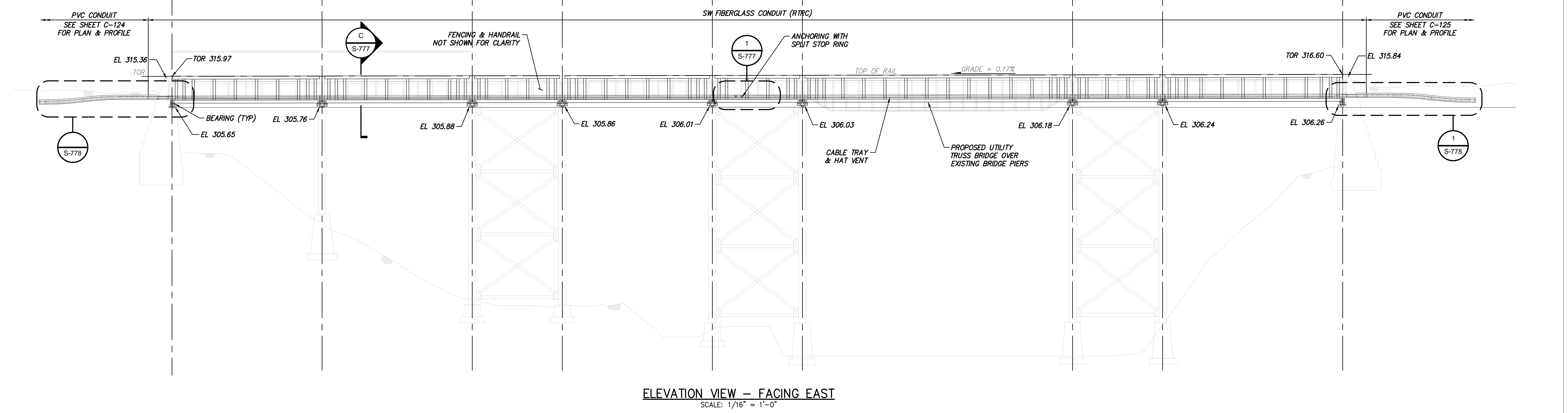
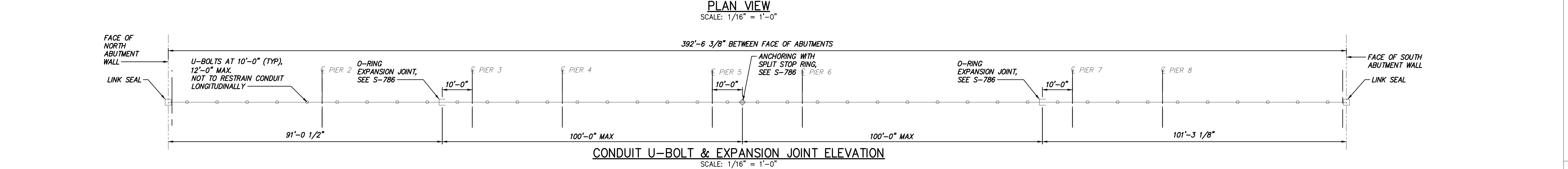
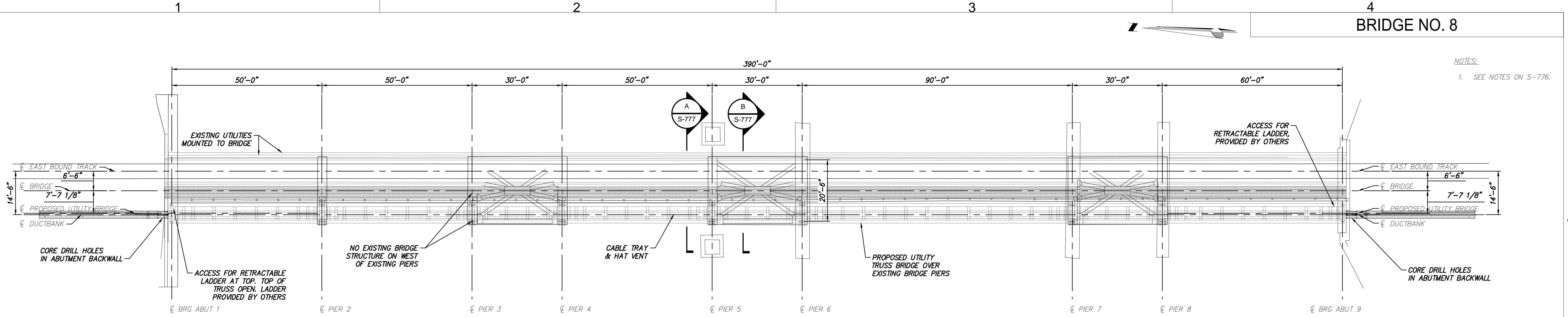




File: P:\KIE-CHPE\3-DES\07 STR\SHTS\21162\_PROJECT-WIDE\_S\_750-761\_BRG.DWG Saved: 3/23/2023 9:18:27 AM Plotted: 3/23/2023 12:56:57 PM Current User: Joca.Kempen LostSavedBy: Joca.Kempen






Champlain Hudson Power Express



Kiewit



STATE OF NEW YORK  
LUS GERARDO YUNESBY  
LICENSED PROFESSIONAL ENGINEER  
087775

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
C	03/24/2023	IFC	JNK	OO
B	12/16/2022	FINAL SUBMISSION	JNK	OO
A	11/11/2022	DRAFT FINAL SUBMISSION	JNK	OO

### CHAMPLAIN HUDSON POWER EXPRESS

#### BRIDGE NO. 8 - UTILITY TRUSS BRIDGE

#### PLAN AND ELEVATION

DRAWN BY: DRH	DESIGNED BY: JNK	APPROVED BY: OO	SCALE: AS SHOWN
REV. NO.			DATE: 12/16/2022

KIEWIT PROJECT NO. 21162	DRAWING NO. S-775
DATE: 12/16/2022	



File: P:\VIE-CHPE\3-DES\07 STR\SHTS\21162\_PROJECT-WIDE\_S\_750-761\_BRG.DWG    Saved: 3/23/2023 9:18:27 AM    Plotted: 3/23/2023 12:57:05 PM    Current User: Joca.Kempen    LastSavedBy: Joca.Kempen

CHPE

Champlain Hudson  
Power Express

PKS

MADE IN THE USA

Kiewit

STATE OF NEW YORK

LUIS GERARDO YUNIBET

087775

REGISTERED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC	JNK	OO
B	12/16/2022	FINAL SUBMISSION	JNK	OO
A	11/11/2022	DRAFT FINAL SUBMISSION	JNK	OO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

CHAMPLAIN HUDSON POWER EXPRESS

BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
ABUTMENT ELEVATIONS AND SECTIONS

DRAWN BY: DRH

DESIGNED BY: JNK

APPROVED BY: OO

SCALE AS SHOWN

DATE 12/16/2022

**NORTH ABUTMENT ELEVATION**  
SCALE: 1/4" = 1'-0"

Labels: 1, A, S-776, EL 315.36, TOR, 7'-1", EL 305.65, EXISTING GRADE AT 1'-0" BEHIND ABUTMENT, TREL, LLIZ, GROUT SEE S-785, BEARING (TYP), POST DRILLED ANCHOR RODS, EL 315.97, TOR, 14'-6", 14'-1 1/8", 1'-6", 12'-0", 1.5H, 1H, 1V, CL HYDC CONDUIT, CL PROPOSED UTILITY BRIDGE.

**SOUTH ABUTMENT ELEVATION**  
SCALE: 1/4" = 1'-0"

Labels: B, S-776, TOR 316.60, EL 315.84, EL 306.26, EXISTING GRADE AT 1'-0" BEHIND ABUTMENT, TREL, LLIZ, GROUT SEE S-785, BEARING (TYP), POST DRILLED ANCHOR RODS, CL HYDC CONDUIT, CL PROPOSED UTILITY BRIDGE, 14'-6", 14'-1 1/8", 12'-0", 1'-6", 1.5H, 1H, 1V.

**SECTION A**  
SCALE: 1/4" = 1'-0"

Labels: EXISTING STRUCTURE BEHIND, TOR, TRUSS TOP CHORD, TRUSS VERTICAL STRUTS, CORE DRILL HOLES IN ABUTMENT BACKWALL, EXISTING GROUND, CL DC CONDUIT, HAT VENT, CABLE TRAY, TRUSS BOTTOM CHORD, BEARING OF EXISTING STRUCTURE BEYOND, BEARING OF PROPOSED UTILITY BRIDGE, S-778.

**SECTION B**  
SCALE: 1/4" = 1'-0"

Labels: EXISTING STRUCTURE BEHIND, TOR, TRUSS TOP CHORD, TRUSS VERTICAL STRUTS, CORE DRILL HOLES IN ABUTMENT BACKWALL, EXISTING GROUND, HAT VENT, CABLE TRAY, TRUSS BOTTOM CHORD, BEARING OF PROPOSED UTILITY BRIDGE, BEARING OF EXISTING STRUCTURE BEYOND, S-778.

BRIDGE NO. 8

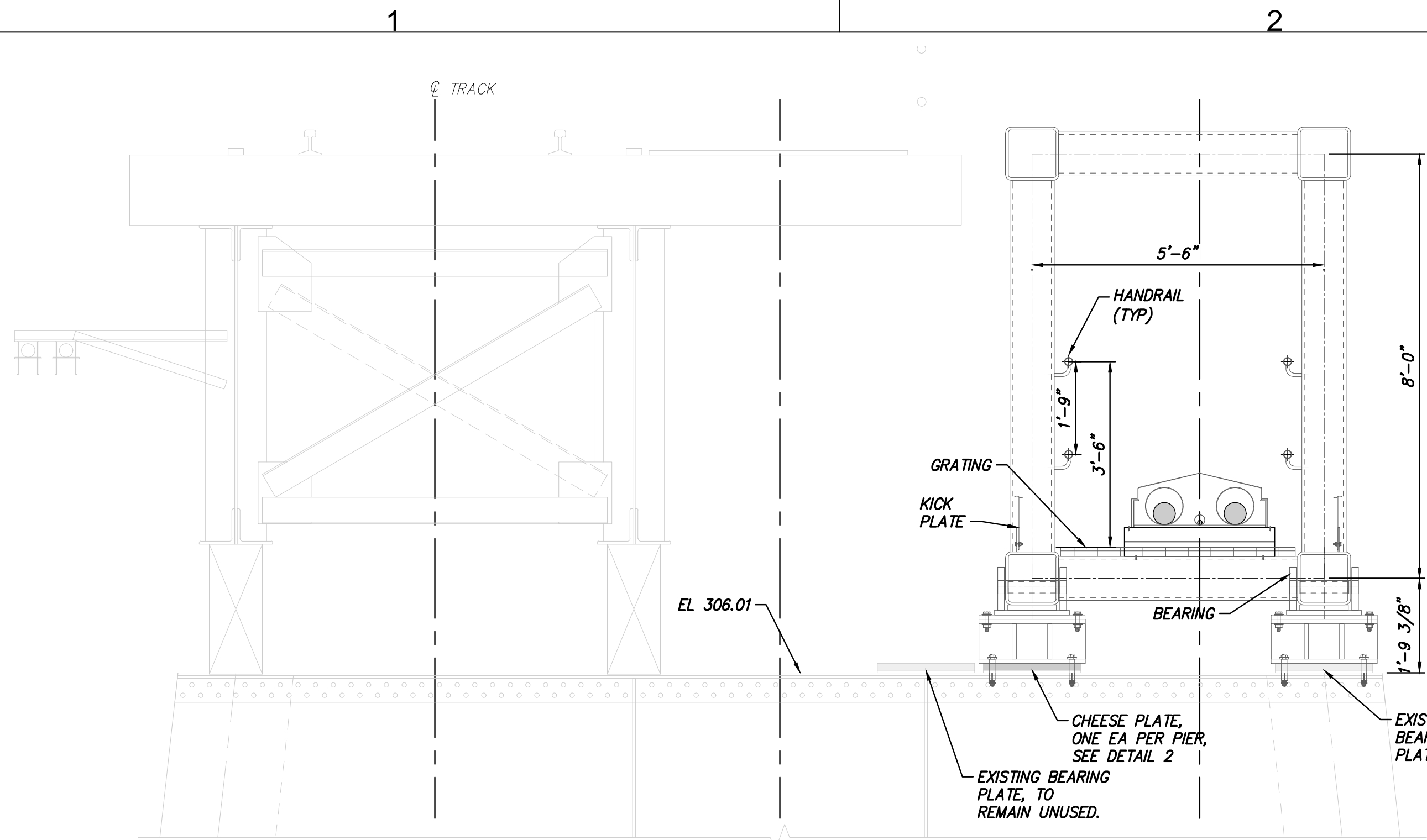
NOTES:

- UTILITY TRUSS BRIDGE DESIGN PER AREMA.
- WEIGHT OF CABLE TRAY + HAT VENT = 20.57 PLF  
WEIGHT OF CABLE + CONDUITS (2xDC+1xF0) = 47.53 PLF  
WEIGHT OF CABLE TRAY WITH CABLES & CONDUITS = 68.1 PLF
- ENVIRONMENTAL LOADS PER AREMA §15 -1.3.8 :  
TRANSVERSE WIND = 50 PSF  
LONGITUDINAL WIND = 50% x 50 PSF = 25 PSF  
  
ENVIRONMENTAL LOADS PER ASCE 7-16 §7:  
SNOW LOAD = 45 PSF  
  
LIVE LOAD DURING CONSTRUCTION / INSPECTION = 60PSF  
  
CABLE PULL LOADS TO BE CONSIDERED PENDING ALIGNMENT FINALIZATION.
- CABLE TRAY ACCOMODATES EXPANSION/CONTRACTION OVER UNISTRUTS WITH HOLD DOWN CLAMP & EXPANSION GUIDE.  
  
FOR SW FIBERGLASS CONDUITS (RTRC, REINFORCED THERMOSET RESIN CONDUIT), PROVIDE:  
- NO EXPANSION JOINT, FOR CONDUIT LENGTH LESS THAN 50FT,  
- ONE EXPANSION JOINT MIDWAY, FOR CONDUIT LENGTH BETWEEN 50FT & 200FT,  
- ONE EXPANSION JOINT EVERY 200FT APART, FOR CONDUIT LENGTH OVER 200FT, ANCHORING BETWEEN 0-RINGS.  
  
TEMPERATURE CHANGE OF 120°F ON 100FT LONG SW FIBERGLASS (RTRC) CONDUIT RESULTS IN ±1.8IN EXPANSION/CONTRACTION. O-RING EXPANSION JOINT PROVIDES ±6IN OF FREE TRAVEL IN EACH DIRECTION AT SET POSITION.
- DRILL ABUTMENT BACKWALL WITH 2 x 12IN DIA + 1 x 4IN DIA CORE DRILLS, AT EACH ABUTMENT. USE RUBBER LINK SEAL (GARLOCK OR SIMILAR) BETWEEN THE RTRC CONDUIT & DRILLED SURFACE TO PROVIDE WATERTIGHTNESS. LINK SEALS INSTALLED AT 1.5IN MIN RECESS. COVER LINK SEAL SURFACE WITH GROUT.
- UTILITY TRUSS BRIDGE TO BE SUPPORTED ON EXISTING PIERS OVER NEW BEARINGS.
- DIMENSIONS TO BE VERIFIED WITH FIELD SURVEY.
- SEE SHEETS C-124 & C-125 FOR PLAN & PROFILE.
- FOR DUCTBANK TO BRIDGE TRANSITION, SEE S-778.
- SEE TEMPORARY WORKS DRAWINGS FOR SHORING CONSTRUCTION DETAILS.
- TREL: THEORETICAL RAILROAD EMBANKMENT LINE (1.5H:1.0V STARTING AT 1'-6" BELOW AND 12'-0" AWAY FROM TOP OF RAIL CENTERLINE)
- LLIZ: RAILROAD LIVE LOAD INFLUENCE ZONE (1.0H: 1.0V STARTING AT BOTTOM EDGE OF RAIL TIE)
- FOR DUCTBANKS WITH LESS THAN 2'-6" COVER TO TOP OF DUCTBANK, EXCAVATE TRENCH AT MINIMUM 4'-0" (FROST DEPTH) FROM GROUND LEVEL, BACKFILL TRENCH BELOW DUCTBANK WITH NON-FROST-SUSCEPTIBLE FILL OR FLOWABLE FILL MATERIAL.
- STRUCTURAL STEEL PLATES & SHAPES SHALL BE ASTM A709, GRADE 50W (A588) (FY=50KSI).
- NO FIELD WELDING SHALL BE PERMITTED.
- TRUSS MEMBER SIZES ARE AS FOLLOWING:

SPAN	CHORDS	STRUTS
30FT	HSS 12x12x3/8	HSS 10x10x3/8
50FT	HSS 12x12x3/8	HSS 10x10x3/8
60FT	HSS 12x12x5/8	HSS 10x10x5/8
90FT	HSS 12x12x5/8	HSS 10x10x5/8

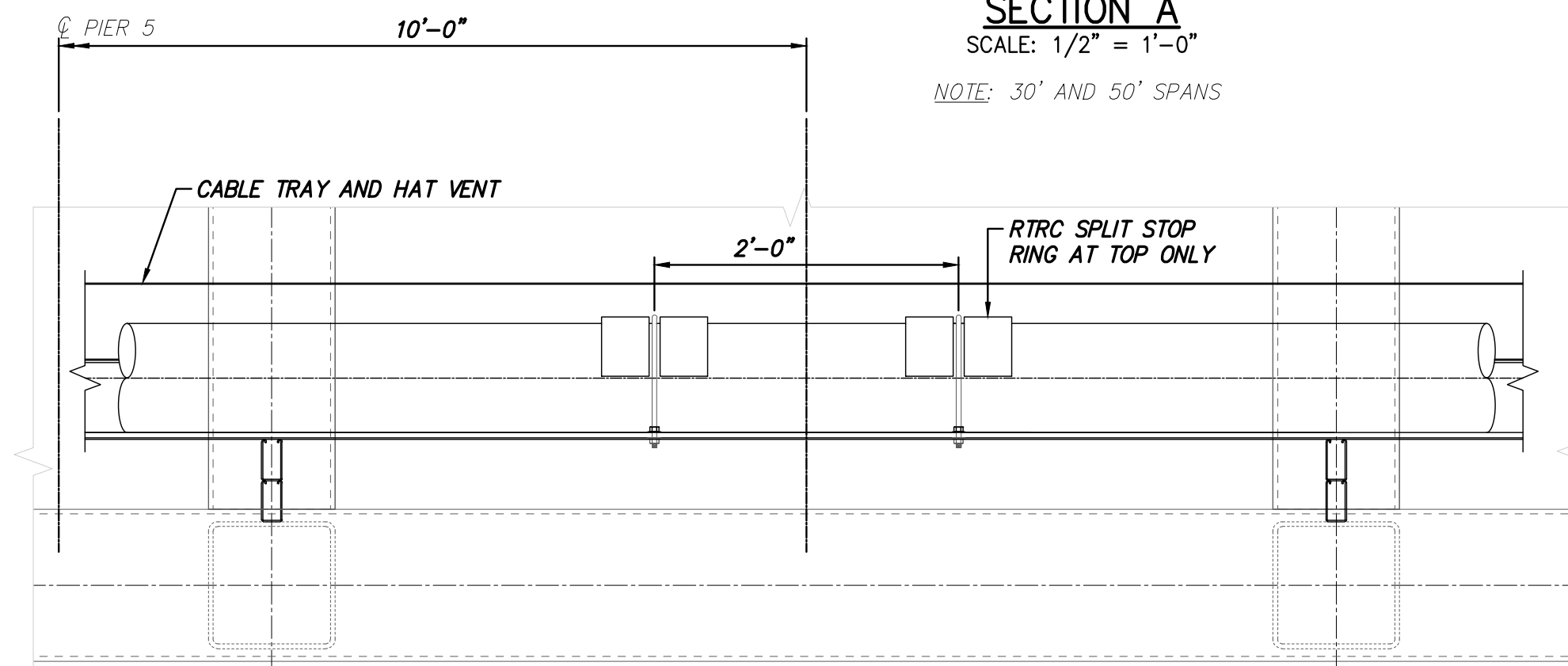


File: P:\KID-CHPE\3-DES\07 STR\SHTS\21162\_PROJECT-WIDE\_S-750-761\_BRG.DWG Saved: 3/23/2023 12:57:37 PM Current User: Joca.Kempen Lost\SavedBy: Joca.Kempen

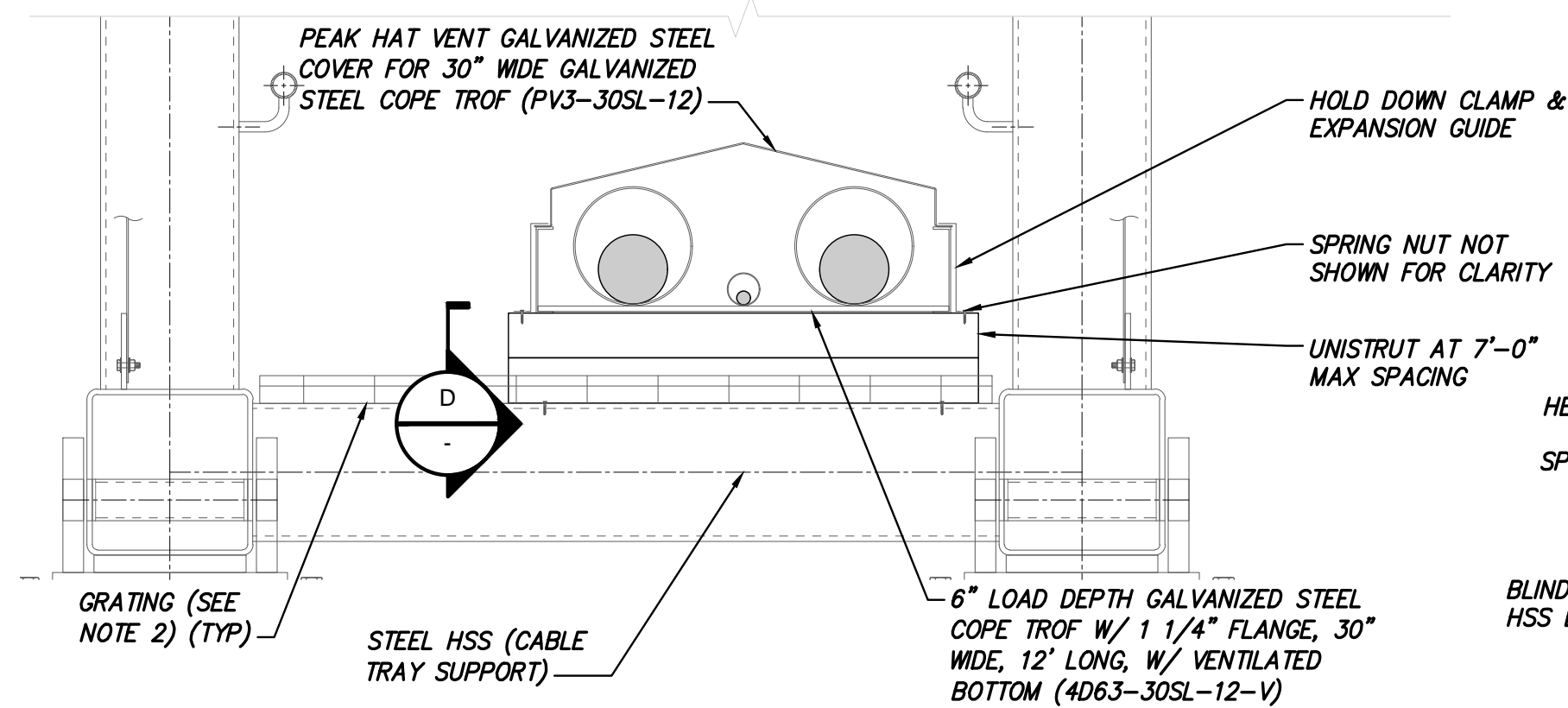


**SECTION A**  
SCALE: 1/2" = 1'-0"

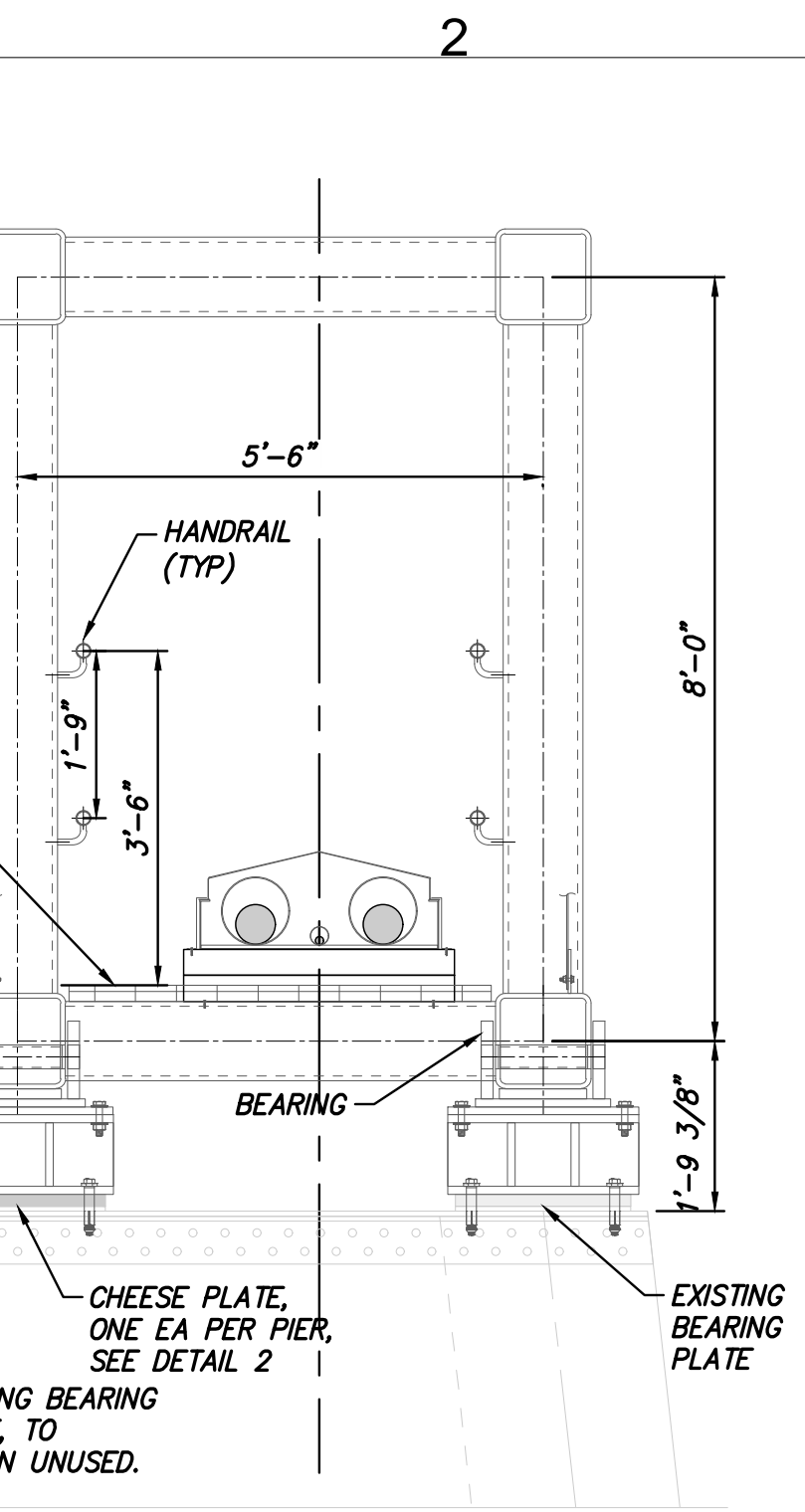
NOTE: 30' AND 50' SPANS



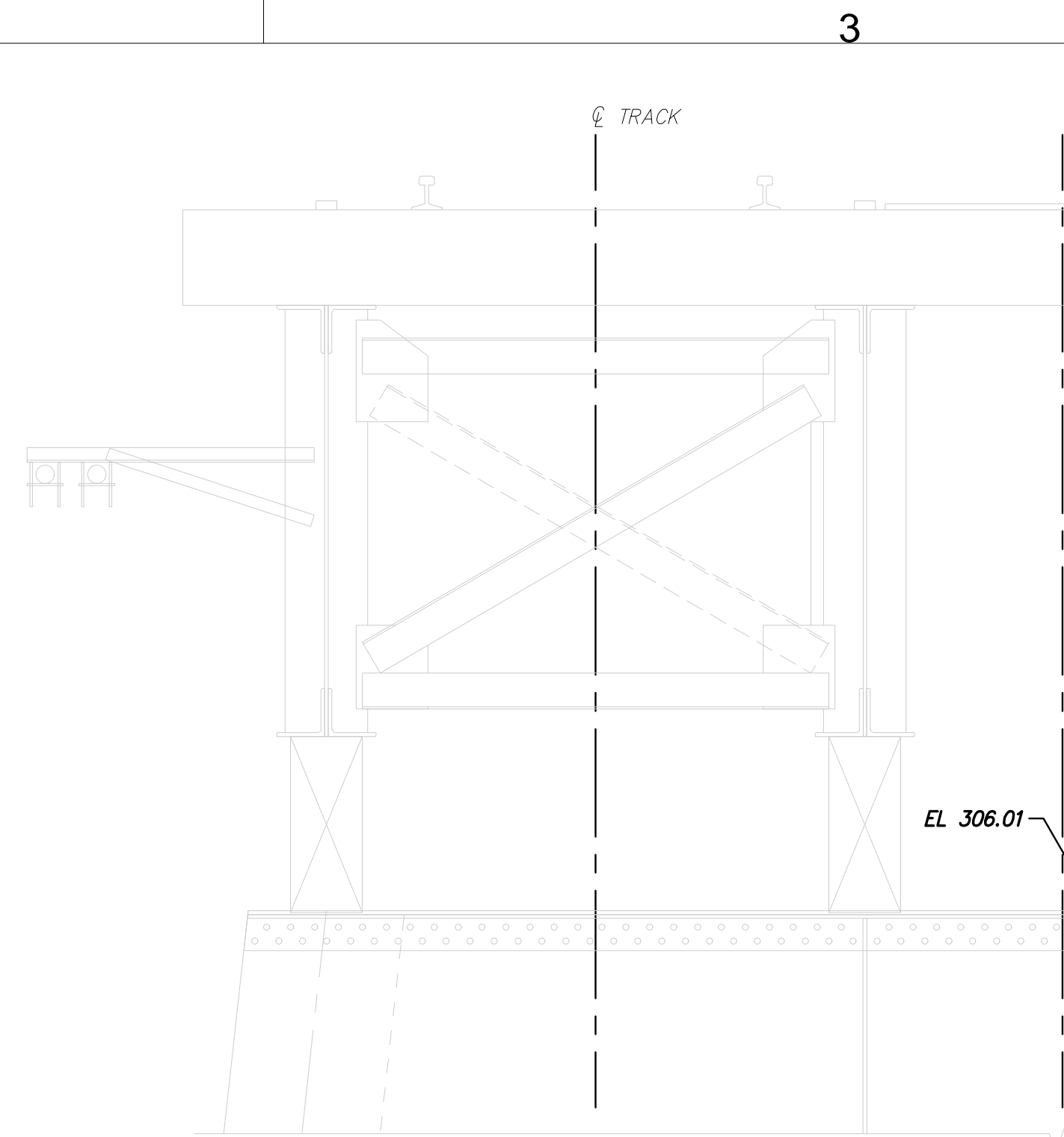
**DETAIL 1 - ANCHORING WITH SPLIT STOP RING - ELEVATION**  
SCALE: 1" = 1'-0"



**SECTION C - CABLE TRAY ATTACHMENT AT UNISTRUT SUPPORT**  
SCALE: 1" = 1'-0"

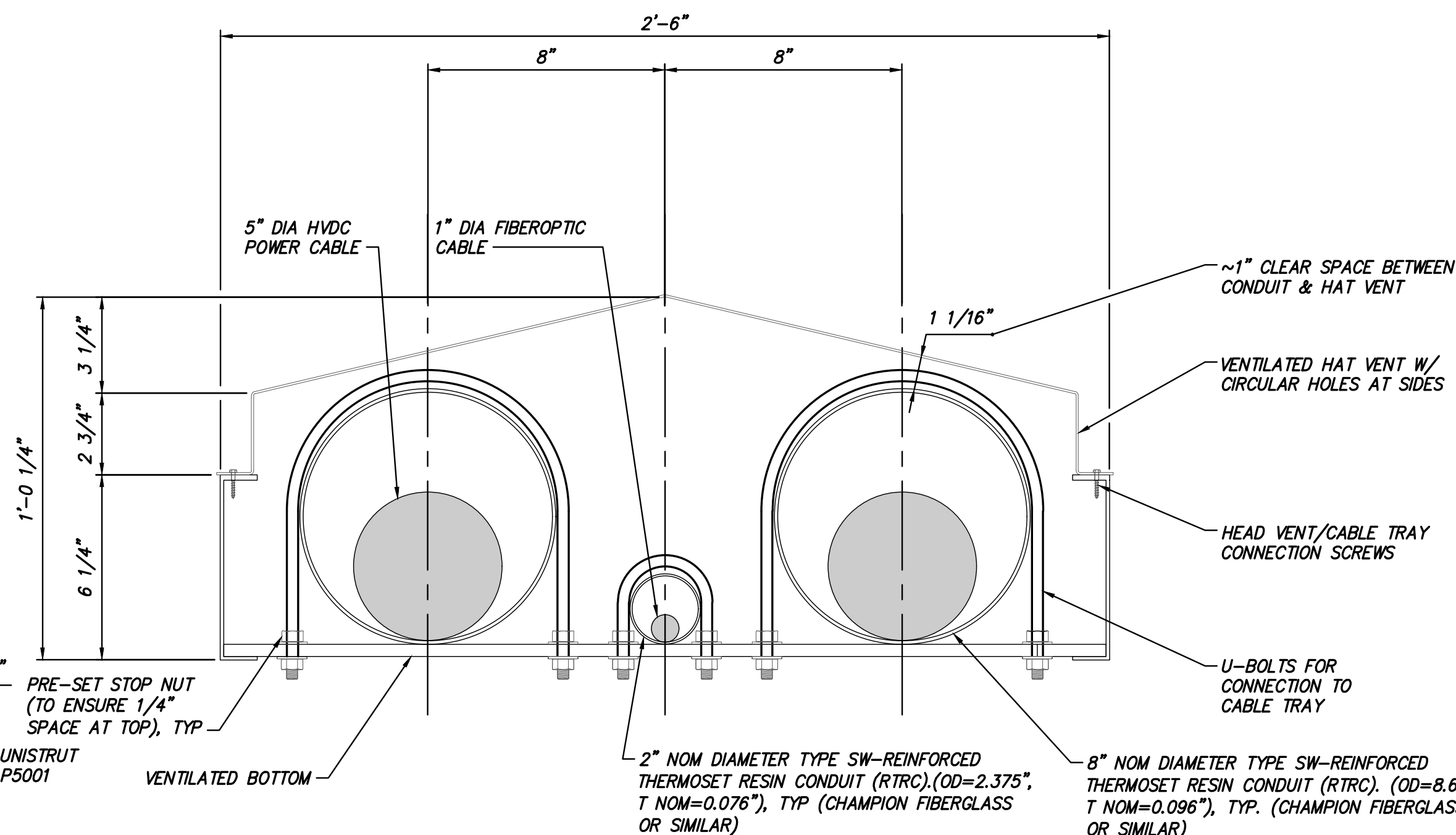


**SECTION D - UNISTRUT SUPPORT**  
SCALE: 1 1/2" = 1'-0"



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

NOTE: 60' AND 90' SPANS



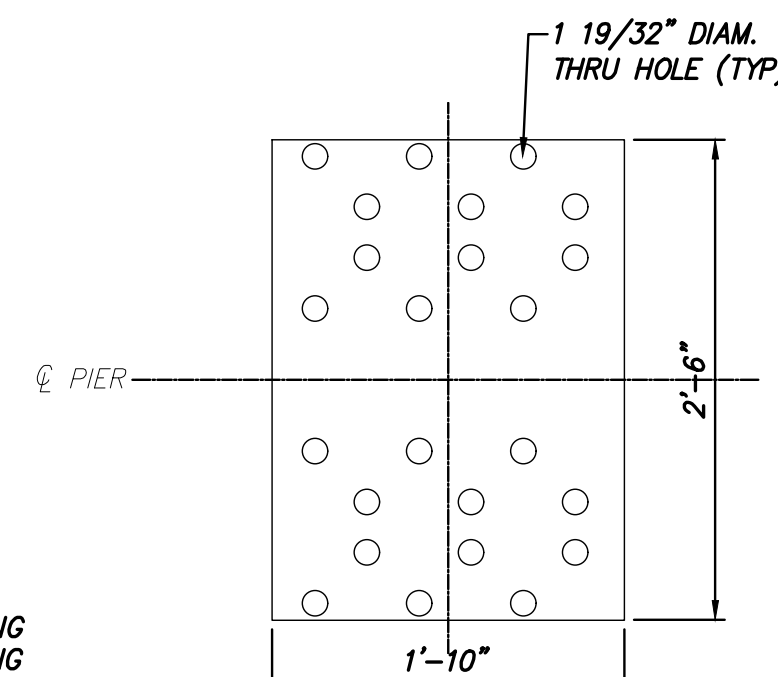
NOTE:  
U-BOLTS ARE PROVIDED AT APPROXIMATELY 12'-0" SPACING. RTRC CONDUITS ARE FREE TO MOVE LONGITUDINALLY. PROVIDE MINIMUM SPACING OF 1/16" ON THE SIDES & 1/4" AT THE TOP, BETWEEN THE OUTSIDE OF RTRC CONDUIT AND THE U-BOLT. U-BOLTS NOT TO RESTRAIN CONDUIT LONGITUDINALLY.

