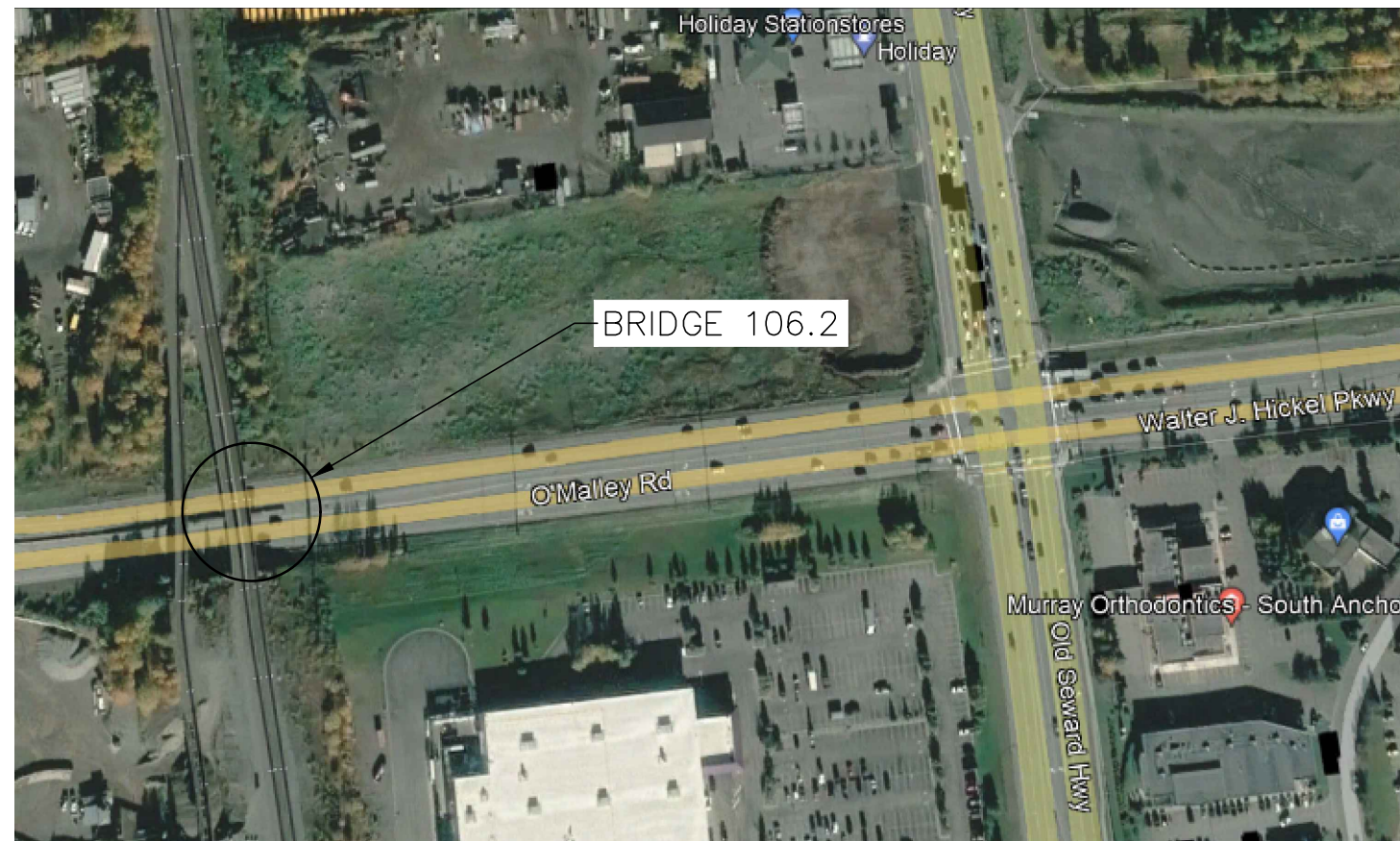




**ALASKA RAILROAD CORPORATION**  
**ENGINEERING SERVICES**

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

**BRIDGE 106.2**  
**O'MALLEY ROAD UNDERPASS**  
**EAST HANDRAIL REPLACEMENT**  
**JULY 2022**



WORK LOCATON

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

PROJECT : **BRIDGE 106.2**  
**EAST HANDRAIL REPLACEMENT**

TITLE: **TITLE SHEET AND**  
**WORK LOCATION**

DESIGNED BY: ARRC	SCALE : AS NOTED	<b>T1</b>	DWG NO.
CHECKED BY: ARRC	DATE : 6/6/2022		<b>1</b> OF <b>5</b>
APPROVED BY: ARRC			

REV.	DATE	BY	REVISION

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**1. REFERENCE DOCUMENTS**

- A. AREMA 2018
- B. AWS D1.1
- C. AISC 14TH EDITION
- D. CHAIN LINK FENCE MANUFACTURERS INSTITUTE, WIND LOAD GUIDE (WLG-2445)
- E. CHAIN LINK FENCE MANUFACTURERS INSTITUTE, PRODUCT MANUAL (CLF-PM0610)

