

GENERAL NOTES

- All work requirements on these drawings and not otherwise detailed shall be accomplished as specified in the current edition of the American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering.
- Field verify all dimensions and elevations prior to start of construction.
- Stationing for these plans can be converted to Br. 25.4 Rail Raise Track Plans by adding 1171+75.43.
- Information used to prepare this drawing:

Geotechnical Investigation and recommendations prepared by Northern Geotechnical Engineering, Inc. d.b.a. Terra Firma Testing, Dated 04/07/20.

Hydraulic and hydrologic investigation and recommendations prepared by Michael Baker International, Dated 06/10/20.

DESIGN NOTES

- The proposed structure has been designed in accordance with the AREMA Manual for Railway Engineering, Chapter 8: Concrete Structures and Foundations, Chapter 9: Seismic Design for Railway Structures and Chapter 15: Steel Structures.
- This structure was designed for Cooper E80 Live Load plus Impact.

FIELD WELDING

- Welding shall be accomplished with the SMAW or FCAW Process.
- Welding shall be in compliance with the requirements specified in AWS D1.5, except 5/16" fillet welds may be made with a single pass.
- Welding electrodes shall be E7018 for SMAW or E71T-7 for FCAW.
- Welders shall possess valid qualifications, which shall be furnished to the Railroad for approval prior to commencing welding.

CAST-IN-PLACE CONCRETE NOTES

CONCRETE

- All concrete materials, placement and workmanship shall be in accordance with Chapter 8: Concrete Structures and Foundations of the AREMA Manual for Railway Engineering. This section of notes applies to all concrete work except for drilled shafts.
- Formwork tolerances shall be in accordance with ACI 347 specifications.
- Minimum compressive strength at 28 days shall be 4000 psi.
- Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45.
- Cement shall be Type I or Type II Portland Cement, blended hydraulic cement, fly ash, ground granulated blast-furnace slag, or silica fume in accordance with AKDOT 501 specifications.
- Aggregates shall be graded in accordance with AKDOT Standard Specifications for Highway Construction 2020 Edition.
- Air content shall be between 5.5% and 6.5% (by volume).
- Admixtures shall not be used without approval by the Railroad.
- Curing shall be accomplished by wet curing or application of a Type 2 membrane.
- Concrete work shall conform to all requirements of ACI 306.1, Standard Specification for Cold Weather Concreting. Contractor shall submit detailed procedures for the production, transportation, placement, protection, curing, and temperature monitoring of concrete during cold weather to the Railroad for approval.

REINFORCING STEEL

- Reinforcing steel shall be deformed, new billet bars per ASTM A615 specifications and meet Grade 60 requirements. Bars shall be non-coated.
- Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details are out to out of bar.
- Reinforcing steel shall be blocked and tied to proper location and securely wired against displacement. Tie wires shall be installed at every other bar intersection so that at least 50% of the intersections are tied. Tack welding of reinforcing is prohibited. Minimum concrete cover on reinforcing not otherwise noted shall meet the AREMA Manual for Railway Engineering requirements.

PILE DRIVING NOTES

DESIGN

- All piles shall be driven to 100 ton capacity.

Minimum pile penetration depth = 35' below groundline.
Estimated pile driving depth = 54' below groundline.
- Estimated capacity of driven piles shall be calculated using the Modified ENR formula, with Factor of Safety of 5. Pile driving records and estimated capacities shall be submitted to the engineer. Alternate methods such as Gates or PDA testing may also be considered at the Railroad's discretion.
- Vibratory hammers are only permitted for 20' max of pile advancement below the mudline.
- Mark every pile with a dimension indicating the pile depth from cutoff to point of pile. The dimension shall be rounded to the nearest foot. The mark shall be welded on the outside face, low mile post side on the pile flange, approximately 1'-0" below the bottom of the cap, and in numbers of approximately 3" in height. If a pile is not exposed, no mark is required.

STEEL

- Piles - ASTM A252, Grade 3, split seam welded. Upon approval, split seam welded pipe conforming to ASTM 53 Grade B, API Specification 2B, or API Specification 5L X52 PSL2 may be used.
- Pile splices - ASTM A572 Grade 50.
- Backing rings - provided by manufacturer or an approved alternate equal to a minimum thickness of 1/4" and a width of 4".

GALVANIZED PIPE PILE

- Where specified, galvanized coating for pipe piles shall conform to ASTM A123. Pickle per SSPC No. 8 and Hot-Dipped Galv. per current ASTM A123. Coating weight 2.3 oz. per sq. ft. (Grade 100).
- Provide 3" Mask on each end of Pile.

SPLICES

- Spllices shall be made a sufficient distance above the ground or water (not less than one foot) so that the splice can be observed during driving. The number of spllices shall be kept to a minimum. Splicing cut-offs or short pieces to make a main bearing pile is not permitted. The pile shall be driven so that the upper splice is at least 10 feet below the ground surface.

TOLERANCE

- Variations greater than 1/4" per foot from vertical or batter line shall not be allowed. The deviation of the top of the piles in a bent shall not exceed one inch from the plan location. Piles not meeting tolerance requirements or out of line as to impair usefulness, or piles that are damaged in driving as to impair structural capacity, shall be pulled and redriven or an additional pile shall be driven to provide added support.

MISCELLANEOUS STEEL SPECIFICATIONS:

Design and Workmanship - Per current AREMA Manual for Railway Engineering.

Miscellaneous Steel - Per current ASTM A36 Specifications, unless otherwise noted.

Steel Coating - Unless otherwise noted, pickle per SSPC No. 8 and Hot-Dipped Galv. per current ASTM A123 (Grade 100). Coating weight 2.3 oz. per sq. ft. Bolts and nuts to be zinc plated.

Welding - Arc Process per current AREMA Manual for Railway Engineering and AWS D1.1 Structural Welding Code.

RIPRAP SPECIFICATIONS:

- Riprap shall be placed to thickness, height and length shown on plans. Individual stones are to be keyed into each other to reduce void space in the finished product.
- Riprap subgrade shall be prepared to achieve the lines and grades shown on the plans prior to riprap placement. Any fill required in the subgrade shall be compacted to a density consistent with surrounding undisturbed material.
- Woven filtration fabric shall be installed between all riprap and underlying soil. Fabric material shall meet AASHTO M288 specifications for stabilization.
- Site preparation shall include removing vegetation, large stones, limbs, brush, roots and other debris.
- Sheets placed in the improved bank and channel shall be orientated with the longer dimension parallel with the embankment.
- Upper sheets shall overlap the lower sheets with a minimum 18 inch overlap between individual fabric sheets.
- Include folds in fabric to minimize tension and stretching during settlement.
- Secure fabric with pins and washers at 2 to 5 foot spacing along the overlaps.
- Do not drop stones from heights greater than 2 feet when placing riprap on filter fabric.

WOVEN FILTER FABRIC SPECIFICATIONS:

SUMMARY OF ESTIMATED QUANTITIES		
DESCRIPTION	ESTIMATING UNIT	QUANTITY
PRECAST CONCRETE THREE PILE, SINGLE ROW BENT CAP (PER REF. 1, DWG. NO. 8-9)	EA.	3
PRECAST CONCRETE TWO ROW ABUTMENT CAP (PER REF. 1, DWG. NO. 11-12)	EA.	2
27'-11 1/2" CONCRETE BALLAST DECK SPAN WITH DIAPHRAGMS SHOP INSTALLED (PER REF. 1, DWG. NOS. 3-6)	EA.	8
DIAPHRAGM CHANNEL ASSEMBLY FOR TANGENT TRACK ALIGNMENT (PER REF. 1, DWG. NO. 14)	EA.	12
1/8" x 10" x 1'-4 1/2" LAMINATED BEARING PAD (PER REF. 1, DWG. NO. 4)	EA.	32
EXPANSION BEAM STOP ASSEMBLY (PER REF. 1, DWG. NO. 3)	EA.	8
FIXED BEAM STOP ASSEMBLY (PER REF. 1, DWG. NO. 3)	EA.	8
1 1/2" DIA. x 1'-9" ANCHOR ROD, HOT DIP GALVANIZED, ASTM F1554 GR. 36	EA.	16
1" DIA. x 2 1/2" A325 BOLT, HOT DIP GALVANIZED	EA.	32
STEEL TEE T-20 (PER DETAILS, DWG. NO. 10)	EA.	12
INTERIOR DECK PLATE DP-1 (PER DETAILS, DWG. NO. 10)	EA.	6
EXTERIOR DECK PLATE DP-3 (PER DETAILS, DWG. NO. 10)	EA.	2
15" TIE PLATE (FOR 5 1/2" RAIL BASE)	EA.	208 **
1/4" x 7 3/4" x 15" TIE PAD, CORDED RUBBER, DUROMETER 70	EA.	208 **
RIGHT HAND "E" CLIP	EA.	406 **
5/8" DIA. x 6 1/2" RECTANGULAR HEAD TIMBER COACH SCREW (HIGH TENSILE, 120 KSI MIN.)	EA.	812 **
WALKWAY AND HANDRAIL MATERIAL SCHEDULE (PER DETAILS, DWG. NO. 12)	LOT	1
1/4"x6"x 12'-4" UHMW PLASTIC BULKHEAD CAP BEARING PAD (PER REF. 1, DWG. NO. 11)	EA.	2
3/8" DIA. x 6" HDG ANCHORS (PER REF. 1, DWG. NO. 11)	EA.	16
GALVANIZED STEEL PIPE PILE 12" DIA. x 1/2" THICKNESS, 40'-0" LENGTH, ONE END BEVELED, (ASTM A252, GRADE 3) (SHOP GALVANIZE PER NOTES DWG. NO. 2)	EA.	12
GALVANIZED STEEL PIPE PILE 12" DIA. x 1/2" THICKNESS, 60'-0" LENGTH, NO END BEVELS, WITH CUTTING SHOE 0-14001, OR APPROVED ALTERNATE, SHOP ATTACHED (ASTM A252, GRADE 3)	EA.	12
GALVANIZED STEEL PIPE PILE 16" DIA. x 1/2" THICKNESS, 40'-0" LENGTH, ONE END BEVELED, (ASTM A252, GRADE 3) (SHOP GALVANIZE PER NOTES DWG. NO. 2)	EA.	9
GALVANIZED STEEL PIPE PILE 16" DIA. x 1/2" THICKNESS, 60'-0" LENGTH, NO END BEVELS, WITH CUTTING SHOE 0-14001, OR APPROVED ALTERNATE, SHOP ATTACHED (ASTM A252, GRADE 3)	EA.	9
4,000 PSI CONCRETE FOR PIPE PILES (PER DETAILS, DWG. NO. 7)	CU. YD.	22.3
FLOWABLE FILL FOR PIPE PILE FILL (PER DETAILS, DWG. NO. 7)	LOT	1
REINFORCING STEEL FOR PIPE PILES (PER SCHEDULES, DWG. NO. 7)	LOT	1
BACKING RING, APF S-40000 D=11.0" (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 7)	EA.	12
BACKING RING, APF S-40000 D=15.0" (PER NOTES, DWG. NO. 2 AND DETAILS, DWG. NO. 7)	EA.	9
CUTTING SHOE, APF 0-14001 FOR 12" DIA. PIPE (PER DETAILS, DWG. NO. 7)	EA.	12
CUTTING SHOE, APF 0-14001 FOR 16" DIA. PIPE (PER DETAILS, DWG. NO. 7)	EA.	9
BULKHEAD MATERIAL (PER SCHEDULE, DWG. NO. 9)	LOT	1
GEOTEXTILE FABRIC (PER AASHTO M288 SPECIFICATIONS)	LOT	1
RIPRAP, CLASS III	TON	280
NON-CEMENTITIOUS GROUT, SIKADUR 32 OR APPROVED EQUAL	LOT	1
COLD GALVANIZING COMPOUND SPRAY	LOT	1


EST. WT. OF STEEL PIPE PILING = 152,700 LB.
EST. WT. OF STEEL SHEET PILING = 107,530 LB.
EST. WT. OF MISC. STEEL = 4,530 LB.