**CABLE TRAY AND HAT VENT AT U-BOLT**  
SCALE: 3" = 1'-0"

## BRIDGE NO. 8

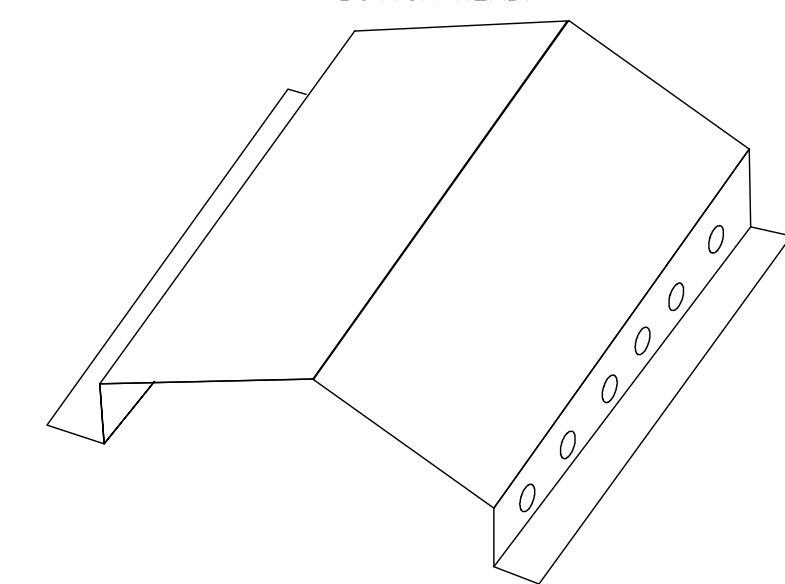
NOTES:

- SEE NOTES ON S-776.
- GRATING TO BE 1 1/4"x1/8" BEARING BAR WITH 2" CROSS BAR, OPEN AREA RATIO OF 71% (MCNICHOLS SCW-125A-2 OR SIMILAR)

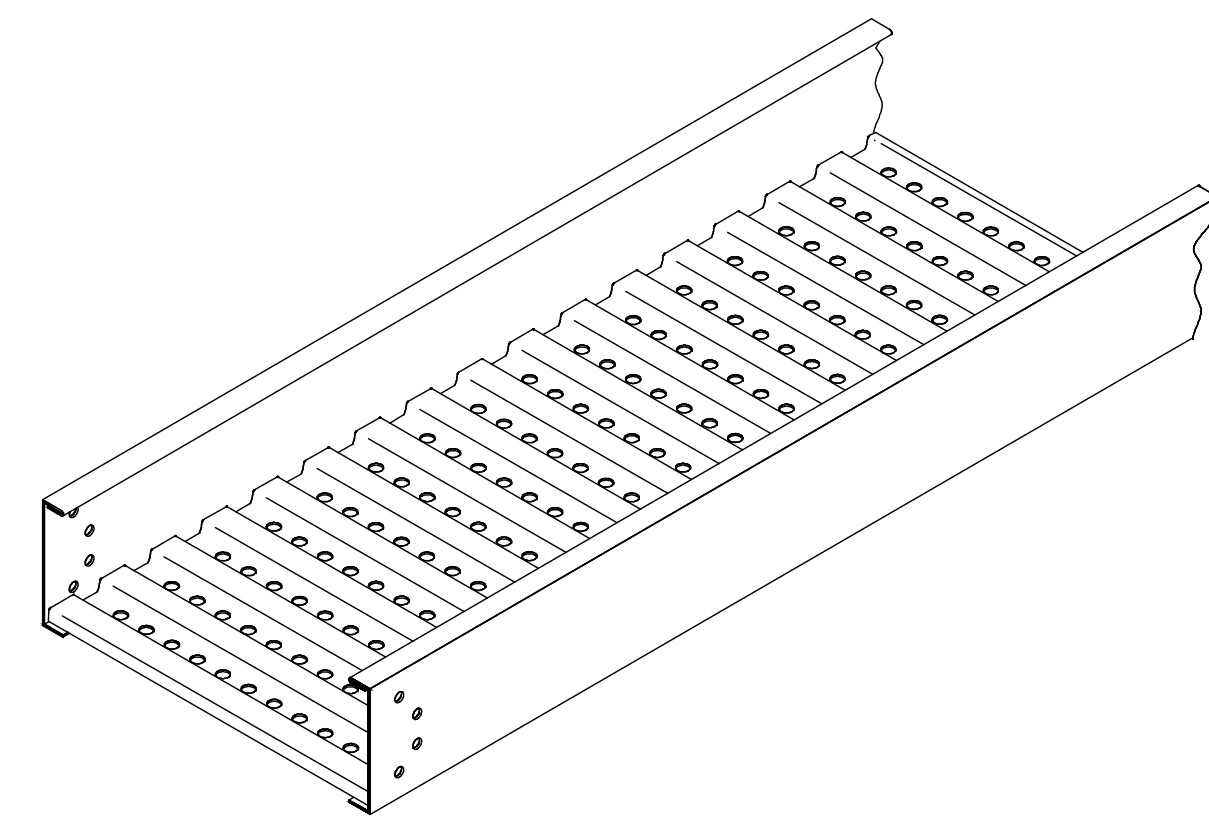


**DETAIL 2 - CHEESE PLATE**  
SCALE: 1/2" = 1'-0"

NOTE: EXACT CHEESE PLATE DIMENSIONS, ORIENTATION, AND NUMBER OF HOLES TO BE DETERMINED BY DETAILED FIELD MEASUREMENT. THICKNESS TO MATCH EXISTING ADJACENT BEARING PLATES. 7 STEEL CHEESE PLATES TOTAL TO BE CUSTOM FABRICATED. PER RECORD PLANS, EXISTING RIVETS ARE 7/8" DIAMETER. THRU HOLE DIAMETER CALCULATED ASSUMING STD BUTTON HEAD.



**VENTILATED HAT - ISOMETRIC VIEW**  
SCALE: NTS



**VENTILATED TROF - ISOMETRIC VIEW**  
SCALE: NTS



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
C	03/24/2023	IFC	JNK	OO
B	12/16/2022	FINAL SUBMISSION	JNK	OO
	11/11/2022	DRAFT FINAL SUBMISSION	JNK	OO

## CHAMPLAIN HUDSON POWER EXPRESS

### BRIDGE NO. 8 - UTILITY TRUSS BRIDGE SECTIONS AND DETAILS

DRAWN BY: DRH	DESIGNED BY: JNK	APPROVED BY: OO	SCALE: AS SHOWN	DATE: 12/16/2022
			REV. NO. B	SH.NO.

KIEWIT PROJECT NO.  
21162

DRAWING NO.

S-777



File: P:\KIE-CHPE\3-DES\07 STR\SHTS\21162\_PROJECT-WIDE\_S\_750-761\_BRG.DWG Saved: 3/23/2023 12:57:57 PM Current User: Joca.Kempen LostSavedBy: Joca.Kempen

B



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC				JNK	OO		
B	12/16/2022	FINAL SUBMISSION				JNK	OO		
A	11/11/2022	DRAFT FINAL SUBMISSION				JNK	OO		
No.	DATE	SUBMITTAL / REVISION DESCRIPTION				DB	APP		

CHAMPLAIN HUDSON POWER EXPRESS

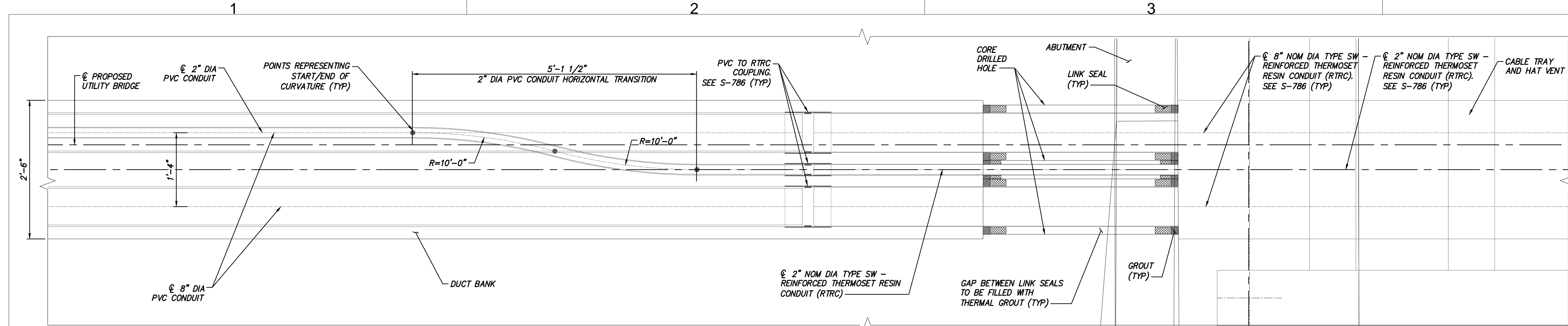
BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
CONDUIT TRANSITION DETAIL

DRAWN BY: DRH	DESIGNED BY: JNK	APPROVED BY: OO	SCALE REV. NO.	AS SHOWN	DATE B SH.NO.	12/16/2022
---------------	------------------	-----------------	-------------------	----------	------------------	------------

BRIDGE NO. 8

- NOTES:
- SEE NOTES ON S-776.

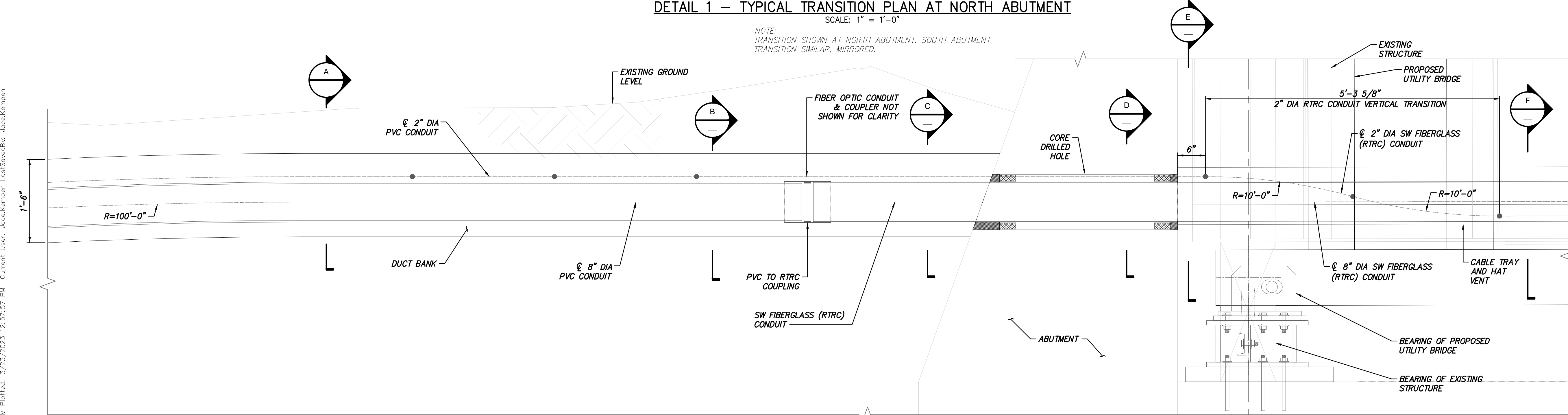
A



DETAIL 1 - TYPICAL TRANSITION PLAN AT NORTH ABUTMENT

SCALE: 1" = 1'-0"

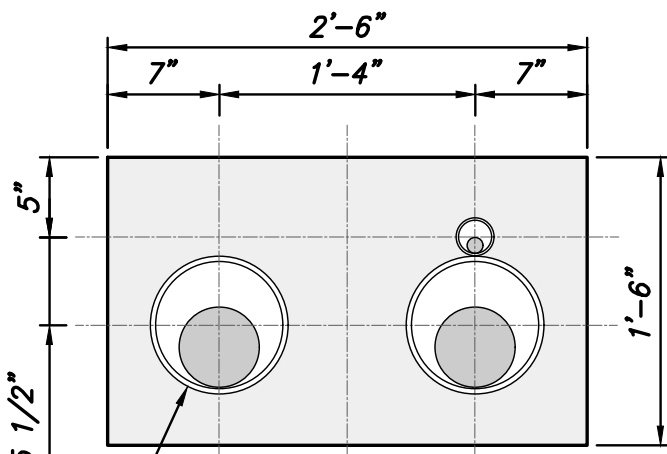
NOTE:  
TRANSITION SHOWN AT NORTH ABUTMENT. SOUTH ABUTMENT  
TRANSITION SIMILAR, MIRRORED.



DETAIL 1 - TYPICAL TRANSITION ELEVATION AT NORTH ABUTMENT

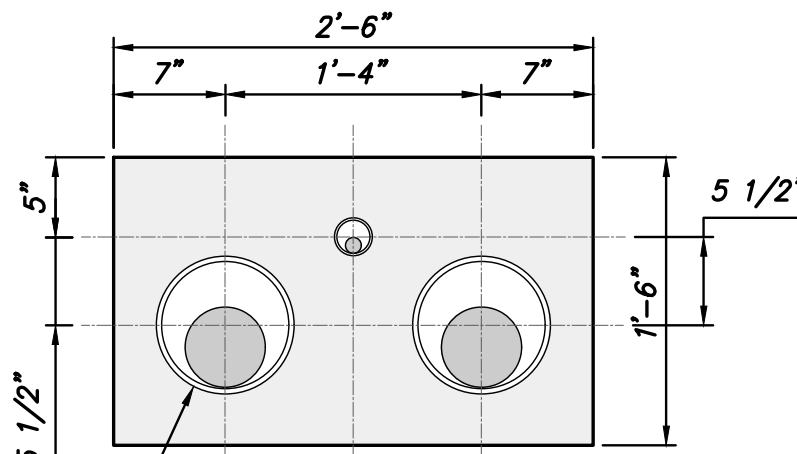
SCALE: 1" = 1'-0"

NOTE:  
TRANSITION SHOWN AT NORTH ABUTMENT. SOUTH ABUTMENT  
TRANSITION SIMILAR, MIRRORED.

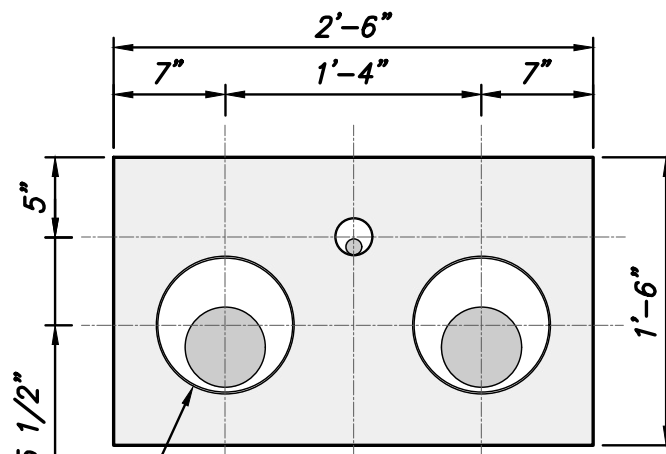


SECTION A  
SCALE: 1" = 1'-0"

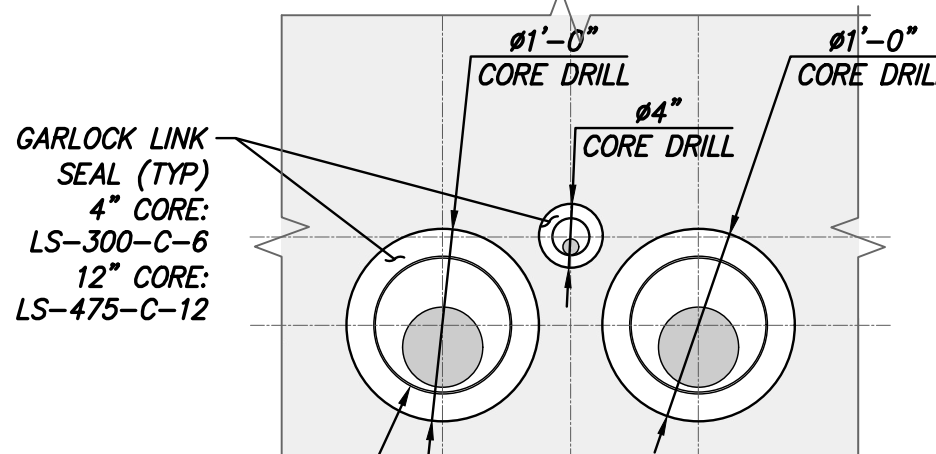
NOTE:  
SHOWN AT NORTH ABUTMENT TRANSITION. 2" FO (DTS SENSOR)  
MOUNTED ABOVE EAST HVDC LINE. TYP. ALL TRENCH LOCATIONS.



SECTION B  
SCALE: 1" = 1'-0"

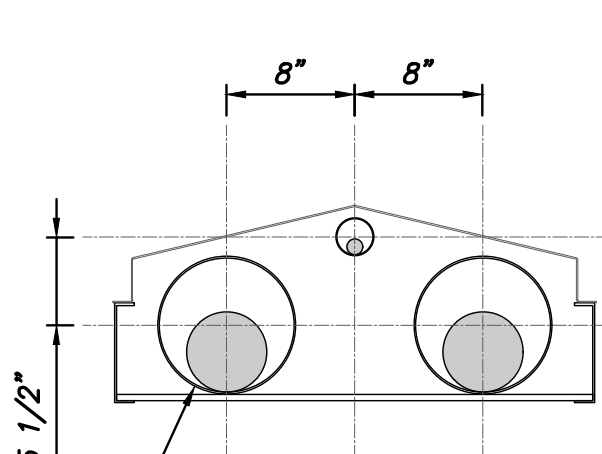


SECTION C  
SCALE: 1" = 1'-0"

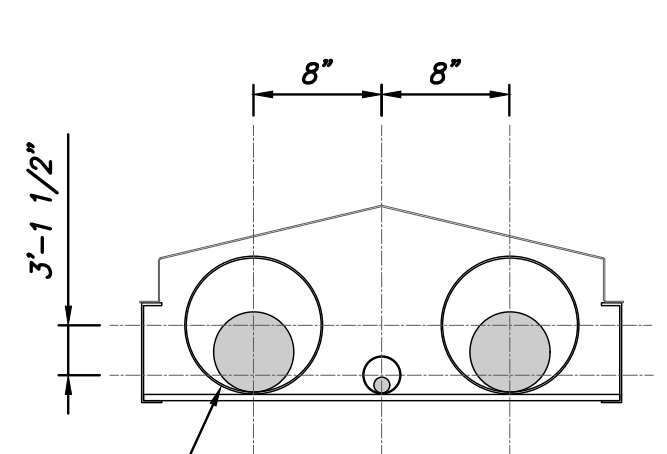


SECTION D  
SCALE: 1" = 1'-0"

GARLOCK LINK  
SEAL (TYP)  
4" CORE:  
LS-300-C-6  
12" CORE:  
LS-475-C-12



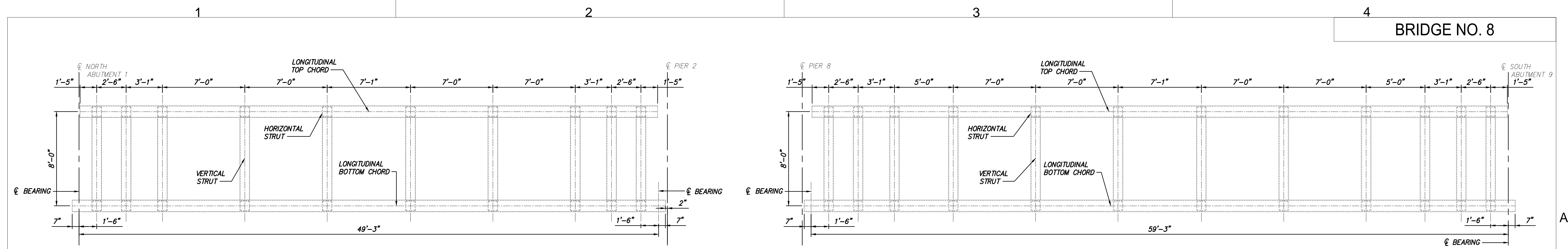
SECTION E  
SCALE: 1" = 1'-0"



SECTION F  
SCALE: 1" = 1'-0"

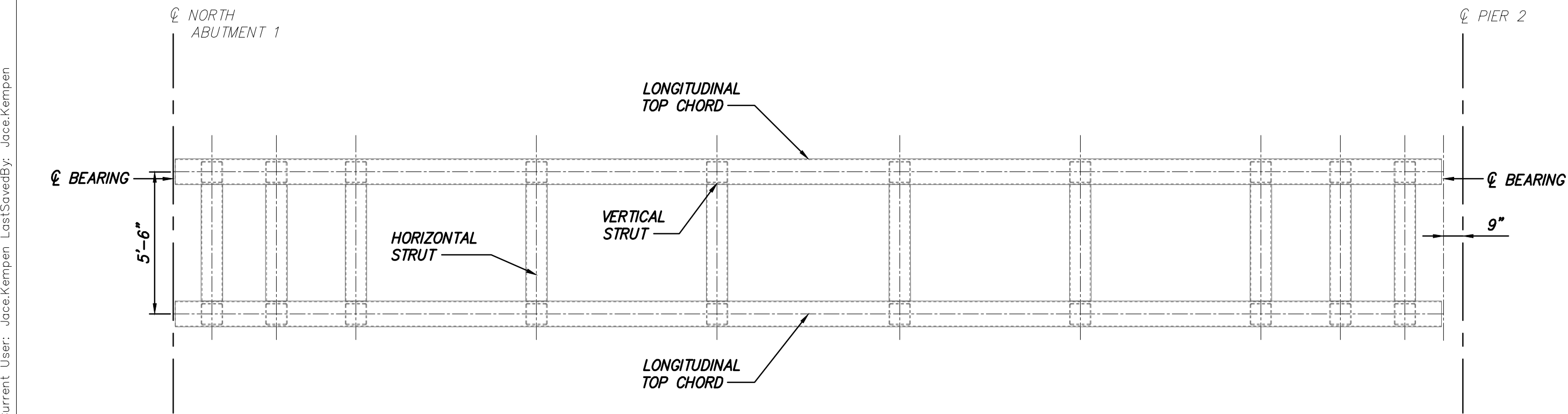


File: P:\KIE-CHPE\3-DES\07 STR\SH1'S\21162\_PROJECT-WIDE\_S-750-761\_BRG.DWG Saved: 3/23/2023 9:18:27 AM Plotted: 3/23/2023 12:58:04 PM Current User: Joca.Kempen LostSavesBy: Joca.Kempen

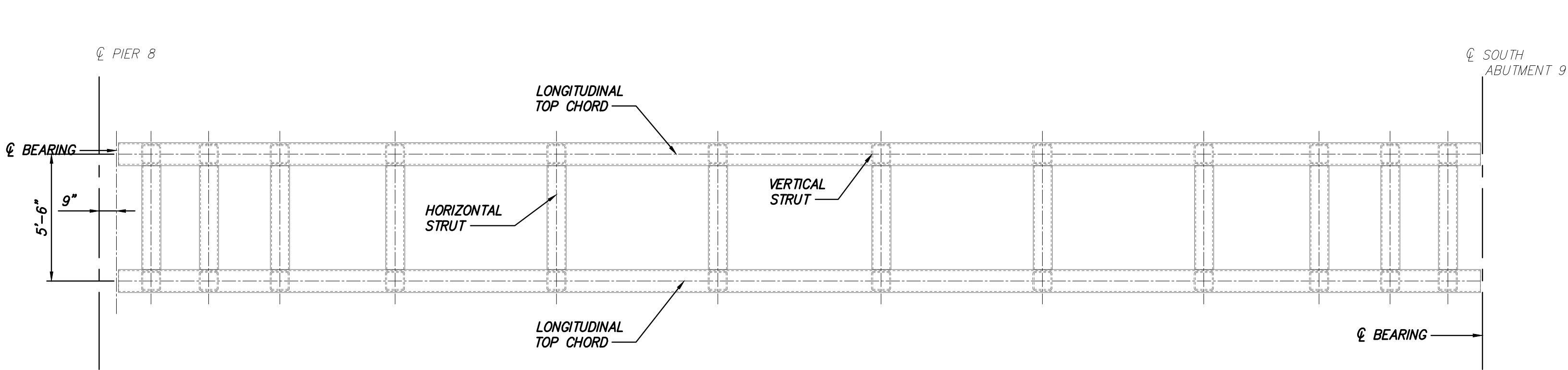


SPAN 1 – TRUSS ELEVATION – FRONT VIEW (50FT)  
SCALE: 1/4" = 1'-0"

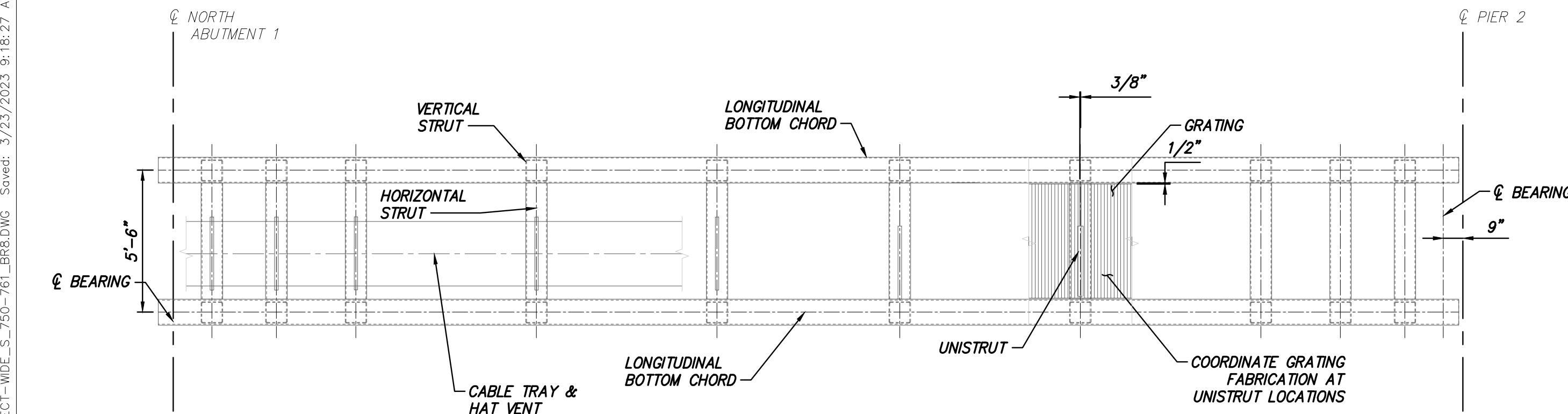
SPAN 8 – TRUSS ELEVATION – FRONT VIEW (60FT)  
SCALE: 1/4" = 1'-0"



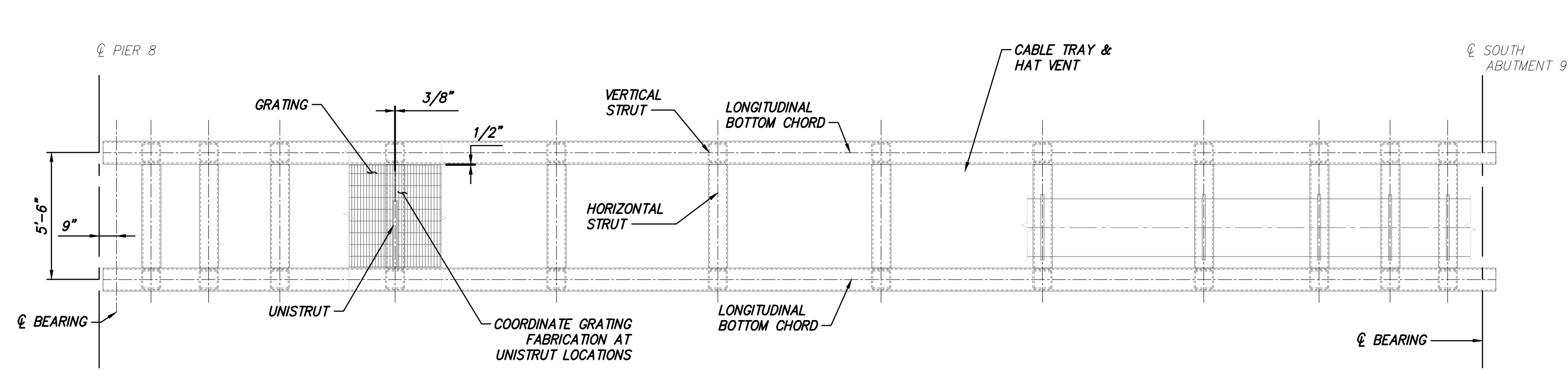
SPAN 1 – TRUSS TOP CHORD PLAN (50FT)  
SCALE: 1/4" = 1'-0"



SPAN 8 – TRUSS TOP CHORD PLAN (60FT)  
SCALE: 1/4" = 1'-0"



SPAN 1 – TRUSS BOTTOM CHORD PLAN (50FT)  
SCALE: 1/4" = 1'-0"



SPAN 8 – TRUSS BOTTOM CHORD PLAN (60FT)  
SCALE: 1/4" = 1'-0"

NOTES:  
1. SEE NOTES ON S-776.



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC		JNK	OO				
B	12/16/2022	FINAL SUBMISSION		JNK	OO				
A	11/11/2022	DRAFT FINAL SUBMISSION		JNK	OO				
No.	DATE	SUBMITTAL / REVISION DESCRIPTION		DB	APP				

CHAMPLAIN HUDSON POWER EXPRESS

BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
SPANS 1 AND 8 - PLAN AND ELEVATION

DRAWN BY:	DRH	DESIGNED BY:	JNK	APPROVED BY:	OO	SCALE	AS SHOWN	DATE	12/16/2022
						REV. NO.	B	SH.NO.	