**2. MATERIAL SPECIFICATION:**

**A. HANDRAIL ASSEMBLIES**

- 1. HSS                   ASTM A500, GRADE B
- 2. ANGLE                ASTM A36
- 3. PLATE                 ASTM A36

**B. FENCING**

- 1. FABRIC                ASTM A392
- 2. TENSION WIRE        ASTM A824
- 3. FITTINGS             ASTM F626

**3. COATINGS:**

**A. HANDRAIL ASSEMBLIES**

- 1. HOT DIPPED GALVANIZED PER ASTM A123.  
OR
- 2. SPRAY METALLIZED WITH ZINC OR ALUMINUM PER AWS C2.18-93. PREPARE SURFACE TO WHITE METAL FINISH, SSPC-SP5/NACE NO. 1, WITH 2.5 MIL ANGULAR PROFILE, MINIMUM DRY COATING THICKNESS OF 8 MILS IS REQUIRED.

**B. FENCING**

- 1. ALL FENCING MATERIALS SHALL BE GALVANIZED WITH ZINC COATING NO LESS THAN 1.20Z/FT<sup>2</sup>.
- C. ALL FIELD WELDS AT GALVANIZED CONNECTIONS SHALL BE COATED WITH A ZINC-BASED SOLDER.
- D. ALL DAMAGED COATINGS SHALL BE REPAIRED WITH ZINC-BASE SOLDER OR COLD GALVANIZING SPRAY.

**4. FABRICATION:**


- 1. ALL WELDERS SHALL BE QUALIFIED FOR THE WELDING PROCEDURES PER AWS D1.1.
- 2. ALL WELD ELECTRODES SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70,000 PSI.
- 3. ALL WELDS SHALL BE 100% VISUALLY INSPECTED.

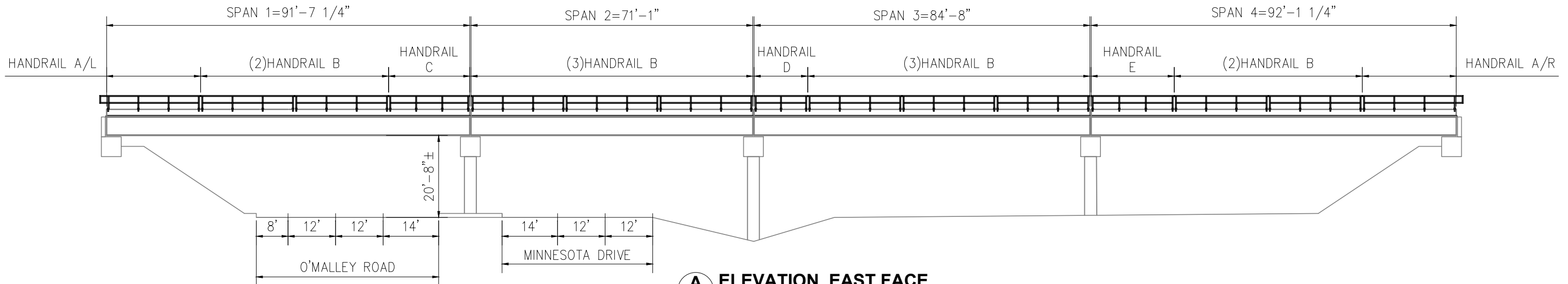
**5. HANDRAIL AND FENCE INSTALLATION:**

- A. GENERAL: REMOVE EXISTING DAMAGED FENCE FABRIC AND PIPE POSTS AND RAIL. INSTALL FABRICATED HANDRAIL SECTIONS AND FENCE FABRIC AS DETAILED IN PLAN SET. EXISTING DAMAGED FENCE AND FABRIC ARE TO BE PROPERLY DISPOSED OF BY CONTRACTOR.
- B. ALL WELDING SURFACES SHALL BE PREPARED PER SPCC-SP11, POWER-TOOL CLEANING TO BARE METAL.
- C. ALL WELDERS SHALL BE QUALIFIED FOR THE WELD PROCEDURE PER AWS D1.1.
- D. ALL WELD ELECTRODES SHALL BE COMPATIBLE WITH THE BASE METAL AND A MINIMUM TENSILE STRENGTH OF 70,000PSI.
- E. ALL FIELD WELDS NOT CALLED OUT IN PLAN SET ON EXISTING BRIDGE STRUCTURES ARE PROHIBITED UNLESS APPROVED BY ENGINEER..
- F. FIELD WELD TESTING:
  - 1. ALL WELD TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH AWS D1.1.
  - 2. ALL WELDS UNLESS OTHERWISE NOTED SHALL BE 100% VISUALLY INSPECTED AND AT LEAST 25% MAGNETIC PARTICLE TESTED.
- E. REMOVAL OF UNACCEPTABLE WELD OR BASE METAL SHALL BE DONE BY MECHANICAL MEANS OR MECHANICALLY CONTROLLED METHODS.

