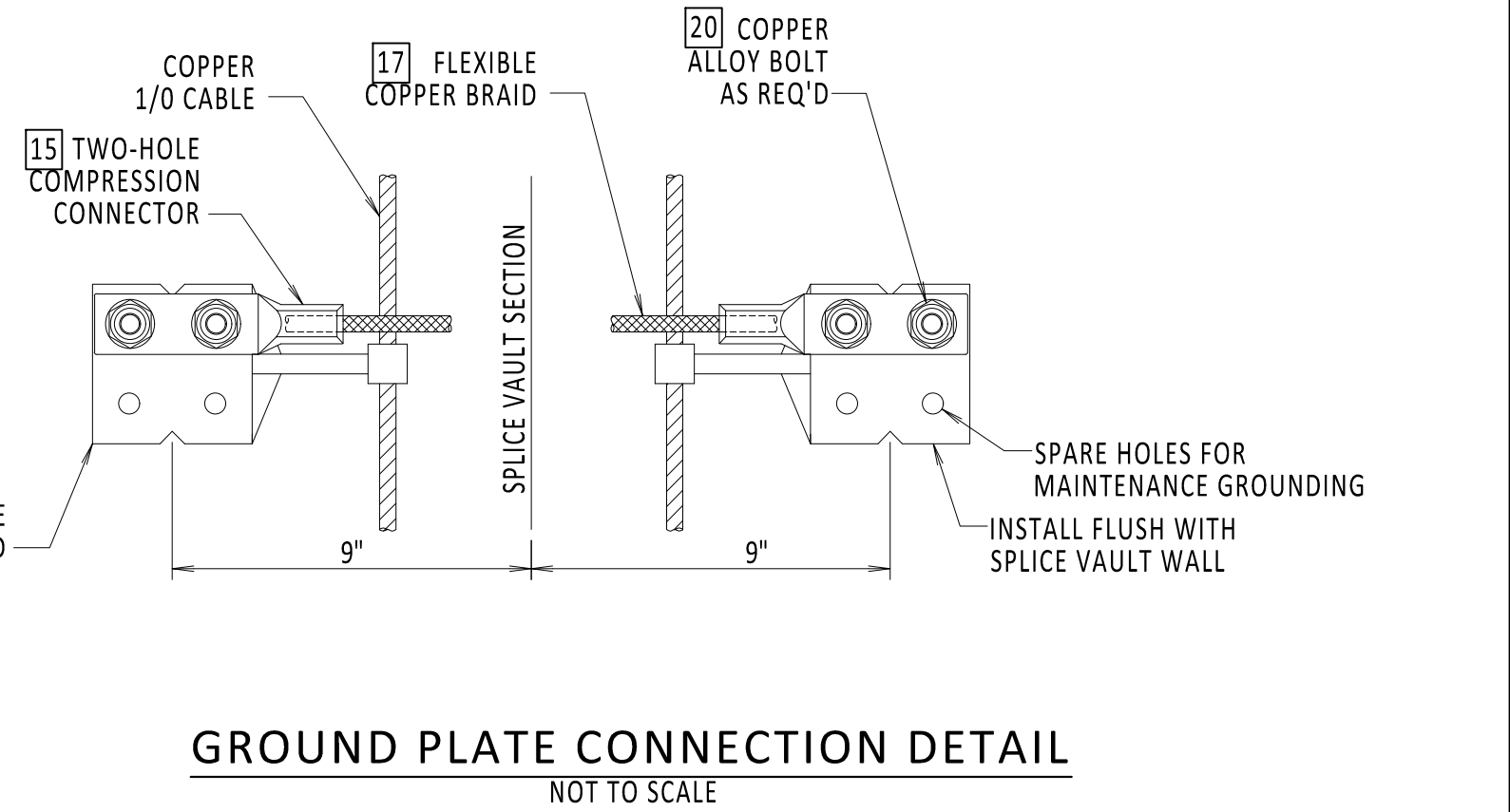
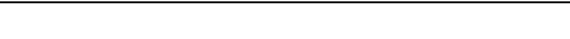
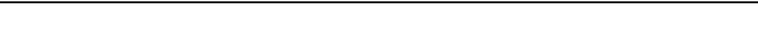

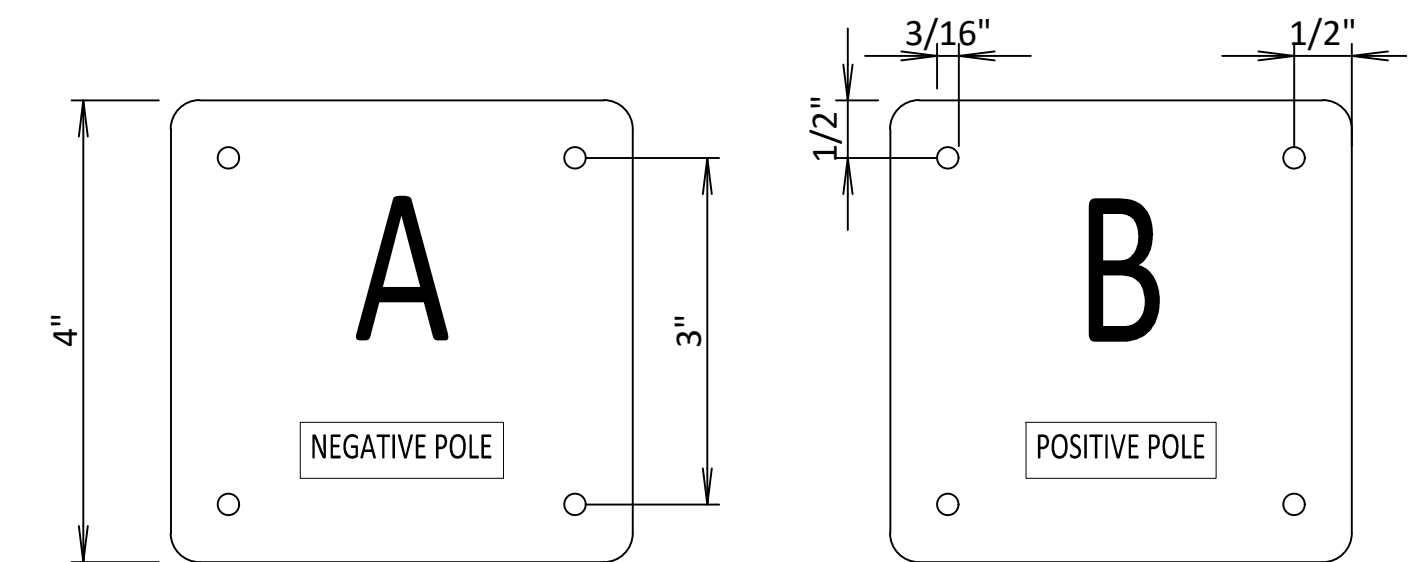
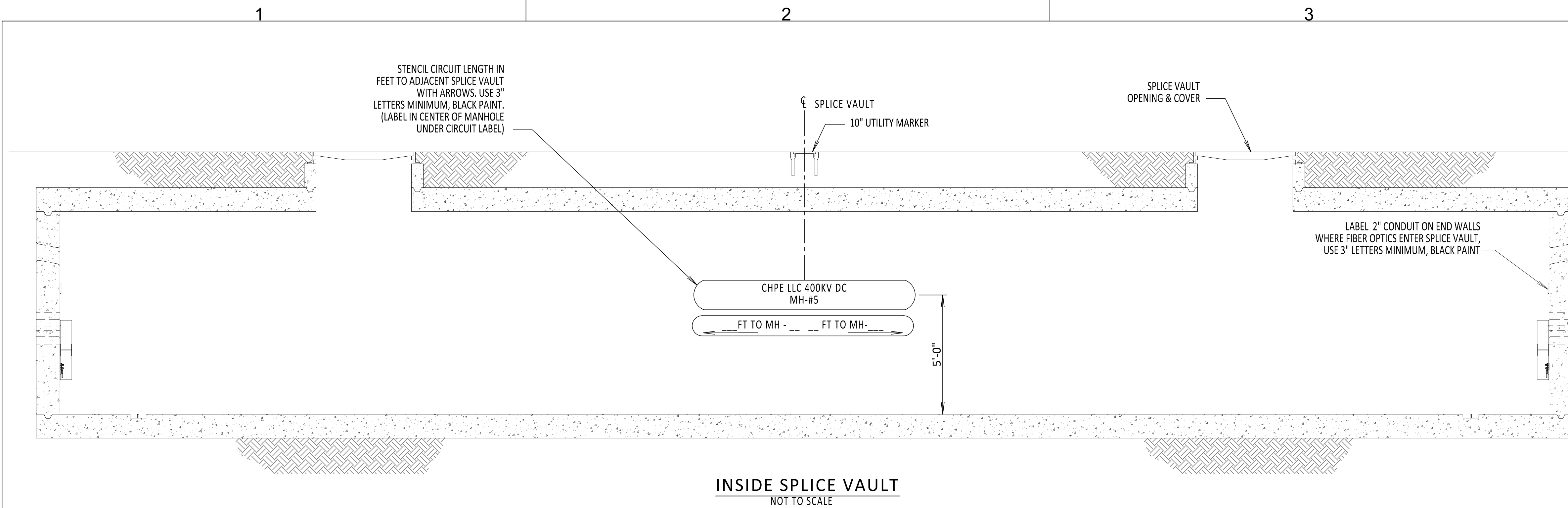


BILL OF MATERIALS				
ITEM NO.	ITEM DESCRIPTION	MANUFACTURER & CATALOG NO.	PROVIDER	INSTALLER
1	LINK BOX	NKT LB.U.E.2.1	NKT	KIEWIT
2	INSULATED COAX BONDING CABLE	AS REQUIRED	NKT	NKT
3	BARE 4/0 GROUND CABLE	AS REQUIRED	KIEWIT	KIEWIT
4	GROUND CONNECTOR	BURNDY GB29	KIEWIT	KIEWIT
5	FEMALE WEDGE ANCHOR	GRAINGER 12DWG	KIEWIT	KIEWIT
6	COMPRESSION CROSS GRID CONNECTOR	BURNDY YGL29C29	KIEWIT	KIEWIT
7	COMPRESSION C CONNECTOR	BURNDY YGHC29C29	KIEWIT	KIEWIT
8	COMPRESSION CONNECTION TO GROUND ROD	BURNDY YGL34C29	KIEWIT	KIEWIT
9	3/4" X 10'-0" GROUND ROD	NVENT ERICO 613400	KIEWIT	KIEWIT
10	BRASS HEX HEAD CAP SCREW	GRAINGER 1YB51	KIEWIT	KIEWIT
11	POLYWATER FST SEALANT	POLYWATER	KIEWIT	KIEWIT
12	FOUR-HOLE GROUNDING PLATE	BURNDY YGF294N	KIEWIT	KIEWIT
13	GROUNDING BUSBAR & ASSEMBLY	NVENT ERICO EGBA14210BB	KIEWIT	KIEWIT
14	ONE HOLE LUG COMPRESSION TERMINAL	BURNDY YAV28L60	KIEWIT	KIEWIT
15	TWO HOLE LONG BARREL LUG	BURNDY YA282N	KIEWIT	KIEWIT
16	UNISTRUT AND SUNDRIES	STAINLESS STEEL	NKT	NKT
17	FLEXIBLE COPPER BRAID	BURNDY BD24N	KIEWIT	KIEWIT
18	BRASS HEX NUT	GRAINGER 1WE22	KIEWIT	KIEWIT
19	COMPRESSION LUG	ABB 120M16-A	KIEWIT	KIEWIT
20	SILICON BRONZE HEX HEAD CAP SCREW	AFT BB-VS1160-B	KIEWIT	KIEWIT

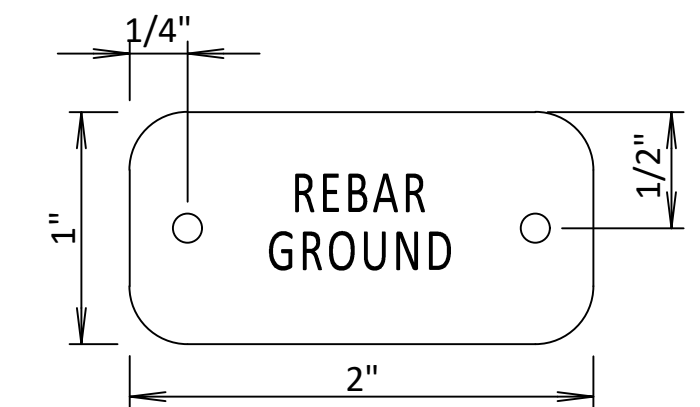
APPROVED EQUAL MATERIAL MAY BE SUBMITTED FOR REVIEW AND APPROVAL. QUANTITIES ARE MINIMUM - PROVIDER IS RESPONSIBLE FOR ALL MATERIAL ITEMS AND QUANTITIES.		
REFERENCE DOCUMENTS		
LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	STRUCTURAL VAULT DRAWING	S-700
2	GROUNDING SPECIFICATIONS	260526.01



 CHPE Champlain Hudson Power Express	 Kiewit		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" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.	0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM	CHAMPLAIN HUDSON POWER EXPRESS				KIEWIT PROJECT NO.	
				No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY:	DLM	DESIGNED BY:	SD	APPROVED BY:	ASM
										TYPICAL VAULT GROUNDING DETAILS	C-803		21162	
										0	0	0	0	03/15/2023
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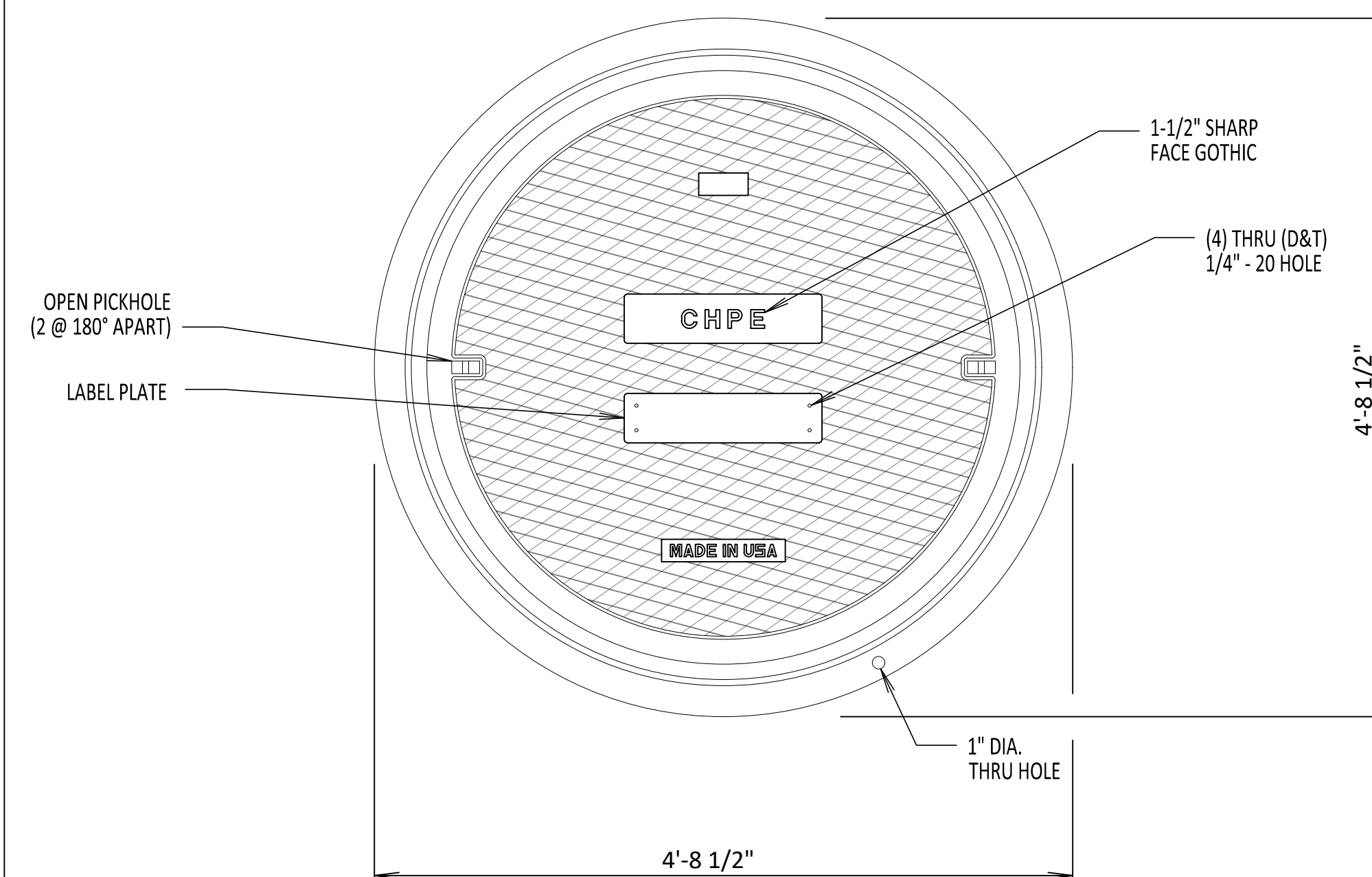