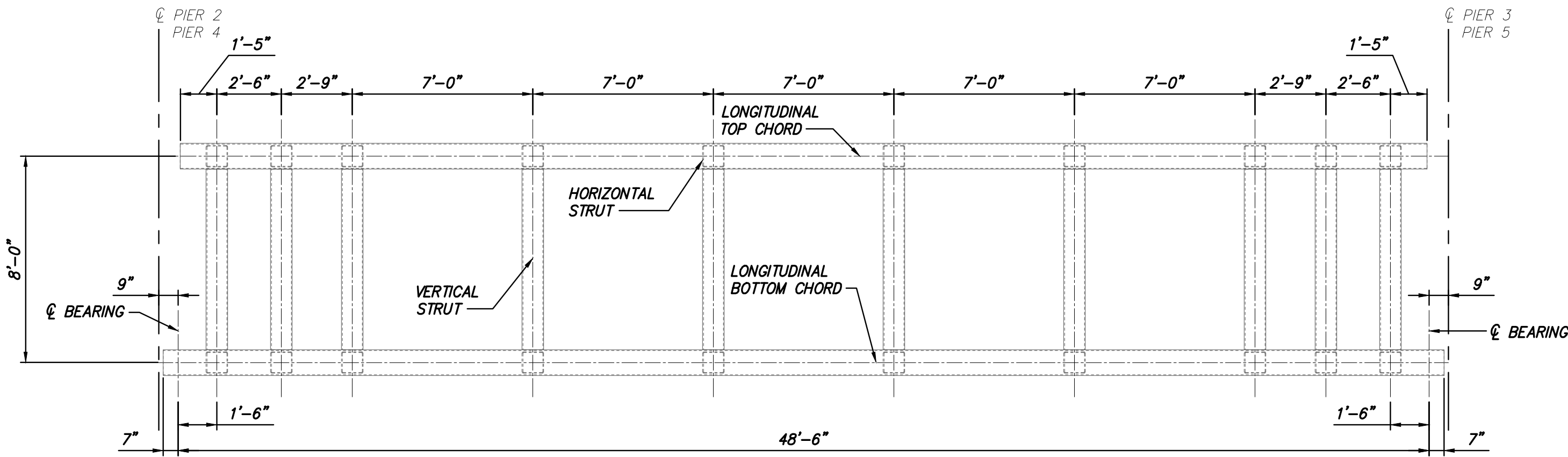
KIEWIT PROJECT NO.  
21162

DRAWING NO.

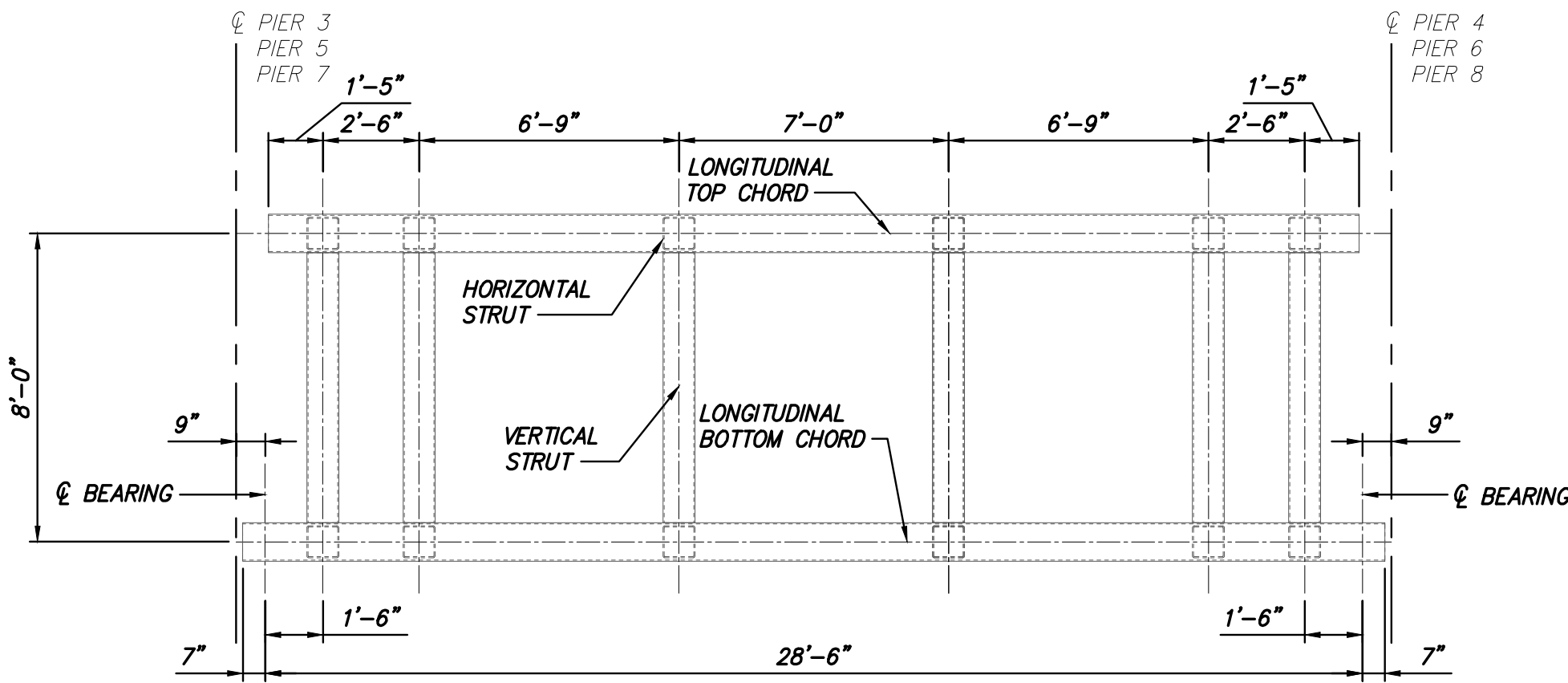
S-779



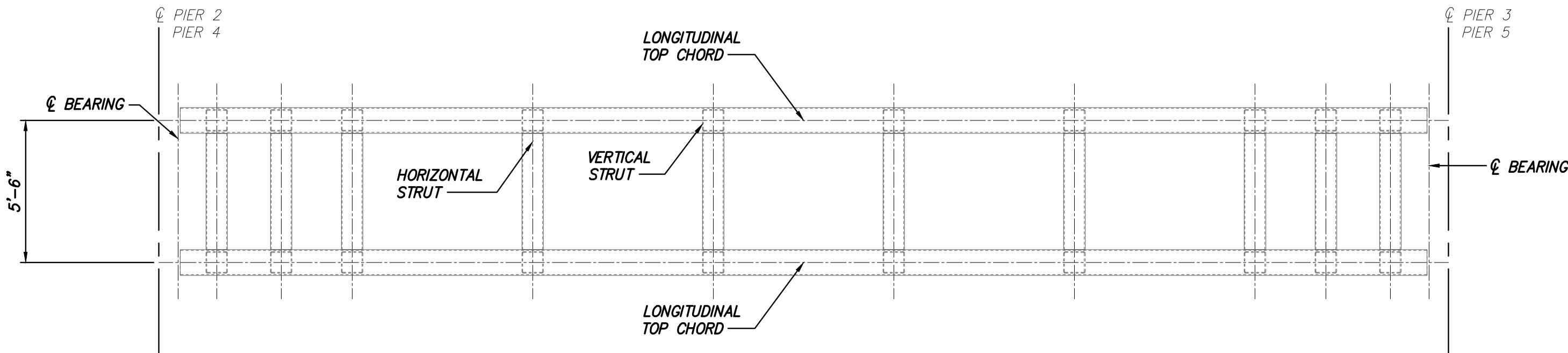
NOTES:  
1. SEE NOTES ON S-776.



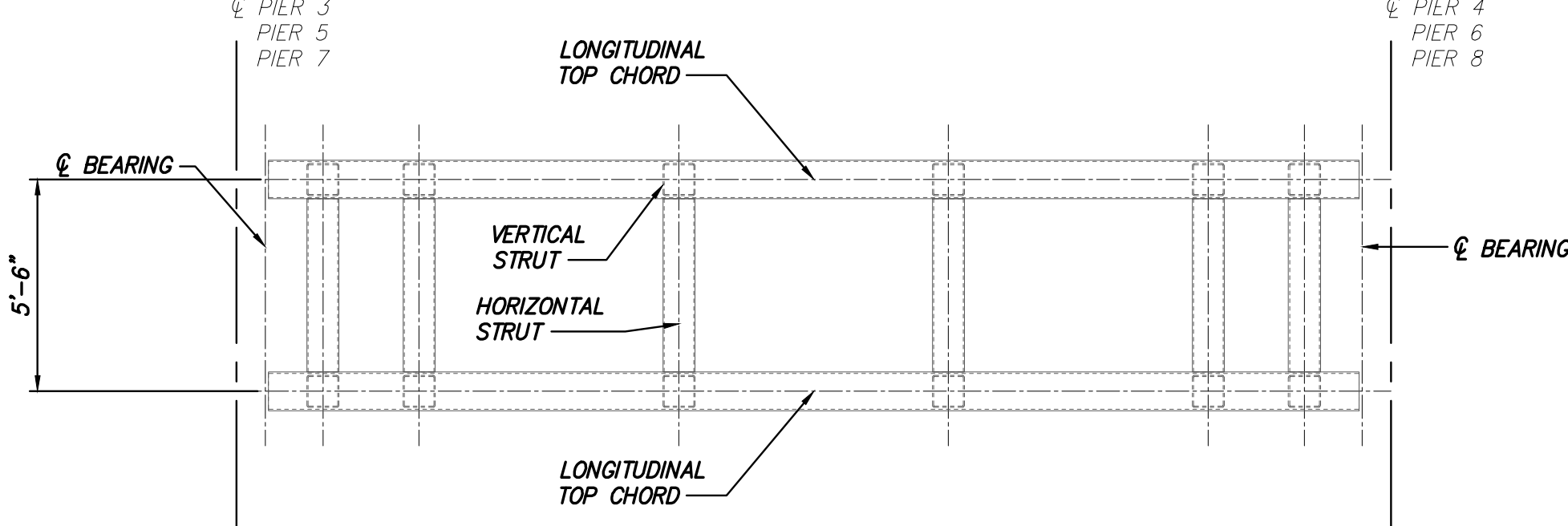
SPANS 2 & 4 – TRUSS ELEVATION (50FT)  
SCALE: 1/4" = 1'-0"



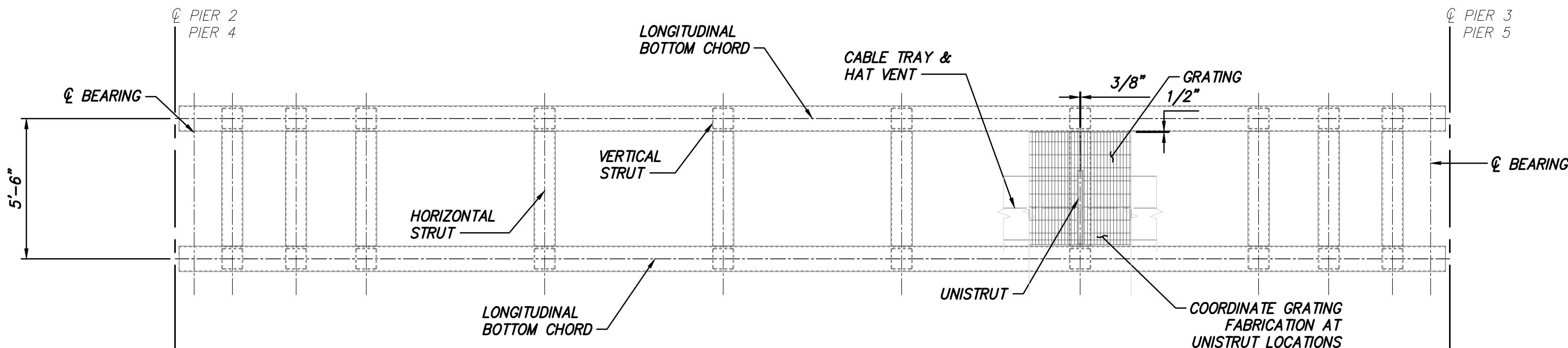
SPANS 3, 5, 7 – TRUSS ELEVATION (30FT)  
SCALE: 1/4" = 1'-0"



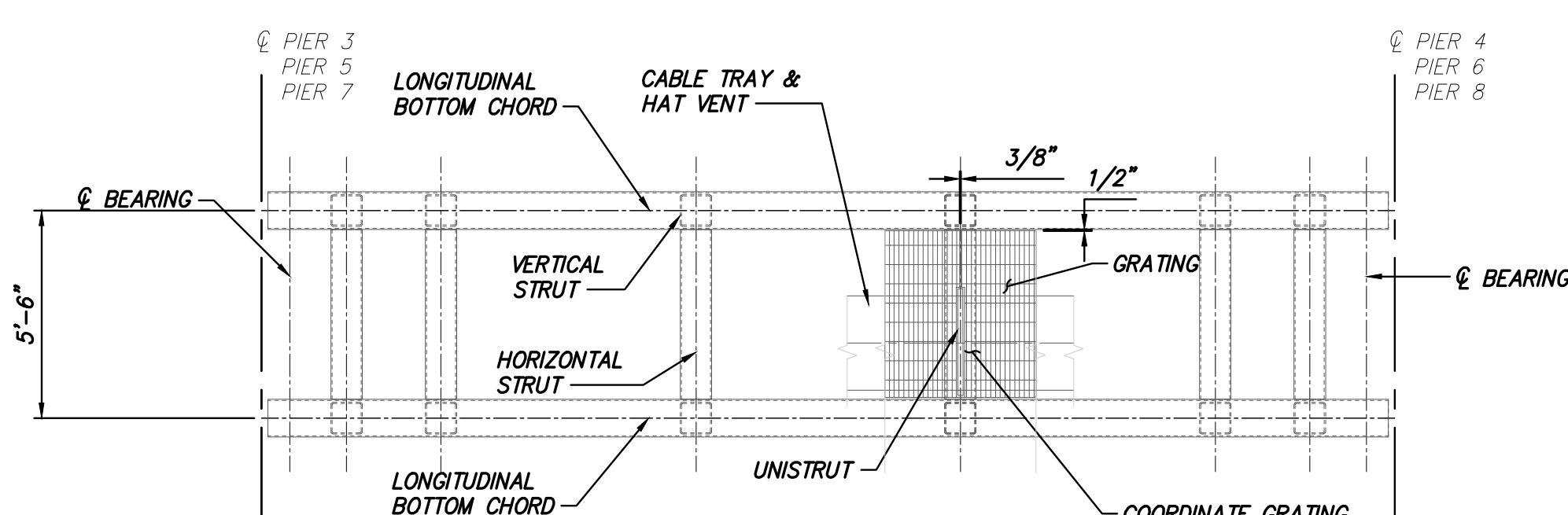
SPANS 2 & 4 – TRUSS TOP CHORD PLAN (50FT)  
SCALE: 1/4" = 1'-0"



SPANS 3, 5, 7 – TRUSS TOP CHORD PLAN (30FT)  
SCALE: 1/4" = 1'-0"



SPANS 2 & 4 – TRUSS BOTTOM CHORD PLAN (50FT)  
SCALE: 1/4" = 1'-0"



SPANS 3, 5, 7 – TRUSS BOTTOM CHORD PLAN (30FT)  
SCALE: 1/4" = 1'-0"



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC		JNK	OO		
B	12/16/2022	FINAL SUBMISSION		JNK	OO		
A	11/11/2022	DRAFT FINAL SUBMISSION		JNK	OO		
No.	DATE	SUBMITTAL / REVISION DESCRIPTION		DB	APP		

CHAMPLAIN HUDSON POWER EXPRESS

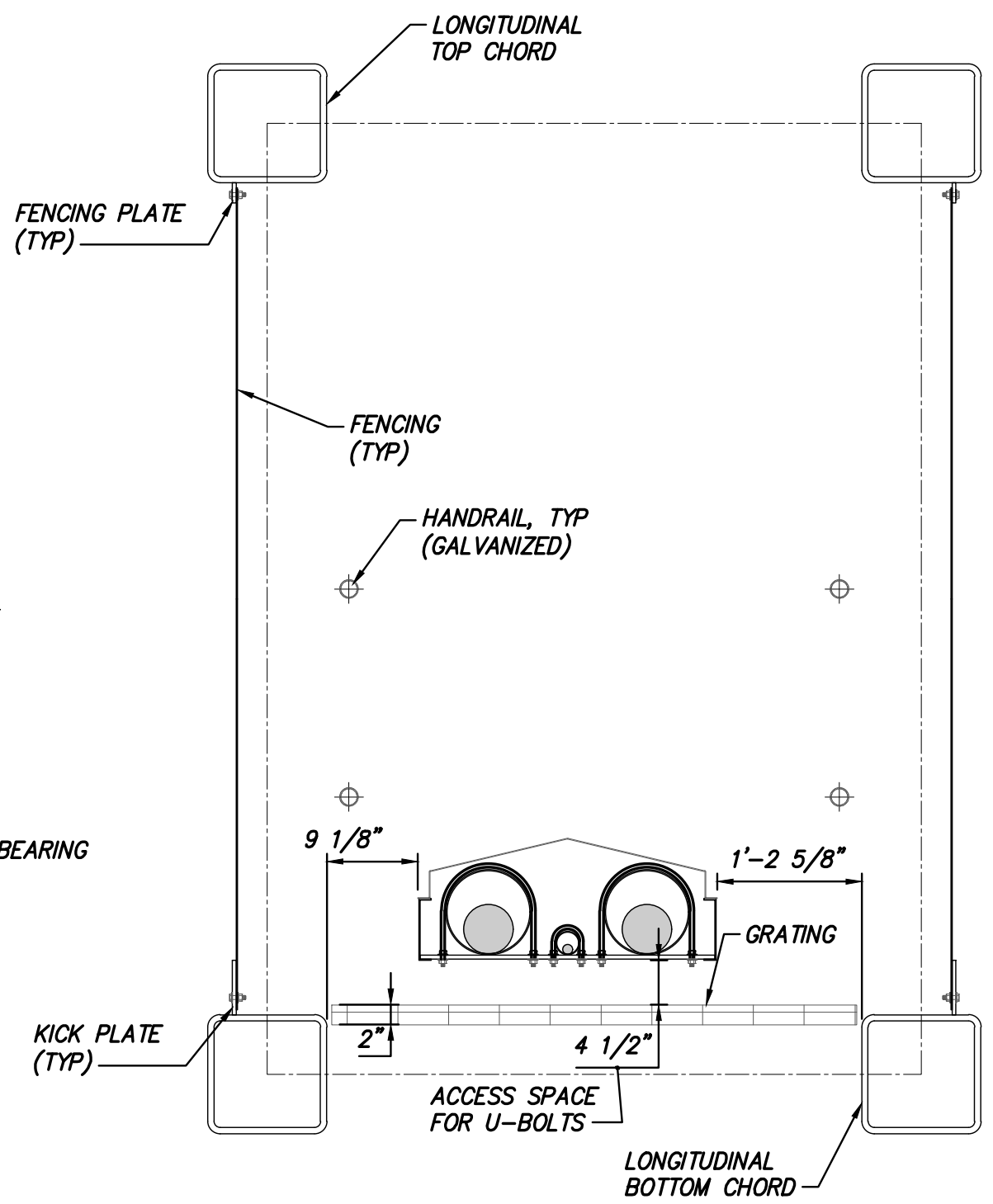
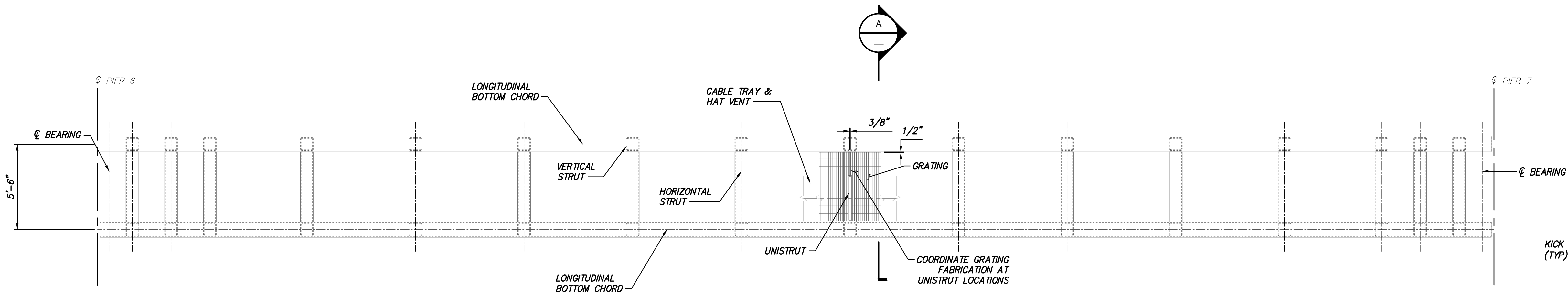
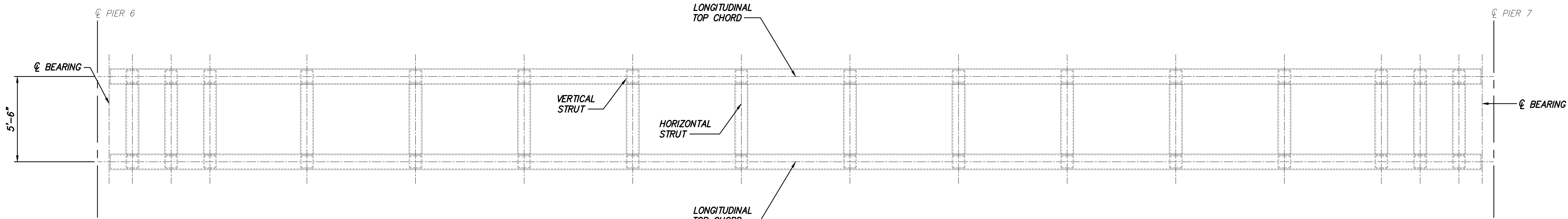
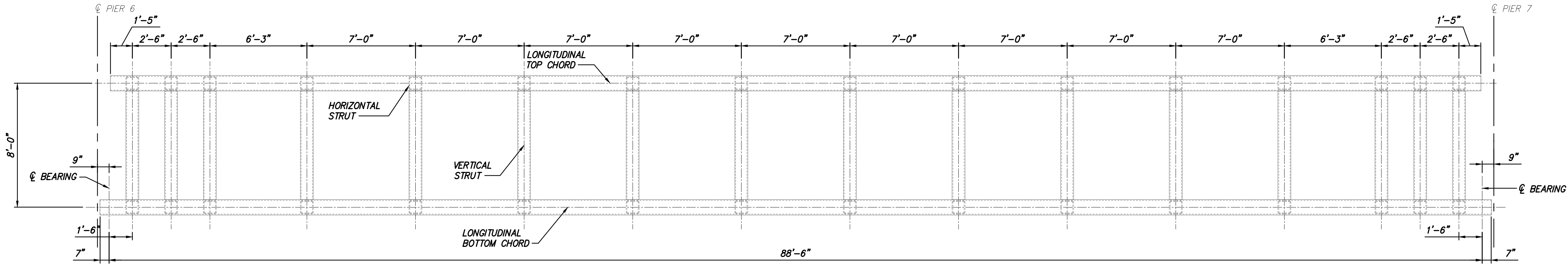
BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
SPANS 2, 3, 4, 5, 7 - PLAN AND ELEVATION

DRAWN BY: DRH DESIGNED BY: JNK APPROVED BY: OO SCALE AS SHOWN DATE

KIEWIT PROJECT NO.	21162
DRAWING NO.	S-780
DATE	SH.NO.



NOTES:  
1. SEE NOTES ON S-776.



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC	JNK	OO					
B	12/16/2022	FINAL SUBMISSION	JNK	OO					
A	11/11/2022	DRAFT FINAL SUBMISSION	JNK	OO					
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP					