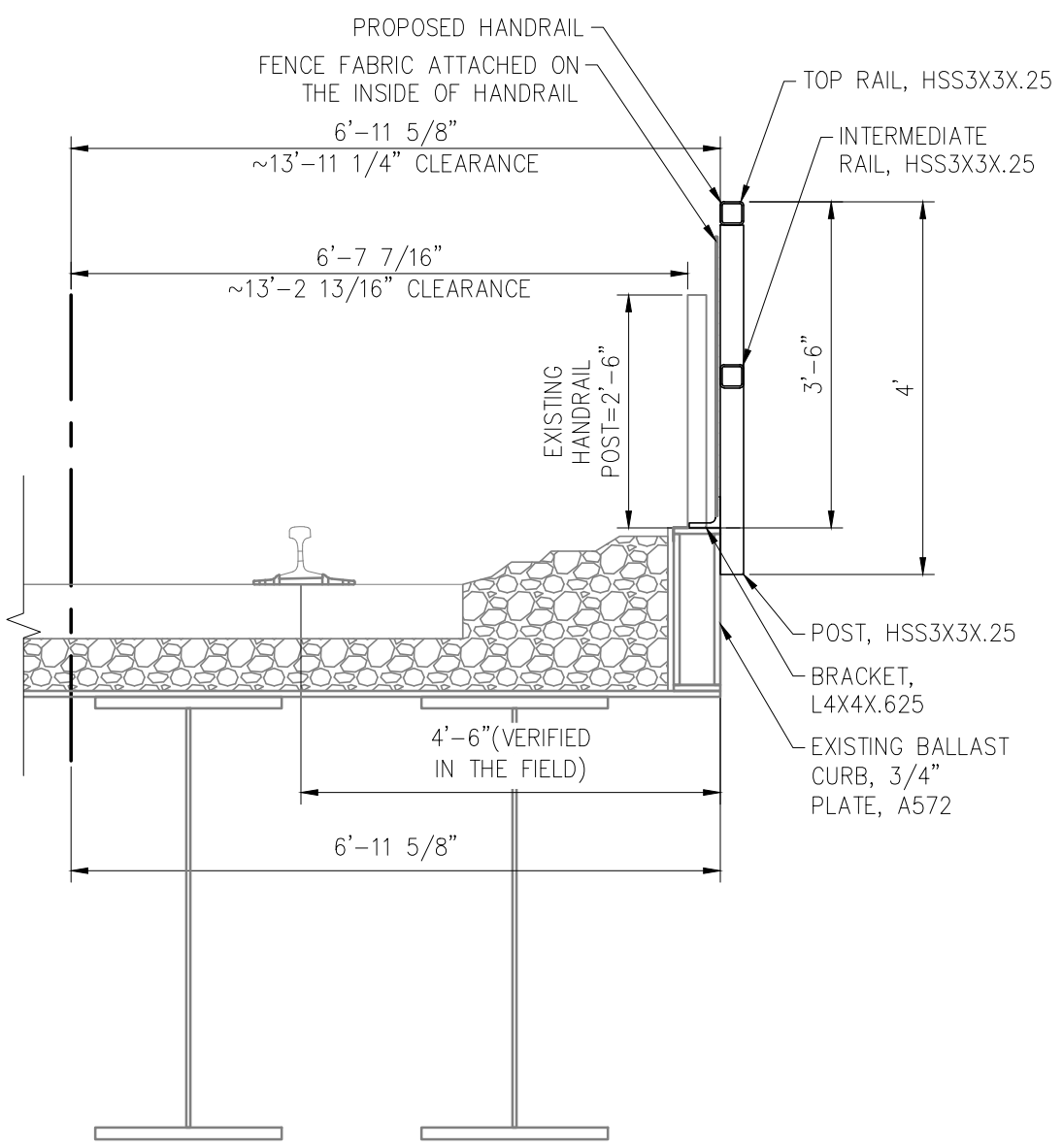
SUMMARY OF ESTIMATED QUANTITIES		
DESCRIPTION	UNIT	QUANTITY
HANDRAIL A, AS DETAILED ON S2	EA.	2
HANDRAIL B, AS DETAILED ON S2	EA.	10
HANDRAIL C, AS DETAILED ON S2	EA.	1
HANDRAIL D, AS DETAILED ON S3	EA.	1
HANDRAIL E, AS DETAILED ON S3	EA.	1
CHAINLINK FENCE FABRIC AND FITTINGS, AS DETAILED ON S3	LOT	1

