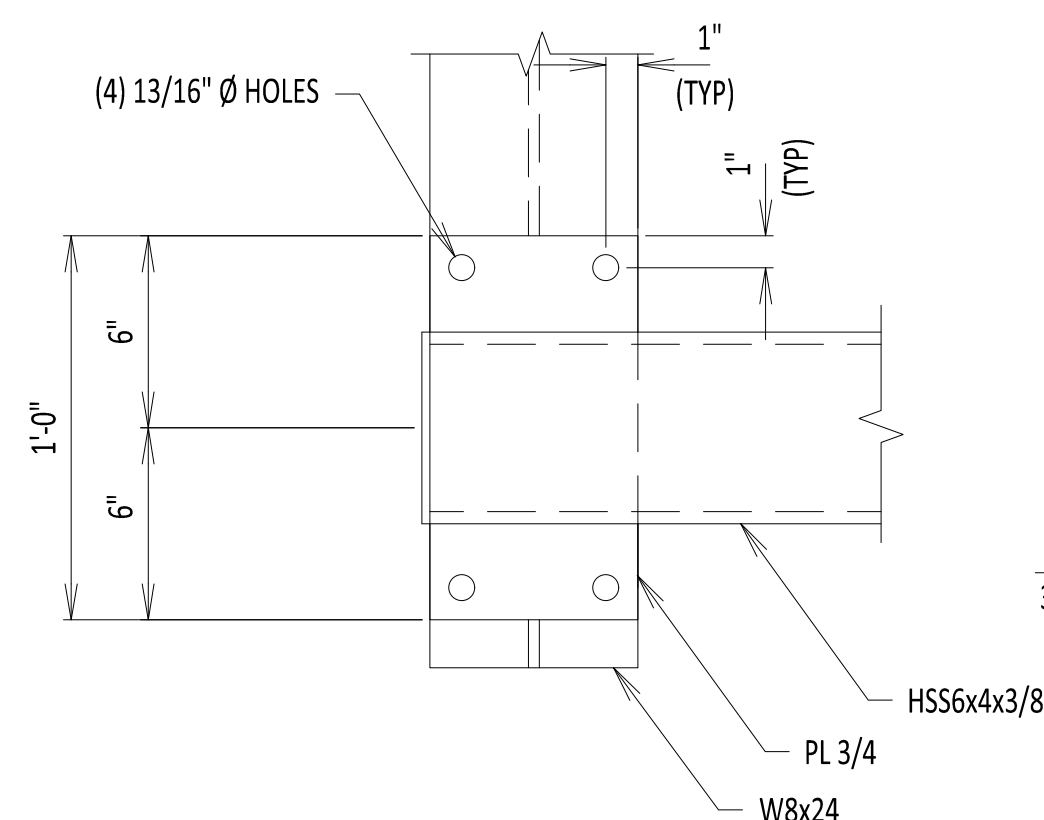
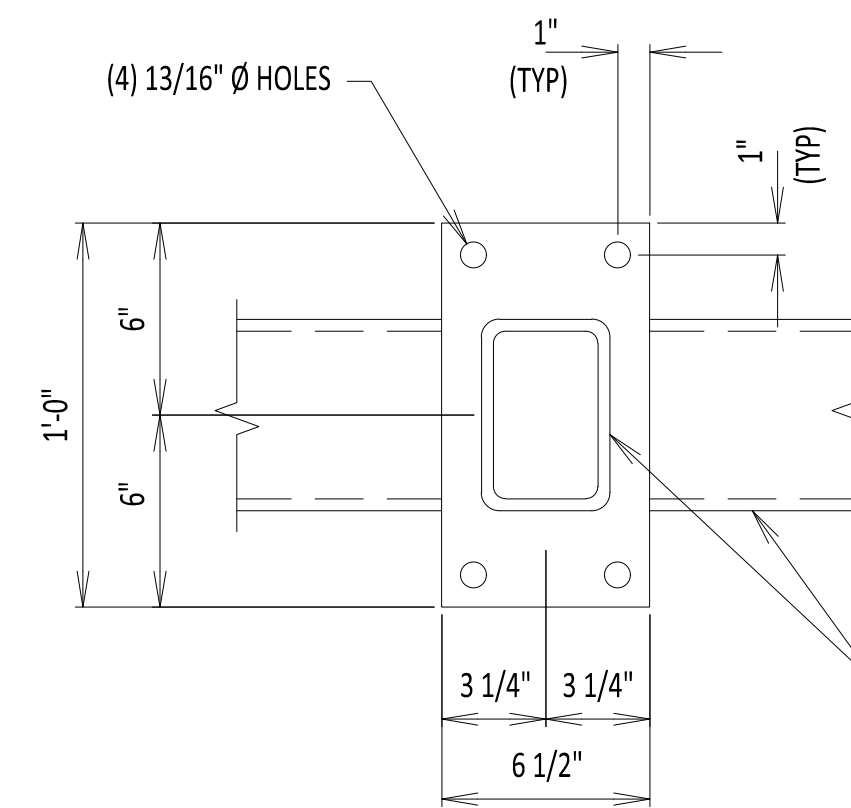