CHAMPLAIN HUDSON POWER EXPRESS

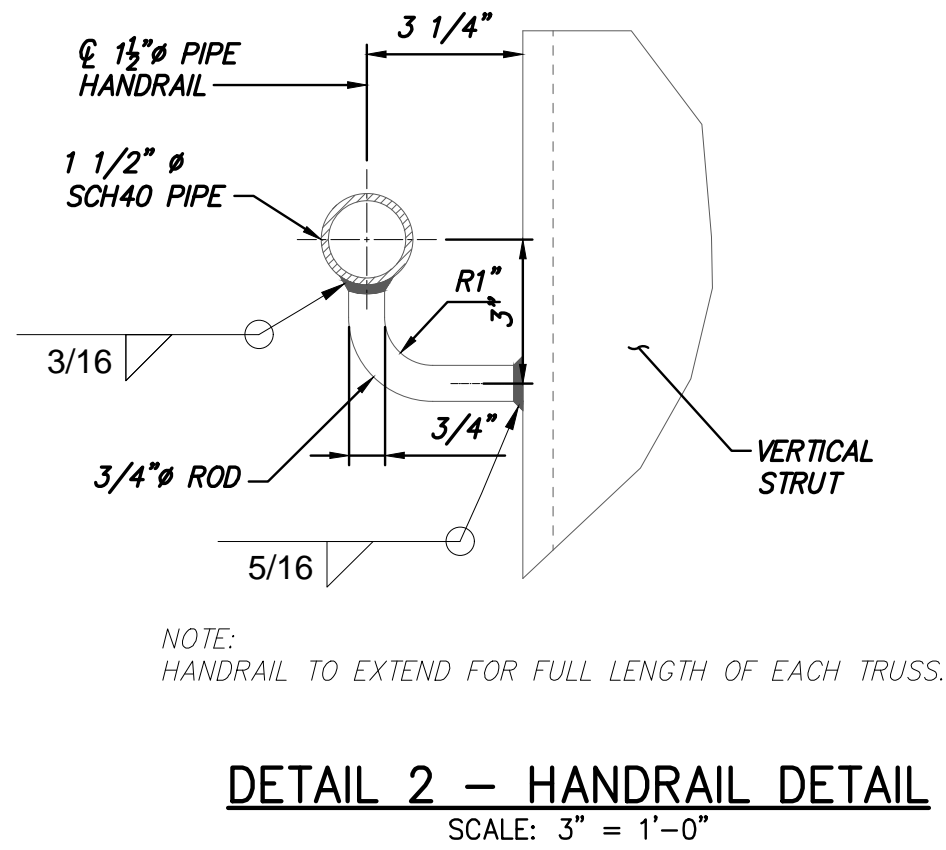
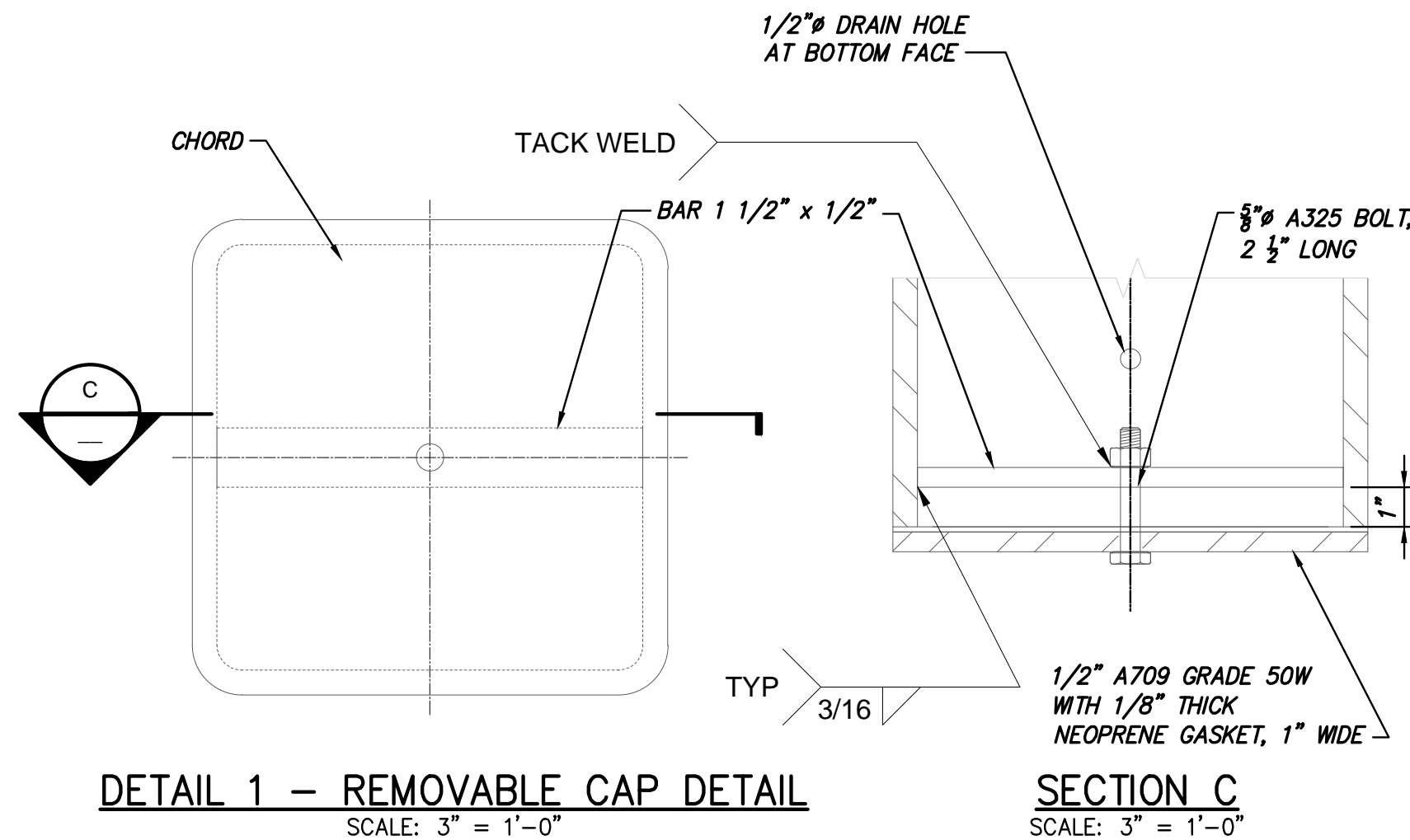
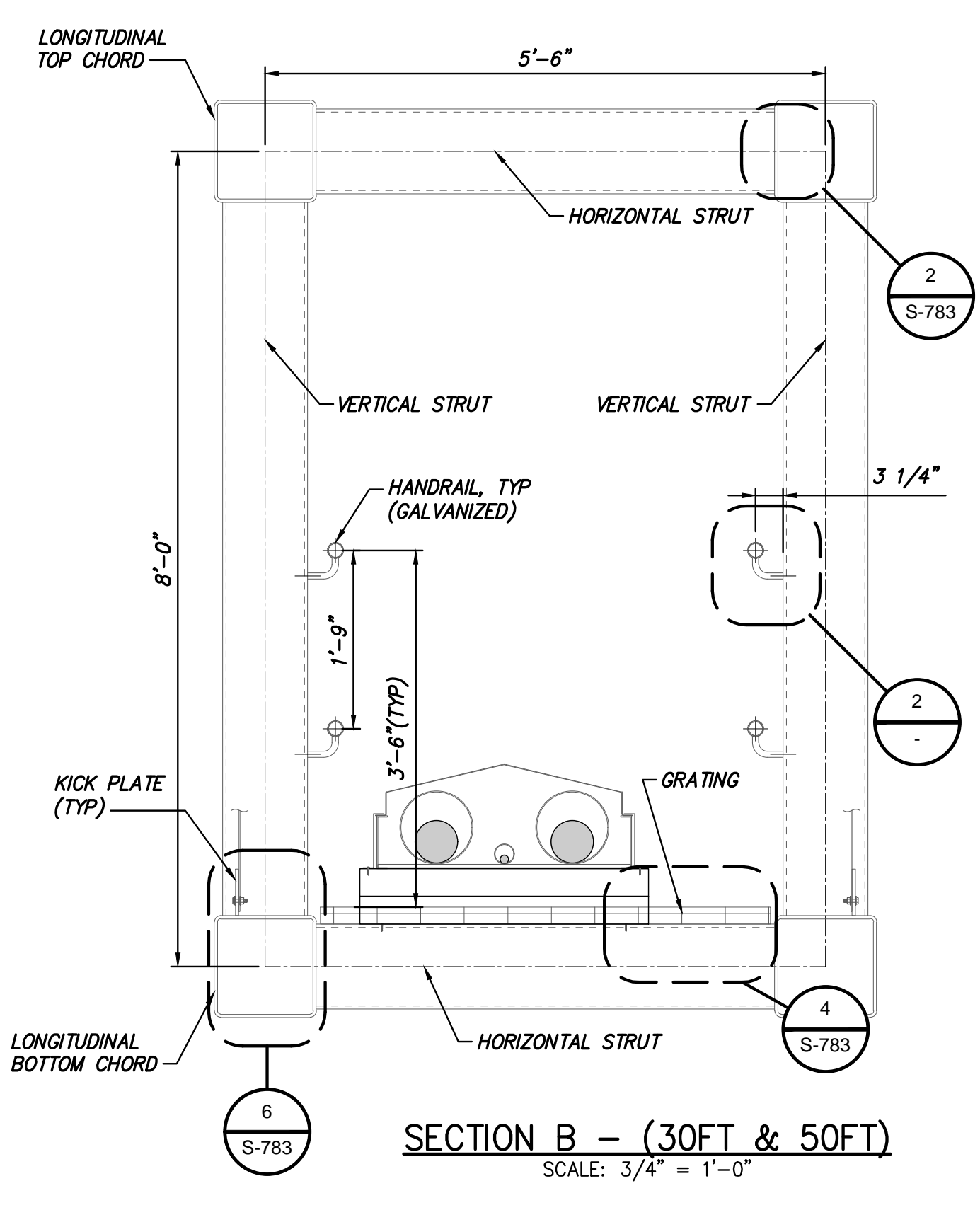
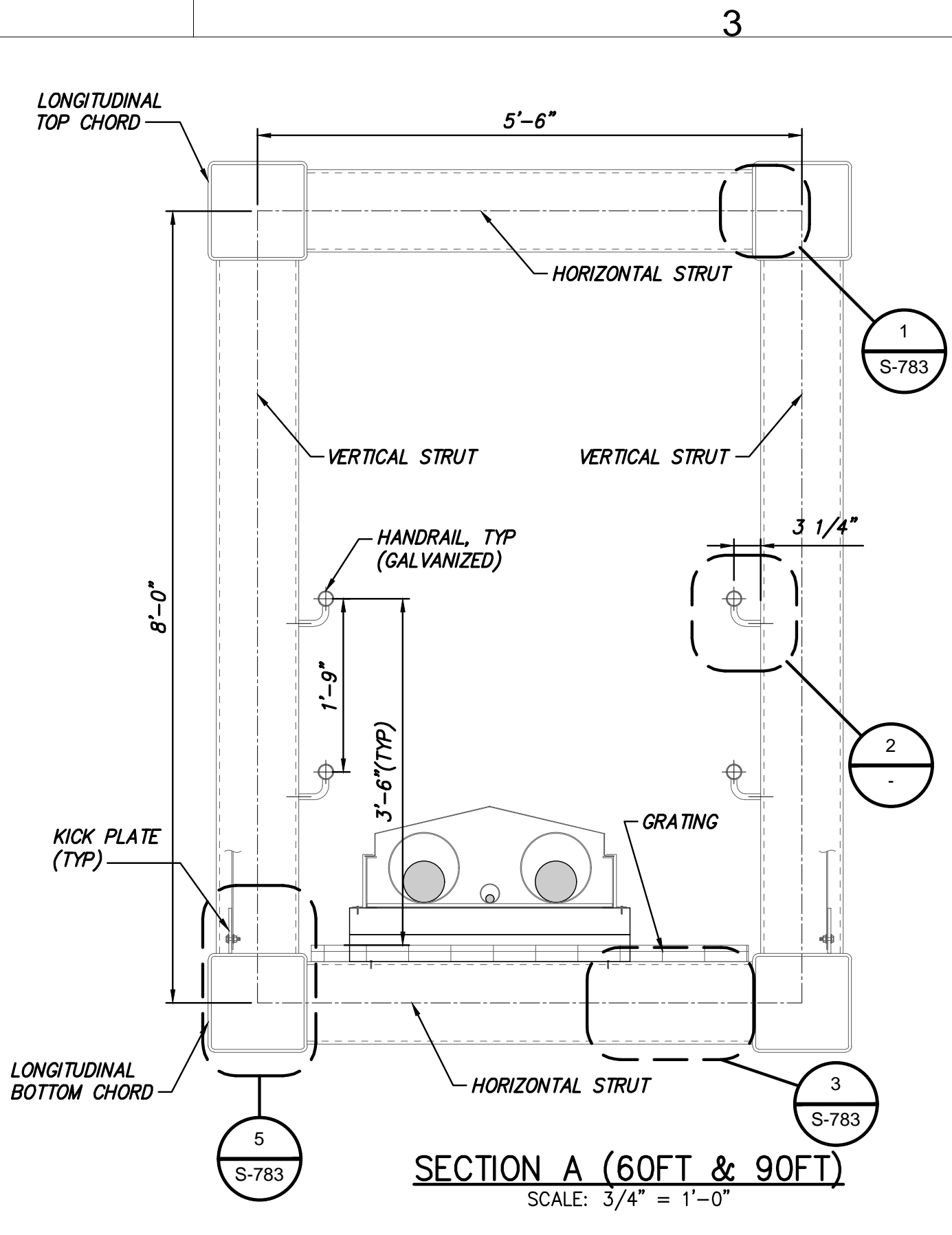
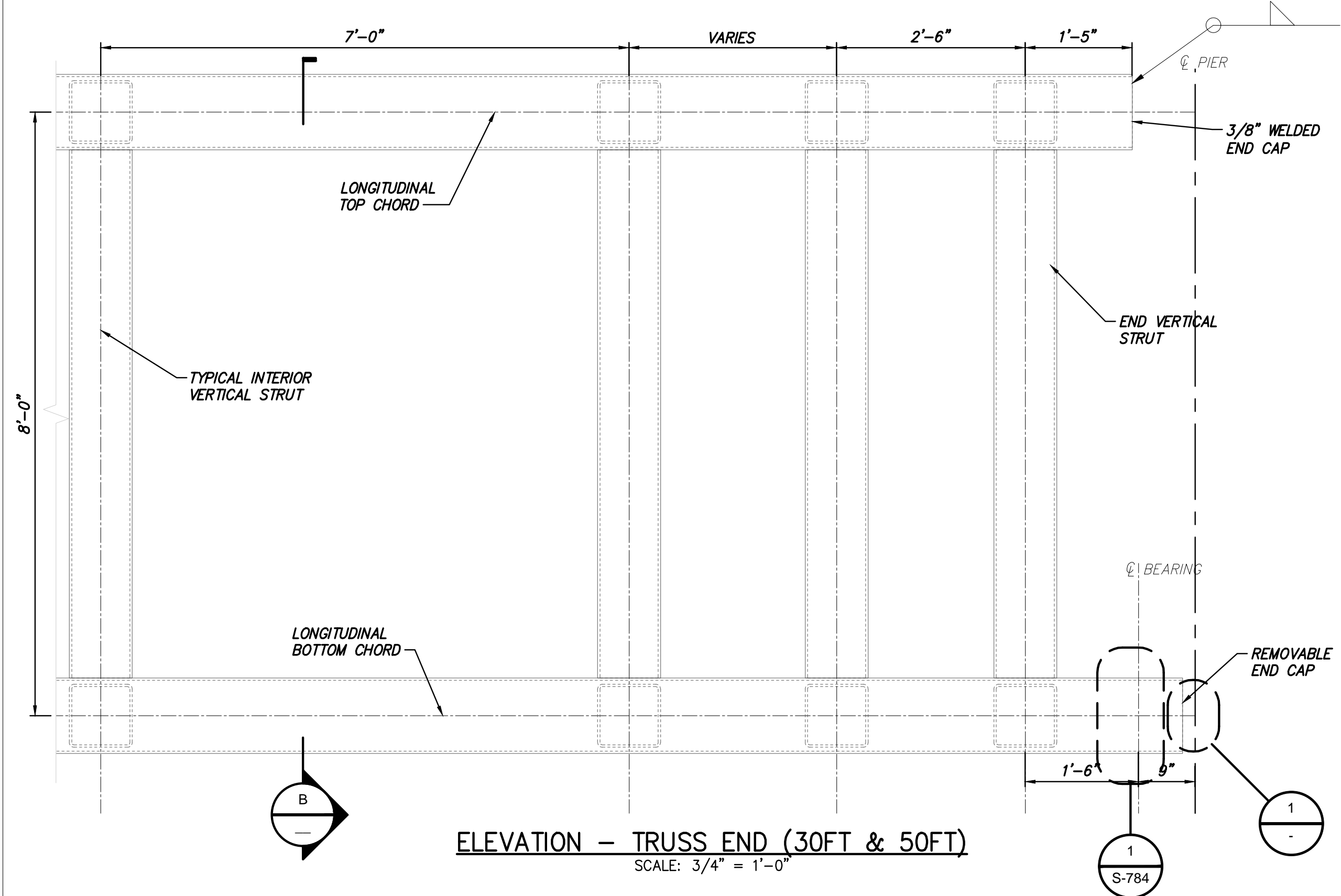
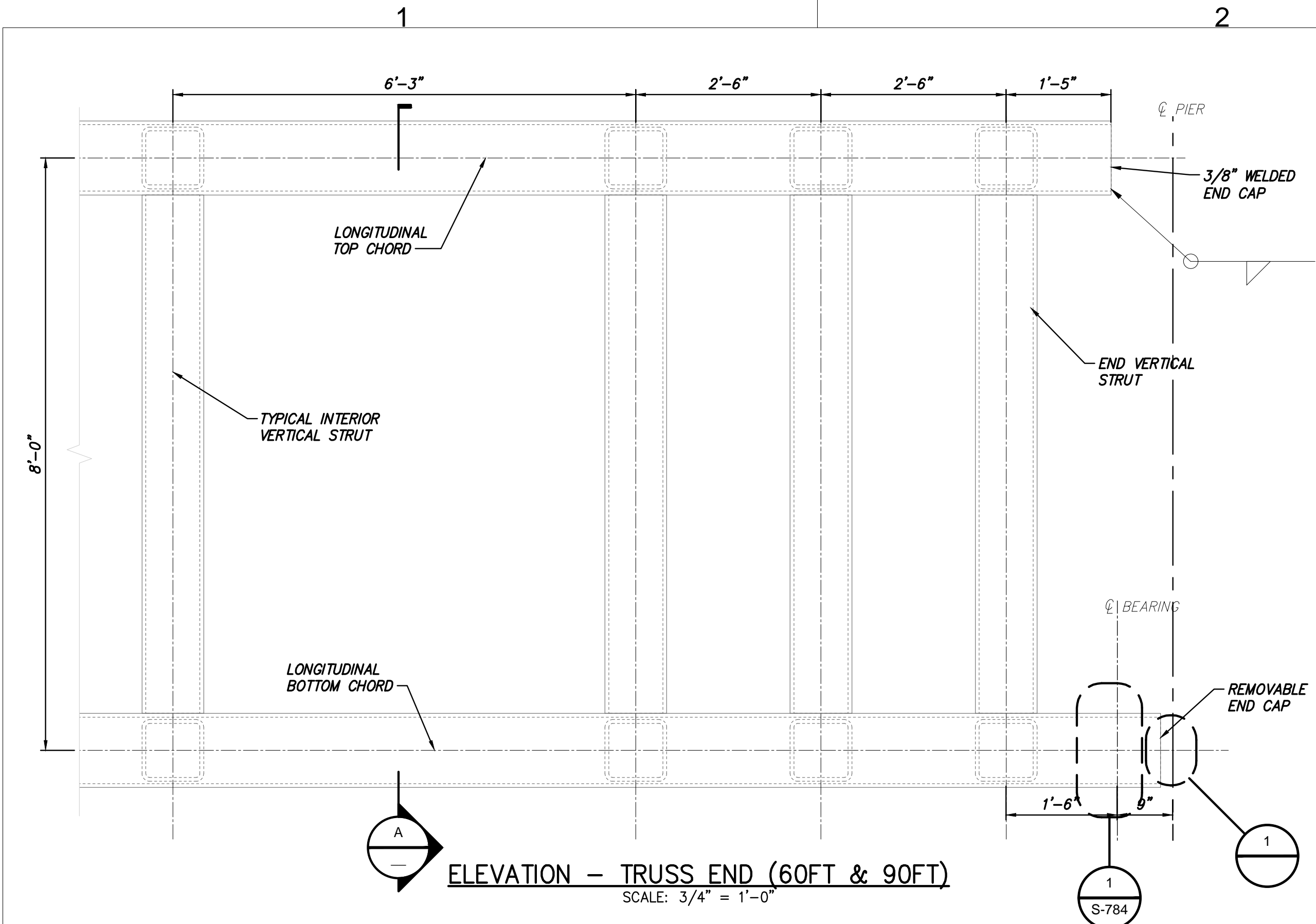
BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
SPAN 6 - PLAN AND ELEVATION

KIEWIT PROJECT NO.	21162
DRAWING NO.	S-781
DATE	12/16/2022
SH.NO.	B

DRAWN BY: DRH	DESIGNED BY: JNK	APPROVED BY: OO	SCALE	AS SHOWN	DATE
			REV. NO.		12/16/2022



- NOTES:
- SEE NOTES ON S-776.
  - IF FILLET WELD SIZE IS NOT SHOWN ON THE DETAILS, THE WELD SIZE SHALL BE THE SAME AS THE THICKNESS OF THE THINNER PART BEING JOINED.



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC	JNK	OO	
B	12/16/2022	FINAL SUBMISSION	JNK	OO	
A	11/11/2022	DRAFT FINAL SUBMISSION	JNK	OO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
TRUSS DETAILS

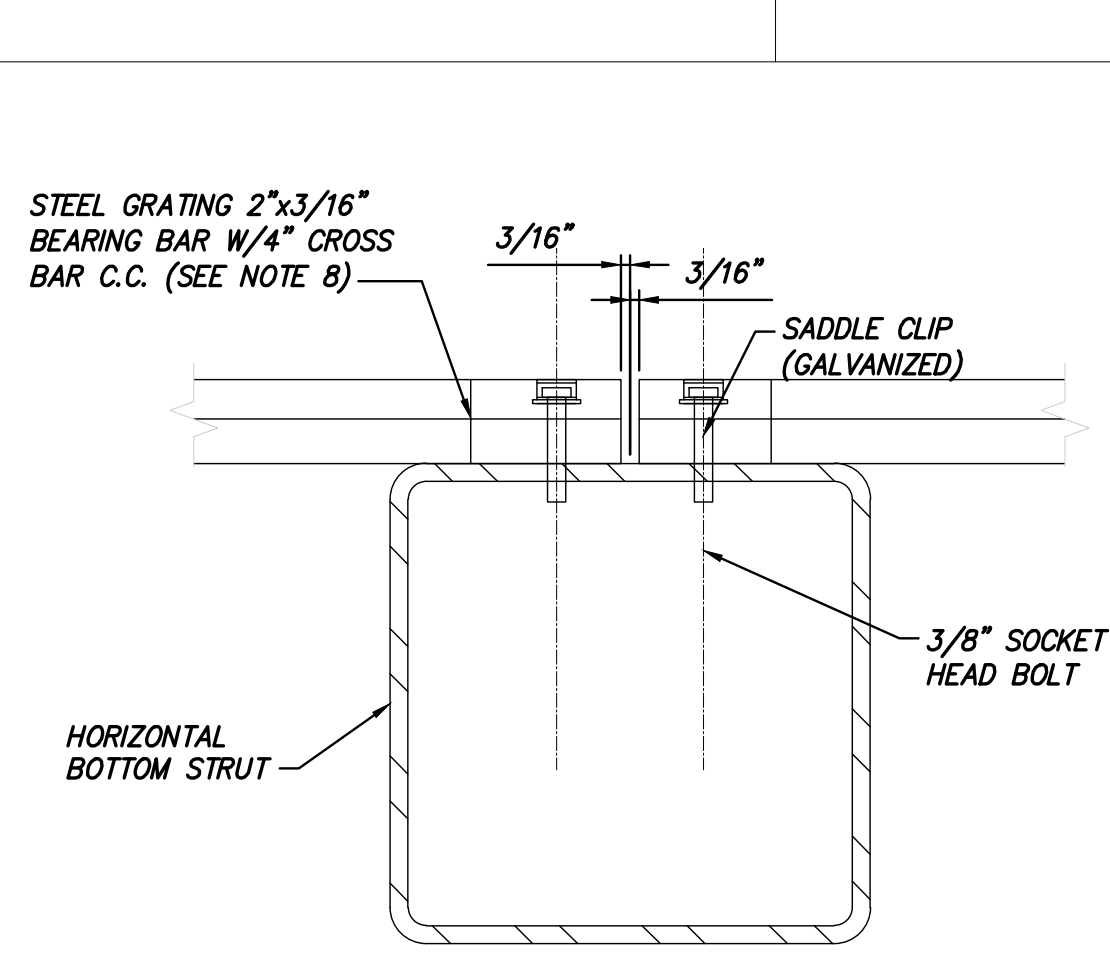
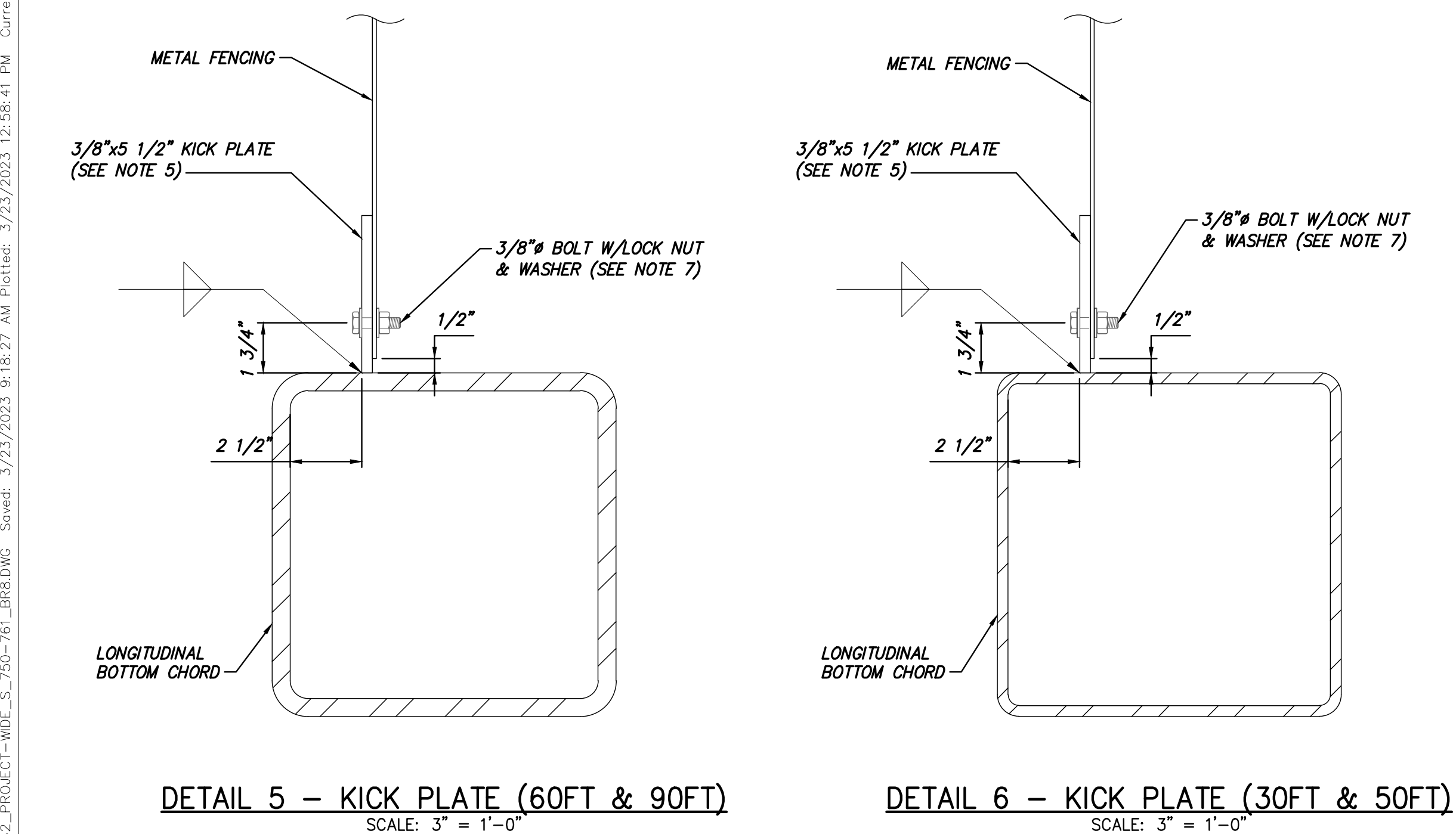
DRAWN BY: DRH	DESIGNED BY: JNK	APPROVED BY: OO	SCALE: AS SHOWN	DATE: 12/16/2022
			REV. NO.	B SH.NO.

KIEWIT PROJECT NO. 21162
DRAWING NO. S-782
DATE 12/16/2022

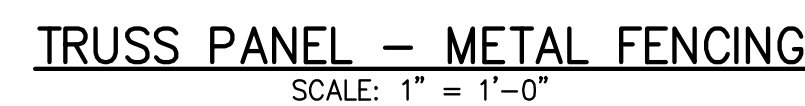


NOTES:

1. SEE NOTES ON S-776.
2. GALVANIZED METAL FENCING: 1.33"x3.00" L.G. W/9 DIAMONDS/L.F. 0.142" WIDTH x 0.134" THICKNESS. 75% OPEN AREA.
3. METAL FENCING SHALL BE MINIMUM 1/2" CLEAR TO ALL CHORD AND STRUT MEMBERS.
4. DRILL 7/16" Ø HOLES FOR 3/8" Ø BOLTS IN FENCING PLATES.
5. KICK PLATE SHALL ONLY BE FURNISHED AT BOTTOM LONGITUDINAL CHORDS.
6. FULL PENETRATION WELDED CHORD TO STRUT CONNECTION WITH THE BACKER RING ATTACHED TO THE CHORD WITH A CONTINUOUS FILLET WELD AROUND THE INTERIOR FACE OF THE RING. THE THICKNESS OF THE BACKING RING SHALL NOT EXCEED 3/8".
7. WASHER SHALL BE OVERSIZE FENDER-WASHER, MIN OD=1.625", MIN THICKNESS=0.056".
8. SMOOTH SURFACE STANDARD DUOTY GRATING CLOSED MESH WITH 69.5% OPEN AREA. (TYPE 15W4 CLOSE MESH VULCRAFT OR SIMILAR)
9. IF FILLET WELD SIZE IS NOT SHOWN ON THE DETAILS, THE WELD SIZE SHALL BE THE SAME AS THE THICKNESS OF THE THINNER PART BEING JOINED.



DETAIL 4 - GRATING CONNECTION (30FT & 50FT)  
SCALE: 1 1/2" = 1'-0"



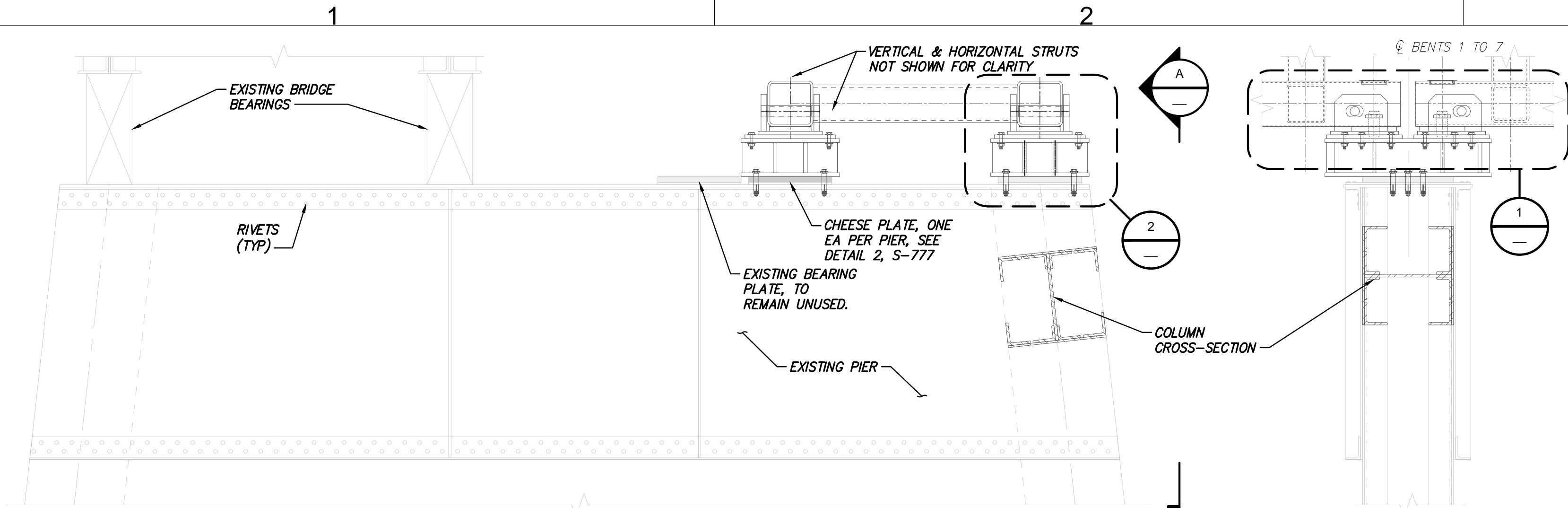
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

						CHAMPLAIN HUDSON POWER EXPRESS  BRIDGE NO. 8 - UTILITY TRUSS BRIDGE TYPICAL WELD AND FENCE DETAILS				KIEWIT PROJECT NO. 21162	
										DRAWING NO.	
C	03/24/2023	IFC		JNK	OO					S-783	
B	12/16/2022	FINAL SUBMISSION		JNK	OO						
A	11/11/2022	DRAFT FINAL SUBMISSION		JNK	OO						
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: DRH	DESIGNED BY: JNK	APPROVED BY: OO	SCALE	AS SHOWN	DATE	
								REV. NO.	B	SH.NO.	
										12/16/2022	



NOTES:

- SEE NOTES ON S-776.
- THE UNTHREADED GRIP LENGTH OF THE LOCK PIN SHALL BE 13 3/4". PLACE A RECESS NUT AT EACH END OF THE PIN.
- INSERT NEOPRENE PAD AND 7 1/4" OD WASHER OVER PIPE NIPPLE. INSTALL REMOVABLE CAP PLATE.
- DECK PLATE FOR ACCESS TO PIPE NIPPLE. 6" Ø STAINLESS STEEL DECK PLATE, BECKSON MARINE, CNC EST OR SIMILAR. SEE S-785 FOR DETAILS.
- IF FILLET WELD SIZE IS NOT SHOWN ON THE DETAILS, THE WELD SIZE SHALL BE THE SAME AS THE THICKNESS OF THE THINNER PART BEING JOINED.

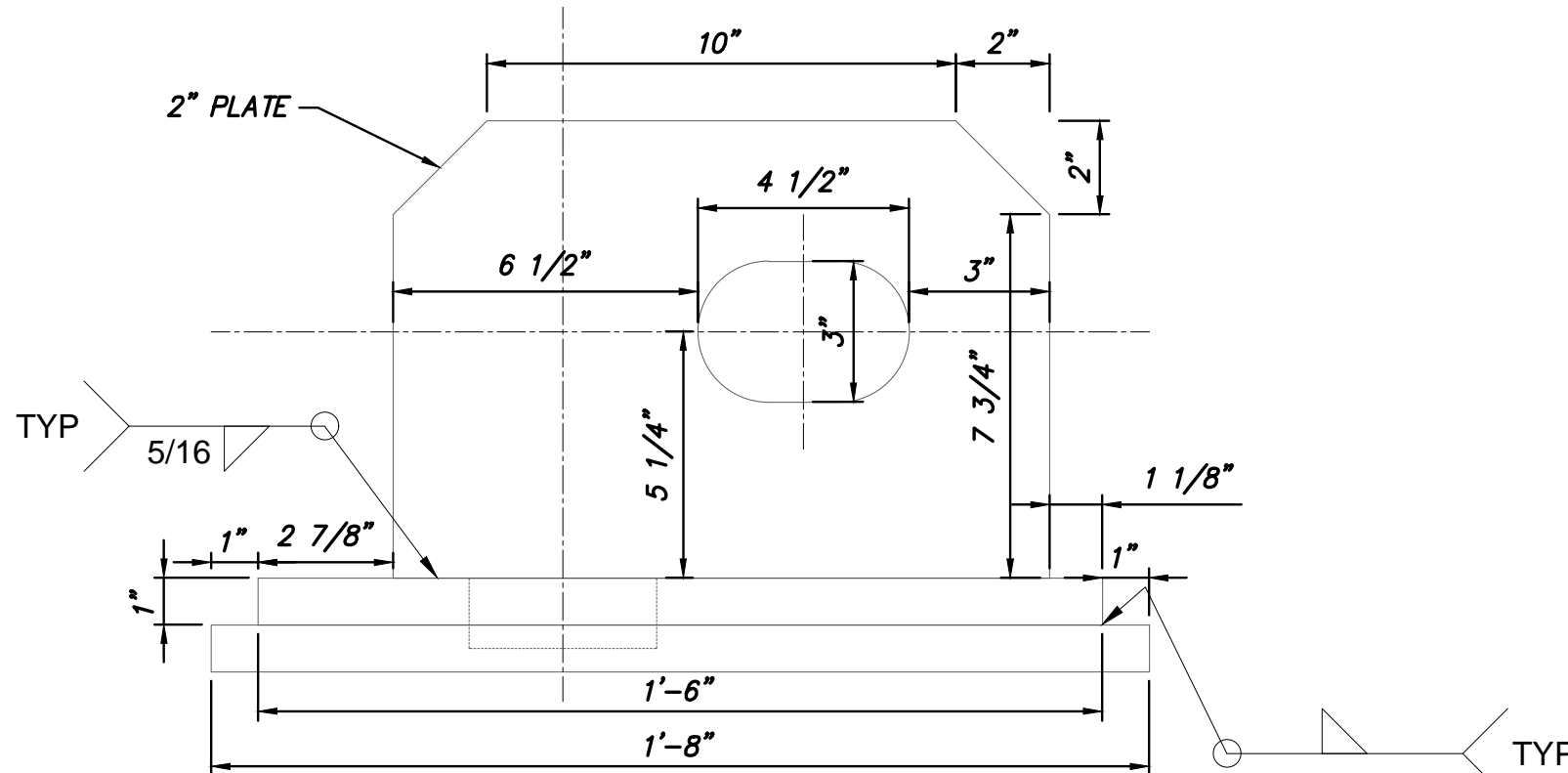


TYPICAL PIER TOP-ELEVATION

SCALE: 1/2" = 1'-0"

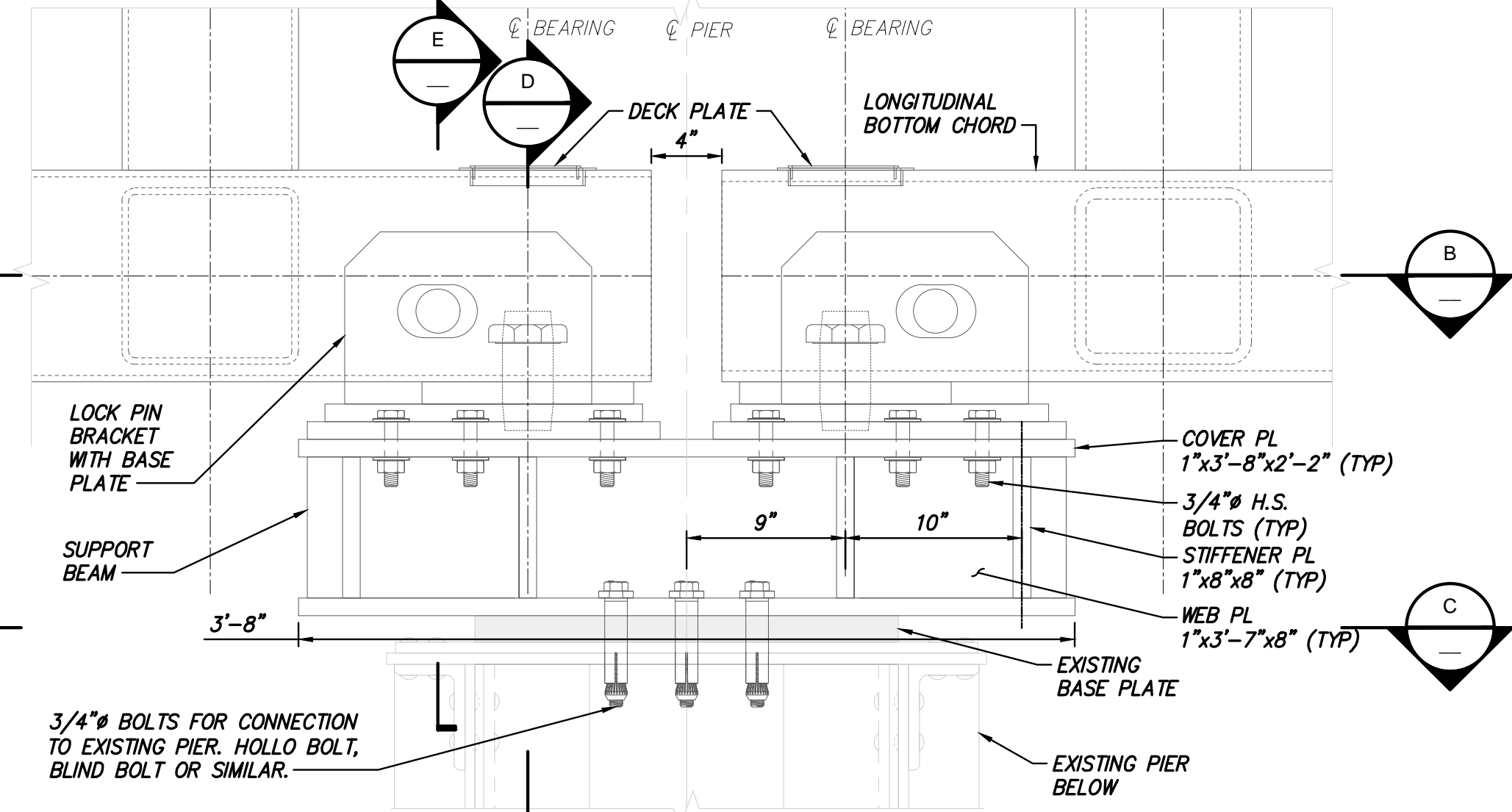
SECTION A

SCALE: 1/2" = 1'-0"