DC CABLE IDENTIFICATION TAGS



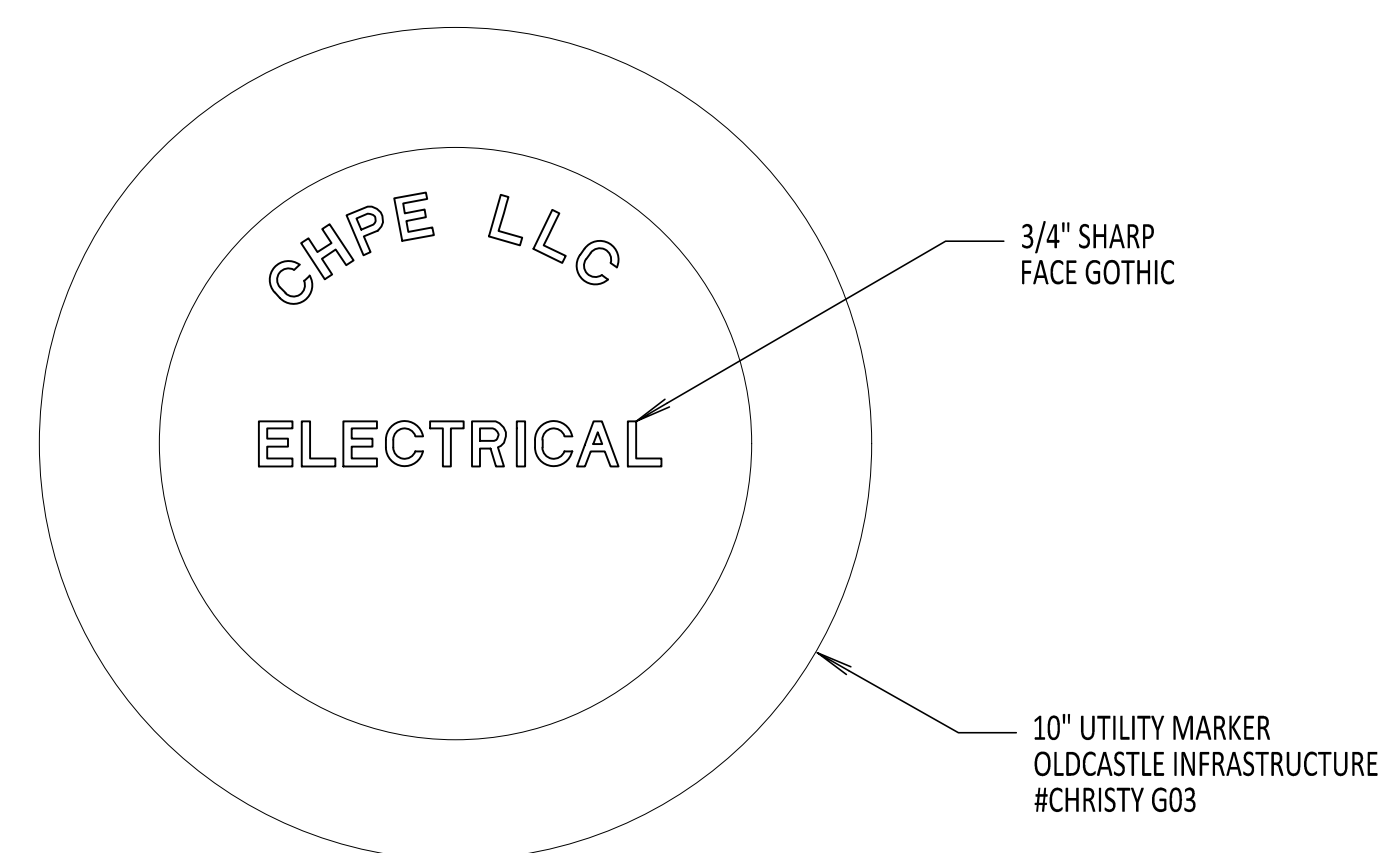
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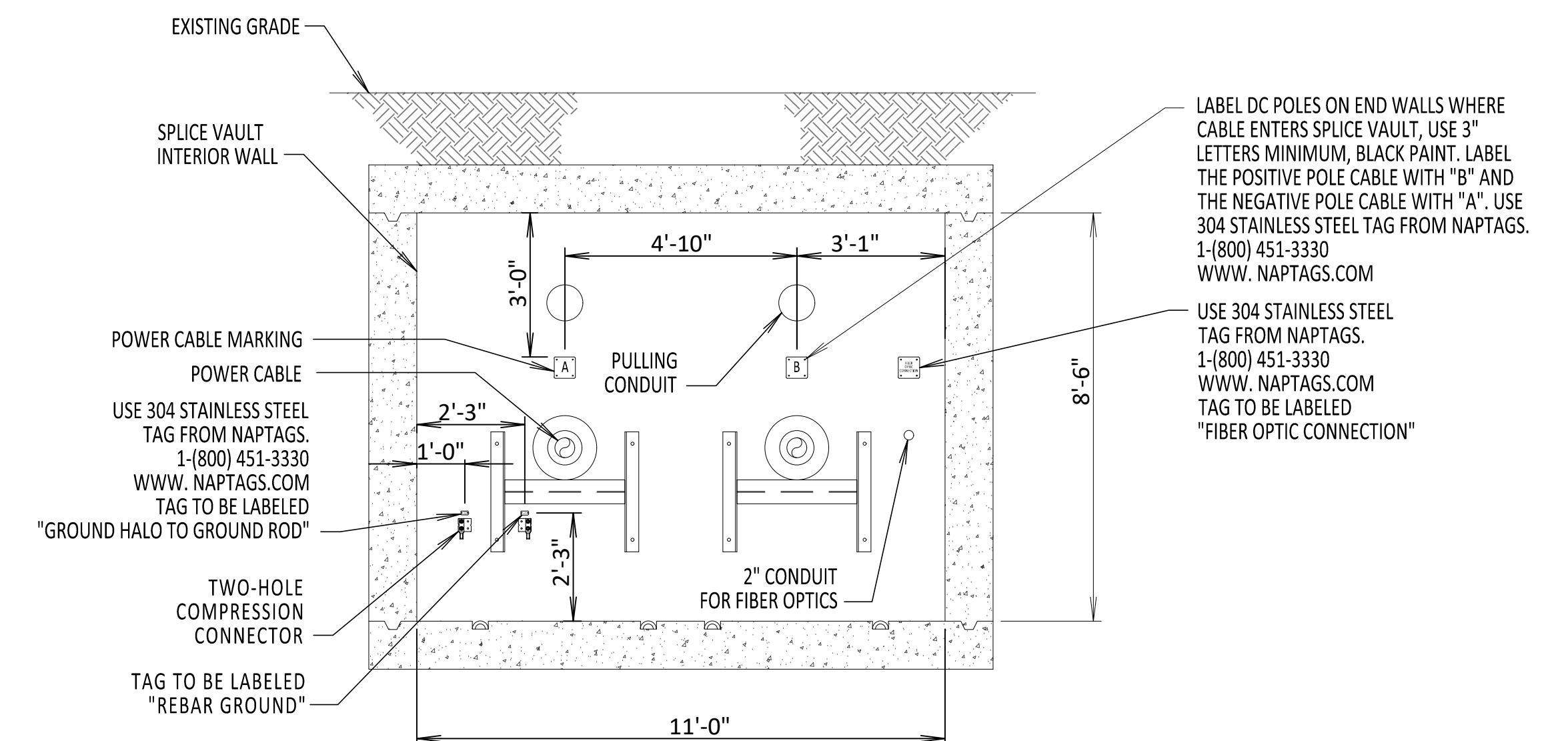
SPLICE VAULT LID MARKINGS PLAN VIEW

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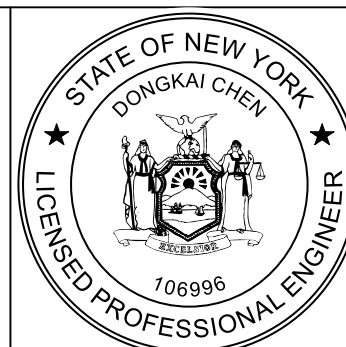


UTILITY MARKER DETAIL

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INSIDE ENDWALL VIEW
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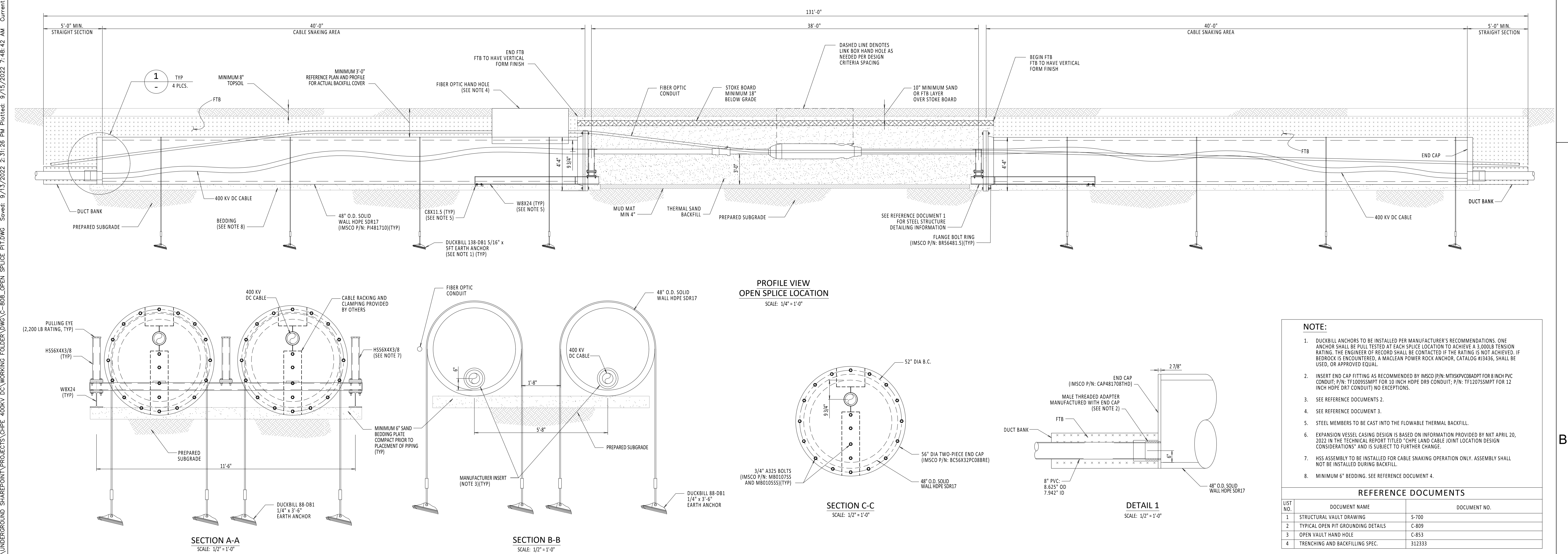
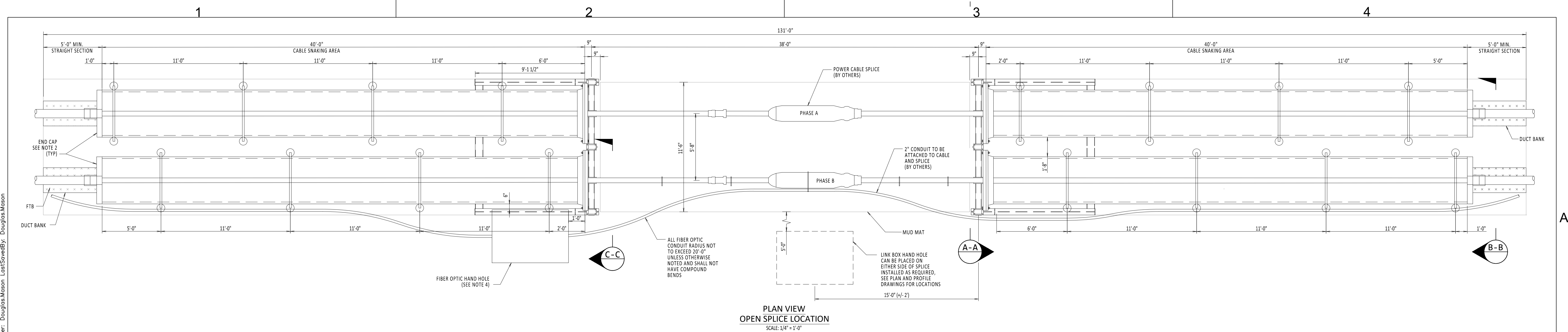
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT AND CABLE MARKING DETAILS

KIEWIT PROJECT NO.	
21162	
CHA PROJECT NO.	
066076	
DRAWING NO.	
C-807	
DATE	03/15/2023
SH NO	OF



NOTE:

1. DUCKBILL ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. ONE ANCHOR SHALL BE PULL TESTED AT EACH SPICE LOCATION TO ACHIEVE A 3,000LB TENSION RATING. THE ENGINEER OF RECORD SHALL BE CONTACTED IF THE RATING IS NOT ACHIEVED. IF BEDROCK IS ENCOUNTERED, A MACLEAN POWER ROCK ANCHOR, CATALOG #J3436, SHALL BE USED, OR APPROVED EQUAL.
2. INSERT END CAP FITTING AS RECOMMENDED BY IMSCO (P/N: MTSKXPC08ADPT FOR 8 INCH PVC CONDUIT; P/N: TFI20SSMPT FOR 10 INCH HOPE DR9 CONDUIT; P/N: TFI207SSMPT FOR 12 INCH HOPE DR7 CONDUIT) NO EXCEPTIONS.
3. SEE REFERENCE DOCUMENTS 2.
3. SEE REFERENCE DOCUMENT 3.
5. STEEL MEMBERS TO BE CAST INTO THE FLOWABLE THERMAL BACKFILL.
6. EXPANSION VESSEL CASING DESIGN IS BASED ON INFORMATION PROVIDED BY NKT APRIL 20, 2022 IN THE TECHNICAL REPORT TITLED "CPE AND CABLE JOINT LOCATION DESIGN CONSIDERATIONS" AND IS SUBJECT TO FURTHER CHANGE.
7. HSS ASSEMBLY TO BE INSTALLED FOR CABLE SNAKING OPERATION ONLY. ASSEMBLY SHALL NOT BE INSTALLED DURING BACKFILL.
8. MINIMUM 6" BEDDING. SEE REFERENCE DOCUMENT 4.

REFERENCE DOCUMENTS		
LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	STRUCTURAL VAULT DRAWING	5-700
2	TYPICAL OPEN PIT GROUNDING DETAILS	C-809
3	OPEN VAULT HAND HOLE	C-853
4	TRACING AND BACKFILLING SPEC.	312333

[illegible]

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1

2

3

4

NOTES:

- FOR ADDITIONAL DESIGN PARAMETERS SEE SPECIFICATIONS.
- ALL GROUND CONNECTIONS SHALL BE IRREVERSIBLE COMPRESSION CONNECTION UNLESS OTHERWISE NOTED.
- LINK BOX WILL CONTAIN FOUR DISCONNECTING LINKS, AS PROVIDED BY VENDOR.
- POLYWATER FST SHALL BE USED TO SEAL CONDUIT.
- BONDING CABLE CONNECTION BETWEEN HIGH VOLTAGE DC CABLE SPLICE AND LINK BOX SHALL BE NO LONGER THAN 30 FEET. FIELD FIT EXACT LOCATION.
- RESISTANCE OF GROUND GRID MEASURED RELATIVE TO DEEP EARTH SHALL BE 10 OHMS OR LESS. LENGTH AND NUMBER OF GROUND RODS TO BE DETERMINED BASED ON MEASURED GROUND ROD RESISTANCE.
- KIEWIT HAS PROVIDED GROUNDING AS PER NKT REQUIREMENTS. NO OTHER ELECTRICAL SYSTEM DESIGN HAS BEEN INCLUDED BY KIEWIT.