QUANTITIES PROVIDED FOR ESTIMATING AND PLANNING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE TO FURNISH ALL PROJECT MATERIAL TO MEET PLAN REQUIREMENTS.

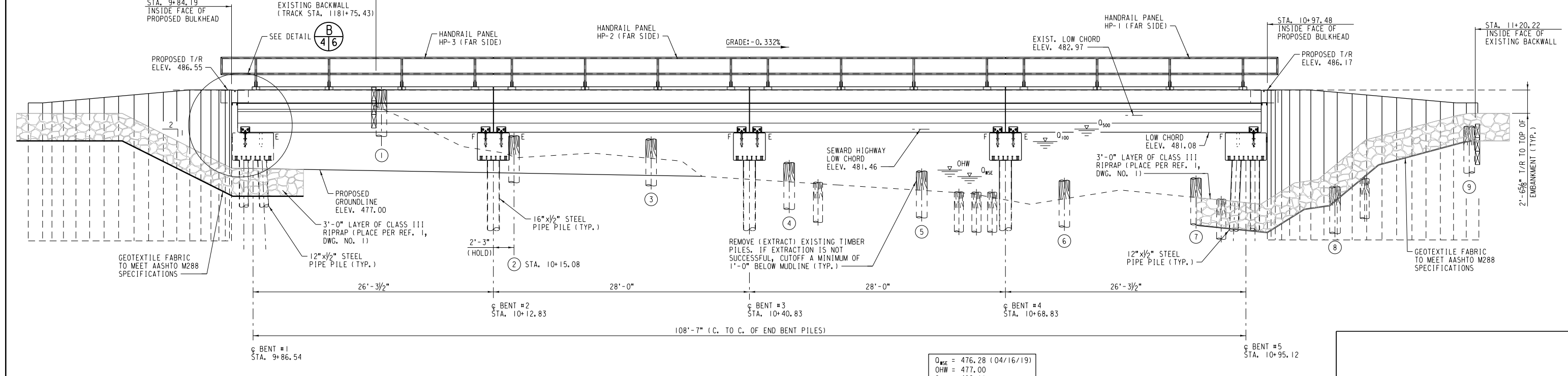
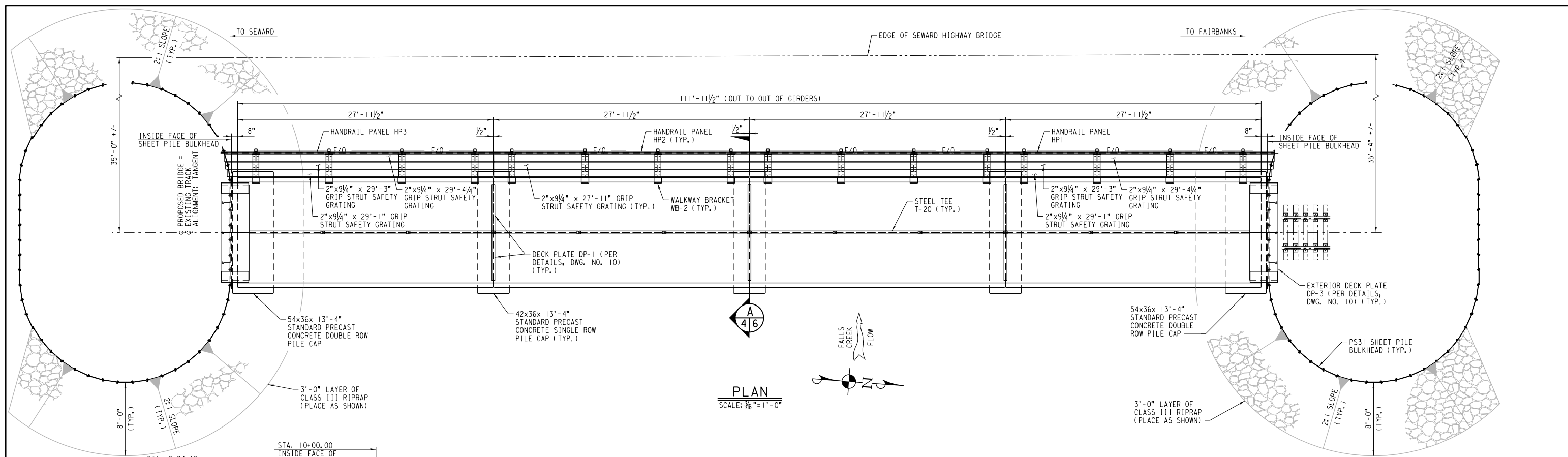
* BALLAST AND TRACK MATERIALS PROVIDED BY ARRC

* CURRENT SINGLE PILE ROW BENT CAPS IN INVENTORY (9) HAVE ONLY TWO (2) DWIDAG BLOCKOUTS FOR ANCHORS. TWO (2) ADDITIONAL HOLES WILL NEED TO BE FIELD CORED.

** INDICATES ADDITIONAL 5% (OR MINIMUM OF 1 EXTRA) INCLUDED IN QUANTITY.

 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT: <h2 style="margin: 0;">BR. 25.4 REPLACEMENT</h2>		
TITLE: <h2 style="margin: 0;">GENERAL NOTES AND BILL OF MATERIAL</h2>		
DESIGNED BY: <u>NAS/MLB</u>	SCALE: AS NOTED	DWG NO. <h1 style="margin: 0;">2 OF 12</h1>
DRAWN BY: <u>NAS/DTP</u>	DATE: 04/08/22	
CHECKED BY: <u>BWB/DAO</u>		
APPROVED BY: _____		

REV.	DATE	BY	REVISION



O _{WSE}	= 476.28 (04/16/19)
O _{HW}	= 477.00
O ₁₀₀	= 480.11
O ₅₀₀	= 481.47

NOTE:
⊕ = EXISTING BENT #

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 25.4 REPLACEMENT

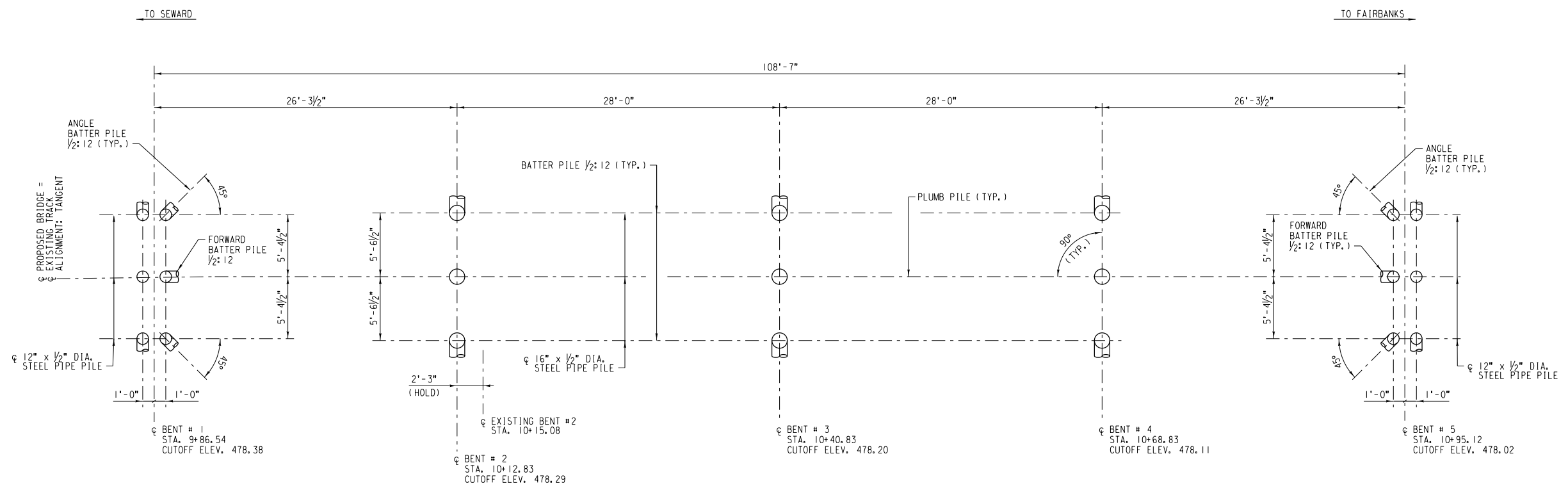
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DESIGNED BY: NAS/MLB
DRAWN BY: NAS/DTP
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APPROVED BY:

SCALE: AS NOTED
DATE: 04/08/22


DWG NO. 4 OF 12

REV.	DATE	BY	REVISION

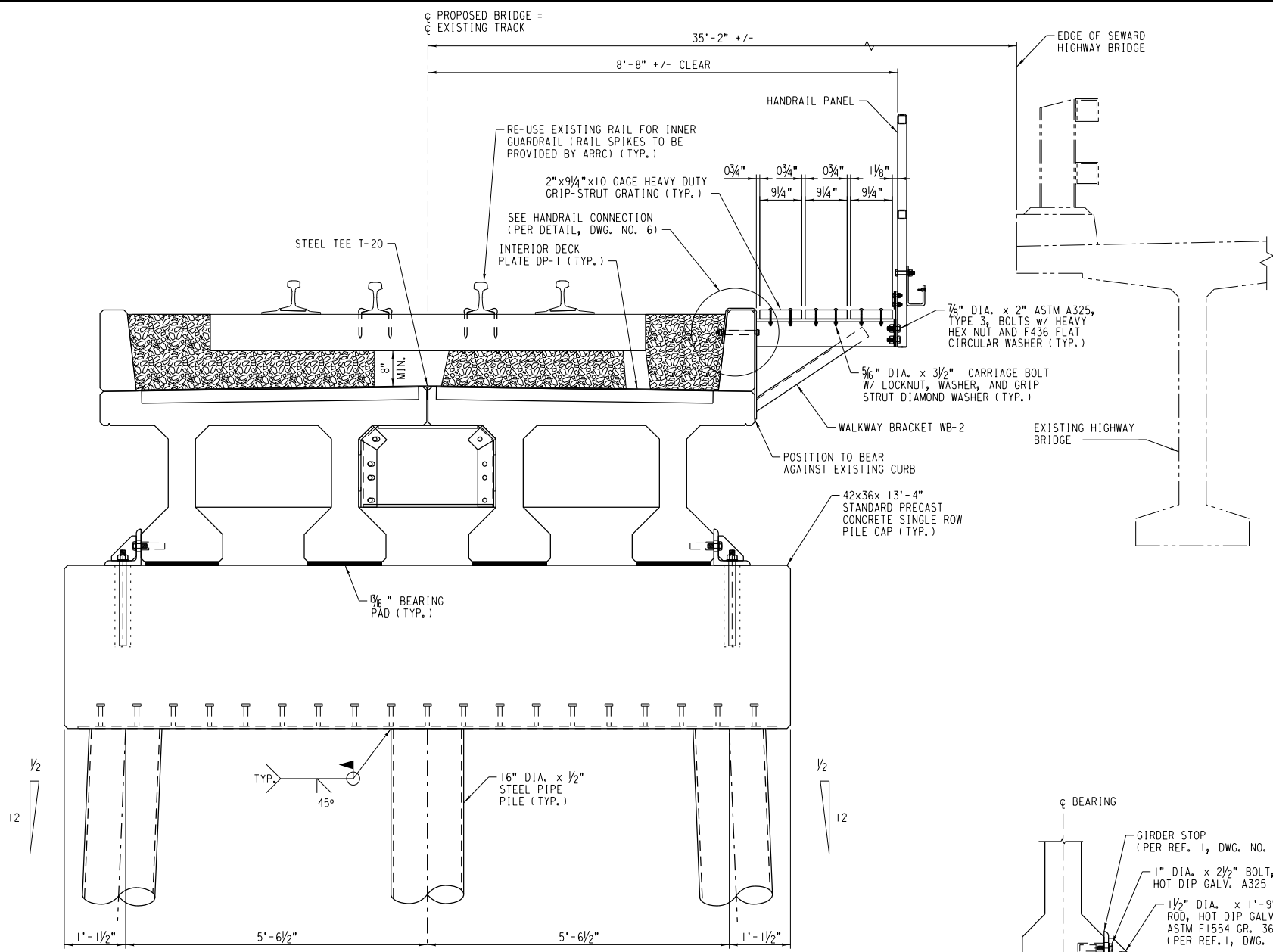


PILE LAYOUT
SCALE: 3/8" = 1'-0"
AT PILE CUTOFF

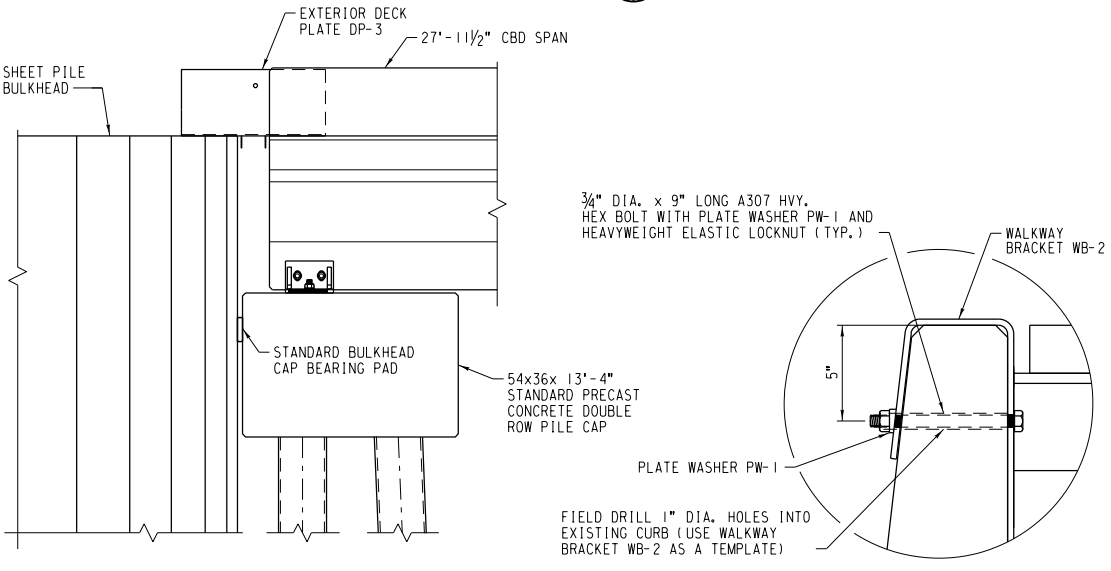


 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		PROJECT:	
		BR. 25.4 REPLACEMENT	
TITLE:		PILE LAYOUT	
DESIGNED BY:	NAS/MLB	SCALE: AS NOTED	DWG NO.
DRAWN BY:	NAS/DIP	DATE: 04/08/22	5 OF 12
CHECKED BY:	BWB/DAO		
APPROVED BY:			

REV.	DATE	BY	REVISION

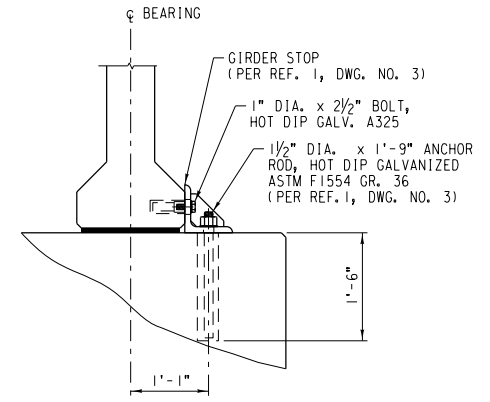


SECTION A
SCALE: 3/4" = 1'-0" 4/6

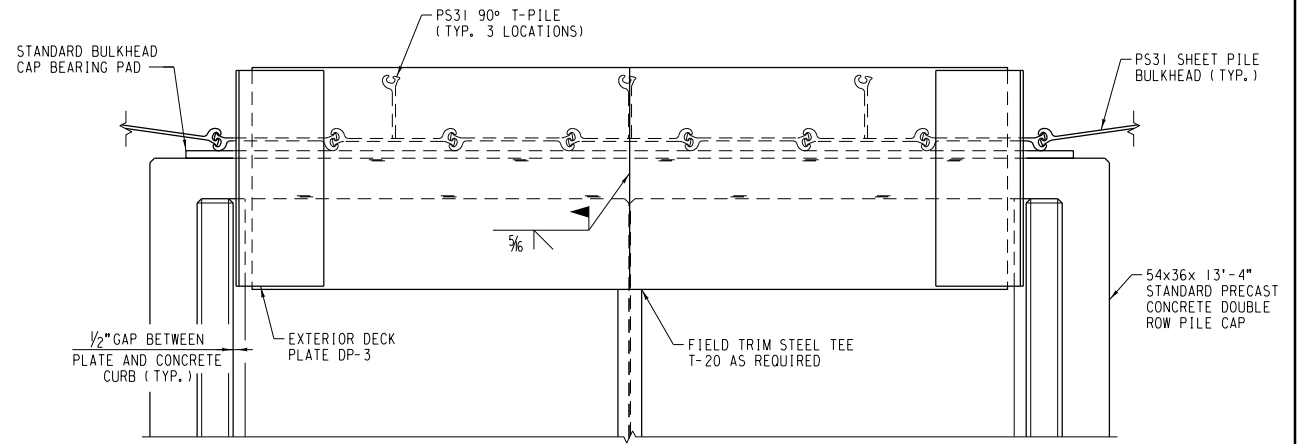


DETAIL B
SCALE: 1/2" = 1'-0" 4/6

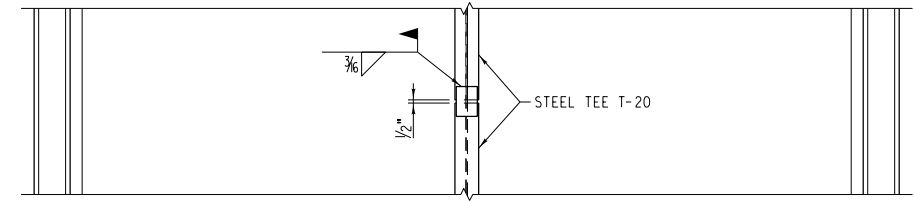
HANDRAIL CONNECTION DETAIL
SCALE: NONE



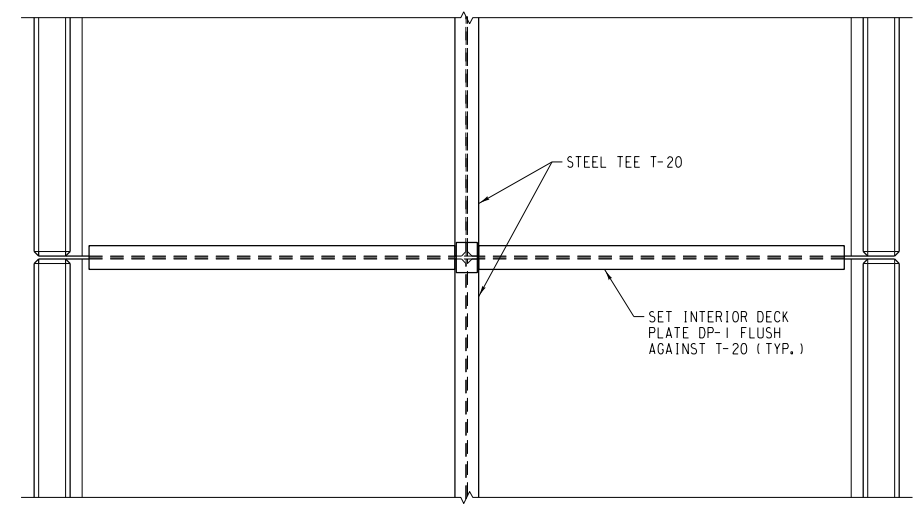
TYPICAL GIRDER END VIEW
SCALE: 3/4" = 1'-0"



END BENTS




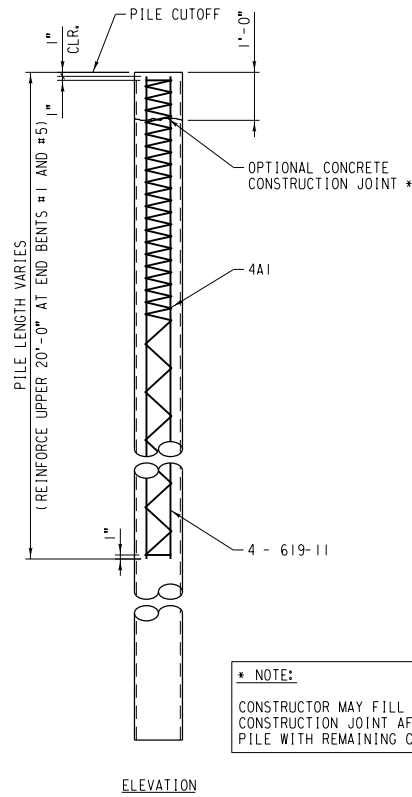
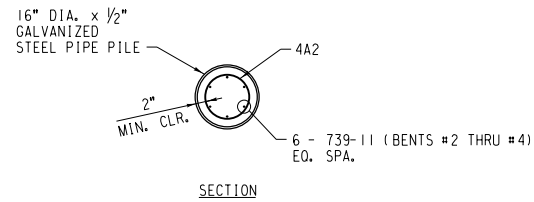
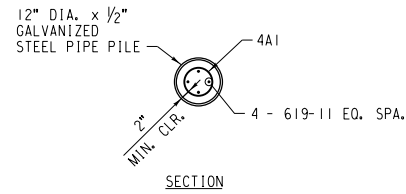
BETWEEN BENTS



