



4 Inverness Court East
Suite 250
Englewood, CO 80112
Office: (303) 770-7878
Fax: (303) 770-7667

LETTER OF TRANSMITTAL

TO: Steamboat Structures
96 Perry Park Ave #464
Larkspur, CO 80118

DATE: 8/16/2021

FILE NO. 009-01

ATTN: Heather Reed

RE: Forest Lakes Bridges

WE ARE SENDING YOU:

- | | | |
|---|---|----------------------------------|
| <input type="checkbox"/> Shop Drawings | <input type="checkbox"/> Copy of Letter | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Specifications | <input type="checkbox"/> Reports | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Plans | <input checked="" type="checkbox"/> Submittal Information | |

SUBMITTED BY: Structures

COPIES	DESCRIPTION	CONTRACTOR
1	Expansion Device Shop Drawings	Structures

THESE ARE TRANSMITTED:

- | | | |
|--|---|---|
| <input type="checkbox"/> For Approval | <input type="checkbox"/> For Review and Comment | <input type="checkbox"/> Returned for Corrections |
| <input checked="" type="checkbox"/> For Your Use | <input type="checkbox"/> Approved As Submitted | <input type="checkbox"/> _____ |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> Approved As Noted | |

REMARKS:

cc: File

SHOP DRAWING REVIEW

- ☐ NO EXCEPTIONS ☒ REVISE AS NOTED
☐ REVISE AND RESUBMIT ☐ REJECTED

This review is for general conformance with the design intent of the project and general compliance with the information provided in the contract documents. Review, corrections, or comments made concerning the shop drawings during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications, nor relieve the contractor of contractual responsibility for any error or deviation from the contract documents.

The contractor is responsible for, but not limited to: confirming all quantities, dimensions, and structural capabilities, selecting fabrication and construction techniques, coordinating work with that of all other trades, and performing work in a safe and satisfactory manner.

STEAMBOAT STRUCTURES, LLC

By: H. Reed

DATE: 8/17/21



Letter of Transmittal

To: Structures Inc.

Date: 08/16/2021

Attn: Elliott

RE: Forest Lakes Bridges

☒ Attached ☐ Separate Cover Via _____

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

Copies	Date	Description
(1)	08-16-21	Forest Lakes Bridges 0-4" Expansion Joint

The above items are transmitted for your action as noted:

☒ For Approval ☐ For Your Use
☐ Resubmitted for Approval ☐ As Requested
☐ Approved as Submitted ☐ Approved as Noted
☐ Resubmit ☐ Copies for Approval ☐ For Distribution

Comments:

