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LETTER OF TRANSMITTAL

TO: Steamboat Structures
Denver Metro, CO

DATE: 10/5/2021

FILE NO. 009-03

ATTN: Heather Reed

RE: Forest Lakes Bridges

WE ARE SENDING YOU:

☐ Shop Drawings

☐ Copy of Letter

☐ Samples

☐ Specifications

☐ Reports

☐ _____

☐ Plans

☒ Submittal Information

SUBMITTED BY: Structures

COPIES	DESCRIPTION	CONTRACTOR
1	Expansion Device Shop Drawings	Structures

THESE ARE TRANSMITTED:

☒ For Approval

☒ For Review and Comment

☐ Returned for Corrections

☐ For Your Use

☐ Approved As Submitted

☐ _____

☐ As Requested

☐ Approved As Noted

REMARKS:

cc: File



Letter of Transmittal

To: Structures Inc.

Date: 10/05/2021

Attn: Elliott

RE: Forest Lakes Bridges

☒ Attached ☐ Separate Cover Via _____

☒ Shop Drawing ☐ Prints ☐ Samples ☐ Specifications
☐ Letter ☐ Change Order Other _____

Copies	Date	Description
(1)	10-05-21	Forest Lakes Bridges 0-4" Expansion Joint and cover plates

The above items are transmitted for your action as noted:

<input type="checkbox"/> For Approval	<input checked="" type="checkbox"/> For Your Use
<input type="checkbox"/> Resubmitted for Approval	<input type="checkbox"/> As Requested
<input type="checkbox"/> Approved as Submitted	<input type="checkbox"/> Approved as Noted
<input type="checkbox"/> Resubmit _____ Copies for Approval	<input type="checkbox"/> For Distribution

Comments:

Shop Drawings

Transmitted by: Bowman Construction Supply

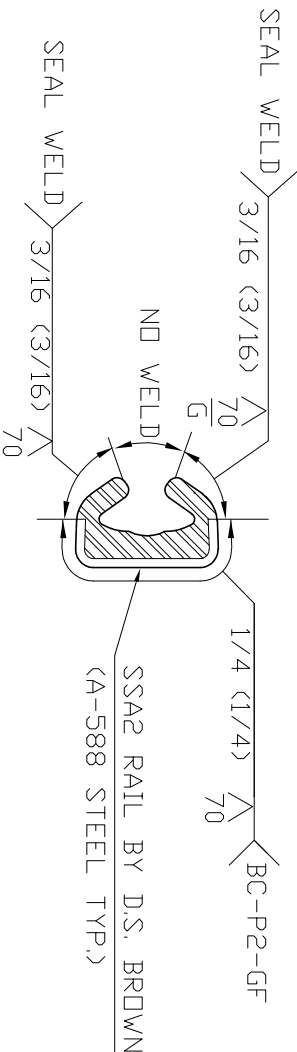
Signed: Martin Verce

By: Martin J. Verce

Date: 10-05-2021

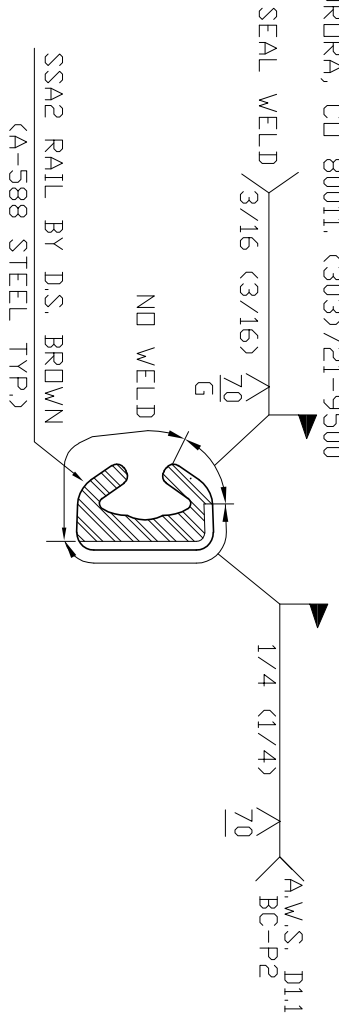
GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF BOWMAN CONSTRUCTION SUPPLY AND THE ENGINEER.
- A REPRESENTATIVE OF BOWMAN CONSTRUCTION SUPPLY SHALL BE PRESENT DURING INSTALLATION.
- SSA2 RAILS SHALL BE FABRICATED IN MAXIMUM 23'-0" LENGTHS. FABRICATION SHALL BE IN ACCORDANCE WITH SECTION 509 OF THE CDDT STANDARD SPECIFICATIONS.
- AFTER FABRICATION, EXPANSION DEVICE SHALL BE GALVANIZED TO ASTM A123.
- "W" AND "A" DIMENSIONS ARE TEMPERATURE DEPENDENT. INTERPOLATE AS NECESSARY. SEE SPECIFICATIONS TO DETERMINE STRUCTURE TEMPERATURE. GALVANIC PAINT SHALL BE APPLIED AT CUT AND WELD LOCATIONS TO PREVENT POTENTIAL CORROSION.
- MINIMUM GAP WIDTH FOR A2R AND A2R-XTRA SEALS SHALL BE 1/2" MEASURED FROM STEEL RAIL TO STEEL RAIL. MAXIMUM WIDTH SHALL BE 4 1/2" FOR A2R SEAL AND 7 1/2" FOR A2R-XTRA SEAL. GAP WIDTHS OUTSIDE THESE PARAMETERS MAY CAUSE JOINT FAILURE. MINIMUM GAP WIDTH FOR EASY INSTALLATION IS 1 1/2"
- EXPANSION DEVICE MITER LINE SHALL BE RECESSED 1/4" MINIMUM BEHIND CONCRETE GUTTER LINE, RECESS VARIES FROM ONE SIDE OF JOINT TO OTHER SIDE OF JOINT FOR SKEWED EXPANSION DEVICES. SEE PLAN DETAILS, IF APPLIES.
- SSA2 STEEL RAILS SHALL BE INSTALLED 1/4" BELOW CONCRETE, PARALLEL TO SLOPE AND GRADE OF THE ROADWAY.
- FABRICATED SSA2 RAILS MAY BE FIELD CUT TO ACCOMMODATE ROADWAY CROWNS, SLOPE BREAKS, AND CONSTRUCTION PHASING. SAW CUT (DO NOT BURN) AND FIELD WELD PER FIELD WELD DETAIL.
- MASK OFF GROOVE IN SSA2 RAILS (OR INSERT 3/4"Ø BACKER ROD) TO PREVENT CONCRETE INTRUSION INTO GROOVE OF SSA2 RAIL.
- PLACE AND CURE CONCRETE ACCORDING TO SPECIFICATIONS.
- IMMEDIATELY AFTER CONCRETE ACHIEVES INITIAL SET, REMOVE ALL RIGID SUPPORTS THAT SPAN THE EXPANSION GAP.
- SEAL SHALL BE FIELD INSTALLED BY THE CONTRACTOR CONTINUOUS FROM END OF JOINT TO END OF JOINT. FACTORY VULCANIZED HORIZONTAL MITERS ARE REQUIRED FOR HORIZONTAL TURNS GREATER THAN 35°. NO FIELD SPLICING OR PATCHING SHALL BE ALLOWED UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
- BEFORE INSTALLATION OF SEAL, CLEAN ALL AREAS OF STEEL TO BE IN CONTACT WITH THE SEAL.
- LAY OUT SEAL ADJACENT TO EXPANSION DEVICE TO CHECK LENGTH AND CONFORMANCE OF ANY TURNS. SEE SEAL INSTALLATION DIAGRAM.
- LUBRICANT ADHESIVE SHALL BE DELASTIBOND 1520 AND SHALL BE A ONE-PART POLYURETHANE ADHESIVE CONFORMING TO ASTM D4070
- APPLY LUBRICANT ADHESIVE FOR ONLY 3-4 FEET AT A TIME. WORK BOTH SIDES OF SEAL SIMULTANEOUSLY.
- SEAL SHALL BE FULLY INSTALLED PRIOR TO PLACEMENT OF ANY SIDEWALKS, MEDIANS, CURBS, ETC., ABOVE EXPANSION DEVICE. GAP WIDTH SHALL BE AT LEAST "W" WIDE ABOVE EXPANSION DEVICE. NO CONCRETE OR OTHER FOREIGN MATERIAL MAY BE PERMANENTLY PLACED ON TOP OF SEAL.
- MATERIAL CERTIFICATIONS SHALL BE SUPPLIED FOR ALL PERMANENT MATERIALS.
- FABRICATION PROVIDED BY DRAKE WILLIAMS STEEL. 20400 E. 26TH AVE. AURORA, CO 80011. (303)721-9500



SHOP WELD DETAIL

ALL SHOP WELD BUTT JOINTS SHALL BE SINGLE V-GROOVE WELDS BTC-P4 WITH E-70XX OR E-7XTX ELECTRODE. NO WELD IN INTERIOR OR RAIL WHERE IN CONTACT WITH RUBBER SEAL.



