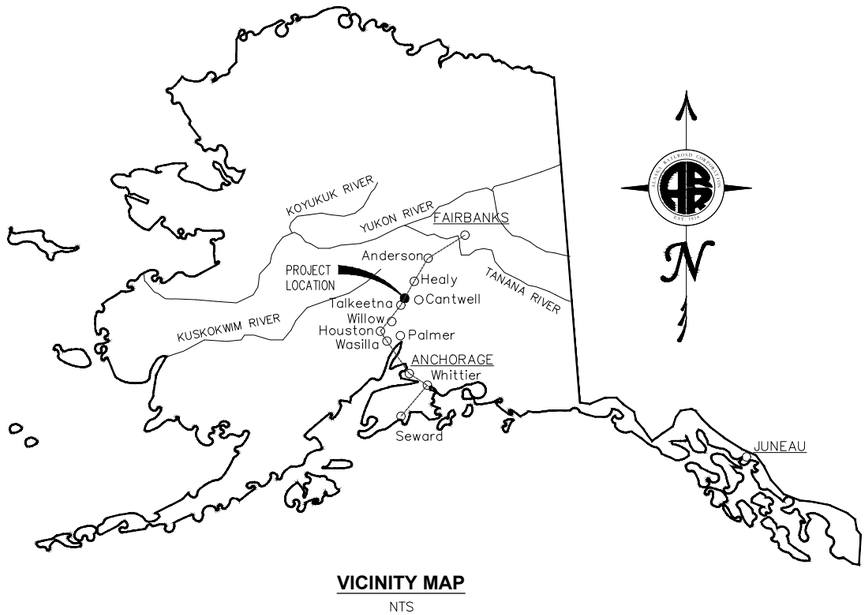
# ALASKA RAILROAD CORPORATION

## ENGINEERING SERVICES

**P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500**

# BRIDGE 276.1 PASS CREEK REPLACEMENT
# BENT CAP PROCUREMENT PLANS

**NOVEMBER 2023**




**VICINITY MAP**

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**SHEET INDEX**


| | |
|---|---|
| COVER | 1 |
| NOTES AND ESTIMATE OF QUANTITIES | 2 |
| BENT CAP DETAILS | 3 |


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ALASKA RAILROAD CORPORATION
PO BOX 107500, ANCHORAGE, AK 99510-7500
327 W SHIP CREEK AVE
ANCHORAGE, AK 99501
(907) 265-2300


KEY MAP

A/E FIRM

ENGINEERING DEPARTMENT
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ANCHORAGE, ALASKA 99510-7500

ALASKA RAILROAD

PROJECT: BRIDGE 276.1 PASS CREEK REPLACEMENT

SHEET TITLE: COVER

AFE NO. TBD

YEAR 2023

SHEET 1 OF 3

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## NOTES:

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

HARDWARE (OR AS NOTED):
1. HIGH STRENGTH BOLTS — ASTM F3125 GR. A325, TYPE 3
2. NUTS — ASTM A563, TYPE 3
3. WASHERS — ASTM F436, TYPE 3