Shop Drawings

Transmitted by: Bowman Construction Supplyjames

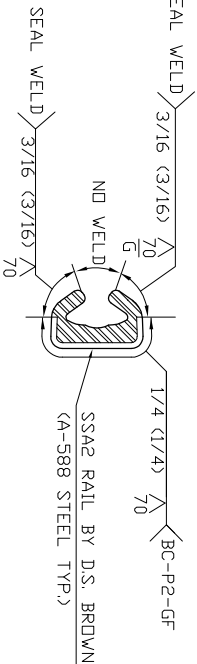
Signed: _____

By: Martin J. Verce

Date: 08-16-2021

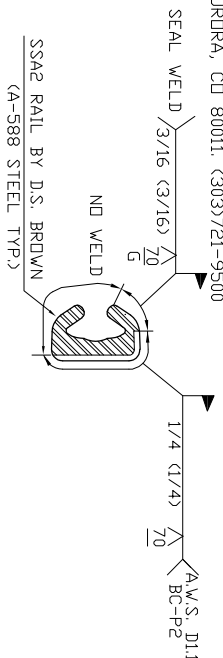
GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF BOWMAN CONSTRUCTION SUPPLY AND THE ENGINEER.
2. A REPRESENTATIVE OF BOWMAN CONSTRUCTION SUPPLY SHALL BE PRESENT DURING INSTALLATION.
3. SS&A RAILS SHALL BE FABRICATED IN MAXIMUM 23'-0" LENGTHS. FABRICATION SHALL BE IN ACCORDANCE WITH SECTION 509 OF THE CDDT STANDARD SPECIFICATIONS.
4. AFTER FABRICATION, EXPANSION DEVICE SHALL BE GALVANIZED TO ASTM A123.
5. "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.
6. MINIMUM GAP WIDTH FOR A&R AND A&R-XTRA SEALS SHALL BE 1/2" MEASURED FROM STEEL RAIL TO STEEL RAIL. MAXIMUM WIDTH SHALL BE 4 1/2" FOR A&R SEAL AND 7 1/2" FOR A&R-XTRA SEAL. GAP WIDTHS OUTSIDE THESE PARAMETERS MAY CAUSE JOINT FAILURE. MINIMUM GAP WIDTH FOR EASY INSTALLATION IS 1 1/2".
7. 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.
8. SS&A STEEL RAILS SHALL BE INSTALLED 1/4" BELOW CONCRETE, PARALLEL TO SLOPE AND GRADE OF THE ROADWAY.
9. FABRICATED SS&A 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.
10. MASK OFF GROOVE IN SS&A RAILS (OR INSERT 3/4" Ø BACKER ROD) TO PREVENT CONCRETE INTRUSION INTO GROOVE OF SS&A RAIL.
11. PLACE AND CURE CONCRETE ACCORDING TO SPECIFICATIONS.
12. IMMEDIATELY AFTER CONCRETE ACHIEVES INITIAL SET, REMOVE ALL RIGID SUPPORTS THAT SPAN THE EXPANSION GAP.
13. 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.
14. BEFORE INSTALLATION OF SEAL, CLEAN ALL AREAS OF STEEL TO BE IN CONTACT WITH THE SEAL.
15. LAY OUT SEAL ADJACENT TO EXPANSION DEVICE TO CHECK LENGTH AND CONFORMANCE OF ANY TURNS. SEE SEAL INSTALLATION DIAGRAM.
16. LUBRICANT ADHESIVE SHALL BE DELASTIBOND 1520 AND SHALL BE A ONE-PART POLYURETHANE ADHESIVE CONFORMING TO ASTM D4070.
17. APPLY LUBRICANT ADHESIVE FOR ONLY 3-4 FEET AT A TIME. WORK BOTH SIDES OF SEAL SIMULTANEOUSLY.
18. 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.
19. MATERIAL CERTIFICATIONS SHALL BE SUPPLIED FOR ALL PERMANENT MATERIALS.
20. 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 B7C-P4 WITH E-70XX OR E-7XTX ELECTRODE. NO WELD IN INTERIOR OF 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

A&R GLAND INSTALLATION INSTRUCTIONS

- STEP 1**

EXPANSION JOINT
A&R SEAL SEE NOTE 13
SS&A RAIL (TYP)
BEGINNING AT TURNS, FOLD SEAL IN HALF LONGITUUDINALLY AND PLACE INTO JOINT OPENING
- STEP 2**

PUSH SEAL DOWN INTO JOINT OPENING UNTIL THE LUG OF THE A&R SEAL CATCHES IN THE GROOVE OF THE SS&A RAIL.
- STEP 3**

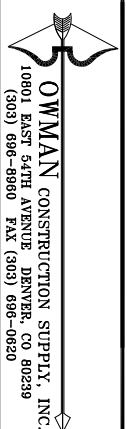
LUBRICANT ADHESIVE APPLICATION AREA
- STEP 4**

APPLY LUBRICANT ADHESIVE TO THE A&R SEAL AND ADJACENT AREA OF SS&A RAIL USING A PAINT BRUSH.
- STEP 5**

COMPLETED INSTALLATION--NOTE A&R SEAL FITS SNUGLY AGAINST SS&A RAIL

CADD FILE: 1
DATE OF LAST REVISION:

NO.	DESCRIPTION	DATE
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20	DESCRIPTION	DATE



ENGINEER: CDDT	DESCRIPTION OF MATERIALS:
	BRIDGE EXPANSION DEVICE (0-4')--D.S. BROWN
	SS&A RAIL WITH A&R-400

CUSTOMER: STRUCTURES, INC.	PROJECT: FOREST LAKES BRIDGES
	LOCATION: MONUMENT, CO

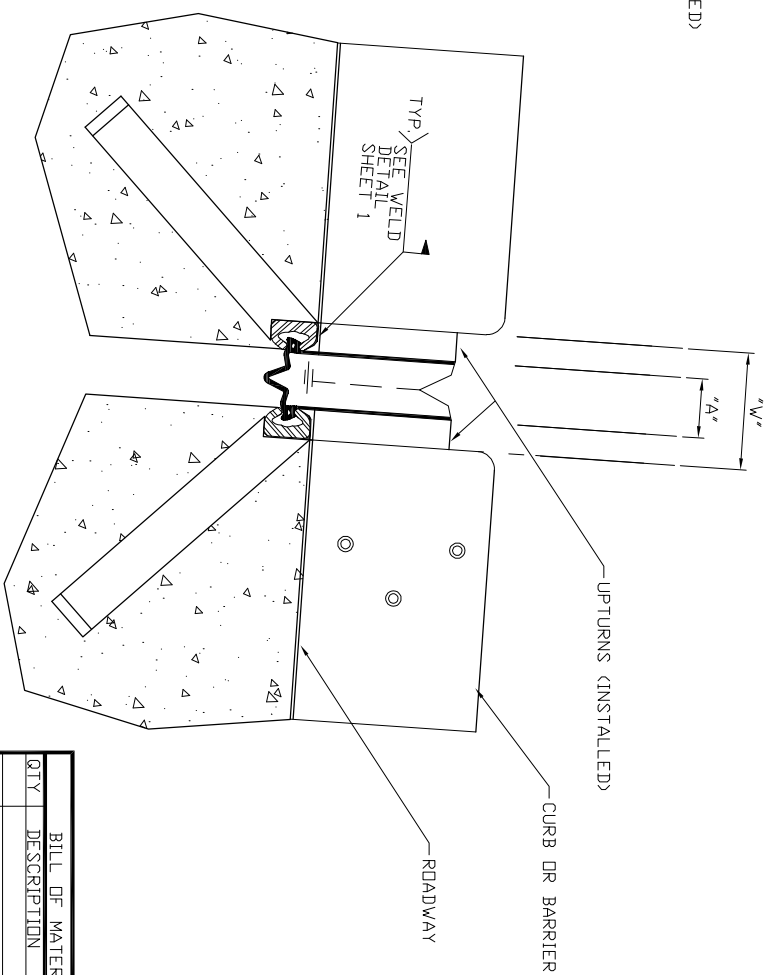
DWG. BY: MUV	CHK. BY:	SHEET 1 OF 10	DATE: 04-16-21
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TEMPERATURE CHART



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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

[illegible]

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MK	DESCRIPTION	DATE
SHEET REVISIONS		

OWMAN CONSTRUCTION SUPPLY, INC.
 10861 EAST 94TH AVENUE DENVER, CO. 80238
 (303) 696-8860 FAX (303) 696-0650

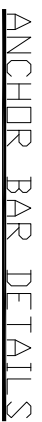
ENGINEER: CDOT
DESCRIPTION OF MATERIALS: BRIDGE EXPANSION DEVICE (0-4") D.S. BROWN SS&P RAIL WITH A2R-4000 SEAL
STRUCTURE: FOREST LAKES BRIDGES