FIELD WELD DETAIL

ALL FIELD WELD BUTT JOINTS SHALL BE SINGLE V-GROOVE WELDS BC-P2 WITH E-7018 ELECTRODE. NO WELD IN INTERIOR OF RAIL WHERE IN CONTACT WITH RUBBER SEAL. COLD GALV. ALL EXPOSED CUTS AND WELDS

A2R GLAND
INSTALLATION INSTRUCTIONS

- EXPANSION JOINT


A2R SEAL SEE NOTE 13

SSA2 RAIL (TYP.)

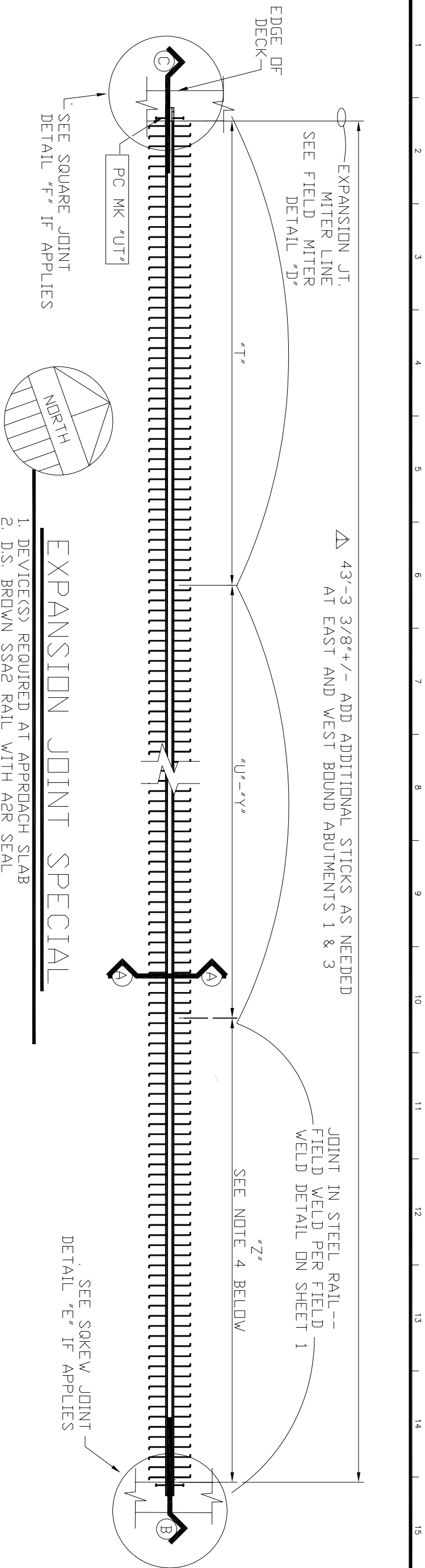
BEGINNING AT TURNS, FOLD SEAL IN HALF LONGITUDINALLY AND PLACE INTO JOINT OPENING
- PUSH SEAL DOWN INTO JOINT OPENING UNTIL THE LUG OF THE A2R SEAL CATCHES IN THE GROOVE OF THE SSA2 RAIL.
- LUBRICANT ADHESIVE APPLICATION AREA
- APPLY LUBRICANT ADHESIVE TO THE A2R SEAL AND ADJACENT AREA OF SSA2 RAIL USING A PAINT BRUSH.
- TYPICAL ANGLE OF PRESSURE (SYM ABOUT EXPANSION DEVICE)

PUSH LATERALLY WITH PRY BAR OR SIMILAR TOOL TO "ROLL" THE TOP LUG OF THE A2R SEAL INTO THE GROOVE OF THE SSA2 RAIL
- COMPLETED INSTALLATION--NOTE A2R SEAL FITS SNUGLY AGAINST SSA2 RAIL

CADD FILE: 1		DATE OF LAST REVISION:		DESCRIPTION OF MATERIALS:		CUSTOMER: STRUCTURES, INC.	
MK		DATE		BRIDGE EXPANSION DEVICE (0-4")--D.S. BROWN		PROJECT: FOREST LAKES BRIDGES	
SHEET REVISIONS				SSA2 RAIL WITH A2R-400		LOCATION: MONUMENT, CO	
				ENGINEER: CDDT		DW/G BY: MJV	
				STRUCTURE: FOREST LAKES BRIDGES		CHK BY:	
						SHEET 1 OF 9	
						DATE: 04-16-21	



