



REFERENCE DOCUMENTS:

1. AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION FOR RAILWAY ENGINEERING 2018 (AREMA MANUAL)
2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
3. AMERICAN WELDING SOCIETY (AWS) BRIDGE WELDING MANUAL, AWS D1.5 2022

STRUCTURAL STEEL:

- |                                   |                       |
|-----------------------------------|-----------------------|
| 1. DECK AND HANDRAIL MATERIALS    | ASTM A36 (UNCOATED)   |
| 2. SPAN ASSEMBLY, BENT CAP W18X97 | ASTM A709, GR. 50W T3 |
| 3. PIER CAP W18X97                | ASTM A709, GR. 50W F3 |
| 4. ALL OTHER STRUCTURAL STEEL     | ASTM A709, GR. 50W    |

HARDWARE:

- |                        |                             |
|------------------------|-----------------------------|
| 1. HIGH STRENGTH BOLTS | ASTM F3125 GR. A325, TYPE 3 |
| 2. NUTS                | ASTM A563, TYPE 3           |
| 3. WASHERS             | ASTM F436, TYPE 3           |

ELASTOMERIC PADS:

- |                          |                   |
|--------------------------|-------------------|
| 1. VIRGIN NATURAL RUBBER | 60 DUROMETER      |
| 2. STEEL LAMINATE        | ASTM 1011, GR. 36 |

WELD ELECTRODES:

1. WELD ELECTRODES SHALL BE COMPATIBLE WITH BASE METAL PROPERTIES AND WEATHERING CHARACTERISTICS AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70,000 PSI.

FABRICATION:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE AREMA MANUAL UNLESS SPECIFIED OTHERWISE.
2. THE FABRICATOR SHALL ACCOMMODATE THE QUALITY ASSURANCE EFFORTS OF THE ALASKA RAILROAD CORPORATION, OR ITS DESIGNEE, AT THE FABRICATOR'S FACILITIES.
3. SPAN TO BE FULLY SHOP FITTED AND PIECE MARKED.
4. ALL SHOP BOLTS TO BE TENSION BY TURN OF THE NUT METHOD.
5. FABRICATOR TO ENSURE THAT FULLY ASSEMBLED SPAN AND CAPS SEAT FLAT AND SQUARE FOR BEARING.

6. ALL FAYING SURFACES AND EXTERIOR SURFACES OF A709 STEEL SHALL BE CLEANED TO A MINIMUM OF SSPC-SP6/NACE NO. 3, COMMERCIAL BLAST CLEANING.
7. ALL BEAMS SHALL BE FABRICATED SUCH THAT THEIR NATURAL CAMBER IS UP.
8. WELDING;
  - 8.1. USE 1/4" HOLDBACK ON FILLET WELDS.
  - 8.2. ALL WELD SPLATTER AND SLAG SHALL BE REMOVED.
  - 8.3. ALL FIELD WELDS, TRANSVERSE TACK WELDS ON TENSION FLANGES, AND PARTIAL PENETRATION GROOVE WELDS ARE PROHIBITED UNLESS SPECIFICALLY NOTED.
  - 8.4. ALL WELDERS SHALL BE QUALIFIED FOR THE WELD PROCEDURE PER AWS D1.5.
9. WELD TESTING;
  - 9.1. ALL GROOVE WELDS SHALL BE 100% VISUALLY INSPECTED AND 25% RT INSPECTED WITH THE EXCEPTION OF GROOVE WELD ON BOTTOM OF 'PIER CAP', 100% RT INSPECTED.
  - 9.2. ALL FILLET WELDS SHALL BE 100% VISUALLY INSPECTED AND 25% MP INSPECTED.
  - 9.3. INSPECTIONS SHALL BE PERFORMED BY AWS INSPECTORS CERTIFIED PER AWS D1.5.
10. WELD REPAIRS;
  - 10.1. ALL DEFECTIVE WELDS SHALL BE REPAIRED PER AWS D1.5 AND RETESTED UNTIL THEY PASS
  - 10.2. CRITICAL REPAIRS SHALL COMMENCE ONLY WITH THE ENGINEER'S APPROVAL

COATINGS:

1. ALL STEEL TO BE UNCOATED.

DELIVERY:

1. MARKING AND SHIPPING SHALL BE IN ACCORDANCE WITH AREMA CHAPTER 15, SECTION 3.6, ARTICLE 3.6.1-MARKING, PACKAGING AND LOADING.
2. ALL COMPONENTS SHALL BE DELIVERED AS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. FABRICATOR SHALL FIX OR REPLACE ANY COMPONENTS DAMAGED OR LOST DURING SHIPPING INCIDENTAL TO THIS CONTRACT.
4. ALL MATERIALS F.O.B:

WAREHOUSE 1  
485 OCEAN DOCK RD  
ANCHORAGE AK 99501

MATERIAL LIST

ITEM	PIECE MARK	SIZE	LENGTH	UNIT WEIGHT	QTY	TOTAL WEIGHT
SPAN (BEAM CHORD)		W27X194	26'-0"	10868	2	21736
PIER CAP		DBL W18X97	14'-0"	3033	1	3033
BENT CAP		DBL W18X97	14'-0"	3124	1	3124
CROSS CAP		HP12X84	3'-4"	308	2	616
CAP SHIM		PL 0.25X12.25"	2'-0"	21	2	42
STIFFENERS	s1	PL 0.75X7.5"	2'-9.375"	54.0	4	216
END DIAPHRAGM	d2	PL 0.5X32.25"	2'-5.625"	119	2	238
INT. DIAPHRAGM	d4	PL 0.5X32.25"	2'-5.625"	135	2	270
SOLE PLATE	sp1	PL 1.0X13.5"	4'-0"	170	2	340
SOLE PLATE	sp2	PL 1.0X13.5"	4'-0"	170	2	340
TIE SPACER		PL 0.625X3"	20'-0"	128	3	384
WING GUARD		L 3X2X0.375"	20'-0"	118	2	236
WING GUARD TAB		PL 0.625X3"	0'-8"	4.3	8	34
POST ASSEMBLY	p1	L 2.5X2.5X0.25"	4'-8"	20.5	3	61
POST ASSEMBLY	p2	L 2.5X2.5X0.25"	4'-8"	20.5	4	82
POST DIAGONAL	p3	L 2.5X2.5X0.25"	5'-0"	20.5	2	41
POST RAIL	p4	L 2.5X2.5X0.25"	2'-0"	8.2	4	33
END POST	p5	L 2.5X2.5X0.25"	1'-11.438"	8	2	16
ELASTOMERIC PAD	ep1	0.25X13"	0'-8.5"	1.5	2	3
ELASTOMERIC PAD	ep2	0.25X13"	1'-5"	2.75	2	6
ELASTOMERIC PAD	ep3	0.75X10.5"	3'-3.5"	28	4	112


FIELD BOLT LIST (INCLUDES EXTRA 15%)

ITEM	SIZE	LENGTH	NOTES	QTY
BOLT	7/8"φ	4.25"	TYPE 3	18
BOLT	7/8"φ	3.25"	TYPE 3	10
BOLT	7/8"φ	2.5"	TYPE 3	55
BOLT	1 1/4"φ	4.75"	TYPE 3	10
NUTS	1 1/4"φ		TYPE 3	10
NUTS	7/8"φ		TYPE 3	83
FLAT WASHER	7/8"φ		TYPE 3	138
FLAT WASHER	1 1/4"φ		TYPE 3	10

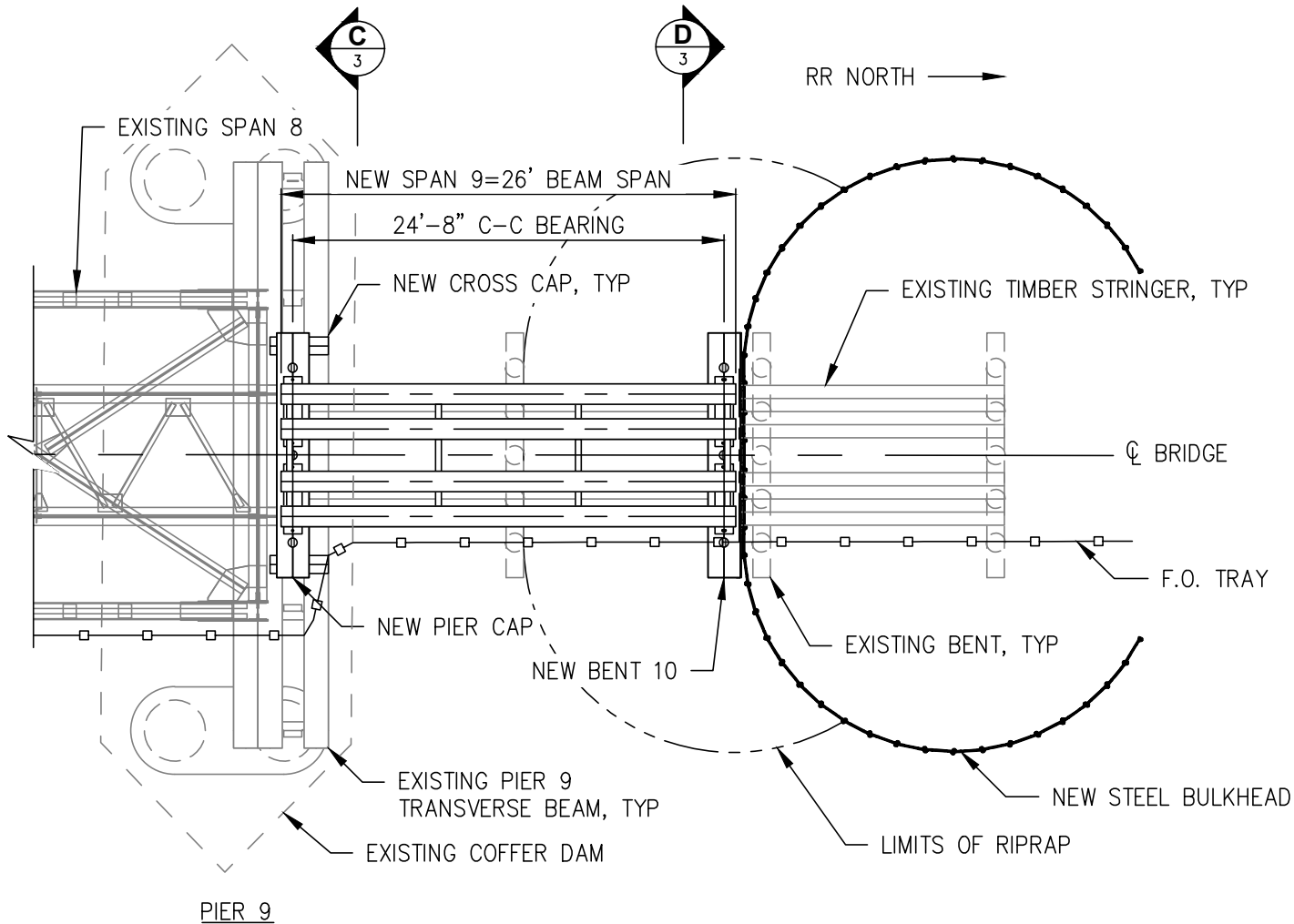
HANDRAIL HARDWARE (INCLUDES EXTRA 15%)

ITEM	SIZE	LENGTH	QTY
CROSBY CLIP	1/2"		16
WIRE ROPE	1/2"φ	60 LF	1
BOLTS	1/2"φ	9.5in	16
NUTS	1/2"φ		16
FLAT WASHERS	1/2"φ		32
NAILS	16d		8

NOTE: HANDRAIL HARDWARE TO BE PROVIDED BY OWNER.