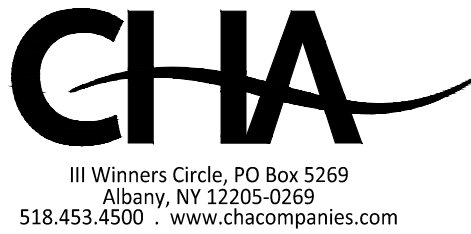
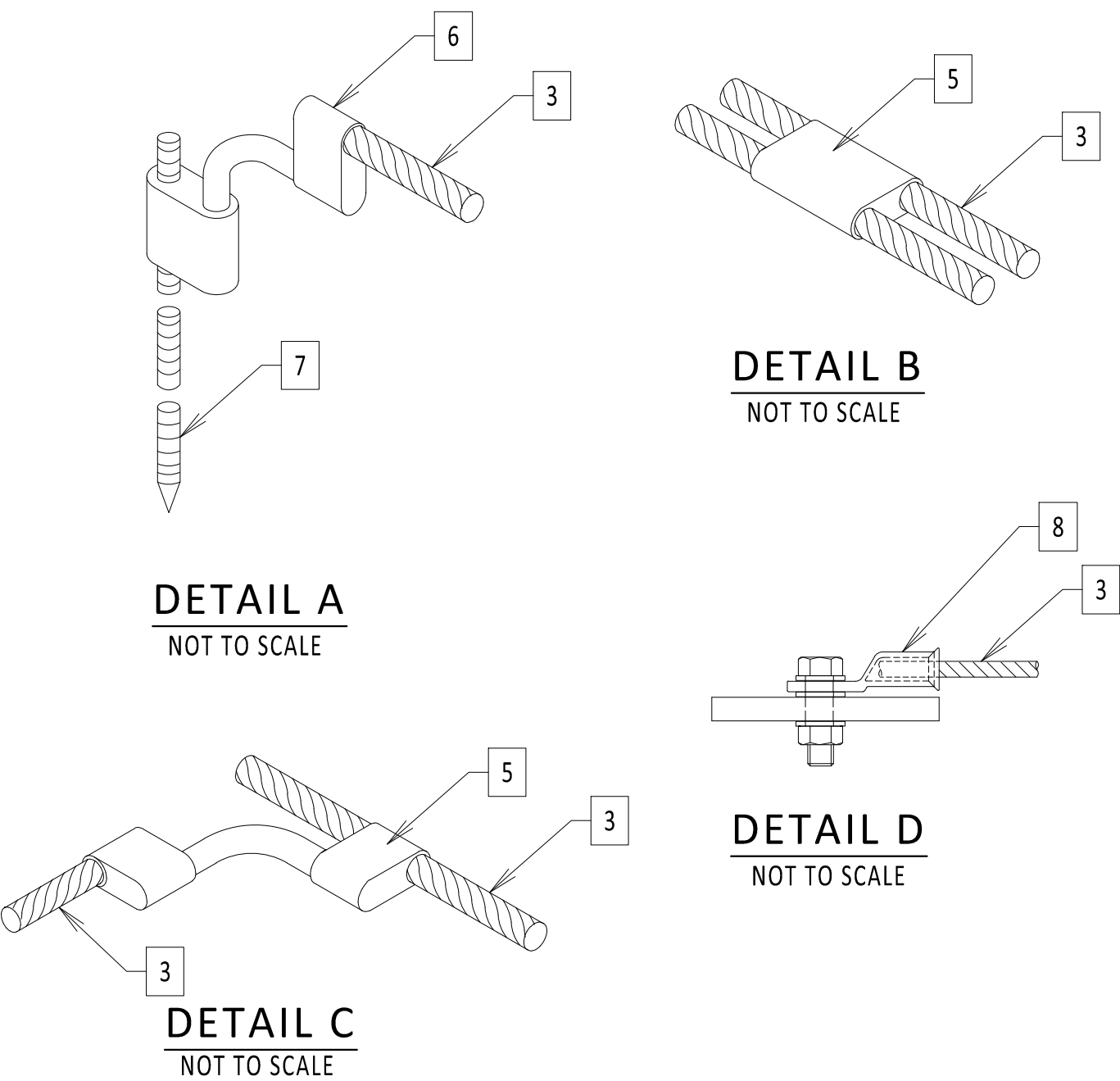
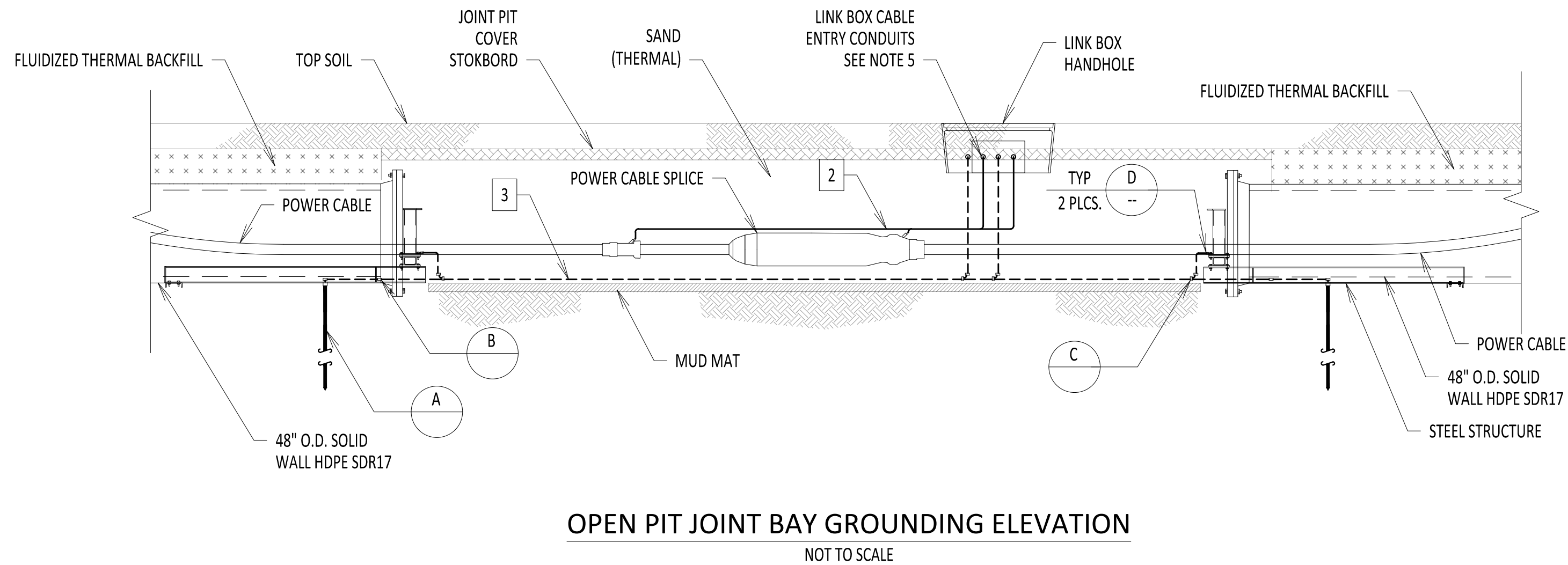
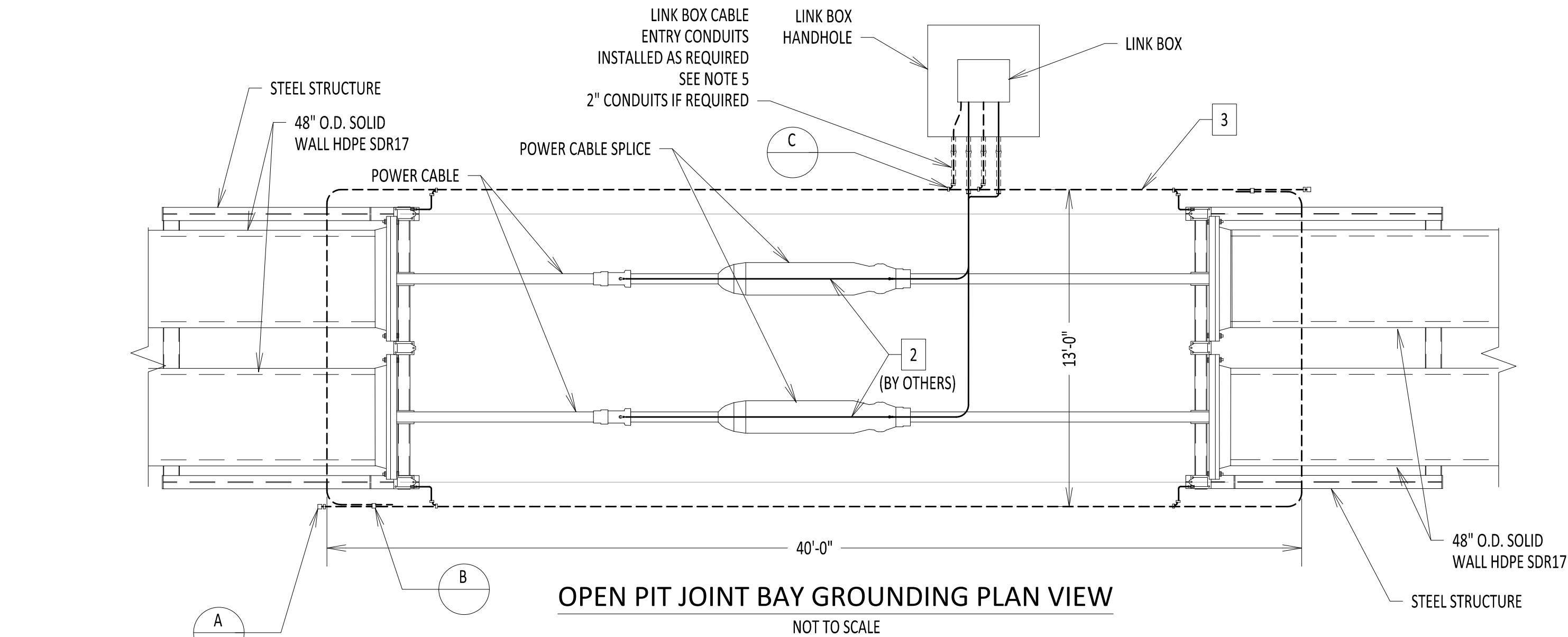
BILL OF MATERIALS

ITEM NO.	ITEM DESCRIPTION	MANUFACTURER & CATALOG NO.	PROVIDER	INSTALLER
1	LINK BOX	AS REQUIRED	NKT	KIEWIT
2	INSULATED GROUND CABLE	AS REQUIRED	NKT	NKT
3	BARE 4/0 GROUND CABLE	AS REQUIRED	KIEWIT	KIEWIT
4	COMPRESSION CROSS GRID CONNECTOR	BURNDY YGL29C29	KIEWIT	KIEWIT
5	COMPRESSION C CONNECTOR	BURNDY YGHC29C29	KIEWIT	KIEWIT
6	COMPRESSION CONNECTION TO GROUND ROD	BURNDY YGL34C29	KIEWIT	KIEWIT
7	3/4" X 10'-0" GROUND ROD	NVENT ERICO 613400	KIEWIT	KIEWIT
8	3/4" STUD RING TERMINAL	BURNDY YAD28M20E34	KIEWIT	KIEWIT

APPROVED EQUAL MATERIAL MAYBE SUBMITTED FOR REVIEW AND APPROVAL.
QUANTITIES ARE MINIMUM - PROVIDER IS RESPONSIBLE FOR ALL MATERIAL ITEMS AND QUANTITIES.

REFERENCE DRAWINGS

LIST NO.	DRAWING NAME	DRAWING NO.
1	STRUCTURAL VAULT DRAWINGS	S-700
2	TYPICAL OPEN PIT SPLICE CASING DETAILS	C-808
3	GROUNDING SPECIFICATIONS	260526.01



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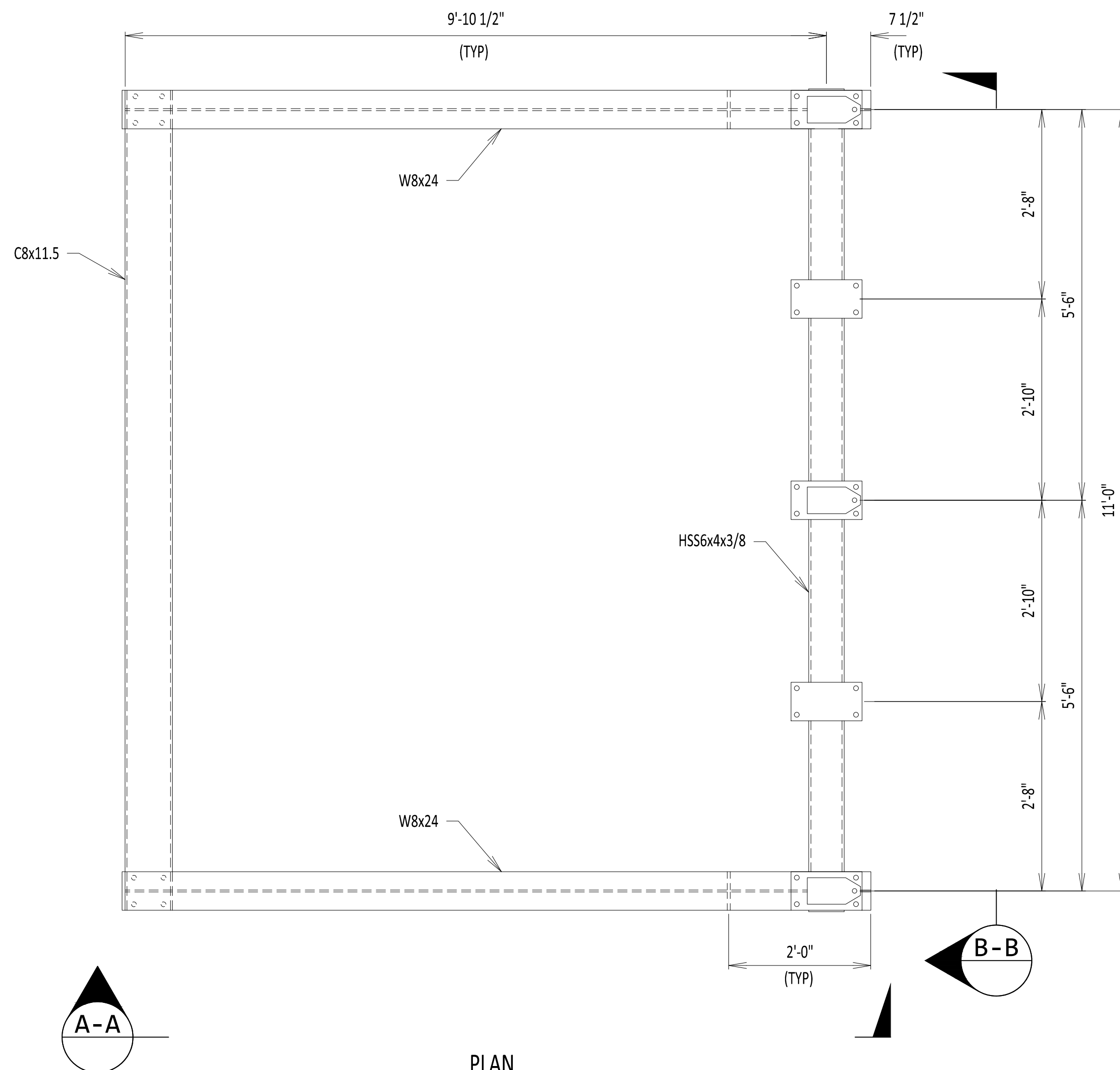
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