BOWMAN CONSTRUCTION SUPPLY, INC.
10801 EAST 54TH AVENUE DENVER, CO 80239
(303) 696-8960 FAX (303) 696-0620

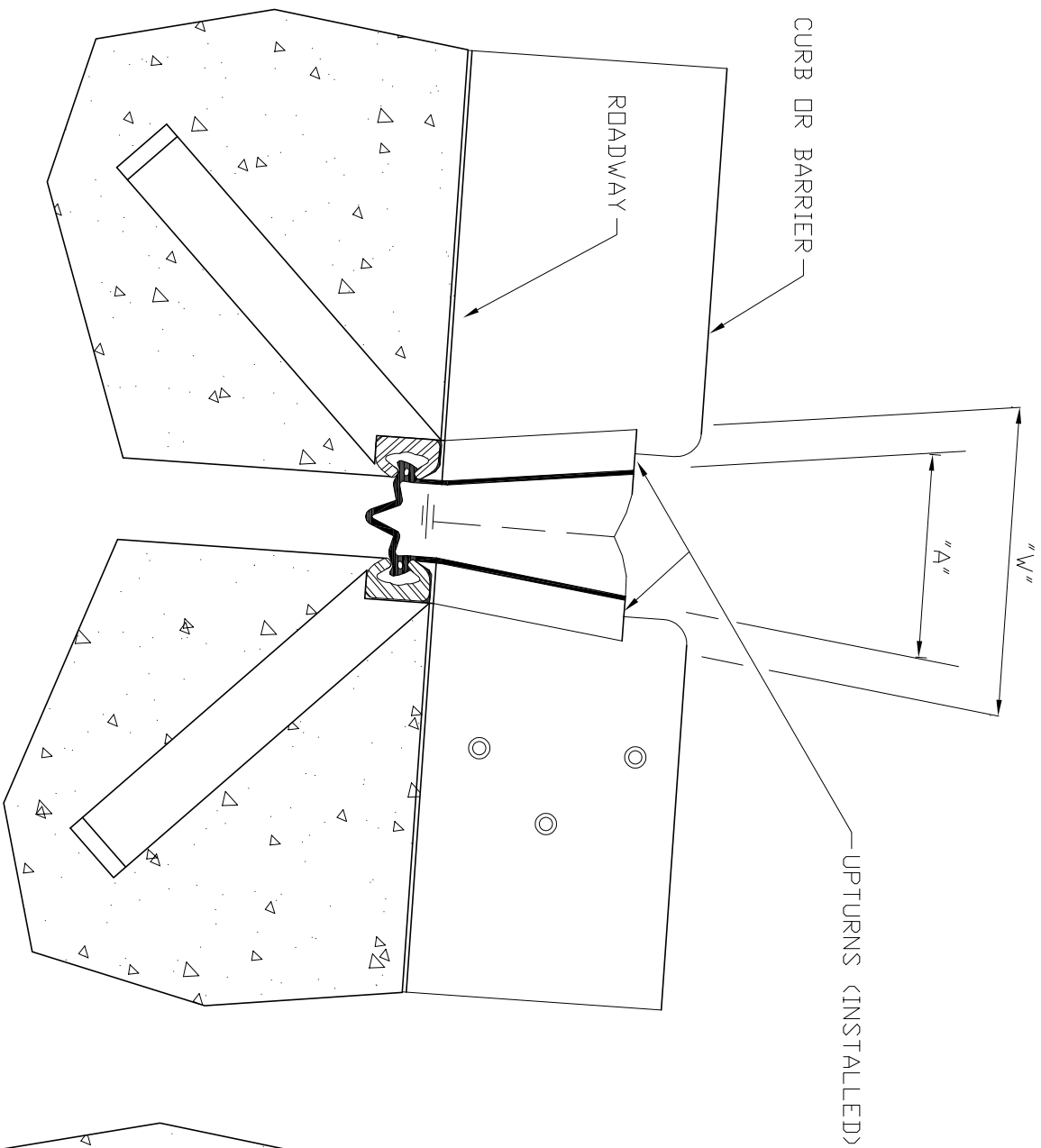
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BILL OF MATERIALS	
QTY	DESCRIPTION
8EA	"STD PC", 23'-0"
8EA	"STD PC", 15'-0"
	FIELD CUT TO 10'-6 1/2" AND
	4'-5 1/2"
8EA	"CUT PC", 5'-0"
	FIELD CUT TO 4'-3 3/8"
8 EA	FABRICATED UPTURNS
1 EA	43'-0" A2R-400
	(FIELD TRIM TO FIT)
1 QT	1520 LUBE ADHESIVE