CUSTOMER: STRUCTURES, INC.
PROJECT: FOREST LAKES BRIDGES
LOCATION: MONUMENT, CO
DWG. BY: MJV
CHK. BY: SHEET 1

SHEET 5 OF 10 DATE: 04-16-21

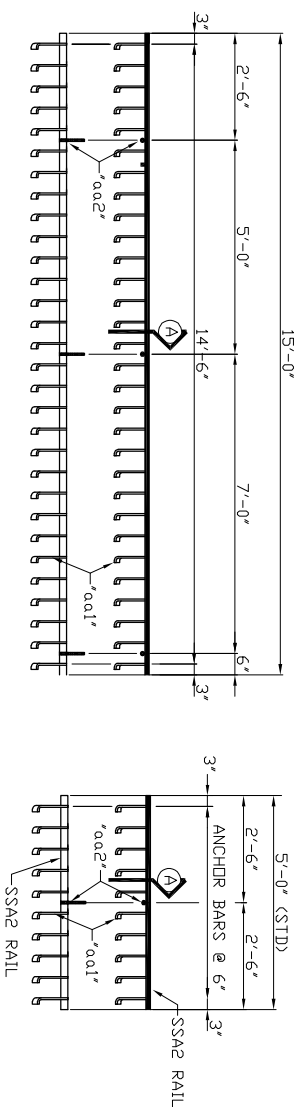


* A 3' ATR WILL BE ATTACHED ON BACK OF RAIL
BOWMAN CONSTRUCTION SUPPLY WILL PROVIDE EXTENSION
TO MEET THE 9' OVERALL HEIGHT



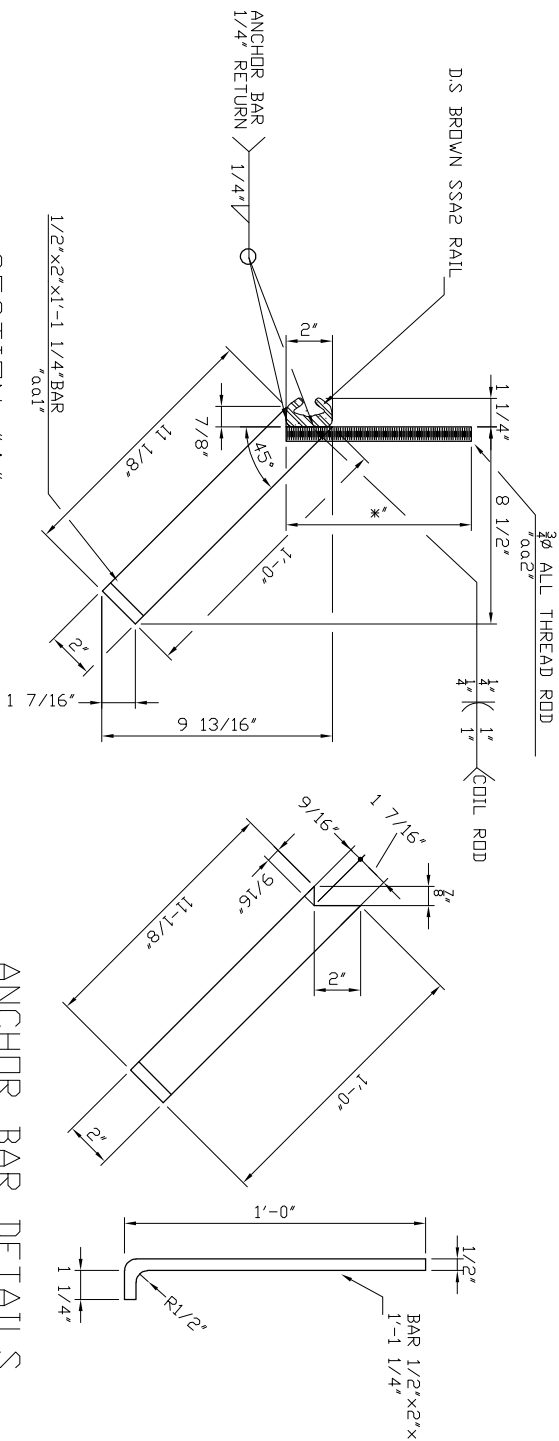
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CUSTOMER: STRUCTURES, INC.	
PROJECT: FOREST LAKES BRIDGES	
LOCATION: MONUMENT, CO	
DWG. BY: MJV	CHECK BY: SHEET 6 OF 10 DATE: 04-16-21