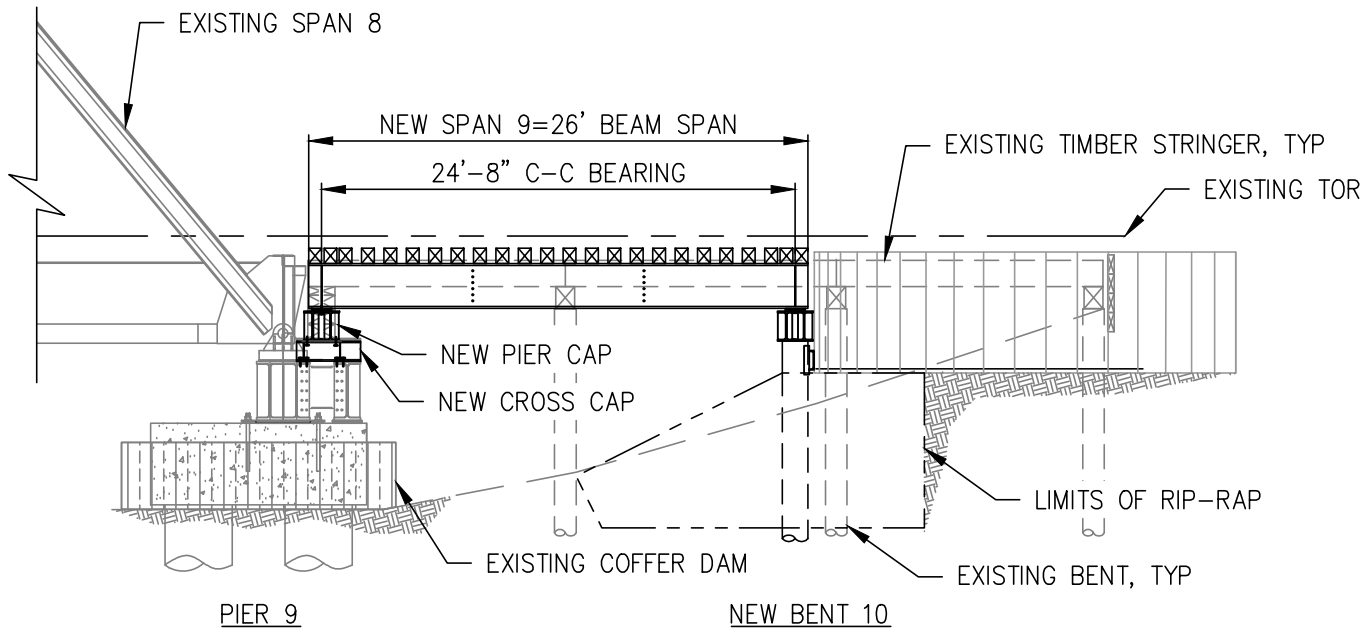
 <b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT :			
<b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE:			
<b>SPECIFICATIONS AND MATERIAL LIST</b>			
DESIGNED BY: <u>DJS</u>	SCALE : AS NOTED	■	DWG NO.
CHECKED BY: _____	DATE : 3/17/23		2 OF 12
APPROVED BY: _____			
REV.	DATE	BY	REVISION

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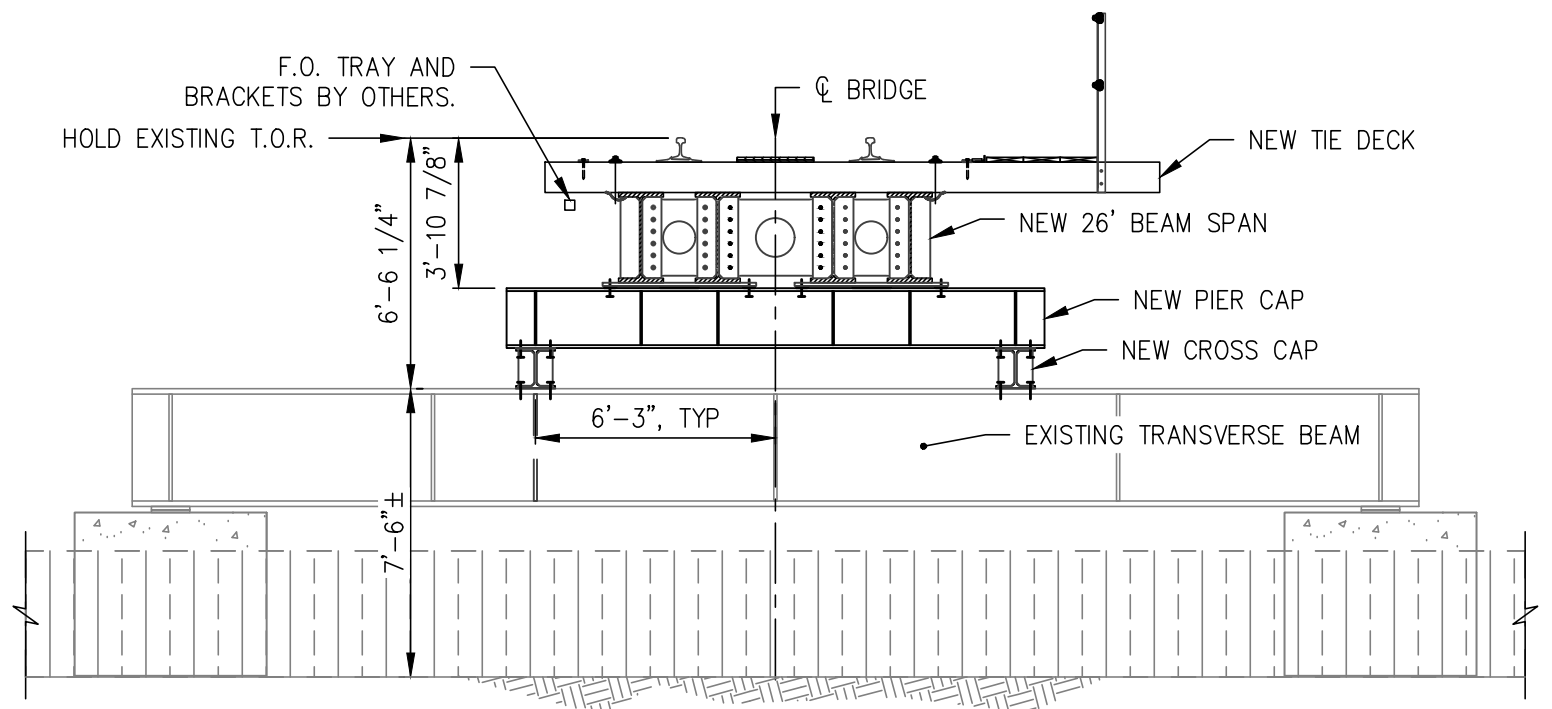


