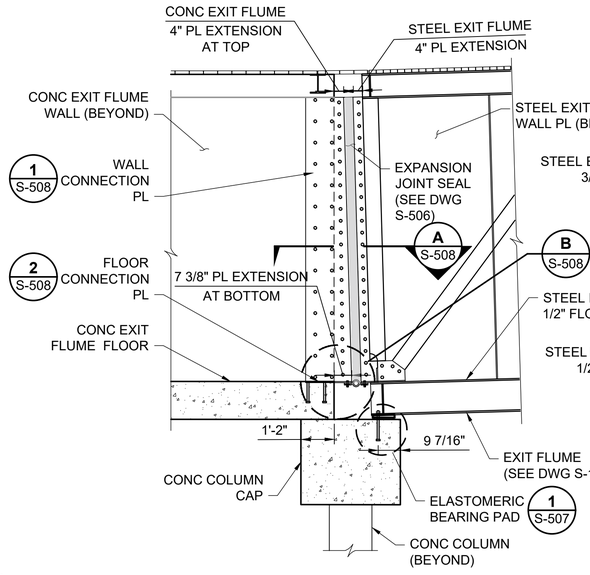
3 - **EXIT FLUME TRANSITION DETAIL**
SCALE: 1/2"=1'-0"
0 2' 4'



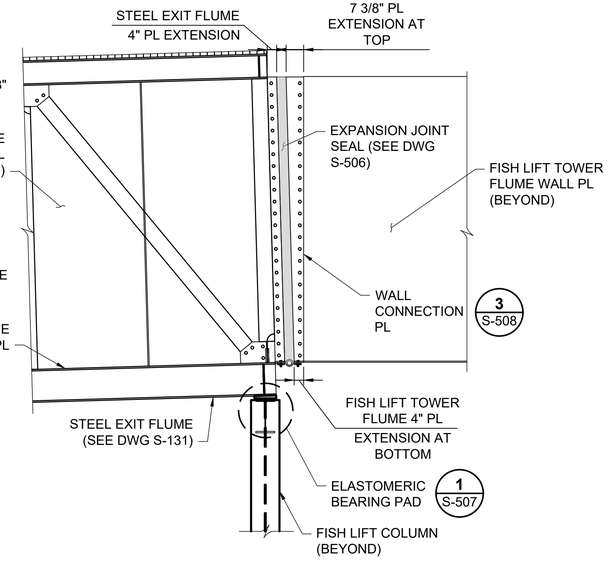
4 - **EXIT FLUME SUPPORT SYSTEM**
SCALE: 1/2"=1'-0"
0 2' 4'



5 - **BOLTED FLANGE DETAIL**
SCALE: 3/8"=1'-0"
0 2' 4'



A - **EXIT FLUME SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'



B - **EXIT FLUME SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

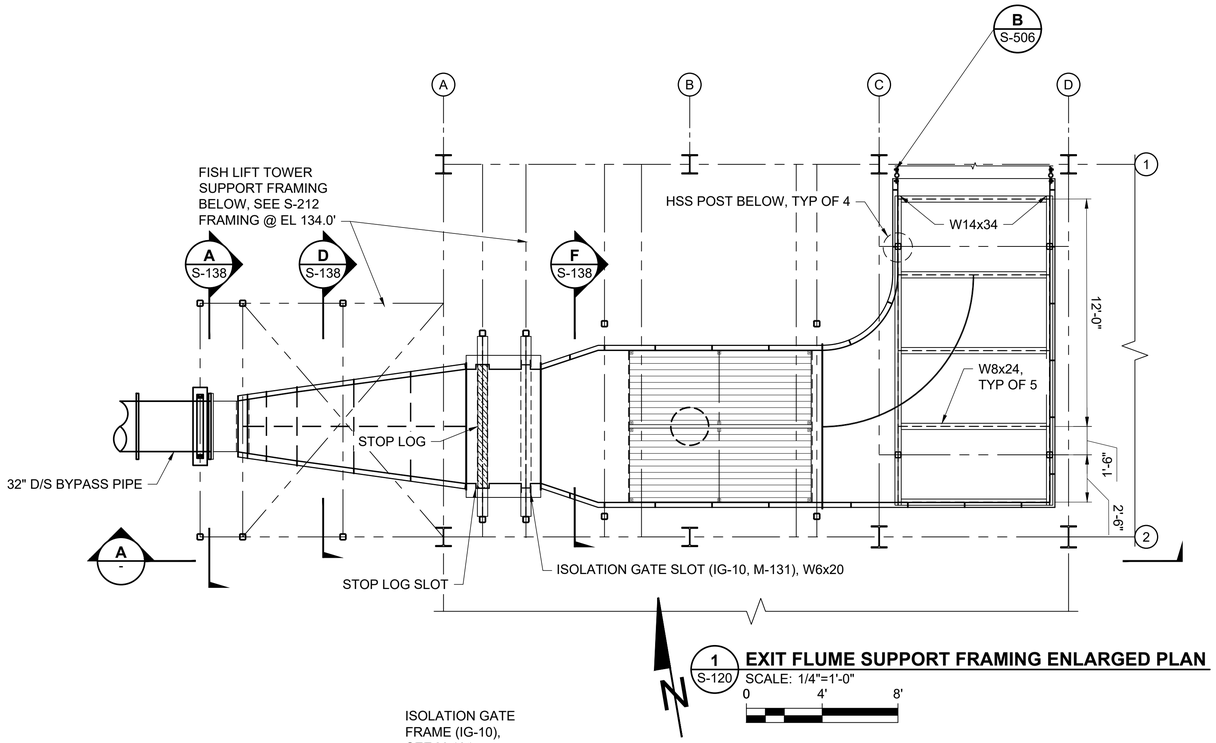
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

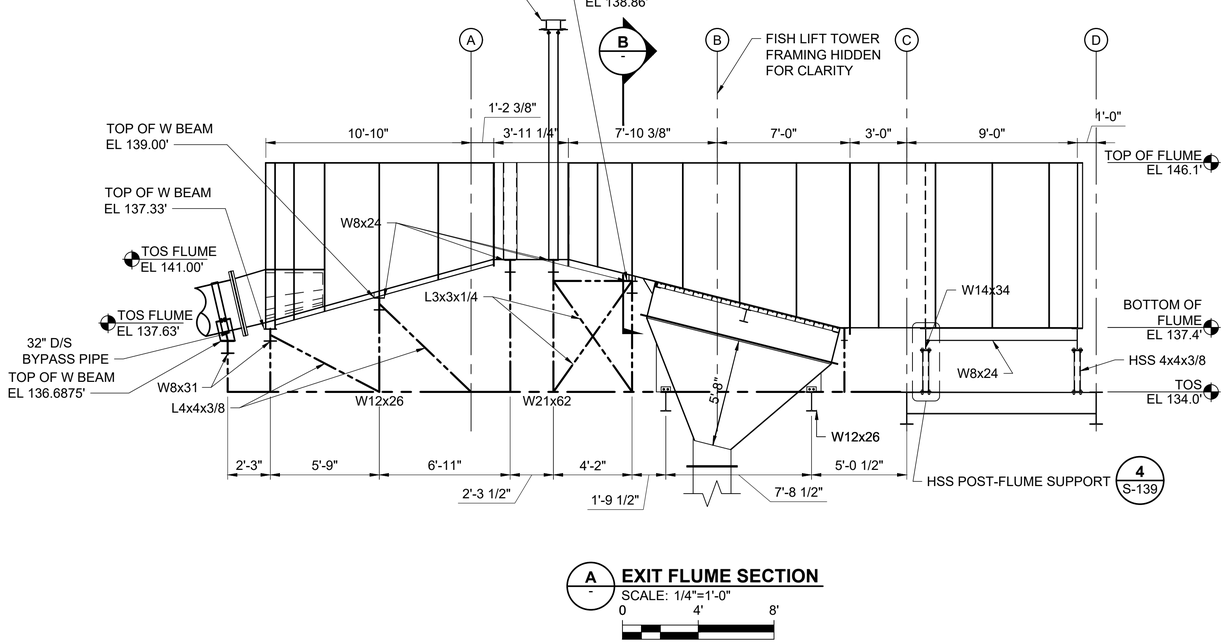
MAINE DEPARTMENT OF MARINE RESOURCES

STEEL EXIT FLUME TRANSITION PLANS AND DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	89 OF 240
DRAWING:	S-135

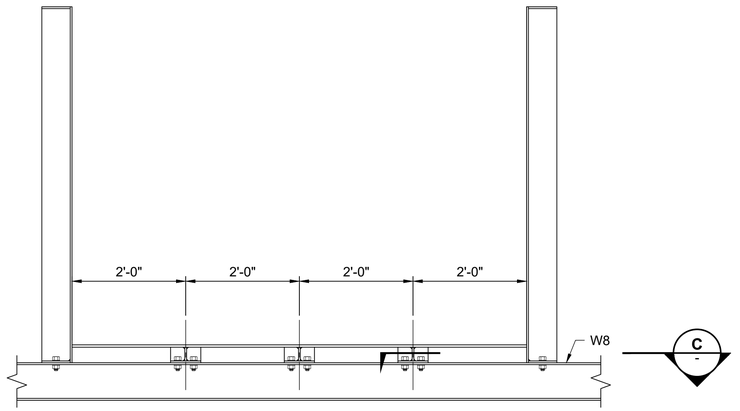


1 / S-120 EXIT FLUME SUPPORT FRAMING ENLARGED PLAN
SCALE: 1/4"=1'-0"
0 4' 8'

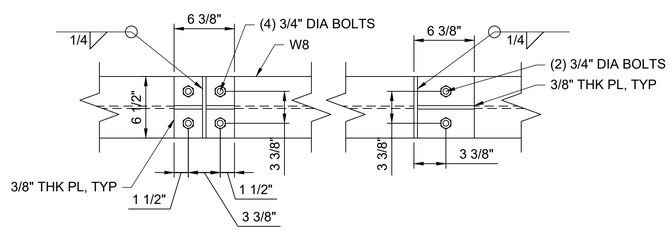


A - EXIT FLUME SECTION
SCALE: 1/4"=1'-0"
0 4' 8'

NOTE
1. SEE S-230 FOR TYPICAL CONNECTION DETAILS.



B - FLUME SUPPORT SECTION
SCALE: 3/4"=1'-0"
0 1' 2'



C - FLUME SUPPORT DETAIL
SCALE: 1 1/2"=1'-0"
0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

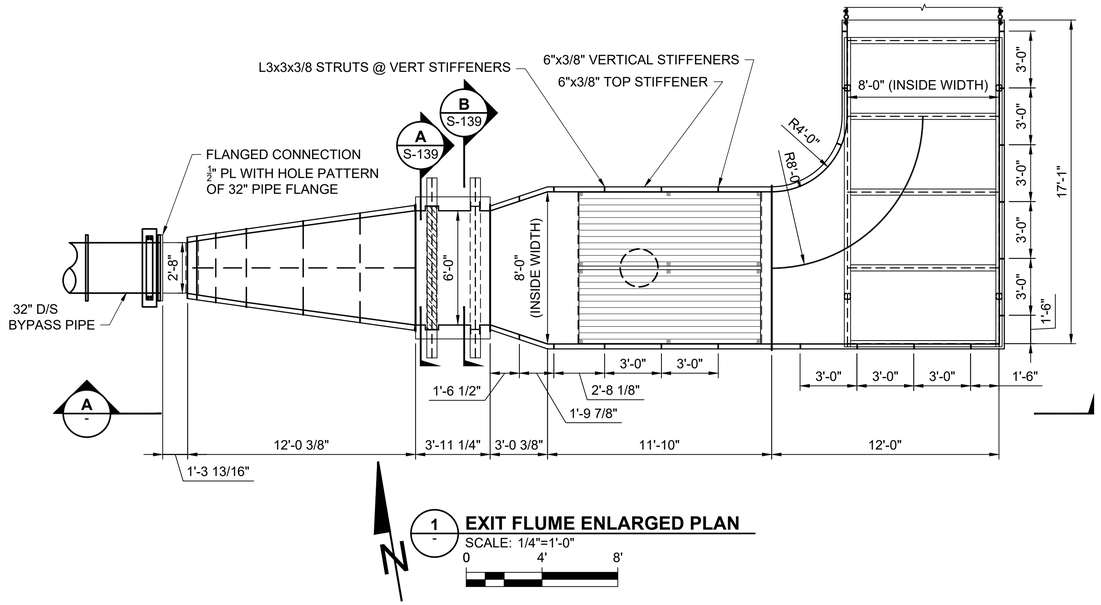
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

STEEL EXIT FLUME PLANS AND SECTIONS

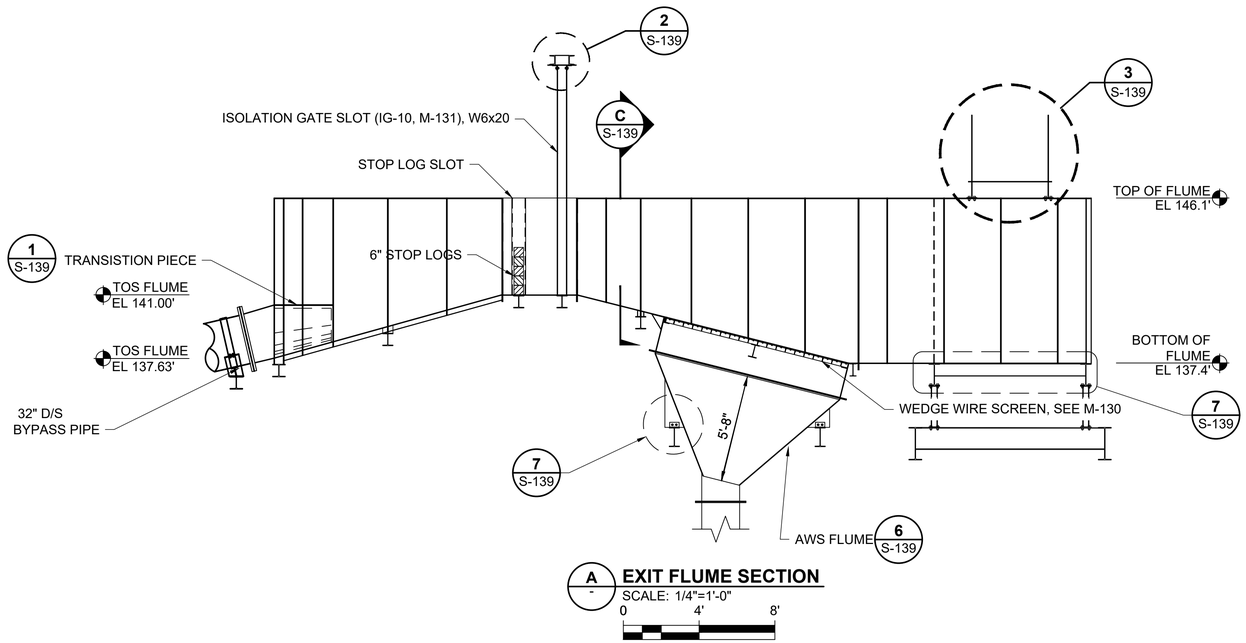
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	90 OF 240
DRAWING:	S-136



1 - EXIT FLUME ENLARGED PLAN

SCALE: 1/4"=1'-0"

0 4' 8'



A - EXIT FLUME SECTION

SCALE: 1/4"=1'-0"

0 4' 8'

STOP LOG TABLE			
NAME	BOTTOM ELEVATION	TOP ELEVATION	DESIGN DIFFERENTIAL HEAD
BYPASS 1 FLUME	141.0'	143.5'	2'-0"

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

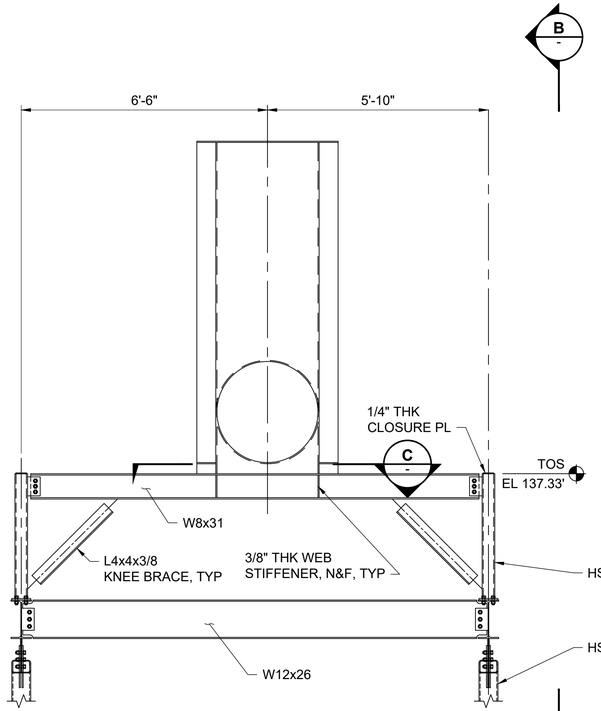
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

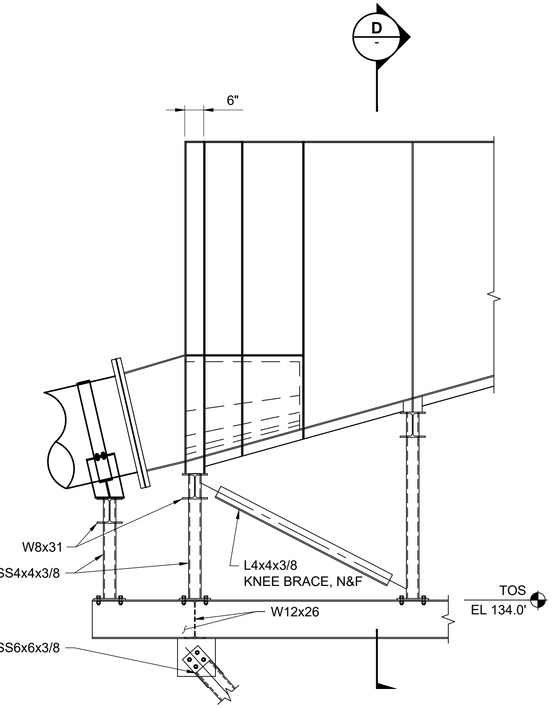
STEEL EXIT FLUME PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	91 OF 240
DRAWING:	S-137



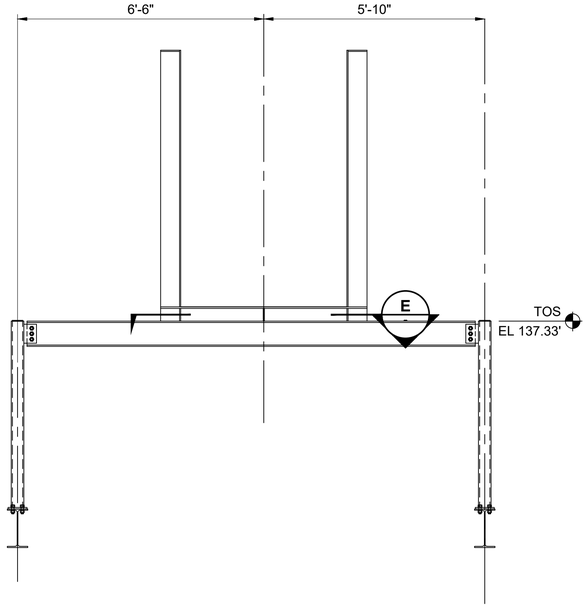
A S-136 **SECTION**
SCALE: 1/2"=1'-0"

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



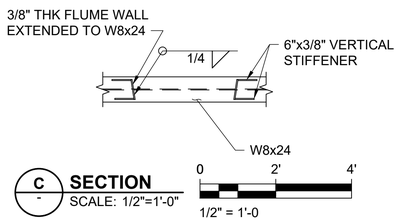
B - **SECTION**
SCALE: 1/2"=1'-0"

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



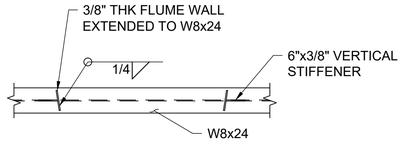
D - **SECTION**
SCALE: 1/2"=1'-0"

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



C - **SECTION**
SCALE: 1/2"=1'-0"

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



E - **SECTION**
SCALE: 1/2"=1'-0"

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

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

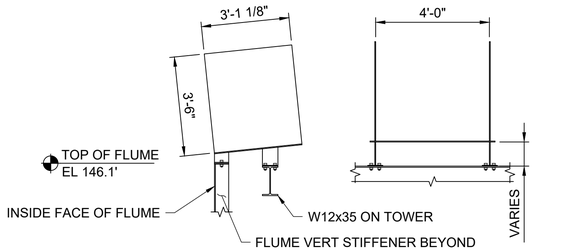
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

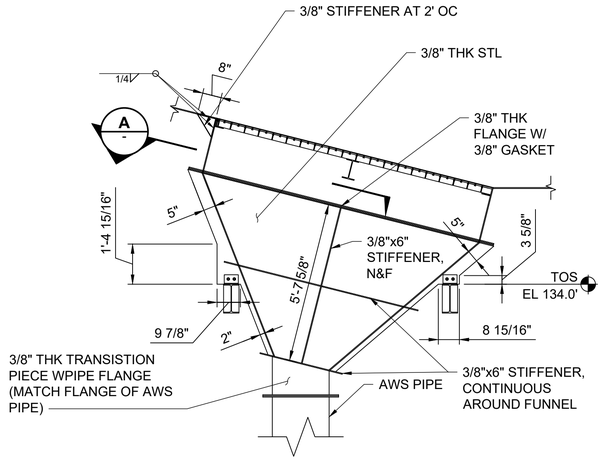
STEEL EXIT FLUME DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	91 OF 240
DRAWING:	S-138



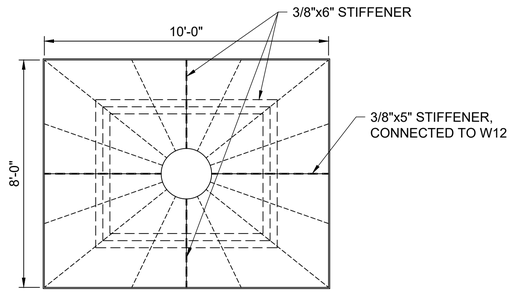
3 / S-137 HOPPER TO EXIT FLUME TROUGH
SCALE: 3/8"=1'-0"

0 2' 4'



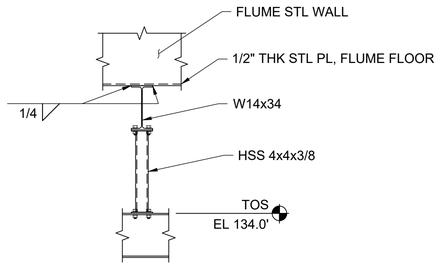
6 / S-137 SECTION
SCALE: 3/8" = 1'-0"

0 2' 4'
3/8" = 1'-0



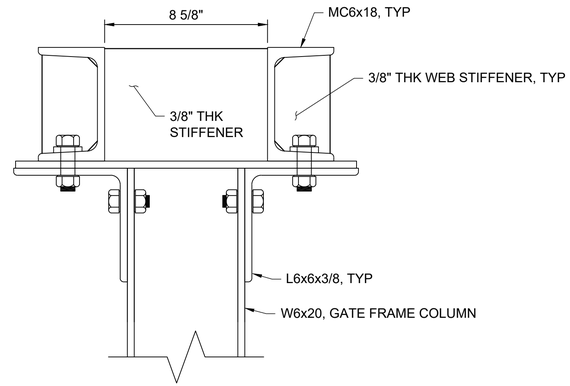
A / - SECTION
SCALE: 3/8" = 1'-0"

0 2' 4'
3/8" = 1'-0



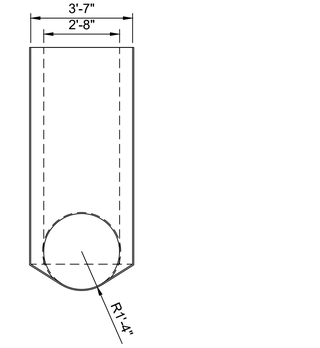
4 / S-136 HSS SUPPORT DETAIL
SCALE: 1/2"=1'-0"

0 2' 4'



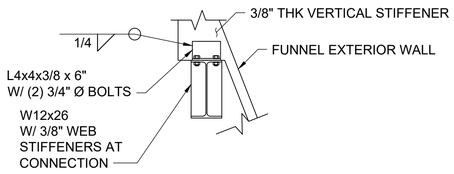
2 / S-137 DETAIL
SCALE: 3"=1'-0"

0 6" 1'
3" = 1'-0



3 / S-137 TRANSITION PIECE
SCALE: 3/8" = 1'-0"

0 2' 4'
3/8" = 1'-0



7 / S-137 CONNECTION DETAIL
SCALE: 3/4" = 1'-0"

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

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

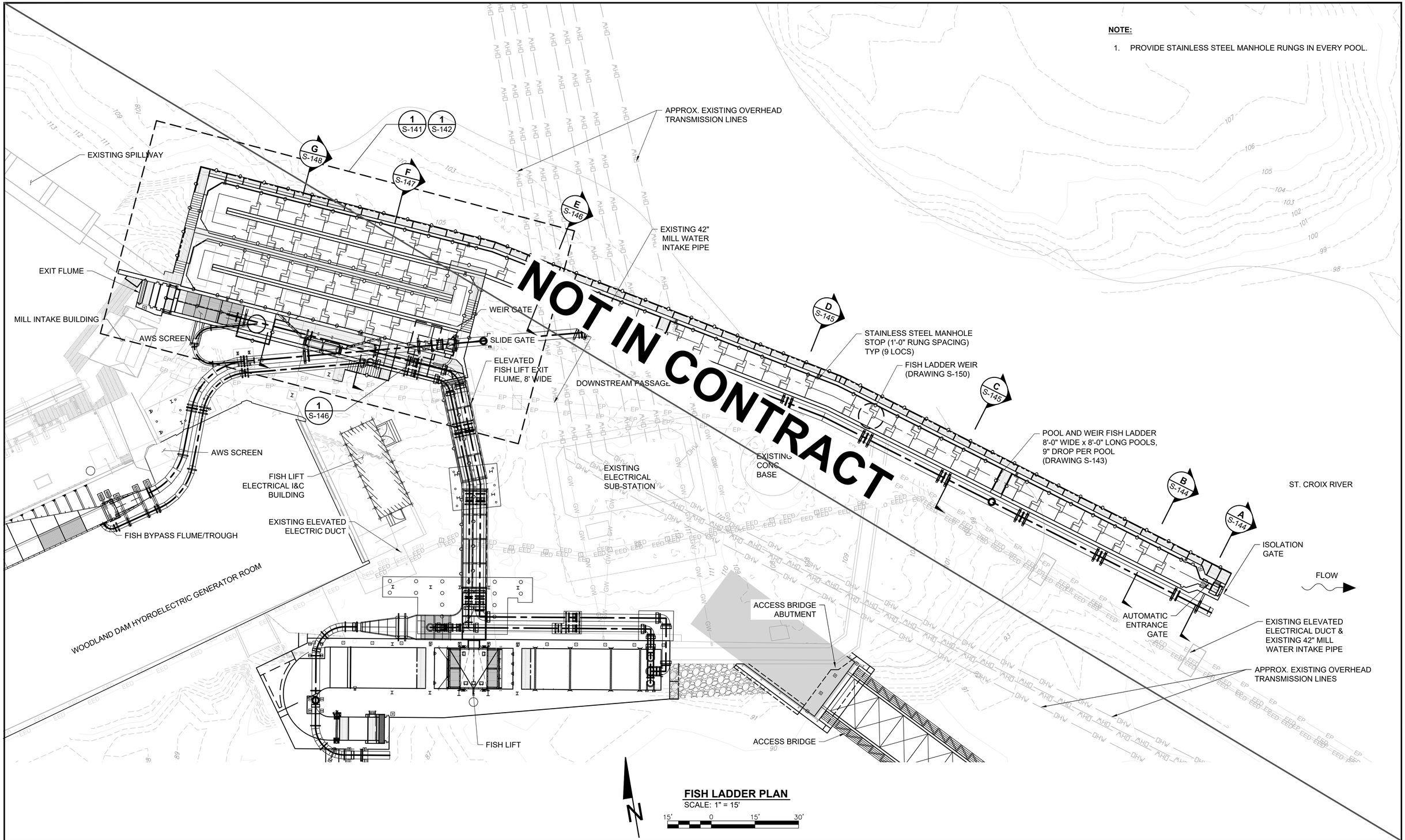
MAINE DEPARTMENT OF MARINE RESOURCES

STEEL EXIT FLUME DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	93 OF 240
DRAWING:	S-139

NOTE:

1. PROVIDE STAINLESS STEEL MANHOLE RUNGS IN EVERY POOL.



FISH LADDER PLAN
SCALE: 1" = 15'

15' 0 15' 30'

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

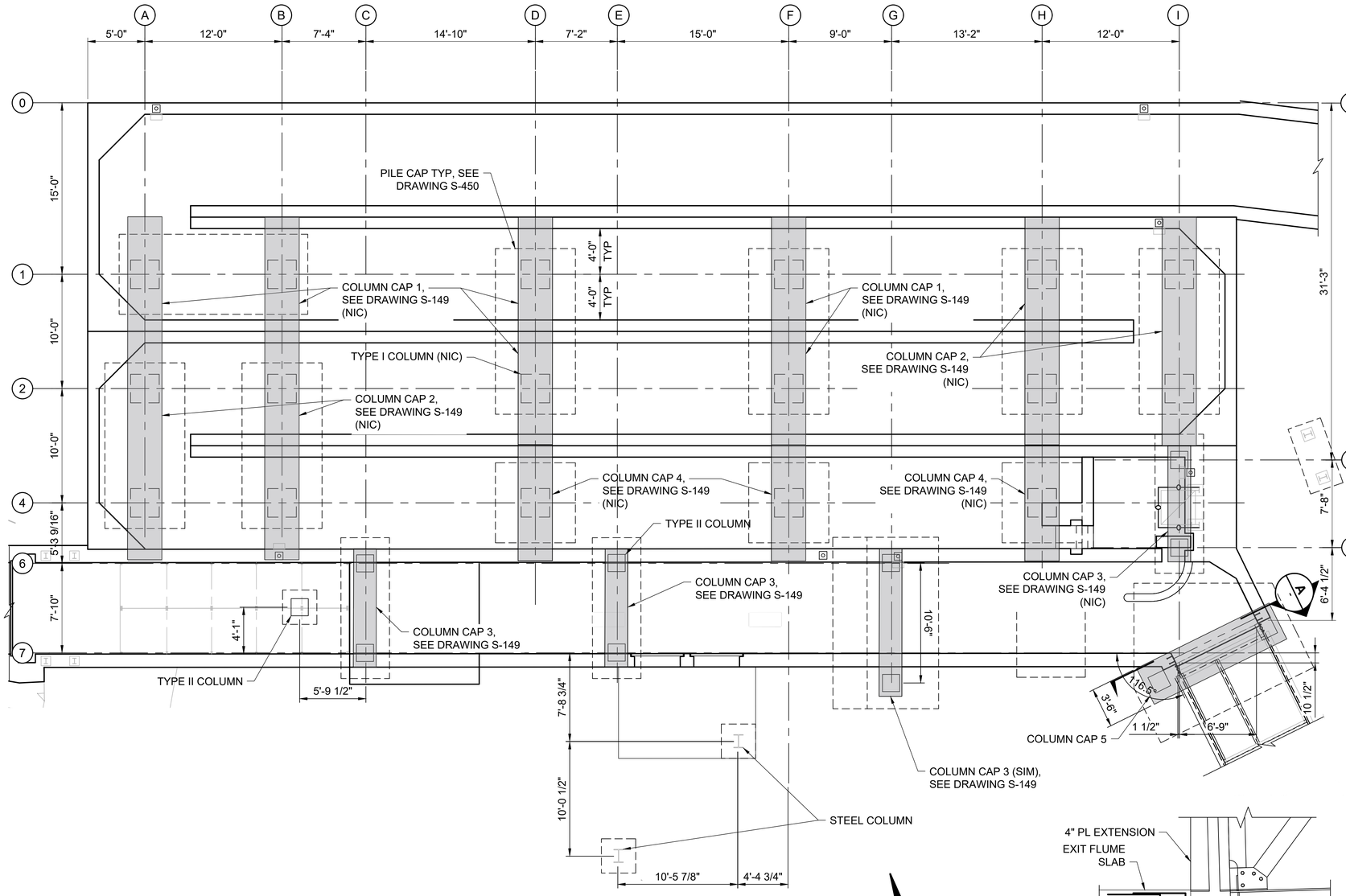
FISH LADDER PLAN
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	94 OF 240
DRAWING:	S-140

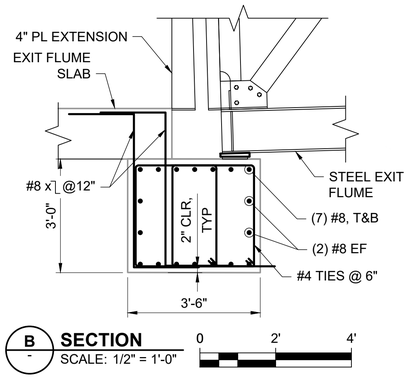
NOTE:

1. GRATING, STAIRS AND RAILING NOT SHOWN FOR CLARITY.
2. FISH LADDER WEIRS NOT SHOWN FOR CLARITY.

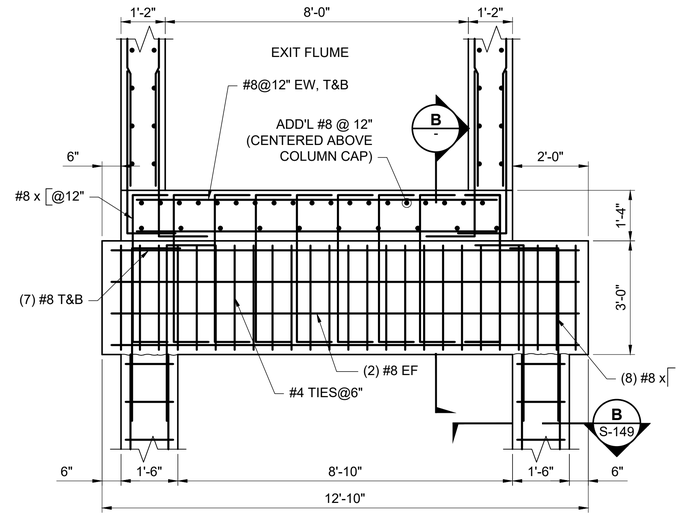
COLUMN SCHEDULE					
LOCATION	COLUMN			COLUMN CAP	
	TYPE	SIZE	DETAIL	TYPE	DETAIL
(NIC) GL 1-A	I	30" x 30"	A/S-149	1	1/S-149
(NIC) GL 1-B	I	30" x 30"	A/S-149	1	1/S-149
(NIC) GL 1-D	I	30" x 30"	A/S-149	1	1/S-149
(NIC) GL 1-F	I	30" x 30"	A/S-149	1	1/S-149
(NIC) GL 1-H	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 1-I	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 2-A	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 2-B	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 2-D	I	30" x 30"	A/S-149	1	1/S-149
(NIC) GL 2-F	I	30" x 30"	A/S-149	1	1/S-149
(NIC) GL 2-H	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 2-I	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 3-I	II	18" x 18"	B/S-149	3	3/S-149
(NIC) GL 4-A	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 4-B	I	30" x 30"	A/S-149	2	2/S-149
(NIC) GL 4-D	I	30" x 30"	A/S-149	4	4/S-149
(NIC) GL 4-F	I	30" x 30"	A/S-149	4	4/S-149
(NIC) GL 4-H	I	30" x 30"	A/S-149	4	4/S-149
GL 5-I	II	18" x 18"	B/S-149	3	3/S-149
GL 6-C	II	18" x 18"	B/S-149	3	3/S-149
GL 6-E	II	18" x 18"	B/S-149	3	3/S-149
GL 6-G	II	18" x 18"	B/S-149	3	3/S-149
GL 7-C	II	18" x 18"	B/S-149	3	3/S-149
GL 7-E	II	18" x 18"	B/S-149	3	3/S-149



1 / S-140 **FISH LADDER - ENLARGED PLAN**
SCALE: 3/16" = 1'-0"
0 4' 8'



B / - **SECTION**
SCALE: 1/2" = 1'-0"
0 2' 4'



A / - **COLUMN CAP 5**
SCALE: 1/2" = 1'-0"
0 2' 4'

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9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

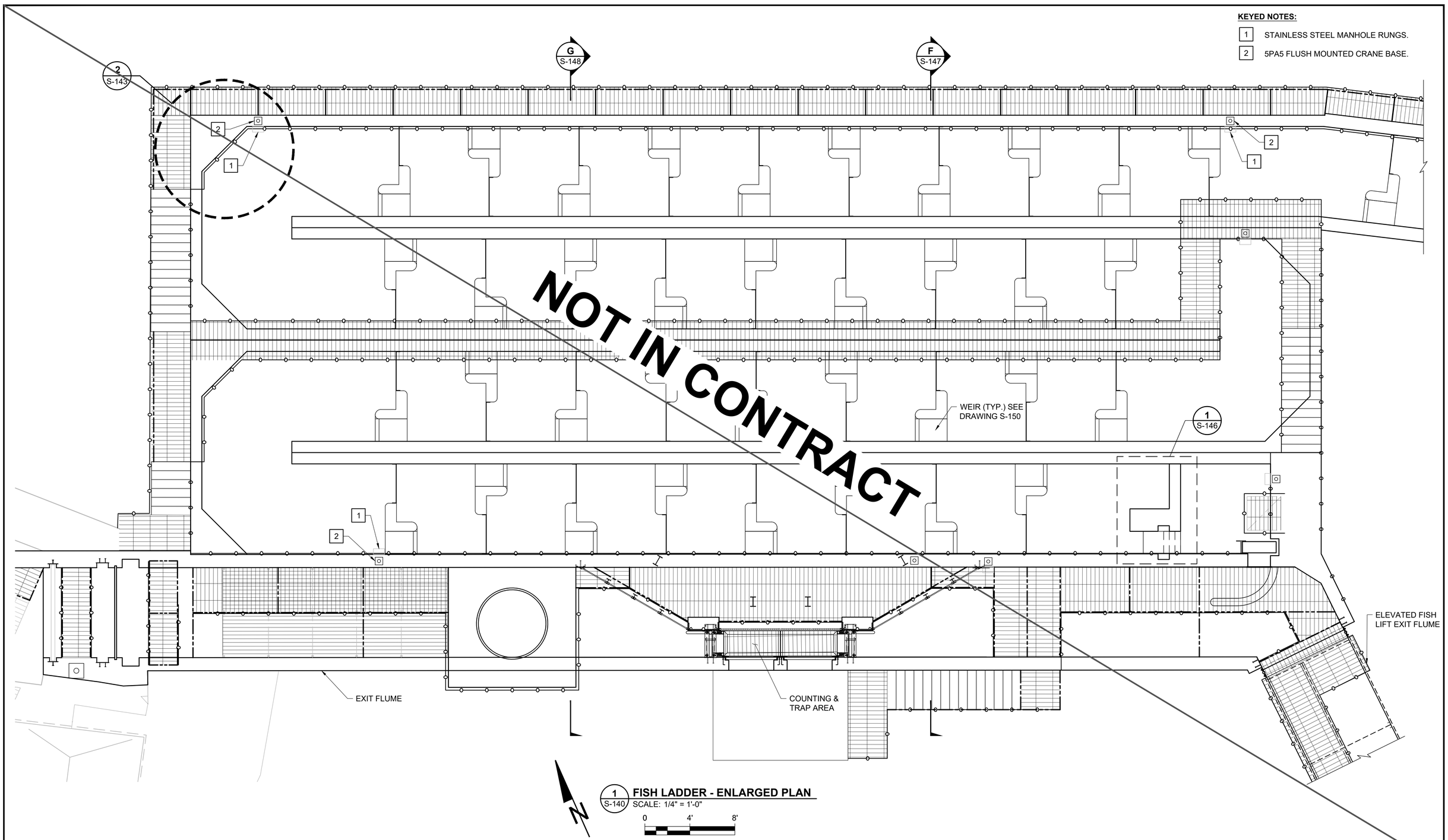
MAINE DEPARTMENT OF MARINE RESOURCES

ENLARGED FISH LADDER FOUNDATION PLAN

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	95 OF 240
DRAWING:	S-141

KEYED NOTES:

1. STAINLESS STEEL MANHOLE RUNGS.
2. 5PA5 FLUSH MOUNTED CRANE BASE.



1 S-140 FISH LADDER - ENLARGED PLAN

SCALE: 1/4" = 1'-0"

0 4' 8'

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER ENLARGED PLAN (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	96 OF 240
DRAWING:	S-142

KEYED NOTES:

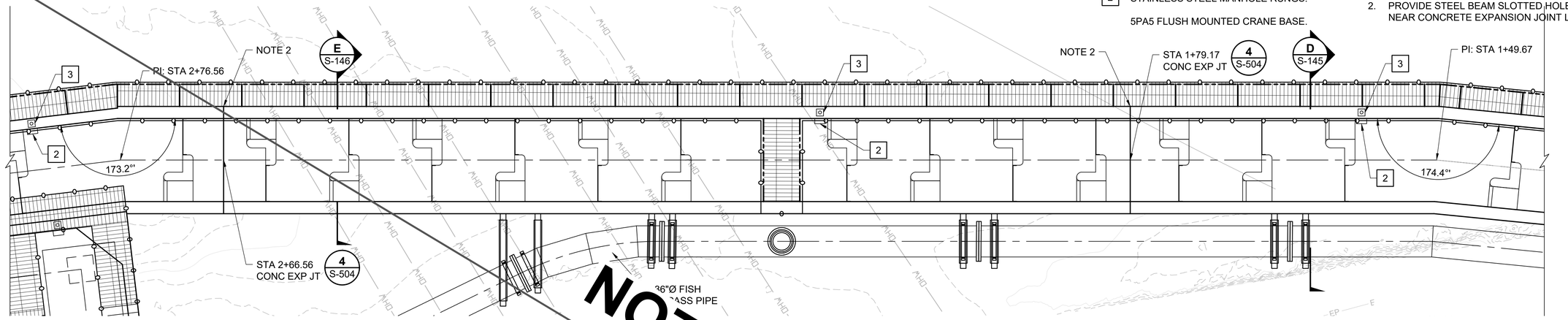
3 / 1 — 5PT20 FLUSH MOUNTED CRANE BASE.

2 — STAINLESS STEEL MANHOLE RUNGS.

5PA5 FLUSH MOUNTED CRANE BASE.

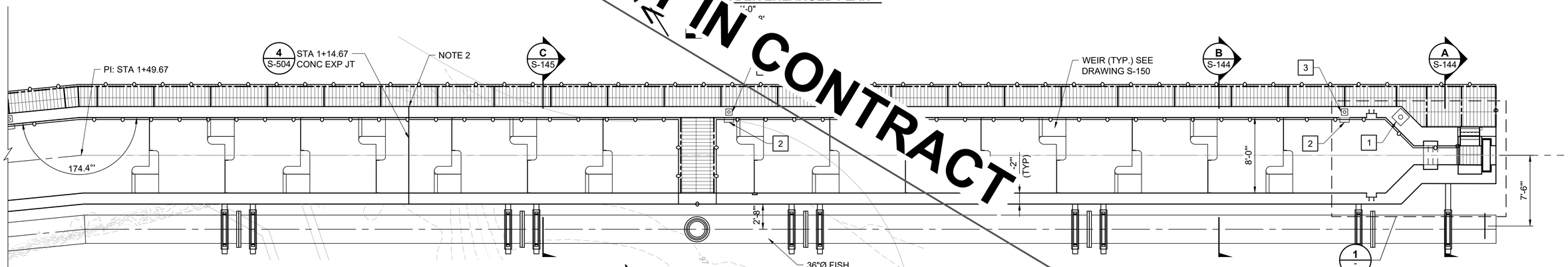
NOTE:

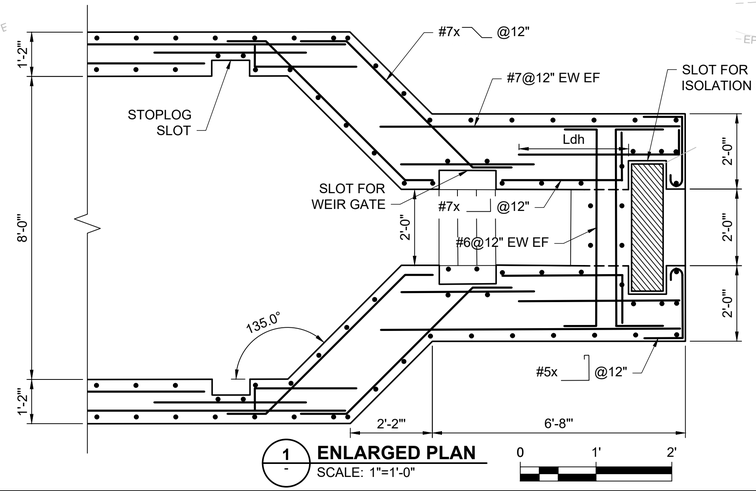
1. PROVIDE GRATING JOINTS AND RAILING EXPANSION JOINTS AT CONCRETE EXPANSION JOINT LOCATIONS.
2. PROVIDE STEEL BEAM SLOTTED HOLE END CONNECTIONS NEAR CONCRETE EXPANSION JOINT LOCATIONS.



NOT IN CONTRACT

ADDER ENLARGED PLAN





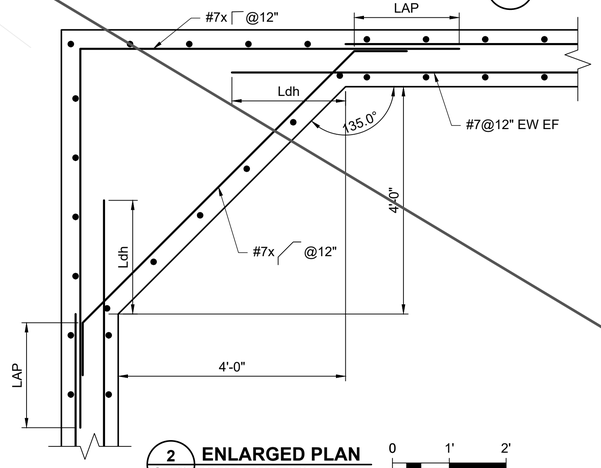
1 / - **ENLARGED PLAN** SCALE: 1"=1'-0"

0 1' 2'

FISH LADDER ENLARGED PLAN

SCALE: 3/16"=1'-0"

0 4' 8'



2 / S-142 **ENLARGED PLAN** SCALE: 3/4"=1'-0"

0 1' 2'

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

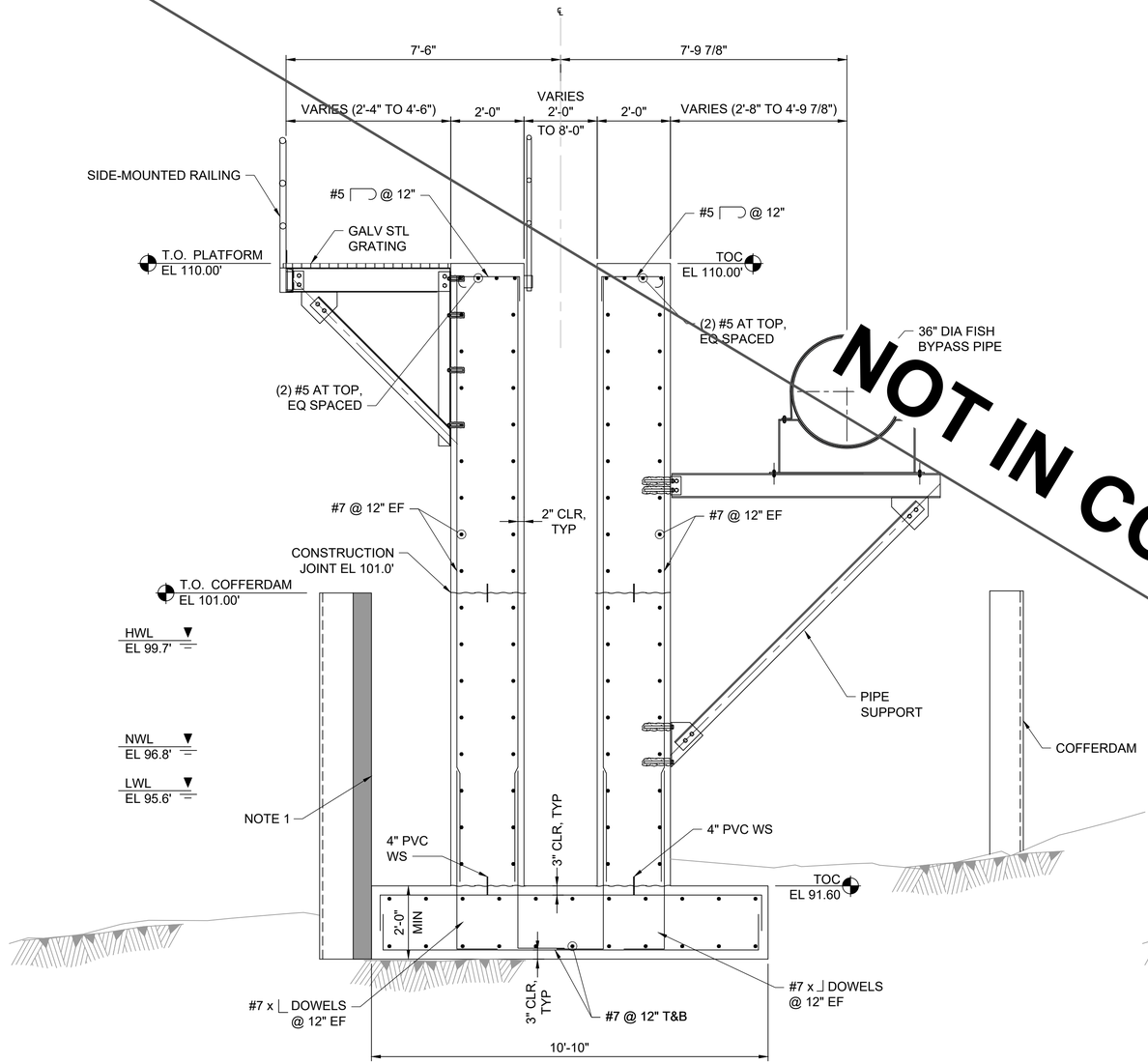
MAINE DEPARTMENT OF MARINE RESOURCES

ENLARGED FISH LADDER PLANS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	97 OF 240
DRAWING:	S-143

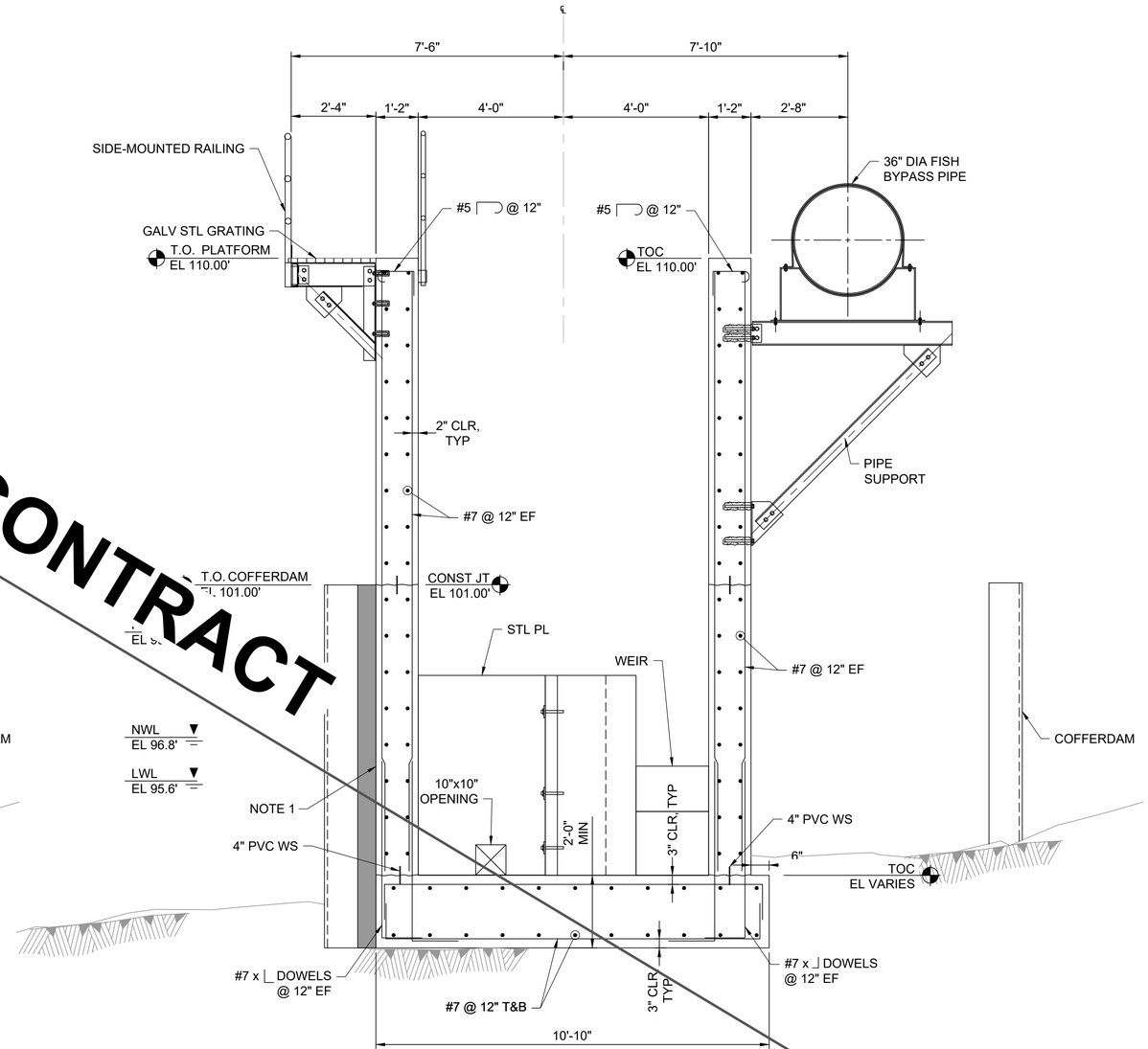
NOTE:

1. CONTRACTOR'S OPTION TO PLACE CONCRETE AGAINST COFFERDAM WALL OR USE A CONCRETE FORM.



A S-143 **SECTION STA 0+00 TO STA 0+08**
SCALE: 1/2" = 1'-0"

0 2' 4'



B S-143 **SECTION STA 0+08 TO STA 0+57**
SCALE: 1/2" = 1'-0"

0 2' 4'

NOT IN CONTRACT

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

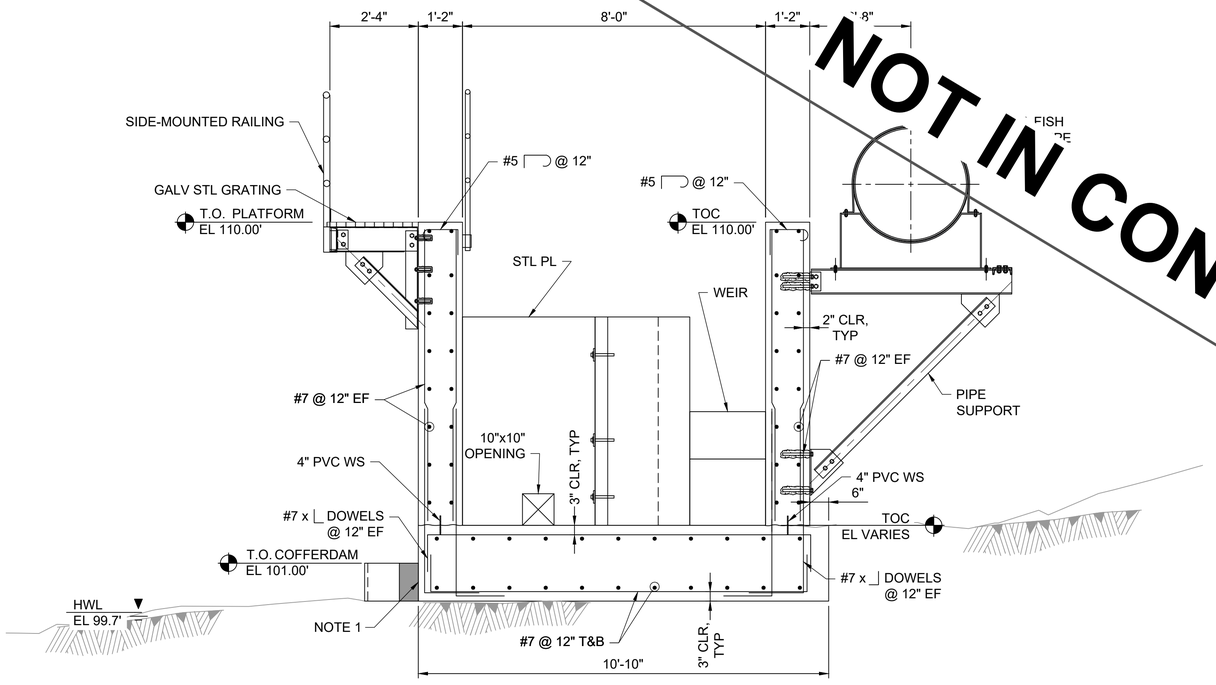
FISH LADDER SECTIONS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	98 OF 240
DRAWING:	S-144

NOTE:

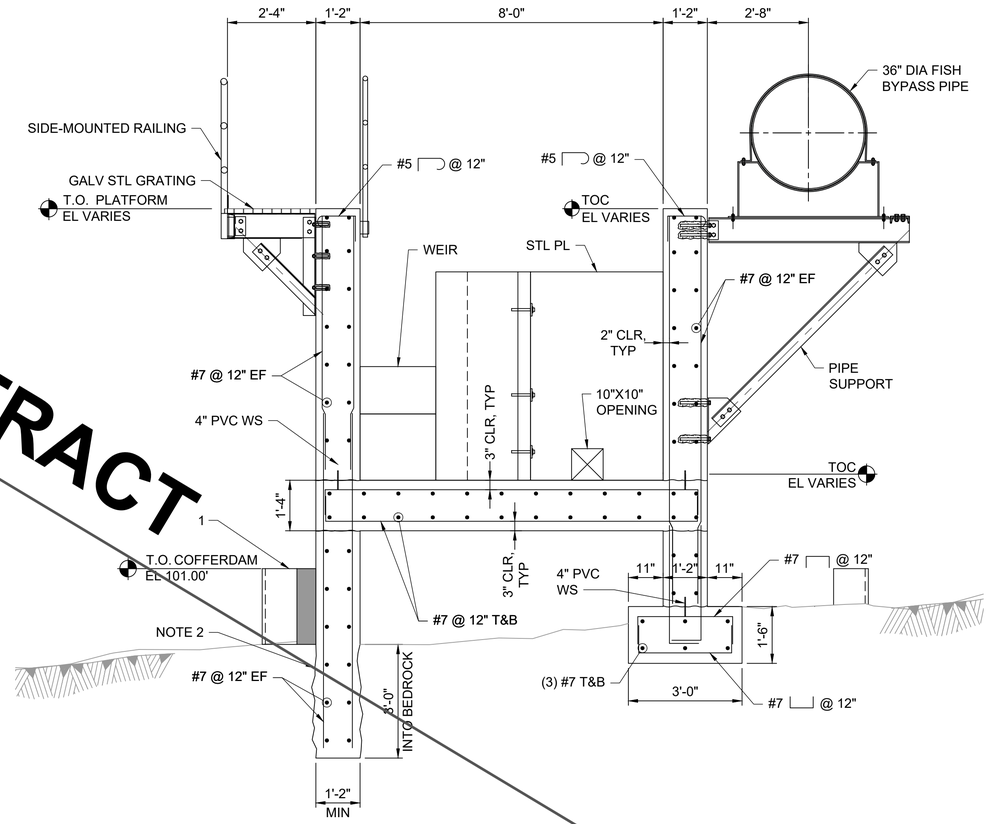
1. CONTRACTOR'S OPTION TO PLACE CONCRETE AGAINST COFFERDAM WALL OR USE A CONCRETE FORM.
2. CONTRACTOR'S OPTION TO PLACE FOOTING ON COMPETENT BEDROCK OR PLACE KEY 3' INTO COMPETENT BEDROCK.

NOT IN CONTRACT



C S-140 **SECTION STA 0+57.0 TO STA 1+26.25**
SCALE: 1/2" = 1'-0"

0 2' 4'



D S-140 **SECTION STA 1+26.25 TO STA 2+30.75**
SCALE: 1/2" = 1'-0"

0 2' 4'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

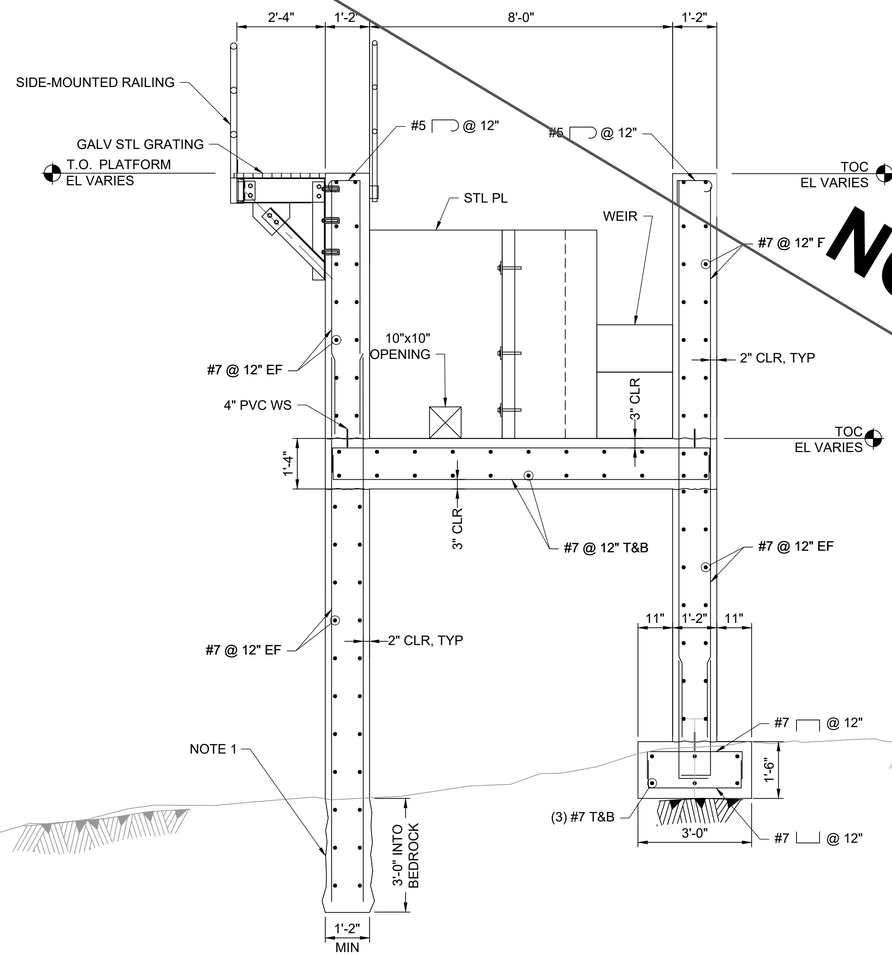
MAINE DEPARTMENT OF MARINE RESOURCES

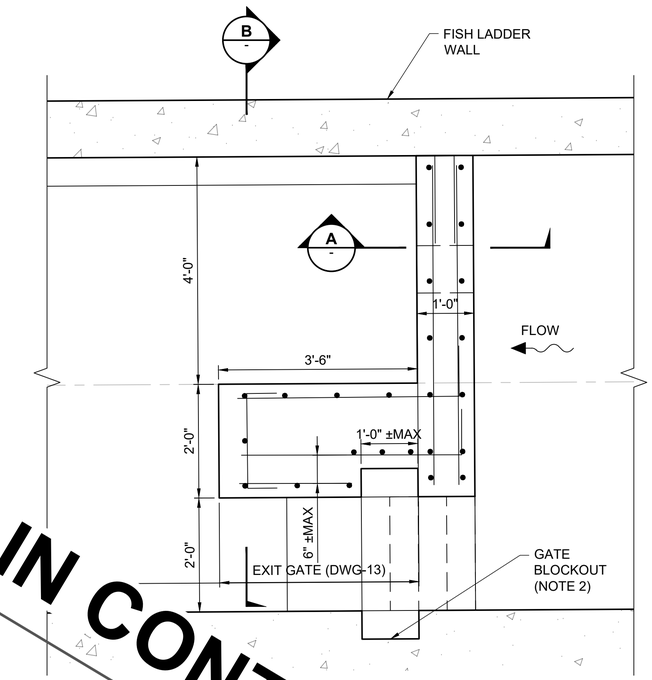
FISH LADDER SECTIONS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	99 OF 240
DRAWING:	S-145

NOTE:

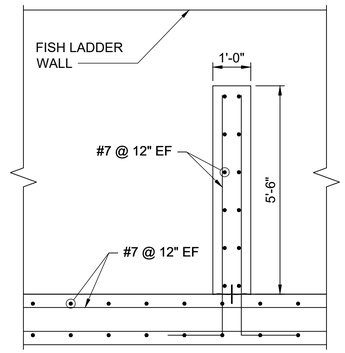
1. CONTRACTOR'S OPTION TO PLACE FOOTING ON COMPETENT BEDROCK OR TRENCH CONCRETE KEY 3' INTO COMPETENT BEDROCK.
2. APPROXIMATE GATE BLOCKOUT DIMENSIONS SHOWN.





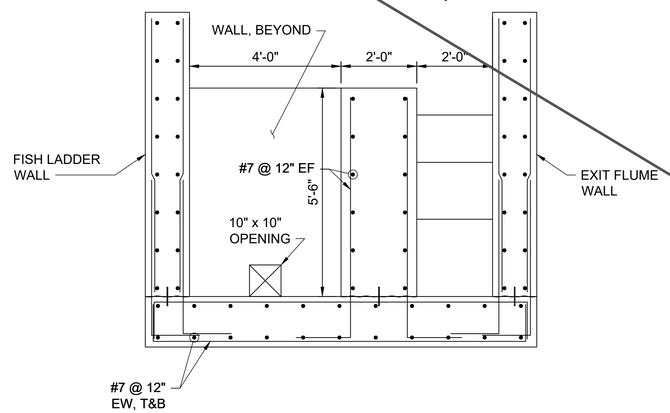
1 S-140 S-142 **FISH LADDER WALL ENLARGED PLAN**
SCALE: 3/4"=1'-0"

0 1' 2'



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

0 2' 4'



E S-140 S-143 **SECTION STA 2+30.75 TO STA 2+76.56**
SCALE: 1/2" = 1'-0"

0 2' 4'

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

0 2' 4'

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9/3/2025	ISSUED FOR BID	M. GRAESER

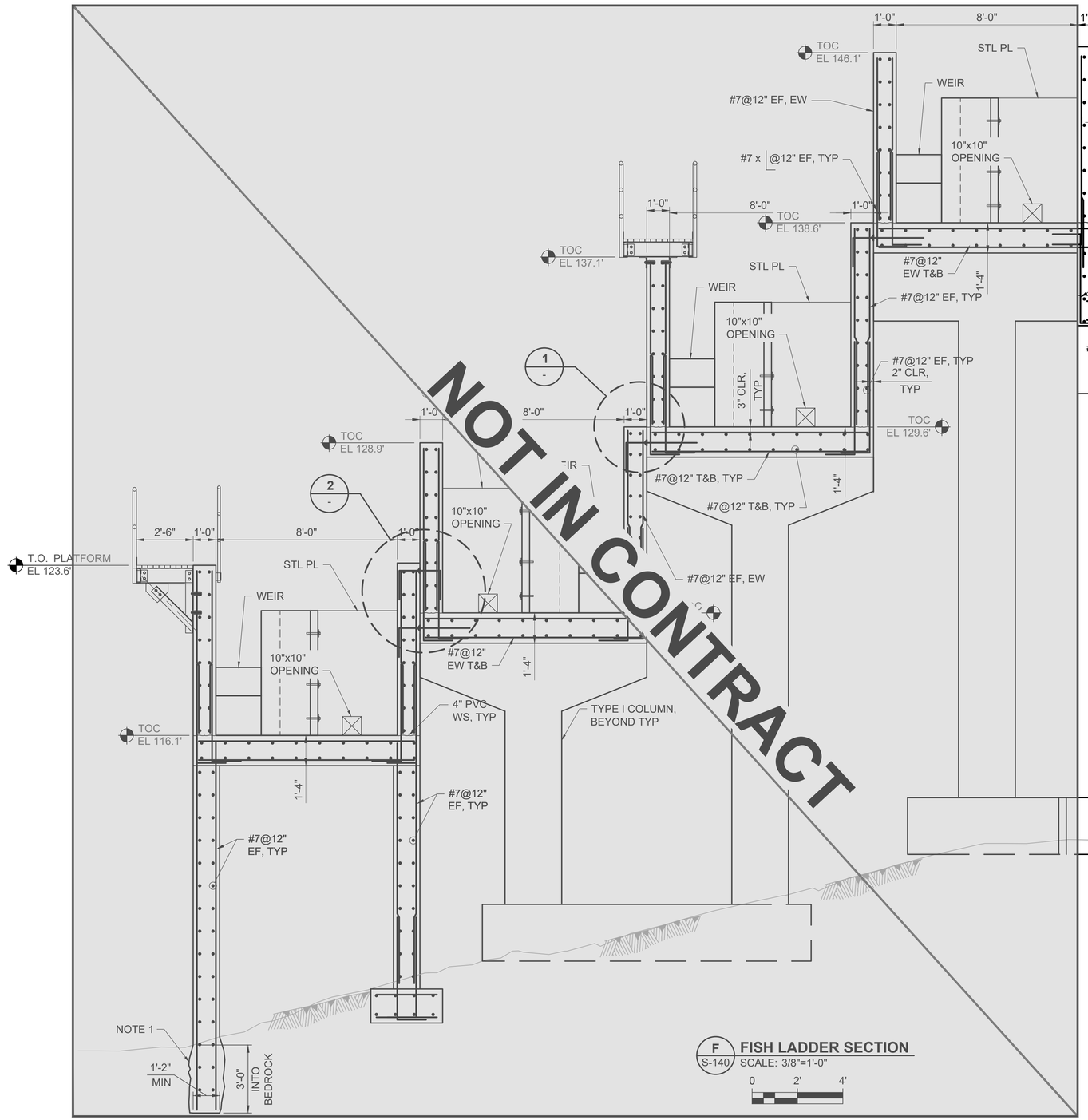
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

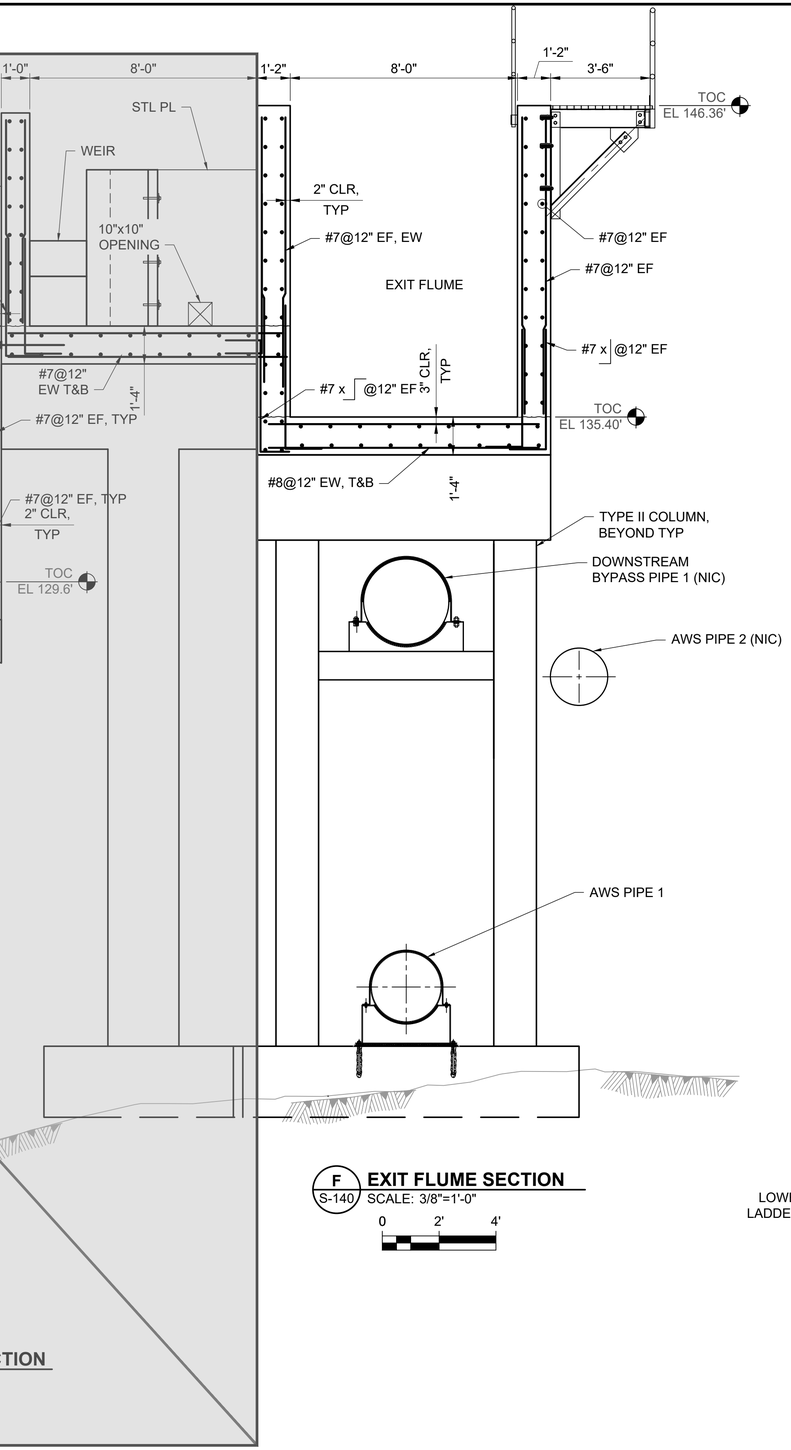
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER SECTIONS
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	100 OF 240
DRAWING:	S-146



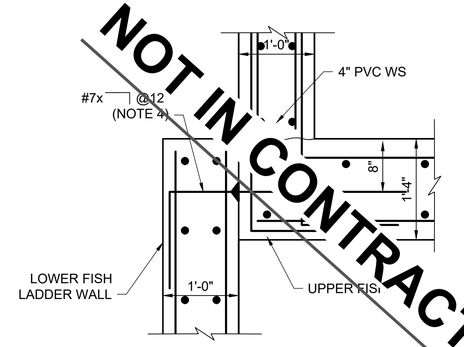
F S-140 **FISH LADDER SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'



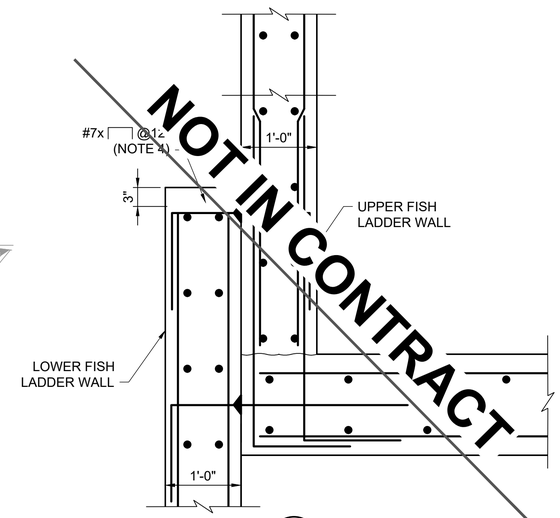
F S-140 **EXIT FLUME SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'

NOTES:

1. CONTRACTOR'S OPTION TO PLACE FOOTING ON COMPETENT BEDROCK OR TRENCH CONCRETE KEY 3' INTO COMPETENT BEDROCK.
2. FISH LADDER TOP OF WALL AND TOP OF SLAB ELEVATIONS VARY. REPORTED ELEVATIONS ARE APPROXIMATE AT THE SECTION CUT LOCATION. SEE DRAWING C-142 FOR ELEVATIONS.
3. FISH LADDER DESIGN ASSUMES THE LOWER SECTIONS WILL BE BUILT FIRST AND UPPER WALLS WILL BE CAST AGAINST THE LOWER WALLS.
4. HORIZONTAL DOWELS OR FORM SAVERS (CONTRACTOR'S OPTION)



1 - **DETAIL**
SCALE: 1"=1'-0"
0 1' 2'



2 - **DETAIL**
SCALE: 1"=1'-0"
0 1' 2'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

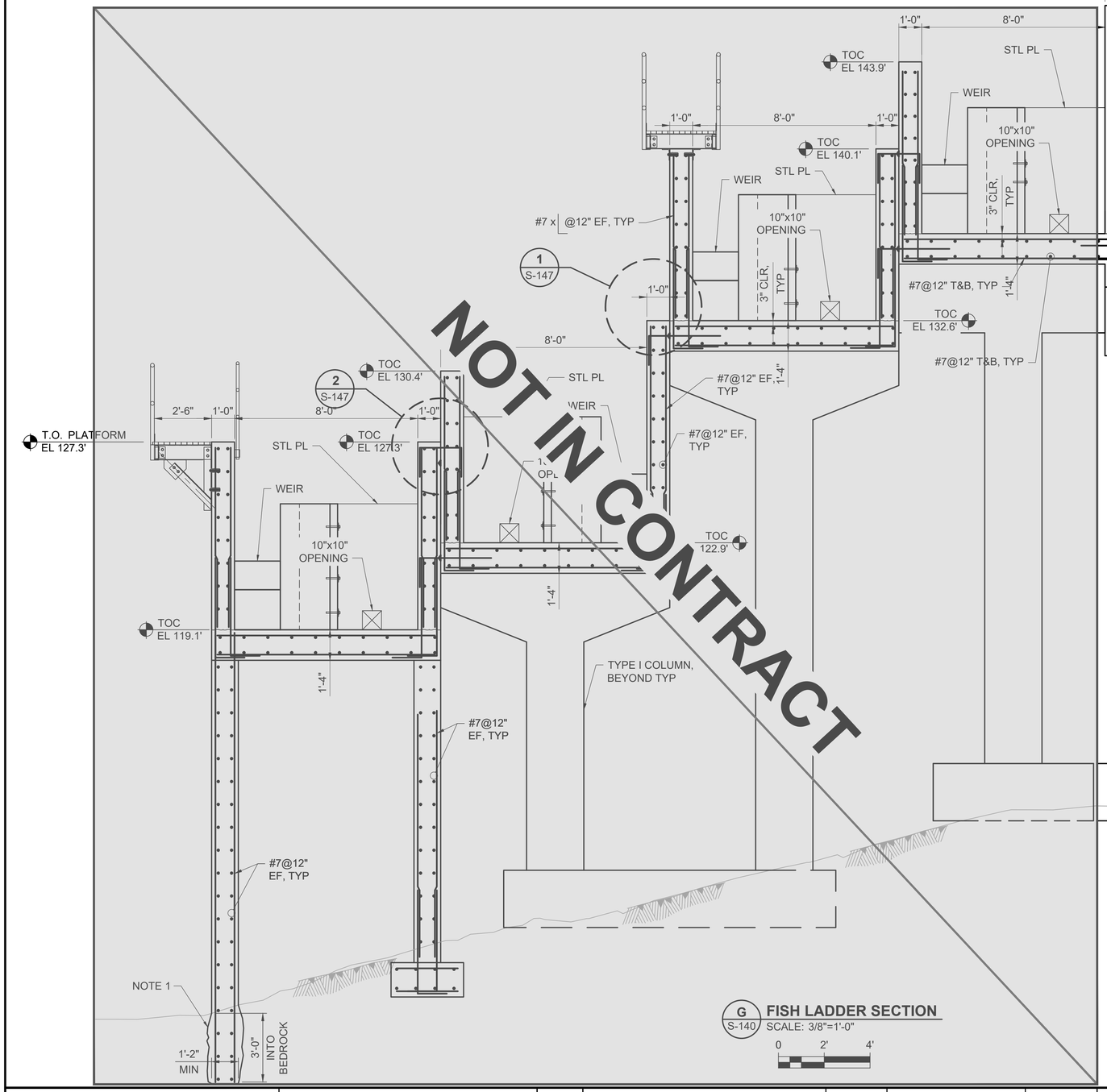
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER SECTION AND DETAILS

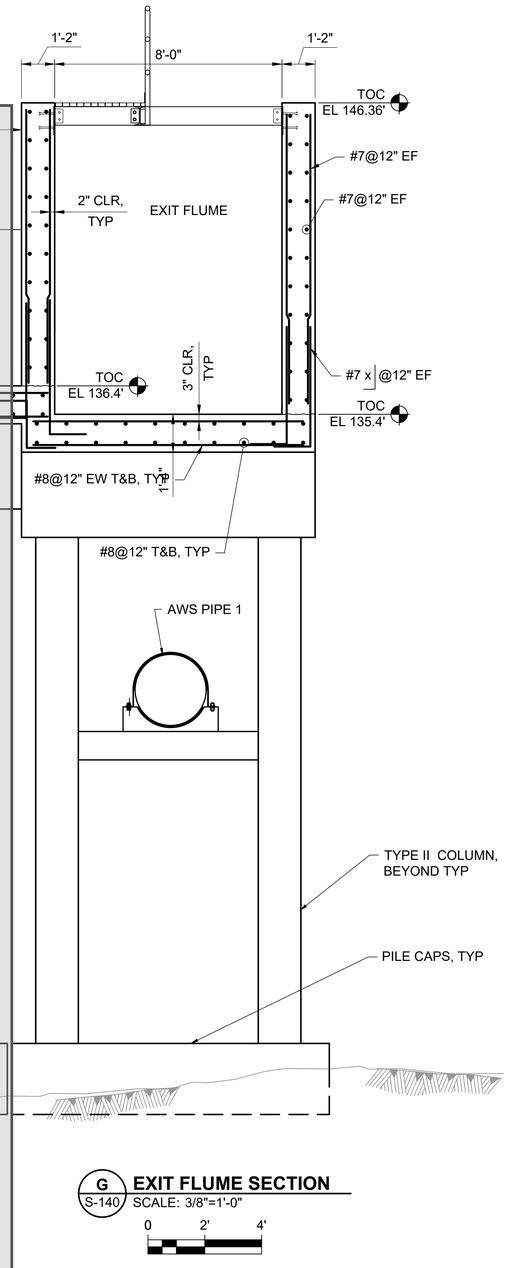
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	101 OF 240
DRAWING:	S-147

NOTES:

1. CONTRACTOR'S OPTION TO PLACE FOOTING ON COMPETENT BEDROCK OR TRENCH CONCRETE KEY 3' INTO COMPETENT BEDROCK.
2. FISH LADDER TOP OF WALL AND TOP OF SLAB ELEVATIONS VARY. REPORTED ELEVATIONS ARE APPROXIMATE AT THE SECTION CUT LOCATION. SEE DRAWING S-142 FOR ELEVATIONS.
3. FISH LADDER DESIGN ASSUMES THE LOWER SECTIONS WILL BE BUILT FIRST AND UPPER WALLS WILL BE CAST AGAINST THE LOWER WALLS.



G S-140 **FISH LADDER SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'



G S-140 **EXIT FLUME SECTION**
SCALE: 3/8"=1'-0"
0 2' 4'

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9/3/2025	ISSUED FOR BID	M. GRAESER

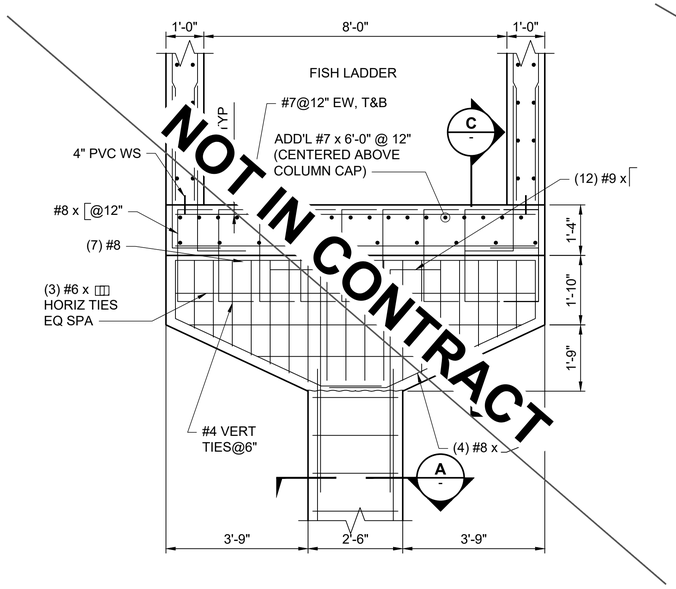
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

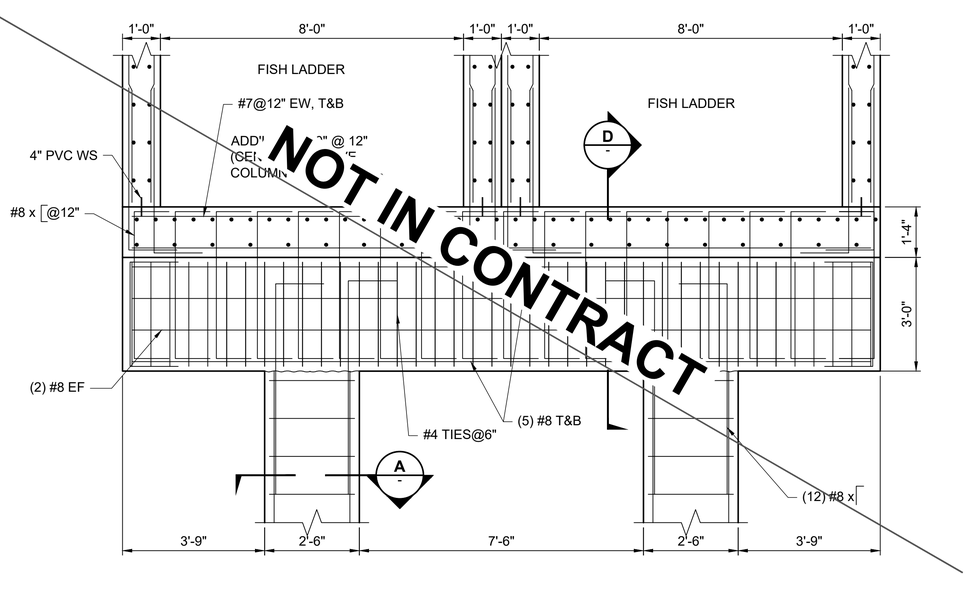
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER SECTION

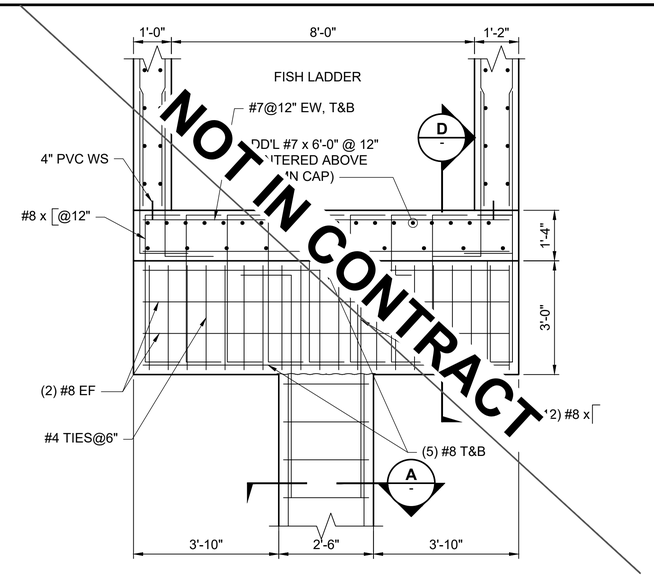
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	102 OF 240
DRAWING:	S-148



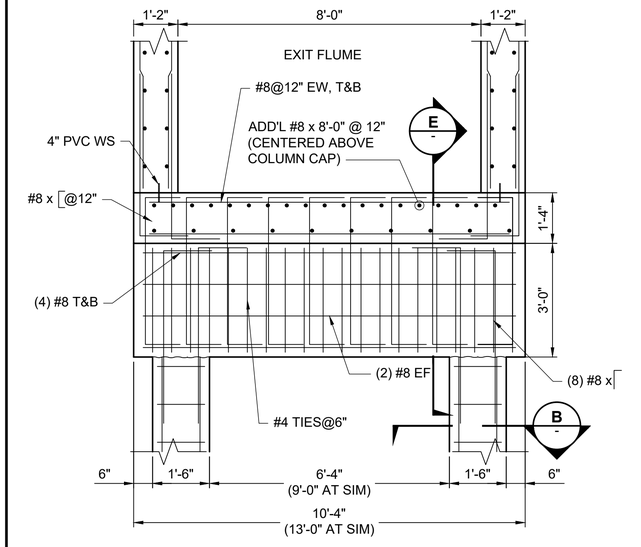
1 S-141 **TYPE 1 COLUMN CAP** 0 2' 4'
SCALE: 1/2" = 1'-0"



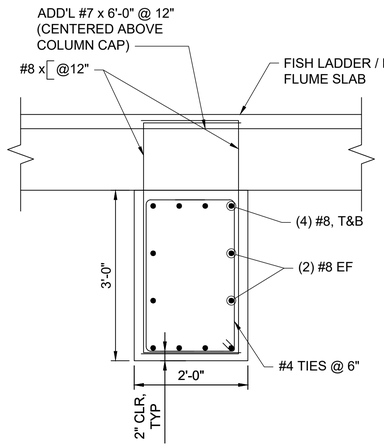
2 S-141 **TYPE 2 COLUMN CAP** 0 2' 4'
SCALE: 1/2" = 1'-0"



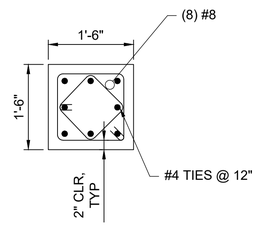
4 S-141 **TYPE 4 COLUMN CAP** 0 2' 4'
SCALE: 1/2" = 1'-0"



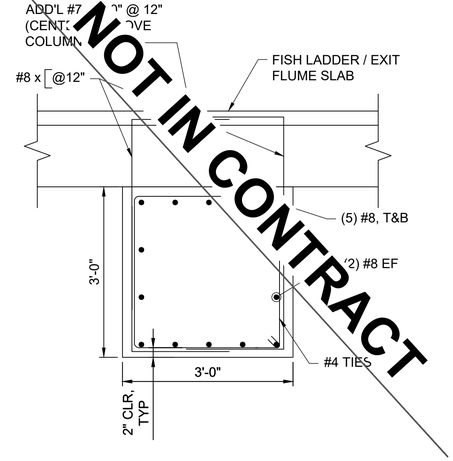
3 S-141 **TYPE 3 COLUMN CAP** 0 2' 4'
SCALE: 1/2" = 1'-0"



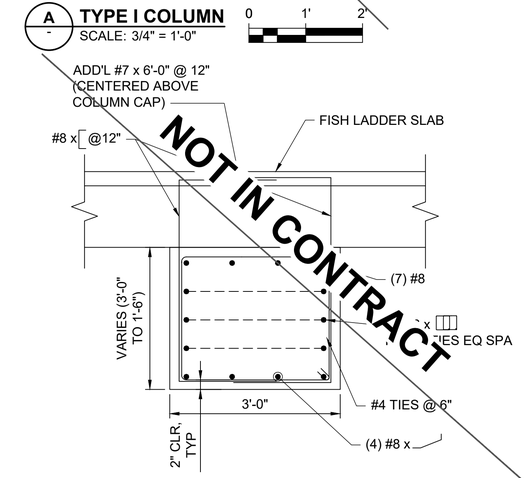
E **SECTION** 0 1' 2'
SCALE: 3/4" = 1'-0"



B **TYPE II COLUMN**
SCALE: 3/4" = 1'-0"
0 1' 2'



D **SECTION** 0 1' 2'
SCALE: 3/4" = 1'-0"



A **TYPE I COLUMN** 0 1' 2'
SCALE: 3/4" = 1'-0"

C **SECTION** 0 1' 2'
SCALE: 3/4" = 1'-0"

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REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

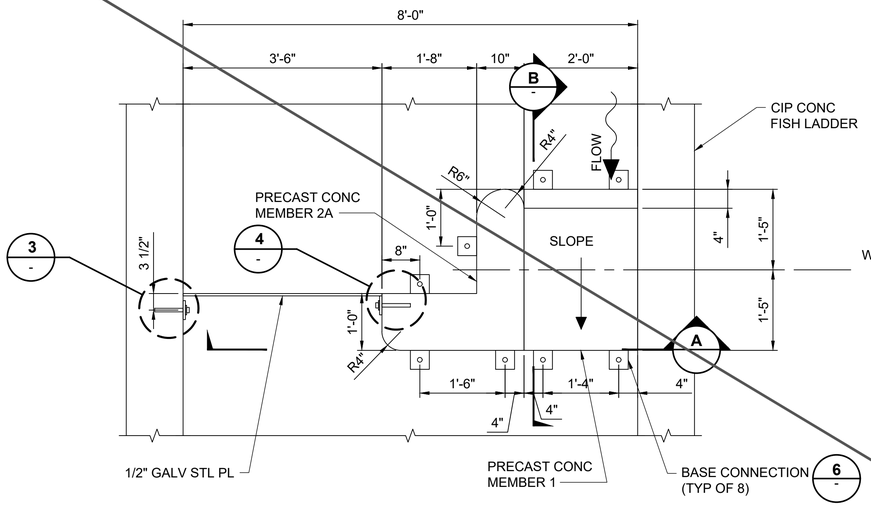
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

COLUMN CAP SECTIONS & DETAILS

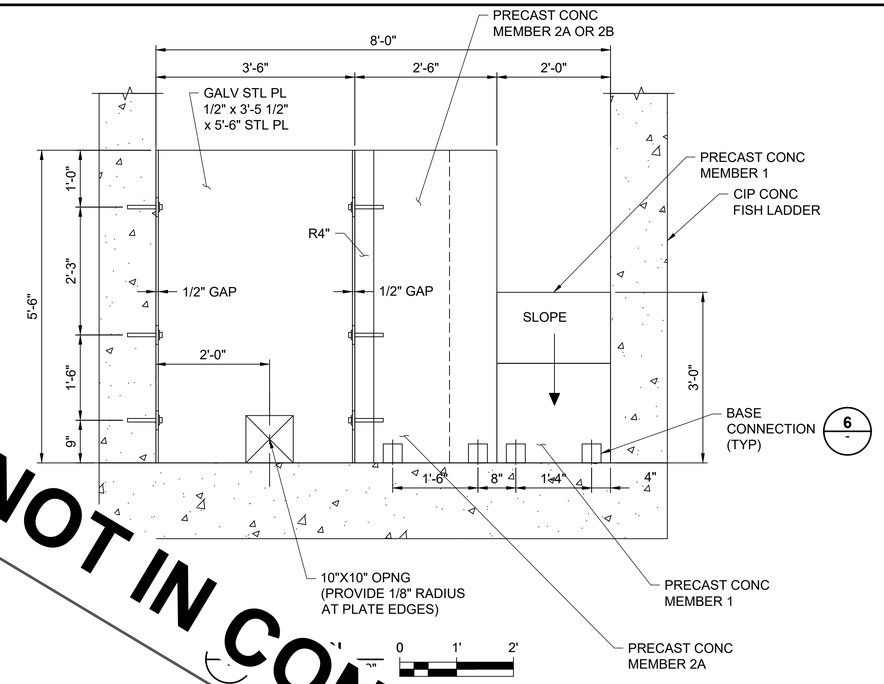
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	103 OF 240
DRAWING:	S-149



CONFIGURATION A- WEIR ON THE RIGHT

1 / S-140 **WEIRS 1 TO 63**
SCALE: 3/4" = 1'-0"

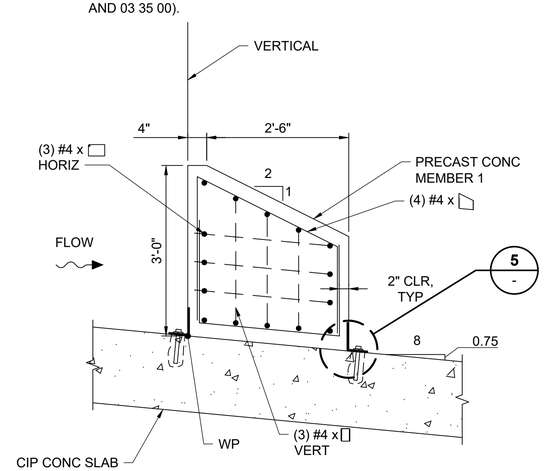
0 1' 2'



0 1' 2'

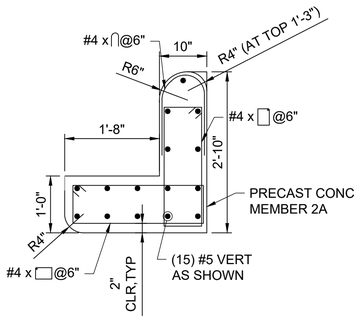
NOTES:

1. DESIGN ASSUMES PRECAST CONCRETE CONSTRUCTION FOR MEMBER 1, MEMBER 2A, AND MEMBER 2B. CONTRACTOR'S OPTION FOR PRECAST CONCRETE OR CAST-IN-PLACE CONCRETE CONSTRUCTION.
2. PRECAST CONCRETE SHALL MEET THE REQUIREMENTS OF CAST-IN-PLACE CONCRETE (SPECIFICATION SECTIONS 03 21 00, 03 30 00, AND 03 35 00).