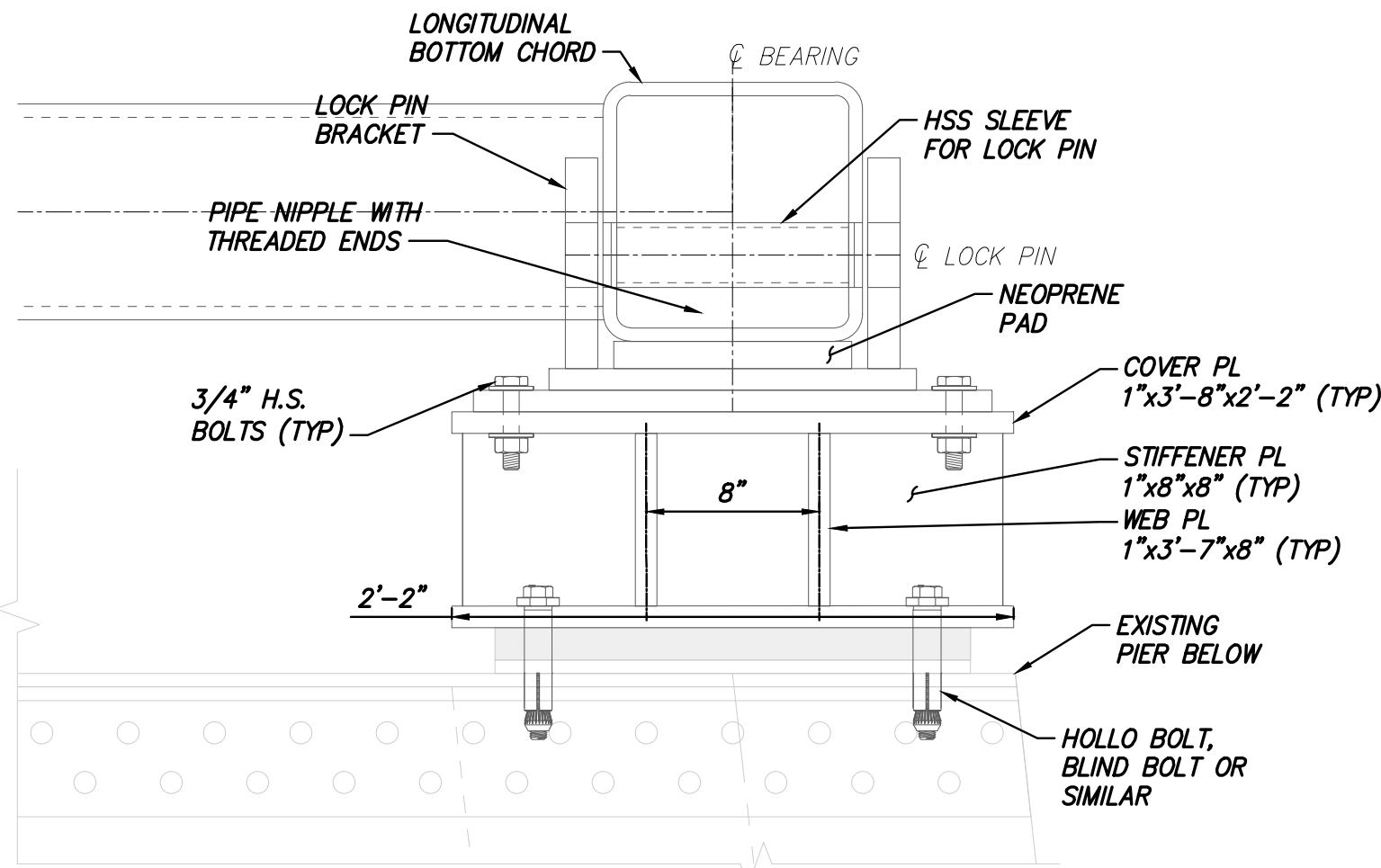
LOCK PIN BRACKET DETAIL

SCALE: 3" = 1'-0"



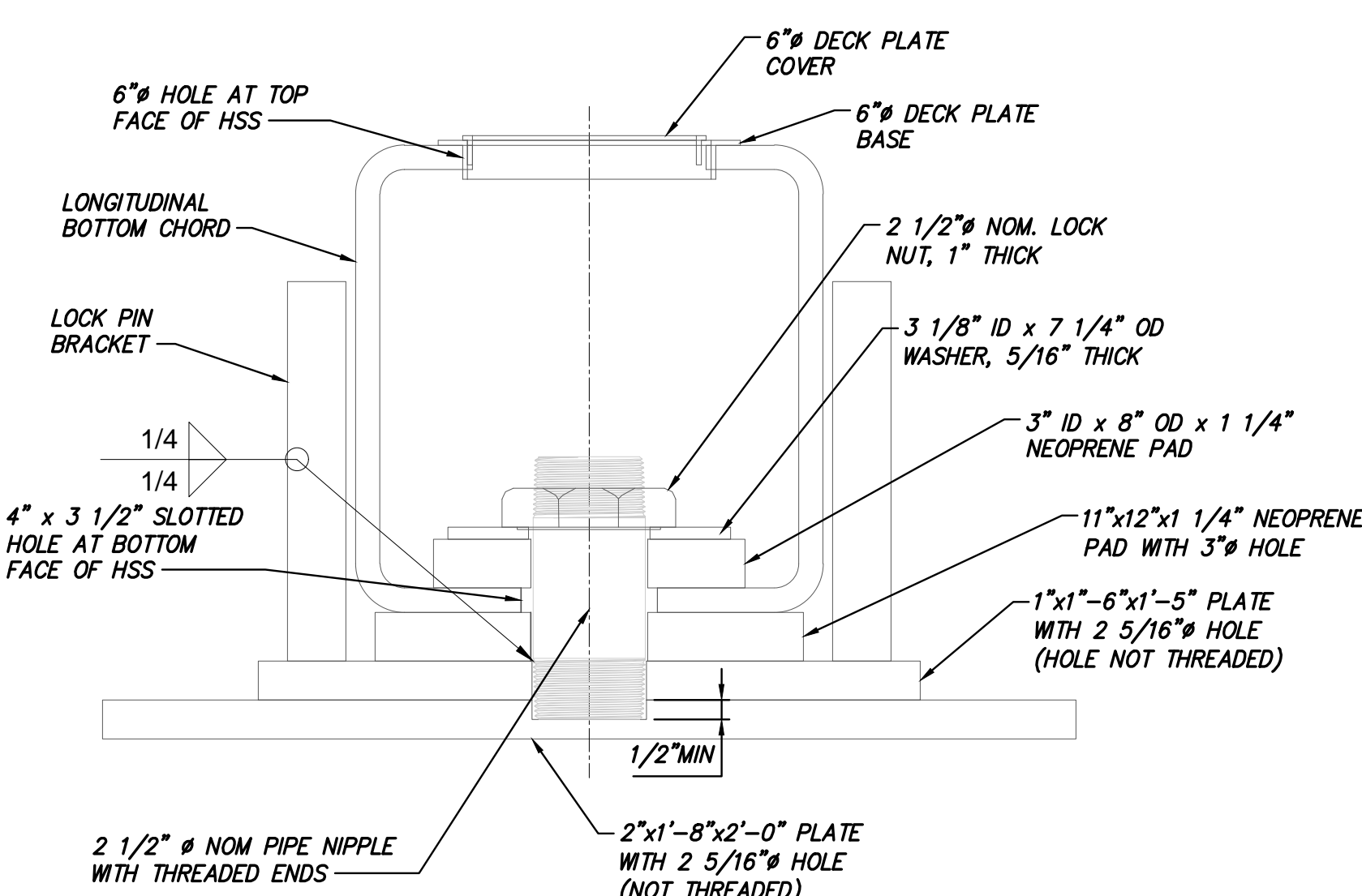
DETAIL 1 - TYPICAL BEARING DETAIL AT PIERS - ELEVATION

SCALE: 1 1/2" = 1'-0"



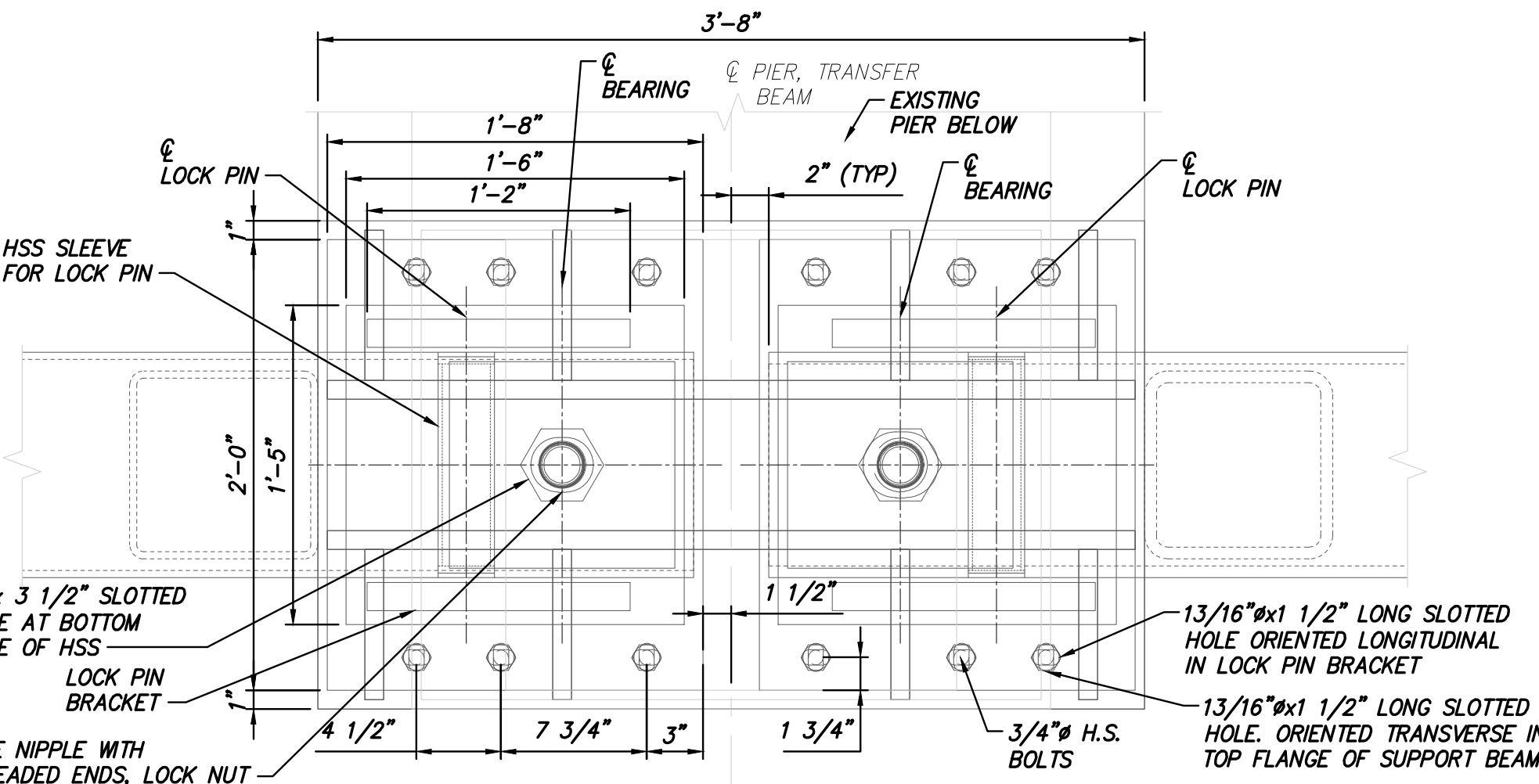
DETAIL 2

SCALE: 1 1/2" = 1'-0"



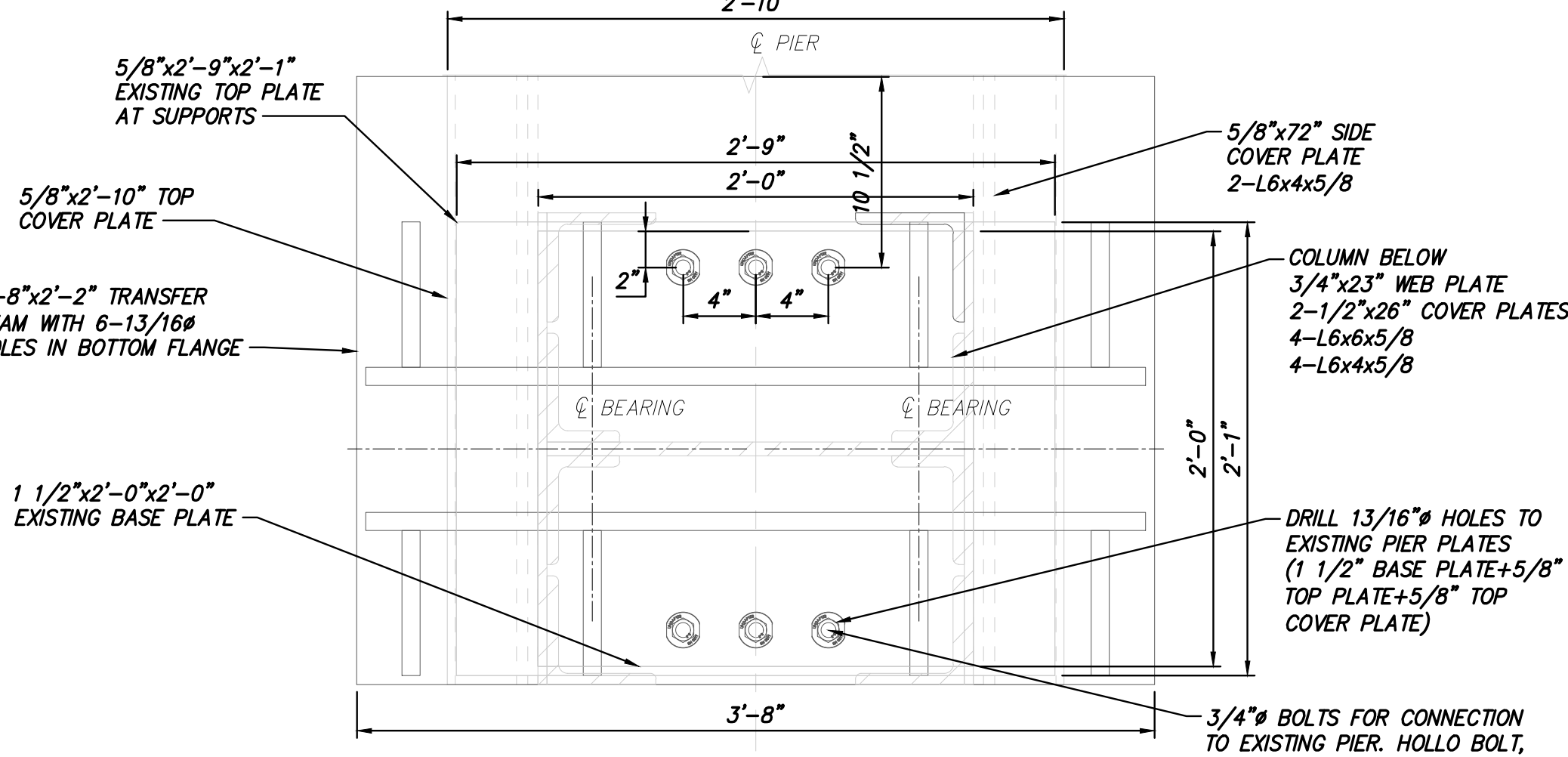
SECTION D

SCALE: 3" = 1'-0"



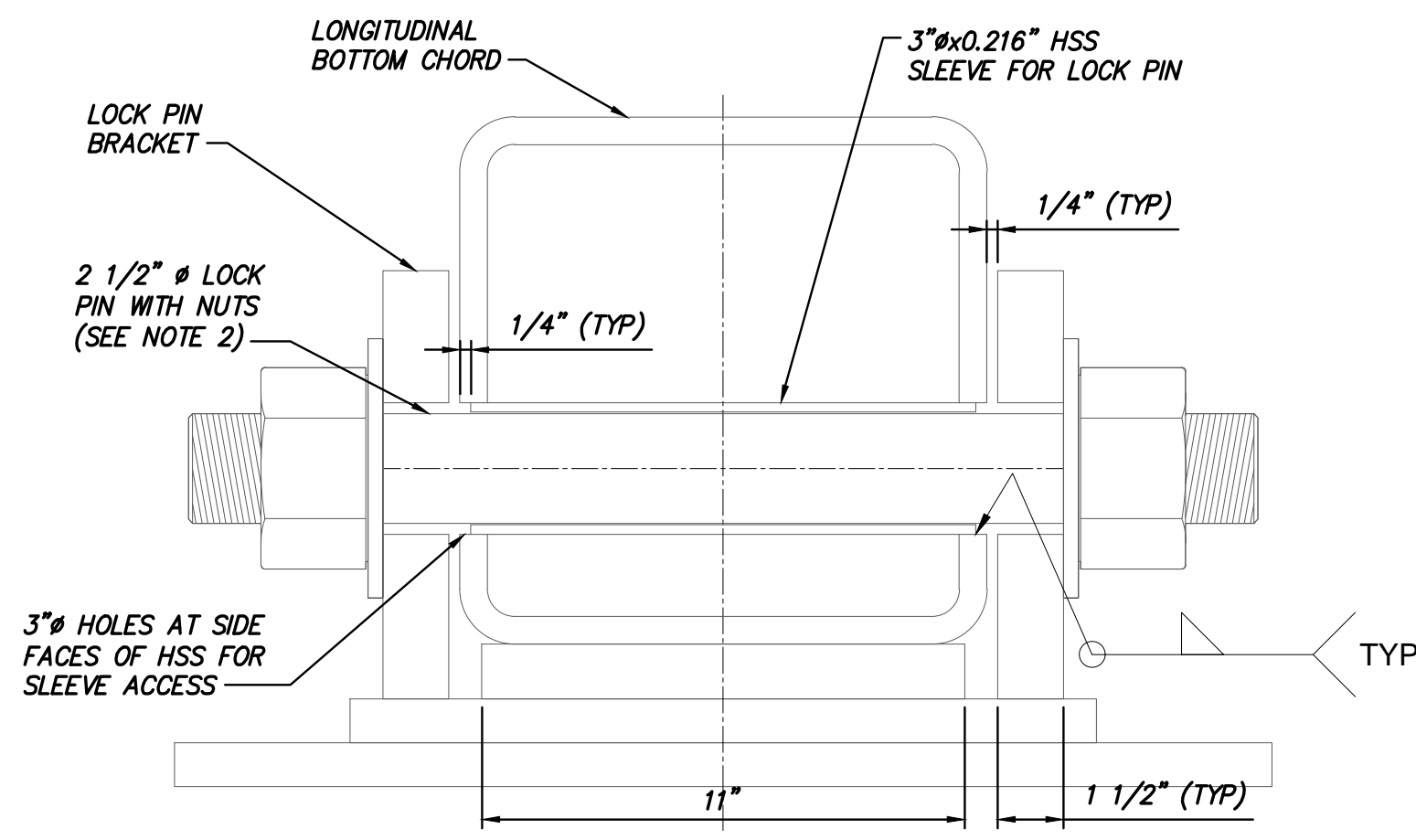
SECTION B-LOCK PIN BRACKET TO SUPPORT BEAM CONNECTION

SCALE: 1 1/2" = 1'-0"



SECTION C-SUPPORT BEAM TO PIER CONNECTION

SCALE: 1 1/2" = 1'-0"



SECTION E

SCALE: 3" = 1'-0"



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED. THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

C	03/24/2023	IFC	JNK	OO
B	12/16/2022	FINAL SUBMISSION	JNK	OO
A	11/11/2022	DRAFT FINAL SUBMISSION	JNK	OO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

CHAMPLAIN HUDSON POWER EXPRESS

BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
TYPICAL BEARING AT PIERS

DRAWN BY:	DRH	DESIGNED BY:	JNK	APPROVED BY:	OO	SCALE	AS SHOWN	DATE	12/16/2022
						REV. NO.	B	SH.NO.	

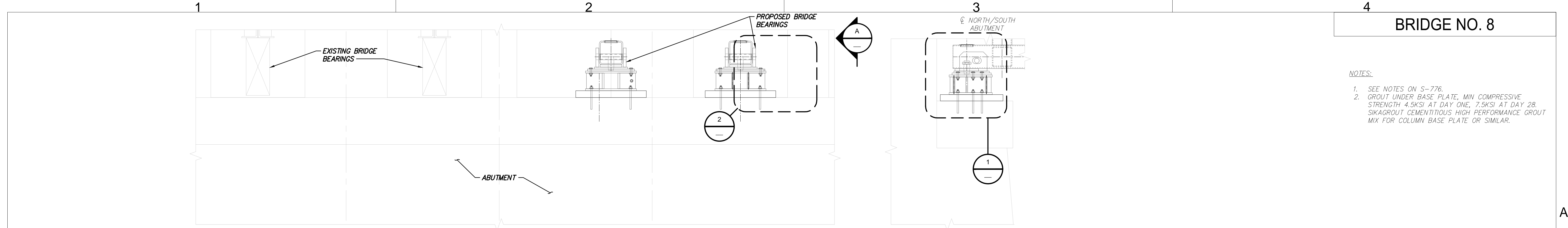
KIEWIT PROJECT NO.  
21162

DRAWING NO.

S-784

DATE  
12/16/2022





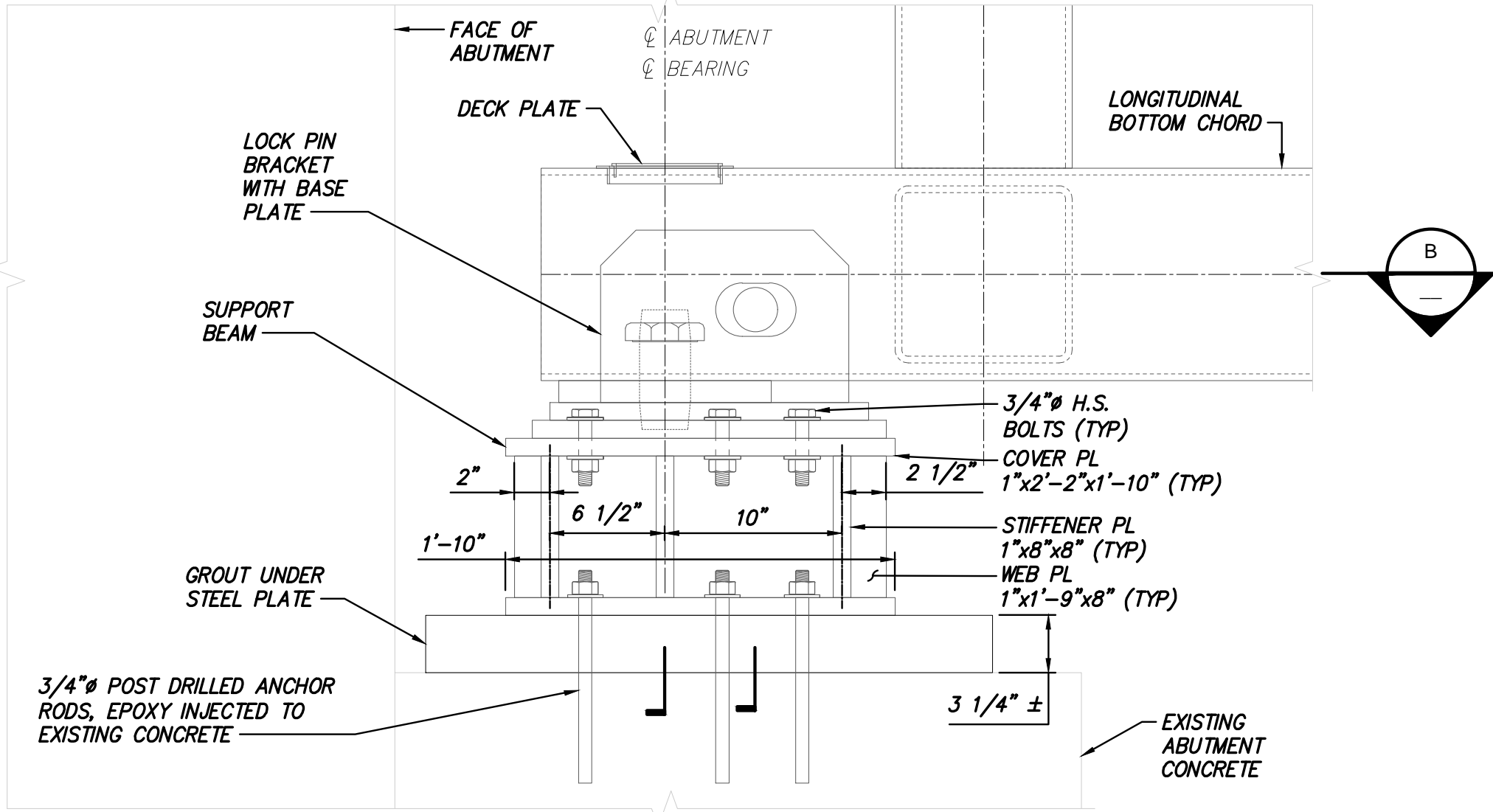
BRIDGE NO. 8

NOTES:

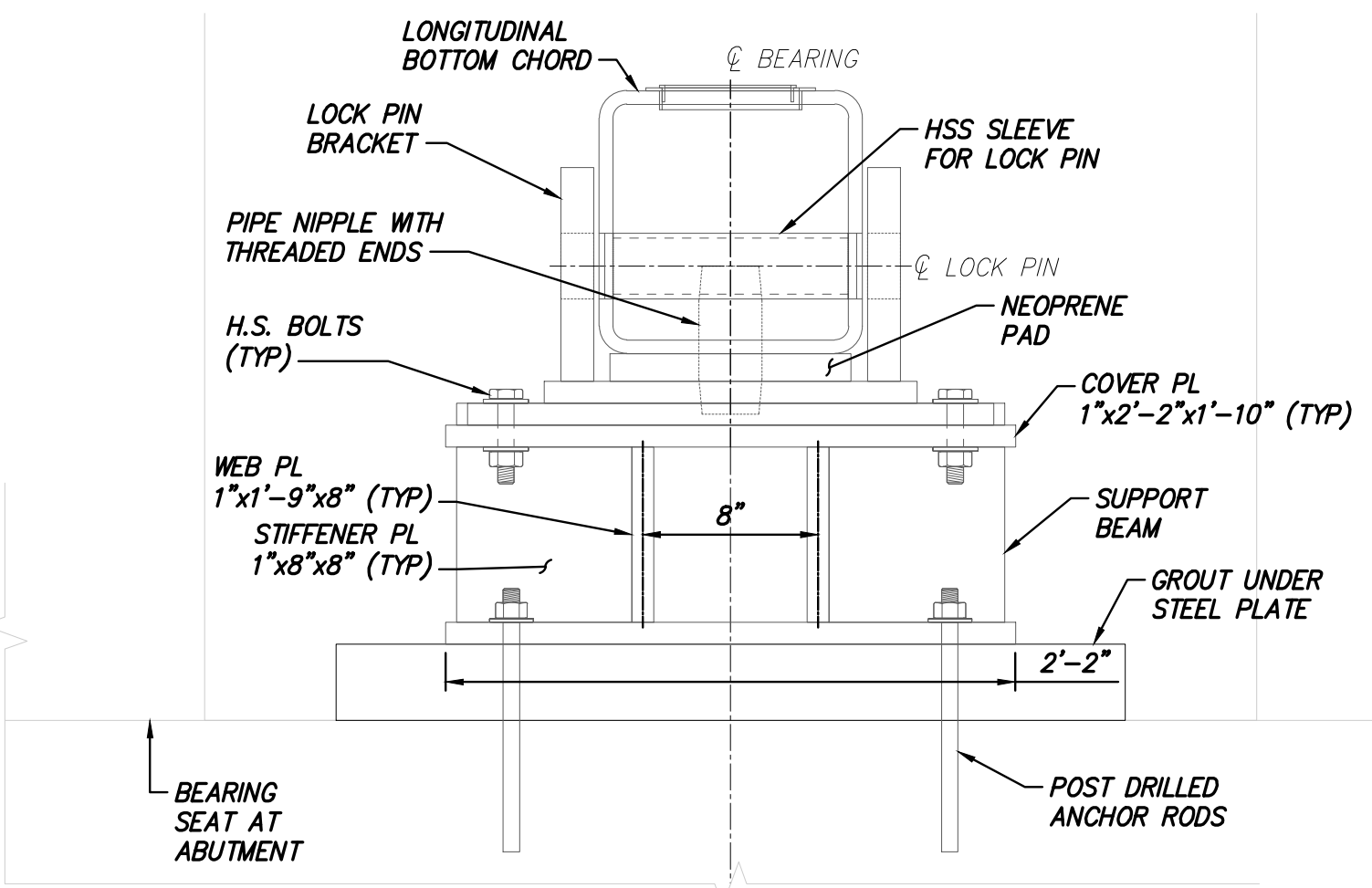
- SEE NOTES ON S-776.
- GROUT UNDER BASE PLATE; MIN. COMPRESSIVE STRENGTH 4.5KSI AT DAY ONE, 7.5KSI AT DAY 28. SIKAGROUT CEMENTITIOUS HIGH PERFORMANCE GROUT MIX FOR COLUMN BASE PLATE OR SIMILAR.