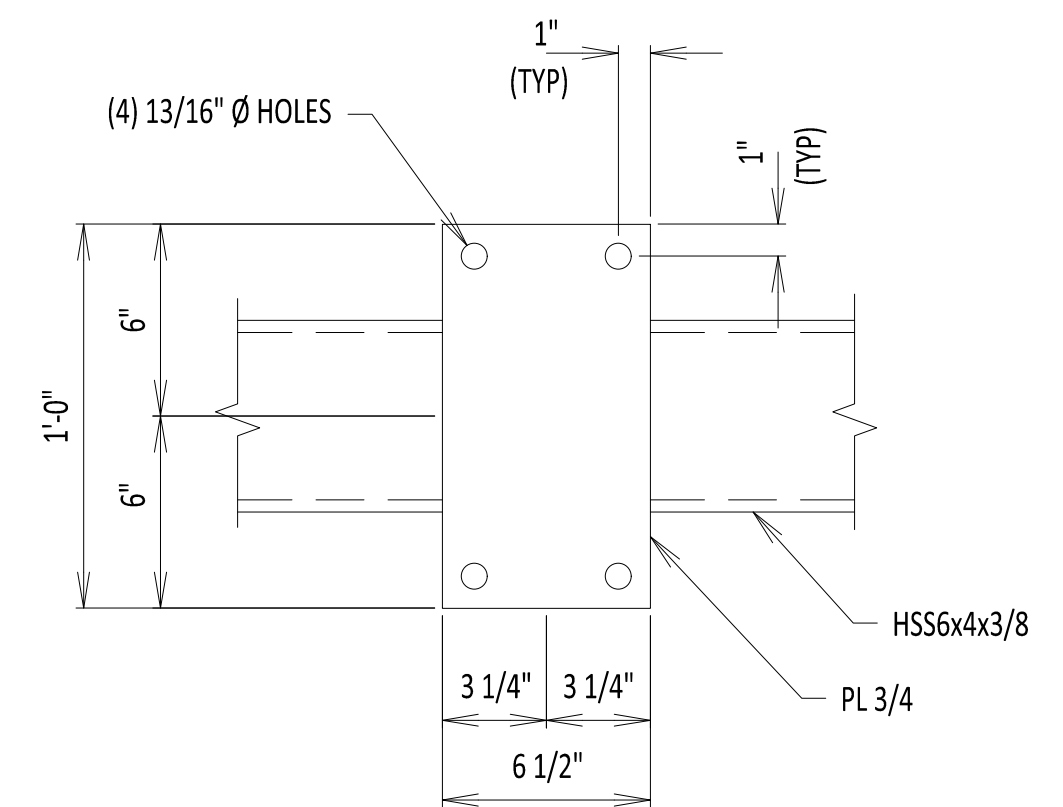
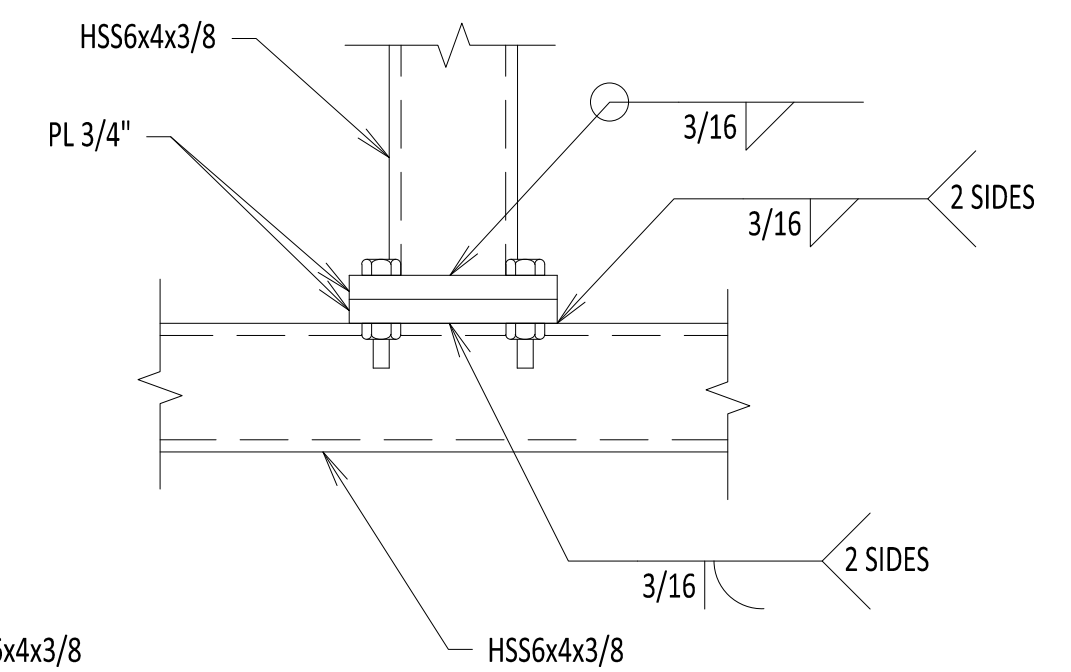
PULLING EYE
DETAIL 1
SCALE: 2" = 1'-0"