REV.	DATE	BY	REVISION

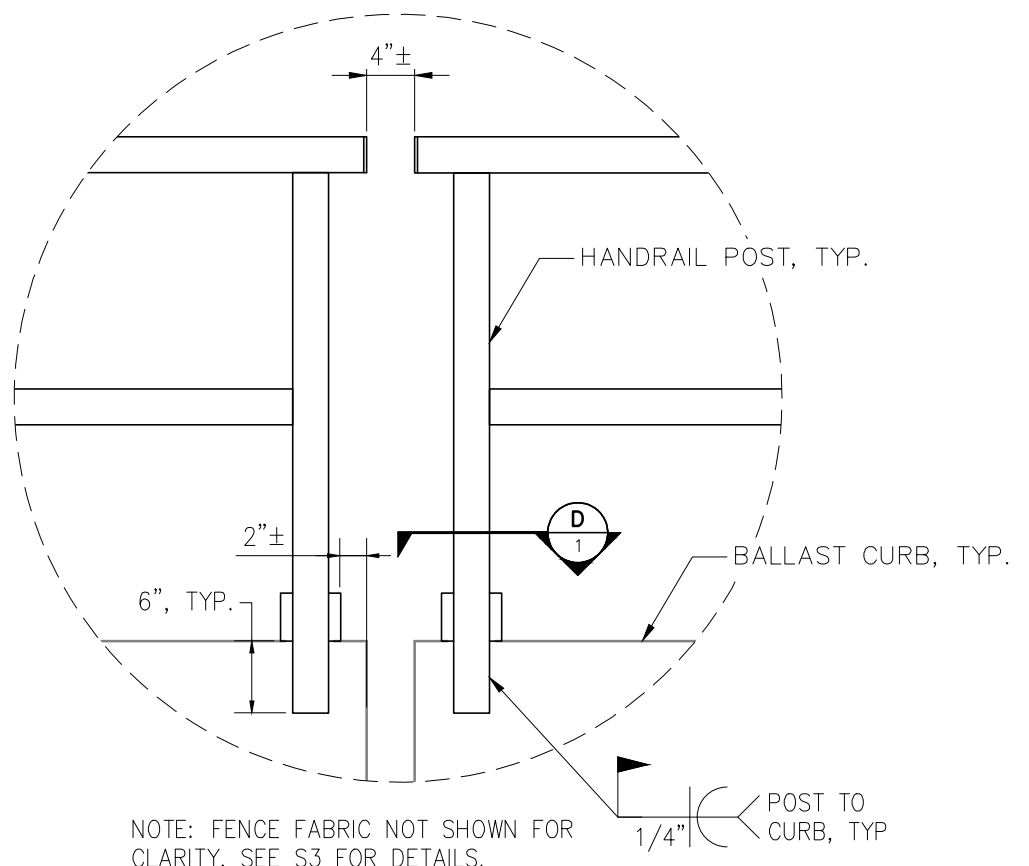
 <b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500	
PROJECT :	
<b>BRIDGE 106.2</b> <b>EAST HANDRAIL REPLACEMENT</b>	
TITLE:	
<b>GENERAL NOTES AND</b> <b>SUMMARY OF ESTIMATED QUANTITIES</b>	
DESIGNED BY: ARRC	SCALE : AS NOTED
CHECKED BY: ARRC	DATE : 6/6/2022
APPROVED BY: ARRC	<b>G1</b>
DWG NO. <b>2</b> OF <b>5</b>	



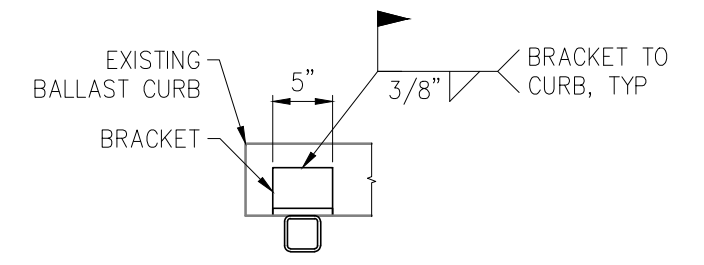
**A ELEVATION, EAST FACE**  
 1 SCALE: 1"=25'



**B TYPICAL X-SECTION**  
 1 SCALE: 1/2"=1'-0"



**C HANDRAIL TO CURB WELDING DETAIL 1**  
 1 SCALE: 3/4" = 1'-0"



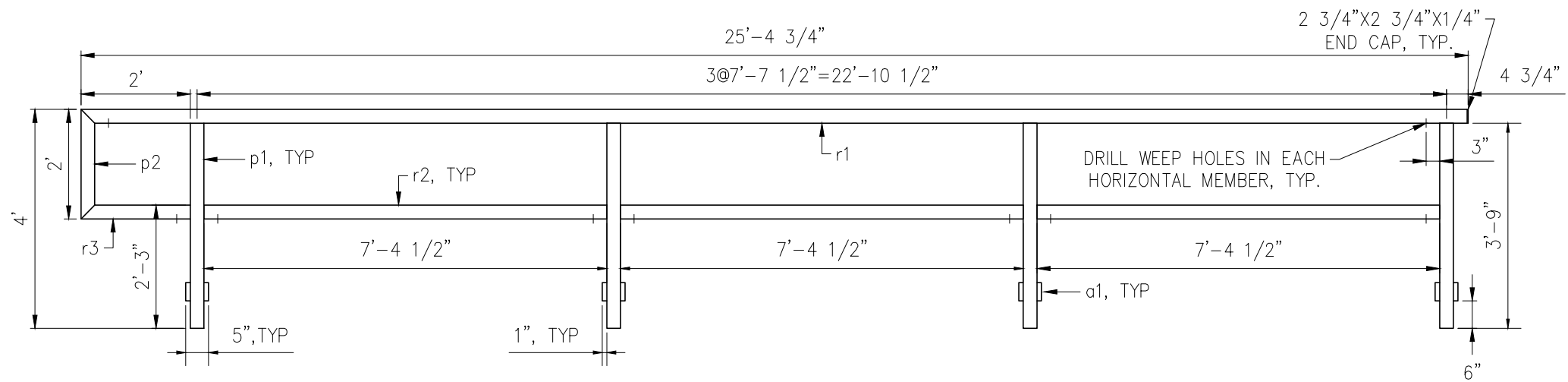
**D WELDING DETAIL 2**  
 1 SCALE: 1 1/2"=1'-0"

NOTE: FENCE FABRIC NOT SHOWN FOR CLARITY, SEE S3 FOR DETAILS.