ABUTMENT ELEVATION  
SCALE: 1/2" = 1'-0"

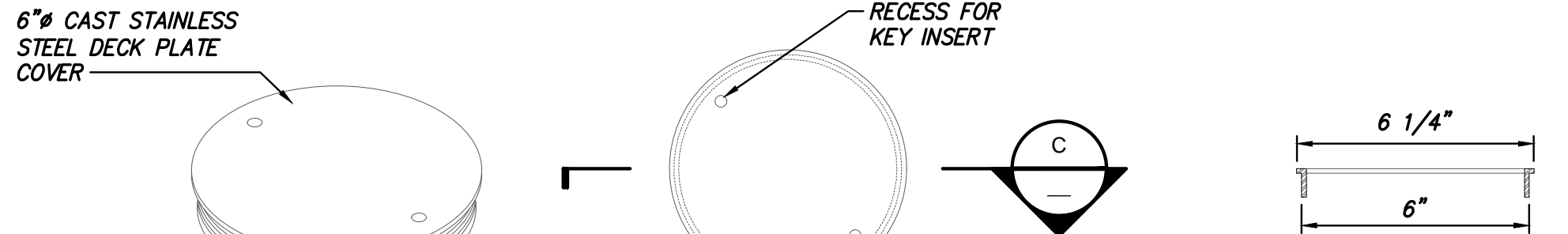
SECTION A  
SCALE: 1/2" = 1'-0"



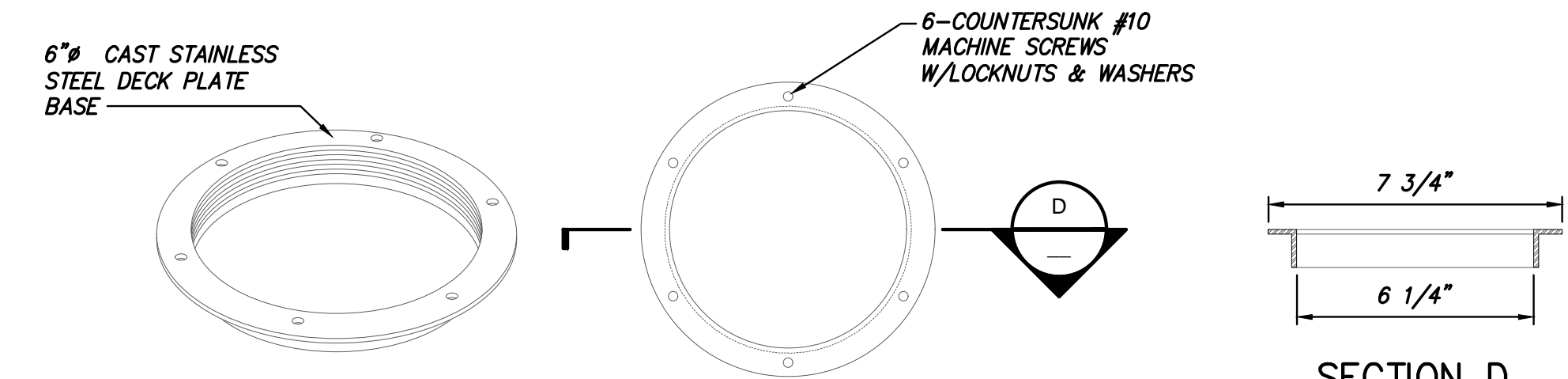
DETAIL 1 - TYPICAL BEARING DETAIL AT ABUTMENTS - ELEVATION  
SCALE: 1 1/2" = 1'-0"



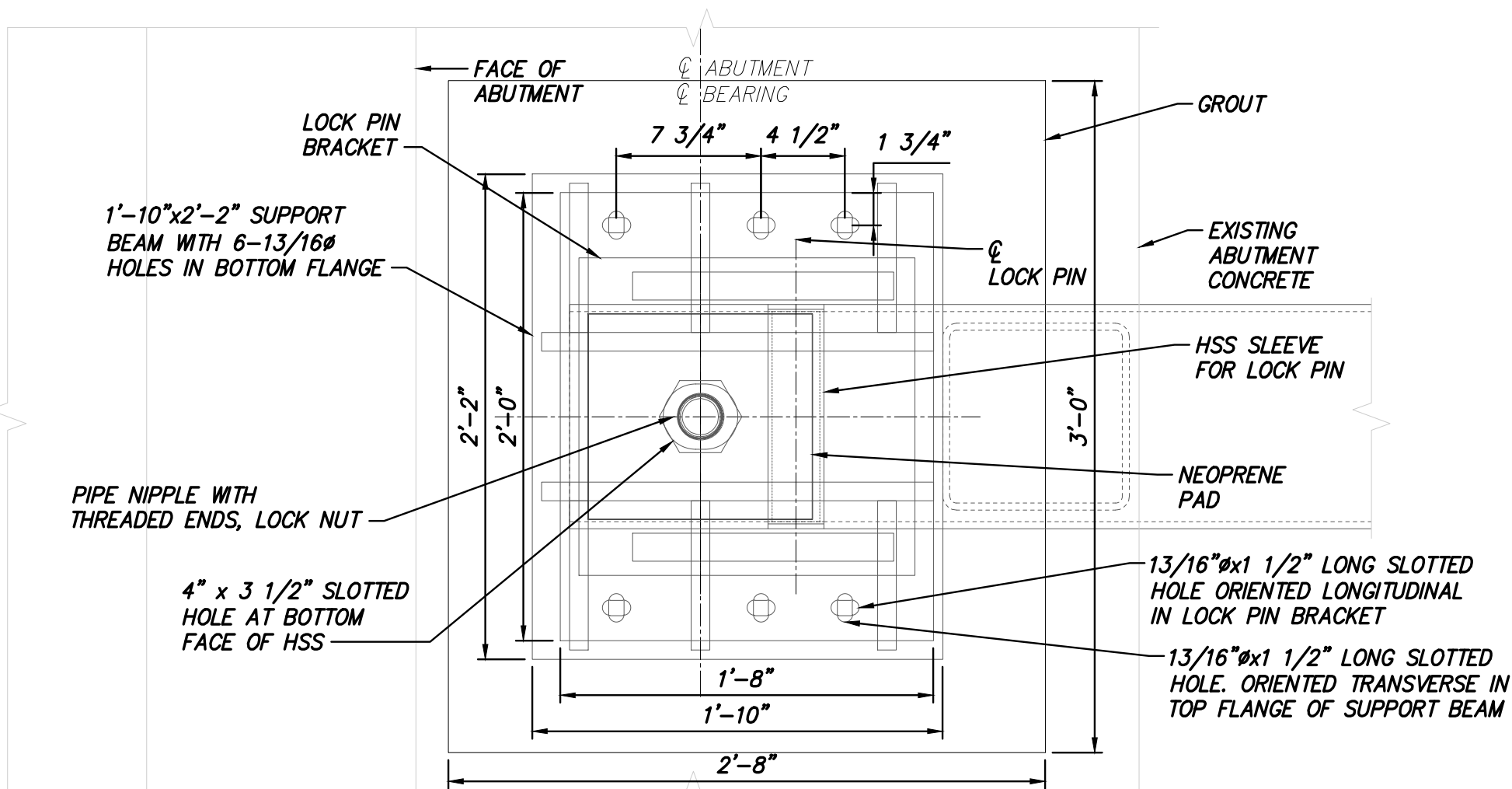
DETAIL 2  
SCALE: 1 1/2" = 1'-0"



DECK PLATE COVER DETAIL  
SCALE: 3" = 1'-0"



DECK PLATE BASE DETAIL  
SCALE: 3" = 1'-0"



SECTION B-LOCK PIN BRACKET TO SUPPORT BEAM CONNECTION  
SCALE: 1 1/2" = 1'-0"



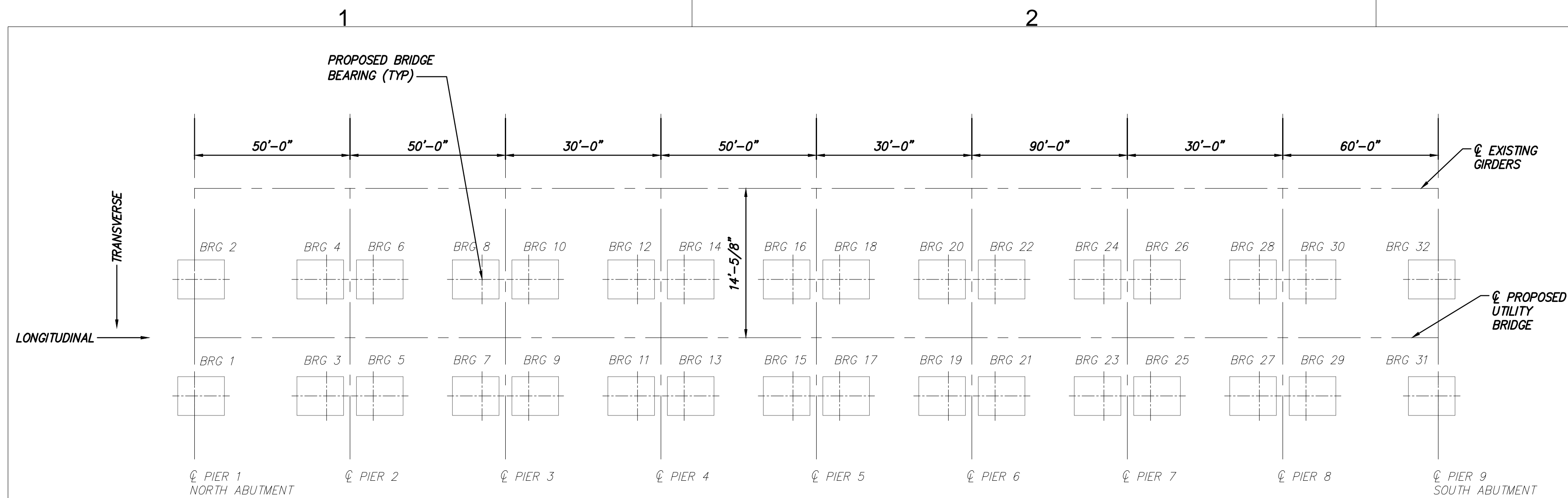
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

B	03/24/2023	IFC		JNK	OO
A	12/16/2022	FINAL SUBMISSION		JNK	OO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

BRIDGE NO. 8 - UTILITY TRUSS BRIDGE  
TYPICAL BEARING AT ABUTMENTS

DRAWN BY:	DRH	DESIGNED BY:	JNK	APPROVED BY:	OO	SCALE	AS SHOWN	DATE	12/16/2022
						REV. NO.	A	SH. NO.	



PROPOSED BRIDGE-BEARING LAYOUT  
SCALE: NTS

SPAN	BEARING LABEL	DEAD LOAD VERTICAL (KIP)	LIVE LOAD VERTICAL (KIP)	SNOW LOAD VERTICAL (KIP)	LONG. WIND VERTICAL (KIP)	LONG. WIND LONGITUDINAL (KIP)	TRAN. WIND VERTICAL (KIP)	TRAN. WIND TRANSVERSE (KIP)
1	1,2,3,4	13.4	4.2	3.5	$\pm 0.4$	-2.2	$\pm 9.3$	5.7
2,4	5,6,7,8 13,14,15,16	13.3	4.1	3.4	$\pm 0.4$	-2.2	$\pm 9.1$	5.6
3,5,7	9,10,11,12 17,18,19,20 25,26,27,28	7.8	2.4	2.0	$\pm 0.4$	-1.3	$\pm 5.5$	3.3
6	21,22,23,24	29.8	7.4	6.2	$\pm 0.4$	-3.9	$\pm 16.5$	10.1
8	29,30,31,32	20.8	5.0	4.2	$\pm 0.4$	-2.6	$\pm 11.1$	6.8

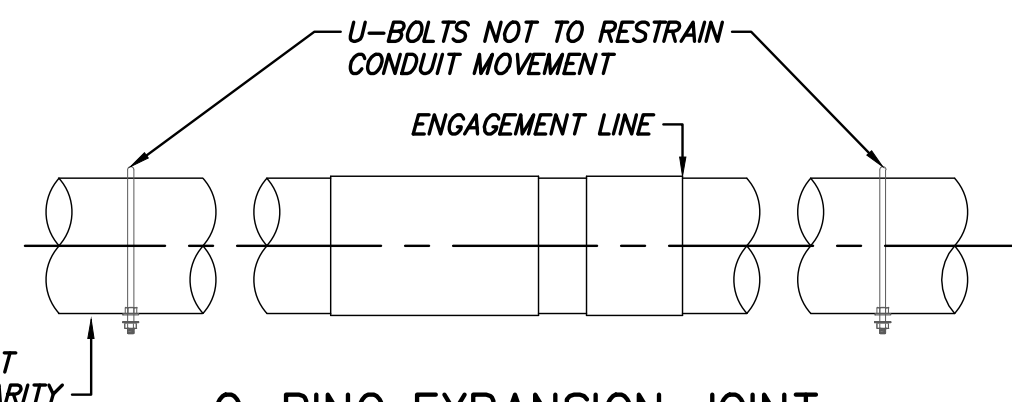
NOTE:  
REACTIONS REPORTED AT PROPOSED BRIDGE BEARING ELEVATION.  
(NOT AT PIER ELEVATION)

PROPOSED BRIDGE-BEARING REACTIONS  
SCALE: NTS

PIER	EXISTING BEARING PLATE THICKNESS
2	2.28"
3	1.68"
4	2.40"
5	1.20"
6	1.20"
7	2.16"
8	1.44"

EXISTING BRIDGE – BEARING PLATE THICKNESSES  
SCALE: NTS

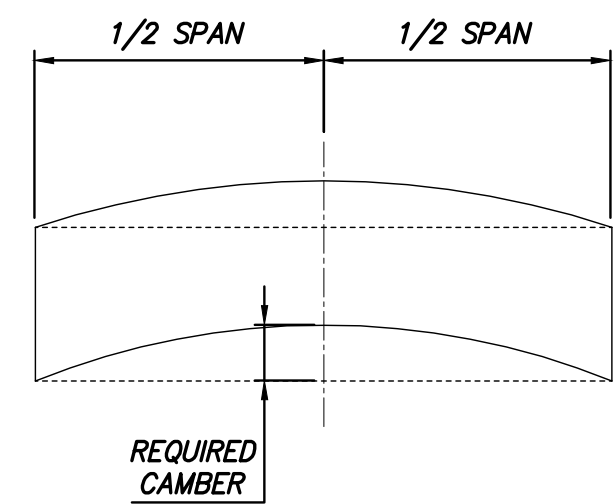
NOTE: EXISTING BEARING PLATE THICKNESSES ESTIMATED BASED ON SURVEY DATA. SHIM PLATES TO BE PROVIDED WHERE NECESSARY TO BRING TRUSS TO GRADE.



### O-RING EXPANSION JOINT

SCALE: 1" = 1'-0"

NOTE: WHEN SET AT ENGAGEMENT LINE POSITION AT SET TEMPERATURE, O-RING EXPANSION JOINT PROVIDES  $6" \pm$  OF FREE TRAVEL IN EITHER DIRECTION. (CHAMPION SINGLE EXPANSION JOINT SOCKET X SOCKET WITH O-RING : 80C-SW-37 & 20C-SW-37, OR SIMILAR)

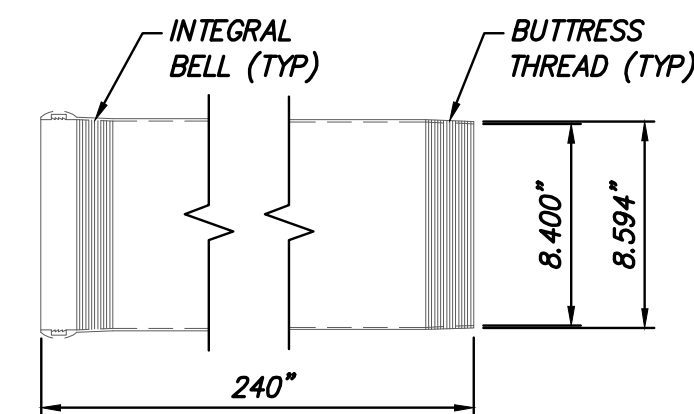
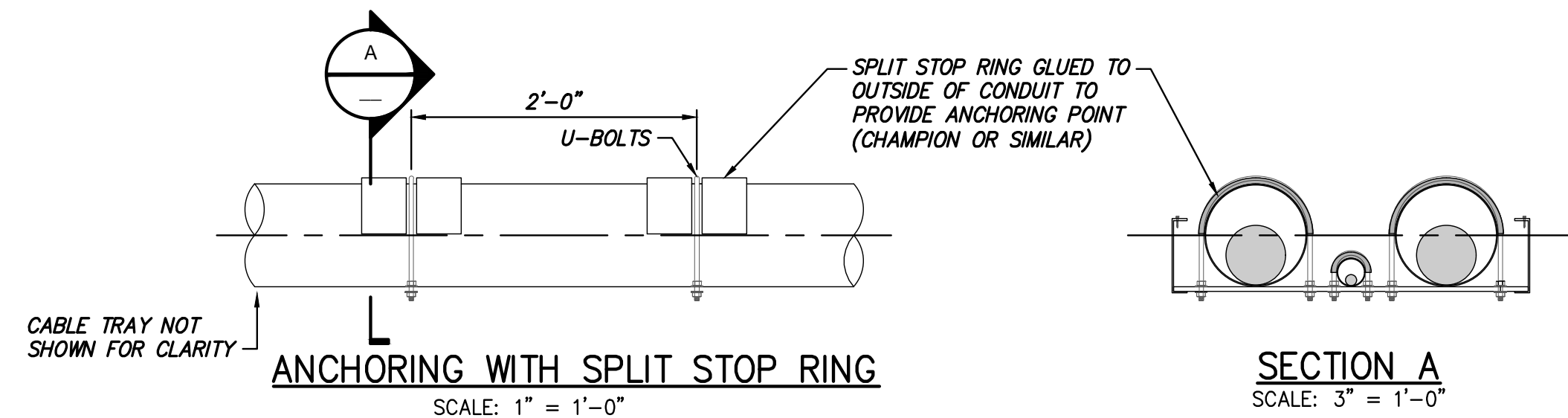


CAMBER DIAGRAM  
SCALE: NTS

SPAN	C-C SUPPORT	BOTTOM CHORD LENGTH	NO OF STRUTS	TRUSS STEEL WEIGHTS	REQUIRED CAMBER	DESIGN THERMAL MOVEMENT
1	49'-3"	50'-5"	4x10	26.0 KIP	1 1/2"	0.46"
2,4	48'-6"	49'-8"	4x10	26.0 KIP	1 1/2"	0.45"
3,5,7	28'-6"	29'-8"	4x6	15.0 KIP	7/8"	0.26"
6	88'-6"	89'-8"	4x16	70.0 KIP	2 3/4"	0.82"
8	59'-3"	60'-5"	4x12	50.0 KIP	1 3/4"	0.55"

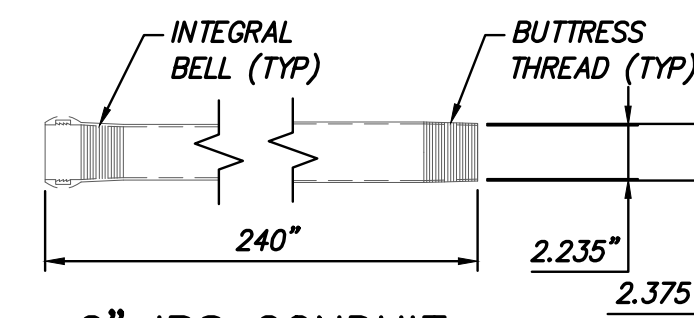
NOTE:  
TRUSS WEIGHT INCLUDES HSS SECTIONS ONLY.  
TOTAL DESIGN THERMAL MOVEMENT CALCULATED WITH  
0.00000645"/"/F &  $\Delta T=120^{\circ}F$  ( $T_{MAX}-T_{MIN}$ ).

## TRUSS HSS STEEL WEIGHTS & CAMBER



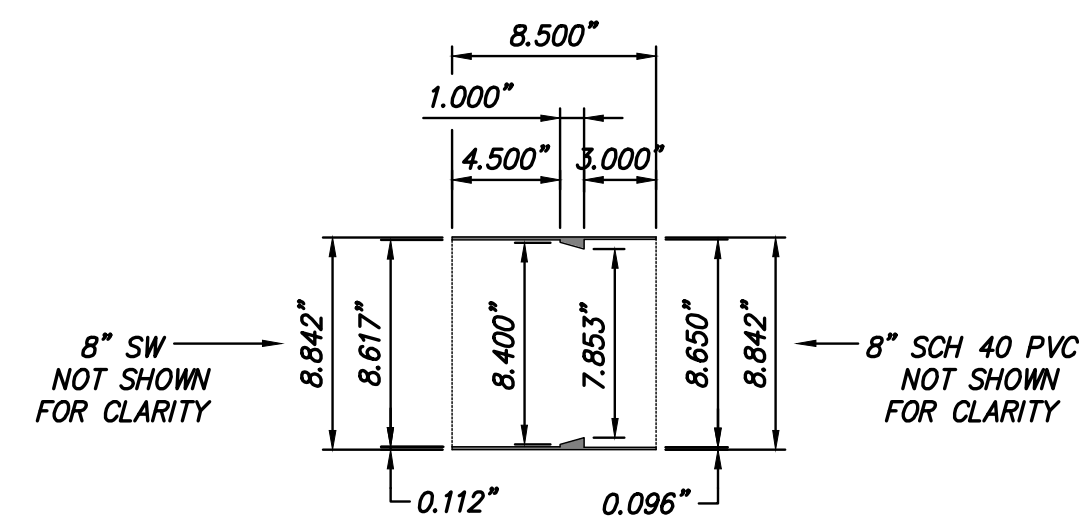
8" IPS CONDUIT

NOTE: CHAMPION INTERFERENCE GASKET JOINT  
(80C-SW-20-G)



2" IPS CONDUIT

NOTE: CHAMPION INTERFERENCE GASKET JOINT  
(20C-SW-20-G)

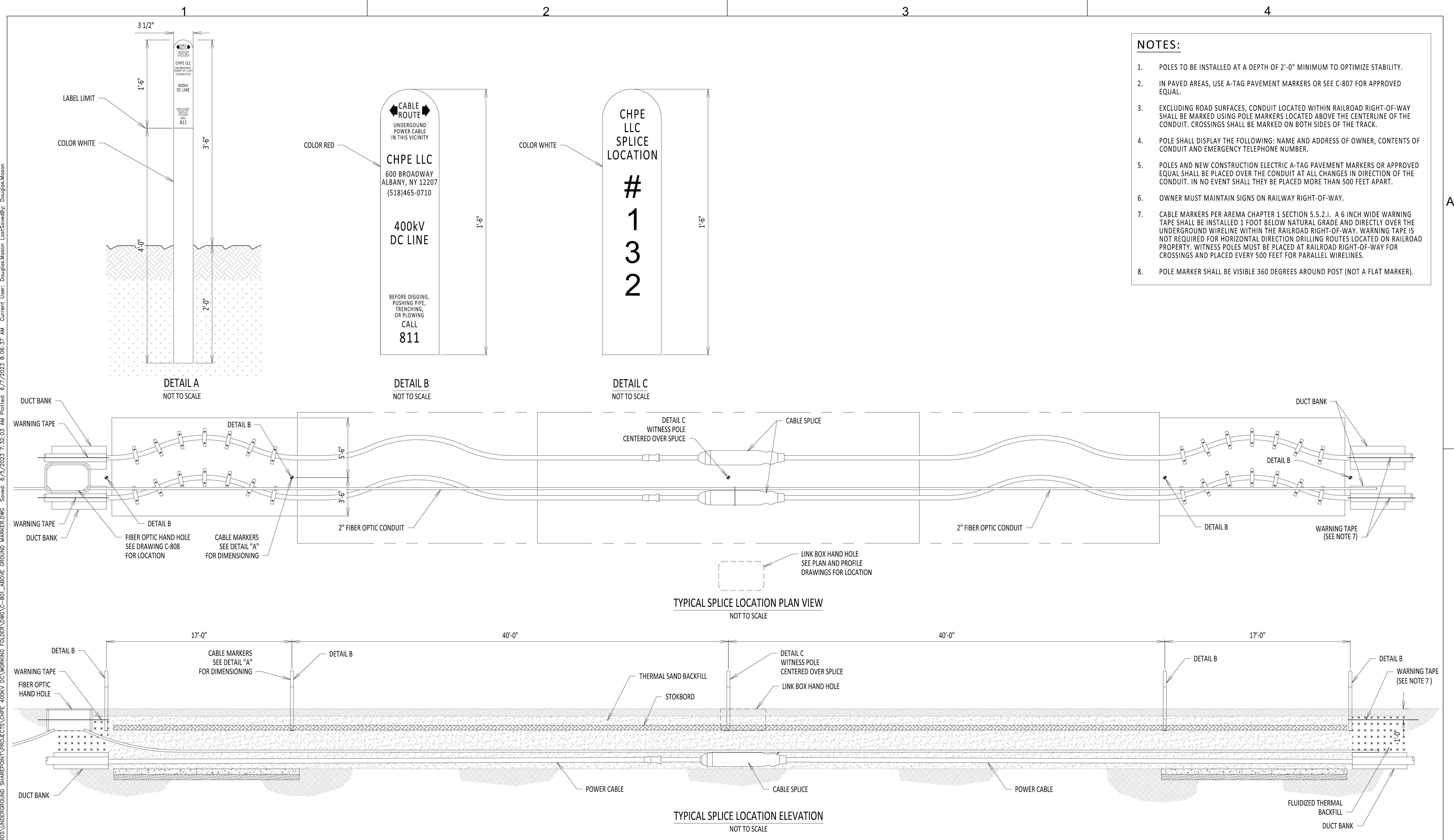




## RTRC TO PVC COUPLING

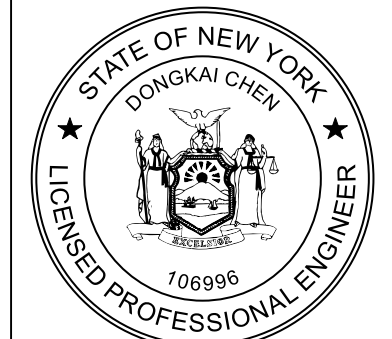
NOTE: CHAMPION REDUCING ADAPTER  
(80C-SW-27-PVC40 AND 20C-SW-27-2PVC40)



File: R:\INFO\PD\USG STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-801\_ABOVE GROUND MARKER.DWG Saved: 6/5/2023 7:32:03 AM Plotted: 6/7/2023 8:06:37 AM Current User: Douglas.Mason LastSavedBy: Douglas.Mason







IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/08/2023	ISSUED FOR CONSTRUCTION SUBMISSION		DLM ASM

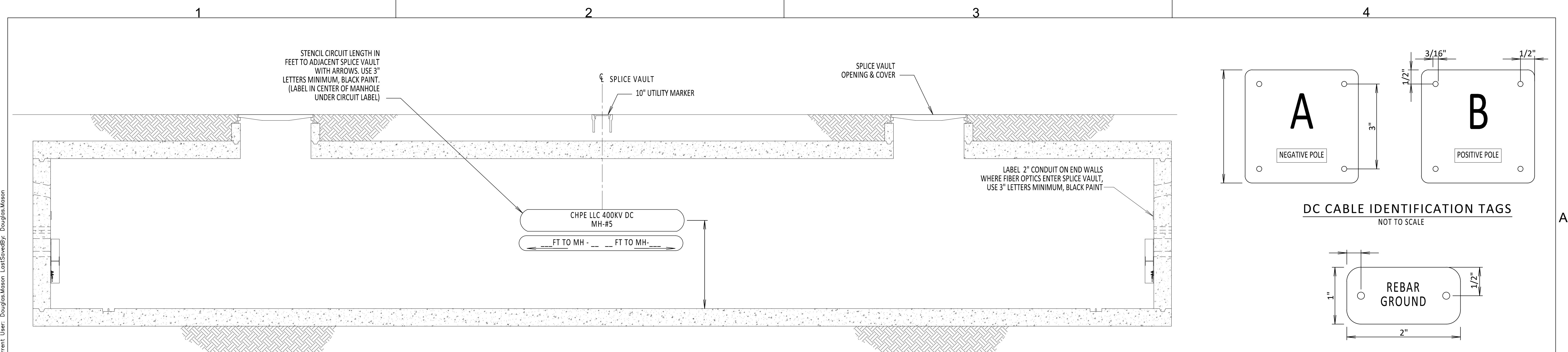
**CHAMPLAIN HUDSON POWER EXPRESS**  
**ABOVE GROUND MARKING DETAILS**

DRAWN BY: DLMDESIGNED BY:APPROVED BY: ASMSCALE  
REV. NO. 0

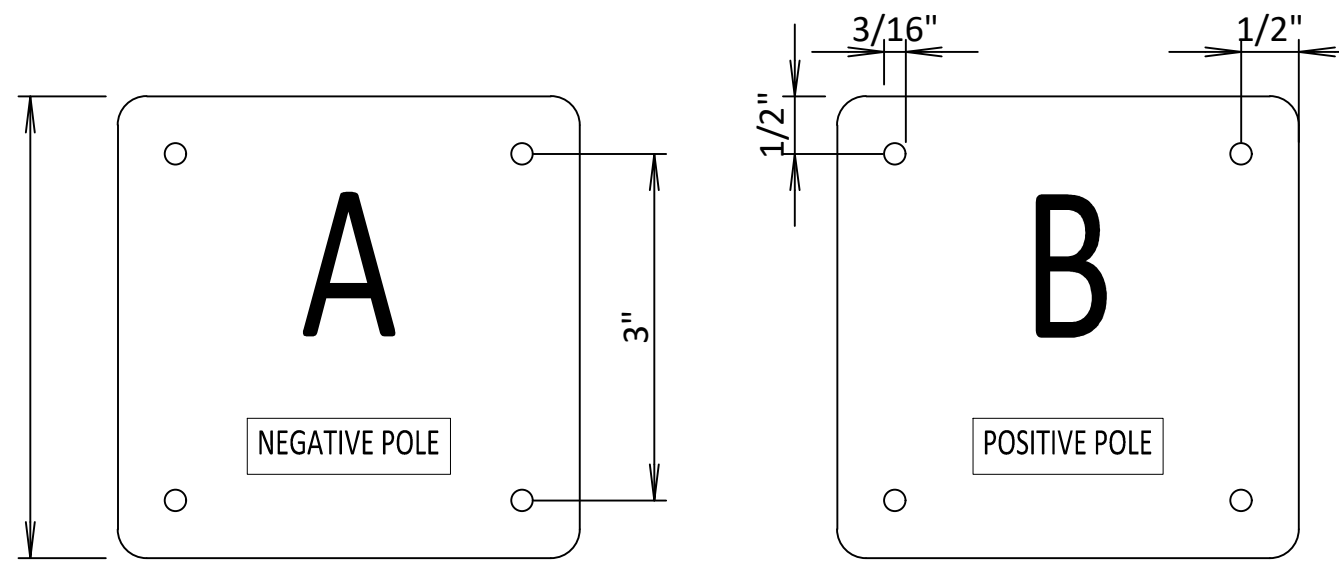
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	<b>C-801</b>
DATE	06/08/2023
SH.NO.	OF



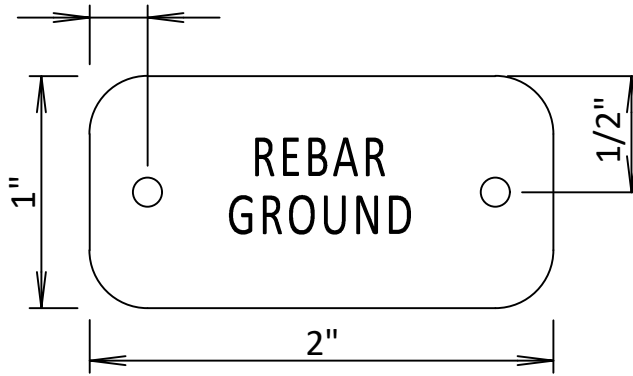
File: R:\INFO\PD\USG STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-807 MANHOLE MARKINGS.DWG Saved: 6/5/2023 9:08:25 AM Plotted: 6/5/2023 9:08:48 AM Current User: Douglas Mason LastSavedBy: Douglas Mason



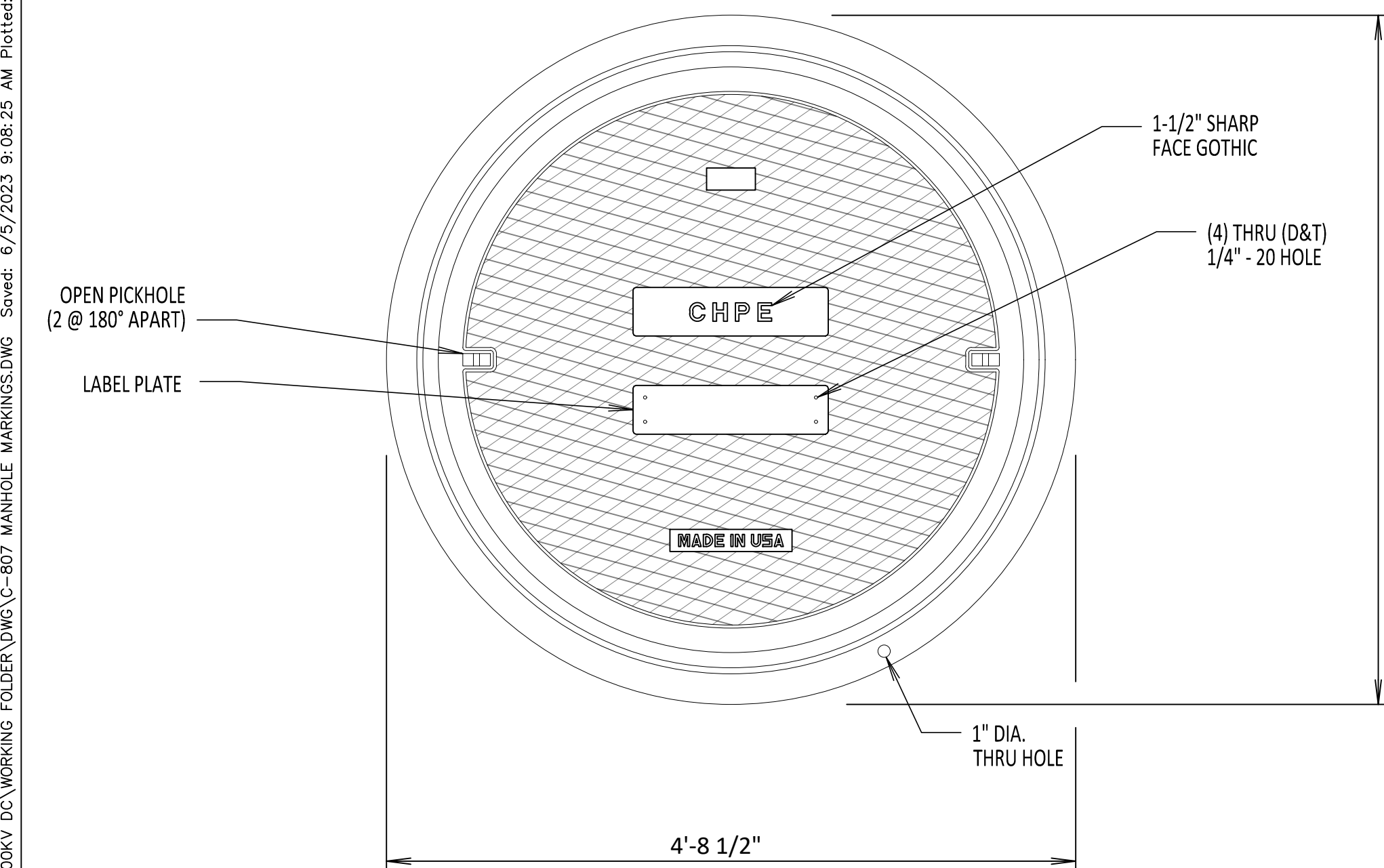
INSIDE SPLICE VAULT  
NOT TO SCALE



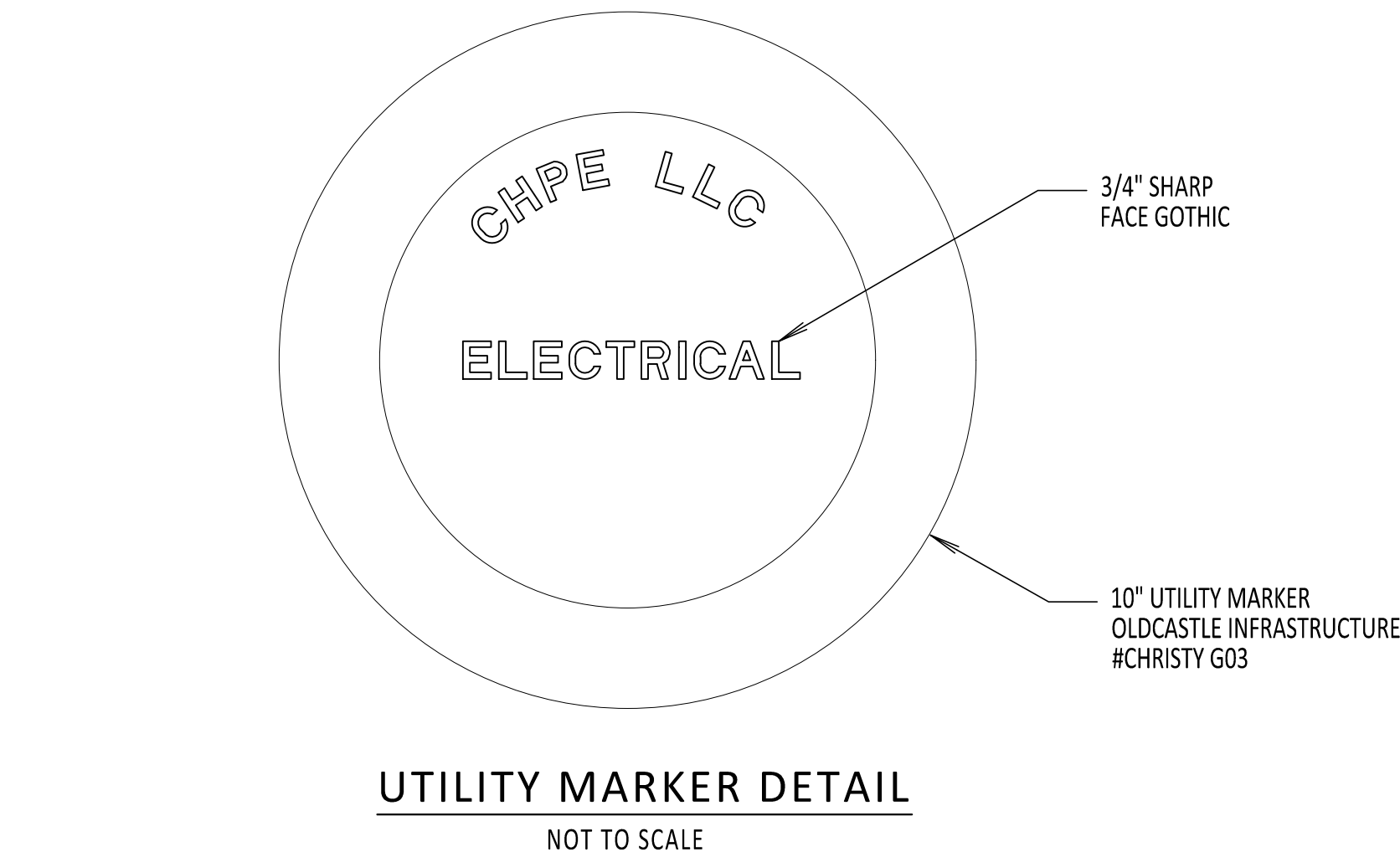
DC CABLE IDENTIFICATION TAGS  
NOT TO SCALE