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



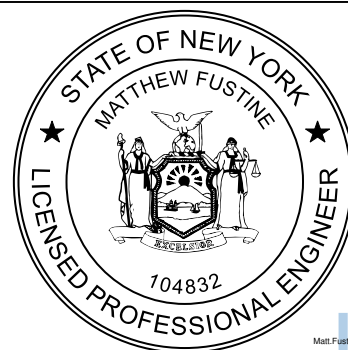
DETAIL 2
SCALE: 2" = 1'-0"



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

NOTES:

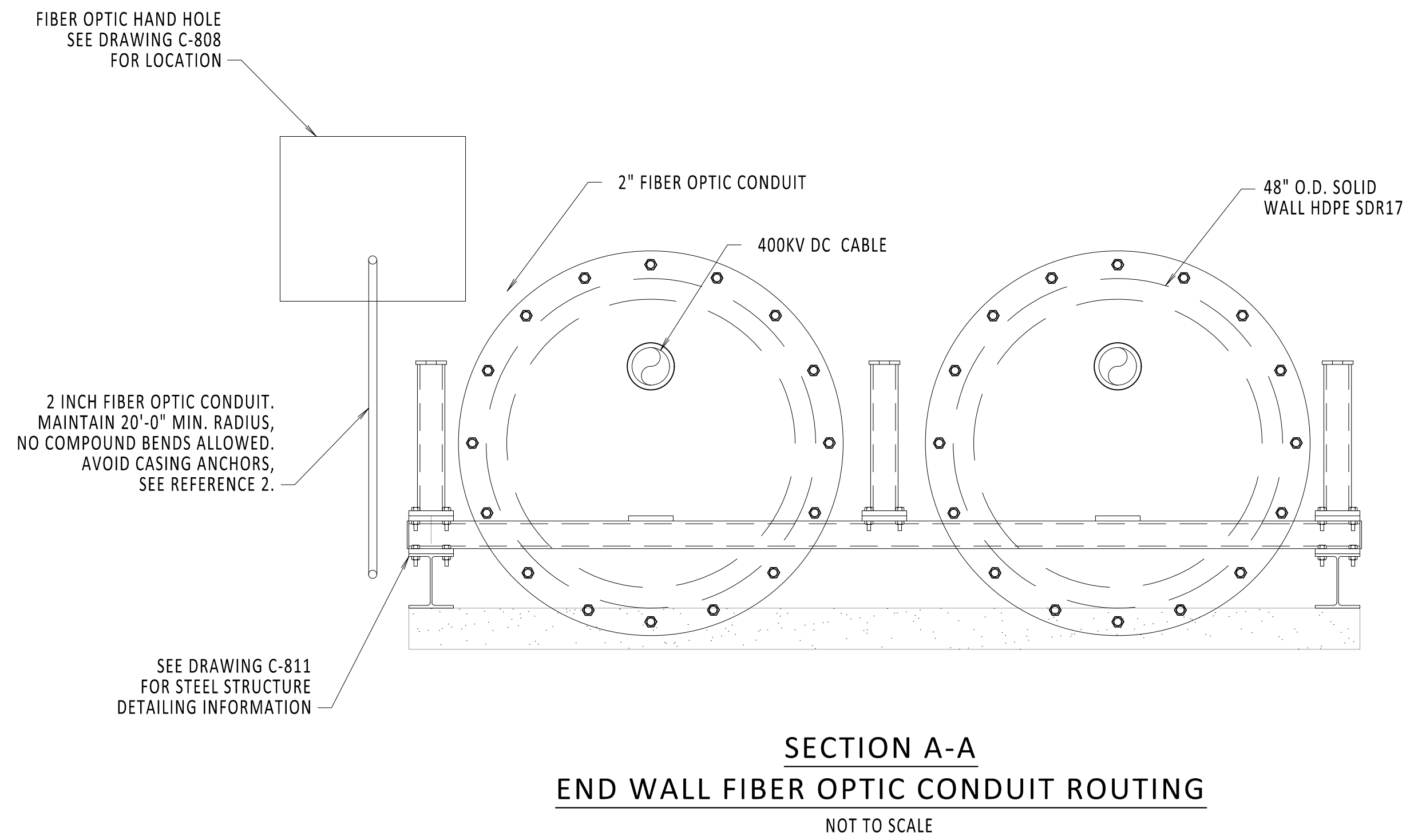
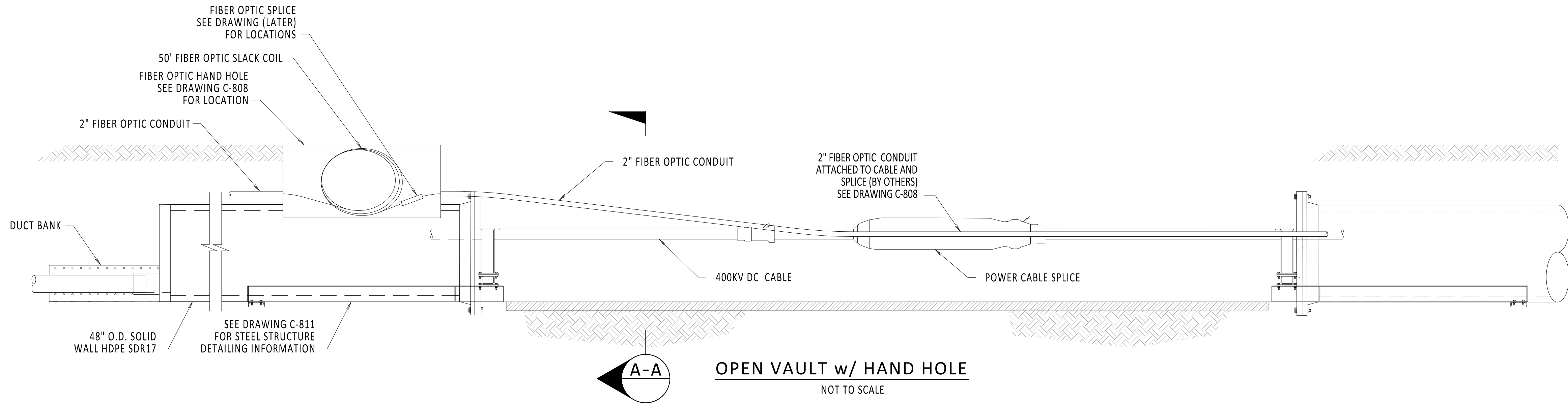
1. W-SHAPES SHALL BE ASTM A992. CHANNELS SHALL BE ASTM A36. HSS RECTANGULAR TUBES SHALL BE ASTM A1085. PLATES SHALL BE ASTM A572 GR 50. ALL STRUCTURAL MEMBERS SHALL BE HOT DIP GALVANIZED.
2. CONNECTION BOLTS TO BE 3/4" DIAMETER U.N.O. ALL STRUCTURAL BOLTS SHALL BE ASTM F3125 GR A325. ALL NUTS SHALL BE 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.