EXPANSION DEVICE (STD) & (CUT

8 PC REQUIRED	(STD)--GALVANIZED	FINISH
8 PC REQUIRED	(CUT)--GALVANIZED	FINISH
TRIM DEFORMED	ENDS OF SS&2 RAIL	



SECTION "A"

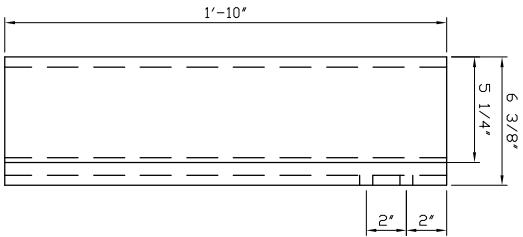
* A 3' AIR WILL BE ATTACHED ON BACK OF RAIL
BOWMAN CONSTRUCTION SUPPLY WILL PROVIDE EXTENSION
TO MEET THE 9' OVERALL HEIGHT

ANCHOR BAR DETAILS

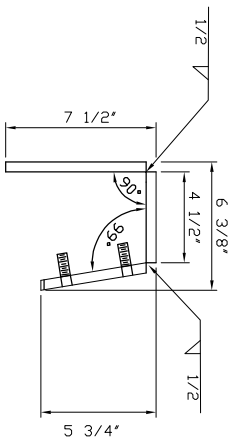
BILL OF MATERIALS	
QTY	DESCRIPTION
8EA	15'-0" EXP. DEVICE (STD)
	8 EA SS&2 RAIL, 15'-0"
8EA	5'-0" EXP. DEVICE (CU)
	8 EA SS&2 RAIL, 5'-0"

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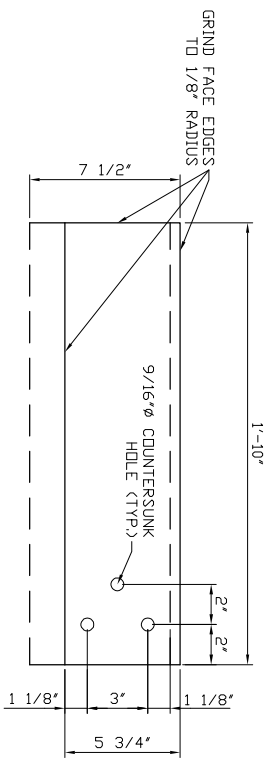
ENGINEER: CDOJ	CUSTOMER: STRUCTURES, INC.
DESCRIPTION OF MATERIALS: BRIDGE EXPANSION DE VICE (0-4') D.S. BROWN S&B RAIL WITH A2R-400 SEAL	PROJECT: FOREST LAKES BRIDGES LOCATION: MONUMENT, CO
STRUCTURE: FOREST LAKES BRIDGES	DWG. BY: MJB CHK. BY: [] SHEET 7 OF 10 DATE: 04-16-21



PLAN



SECTION



SECTION

CURB COVER PLATE PC MK "CCP"