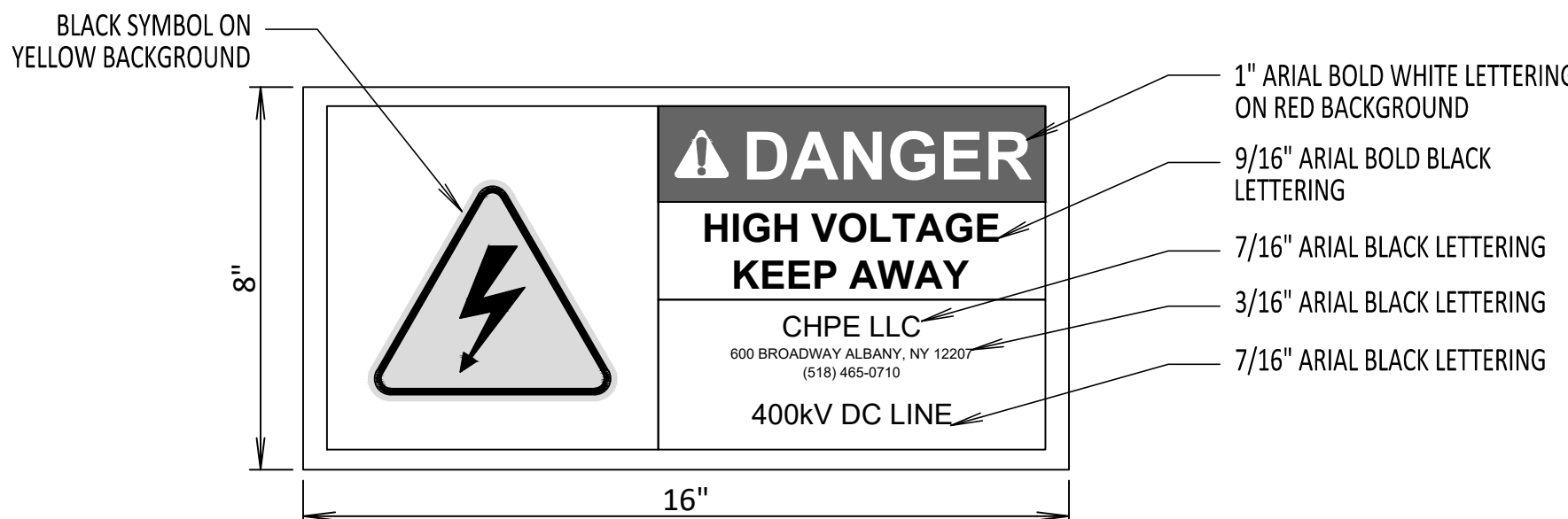
IDENTIFICATION TAGS  
NOT TO SCALE



SPLICE VAULT LID MARKINGS PLAN VIEW  
NOT TO SCALE

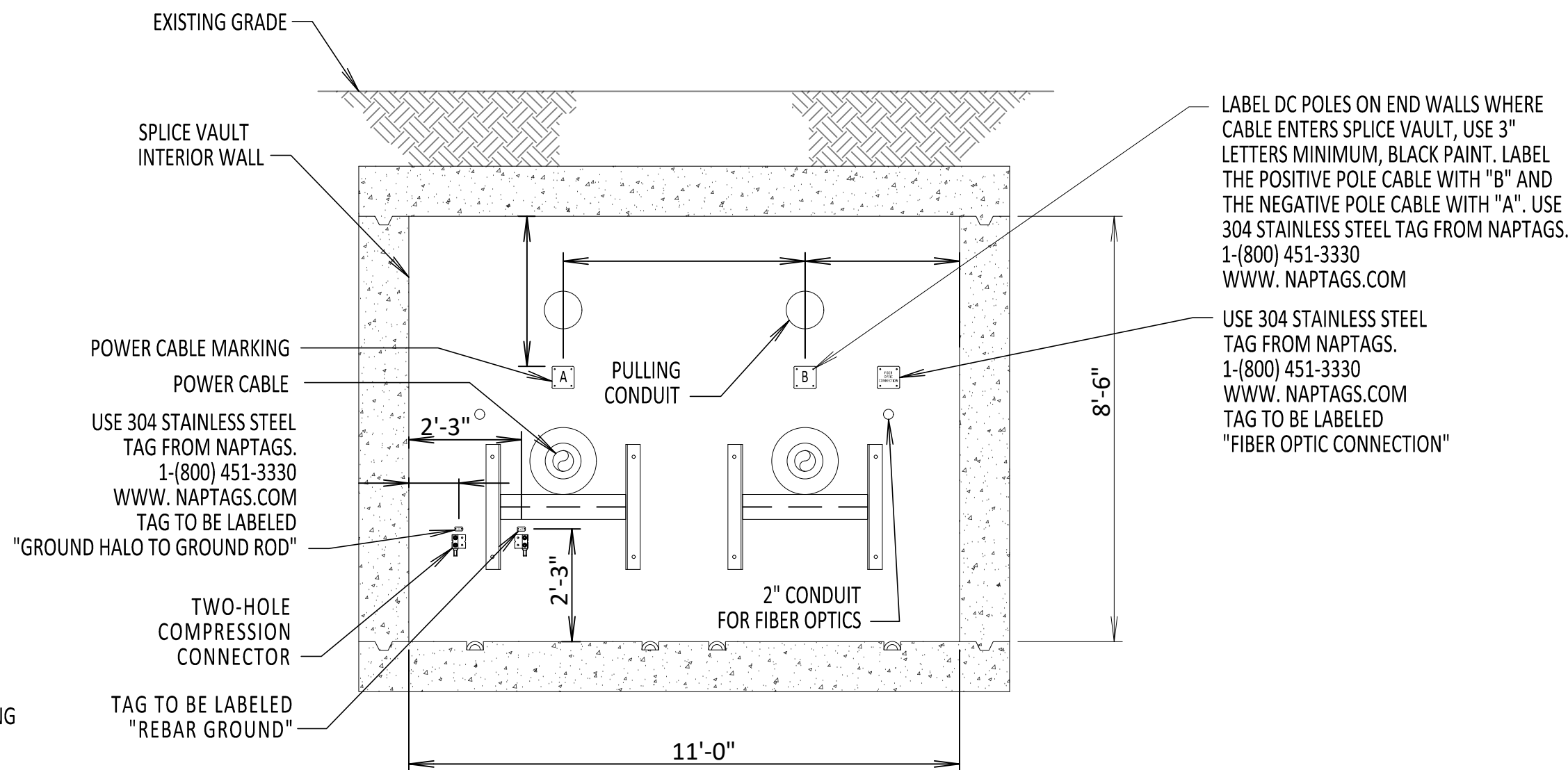


UTILITY MARKER DETAIL  
NOT TO SCALE



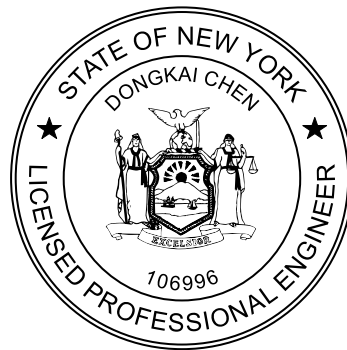
DETAIL 1 - CABLE TRAY WARNING LABEL  
NOT TO SCALE

- NOTE:
1. AFFIX DETAIL 1 LABEL TO THE CABLE TRAY BRIDGE ATTACHMENT AND AT 10-FOOT INTERVALS ALONG THE ENTIRE LENGTH OF THE CABLE TRAY ON THE BRIDGE



INSIDE ENDWALL VIEW  
NOT TO SCALE

- NOTE:
1. SEE PLAN AND PROFILES FOR LOCATION SPECIFIC LABELING INSTRUCTIONS OF WHICH SIDES RECEIVE EACH POLARITY LABEL.



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

0	06/08/2023	ISSUED FOR CONSTRUCTION SUBMISSION		DLM	ASM
No.	DATE	SUBMITTAL / REVISION DESCRIPTION		DB	APP

CHAMPLAIN HUDSON POWER EXPRESS

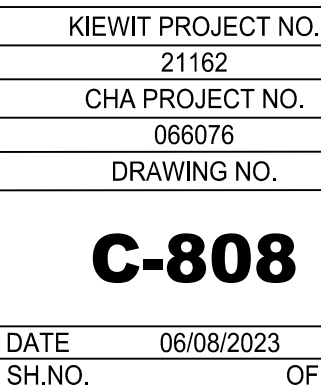
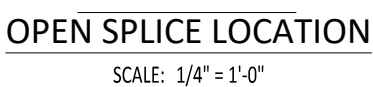
SPLICE VAULT AND CABLE MARKING DETAILS

DRAWN BY: DLM DESIGNED BY: SD APPROVED BY: ASM SCALE REV. NO. 0 DATE 06/08/2023 SH.NO. OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	<b>C-807</b>
DATE	06/08/2023
SH.NO.	OF



- A







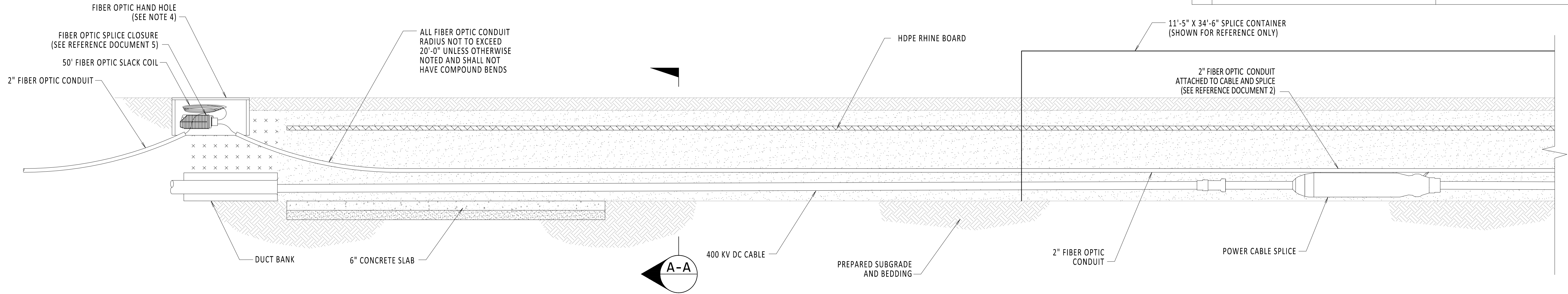


File: R:\INFO\PD\US\STANDARDS\UNDERGROUND\SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-853-OPEN\_VAULT.DWG Saved: 6/5/2023 9:52:32 AM Plotted: 6/6/2023 1:53:20 PM Current User: Douglas.Mason LastSavedBy: Douglas.Mason

1. ADD HAND HOLE TO ALL OPEN SPLICE LOCATIONS.
2. FIBER OPTIC SPLICE CLOSURE ONLY AT SPECIFIC LOCATIONS. SEE PLAN AND PROFILE FOR DETAILS.
3. SEE REFERENCE DOCUMENTS 2 FOR HAND HOLE LOCATION DETAILS.
4. SEE REFERENCE DOCUMENT 4 FOR FIBER OPTIC HAND HOLE DETAILS.
5. MAINTAIN A MINIMUM FIBER OPTIC CABLE BEND RADIUS OF 8" UNLESS OTHERWISE STATED (WHEN BENDING THE CABLE).

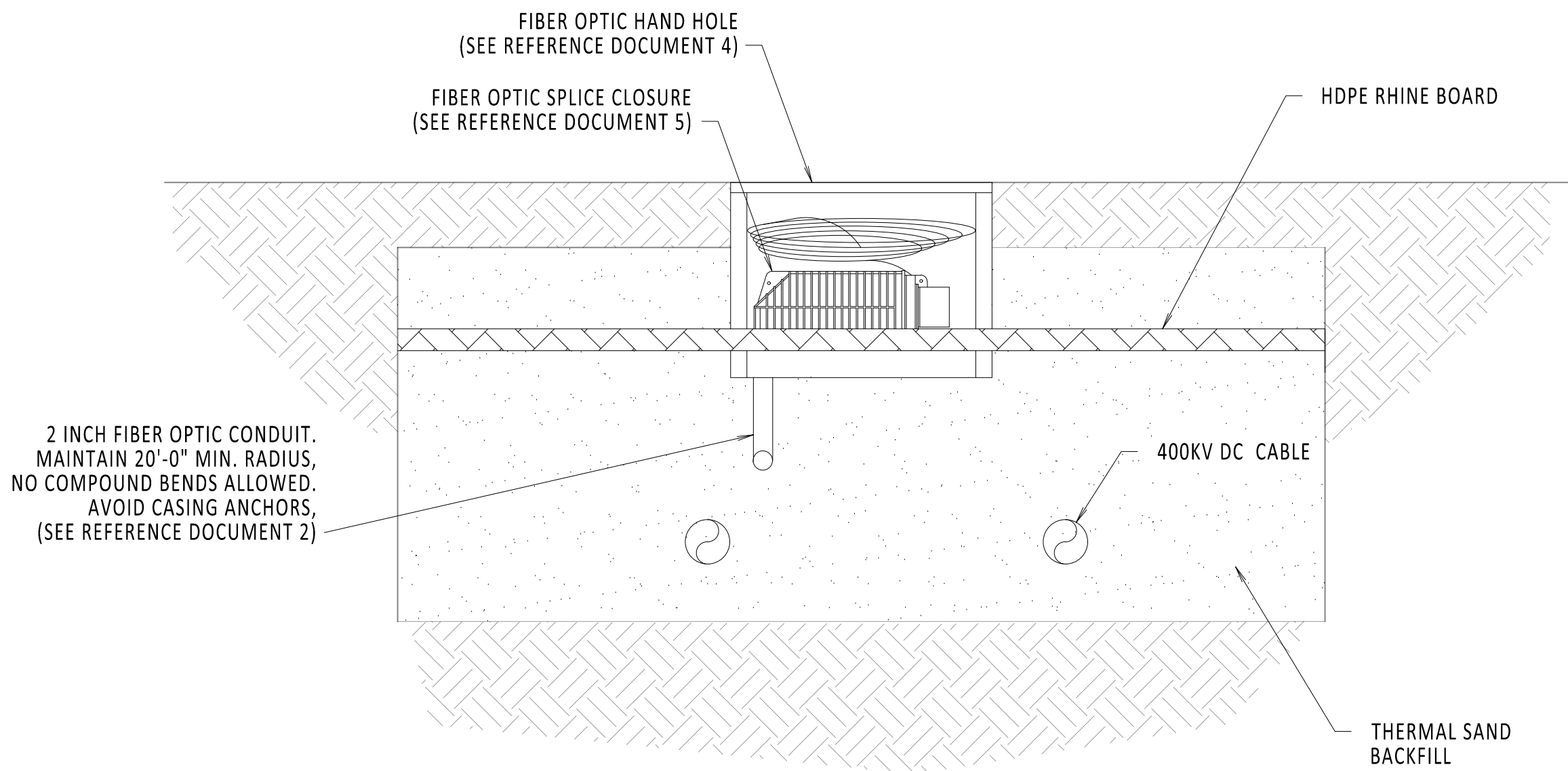
REFERENCE DOCUMENTS

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	FRP FIBER COMMUNICATION HAND HOLE	S-771
2	TYPICAL OPEN PIT SPLICE DETAILS	C-808
3	DTS HUT CONNECTION FIBER OPTIC SPLICE AND HAND HOLE	C-851
4	FIBER OPTIC HAND HOLE DETAILS	C-854
5	FIBER OPTIC SPLICE DETAILS	C-855



OPEN SPLICE w/ HAND HOLE PROFILE VIEW

SCALE: 3/8" = 1'-0"



SECTION A-A

SCALE: 3/4" = 1'-0"



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

0	06/08/2023	ISSUED FOR CONSTRUCTION SUBMISSION	DLM	ASM	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

OPEN SPLICE w/ FIBER OPTICS  
HAND HOLE

DRAWN BY:	TJM	DESIGNED BY:	MK	APPROVED BY:	XX	SCALE		DATE	06/08/2023
						REV. NO.	0	SH.NO.	OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-853
DATE	06/08/2023
SH.NO.	OF



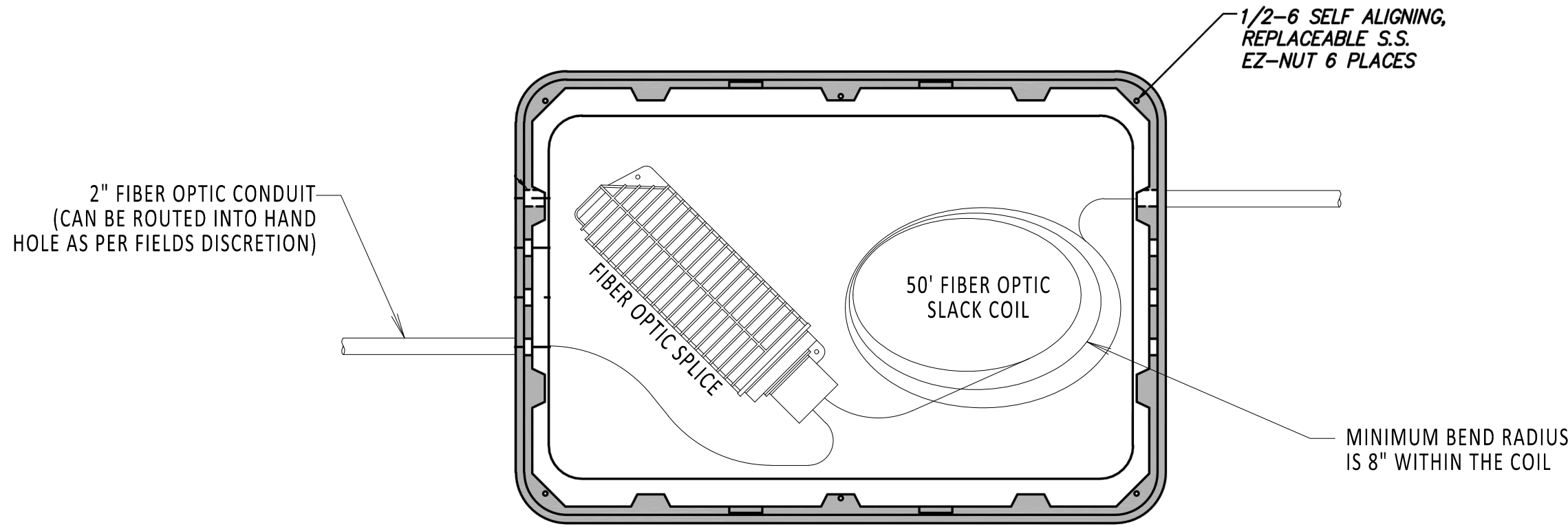
File: R:\INFO\IPD\USA STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-854-HAND\_HOLE.DWG Saved: 5/5/2023 2:35:49 PM Plotted: 6/5/2023 9:52:04 AM Current User: Douglas.Mason LastSavedBy: Douglas.Mason

1

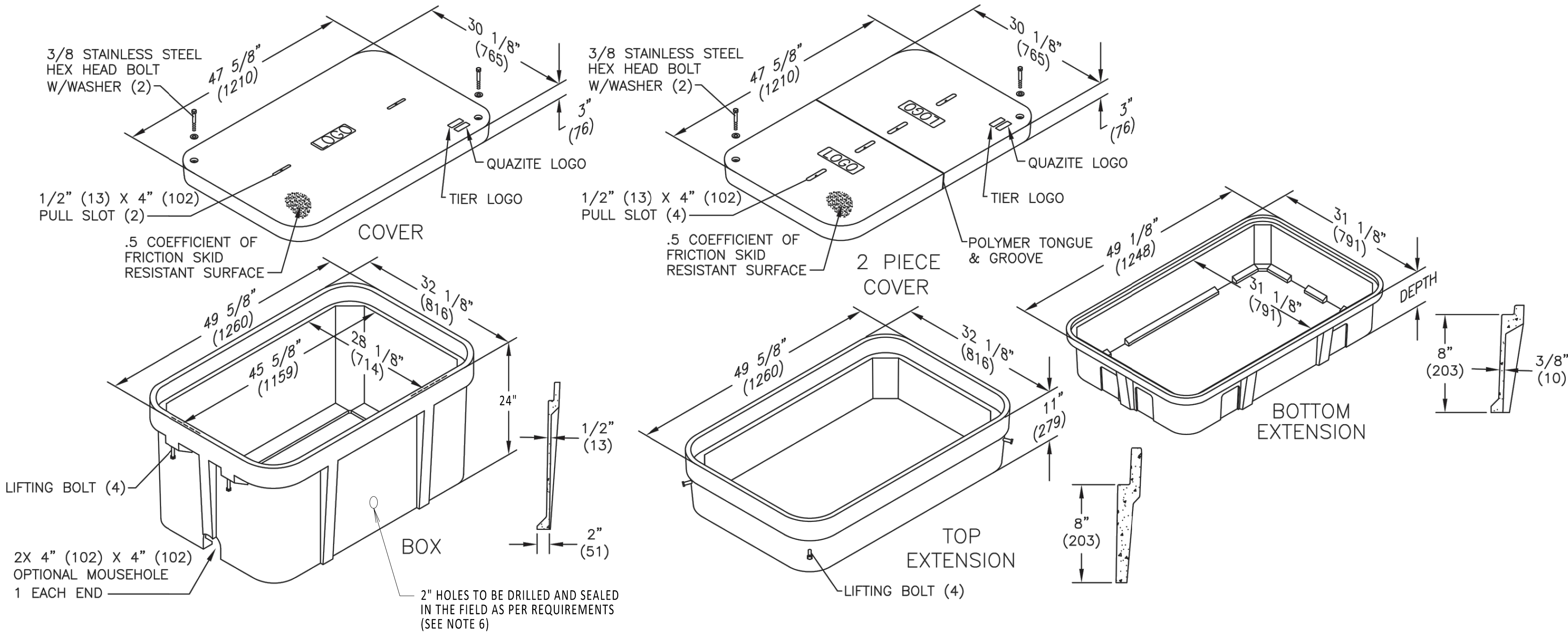
2

3

4



HAND HOLE  
TOP VIEW  
NOT TO SCALE



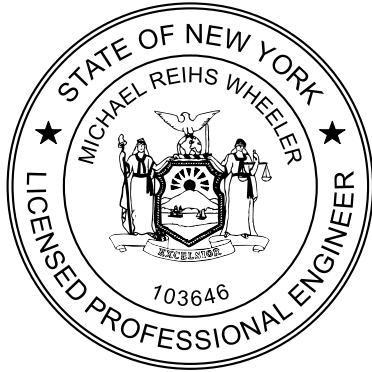
ISOMETRIC VIEW  
NOT TO SCALE

- 1. FIBER OPTIC COIL TO BE PLACED IN BOTTOM OF HAND HOLE. OBSERVE MINIMUM BEND RADIUS.
- 2. SPLICE ALL FIBERS STRAIGHT THROUGH.
- 3. FIBER OPTIC SPLICE CLOSURE ONLY AT SPECIFIC LOCATIONS. SEE PLAN AND PROFILE FOR DETAILS.
- 4. GROUNDING REQUIREMENTS TO BE DETERMINED.
- 5. HAND HOLE AT ALL OPEN SPLICE LOCATIONS. SEE REFERENCE DOCUMENTS 1 AND 2 FOR DETAILS ON HAND HOLE PLACEMENT IN OPEN PIT.
- 6. DRILLED HOLES ARE INTENDED TO ROUTE FIBER OPTIC CONDUIT AND CAN BE DRILLED AND SEALED ON ANY SIDE OF HAND HOLE AS REQUIRED BY THE FIELD.

REFERENCE DOCUMENTS

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	TYPICAL OPEN PIT SPLICE DETAILS	C-808
2	OPEN VAULT w/FIBER OPTIC HAND HOLE	C-853
3	FIBER OPTIC SPLICE DETAILS	C-855
4	HUBBELL QUAZITE (HAND HOLE)	MODEL NO. PG3048BA24

A



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

0	06/08/2023	ISSUED FOR CONSTRUCTION SUBMISSION	DLM	ASM	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

FIBER OPTIC HAND HOLE DETAILS

DRAWN BY:	DLM	DESIGNED BY:	NM	APPROVED BY:	MK	SCALE	
						REV. NO.	0

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-854
DATE	06/08/2023
SH.NO.	OF



File: R:\INFO\PD\USA STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-855-FIBER-SPICE.DWG Saved: 6/5/2023 9:54:23 AM Plotted: 6/5/2023 9:54:43 AM Current User: Douglas.Mason LastSavedBy: Douglas.Mason

1

2

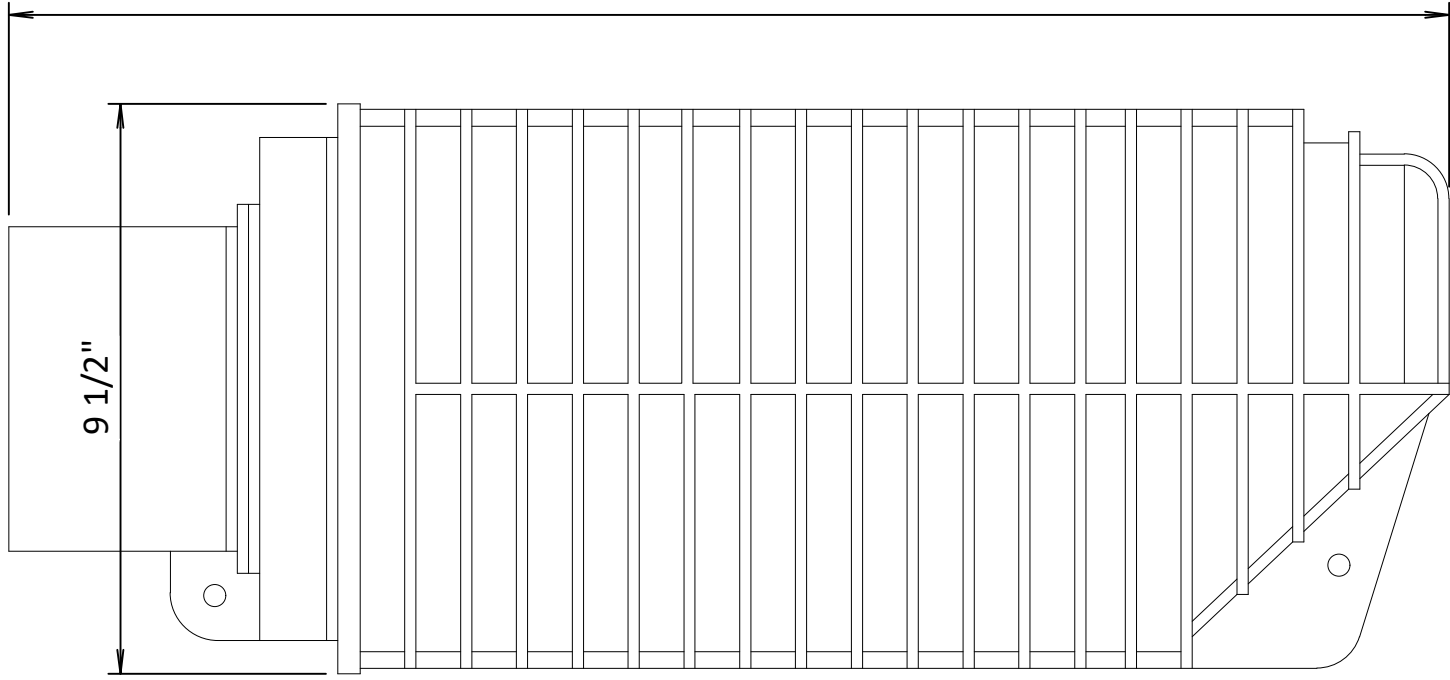
3

4

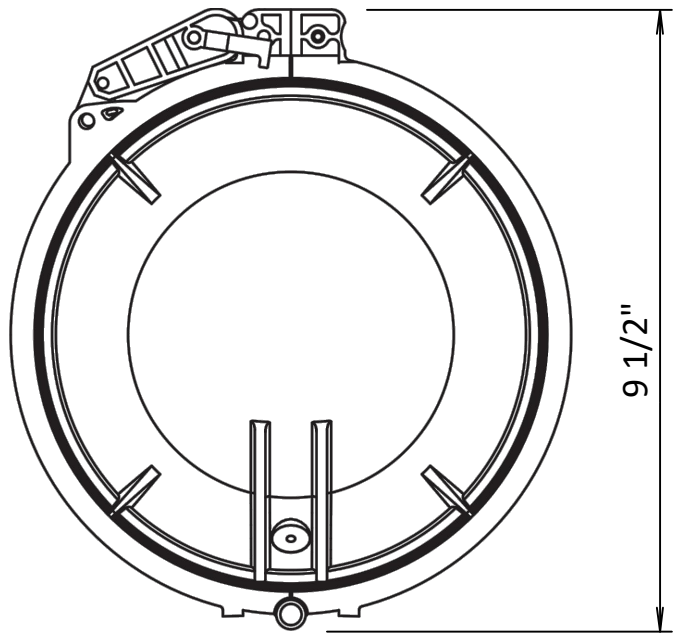
1. MAINTAIN 18" SWEEPS ON ALL CONDUITS.
2. DTS HUT FIBERS WILL SPLICE TO BLUE TUBE FIBER COLORS BLUE, ORANGE, GREEN AND BROWN.
3. SEE REFERENCE DOCUMENTS 2, 3, 4 AND 5 FOR PLACEMENT DETAILS.
4. FIBER OPTIC SPLICE CLOSURE ONLY IN SPECIFIC LOCATIONS. SEE PLAN AND PROFILES FOR DETAILS.