**A PLAN VIEW**  
3 SCALE: 1"=10'

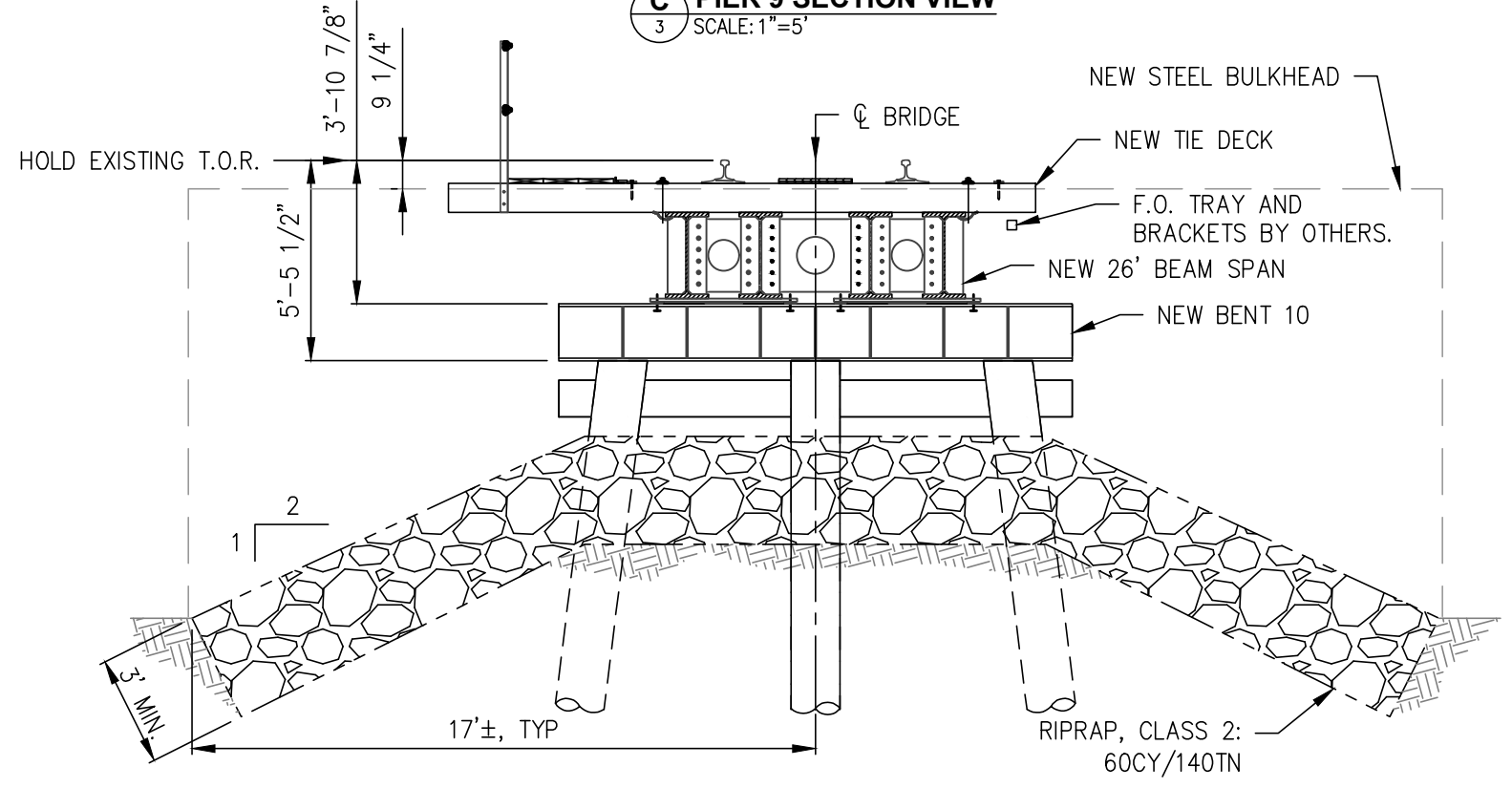
NOTE: DECK NOT SHOWN FOR CLARITY



**B ELEVATION VIEW**  
3 SCALE: 1"=10'



**C PIER 9 SECTION VIEW**  
3 SCALE: 1"=5'

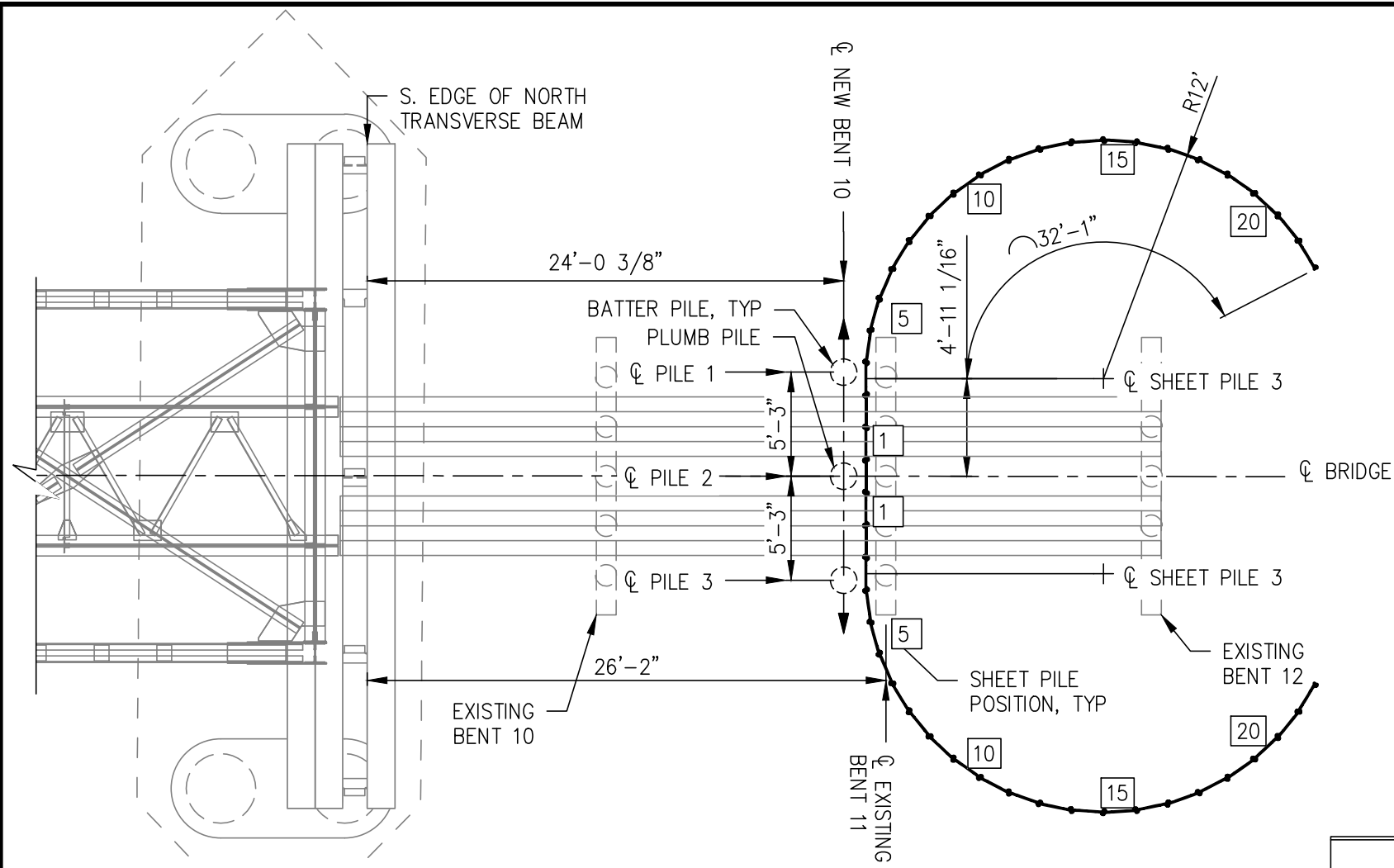


**D BENT 10 SECTION VIEW**  
3 SCALE: 1"=5'

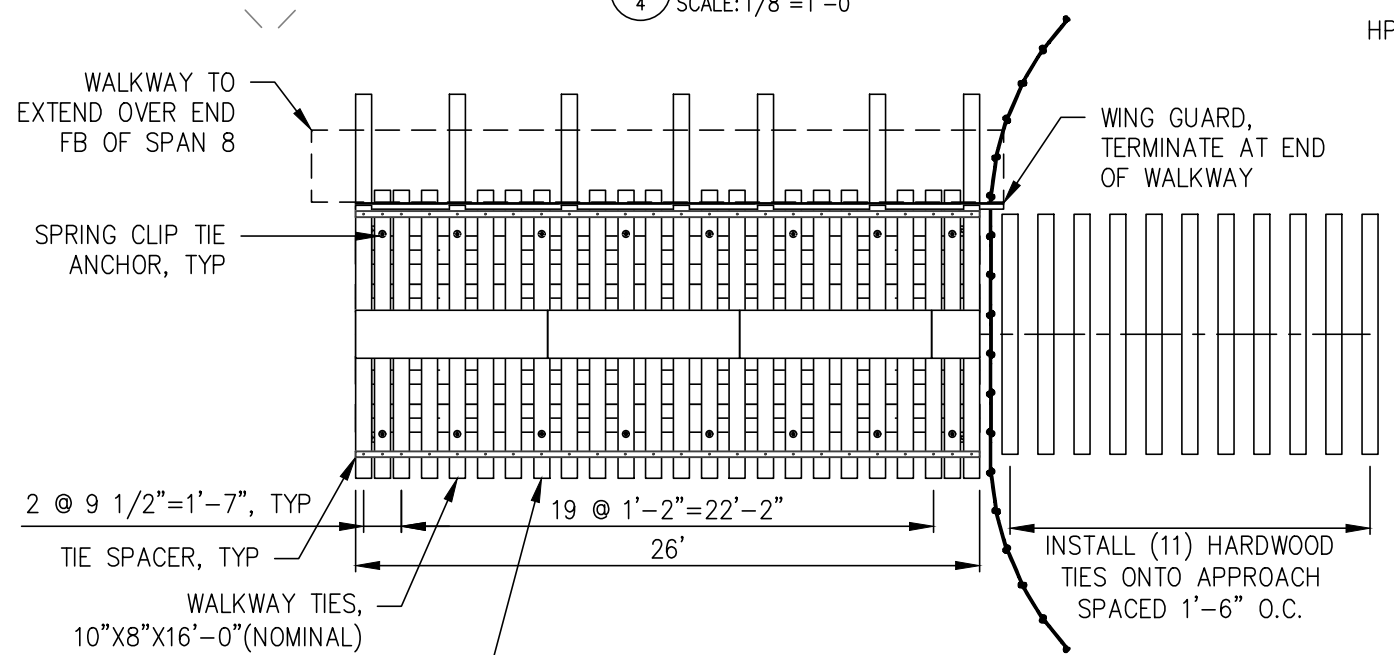
REV.	DATE	BY	REVISION

<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE: <b>GENERAL LAYOUT</b>			
DESIGNED BY: <b>DJS</b>	SCALE : AS NOTED	<input type="checkbox"/>	DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>3</b> OF <b>12</b>
APPROVED BY: _____			

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**A PILE AND BULKHEAD LAYOUT**  
SCALE: 1/8" = 1'-0"

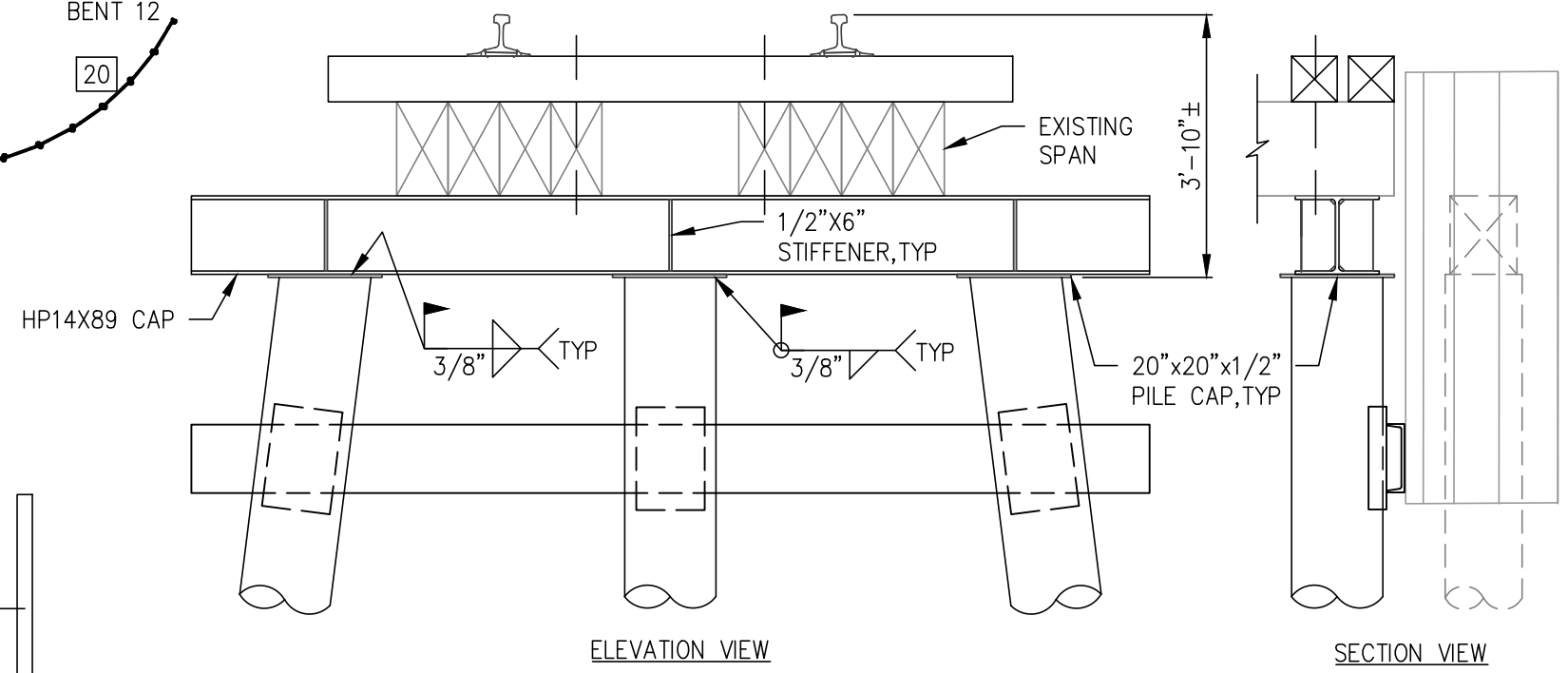


**B TIE DECK AND APPROACH LAYOUT**  
SCALE: 1/8" = 1'-0"

INCLUDE THE FOLLOWING TIE DECK MATERIALS:  
TIE SPACER (3) BAR 3"X5/8"X20'-0"  
WING GUARD (2) L3"X2"X3/8"X20'-0"  
TABS (8) BAR 3"X5/8"X0'-8"

**PILE NOTES:**

1. PILES TO BE 16"ØX1/2", DRIVEN TO A MINIMUM CAPACITY OF 150 TONS,
2. MINIMUM PILE PENETRATION IS 50 FT, ESTIMATED PILE PENETRATION IS 85FT.
3. 1.5H:12V ON BATTER PILE.
4. DRIVE PILE OPEN ENDED.
5. ALL PILES TO BE FILLED WITH CONCRETE. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4,000PSI.
6. APPROX. 1 CY OF CONCRETE REQUIRED PER 20LF OF PILE.
7. BULKHEAD: PS31 SHEET PILE SHALL BE A MINIMUM OF 25FT LONG, 45 SHEETS REQUIRED.
8. SHEET PILE TO BEAR AGAINST C12X30 RUB STRIP. ADD SHIMS TO STAND-OFF WHERE NEEDED TO KEEP RUB STRIP PROUD OF BENT CAP. SEE SHEET 5 FOR RUB STRIP DETAILS.




ELEVATION VIEW

SECTION VIEW

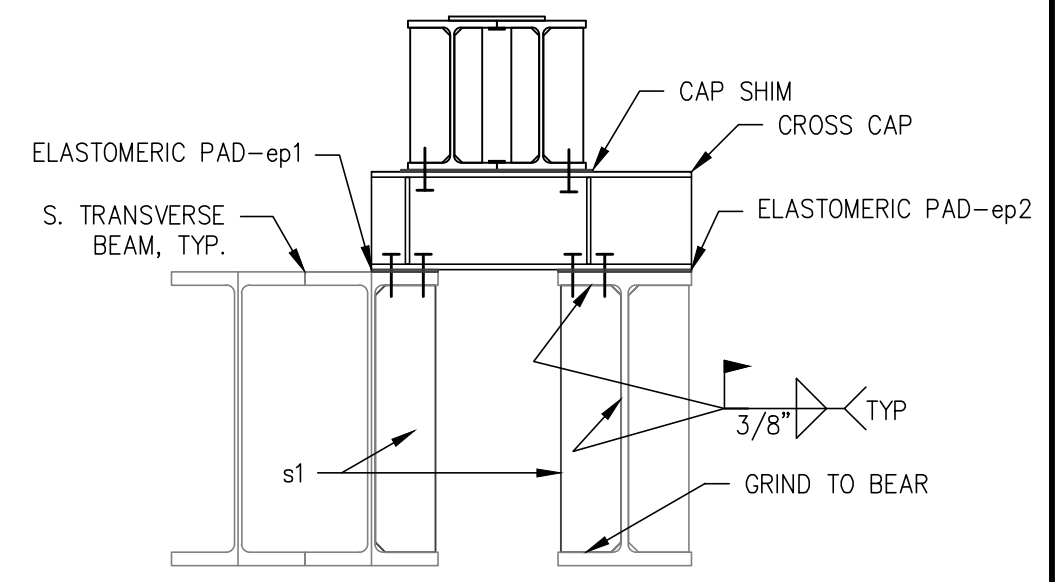
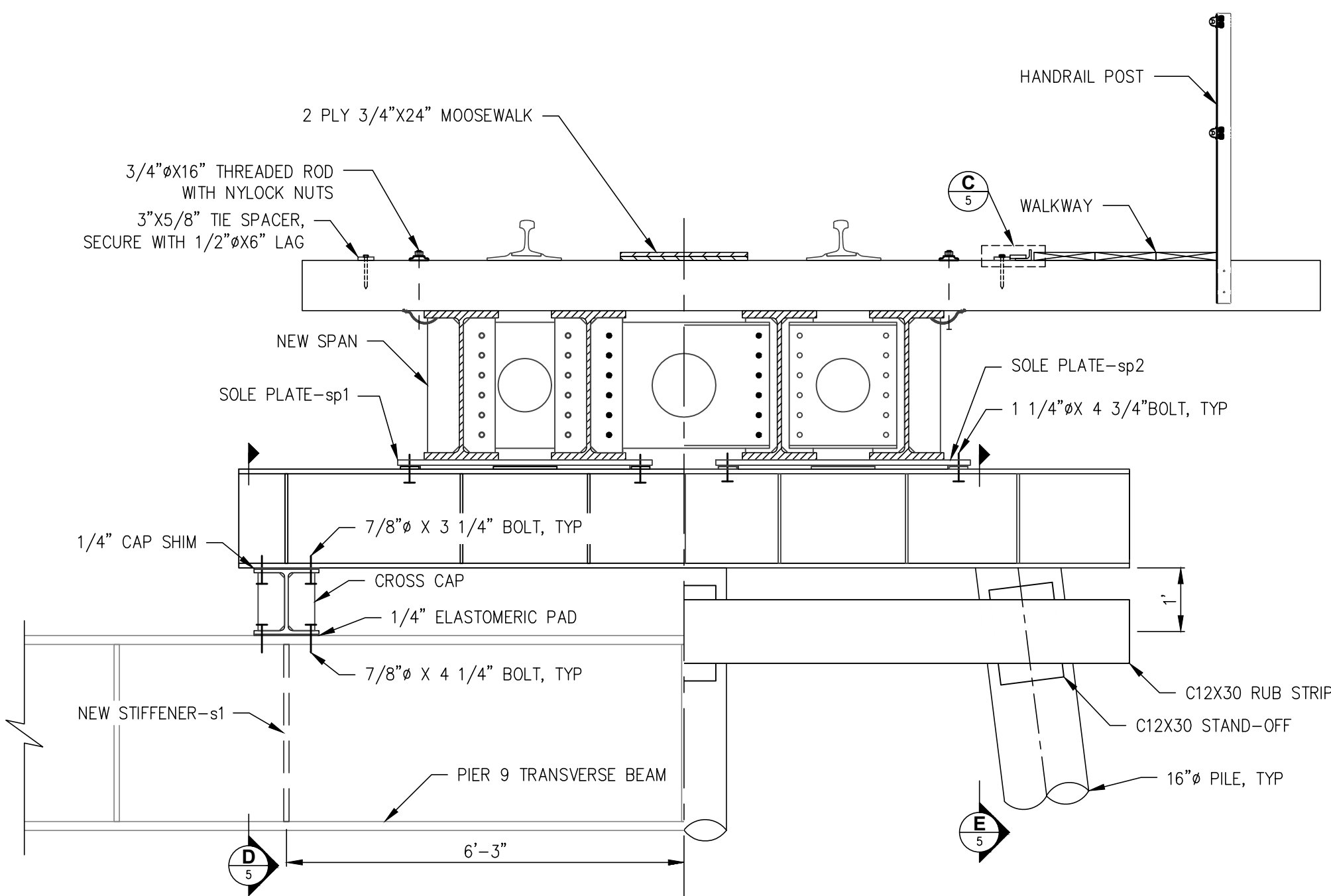
**C NEW BENT 10 TEMPORARY CONDITION**  
SCALE: 3/8" = 1'-0"