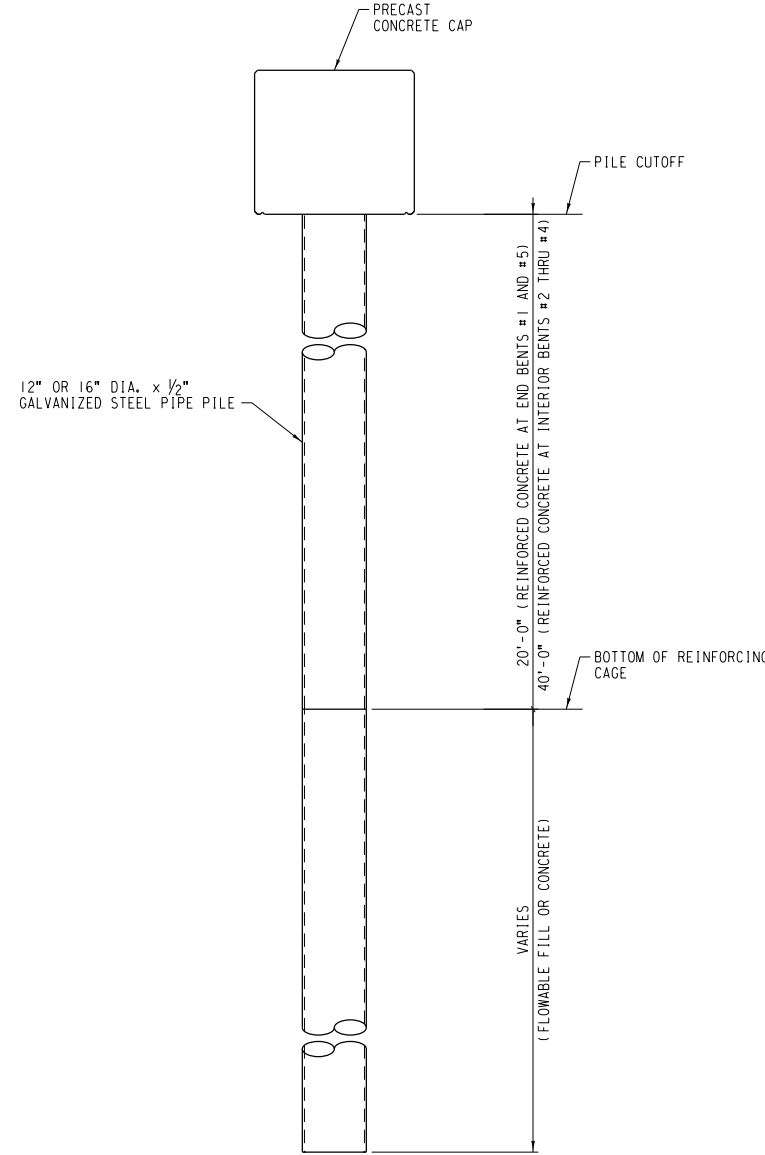
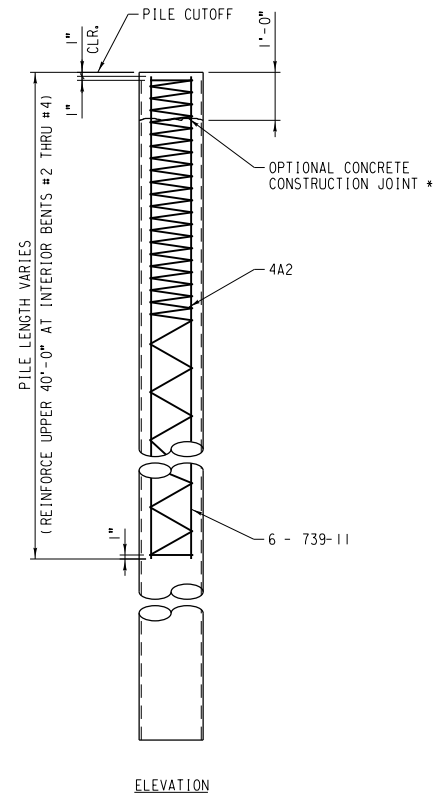
INTERIOR BENTS

DECK PLATE WELDING DETAIL
SCALE: 3/4" = 1'-0"

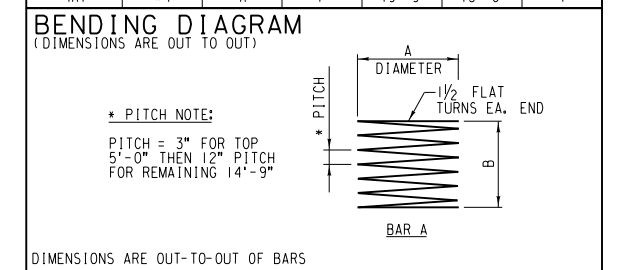
 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT: BR. 25.4 REPLACEMENT			
TITLE: TYPICAL SECTION AND DETAILS			
DESIGNED BY: NAS/MLB	SCALE: AS NOTED	DWG. NO. 6 OF 12	
DRAWN BY: NAS/DIP	DATE: 04/08/22		
CHECKED BY: BWB/DAO			
APPROVED BY:			
REV.	DATE	BY	REVISION



* NOTE:
CONSTRUCTOR MAY FILL PILE WITH CONCRETE TO CONSTRUCTION JOINT AFTER DRIVING PILE THEN FILL PILE WITH REMAINING CONCRETE PRIOR TO SETTING CAP.

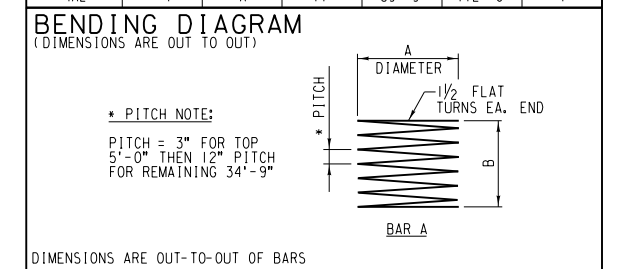


END BENTS PIPE PILE REINFORCING SCHEDULE (BENTS #1 AND #5)						
NAME	SIZE	TYPE	A	B	LENGTH	PER PILE
619-11	#6	STR.	-	-	19'-11"	4
4A1	#4	A	7"	19'-9"	73'-8"	1



EST. WT. OF REINFORCING STEEL PER PIPE PILE = 170 LB.

INTERIOR BENTS PIPE PILE REINFORCING SCHEDULE (BENTS #2 THRU #4)						
NAME	SIZE	TYPE	A	B	LENGTH	PER PILE
739-11	#7	STR.	-	-	39'-11"	6
4A2	#4	A	11"	39'-9"	172'-8"	1



EST. WT. OF REINFORCING STEEL PER PIPE PILE = 605 LB.

12" DIA. CAGE REINFORCING DETAIL

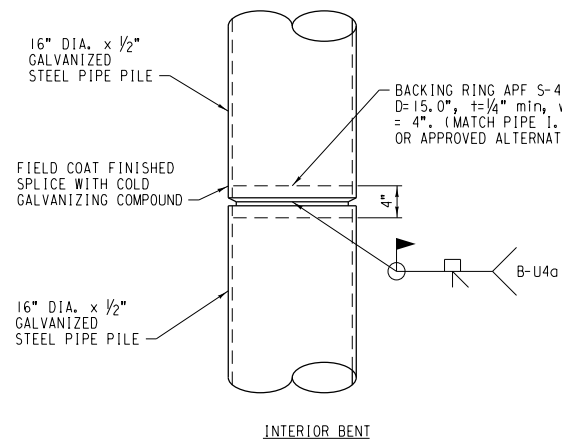
SCALE: 1/2" = 1'-0" BENTS #1 AND #5

16" DIA. CAGE REINFORCING DETAIL

SCALE: 1/2" = 1'-0" BENTS #2 THRU #4

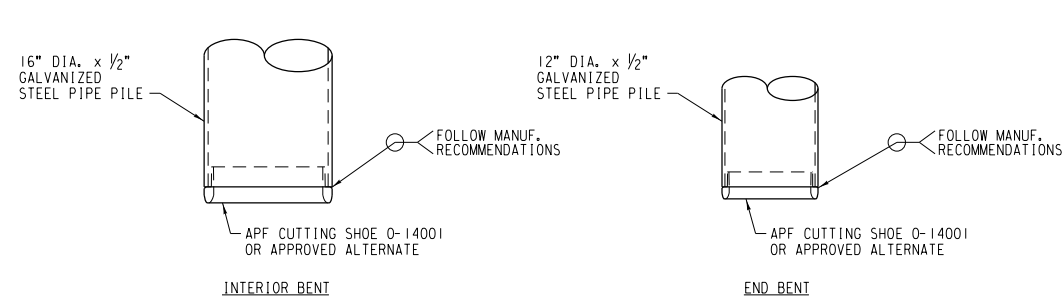
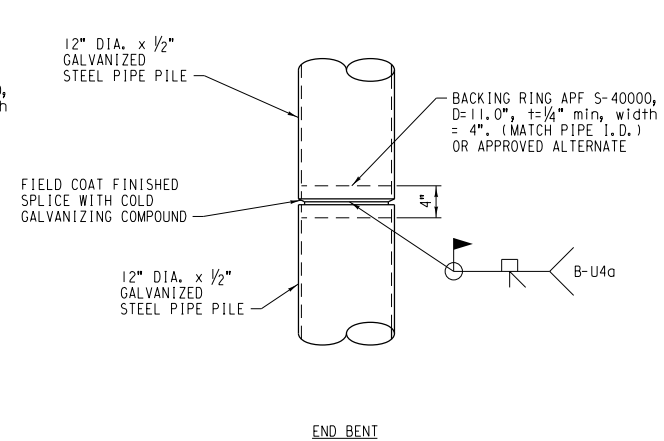
PILE FILL DETAIL

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



PIPE PILE SPLICE DETAIL

SCALE: 1" = 1'-0"



PIPE PILE CUTTING SHOE DETAIL

SCALE: 1" = 1'-0"