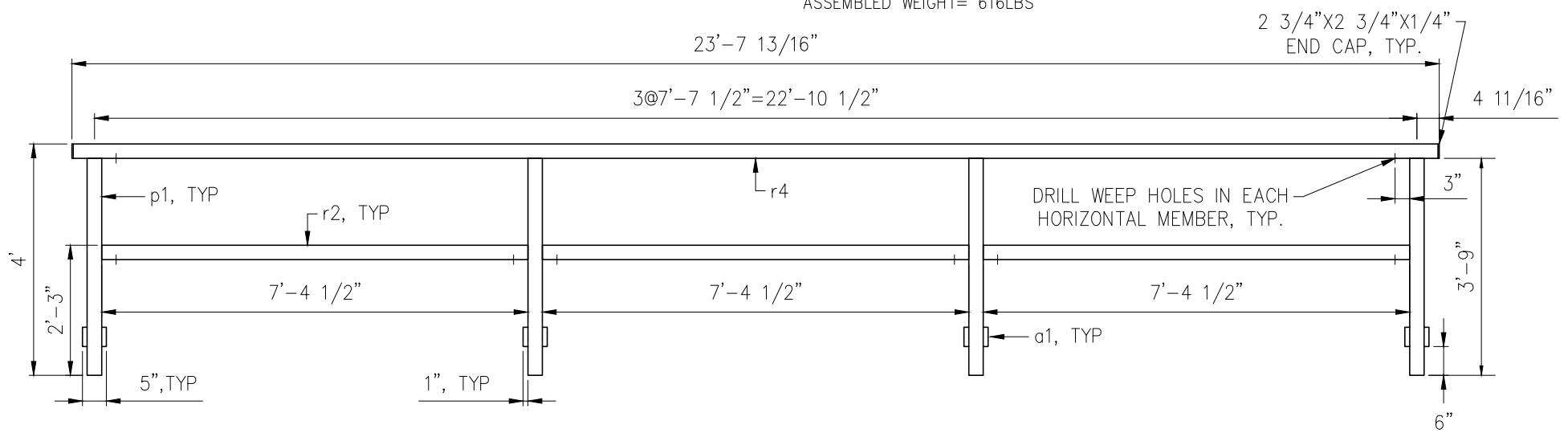
<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500	
PROJECT : <b>BRIDGE 106.2 EAST HANDRAIL REPLACEMENT</b>	
TITLE: <b>BRIDGE LAYOUT AND PROPOSED HANDRAIL</b>	
DESIGNED BY: ARRC	SCALE : AS NOTED
CHECKED BY: ARRC	DATE : 6/30/2022
APPROVED BY: ARRC	
<b>S1</b>	
DWG NO. <b>3</b> OF <b>5</b>	

REV.	DATE	BY	REVISION

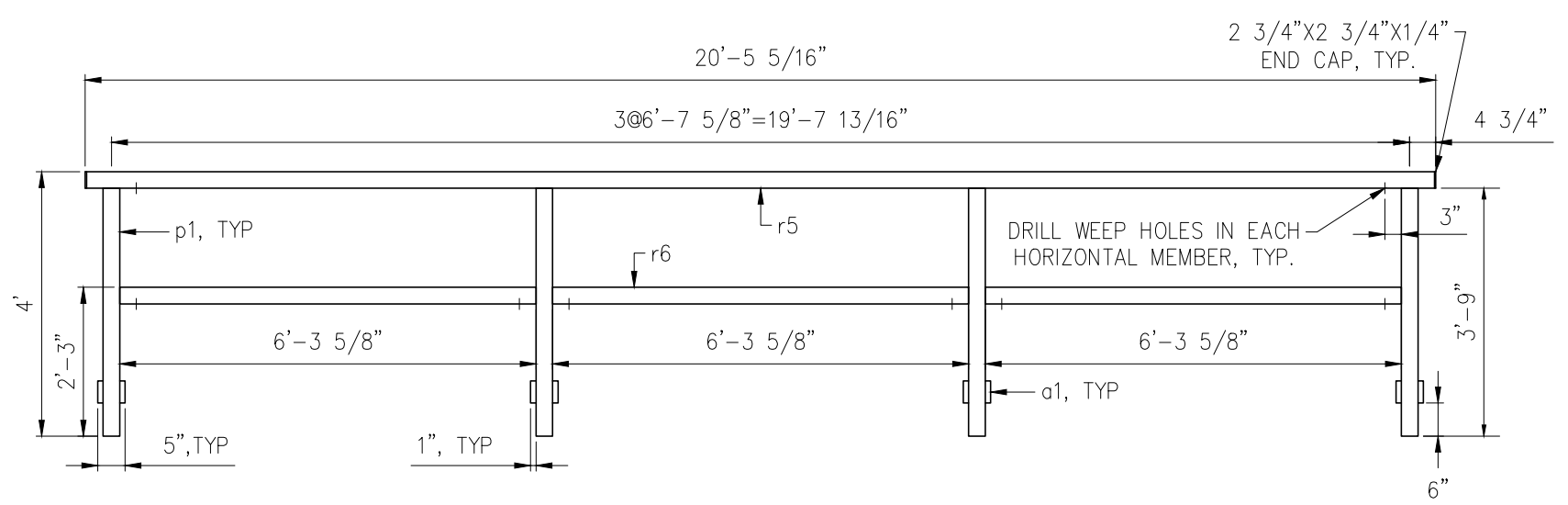
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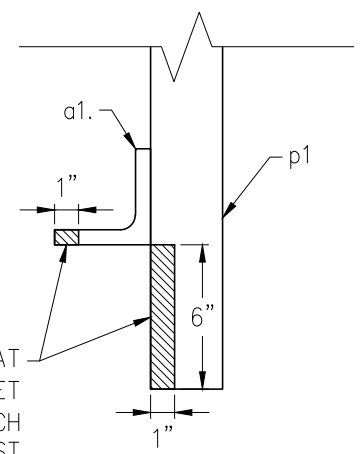
**A (2) HANDRAIL A/L-R**  
 2 SCALE: 3/4"=1'-0"  
 MAKE (1) AS SHOWN, LH  
 MAKE (1) OPPOSITE, RH  
 ASSEMBLED WEIGHT= 616LBS