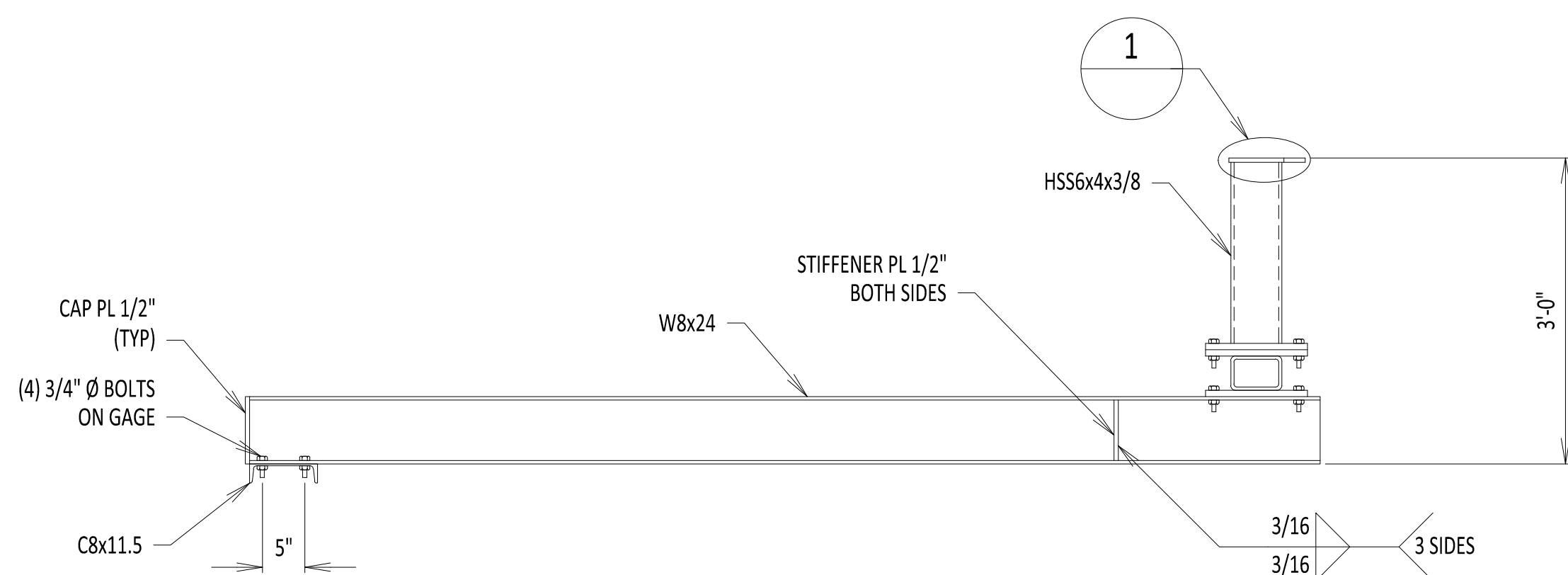
OPEN PIT SPLICE
GROUNDING DETAILS

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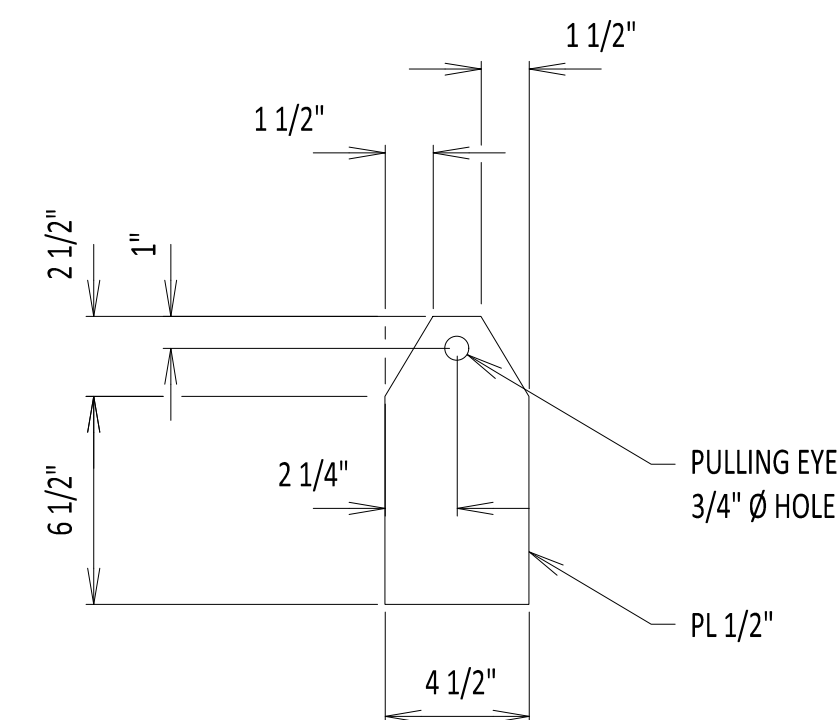
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-809
DATE	09/16/2022
SH.NO.	OF XXX



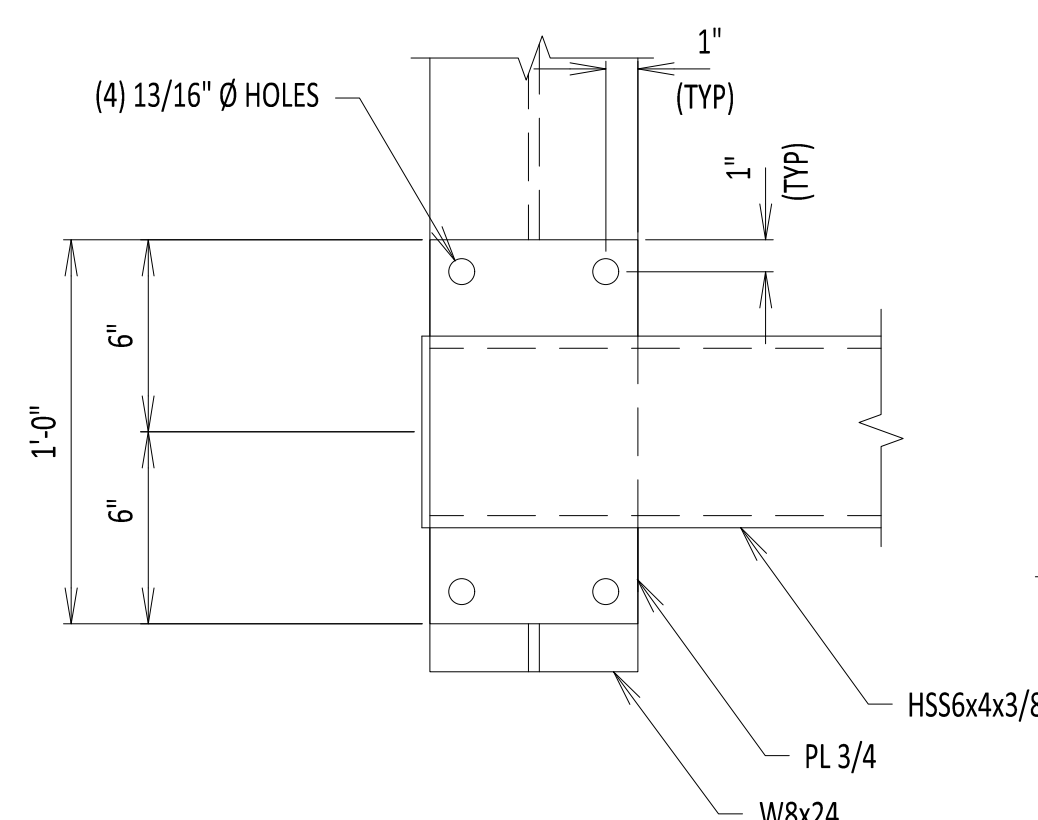
PLAN
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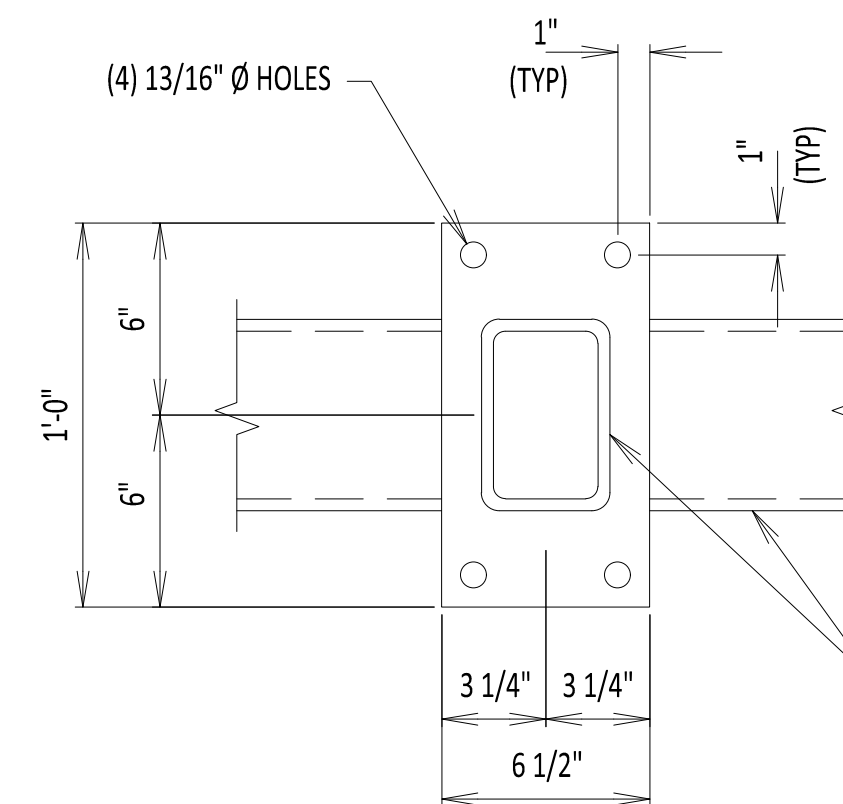
SECTION A-A
SCALE: 3/4" = 1'-0"



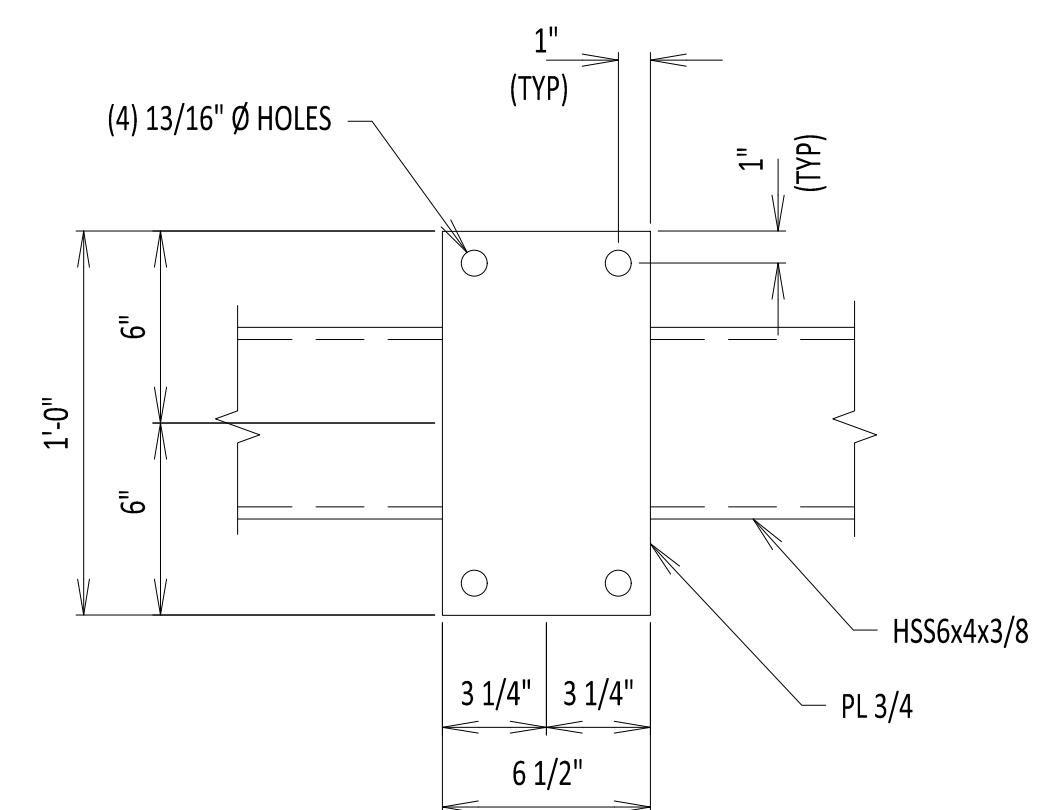
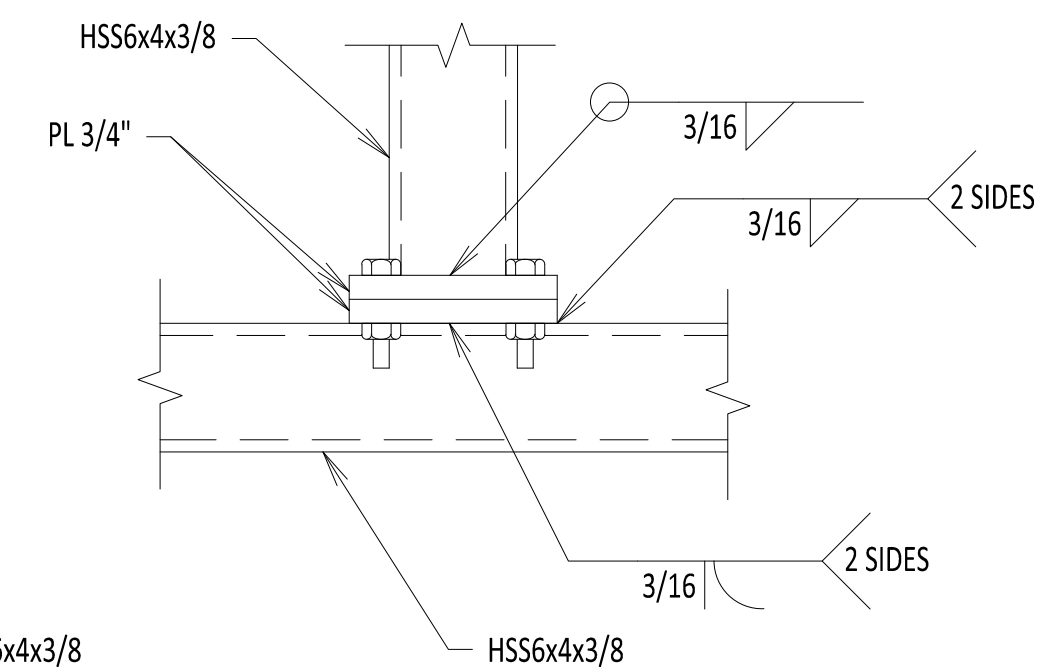
PULLING EYE
DETAIL 1
SCALE: 2" = 1'-0"



DETAIL 3
SCALE: 2" = 1'-0"



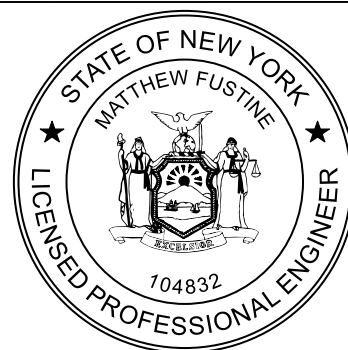
DETAIL 2
SCALE: 2" = 1'-0"



DETAIL 4
SCALE: 2" = 1'-0"

NOTES:

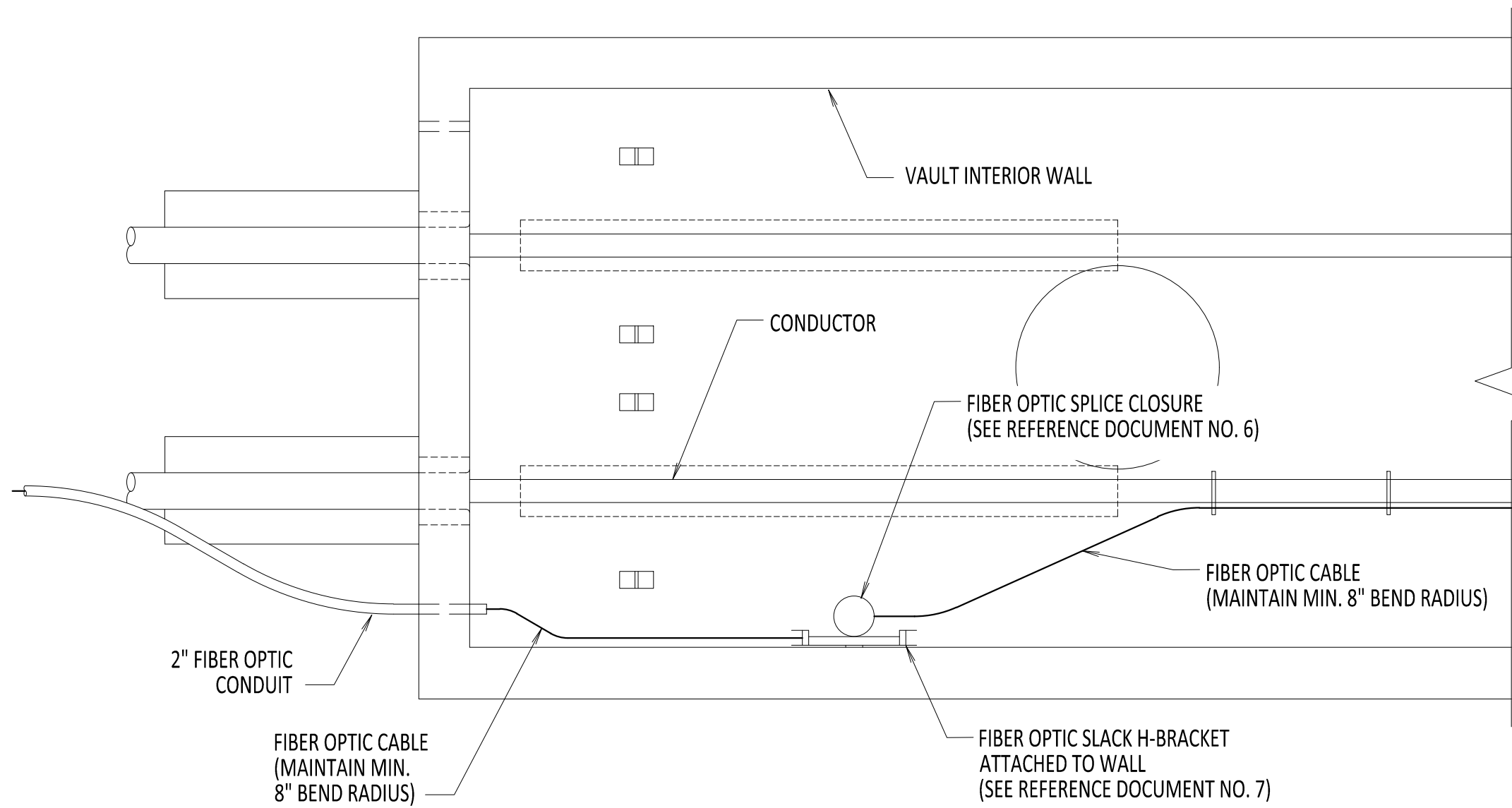
1. W-SHAPES SHALL BE ASTM A992. CHANNELS SHALL BE ASTM A36. HSS RECTANGULAR TUBES SHALL BE ASTM A1085. PLATES SHALL BE ASTM A572 GR 50. ALL STRUCTURAL MEMBERS SHALL BE HOT DIP GALVANIZED.
2. CONNECTION BOLTS TO BE 3/4" DIAMETER U.N.O. ALL STRUCTURAL BOLTS SHALL BE ASTM F3125 GR A325. ALL NUTS SHALL BE ASTM A563. ALL WASHERS SHALL BE ASTM F436. ALL FASTENERS SHALL BE HOT DIP GALVANIZED.
4. ALL MATERIAL ON THIS SHEET SHALL BE HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123 AND ASTM A153. FABRICATOR TO PROVIDE GALV VENTS AS REQ'D.
5. WELDING ELECTRODES SHALL BE E70. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1.
6. LOADING ON THE PULLING EYES SHALL NOT EXCEED 2,200LBS. TWO PULLING EYES CAN BE LOADED AT A TIME.
7. CABLE CLAMPING LOAD SHALL NOT EXCEED 3,400LBS AT EACH OF THE TWO CABLE LOCATIONS. CLAMPS AND CLAMP SUPPORTS SHALL BE EVALUATED AND PROVIDED BY OTHERS.
8. THE MAXIMUM DESIGN LIFE OF THE STRUCTURE IS 30 YEARS.



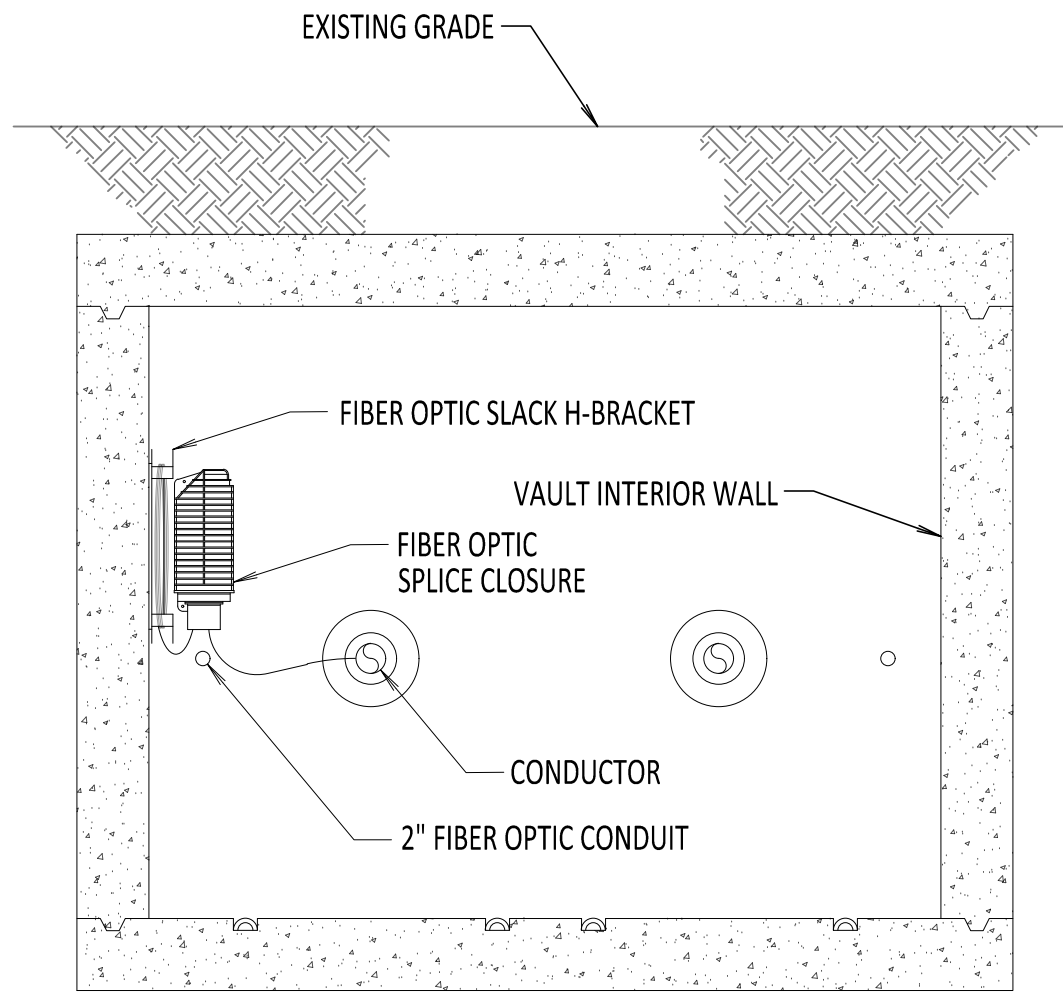
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY, AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL. IF ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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 STEEL SUPPORT DETAILS								KIEWIT PROJECT NO. 21162				
														CHA PROJECT NO. 066076				
														DRAWING NO.				
														C-811				
0	09/16/2022	EM&CP REGULATORY RE-SUBMISSION			AJH	MRF									DATE 08/25/2022			
No.	DATE	SUBMITTAL / REVISION DESCRIPTION			DB	APP	DRAWN BY:	DLM	DESIGNED BY:	AJH	APPROVED BY:	MRF	SCALE	REV. NO.	SH.NO.	1	OF	1

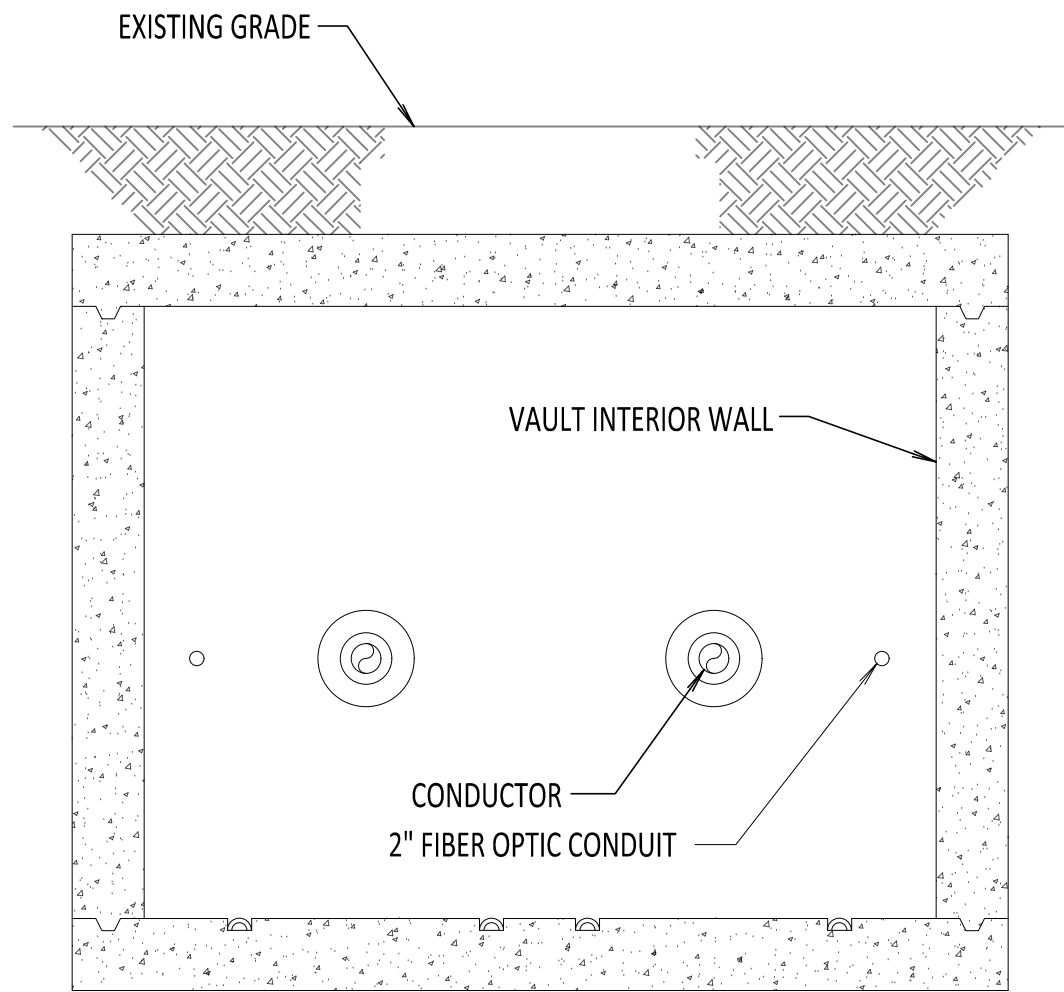
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ENCLOSED VAULT w/ FIBER OPTIC CABLE PLAN VIEW
SCALE: 3/8" = 1'-0"



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



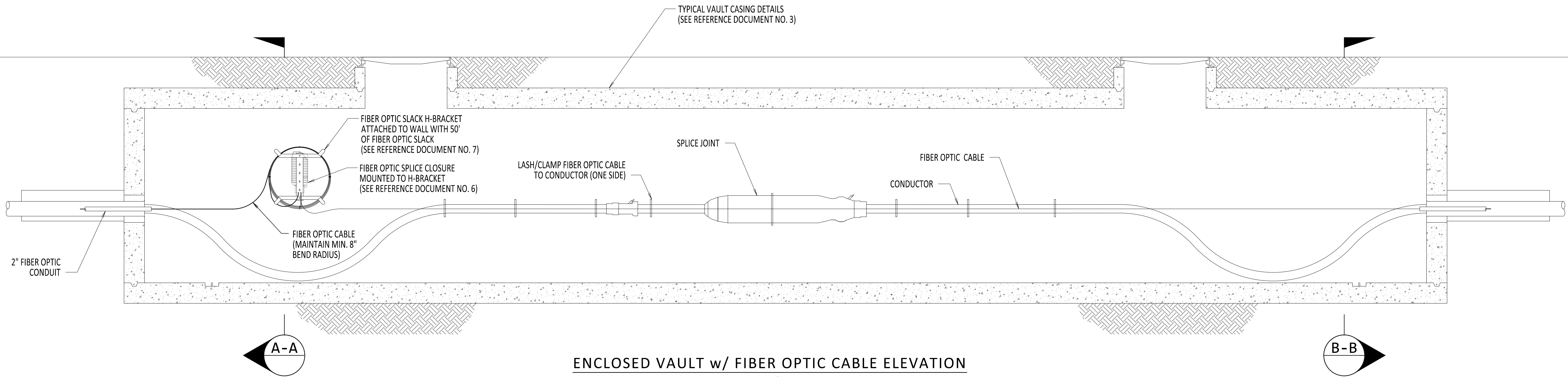
SECTION B-B
SCALE: 3/8" = 1'-0"

NOTES:

1. NKT TO LASH/CLAMP FIBER OPTIC CABLE AND ATTACH SPLICE CLOSURES AS NEEDED.
2. FIBER OPTIC CABLE SHALL FOLLOW THE NEGATIVE POLE HVDC CABLE NOTED ON THE PLAN AND PROFILE DRAWINGS, UNLESS OTHERWISE STATED. IN THE CASE THAT THE FIBER OPTIC CABLE ENTRY IS NOT ALIGNED WITH THE NEGATIVE POLE, THE FIBER OPTIC CONFIGURATION HEREIN SHALL BE MIRRORRED ON THE OPPOSITE SIDE.
3. SPLICE CLOSURE ONLY AT SPECIFIED LOCATIONS. SEE PLAN AND PROFILE.
4. SEE REFERENCE DOCUMENT 5 FOR DETAILS ON ROUTING FIBER TO DTS HUT.

REFERENCE DOCUMENTS

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	SPLICE VAULT PLAN AND ELEVATION	S-700
2	SPLICE VAULT SECTION AND DETAILS	S-701
3	TYPICAL VAULT DETAILS	C-802
4	TYPICAL VAULT GROUNDING DETAILS	C-803
5	DST HUT CONNECTION FIBER OPTIC SPLICE AND HANDHOLE	C-851
6	FIBER OPTIC SPLICE DETAILS	C-855
7	FIBER OPTIC H-FRAME BRACKET DETAILS	C-856



ENCLOSED VAULT w/ FIBER OPTIC CABLE ELEVATION
SCALE: 3/8" = 1'-0"



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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

ENCLOSED VAULT
w/ FIBER OPTICS

DRAWN BY: DLM DESIGNED BY: NM APPROVED BY: MK SCALE: 0 OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-852
DATE	03/15/2023
SH.NO.	OF