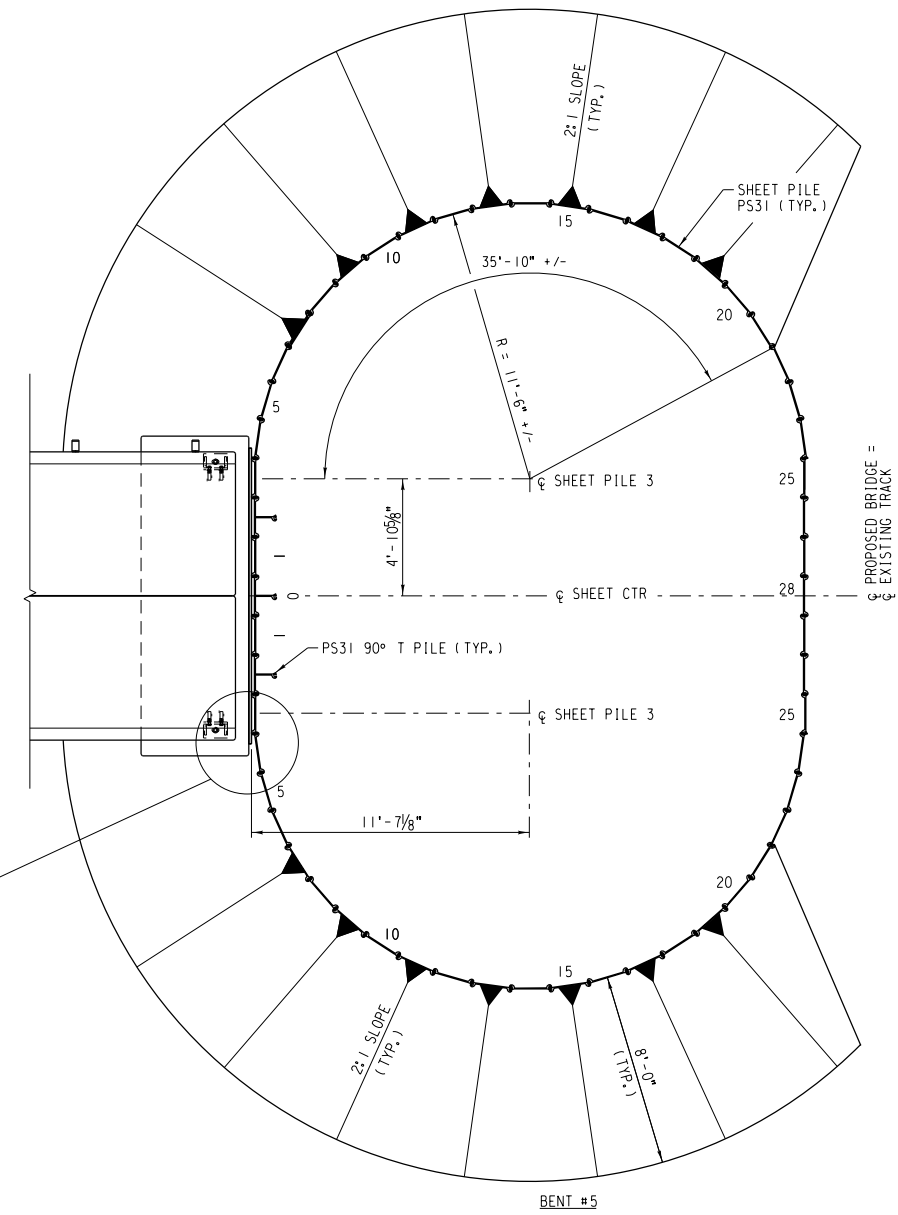
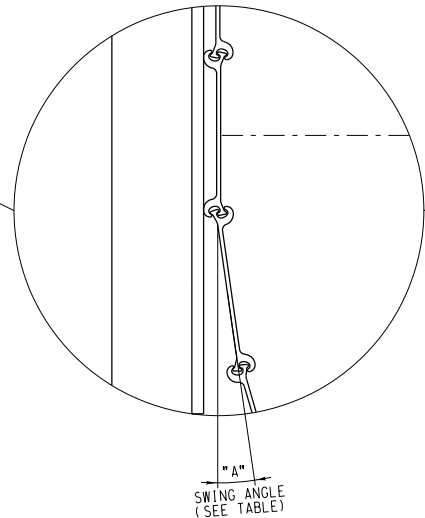
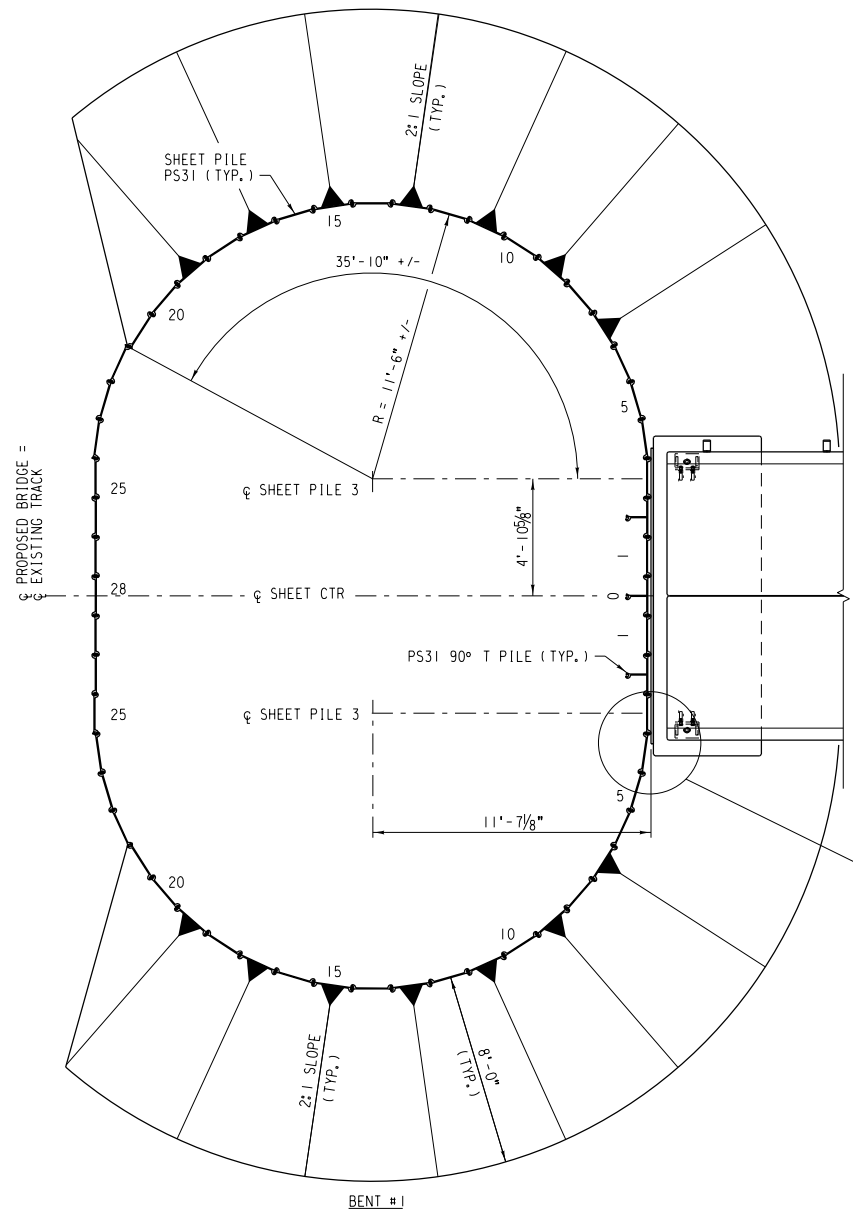
ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 25.4 REPLACEMENT

TITLE: PILE DETAILS

DESIGNED BY: NAS/MLB	SCALE: AS NOTED	DWG NO. 7 OF 12
DRAWN BY: NAS/DIP	DATE: 04/08/22	
CHECKED BY: BWB/DAO		
APPROVED BY:		

REV.	DATE	BY	REVISION



SHEET PILE SWING ANGLE TABLE			
BENT #1		BENT #5	
SHEET PILES	ANGLE "A"	SHEET PILES	ANGLE "A"
0 - 3	0.0°	0 - 3	0.0°
4 - 25	8.2°	4 - 25	8.2°
26 - 28	0.0°	26 - 28	0.0°

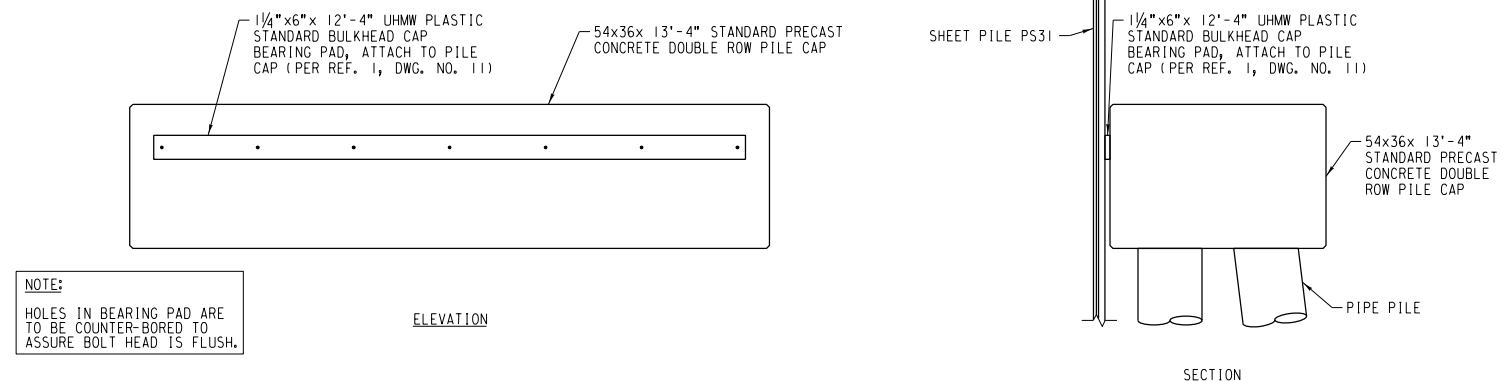
PLAN - SHEET PILE BULKHEAD
SCALE: 1/4" = 1'-0"

NOTE:
DECK PLATE NOT SHOWN FOR CLARITY.

		ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
		PROJECT: BR. 25.4 REPLACEMENT		
TITLE: SHEET PILE BULKHEAD DETAILS (SHEET 1 OF 2)		DESIGNED BY: NAS/MLB DRAWN BY: NAS/DTP CHECKED BY: BWB/DAO APPROVED BY: _____	SCALE: AS NOTED DATE: 04/08/22	DWG NO. 8 OF 12
REV.	DATE	BY	REVISION	