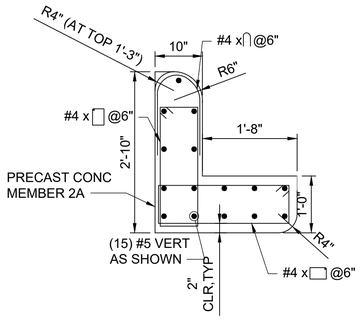


B / - **MEMBER 1 SECTION**
SCALE: 3/4"=1'-0"

0 1' 2'



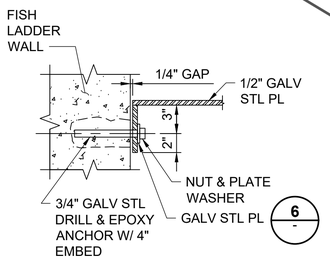
MEMBER 2A



MEMBER 2B

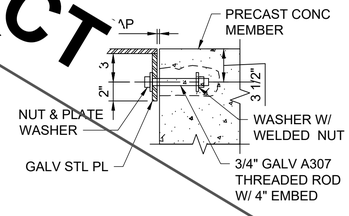
2 / - **DETAIL**
SCALE: 3/4"=1'-0"

0 1' 2'



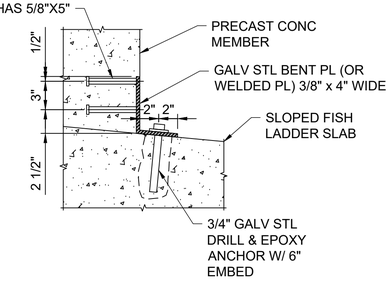
3 / - **DETAIL**
SCALE: 1'-1/2"=1'-0"

0 1' 2'



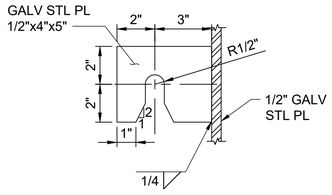
4 / - **DETAIL**
SCALE: 1'-1/2"=1'-0"

0 1' 2'



5 / - **DETAIL**
SCALE: 1'-1/2"=1'-0"

0 1' 2'



6 / - **DETAIL**
SCALE: 3"=1'-0"

0 6" 1'

NOT IN CONTRACT

a verdantas company
ALDEN

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

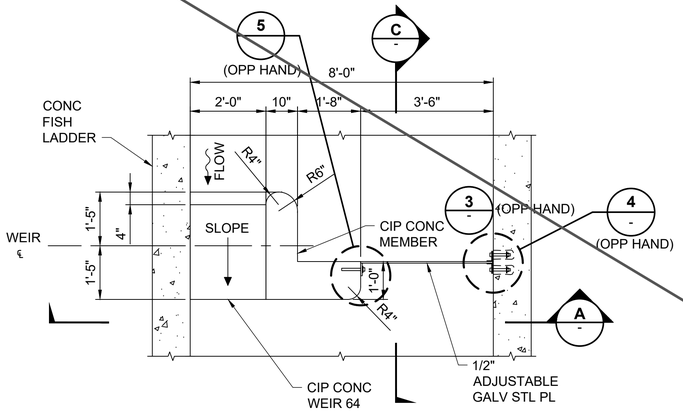
MAINE DEPARTMENT OF MARINE RESOURCES

WEIR DETAILS (NOT IN CONTRACT)

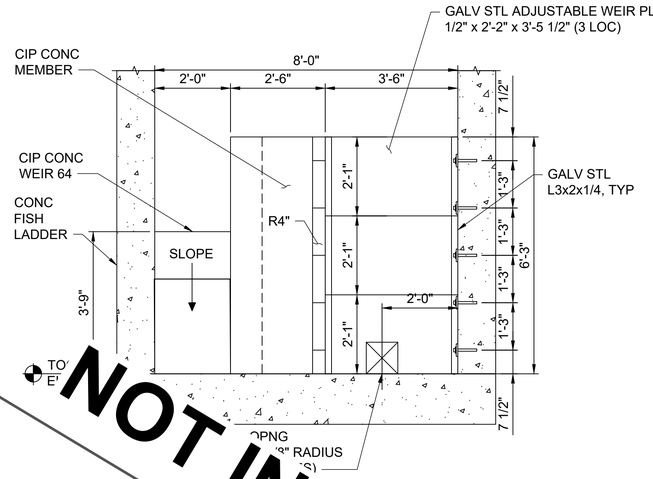
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	104 OF 240
DRAWING:	S-150

NOTES:

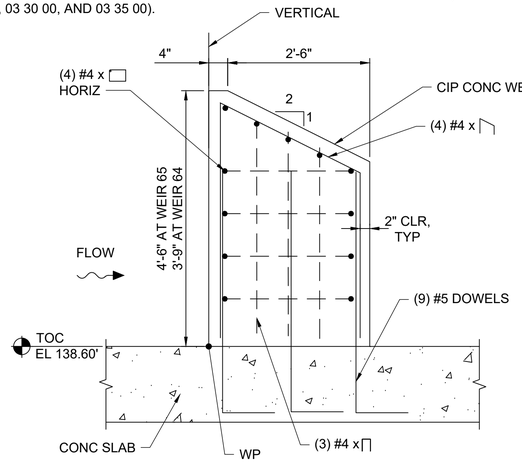
1. DESIGN ASSUMES CAST-IN-PLACE (CIP) CONCRETE CONSTRUCTION. CONTRACTOR'S OPTION FOR PRECAST CONCRETE OR CAST-IN-PLACE CONCRETE CONSTRUCTION.
2. PRECAST CONCRETE SHALL MEET THE REQUIREMENTS OF CAST-IN-PLACE CONCRETE (SPECIFICATION SECTIONS 03 21 00, 03 30 00, AND 03 35 00).



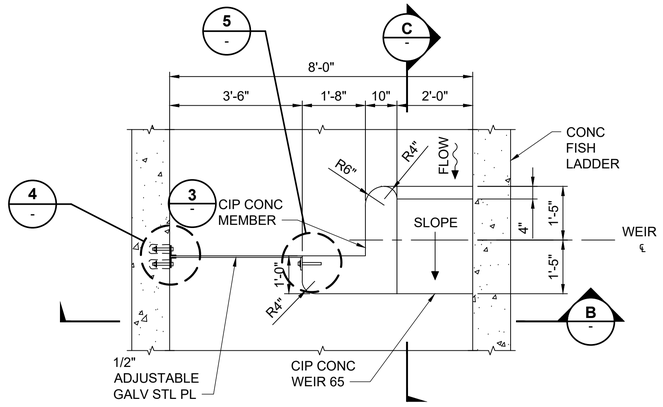
1 S-140 **WEIR 64** SCALE: 1/2" = 1'-0" 0 2' 4'



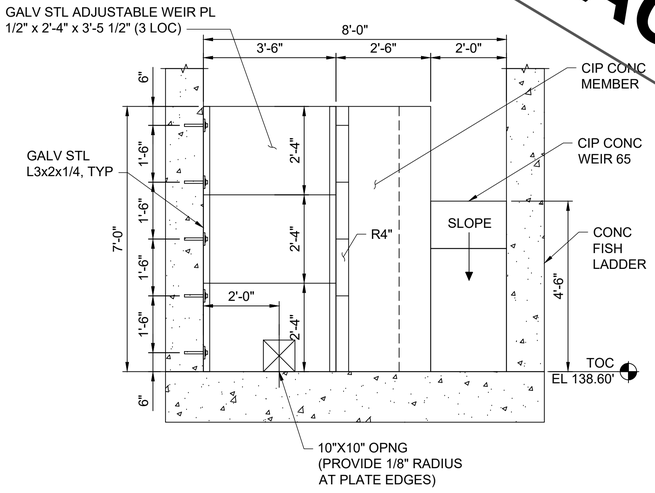
A - **SECTION** SCALE: 1/2" = 1'-0" 0 2' 4'



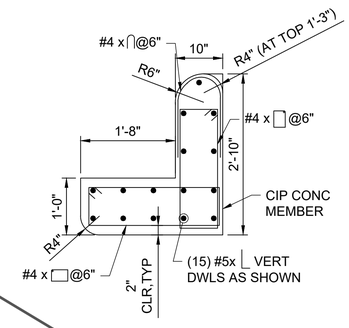
C - **SECTION** SCALE: 3/4"=1'-0" 0 1' 2'



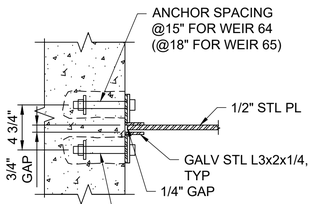
2 S-140 **WEIR 65** SCALE: 1/2" = 1'-0" 0 2' 4'



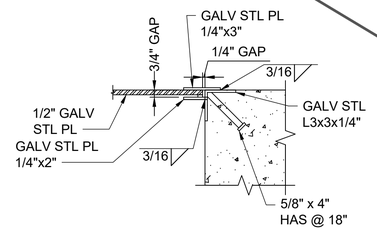
B - **SECTION AT WEIR 65** SCALE: 1/2" = 1'-0" 0 2' 4'



3 - **DETAIL** SCALE: 3/4"=1'-0" 0 1' 2'



4 - **DETAIL** SCALE: 1'-1/2"=1'-0" 0 1' 2'



5 - **DETAIL** SCALE: 1'-1/2"=1'-0" 0 1' 2'

NOT IN CONTRACT

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

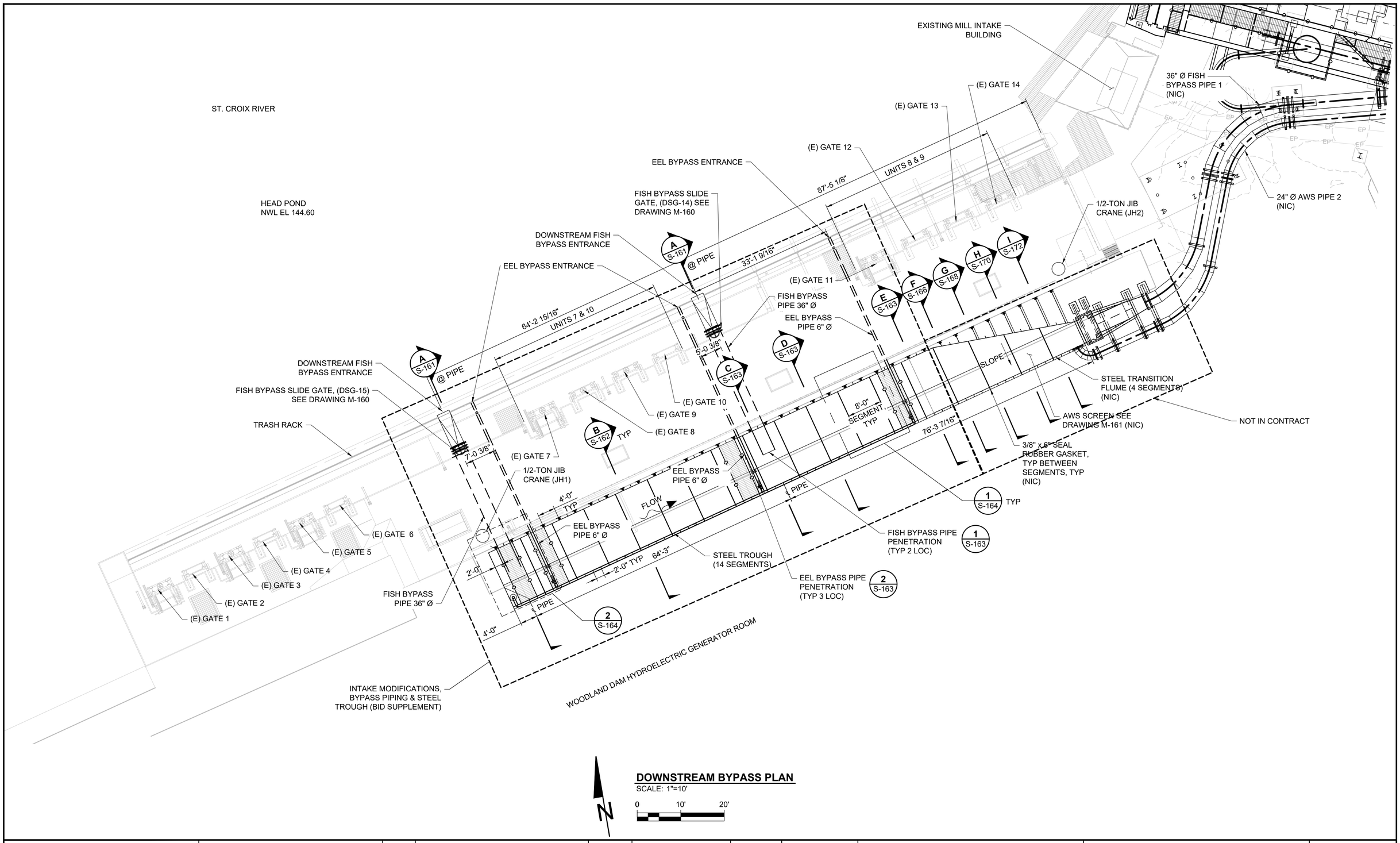
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

WEIR 64 & 65 SECTION AND DETAILS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	105 OF 240
DRAWING:	S-151



DOWNSTREAM BYPASS PLAN

SCALE: 1"=10'

0 10' 20'

N

a verdantas company

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

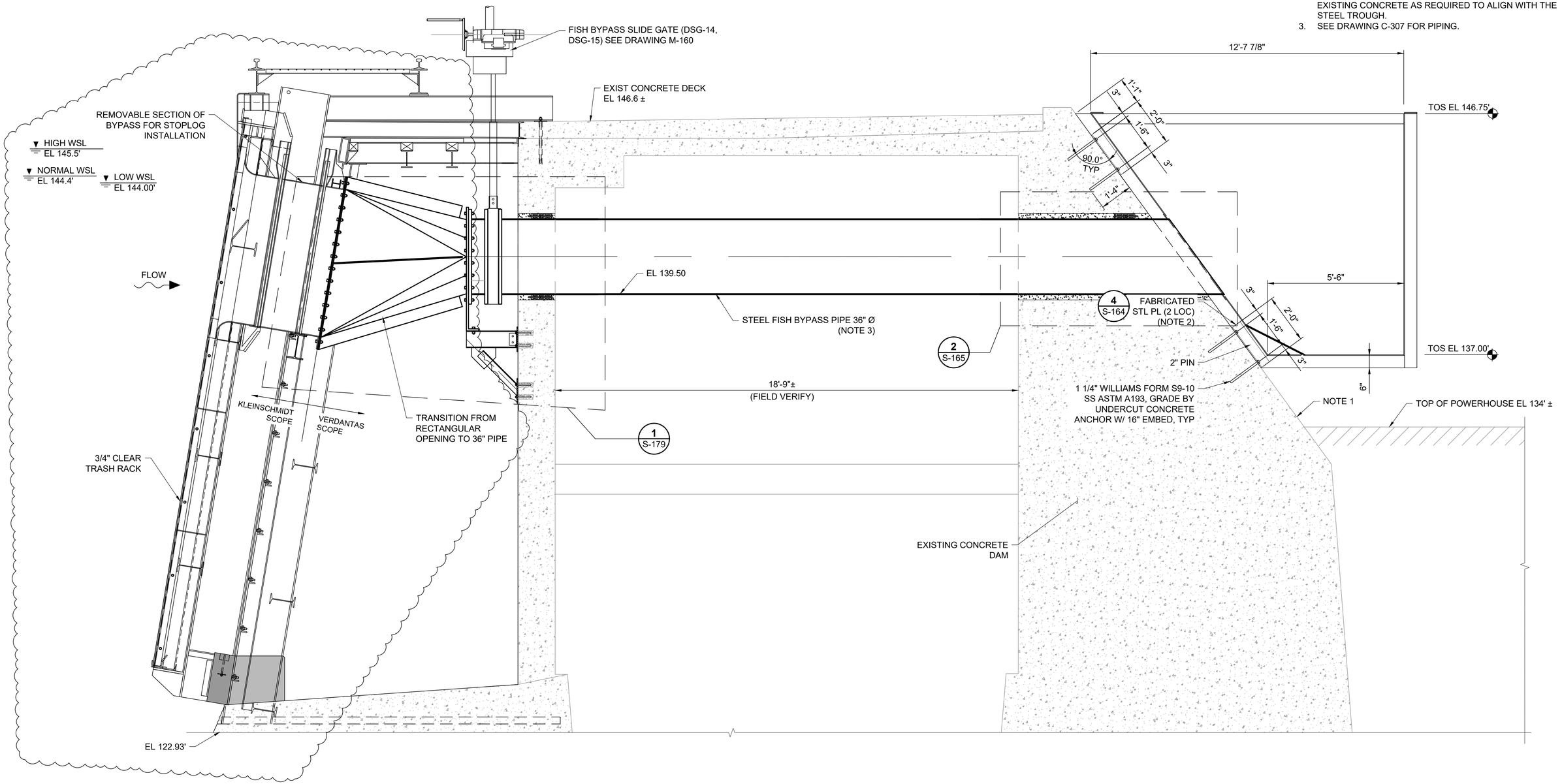
MAINE DEPARTMENT OF MARINE RESOURCES

DOWNSTREAM FISH PASSAGE PLAN

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	106 OF 240
DRAWING:	S-160

NOTES:

1. VERIFY EXISTING CONCRETE SLOPE PRIOR TO STEEL TROUGH FABRICATION.
2. SHIM OR GROUT THE FABRICATED SUPPORT TO THE EXISTING CONCRETE AS REQUIRED TO ALIGN WITH THE STEEL TROUGH.
3. SEE DRAWING C-307 FOR PIPING.



A S-160 **DOWNSTREAM FISH PASSAGE SECTION (2 LOC)**

SCALE: 1/2"=1'-0"

0 2' 4'

a verdantas company

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

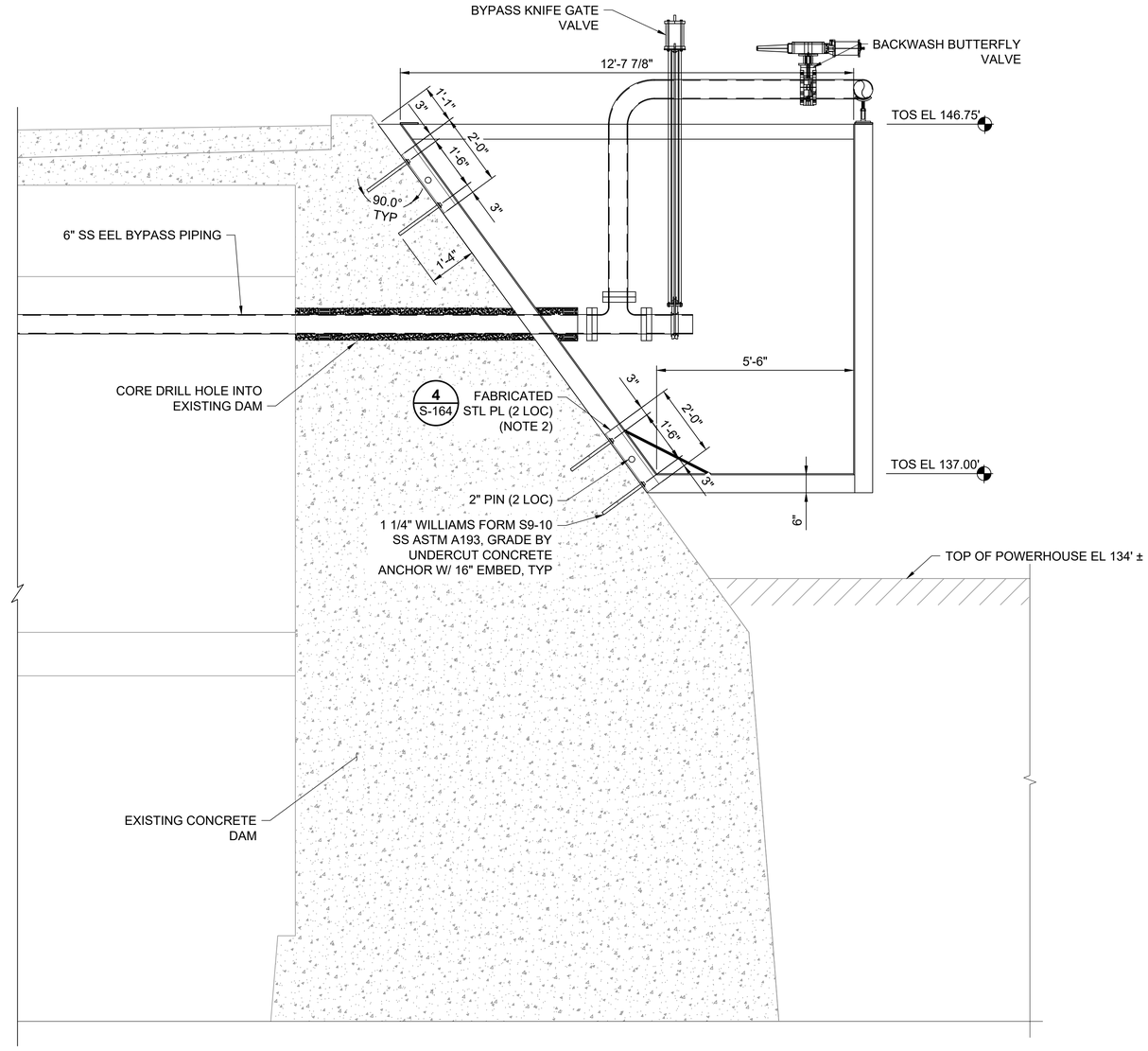
MAINE DEPARTMENT OF MARINE RESOURCES

DOWNSTREAM FISH PASSAGE SECTION (BID SUPPLEMENT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	107 OF 240
DRAWING:	S-161

NOTES:

1. VERIFY EXISTING CONCRETE SLOPE PRIOR TO STEEL TROUGH FABRICATION.
2. SHIM OR GROUT THE FABRICATED SUPPORT TO THE EXISTING CONCRETE AS REQUIRED TO ALIGN WITH THE STEEL TROUGH.



B
S-160
DOWNSTREAM FISH PASSAGE SECTION (TYP)
SCALE: 1/2"=1'-0"

0 2' 4'

1/2" = 1'-0

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

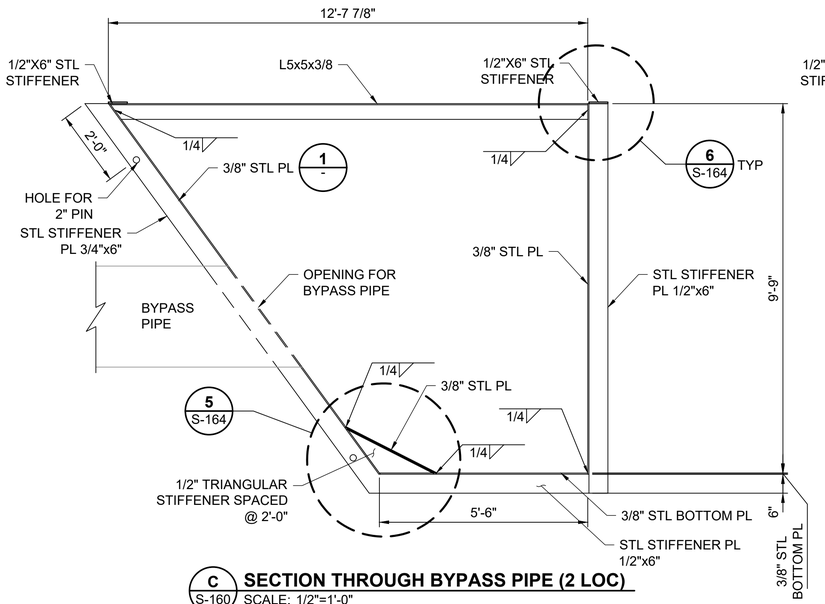
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

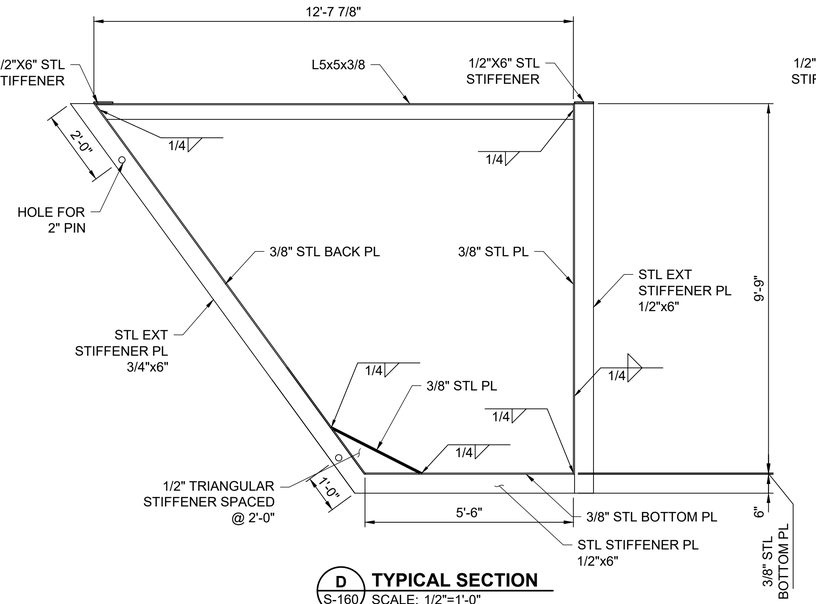
MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS TROUGH SECTION (BID SUPPLEMENT)

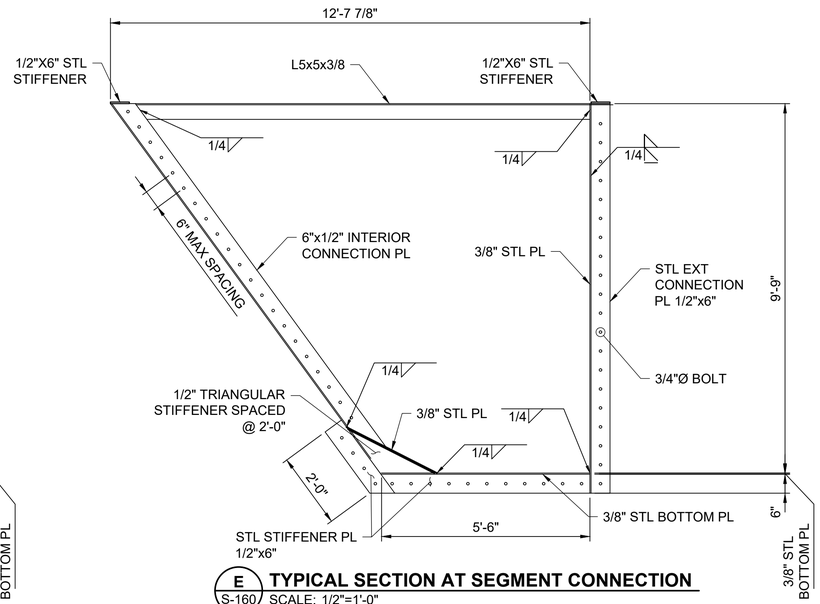
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	108 OF 240
DRAWING:	S-162



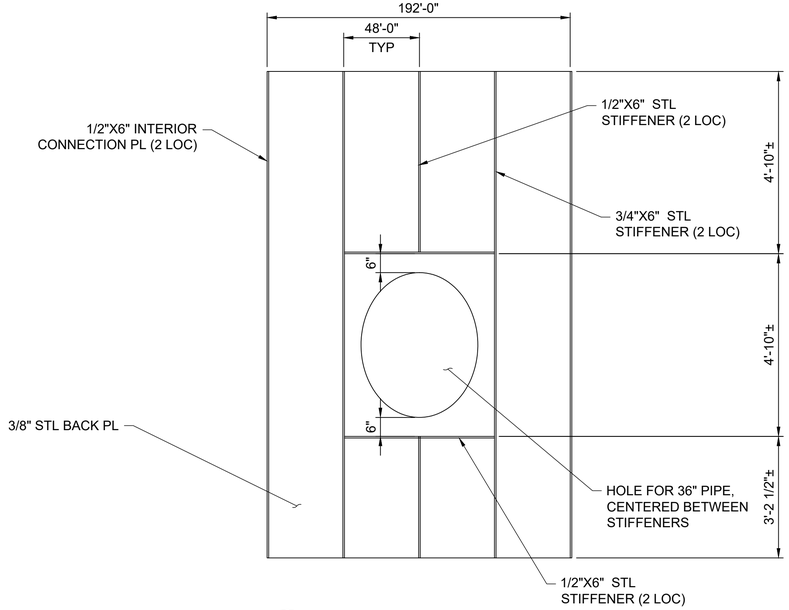
C S-160 **SECTION THROUGH BYPASS PIPE (2 LOC)**
SCALE: 1/2"=1'-0"
0 2' 4'



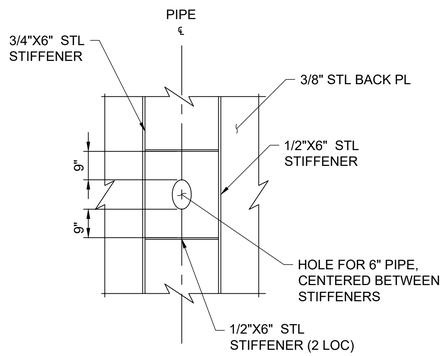
D S-160 **TYPICAL SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



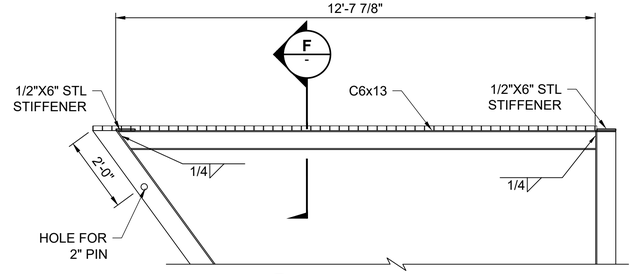
E S-160 **TYPICAL SECTION AT SEGMENT CONNECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



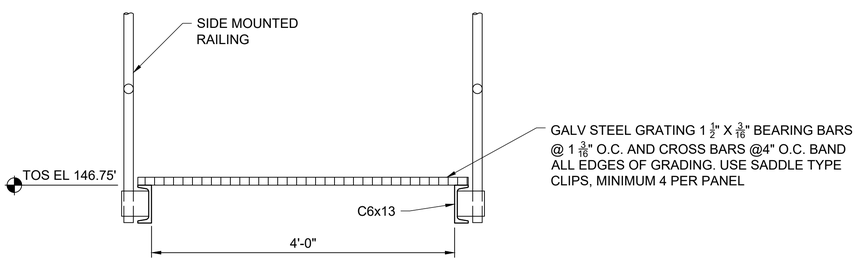
1 S-160 **PIPE BACK WALL PLATE (2 LOC)**
SCALE: 1/2"=1'-0"
0 2' 4'



2 S-160 **PIPE WALL PLATE (3 LOC)**
SCALE: 1/2"=1'-0"
0 2' 4'



D S-160 **TYPICAL SECTION AT WALKWAY**
SCALE: 1/2"=1'-0"
0 2' 4'



F - **TYPICAL SECTION AT WALKWAY**
SCALE: 1"=1'-0"
0 1' 2'

a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

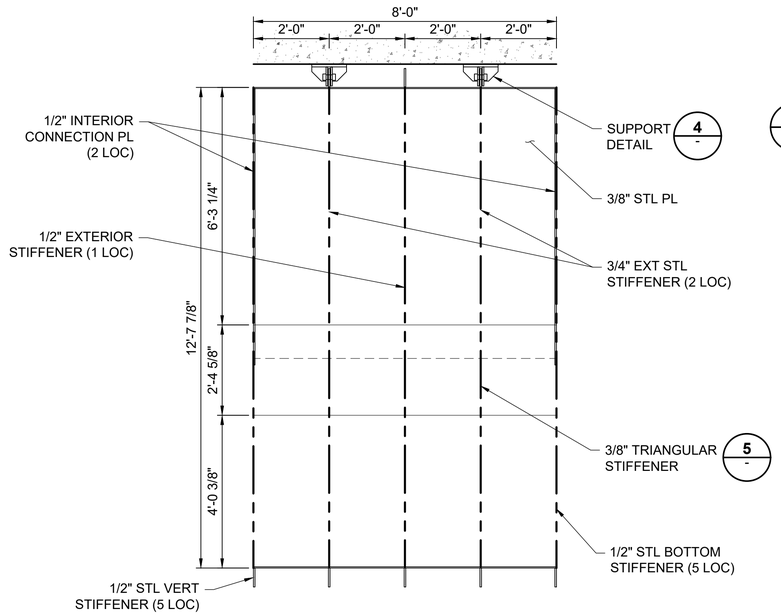
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

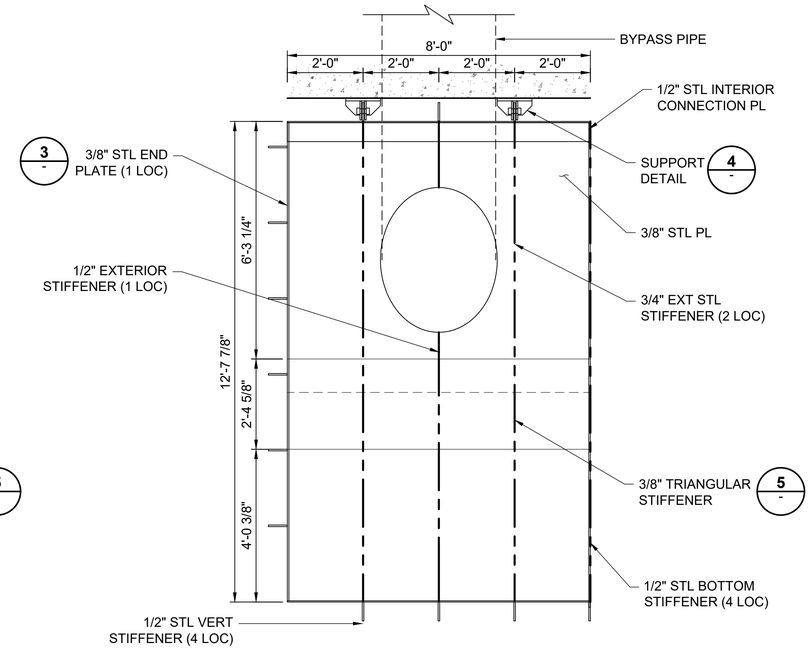
BYPASS TROUGH SECTIONS & DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	109 OF 240
DRAWING:	S-163



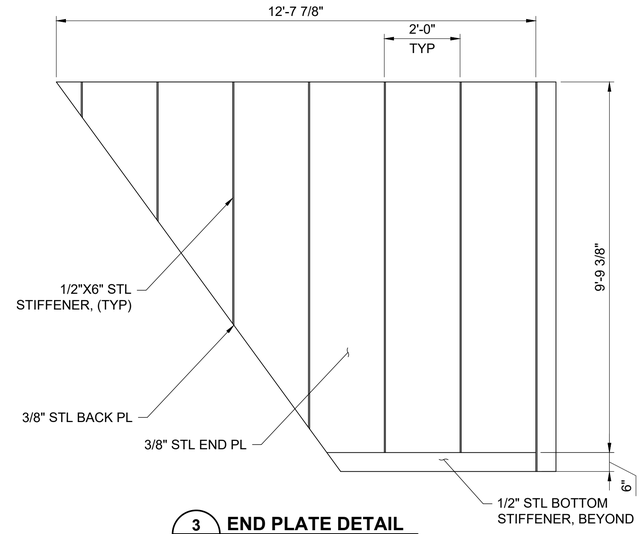
1 / S-160 TROUGH PLAN VIEW - TYPICAL SEGMENT
SCALE: 1/2"=1'-0"

0 2' 4'



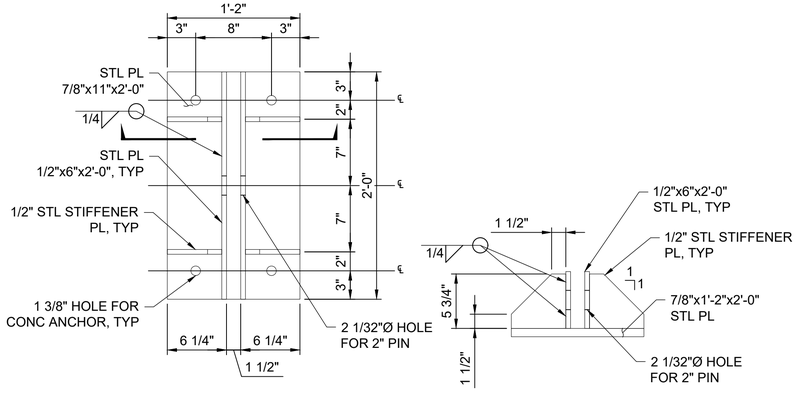
2 / S-160 TROUGH PLAN VIEW - END SEGMENT
SCALE: 1/2"=1'-0"

0 2' 4'



3 / - END PLATE DETAIL
SCALE: 1/2"=1'-0"

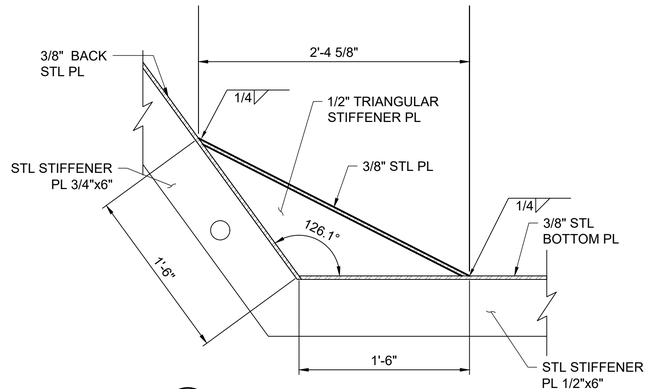
0 2' 4'



PLAN SECTION

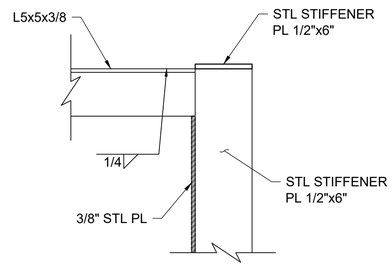
4 / S-161, S-162, S-164 SUPPORT DETAIL
SCALE: 1 1/2"=1'-0"

0 1' 2'



5 / S-163 DETAIL
SCALE: 1 1/2"=1'-0"

0 1' 2'



6 / S-163 DETAIL
SCALE: 1 1/2"=1'-0"

0 1' 2'

a verdantas company

ALDEN

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

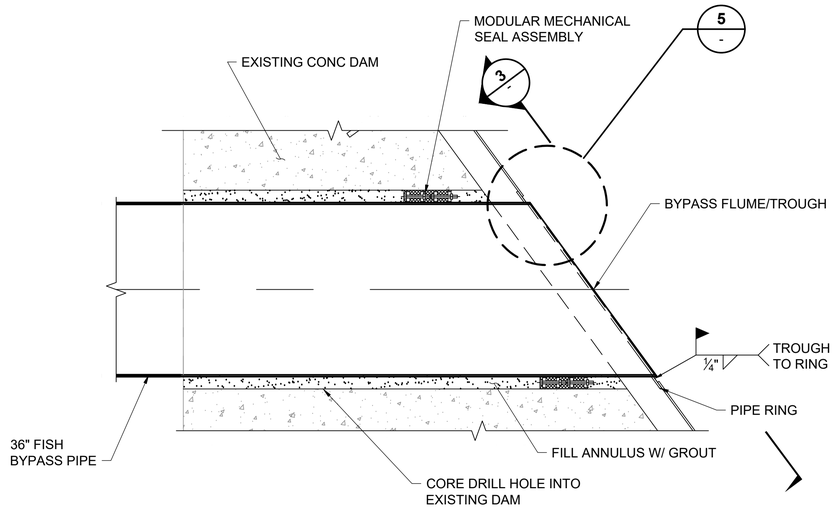
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

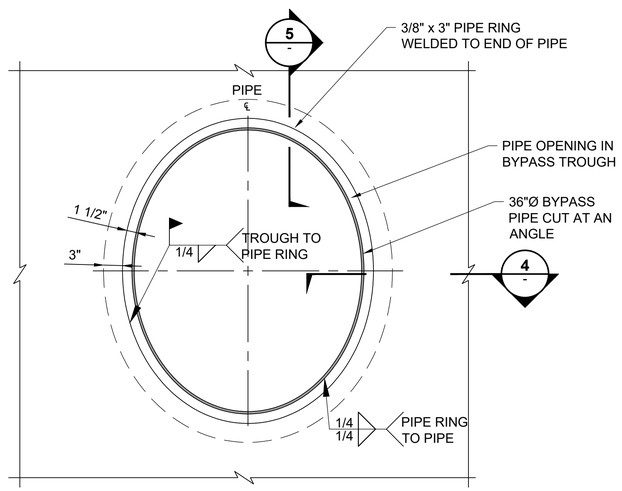
BYPASS TROUGH PLANS & DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	110 OF 240
DRAWING:	S-164



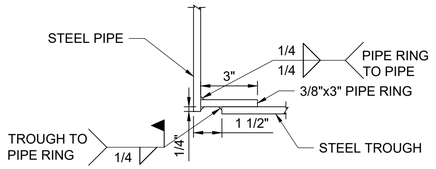
2 DOWNSTREAM PIPE PENETRATION
S-161 SCALE: 3/4"=1'-0"

0 1' 2'



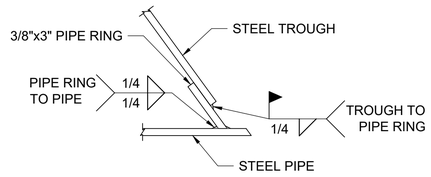
3 PIPE TO TROUGH CONNECTION
- SCALE: 1"=1'-0"

0 1' 2'



4 CONNECTION/WELD DETAIL
- SCALE: 3"=1'-0"

0 6" 1'



5 CONNECTION/WELD DETAIL
- SCALE: 3"=1'-0"

0 6" 1'

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

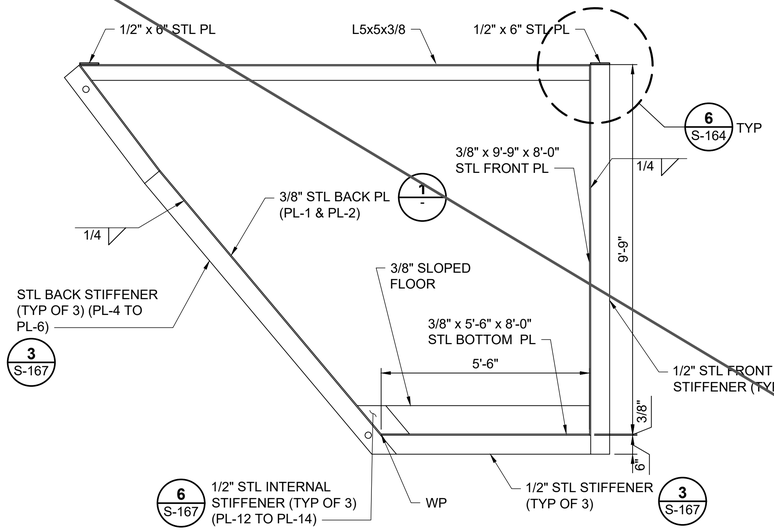
DOWNSTREAM FISH PASSAGE SECTION (BID SUPPLEMENT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	111 OF 240
DRAWING:	S-165

NOTE:

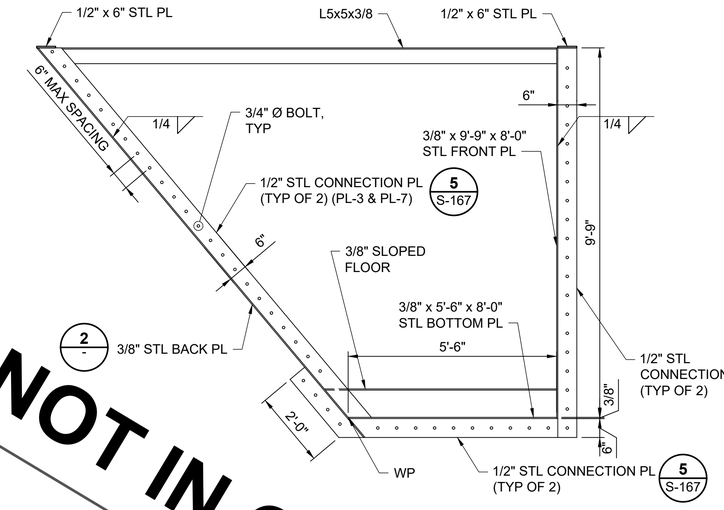
1. REFER TO S-167 FOR STIFFENER DETAILS.

- BACK PLATES PL-1 & PL-2
- CONNECTION PLATES PL-3 & PL-7
- BACK PLATES PL-4 TO PL-6
- ADDITIONAL BACK PLATES PL-8 TO PL-11
- INTERNAL STIFFENERS PL-12 TO PL-14



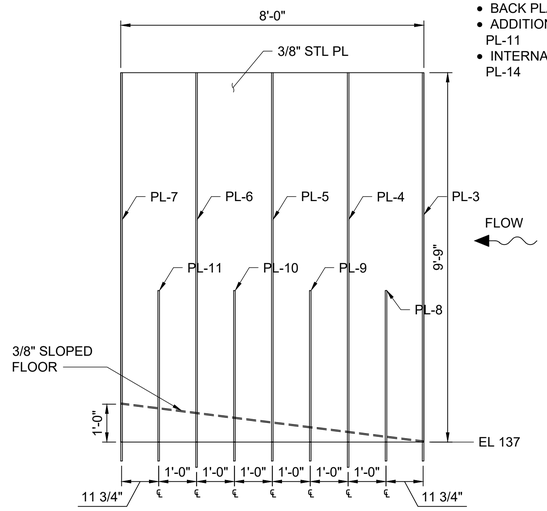
F S-160 BYPASS FLUME TYPICAL SECTION
SCALE: 1/2"=1'-0"

0 2' 4'



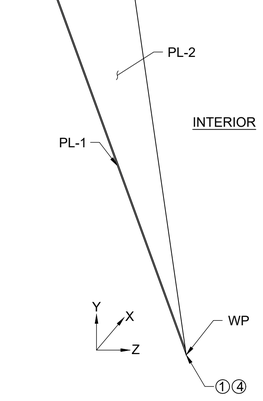
F S-160 BYPASS FLUME TION AT SEGMENT CONNECTION
SCALE: 1/2"=1'-0"

0 2' 4'

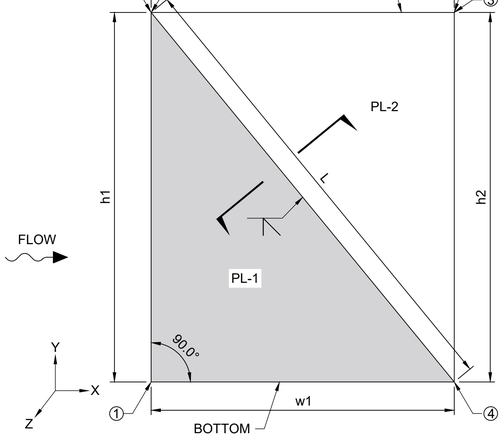


1 - BYPASS FLUME ELEVATION
SCALE: 1/2"=1'-0"

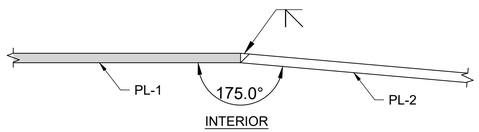
0 2' 4'



SIDE ELEVATION



BACK ELEVATION



SECTION

TRIANGULAR PLATE				
PLATE ID	HEIGHT, h1, h2 (ft)	WIDTH, w1, w2 (ft)	LENGTH, L (ft)	THICKNESS, t (in)
PL-1	11.523	8.000	15.033	0.375
PL-2	12.728	8.256	15.033	0.375

LOCAL REFERENCE COORDINATES			
POINT	X (ft)	Y (ft)	Z (ft)
①	0.000	0.000	0.000
②	0.000	9.750	-6.142
③	8.000	9.750	-8.181
④	8.000	0.000	0.000

2 - BYPASS FLUME BACK PLATE(S) ELEVATION
SCALE: NTS

NOT IN CONTRACT

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

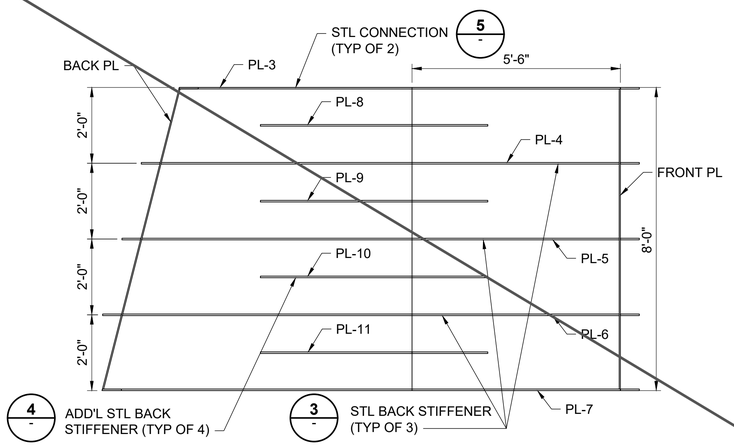
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

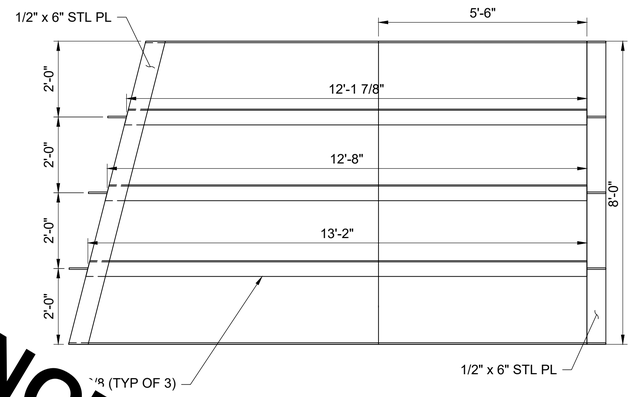
WOODLAND FISH LIFT PASSAGE DESIGN

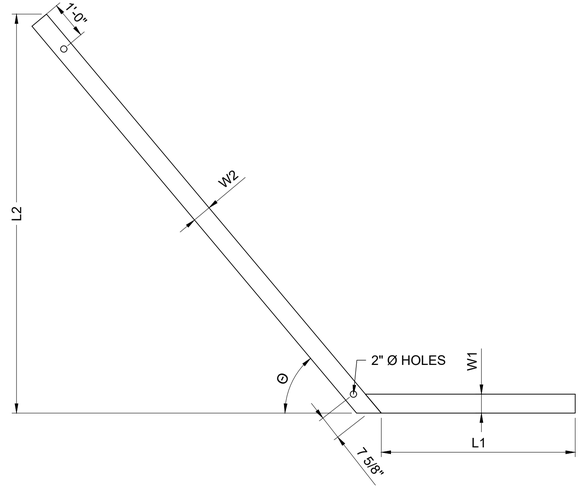
MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS FLUME TRANSITION SEGMENT 1 (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	112 OF 240
DRAWING:	S-166







3 S-166 BACK STIFFENER (PL-4 TO PL-6)
SCALE: NTS

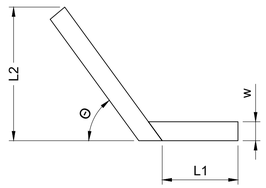
BYPASS FLUME LOWER PLAN VIEW
SCALE: 1/2" = 1'-0"
0 2' 4'

UME UPPER PLAN VIEW
2' 4'

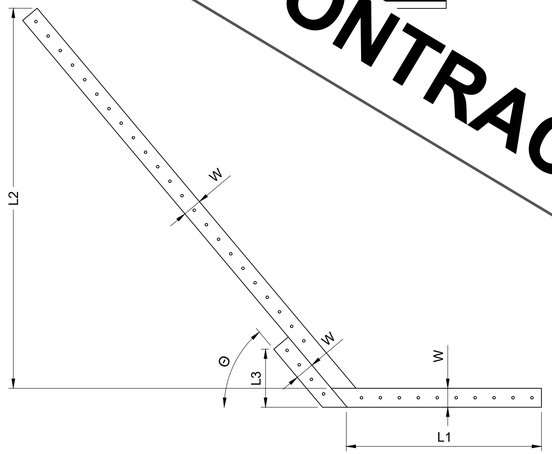
NOT IN CONTRACT

BACK STIFFENER						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W1 (in)	WIDTH, W2 (in)
PL-4	51.8	0.75	5.13	10.53	8	6
PL-5	53.7	0.50	5.13	10.53	6	6
PL-6	55.7	0.75	5.13	10.53	8	6

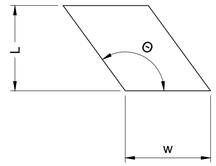
NOTE: PL-5 DOES NOT HAVE 2" HOLES.



4 S-166 ADDITIONAL BACK STIFFENER (PL-8 TO PL-11)
SCALE: NTS



5 S-166 CONNECTION PLATE (PL-3 & PL-7)
SCALE: NTS



6 S-166 INTERNAL STIFFENER (PL-12 TO PL-14)
SCALE: NTS

ADDITIONAL BACK STIFFENER					
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W (in)
PL-8	54.0	0.50	3.50	2.00	6
PL-9	55.2	0.50	3.50	2.00	6
PL-10	56.3	0.50	3.50	2.00	6
PL-11	57.8	0.50	3.50	2.00	6

CONNECTION PLATE						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (in)	LENGTH, L2 (ft)	LENGTH, L3 (ft)	WIDTH, W (in)
PL-3	50.0	0.50	5.13	9.78	1.54	6
PL-7	59.9	0.50	5.13	9.78	1.54	6

INTERNAL STIFFENER				
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L (in)	WIDTH, W (in)
PL-12	141.8	0.50	3.0	9
PL-13	143.7	0.50	6.0	9
PL-14	145.7	0.50	9.0	9

NOTE: THE INTERNAL STIFFENER EXTENDS TO THE SLOPED FLOOR.

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

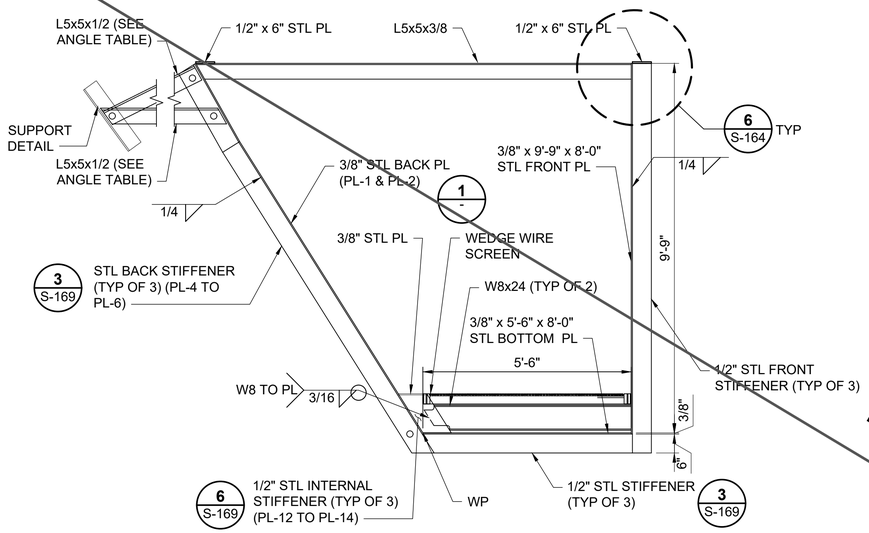
BYPASS FLUME TRANSITION
SEGMENT 1 SECTIONS & DETAILS
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	113 OF 240
DRAWING:	S-167

NOTE:

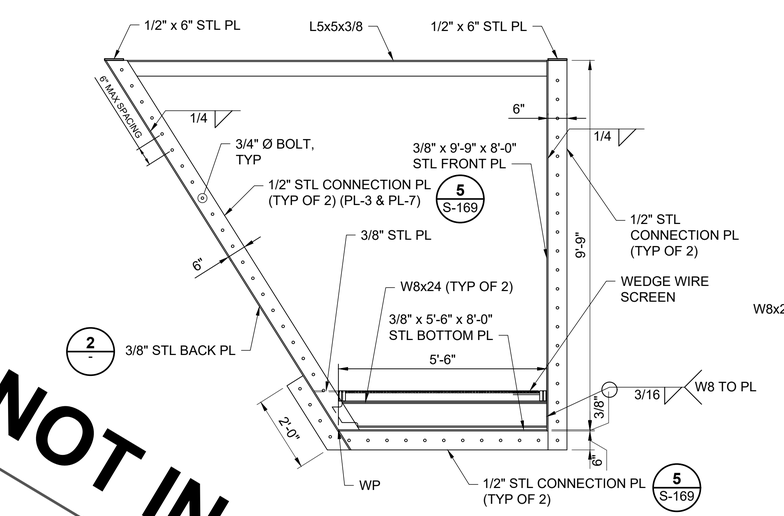
1. REFER TO S-167 FOR STIFFENER DETAILS.

- BACK PLATES PL-1 & PL-2
- CONNECTION PLATES PL-3 & PL-7
- BACK PLATES PL-4 TO PL-6
- ADDITIONAL BACK PLATES PL-8 TO PL-11
- INTERNAL STIFFENERS PL-12 TO PL-14



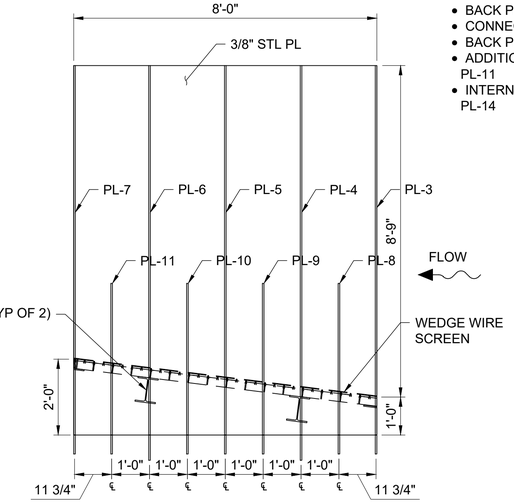
G S-160 BYPASS FLUME TYPICAL SECTION
SCALE: 1/2"=1'-0"

0 2' 4'



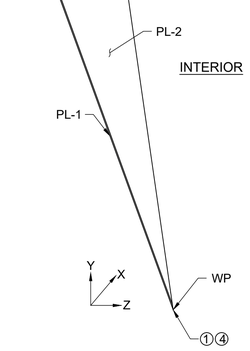
G S-160 BYPASS FLUME [illegible]TION AT SEGMENT CONNECTION
SCALE: 1/2"=1'-0"

0 2' 4'

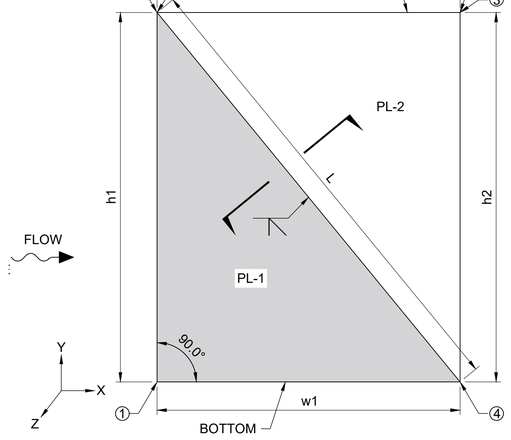


1 - BYPASS FLUME ELEVATION
SCALE: 1/2"=1'-0"

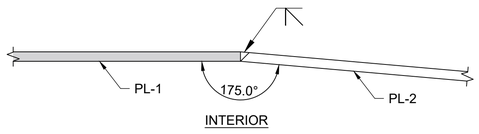
0 2' 4'



SIDE ELEVATION



BACK ELEVATION



SECTION

2 - BYPASS FLUME BACK PLATE(S) ELEVATION
SCALE: NTS

ANGLES			
ANGLE ID	ORIENTATION	SIZE	LENGTH (FT)
ANGLE-1.1	HORIZ	L5x5x½	1'-2 1/4"
ANGLE-1.2	DIAG	L5x5x½	2'-0"
ANGLE-1.3	HORIZ	L5x5x½	1'-5 1/2"
ANGLE-1.4	DIAG	L5x5x½	1'-11 1/4"

TRIANGULAR PLATE				
PLATE ID	HEIGHT, h1, h2 (ft)	WIDTH, w1, w2 (ft)	LENGTH, L (ft)	THICKNESS, t (in)
PL-1	10.575	8.000	13.260	0.375
PL-2	11.519	8.256	13.260	0.375

LOCAL REFERENCE COORDINATES			
POINT	X (ft)	Y (ft)	Z (ft)
①	0.000	0.000	0.000
②	0.000	9.750	-4.094
③	8.000	9.750	-8.181
④	8.000	0.000	0.000

NOT IN CONTRACT

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

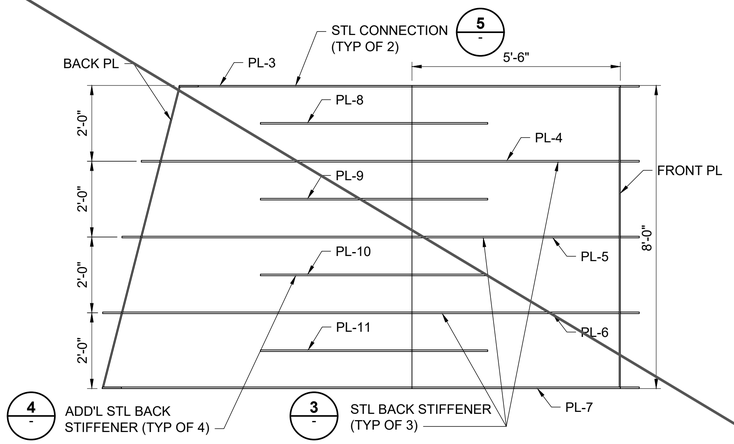
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

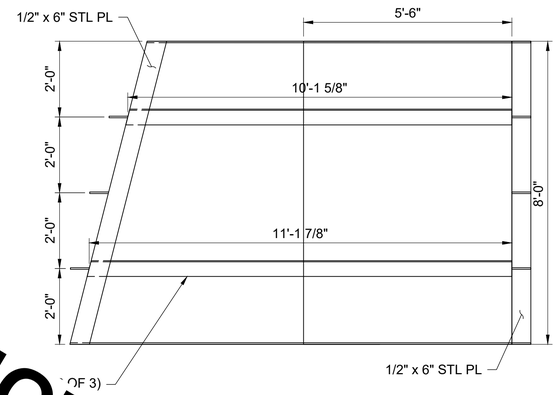
WOODLAND FISH LIFT PASSAGE DESIGN

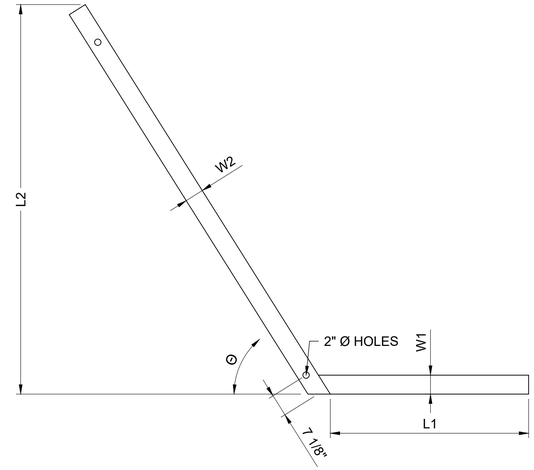
MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS FLUME TRANSITION SEGMENT 2 (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	114 OF 240
DRAWING:	S-168







3 S-168 **BACK STIFFENER (PL-4 TO PL-6)**
SCALE: NTS

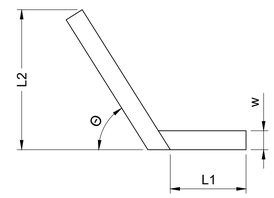
BYPASS FLUME LOWER PLAN VIEW
SCALE: 1/2" = 1'-0"
0 2' 4'

UME UPPER PLAN VIEW
2' 4'

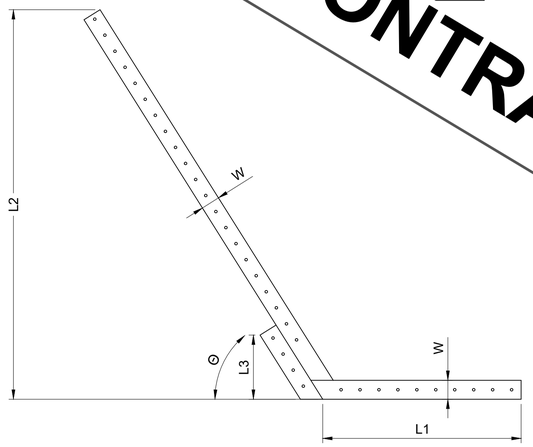
NOT IN CONTRACT

BACK STIFFENER						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W1 (in)	WIDTH, W2 (in)
PL-4	60.0	0.75	5.13	10.53	8	6
PL-5	62.3	0.50	5.13	10.53	6	6
PL-6	64.7	0.75	5.13	10.53	8	6

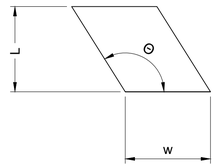
NOTE: PL-5 DOES NOT HAVE 2" HOLES.



4 S-168 **ADDITIONAL BACK STIFFENER (PL-8 TO PL-11)**
SCALE: NTS



5 S-168 **CONNECTION PLATE (PL-3 & PL-7)**
SCALE: NTS



6 S-168 **INTERNAL STIFFENER (PL-12 TO PL-14)**
SCALE: NTS

ADDITIONAL BACK STIFFENER					
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W (in)
PL-8	59.1	0.50	3.50	2.00	6
PL-9	61.6	0.50	3.50	2.00	6
PL-10	64.0	0.50	3.50	2.00	6
PL-11	66.2	0.50	3.50	2.00	6

CONNECTION PLATE						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	LENGTH, L3 (ft)	WIDTH, W (in)
PL-3	60.0	0.50	5.13	9.78	1.54	6
PL-7	69.8	0.50	5.13	9.78	1.54	6

INTERNAL STIFFENER				
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L (in)	WIDTH, W (in)
PL-12	150.0	0.50	15.00	9
PL-13	152.3	0.50	18.00	9
PL-14	154.7	0.50	21.00	9

NOTE: THE INTERNAL STIFFENER EXTENDS TO THE SLOPED FLOOR.

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

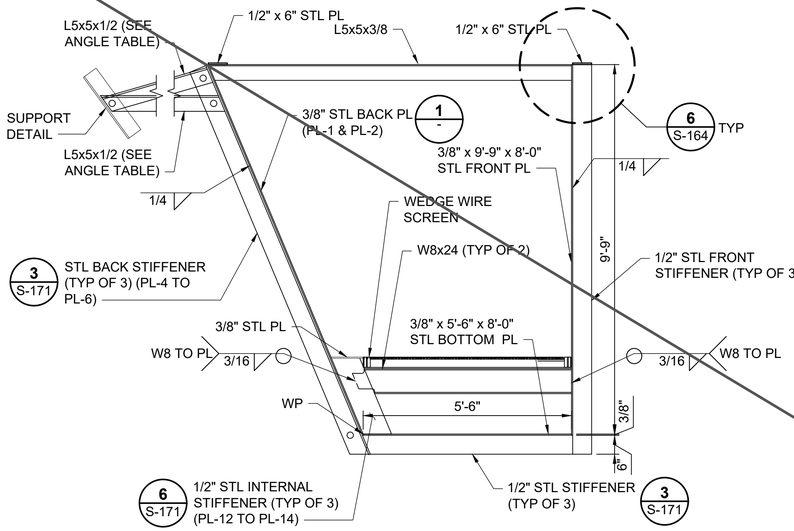
BYPASS FLUME TRANSITION
SEGMENT 2 SECTIONS & DETAILS
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	115 OF 240
DRAWING:	S-169

NOTE:

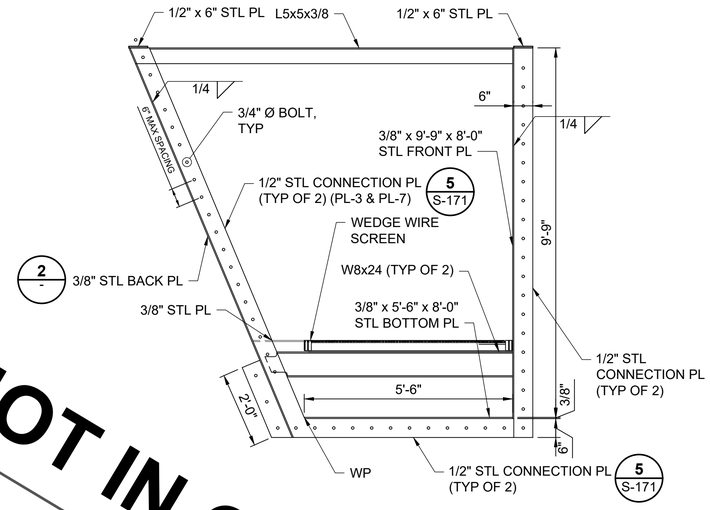
1. REFER TO S-167 FOR STIFFENER DETAILS.

- BACK PLATES PL-1 & PL-2
- CONNECTION PLATES PL-3 & PL-7
- BACK PLATES PL-4 TO PL-6
- ADDITIONAL BACK PLATES PL-8 TO PL-11
- INTERNAL STIFFENERS PL-12 TO PL-14



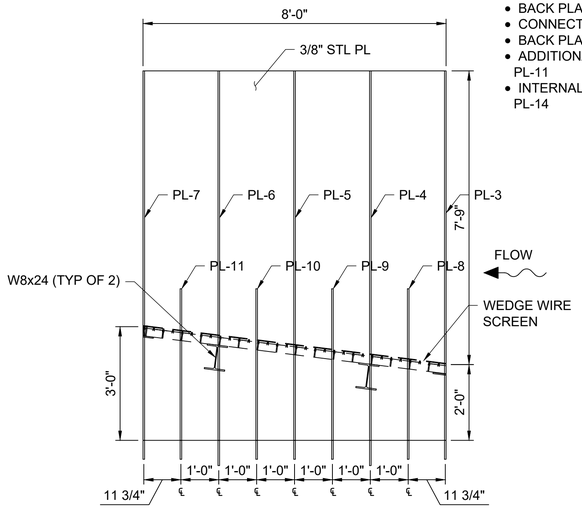
H / S-160 BYPASS FLUME TYPICAL SECTION
SCALE: 1/2"=1'-0"





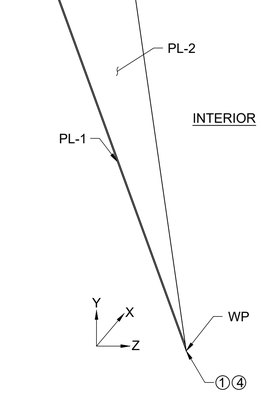
H / S-160 BYPASS FLUME TRANSITION AT SEGMENT CONNECTION
SCALE: 1/2"=1'-0"



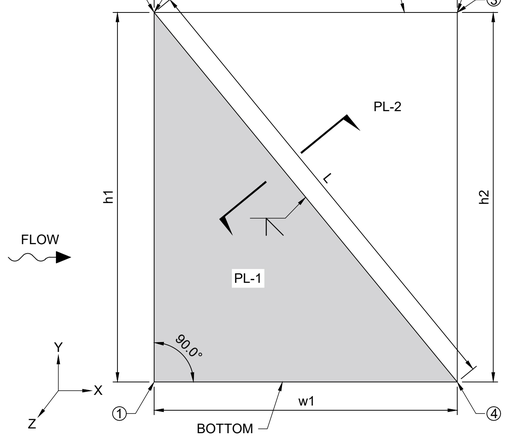


1 / - BYPASS FLUME ELEVATION
SCALE: 1/2"=1'-0"

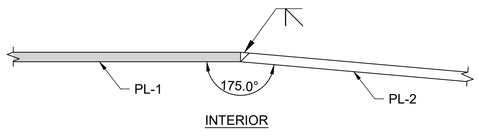




SIDE ELEVATION



BACK ELEVATION



SECTION

ANGLES			
ANGLE ID	ORIENTATION	SIZE	LENGTH (FT)
ANGLE-1.1	HORIZ	L5x5x$\frac{1}{2}$	2'-10"
ANGLE-1.2	DIAG	L5x5x$\frac{1}{2}$	3'-7 5/8"
ANGLE-1.3	HORIZ	L5x5x$\frac{1}{2}$	2'-8 1/4"
ANGLE-1.4	DIAG	L5x5x$\frac{1}{2}$	3'-6 3/4"

TRIANGULAR PLATE				
PLATE ID	HEIGHT, h1, h2 (ft)	WIDTH, w1, w2 (ft)	LENGTH, L (ft)	THICKNESS, t (in)
PL-1	9.963	8.000	12.777	0.375
PL-2	10.572	8.256	12.777	0.375

LOCAL REFERENCE COORDINATES			
POINT	X (ft)	Y (ft)	Z (ft)
①	0.000	0.000	0.000
②	0.000	9.750	-2.047
③	8.000	9.750	-4.087
④	8.000	0.000	0.000

2 / - BYPASS FLUME BACK PLATE(S) ELEVATION
SCALE: NTS

NOT IN CONTRACT

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

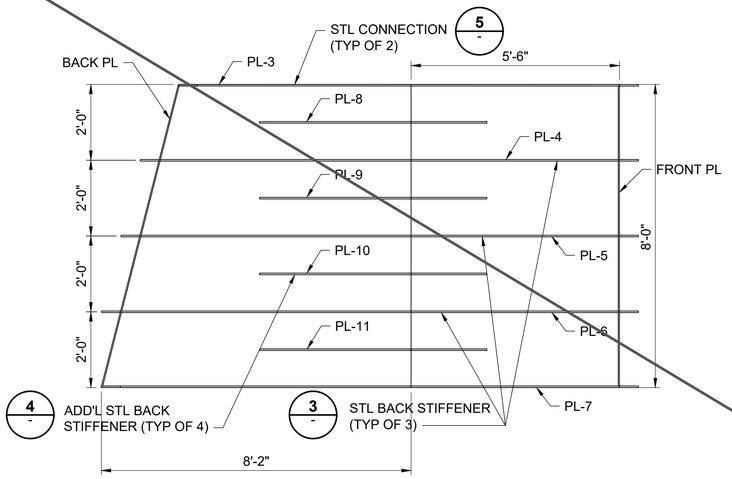
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

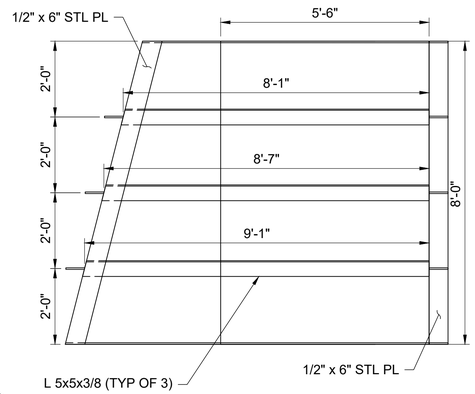
WOODLAND FISH LIFT PASSAGE DESIGN

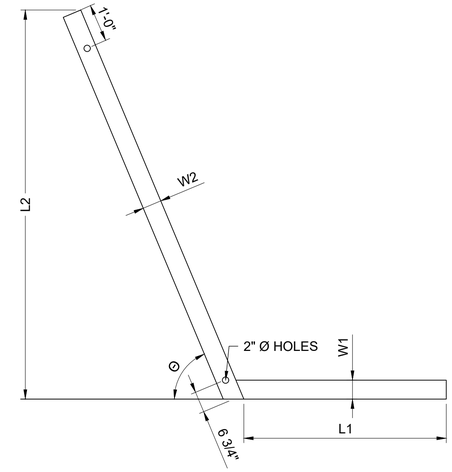
MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS FLUME TRANSITION SEGMENT 3 (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	116 OF 240
DRAWING:	S-170







3 S-170 BACK STIFFENER (PL-4 TO PL-6)
SCALE: NTS

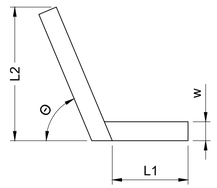
BYPASS FLUME LOWER PLAN VIEW
SCALE: 1/2" = 1'-0"
0 2' 4'

UME UPPER PLAN VIEW
2' 4'

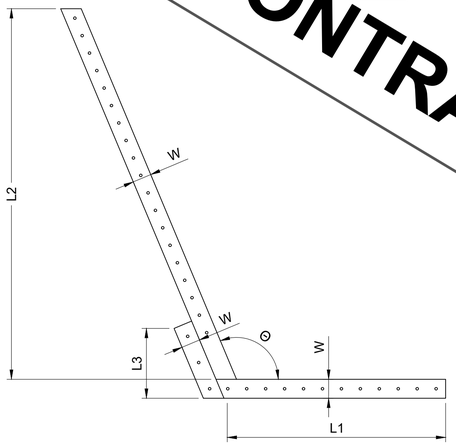
NOT IN CONTRACT

BACK STIFFENER						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W1 (in)	WIDTH, W2 (in)
PL-4	69.9	0.75	5.13	10.53	8	6
PL-5	72.5	0.50	5.13	10.53	6	6
PL-6	75.3	0.75	5.13	10.53	8	6

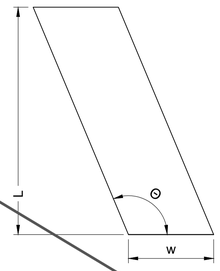
NOTE: PL-5 DOES NOT HAVE 2" HOLES.



4 S-170 ADDITIONAL BACK STIFFENER (PL-8 TO PL-11)
SCALE: NTS



5 S-170 CONNECTION PLATE (PL-3 & PL-7)
SCALE: NTS



6 S-170 INTERNAL STIFFENER (PL-12 TO PL-14)
SCALE: NTS

ADDITIONAL BACK STIFFENER					
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W (in)
PL-8	68.8	0.50	3.50	2.00	6
PL-9	71.7	0.50	3.50	2.00	6
PL-10	74.5	0.50	3.50	2.00	6
PL-11	77.0	0.50	3.50	2.00	6

CONNECTION PLATE						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	LENGTH, L3 (ft)	WIDTH, W (in)
PL-3	110.2	0.50	5.13	9.78	1.54	6
PL-7	99.0	0.50	5.13	9.78	1.54	6

INTERNAL STIFFENER				
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L (in)	WIDTH, W (in)
PL-12	110.1	0.50	27	9
PL-13	107.5	0.50	30	9
PL-14	104.7	0.50	33	9

NOTE: THE INTERNAL STIFFENER EXTENDS TO THE SLOPED FLOOR.

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

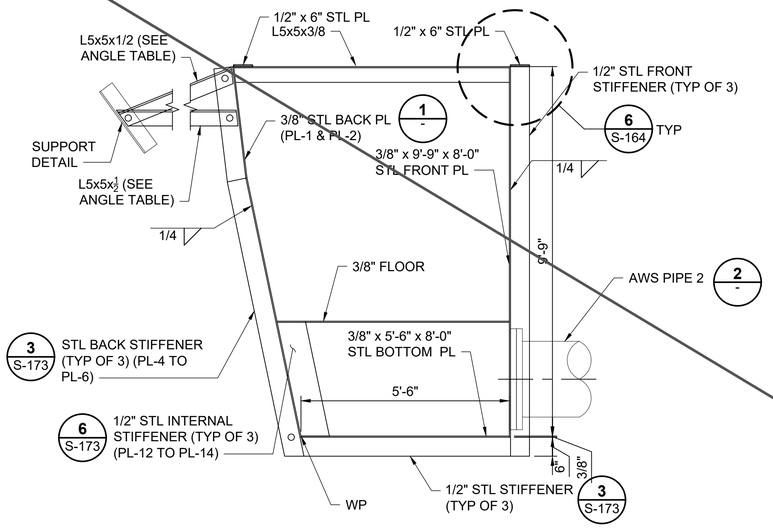
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

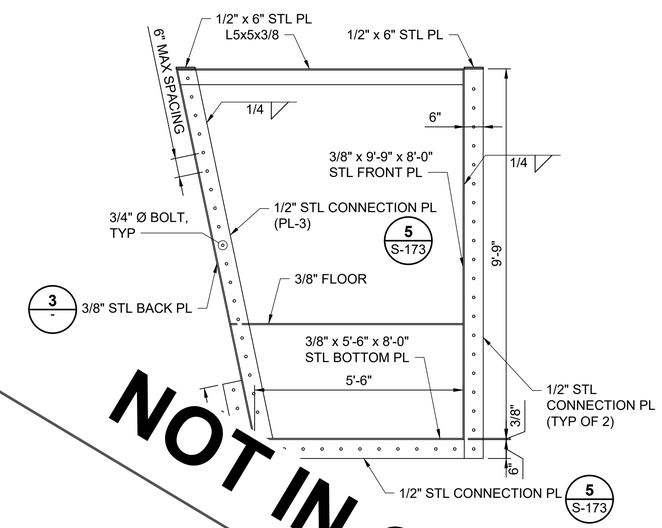
BYPASS FLUME TRANSITION SEGMENT 3 SECTIONS & DETAILS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	117 OF 240
DRAWING:	S-171



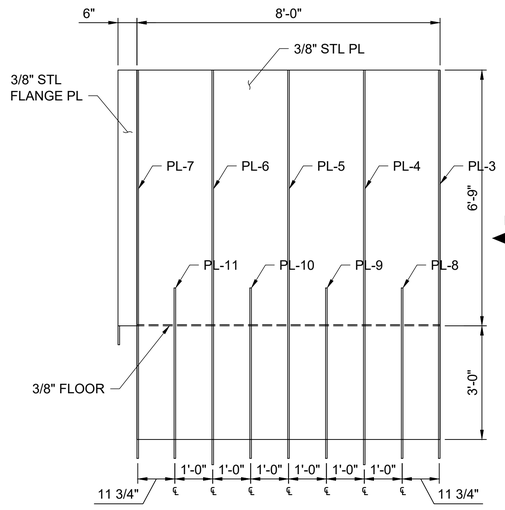
1 S-160 **SEGMENT 4 TYPICAL SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



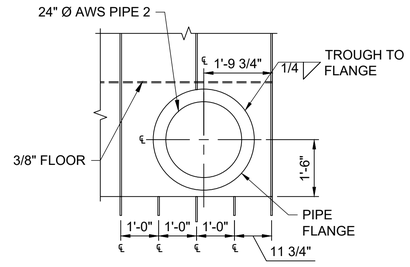
1 S-160 **SEGMENT 4 SECTION AT UPS[illegible]ECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



1 - **BYPASS FLUME ELEVATION**
SCALE: 1/2"=1'-0"

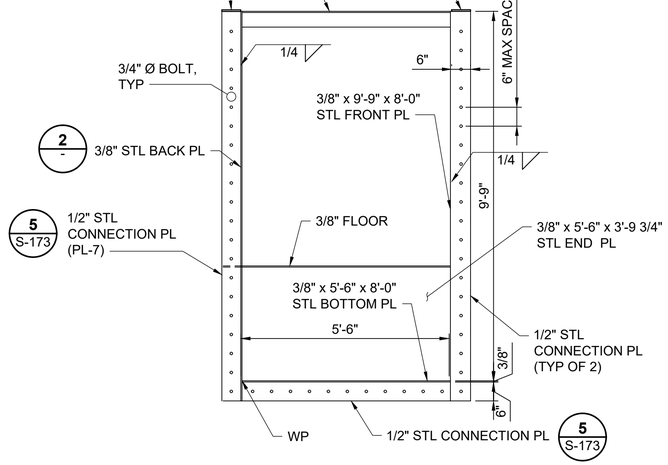
0 2' 4'



2 - **BYPASS FLUME PIPE PENETRATION**
SCALE: 1/2"=1'-0"

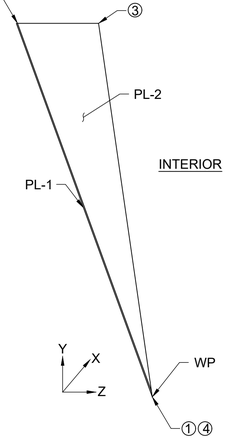
0 2' 4'

ANGLES			
ANGLE ID	ORIENTATION	SIZE	LENGTH (FT)
ANGLE-1.1	HORIZ	L5x5x½	4'-5 1/2"
ANGLE-1.2	DIAG	L5x5x½	5'-3 1/4"
ANGLE-2.1	HORIZ	L5x5x½	4'-5 3/4"
ANGLE-2.2	DIAG	L5x5x½	5'-4 7/8"

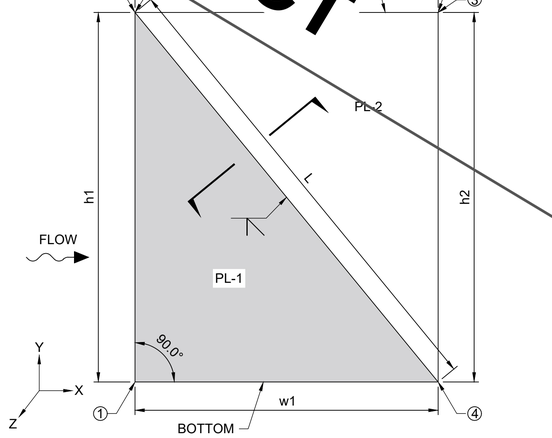


B S-160 **SEGMENT 4 SECTION AT DOWNSTREAM CONNECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



SIDE ELEVATION



BACK ELEVATION



SECTION

TRIANGULAR PLATE				
PLATE ID	HEIGHT, h1, h2 (ft)	WIDTH, w1, w2 (ft)	LENGTH, L (ft)	THICKNESS, t (in)
PL-1	9.961	8.000	12.776	0.375
PL-2	9.750	8.170	12.776	0.375

LOCAL REFERENCE COORDINATES			
POINT	X (ft)	Y (ft)	Z (ft)
①	0.000	0.000	0.000
②	0.000	9.750	0.000
③	8.000	9.750	-2.839
④	8.000	0.000	0.000

NOTE:

REFER TO S-167 FOR STIFFENER DETAILS.

