



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

LETTER OF TRANSMITTAL

TO: Steamboat Structures
Denver Metro, CO

DATE: 9/7/2021

FILE NO. 009-02

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 checked="" type="checkbox"/> For Approval | <input checked="" type="checkbox"/> For Review and Comment | <input type="checkbox"/> Returned for Corrections |
| <input 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: 10/05/21



Request for Information

To: Structures Inc.

Date: 08/24/2021

Attn: Elliott

RE: Forest Lakes Bridges

☒ Attached ☐ Separate Cover Via _____
☒ Shop Drawing ☐ Prints ☐ Samples ☐ Specifications
☒ Letter ☐ Change Order
☒ Other: Request for Information

| Copies | Date | Description |
|--------|----------|--------------------------------------|
| (1) | 08-24-21 | Forest Lakes Bridges Cover Plate RFI |

The above items are transmitted for your action as noted:

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

Comments:

1. Verify that moving holes on the curb plates to match direction of traffic
2. Verify the angle of curb face on sidewalk cover plates is 99°

Transmitted by: Bowman Construction Supplyjames

Signed: _____

By: Martin J. Verce

Date: 08-24-2021

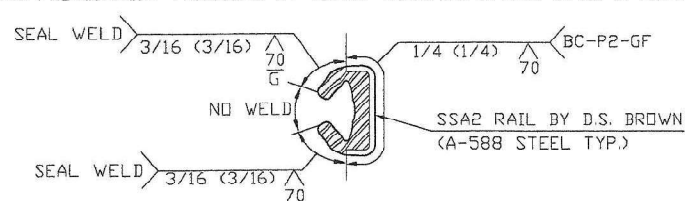
To whom it may concern,

I need to have the angle of the curb face on the sidewalk cover plates (pc mk "CPWB" and "CPEB") on sheets 9 and 10 verified. Curb Covers were approved with a 99° angle, are the sidewalk plates similar?

I also need to mention that the hole locations for the curb cover plates need to be moved to the other side of the plate to match the direction of traffic on sheet 8.

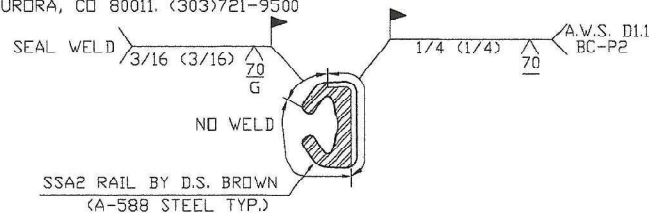
GENERAL NOTES

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. SSA2 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 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"
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. SSA2 STEEL RAILS SHALL BE INSTALLED 1/4" BELOW CONCRETE, PARALLEL TO SLOPE AND GRADE OF THE ROADWAY.
9. 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.
10. MASK OFF GROOVE IN SSA2 RAILS (OR INSERT 3/4" Ø BACKER ROD) TO PREVENT CONCRETE INTRUSION INTO GROOVE OF SSA2 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 BC-P2 WITH E-70XX OR E-7XTX ELECTRODE. NO WELD IN INTERIOR OF RAIL WHERE IN CONTACT WITH RUBBER SEAL.

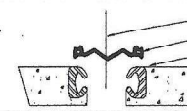


FIELD WELD DETAIL

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

A2R GLAND INSTALLATION INSTRUCTIONS

STEP 1



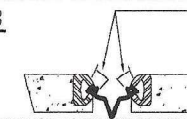
EXPANSION JOINT
A2R SEAL SEE NOTE 13
SSA2 RAIL (TYP.)
BEGINNING AT TURNS, FOLD SEAL IN HALF LONGITUDINALLY AND PLACE INTO JOINT OPENING

STEP 2



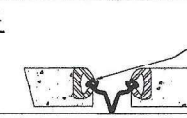
PUSH SEAL DOWN INTO JOINT OPENING UNTIL THE LUG OF THE A2R SEAL CATCHES IN THE GROOVE OF THE SSA2 RAIL.