NOTE: HP14X89 WITH ASSOCIATED STIFFENERS, CAP PLATES, CHANNEL AND PILE AND SHEET PILE TO BE PROVIDED BY OWNER.

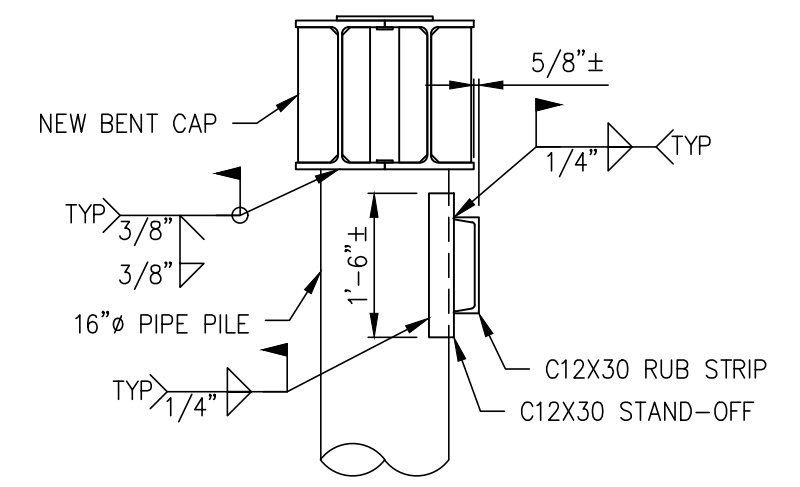
REV.	DATE	BY	REVISION

 <b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500				
PROJECT :				
<b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>				
TITLE:				
<b>PILE, BULKHEAD, AND DECK/APPR.</b> <b>LAYOUT AND TEMPORARY BENT</b>				
DESIGNED BY: <u>DJS</u>	SCALE : AS NOTED	■	DWG NO.	
CHECKED BY: _____	DATE : 3/17/23		4	OF 12
APPROVED BY: _____				

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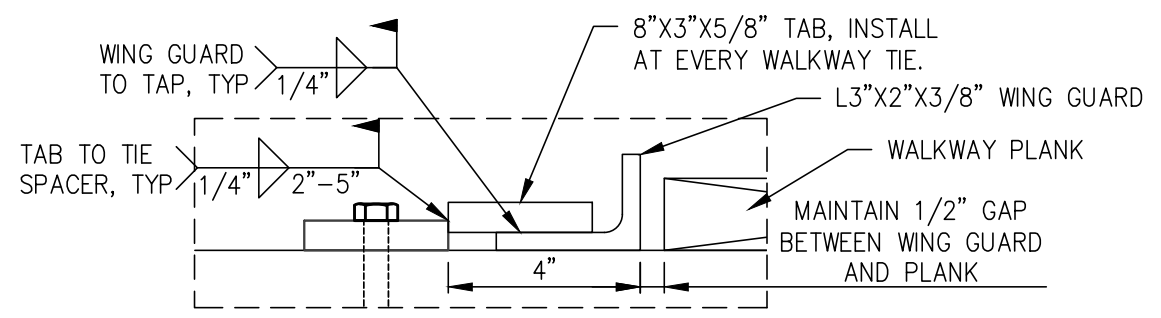
**D SECTION DETAIL**  
5 SCALE: 1/2"=1'-0"



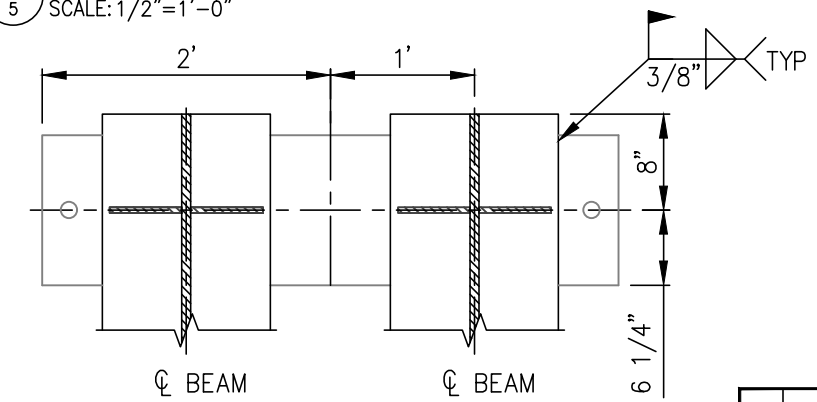
**E SECTION DETAIL**  
5 SCALE: 1/2"=1'-0"

**A PIER 9 NORTH FACE**  
5 SCALE: 1/2"=1'-0"

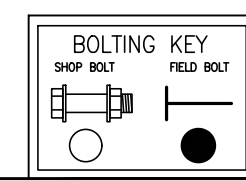
**B BENT 10 NORTH FACE**  
5 SCALE: 1/2"=1'-0"



**C WING GUARD ATTACHMENT DETAIL**  
5 SCALE: 3/4"=1'-0"

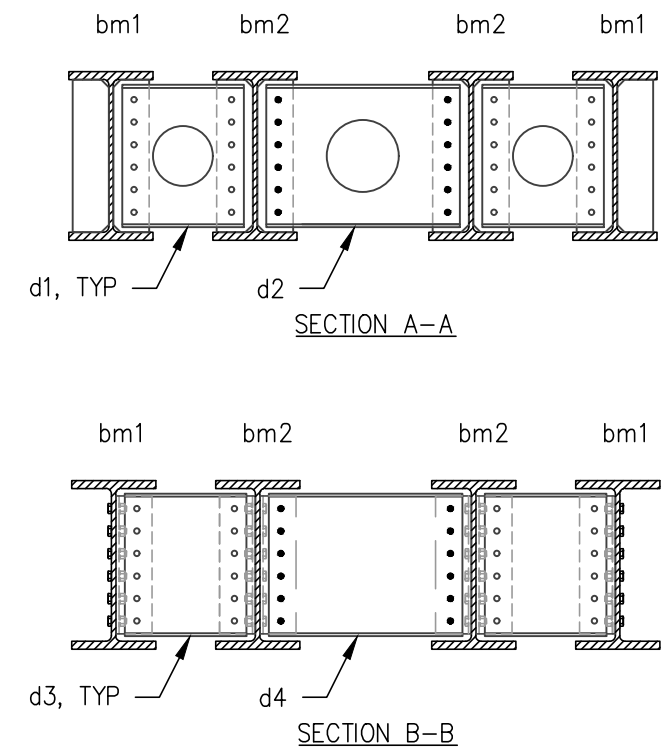
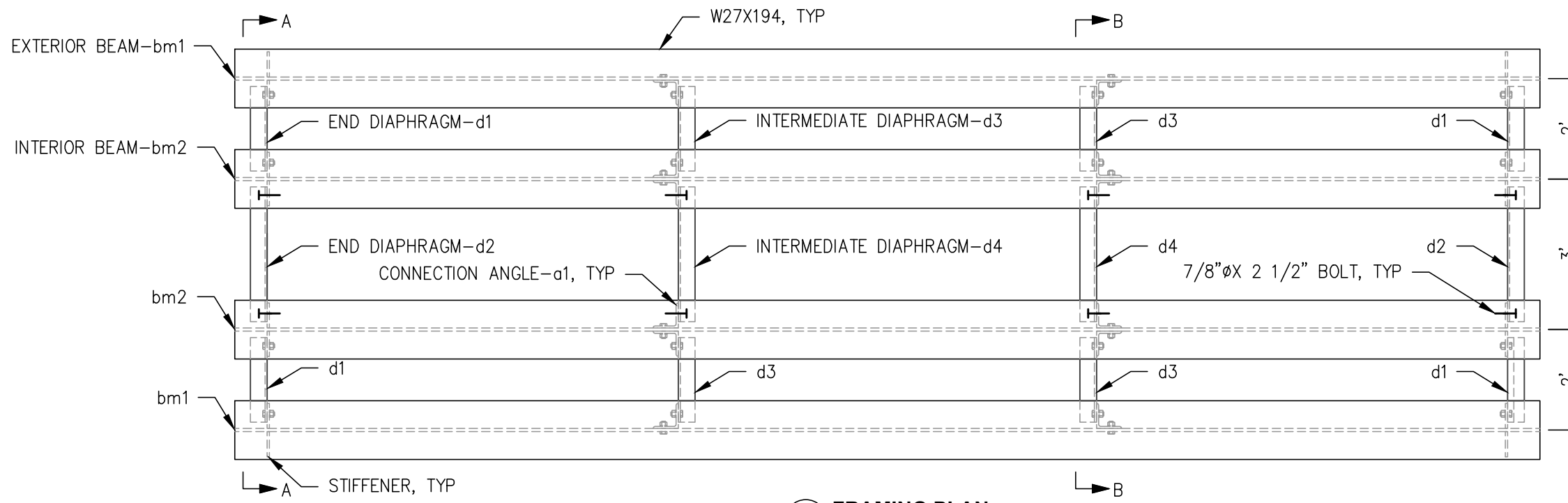