- BACK PLATES PL-1 & PL-2
- CONNECTION PLATES PL-3 & PL-7
- BACK PLATES PL-4 TO PL-6
- ADDITIONAL BACK PLATES PL-8 TO PL-11
- INTERNAL STIFFENERS PL-12 TO PL-14

3 - **BYPASS FLUME BACK PLATE(S) ELEVATION**
SCALE: NTS

NOT IN CONTRACT

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

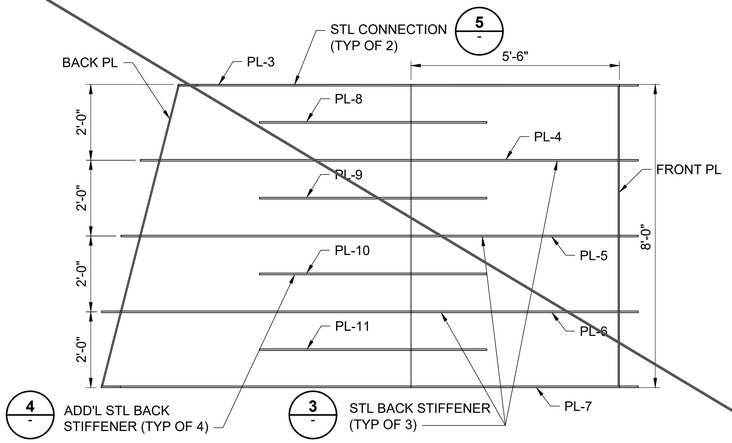
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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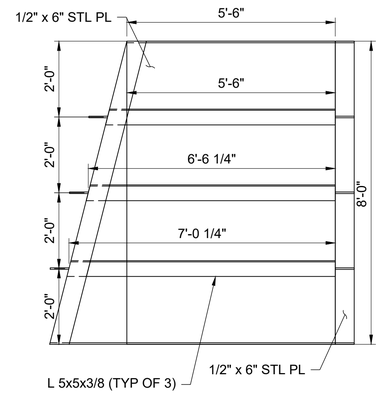
WOODLAND FISH LIFT PASSAGE DESIGN

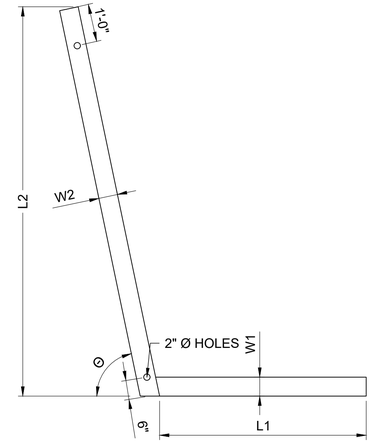
MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS FLUME TRANSITION
SEGMENT 4 (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	118 OF 240
DRAWING:	S-172



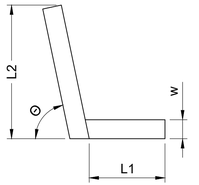


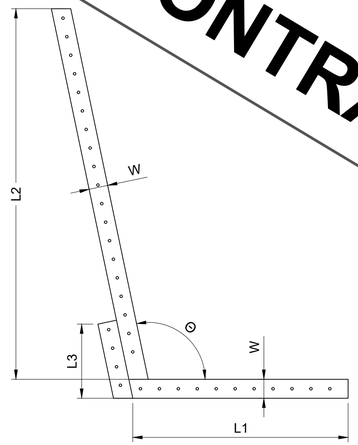


3 S-172 **BACK STIFFENER (PL-4 TO PL-6)**
SCALE: NTS

BYPASS FLUME LOWER PLAN VIEW
SCALE: 1/2" = 1'-0"
0 2' 4'

BYPASS FLUME UPPER PLAN VIEW
2' 4'



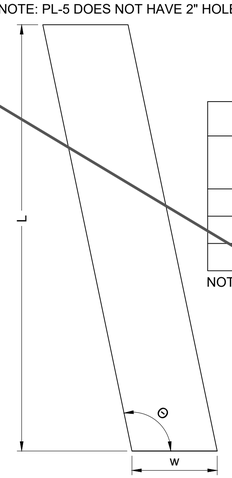


4 S-172 **ADDITIONAL BACK STIFFENER (PL-8 TO PL-11)**
SCALE: NTS

5 S-172 **CONNECTION PLATE (PL-3 & PL-7)**
SCALE: NTS

BACK STIFFENER						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W1 (in)	WIDTH, W2 (in)
PL-4	81.1	0.75	5.13	10.53	8	6
PL-5	84.0	0.50	5.13	10.53	6	6
PL-6	87.0	0.75	5.13	10.53	8	6

NOTE: PL-5 DOES NOT HAVE 2" HOLES.



INTERNAL STIFFENER				
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L (in)	WIDTH, W (in)
PL-12	98.9	0.50	36	9
PL-13	96.0	0.50	36	9
PL-14	93.0	0.50	36	9

NOTE: THE INTERNAL STIFFENER EXTENDS TO THE SLOPED FLOOR.

6 S-172 **INTERNAL STIFFENER (PL-12 TO PL-14)**
SCALE: NTS

ADDITIONAL BACK STIFFENER					
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	WIDTH, W (in)
PL-8	79.6	0.50	3.50	2.00	6
PL-9	82.6	0.50	3.50	2.00	6
PL-10	85.5	0.50	3.50	2.00	6
PL-11	88.5	0.50	3.50	2.00	6

CONNECTION PLATE						
PLATE ID	ANGLE, Θ (DEGREES)	THICKNESS, T (in)	LENGTH, L1 (ft)	LENGTH, L2 (ft)	LENGTH, L3 (ft)	WIDTH, W (in)
PL-3	99.0	0.50	5.13	9.78	1.54	6
PL-7	90.0	0.50	5.13	9.78	1.54	6

NOT IN CONTRACT

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

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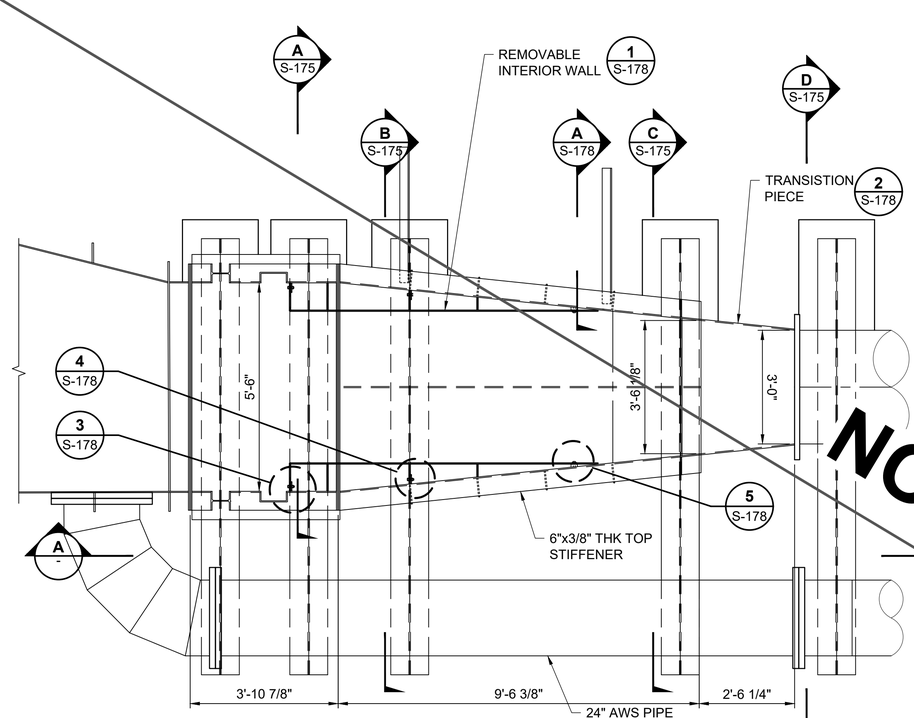
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS FLUME TRANSITION SEGMENT 4 SECTIONS & DETAILS (NOT IN CONTRACT)

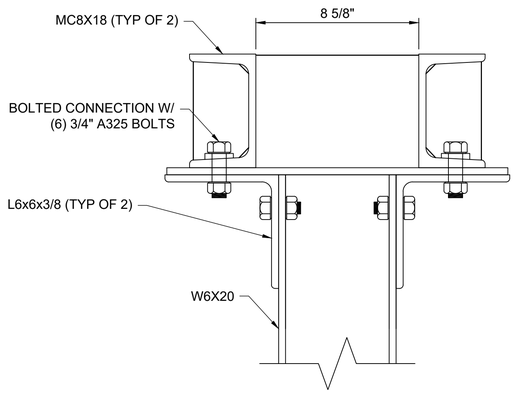
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	119 OF 240
DRAWING:	S-173

STOP LOG TABLE			
NAME	BOTTOM ELEVATION	TOP ELEVATION	DESIGN DIFFERENTIAL HEAD
BYPASS 1 FLUME	140.0	142.5	2'-0"



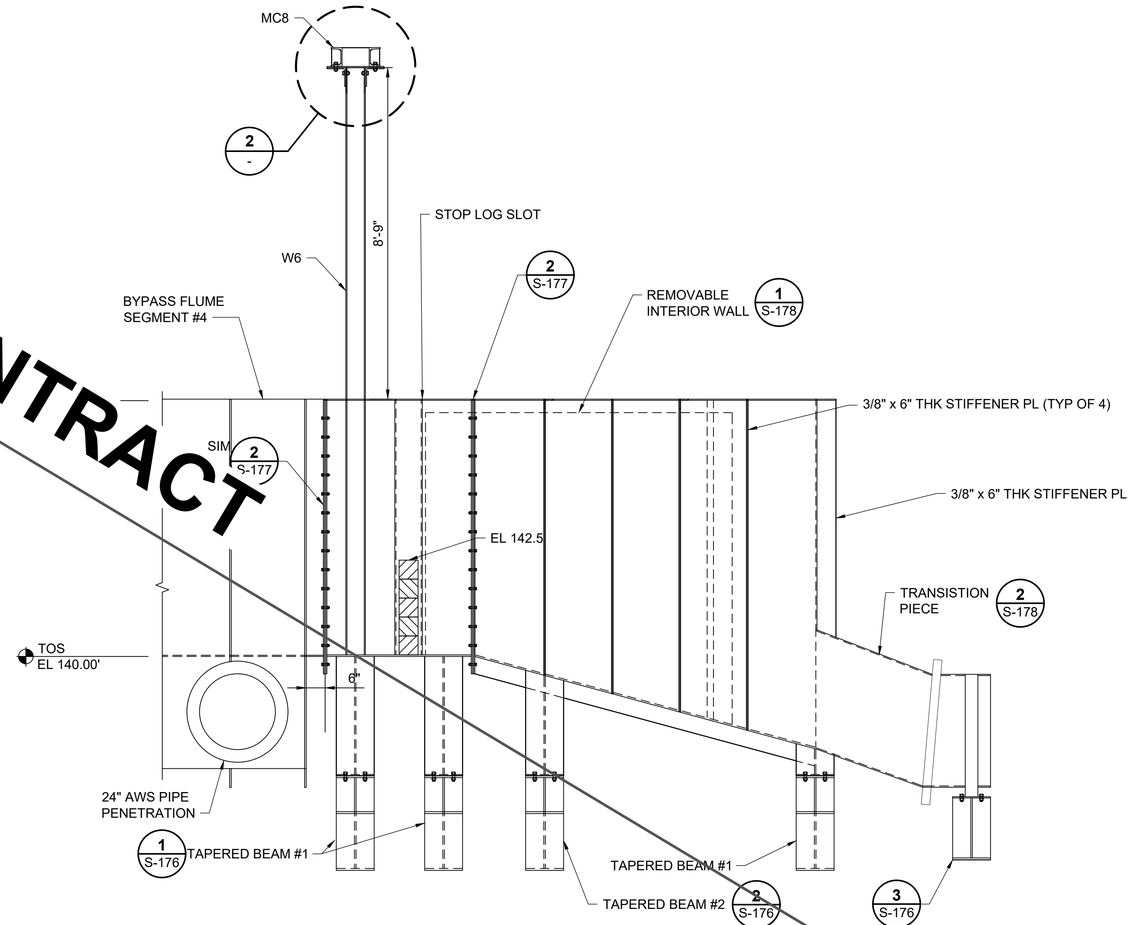
1 - **BYPASS #1 FLUME**
SCALE: 1/2"=1'-0"

0 2' 4'



2 - **DETAIL**
SCALE: 3"=1'-0"

0 6" 1'



A - **ELEVATION**
SCALE: 1/2"=1'-0"

0 2' 4'

NOT IN CONTRACT

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

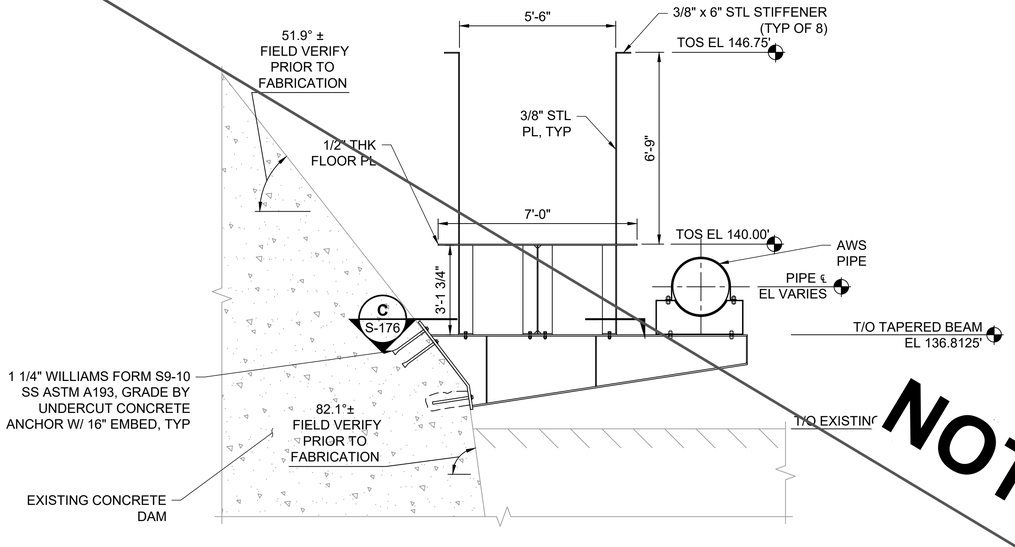
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

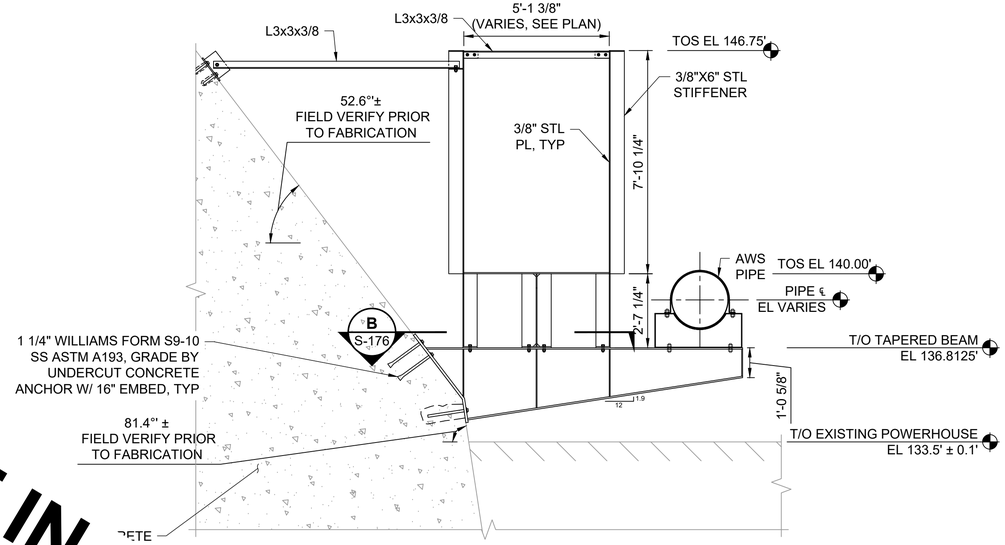
MAINE DEPARTMENT OF MARINE RESOURCES

DOWNSTREAM FISH PASSAGE SECTION (NOT IN CONTRACT)

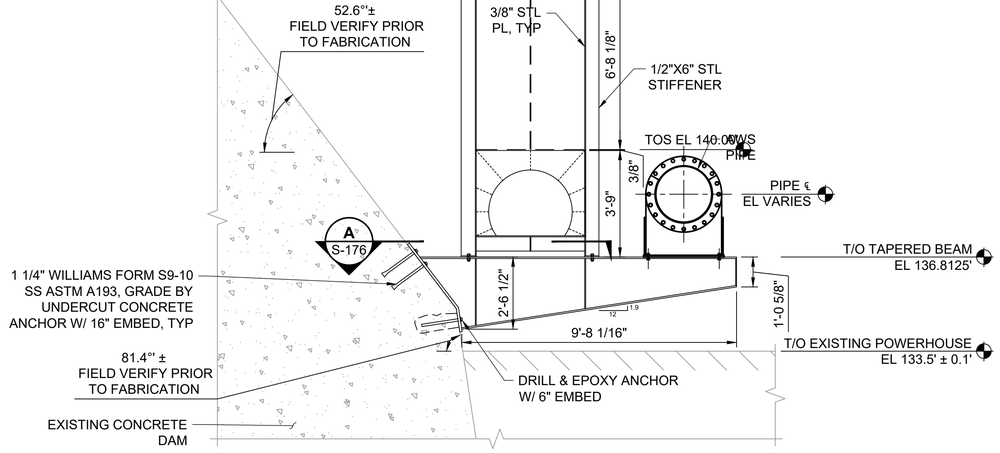
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	120 OF 240
DRAWING:	S-174



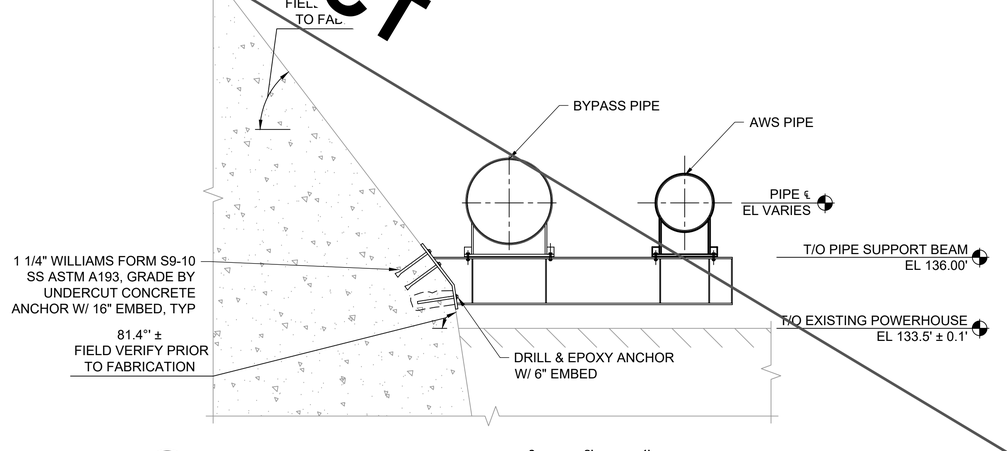
A S-174 **TAPERED BEAMS #1 SECTION**
SCALE: 3/8"=1'-0"



B S-174 **TAPERED BEAM #2 SECTION**
SCALE: 3/8"=1'-0"



C S-174 **TAPERED BEAM #1 SECTION**
SCALE: 3/8"=1'-0"



D S-174 **PIPE SUPPORT BEAM**
SCALE: 3/8"=1'-0"

NOT IN CONTRACT

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

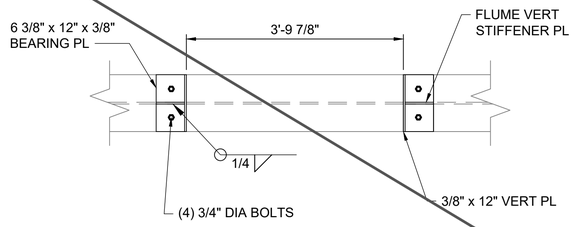
VERIFY SCALE
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

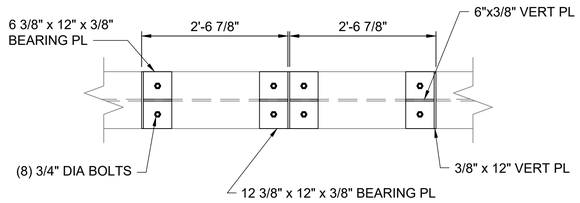
DOWNSTREAM FISH PASSAGE FLUME
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	121 OF 240
DRAWING:	S-175



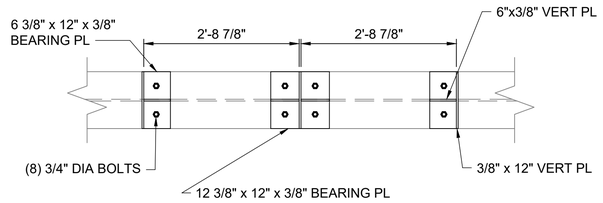
A S-175 **FLUME-BEAM CONNECTION**
SCALE: 3/4" = 1'-0"

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



B S-175 **FLUME-BEAM CONNECTION**
SCALE: 3/4" = 1'-0"

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



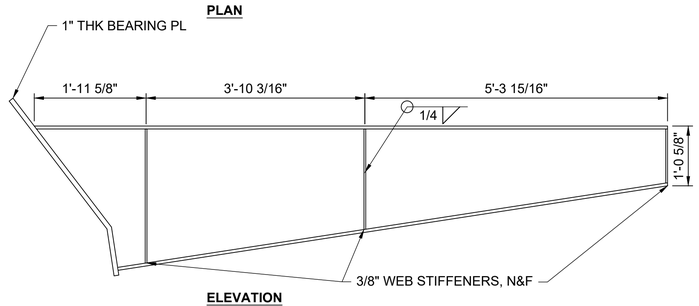
C S-175 **FLUME-BEAM CONNECTION**
SCALE: 3/4" = 1'-0"

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

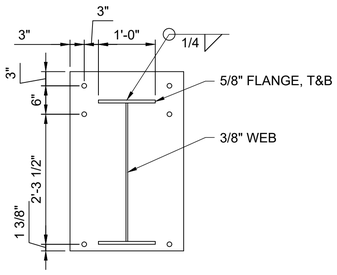
NOT IN CONTRACT



PLAN

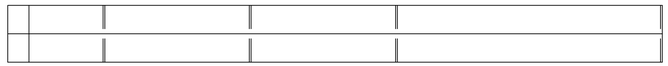


ELEVATION

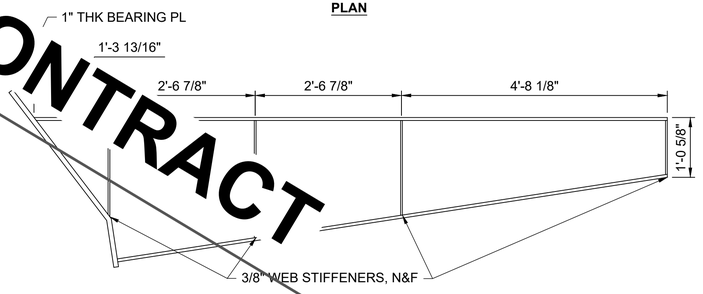


1 S-174 **TAPERED BEAM #1**
SCALE: 3/4" = 1'-0"

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



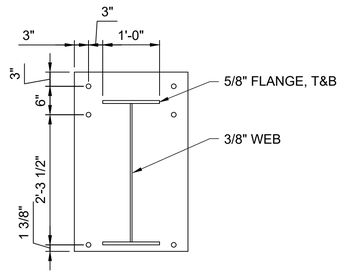
PLAN

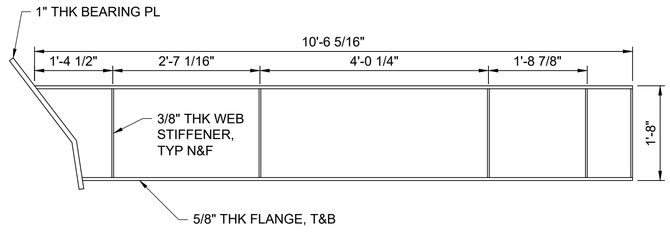


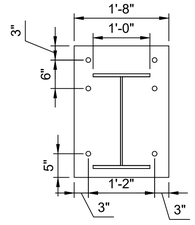
ELEVATION

2 S-174 **TAPERED BEAM #2**
SCALE: 3/4" = 1'-0"

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







3 S-174 **PIPE SUPPORT BEAM**
SCALE: 3/4" = 1'-0"

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

a verdantas company
ALDEN

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

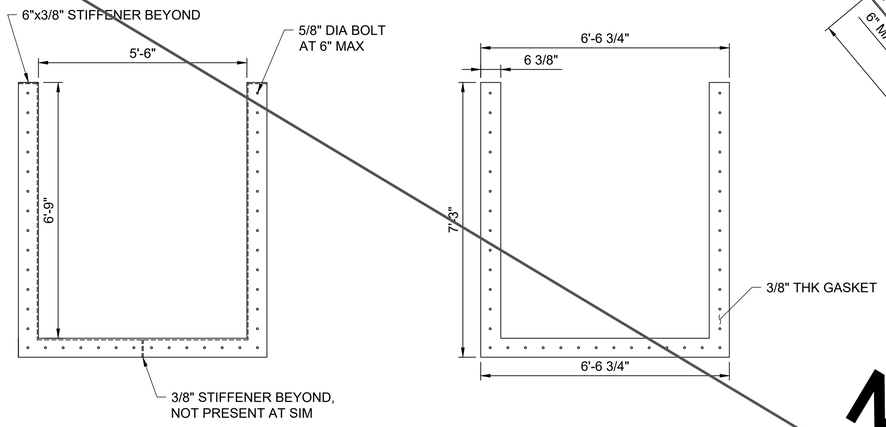
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

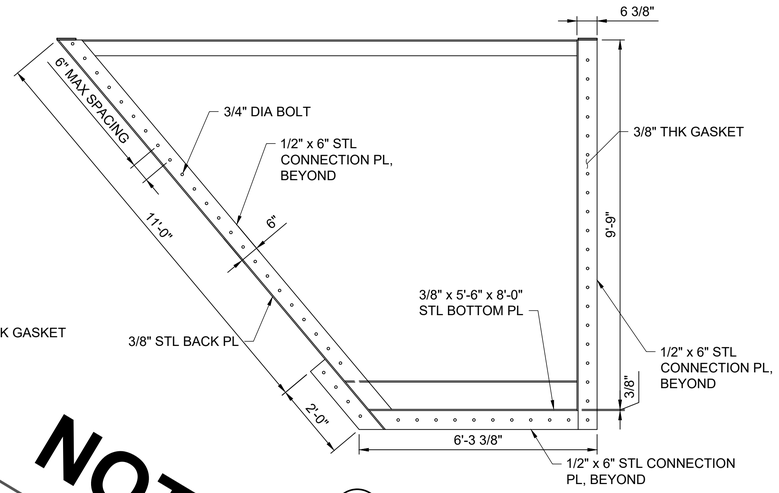
DOWNSTREAM FISH PASSAGE FLUME DETAILS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	122 OF 240
DRAWING:	S-176



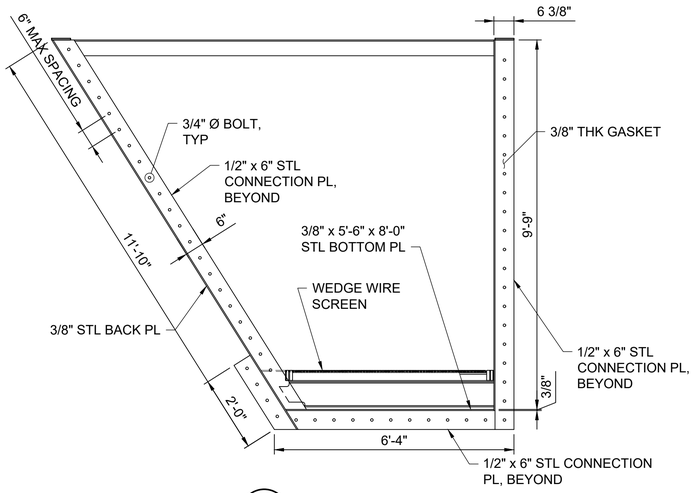
2 GASKETED CONNECTION (S-174)
SCALE: 1/2" = 1'-0"

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



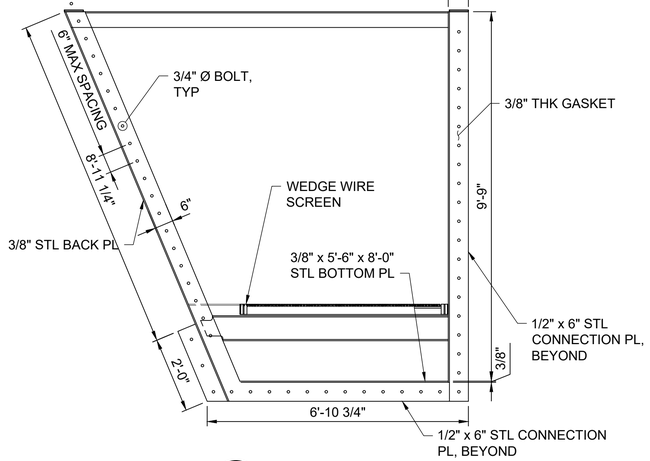
3 GASKETED CONNECTION (S-166)
SCALE: 1/2" = 1'-0"

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



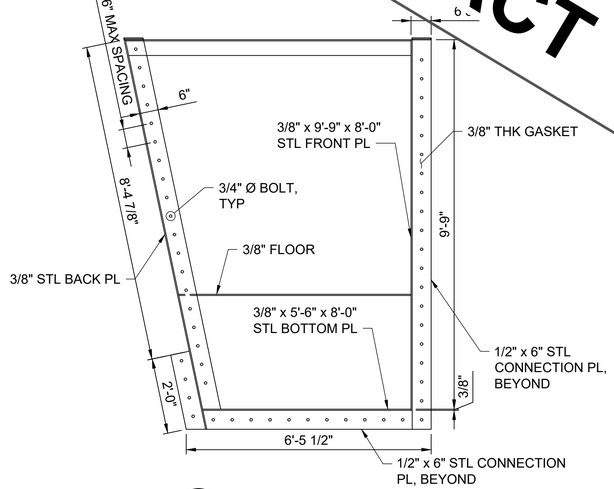
4 GASKETED CONNECTION (S-178)
SCALE: 1/2" = 1'-0"

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



5 GASKETED CONNECTION (S-170)
SCALE: 1/2" = 1'-0"

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



6 GASKETED CONNECTION (S-172)
SCALE: 1/2" = 1'-0"

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

NOT IN CONTRACT

ALDEN
a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

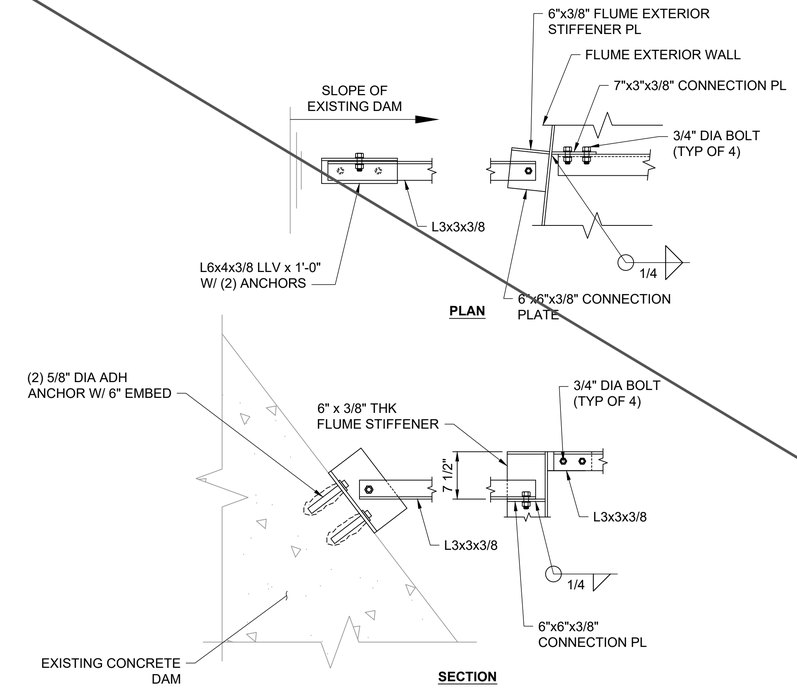
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

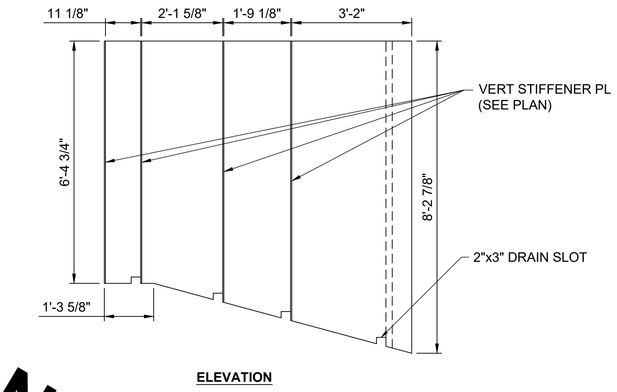
DOWNSTREAM FISH PASSAGE FLUME DETAILS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	123 OF 240
DRAWING:	S-177



A S-174 **ANGLE STRUT CONNECTION**
SCALE: 1" = 1'-0"

0 1' 2'



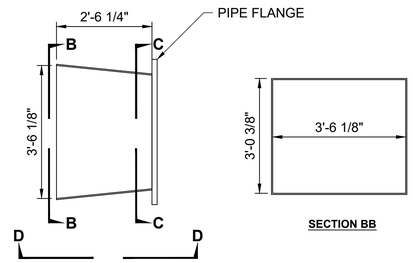
ELEVATION

1 S-174 **REMOVABLE INTERIOR WALL**
SCALE: 1/2" = 1'-0"

2' 4'

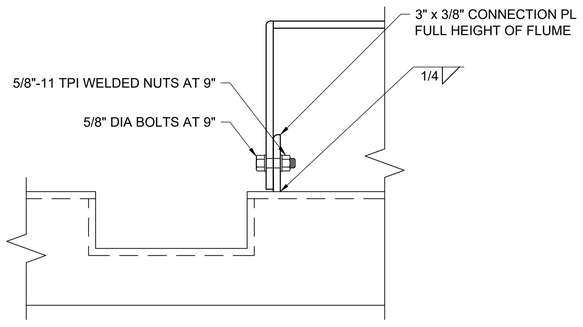
NOTES:

1. THREADS OF WELDED NUTS SHALL BE CHASED AFTER GALVANZING.
2. WELDED NUTS SHALL BE FILLET WELDED ALL AROUND.



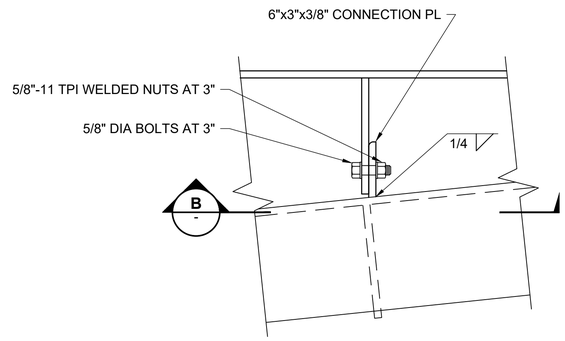
2 S-174 **TRANSISTION PIECE**
SCALE: 1/2" = 1'-0"

0 2' 4'



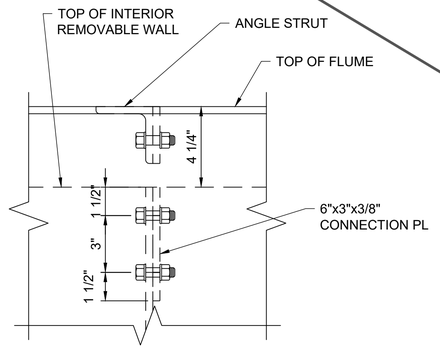
3 S-174 **CONNECTION DETAIL**
SCALE: 3" = 1'-0"

0 6" 1'



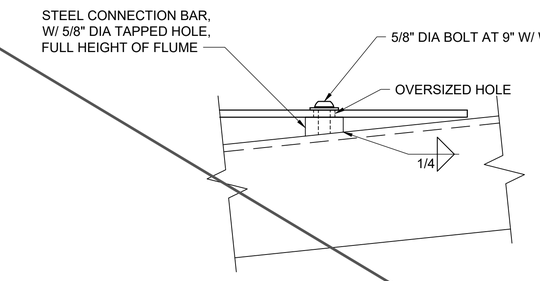
4 S-174 **CONNECTION DETAIL**
SCALE: 3" = 1'-0"

0 6" 1'



B - **CONNECTION DETAIL**
SCALE: 3" = 1'-0"

0 6" 1'



5 S-174 **CONNECTION DETAIL**
SCALE: 3" = 1'-0"

0 6" 1'

NOT IN CONTRACT

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

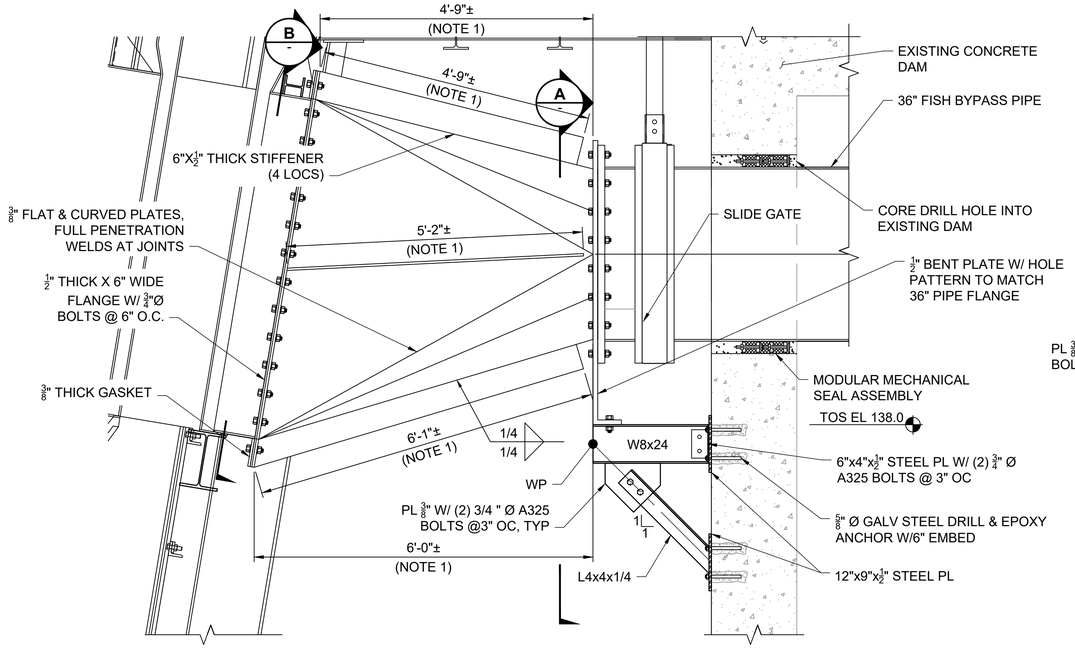
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

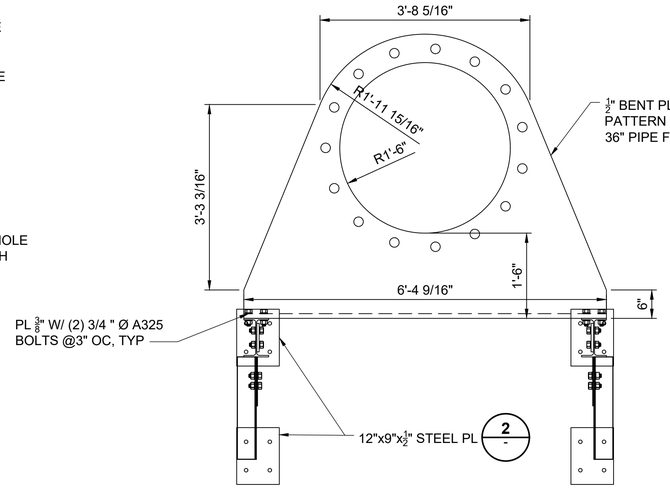
MAINE DEPARTMENT OF MARINE RESOURCES

DOWNSTREAM FISH PASSAGE FLUME SUPPORTS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	124 OF 240
DRAWING:	S-178



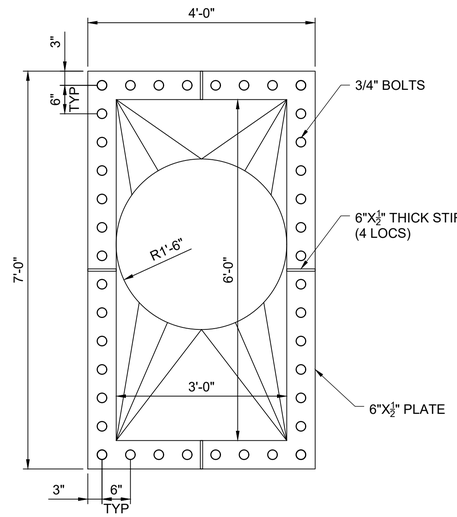
1 S-161 **UPSTREAM PIPE PENETRATION**
SCALE: 3/4"=1'-0"
0 1' 2'



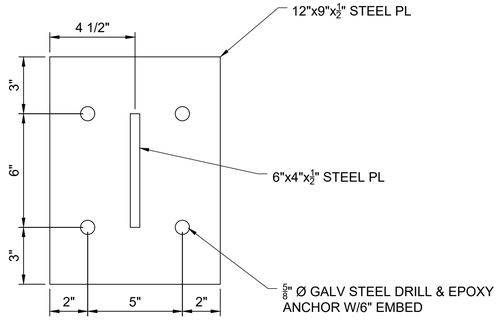
A - **SECTION**
SCALE: 3/4"=1'-0"
0 1' 2'

NOTE:

1. TRANSITION SEGMENT DISTANCES ARE APPROXIMATE. FIELD VERIFY PRIOR TO FABRICATION.



B - **SECTION**
SCALE: 3/4"=1'-0"
0 1' 2'



2 - **END PLATE DETAIL**
SCALE: 3"=1'-0"
0 6" 1'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

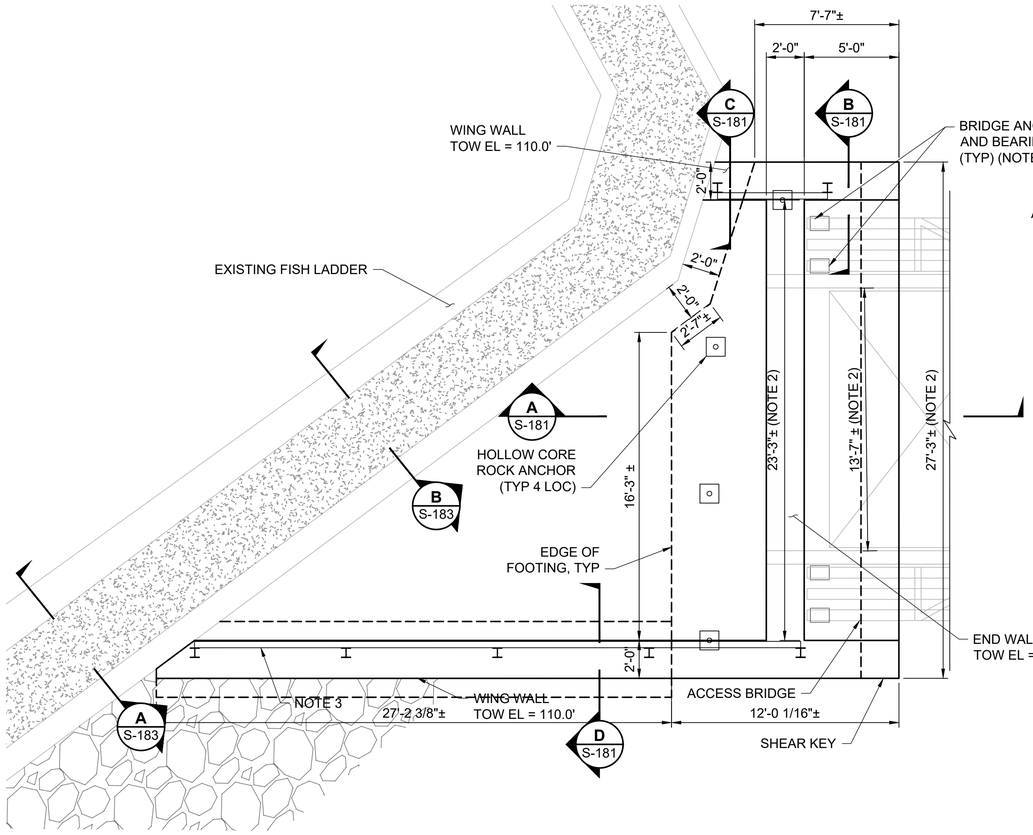
MAINE DEPARTMENT OF MARINE RESOURCES

BYPASS ENTRANCE TRANSITION SEGMENT

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	125 OF 240
DRAWING:	S-179

NOTES:

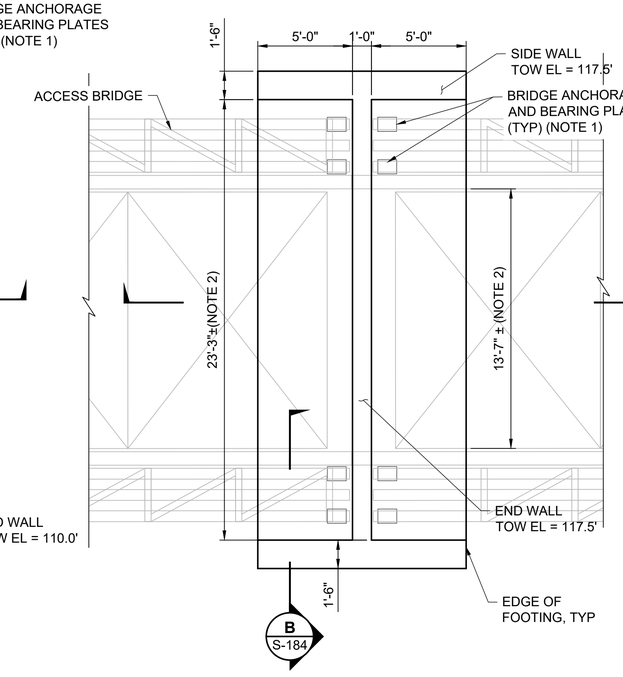
1. BRIDGE ANCHORAGE AND BEARING PER PRE-FABRICATED BRIDGE MFR.
2. PRIOR TO ABUTMENT CONSTRUCTION, COORDINATE BRIDGE WIDTH, DEPTH, AND BEARING PLATE LOCATIONS WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
3. VEHICLE GUARD RAIL. SEE DRAWING C-186



ACCESS BRIDGE ABUTMENT 1 PLAN (AT ISLAND EXPANSION END)

SCALE: 1/4"=1'0"

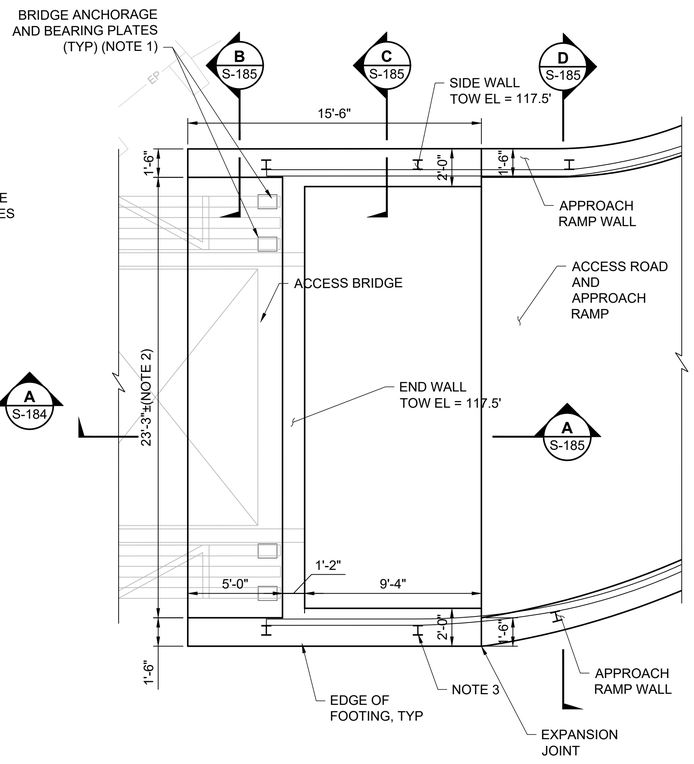
0 4' 8'



ACCESS BRIDGE PIER PLAN (FIXED END)

SCALE: 1/4"=1'0"

0 4' 8'



ACCESS BRIDGE ABUTMENT 2 PLAN (EXPANSION END)

SCALE: 1/4"=1'0"

0 4' 8'

a verdantas company

ALDEN

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

ACCESS BRIDGE ABUTMENT AND PIER PLAN (ALTERNATE ACCESS)

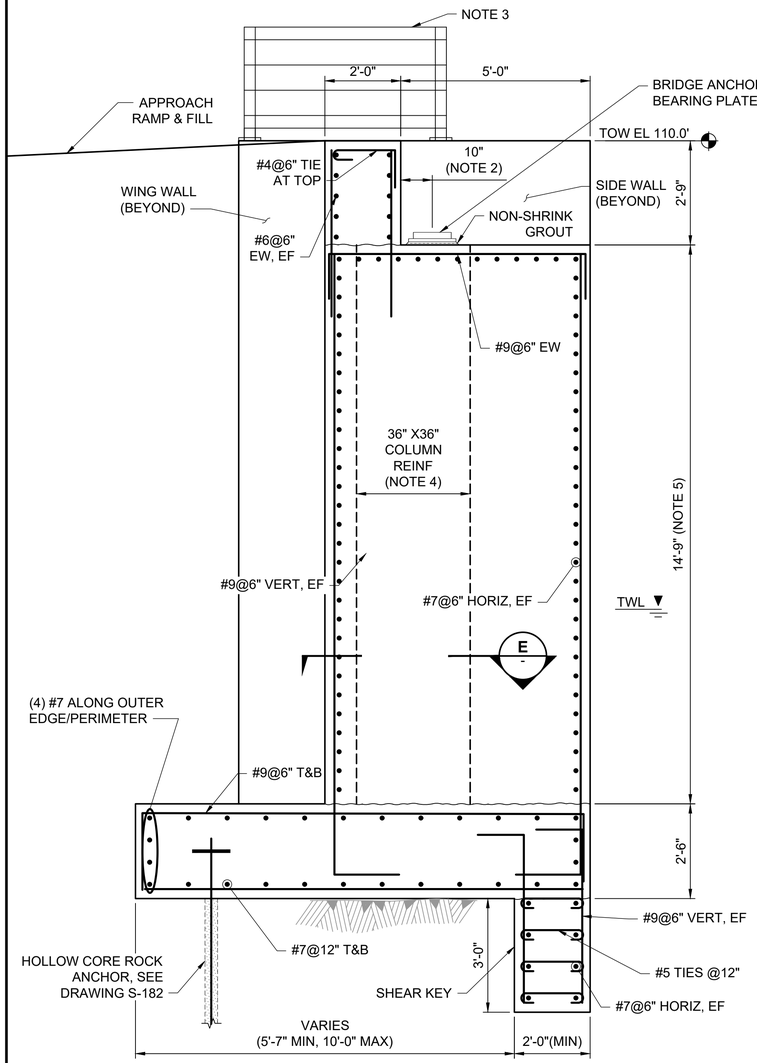
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	126 OF 240
DRAWING:	S-180

NOTES:

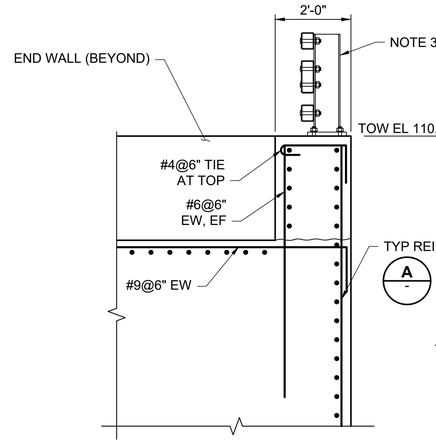
1. BRIDGE ANCHORAGE AND BEARING PER PRE-FABRICATED BRIDGE MFR.
2. PRIOR TO ABUTMENT CONSTRUCTION, COORDINATE BRIDGE WIDTH, DEPTH, AND BEARING PLATE LOCATIONS WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
3. VEHICLE GUARD RAIL. SEE DRAWING C-186.
4. ADDITIONAL COLUMN OF REINFORCEMENT TO BE CENTERED UNDER EACH BEARING PLATE LOCATION. COORDINATE WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
5. ABUTMENT HEIGHT IS APPROXIMATE. ABUTMENT SHALL EXTEND DOWN TO BEDROCK

ROCK ANCHORS (GROUTED DOWELS):

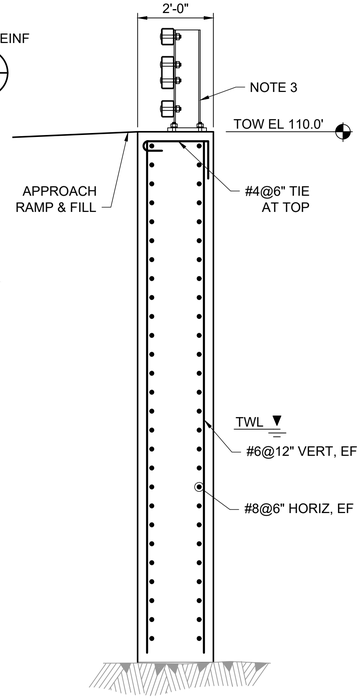
1. SUBMIT A ROCK ANCHOR INSTALLATION PLAN FOR REVIEW. PLAN SHALL INCLUDE DRILLING AND GROUTING PROCEDURES.
2. DRILL HOLES FOR DOWELS USING DRILLING EQUIPMENT SUITABLE FOR THE INTENDED PURPOSE. DIAMETER AND DEPTH OF HOLES SHALL BE AS SHOWN ON THE DRAWINGS.
3. CLEAN THE DRILLED HOLES AND REMOVE THE DEBRIS PRIOR TO DOWEL PLACEMENT.
4. GROUT:
   A. GROUT FOR GROUTING ANCHORS INTO ROCK SHALL CONSIST OF A HOMOGENOUS, STABLE MIXTURE OF PORTLAND CEMENT AND WATER WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. SUBMIT THE PROPOSED MIX DESIGN FOR REVIEW.
   B. THE WATER CONTENT SHALL BE THE MINIMUM NECESSARY FOR PROPER PLACEMENT BUT THE WATER-CEMENT RATIO SHALL NOT EXCEED 0.45 BY WEIGHT. DO NOT USE ACCELERATORS.
5. ROCK ANCHORS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 WITH EPOXY COATING IN ACCORDANCE WITH ASTM A775.



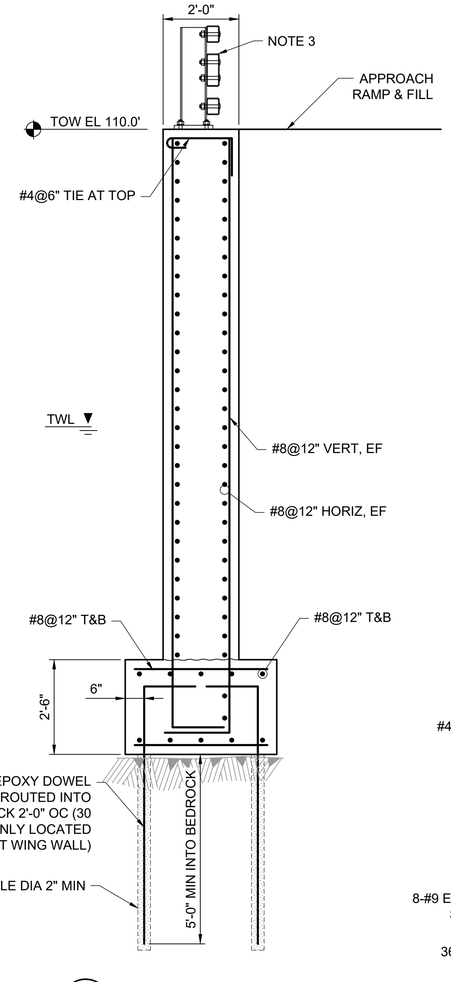
A S-180 **ABUTMENT 1 SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



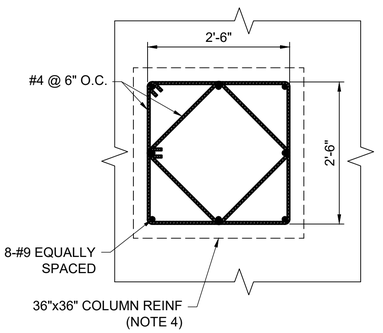
B S-180 **SIDE WALL SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



C S-180 **WING WALL SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



D S-180 **WING WALL SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



E - **SECTION AT COLUMN REINFORCEMENT**
SCALE: 3/4"=1'-0"
0 1' 2'

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ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

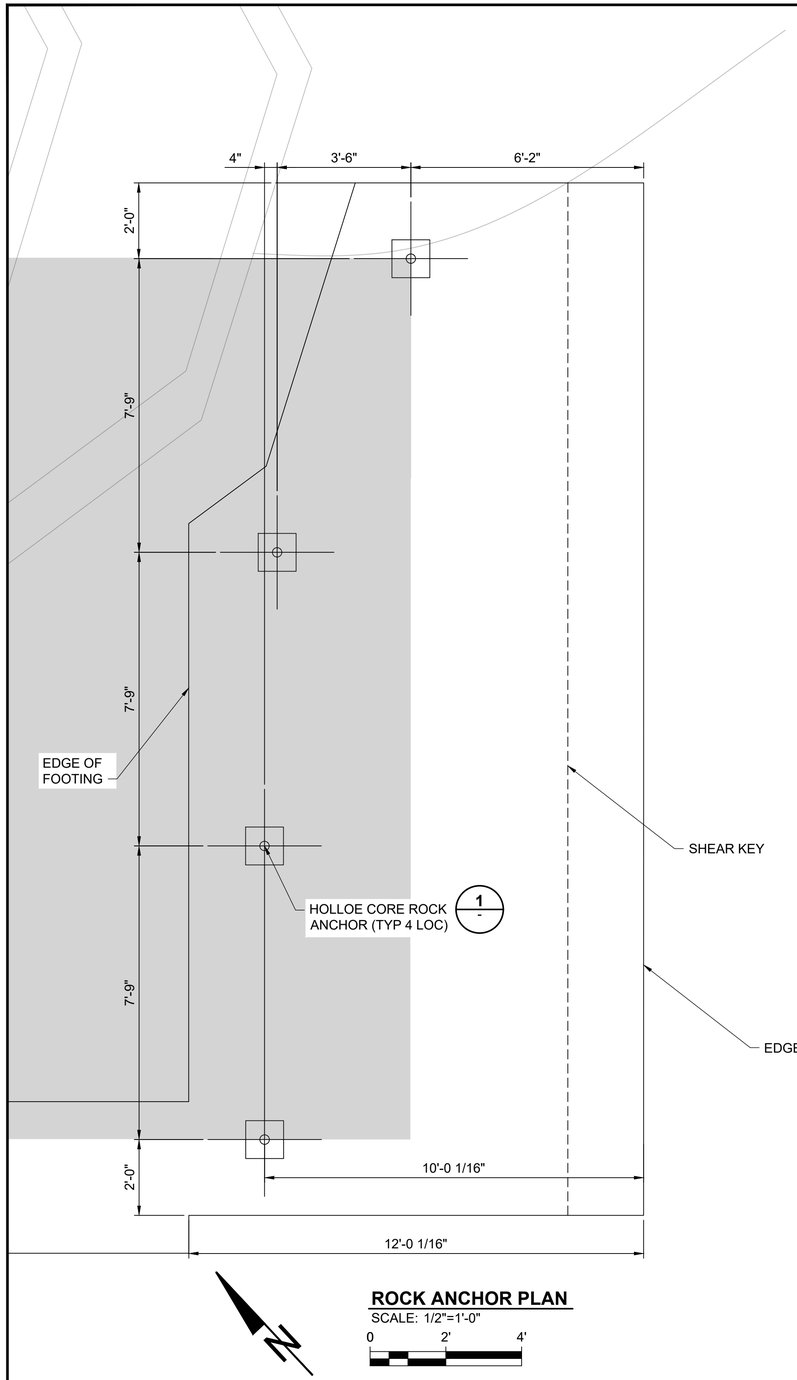
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

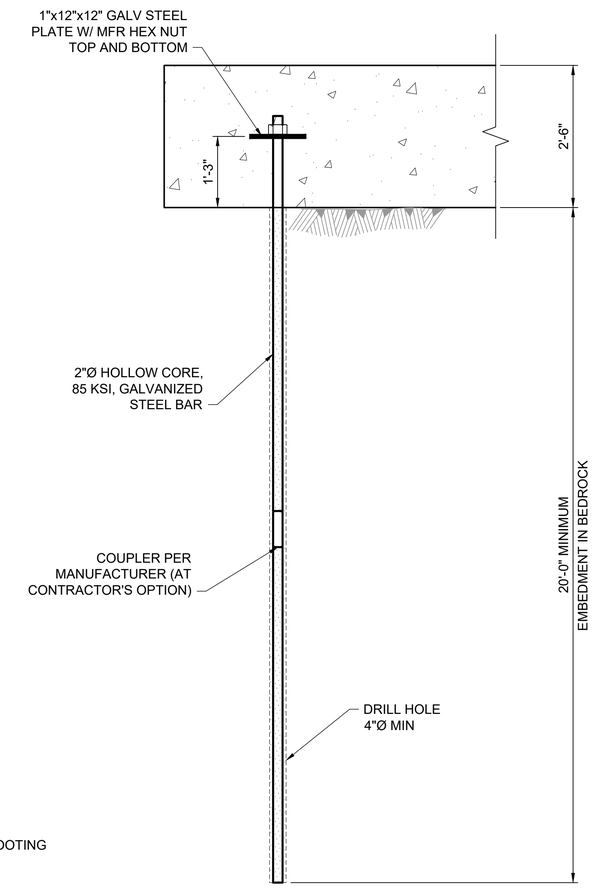
MAINE DEPARTMENT OF MARINE RESOURCES

ACCESS BRIDGE ABUTMENT 1 SECTIONS (ALTERNATE ACCESS)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	127 OF 240
DRAWING:	S-181



ROCK ANCHOR PLAN
SCALE: 1/2"=1'-0"
0 2' 4'



1 - ROCK ANCHOR DETAIL
SCALE: 3/4"=1'-0"
0 1' 2'

ROCK ANCHORS (HOLLOW CORE ANCHORS):

1. SUBMIT A ROCK ANCHOR INSTALLATION PLAN FOR REVIEW. PLAN SHALL INCLUDE DRILLING AND GROUTING PROCEDURES.
2. DRILL HOLES FOR DOWELS USING DRILLING EQUIPMENT SUITABLE FOR THE INTENDED PURPOSE. DIAMETER AND DEPTH OF HOLES SHALL BE AS SHOWN ON THE DRAWINGS.
3. GROUT:
   A. GROUT FOR GROUTING ANCHORS INTO ROCK SHALL CONSIST OF A HOMOGENOUS, STABLE MIXTURE OF PORTLAND CEMENT AND WATER WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. SUBMIT THE PROPOSED MIX DESIGN FOR REVIEW.
   B. THE WATER CONTENT SHALL BE THE MINIMUM NECESSARY FOR PROPER PLACEMENT BUT THE WATER-CEMENT RATIO SHALL NOT EXCEED 0.45 BY WEIGHT. DO NOT USE ACCELERATORS.
   C. THE INDEPENDENT TESTING AGENCY WILL PERFORM COMPRESSION TESTS PER ASTM C109. A SET OF THREE SPECIMENS WILL BE MADE FOR TESTING AT ONE, SEVEN, AND 28 DAYS.
4. ROCK ANCHORS SHALL BE T52N B7YI NON-DOMESTIC HOLLOW INJECT BAR WITH GALVANIZED COATING BY WILLIAMS FORM ENGINEERING OR APPROVED EQUIVALENT.
5. THE INDEPENDENT TESTING AGENCY WILL PERFORM PULL TESTS ON ALL FOUR ROCK ANCHORS IN ACCORDANCE WITH ASTM E488/E488M. PULL TEST LOADING SHALL BE 94,000 LBS PER ANCHOR. CONSIDER ANCHORS TO HAVE FAILED IF DISPLACEMENT EXCEEDS 0.1 INCH OR IF ANY FAILURE MODES OCCUR.

ALDEN a verdantas company

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

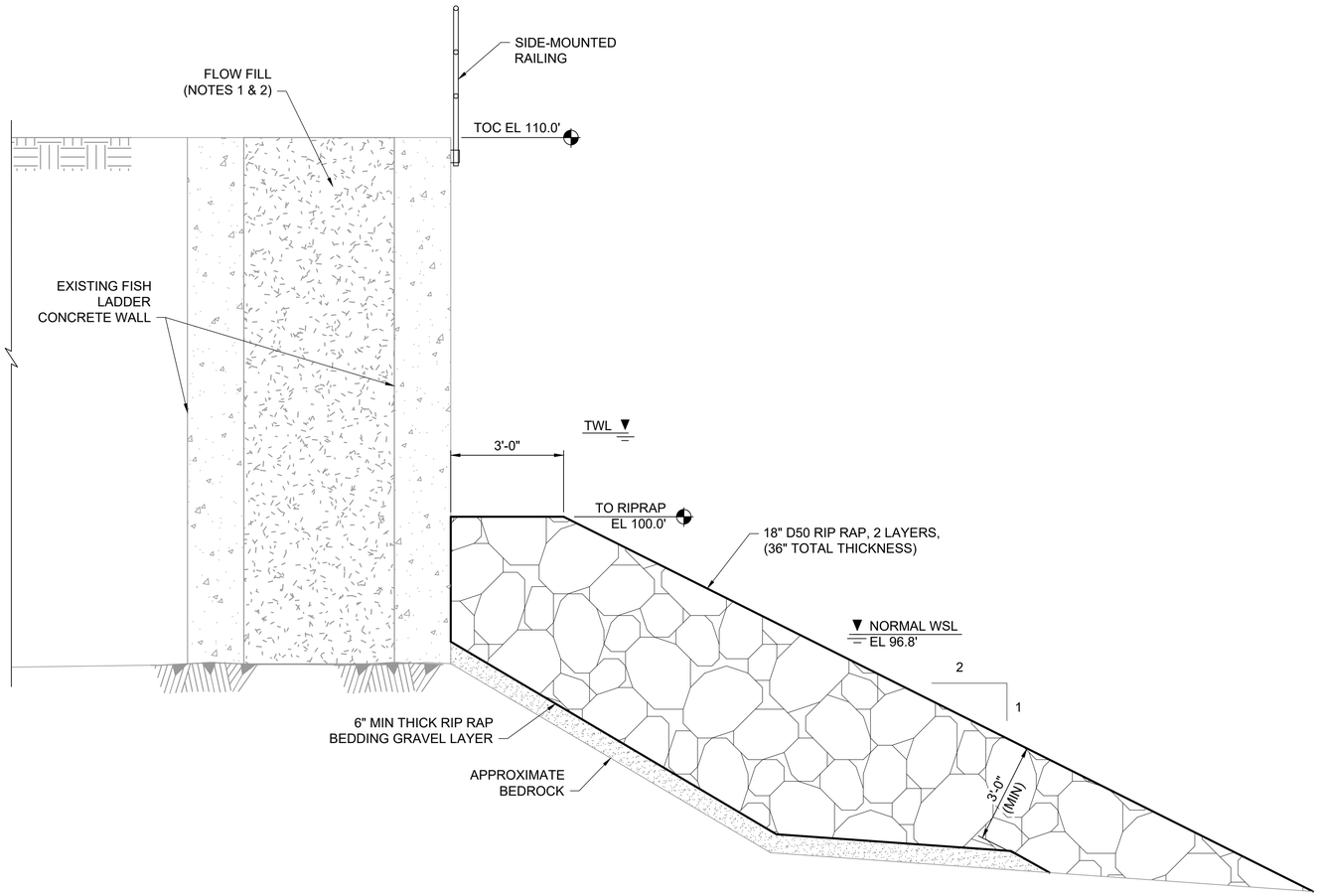
MAINE DEPARTMENT OF MARINE RESOURCES

ACCESS BRIDGE ABUTMENT 1
ROCK ANCHOR DETAIL
(ALTERNATE ACCESS)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	128 OF 240
DRAWING:	S-182

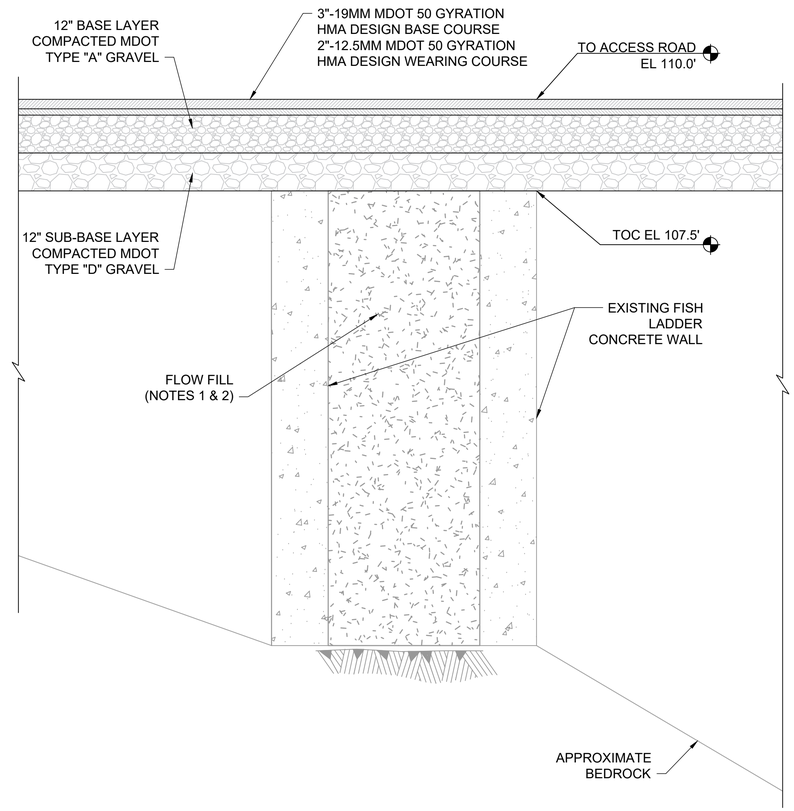
NOTES:

1. CONTRACTOR MAY USE LEAN CONCRETE OR STRUCTURAL CONCRETE INSTEAD OF FLOW FILL.
2. MAXIMUM LIFT HEIGHT OF FLOW FILL IS 4'-0"



A S-180 **SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



B S-180 **SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

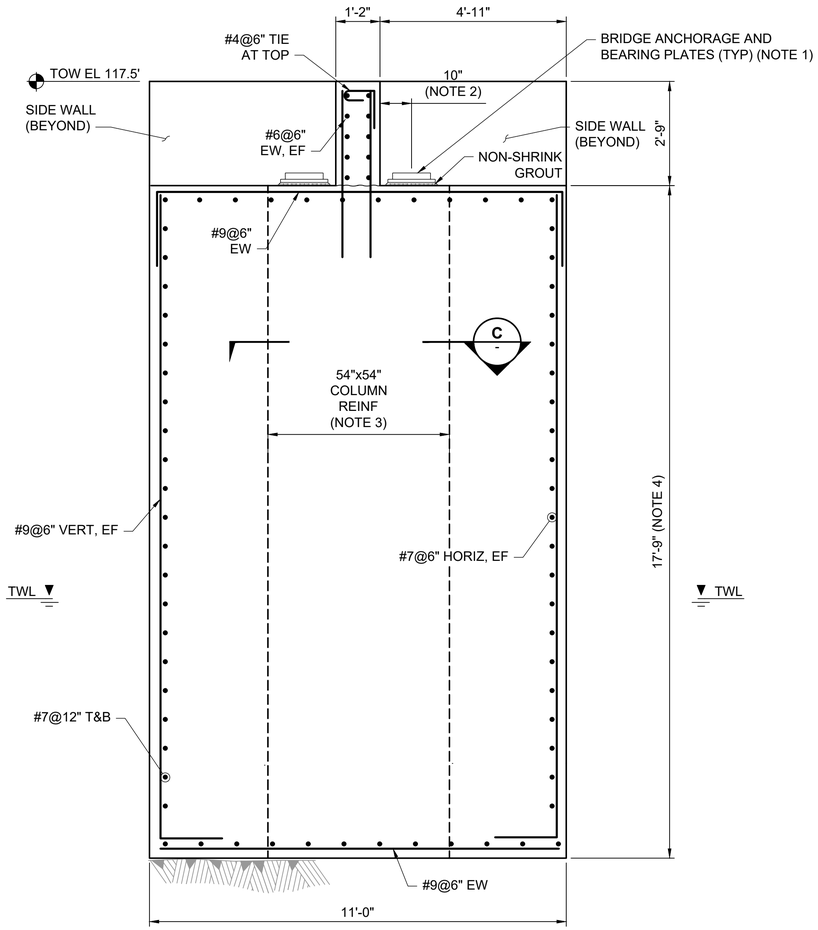
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

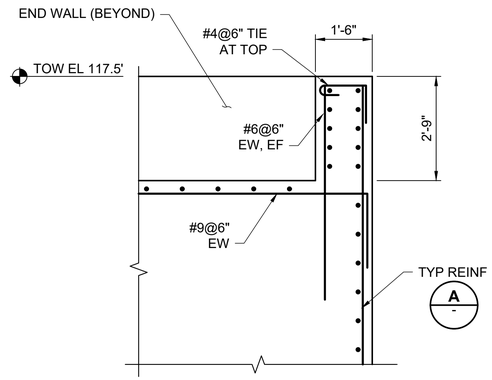
MAINE DEPARTMENT OF MARINE RESOURCES

EXISTING FISH LADDER SECTIONS (ALTERNATE ACCESS)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	129 OF 240
DRAWING:	S-183



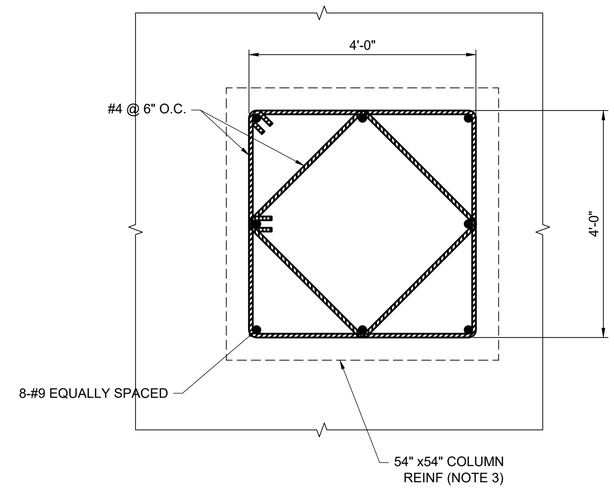
A S-180 **PIER SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'



B S-180 **SIDE WALL SECTION**
SCALE: 1/2"=1'-0"
0 2' 4'

NOTES:

1. BRIDGE ANCHORAGE AND BEARING PER PRE-FABRICATED BRIDGE MFR.
2. PRIOR TO PIER CONSTRUCTION, COORDINATE BRIDGE WIDTH, DEPTH, AND BEARING PLATE LOCATIONS WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
3. ADDITIONAL COLUMN REINFORCEMENT TO BE CENTERED UNDER EACH BEARING PLATE LOCATION. COORDINATE WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
4. PIER HEIGHT IS APPROXIMATE. PIER SHALL EXTEND DOWN TO BEDROCK.



C - **SECTION AT COLUMN REINFORCEMENT**
SCALE: 3/4"=1'-0"
0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

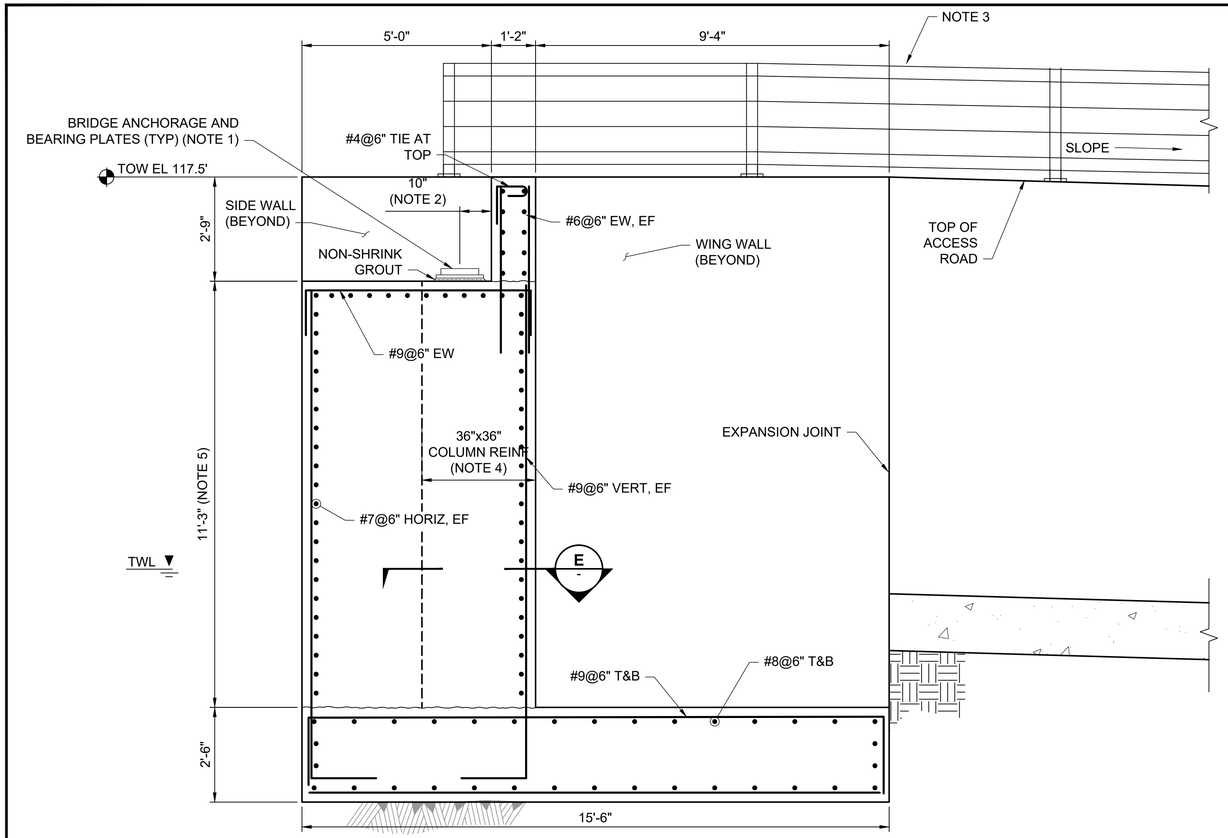
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

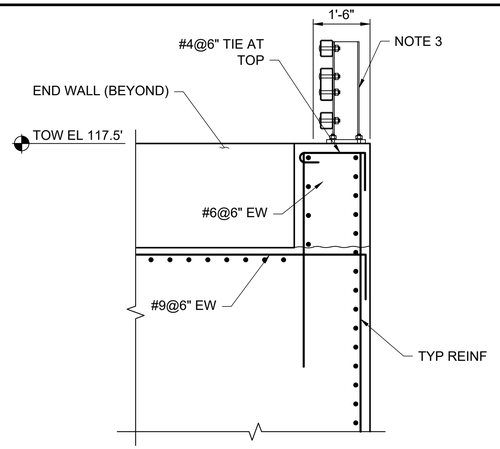
BRIDGE PIER SECTIONS (ALTERNATE ACCESS)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	130 OF 240
DRAWING:	S-184



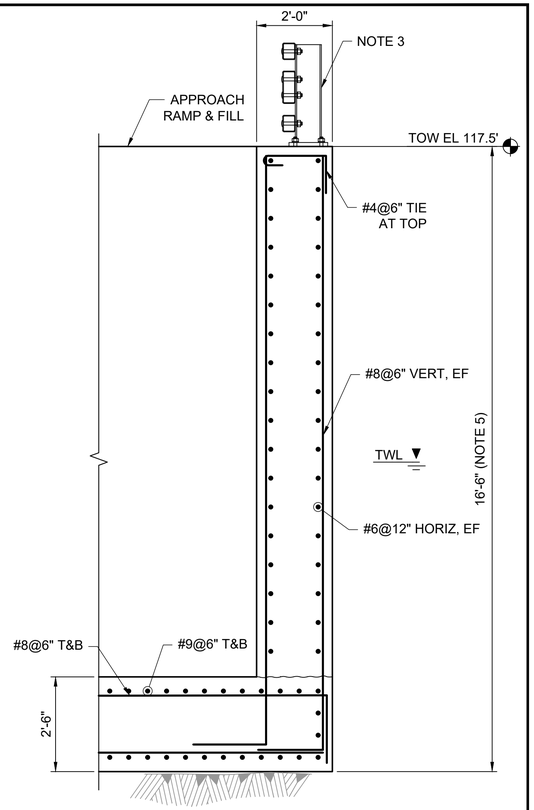
A S-180 **ABUTMENT 1 SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



B S-180 **SIDE WALL SECTION**
SCALE: 1/2"=1'-0"

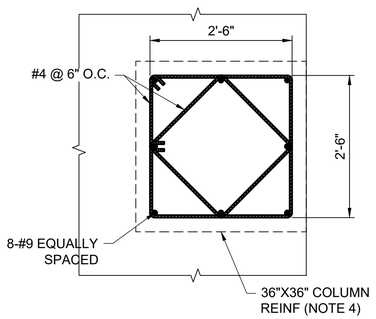
0 2' 4'



C S-180 **WING WALL SECTION**
SCALE: 1/2"=1'-0"

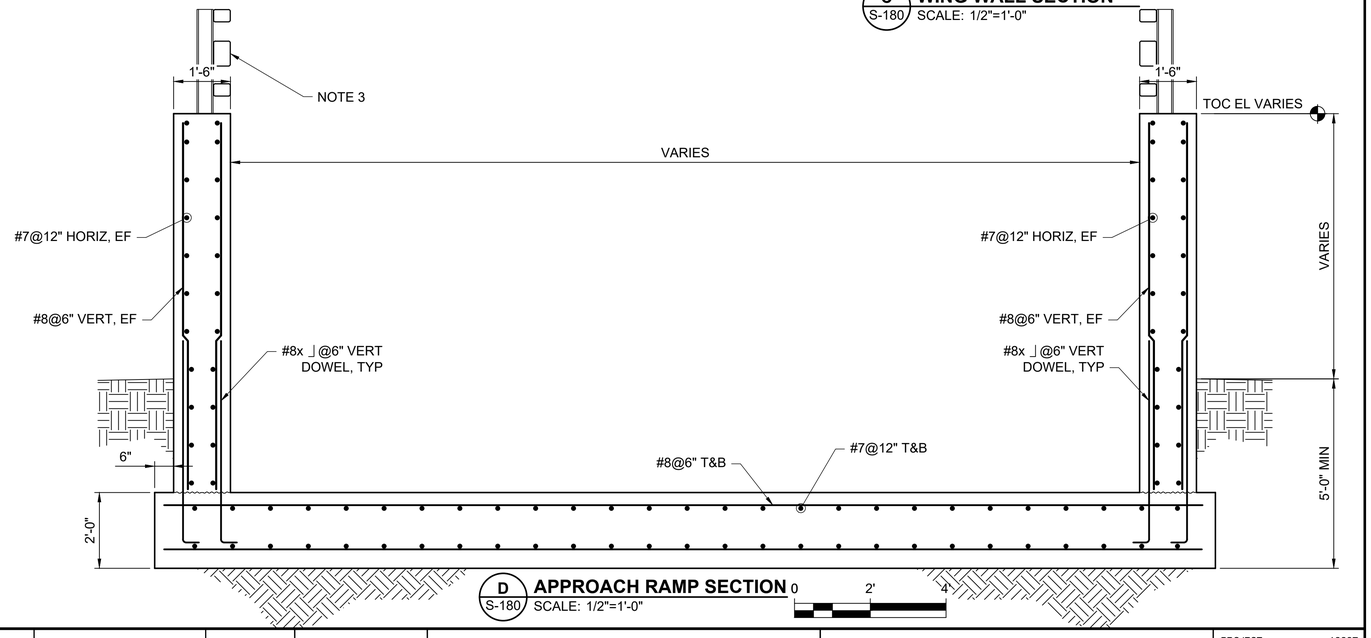
NOTES:

1. BRIDGE ANCHORAGE AND BEARING PER PRE-FABRICATED BRIDGE MFR.
2. PRIOR TO ABUTMENT CONSTRUCTION, COORDINATE BRIDGE WIDTH, DEPTH, AND BEARING PLATE LOCATIONS WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
3. VEHICLE GUARD RAIL. SEE DRAWING C-186.
4. ADDITIONAL COLUMN OF REINFORCEMENT TO BE CENTERED UNDER EACH BEARING PLATE LOCATION. COORDINATE WITH ACTUAL PRE-FABRICATED BRIDGE SUPPLIED.
5. ABUTMENT HEIGHT IS APPROXIMATE. ABUTMENT SHALL EXTEND DOWN TO BEDROCK



E - **SECTION AT COLUMN REINFORCEMENT**
SCALE: 3/4"=1'-0"

0 1' 2'



D S-180 **APPROACH RAMP SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

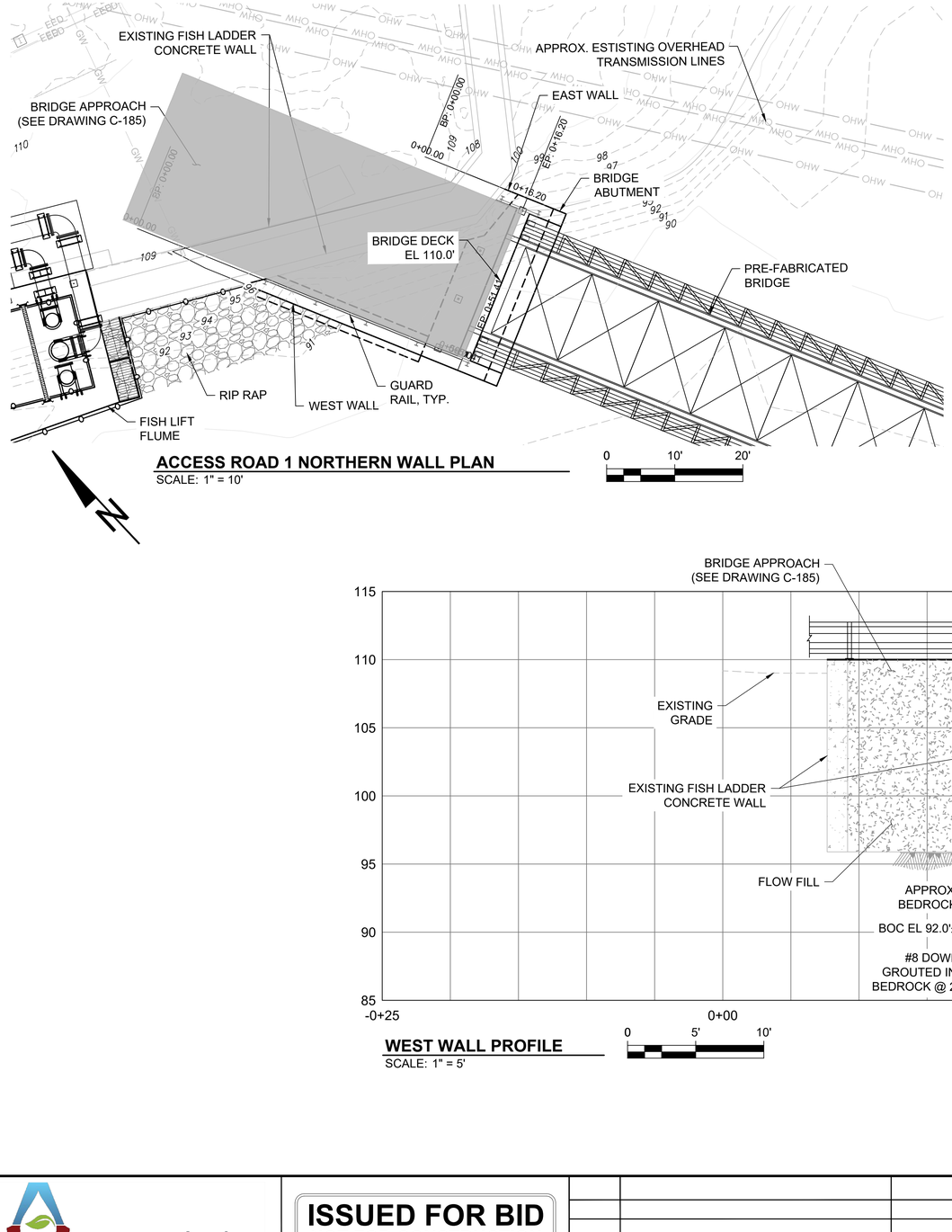
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

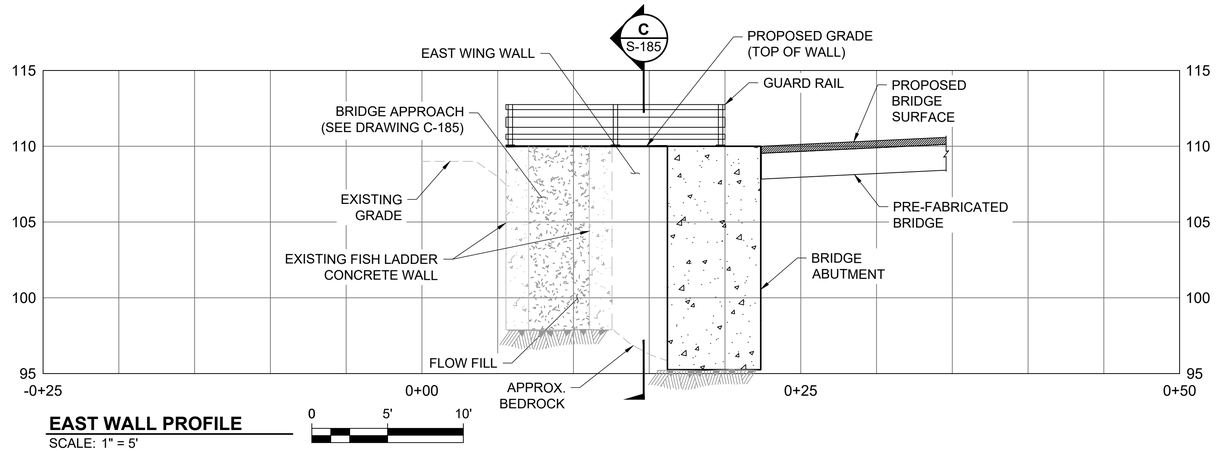
ABUTMENT 2 SECTIONS (ALTERNATE ACCESS)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	131 OF 240
DRAWING:	S-185



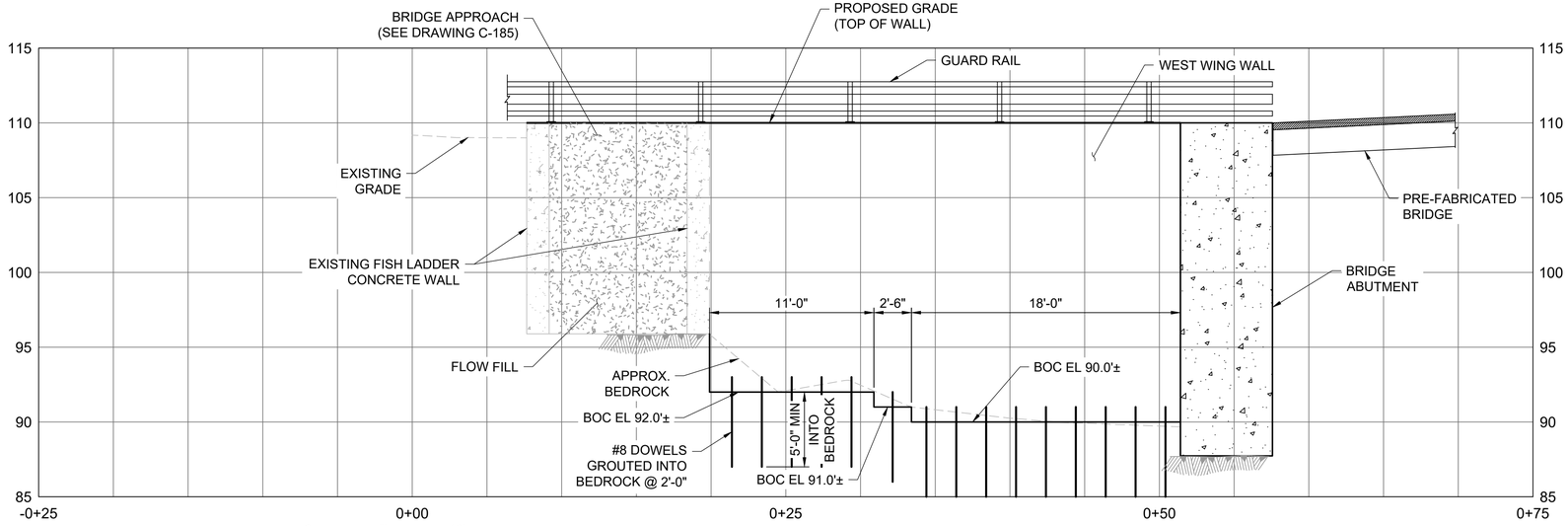
ACCESS ROAD 1 NORTHERN WALL PLAN
SCALE: 1" = 10'

0 10' 20'



EAST WALL PROFILE
SCALE: 1" = 5'

0 5' 10'



WEST WALL PROFILE
SCALE: 1" = 5'

0 5' 10'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

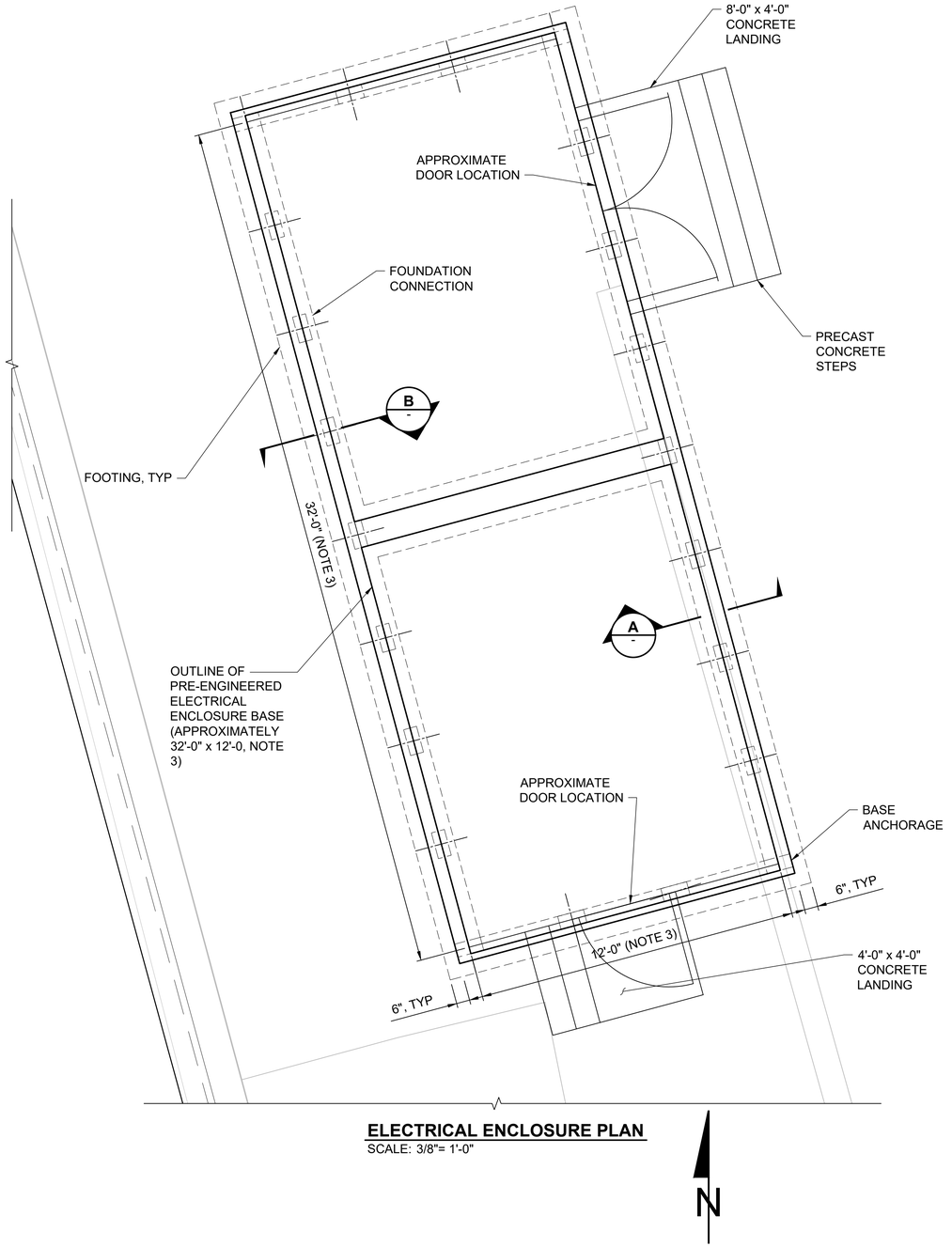
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

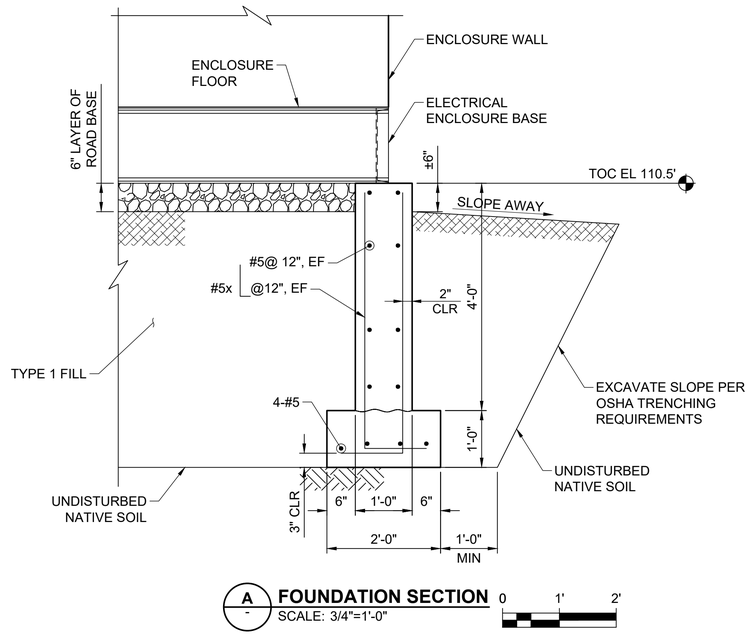
MAINE DEPARTMENT OF MARINE RESOURCES

ACCESS ROAD WALL PROFILES (ALTERNATE ACCESS)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	132 OF 240
DRAWING:	S-186



ELECTRICAL ENCLOSURE PLAN
SCALE: 3/8"= 1'-0"



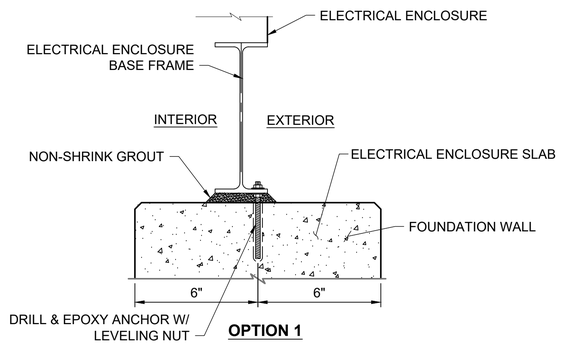
A - FOUNDATION SECTION
SCALE: 3/4"=1'-0"
0 1' 2'

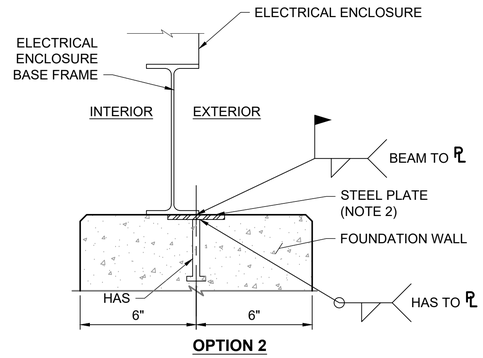
NOTES:

1. SEE SPECIFICATION SECTION 01 81 10 FOR STRUCTURAL DESIGN CRITERIA.
2. SEE SPECIFICATIONS 26 27 16 FOR PRE-ENGINEERED ELECTRICAL ENCLOSURE.
3. FOUNDATION DIMENSIONS ARE BASED ON 12'-0" BY 32'-0" ELECTRICAL ENCLOSURE. FOUNDATION DIMENSIONS SHALL BE VERIFIED WITH THE ACTUAL ELECTRICAL ENCLOSURE SUPPLIED.
4. ELECTRICAL ENCLOSURE ANCHORAGE TO THE CONCRETE FOUNDATION SHALL BE DESIGNED AND DETAILED BY THE ELECTRICAL ENCLOSURE MFR. CONNECTION LOCATIONS SHALL BE DETERMINED BY ELECTRICAL ENCLOSURE MFR.
5. PROPOSED OPENINGS IN CONCRETE FOUNDATION SLAB FOR CONDUIT AND ELECTRICAL DUCTS SHALL BE REVIEWED BY THE ENGINEER AND COORDINATED WITH ELECTRICAL PRIOR TO CONSTRUCTION.
6. STAIRS TO DOUBLE DOOR PLATFORM TO BE COORDINATED WITH ELECTRICAL ENCLOSURE MFR. STAIRS SHALL HAVE 10" TREAD AND EQUAL RISE ON BOTH SIDES OF PLATFORM. MINIMUM RISE IS 6" AND MAXIMUM RISE IN 9".