**B (10) HANDRAIL B**  
 2 SCALE: 3/8"=1'-0"  
 ASSEMBLED WEIGHT= 562LBS



**C (1) HANDRAIL C**  
 2 SCALE: 3/8"=1'-0"  
 ASSEMBLED WEIGHT= 509LBS



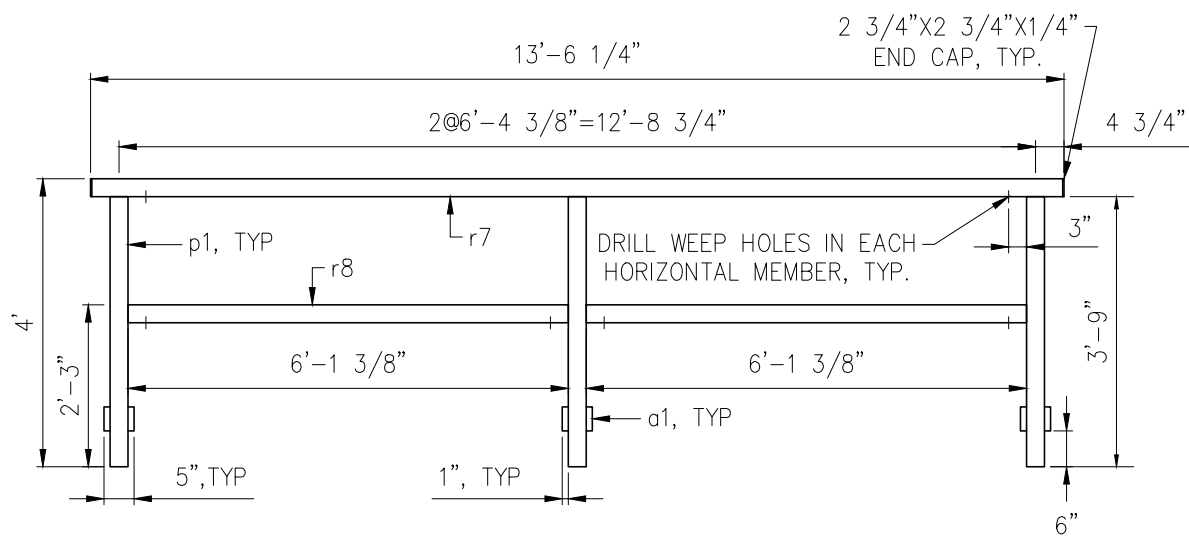
MASK OFF AND DO NOT COAT  
 1" OF TOE ON a1 BRACKET  
 AND 6" SECTION ON EACH  
 BACK SIDE EDGE OF p1 POST