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



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

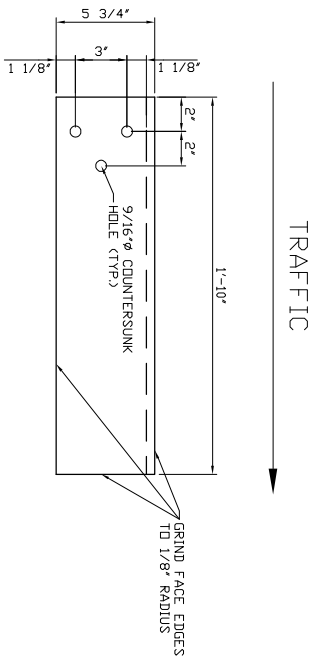
CUSTOMER: STRUCTURES, INC.
PROJECT: FOREST LAKES BRIDGES
LOCATION: MONUMENT, CO

DWG BY: MUV CHK BY: SHEET 8 OF 10 DATE: 04-16-21

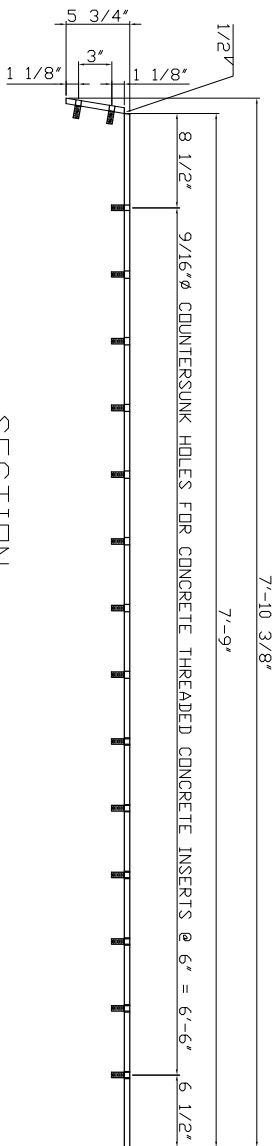
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BILL OF MATERIALS	
QTY	DESCRIPTION
6	PC MK "CCP" 1/2" PLATE
	1/2"x1'-10"x6-3/8"x7-1/2"

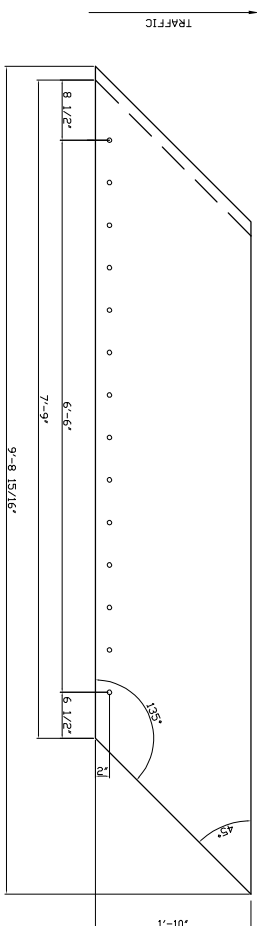
BILL OF MATERIALS	
QTY	DESCRIPTION
3	PC MK "CPWB"
	1/2"x1'-10"x7'-10 3/8"
	CHECKER PLATE, GALVANIZED



ELEVATION



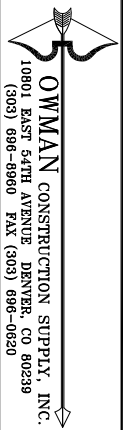
SECTION



PLAN

SIDE WALK COVER PLATE PC MK "CPEB"

3 EA PC MK "CPEB", 1EA @ EAST BOUND ABUTS. 1 AND 3, 1EA @ PIER 2
GALVANIZED



ENGINEER: CDOT
DESCRIPTION OF MATERIALS:
SIDEWALK COVER PLATES
STRUCTURE: FOREST LAKES BRIDGES

CUSTOMER: STRUCTURES, INC.
PROJECT: FOREST LAKES BRIDGES
LOCATION: MONUMENT, CO

DWG BY: MUV CHK BY: SHEET 10 OF 10 DATE: 04-16-21

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BILL OF MATERIALS	
QTY	DESCRIPTION
3	PC MK "CPEB"
	1/2"x1'-10"x7'-10 3/8"
	CHECKER PLATE, GALVANIZED