CONNECTION NOTES:

1. EXAMPLE BASE CONNECTION DETAILS ARE PROVIDED FOR REFERENCE ONLY. CONNECTION DETAIL INSTALLED SHALL BE DESIGNED AND DETAILED BY THE ELECTRICAL ENCLOSURE MFR. CONNECTION LOCATIONS SHALL BE DETERMINED BY ELECTRICAL ENCLOSURE MFR.
2. FIELD PAINT AFTER WELDING.





B - BASE ANCHORAGE CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"
0 1' 2'

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REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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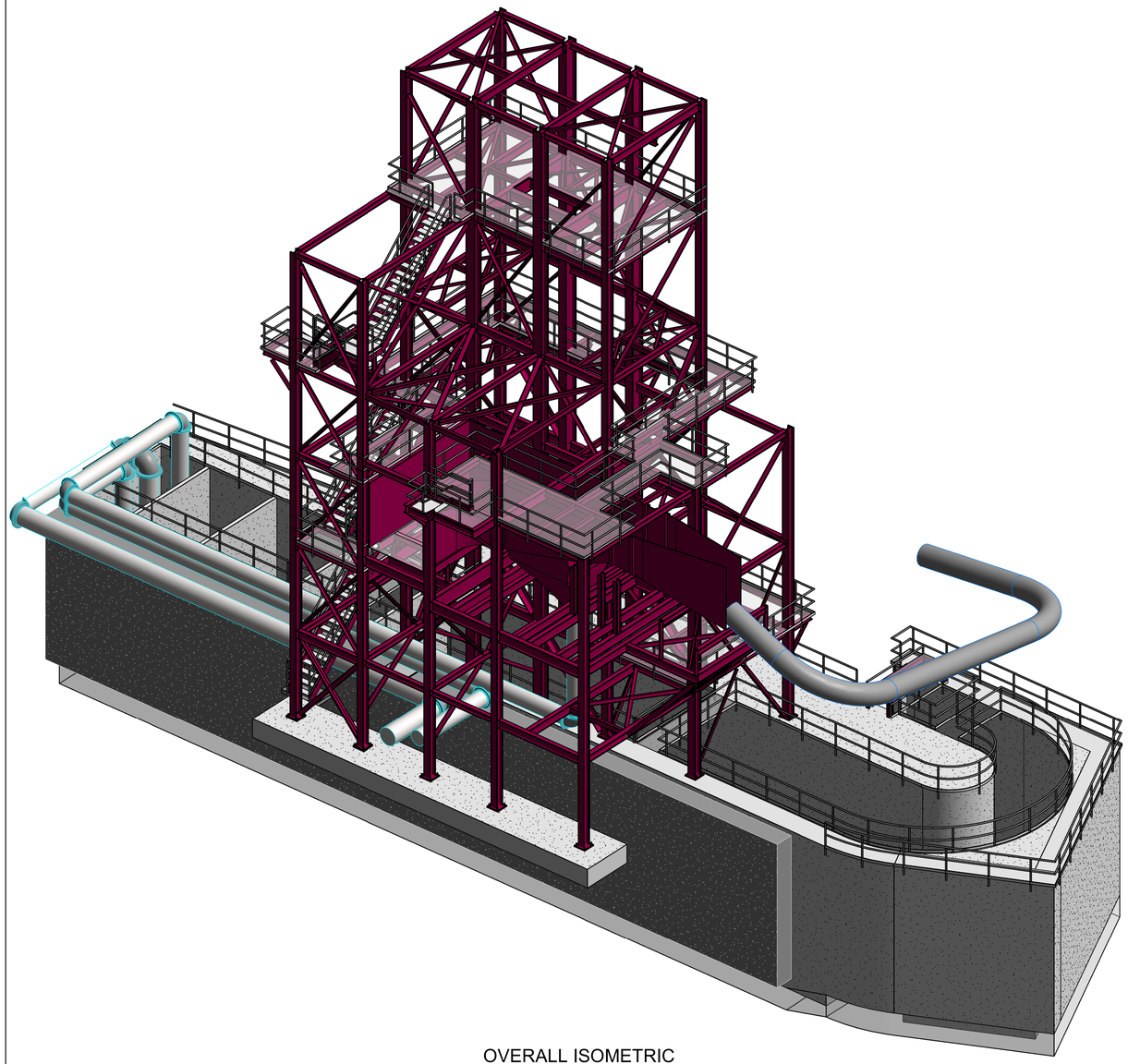
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

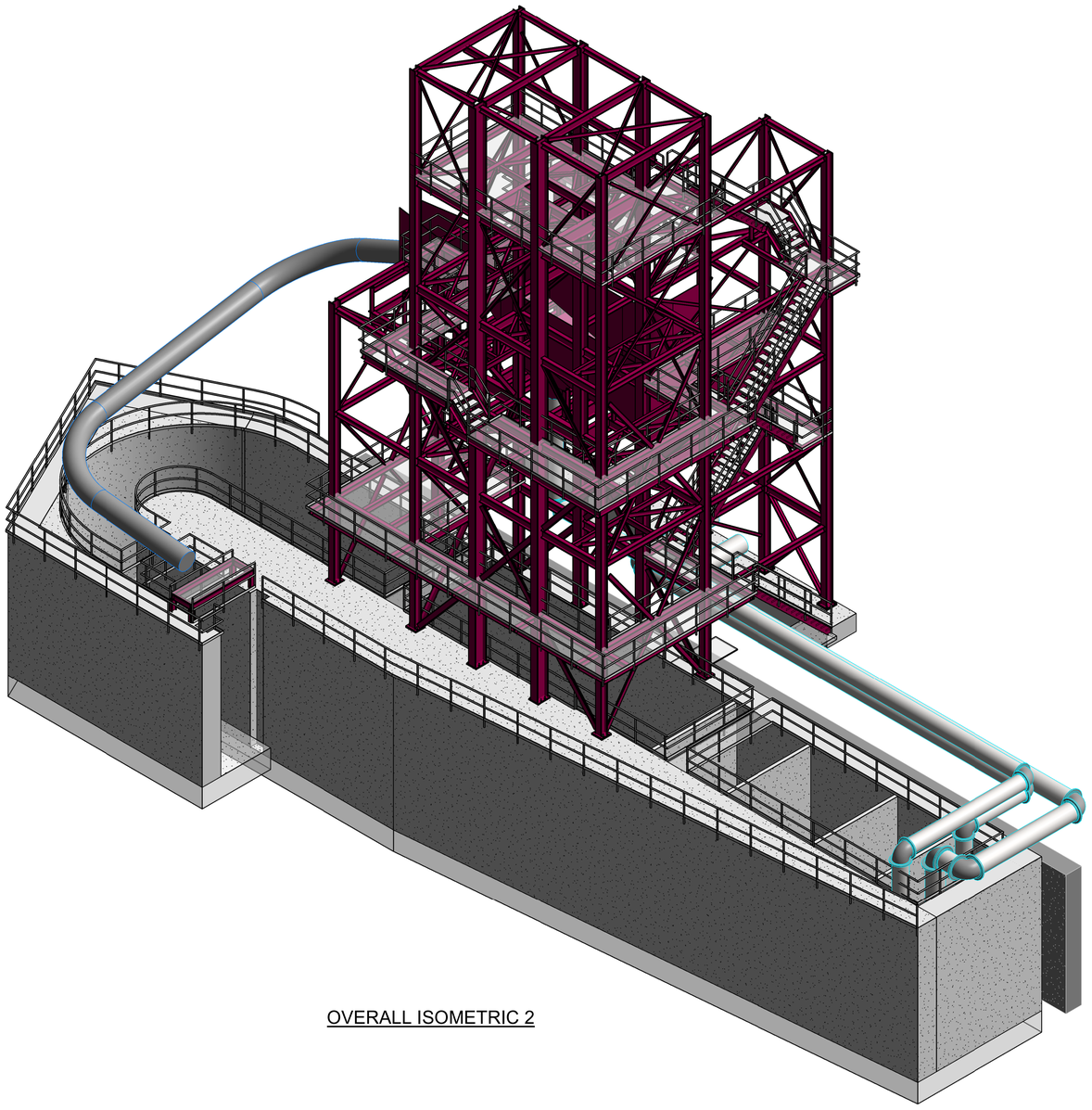
ELECTRICAL ENCLOSURE PLAN

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	82 OF 240
DRAWING:	S-190

NOTES:
1. HOPPER NOT SHOWN FOR CLARITY
2. PIPE SUPPORTS NOT SHOWN FOR CLARITY



OVERALL ISOMETRIC



OVERALL ISOMETRIC 2

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

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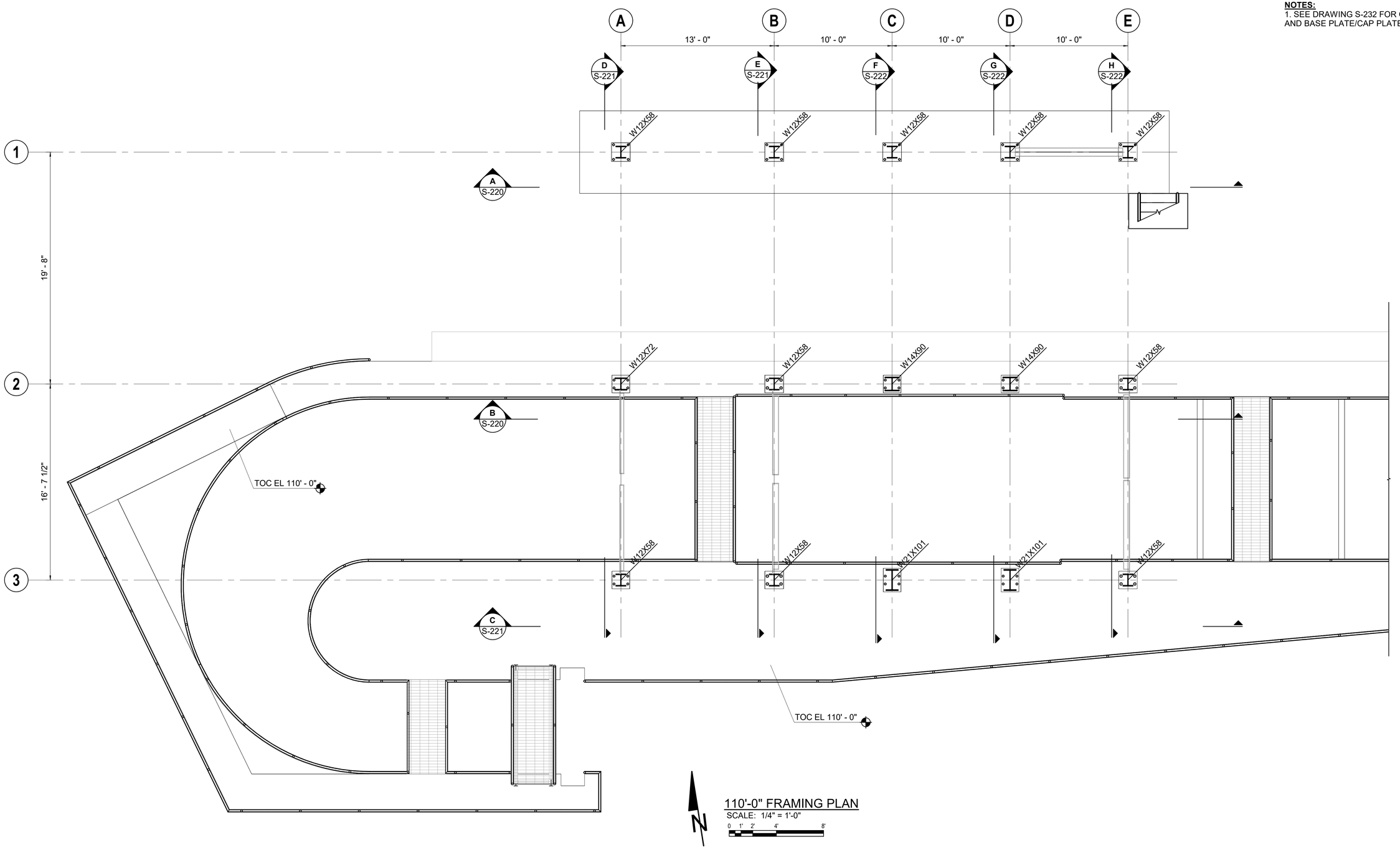
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
OVERALL ISOMETRIC VIEW

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	133 OF 240
DRAWING:	S-200

NOTES:
1. SEE DRAWING S-232 FOR COLUMN SCHEDULE AND BASE PLATE/CAP PLATE DETAILS



110'-0" FRAMING PLAN
SCALE: 1/4" = 1'-0"
0 1' 2' 4' 8'

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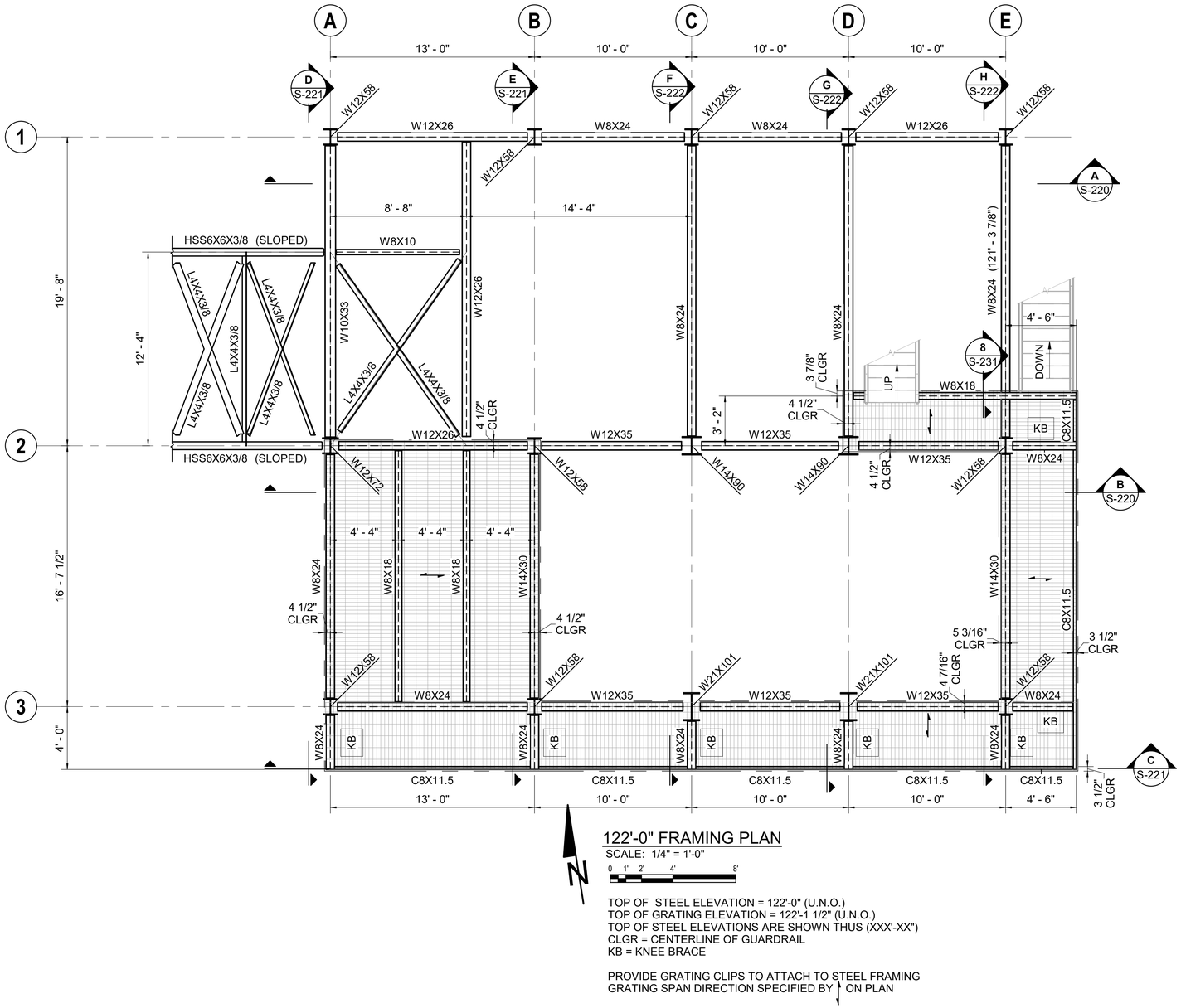
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
COLUMN LOCATION PLAN

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	134 OF 240
DRAWING:	S-210



122'-0" FRAMING PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

TOP OF STEEL ELEVATION = 122'-0" (U.N.O.)
TOP OF GRATING ELEVATION = 122'-1 1/2" (U.N.O.)
TOP OF STEEL ELEVATIONS ARE SHOWN THUS (XXX'-XX")
CLGR = CENTERLINE OF GUARDRAIL
KB = KNEE BRACE

PROVIDE GRATING CLIPS TO ATTACH TO STEEL FRAMING
GRATING SPAN DIRECTION SPECIFIED BY ↕ ON PLAN

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SEPTEMBER 3, 2025

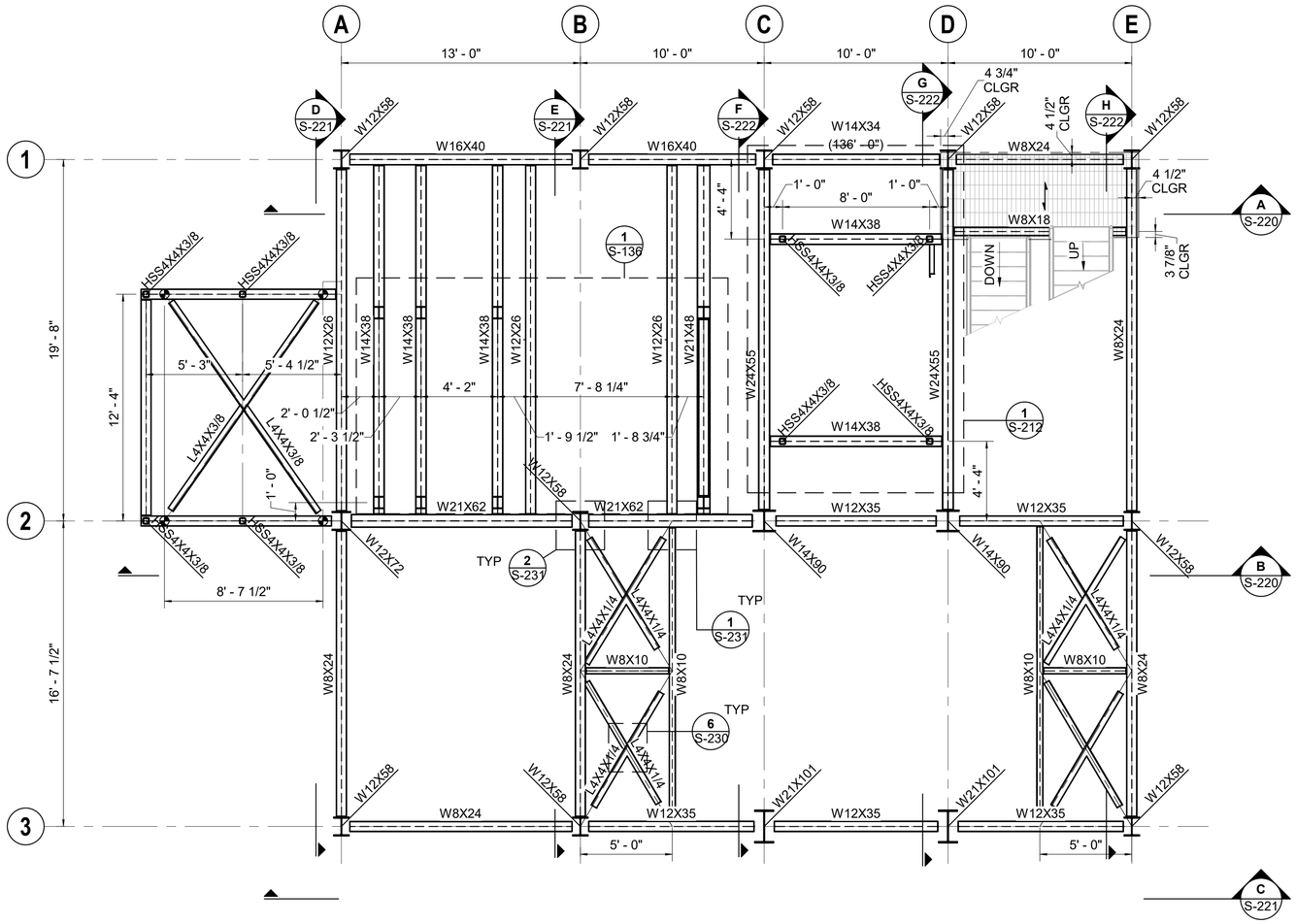
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING PLAN

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	135 OF 240
DRAWING:	S-211



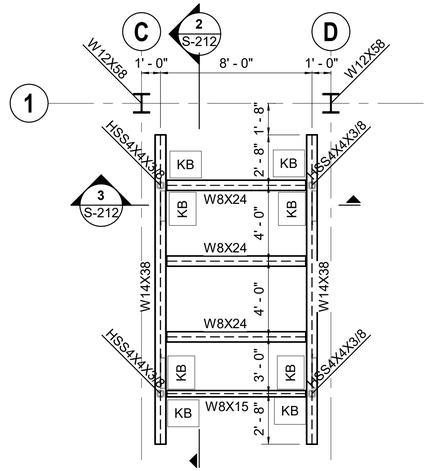
134'-0" FRAMING PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

TOP OF STEEL ELEVATION = 134'-0" (U.N.O.)
TOP OF GRATING ELEVATION = 134'-1 1/2" (U.N.O.)
TOP OF STEEL ELEVATIONS ARE SHOWN THUS (XXX'-XX")
CLGR = CENTERLINE OF GUARDRAIL

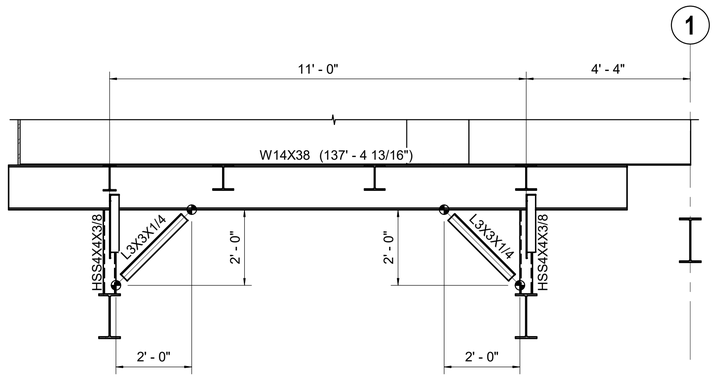
PROVIDE GRATING CLIPS TO ATTACH TO STEEL FRAMING
GRATING SPAN DIRECTION SPECIFIED BY ↕ ON PLAN



137'-4 13/16" FRAMING PLAN

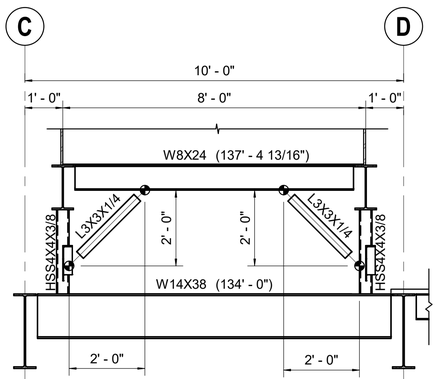
SCALE: 1/4" = 1'-0"

KB = KNEE BRACE



SECTION

SCALE: 1/2" = 1'-0"



SECTION

SCALE: 1/2" = 1'-0"

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

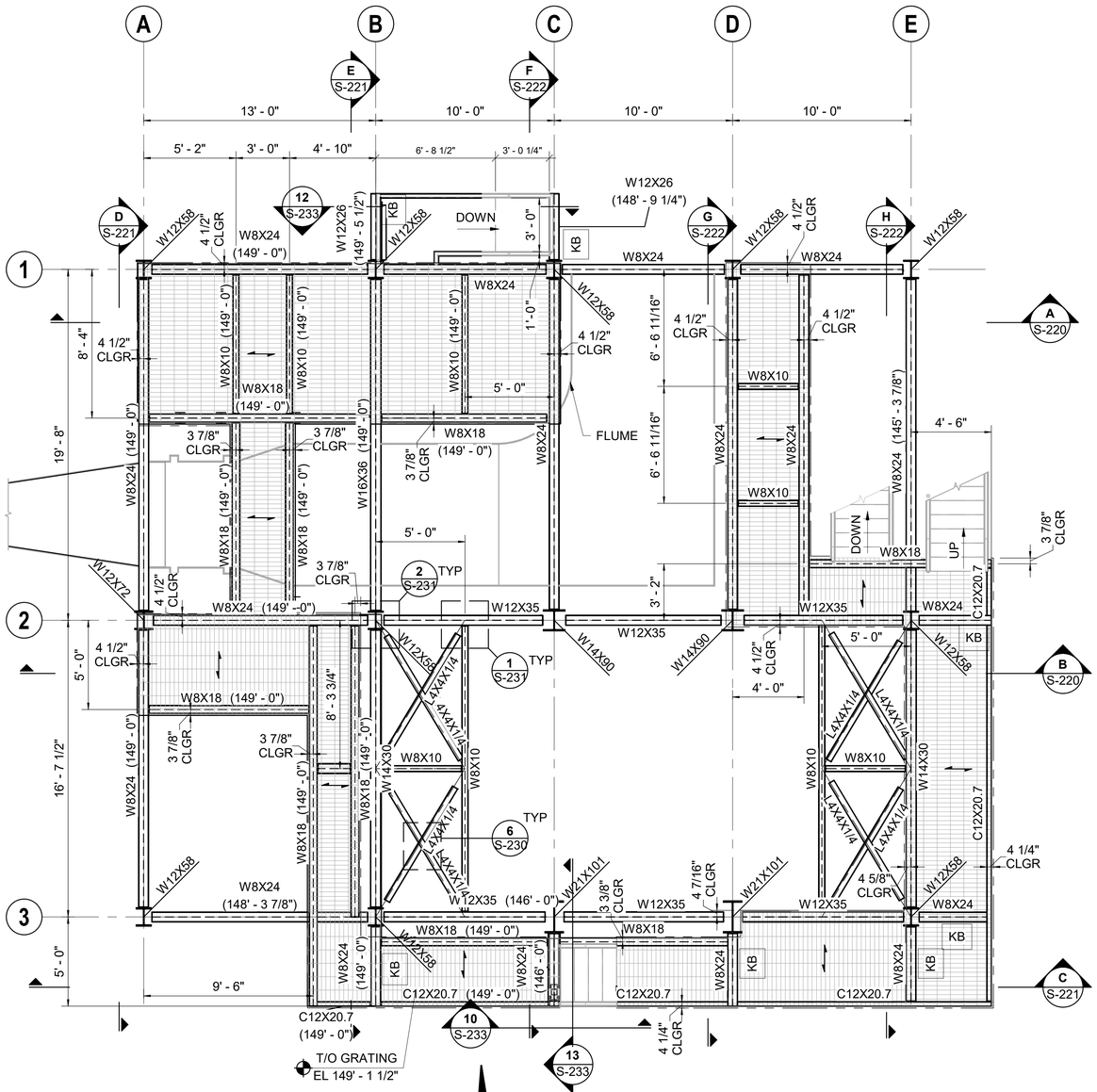
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING PLANS

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	136 OF 240
DRAWING:	S-212



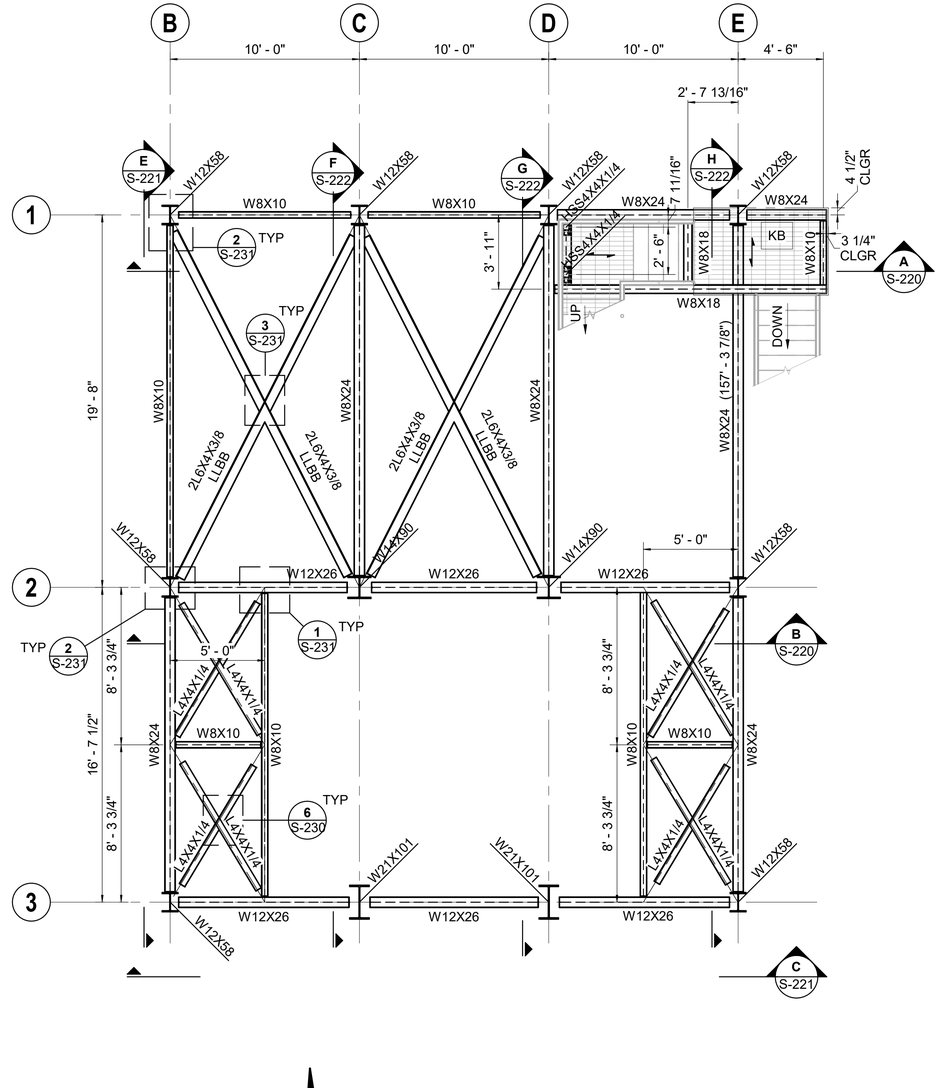
146'-0" FRAMING PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

TOP OF STEEL ELEVATION = 146'-0" (U.N.O.)
TOP OF GRATING ELEVATION = 146'-1 1/2" (U.N.O.)
TOP OF STEEL ELEVATIONS ARE SHOWN THUS (XXX'-XX")
CLGR = CENTERLINE OF GUARDRAIL
KB = KNEE BRACE

PROVIDE GRATING CLIPS TO ATTACH TO STEEL FRAMING
GRATING SPAN DIRECTION SPECIFIED BY ↕ ON PLAN



158'-0" FRAMING PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

TOP OF STEEL ELEVATION = 158'-0" (U.N.O.)
TOP OF GRATING ELEVATION = 158'-1 1/2" (U.N.O.)
TOP OF STEEL ELEVATIONS ARE SHOWN THUS (XXX'-XX")
CLGR = CENTERLINE OF GUARDRAIL
KB = KNEE BRACE

PROVIDE GRATING CLIPS TO ATTACH TO STEEL FRAMING
GRATING SPAN DIRECTION SPECIFIED BY ↕ ON PLAN

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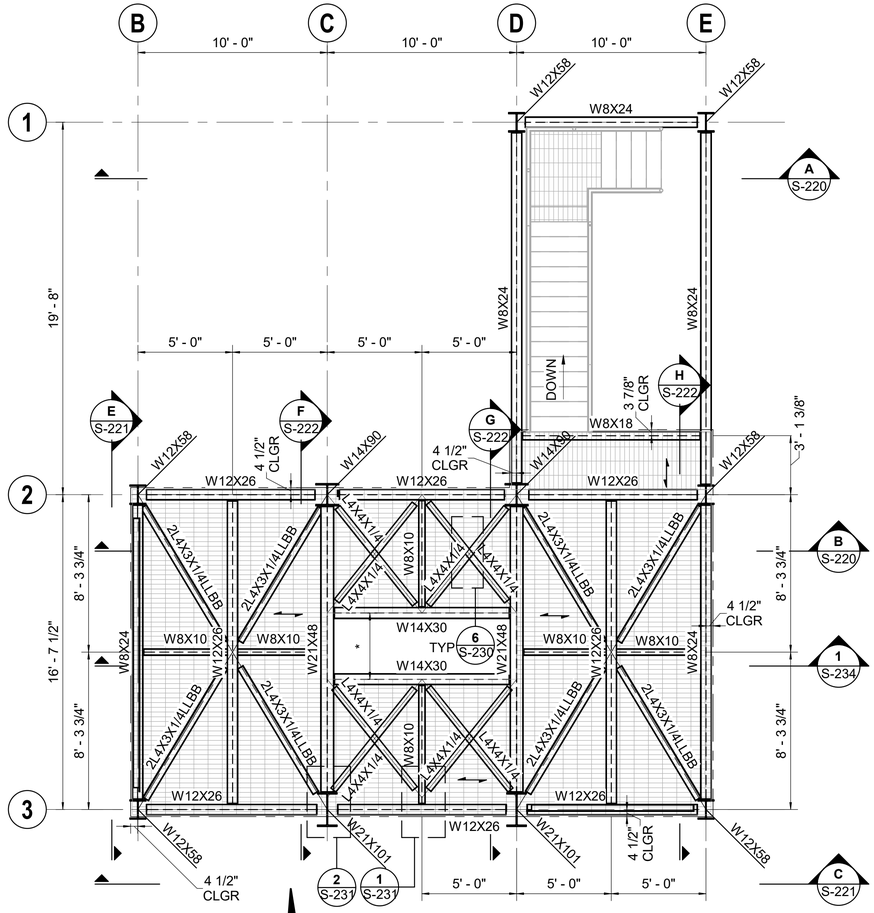
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING PLANS

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	137 OF 240
DRAWING:	S-213



173'-0" FRAMING PLAN

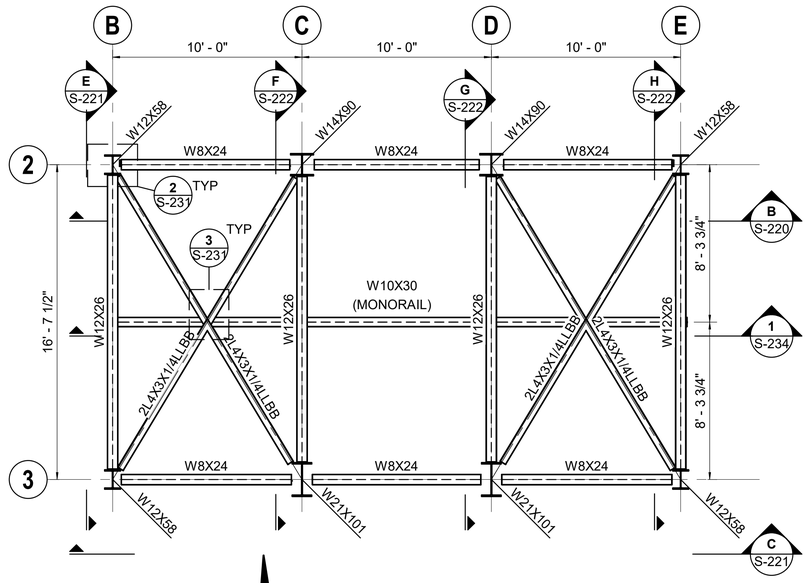
SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

TOP OF STEEL ELEVATION = 173'-0" (U.N.O.)
TOP OF GRATING ELEVATION = 173'-1 1/2" (U.N.O.)
TOP OF STEEL ELEVATIONS ARE SHOWN THUS (XXX'-XX")
CLGR = CENTERLINE OF GUARDRAIL

PROVIDE GRATING CLIPS TO ATTACH TO STEEL FRAMING
GRATING SPAN DIRECTION SPECIFIED BY ↕ ON PLAN

* DIMENSION TO BE DETERMINED BY 30 TON HOIST MANUFACTUER



188'-0" FRAMING PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

TOP OF STEEL ELEVATION = 188'-0" (U.N.O.)
TOP OF STEEL ELEVATIONS ARE SHOWN THUS (XXX'-XX")

ALDEN a verdantas company

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SEPTEMBER 3, 2025

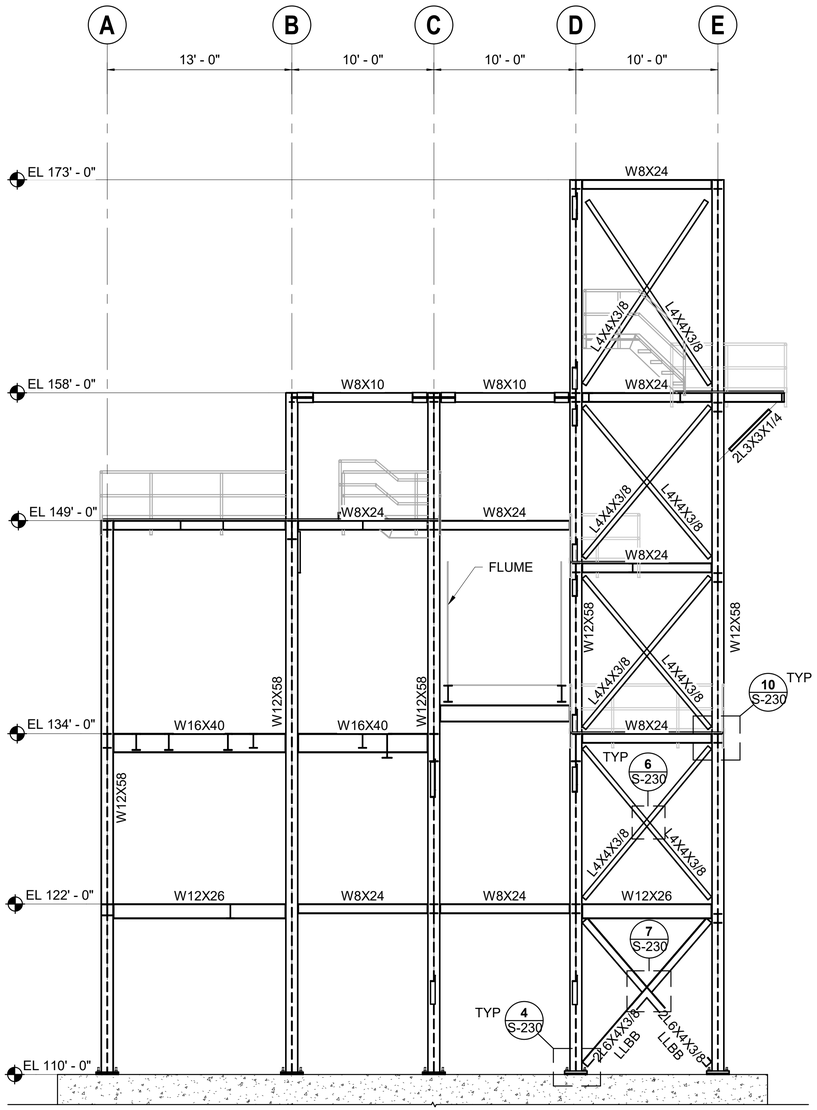
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

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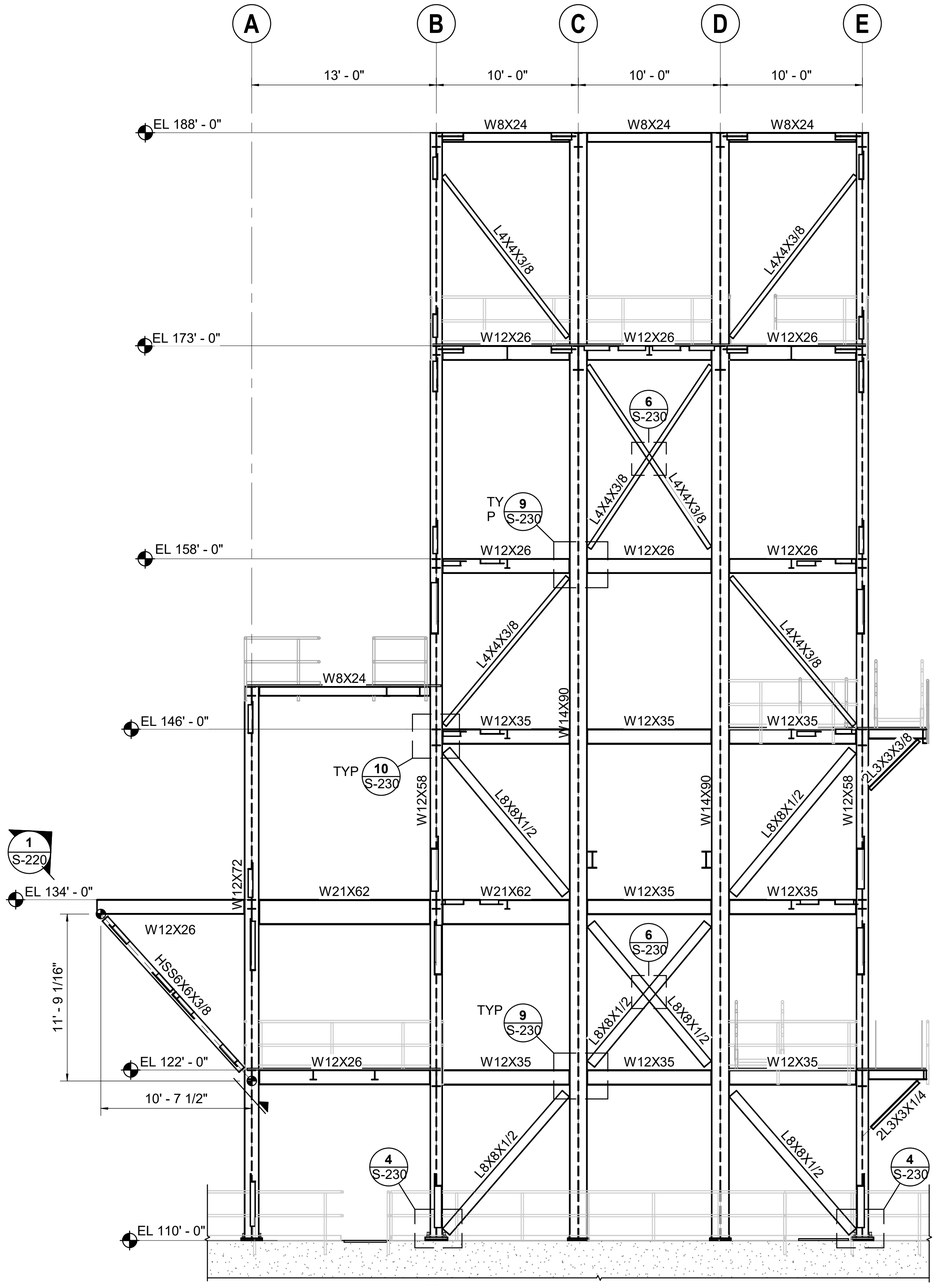
WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING PLANS

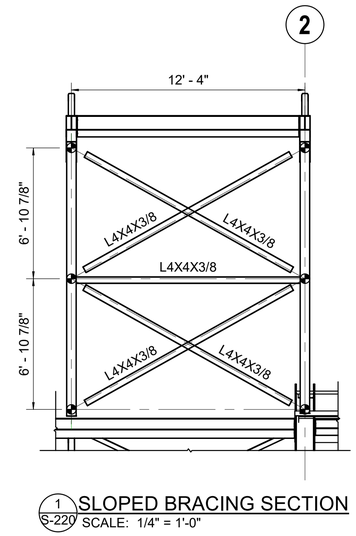
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	138 OF 240
DRAWING:	S-214



A FRAMING ELEV GL-1
S-210 SCALE: 3/16" = 1'-0"



B FRAMING ELEV GL-2
S-210 SCALE: 3/16" = 1'-0"



1 S-220 SLOPED BRACING SECTION
SCALE: 1/4" = 1'-0"

S-211
S-212
S-213
S-214

0 1' 2' 4' 8' 12'

S-211
S-212
S-213
S-214

0 1' 2' 4' 8' 12'

ALDEN a verdantas company

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SEPTEMBER 3, 2025

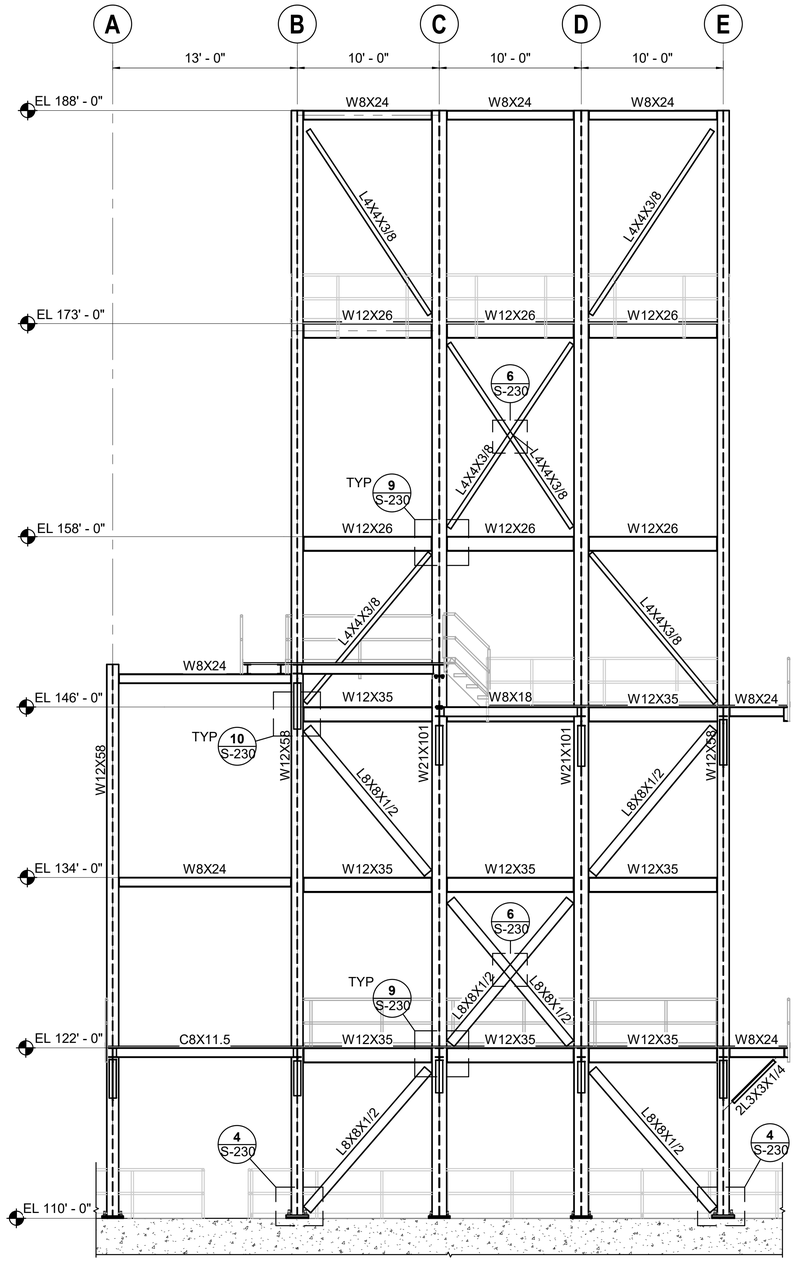
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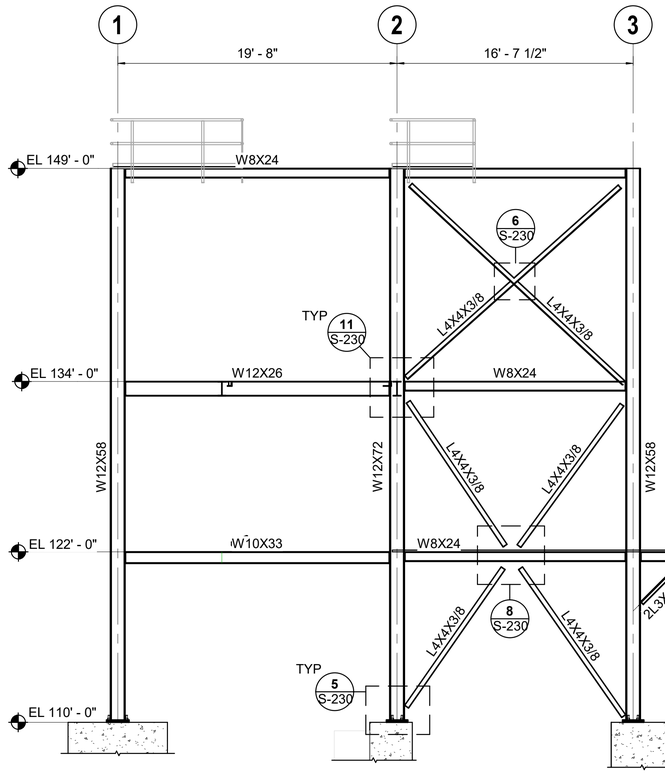
WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING ELEVATIONS

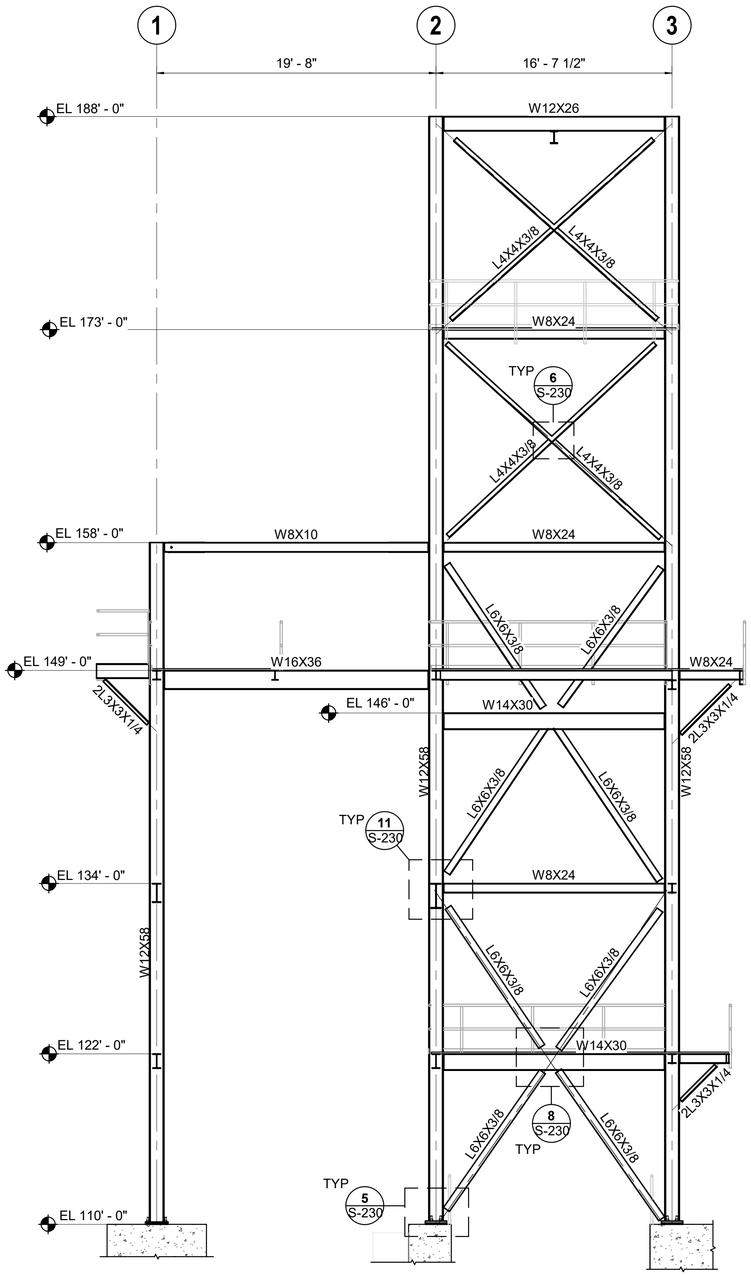
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	139 OF 240
DRAWING:	S-220



C FRAMING ELEV GL-3
S-210 SCALE: 3/16" = 1'-0"
S-211 0 1' 2' 4' 8' 12'
S-212
S-213
S-214



D FRAMING ELEV GL-A
S-210 SCALE: 3/16" = 1'-0"
S-211 0 1' 2' 4' 8' 12'
S-212
S-213
S-214



E FRAMING ELEV GL-B
S-210 SCALE: 3/16" = 1'-0"
S-211 0 1' 2' 4' 8' 12'
S-212
S-213
S-214

a verdantas company

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
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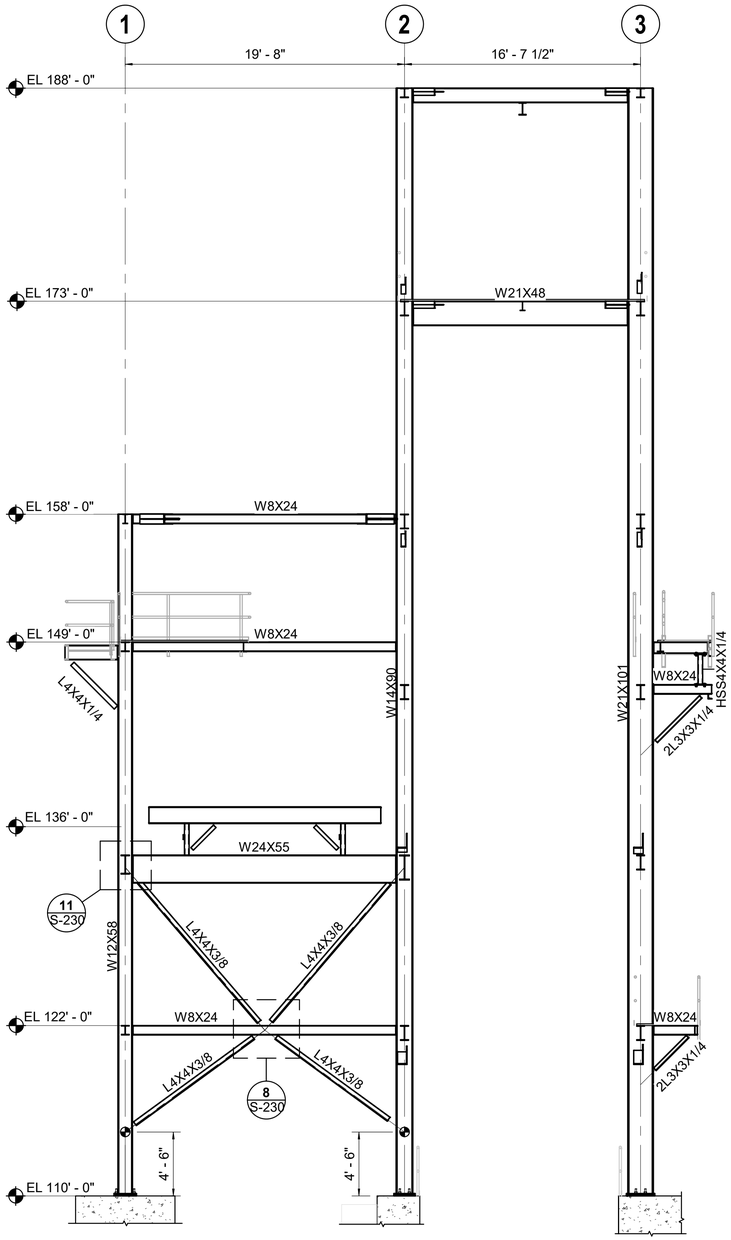
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

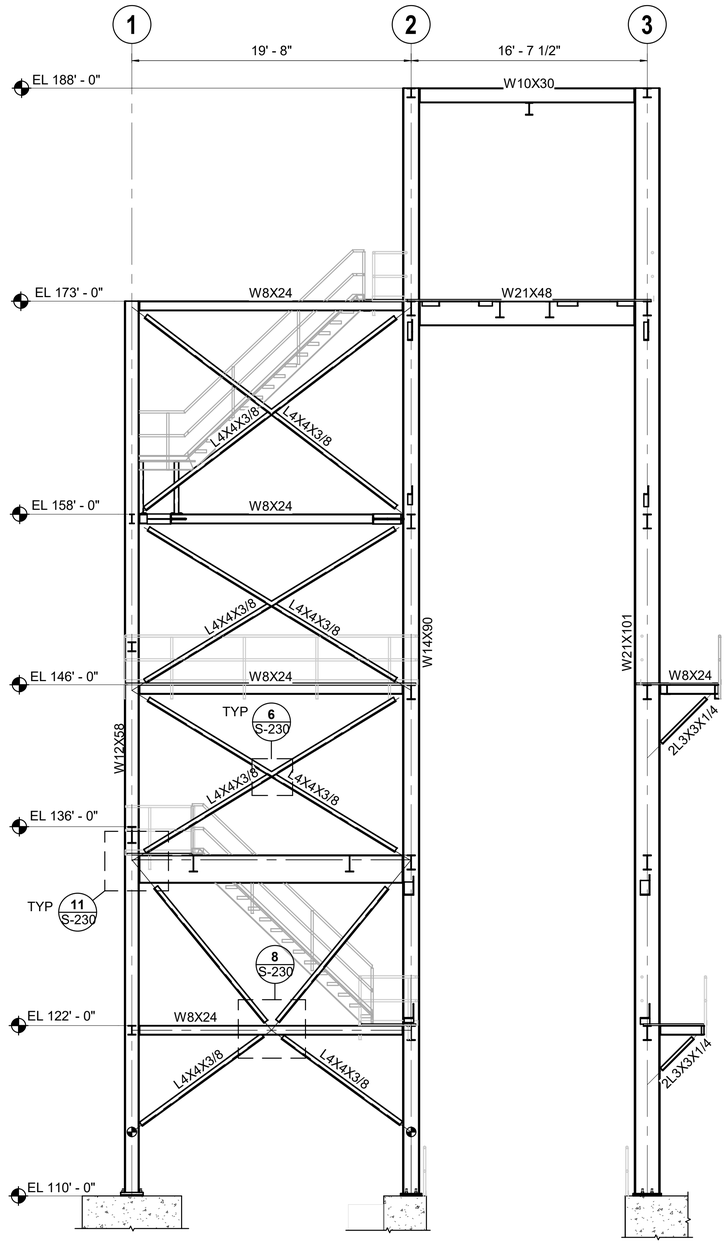
FISH LIFT TOWER
FRAMING ELEVATIONS

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	140 OF 240
DRAWING:	S-221



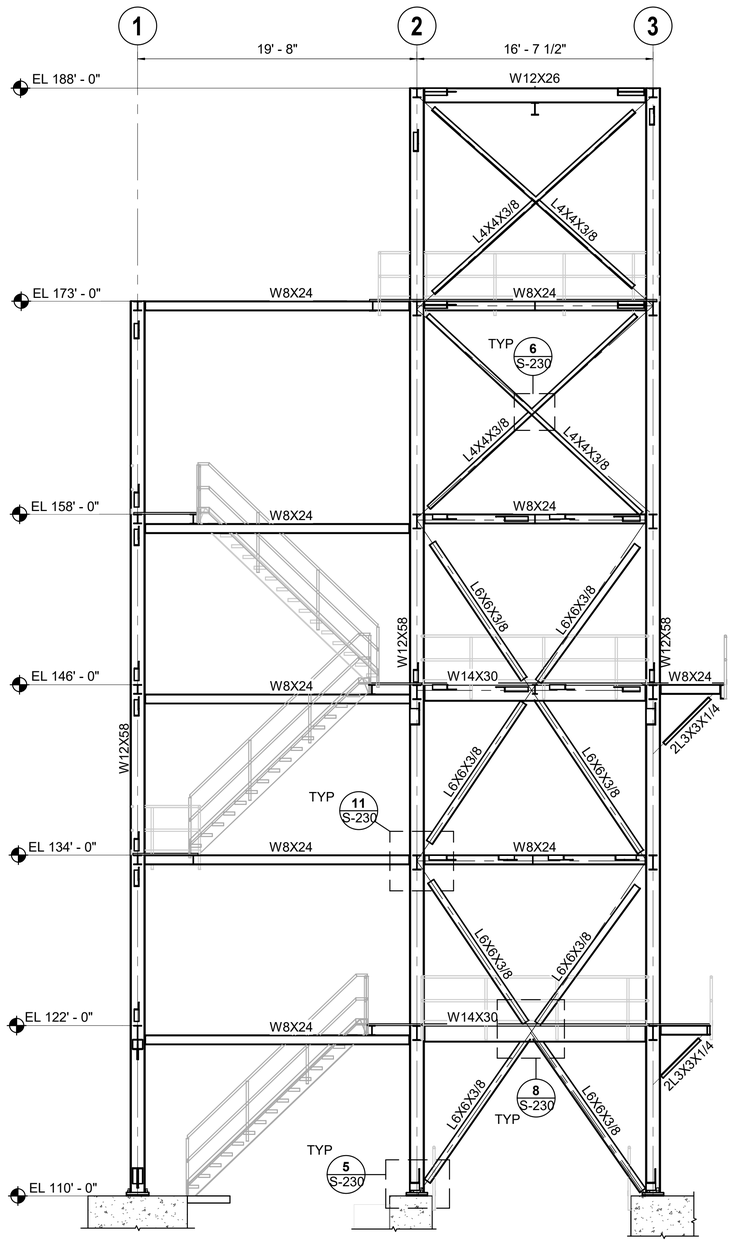
F S-210 FRAMING ELEV GL-C
SCALE: 3/16" = 1'-0"

S-211
S-212
S-213
S-214



G S-210 FRAMING ELEV GL-D
SCALE: 3/16" = 1'-0"

S-211
S-212
S-213
S-214



H S-210 FRAMING ELEV GL-E
SCALE: 3/16" = 1'-0"

S-211
S-212
S-213
S-214

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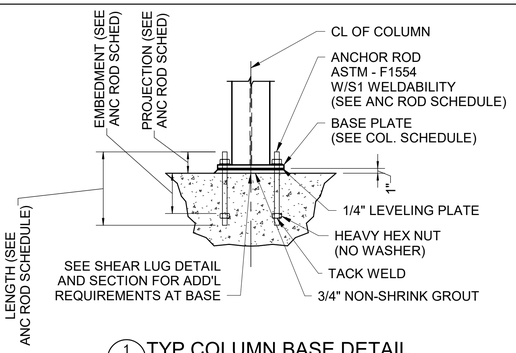
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

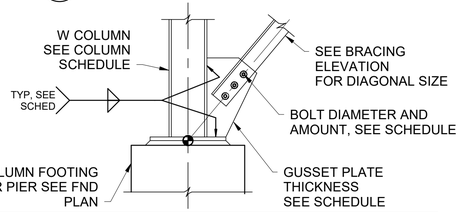
FISH LIFT TOWER
FRAMING ELEVATIONS

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	141 OF 240
DRAWING:	S-222



1 / S-232 TYP COLUMN BASE DETAIL

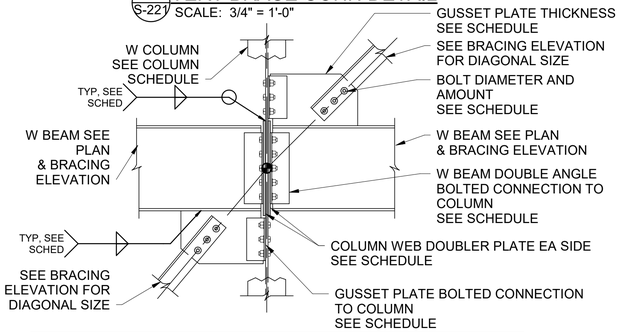
SCALE: 3/4" = 1'-0"



CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROW OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L4X4X3/8	3/4"	1	3	3/8"	1/4"
L6X6X3/8	3/4"	2	4	3/8"	3/8"

5 / S-221 VERT BRACE CONN DETAIL

SCALE: 3/4" = 1'-0"



BRACE TO GUSSET & GUSSET TO BEAM CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L4X4X3/8	3/4"	1	4	3/8"	1/4"
L8X8X1/2	3/4"	2	5	3/4"	1/4"

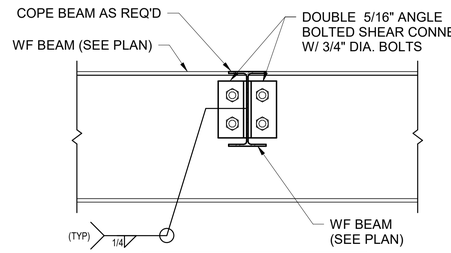
GUSSET TO COLUMN CONNECTION SCHEDULE				
BRACE SIZE	BOLT DIA	NO. OF BOLTS	ANGLE THICKNESS	WELD SIZE
L4X4X3/8	3/4"	2	5/16"	1/4"
L8X8X1/2	3/4"	4	3/8"	5/16"

BEAM TO COLUMN CONNECTION SCHEDULE						
BRACE SIZE	BOLT DIA	NO. OF BOLTS	ANGE THICKNESS	WELD SIZE	DBLER PLATE THICK	DBLER PLATE WELD
L4X4X3/8	3/4"	SEE TYP DET.	1/2"	1/4"	3/16"	1/8"
L8X8X1/2	3/4"	SEE TYP DET.	3/4"	5/16"	1/2"	5/16"

9 / S-220 VERT BRACE CONN DETAIL

SCALE: 3/4" = 1'-0"

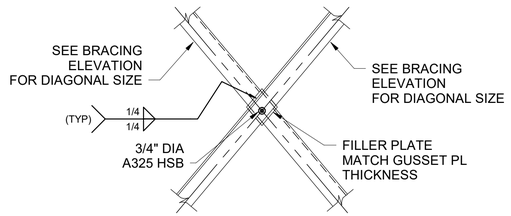
S-221



CONNECTION SCHEDULE:	
W8,W10	2 ROWS A325 BOLTS
W12,W14	3 ROWS A325 BOLTS
W16	4 ROWS A325 BOLTS
W18	5 ROWS A325 BOLTS
W21	6 ROWS A325 BOLTS
W24,W27	7 ROWS A325 BOLTS

TYP BEAM TO BEAM CONN DETAIL

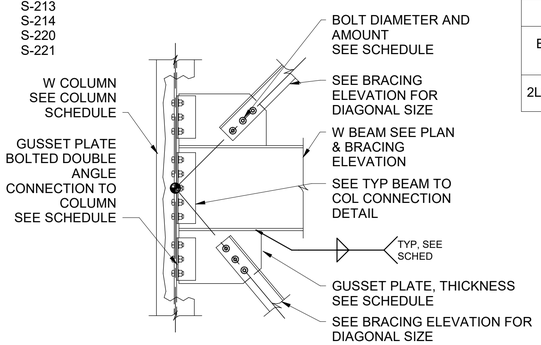
SCALE: 1 1/2" = 1'-0"



6 / S-212 SINGLE ANGLE BRACE DETAIL

SCALE: 3/4" = 1'-0"

S-213
S-214
S-220
S-221



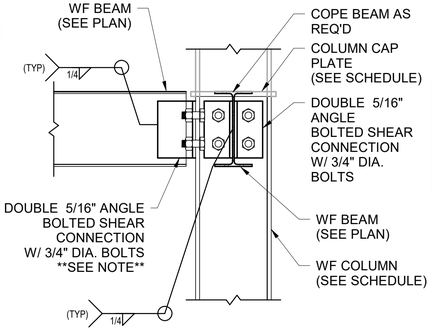
BRACE TO GUSSET & GUSSET TO BEAM CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L4X4X3/8	3/4"	1	4	3/8"	1/4"
L8X8X1/2	3/4"	2	5	3/4"	1/4"
2L6X4X3/8	3/4"	2	3	3/8"	1/4"

GUSSET TO COLUMN CONNECTION SCHEDULE				
BRACE SIZE	BOLT DIA	NO. OF BOLTS	ANGLE THICKNESS	WELD SIZE
L4X4X3/8	3/4"	3	5/16"	1/4"
L8X8X1/2	3/4"	4	3/8"	1/4"
2L6X4X3/8	3/4"	3	5/16"	1/4"

10 / S-220 VERT BRACE CONN DETAIL

SCALE: 3/4" = 1'-0"

S-221

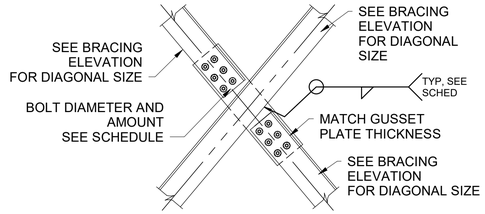


CONNECTION SCHEDULE:	
W8,W10	2 ROWS A325 BOLTS
W12,W14	3 ROWS A325 BOLTS
W16	4 ROWS A325 BOLTS
W18	5 ROWS A325 BOLTS
W21	6 ROWS A325 BOLTS
W24,W27	7 ROWS A325 BOLTS

NOTE: SEE BRACE CONNECTION DETAIL FOR CONNECTION ANGLE THICKNESS AT BRACED LOCATIONS

TYP BEAM TO COL CONN DETAIL

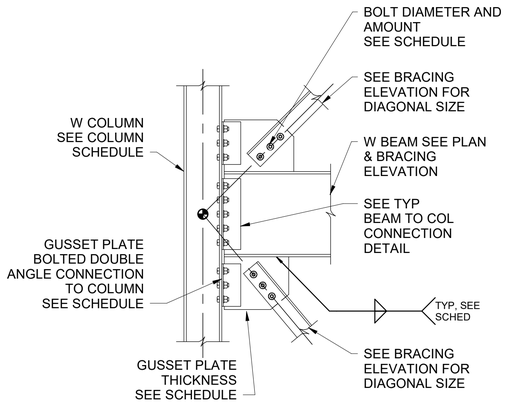
SCALE: 1 1/2" = 1'-0"



CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROWS	GUSSET THICKNESS	WELD SIZE
2L6X4X3/8	3/4"	2	3	MATCH T&B CONN	1/4"

7 / S-220 VERT DOUBLE ANGLE BRACE DETAIL

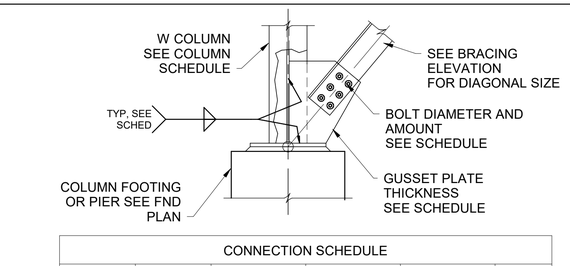
SCALE: 3/4" = 1'-0"



11 / S-221 VERT BRACE CONN DETAIL

SCALE: 3/4" = 1'-0"

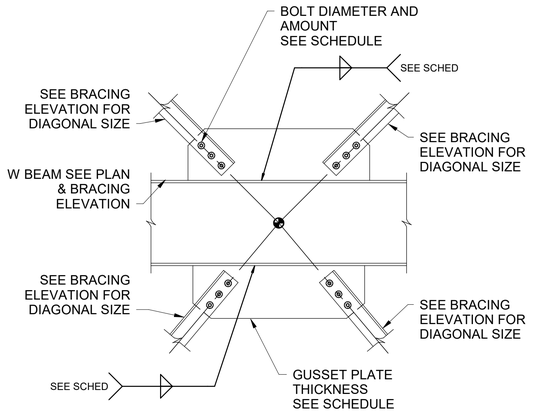
S-222



CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L8X8X1/2	3/4"	2	5	3/4"	3/8"
2L6X4X3/8	3/4"	2	3	3/8"	1/4"

4 / S-220 / S-221 VERT BRACE CONN DETAIL

SCALE: 3/4" = 1'-0"



CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L4X4X3/8	3/4"	1	4	3/8"	1/4"
L6X6X3/8	3/4"	2	4	3/8"	1/4"

8 / S-221 / S-222 VERT BRACE CONN DETAIL

SCALE: 3/4" = 1'-0"

BRACE TO GUSSET & GUSSET TO BEAM CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROWS	GUSSET THICKNESS	WELD SIZE
L4X4X3/8	3/4"	1	4	3/8"	1/4"
L6X6X3/8	3/4"	2	4	3/8"	1/4"

GUSSET TO COLUMN CONNECTION SCHEDULE				
BRACE SIZE	BOLT DIA	NO. OF BOLTS	ANGLE THICKNESS	WELD SIZE
L4X4X3/8	3/4"	3	5/16"	1/4"
L6X6X3/8	3/4"	4	3/8"	1/4"

SCALE: 1 1/2" = 1'-0"

0 3" 6" 1' 2' 3'

SCALE: 3/4" = 1'-0"

0 6" 1' 2' 4' 8'

ALDEN a verdantas company

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SEPTEMBER 3, 2025

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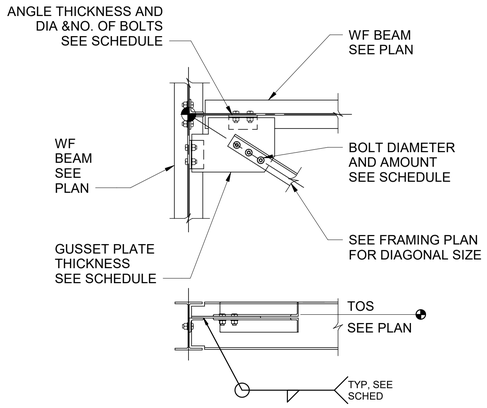
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING SECTIONS & DETAILS

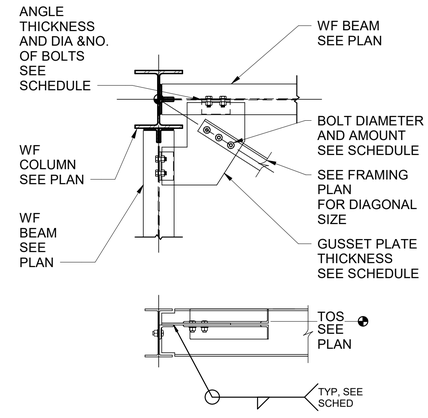
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	C.MODESTO
APPROVED BY:	M. GRAESER
SHEET:	142 OF 240
DRAWING:	S-230



BRACE TO GUSSET & GUSSET TO ANGLES CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L4X4X1/4	3/4"	1	3	3/8"	1/4"
2L4X3X1/4	3/4"	1	3	3/8"	1/4"
2L6X4X3/8	3/4"	2	2	3/8"	1/4"

ANGLES TO BEAM CONNECTION SCHEDULE			
BRACE SIZE	BOLT DIA	NO. OF BOLTS	ANGLE THICKNESS
L4X4X1/4	3/4"	2	5/16"
2L4X3X1/4	3/4"	2	5/16"
2L6X4X3/8	3/4"	2	5/16"

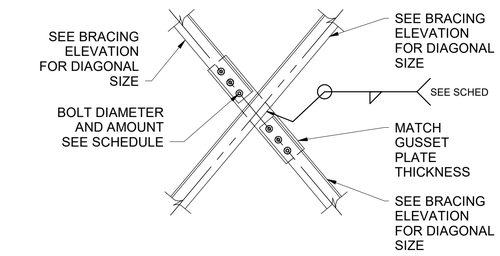
1 S-212 HORIZ BRACE CONN DETAIL
SCALE: 3/4" = 1'-0"
S-213
S-214



BRACE TO GUSSET & GUSSET TO ANGLES CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
L4X4X1/4	3/4"	1	3	3/8"	1/4"
2L4X3X1/4	3/4"	1	3	3/8"	1/4"
2L6X4X3/8	3/4"	2	2	3/8"	1/4"

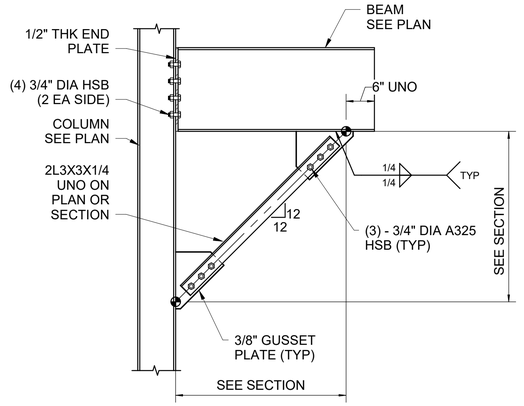
ANGLES TO BEAM CONNECTION SCHEDULE			
BRACE SIZE	BOLT DIA	NO. OF BOLTS	ANGLE THICKNESS
L4X4X1/4	3/4"	2	5/16"
2L4X3X1/4	3/4"	2	5/16"
2L6X4X3/8	3/4"	2	5/16"

2 S-212 HORIZ BRACE CONN DETAIL
SCALE: 3/4" = 1'-0"
S-213
S-214



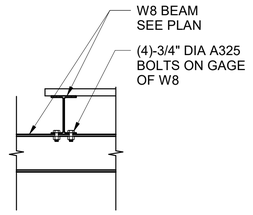
CONNECTION SCHEDULE					
BRACE SIZE	BOLT DIA	ROWS OF BOLTS	BOLTS PER ROW	GUSSET THICKNESS	WELD SIZE
2L4X3X1/4	3/4"	1	3	MATCH T&B CONN	1/4"
2L6X4X3/8	3/4"	2	2	MATCH T&B CONN	1/4"

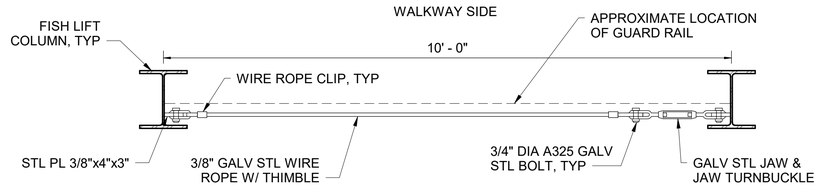
3 S-213 HORIZ DOUBLE ANGLE BRACE DETAIL
SCALE: 3/4" = 1'-0"



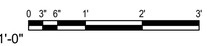
TYP KNEE BRACE DETAIL
SCALE: 3/4" = 1'-0"

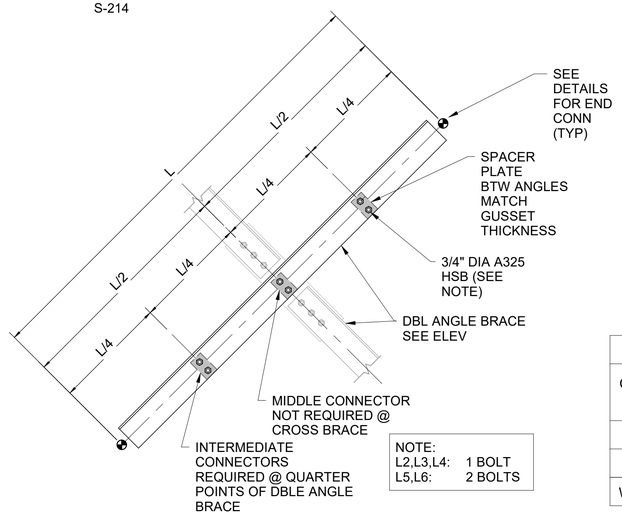
S-214





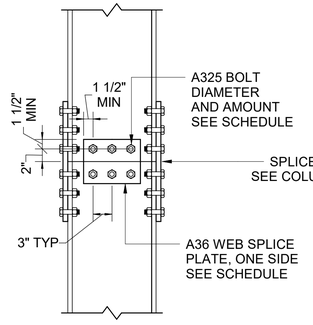
8 S-211 SECTION
SCALE: 3/4" = 1'-0"



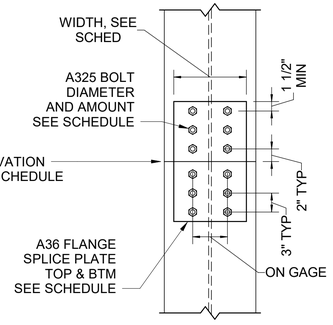


NOTE:
L2,L3,L4: 1 BOLT
L5,L6: 2 BOLTS

TYP DBLE ANGLE BRACE INT CONNECTOR DETAIL
SCALE: 3/4" = 1'-0"

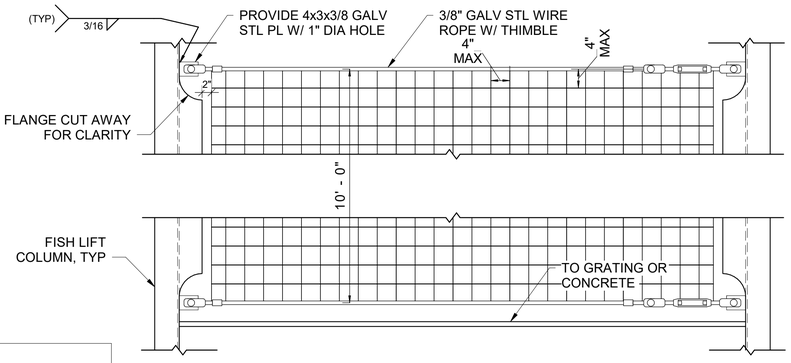


WEB PLATE CONNETION SCHEDULE				
COLUMN SIZE	WEB PLATE THICKNESS	BOLT DIA	ROWS OF BOLTS PER SIDE	BOLTS PER ROW
W12X58	3/8"	3/4"	1	3
W14X90	1/2"	3/4"	1	3
W21X101	1/2"	3/4"	1	6



FLANGE PLATE CONNETION SCHEDULE					
COLUMN SIZE	FLG PLATE THICKNESS	FLG PLATE WIDTH	BOLT DIA	ROWS OF BOLTS PER SIDE	BOLTS PER ROW
W12X58	5/8"	10"	3/4"	3	2
W14X90	3/4"	12"	3/4"	3	2
W21X101	7/8"	10"	3/4"	4	2

COLUMN SPLICE DETAIL
SCALE: 1" = 1'-0"



PROVIDE WIRE MESH WITH MAX 4" SPACING BETWEEN GRIDS:
- B&C, C&D, D&E ALONG GRIDS 2 & 3 ABOVE TOP OF CONCRETE EL 110.0'
- D&E ALONG GRID 2 ABOVE TOP OF GRATING EL 122.0'
- B&C, C&D, D&E ALONG GRID 3 ABOVE TOP OF GRATING EL 122.0'
- D&E ALONG GRID 2 ABOVE TOP OF GRATING EL 146.0'
- C&D, D&E ALONG GRID 3 ABOVE TOP OF GRATING EL 146.0'
- B&C ALONG GRID 3 ABOVE TOP OF GRATING EL 149.0'

WIRE MESH DETAIL
SCALE: 3/4" = 1'-0"

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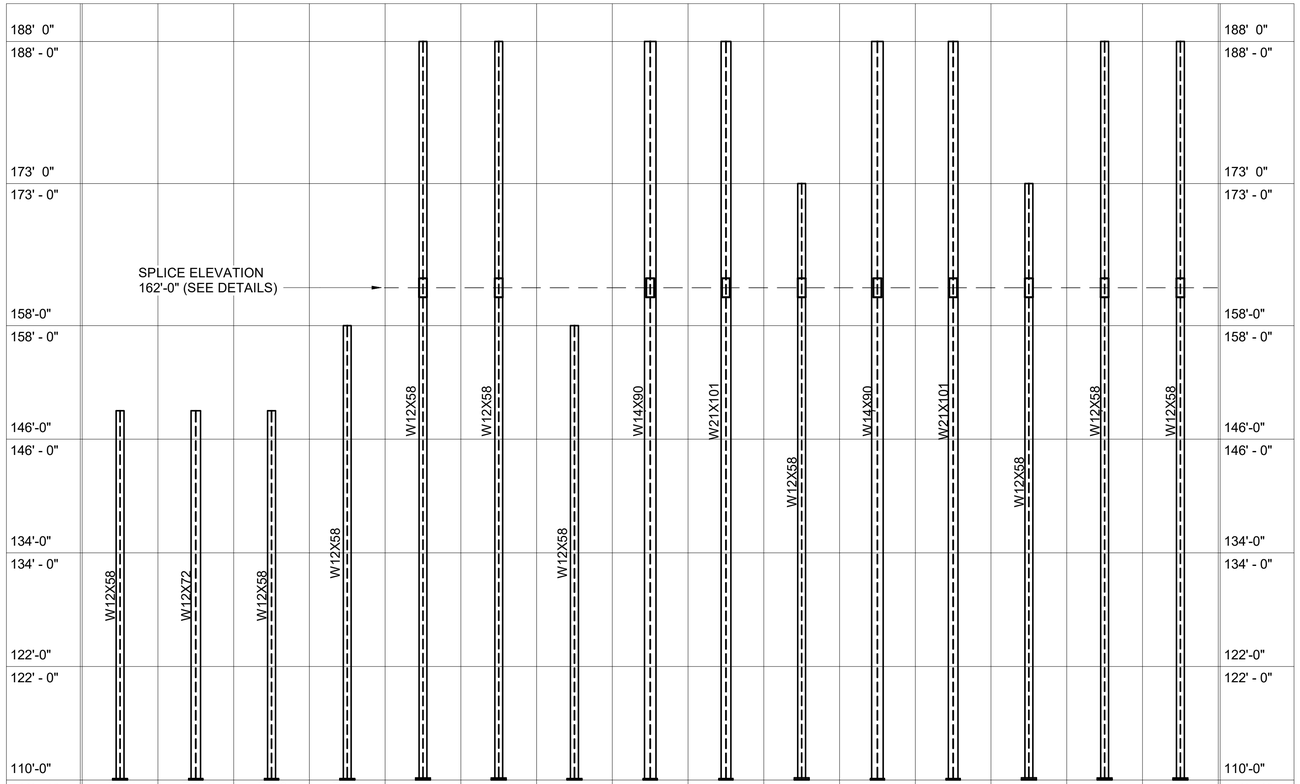
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
FRAMING SECTIONS & DETAILS