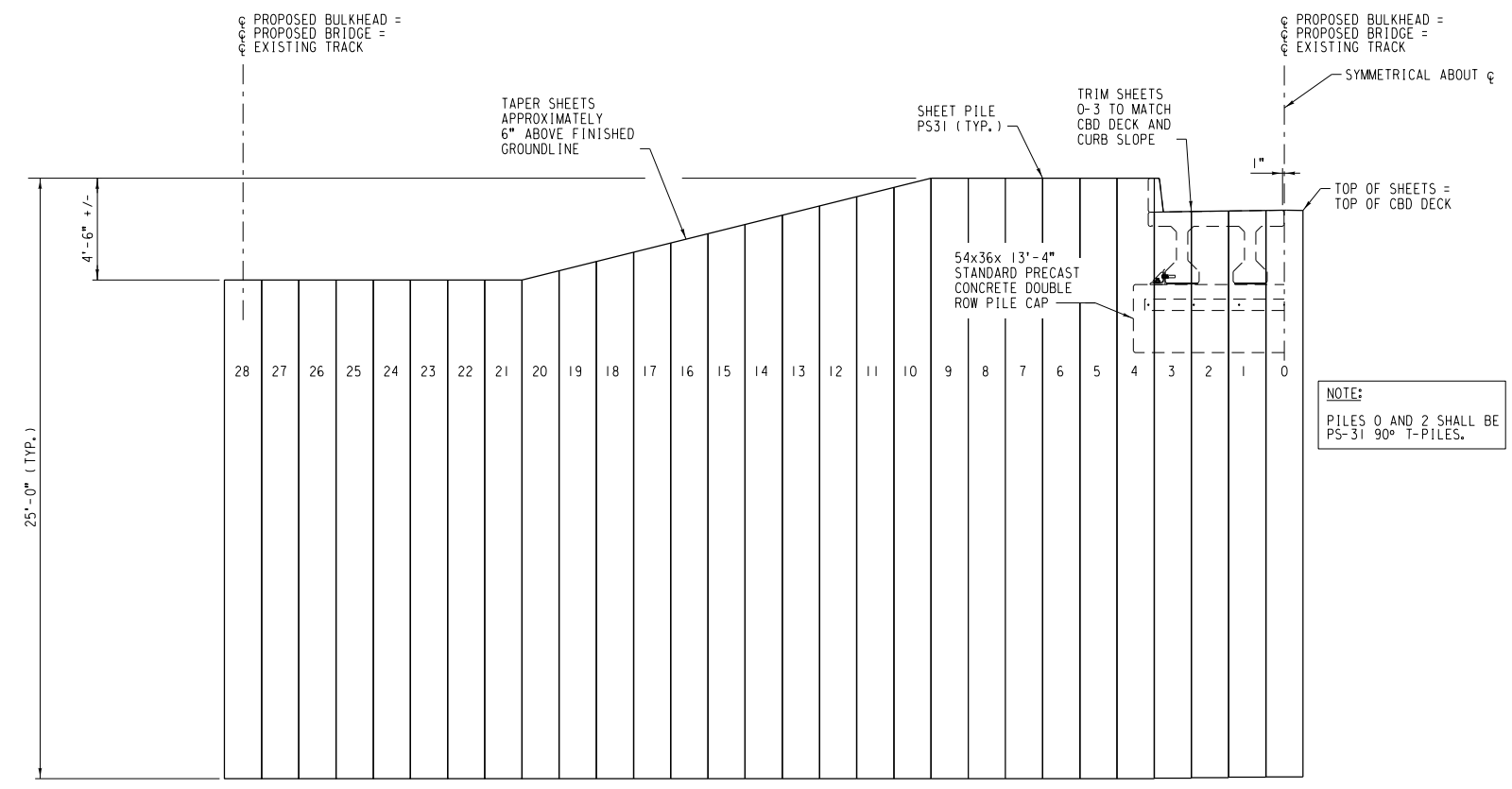
BULKHEAD MATERIAL SCHEDULE		
REQ'D.	UNIT	DESCRIPTION
106	EA.	PS31 SHEET PILE, 25'-0" LENGTH (ASTM A572, GRADE 50)
6	EA.	PS31 90° T PILE, 25'-0" LENGTH (ASTM A572, GRADE 50)

EST. WT. OF SHEET PILING = 107,530 LB.



NOTE:
HOLES IN BEARING PAD ARE TO BE COUNTER-BORED TO ASSURE BOLT HEAD IS FLUSH.

BULKHEAD BEARING ASSEMBLY DETAIL
SCALE: 1/2" = 1'-0"



NOTE:
PILES 0 AND 2 SHALL BE PS-31 90° T-PILES.

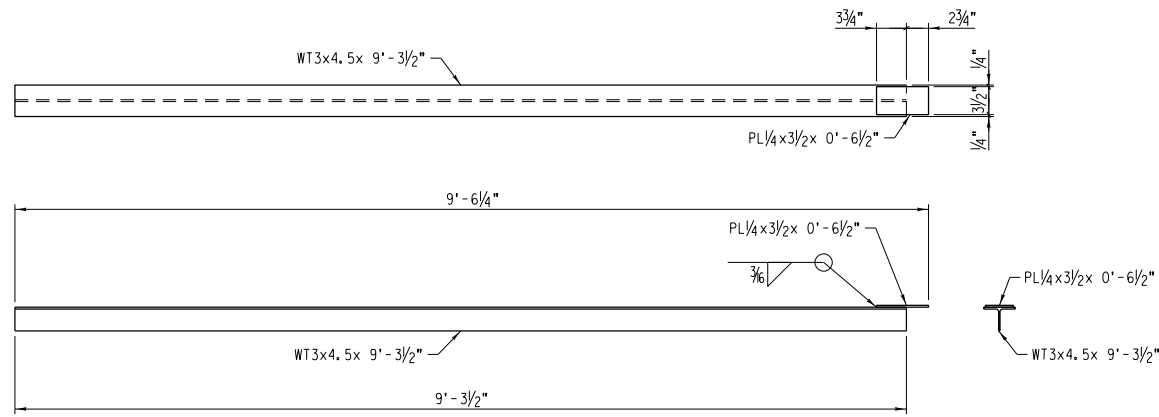
BULKHEAD ELEVATION
SCALE: 1/4" = 1'-0"

NOTE:
ALL SHEET TO BE DRIVEN TO HIGHER ELEVATION AND CUT DOWN TO FINAL ELEVATION, REMOVING LIFTING HOLES IN SHEET PILE.

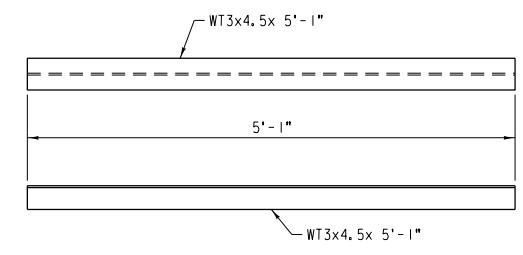
- NOTES:**
1. FILL INSIDE BULKHEAD SHALL BE STRUCTURAL FILL FURNISHED, SHAPED, AND COMPACTED IN ACCORDANCE WITH AKDOT AND PUBLIC FACILITIES STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION 2020 EDITION, SECTION 205, EXCAVATION AND FILL FOR MAJOR STRUCTURES.
 2. SUBBALLAST ABOVE STRUCTURAL FILL SHALL BE A MINIMUM 1'-0" GRADING C-1 FURNISHED, PLACED, SHAPED, AND COMPACTED TO AKDOT AND PUBLIC FACILITIES STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION 2020 EDITION, SECTION 301, AGGREGATE BASE AND SURFACE COURSE.
 3. AFTER INSTALLATION OF BULKHEAD SHEET PILES CONTRACTOR SHALL FIELD DRILL 1" DIAMETER DRAIN HOLES IN THE SHEET PILES 1'-0" ABOVE THE GROUND SURFACE ON THE OUTSIDE OF THE SHEET PILES. DRAIN HOLES SHALL BE A MAXIMUM OF 5'-0" SPACING LONGITUDINALLY AROUND THE CONSTRUCTED BULKHEAD.

 ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT: BR. 25.4 REPLACEMENT		
TITLE: SHEET PILE BULKHEAD DETAILS (SHEET 2 OF 2)		
DESIGNED BY: NAS/MLB	SCALE: AS NOTED	DWG NO. 9 OF 12
DRAWN BY: NAS/DTP	DATE: 04/08/22	
CHECKED BY: BWB/DAO		
APPROVED BY: _____		

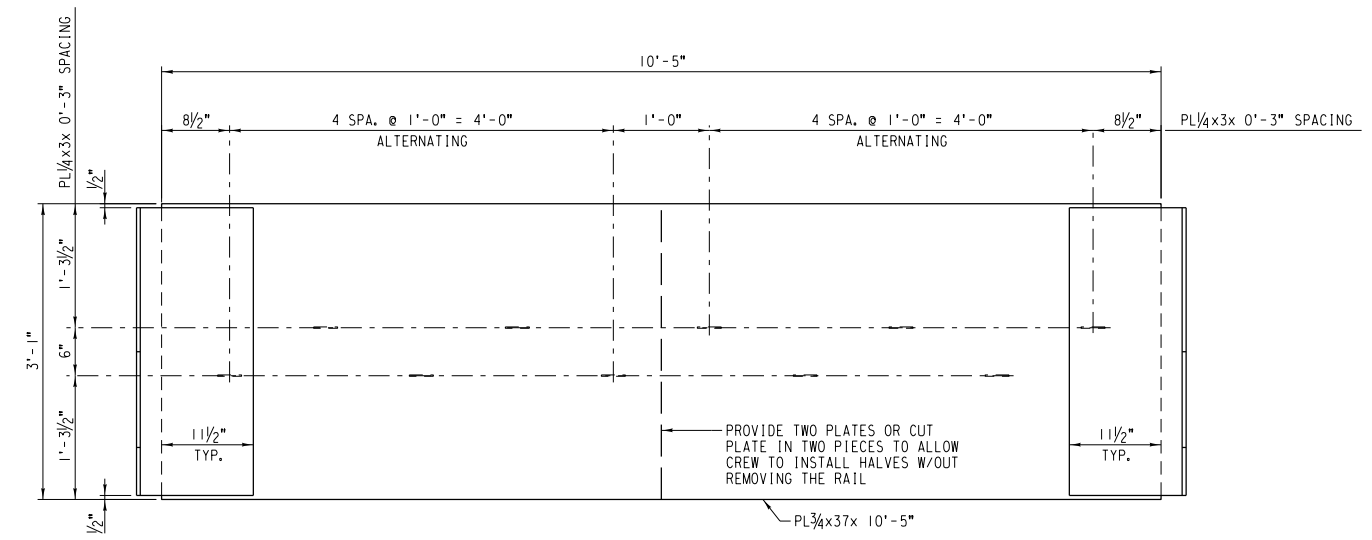
REV.	DATE	BY	REVISION



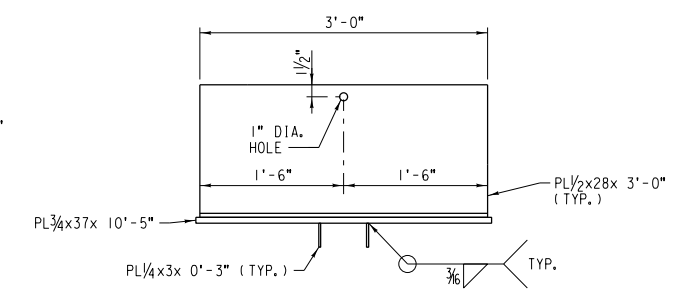
STEEL TEE T-20
 SCALE: 1"=1'-0"
 EST. WT. = 43.1 LB. EA.
 (ASTM A36, GALVANIZED)



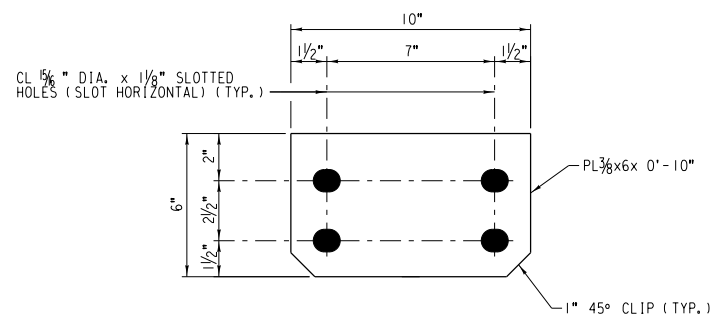
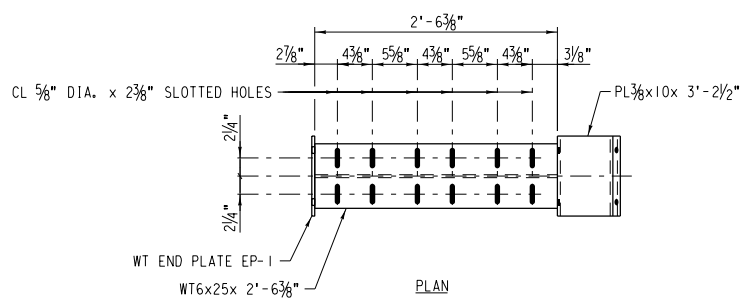
INTERIOR DECK PLATE DP-1
 SCALE: 1"=1'-0"
 EST. WT. = 22.9 LB. EA.
 (ASTM A36, GALVANIZED)