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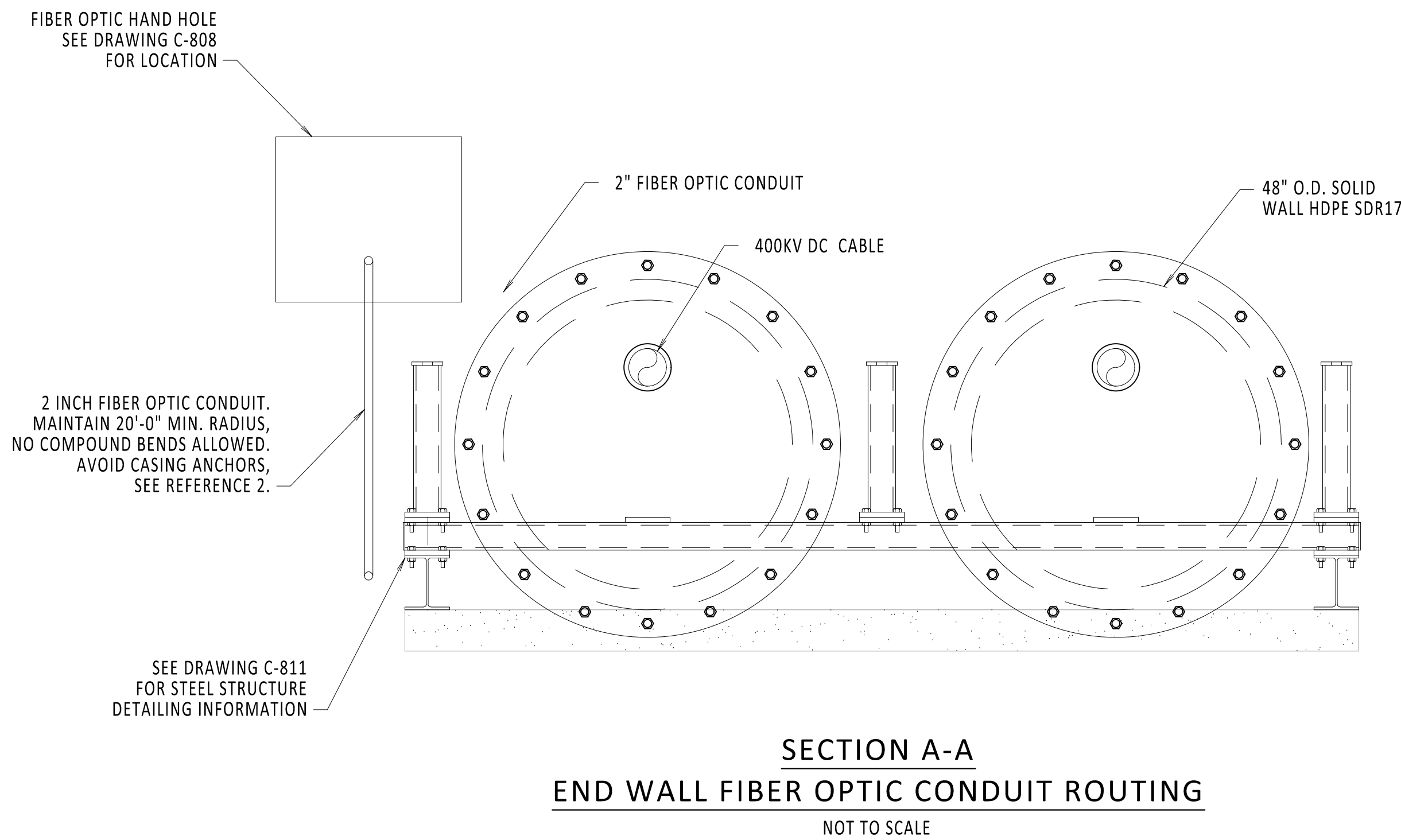
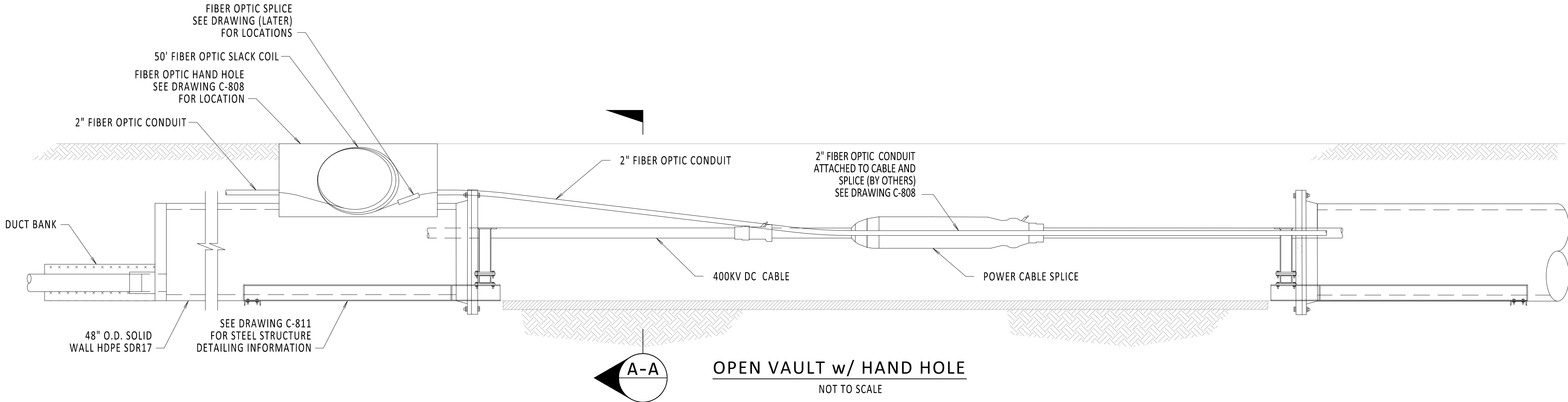
NOTES:

1. ADD HAND HOLE TO ALL OPEN VAULT LOCATIONS.

2. FIBER OPTIC SPLICE CLOSURE ONLY AT SPECIFIC LOCATIONS.

REFERENCE DOCUMENTS

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	FRP FIBER COMMUNICATION HAND HOLE	S-771
2	TYPICAL OPEN PIT SPLICE CASING DETAILS	C-808
3	STEEL SUPPORT DETAILS	C-811



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0	09/16/2022	EM&CP REGULATORY RE-SUBMISSION	DM	MK	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

OPEN VAULT w/ FIBER OPTICS
HAND HOLE

DRAWN BY:	TJM	DESIGNED BY:	MK	APPROVED BY:	XX	SCALE	
						REV. NO.	

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-853
DATE	09/16/2022
SH.NO.	OF XXX

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4

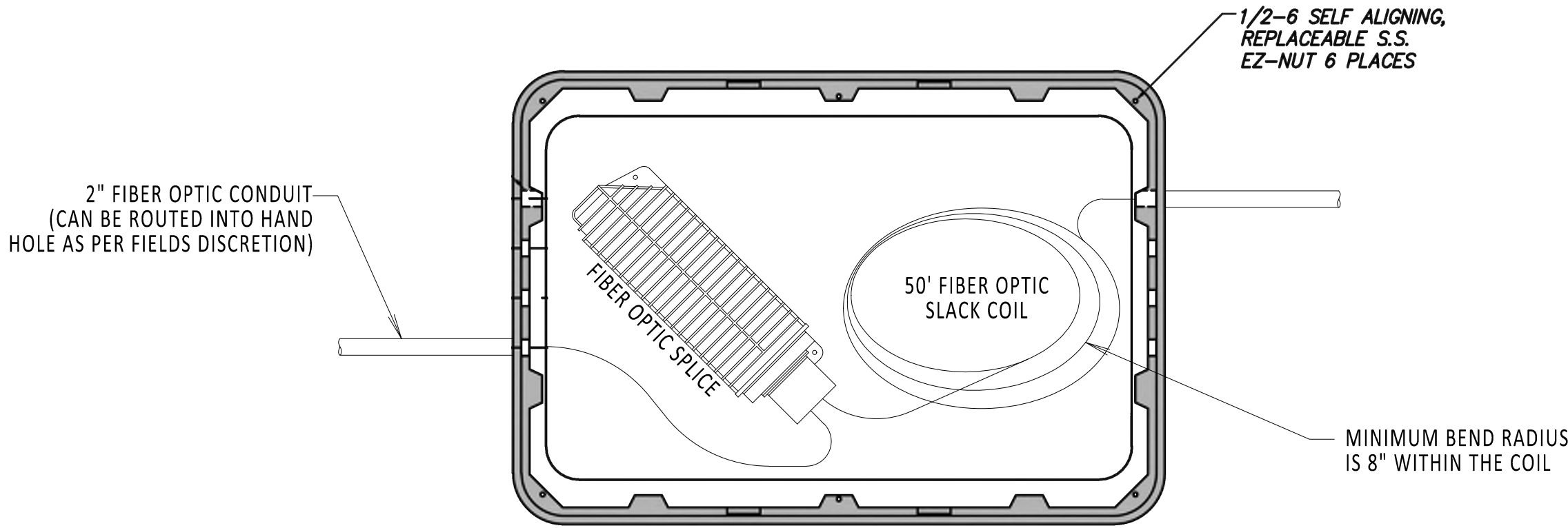
NOTES:

- 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.

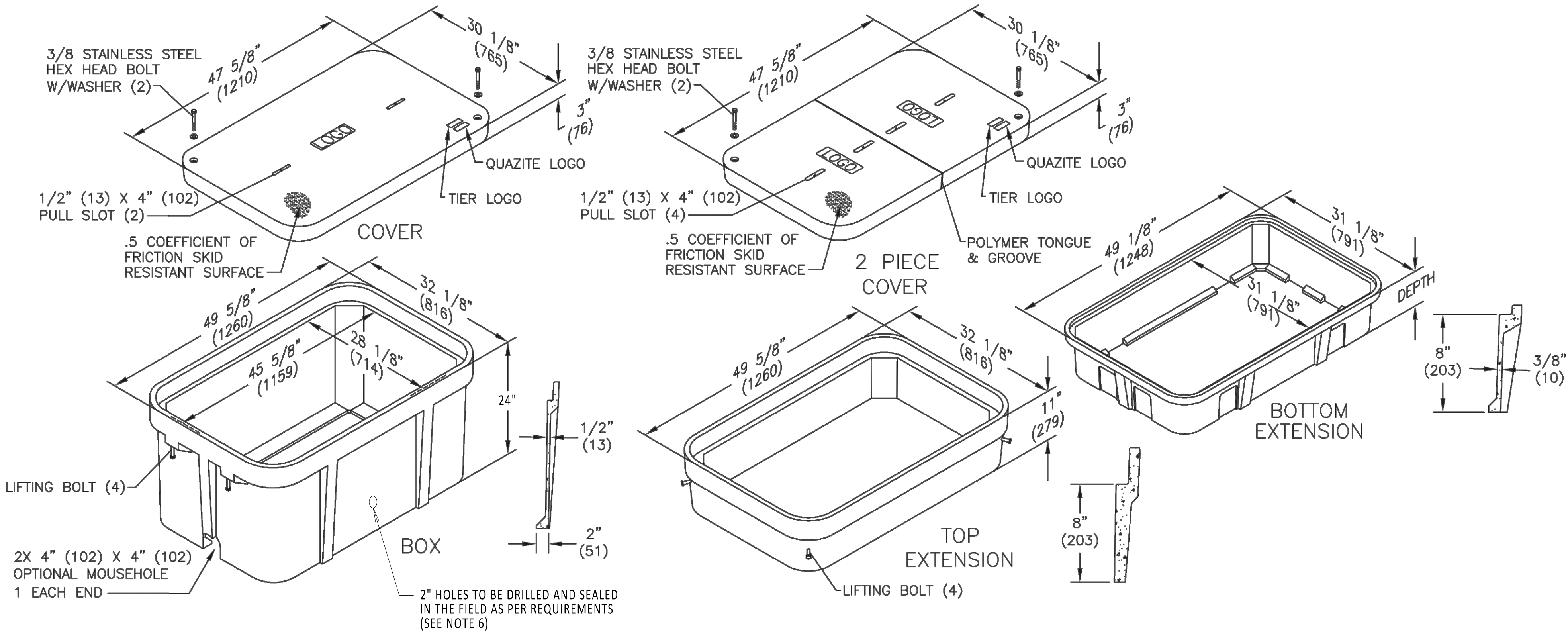
REFERENCE DOCUMENTS

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



HAND HOLE
TOP VIEW
NOT TO SCALE



ISOMETRIC VIEW
NOT TO SCALE

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.

0	03/15/2023	ISSUED FOR CONSTRUCTION	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		DATE	03/15/2023
						REV. NO.	0	SH.NO.	OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-854
DATE	03/15/2023
SH.NO.	OF

File: R:\INFO\PD\USA STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-855-FIBER-FIBER_OPTIC_SPLICE.DWG Saved: 3/7/2023 1:56:37 PM Plotted: 3/15/2023 10:35:48 AM Current User: Douglas.Mason Last Saved By: Douglas.Mason

1

2

3

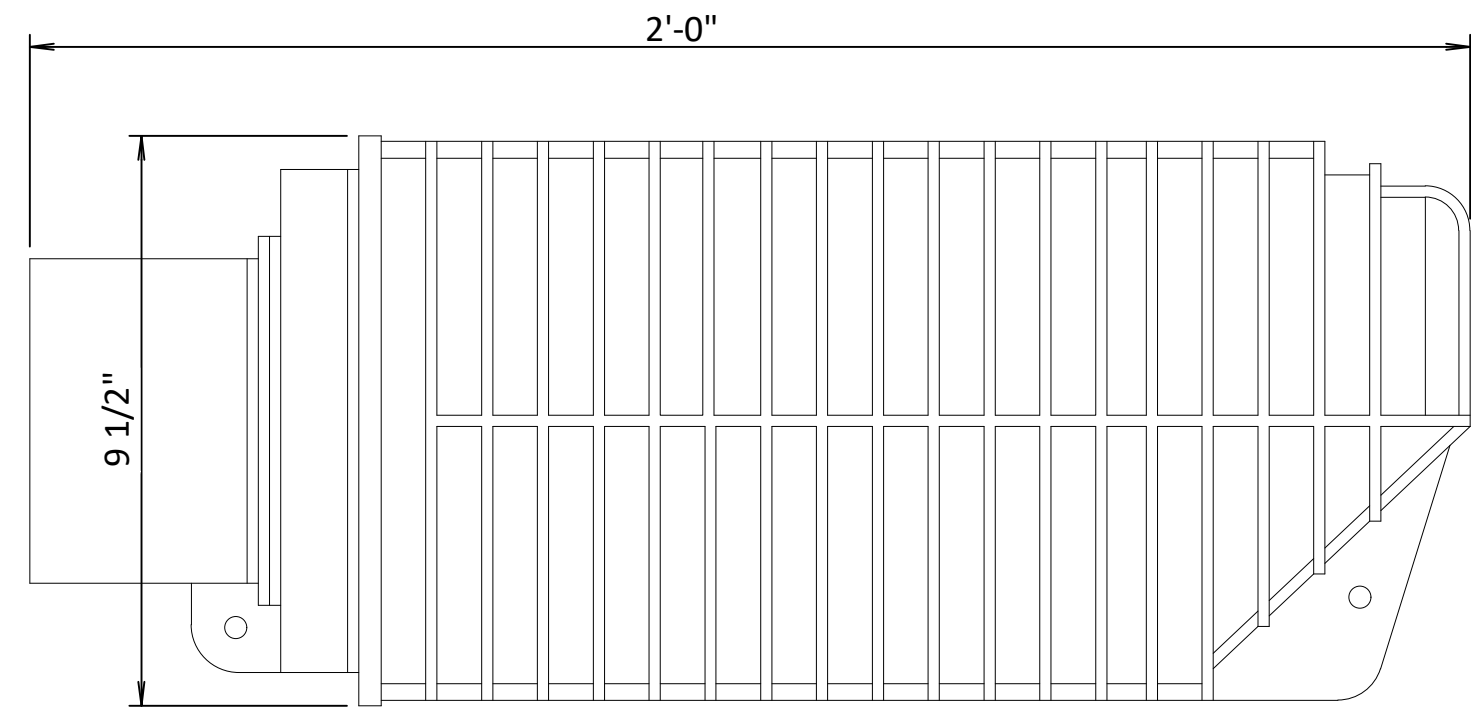
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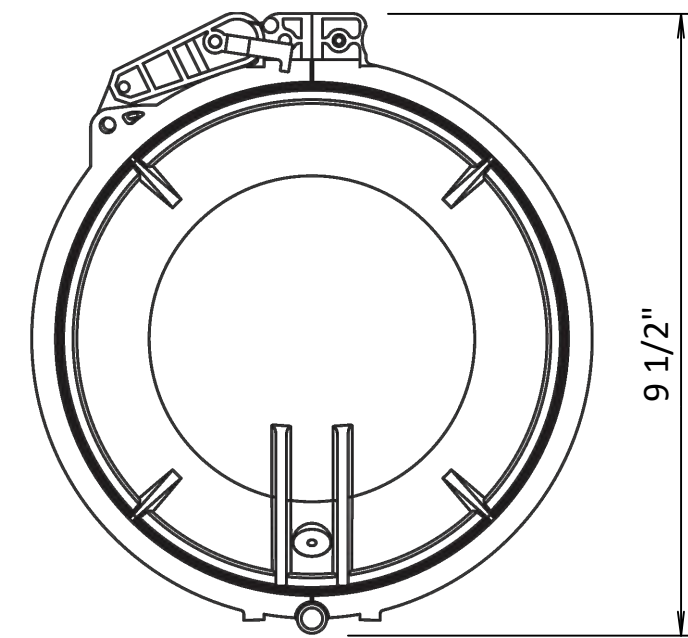
- 1. MAINTAIN 18" SWEEPS ON ALL CONDUITS.
- 2. DTS HUT FIBERS WILL SPLICE TO BLUE TUBE FIBER COLORS BLUE, ORANGE, GREEN AND BROWN.
- 3. SEE REFERENCE DOCUMENTS 2, 3, 4 AND 5 FOR PLACEMENT DETAILS.
- 4. FIBER OPTIC SPLICE CLOSURE ONLY IN SPECIFIC LOCATIONS. SEE PLAN AND PROFILES FOR DETAILS.