FIELD ASSEMBLY CHART

-ANY CHANGES TO SEQUENCE OF ASSEMBLY MAY RESULT IN
EXTRA MATERIAL NEEDED AT THE CONTRACTORS EXPENSE
-ADDITIONAL FIELD CUTS CAN BE MADE TO EXPANSION DEVICE FOR PHASING
AND CROWNS IN ROADWAY, THOSE DROPS MUST BE USED IN THE SEQUENCE THEY ARE CUT.
-ALL CUTS SHALL BE DONE AS A PAIR OF "STD" PC.
*THESE PARTS WILL BE PROVIDED TO YOU PRE-CUT TO LENGTH BY THE MANUFACTURE (FIELD TRIM TO FIT)

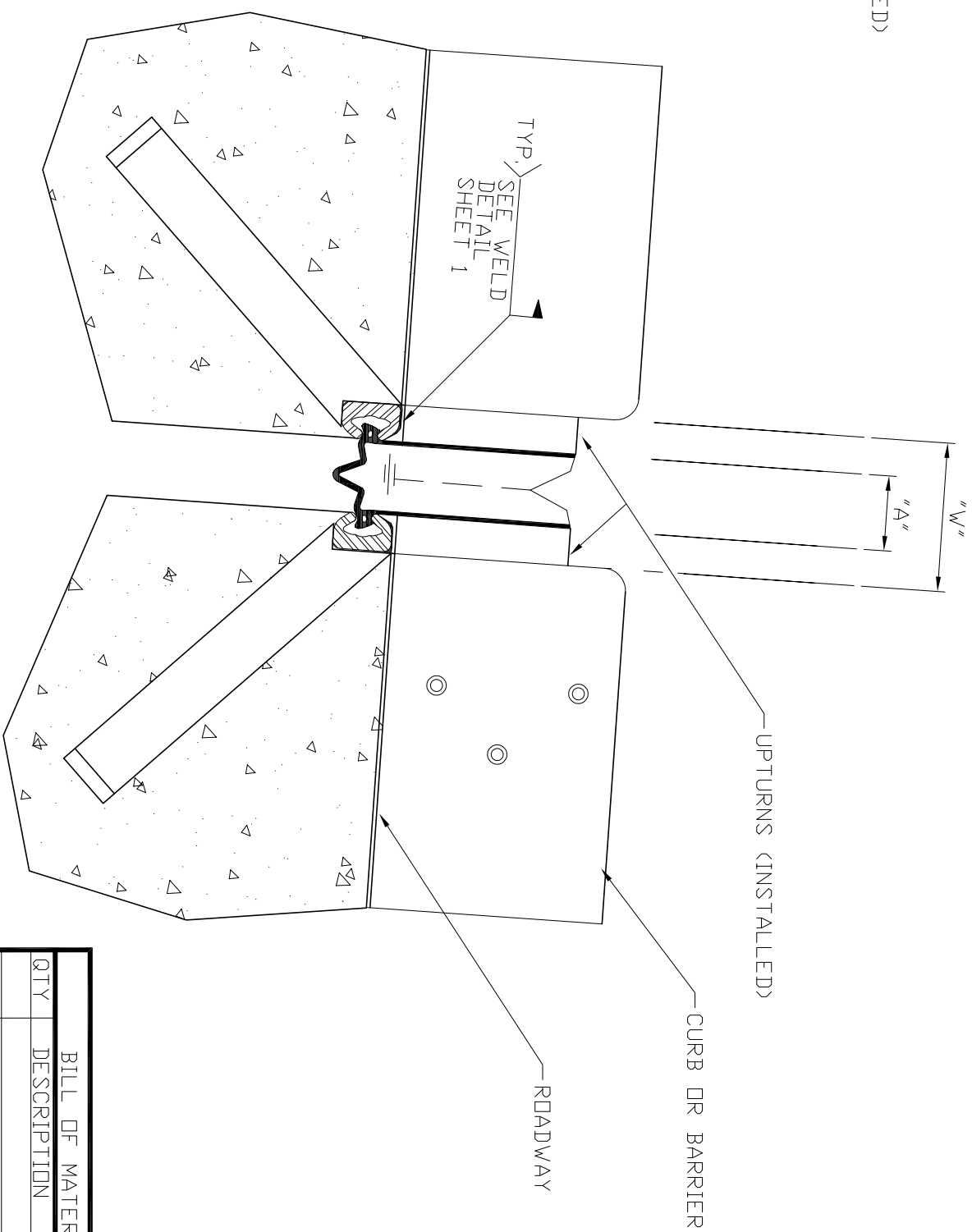
AN	MV	08/20/21	 <p>OWMAN CONSTRUCTION SUPPLY, INC. 10801 EAST 54TH AVENUE DENVER, CO 80239 (303) 696-8960 FAX (303) 696-0620</p>		
MK	DESCRIPTION	DATE			
	SHEET REVISIONS				
			ENGINEER: CDDT	CUSTOMER: STRUCTURES INC	
			DESCRIPTION OF MATERIALS:	PROJECT: FOREST LAKES BRIDGES	
			BRIDGE EXPANSION DEVICE (0-4")	LOCATION: MONUMENT, CO	
			D.S. BROWN SS&P RAIL WITH A2R-400 SEAL		
			STRUCTURE: FOREST LAKES BRIDGES		
			DWG BY: MV	CHK BY:	SHEET 2 OF 9
			DATE: 04-16-21		



IMPROPER UPTURN INSTALL

COMMON CONDITION OF UPTURNS WHEN NOT INSTALLED (WELDED)
IN PLACE.