**F BEAM TO SOLE PL WELDING DETAIL**  
5 SCALE: 3/4"=1'-0"



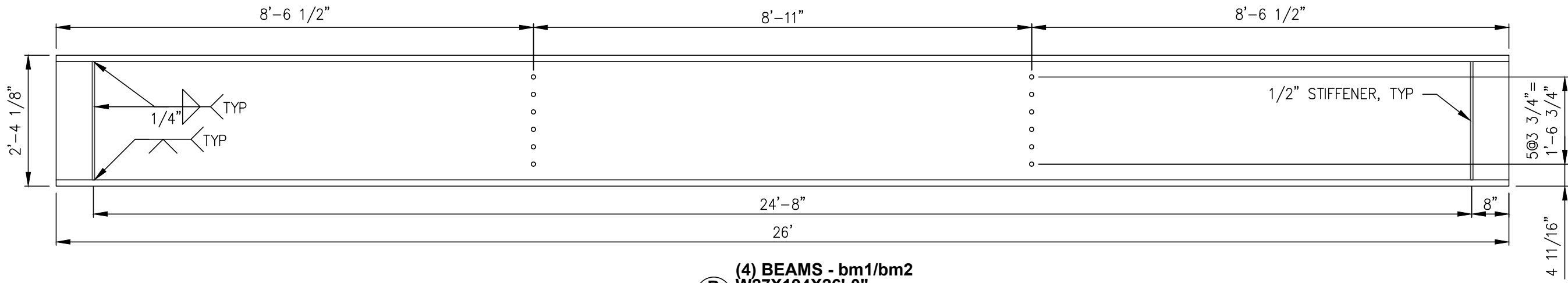
<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE: <b>PIER AND BENT SECTION DETAILS</b>			
DESIGNED BY: <b>DJS</b>	SCALE : AS NOTED		DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>5</b> OF <b>12</b>
APPROVED BY: _____			
REV.	DATE	BY	REVISION

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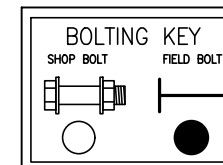
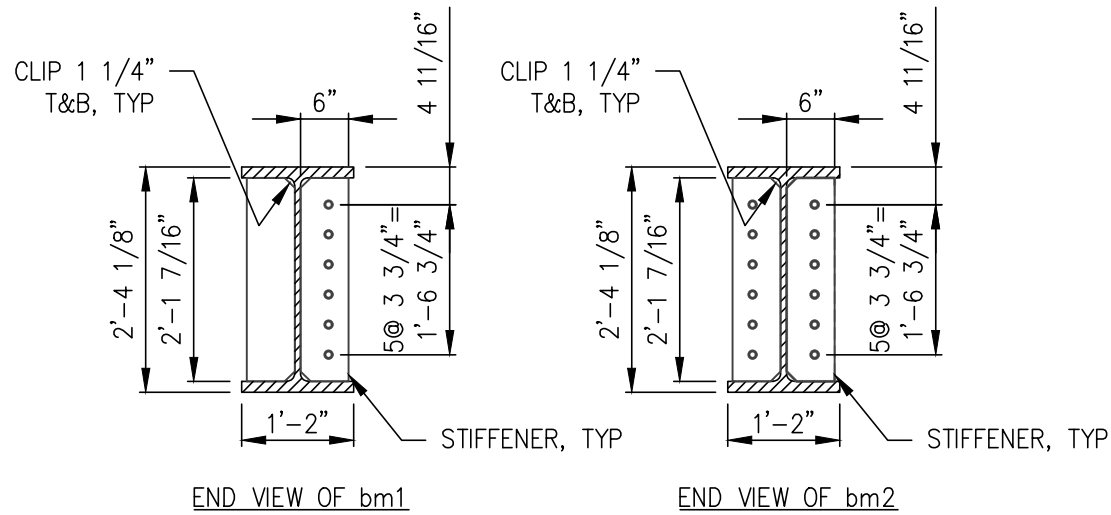
**A FRAMING PLAN**  
SCALE: 3/8"=1'-0"

NOTE:  
1. BEAM CHORD ESTIMATED SHIPPING WEIGHT= 10868 LBS.  
2. ASSEMBLED SPAN ESTIMATED WEIGHT= 22300 LBS.



**(4) BEAMS - bm1/bm2**  
**B W27X194X26'-0"**  
SCALE: 1/2"=1'-0"

MAKE (2) bm1  
MAKE (2) bm2



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

PROJECT : **BRIDGE 148.3**  
**N. APPROACH REPLACEMENT**

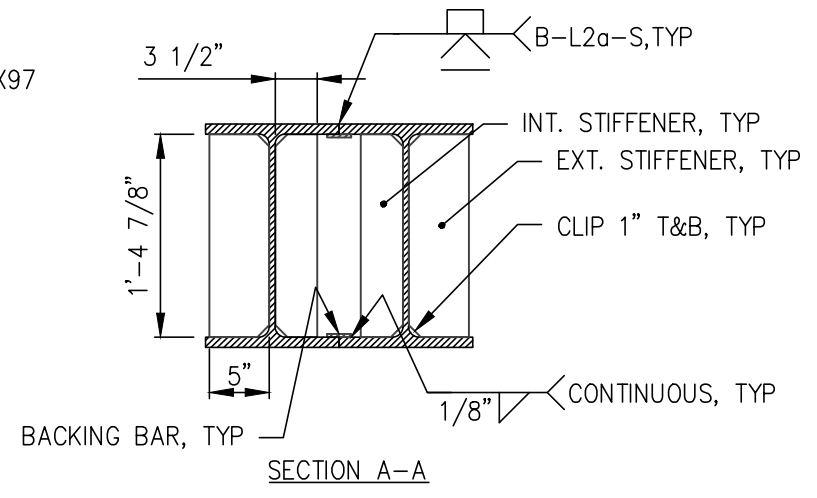
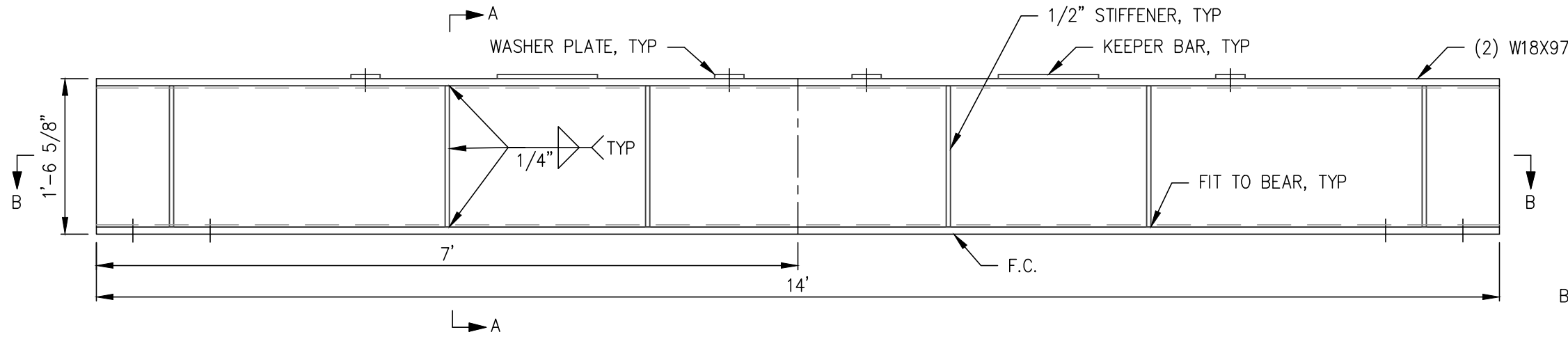
TITLE: **SPAN FRAMING PLAN AND BEAM DETAILS**

DESIGNED BY: DJS SCALE : AS NOTED  
CHECKED BY: \_\_\_\_\_ DATE : 3/17/23  
APPROVED BY: \_\_\_\_\_

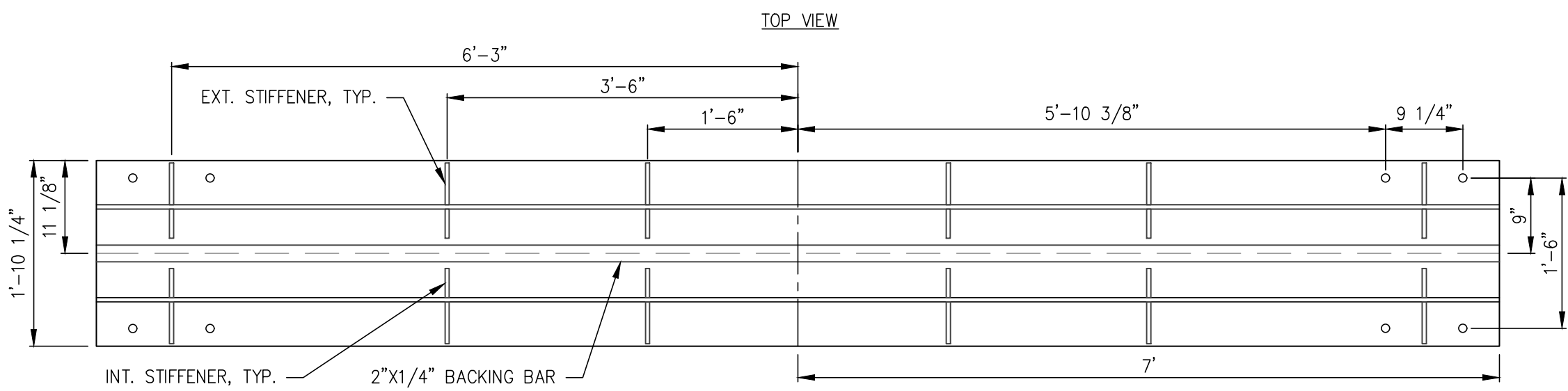
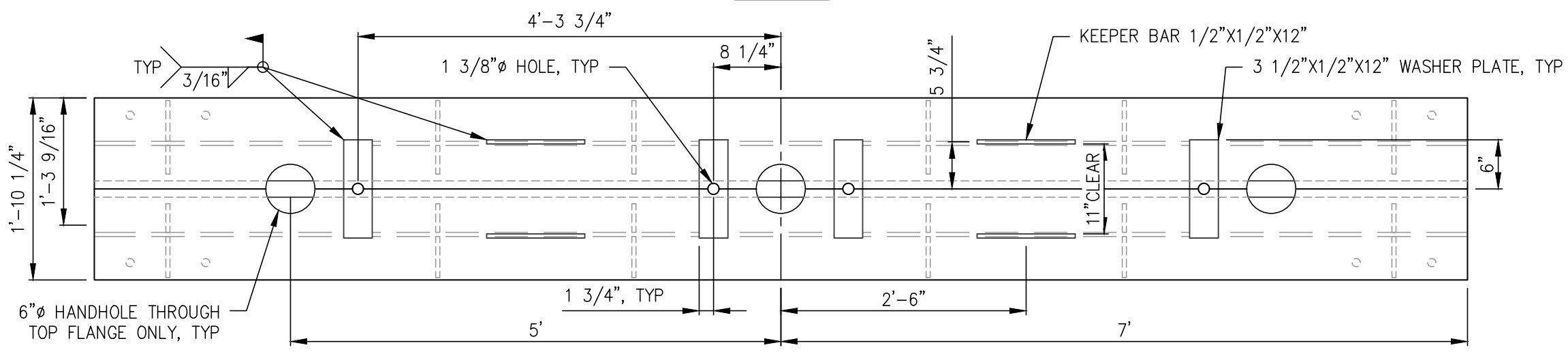
DWG NO. **6** OF **12**

REV.	DATE	BY	REVISION

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**NOTE:** FABRICATOR TO ENSURE BOTH TOP AND BOTTOM BEARING SURFACES OF CAP ARE FLAT WITH A GAP NO GREATER THAN 1/8" UNDER A STRAIGHT EDGE AT WELD SEAM. FABRICATOR MAY CHOOSE TO ADD ANTI-DISTORTION TUBING BETWEEN BACKING PLATES WITH APPROVAL OF ENGINEER.