STEP 3



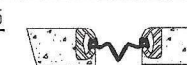
LUBRICANT ADHESIVE APPLICATION AREA

STEP 4



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"

STEP 5



COMPLETED INSTALLATION--NOTE A2R SEAL FITS SNUGLY AGAINST SSA2 RAIL

THIS SPACE FOR REVIEW STAMP

CADD FILE: 1
DATE OF LAST REVISION:

| NO. | DESCRIPTION | DATE |
|-----|-----------------|------|
| 1 | SHEET REVISIONS | |



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

ENGINEER: CDDT
DESCRIPTION OF MATERIALS:
BRIDGE EXPANSION DEVICE (0-4")--D.S. BROWN
SSA2 RAIL WITH A2R-400

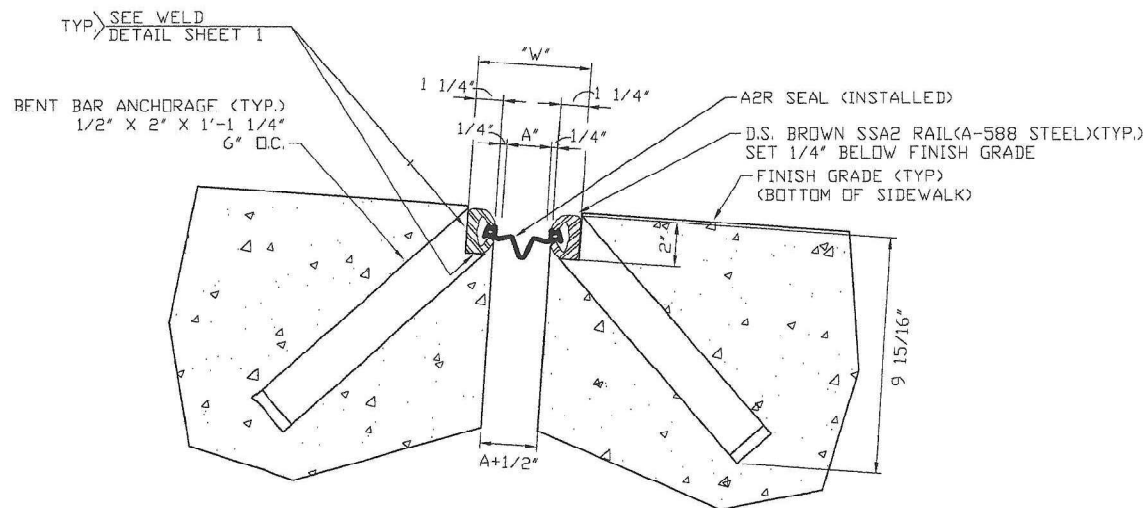
STRUCTURE: FOREST LAKES BRIDGES

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

DWG BY: MJV | CHK BY: | SHEET 1 OF 10 | DATE: 04-16-21

| STR. FOREST LAKES | | |
|-------------------|---------|---------|
| | "A" In. | "W" In. |
| -30 F | 2.75" | 5.75" |
| 0 F | 2.55" | 5.55" |
| 30 F | 2.35" | 5.35" |
| 60 F | 2.15" | 5.15" |
| 90 F | 1.95" | 4.95" |
| 120 F | 1.75" | 4.75" |

TEMPERATURE CHART



TYPICAL SECTION "A"-"A"

THROUGH JOINT IN ROADWAY
NOTE: GAP BETWEEN STEEL RAILS = "A"+1/2"

| BILL OF MATERIALS | |
|-------------------|-------------|
| QTY | DESCRIPTION |
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THIS SPACE FOR REVIEW STAMP

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
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OWMAN CONSTRUCTION SUPPLY, INC.
10801 EAST 54TH AVENUE DENVER, CO 80239
(303) 696-8960 FAX (303) 696-0620