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. BOLTS TO BE TENSION BY TURN OF THE NUT METHOD.
4. ALL FAYING SURFACES AND EXTERIOR SURFACES OF A709 STEEL SHALL BE CLEANED TO A MINIMUM OF SSPC-SP6/NACE NO. 3, COMMERCIAL BLAST CLEANING.
5. FABRICATOR WILL ENSURE THAT FULLY ASSEMBLED CAPS SEAT FLAT AND SQUARE FOR BEARING.
6. WELDING;
   - 6.1. WELD ELECTRODES SHALL BE COMPATIBLE WITH BASE METAL PROPERTIES AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70,000 PSI.
   - 6.2. USE 1/4" HOLDBACK ON FILLET WELDS.
   - 6.3. ALL WELD SPLATTER AND SLAG SHALL BE REMOVED.
   - 6.4. ALL FIELD WELDS, TRANSVERSE TACK WELDS ON TENSION FLANGES, AND PARTIAL PENETRATION GROOVE WELDS ARE PROHIBITED UNLESS SPECIFICALLY NOTED.
   - 6.5. ALL WELDERS SHALL BE QUALIFIED FOR THE WELD PROCEDURE PER AWS D1.1 AND D1.5.
7. WELD TESTING;
   - 7.1. GROOVE WELDS SHALL BE 100% VISUALLY INSPECTED AND 100% UT INSPECTED.
   - 7.2. ALL FILLET WELDS SHALL BE 100% VISUALLY INSPECTED AND 25% MP INSPECTED.
   - 7.3. INSPECTIONS SHALL BE PERFORMED BY AWS INSPECTORS CERTIFIED PER AWS D1.5.
8. WELD REPAIRS;
   - 8.1. ALL DEFECTIVE WELDS SHALL BE REPAIRED PER AWS D1.5 AND RETESTED UNTIL THEY PASS
   - 8.2. CRITICAL REPAIRS SHALL COMMENCE ONLY WITH THE ENGINEER'S APPROVAL

COATINGS:
1. AS NOTED.

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

### BILL OF MATERIAL

| DESCRIPTION | PIECE MARK | TYPE | SIZE | LENGTH | UNIT WEIGHT (LBS) | QUANTITY | TOTAL WEIGHT (LBS) | MATERIAL GRADE | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| BENT CAP | BC1 | W | DOUBLE W14X68 | 14'-0" | 2024 | 5 | 10120 | A572 GRADE 50 | UNCOATED |
| | | | | | | | | | |
| INTERIOR STIFFENERS | S1 | PL | 0'-3 1/2" | ±1'-0 5/8" | 6 | 60 | 360 | A572 GRADE 50 | UNCOATED |
| | | | | | | | | | |
| EXTERIOR STIFFENERS | S2 | PL | 0'-4 1/2" | ±1'-0 5/8" | 8 | 30 | 240 | A572 GRADE 50 | UNCOATED |
| | | | | | | | | | |
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SHEET TITLE: NOTES AND ESTIMATE OF QUANTITIES