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	C.MODESTO
APPROVED BY:	M. GRAESER
SHEET:	143 OF 240
DRAWING:	S-231



SCALE: 3/4" = 1'-0"
0 3" 6" 1' 2' 3'

SCALE: 1" = 1'-0"
0 3" 6" 1' 2'

COLUMN LENGTH SCHEDULE

MARK	COL SIZE	BTM OF COL ELEVATION	TOP OF COL ELEVATION
A-1	W12X58	110'-1"	149' 0"
A-2	W12X72	110'-1"	149' 0"
A-3	W12X58	110'-1"	149' 0"
B-1	W12X58	110'-1"	158'-0"
B-2	W12X58	110'-1"	188' 0"
B-3	W12X58	110'-1"	188' 0"
C-1	W12X58	110'-1"	158'-0"
C-2	W14X90	110'-1"	188' 0"
C-3	W21X101	110'-1"	188' 0"
D-1	W12X58	110'-1"	173' 0"
D-2	W14X90	110'-1"	188' 0"
D-3	W21X101	110'-1"	188' 0"
E-1	W12X58	110'-1"	173' 0"
E-2	W12X58	110'-1"	188' 0"
E-3	W12X58	110'-1"	188' 0"

NOTES:
BTM OF COL ELEVATION = BOTTOM OF BASE PLATE
TOP OF COL ELEVATION = TOP OF CAP PLATE (WHERE APPLICABLE)
SEE PLANS FOR COLUMN ORIENTATION

ANCHOR ROD SCHEDULE

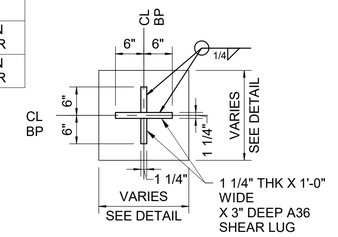
TAG	DIAMETER	MATERIAL & GRADE	PROJECTION	EMBEDMENT	LENGTH	STYLE
AR1	1 1/4"	F1554 GR. 36	6"	2' - 0"	2' - 8"	CAST IN ANCHOR
AR2	1 1/2"	F1554 GR. 36	7"	2' - 6"	3' - 3"	CAST IN ANCHOR

BASE PL SCHEDULE

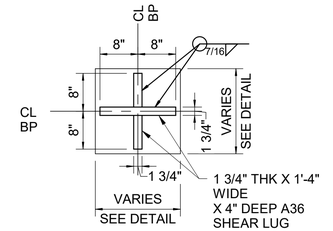
TAG	SIZE
BP-1	1"x1' - 7"x1' - 7"
BP-2	1 3/4"x1' - 7"x1' - 6"
BP-3	1"x1' - 6"x1' - 6"
BP-4	1"x1' - 6"x2' - 0"
BP-5	2"x1' - 7"x1' - 7"

CAP PL SCHEDULE

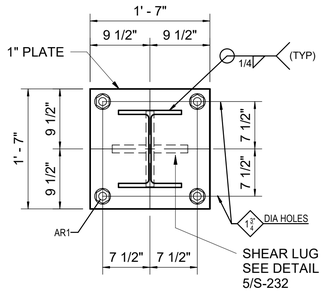
TAG	SIZE
CP-x	3/4"x10"x8"



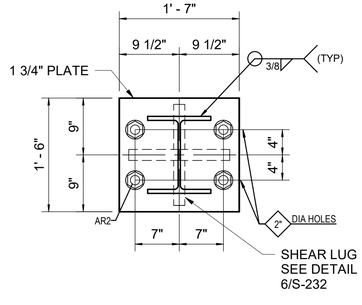
5 SHEAR LUG - BP-1,BP-3,BP-4, BP-5
SCALE: 3/4" = 1'-0"



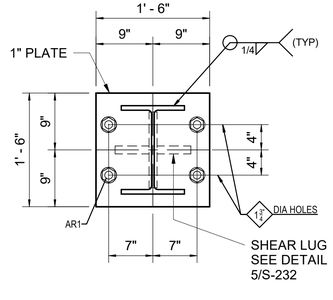
6 SHEAR LUG - BP-2
SCALE: 3/4" = 1'-0"



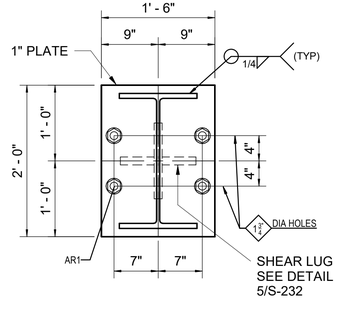
BASE PLATE DETAIL BP-1
SCALE: 1" = 1'-0"



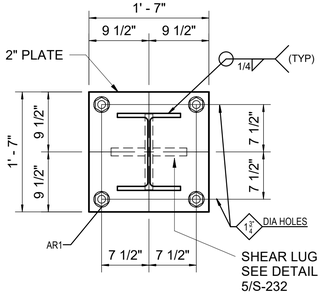
BASE PLATE DETAIL BP-2
SCALE: 1" = 1'-0"



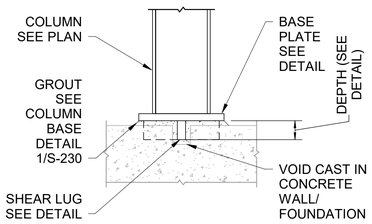
BASE PLATE DETAIL BP-3
SCALE: 1" = 1'-0"



BASE PLATE DETAIL BP-4
SCALE: 1" = 1'-0"



BASE PLATE DETAIL BP-5
SCALE: 1" = 1'-0"



SHEAR LUG SECTION
SCALE: 3/4" = 1'-0"

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

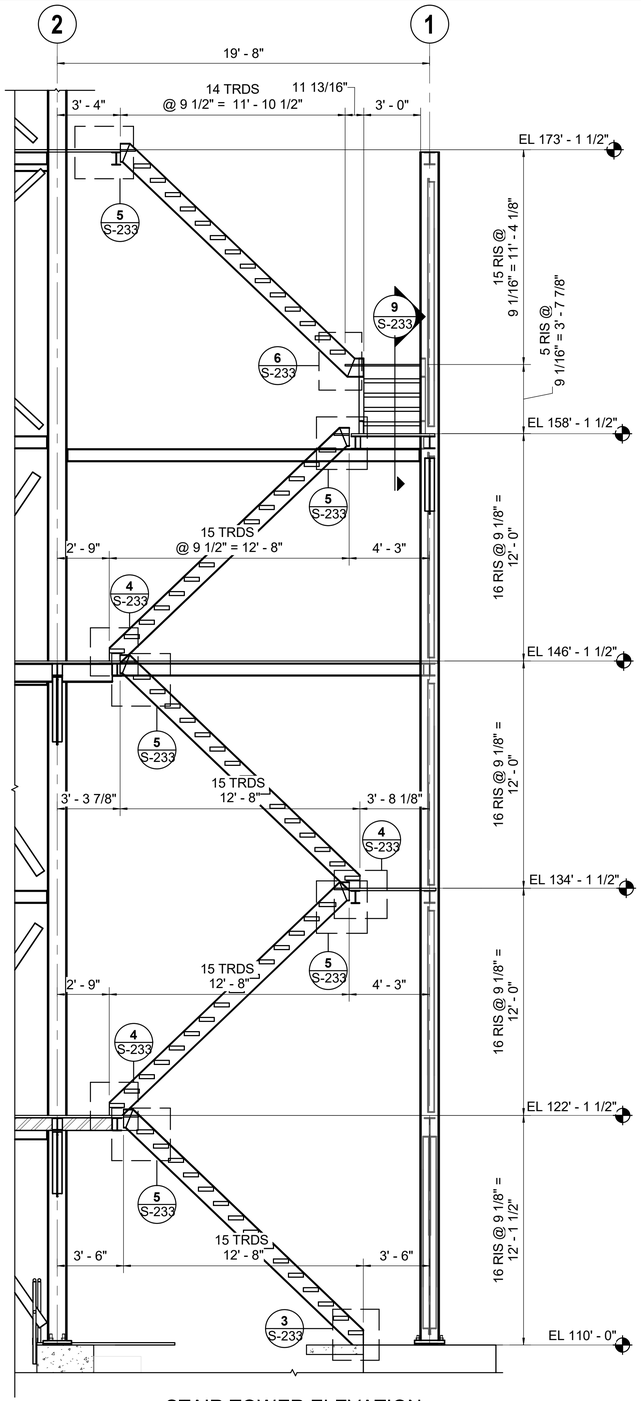
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

VERIFY SCALE
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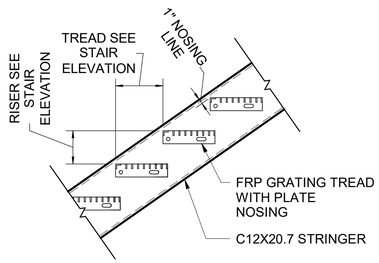
WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
COLUMN SCHEDULE AND BASE PLATE & CAP PLATE DETAILS

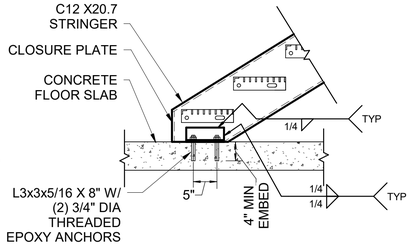
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	C.MODESTO
APPROVED BY:	M. GRAESER
SHEET:	144 OF 240
DRAWING:	S-232



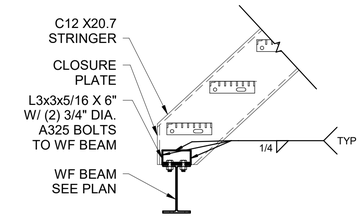
STAIR TOWER ELEVATION
SCALE: 1/4" = 1'-0"
NOTE: RAILINGS OMITTED FOR CLARITY



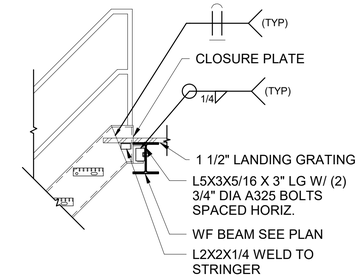
TYP. STAIR CONSTRUCTION
SCALE: 3/4" = 1'-0"



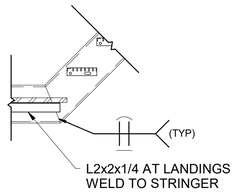
3 S-233 STRINGER BASE
SCALE: 3/4" = 1'-0"



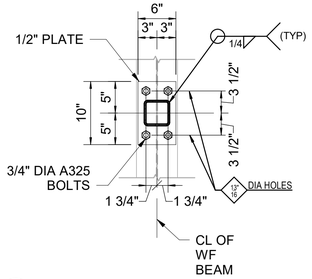
4 S-233 STRINGER BASE @ WF
SCALE: 3/4" = 1'-0"



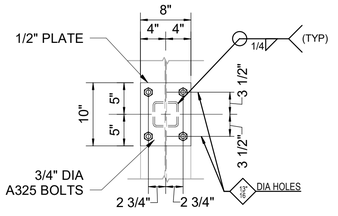
5 S-233 STRINGER CONN. @ LANDING
SCALE: 1/2" = 1'-0"



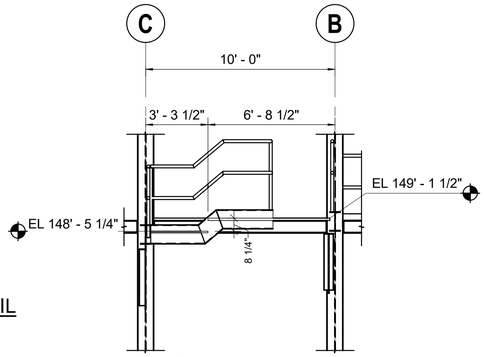
6 S-233 TYP. STRINGER DET.
SCALE: 1/2" = 1'-0"



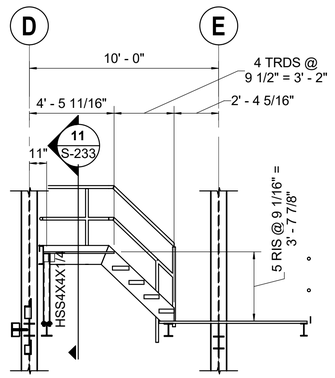
7 S-BP-1 - BASE PLATE DETAIL
SCALE: 1" = 1'-0"



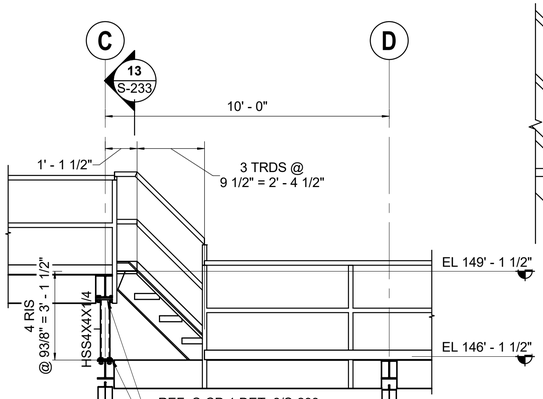
8 S-CP-1 - CAP PLATE DETAIL
SCALE: 1" = 1'-0"



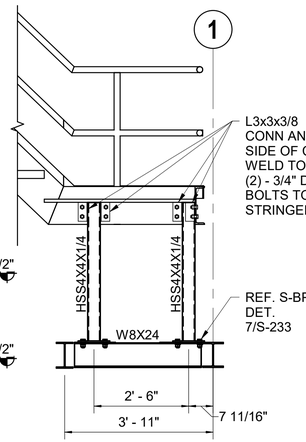
12 S-213 SECTION
SCALE: 1/4" = 1'-0"



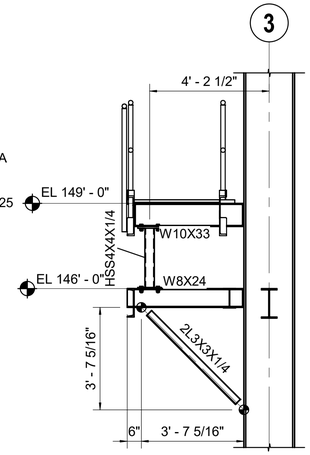
9 S-233 SECTION
SCALE: 1/4" = 1'-0"



10 S-213 SECTION
SCALE: 3/8" = 1'-0"



11 S-233 SECTION
SCALE: 1/2" = 1'-0"



13 S-213 SECTION
SCALE: 3/8" = 1'-0"

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

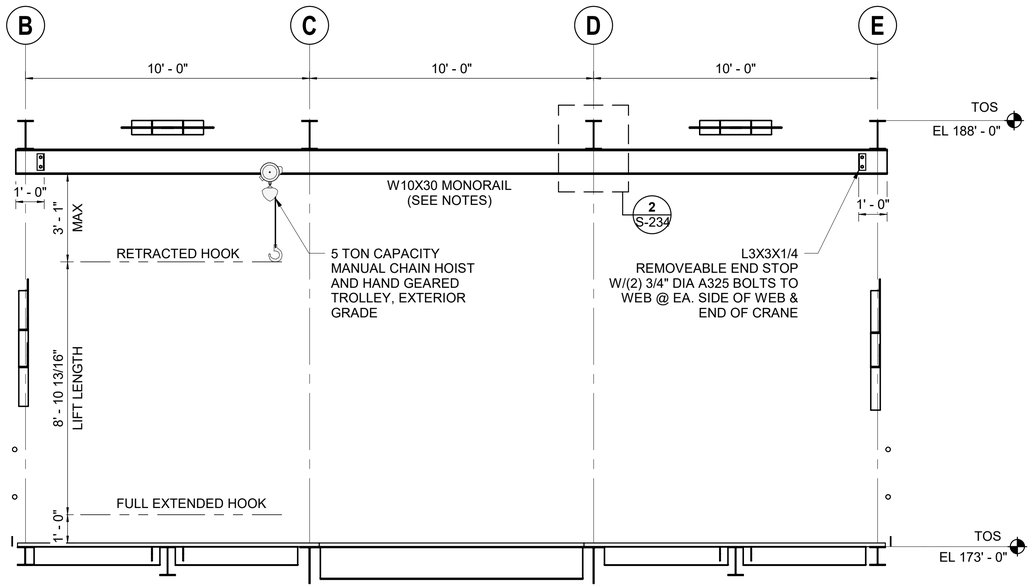
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

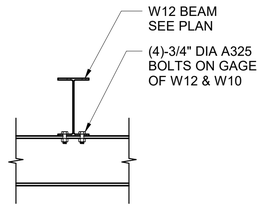
FISH LIFT TOWER
STAIR SECTIONS & DETAILS

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	145 OF 240
DRAWING:	S-233



MONORAIL SECTION @ EL. 188'-0"

SCALE: 3/8" = 1'-0"



2 S-234 MONORAIL CONNECTION DETAIL

SCALE: 3/4" = 1'-0"

CRANE/MONORAIL NOTES:

CRANE SHALL MEET REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC), LATEST EDITION ADOPTED BY THE STATE OF MAINE AND IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT REQUIREMENTS.

STRUCTURAL STEEL MATERIAL MUST CONFORM TO THE STANDARDS PERMITTED IN CMAA AND SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATIONS AND CODES.

OVERALL CLEARANCE (DISTANCE FROM FINISHED FLOOR TO THE BOTTOM OF ANY OBSTRUCTION INCLUDING BUT NOT LIMITED TO BOTTOM OF HOOK, SERVICE PLATFORM AND MOVING CABLES) TO BE MET AS DETAILED ON DRAWINGS.

MONORAIL TO BE PAINTED SAFETY YELLOW. CONFORM TO SSPC (STRUCTURAL STEEL PAINTING COUNCIL) - STEEL STRUCTURES PAINTING MANUAL.

MARK THE RATED CAPACITY ON EACH SIDE OF THE MONORAIL BEAM WEB. CAPACITY MARKS MUST BE LARGE ENOUGH TO BE CLEARLY VISIBLE FROM THE PLATFORM.

REQUIRED OPERATIONAL TESTS AND LOAD TESTS TO BE PERFORMED PER APPLICABLE CODES AND LOCAL BUILDIND DEPARTMENT REQUIREMENTS.

HOIST DUTY CLASSIFICATION TO BE ASME H4

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT TOWER
MONORAIL SECTION AND DETAIL

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	146 OF 240
DRAWING:	S-234

PIPE SUPPORT SCHEDULE

PIPE SUPPORT NAME	STATIONING	PIPE INVERT ELEVATION	SADDLE TYPE	PIPE SUPPORT TYPE	SUPPORT EL	φ	WIDTH, W1	WIDTH, W2	HEIGHT, H1	HEIGHT, H2
PS AWS1-1	0+06.36	EL 124.62	A	1	EL 123.87	8.92°	9.00 in	11.64 in	16.13 in	17.73 in
PS AWS1-2	0+28.36	EL 121.16	A	2	EL 120.00	8.92°	9.00 in	12.26 in	20.05 in	21.46 in
PS AWS1-3	0+52.36	EL 117.40	A	2	EL 116.85	8.92°	9.00 in	11.11 in	12.73 in	14.14 in
PS AWS1-4	0+64.06	EL 115.56	A	2	EL 114.60	8.92°	9.00 in	11.88 in	17.65 in	19.06 in
PS AWS1-5	0+68.66	EL 114.84	A	2	EL 114.60	8.92°	9.00 in	10.52 in	9.01 in	10.42 in
PS AWS1-6	0+76.70	EL 114.00	B	3	EL 113.41	0.00°	6.00 in	6.00 in	12.77 in	12.77 in
PS AWS1-7	0+85.66	EL 114.00	B	3	EL 113.41	0.00°	6.00 in	6.00 in	12.77 in	12.77 in
PS AWS1-8	0+97.69	EL 113.84	A	2	EL 113.00	2.41°	9.00 in	9.00 in	16.21 in	16.21 in
PS AWS1-9	1+02.29	EL 113.65	A	2	EL 113.00	2.41°	9.00 in	9.00 in	13.93 in	13.93 in
PS AWS1-10	1+22.09	EL 112.81	A	2	EL 111.75	2.41°	9.00 in	9.00 in	18.85 in	18.85 in
PS AWS1-11	1+26.69	EL 112.62	A	2	EL 111.75	2.41°	9.00 in	9.00 in	16.57 in	16.57 in
PS AWS1-12	1+56.69	EL 111.64	B	3	EL 110.00	0.00°	6.00 in	6.00 in	25.37 in	25.37 in
PS AWS1-13	1+62.36	EL 111.64	B	3	EL 110.00	0.00°	6.00 in	6.00 in	25.37 in	25.37 in
PS AWS1-14	1+68.42	EL 111.64	B	3	EL 110.00	0.00°	6.00 in	6.00 in	25.37 in	25.37 in
PS AWS1-15	1+95.06	EL 111.59	A	2	EL 110.23	0.13°	9.00 in	9.00 in	22.45 in	22.45 in
PS AWS1-16	1+99.66	EL 111.58	A	2	EL 110.23	0.13°	9.00 in	9.00 in	22.33 in	22.33 in
PS AWS1-17	2+26.37	EL 111.53	B	3	EL 110.00	0.00°	6.00 in	6.00 in	24.05 in	24.05 in
PS AWS1-18	2+32.54	EL 111.53	B	3	EL 110.00	0.00°	6.00 in	6.00 in	24.05 in	24.05 in
PS AWS1-19	2+44.64	EL 111.53	B	3	EL 110.00	0.00°	6.00 in	6.00 in	24.05 in	24.05 in
PS AWS1-20	2+52.97	N/A	B	4	N/A	0.00°	6.00 in	6.00 in	34.81 in	34.81 in
PS AWS2-1	0+05.17	EL 137.50	C	5B	EL 136.29	0.00°	6.00 in	6.00 in	19.71 in	19.71 in
PS AWS2-2	0+10.15	EL 137.39	A	6	EL 136.29	1.93°	9.00 in	9.00 in	18.82 in	18.82 in
PS AWS2-3	0+17.29	EL 137.15	A	6	EL 136.29	1.93°	9.00 in	9.00 in	15.95 in	15.95 in
PS AWS2-4	0+21.42	EL 136.90	B	5A	EL 136.00	4.53°	6.00 in	6.00 in	15.99 in	15.99 in
PS AWS2-5	0+39.63	EL 135.46	B	7	EL 134.96	4.53°	6.00 in	6.00 in	11.19 in	11.19 in
PS AWS2-6	0+59.28	EL 133.90	A	8A	EL 133.25	4.53°	9.00 in	9.00 in	13.43 in	13.43 in
PS AWS2-7	0+61.28	EL 133.74	B	8A	EL 133.25	4.53°	6.00 in	6.00 in	11.07 in	11.07 in
PS AWS2-8	0+79.94	EL 132.27	A	8B	EL 131.00	4.53°	9.00 in	9.00 in	20.87 in	20.87 in
PS AWS2-9	0+81.94	EL 132.11	A	8B	EL 131.00	6.28°	6.00 in	6.00 in	18.51 in	18.51 in
PS AWS2-10	1+21.29	EL 127.99	B	3	EL 127.49	0.00°	6.00 in	6.00 in	10.19 in	10.19 in
PS AWS2-10.1	1+24.12	N/A	B	4	N/A	0.00°	6.00 in	6.00 in	10.19 in	10.19 in
PS AWS2-10.2	1+24.12	N/A	B	4	N/A	0.00°	6.00 in	6.00 in	10.19 in	10.19 in
PS AWS2-11	1+26.95	EL 116.89	B	3	EL 116.85	0.00°	6.00 in	6.00 in	4.67 in	4.67 in
PS AWS2-12	1+36.41	EL 115.56	A	2	EL 114.60	8.93°	9.00 in	11.65 in	16.15 in	17.56 in
PS AWS2-13	1+41.01	EL 114.84	A	2	EL 114.60	8.93°	9.00 in	10.29 in	7.51 in	8.92 in
PS AWS2-14	1+47.34	EL 113.99	B	3	EL 113.41	0.00°	6.00 in	6.00 in	11.15 in	11.15 in
PS AWS2-15	1+55.05	EL 114.00	B	3	EL 113.41	0.00°	6.00 in	6.00 in	11.27 in	11.27 in
PS AWS2-16	1+65.52	EL 113.84	A	2	EL 113.00	2.45°	9.00 in	9.00 in	14.71 in	14.71 in
PS AWS2-17	1+70.12	EL 113.64	A	2	EL 113.00	2.45°	9.00 in	9.00 in	12.31 in	12.31 in
PS AWS2-18	1+89.12	EL 112.83	A	2	EL 111.75	2.45°	9.00 in	9.00 in	17.59 in	17.59 in
PS AWS2-19	1+93.72	EL 112.64	A	2	EL 111.75	2.45°	9.00 in	9.00 in	15.31 in	15.31 in
PS AWS2-20	2+23.72	EL 111.64	B	3	EL 110.00	0.00°	6.00 in	6.00 in	23.87 in	23.87 in
PS AWS2-21	2+29.38	EL 111.64	B	3	EL 110.00	0.00°	6.00 in	6.00 in	23.87 in	23.87 in
PS AWS2-22	2+38.94	EL 111.64	B	3	EL 110.00	0.00°	6.00 in	6.00 in	23.87 in	23.87 in
PS AWS2-23	2+69.59	EL 111.58	A	2	EL 110.23	0.13°	9.00 in	9.00 in	20.83 in	20.83 in
PS AWS2-24	2+74.19	EL 111.57	A	2	EL 110.23	0.13°	9.00 in	9.00 in	20.70 in	20.70 in
PS AWS2-25	2+95.90	EL 111.54	B	3	EL 110.00	0.00°	6.00 in	6.00 in	22.67 in	22.67 in
PS AWS2-26	3+01.57	EL 111.54	B	3	EL 110.00	0.00°	6.00 in	6.00 in	22.67 in	22.67 in
PS AWS2-27	3+04.45	EL 111.54	B	3	EL 110.00	0.00°	6.00 in	6.00 in	22.67 in	22.67 in
PS AWS2-28	3+08.68	N/A	B	4	N/A	0.00°	6.00 in	6.00 in	28.19 in	28.19 in

NOT IN CONTRACT

PIPE SUPPORT SCHEDULE

PIPE SUPPORT NAME	STATIONING	PIPE INVERT ELEVATION	SADDLE TYPE	PIPE SUPPORT TYPE	SUPPORT EL	φ	WIDTH, W1	WIDTH, W2	HEIGHT, H1	HEIGHT, H2
PS AWS3-1	0+00.00	N/A	B	4	N/A	0.00°	6.00 in	6.00 in	12.19 in	12.19 in
PS AWS3-2	0+02.86	EL 115.22	B	9A	N/A	0.00°	6.00 in	6.00 in	12.63 in	12.63 in
PS AWS3-3	0+06.66	EL 115.22	B	9A	EL 114.60	0.00°	6.00 in	6.00 in	12.63 in	12.63 in
PS AWS3-4	0+11.32	EL 115.22	A	10	EL 114.60	0.00°	9.00 in	9.00 in	13.07 in	13.07 in
PS AWS3-5	0+43.00	EL 115.17	A	10	EL 114.60	0.11°	9.00 in	9.00 in	12.47 in	12.47 in
PS AWS3-6	0+45.00	EL 115.17	A	10	EL 114.60	0.11°	9.00 in	9.00 in	12.47 in	12.47 in
PS AWS3-7	0+72.92	EL 115.11	B	9B	EL 114.60	0.00°	6.00 in	6.00 in	11.31 in	11.31 in
PS AWS3-8	0+78.59	EL 115.11	B	9B	EL 114.60	0.00°	6.00 in	6.00 in	11.31 in	11.31 in
PS AWS3-9	0+94.32	N/A	B	4	N/A	0.00°	6.00 in	6.00 in	21.94 in	21.94 in
PS BYPASS1-1	1	EL 136.40	B	5A	EL 136.00	4.53°	6.00 in	6.00 in	13.00 in	13.00 in
PS BYPASS1-2	18.27	EL 135.03	B	7	EL 134.96	4.53°	6.00 in	6.00 in	9.06 in	9.06 in
PS BYPASS1-3	33.64	EL 133.81	A	8A	EL 133.25	4.53°	9.00 in	9.00 in	15.35 in	15.35 in
PS BYPASS1-4	35.64	EL 133.66	B	8A	EL 133.25	4.53°	6.00 in	6.00 in	13.08 in	13.08 in
PS BYPASS1-5	59.47	EL 131.77	B	8B	EL 131.00	4.53°	6.00 in	6.00 in	17.43 in	17.43 in
PS BYPASS1-6	61.47	EL 131.61	A	8B	EL 131.00	4.53°	9.00 in	9.00 in	15.96 in	15.96 in
PS BYPASS1-7	81.34	EL 129.47	A	11	EL 128.72	6.31°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-8	105.66	EL 126.79	A	12	EL 126.04	6.31°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-9	120.65	EL 125.14	A	11	EL 124.39	6.31°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-10	132.38	EL 12.75	A	12	EL 12.00	6.31°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-11	145	EL 122.46	A	13	EL 121.71	6.31°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-12	175.85	EL 119.07	B	14	EL 118.32	5.71°	6.00 in	6.00 in	17.19 in	17.19 in
PS BYPASS1-13	177.85	EL 118.87	A	15	EL 118.12	5.71°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-14	189.98	EL 117.61	A	15	EL 116.86	5.71°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-15	191.95	EL 117.41	A	15	EL 116.66	5.71°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-16	220	EL 115.11	A	15	EL 114.36	4.64°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-17	223	EL 114.87	A	15	EL 114.12	4.64°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-18	250	EL 112.68	A	15	EL 111.93	4.64°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-19	253	EL 112.44	A	15	EL 111.69	4.64°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-20	280	EL 110.65	A	15	EL 109.90	4.64°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-21	283	EL 110.52	A	15	EL 109.77	4.64°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-22	310	EL 109.36	A	15	EL 108.61	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-23	313	EL 109.24	A	15	EL 108.49	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-24	340	EL 108.08	A	15	EL 107.33	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-25	343	EL 107.95	A	15	EL 107.20	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-26	370	EL 106.78	A	15	EL 106.03	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-27	373	EL 106.66	A	15	EL 105.91	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-28	400	EL 105.49	A	16	EL 104.74	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS BYPASS1-29	409.46	EL 105.00	A	17	EL 104.25	2.46°	9.00 in	9.00 in	17.63 in	17.63 in
PS TANK OUTLET-1	1024.16	EL 144.60	B	23	EL 144.10	13.78°	6.00 in	9.41 in	13.19 in	14.66 in
PS BYPASS2-1	0.95	EL 137.16	B	18	EL 136.74	12.93°	6.00 in	8.97 in	12.27 in	13.64 in
PS BYPASS2-2	17.69	EL 133.32	B	19	EL 132.14	12.93°	6.00 in	11.05 in	21.33 in	22.71 in
PS BYPASS2-3	36.87	EL 128.92	B	20	EL 127.82	12.93°	6.00 in	10.82 in	20.34 in	21.71 in
PS BYPASS2-4	55.65	EL 124.60	A	21	EL 123.85	12.93°	9.00 in	13.06 in	16.68 in	18.74 in
PS BYPASS2-5	62.25	EL 123.09	B	22	EL 121.54	12.93°	6.00 in	12.07 in	25.78 in	27.15 in
PS BYPASS2-6	65.39	EL 122.37	A	22	EL 121.54	12.93°	9.00 in	13.27 in	17.56 in	19.63 in

NOT IN CONTRACT

SEE DRAWING S-301 FOR PIPE SADDLE DETAILS.

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

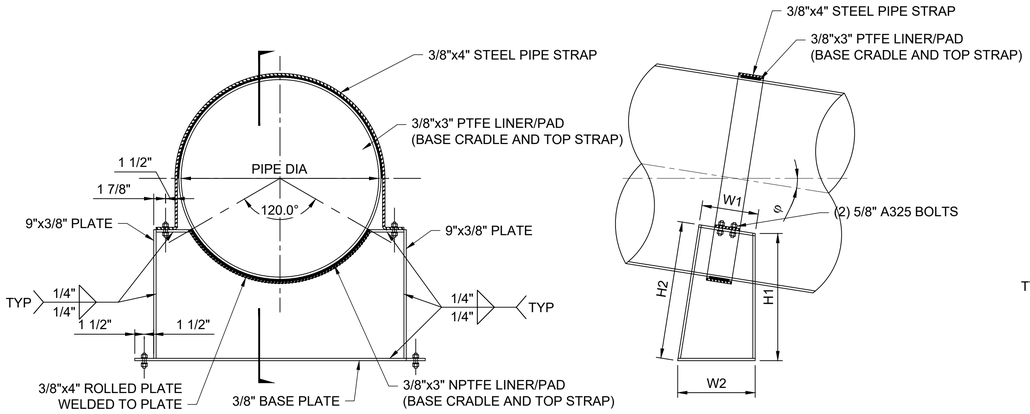
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORT SCHEDULE

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	148 OF 240
DRAWING:	S-300



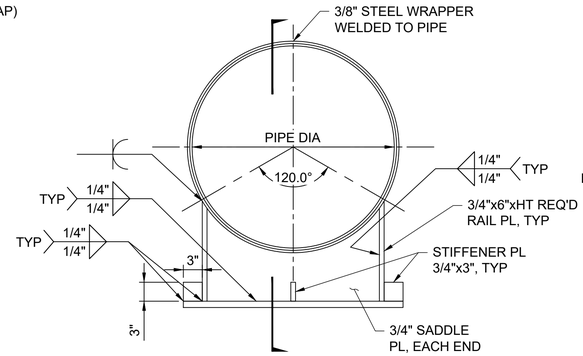
ELEVATION

SECTION

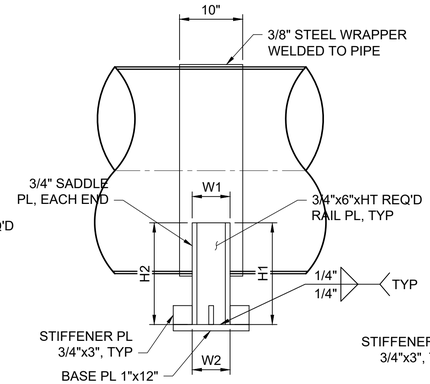
CRADLE SUPPORT TYPE A

SCALE: 1" = 1'-0"

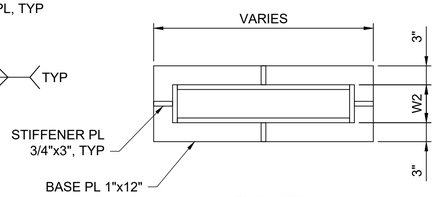
0 1' 2'



ELEVATION



SECTION

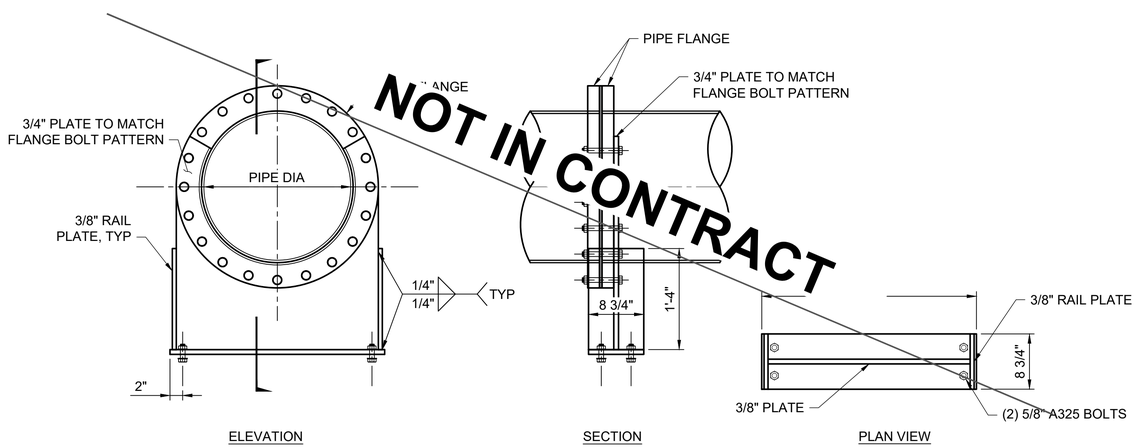


PLAN VIEW

CRADLE SUPPORT TYPE B

SCALE: 1" = 1'-0"

0 1' 2'

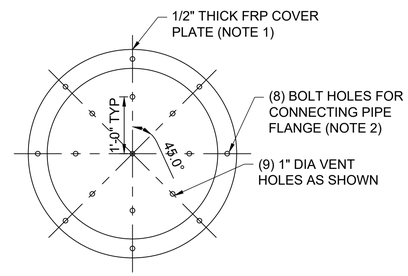


ELEVATION SECTION PLAN VIEW

CRADLE SUPPORT TYPE C

SCALE: 1" = 1'-0"

0 1' 2'



NOTES:

1. FRP COVER PLATE DIAMETER SHALL MATCH THE STEEL PIPE FLANGE DIAMETER.
2. BOLT SIZE AND LOCATION TO MATCH STEEL PIPE FLANGE.

1 C-350 FRP COVER PLATE

SCALE: 3/4"=1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

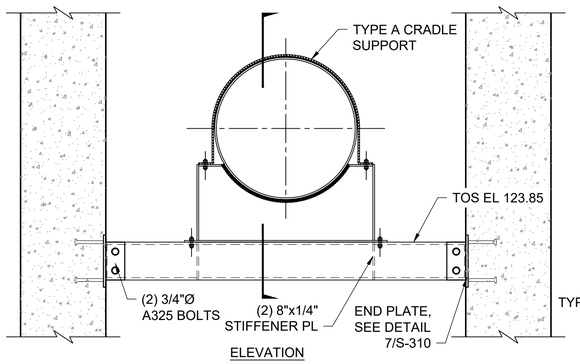
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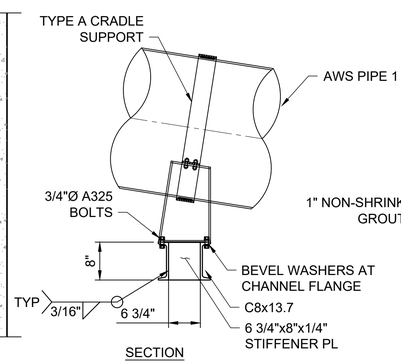
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

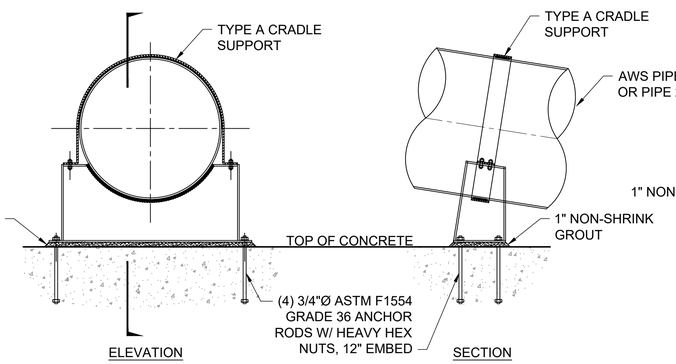
PIPE SADDLE DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	149 OF 240
DRAWING:	S-301

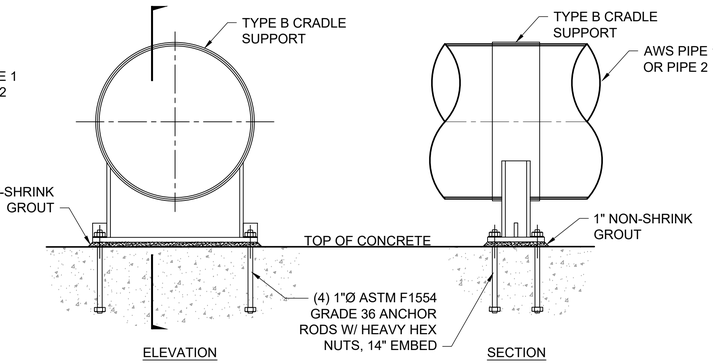




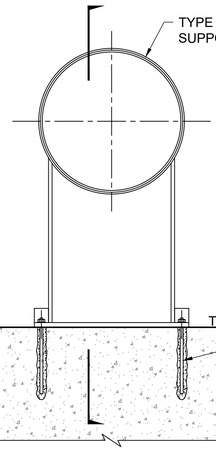
PIPE SUPPORT 1
SCALE: 3/4"=1'-0"

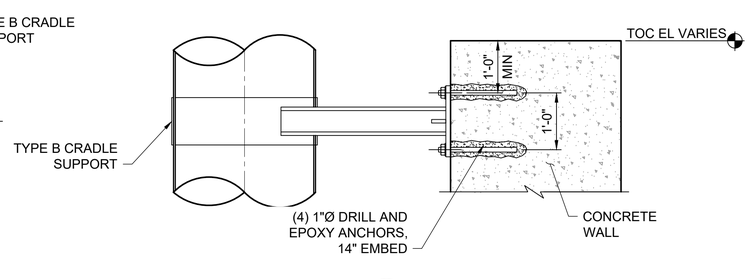


PIPE SUPPORT 2
SCALE: 3/4"=1'-0"



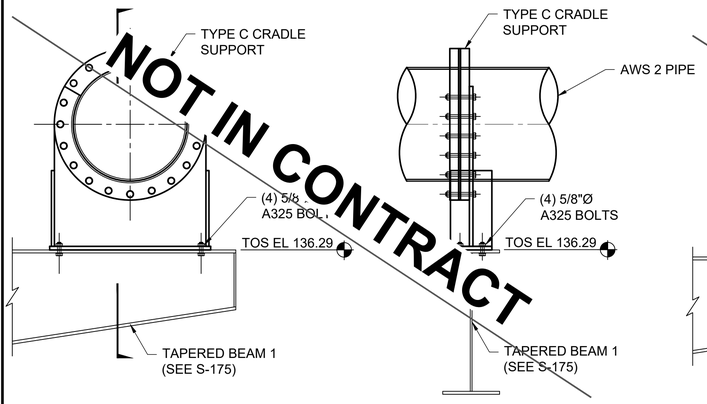
PIPE SUPPORT 3
SCALE: 3/4"=1'-0"



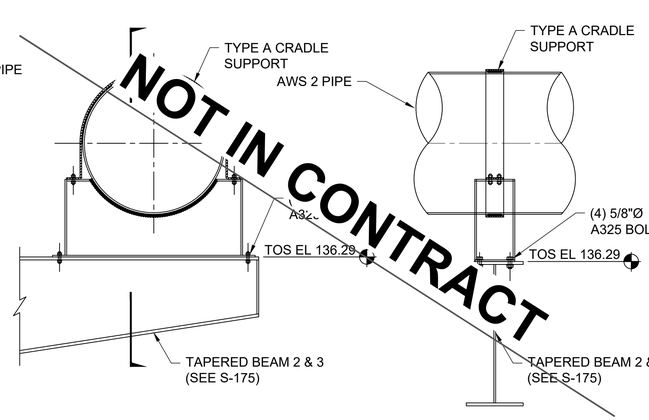


D **SECTION**
SCALE: 3/4"=1'-0"

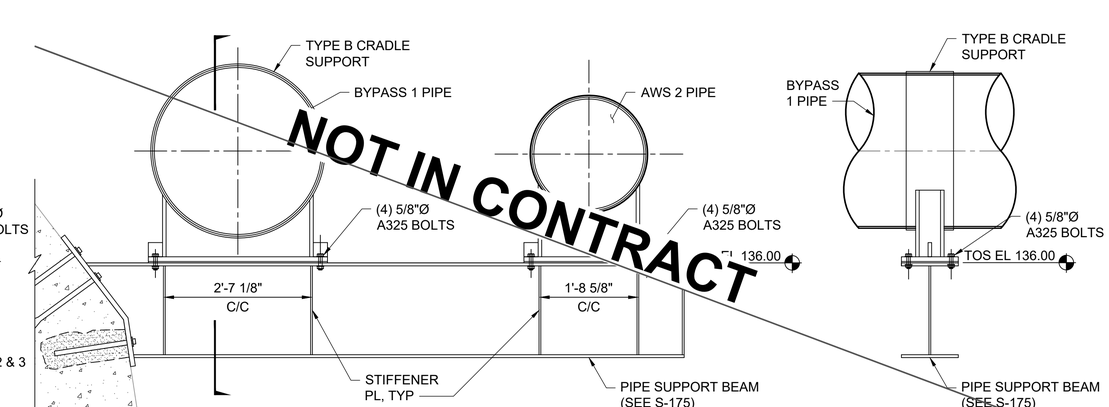
PIPE SUPPORT 4
SCALE: 3/4"=1'-0"



PIPE SUPPORT 5B
SCALE: 3/4"=1'-0"



PIPE SUPPORT 6
SCALE: 3/4"=1'-0"



PIPE SUPPORT 5A
SCALE: 3/4"=1'-0"

a verdantas company

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

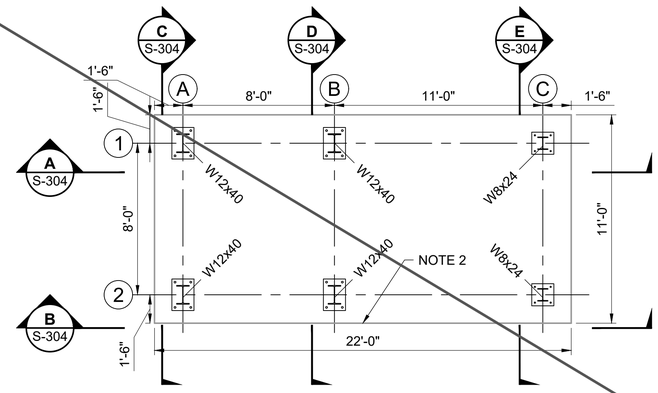
MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORTS (4, 5A, 5B & 6)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	150 OF 240
DRAWING:	S-302

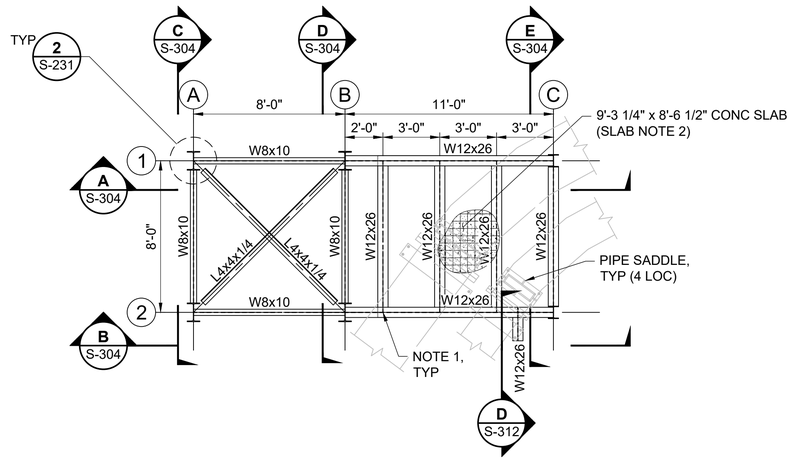
NOTES:

1. SEE S-230 FOR TYPICAL BEAM TO BEAM CONN DETAIL.
2. SEE S-455 FOR FOUNDATION PLANS AND SECTIONS.
3. ALL STEEL FRAMING SHALL BE GALVANIZED.



120'-0" FRAMING PLAN
SCALE: 1/4" = 1'-0"

0 4' 8'

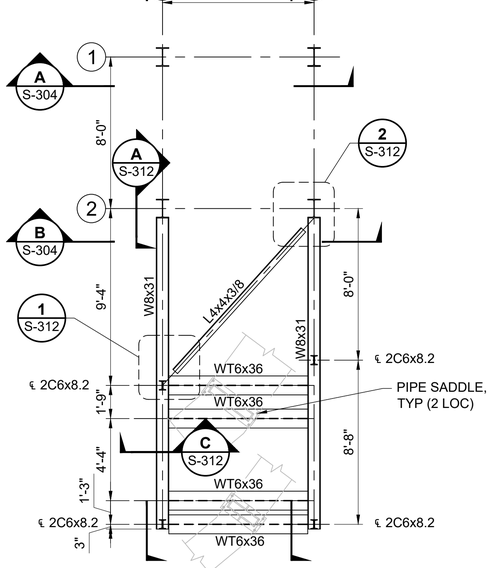


132'-6" FRAMING PLAN
SCALE: 1/4" = 1'-0"

0 4' 8'

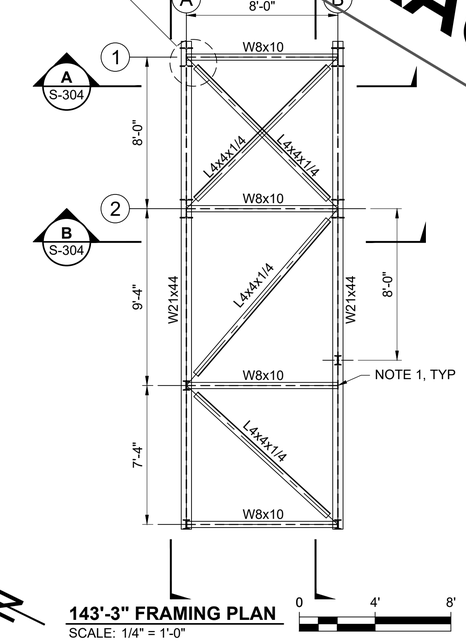
SLAB NOTES:

1. CONCRETE SLAB SHALL BE 9" TOTAL THICKNESS AND SHALL BE FORMED WITH VULCRAFT 3VLI-36 18 GAUGE COMPOSITE CORRUGATED METAL FLOOR.
2. SLAB SHALL BE REINFORCED WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCEMENT.



134'-6" FRAMING PLAN
SCALE: 1/4" = 1'-0"

0 4' 8'



143'-3" FRAMING PLAN
SCALE: 1/4" = 1'-0"

0 4' 8'

NOT IN CONTRACT

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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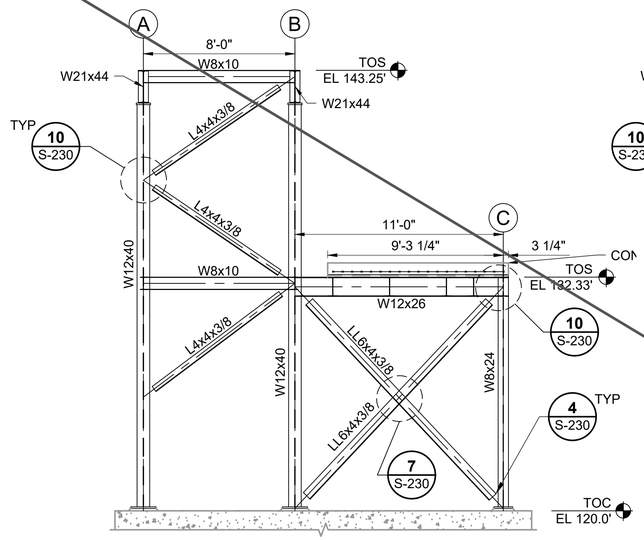
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORT 7
(NOT IN CONTRACT)

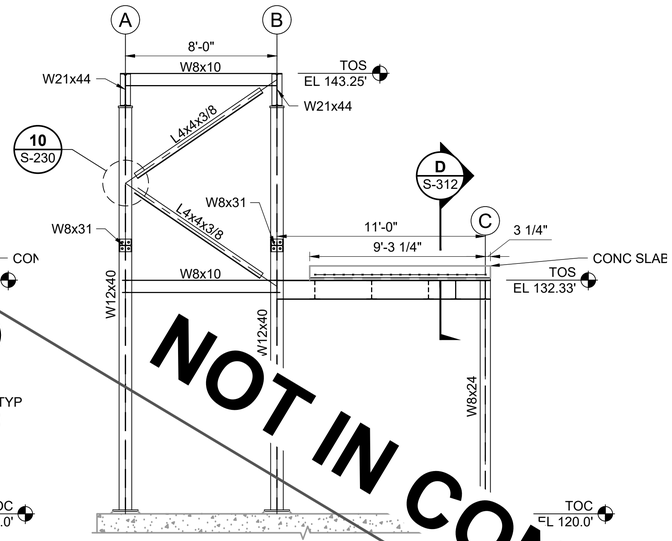
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	151 OF 240
DRAWING:	S-303

NOTE:
1. ALL STEEL FRAMING SHALL BE GALVANIZED.



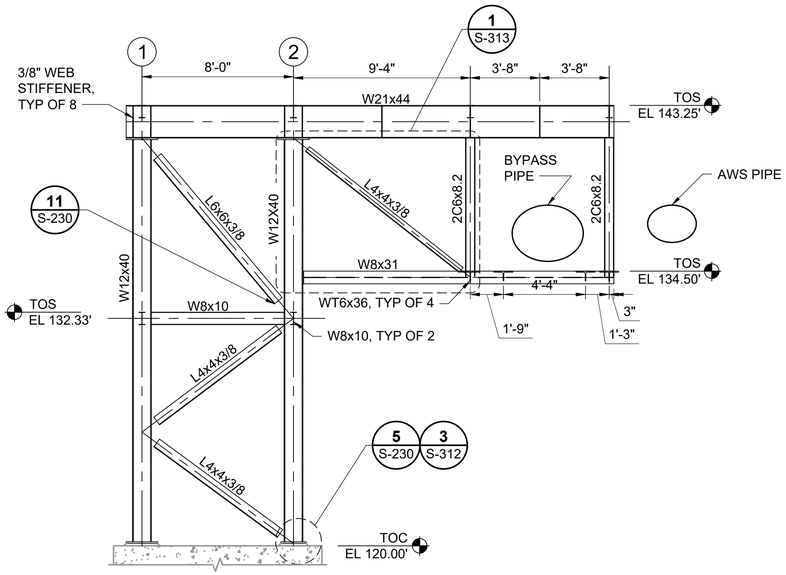
A SECTION S-303 SCALE: 1/4"=1'-0"

0 4' 8'



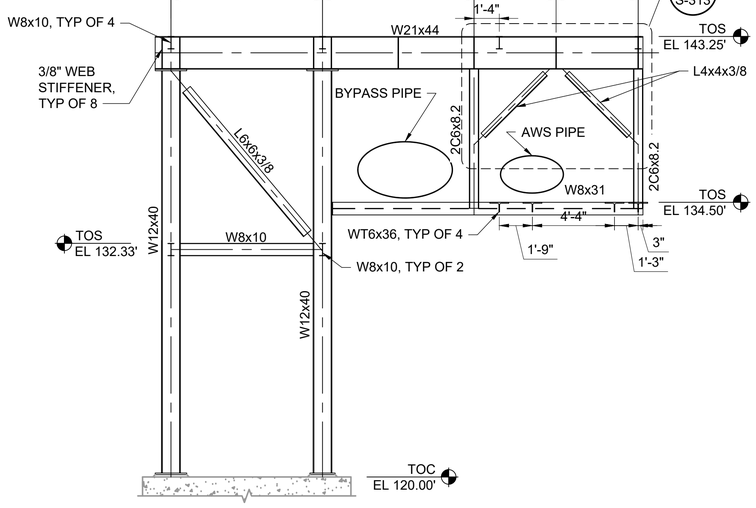
B SECTION S-303 SCALE: 1/4"=1'-0"

0 4' 8'



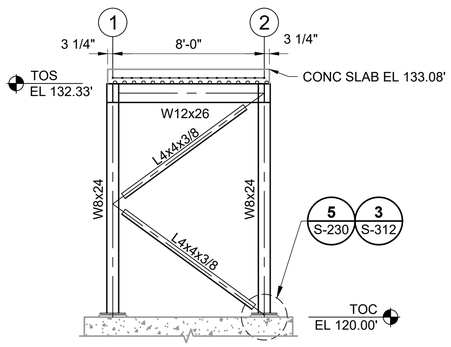
C SECTION S-303 SCALE: 1/4"=1'-0"

0 4' 8'



D SECTION S-303 SCALE: 1/4"=1'-0"

0 4' 8'



E SECTION S-303 SCALE: 1/4"=1'-0"

0 4' 8'

NOT IN CONTRACT

ALDEN a verdantas company

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

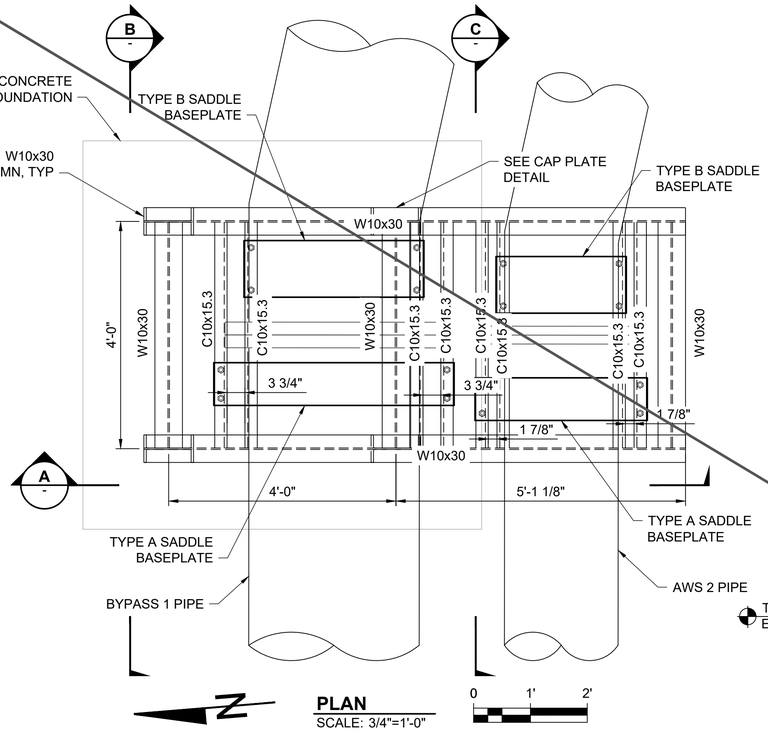
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

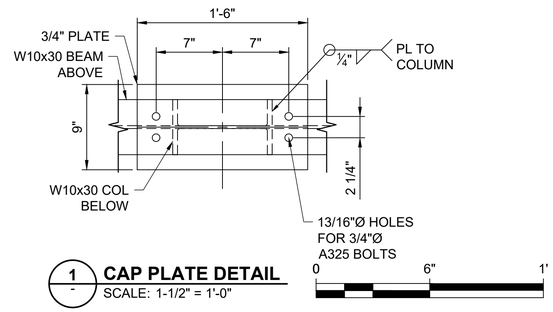
MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORT 7
(NOT IN CONTRACT)

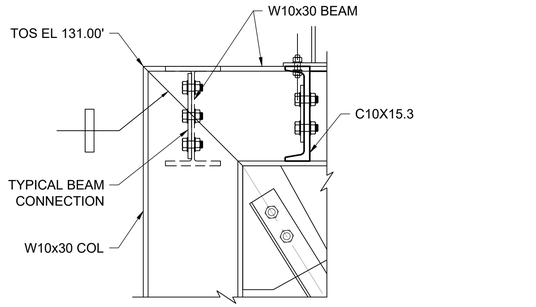
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	152 OF 240
DRAWING:	S-304



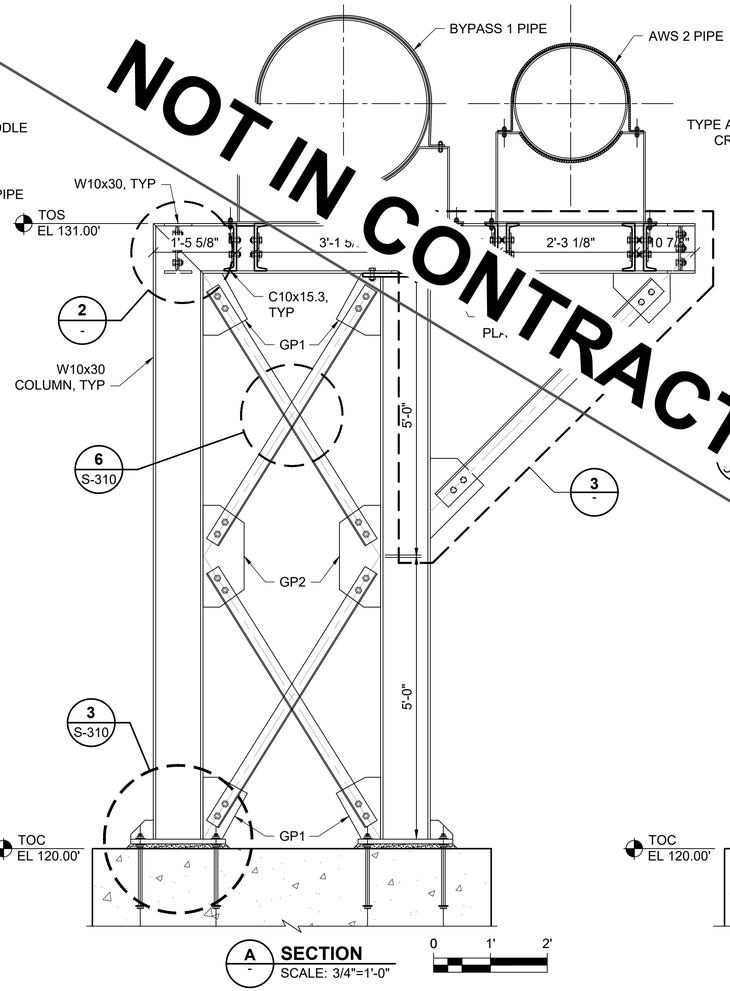
PLAN
SCALE: 3/4"=1'-0"



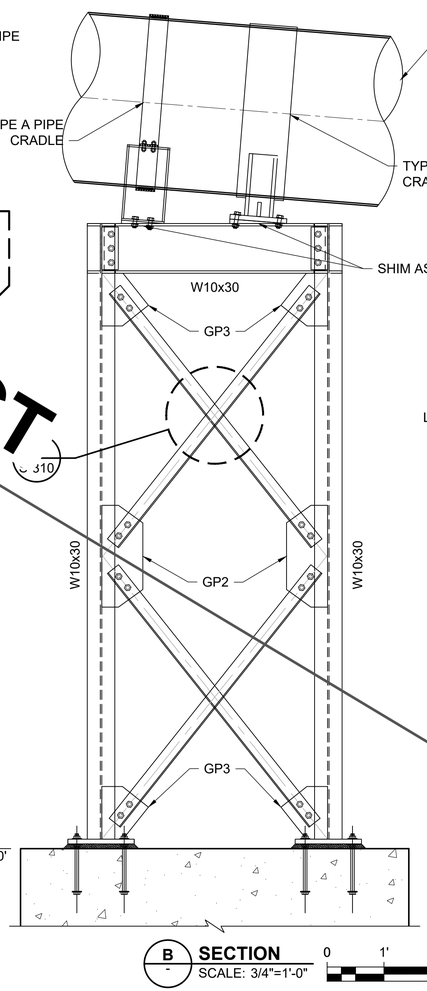
1 CAP PLATE DETAIL
SCALE: 1-1/2" = 1'-0"



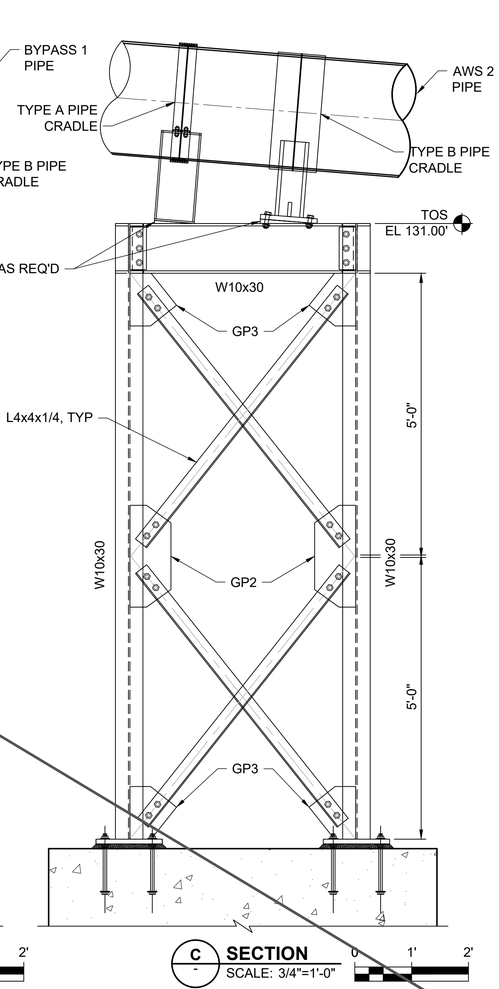
2 DETAIL
SCALE: 1-1/2" = 1'-0"
0 1' 2'



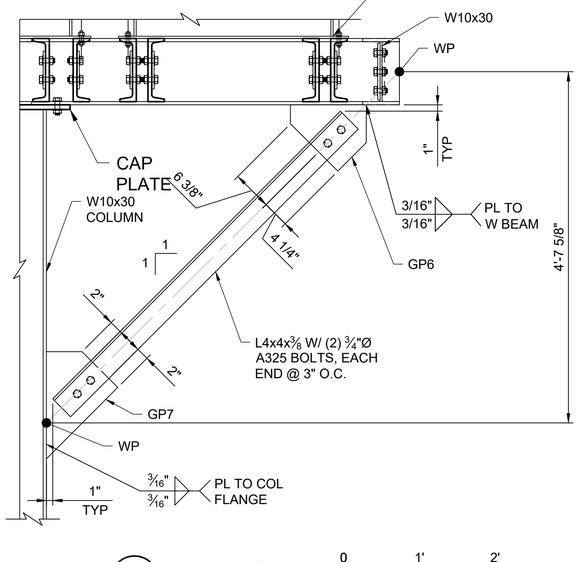
A SECTION
SCALE: 3/4"=1'-0"
0 1' 2'



B SECTION
SCALE: 3/4"=1'-0"
0 1' 2'



C SECTION
SCALE: 3/4"=1'-0"
0 1' 2'



3 KICKER DETAIL
SCALE: 1" = 1'-0"
0 1' 2'

PIPE SUPPORT 8B

NOT IN CONTRACT

a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

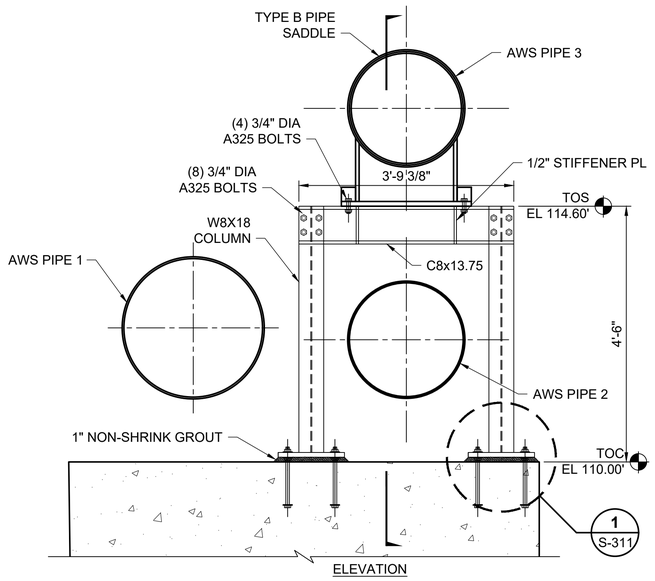
VERIFY SCALE
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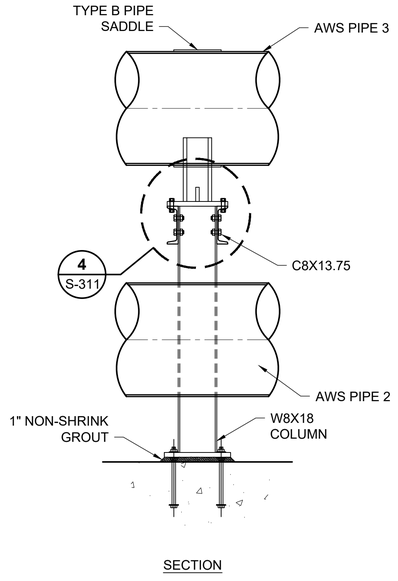
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORT 8
(NOT IN CONTRACT)

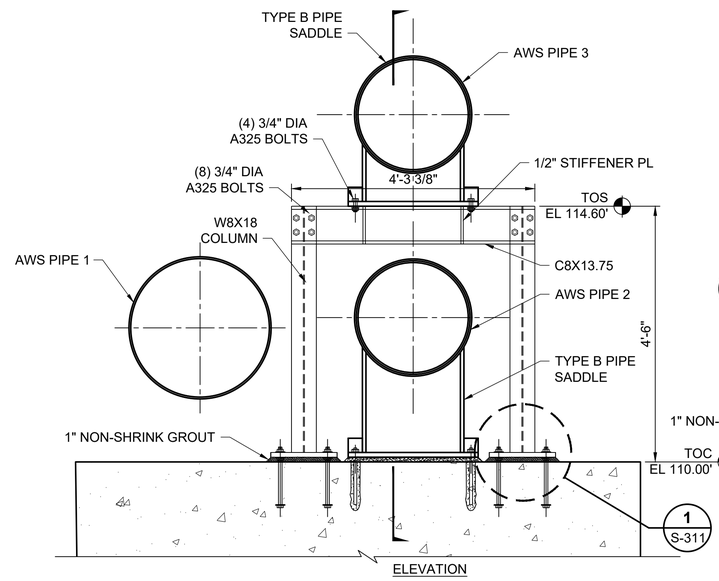
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	153 OF 240
DRAWING:	S-305

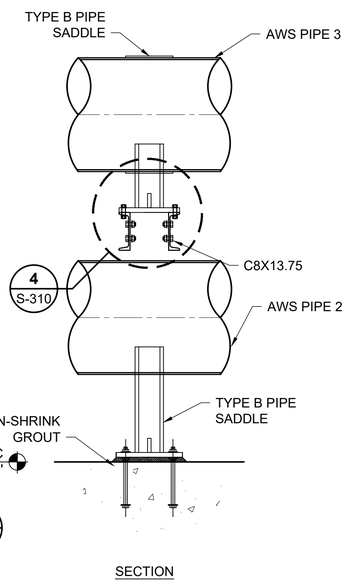




PIPE SUPPORT 9A
SCALE: 3/4"=1'-0"

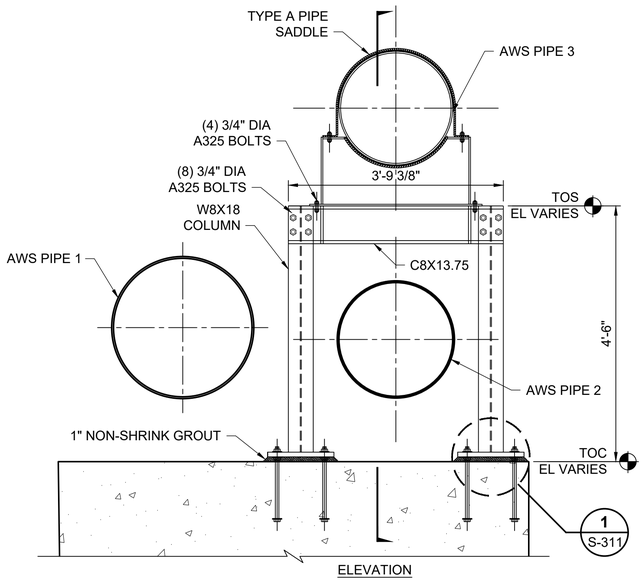
0 1' 2'

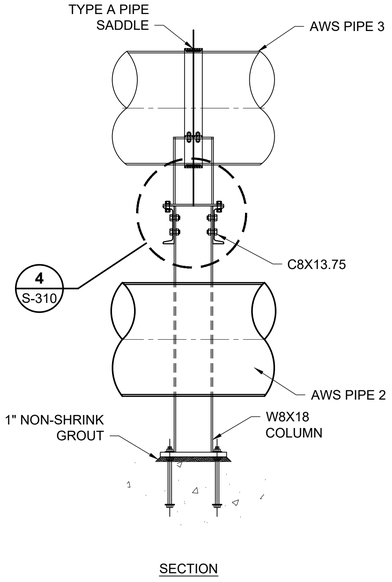




PIPE SUPPORT 9B
SCALE: 3/4"=1'-0"

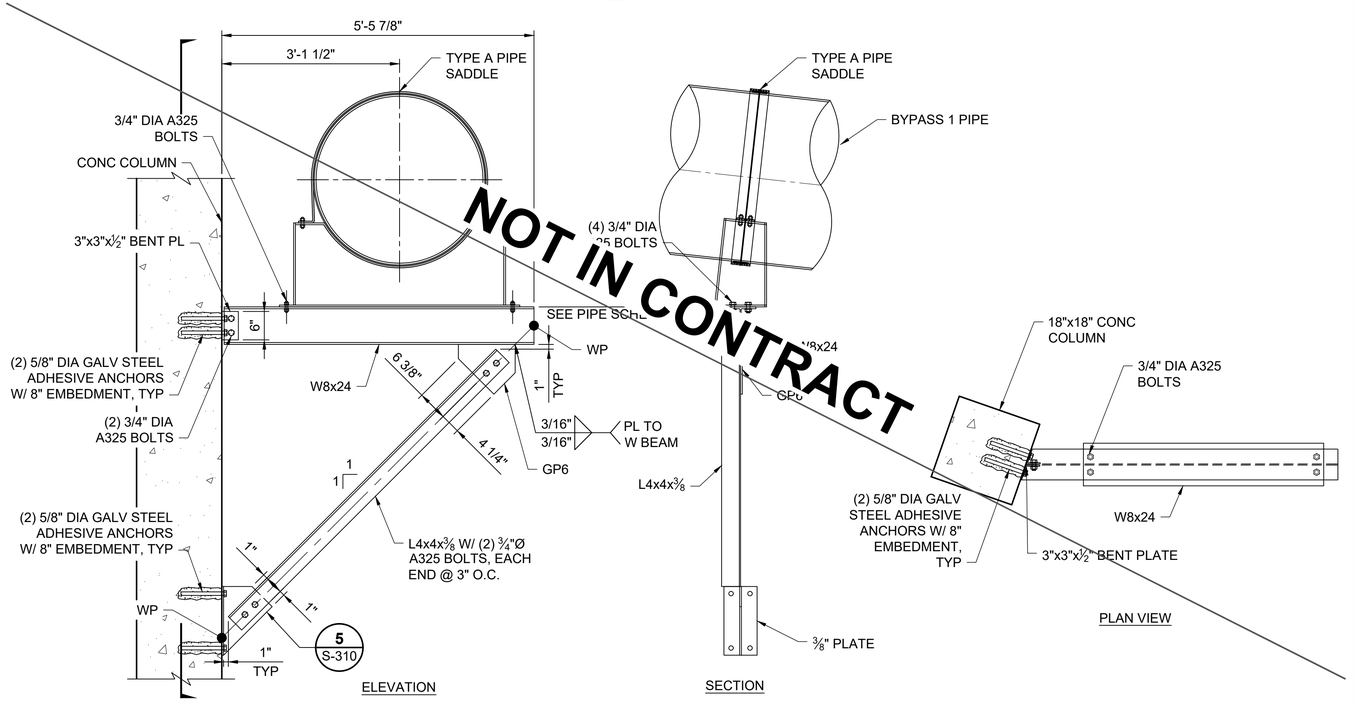
0 1' 2'





PIPE SUPPORT 10
SCALE: 3/4"=1'-0"

0 1' 2'



NOT IN CONTRACT

PIPE SUPPORT 11
SCALE: 3/4"=1'-0"

0 1' 2'

a verdantas company

ALDEN

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

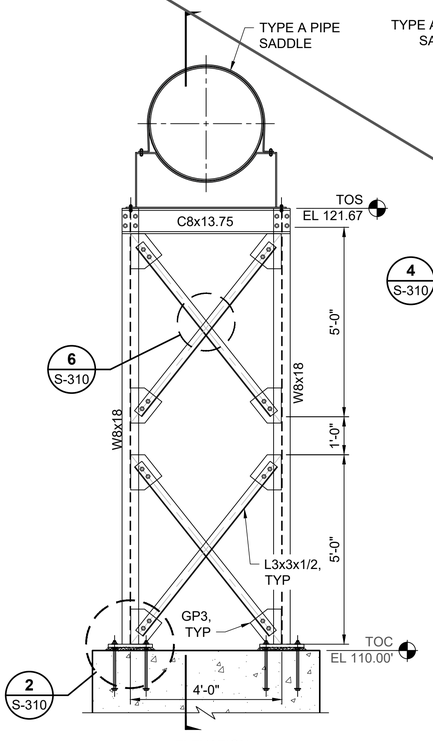
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

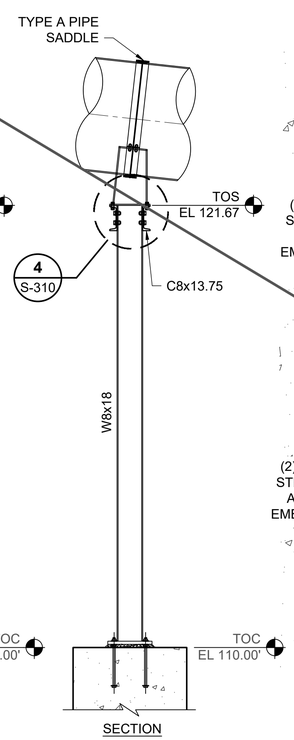
MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORTS (9A, 9B, 10 & 11)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	154 OF 240
DRAWING:	S-306



ELEVATION

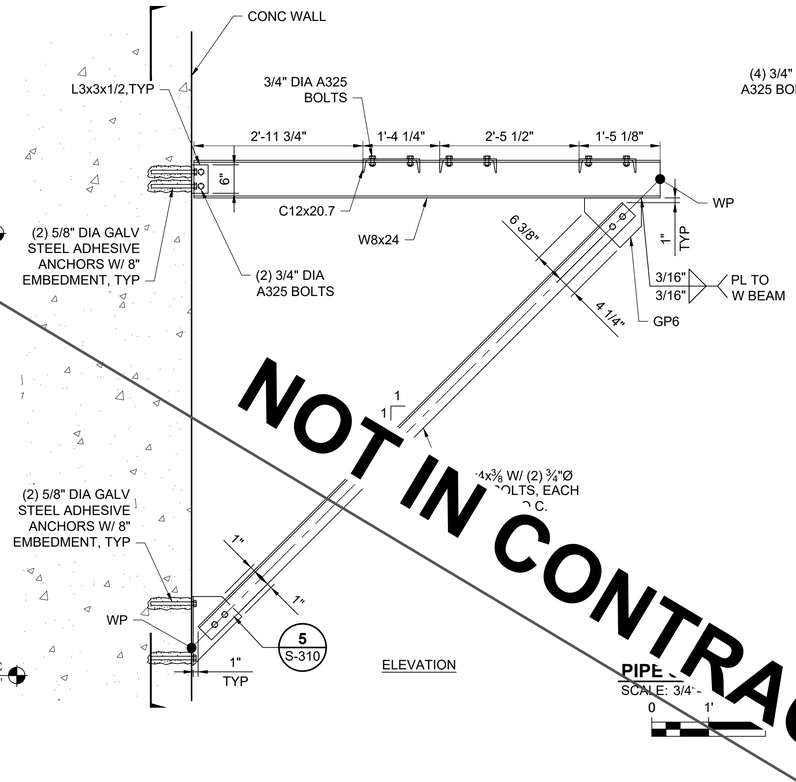


SECTION

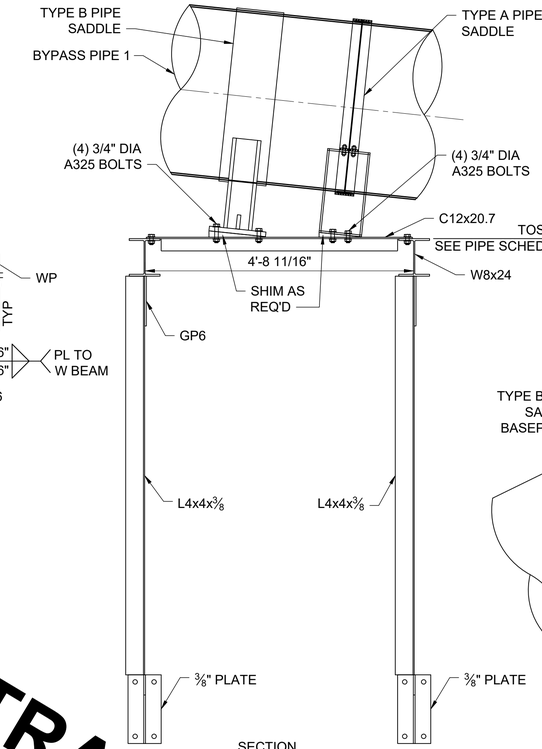
PIPE SUPPORT 13

SCALE: 1/2"=1'-0"

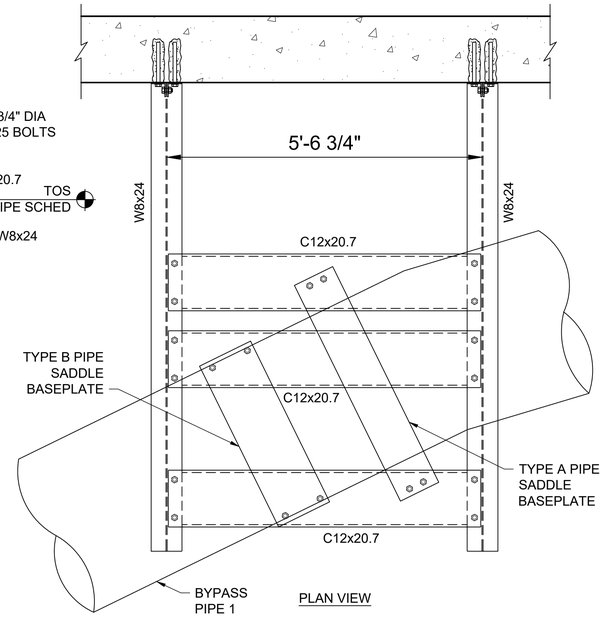
0 2' 4'



ELEVATION



SECTION

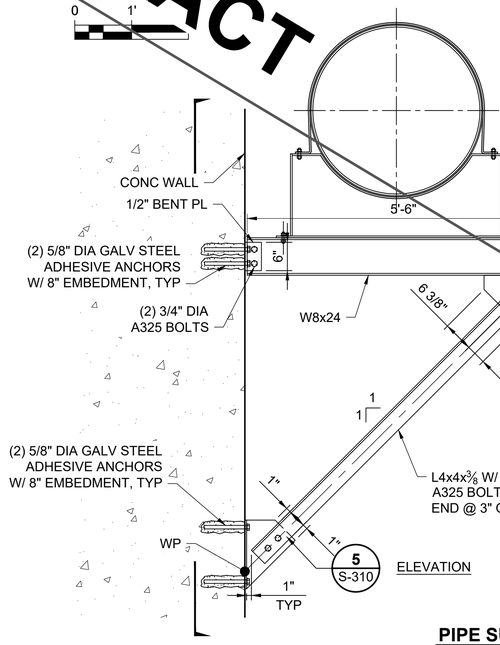


PLAN VIEW

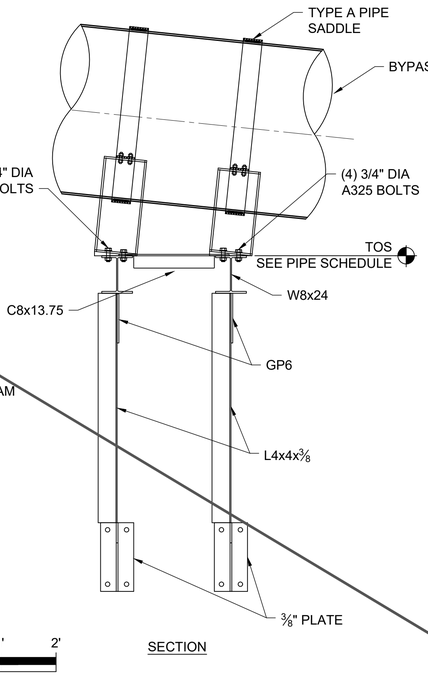
PIPE SUPPORT 14

SCALE: 3/4"=1'-0"

0 1' 2'



ELEVATION



SECTION

PIPE SUPPORT 15

SCALE: 3/4"=1'-0"

0 1' 2'

NOT IN CONTRACT

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

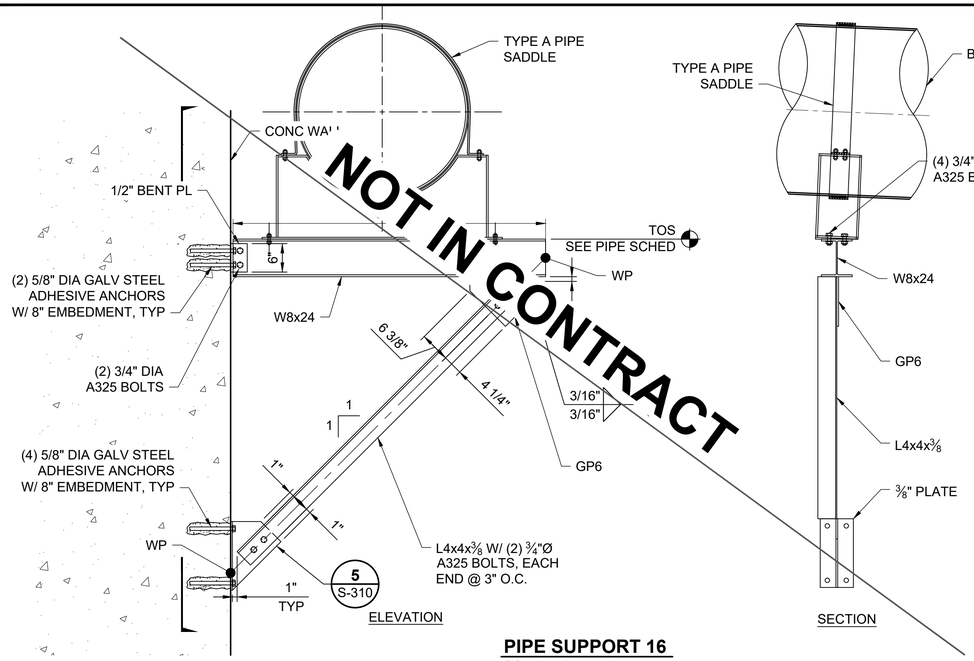
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORTS (13, 14 & 15)
(NOT IN CONTRACT)

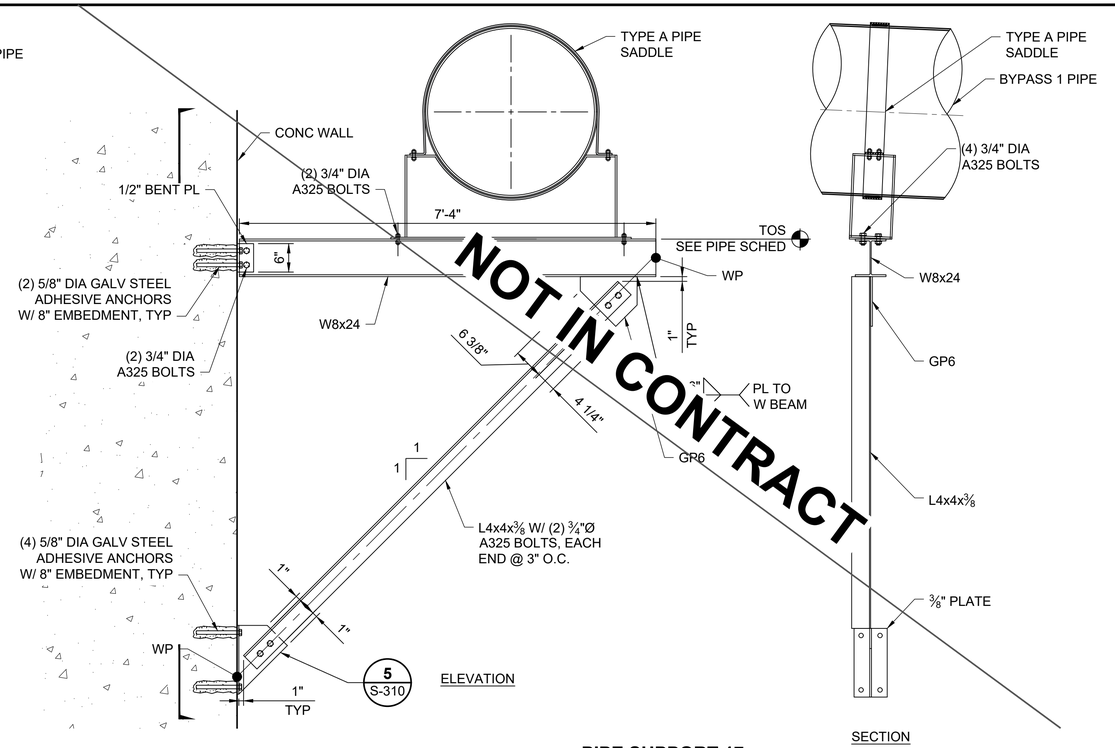
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	155 OF 240
DRAWING:	S-307



PIPE SUPPORT 16

SCALE: 3/4"=1'-0"

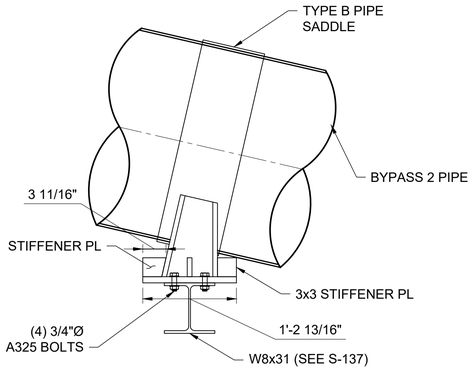
0 1' 2'



PIPE SUPPORT 17

SCALE: 3/4"=1'-0"

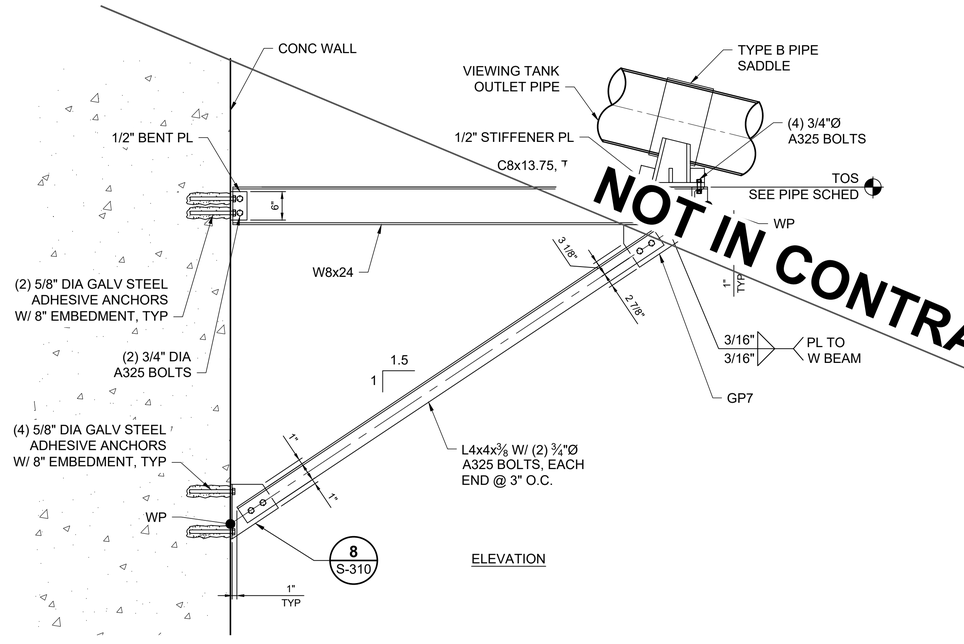
0 1' 2'



PIPE SUPPORT 18

SCALE: 1"=1'-0"

0 1' 2'



PIPE SUPPORT 23

SCALE: 3/4"=1'-0"