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File: R:\INFO\IPD\USG STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-853-OPEN_VAULT.DWG Saved: 9/15/2022 2:39:03 PM Plotted: 9/15/2022 8:00:59 AM Current User: Douglas Mason Last Saved By: Douglas Mason



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

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

C-853

DRAWN BY:	TJM	DESIGNED BY:	MK	APPROVED BY:	XX	SCALE		DATE	09/16/2022
						REV. NO.		SH.NO.	OF XXX

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1

2

3

4

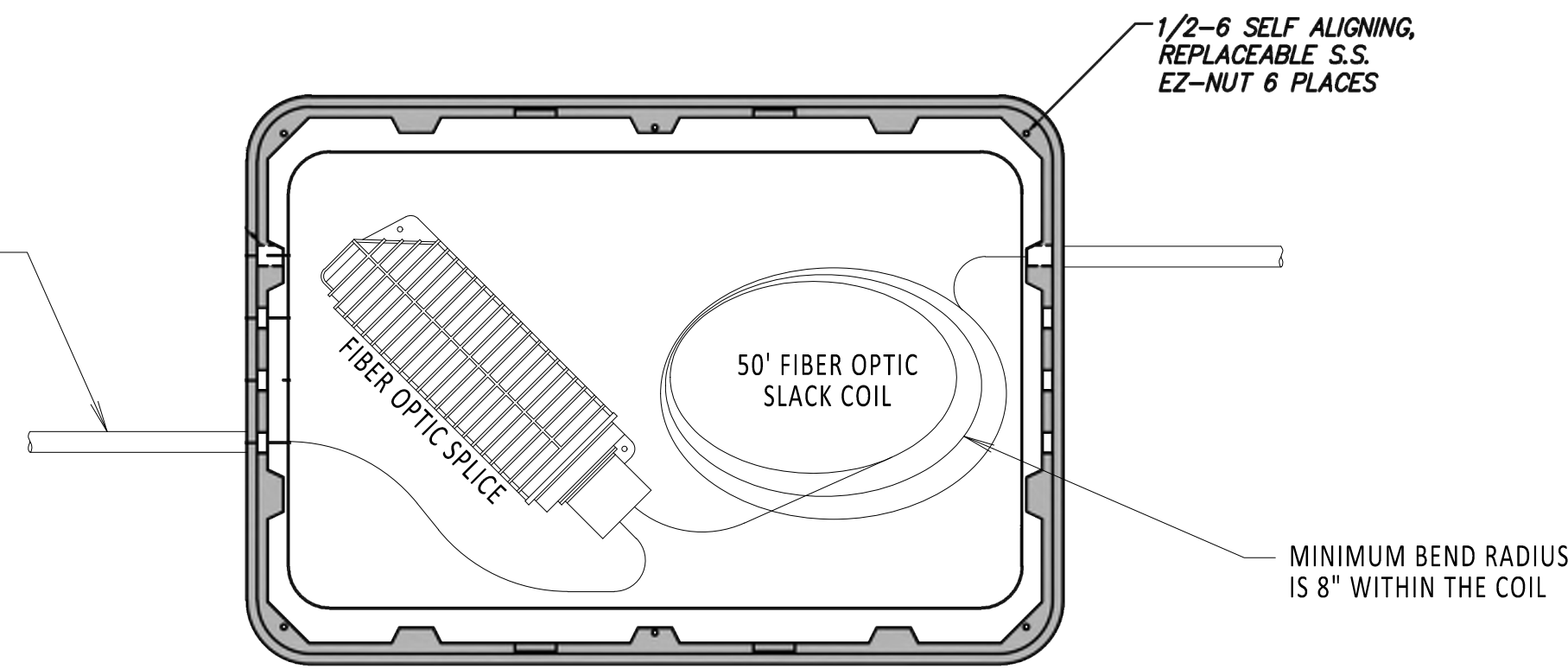
NOTES:

- 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.