EXTERIOR DECK PLATE DP-3
 SCALE: 1"=1'-0"
 EST. WT. = 1,146 LB. EA.
 (ASTM A36, GALVANIZED)

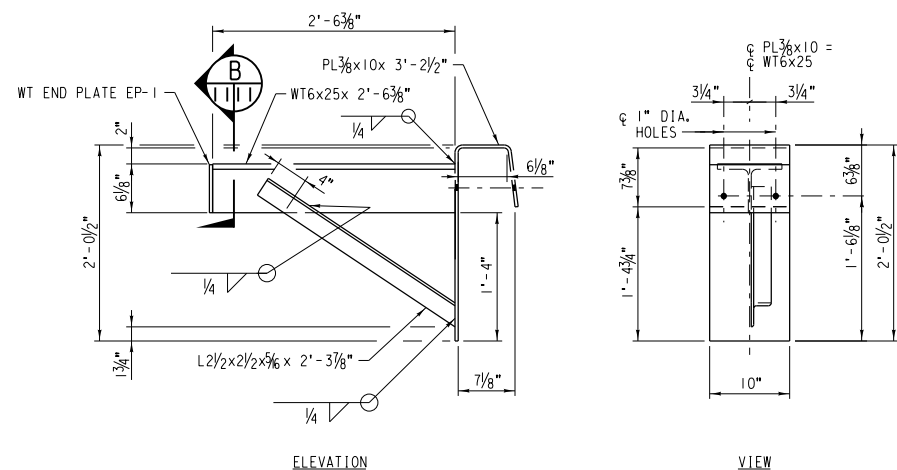


ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT: BR. 25.4 REPLACEMENT			
TITLE: CLOSURE PLATE DETAILS			
DESIGNED BY: NAS/MLB	SCALE: AS NOTED	DWG NO. 10 OF 12	
DRAWN BY: NAS/DTP	DATE: 04/08/22		
CHECKED BY: BWB/DAO			
APPROVED BY:			
REV.	DATE	BY	REVISION



WT END PLATE EP-1

SCALE: 3"=1'-0"
EST. WT. = 6.4 LB. EA.



WALKWAY BRACKET WB-2

SCALE: 1"=1'-0"
EST. WT. = 123 LB. EA.

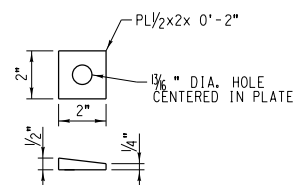
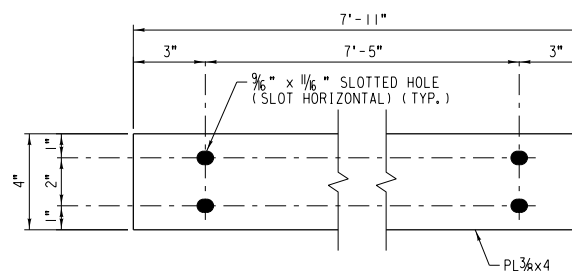


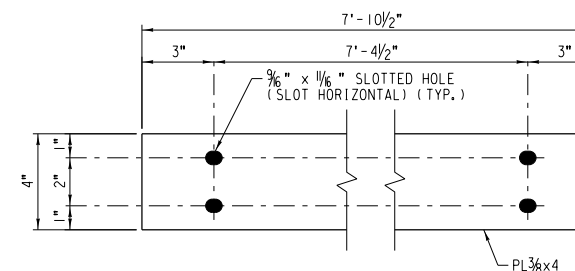
PLATE WASHER PW-1

SCALE: 3"=1'-0"
EST. WT. = 0.5 LB. EA.
(ASTM A36, GALVANIZED)



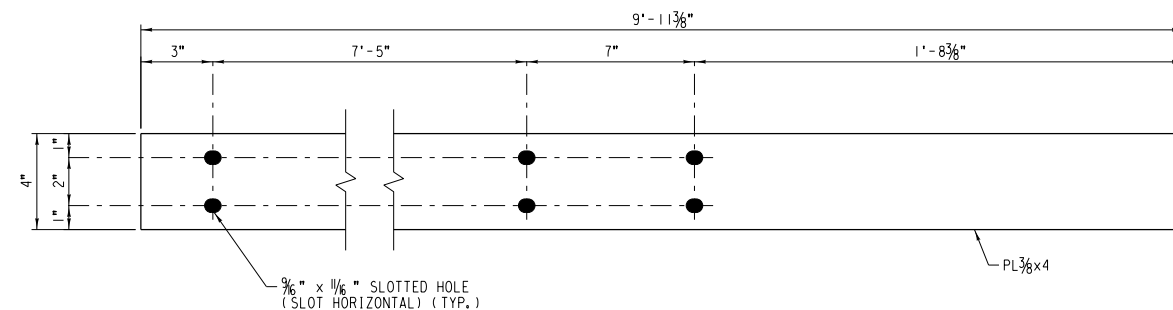
TOE PLATE TP1

SCALE: 3"=1'-0"



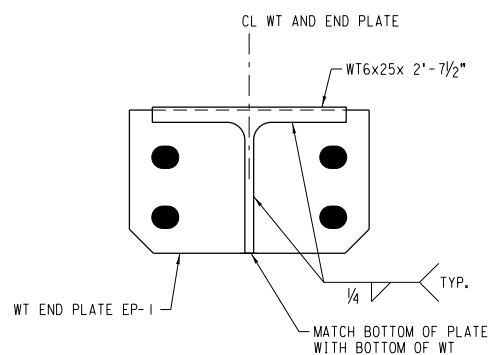
TOE PLATE TP2

SCALE: 3"=1'-0"



TOE PLATE TP3

SCALE: 3"=1'-0"



SCALE: 3"=1'-0"

- NOTES:
- STRUCTURAL STEEL PLATES, ANGLES, AND WT'S SHALL CONFORM TO ASTM A709 GRADE 36.
 - WALKWAY BRACKET WB-2 SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.
 - AFTER GALVANIZING ALL ELEMENTS SHALL BE FREE OF FINS, ABRASIONS, ROUGH OR SHARP EDGES AND OTHER SURFACE DEFECTS.

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ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 25.4 REPLACEMENT

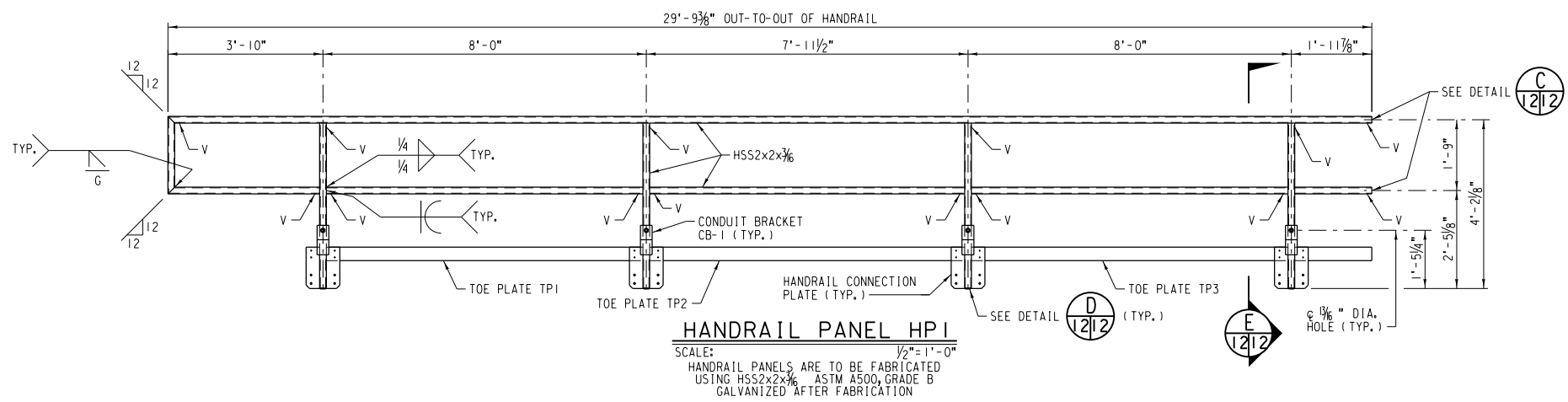
TITLE: MISCELLANEOUS STEEL DETAILS (SHEET 1 OF 2)