0 1' 2'

a verdantas company

ALDEN

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

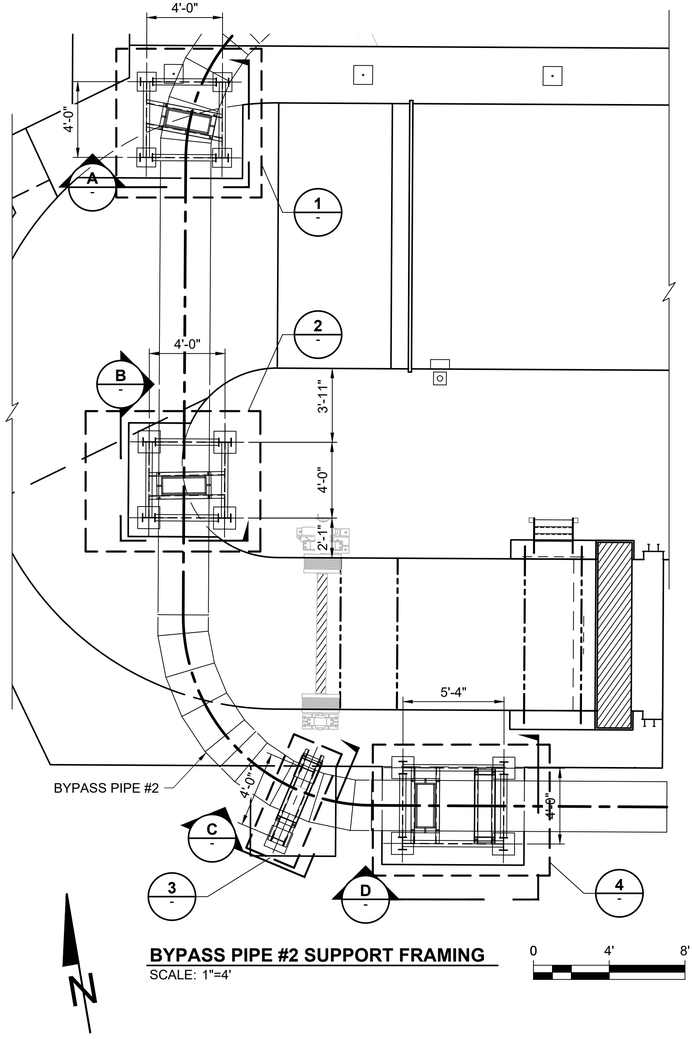
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

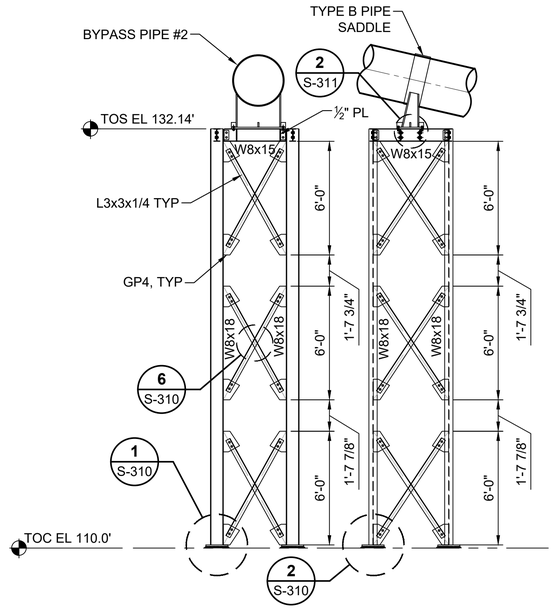
MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORTS (16, 17, 18 & 23)

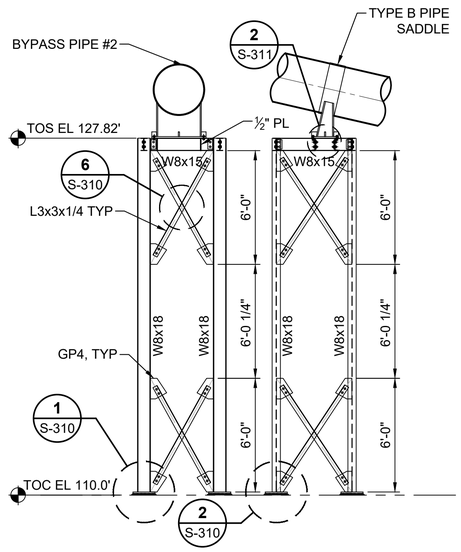
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	156 OF 240
DRAWING:	S-308



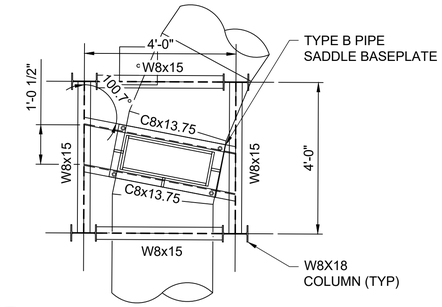
BYPASS PIPE #2 SUPPORT FRAMING
SCALE: 1"=4'
0 4' 8'



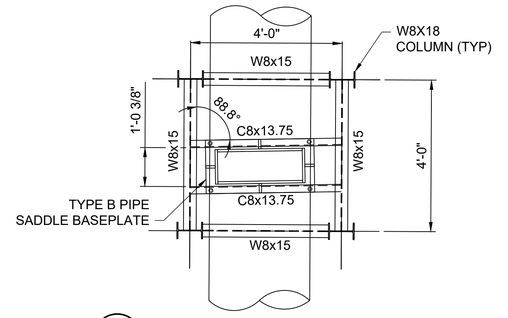
A - PIPE SUPPORT 19 ELEVATION
SCALE: 1/4" = 1'-0"
0 4' 8'



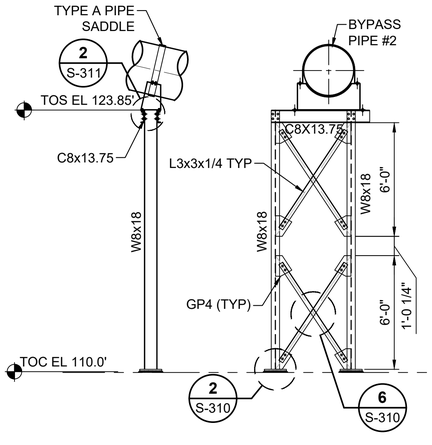
B - PIPE SUPPORT 20 ELEVATION
SCALE: 1/4" = 1'-0"
0 4' 8'



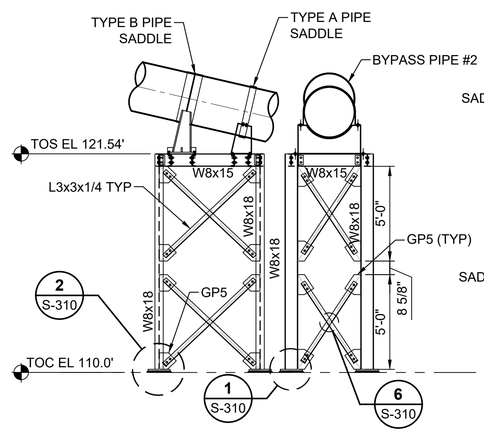
1 - SUPPORT 19 PLAN AT TOS 132.14'
SCALE: 1" = 2'
0 2' 4'



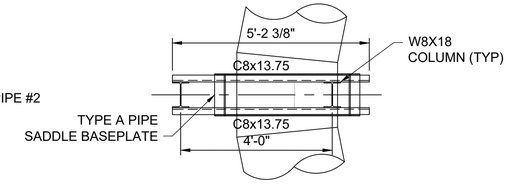
2 - SUPPORT 20 PLAN AT TOS 127.82'
SCALE: 1" = 2'
0 2' 4'



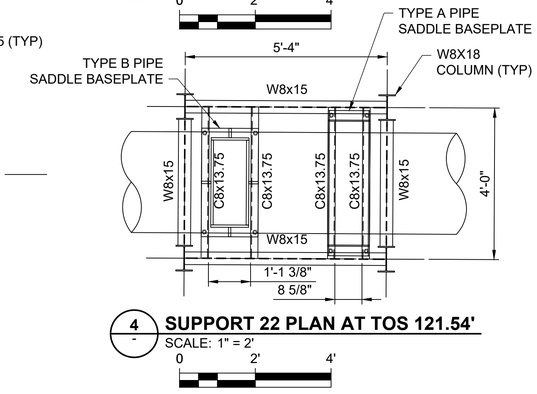
C - PIPE SUPPORT 21 ELEVATION
SCALE: 1/4" = 1'-0"
0 4' 8'



D - PIPE SUPPORT 22 ELEVATION
SCALE: 1/4" = 1'-0"
0 4' 8'



3 - SUPPORT 21 PLAN AT TOS 123.85'
SCALE: 1" = 2'
0 2' 4'



4 - SUPPORT 22 PLAN AT TOS 121.54'
SCALE: 1" = 2'
0 2' 4'

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

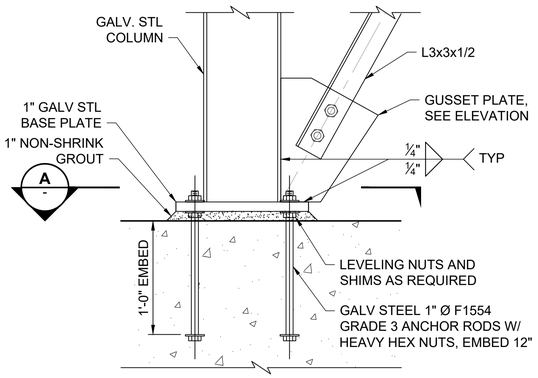
MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORTS (19, 20, 21 & 22)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	157 OF 240
DRAWING:	S-309

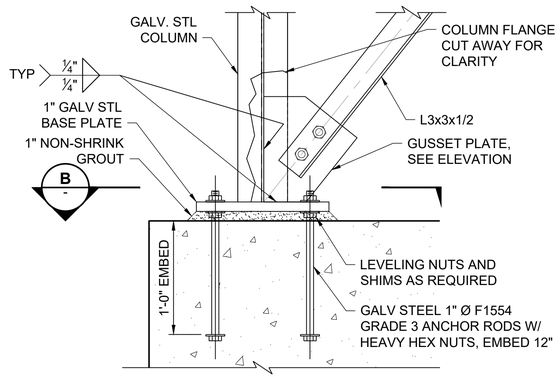
NOTE:

1. ALL STEEL FRAMING AND CONNECTIONS SHALL BE GALVANIZED STEEL.



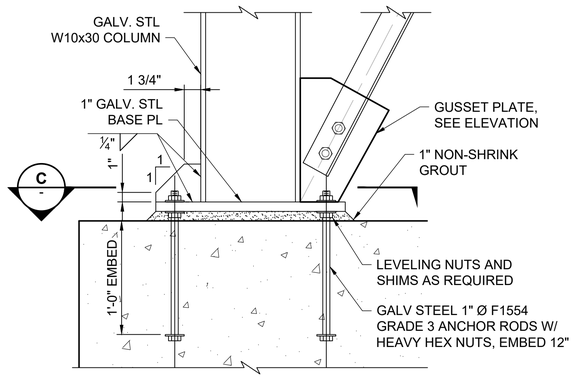
1 S-309 **DETAIL** SCALE: 1-1/2"=1'-0"

0 1' 2'



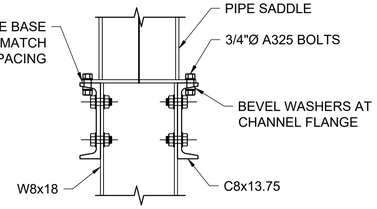
2 S-307 **DETAIL** SCALE: 1-1/2"=1'-0"

S-309 0 1' 2'



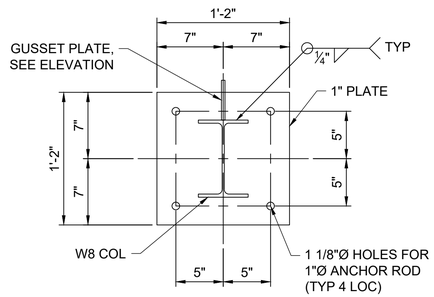
3 S-305 **DETAIL** SCALE: 1-1/2"=1'-0"

0 1' 2'



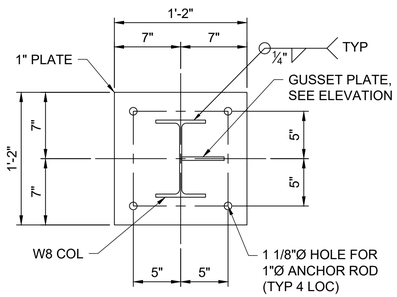
4 S-306 **DETAIL** SCALE: 1 1/2"=1'-0"

S-307 S-309 0 1' 2'



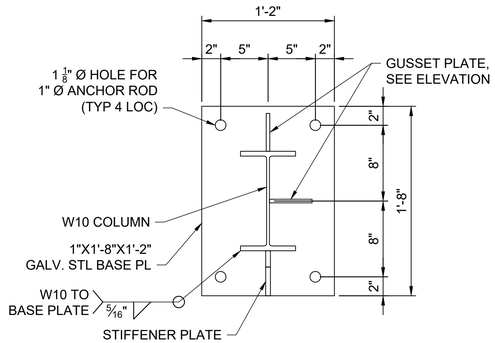
A - **BASEPLATE DETAIL** SCALE: 1 1/2"=1'-0"

0 1' 2'



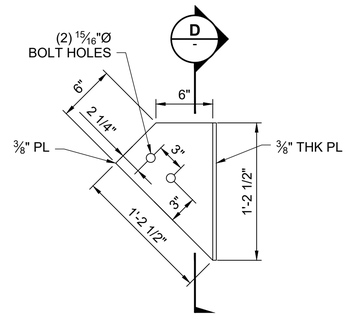
B - **BASEPLATE DETAIL** SCALE: 1 1/2"=1'-0"

0 1' 2'



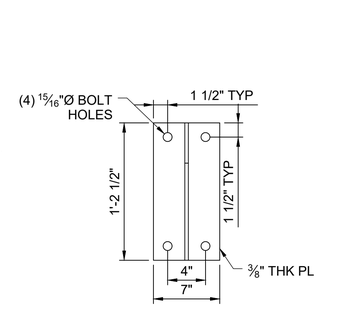
C - **W10x30 BASE PLATE** SCALE: 1 1/2"=1'-0"

0 1' 2'



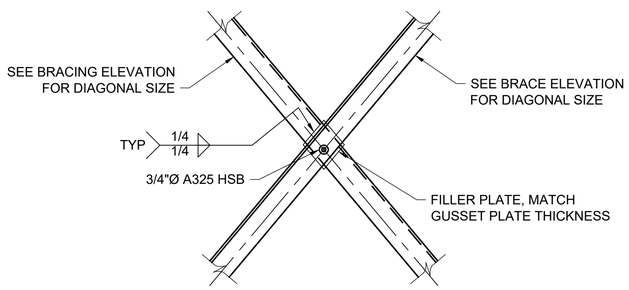
5 S-306 **DETAIL** SCALE: 1-1/2"=1'-0"

S-307 S-308 0 1' 2'



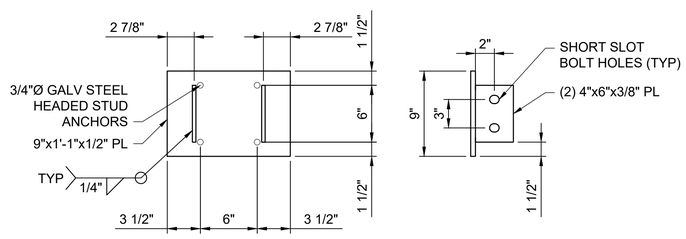
D - **CONNECTION PLATE SECTION** SCALE: 1-1/2"=1'-0"

0 1' 2'



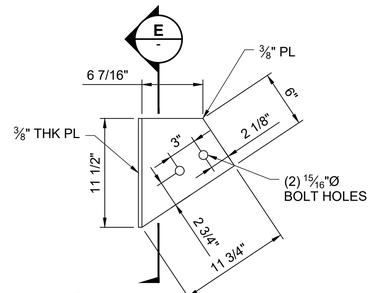
6 S-305 **DETAIL** SCALE: 1"=1'-0"

S-307 S-309 0 1' 2'



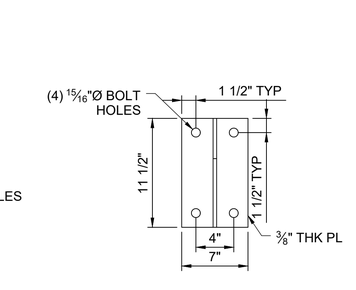
7 S-302 **END PLATE DETAIL** SCALE: 1-1/2"=1'-0"

0 1' 2'



8 S-308 **DETAIL** SCALE: 1-1/2"=1'-0"

0 1' 2'



E - **CONNECTION PLATE SECTION** SCALE: 1-1/2"=1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

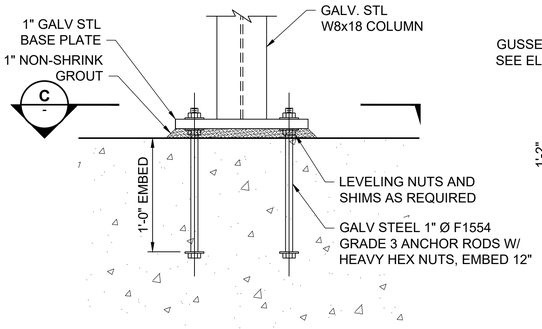
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

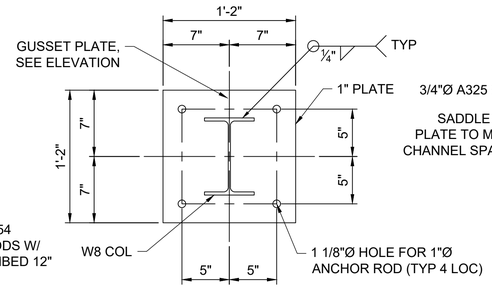
PIPE SUPPORT FRAMING DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	158 OF 240
DRAWING:	S-310



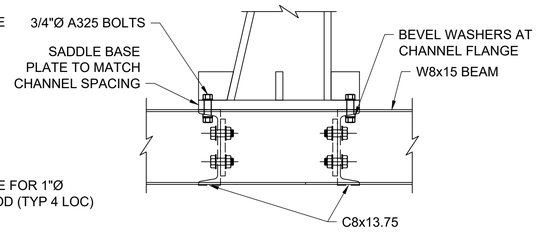
1 / S-306 DETAIL
SCALE: 1-1/2"=1'-0"

0 1' 2'



C / - BASEPLATE DETAIL
SCALE: 1 1/2"=1'-0"

0 1' 2'

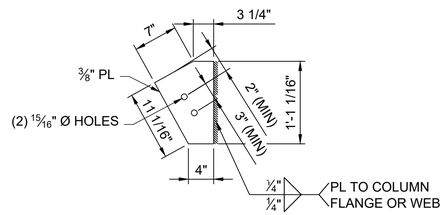


2 / S-309 DETAIL
SCALE: 1-1/2"=1'-0"

0 1' 2'

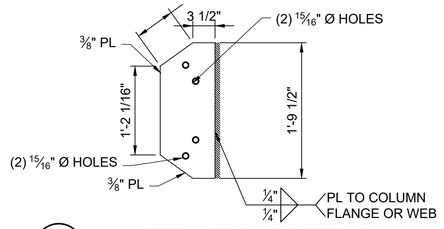
NOTE:

1. ALL STEEL FRAMING AND CONNECTIONS SHALL BE GALVANIZED STEEL.



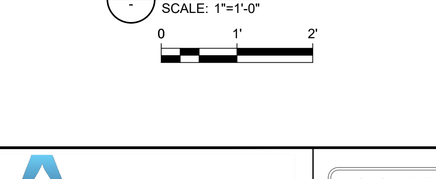
1 / - GUSSET PLATE 1 (GP1) DETAIL
SCALE: 1"=1'-0"

0 1' 2'



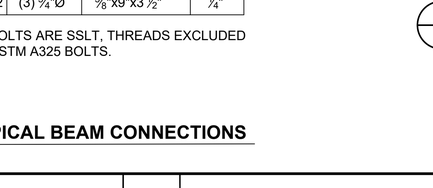
2 / - GUSSET PLATE 2 (GP2) DETAIL
SCALE: 1"=1'-0"

0 1' 2'



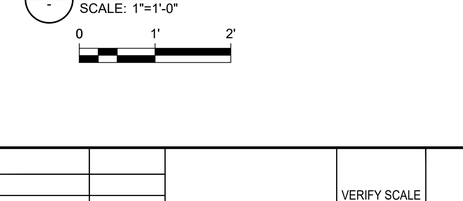
3 / - GUSSET PLATE 3 (GP3) DETAIL
SCALE: 1"=1'-0"

0 1' 2'



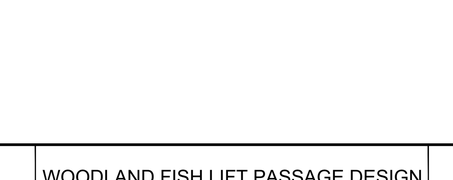
4 / - GUSSET PLATE 4 (GP4) DETAIL
SCALE: 1"=1'-0"

0 1' 2'



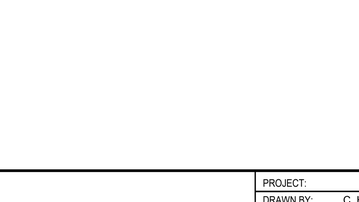
5 / - GUSSET PLATE 5 (GP5) DETAIL
SCALE: 1"=1'-0"

0 1' 2'



6 / - GUSSET PLATE 6 (GP6) DETAIL
SCALE: 1"=1'-0"

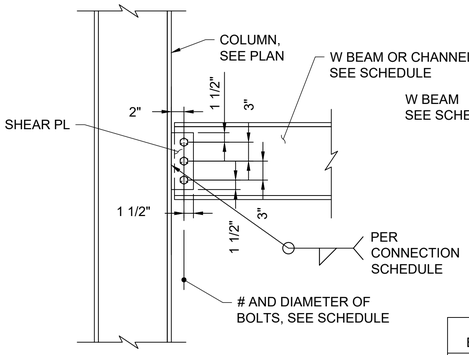
0 1' 2'



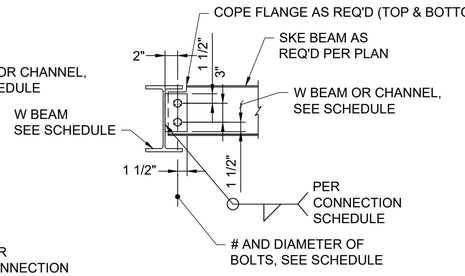
7 / - GUSSET PLATE 7 (GP7) DETAIL
SCALE: 1"=1'-0"

0 1' 2'

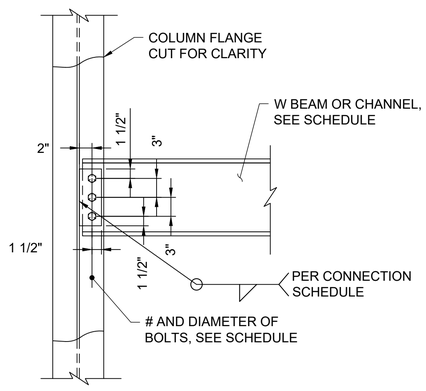
AT COLUMN FLG



AT BEAM



AT COLUMN WEB



CONNECTION SCHEDULE

BEAM	# AND BOLT DIA	SHEAR PL DIMS	WELD SIZE
W or C 8	(2) ¾"Ø	⅜"x6"x3 ½"	¼"
W or C 10	(2) ¾"Ø	⅜"x6"x3 ½"	¼"
W or C 12	(3) ¾"Ø	⅜"x9"x3 ½"	¼"

NOTE: BOLTS ARE SSLT, THREADS EXCLUDED
ASTM A325 BOLTS.

A / - SECTION
SCALE: 1"=1'-0"

0 1' 2'

B / - SECTION
SCALE: 1"=1'-0"

0 1' 2'

TYPICAL BEAM CONNECTIONS

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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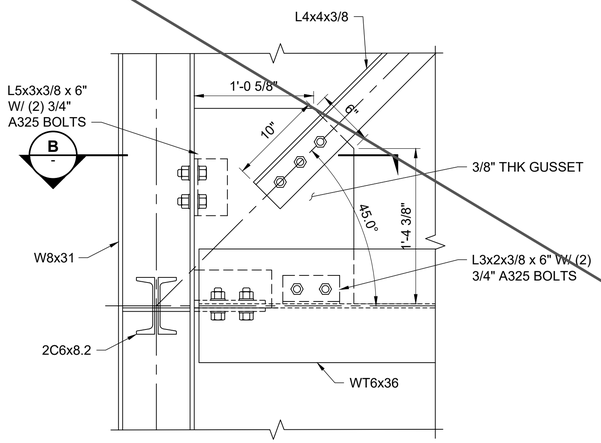
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

STEEL FRAMING DETAILS

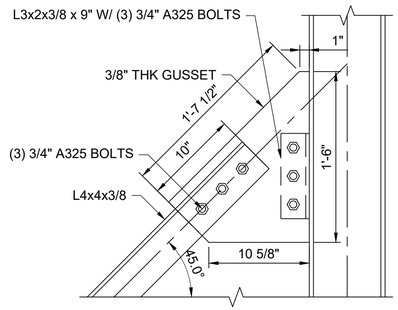
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	159 OF 240
DRAWING:	S-311

NOTE:
1. ALL STEEL FRAMING SHALL BE GALVANIZED.



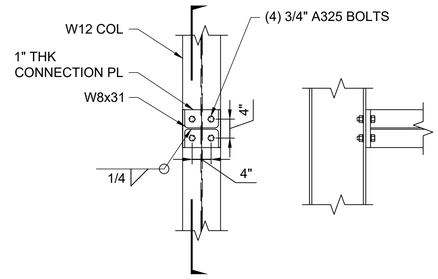
1 DETAIL S-303 SCALE: 1 1/2" = 1'-0"

0 1' 2'



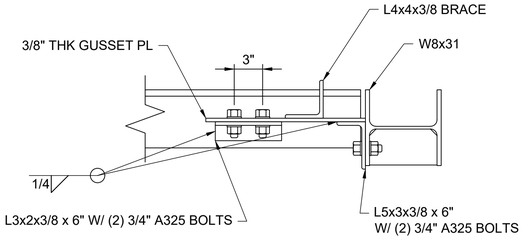
2 DETAIL S- SCALE: 1 1/2" = 1'-0"

0 2'



A CONNECTION DETAIL S-303 SCALE: 3/4" = 1'-0"

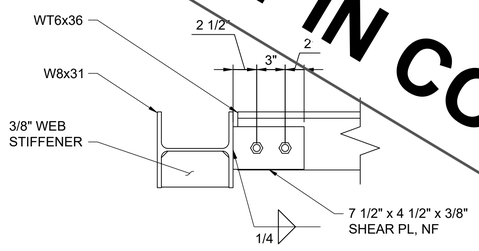
0 1' 2'



B CONNECTION DETAIL - SCALE: 1 1/2" = 1'-0"

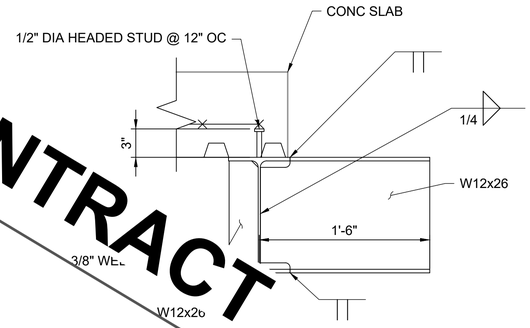
0 1' 2'

NOT IN CONTRACT



C TYP WT6 TO W8 CONNECTION S-303 SCALE: 1 1/2" = 1'-0"

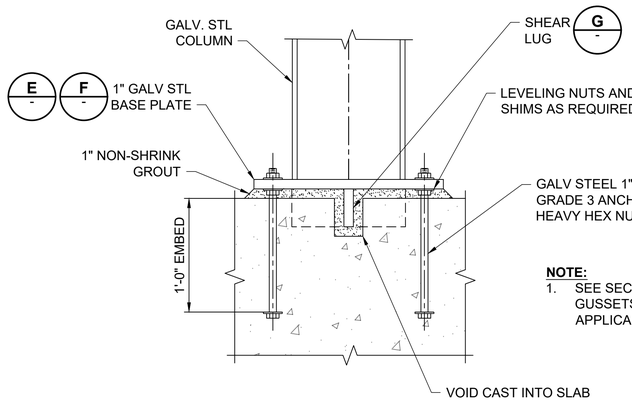
0 1' 2'



D DETAIL S-303 SCALE: 1 1/2" = 1'-0"

S-304

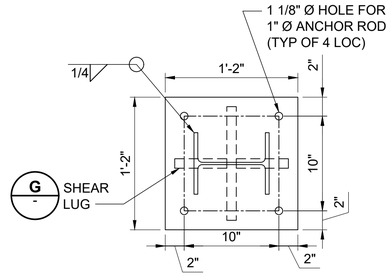
0 1' 2'



NOTE:
1. SEE SECTIONS (S-304) FOR BRACING GUSSETS AT COLUMN WHERE APPLICABLE.

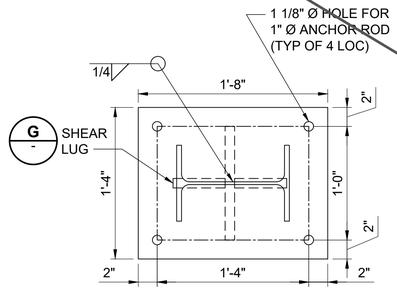
3 DETAIL S-304 SCALE: 1 1/2" = 1'-0"

0 1' 2'



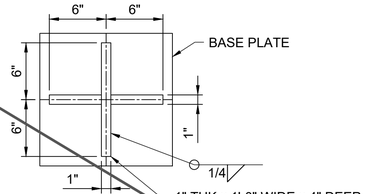
E BASE PLATE AT W8 COL - SCALE: 1 1/2" = 1'-0"

0 1' 2'



F BASE PLATE AT W12 COL - SCALE: 1 1/2" = 1'-0"

0 1' 2'



G SHEAR LUG DETAIL - SCALE: 1 1/2" = 1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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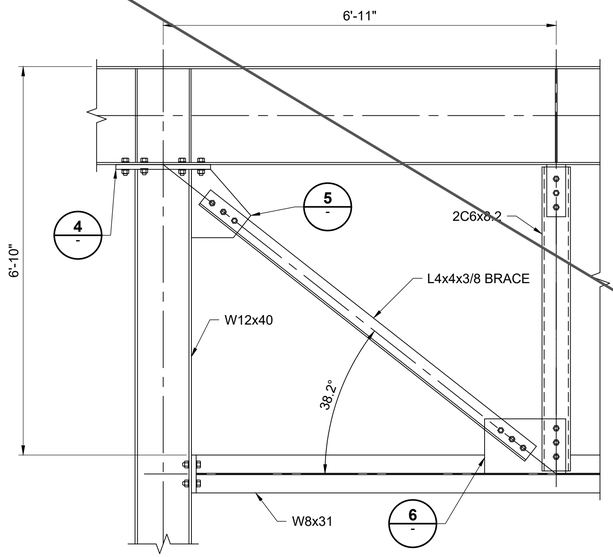
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

PIPE SUPPORT FRAMING DETAILS (NOT IN CONTRACT)

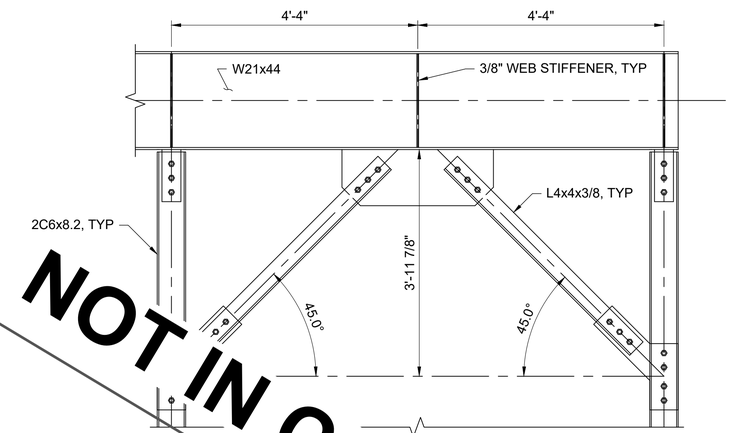
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	160 OF 240
DRAWING:	S-312

NOTE:
1. ALL STEEL FRAMING SHALL BE GALVANIZED.



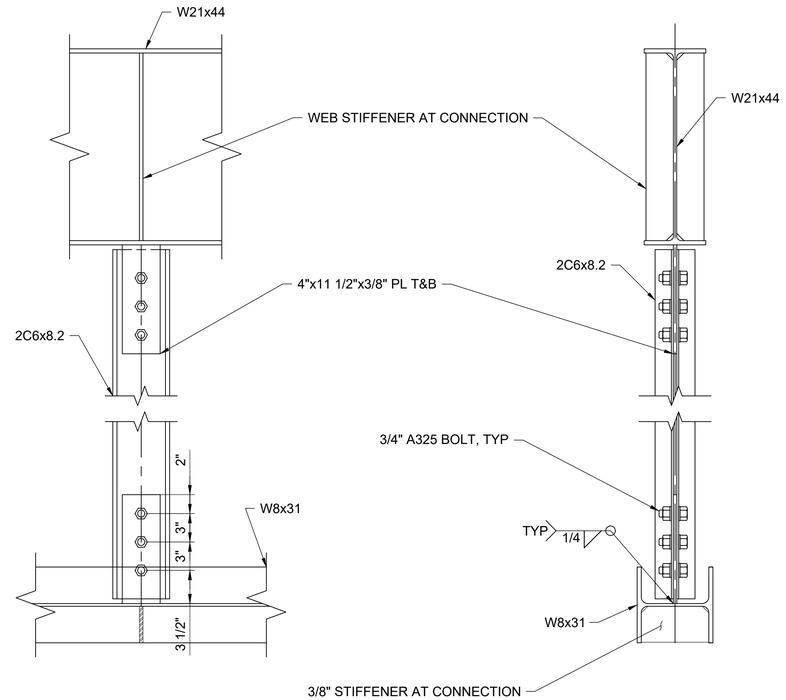
1 SECTION
S-304 SCALE: 3/4"=1'-0"

0 1' 2'



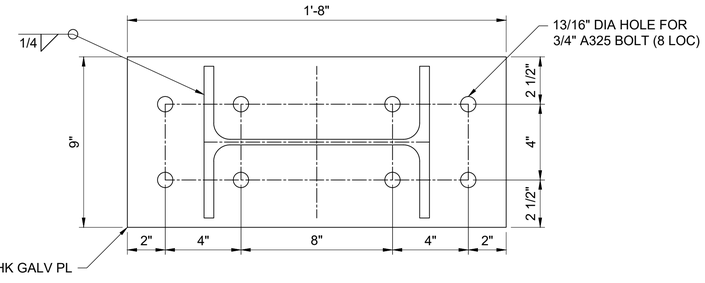
2 SEC
S-304 SCALE: 3/-

0 1' 2'



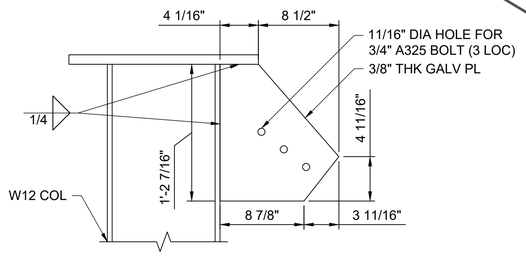
3 SECTION
S-304 SCALE: 1 1/2"=1'-0"

0 1' 2'



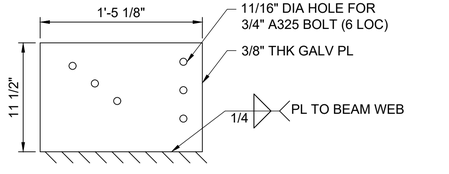
4 SECTION
SCALE: 3"=1'-0"

0 6" 1'



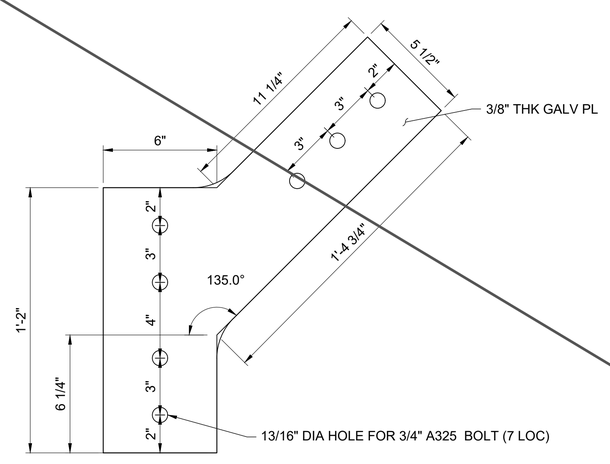
5 DETAIL
SCALE: 1 1/2"=1'-0"

0 1' 2'



6 DETAIL
SCALE: 1 1/2"=1'-0"

0 1' 2'



7 SECTION
SCALE: 3"=1'-0"

0 6" 1'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

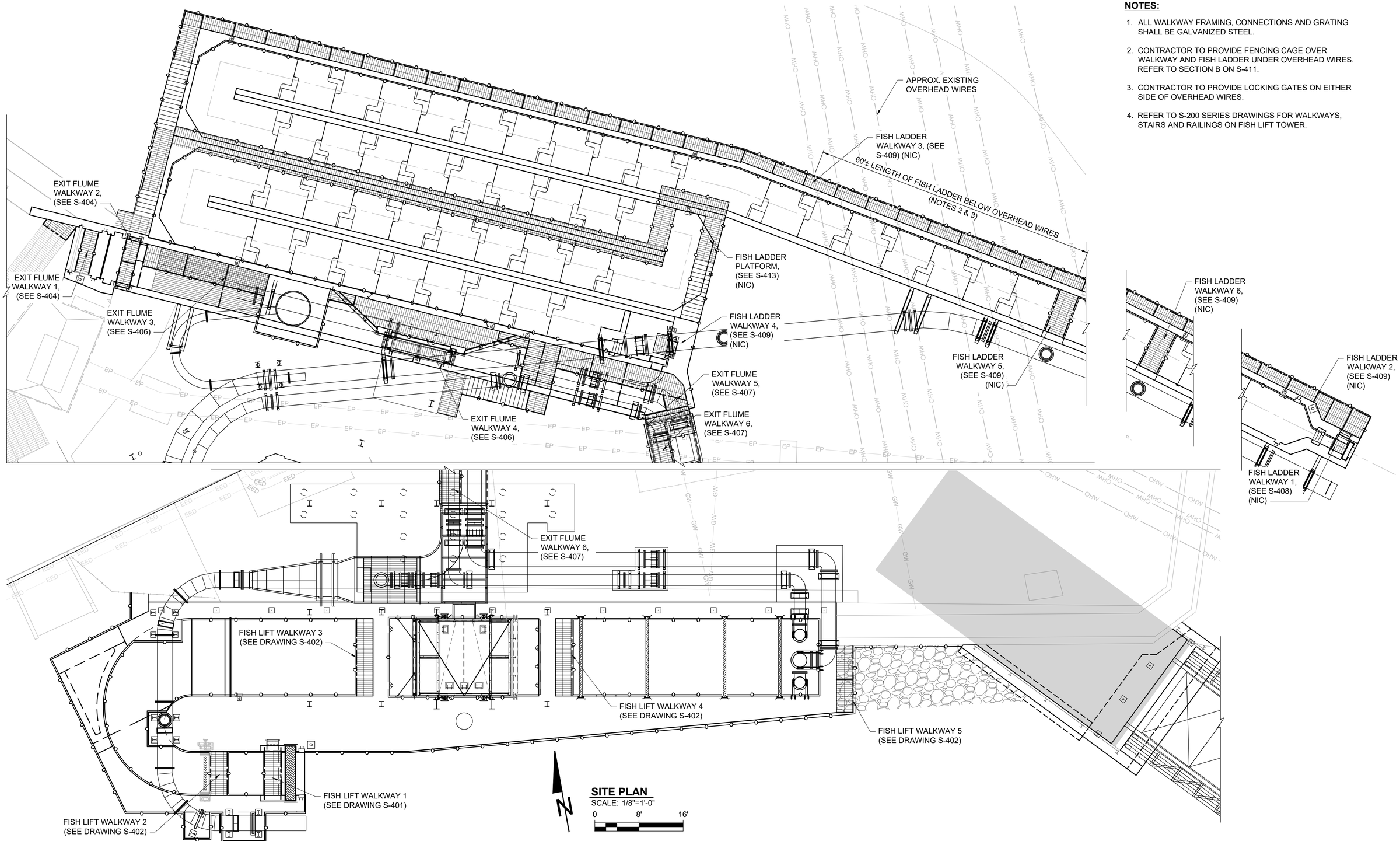
PIPE SUPPORT FRAMING DETAILS
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	161 OF 240
DRAWING:	S-313

NOT IN CONTRACT

NOTES:

1. ALL WALKWAY FRAMING, CONNECTIONS AND GRATING SHALL BE GALVANIZED STEEL.
2. CONTRACTOR TO PROVIDE FENCING CAGE OVER WALKWAY AND FISH LADDER UNDER OVERHEAD WIRES. REFER TO SECTION B ON S-411.
3. CONTRACTOR TO PROVIDE LOCKING GATES ON EITHER SIDE OF OVERHEAD WIRES.
4. REFER TO S-200 SERIES DRAWINGS FOR WALKWAYS, STAIRS AND RAILINGS ON FISH LIFT TOWER.



SITE PLAN
SCALE: 1/8"=1'-0"
0 8' 16'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

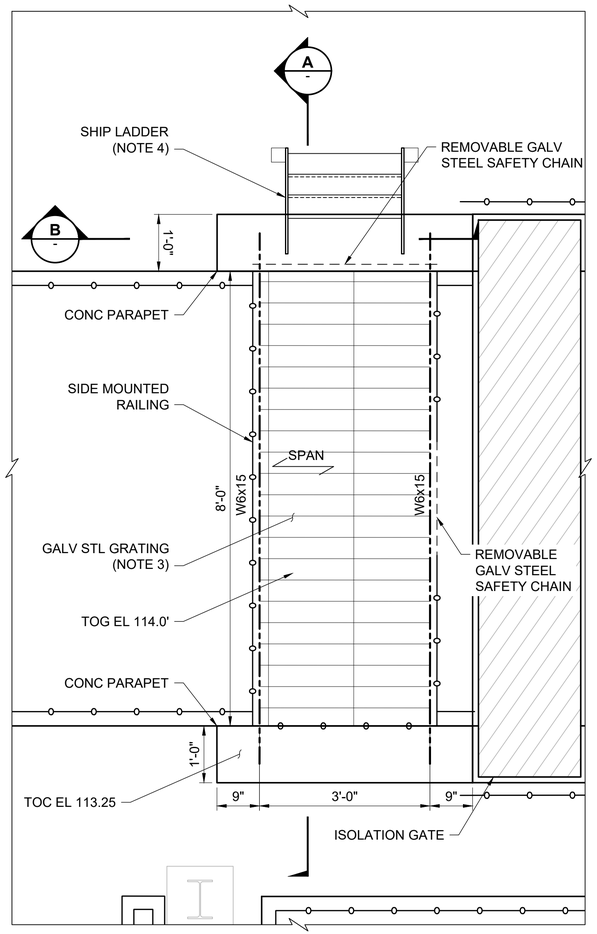
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

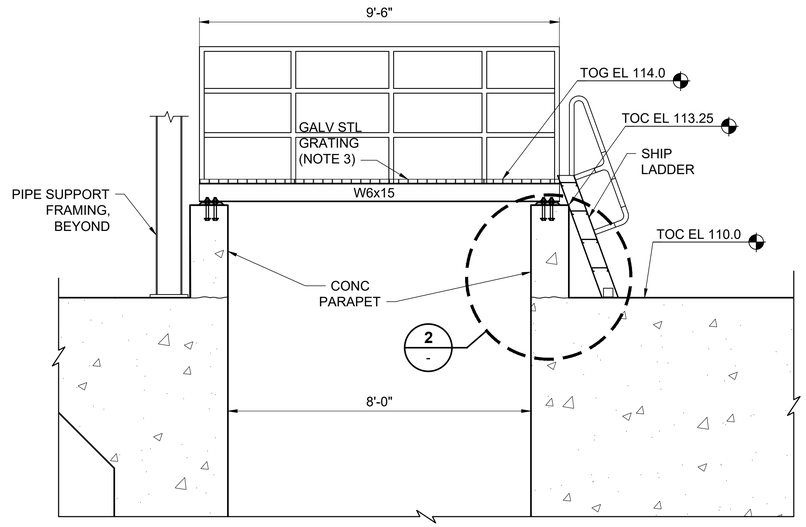
PLATFORM AND ACCESS PLAN

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	162 OF 240
DRAWING:	S-400



1 S-400 **FISH LIFT WALKWAY 1 PLAN**
SCALE: 3/4"=1'-0"

0 1' 2'

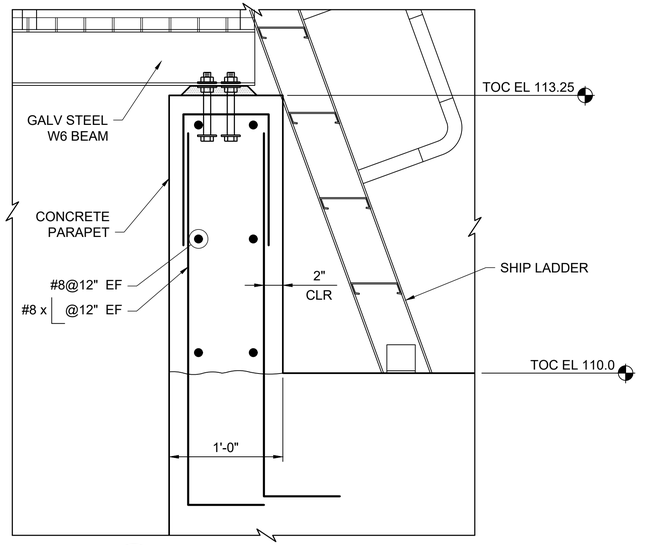


A - **SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'

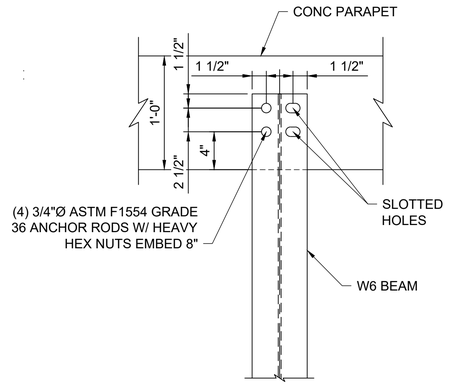
NOTES:

1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED. PROVIDE REMOVABLE SAFETY CHAIN AT ACCESS LOCATIONS AND OTHER RAILING INTERFERENCE LOCATIONS.
2. ACCESS WALKWAY FRAMING, CONNECTIONS, RAILING, AND GRATING SHALL BE GALVANIZED STEEL.
3. GALVANIZED STEEL GRATING, 1 ½"X3⁄16" BEARING BARS @1 3⁄16" OC. AND CROSS BARS @4" OC. BAND ALL EDGES OF GRATING. USE SADDLE TYPE CLIPS, MINIMUM 4 PER PANEL.
4. SEE SPECIFICATION 05 51 10 FOR SHIPS LADDERS.



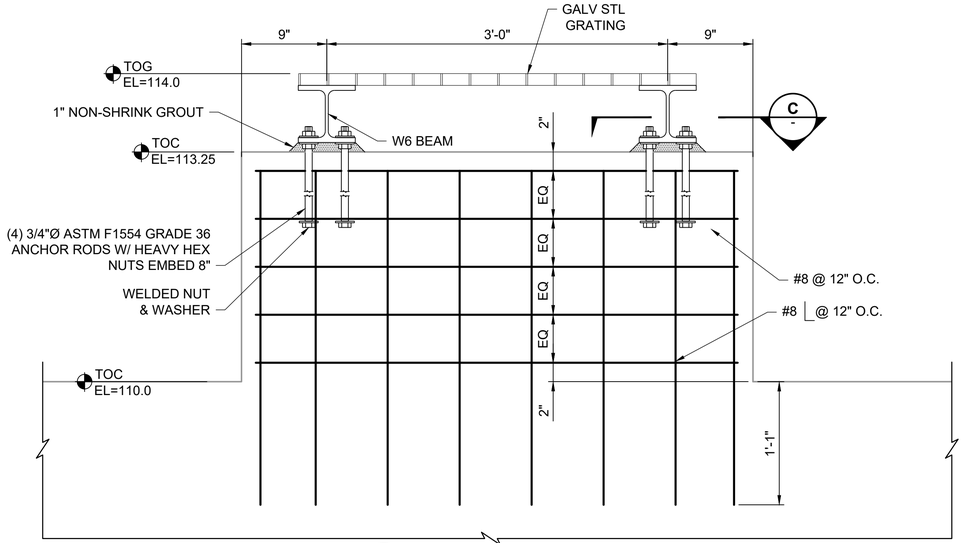
2 - **CONCRETE PARAPET DETAIL**
SCALE: 1 1/2"=1'-0"

0 1' 2'



C - **BEAM BEARING SECTION**
SCALE: 1 1/2"=1'-0"

0 1' 2'



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

0 1' 2'

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LIFT WALKWAY 1 PLAN, SECTIONS AND DETAILS

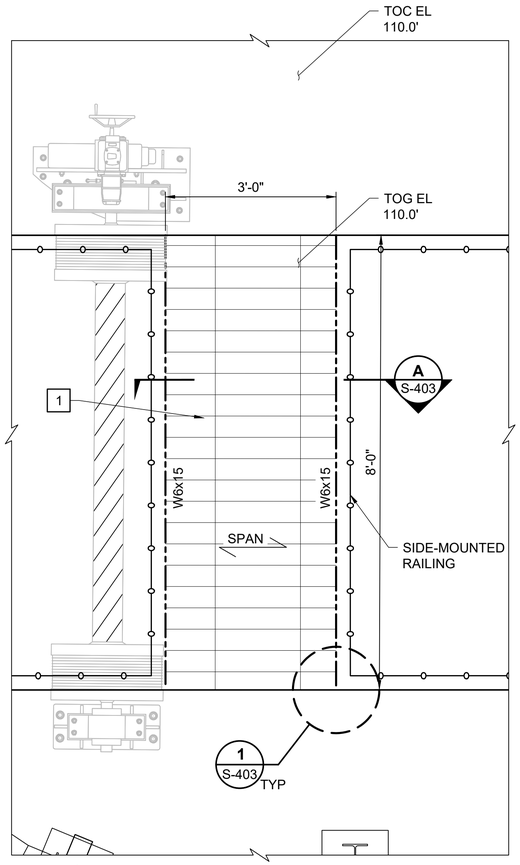
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	161 OF 240
DRAWING:	S-401

KEYED NOTE:

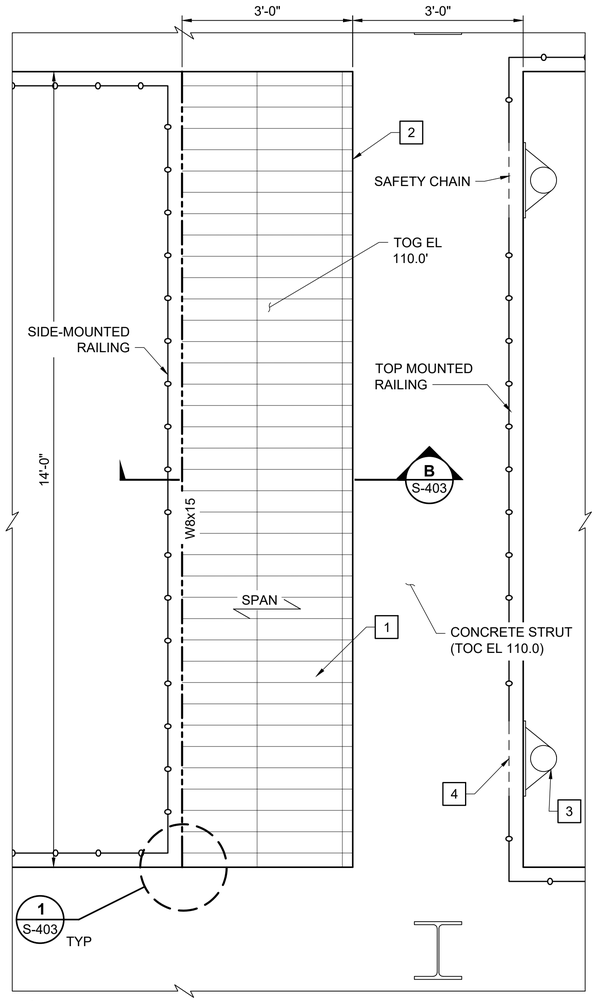
1. GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.
2. GRATING SUPPORT TYPE 1 (1 / S-503)
3. 5PT20 WALL MOUNTED CRANE BASE (6 LOCATIONS).
4. REMOVABLE GALVANIZED STEEL SAFETY CHAIN.

NOTES:

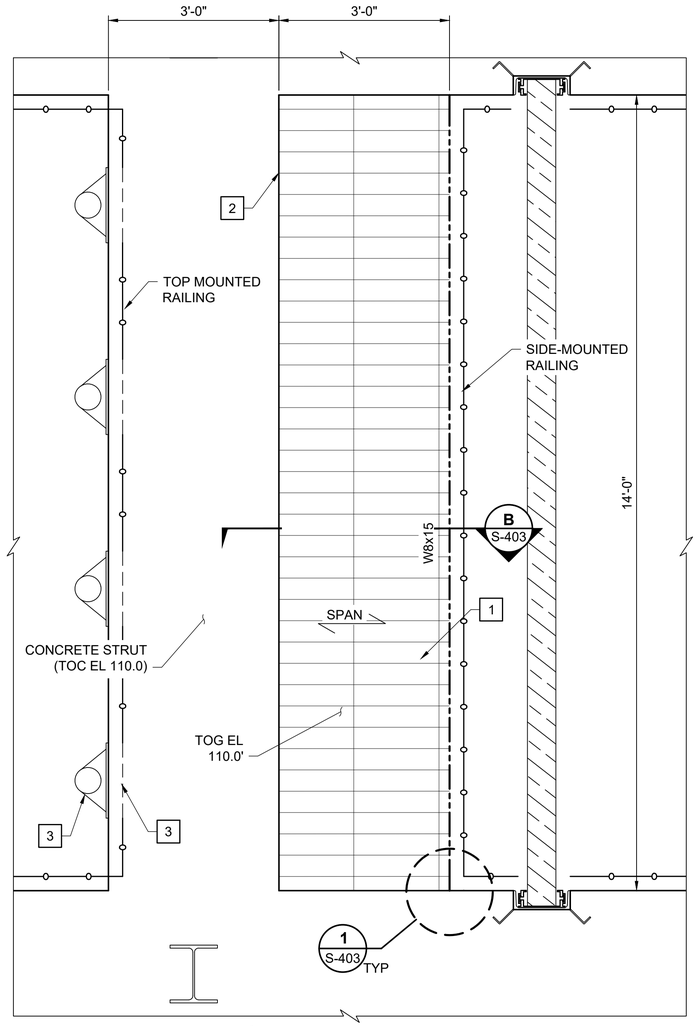
1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED. PROVIDE REMOVABLE SAFETY CHAIN AT ACCESS LOCATIONS AND OTHER RAILING INTERFERENCE LOCATIONS.
2. ACCESS WALKWAY FRAMING, CONNECTIONS AND RAILING SHALL BE GALVANIZED STEEL.



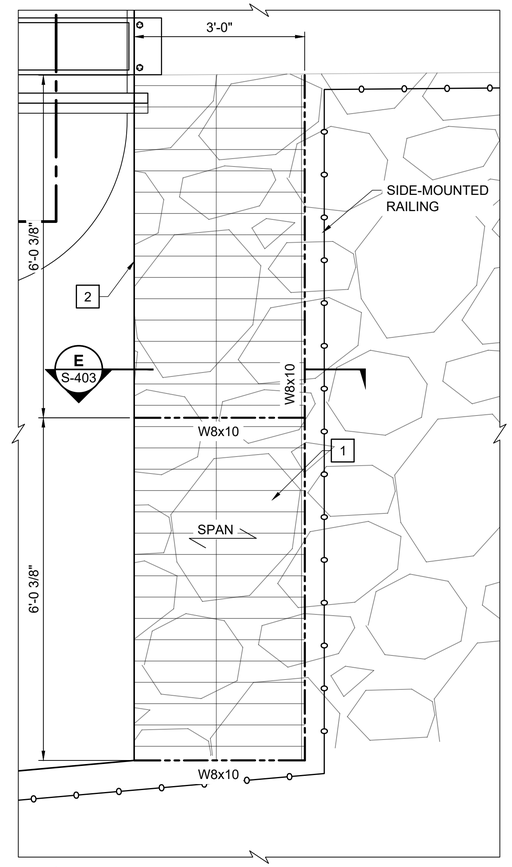
FISH LIFT WALKWAY 2 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'



FISH LIFT WALKWAY 3 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'



FISH LIFT WALKWAY 4 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'



FISH LIFT WALKWAY 5 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

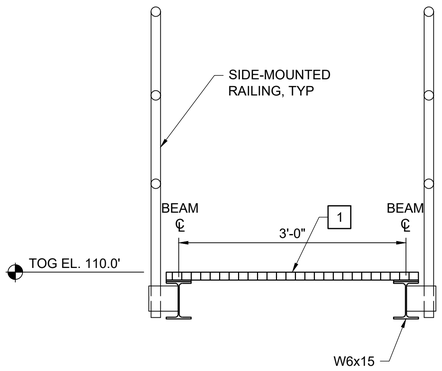
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

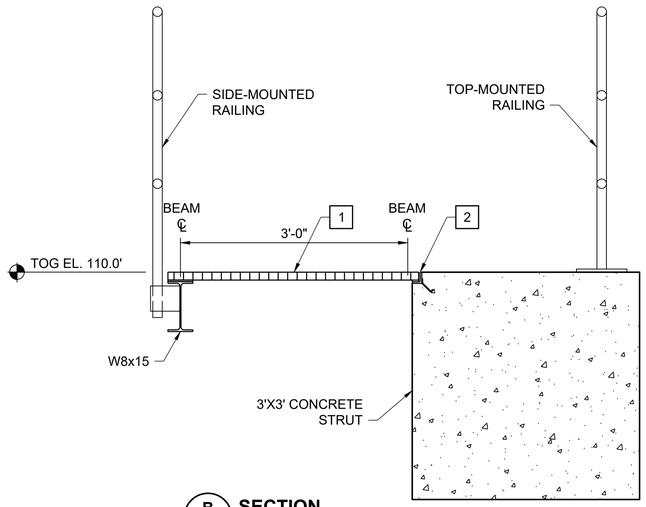
FISH LIFT WALKWAYS 2, 3, 4 AND 5 PLANS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	162 OF 240
DRAWING:	S-402



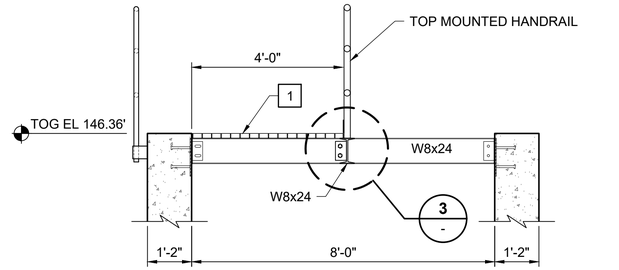
A S-402 **SECTION**
SCALE: 1"=1'-0"

0 1' 2'



B S-402 **SECTION**
SCALE: 1"=1'-0"

0 1' 2'



C S-406 **SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'

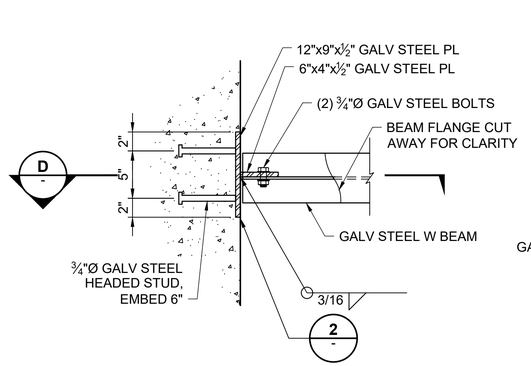
NOTES:

1. ALL RAILING IS SIDE-MOUNTED UNLESS OTHERWISE NOTED.
2. ACCESS WALKWAY FRAMING, CONNECTIONS AND RAILING SHALL BE GALVANIZED STEEL.

KEYED NOTES:

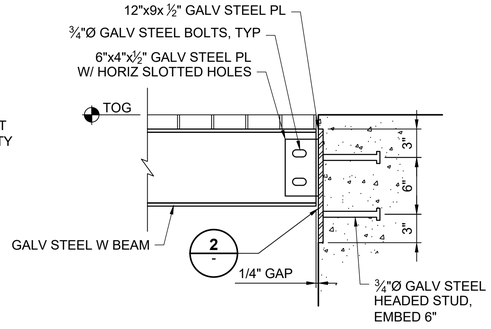
1 GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.

2 GRATING SUPPORT TYPE 1 (1 / S-503)



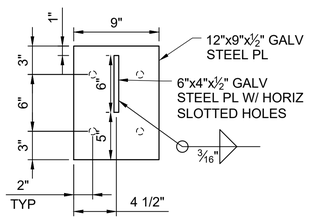
1 S-402 **CONNECTION DETAIL**
SCALE: 1-1/2" = 1'-0"

0 1' 2'



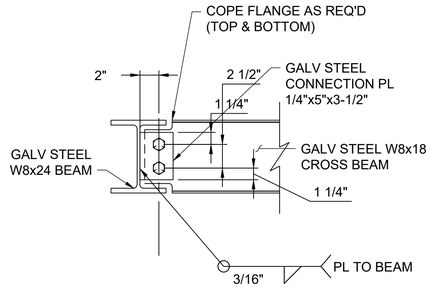
D - **SECTION**
SCALE: 1-1/2" = 1'-0"

0 1' 2'



2 - **END PLATE DETAIL**
SCALE: 1-1/2" = 1'-0"

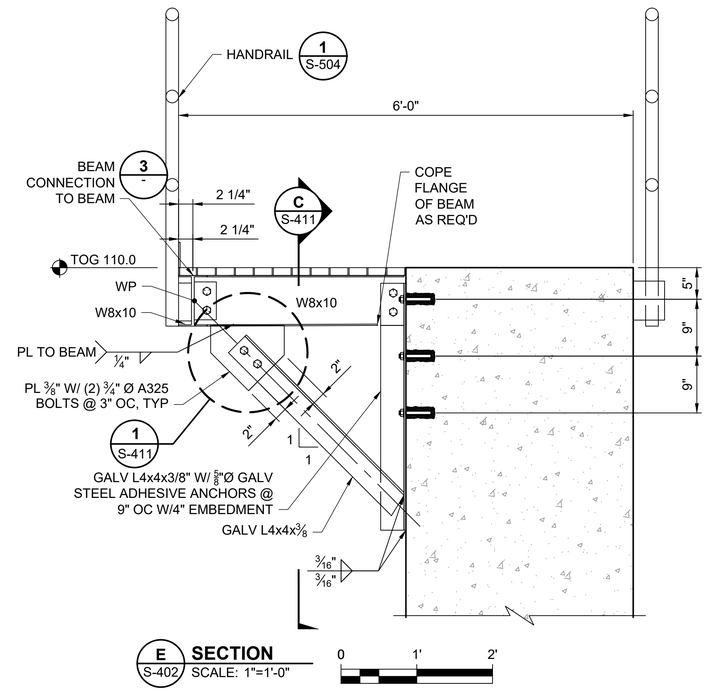
0 1' 2'



3 - **BEAM TO BEAM CONNECTION**
SCALE: 1-1/2" = 1'-0"

NOTE:
1. ANGLE THE GALVANIZED PLATE AT SIM.

0 1' 2'



E S-402 **SECTION**
SCALE: 1"=1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

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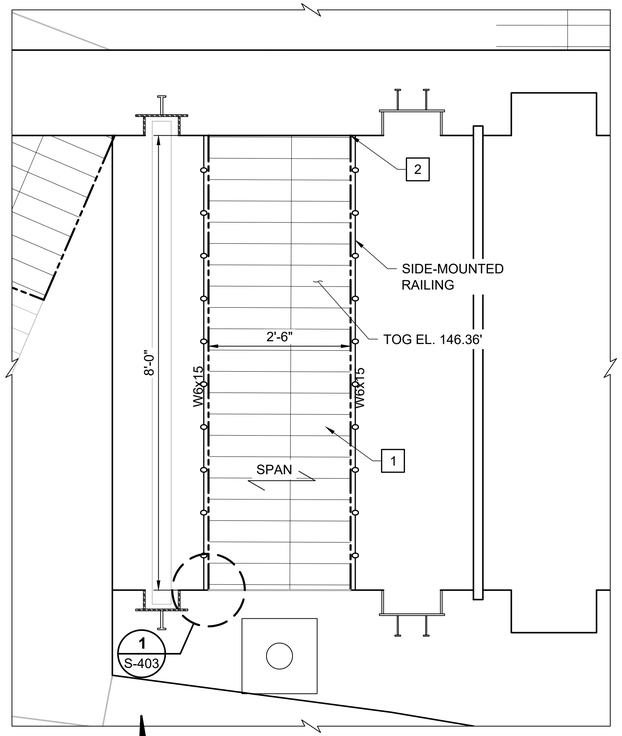
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

WALKWAY SECTIONS AND DETAILS

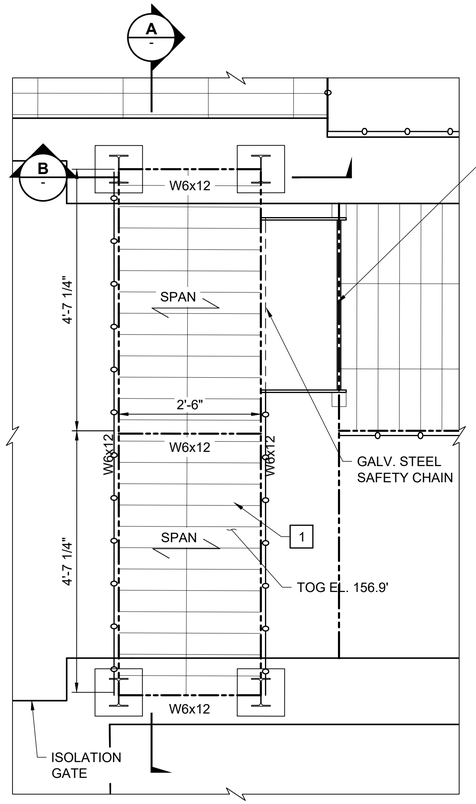
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	165 OF 240
DRAWING:	S-403



EXIT FLUME WALKWAY 1 PLAN

SCALE: 3/4" = 1'-0"

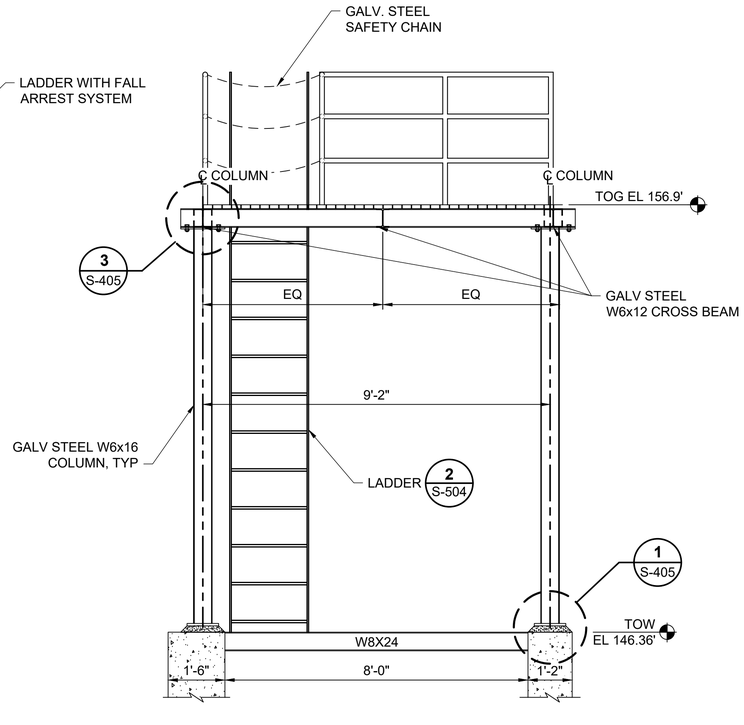
0 1' 2'



EXIT FLUME WALKWAY 2 PLAN

SCALE: 3/4" = 1'-0"

0 1' 2'



A EXIT FLUME ELEVATED WALKWAY

SCALE: 1/2" = 1'-0"

0 2' 4'

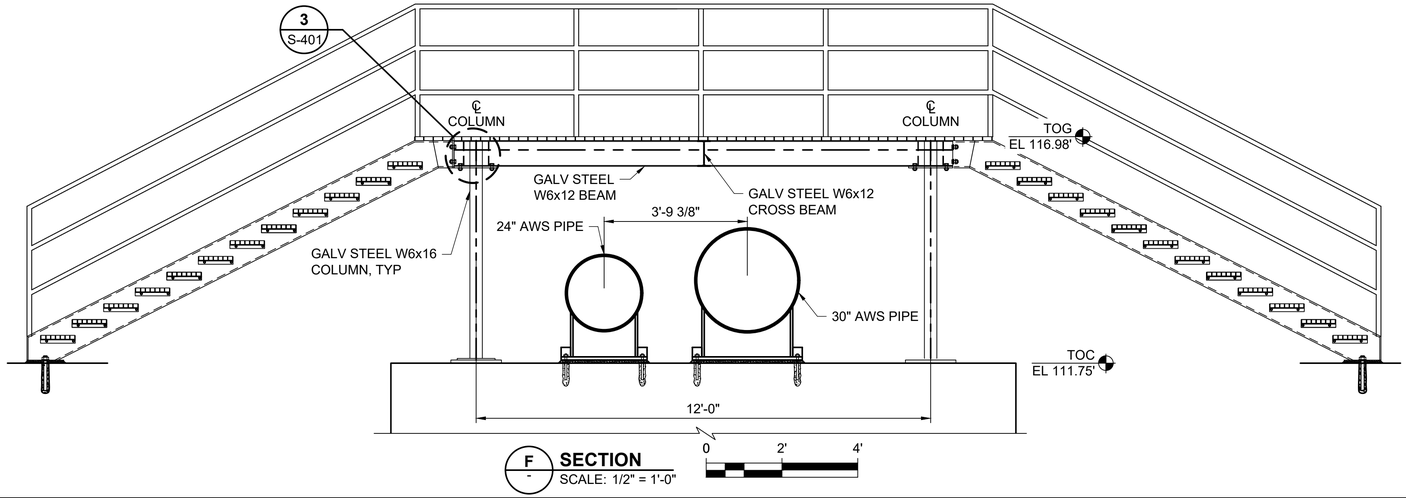
NOTES:

1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED.
2. ACCESS WALKWAY FRAMING, CONNECTIONS AND RAILING SHALL BE GALVANIZED STEEL.
3. FIELD DRILL BOLT HOLES TO ALIGN WITH X-BRACING MEMBERS, REPAIR DRILLED HOLES WITH COLD GALVANIZED COMPOUND.
4. COORDINATE TOP OF GRATING ELEVATION WITH GATE MANUFACTURER PRIOR TO PLATFORM FABRICATION.

KEYED NOTES:

1 GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.

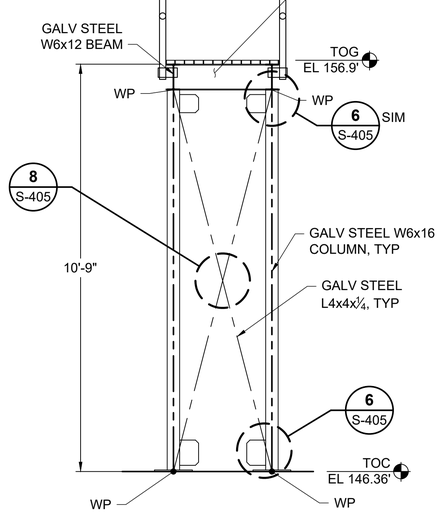
2 GRATING SUPPORT TYPE 1 (1 / S-503)



F SECTION

SCALE: 1/2" = 1'-0"

0 2' 4'



B SECTION

SCALE: 1/2" = 1'-0"

0 2' 4'

ALDEN — a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

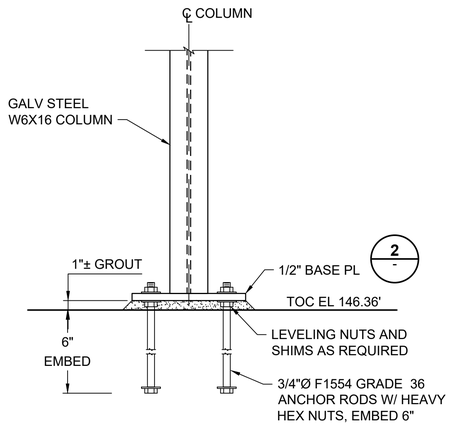
MAINE DEPARTMENT OF MARINE RESOURCES

EXIT FLUME WALKWAYS 1 AND 2 PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	166 OF 240
DRAWING:	S-404

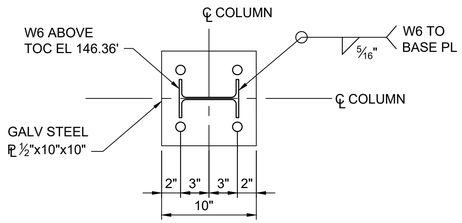
NOTES:

1. ACCESS WALKWAY FRAMING, CONNECTIONS, RAILING AND GRATING SHALL BE GALVANIZED STEEL.
2. FIELD DRILL BOLT HOLES TO ALIGN WITH X-BRACING MEMBERS. REPAIR DRILLED HOLES WITH COLD GALVANIZED COMPOUND.



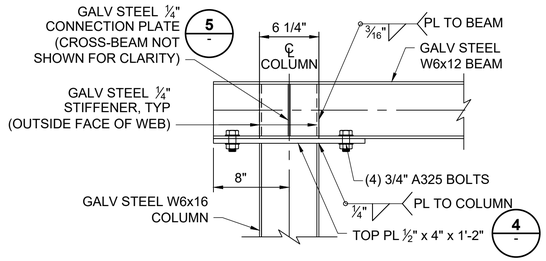
1 DETAIL (S-404) SCALE: 1 1/2"=1'-0"

0 1' 2'



2 COLUMN BASE PLATE DETAIL (-) SCALE: 1 1/2"=1'-0"

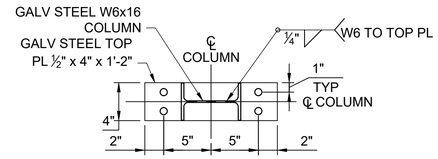
0 1' 2'



3 BEAM TO COLUMN DETAIL (S-404) SCALE: 1 1/2"=1'-0"

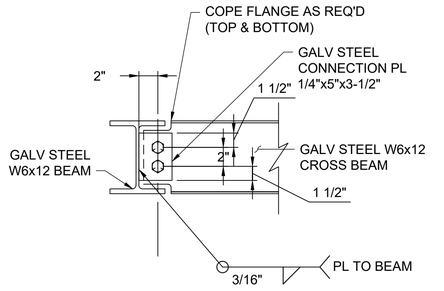
0 1' 2'

1 1/2" = 1'-0



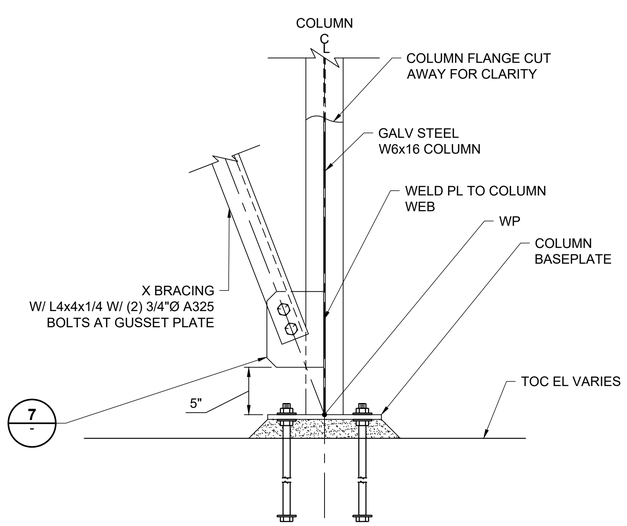
4 COLUMN TOP PLATE DETAIL (-) SCALE: 1 1/2"=1'-0"

0 1' 2'



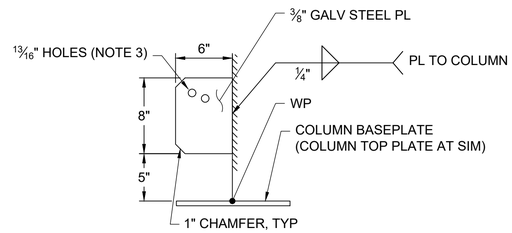
5 BEAM TO BEAM CONNECTION (-) SCALE: 1-1/2" = 1'-0"

0 1' 2'



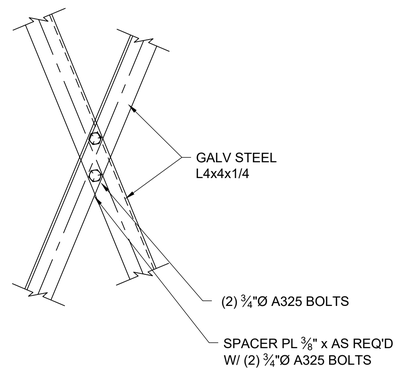
6 DETAIL (S-404) SCALE: 1 1/2"=1'-0"

0 1' 2'



7 GUSSET PLATE DETAIL (-) SCALE: 1 1/2"=1'-0"

0 1' 2'



8 X-BRACING DETAIL (S-404) SCALE: 1 1/2"=1'-0"

0 1' 2'

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

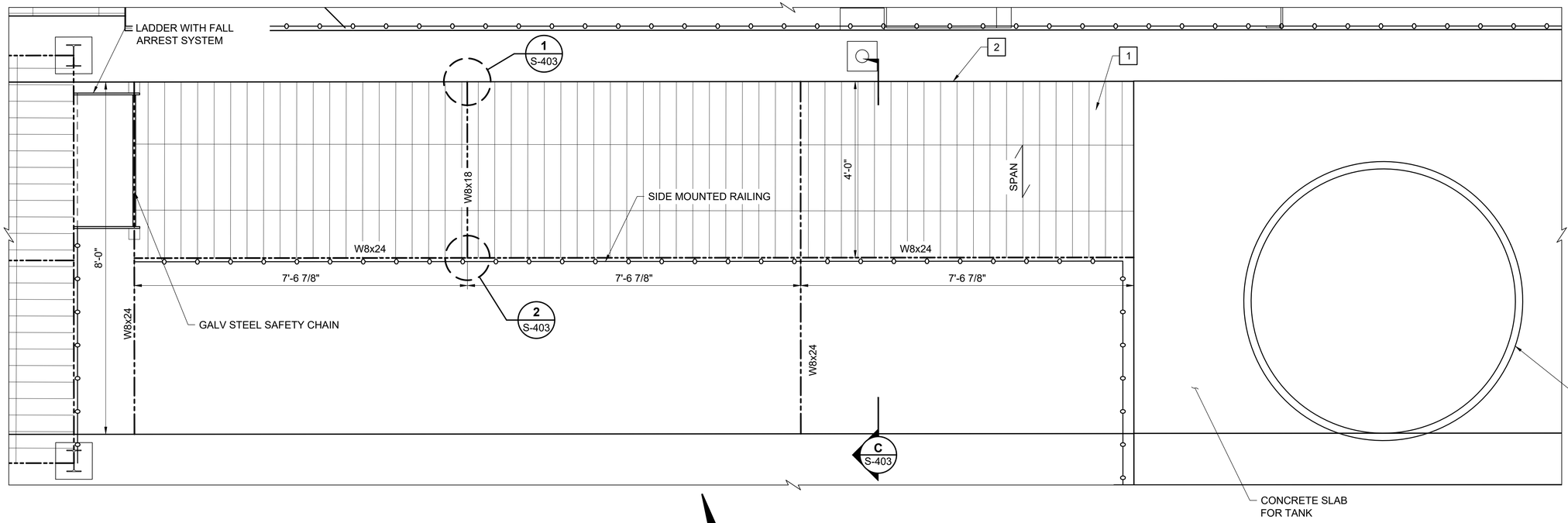
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

EXIT FLUME WALKWAY 2
DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	167 OF 240
DRAWING:	S-405



NOTES:

1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED.
2. ACCESS WALKWAY FRAMING, CONNECTIONS AND RAILING SHALL BE GALVANIZED STEEL.
3. REMOVABLE GRATING, APPROXIMATE PANEL WEIGHT = 80 LBS.

KEYED NOTES:

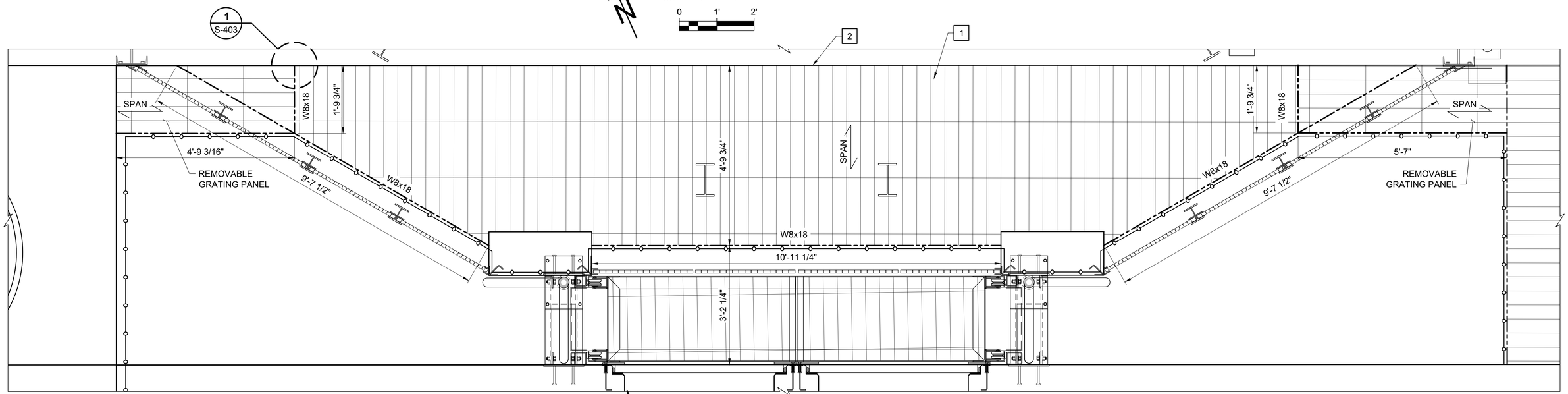
1 GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.

2 GRATING SUPPORT TYPE 1 (1 / S-503)

EXIT FLUME WALKWAY 3 PLAN

SCALE: 3/4" = 1'-0"

0 1' 2'



EXIT FLUME WALKWAY 4 PLAN

SCALE: 3/4" = 1'-0"

0 1' 2'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

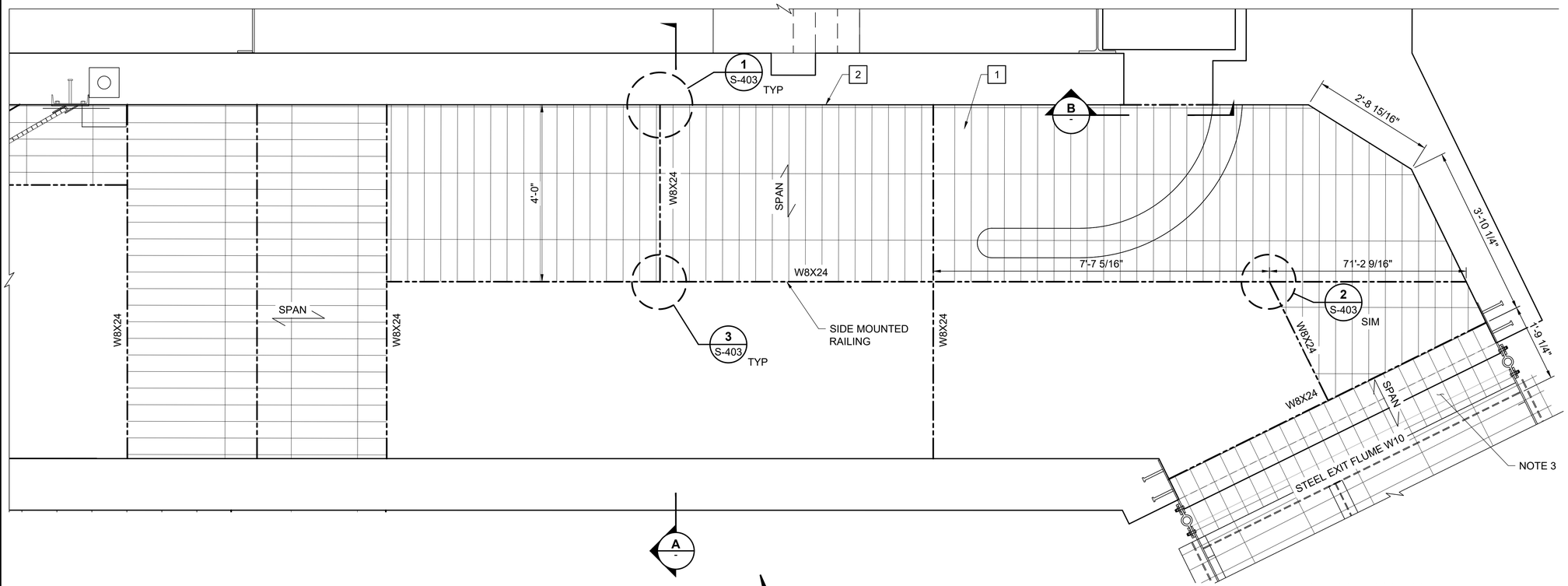
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

EXIT FLUME WALKWAYS 3 AND 4 PLANS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	166 OF 240
DRAWING:	S-406



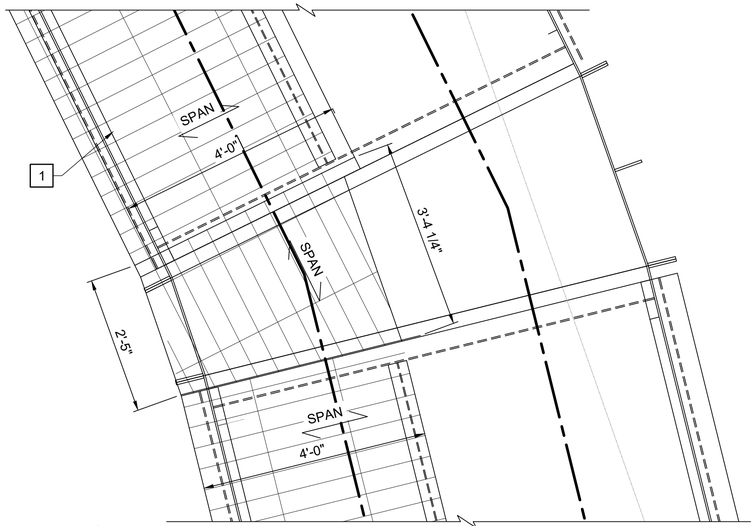
NOTES:

1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED.
2. ACCESS WALKWAY FRAMING, CONNECTIONS AND RAILING SHALL BE GALVANIZED STEEL.
3. SHIM TRANSITION PANEL AS REQUIRED AT W8X24 AND STEEL EXIT FLUME W10.

KEYED NOTES:

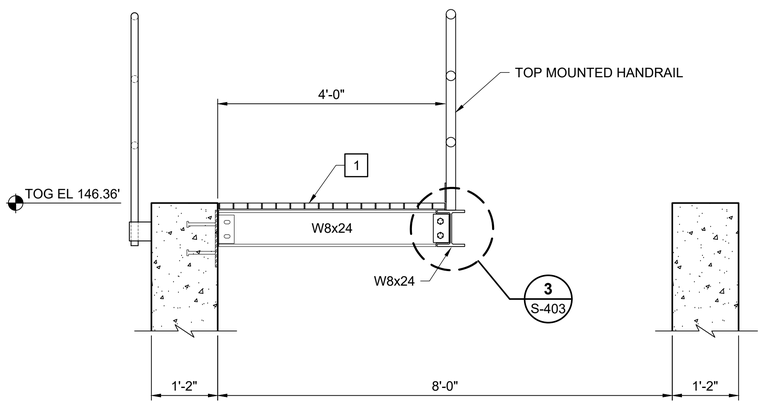
1 GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.

2 GRATING SUPPORT TYPE 1 (1 / S-503)

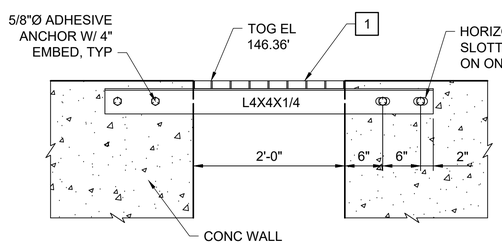


EXIT FLUME WALKWAY 6 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'

EXIT FLUME WALKWAY 5 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'



A - SECTION
SCALE: 1"=1'-0"



B - SUPPORT ANGLE
SCALE: 1"=1'-0"

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NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

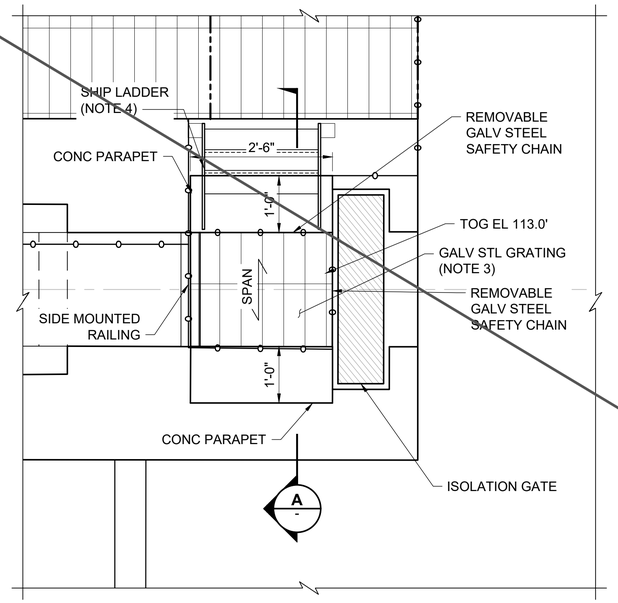
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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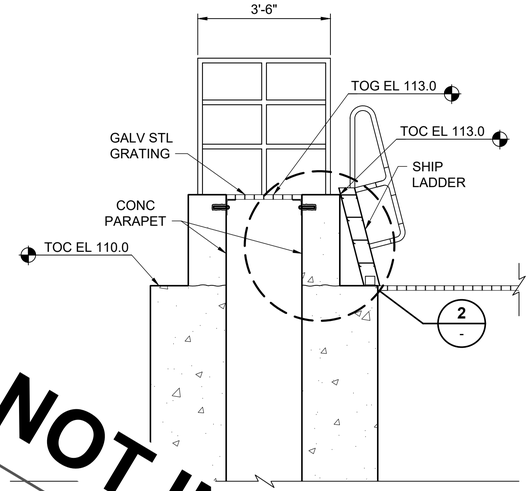
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

EXIT FLUME WALKWAYS 5 AND 6 PLANS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	169 OF 240
DRAWING:	S-407





SECTION
1/2"=1'-0"

0 1' 2'

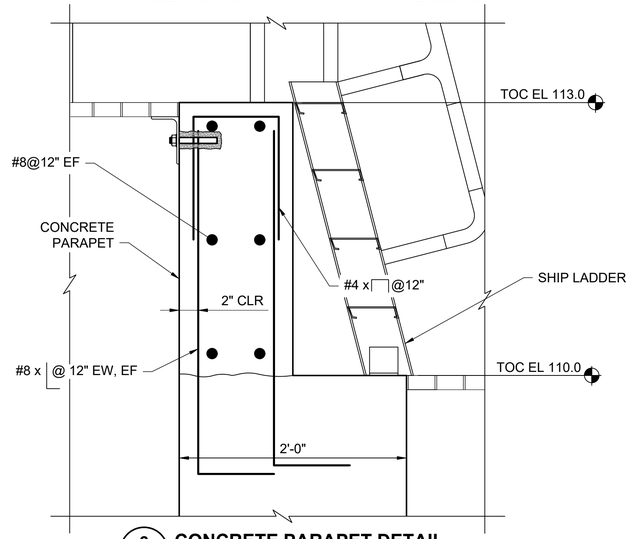
NOT IN CONTRACT

1 / S-100 **FISH LADDER WALKWAY 1 PLAN**
SCALE: 3/4"=1'-0"

0 1' 2'

NOTES:

1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED. PROVIDE REMOVABLE SAFETY CHAIN AT ACCESS LOCATIONS AND OTHER RAILING INTERFERENCE LOCATIONS
2. ACCESS WALKWAY FRAMING, CONNECTIONS, RAILING, AND GRATING SHALL BE GALVANIZED STEEL.
3. GALVANIZED STEEL GRATING, 1 ½"X3/16" BEARING BARS @1 3/16" OC. AND CROSS BARS @4" OC. BAND ALL EDGES OF GRATING. USE SADDLE TYPE CLIPS, MINIMUM 4 PER PANEL.
4. SEE SPECIFICATION 05 51 10 FOR SHIPS LADDERS.