ENGINEER: CDOT
DESCRIPTION OF MATERIALS:
BRIDGE EXPANSION DEVICE (0-4")
D.S. BROWN SSA2 RAIL WITH A2R-400
OR A2R-XTRA

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

STRUCTURE: FOREST LAKES BRIDGES

DWG BY: MV CHK BY: SHEET 3 OF 10 DATE: 04-16-21

CADD FILE: 3
DATE OF LAST REVISION:



8 EA PC MK "UT", FIELD TRIM TO FIT
GALVANIZED
HALF THE QUANTITY ABOVE WILL BE
CUT WITH MIRROR IMAGE

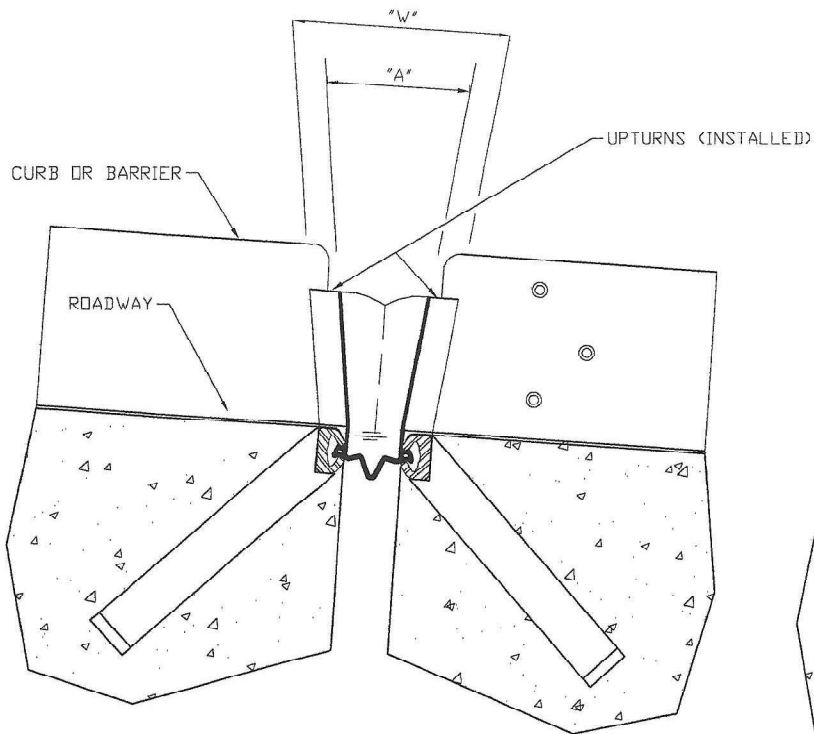


SEE FIELD WELD DETAIL ON SHEET G-1



THIS SPACE FOR REVIEW STAMP

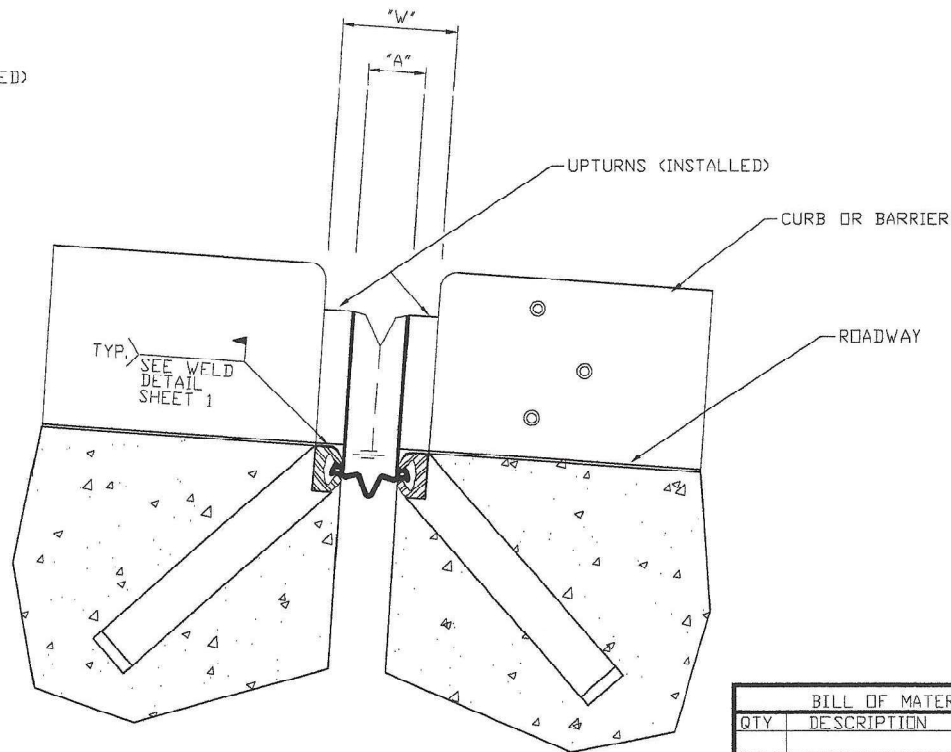
| | | | |
|-------------|---------|---------------|----------------|
| DWG BY: MJV | CHK BY: | SHEET 4 OF 10 | DATE: 04-16-21 |
|-------------|---------|---------------|----------------|