REFERENCE DOCUMENTS

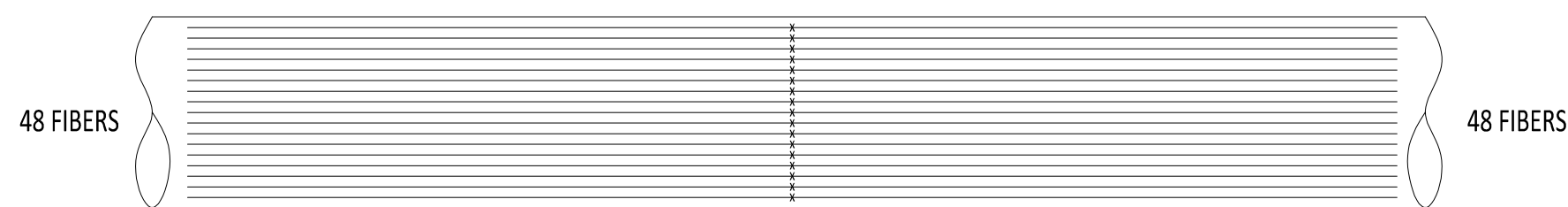
LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	FIBER OPTIC SPLICE CLOSURE	COMMSCOPE: MODEL NO. FOSC450-B6-6-24-1-83V
2	TRANSITION VAULT FIBER OPTIC DETAIL	C-850
3	DTS HUT CONNECTION FIBER OPTIC SPLICE AND HANDHOLE	C-851
4	ENCLOSED VAULT w/FIBER OPTICS	C-852
5	OPEN VAULT w/FIBER OPTICS HAND HOLE	C-853



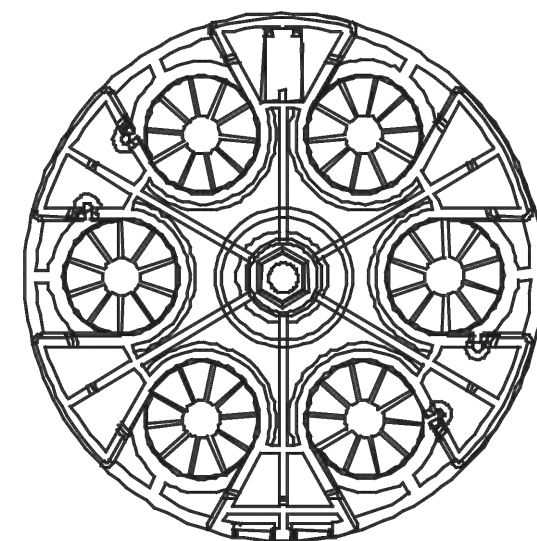
FIBER OPTIC SPLICE CLOSURE
NOT TO SCALE



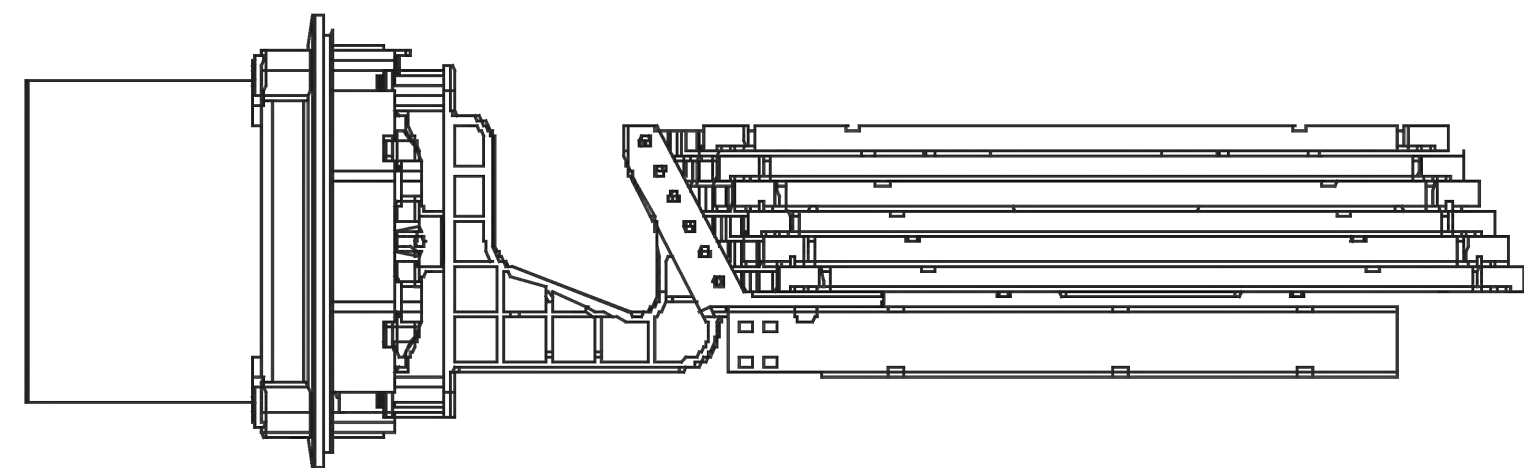
FIBER OPTIC SPLICE CLOSURE
NOT TO SCALE



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



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CHAMPLAIN HUDSON POWER EXPRESS

FIBER OPTIC SPLICE DETAILS

DRAWN BY:	DLM	DESIGNED BY:	NM	APPROVED BY:	MK	SCALE		DATE	03/15/2023
						REV. NO.	0	SH.NO.	OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	

C-855

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CHPE

Champlain Hudson
Power Express



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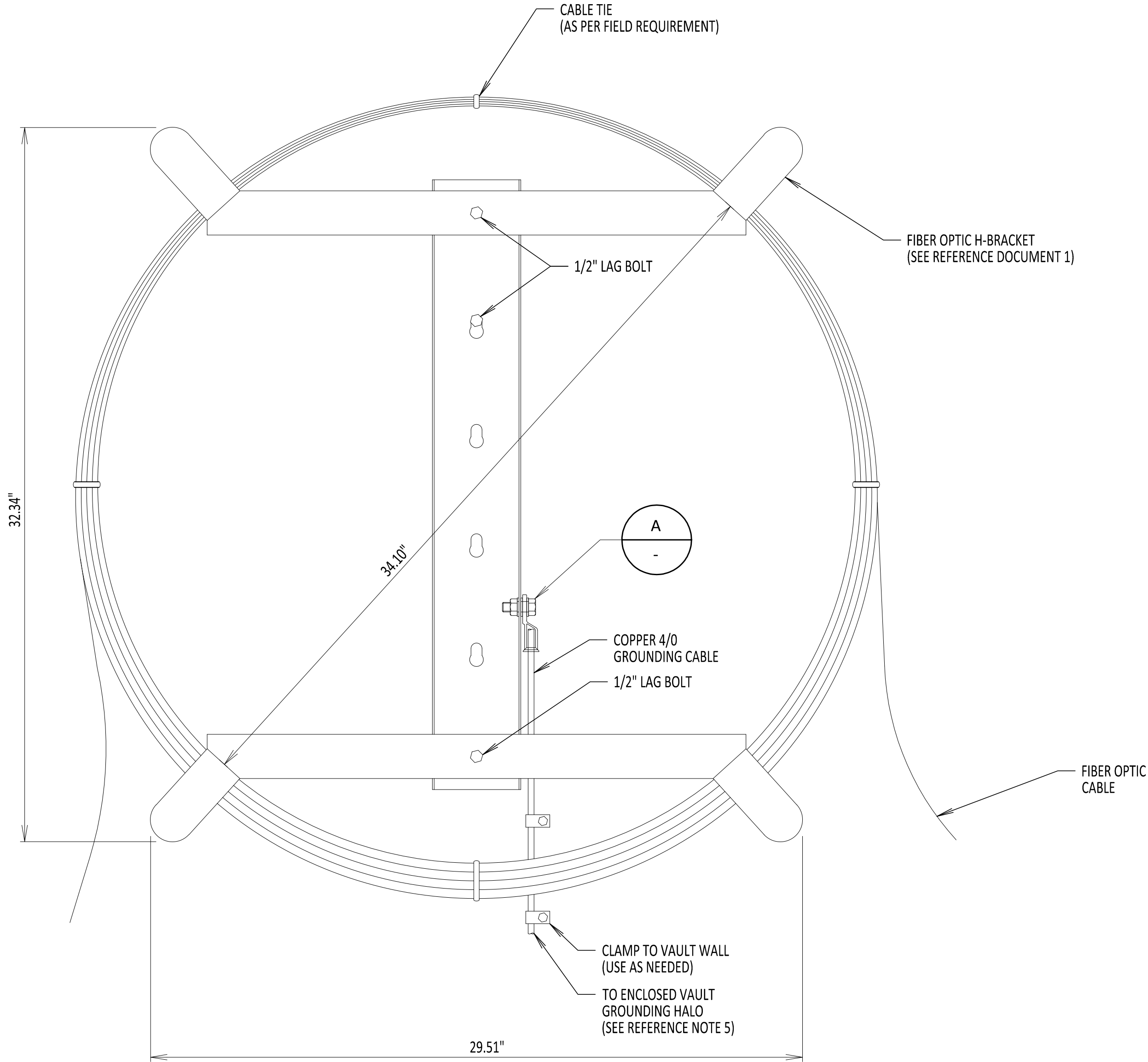
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

FIBER OPTIC H-FRAME BRACKET DETAIL

DRAWN BY:	DLM	DESIGNED BY:	NM	APPROVED BY:	MK	SCALE		DATE	03/15/2023
						REV. NO.	0	SH.NO.	OF

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-856
DATE	03/15/2023
SH.NO.	OF



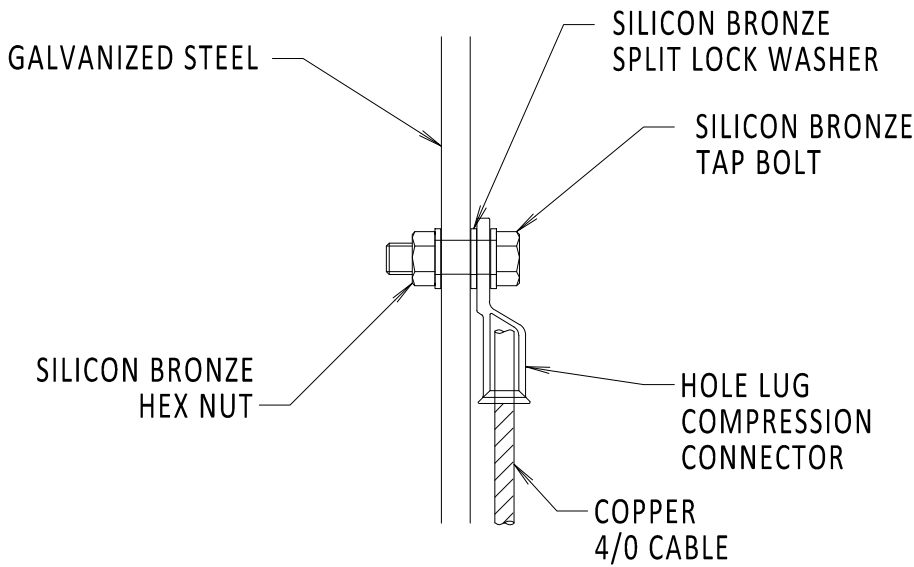
FIBER OPTIC H-FRAME BRACKET
NOT TO SCALE

NOTES:

- 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

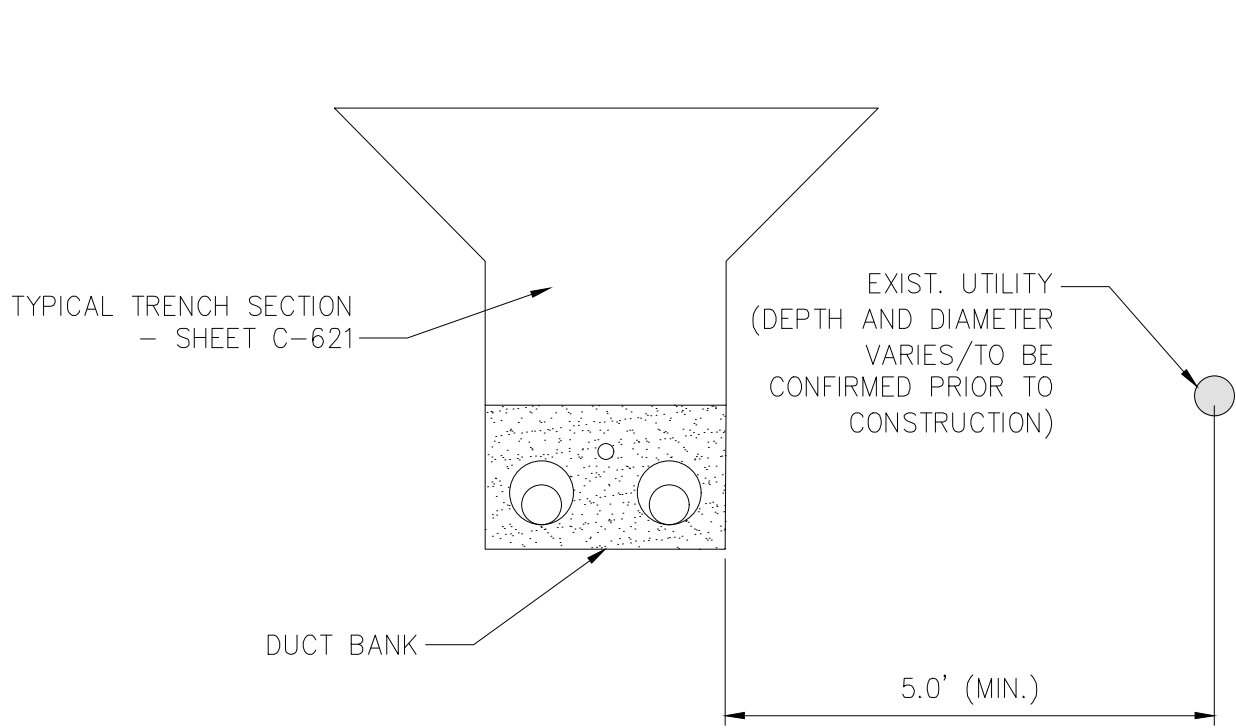


DETAIL A
NOT TO SCALE

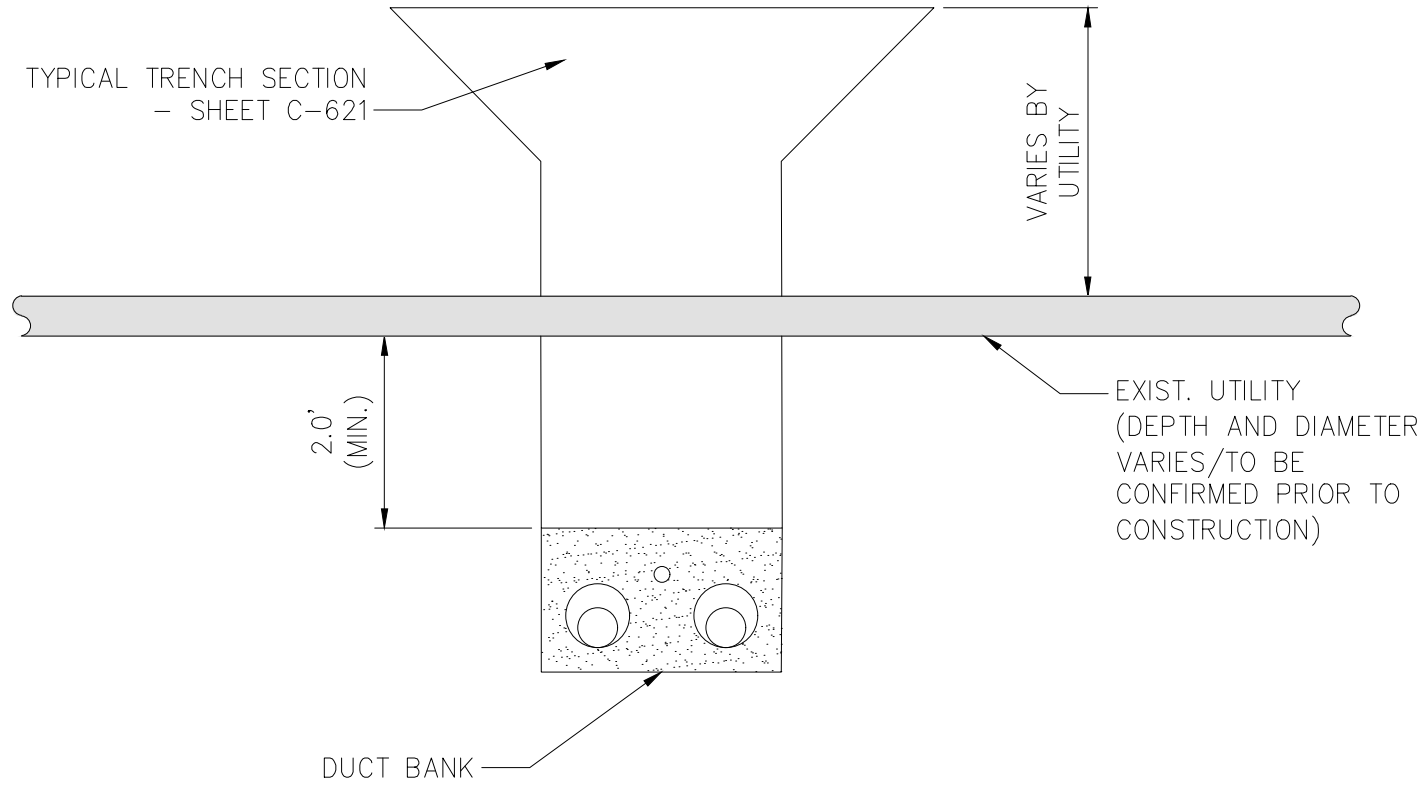
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NATIONAL GRID NOTES