2 / - **CONCRETE PARAPET DETAIL**
SCALE: 1 1/2"=1'-0"

0 1' 2'

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

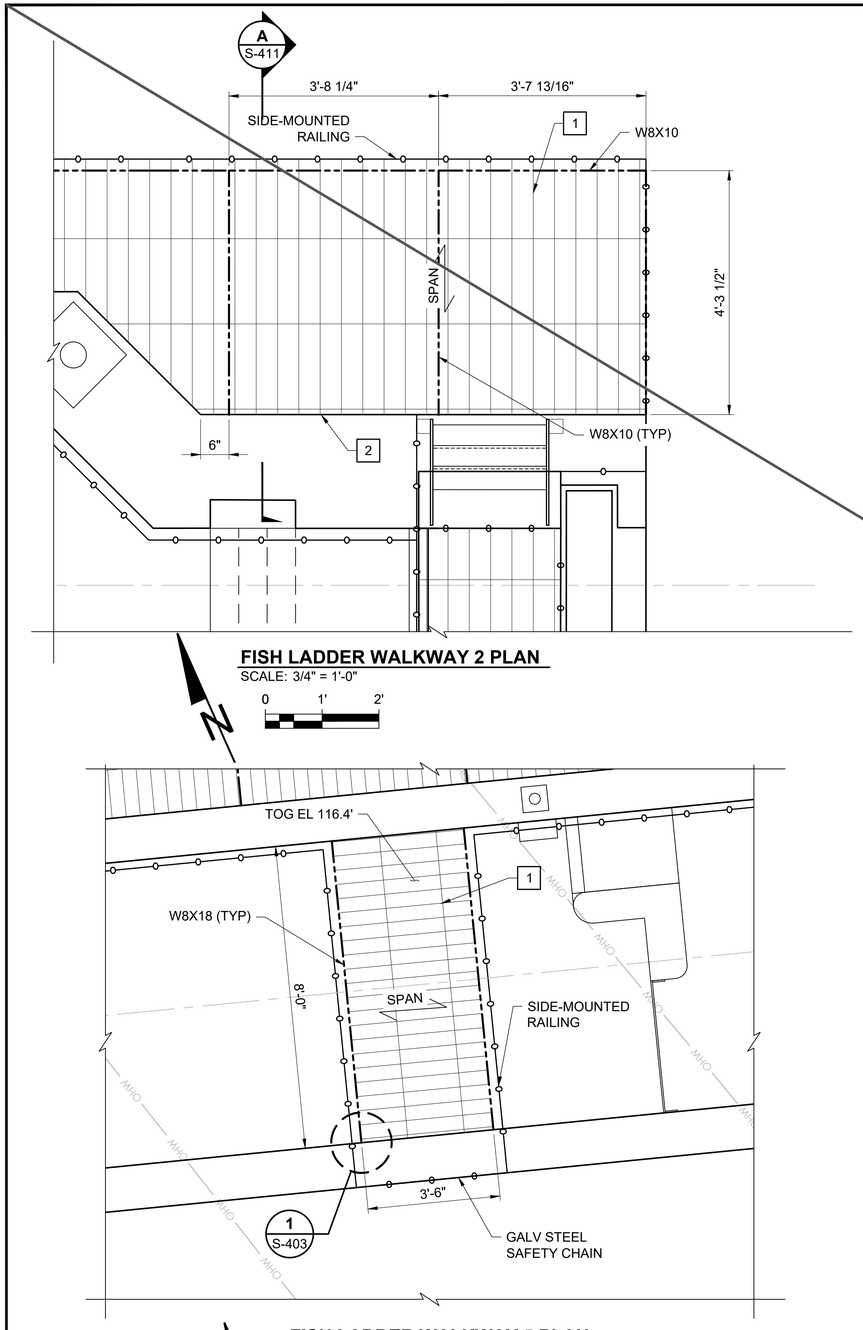
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER WALKWAY 1 PLAN, SECTIONS AND DETAILS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	170 OF 240
DRAWING:	S-408



FISH LADDER WALKWAY 2 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'



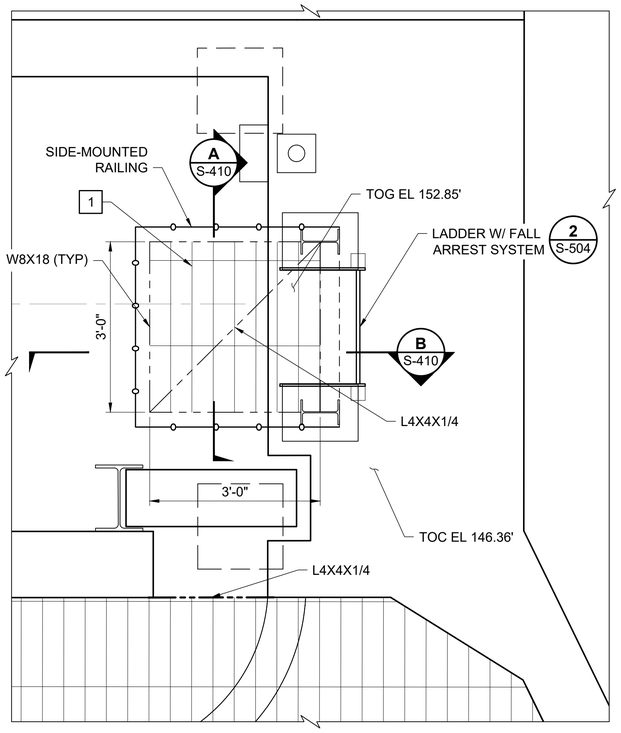
WALKWAY 3 PLAN
SCA
0

NOT IN CONTRACT

KEYED NOTES:

1 GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.

2 GRATING SUPPORT TYPE 1 (1 / S-503)



FISH LADDER WALKWAY 4 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'

FISH LADDER WALKWAY 5 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'

FISH LADDER WALKWAY 6 PLAN
SCALE: 3/4" = 1'-0"
0 1' 2'

a verdantas company

ALDEN

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

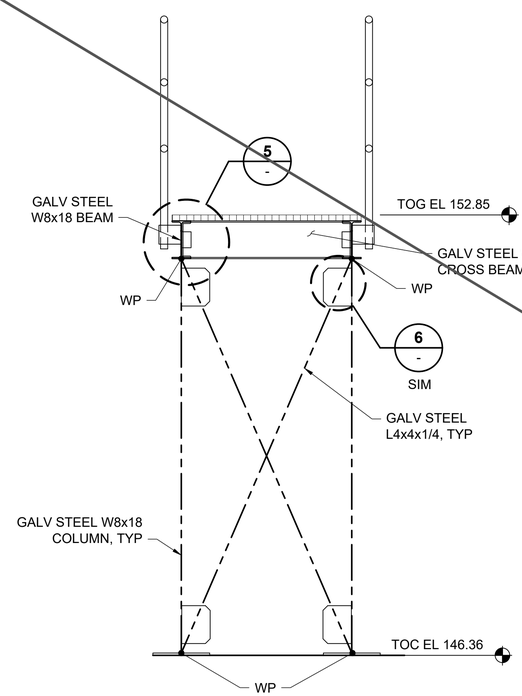
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

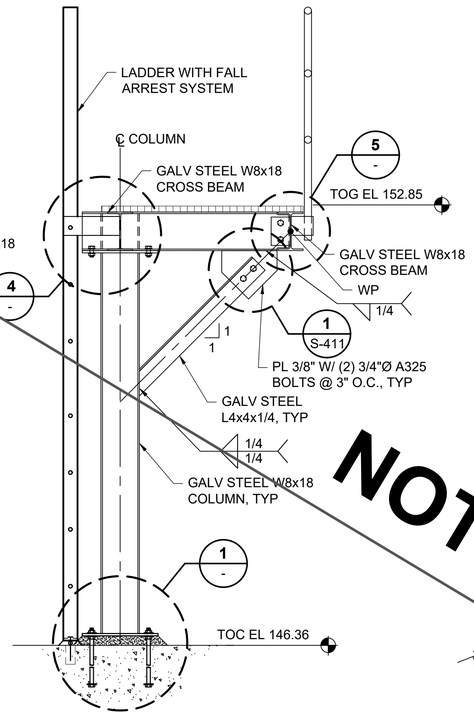
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER WALKWAYS 2, 3, 4, 5 AND 6 PLANS (NOT IN CONTRACT)

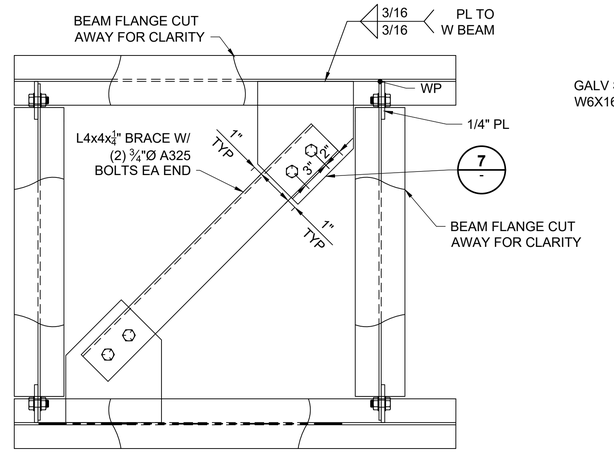
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	171 OF 240
DRAWING:	S-409



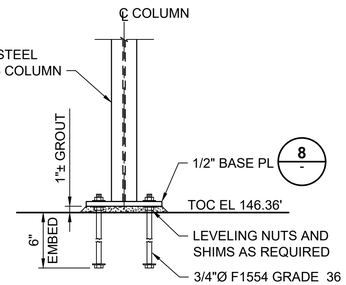
A S-409 **SECTION**
SCALE: 3/4" = 1'-0"
0 1' 2'



B S-409 **SECTION**
SCALE: 3/4" = 1'-0"
0 1' 2'

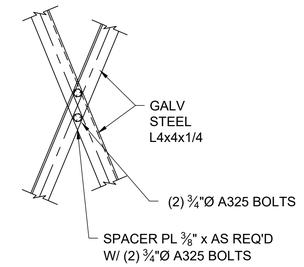


PLAN VIEW
SCALE: 1 1/2"=1'-0"
0 1' 2'

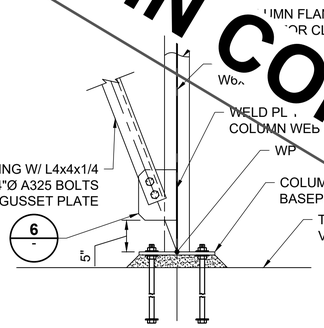


1 **DETAIL**
SCALE: 1"=1'-0"
0 1' 2'

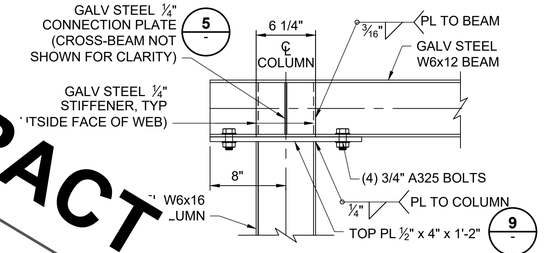
NOTES:
1. ACCESS WALKWAY FRAMING, CONNECTIONS, RAILING AND GRATING SHALL BE GALVANIZED STEEL.
2. FIELD DRILL BOLT HOLES TO ALIGN WITH X-BRACING MEMBERS. REPAIR DRILLED HOLES WITH COLD GALVANIZED COMPOUND.



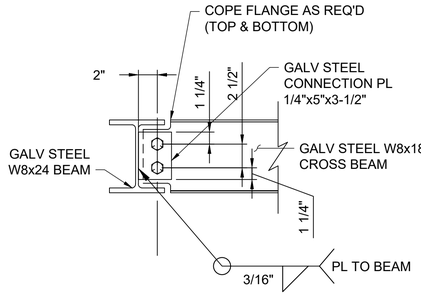
2 **X-BRACING DETAIL**
SCALE: 1"=1'-0"
0 1' 2'



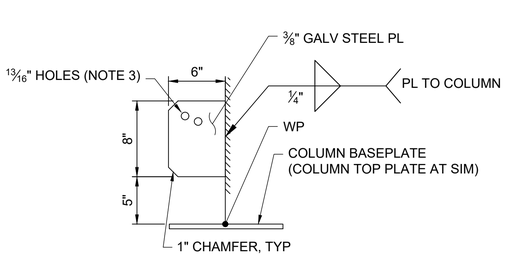
3 **DETAIL**
SCALE: 1"=1'-0"
0 1' 2'



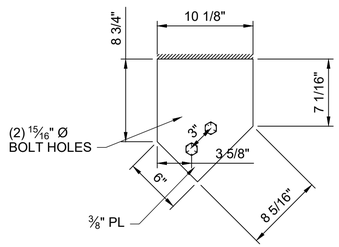
4 **BEAM TO COLUMN DETAIL**
SCALE: 1 1/2"=1'-0"
0 1' 2'



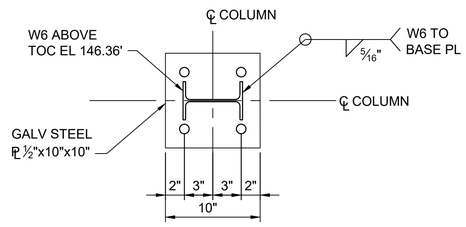
5 **BEAM TO BEAM CONNECTION**
SCALE: 1-1/2" = 1'-0"
0 1' 2'



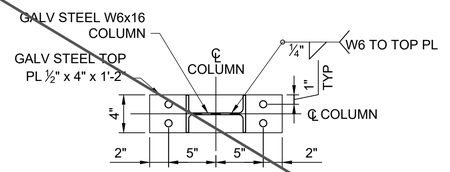
6 **GUSSET PLATE DETAIL**
SCALE: 1 1/2"=1'-0"
0 1' 2'



7 **GUSSET PLATE DETAIL**
SCALE: 1 1/2"=1'-0"
0 1' 2'



8 **COLUMN BASE PLATE DETAIL**
SCALE: 1 1/2"=1'-0"
0 1' 2'



9 **COLUMN TOP PLATE DETAIL**
SCALE: 1 1/2"=1'-0"
0 1' 2'

NOT IN CONTRACT

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

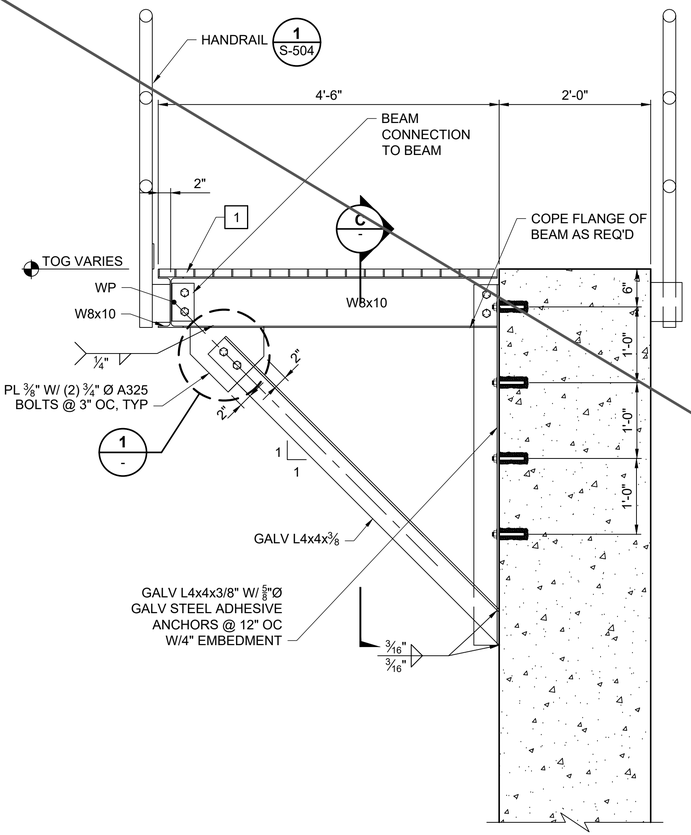
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

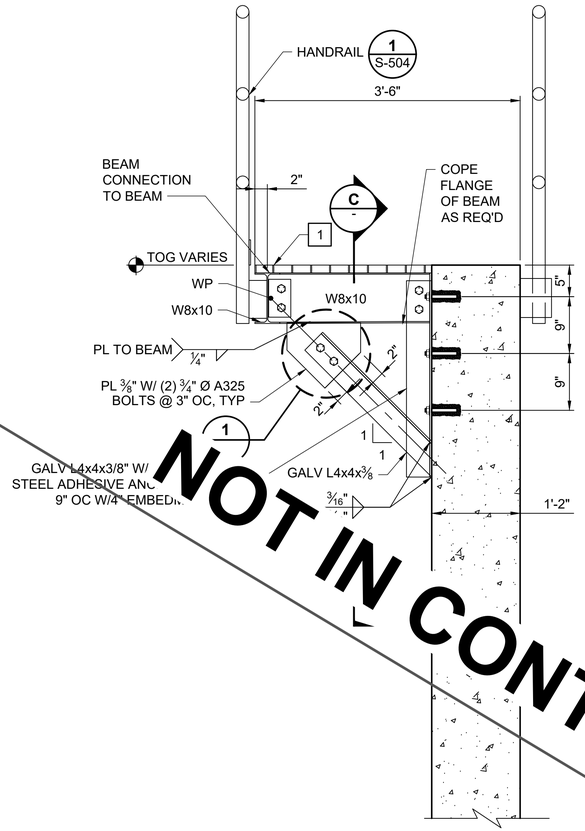
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER WALKWAY 6 SECTION AND DETAILS (NOT IN CONTRACT)

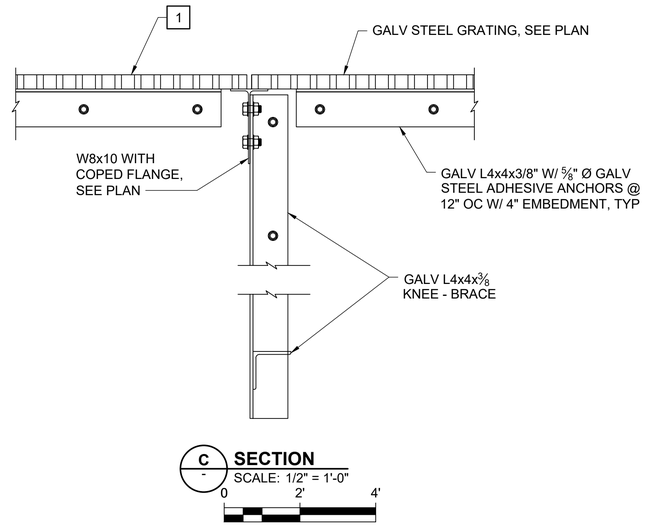
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	172 OF 240
DRAWING:	S-410



A S-409 **SECTION**
SCALE: 1" = 1'-0"
0 1' 2'



B S-409 **SECTION**
SCALE: 1" = 1'-0"
0 1' 2'



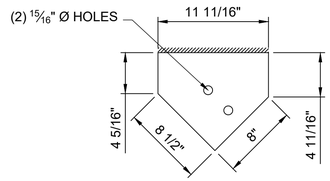
C - **SECTION**
SCALE: 1/2" = 1'-0"
0 2' 4'

NOTES:

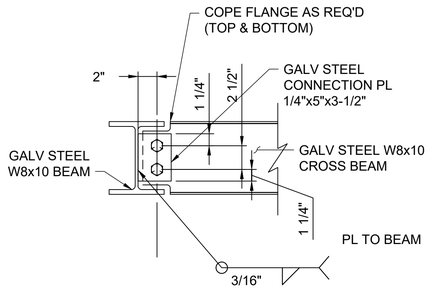
1. ALL RAILING IS SIDE MOUNTED UNLESS OTHERWISE NOTED.
2. ACCESS WALKWAY FRAMING, CONNECTIONS, RAILING, AND GRATING SHALL BE GALVANIZED STEEL.
3. TOP OF GRATING SHALL MATCH TOP OF WALL

KEYED NOTES:

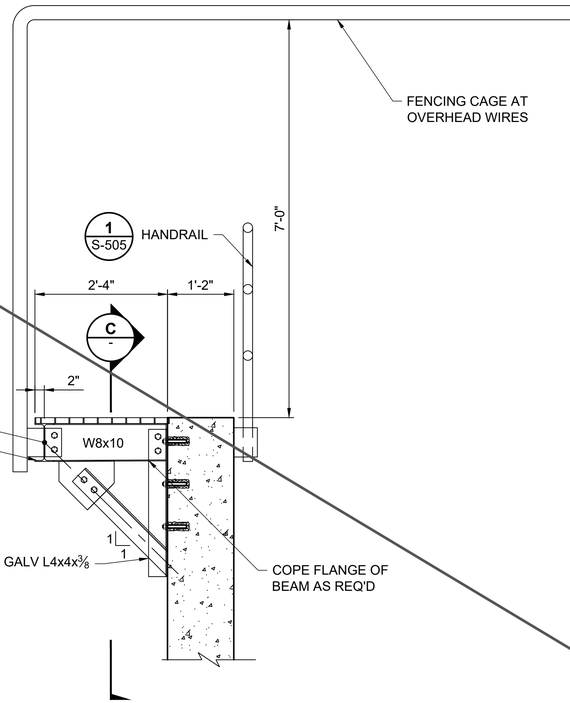
1 GALVANIZED STEEL GRATING 1 1/2" X 3/16" BEARING BARS @ 1 3/16" O.C. AND CROSS BARS @ 4" O.C. BAND ALL EDGES OF GRATING. USE SADDLE TYP CLIPS, MINIMUM 4 PER PANEL.



1 - **GUSSET PLATE DETAIL**
SCALE: 1-1/2" = 1'-0"
0 1' 2'



2 - **BEAM TO BEAM CONNECTION**
SCALE: 1-1/2" = 1'-0"



B S-409 **SECTION UNDER OVERHEAD WIRES**
SCALE: 3/4" = 1'-0"
0 1' 2'

NOT IN CONTRACT

ALDEN a verdantas company

ISSUED FOR BID
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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

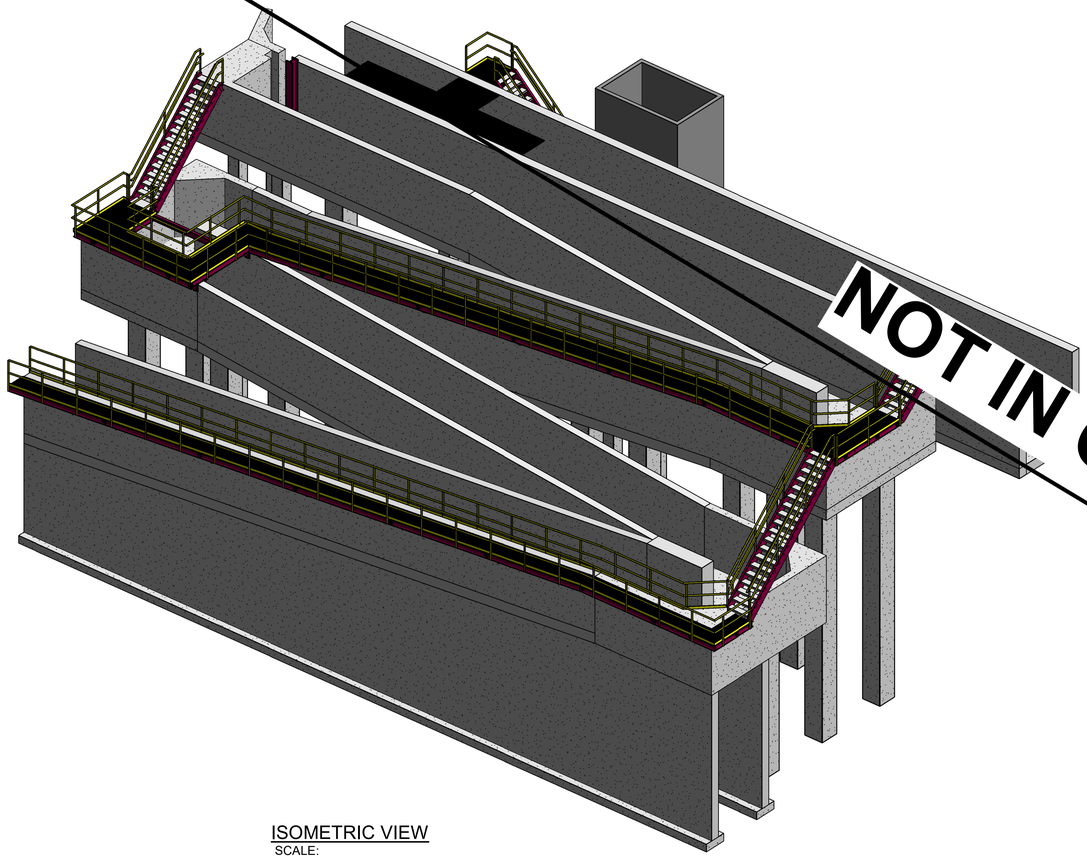
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

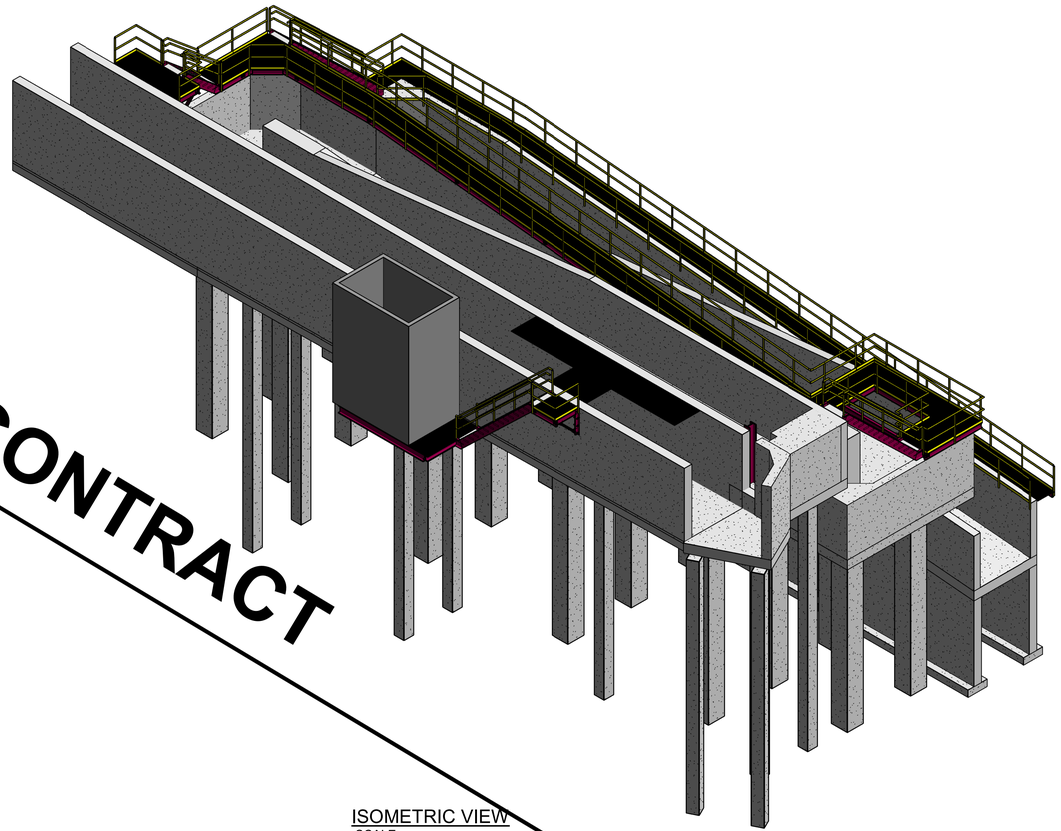
FISH LADDER WALKWAYS 2 AND 3 SECTIONS AND DETAILS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	173 OF 240
DRAWING:	S-411



ISOMETRIC VIEW
SCALE:

NOT IN CONTRACT



ISOMETRIC VIEW
SCALE:

NOTE:
ALL WALKWAY FRAMING AND CONNECTIONS TO BE HOT DIP GALVANIZED.

ALL WALKWAY GRATING TO BE HOT DIP GALVANIZED.

ALL WALKWAY GUARDRAIL/HANDRAIL TO BE HOT DIP GALVANIZED.

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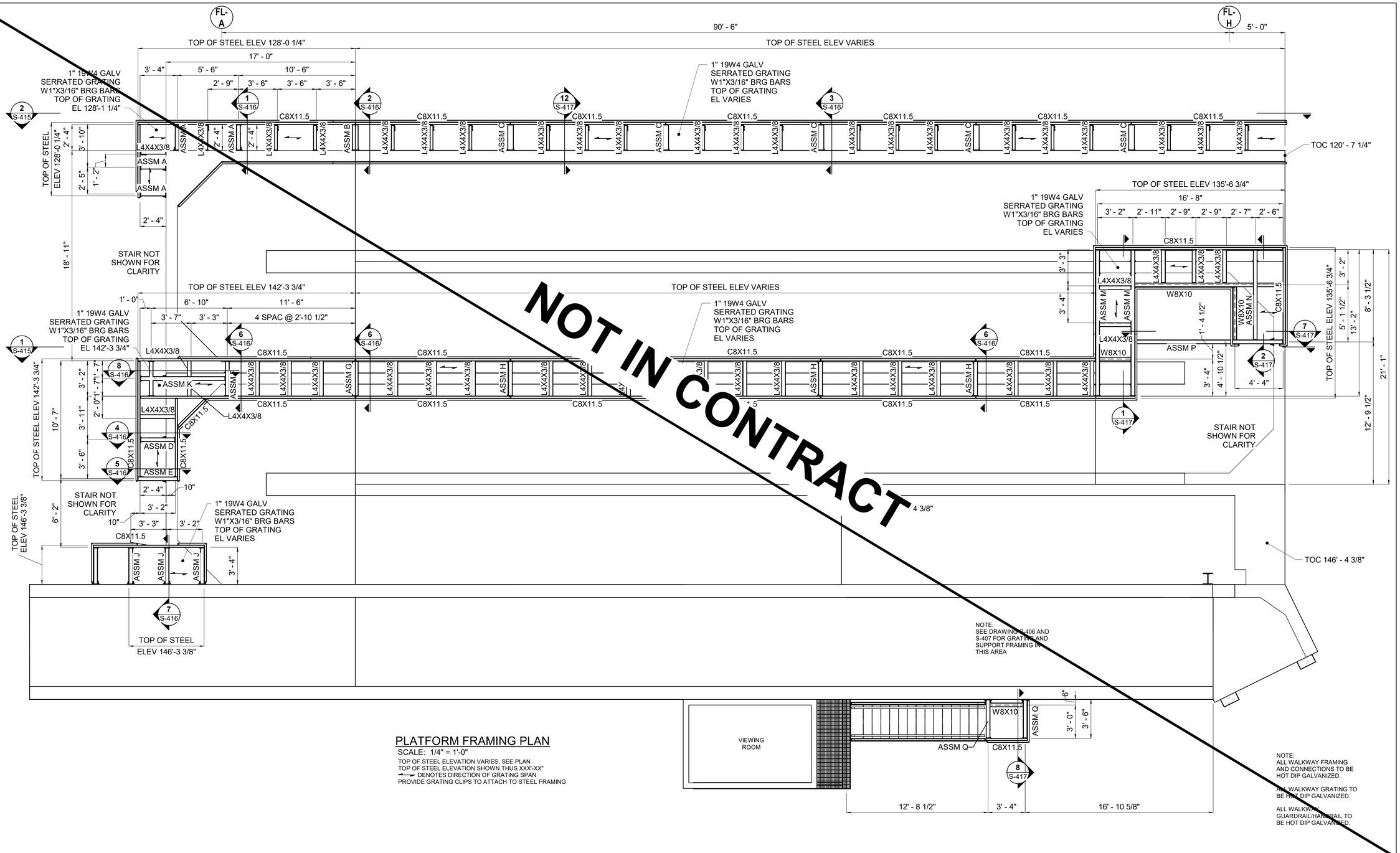
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM
PLATFORM ISOMETRIC VIEWS
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	173 OF 240
DRAWING:	S-412



NOT IN CONTRACT

PLATFORM FRAMING PLAN

SCALE: 1/4" = 1'-0"

TOP OF STEEL ELEVATION VARIES, SEE PLAN
TOP OF STEEL ELEVATION SHOWN THUS XXX'-XX"
←→ DENOTES DIRECTION OF GRATING SPAN
PROVIDE GRATING CLIPS TO ATTACH TO STEEL FRAMING

a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

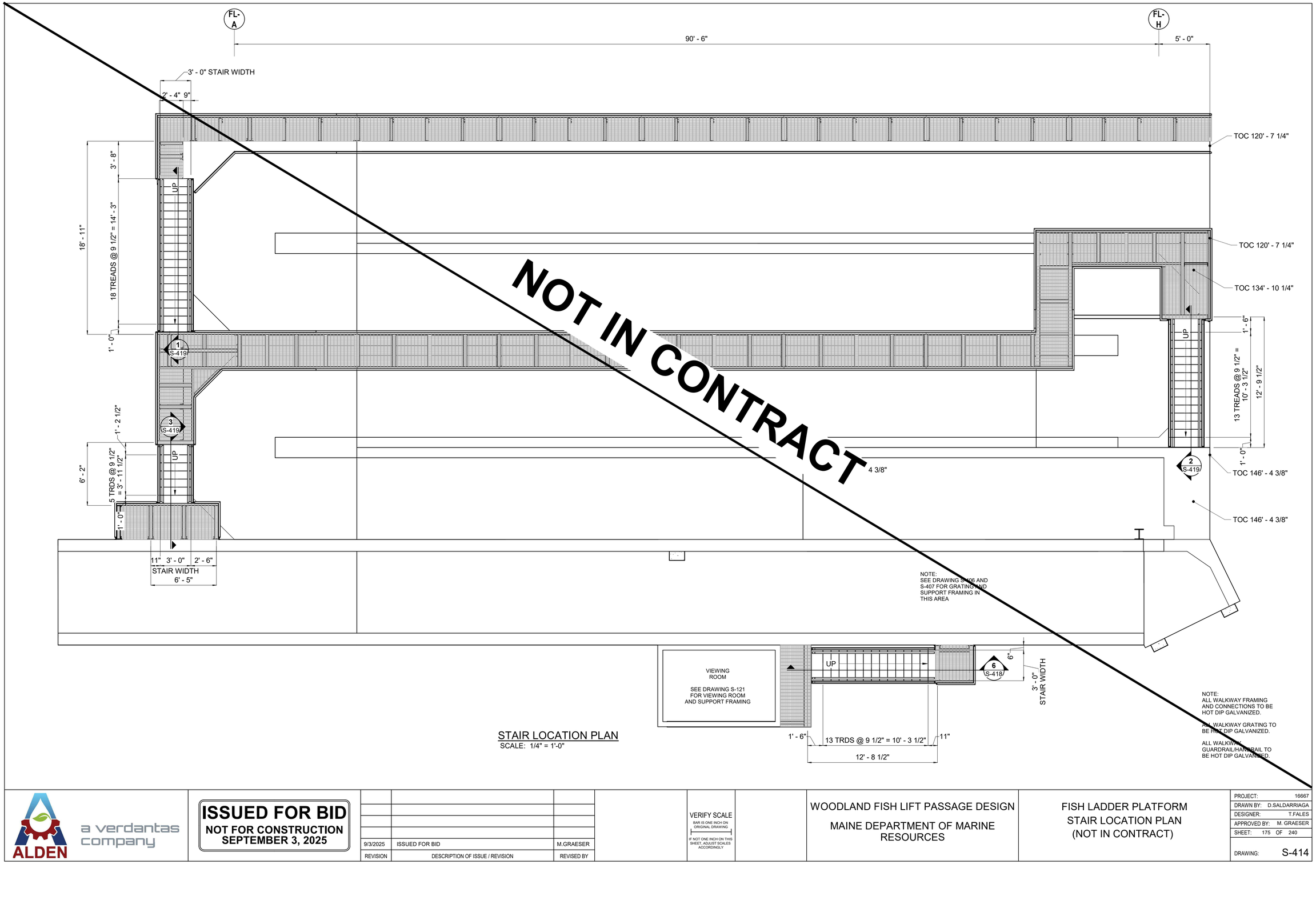
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM FRAMING PLAN (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	174 OF 240
DRAWING:	S-413



NOT IN CONTRACT

STAIR LOCATION PLAN
SCALE: 1/4" = 1'-0"

ALDEN a verdantas company

ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

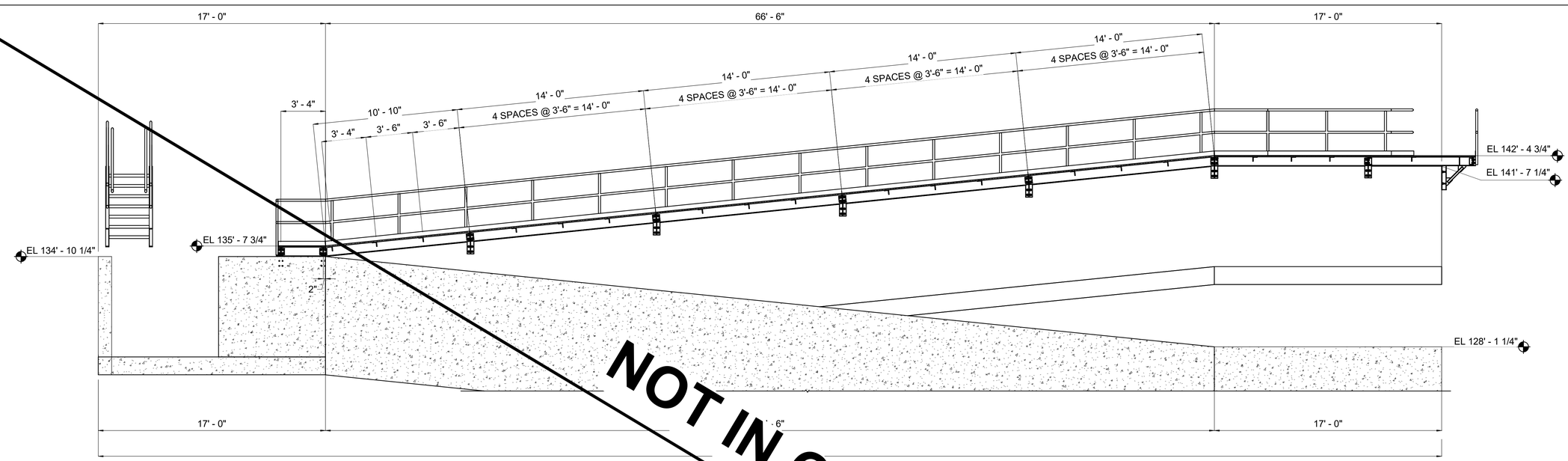
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

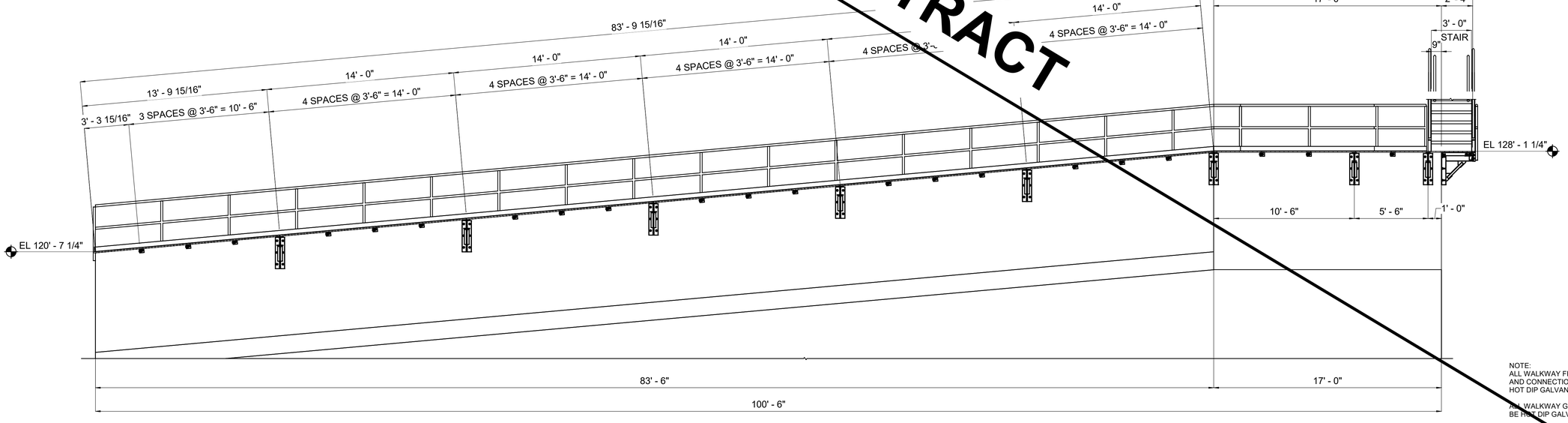
FISH LADDER PLATFORM
STAIR LOCATION PLAN
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	175 OF 240
DRAWING:	S-414



1 S-413 PLATFORM ELEVATION
SCALE: 1/4" = 1'-0"

NOT IN CONTRACT



2 S-413 PLATFORM FRAMING ELEVATION
SCALE: 1/4" = 1'-0"

NOTE:
ALL WALKWAY FRAMING AND CONNECTIONS TO BE HOT DIP GALVANIZED.

ALL WALKWAY GRATING TO BE HOT DIP GALVANIZED.

ALL WALKWAY GUARDRAIL/HANDRAIL TO BE HOT DIP GALVANIZED.

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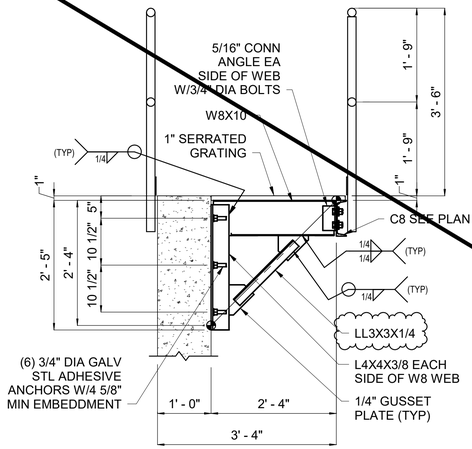
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WOODLAND FISH LIFT PASSAGE DESIGN

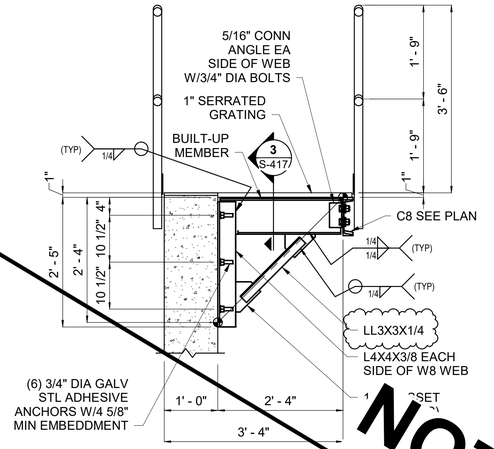
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM FRAMING ELEVATION (NOT IN CONTRACT)

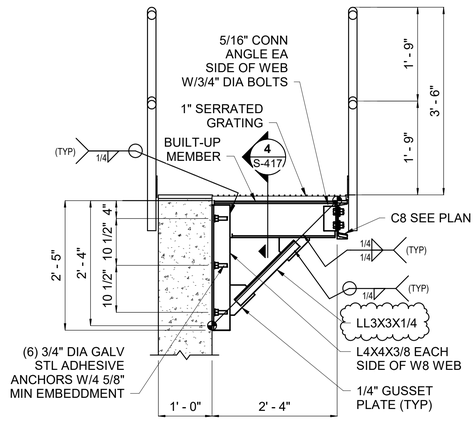
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	176 OF 240
DRAWING:	S-415



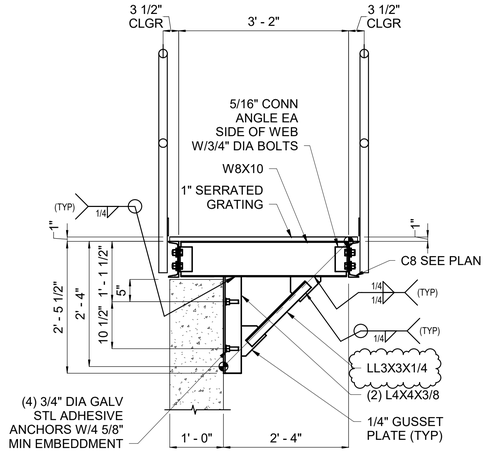
1 S-413 ASSM A DETAIL
SCALE: 3/4" = 1'-0"



2 S-413 ASSM B DETAIL
SCALE: 3/4" = 1'-0"



3 S-413 ASSM C DETAIL
SCALE: 3/4" = 1'-0"



4 S-413 ASSM D DETAIL
SCALE: 3/4" = 1'-0"

5 S-413 ASSM E DETAIL
SCALE: 3/4" = 1'-0"

6 S-413 ASSEMBLY F,G,&H DETAIL
SCALE: 3/4" = 1'-0"

7 S-413 ASSM J DETAIL
SCALE: 3/4" = 1'-0"

8 S-413 ASSM K DETAIL
SCALE: 3/4" = 1'-0"

NOTE:
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ALL WALKWAY GUARDRAIL/HANDRAIL TO BE HOT DIP GALVANIZED.

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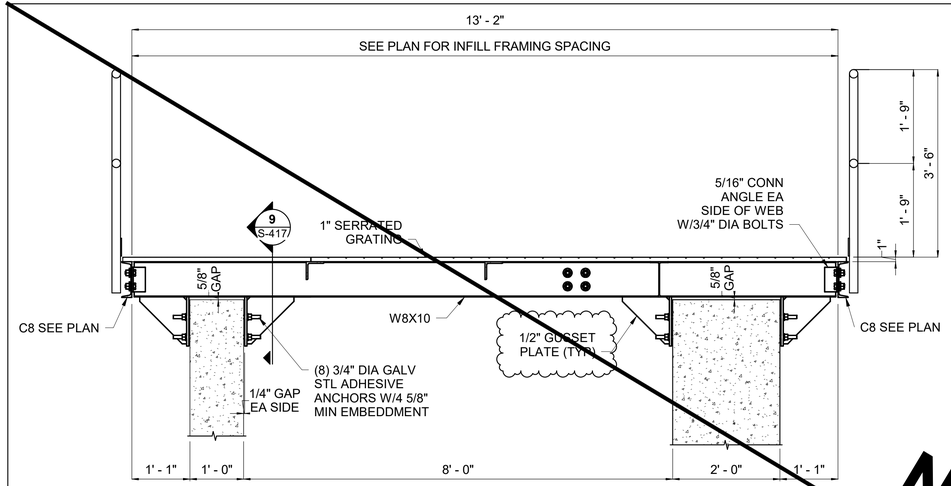
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

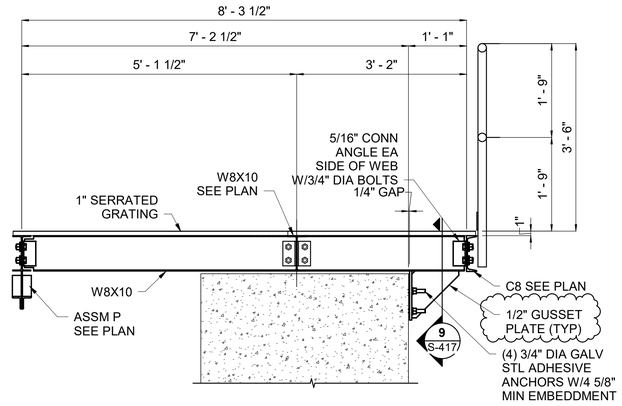
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM FRAMING DETAILS (NOT IN CONTRACT)

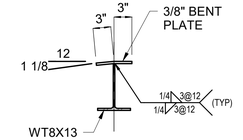
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	177 OF 240
DRAWING:	S-416



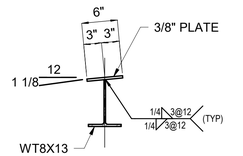
1 ASSM M DETAIL
S-413 SCALE: 3/4" = 1'-0"



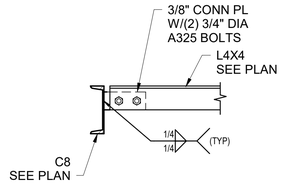
2 ASSM N DETAIL
S-413 SCALE: 3/4" = 1'-0"



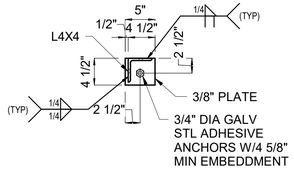
3 SECTION
S-416 SCALE: 1" = 1'-0"



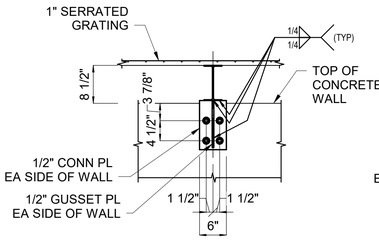
4 SECTION
S-416 SCALE: 1" = 1'-0"

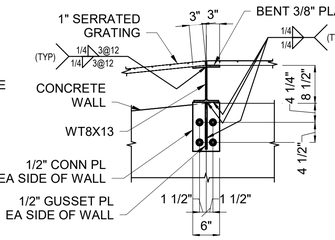


5 CONNECTION DETAIL
S-417 SCALE: 1" = 1'-0"



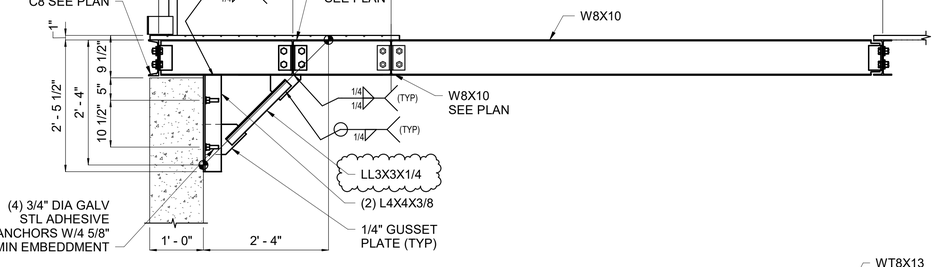
6 CONNECTION DETAIL
S-417 SCALE: 1" = 1'-0"



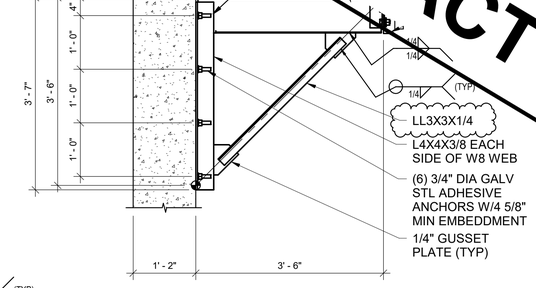


9 CONNECTION DETAIL
S-416 SCALE: 3/4" = 1'-0"

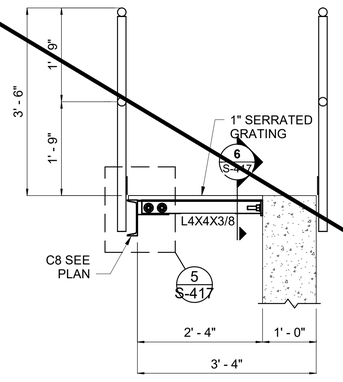
10 CONNECTION DETAIL
S-416 SCALE: 3/4" = 1'-0"



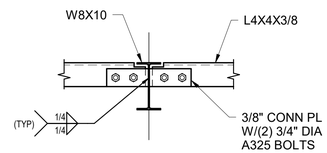
7 ASSM P DETAIL
S-413 SCALE: 3/4" = 1'-0"



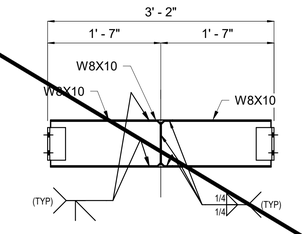
8 ASSM Q DETAIL
S-413 SCALE: 3/4" = 1'-0"



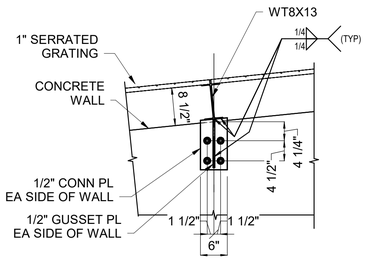
12 SECTION
S-413 SCALE: 3/4" = 1'-0"



11 CONNECTION DETAIL
S-416 SCALE: 1" = 1'-0"



13 CONNECTION DETAIL
S-416 SCALE: 1" = 1'-0"



14 CONNECTION DETAIL
S-416 SCALE: 3/4" = 1'-0"

NOTE:
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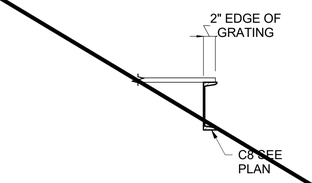
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WOODLAND FISH LIFT PASSAGE DESIGN

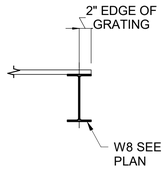
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM FRAMING DETAILS (NOT IN CONTRACT)

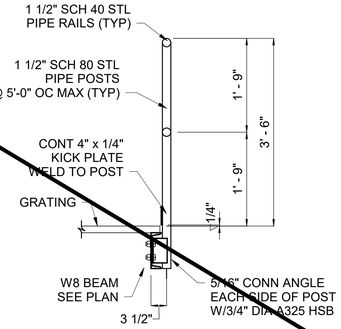
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	178 OF 240
DRAWING:	S-417



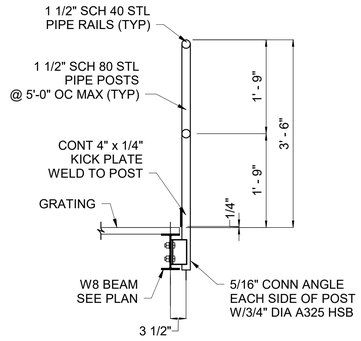
TYP EDGE OF GRATING DETAIL
SCALE: 1" = 1'-0"



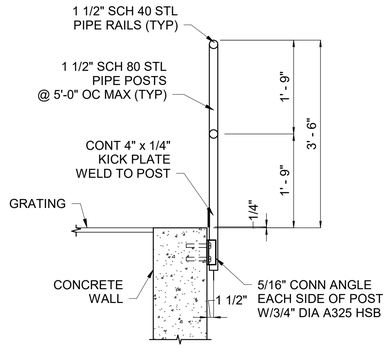
TYP EDGE OF GRATING DETAIL
SCALE: 1" = 1'-0"



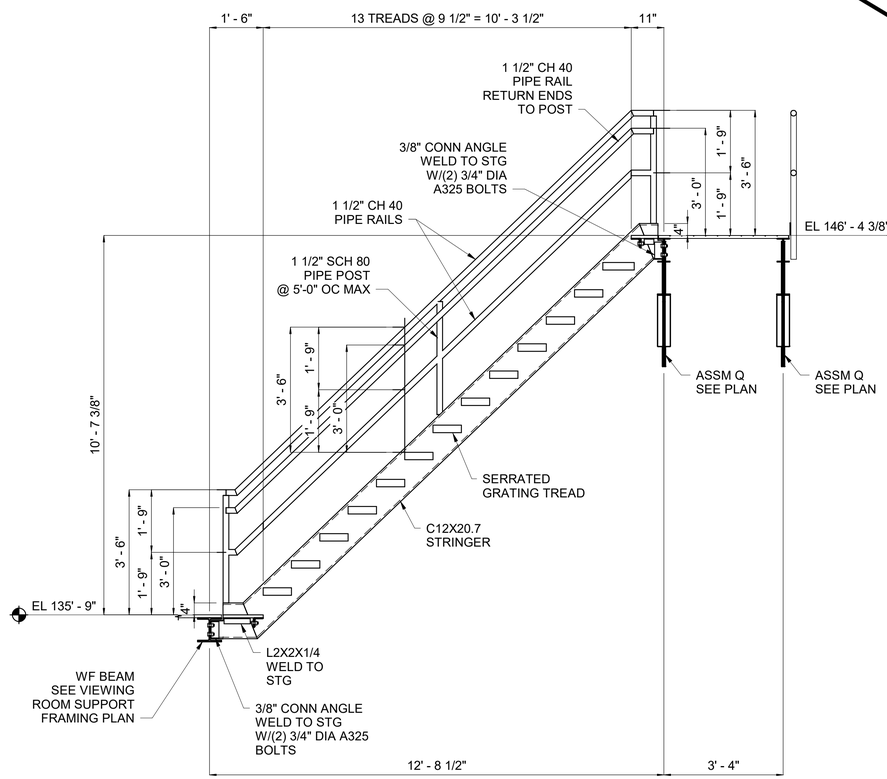
GUARDRAIL TO C8 CONNECTION
SCALE: 3/4" = 1'-0"



GUARD TO W8 CONNECTION
SCALE:



GUARDRAIL TO WALL CONNECTION
SCALE: 3/4" = 1'-0"



6 S-414 STAIR ELEVATION
SCALE: 1/2" = 1'-0"

NOT IN CONTRACT

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ALL WALKWAY GRATING TO BE HOT DIP GALVANIZED.

ALL WALKWAY GUARDRAIL/HANDRAIL TO BE HOT DIP GALVANIZED.

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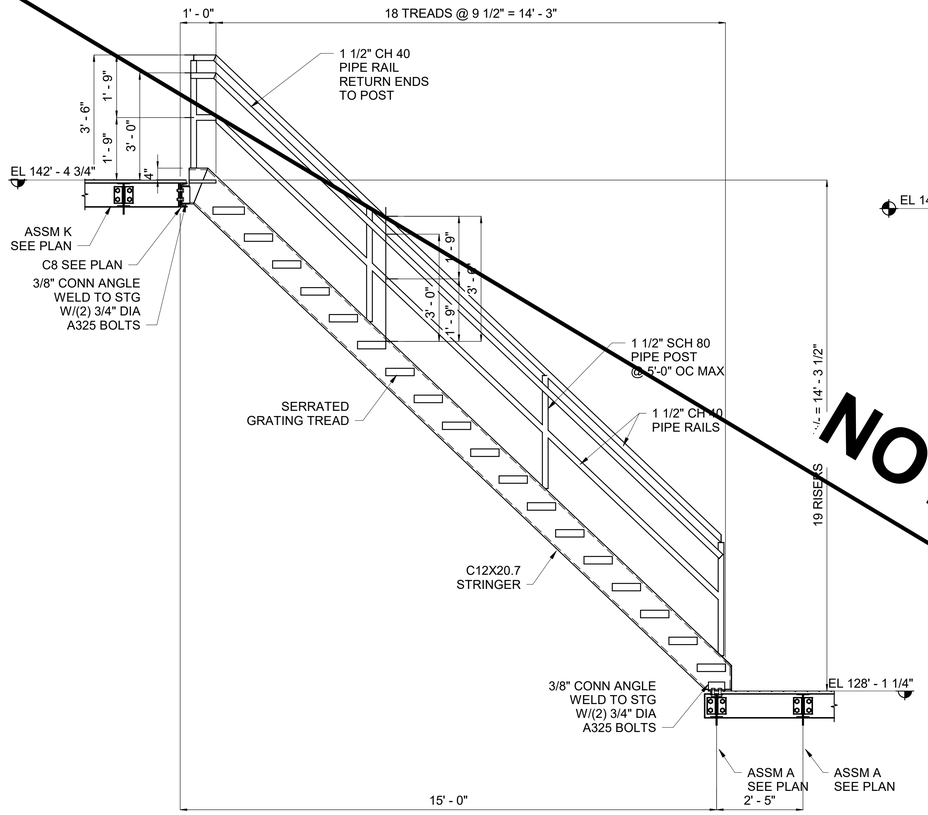
REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

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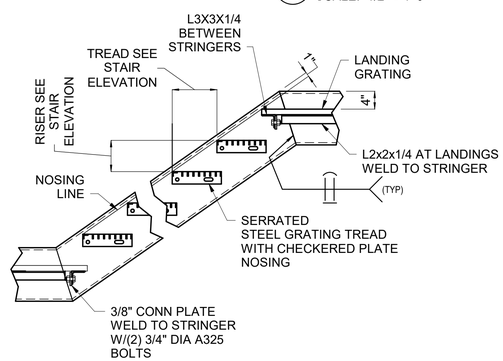
WOODLAND FISH LIFT PASSAGE DESIGN
MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM FRAMING DETAILS (NOT IN CONTRACT)

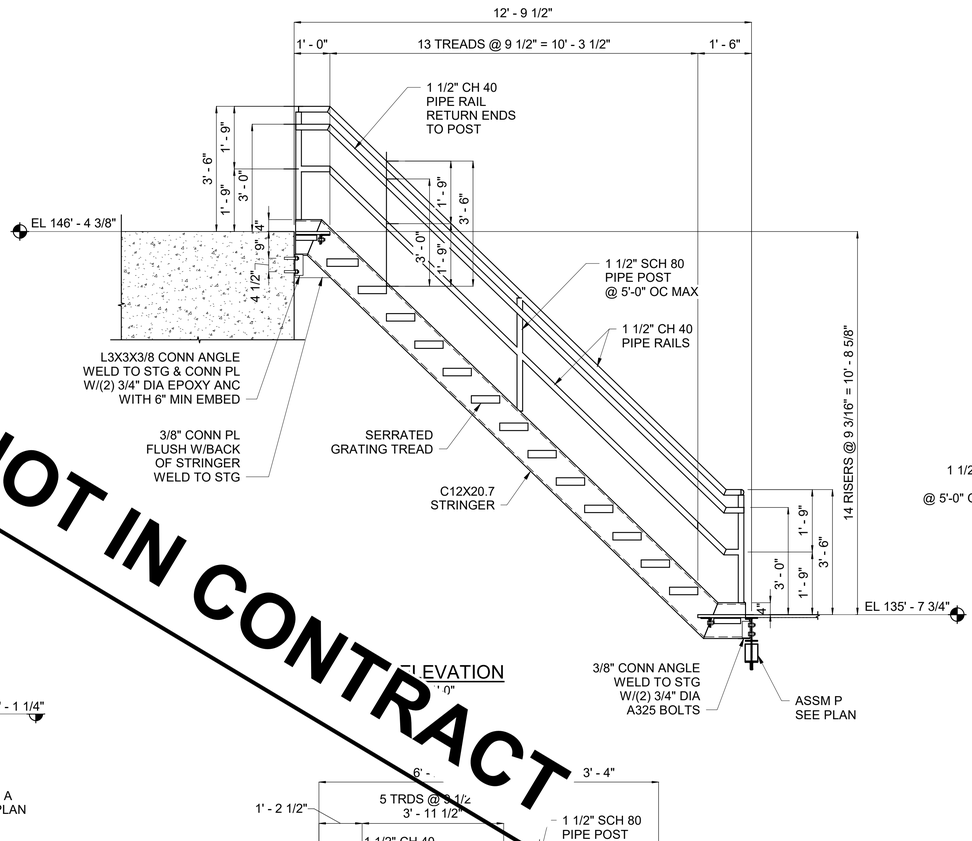
PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	179 OF 240
DRAWING:	S-418



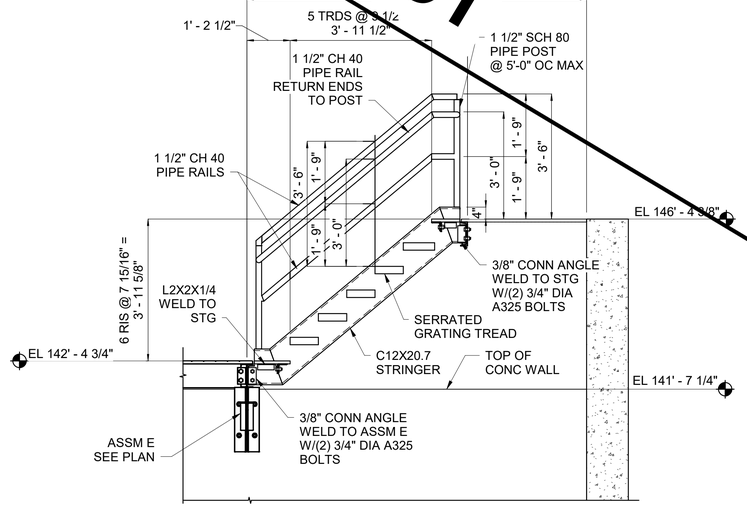
1 S-414 STAIR ELEVATION
SCALE: 1/2" = 1'-0"



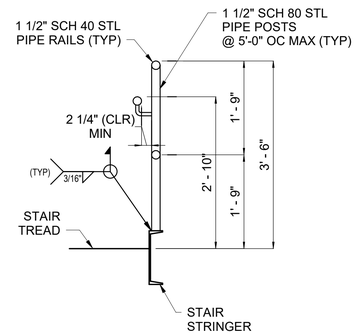
TYP STAIR CONSTRUCTION
SCALE: 3/4" = 1'-0"



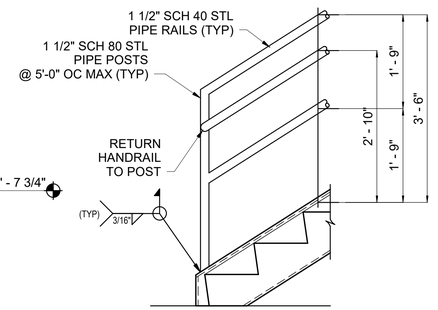
ELEVATION



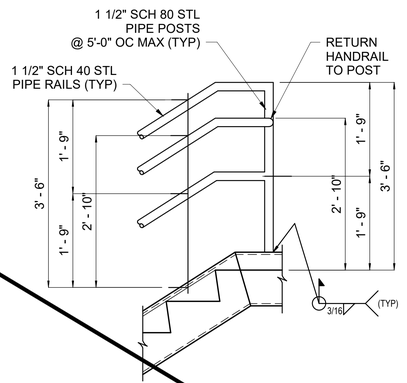
3 S-414 STAIR ELEVATION
SCALE: 1/2" = 1'-0"



TYP STAIR RAIL DETAIL
SCALE: 3/4" = 1'-0"



TYP STAIR RAIL DETAIL
SCALE: 3/4" = 1'-0"



TYP STAIR RAIL DETAIL
SCALE: 3/4" = 1'-0"

NOTE:
ALL WALKWAY FRAMING AND CONNECTIONS TO BE HOT DIP GALVANIZED.

ALL WALKWAY GRATING TO BE HOT DIP GALVANIZED.

ALL WALKWAY GUARDRAIL/HANDRAIL TO BE HOT DIP GALVANIZED.

NOT IN CONTRACT

ALDEN a verdantas company

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M.GRAESER

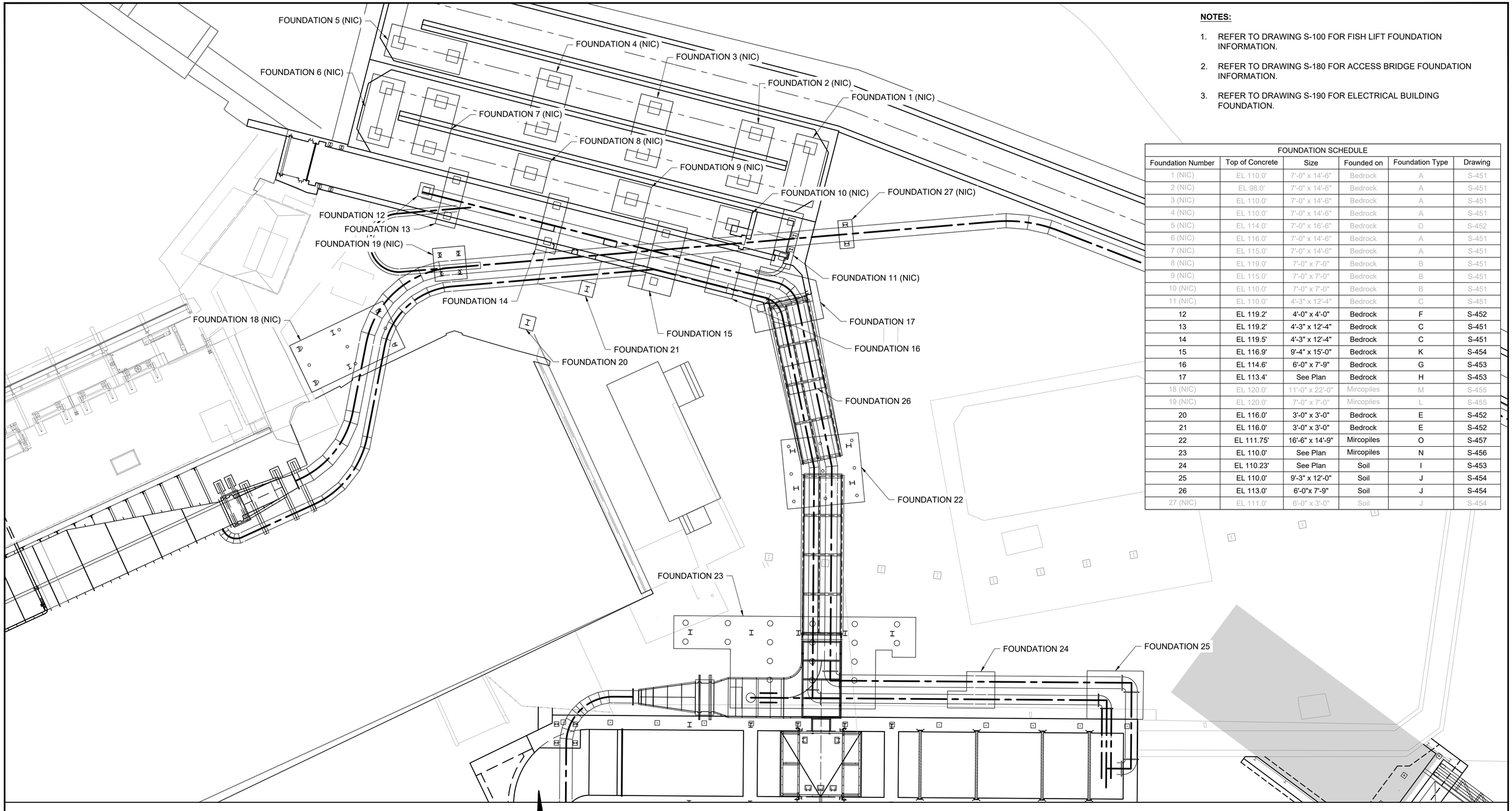
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FISH LADDER PLATFORM
STAIR SECTION & DETAILS
(NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	D.SALDARRIAGA
DESIGNER:	T.FALES
APPROVED BY:	M. GRAESER
SHEET:	180 OF 240
DRAWING:	S-419



NOTES:

1. REFER TO DRAWING S-100 FOR FISH LIFT FOUNDATION INFORMATION.
2. REFER TO DRAWING S-180 FOR ACCESS BRIDGE FOUNDATION INFORMATION.
3. REFER TO DRAWING S-190 FOR ELECTRICAL BUILDING FOUNDATION.

FOUNDATION SCHEDULE

Foundation Number	Top of Concrete	Size	Founded on	Foundation Type	Drawing
1 (NIC)	EL 110.0'	7'-0" x 14'-6"	Bedrock	A	S-451
2 (NIC)	EL 98.0'	7'-0" x 14'-6"	Bedrock	A	S-451
3 (NIC)	EL 110.0'	7'-0" x 14'-6"	Bedrock	A	S-451
4 (NIC)	EL 110.0'	7'-0" x 14'-6"	Bedrock	A	S-451
5 (NIC)	EL 114.0'	7'-0" x 16'-6"	Bedrock	D	S-452
6 (NIC)	EL 116.0'	7'-0" x 14'-6"	Bedrock	A	S-451
7 (NIC)	EL 115.0'	7'-0" x 14'-6"	Bedrock	A	S-451
8 (NIC)	EL 119.0'	7'-0" x 7'-0"	Bedrock	B	S-451
9 (NIC)	EL 115.0'	7'-0" x 7'-0"	Bedrock	B	S-451
10 (NIC)	EL 110.0'	7'-0" x 7'-0"	Bedrock	B	S-451
11 (NIC)	EL 110.0'	4'-3" x 12'-4"	Bedrock	C	S-451
12	EL 119.2'	4'-0" x 4'-0"	Bedrock	F	S-452
13	EL 119.2'	4'-3" x 12'-4"	Bedrock	C	S-451
14	EL 119.5'	4'-3" x 12'-4"	Bedrock	C	S-451
15	EL 116.9'	9'-4" x 15'-0"	Bedrock	K	S-454
16	EL 114.6'	6'-0" x 7'-9"	Bedrock	G	S-453
17	EL 113.4'	See Plan	Bedrock	H	S-453
18 (NIC)	EL 120.0'	11'-0" x 22'-0"	Mircopiles	M	S-455
19 (NIC)	EL 120.0'	7'-0" x 7'-0"	Mircopiles	L	S-455
20	EL 116.0'	3'-0" x 3'-0"	Bedrock	E	S-452
21	EL 116.0'	3'-0" x 3'-0"	Bedrock	E	S-452
22	EL 111.75'	16'-6" x 14'-9"	Mircopiles	O	S-457
23	EL 110.0'	See Plan	Mircopiles	N	S-456
24	EL 110.23'	See Plan	Soil	I	S-453
25	EL 110.0'	9'-3" x 12'-0"	Soil	J	S-454
26	EL 113.0'	6'-0"x 7'-9"	Soil	J	S-454
27 (NIC)	EL 111.0'	6'-0" x 3'-0"	Soil	J	S-454

EXIT FLUME GENERAL ARRANGEMENT PLAN

SCALE: 1"=10'

10' 0 10' 20'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

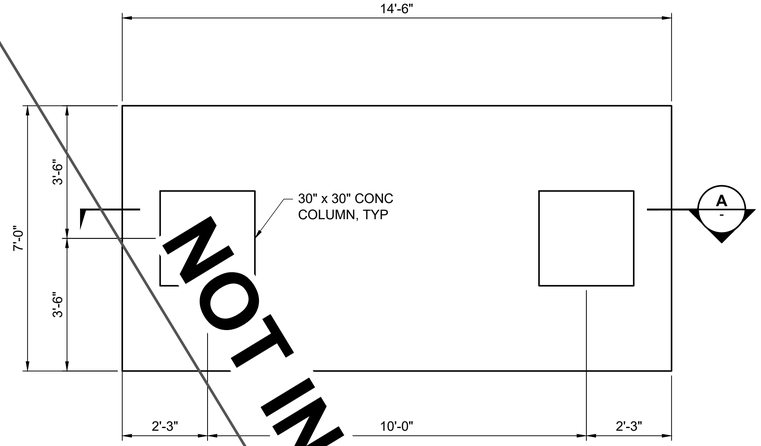
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

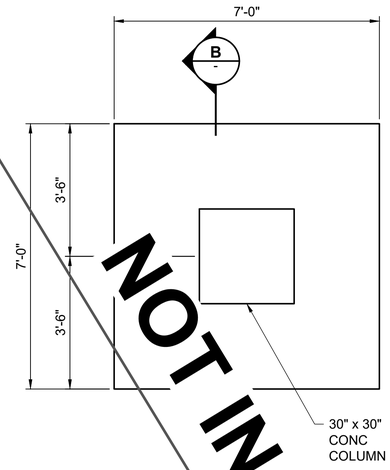
OVERALL FOUNDATION PLAN AND SCHEDULE

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	182 OF 240
DRAWING:	S-450



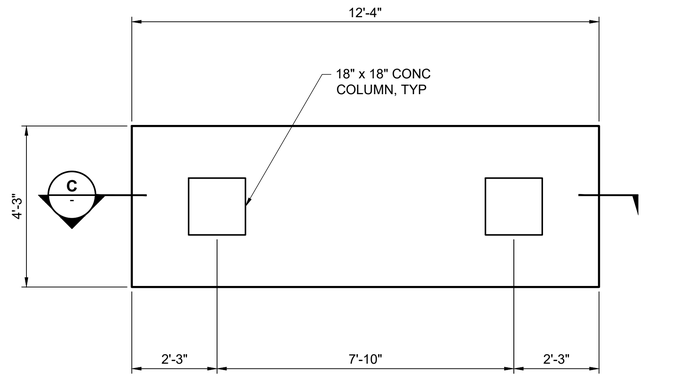
TYPE A FOU N PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



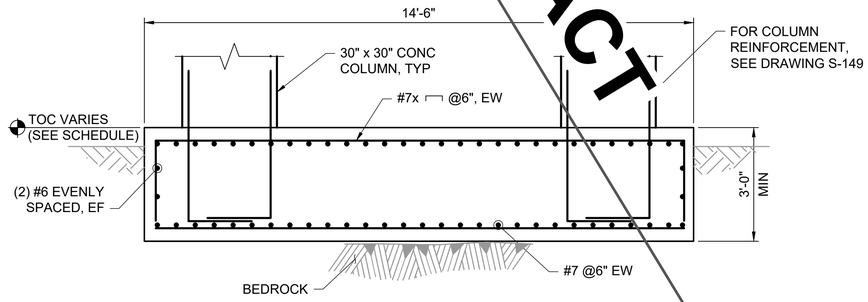
TYPE B FOUNDATION
SCALE: 1/2" = 1'-0"

0 2' 4'



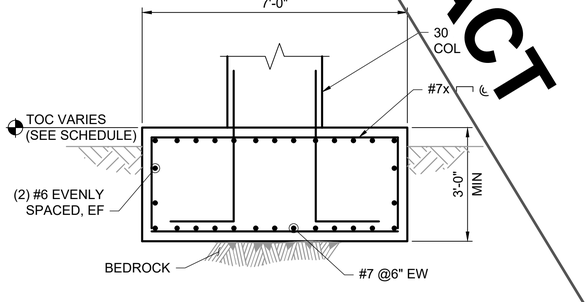
TYPE C FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



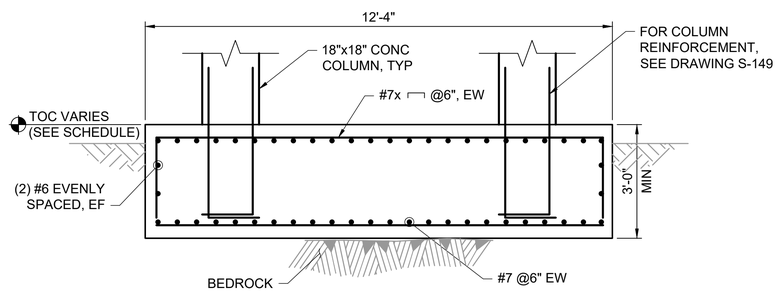
A - **TYPE A FOUNDATION SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'



B - **TYPE B FOUNDATION SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'



C - **TYPE C FOUNDATION SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'

NOT IN CONTRACT
NOT IN CONTRACT

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REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

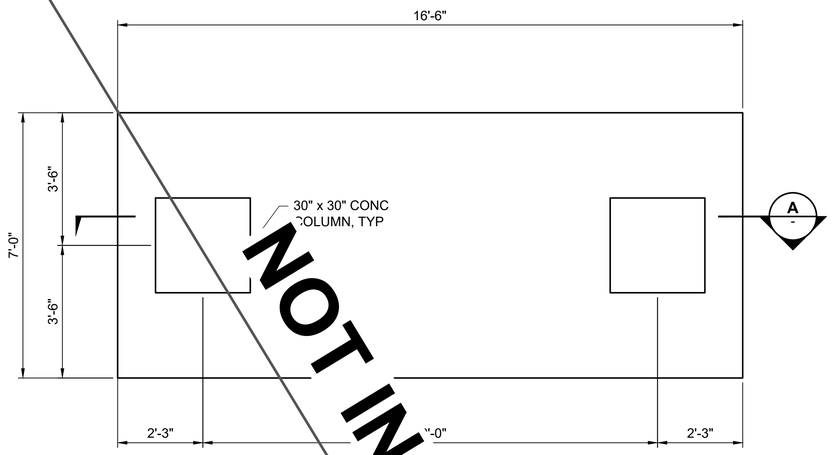
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

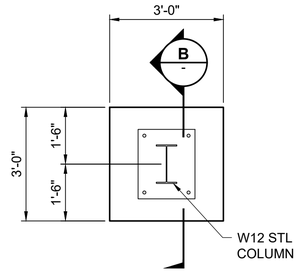
FOUNDATION PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	183 OF 240
DRAWING:	S-451



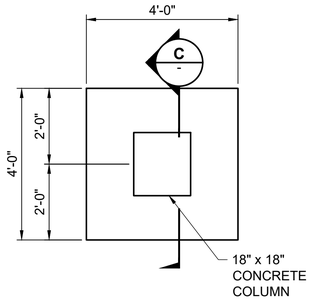
TYPE D FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



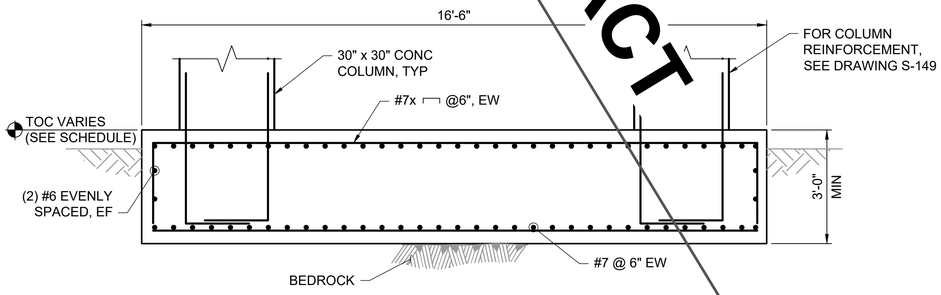
TYPE E FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



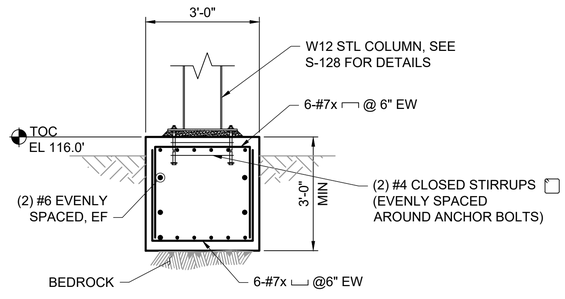
TYPE F FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



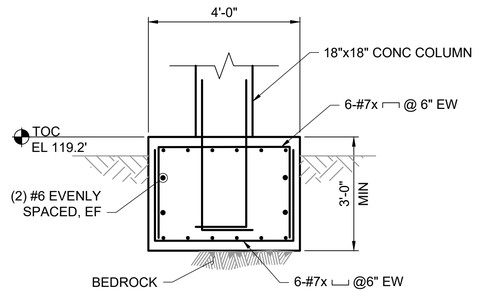
A - **TYPE D FOUNDATION SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'



B - **TYPE E FOUNDATION SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'



C - **TYPE F FOUNDATION SECTION**
SCALE: 1/2" = 1'-0"

0 2' 4'

NOT IN CONTRACT

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

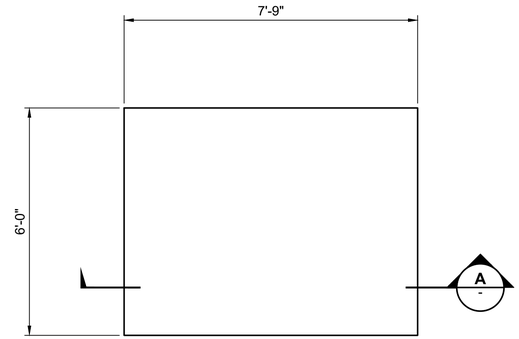
VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

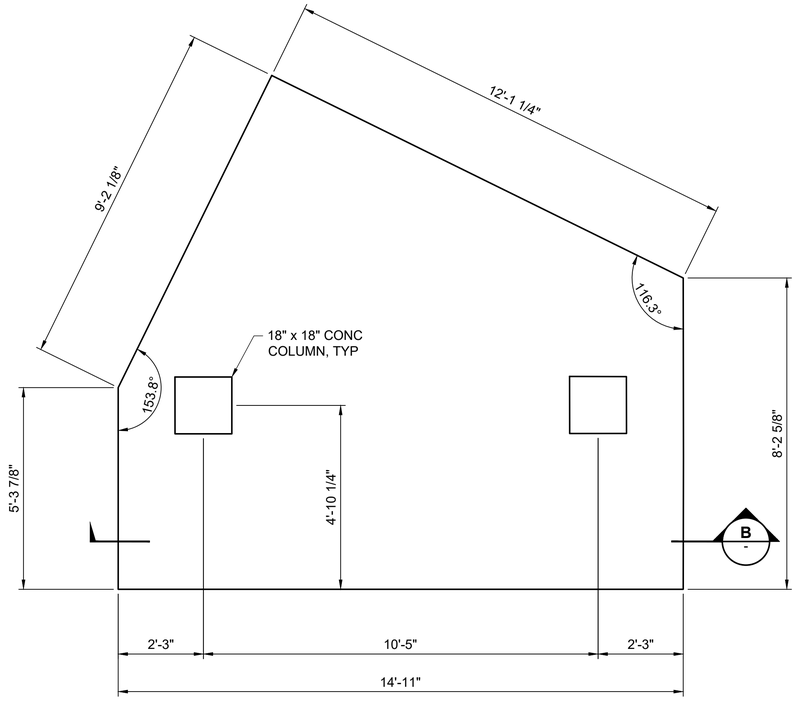
FOUNDATION PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	184 OF 240
DRAWING:	S-452



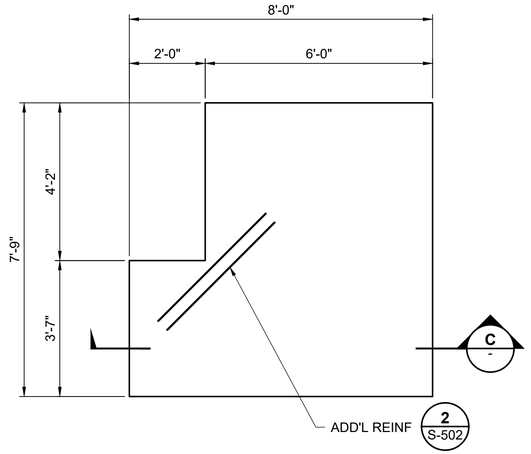
TYPE G FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



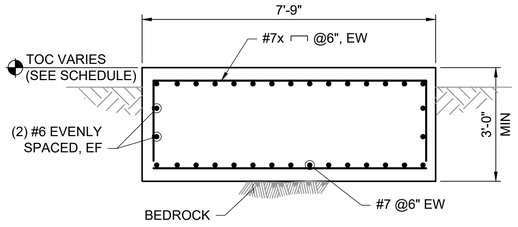
TYPE H FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



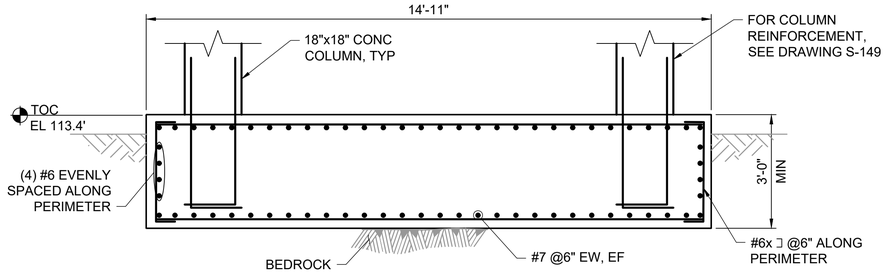
TYPE I FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



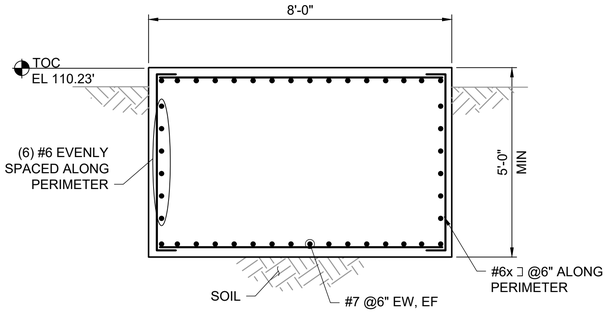
A - TYPE G FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

0 2' 4'



B - TYPE H FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

0 2' 4'



C - TYPE I FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

0 2' 4'

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

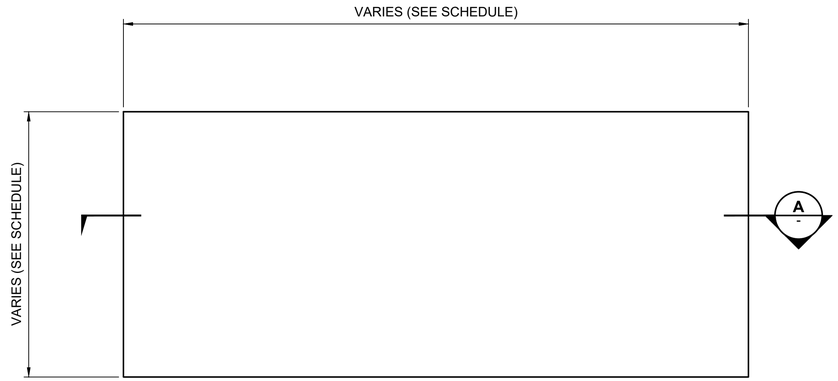
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

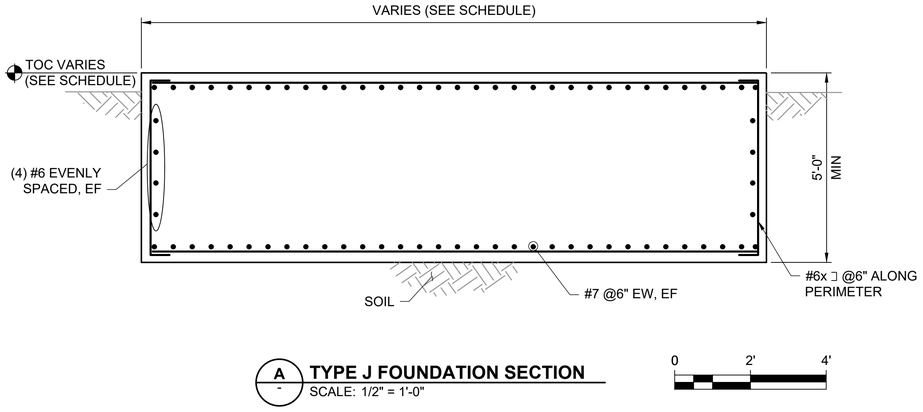
FOUNDATION PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	185 OF 240
DRAWING:	S-453



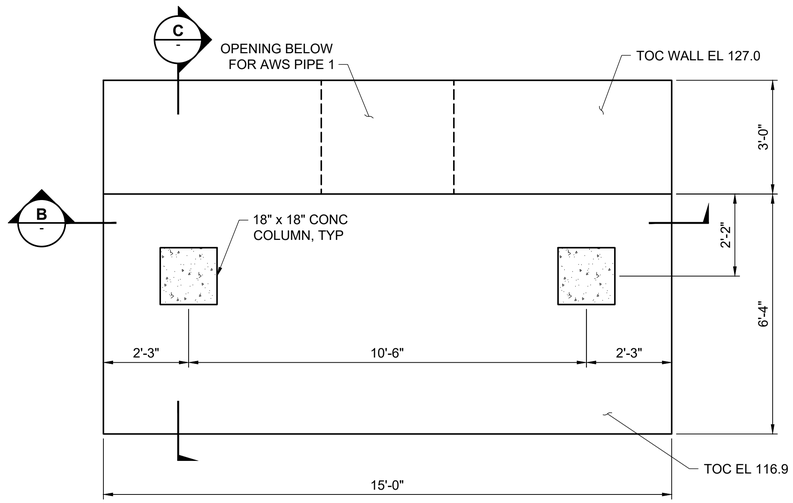
TYPE J FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



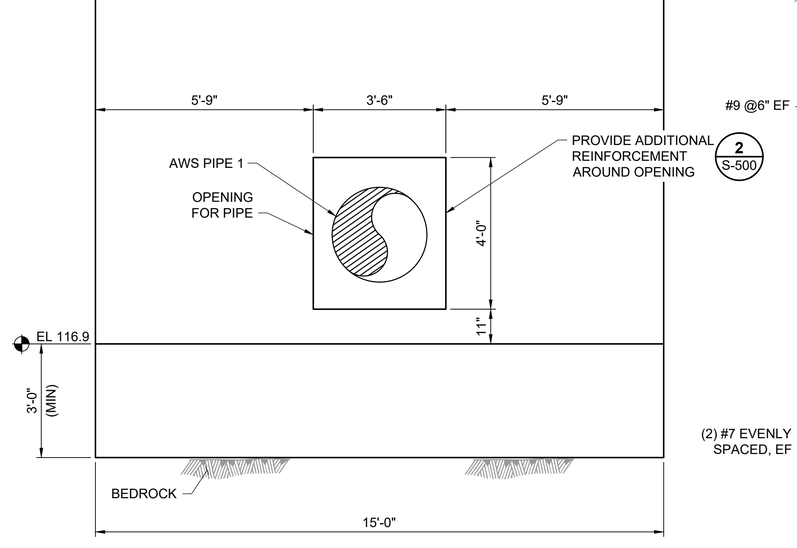
A TYPE J FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

0 2' 4'



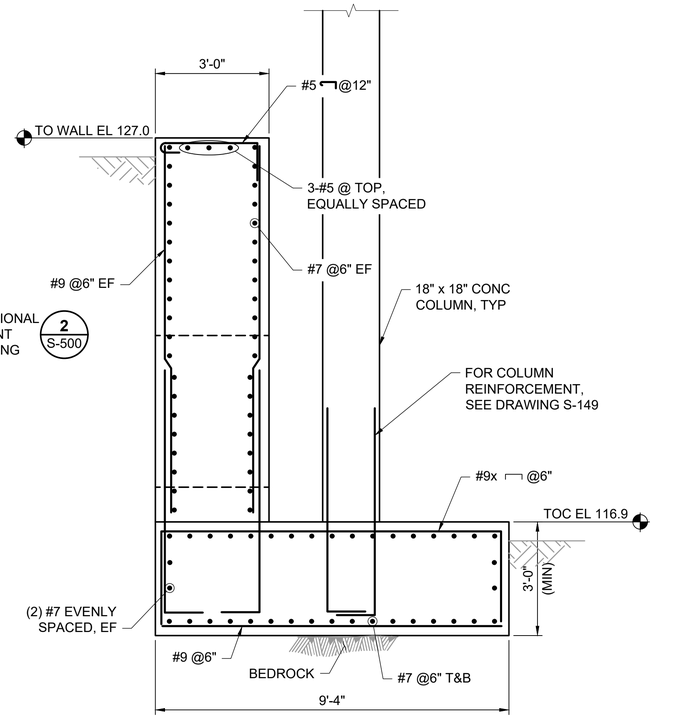
TYPE K FOUNDATION PLAN
SCALE: 1/2" = 1'-0"

0 2' 4'



B TYPE K FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

0 2' 4'



C TYPE K FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

0 2' 4'

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ISSUED FOR BID
NOT FOR CONSTRUCTION
SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

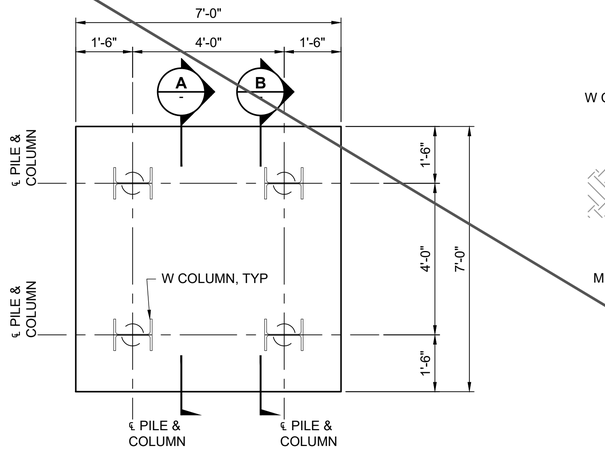
FOUNDATION PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	186 OF 240
DRAWING:	S-454

MICROPILE SCHEDULE						
FOUNDATION	QTY	MAX. OUTSIDE CASING DIAMETER	HEAD EL	CASED LENGTH	UNCASED LENGTH	MINIMUM PENETRATION IN COMPETENT BEDROCK
L	4	0'-7"	118.5	22'-6"	8'-0"	13'-0"
M	9	0'-7"	118.5	22'-6"	8'-0"	13'-0"

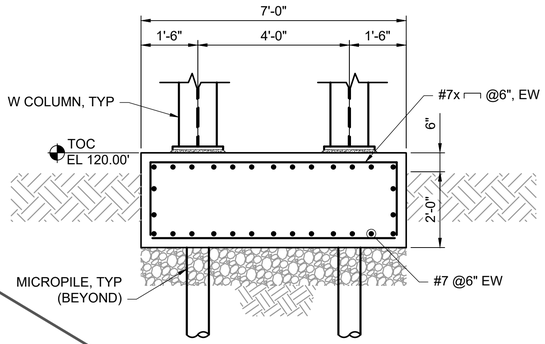
NOTE:

1. COMPETENT BEDROCK ELEVATION ASSUMED TO BE ELEVATION 101±. COMPETENT BEDROCK SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER.