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 |
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CADD FILE: 5
DATE OF LAST REVISION

| MK | DESCRIPTION | DATE |
|----|-----------------|------|
| | SHEET REVISIONS | |



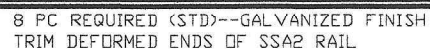
OWMAN CONSTRUCTION SUPPLY, INC.
10801 EAST 54TH AVENUE DENVER, CO 80239
(303) 696-0960 FAX (303) 696-0620

ENGINEER: CDDT
DESCRIPTION OF MATERIALS:
BRIDGE EXPANSION DEVICE (0-4')
B.S. BROWN SSA2 RAIL WITH A2R-400
SEAL

STRUCTURE: FOREST LAKES BRIDGES

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


DWG BY: MJV | CHK BY: | 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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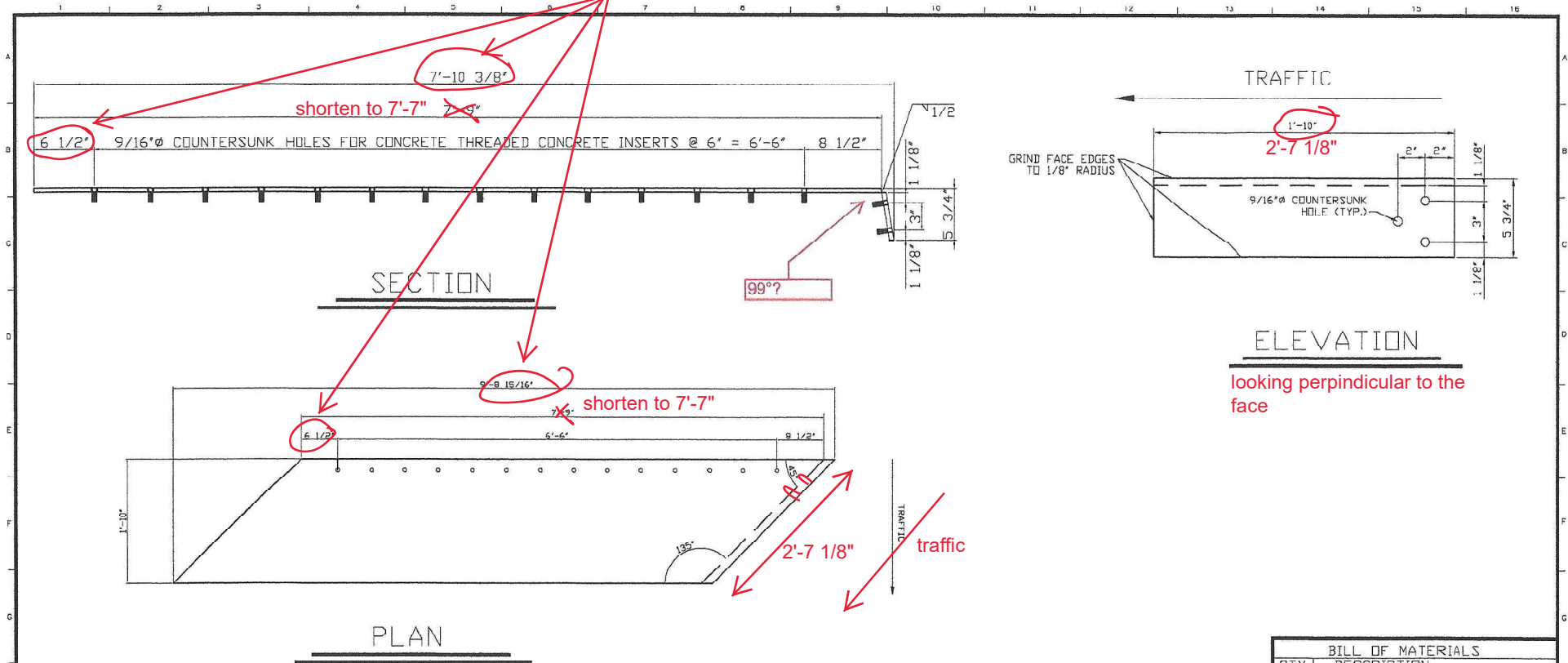
| | | | | | | |
|---|--------------------------------|------|--|--|---|--|
|  <p>BOWMAN CONSTRUCTION SUPPLY, INC. 10801 EAST 54TH AVE DENVER, CO 80239 (303) 696-8960 FAX (303) 696-0620</p> | | | ENGINEER: CDDT DESCRIPTION OF MATERIALS: BRIDGE EXPANSION DEVICE (0-4') U.S. BROWN SSA2 RAIL WITH A2R-400 SEAL | | CUSTOMER: STRUCTURES INC PROJECT: FOREST LAKES BRIDGES LOCATION: MONUMENT, CO | |
| MK | DESCRIPTION SHEET REVISIONS | DATE | STRUCTURE: FOREST LAKES BRIDGES | | DWG BY: MJV CHK BY: SHEET 6 OF 10 DATE: 04-16-21 | |