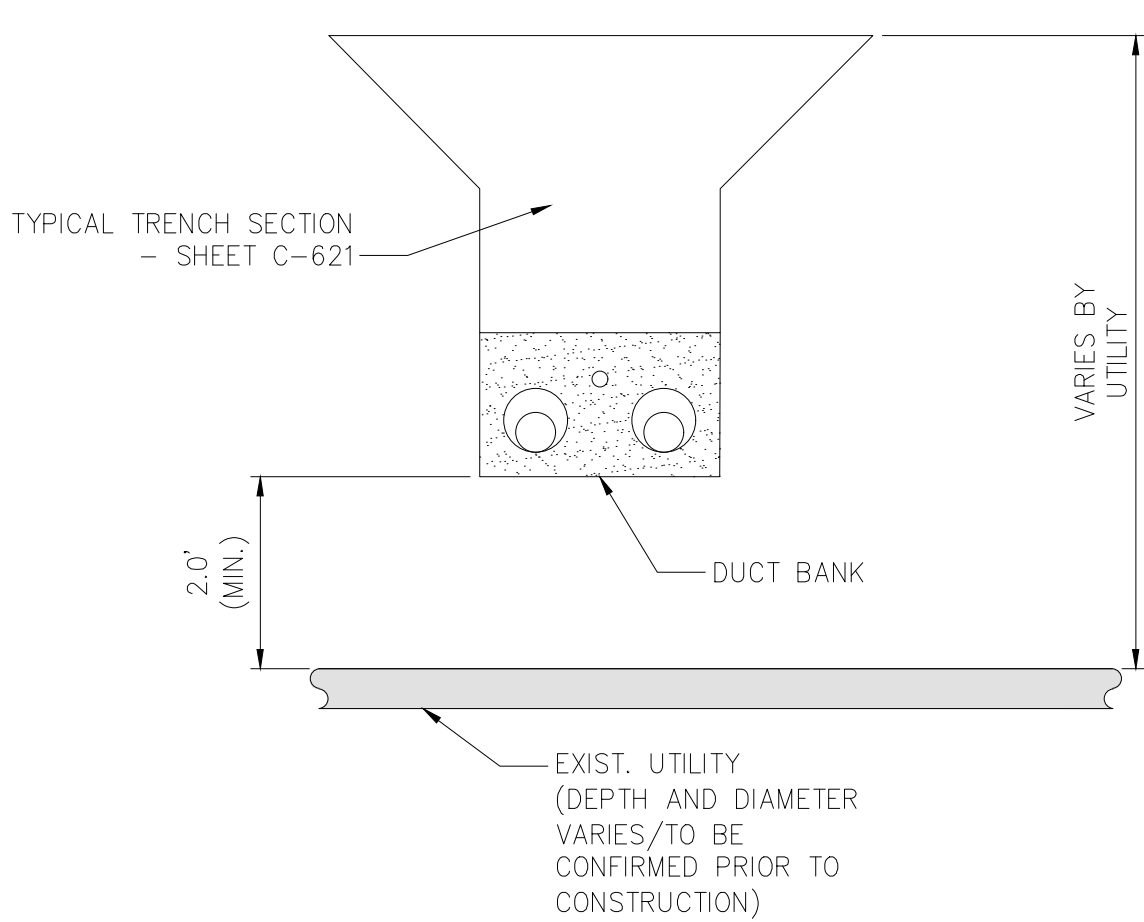
1. THE CONTRACTOR SHALL OBSERVE AND ABIDE BY THE APPLICABLE POWER LINE SAFETY REGULATIONS 29 C.F.R. § 1926.1406 – 1926.1411.
2. THE CONTRACTOR SHALL TRAIN EMPLOYEES WORKING AS DEDICATED SPOTTERS IN ACCORDANCE WITH 29 C.F.R. § 1926.1408(G)(2).
3. CONSTRUCTION UNDER TRANSMISSION LINES REQUIRES A DEDICATED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



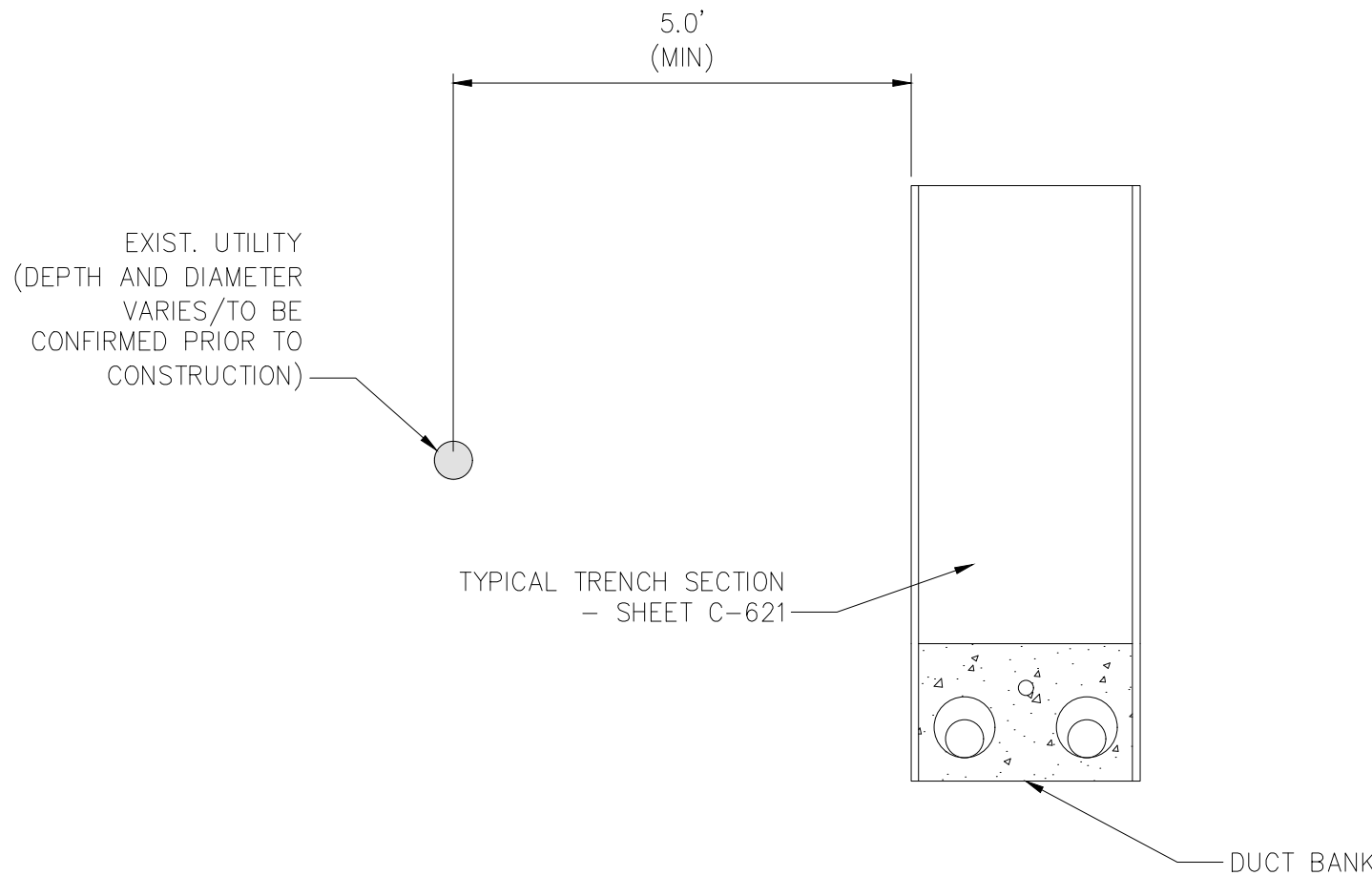
1 OPEN TRENCH - HORIZONTAL SEPARATION
NOT TO SCALE



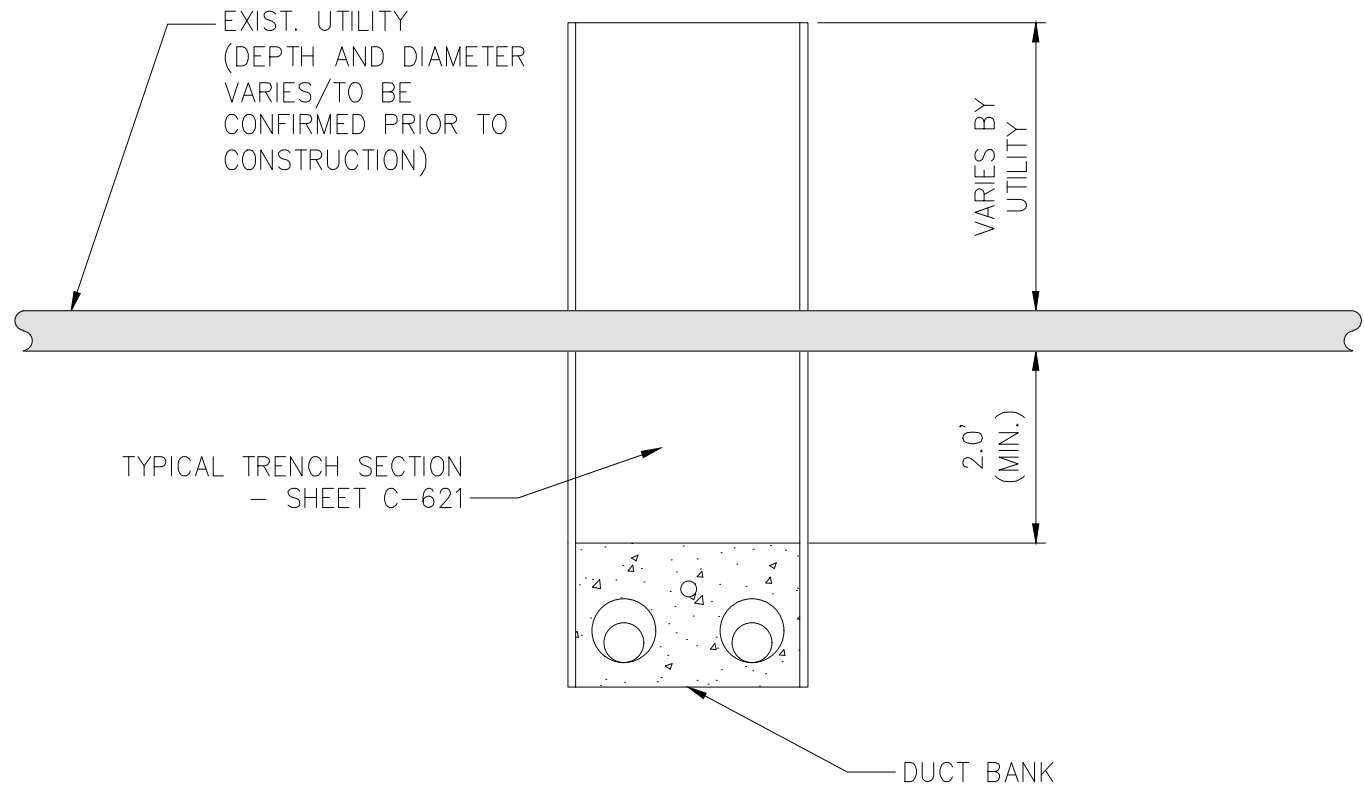
2 OPEN TRENCH - VERTICAL SEPARATION (UNDER)
NOT TO SCALE



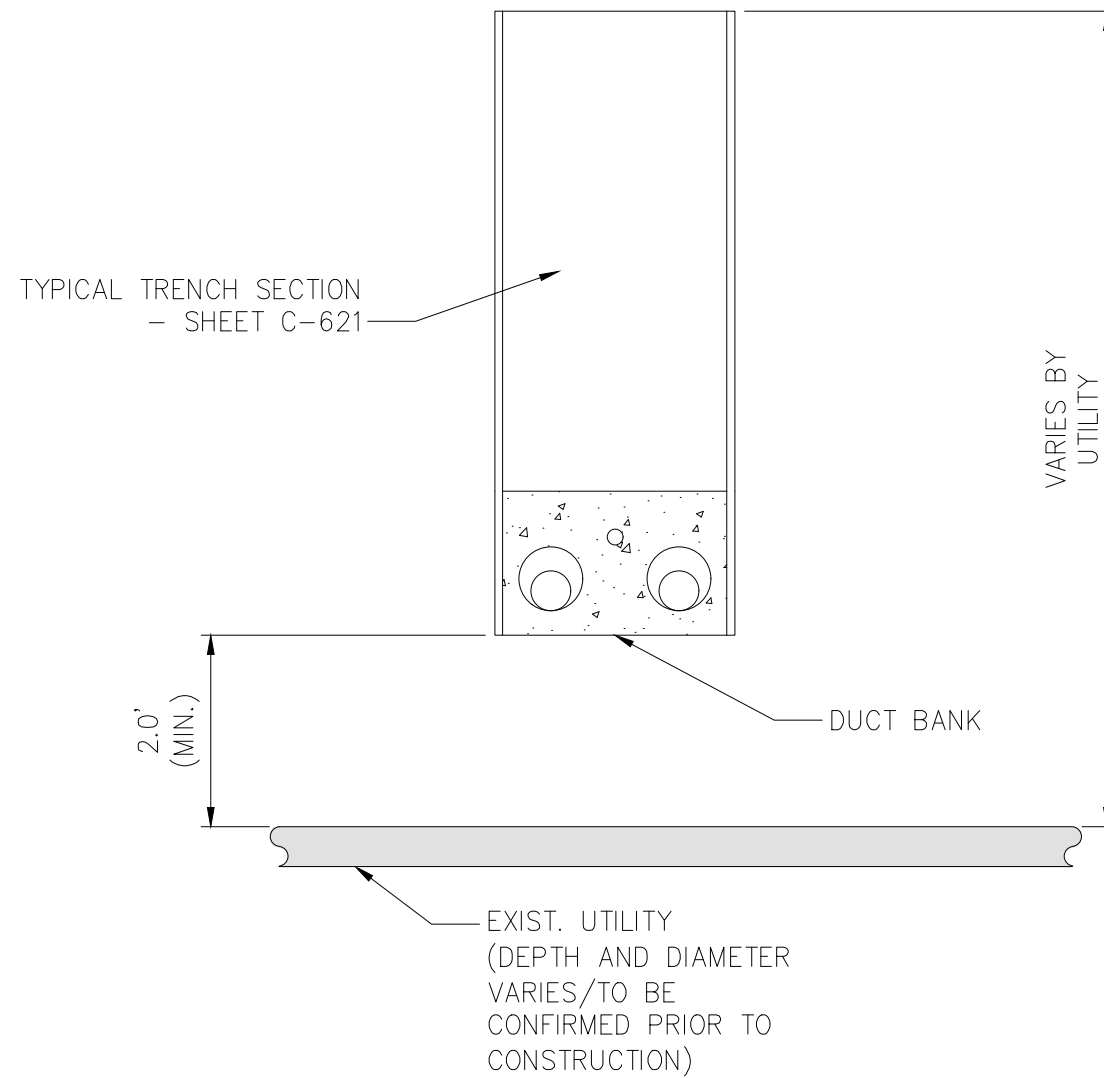
3 OPEN TRENCH - VERTICAL SEPARATION (OVER)
NOT TO SCALE



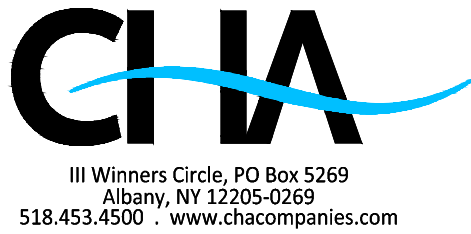
4 TYPICAL DUCTBANK IN ROADWAY - HORIZONTAL SEPARATION
NOT TO SCALE



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



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



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	03/20/2023	FINAL SUBMISSION		BV	TK
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS

UTILITY TYPICAL SEPARATION DETAILS

DRAWN BY: AR DESIGNED BY: BV APPROVED BY: TK SCALE AS SHOWN REV. NO.

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-901
DATE SH.NO.	XX/XX/XXXX OF XXX