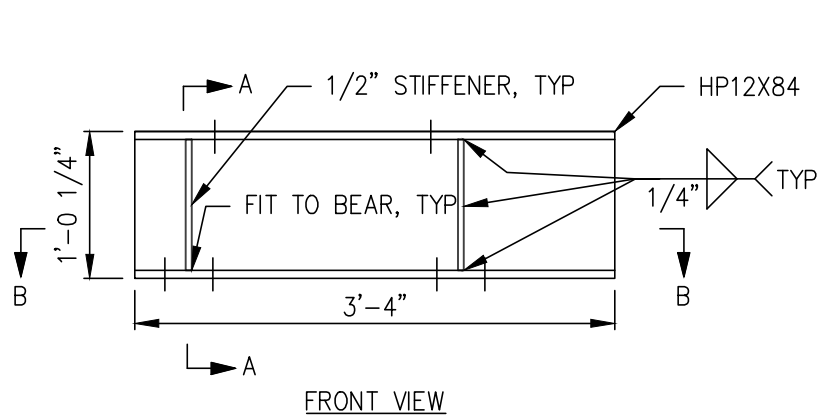


**(1) PIER CAP**  
**DBL W18X97X14'-0"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=3033 LBS

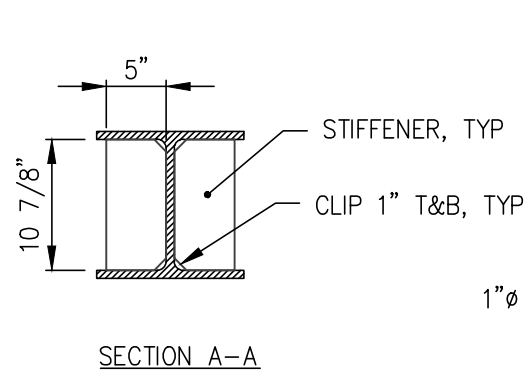
REV.	DATE	BY	REVISION

<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE: <b>NEW PIER CAP</b>			
DESIGNED BY: <b>DJS</b>	SCALE : AS NOTED	<input type="checkbox"/>	DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>7</b> OF <b>12</b>
APPROVED BY: _____			

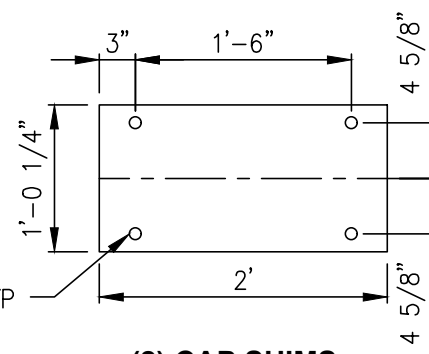
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FRONT VIEW

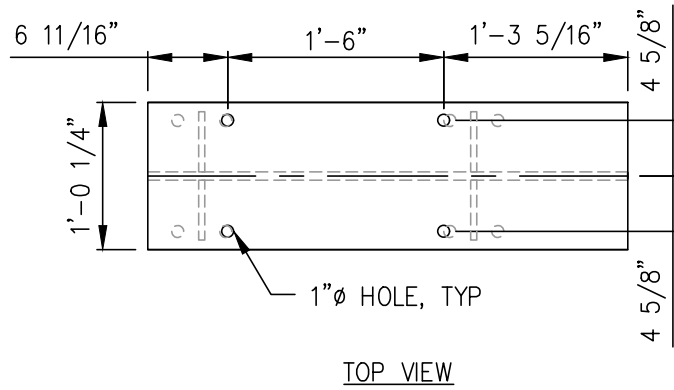


SECTION A-A

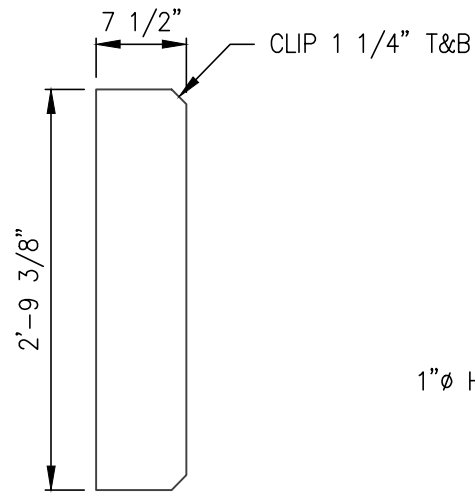


**(2) CAP SHIMS**  
**PL 1'-1 1/4"X1/4"X2'-0"**  
 SCALE: 3/4"=1'-0"

ESTIMATED WEIGHT=21 LBS/EA

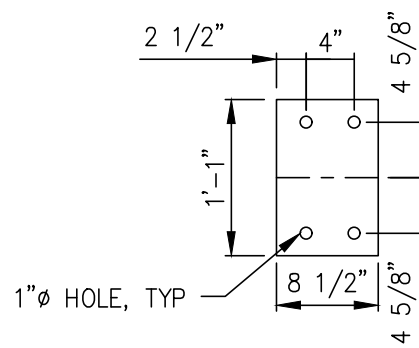


TOP VIEW

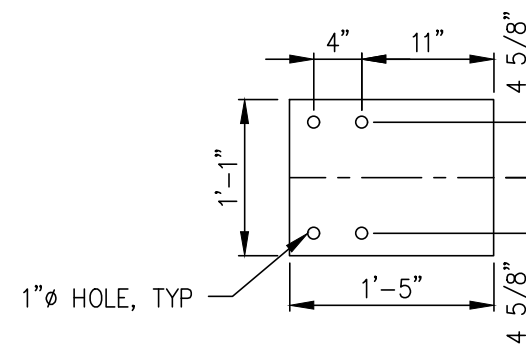


**(4) STIFFENERS**  
**PL 7 1/2"X3/4"X2'-9 3/8"**  
 SCALE: 3/4"=1'-0"

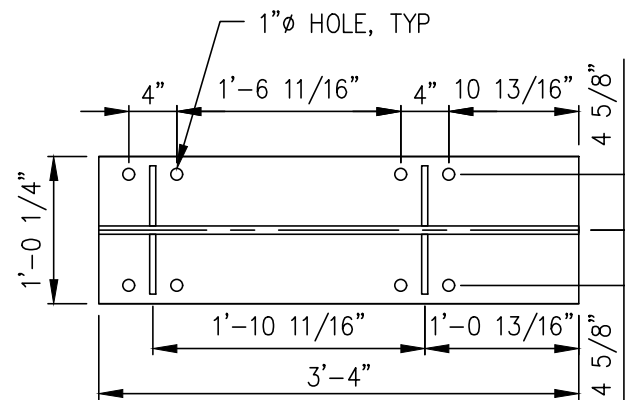
ESTIMATED WEIGHT=54 LBS/EA



**(2) ELASTOMERIC PAD-ep1**  
**1'-1"X1/4"X8 1/2"**  
 SCALE: 3/4"=1'-0"



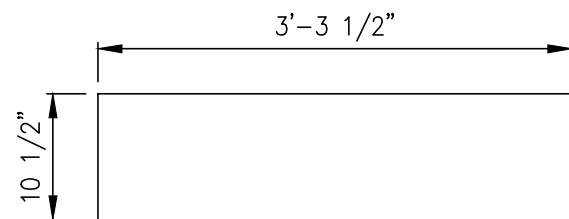
**(2) ELASTOMERIC PAD-ep2**  
**1'-1"X1/4"X1'-5"**  
 SCALE: 3/4"=1'-0"



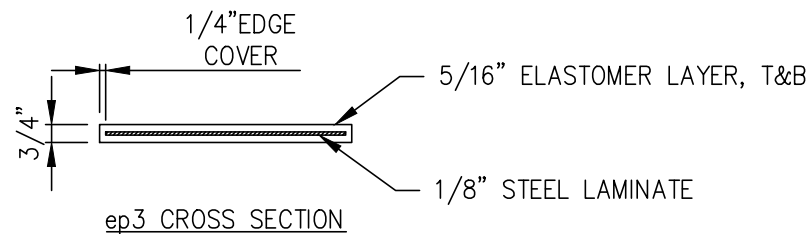
SECTION B-B

**(2) CROSS CAP**  
**HP12X84X3'-4"**  
 SCALE: 3/4"=1'-0"

ESTIMATED WEIGHT=308 LBS/EA



**(4) ELASTOMERIC PAD-ep3**  
**10 1/2"X3/4"X3'-3 1/2"**  
 SCALE: 3/4"=1'-0"



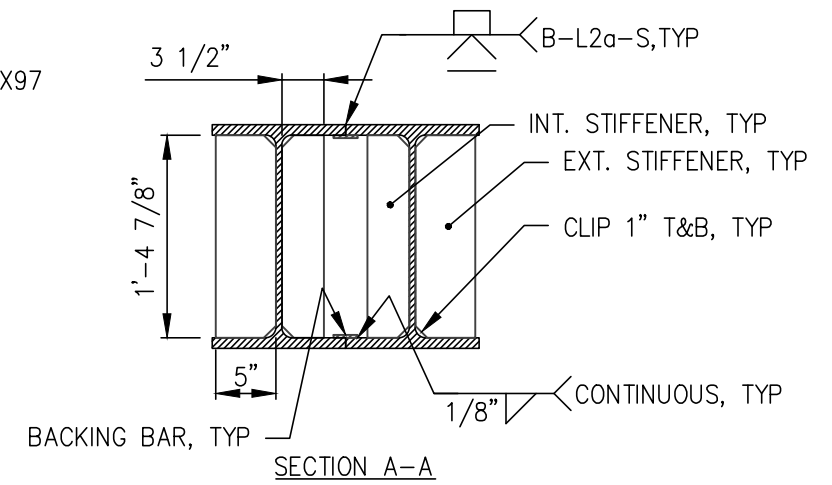
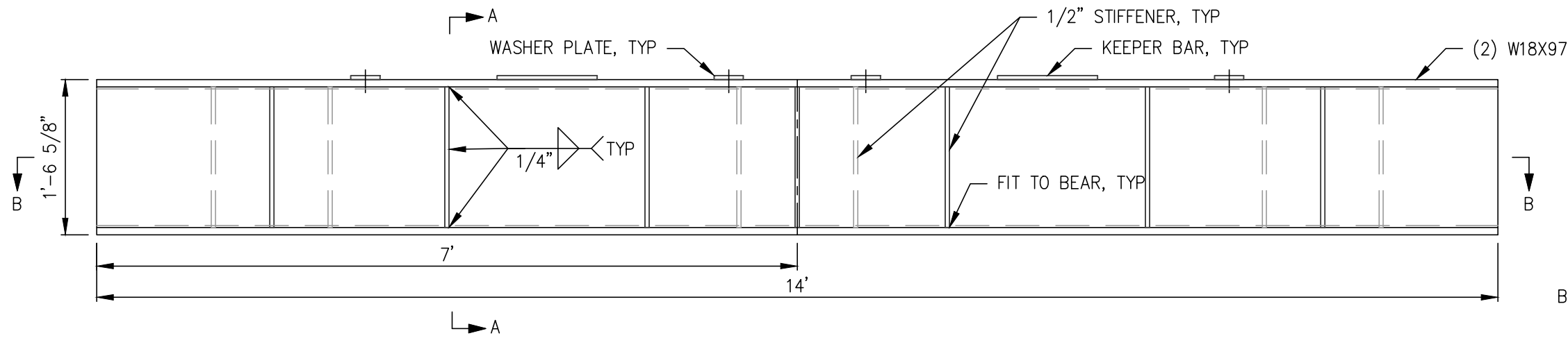
ep3 CROSS SECTION

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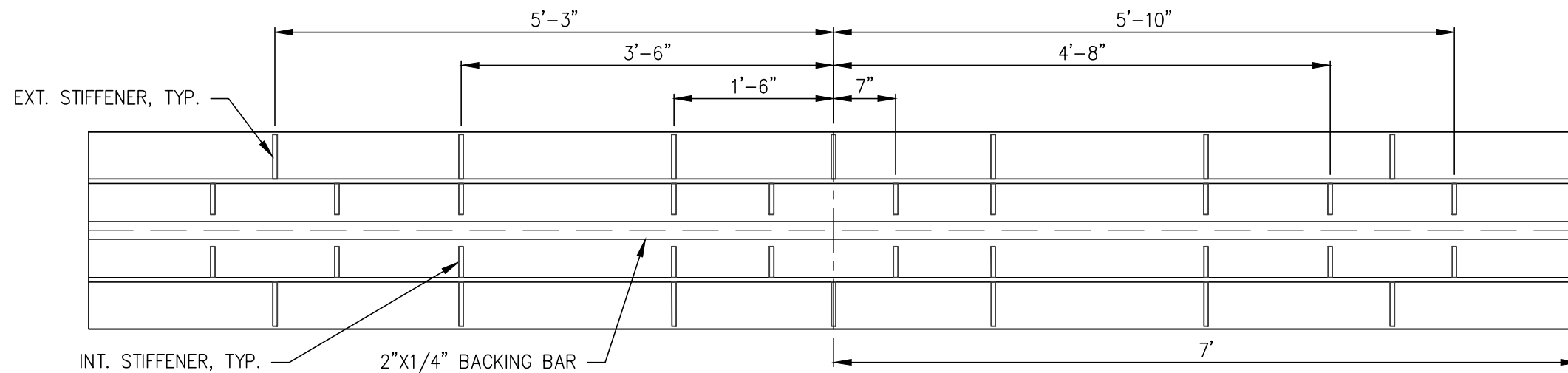
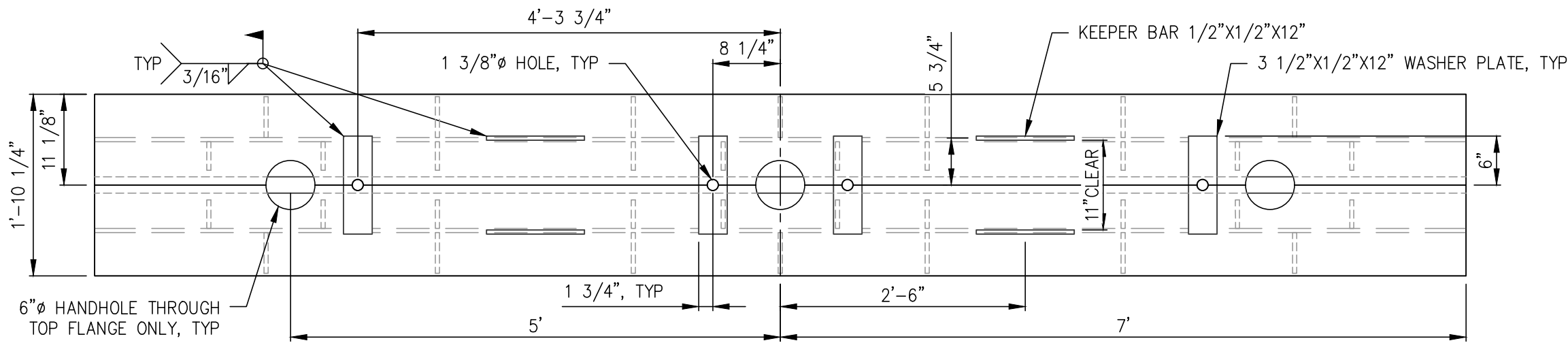
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
<b>PROJECT :</b> <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
<b>TITLE:</b> <b>CROSS CAP, STIFFENER, CAP SHIMS</b> <b>ELASTOMERIC PADS</b>			
DESIGNED BY: <u>DJS</u>	SCALE : AS NOTED		DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>8</b> OF <b>12</b>
APPROVED BY: _____			