[illegible][illegible]

THIS SPACE FOR REVIEW STAMP

| | | | | | |
|---|--|--|--|---|--|
|  | | ENGINEER: CDDT DESCRIPTION OF MATERIALS: CURB COVER PLATES | | CUSTOMER: STRUCTURES, INC. PROJECT: FOREST LAKES BRIDGES LOCATION: MONUMENT, CO | |
| 10801 EAST 54TH AVENUE DENVER, CO 80239 (303) 696-6960 FAX (303) 696-0820 | | STRUCTURE: FOREST LAKES BRIDGES | | DWG BY: MJV CHK BY: SHEET 8 OF 10 DATE: 04-16-21 | |

update accordingly



ELEVATION

looking perpendicular to the face

PLAN

SIDE WALK COVER PLATE PC MK "CPWB"

6 EA PC MK "CPWB", IEA @ WEST BOUND ABUTS. 1 AND 3, IEA @ PIER 2 GALVANIZED

| BILL OF MATERIALS | |
|-------------------|---------------------------|
| QTY | DESCRIPTION |
| 3 | PC MK "CPWB" |
| | 8'x1'-10" 7'-10 3/8" |
| | CHECKER PLATE, GALVANIZED |
| | |
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THIS SPACE FOR REVIEW STAMP

CADD FILE: DVG
DATE OF LAST REVISION:

| | |
|------|-----------------|
| △ MV | 08/20/21 |
| | |
| | |
| MK | DESCRIPTION |
| | DATE |
| | SHEET REVISIONS |



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

| |
|--|
| CUSTOMER: STRUCTURES, INC |
| PROJECT: FOREST LAKES BRIDGES |
| LOCATION: MONUMENT, CO |
| DWG BY: MJV CHK BY: SHEET 9 OF 10 DATE: 04-16-21 |

don't need this page, they
are the same