AFE NO. TBD
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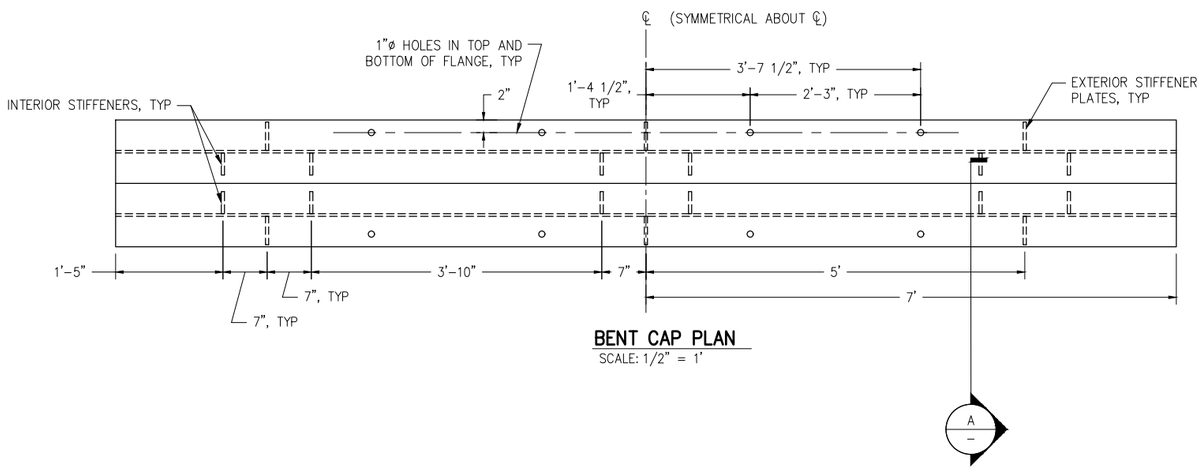
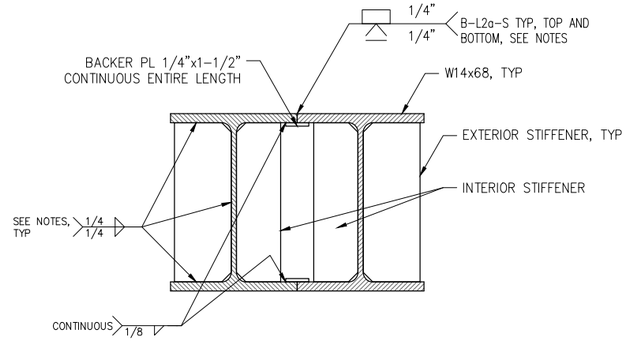
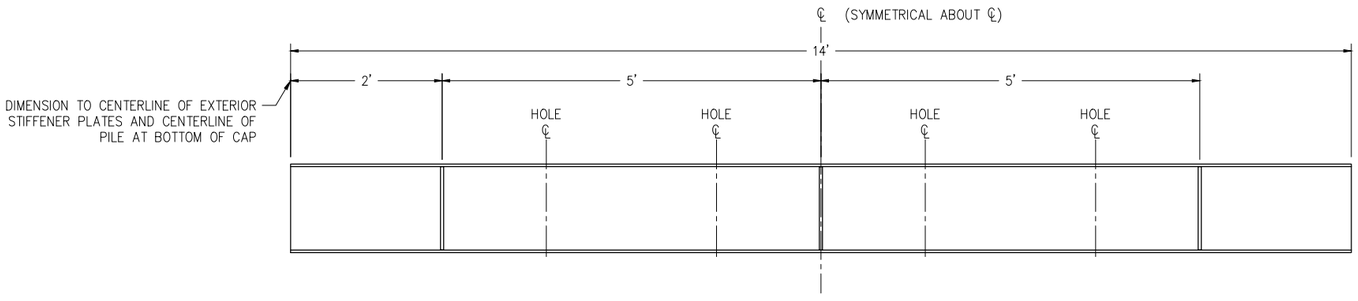
SHEET 2 OF 3




**BENT CAP PLAN**
SCALE: 1/2" = 1'



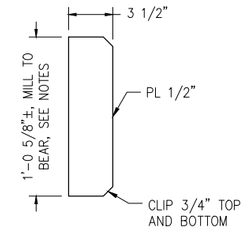

**BENT CAP SECTION**
SCALE: 1" = 1'



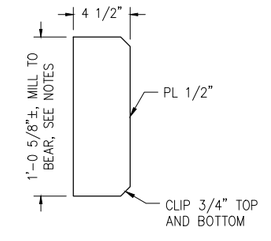

**BC1– BENT CAP ELEVATION**
SCALE: 1/2" = 1'

## BENT CAP FABRICATION NOTES:

1. USE 1/4" HOLDBACK ON ALL FILET WELDS. DO NOT WELD WITHIN CLIPS OR WELD AROUND ENDS OF BEARING STIFFENERS.
2. BEARINGS STIFFENERS SHALL BE FLUSH AND SQUARE WITH WEB. MILL TO BEAR BEARING STIFFENERS WITH MIN 75% CONTACT WITH FLANGES, REMAINING GAP NOT TO EXCEED 1/32" ON BOTTOM FLANGE AND TOP OF BEARING NOT TO EXCEED 3/16" WITH FILLET WELD SIZE INCREASED AS REQUIRED PER AWS D1.5.
3. 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 PLATE WITH APPROVAL OF THE ENGINEER.




**S1 – INTERIOR STIFFENER**
SCALE: 1" = 1'




**S2 – EXTERIOR STIFFENER**
SCALE: 1" = 1'

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