P:\Engineering\Bridges\BR 148\_3 Matanuska\2022 N Approach\BR148.3\_NAppr\_031723.dwg VPort: S9 Plot Style: -----



NOTE: FABRICATOR TO ENSURE BOTH TOP AND BOTTOM BEARING SURFACES OF CAP ARE FLAT WITH A GAP NO GREATER THAN 1/8" UNDER A STRAIGHT EDGE AT WELD SEAM. FABRICATOR MAY CHOOSE TO ADD ANTI-DISTORTION TUBING BETWEEN BACKING PLATES WITH APPROVAL OF ENGINEER.



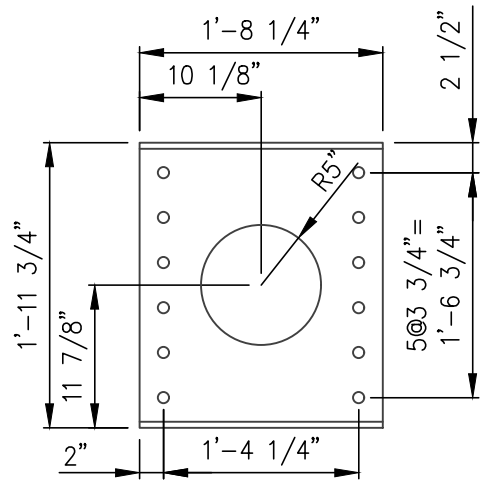
**(1) NEW BENT CAP**  
**DBL W18X97X14'-0"**  
 SCALE: 3/4" = 1'-0"

ESTIMATED WEIGHT=3124 LBS

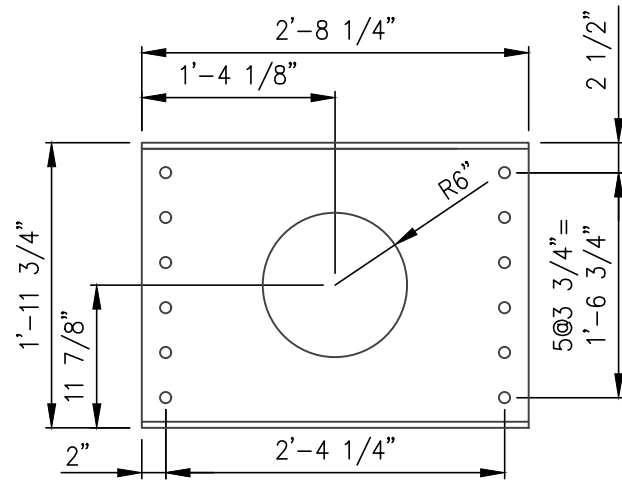
REV.	DATE	BY	REVISION

<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE: <b>NEW BENT CAP</b>			
DESIGNED BY: <b>DJS</b>	SCALE : AS NOTED	<input type="checkbox"/>	DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>9</b> OF <b>12</b>
APPROVED BY: _____			

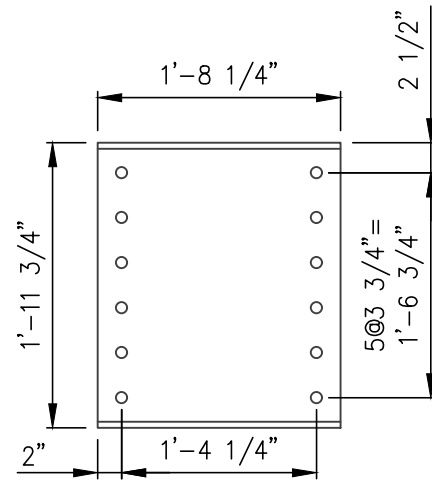
P:\Engineering\Bridges\BR 148\_3 Matanuska\2022 N Approach\BR148.3\_NAppr\_031723.dwg VPort: S10 Plot Style: -----



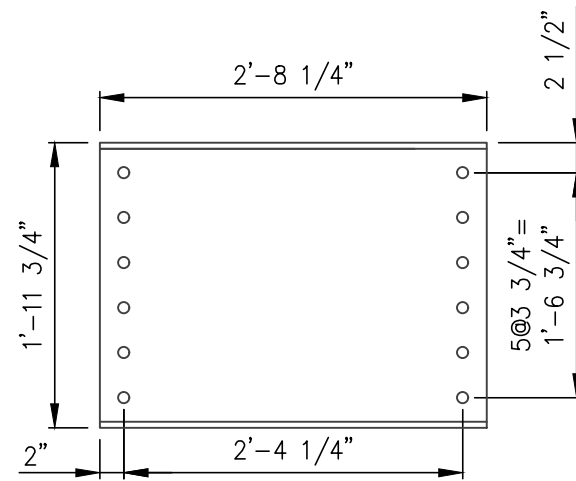
**(4) END DIAPHRAGM - d1**  
**PL-1'-8 1/4"X1/2"X2'-5 5/8"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=74 LBS/EA



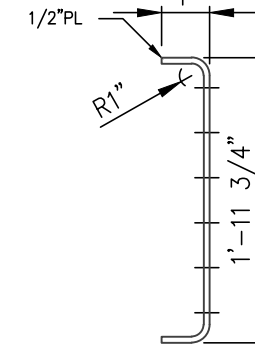
**(2) END DIAPHRAGM - d2**  
**PL-2'-8 1/4"X1/2"X2'-5 5/8"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=119 LBS/EA



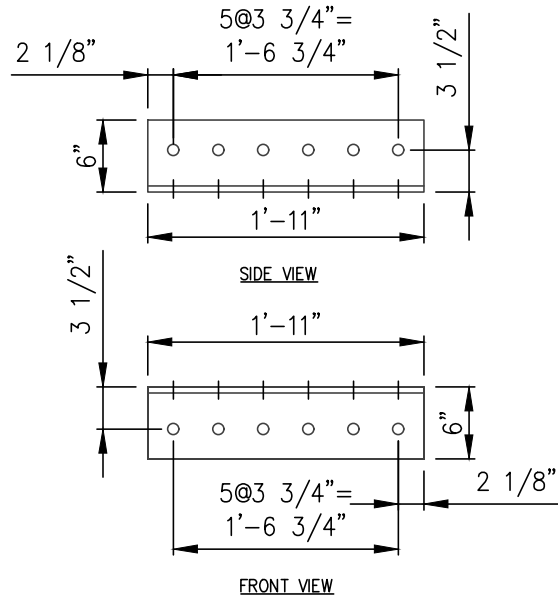
**(4) INT. DIAPHRAGM - d3**  
**PL-1'-8 1/4"X1/2"X2'-5 5/8"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=85 LBS/EA



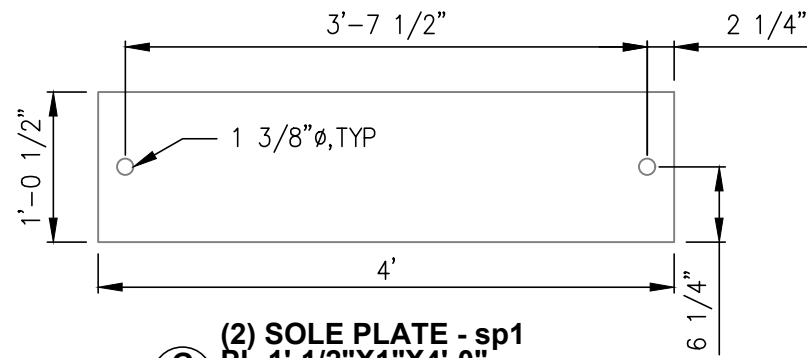
**(2) INT. DIAPHRAGM - d4**  
**PL-2'-8 1/4"X1/2"X2'-5 5/8"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=135 LBS/EA



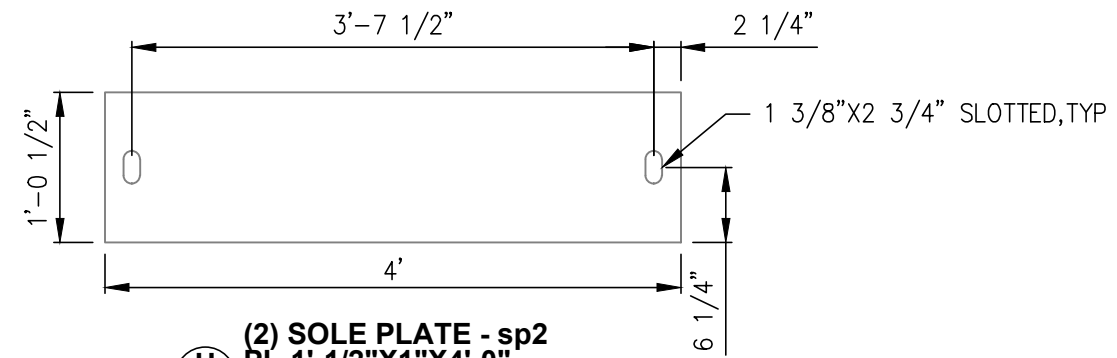
**TYPICAL DIAPHRAGM SECTION**  
 SCALE: 3/4"=1'-0"