- NEEDS TO BE CUT OFF AND REATTACHED PROPERLY
- LEADS TO ADDITIONAL EXPENSE BY CONTRACTOR THAT'S NOT BUDGETED
- SOMETIMES IMPOSSIBLE TO INSTALL RUBBER GLAND
- INSTALLED GLANDS USUALLY FAIL AFTER LITTLE TIME.



PROPER UPTURN INSTALL

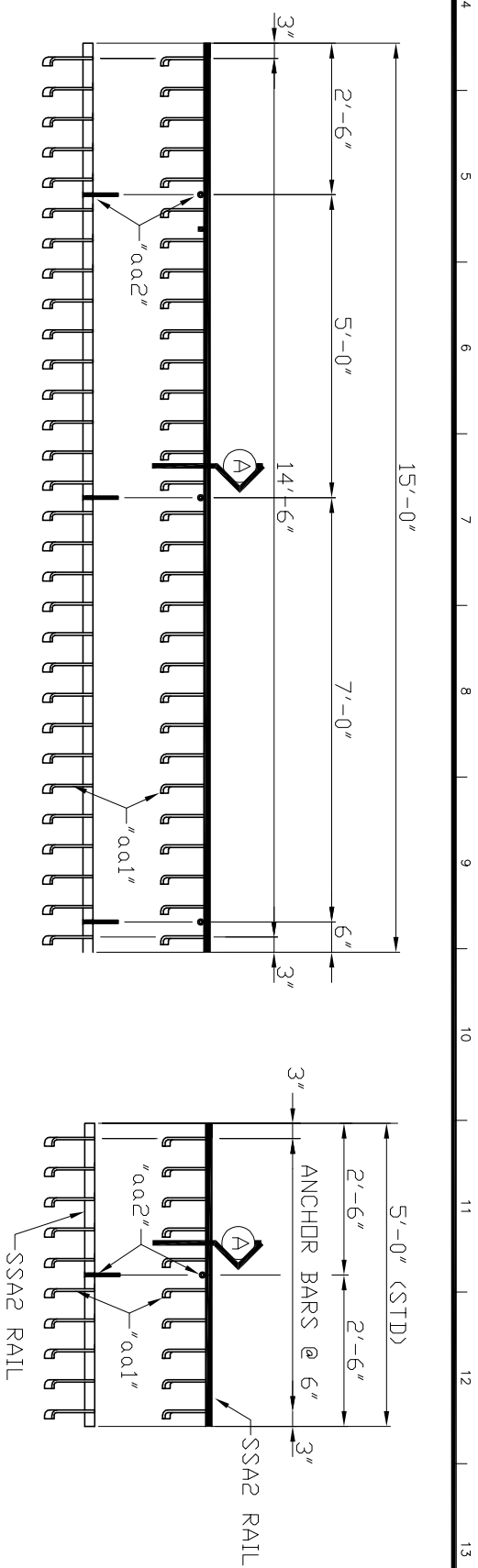
INSTALL UPTURNS AFTER RAILS ARE SET IN BLOCKOUT.

- ALLOWS MORE FLEXIBILITY WITH INSTALLATION
- NO NEED TO CUT OR MOVE REBAR TO GET EXPANSION DEVICE AT EXACT 45° ANGLE

BILL OF MATERIALS	
QTY	DESCRIPTION

THIS SPACE FOR REVIEW STAMP

		ENGINEER: CDOT						
		DESCRIPTION OF MATERIALS: BRIDGE EXPANSION DEVICE <0-4"> D.S. BROWN SS&P RAIL WITH AGR-400 SEAL						
X	MK	DESCRIPTION	DATE	DWG BY:MJV	CHK BY:	SHEET 5	OF 9	DATE: 04-16-21
		STRUCTURE:FOREST LAKES BRIDGES						