REFERENCE DOCUMENTS

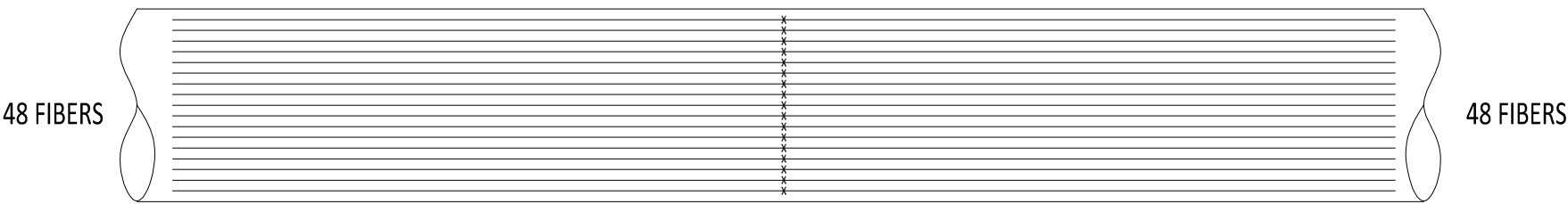
LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	FIBER OPTIC SPLICE CLOSURE	COMMSCOPE: MODEL NO. FOSC450-B6-6-24-1-B3V
2	TRANSITION VAULT FIBER OPTIC DETAIL	C-850
3	DTS HUT CONNECTION FIBER OPTIC SPLICE AND HANDHOLE	C-851
4	ENCLOSED VAULT w/FIBER OPTICS	C-852
5	OPEN VAULT w/FIBER OPTICS HAND HOLE	C-853



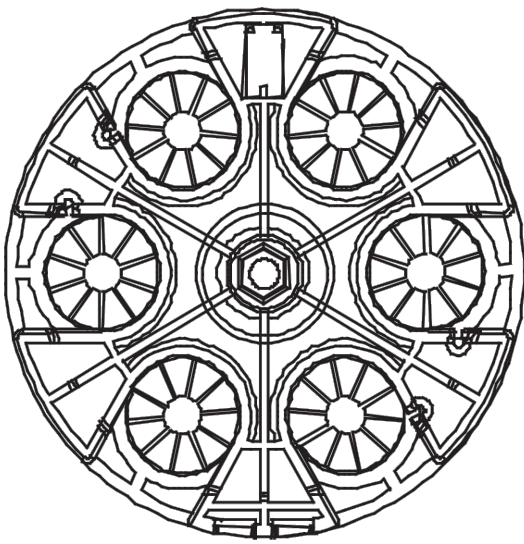
FIBER OPTIC SPLICE CLOSURE  
NOT TO SCALE



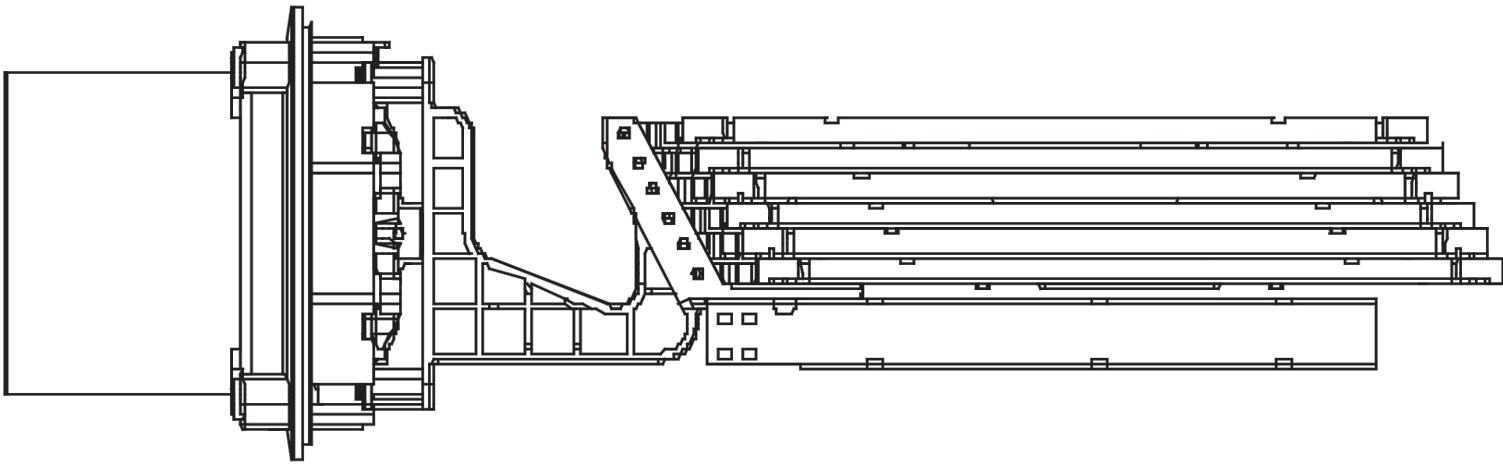
FIBER OPTIC SPLICE CLOSURE  
NOT TO SCALE



FIBER OPTIC CABLE SPLICE  
DIAGRAM TYPICAL  
NOT TO SCALE



FIBER OPTIC SPLICE CLOSURE  
GEL-BLOCK PROFILE  
NOT TO SCALE



FIBER OPTIC SPLICE CLOSURE  
INSIDE DIAGRAM  
NOT TO SCALE



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

0	06/08/2023	ISSUED FOR CONSTRUCTION SUBMISSION	DLM	ASM	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

FIBER OPTIC SPLICE DETAILS

DRAWN BY: DLM DESIGNED BY: NM APPROVED BY: MK SCALE REV. NO. 0

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-855
DATE	06/08/2023
SH.NO.	OF

File: R:\INFO\PD\USA STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-856-SPUCE\_ENCLOSURE.DWG Saved: 5/12/2023 1:49:40 PM Plotted: 6/5/2023 9:59:20 AM Current User: Douglas.Mason LastSavedBy: Douglas.Mason

CHPE

Champlain Hudson Power Express



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

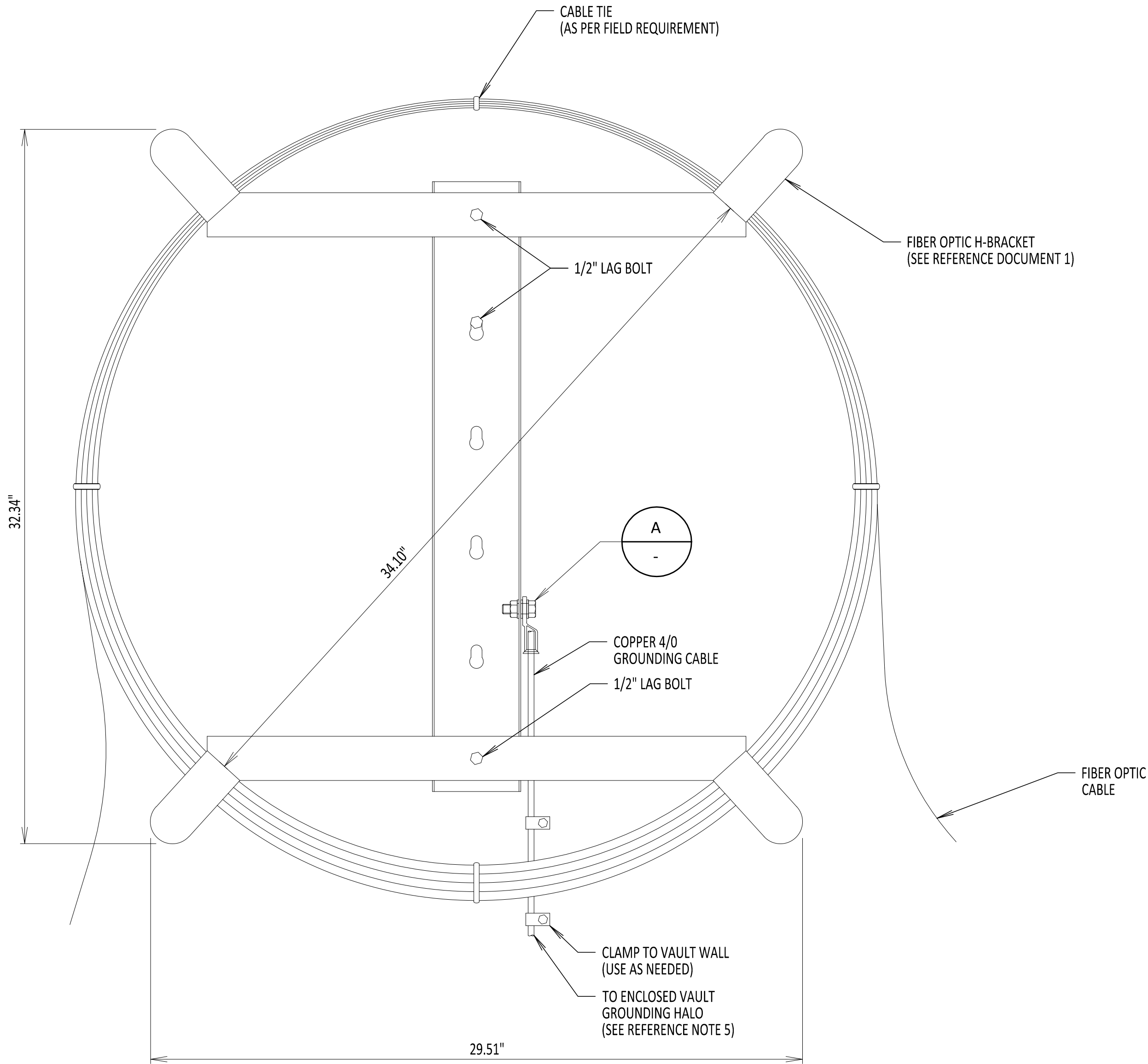
0	06/08/2023	ISSUED FOR CONSTRUCTION SUBMISSION		DLM	ASM
No.	DATE	SUBMITTAL / REVISION DESCRIPTION		DB	APP

CHAMPLAIN HUDSON POWER EXPRESS

FIBER OPTIC H-FRAME BRACKET DETAIL

DRAWN BY:	DLM	DESIGNED BY:	NM	APPROVED BY:	MK	SCALE		DATE	06/08/2023
				REV. NO.			0	SH.NO.	OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-856

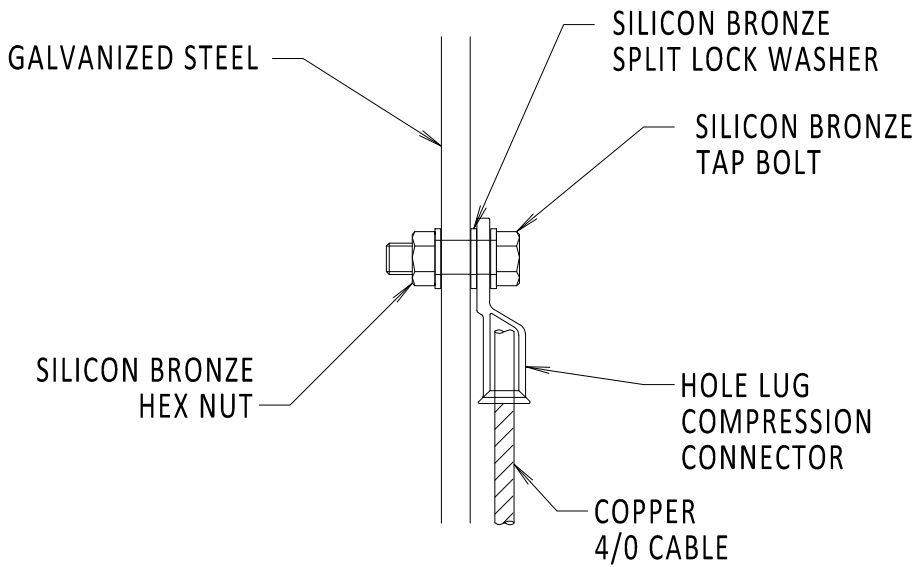


FIBER OPTIC H-FRAME BRACKET  
NOT TO SCALE

- DO NOT KINK OR TWIST FIBER OPTIC CABLE.
- IN VAULT PULL FROM DISTANT MANHOLE THEN COIL AND PLACE ON H-FRAME BRACKET.
- H-FRAME IS ONLY USED IN ENCLOSED VAULTS. SEE REFERENCE DOCUMENTS 2 AND 3 FOR PLACEMENT DETAILS.
- H-FRAME BRACKET DEPTH IS 4.50".
- H-FRAME BRACKET TO BE GROUNDED TO THE GROUNDING HALO WITHIN AN ENCLOSED VAULT. SEE DRAWING C-803 FOR ENCLOSED VAULT GROUNDING DETAILS.
- H-FRAME BRACKET IS MADE OF 12GA GALVANIZED STEEL.
- 1/2" LAG BOLT DOES NOT COME WITH H-BRACKET ASSEMBLY AND NEEDS TO BE PROCURED AS NEEDED. BOLT TO BE INSTALLED INTO VAULT WALL BY FIELD PERSONNEL.

REFERENCE DOCUMENTS

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	AMERICAN PRODUCT	H-FRAME POLE BRACKET MODEL NO: AM-3432-FSF-G-B x2
2	TYPICAL VAULT GROUNDING DETAILS	C-803
3	TRANSITION VAULT FIBER OPTIC DETAILS	C-850
4	ENCLOSED VAULT w/FIBER OPTICS	C-852



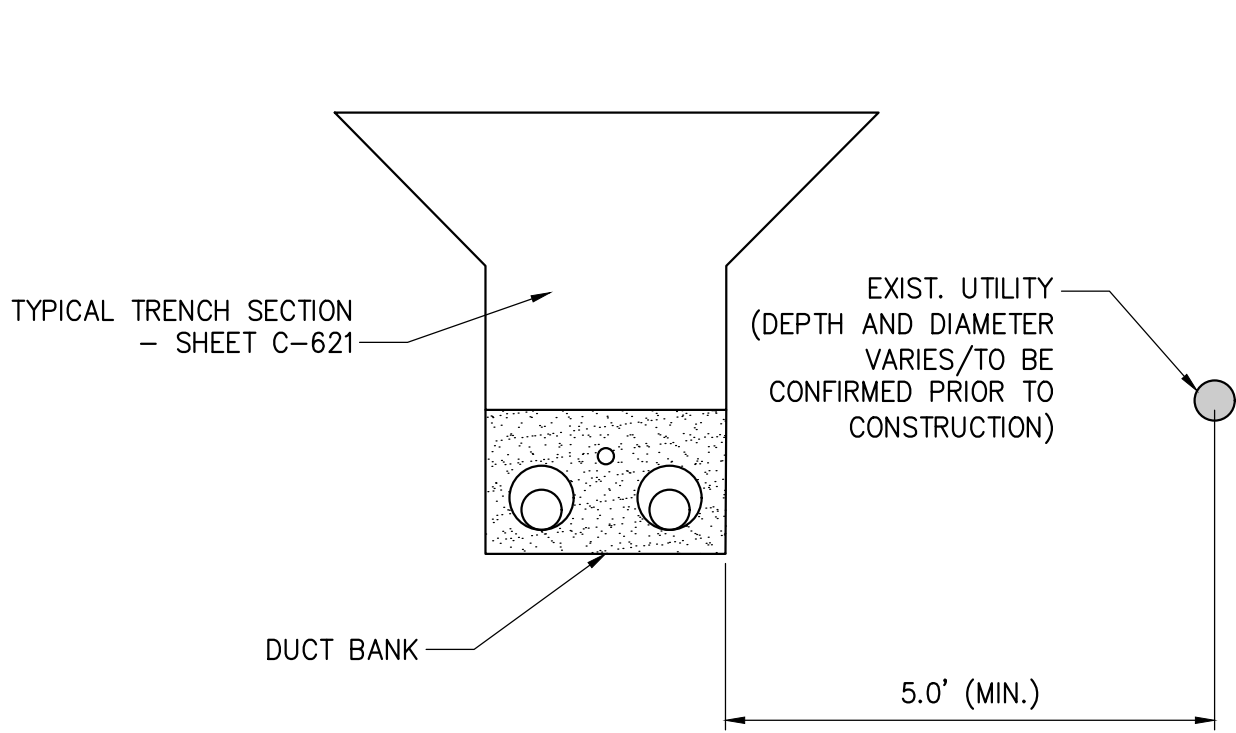
DETAIL A  
NOT TO SCALE



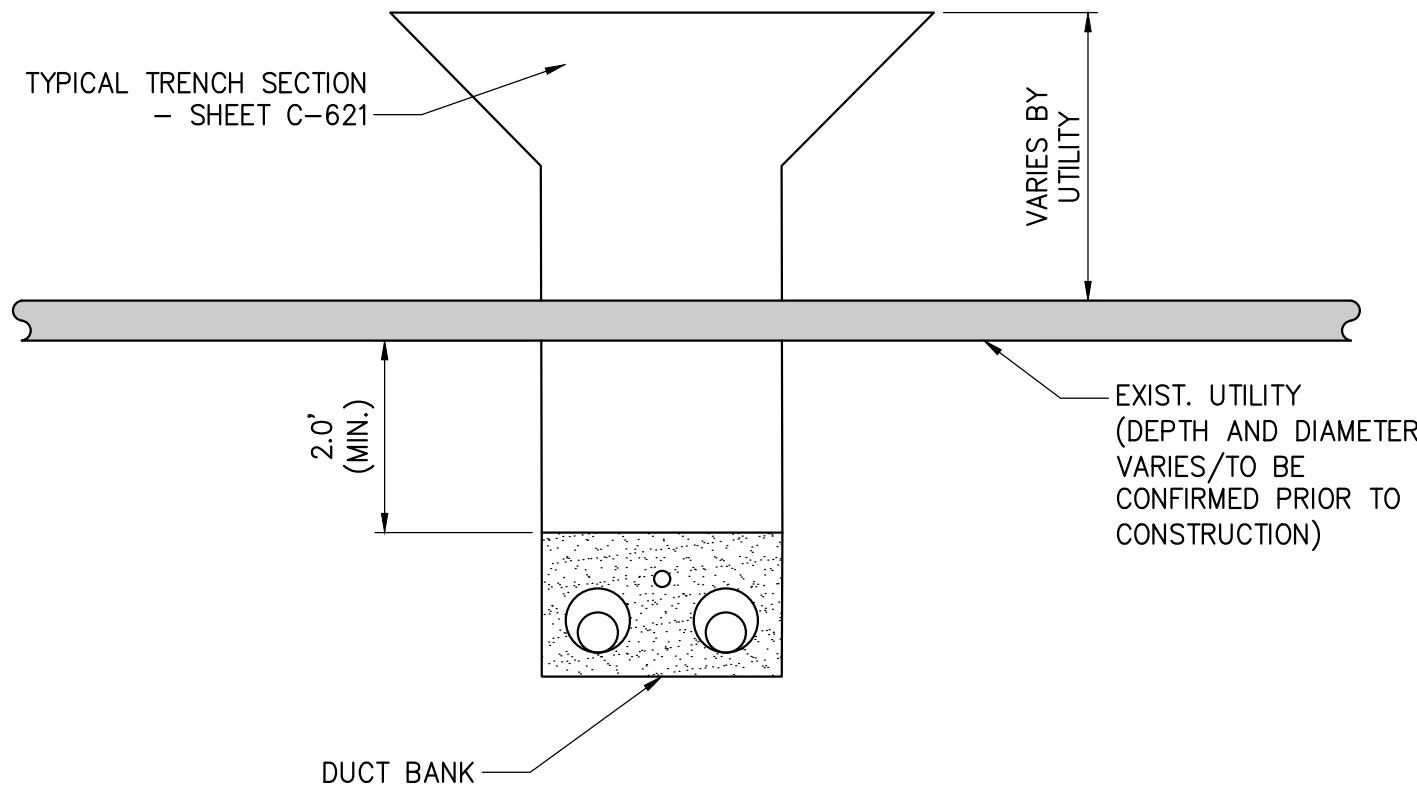
File: P:\KIE-CHPE\3-DES\02-RDW\SHITS\PS\21162\_5\_C-901.DWG Saved: 3/21/2023 1:59:08 PM Plotted: 6/7/2023 9:34:03 PM Current User: Brian.Vines LastSavedBy: Brian.Vines

NATIONAL GRID NOTES

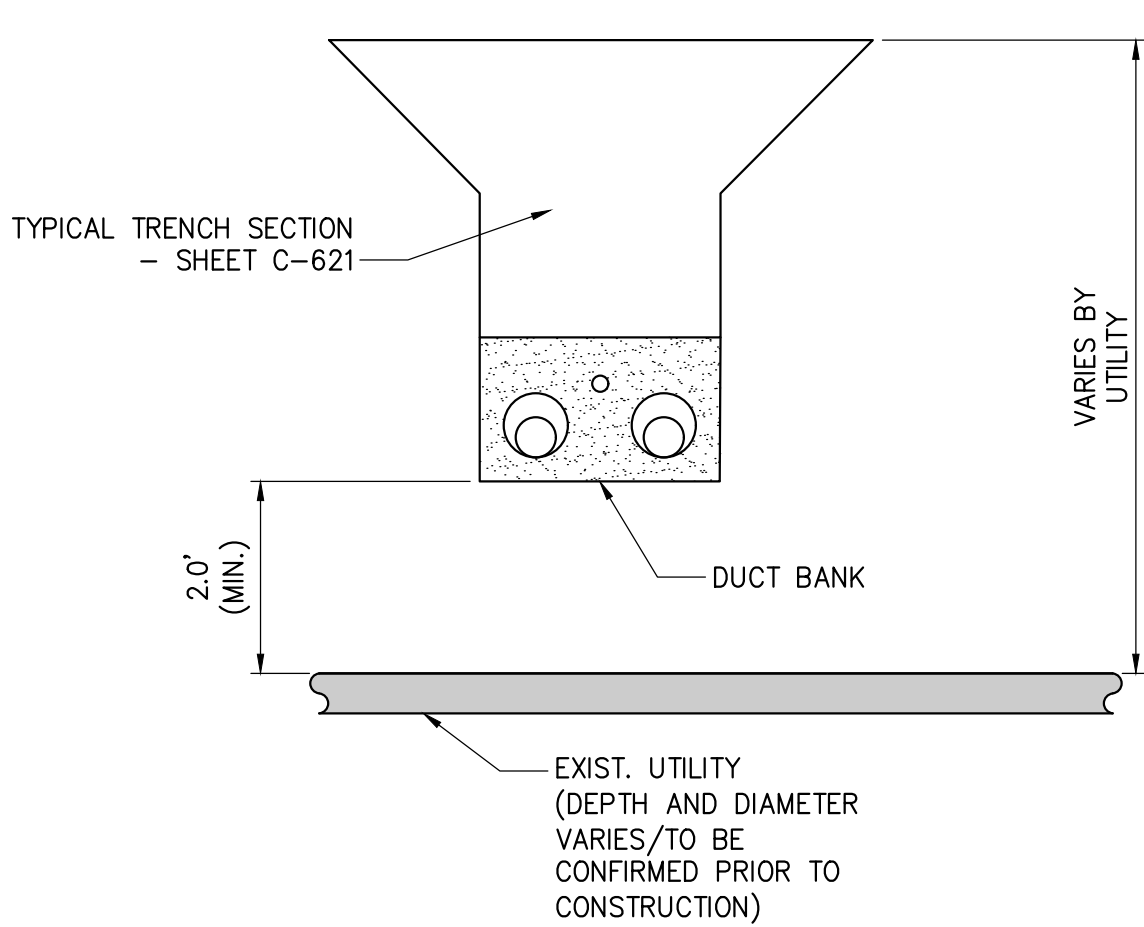
1. THE CONTRACTOR SHALL OBSERVE AND ABIDE BY THE APPLICABLE POWER LINE SAFETY REGULATIONS 29 C.F.R. § 1926.1406 – 1926.1411.
2. THE CONTRACTOR SHALL TRAIN EMPLOYEES WORKING AS DEDICATED SPOTTERS IN ACCORDANCE WITH 29 C.F.R. § 1926.1408(G)(2).
3. CONSTRUCTION UNDER TRANSMISSION LINES REQUIRES A DEDICATED SPOTTER, AS APPLICABLE.
4. THE CONTRACTOR SHALL SUBMIT QUALIFIED INDIVIDUALS' RESUMES TO NATIONAL GRID.



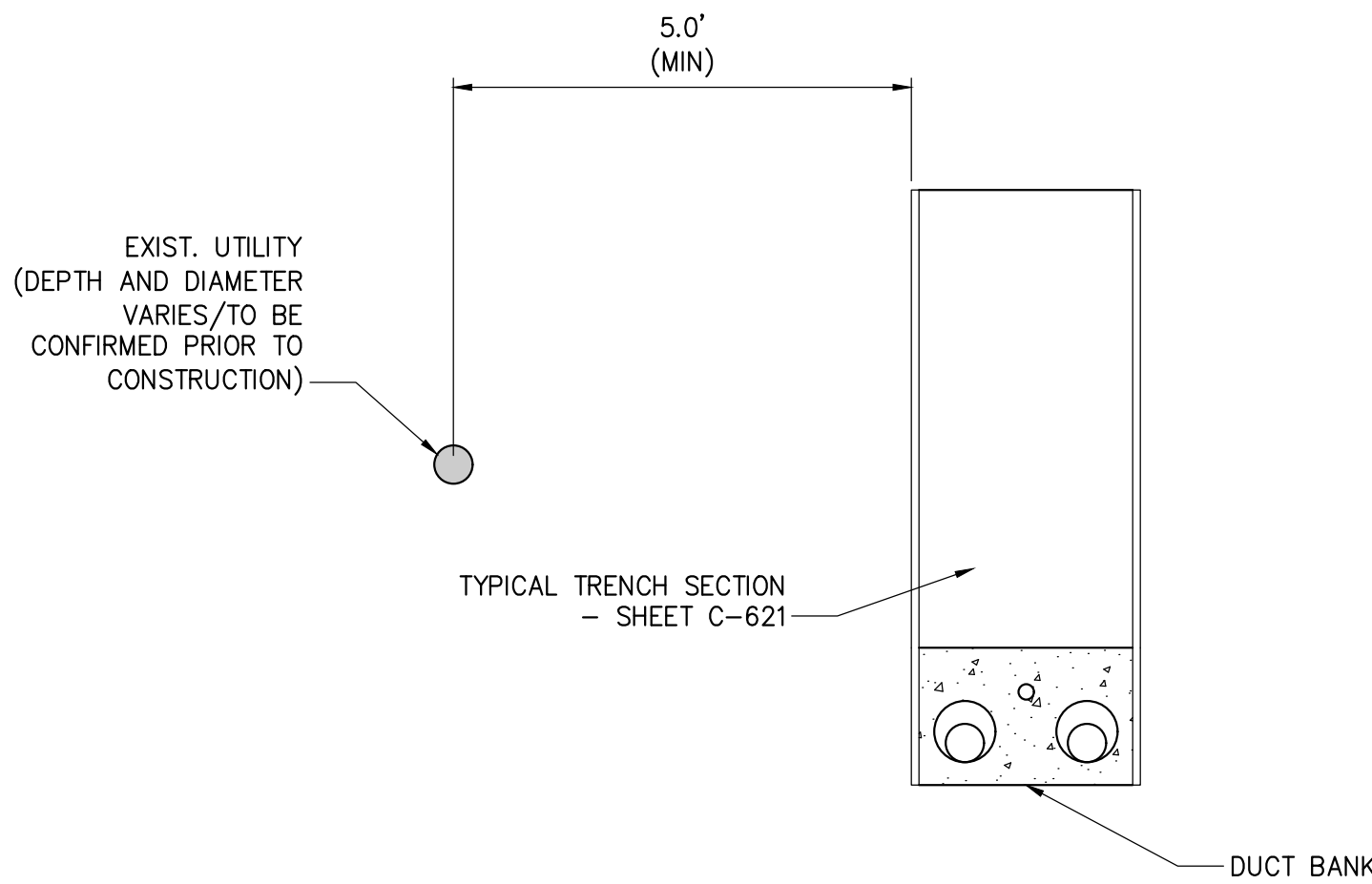
1 OPEN TRENCH - HORIZONTAL SEPARATION  
NOT TO SCALE



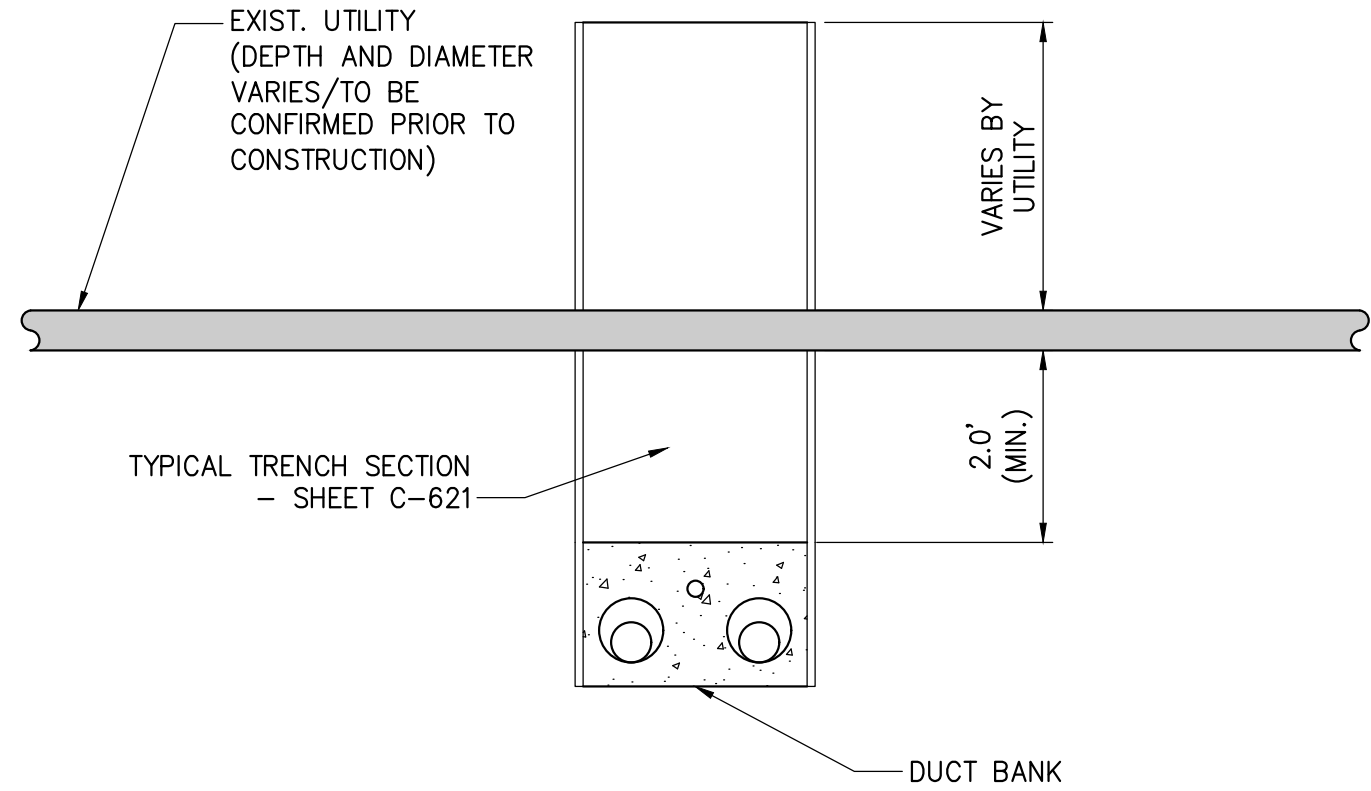
2 OPEN TRENCH - VERTICAL SEPARATION (UNDER)  
NOT TO SCALE



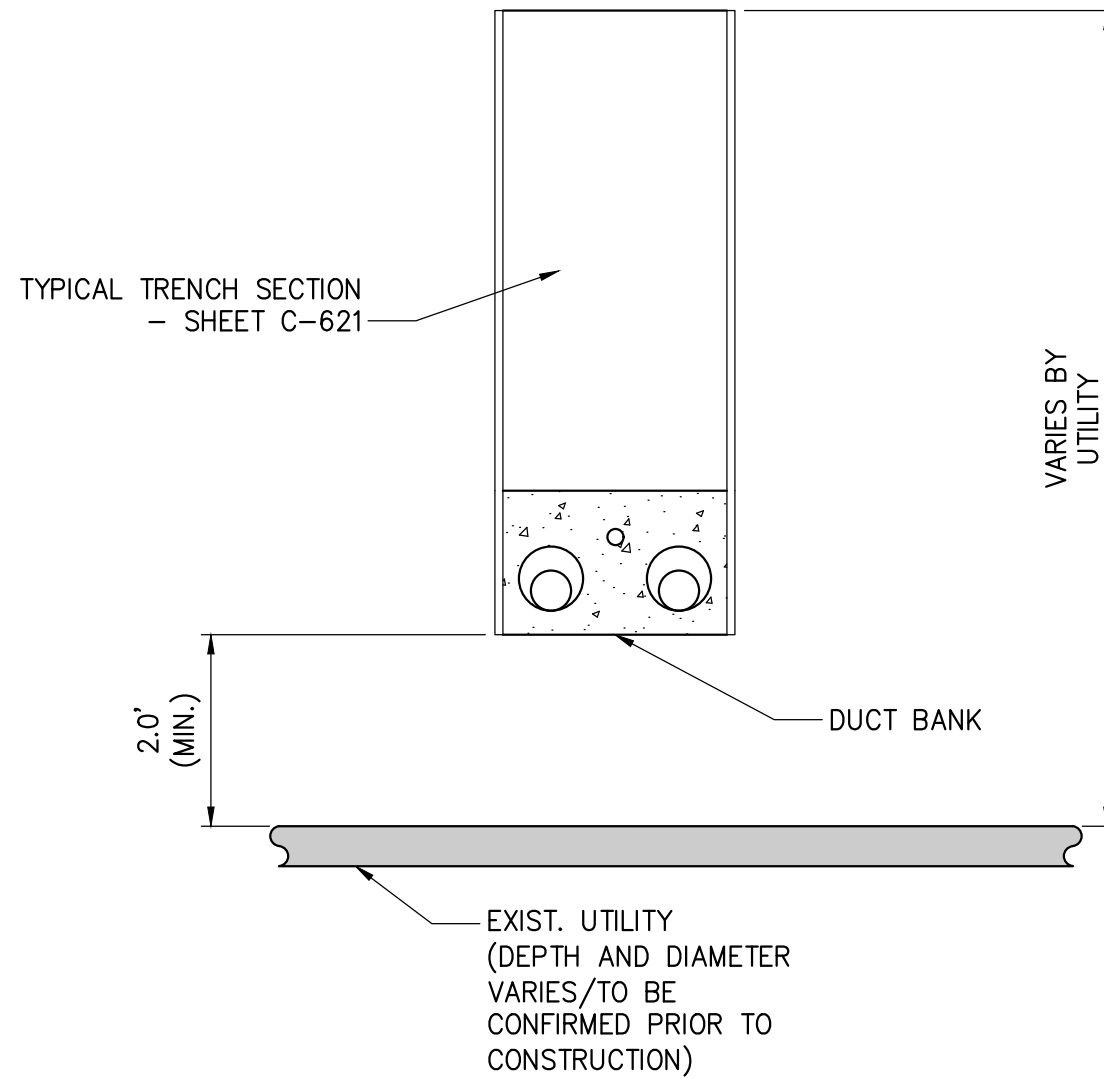
3 OPEN TRENCH - VERTICAL SEPARATION (OVER)  
NOT TO SCALE



4 TYPICAL DUCTBANK IN ROADWAY - HORIZONTAL SEPARATION  
NOT TO SCALE



5 TYPICAL DUCTBANK IN ROADWAY - VERTICAL SEPARATION (UNDER)  
NOT TO SCALE



6 TYPICAL DUCTBANK IN ROADWAY - VERTICAL SEPARATION (OVER)  
NOT TO SCALE



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BV	TK	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM  
UTILITY TYPICAL SEPARATION DETAILS

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE REV. NO.	AS SHOWN 0	DATE SH.NO.	06/09/2023 OF
-----------	--------------	--------------	-------------------	---------------	----------------	------------------

KIEWIT PROJECT NO. 21162
DRAWING NO. C-901