**(12) CONN. ANGLE - a1**  
**L-6"X6"1/2"X1'-11"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=37 LBS/EA



**(2) SOLE PLATE - sp1**  
**PL-1'-1/2"X1"X4'-0"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=170 LBS/EA.

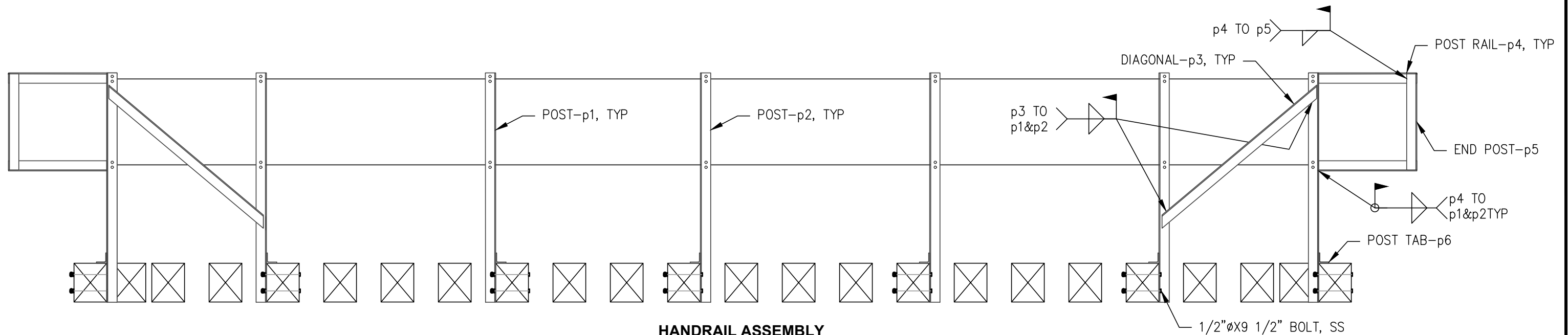


**(2) SOLE PLATE - sp2**  
**PL-1'-1/2"X1"X4'-0"**  
 SCALE: 3/4"=1'-0"  
 ESTIMATED WEIGHT=170 LBS/EA.

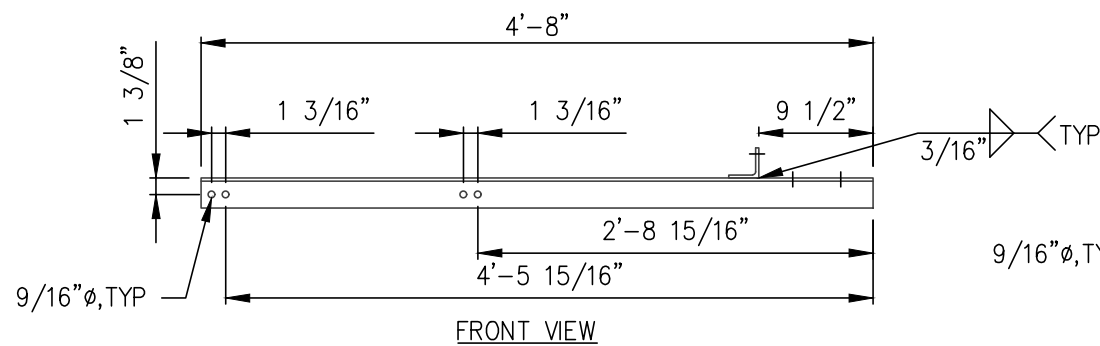
REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT :			
<b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE:			
<b>DIAPHRAGMS, CONNECTION ANGLE AND SOLE PLATE DETAILS</b>			
DESIGNED BY:	DJS	SCALE :	AS NOTED
CHECKED BY:		DATE :	3/17/23
APPROVED BY:		DWG NO.	10 OF 12

P:\Engineering\Bridges\BR 148\_3 Matanuska\2022 N Approach\BR148.3\_Appr\_031723.dwg VPort: S11 Plot Style: ----



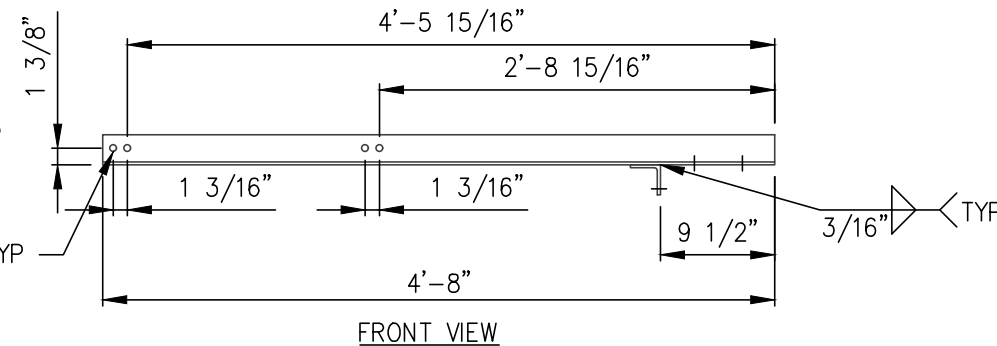
**A** HANDRAIL ASSEMBLY  
OUTBOARD VIEW  
SCALE: 1/2"=1'-0"



FRONT VIEW

**B** (3) POST ASSEMBLY-p1  
L 2 1/2"X2 1/2"X1/4"X4'-8"  
SCALE: 3/4"=1'-0"

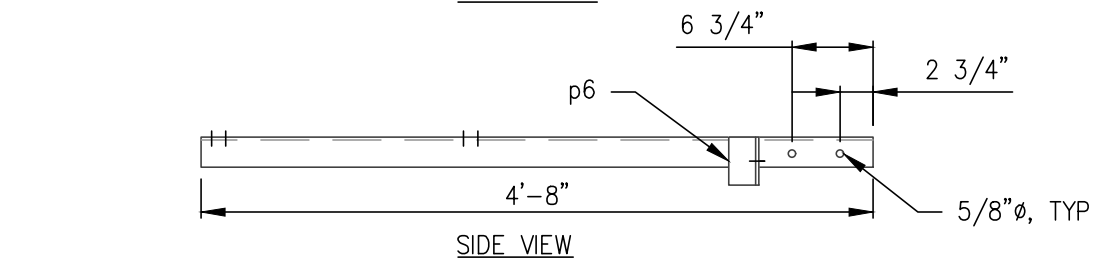
ESTIMATED WEIGHT=20.5 LBS/EA



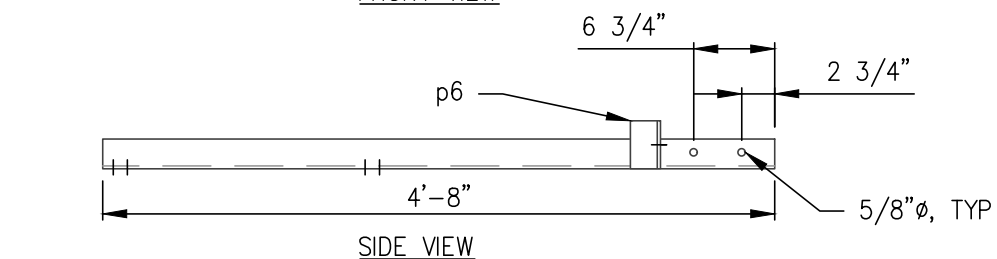
FRONT VIEW

**C** (4) POST ASSEMBLY-p2  
L 2 1/2"X2 1/2"X1/4"X4'-8"  
SCALE: 3/4"=1'-0"

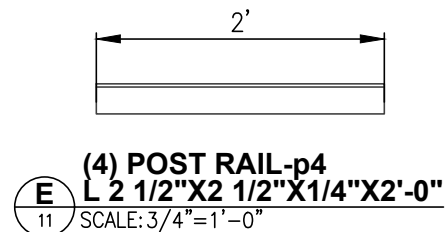
ESTIMATED WEIGHT=20.5 LBS/EA



SIDE VIEW

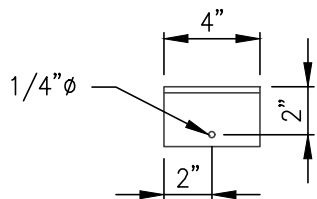


SIDE VIEW



**E** (4) POST RAIL-p4  
L 2 1/2"X2 1/2"X1/4"X2'-0"  
SCALE: 3/4"=1'-0"

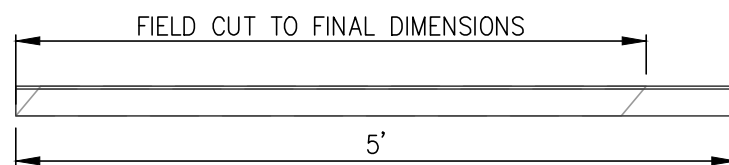
ESTIMATED WEIGHT=8 LBS/EA



**G** (7) POST TAB-p6  
L 2 1/2"X2 1/2"X1/4"X0'-4"  
SCALE: 1 1/2"=1'-0"

**F** (2) END POST-p5  
L 2 1/2"X2 1/2"X1/4"X1'-11 7/16"  
SCALE: 3/4"=1'-0"

ESTIMATED WEIGHT=8 LBS/EA



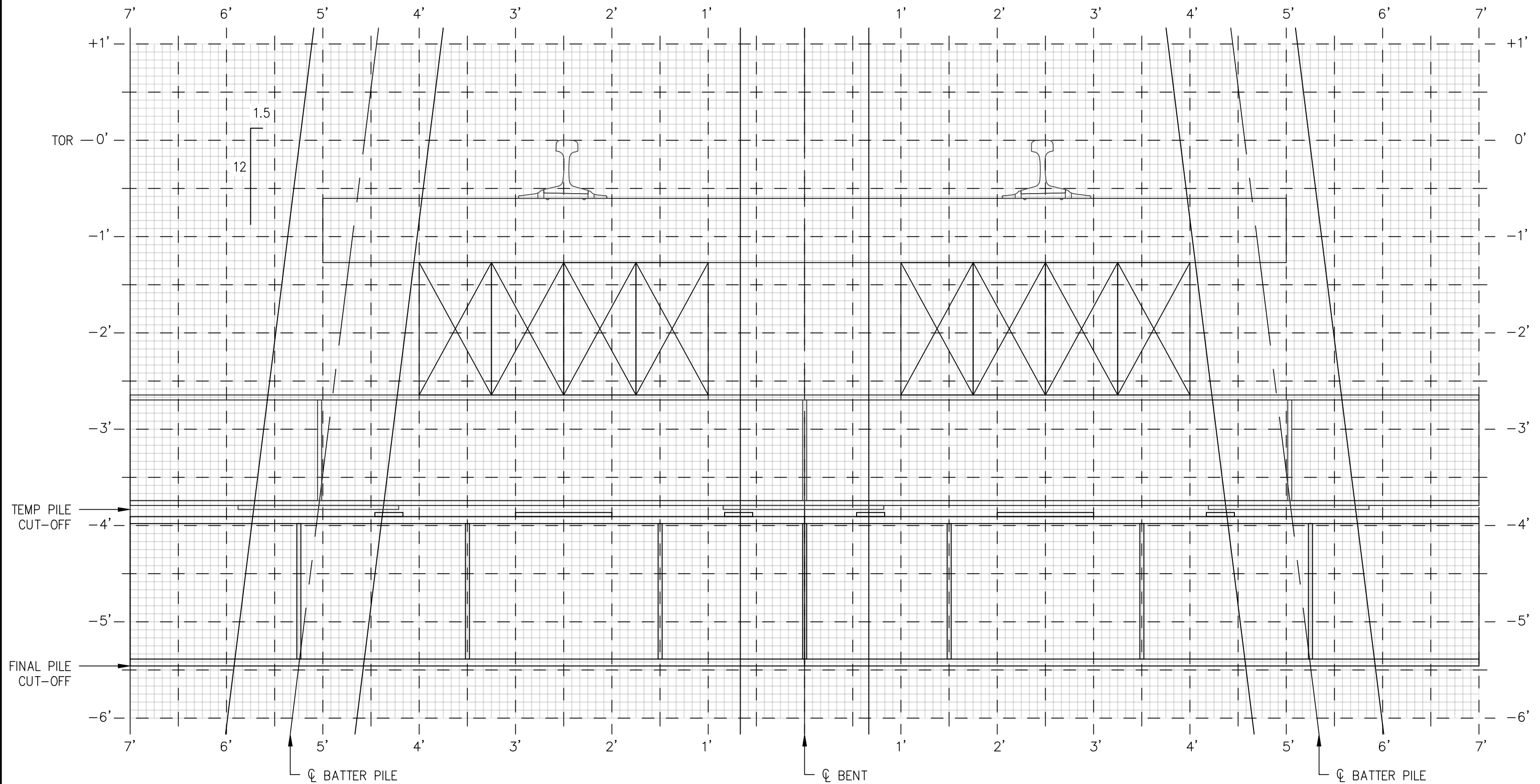
**D** (2) POST DIAGONAL-p3  
L 2 1/2"X2 1/2"X1/4"X5'-0"  
SCALE: 3/4"=1'-0"

ESTIMATED WEIGHT=21 LBS/EA

REV.	DATE	BY	REVISION



<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE: <b>HANDRAIL DETAILS</b>			
DESIGNED BY: <b>DJS</b>	SCALE : AS NOTED		DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>11</b> OF <b>12</b>
APPROVED BY: _____			

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NOTE: \*\*GRID TO BE USED AS A GUIDE TO LAYOUT BATTER PILE IN RELATION TO TOP OF RAIL. EXACT ELEVATIONS OF PILE CUT-OFFS TO BE DETERMINED IN THE FIELD BY VERIFYING MATERIAL DEPTHS\*\*

**A** PILE LAYOUT GRID  
12 SCALE: 1"=1'-0"

 <b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 148.3</b> <b>N. APPROACH REPLACEMENT</b>			
TITLE: <b>PILE LAYOUT GRID</b>			
DESIGNED BY: <u>DJS</u>	SCALE : AS NOTED		DWG NO.
CHECKED BY: _____	DATE : 3/17/23		<b>12</b> OF <b>12</b>
APPROVED BY: _____			
REV.	DATE	BY	REVISION