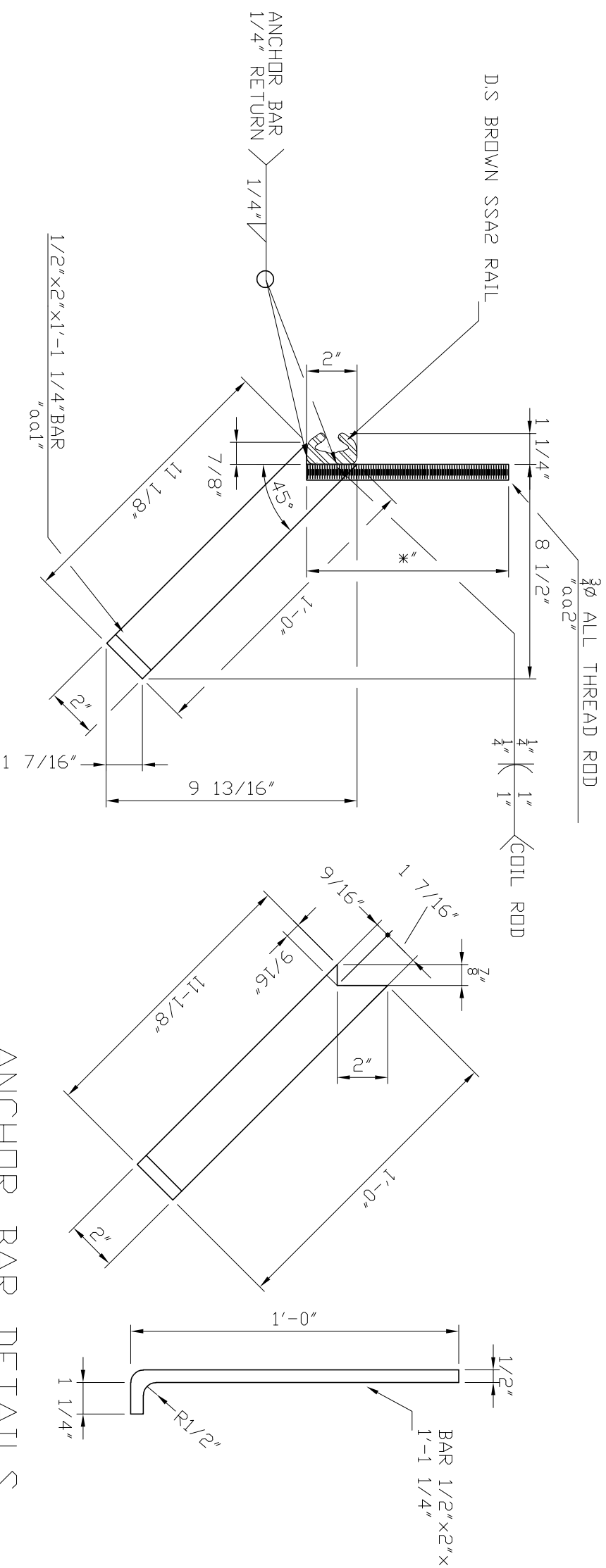


EXPANSION DEVICE (STD) & (CUT

8 PC TRIM	REQUIRED (CUT) DEFORMED ENDS	--GALVANIZED --GALVANIZED SSAC RAIL	FINISH FINISH
-----------	------------------------------	-------------------------------------	---------------

	8 PC	8 PC	8 PC
REQUIRED	(STD)	--GALVANIZED	FINISH
REQUIRED	(CUT)--	GALVANIZED	FINISH

TRIM DEFORMED ENDS OF SS&A2 RAIL



3/4" ALL THREAD ROD

SECTION "A"

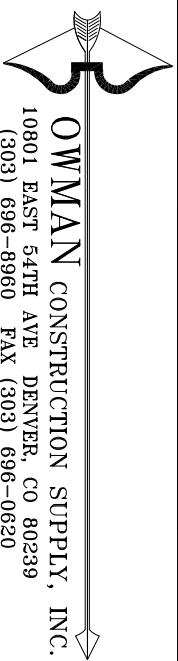
* A 3" AIR WILL BE ATTACHED ON BACK OF RAIL
BOWMAN CONSTRUCTION SUPPLY WILL PROVIDE EXTENSION
TO MEET THE 9" OVERALL HEIGHT