DESIGNED BY: NAS/MLB
DRAWN BY: NAS/DTP
CHECKED BY: BWB/DAO
APPROVED BY: _____

SCALE: AS NOTED
DATE: 04/08/22

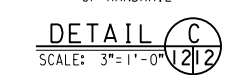
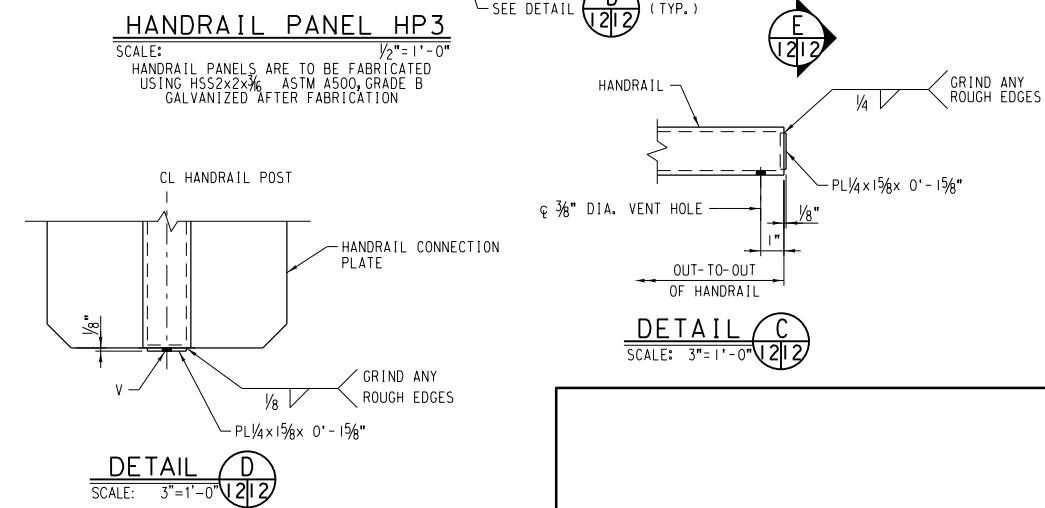
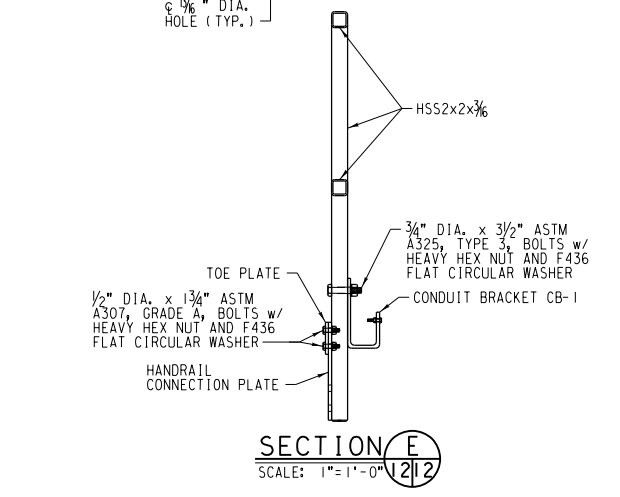
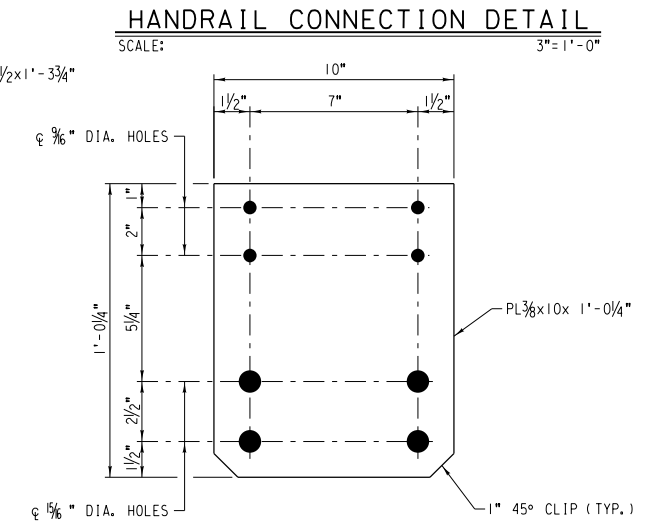
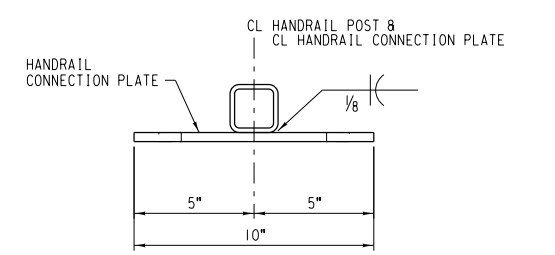
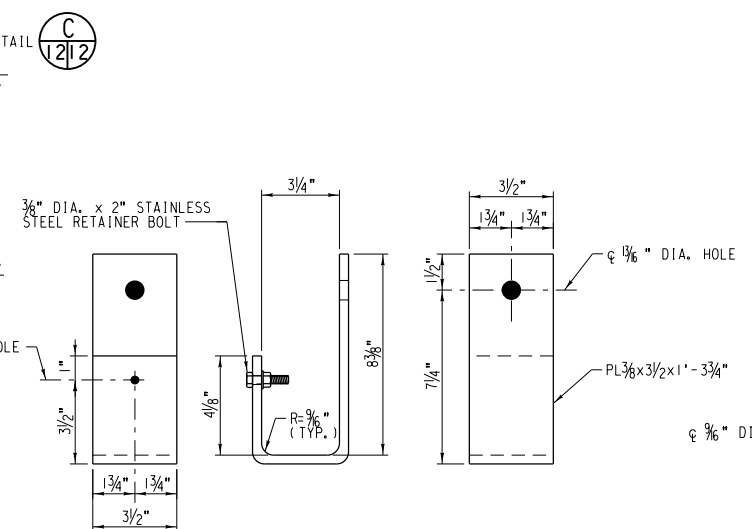
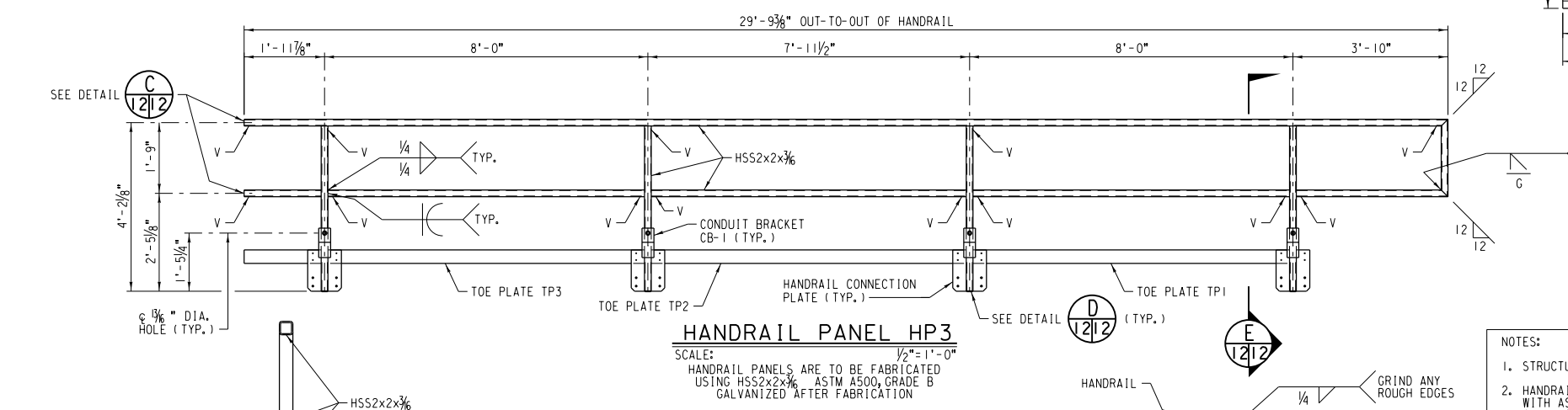
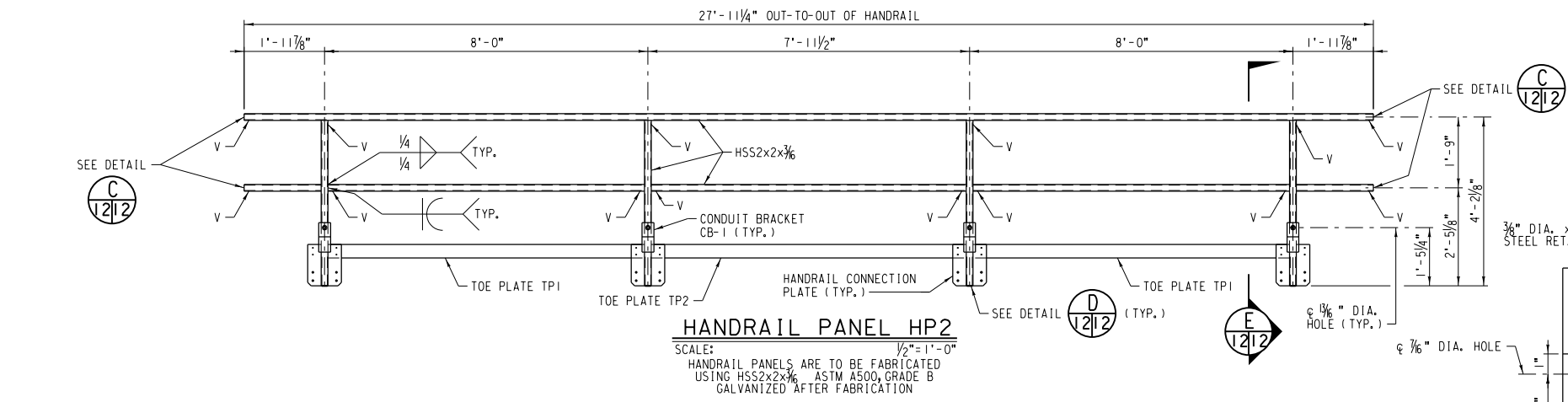
DWG NO. 11 OF 12

REV.	DATE	BY	REVISION



WALKWAY AND HANDRAIL MATERIAL SCHEDULE						
QUANTITY	UNIT	DESCRIPTION	MARK	SIZE	LENGTH	REMARKS
16	EA.	WALKWAY BRACKET, ASTM A36, GALV.	WB-2			PER SHEET 11
1	EA.	HANDRAIL PANEL, ASTM A500 GR. B. GALV.	HP1	HSS2x2x3/8"	29'-9 3/8"	PER SHEET 12
2	EA.	HANDRAIL PANEL, ASTM A500 GR. B. GALV.	HP2	HSS2x2x3/8"	27'-11 1/4"	PER SHEET 12
1	EA.	HANDRAIL PANEL, ASTM A500 GR. B. GALV.	HP3	HSS2x2x3/8"	29'-9 3/8"	PER SHEET 12
6	EA.	GRIP STRUT SAFETY GRATING, 10 GA.		2" x 9 1/4"	27'-11"	PER SHEET 4
2	EA.	GRIP STRUT SAFETY GRATING, 10 GA.		2" x 9 1/4"	29'-11"	PER SHEET 4
2	EA.	GRIP STRUT SAFETY GRATING, 10 GA.		2" x 9 1/4"	29'-3"	PER SHEET 4
2	EA.	GRIP STRUT SAFETY GRATING, 10 GA.		2" x 9 1/4"	29'-4 1/4"	PER SHEET 4
34	EA.	3/4" DIA. x 9" ASTM A307, HEAVY HEX BOLT, WITH HEAVYWEIGHT ELASTIC LOCKNUT (ZINC PLATED OR GALVANIZED)				WALKWAY BRACKET WB-2 TO CURB
34	EA.	WASHER	PW-1			WALKWAY BRACKET WB-2 TO CURB
68	EA.	7/8" DIA. x 2" ASTM A307, GRADE A, BOLTS w/ HEAVY HEX ELASTIC LOCKNUT AND F436 FLAT CIRCULAR WASHER (ALL COMPONENTS ZINC PLATED OR GALVANIZED)				HANDRAIL POST TO WALKWAY BRACKET WB-2
202	EA.	5/8" DIA. x 3 1/2" CARRIAGE BOLTS w/ LOCKNUT, WASHER, AND GRIP STRUT DIAMOND WASHER (ALL COMPONENTS ZINC PLATED OR GALVANIZED)				WALKWAY BRACKET TO GRATING

ADDITIONAL 5% PROVIDED FOR QUANTITY OF FASTENERS.



- NOTES:
- STRUCTURAL STEEL BARS, PLATES AND ANGLES SHALL CONFORM TO ASTM A36.
 - HANDRAIL PANELS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. BOLTS USED ON TOE PLATE AND CONDUIT BRACKET SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
 - AFTER GALVANIZING, ALL ELEMENTS SHALL BE FREE OF FINIS, ABRASIONS, ROUGH OR SHARP EDGES AND OTHER SURFACE DEFECTS.
 - V = 3/8" DIA. DRILLED VENT HOLE 1" FROM JOINT.
 - HANDRAIL PANELS ON WALKWAY SHALL BE ERECTED PLUMB AND IN-LINE.
 - GRATING BY PACIFIC OR EQUIVALENT AS APPROVED BY THE ENGINEER.
 - GRATING SHALL BE GALVANIZED BY MANUFACTURER PER MATERIAL REQUIREMENTS.

ALASKA RAILROAD CORPORATION
 ENGINEERING SERVICES
 P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

PROJECT: BR. 25.4 REPLACEMENT

TITLE: MISCELLANEOUS STEEL DETAILS (SHEET 2 OF 2)

DESIGNED BY: NAS/MLB
 DRAWN BY: NAS/DTP
 CHECKED BY: BWB/DAO
 APPROVED BY:

SCALE: AS NOTED
 DATE: 04/08/22

DWG NO. 12 OF 12

REV.	DATE	BY	REVISION