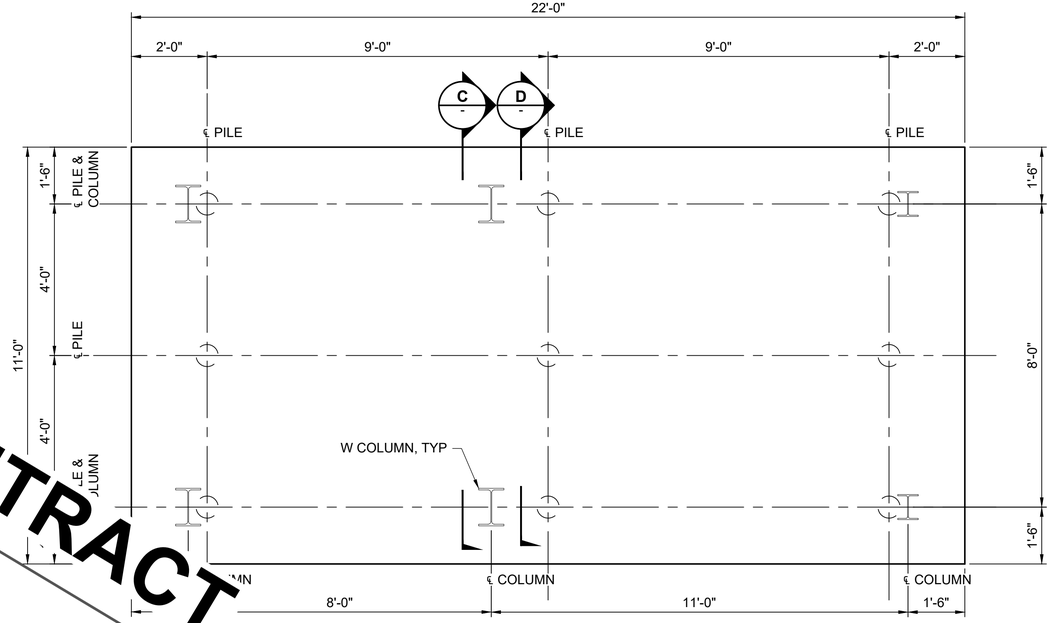
TYPE L FOUNDATION PLAN
SCALE: 1/2"=1'-0"

0 2' 4'



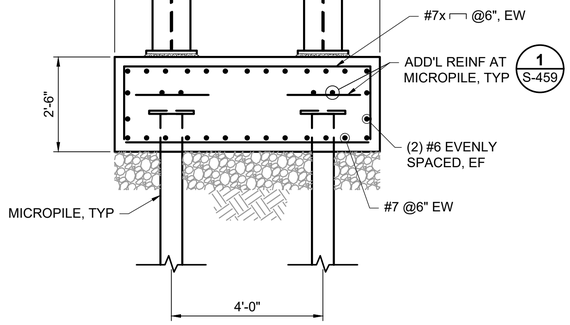
A — **TYPE L FOUNDATION SECTION**
SCALE: 1/2"

0 2'



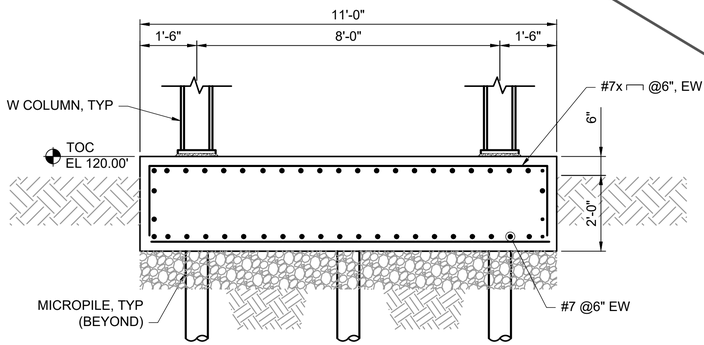
TYPE M FOUNDATION PLAN
SCALE: 1/2"=1'-0"

0 2' 4'



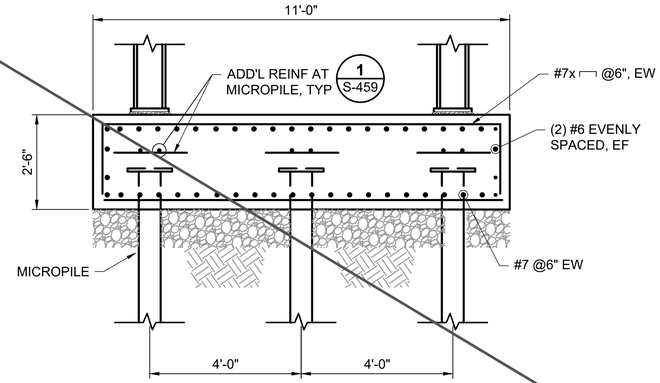
B — **TYPE L FOUNDATION SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



C — **TYPE M FOUNDATION SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'



D — **TYPE M FOUNDATION SECTION**
SCALE: 1/2"=1'-0"

0 2' 4'

NOT IN CONTRACT

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SEPTEMBER 3, 2025

REVISION	DESCRIPTION OF ISSUE / REVISION	REVISED BY
9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

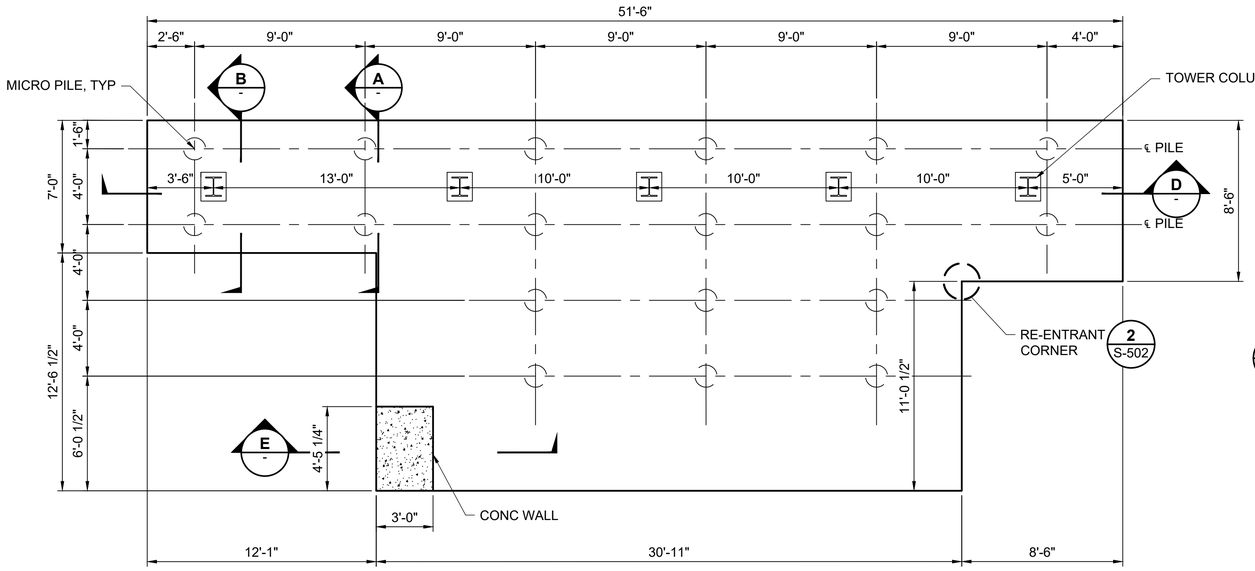
FOUNDATION PLANS AND SECTIONS (NOT IN CONTRACT)

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	187 OF 240
DRAWING:	S-455

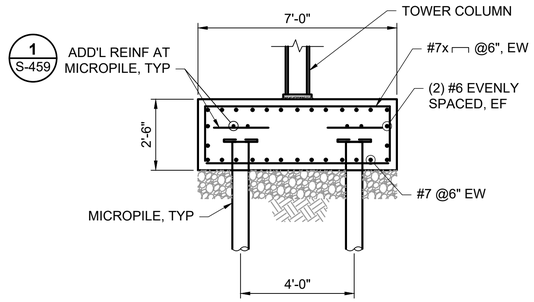
MICROPILE SCHEDULE						
TYPE	QTY	MAX. OUTSIDE CASING DIAMETER	HEAD EL	CASED LENGTH	UNCASED LENGTH	MINIMUM PENETRATION IN COMPETENT BEDROCK
N	18	0'-7"	108.5'	12'-6"	8'-0"	13'-0"

NOTE:

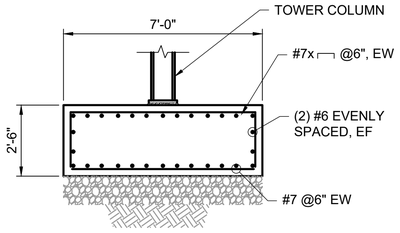
1. COMPETENT BEDROCK ELEVATION ASSUMED TO BE ELEVATION 101±. COMPETENT BEDROCK SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER.



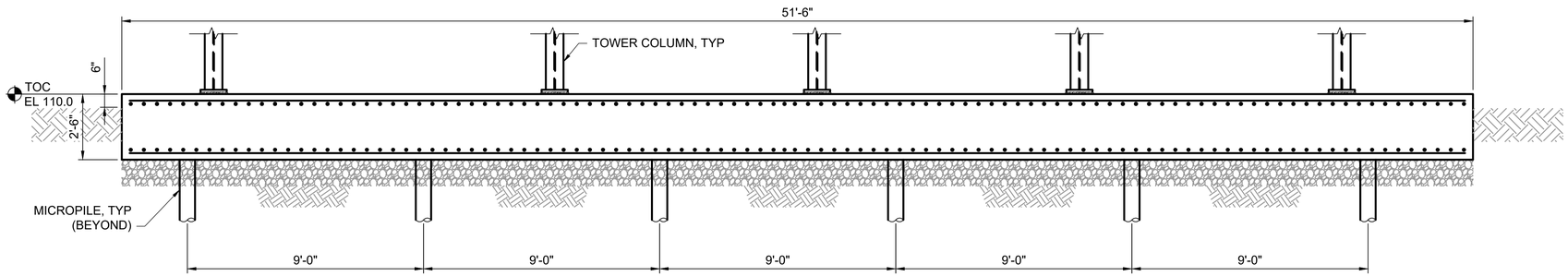
TYPE N FOUNDATION PLAN
SCALE: 1/4"=1'-0"
0 4' 8'



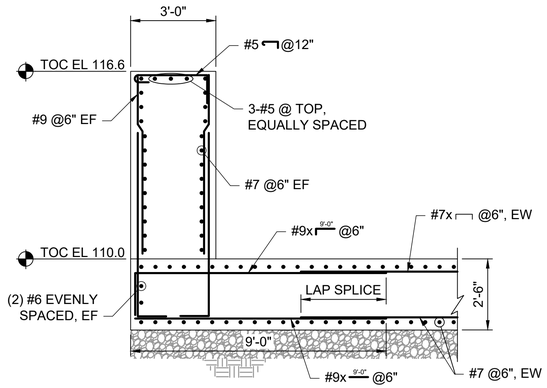
A SECTION
SCALE: 3/8" = 1'-0"
0 2' 4'



B SECTION
SCALE: 3/8" = 1'-0"
0 2' 4'



D SECTION
SCALE: 3/8" = 1'-0"
0 2' 4'



E SECTION
SCALE: 3/8" = 1'-0"
0 2' 4'

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SEPTEMBER 3, 2025

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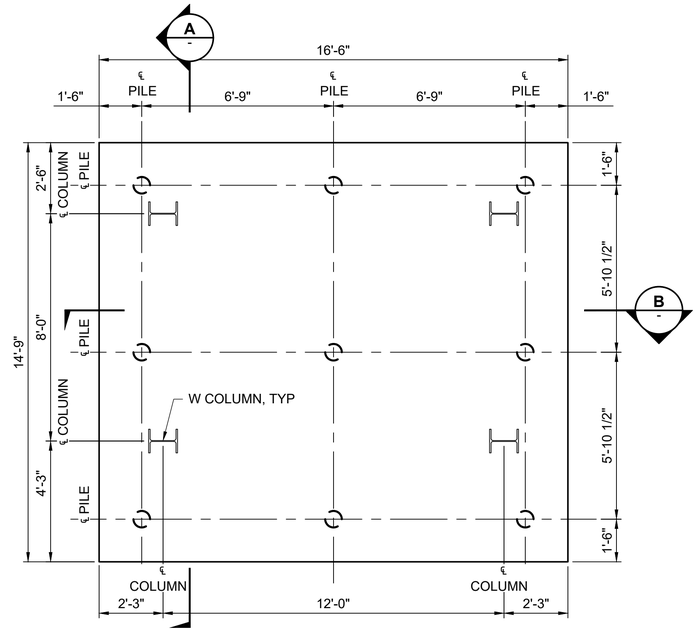
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FOUNDATION PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	188 OF 240
DRAWING:	S-456



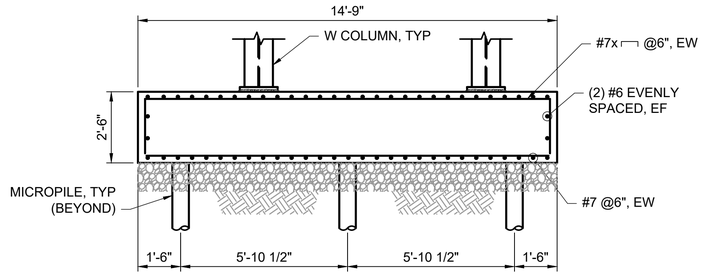
TYPE O FOUNDATION PLAN
SCALE: 3/8"=1'-0"

0 2' 4'

MICROPILE SCHEDULE						
TYPE	QTY	MAX. OUTSIDE CASING DIAMETER	HEAD EL	CASED LENGTH	UNCASED LENGTH	MINIMUM PENETRATION IN COMPETENT BEDROCK
O	9	0'-7"	EL. 110.25'	14'-3"	8'-0"	13'-0"

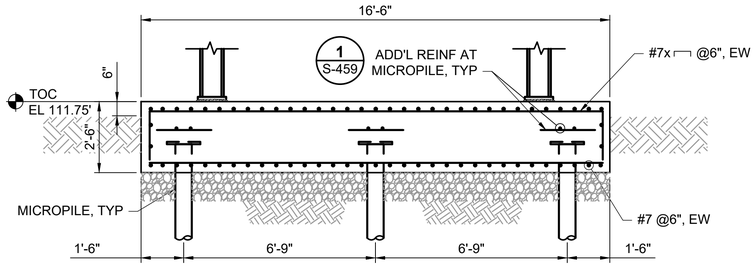
NOTE:

1. COMPETENT BEDROCK ELEVATION ASSUMED TO BE ELEVATION 101±. COMPETENT BEDROCK SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER.



A - **TYPE O FOUNDATION SECTION**
SCALE: 3/8" = 1'-0"

0 2' 4'



B - **TYPE O FOUNDATION SECTION**
SCALE: 3/8" = 1'-0"

0 2' 4'

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

FOUNDATION PLANS AND SECTIONS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	189 OF 240
DRAWING:	S-457

MICROPILE NOTES:

1. FOR FROST PROTECTION, PROVIDE A MINIMUM OF 1 FT OF CRUSHED STONE BELOW THE BOTTOM OF PILE CAP AND USE INSULATED 2" EXTRUDED POLYSTYRENE FOAM BOARD (OR EQUIVALENT).

2. FOUNDATION SUBGRADE APPROVAL IS REQUIRED BY THE REPRESENTATIVE PRIOR TO CONSTRUCTING PILE CAPS.

3. CONSTRUCT MICROPILES WITH THE FOLLOWING REQUIREMENTS:

a. $\frac{1}{16}$" LOSS ON THE OUTSIDE PERIMETER OF MICROPILE CASING WAS CONSIDERED IN DESIGN FOR STRUCTURAL CAPACITY.

b. 7" OUTER DIAMETER CASING (GRADE 80 STEEL) WITH MINIMUM THICKNESS OF 0.5".

c. 7" DIAMETER ROCK SOCKET WITH EPOXY COATED NO. 10 REINFORCING BAR (GRADE 75 STEEL).

d. PROVIDE STRUCTURAL STEEL FOR BEARING PLATES CONFORMING TO AASHTO M270 GRADE 50 (ASTM A709, GRADE 50).

e. EXTEND THE REINFORCING BAR FULL LENGTH OF MICROPILE.

f. CEMENT GROUT WITH 4000 PSI COMPRESSIVE STRENGTH.

4. CONSTRUCT MICROPILES WITH A MINIMUM BOND LENGTH OF 8 FEET IN COMPETENT BEDROCK (NO SOFT ROCK, WEAK SEAMS, VOIDS, OR OTHER SOLUTION FAILURE ZONES) THE BOND ZONE HAS BEEN DESIGNED TO PROVIDE THE GEOTECHNICAL RESISTANCE OF IN COMPRESSION AND IN TENSION.

5. THE BOND LENGTH SHALL BE IN COMPETENT BEDROCK AND SHOULD NOT HAVE MAJOR VOIDS, SOIL SEAMS, OR WEAK INCOMPETENT BEDROCK. THE BOTTOM OF THE MICROPILE CASING (ESTIMATED TOP OF THE BOND ZONE) SHOULD EXTEND A MINIMUM OF 5 FEET BELOW THE TOP OF COMPETENT BEDROCK (NO SOFT ROCK ZONES OR VOIDS) TO REDUCE THE LIKELIHOOD OF EXCESSIVE GROUT LOSS.

6. SOME LOSS OF GROUT DUE TO MINOR JOINTS OR THIN VOIDS IN BEDROCK WITHIN THE BOND ZONE IS POSSIBLE. IF THE GROUT VOLUME EXCEEDS 200 PERCENT OF THE CALCULATED VOLUME AT ANY STAGE, GROUTING OPERATIONS SHALL BE CEASED. AFTER THE GROUT HAS HARDENED, DRILLING SHALL BE RESUMED, EXTENDED THROUGH THE HARDENED GROUT, AND CONTINUED DEEPER THAN THE BOND ZONE.

7. CASING SHALL BE ADVANCED THROUGH ROCK TO THE BOTTOM OF THE ESTIMATED MICROPILE TIP ELEVATION (EMTE). ONCE THE BOTTOM OF THE BOND ZONE IS CONFIRMED, CASING SHALL BE LIFTED TO THE FINAL CONFIGURATION TO ALLOW GROUT/ROCK CONTACT AT THE BOND ZONE.

8. THE GEOTECHNICAL REPRESENTATIVE SHALL BE PRESENT DURING THE CONSTRUCTION OF THE MICROPILES AND SHALL APPROVE THE BOND ZONE IN THE FIELD.

9. MAINTAIN A RECORD OF VOIDS, FRACTURES, AND WEAK ZONES AS DOCUMENTED BY THE MICROPILE DRILL RIG OPERATOR AS DRILLING ADVANCES. ALSO, MAINTAIN A RECORD OF PENETRATION RATE, TORQUE, AND/OR OTHER PENETRATION RESISTANCE WITH DEPTH. IF VOIDS, FRACTURES, OR WEAK ZONES ARE ENCOUNTERED IN THE BOND ZONE NOTIFY THE GEOTECHNICAL REPRESENTATIVE. NOTE THAT A WEAK ZONE IS DEFINED AS A SUDDEN LOSS OF PRESSURE OR RAPID ADVANCEMENT OF THE TOOLING EQUIPMENT THAT INDICATES LOW RESISTANCE. THE SUDDEN LOSS OF PRESSURE/RAPID ADVANCEMENT SHALL BE OBSERVED BY THE REPRESENTATIVE AND VERIFIED BY THE DRILLING EQUIPMENT OPERATOR. DETERMINE BOND LENGTH BASED ON THE FOLLOWING CRITERIA:

a. IF ATTEMPTED BOND LENGTH HAS VOIDS OR FRACTURES/WEAK ZONES THAT SUM LESS THAN 6 INCHES IN LENGTH, THE BOND ZONE WOULD EXTEND AN ADDITIONAL 1 FOOT.

b. IF VOIDS OR FRACTURES/WEAK ZONES SUM MORE THAN 6 INCHES, DRILLING SHALL CONTINUE UNTIL THE SUM OF THE VOIDS/WEAK ZONES IN THE BOND ZONE IS LESS THAN 6 INCHES.

10. PROVIDE TOOLING AND EQUIPMENT ON SITE CAPABLE OF DRILLING TO AT LEAST 2 TIMES THE DEPTH OF THE DEEPEST EXPECTED MICROPILE.

11. THE MICROPILE CONTRACTOR SHALL PREPARE AND COMPLETE A MICROPILE INSTALLATION RECORD FOR EACH MICROPILE EXCAVATED AND CONSTRUCTED. THIS RECORD SHALL PROVIDE ALL EXCAVATION AND INSTALLATION DATA AND WILL BECOME THE AS-BUILT RECORD FOR THE MICROPILE.

12. PROOF TESTS:

Foundation Type	Drawing	Number of Piles	Test Frequency	Number of Piles Tested	Unfactored Design Load (DL) (Kips)		Test Load = 1.6*DL (Kips)	
					Tension (DL)	Compression (DL)	Tension (1.6*DL)	Compression (1.6*DL)
L (NIC)	S-455	4	0.2	1	7.0	80.0	11.2	128.0
M (NIC)	S-455	9	0.45	1	7.0	80.0	11.2	128.0
N	S-456	18	0.9	2	27.5	76.0	44.0	121.6
O	S-457	9	0.45	1	7.00	80.0	11.2	128.0

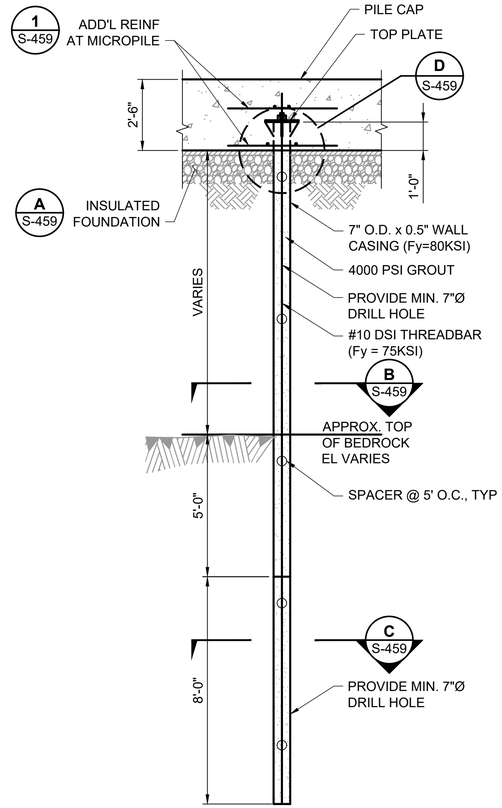
13. VERIFICATION STATIC LOAD TESTS:

Foundation Type	Drawing	Number of Piles	Test Frequency	Number of Piles Tested	Unfactored Design Load (DL) (Kips)		Test Load = 2.0*DL (Kips)	
					Tension (DL)	Compression (DL)	Tension (2.0*DL)	Compression (2.0*DL)
L (NIC)	S-455	4	0.2	1	7.0	80.0	14.0	160.0
M (NIC)	S-455	9	0.45	1	7.0	80.0	14.0	160.0
N	S-456	18	0.9	2	27.5	76.0	55.0	152.0
O	S-457	9	0.45	1	7.00	80.0	14.0	160.0

14. THE CONTRACTOR MAY NEED TO UPSIZE THE CENTRAL BAR TO NOT EXCEED ITS CAPACITY DURING VERIFICATION TESTS.

15. PLACE AND COMPACT STRUCTURAL BACKFILL IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

16. THREADED CASING CONNECTIONS WILL NOT BE PERMITTED.



MICROPILE ELEVATION

SCALE: 3" = 1'-0"

0 6" 1'

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9/3/2025	ISSUED FOR BID	M. GRAESER

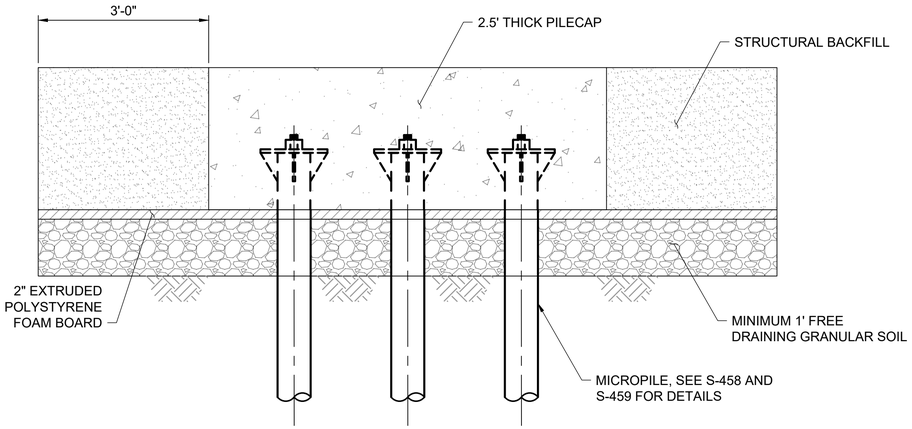
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

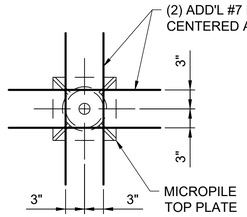
MICROPILE NOTES & DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	190 OF 240
DRAWING:	S-458

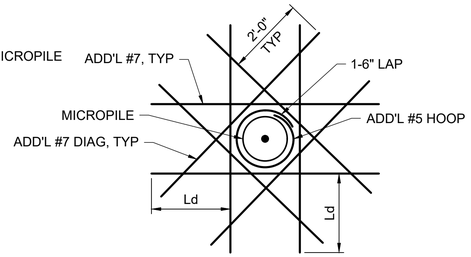


A S-458 **INSULATED FOUNDATION**
SCALE: 3/4"=1'-0"

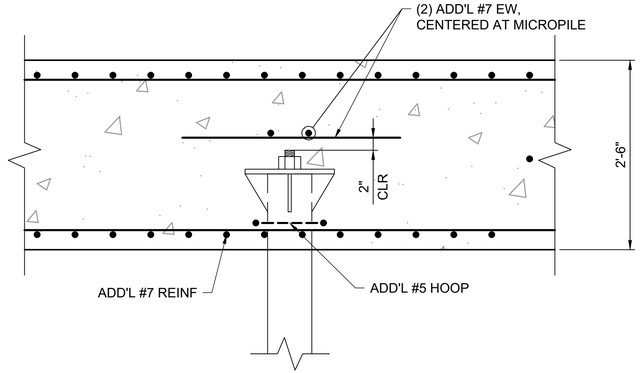
0 1' 2'



UPPER PLAN



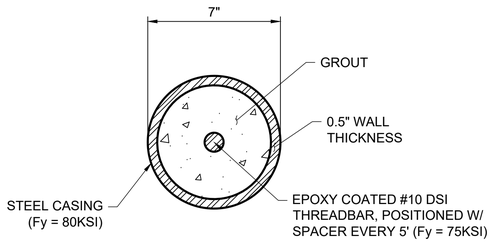
LOWER PLAN



SECTION

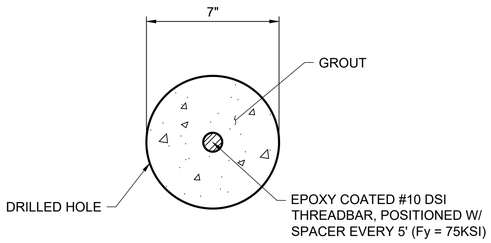
1 S-458 **ADDITIONAL REINFORCEMENT AT MICROPILE**
SCALE: 1"=1'-0"

0 1' 2'



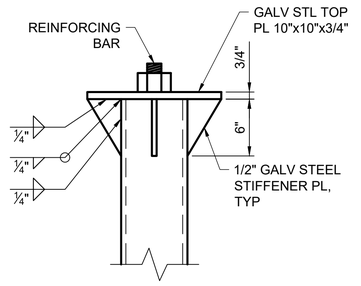
B S-458 **MICROPILE CASED SECTION**
SCALE: 3" = 1'-0"

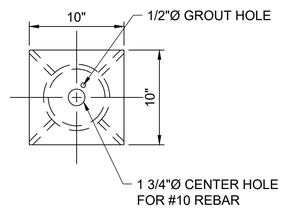
0 6" 1'



C S-458 **MICROPILE UNCASED SECTION**
SCALE: 3" = 1'-0"

0 6" 1'





D S-458 **TOP PLATE DETAILS**
SCALE: 1-1/2" = 1'-0"

0 1' 2'

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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

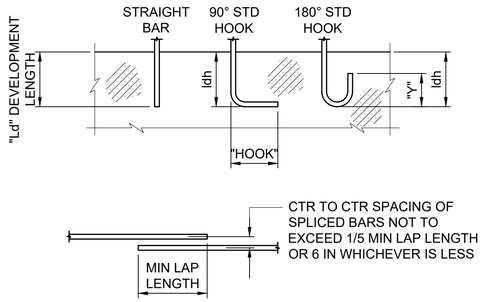
TYPICAL MICROPILE SECTIONS & DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	191 OF 240
DRAWING:	S-459

f'c = 4500 psi		fy = 60,000 psi		bar spacing = 6" min				
BAR SIZE	DIAMETER (d_b) (INCHES)	DEVELOPMENT LENGTH (l_d) (INCHES)		CLASS B LAP SPLICE (INCHES)		90° STD HOOK (INCHES)		180° STD HOOK "Y"
		"TOP" BARS	OTHER	"TOP" BARS	OTHER	HOOK	l_{dh}	
		REINFORCING BARS IN TENSION						
#3	0.375	12	12	16	16	6	6	4
#4	0.5	14	12	19	16	8	6	5
#5	0.625	18	14	24	19	10	8	5
#6	0.75	21	17	28	23	12	10	6
#7	0.875	31	24	41	32	14	12	7
#8	1.0	35	27	46	36	16	15	8
#9	1.128	44	34	58	45	20	18	11
#10	1.270	54	42	71	55	22	21	12
#11	1.41	65	50	85	65	24	25	13

NOTES:

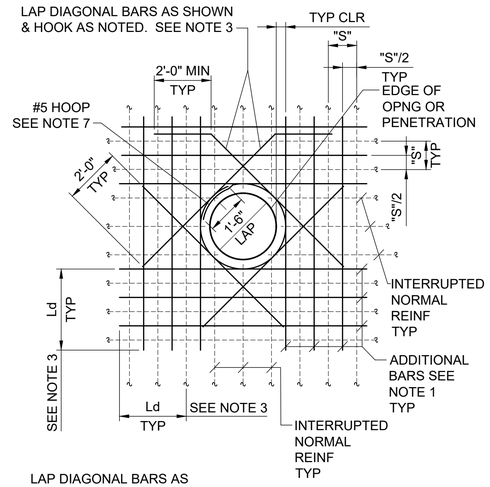
1. "TOP" BARS SHALL BE HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
2. ALL LAP SPLICES SHALL BE CLASS B UNLESS NOTED OTHERWISE.
3. SPLICES ARE TO BE MADE SO THAT THE GIVEN DISTANCES TO FACE OF CONCRETE WILL BE MAINTAINED.

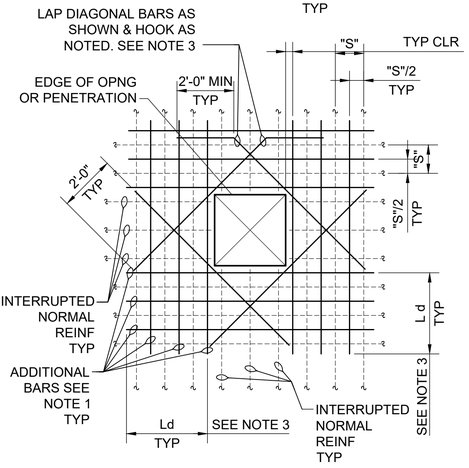


1 - STANDARD HOOK AND REINF LAP SPLICE
SCALE: NTS

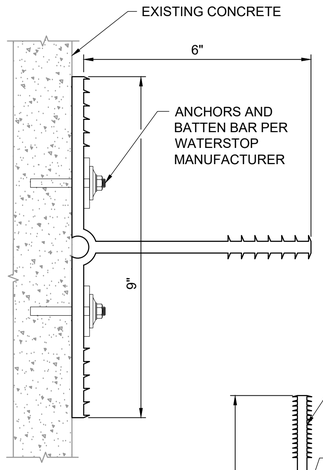
NOTES:

1. NUMBER OF ADD'L REINF BARS AT EA SIDE OF OPNG SHALL EQUAL HALF THE NUMBER OF INTERRUPTED BARS IN EACH LAYER OF REINF, 2 MIN.
2. SIZE OF ADD'L REINF BARS TO EQUAL SIZE OF INTERRUPTED REINF BARS.
3. PROVIDE STD HOOKS FOR BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED AT JOINTS OR OTHER OBSTRUCTIONS. PLACE ADDITIONAL BARS IN SAME PLANES AS INTERRUPTED REINF.
4. SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINF BAR CUT, UON. LOCATE DIAGONALS IN EACH LAYER OF REINF.
5. PLACE DIAGONAL BARS INSIDE NORMAL REINF.
6. ALL REINF TO CLEAR OPNG OR FLANGE COLLARS BY 2".
7. PROVIDE ADD'L HOOP @ EACH LAYER OF REINF.



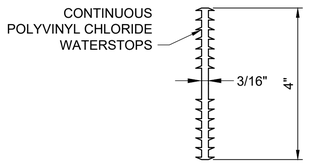


2 - ADDITIONAL REINF BAR DETAILS
SCALE: NTS



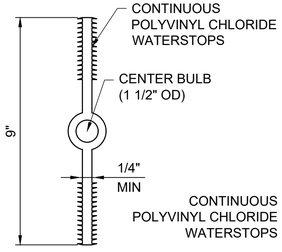
SEE JT NOTES & SPECIFICATIONS FOR REQ'D LOCATIONS

6" PVC CENTER BULB RETROFIT WATERSTOP



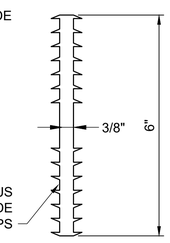
SEE JT NOTES & SPECIFICATIONS FOR REQ'D LOCATIONS

4" PVC FLAT WATERSTOP



SEE JT NOTES & SPECIFICATIONS FOR REQ'D LOCATIONS

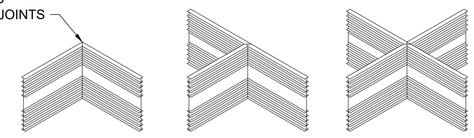
9" PVC FLAT WATERSTOP WITH CENTER BULB



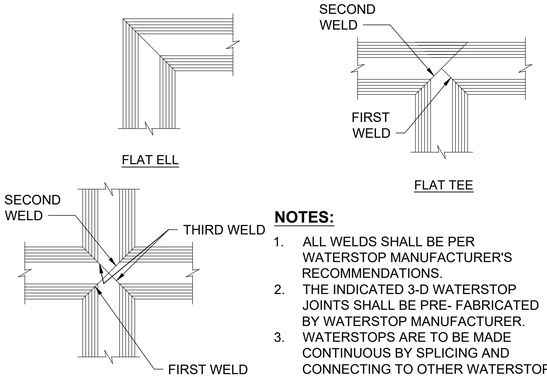
SEE JT NOTES & SPECIFICATIONS FOR REQ'D LOCATIONS

6" PVC FLAT WATERSTOP

MITER CORNERS OF VERTICAL JOINTS & WELD SIMILAR AS SHOWN BELOW FOR FLAT JOINTS



WATERSTOP 3-D JOINTS

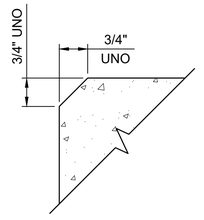


NOTES:

1. ALL WELDS SHALL BE PER WATERSTOP MANUFACTURER'S RECOMMENDATIONS.
2. THE INDICATED 3-D WATERSTOP JOINTS SHALL BE PRE- FABRICATED BY WATERSTOP MANUFACTURER.
3. WATERSTOPS ARE TO BE MADE CONTINUOUS BY SPLICING AND CONNECTING TO OTHER WATERSTOPS AS SHOWN ON THE DRAWINGS.

WATERSTOP SPLICE DETAILS

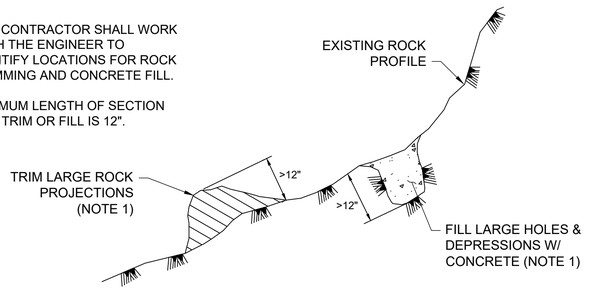
3 - PVC WATERSTOPS
SCALE: NTS



4 - CHAMFER DETAIL
SCALE: NTS

NOTE:

1. THE CONTRACTOR SHALL WORK WITH THE ENGINEER TO IDENTIFY LOCATIONS FOR ROCK TRIMMING AND CONCRETE FILL.
2. MINIMUM LENGTH OF SECTION FOR TRIM OR FILL IS 12".



5 - ROCK SURFACE PREPARATION DETAIL
SCALE: NTS

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

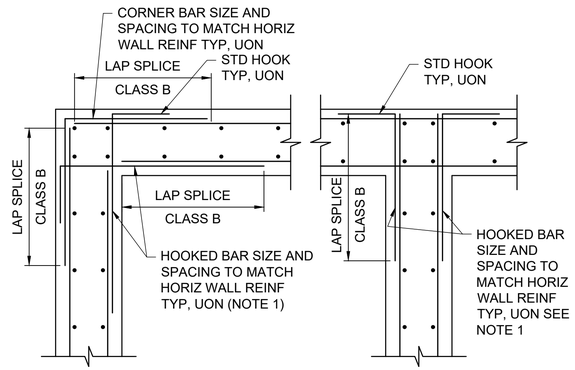
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

WOODLAND FISH LIFT PASSAGE DESIGN

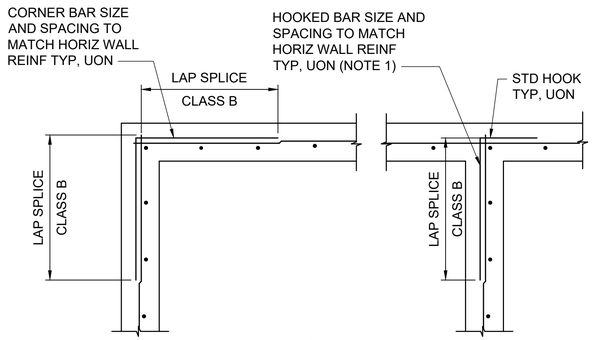
MAINE DEPARTMENT OF MARINE RESOURCES

STRUCTURAL STANDARD DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	192 OF 240
DRAWING:	S-500



TYPICAL PLAN
REINFORCING EACH FACE

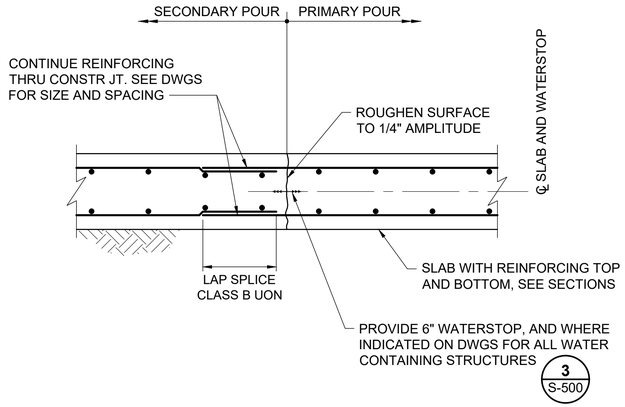


TYPICAL PLAN
SINGLE LAYER REINFORCING

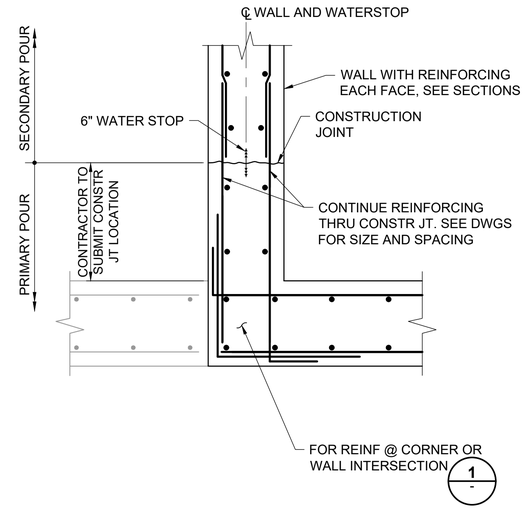
NOTE:

1. IN LIEU OF SEPARATE HOOKED BAR, CONTRACTOR OPTION TO USE HORIZ REINF WITH STD HOOK EA END.

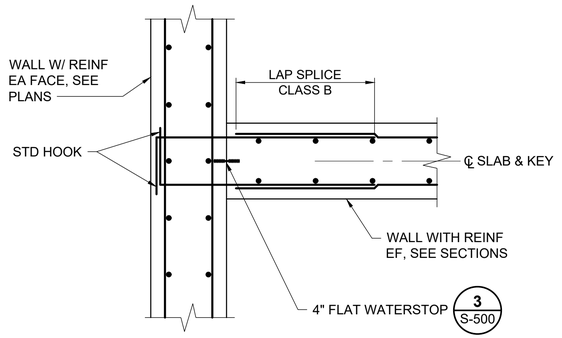
1 / - WALL INTERSECTION / CORNER REINF
SCALE: NTS



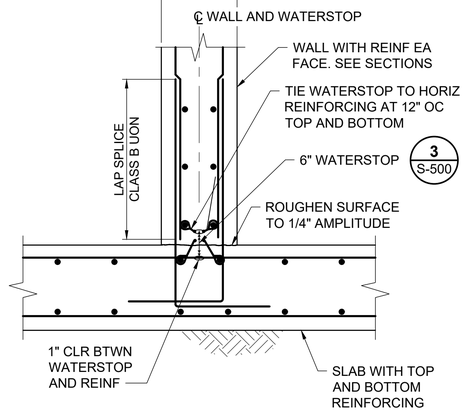
2 / - CONSTRUCTION JOINT (CJ)
SCALE: NTS



3 / - CONSTRUCTION JOINT-WALL TO WALL
SCALE: NTS



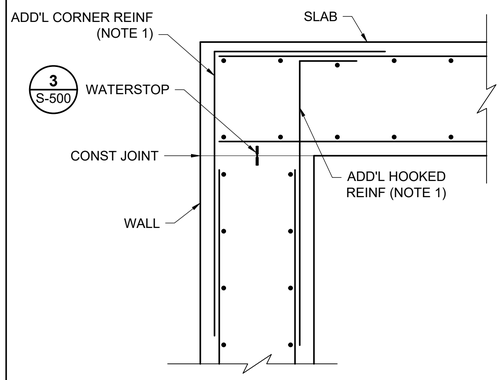
4 / - CONSTRUCTION JOINT-WALL TO WALL
SCALE: NTS



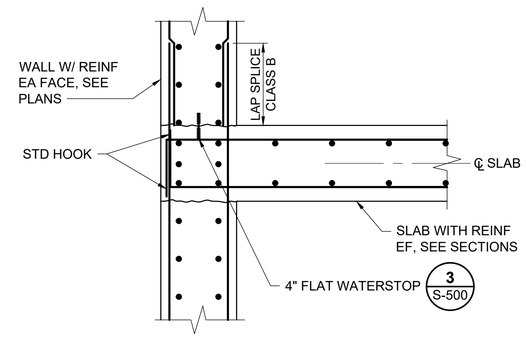
5 / - CONSTRUCTION JOINT-WALL TO SLAB
SCALE: NTS

NOTE:

1. ADD'L REINF SIZE & SPACING SHALL MATCH WALL REINF.



6 / - TOP SLAB TO WALL DETAIL
SCALE: NTS



7 / - INTERMEDIATE SLAB TO WALL DETAIL
SCALE: NTS

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9/3/2025	ISSUED FOR BID	M. GRAESER

VERIFY SCALE
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

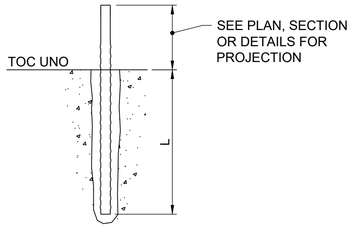
STRUCTURAL STANDARD DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	193 OF 240
DRAWING:	S-501

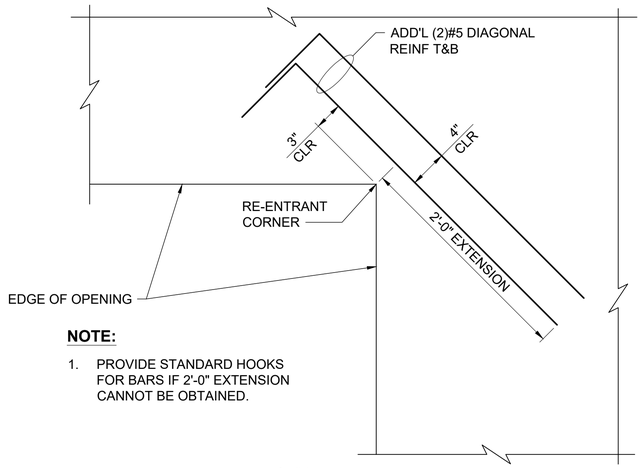
NOTES:

1. DOWEL EDGE DISTANCE SHALL BE A MINIMUM OF 1.5 X L, UNO ON THE DRAWINGS. SMALLER EDGE DISTANCES SHALL BE APPROVED BY THE ENGINEER OF RECORD.
2. MINIMUM CENTER TO CENTER SPACING OF DOWELS SHALL BE 3 X L, UNO ON THE DRAWINGS. SMALLER BOLT SPACINGS SHALL BE APPROVED BY THE ENGINEER OF RECORD.
3. HOLES SHALL BE DRILLED USING A HAMMER DRILL AND CARBIDE BIT, OR EQUAL.
4. REINFORCEMENT SHALL BE ASTM A615 GRADE 60.

BAR SIZE	"L" MIN (IN)
4	6
5	8
6	10
7	13.5
8	16
9	18.5
10	21



1 REBAR ADHESIVE ANCHOR DEAIL
SCALE: NTS



NOTE:

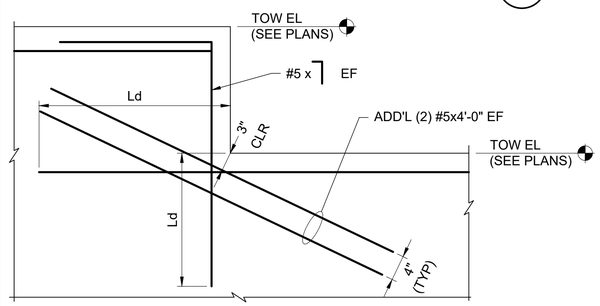
1. PROVIDE STANDARD HOOKS FOR BARS IF 2'-0" EXTENSION CANNOT BE OBTAINED.

PLAN

2 RE-ENTRANT CORNER DETAIL
SCALE: NTS

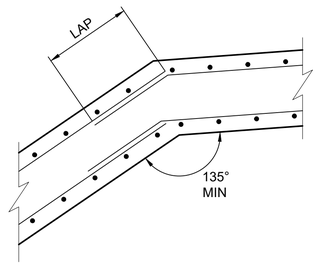
NOTE:

1. Ld SHALL BE DEVELOPMENT LENGTH PER DETAIL 1/S-500



ELEVATION

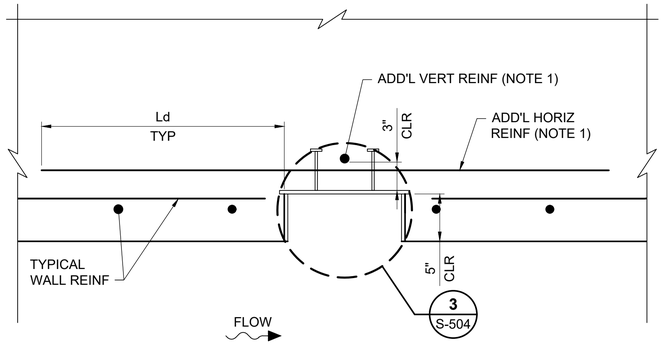
3 STEP IN TOP OF WALL DETAIL
SCALE: NTS



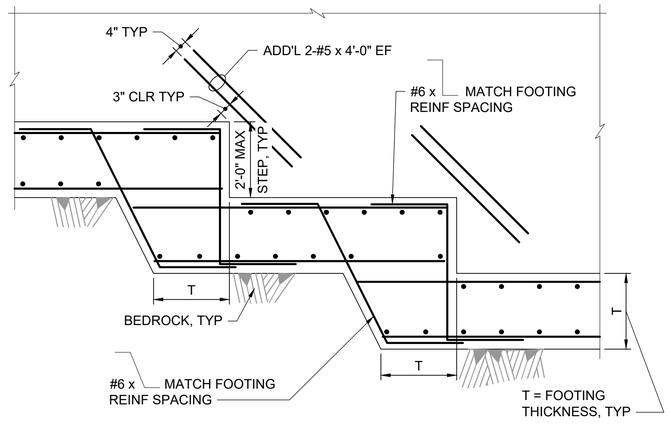
4 CORNER DETAIL
SCALE: NTS

NOTES:

1. ADD'L REINF SIZE AND SPACING SHALL MATCH WALL REINF.
2. Ld SHALL BE DEVELOPMENT LENGTH PER DETAIL.



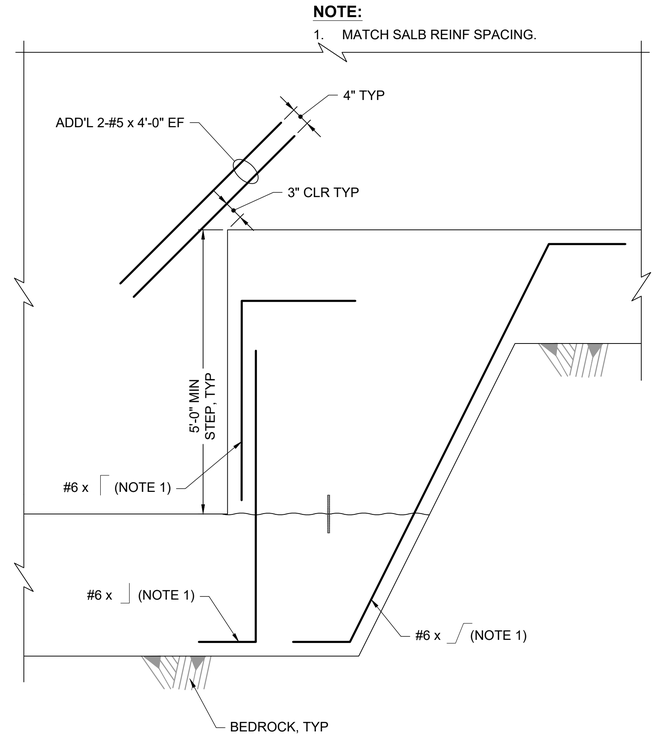
5 BULKHEAD/STOPLOG SLOT DETAIL
SCALE: NTS



6 STEPPED FOOTING
SCALE: NTS

NOTE:

1. MATCH SALB REINF SPACING.



7 LARGE STEP IN FOUNDATION/BASE SLAB
SCALE: NTS

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9/3/2025	ISSUED FOR BID	M. GRAESER

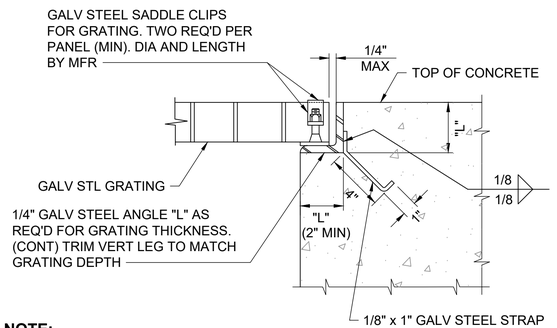
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

STRUCTURAL STANDARD DETAILS

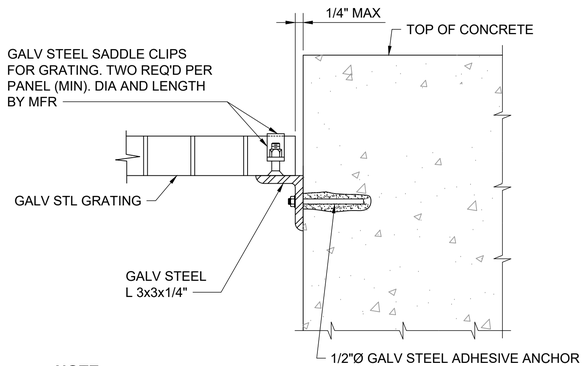
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	194 OF 240
DRAWING:	S-502



NOTE:

1. ALL DIMENSIONS ARE TO BE COORDINATED WITH GRATING MFR.

1 - GRATING SUPPORT TYPE 1
SCALE: NTS



NOTE:

1. ALL DIMENSIONS ARE TO BE COORDINATED WITH GRATING MFR.

2 - GRATING SUPPORT TYPE 2
SCALE: NTS

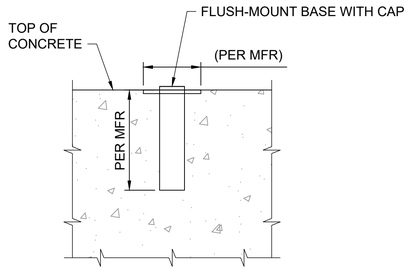
NOTES:

1. FLUSH FLOOR MOUNT SLEEVE SHALL BE MADE OF STRUCTURAL STEEL.

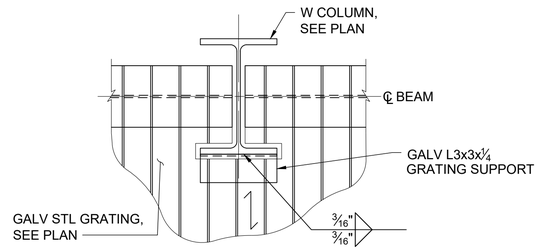
LOCATE SLEEVE AT DIRECTION OF WOODLAND PULP AND ENGINEER.

2. EACH MOUNT SHALL HAVE A CAP TO KEEP WATER AND DEBRIS OUT OF BASE.

3. CONTRACTOR SHALL SUBMIT LOCATIONS AND SAFETY ANCHORAGE DETAILS FOR REVIEW AND APPROVAL BY WOODLAND PULP AND ENGINEER.

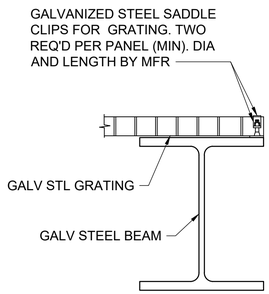


3 - SAFETY ANCHORAGE BASE
SCALE: NTS



PLAN

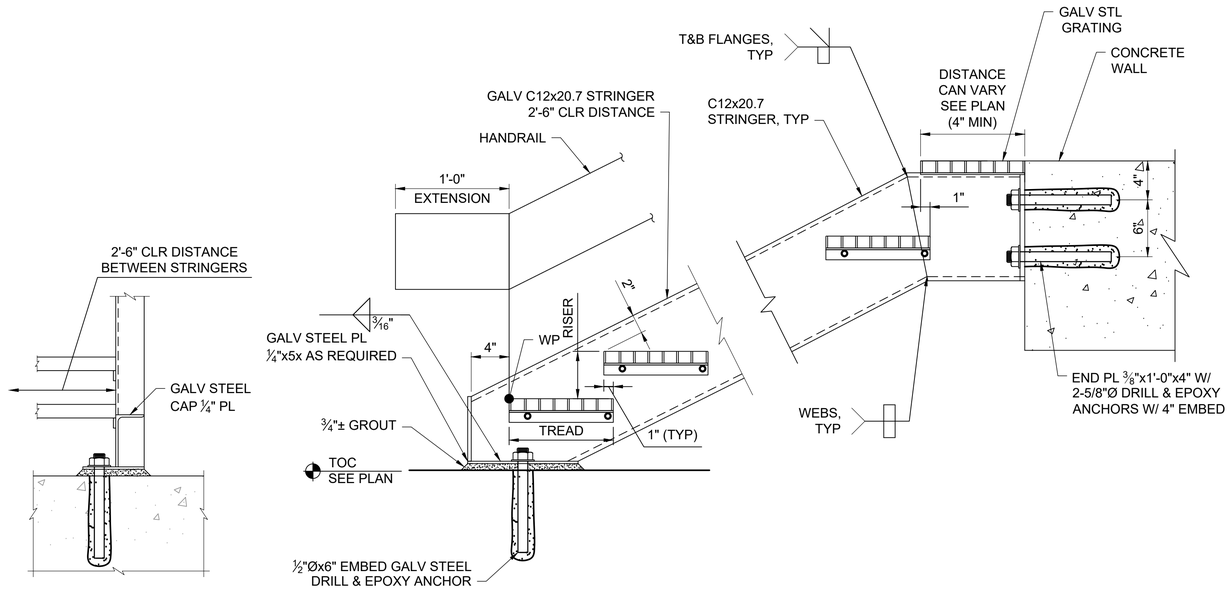
4 - GRATING SUPPORT @ COLUMNS
SCALE: NTS



NOTE:

1. ALL DIMENSIONS ARE TO BE COORDINATED WITH GRATING MFR.

5 - GRATING SUPPORT (AT PLATFORM)
SCALE: NTS



6 - STAIR CONNECTINS
SCALE: NTS

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SEPTEMBER 3, 2025

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9/3/2025	ISSUED FOR BID	M. GRAESER

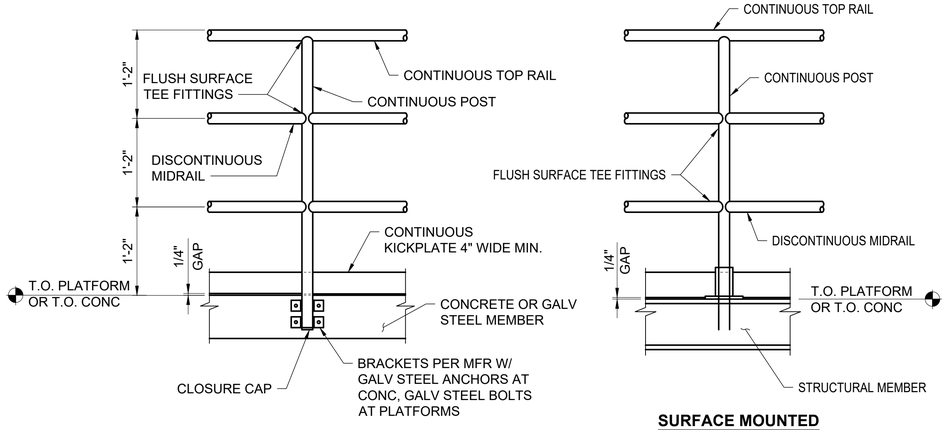
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

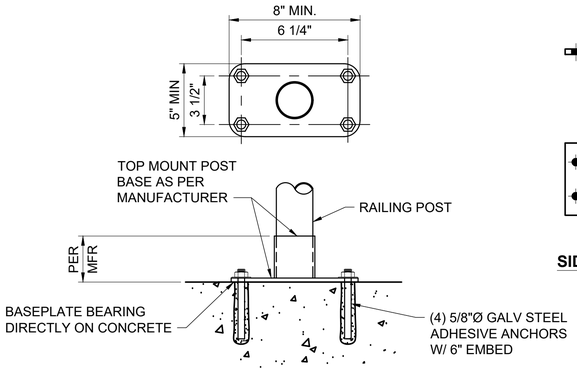
STRUCTURAL STANDARD DETAILS

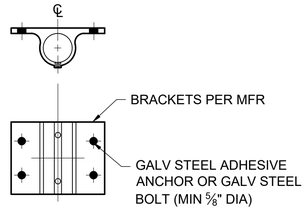
PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	195 OF 240
DRAWING:	S-503



SIDE MOUNTED POST DETAIL

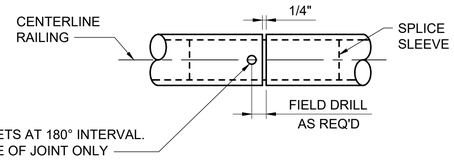
SURFACE MOUNTED





SIDE MOUNTED

SURFACE POST DETAIL

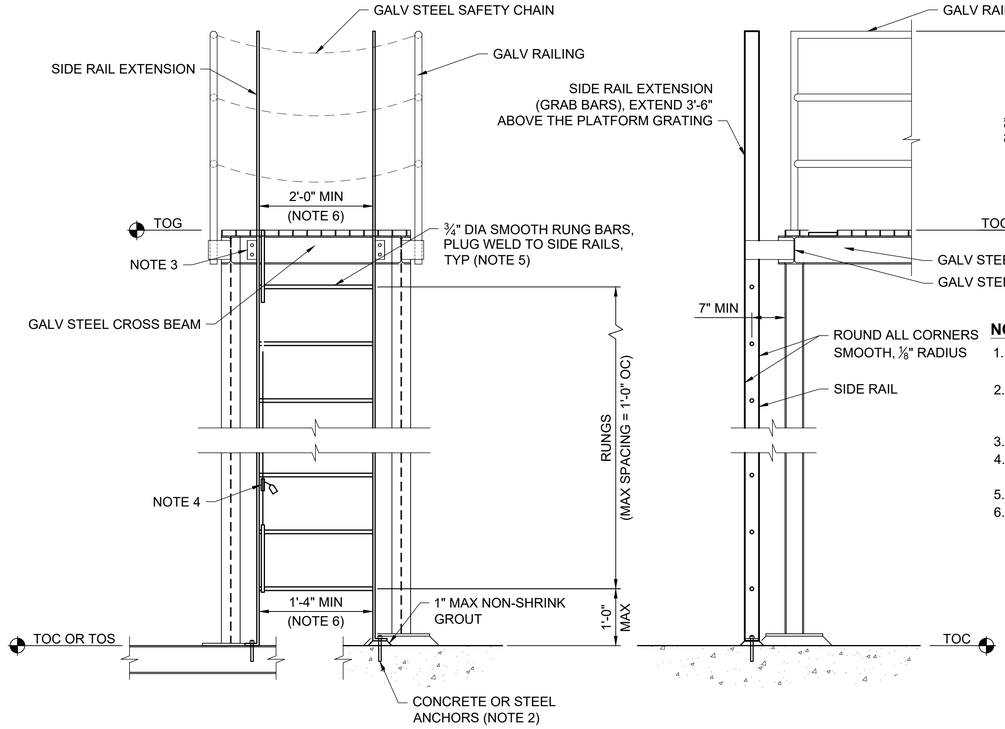


RAIL SPLICE DETAIL

RAILING NOTES:

1. ALL KICKPLATES, AND ACCESSORIES SHALL BE GALVANIZED STEEL, PER SPECIFICATIONS.
2. ALL RAILING SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
3. ALL RAILS AND POSTS MUST BE SIZED AND SPACED TO SATISFY ALL APPLICABLE CODES AND STANDARDS. MAX POST SPACING = 4'-0".
4. MAXIMUM RAIL SPLICE LENGTH = 24'-0".

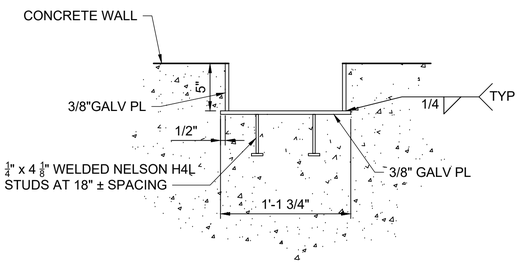
1 **HANDRAIL DETAIL**
SCALE: NTS



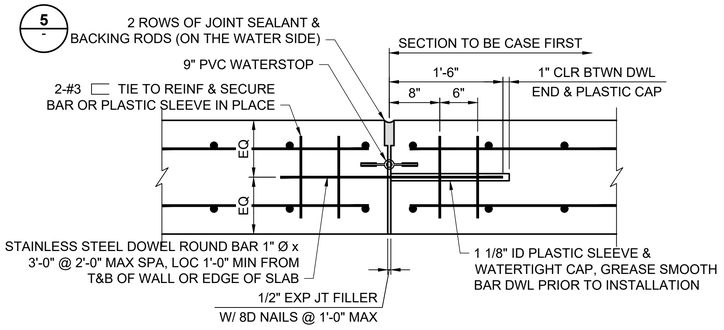
NOTES:

1. ALL LADDER MATERIALS GALVANIZED STEEL, UNLESS NOTED OTHERWISE.
2. ALL CONCRETE ANCHORS: ⅝" DIA GALVANIZED STEEL DRILL & EPOXY ANCHORS W/ 6" MIN EMBED. ALL BOLTS: 3/4" DIA A325 BOLTS.
3. ALL STEEL ANCHORS TO BE 3/4" DIA A325 BOLTS.
4. PROVIDE GALVANIZED STEEL FALL ARREST MECHANISM.
5. COAT RUNGS WITH NON-SKID EPOXY COATING.
6. ABOVE THE PLATFORM LEVEL, PROVIDE THROUGH LADDER WITH RUNGS OMITTED FROM THE SIDE RAIL EXTENSIONS. THE SIDE RAILS SHALL BE SPACED FURTHER APART OR FLARED TO PROVIDE NOT LESS THAN 24" OF CLEARANCE.

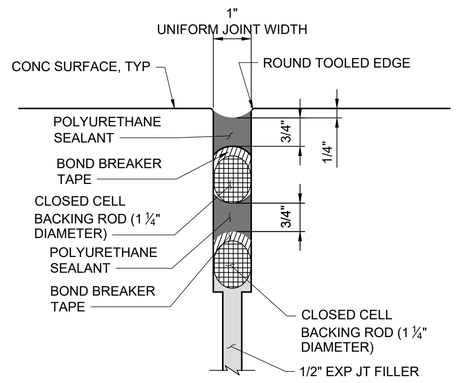
2 **GALVANIZED STEEL FIXED LADDER DETAIL**
SCALE: NTS



3 **EMBEDMENT FOR SLOT**
SCALE: NTS



4 **TYPICAL EXPANSION JOINT DETAIL**
SCALE: NTS



5 **JOINT SEALANT (DOUBLE)**
SCALE: NTS

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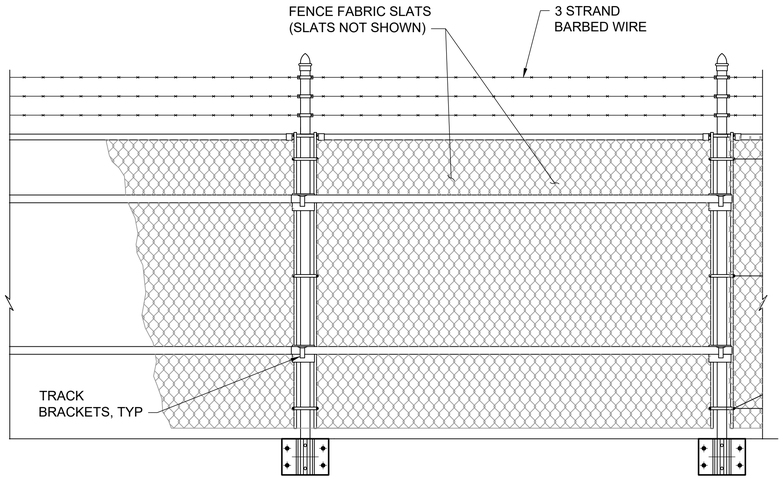
VERIFY SCALE
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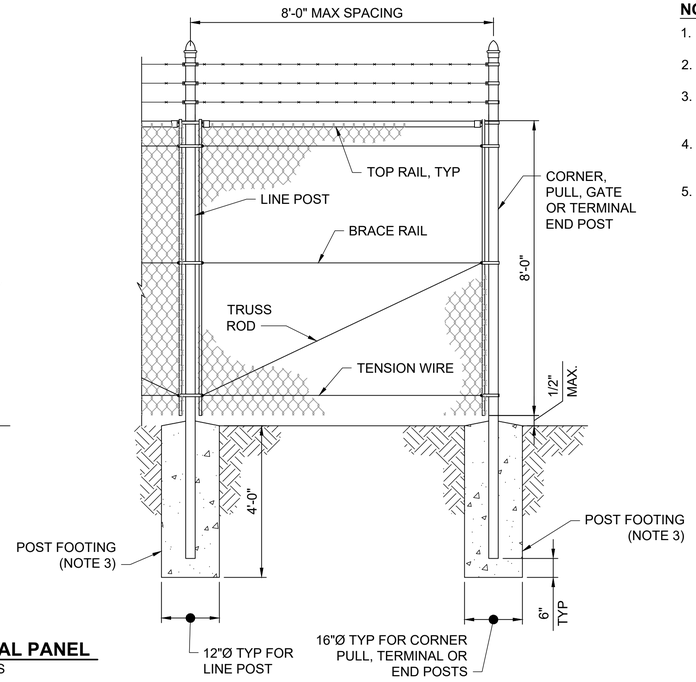
WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

STRUCTURAL STANDARD DETAILS

PROJECT:	16667
DRAWN BY:	C. HAGLER
DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	196 OF 240
DRAWING:	S-504





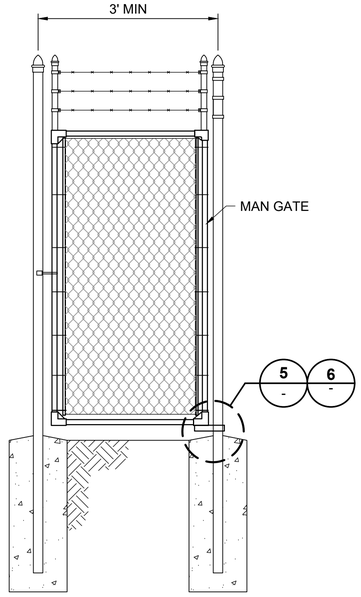
1 - TERMINAL PANEL
SCALE: NTS

NOTES:

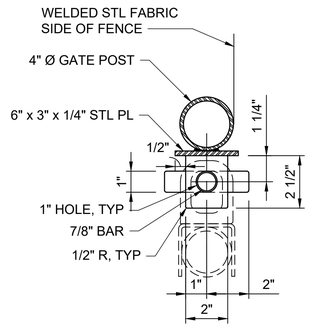
1. WHERE SOUND ROCK IS ENCOUNTERED, USE FOOTING DETAIL
2. ALL METAL SHALL BE GALVANIZED STEEL
3. SIDE MOUNTED FENCE POSTS AT CONCRETE SHALL HAVE LOWER POST BRACKET AS SHOWN IN
4. TERMINAL PANELS SHALL BE PLACED AT INTERVALS NOT TO EXCEED 150'
5. COORDINATE MAN GATE LOCATIONS WITH WOODLAND PULP AND ENGINEER.

POST & MATERIALS TABLE

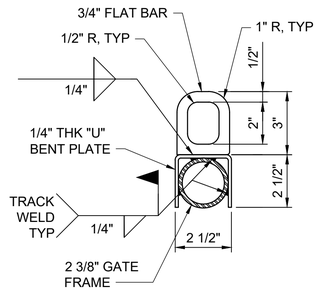
LINE POSTS	2-3/8" OD SCH 40 PIPE
CORNER & END POSTS	2-7/8" OD SCH 40 PIPE
TOP RAIL	1-5/8" OD SCH 40 PIPE
DRIVE GATE POSTS	4-1/2" OD SCH 40 PIPE
CHAIN LINK FABRIC	9 GA WIRE 2" DIAMOND WIRE, KNUCKLED TOP & BOTTOM, TWISTED & BARBED
GATE FRAMES	1-7/8" OD SCH 40 PIPE
TENSION WIRE	7 GA GALV COIL SPRING STEEL
TRUSS RODS	3/8" GALV STEEL
BRACE RAIL	1-5/8" OD SCH 40 PIPE
SLATS	1-3/32" DOUBLE WALL HDPE W/ BOTTOM LOCKING CHANNEL



4 - MAN GATE DETAIL
SCALE: NTS



5 - GATE POST PLAN
SCALE: NTS



6 - GATE FRAME PLAN
SCALE: NTS

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9/3/2025	ISSUED FOR BID	M. GRAESER

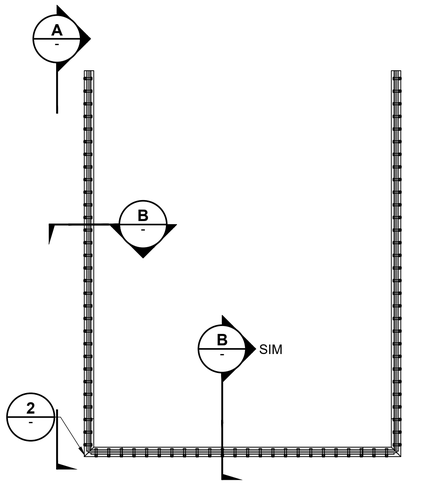
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WOODLAND FISH LIFT PASSAGE DESIGN

MAINE DEPARTMENT OF MARINE RESOURCES

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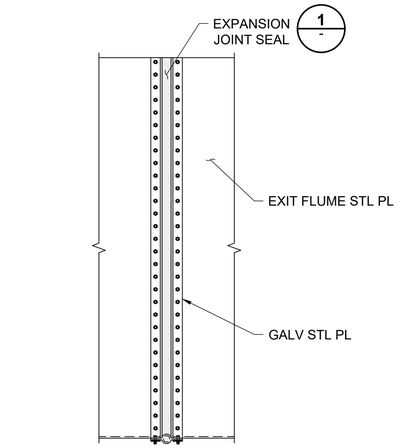
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APPROVED BY:	M. GRAESER
SHEET:	197 OF 240
DRAWING:	S-505



EXPANSION JOINT SEAL ELEVATION

SCALE: 1/2"=1'-0"

0 2' 4'



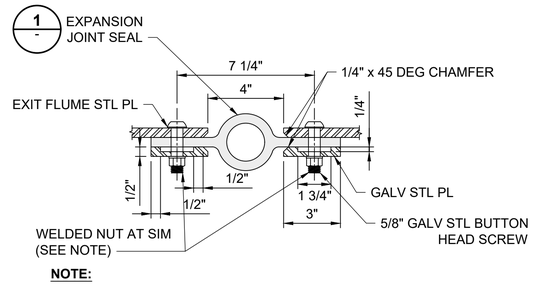
A - **EXPANSION JOINT SECTION**

SCALE: 1/2"=1'-0"

0 2' 4'

EXPANSION JOINT SEAL NOTES:

1. ATTACHING THE RUBBER SEALS:
   A. TIGHTEN BOLTS ATTACHING THE RUBBER SEALS, PAST SNUG TIGHT.
   B. MAX BOLT SPACING FOR ATTACHING THE RUBBER SEALS SHALL BE 5" ON-CENTER.
2. EACH CORNER PIECE SHALL BE ONE MONOLITHIC PIECE MOLDED TO THE DIMENSIONS SHOWN.
3. EXPANSION JOINT SHALL BE AS LONG AS PRACTICAL TO REDUCE THE NUMBER OF SPLICES.
4. SPLICING:
   A. SPLICES SHALL BE COMPLETED IN THE SHOP AS MUCH AS PRACTICAL.
   B. SPLICES DONE IN THE SHOP SHALL BE HOT VULCANIZED.
   C. SPLICES DONE IN THE FIELD SHALL BE COLD VULCANIZED.
   D. SPLICES SHALL BE COMPLETED PER THE SEAL MANUFACTURER'S RECOMMENDATIONS.



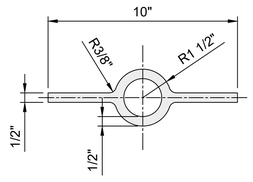
NOTE:

1. NUTS WELDED TO STRUCTURAL MEMBERS SHALL BE 5/8" DIAMETER, 10 TPI (UNO). FILLET WELD ALL AROUND.

B - **EXPANSION JOINT SEAL CONNECTION DETAIL**

SCALE: 3" = 1'-0"

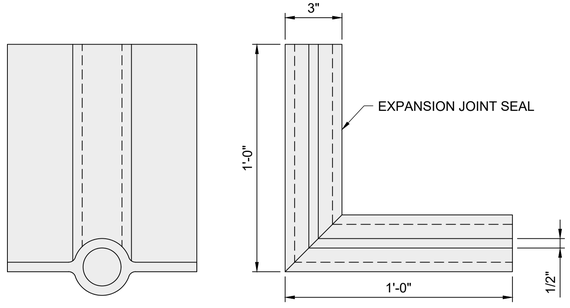
0 6" 1'



1 - **EXPANSION JOINT SEAL DETAIL**

SCALE: 3" = 1'-0"

0 6" 1'



2 - **EXPANSION JOINT CORNER DETAIL**

SCALE: 3" = 1'-0"

0 6" 1'

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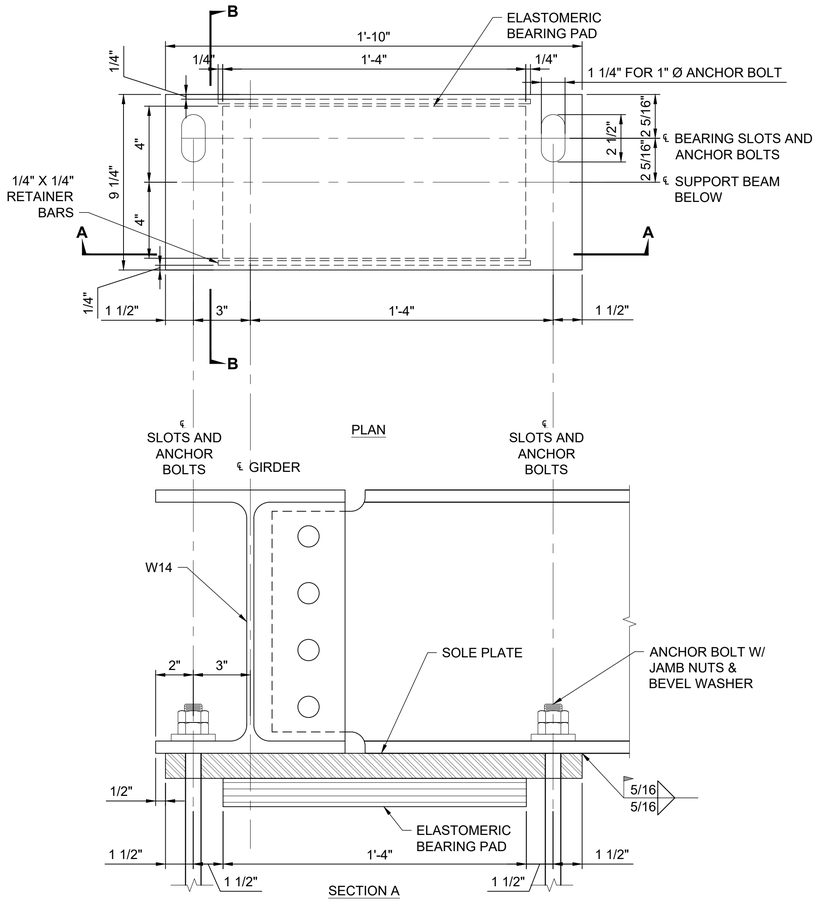
MAINE DEPARTMENT OF MARINE RESOURCES

STRUCTURAL STANDARD DETAILS

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DRAWN BY:	C. HAGLER
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APPROVED BY:	M. GRAESER
SHEET:	198 OF 240
DRAWING:	S-506

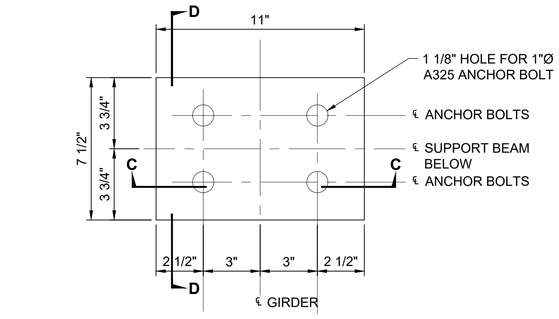
BEARING NOTES:

1. AT FIXED BEARING ANCHOR BOLT NUTS SHALL BE SNUGGED AND JAMMED WITH JAM NUTS. AT EXPANSION BEARINGS, PROVIDE ¼" CLEARANCE BETWEEN JAM NUT AND SOLE PLATE UNDER ALL TEMPERATURE CONDITIONS PRIOR TO JAMMING.
2. GRADE 4 ELASTOMER SHALL BE USED.
   a. DESIGN SHEAR MODULUS G = 0.13 PSI AT 73° F.
   b. HARDNESS = 60DURO (SHORE A).
3. HIGHER GRADE ELASTOMER MAY BE SUBSTITUTED FOR GRADE 4 AT NO ADDITIONAL COST TO THE PROJECT.

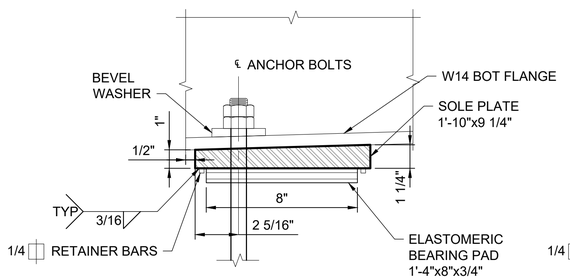


PLAN

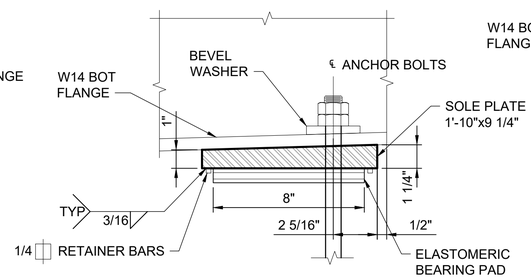
SECTION A



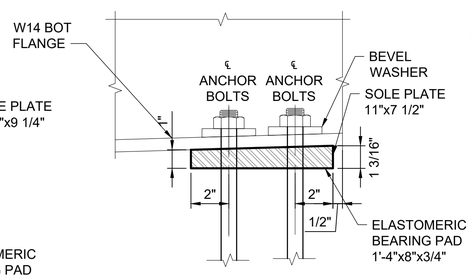
SECTION C



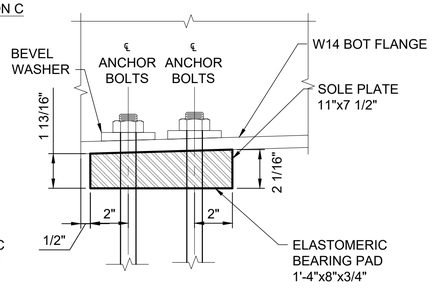
SECTION B - NORTH EXIT FLUME



SECTION B - SOUTH EXIT FLUME



SECTION D - NORTH EXIT FLUME



SECTION D - SOUTH EXIT FLUME

1 - ELASTOMERIC BEARING DETAILS
SCALE: 3" = 1'-0"

0 6" 1'

2 - SOLE PLATE DETAILS
SCALE: 3" = 1'-0"

0 6" 1'

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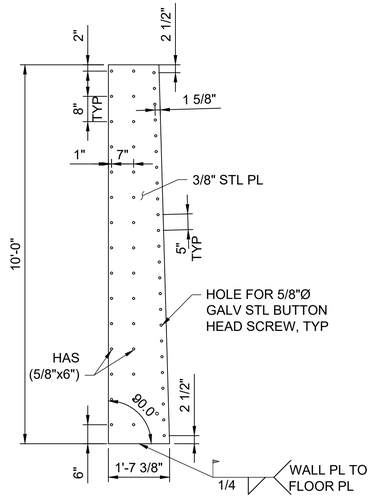
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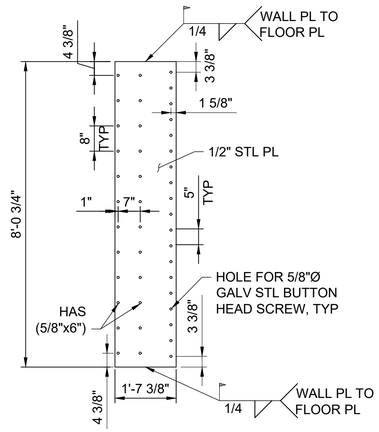
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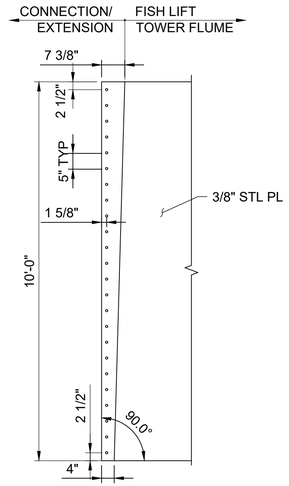
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DESIGNER:	A. MENGERT
APPROVED BY:	M. GRAESER
SHEET:	199 OF 240
DRAWING:	S-507



1 S-135 **WALL CONNECTION PLATE - ELEVATION**
SCALE: 1/2"=1'-0" 0 2' 4'



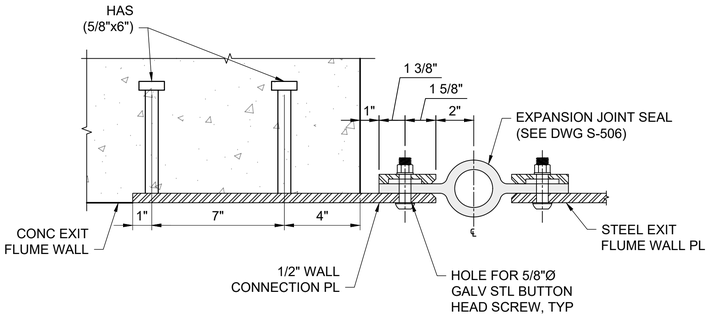
2 S-135 **FLOOR CONNECTION PLATE - PLAN**
SCALE: 1/2"=1'-0" 0 2' 4'



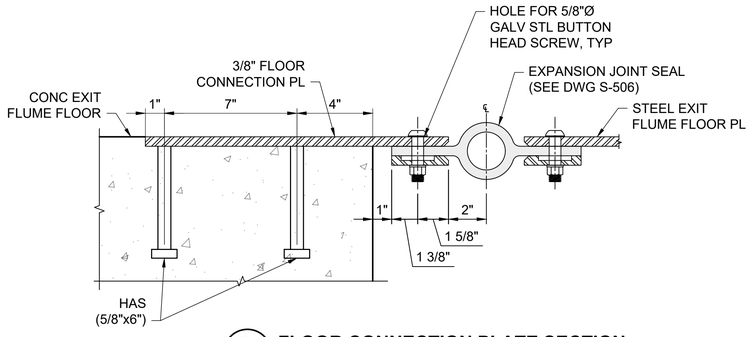
3 S-135 **WALL CONNECTION PLATE - ELEVATION**
SCALE: 1/2"=1'-0" 0 2' 4'

NOTES:

1. THE EXIT FLUME TRANSITION PLATES SHALL BE PAINTED PER SPECIFICATION SECTION 09 90 00.
2. THE WALL CONNECTION PLATES SHALL BE FIELD WELDED TO THE FLOOR CONNECTION PLATE. THE AREA NEAR THE FIELD WELD SHALL BE PAINTED IN THE FIELD.



A S-135 **WALL CONNECTION PLATE SECTION**
SCALE: 3" = 1'-0" 0 6" 1'



B S-135 **FLOOR CONNECTION PLATE SECTION**
SCALE: 3" = 1'-0" 0 6" 1'

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EXIT FLUME TRANSITION DETAILS

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