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

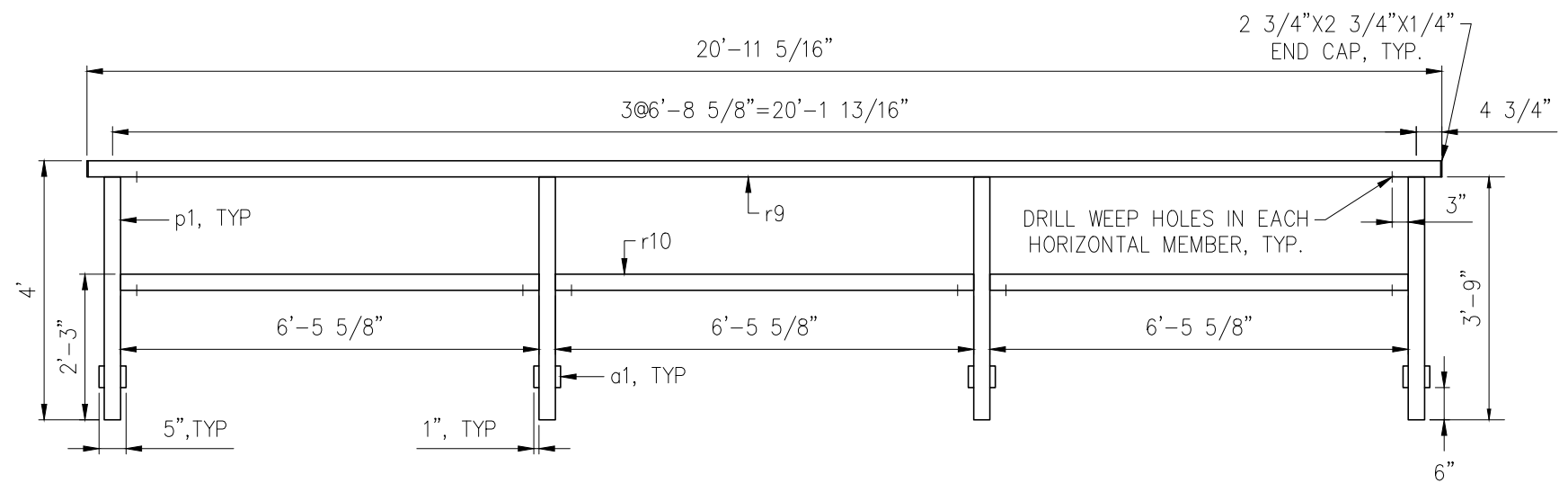
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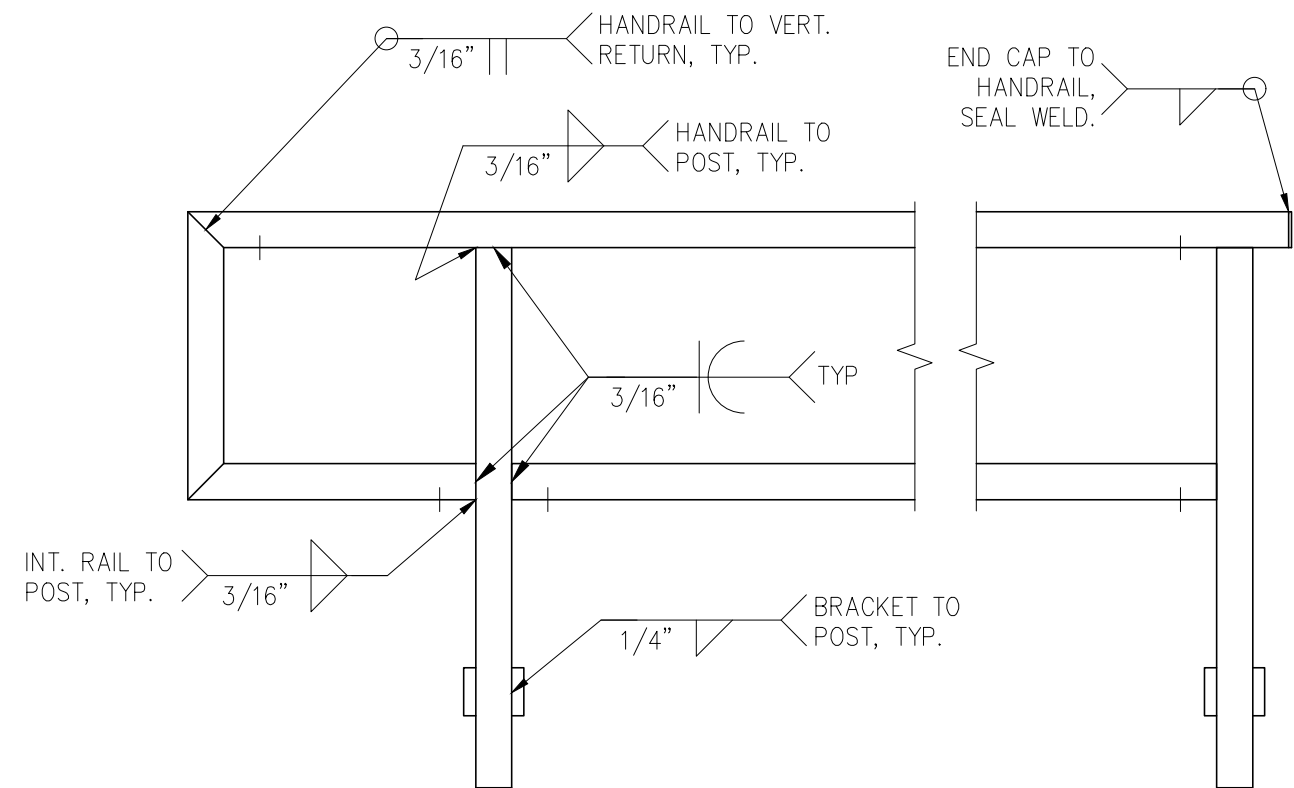
<b>ALASKA RAILROAD CORPORATION</b> ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500			
PROJECT : <b>BRIDGE 106.2 EAST HANDRAIL REPLACEMENT</b>			
TITLE: <b>HANDRAIL DETAILS</b>			
DESIGNED BY: ARRC	SCALE : AS NOTED	S2	DWG NO. <b>4</b> OF <b>5</b>
CHECKED BY: ARRC	DATE : 6/30/2022		
APPROVED BY: ARRC			