BOWMAN CONSTRUCTION SUPPLY WILL PROVIDE EXTENSION

TO MEET THE 9" OVERALL HEIGHT

ANCHOR BAR DETAILS

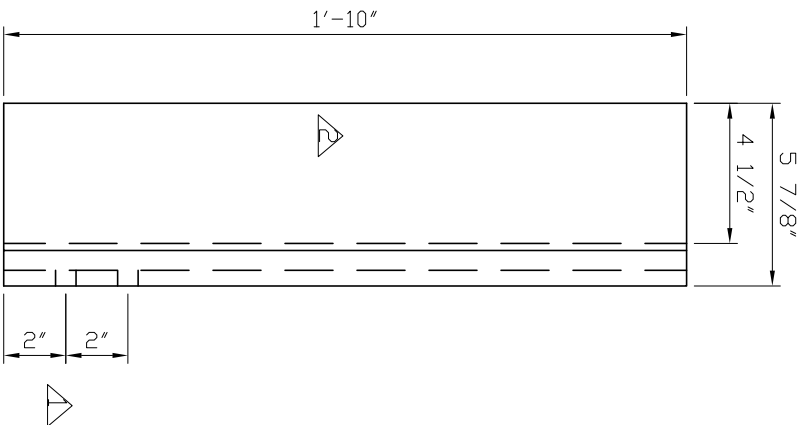
X		
MK	DESCRIPTION	DATE
	SHEET REVISIONS	



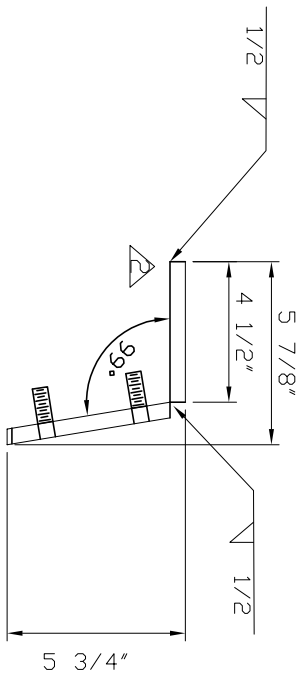
ENGINEER: CDOT
DESCRIPTION OF MATERIALS: BRIDGE EXPANSION DEVICE (0-4") D.S. BROWN SS&2 RAIL WITH A2R-400 SEAL
STRUCTURE: FOREST LAKES BRIDGES

CUSTOMER:STRUCTURES	
PROJECT:FOREST LAKES	
LOCATION:MONUMENT, CO	
DWG BY: MJV	CHK BY:

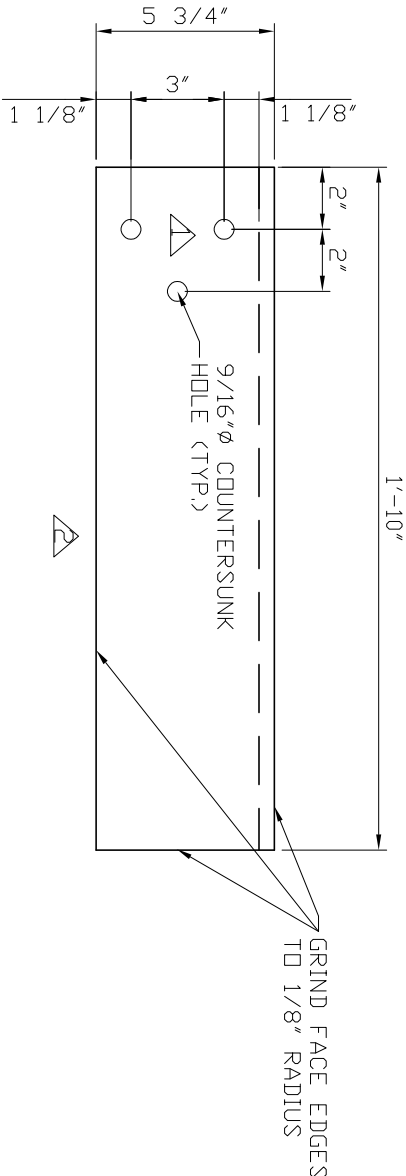
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PLAN



SECTION




SECTION

CURB COVER PLATE PC MK "CCP"

6 EA PC MK "CCP", 2EA @ ABUT. 1, PIER 2 AND ABUT. 3
GALVANIZED

MV	08/20/21
MV	08/20/21
MK	DATE
SHEET REVISIONS	



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ENGINEER: CDDT
DESCRIPTION OF MATERIALS:
CURB COVER PLATES
STRUCTURE:FOREST LAKES BRIDGES

CUSTOMER:STRUCTURES INC
PROJECT:FOREST LAKES BRIDGES
LOCATION:MONUMENT, CO
DWG BY:MMJV
CHK BY:
SHEET 8 OF 9
DATE: 04-16-21

THIS SPACE FOR REVIEW STAMP

BILL OF MATERIALS

QTY	DESCRIPTION
6	PC MK "CCP" 1/2" PLATE
	1/2"x1'-10"x6-3/8"x7-1/2"