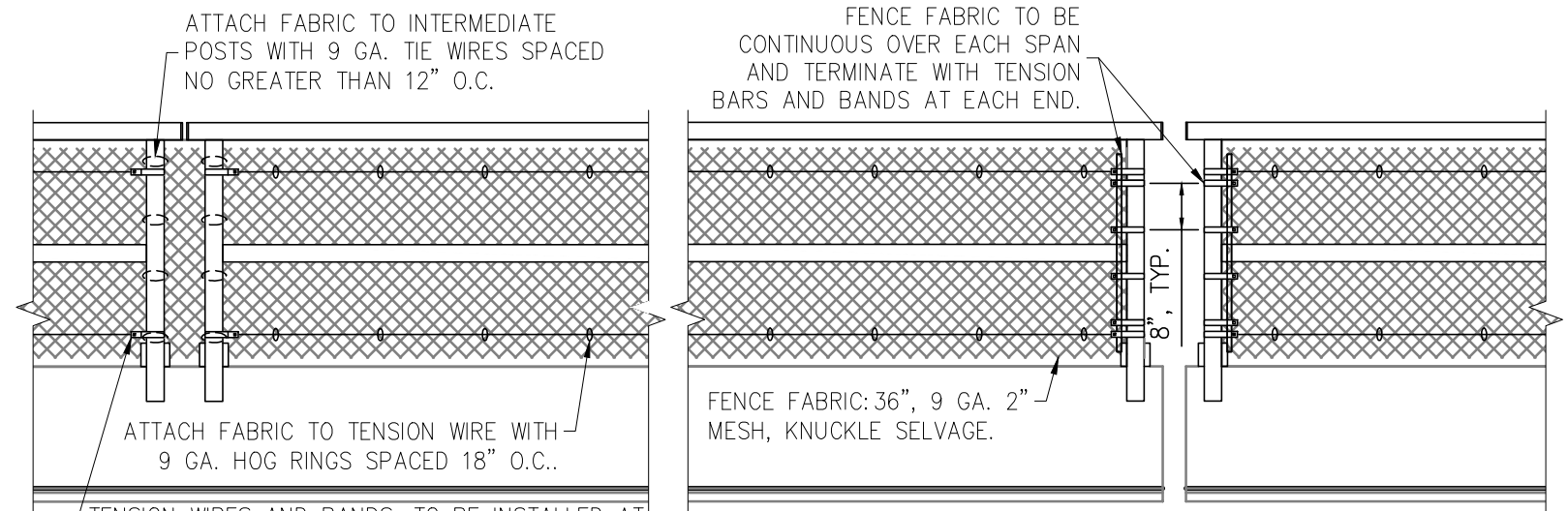
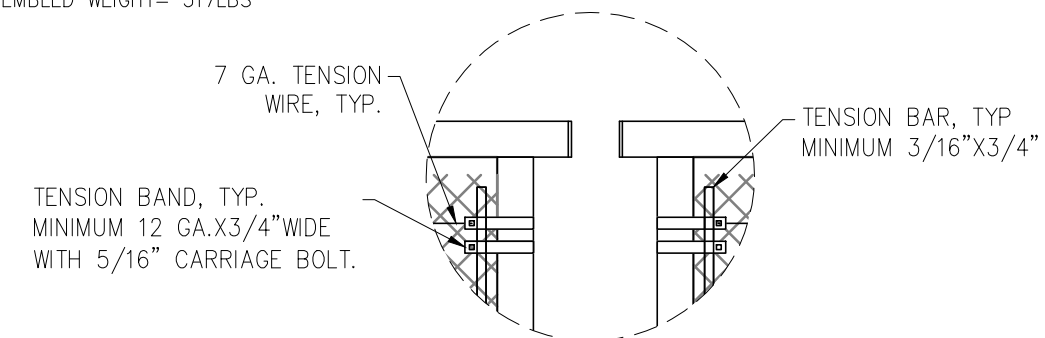
**(1) HANDRAIL D**  
 SCALE: 3/8"=1'-0"  
 ASSEMBLED WEIGHT= 349LBS



**(1) HANDRAIL E**  
 SCALE: 3/8"=1'-0"  
 ASSEMBLED WEIGHT= 517LBS



**(C) HANDRAIL WELDING DETAIL**  
 SCALE: 3/4"=1'-0"



**(D) CHAINLINK FENCE DETAILS**  
 SCALE: 3/8"=1'-0"

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PROJECT :			
<b>BRIDGE 106.2</b>			
<b>EAST HANDRAIL REPLACEMENT</b>			
TITLE:			
<b>HANDRAIL AND CHAINLINK FENCE DETAILS</b>			
DESIGNED BY: ARRC	SCALE : AS NOTED	<b>S3</b>	DWG NO.
CHECKED BY: ARRC	DATE : 6/30/2022		<b>5</b> OF <b>5</b>
APPROVED BY: ARRC			