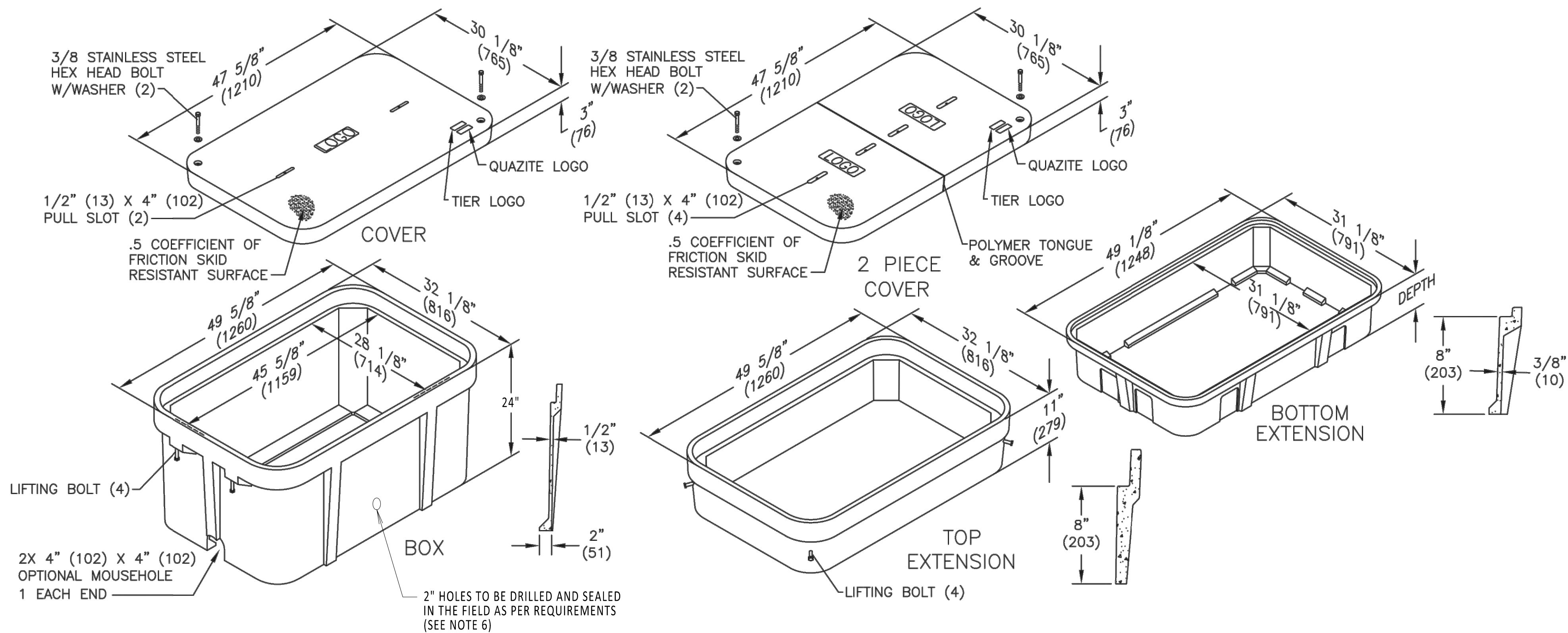
REFERENCE DOCUMENTS

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

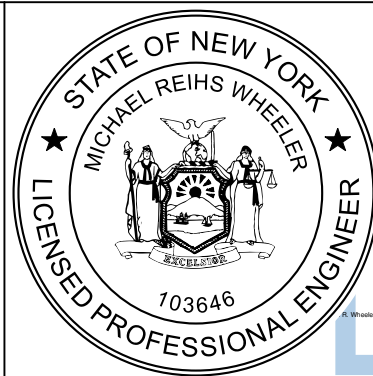
2" FIBER OPTIC CONDUIT
(CAN BE ROUTED INTO HAND
HOLE AS PER FIELDS DISCRETION)



HAND HOLE
TOP VIEW
NOT TO SCALE



ISOMETRIC VIEW
NOT TO SCALE



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

CHAMPLAIN HUDSON POWER EXPRESS					KIEWIT PROJECT NO.
					21162
					CHA PROJECT NO.
					066076
					DRAWING NO.
					C-854
					DATE 03/15/2023
					SH.NO. OF
DRAWN BY: DLM DESIGNED BY: NM APPROVED BY: MK SCALE					
					0

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1

2

3

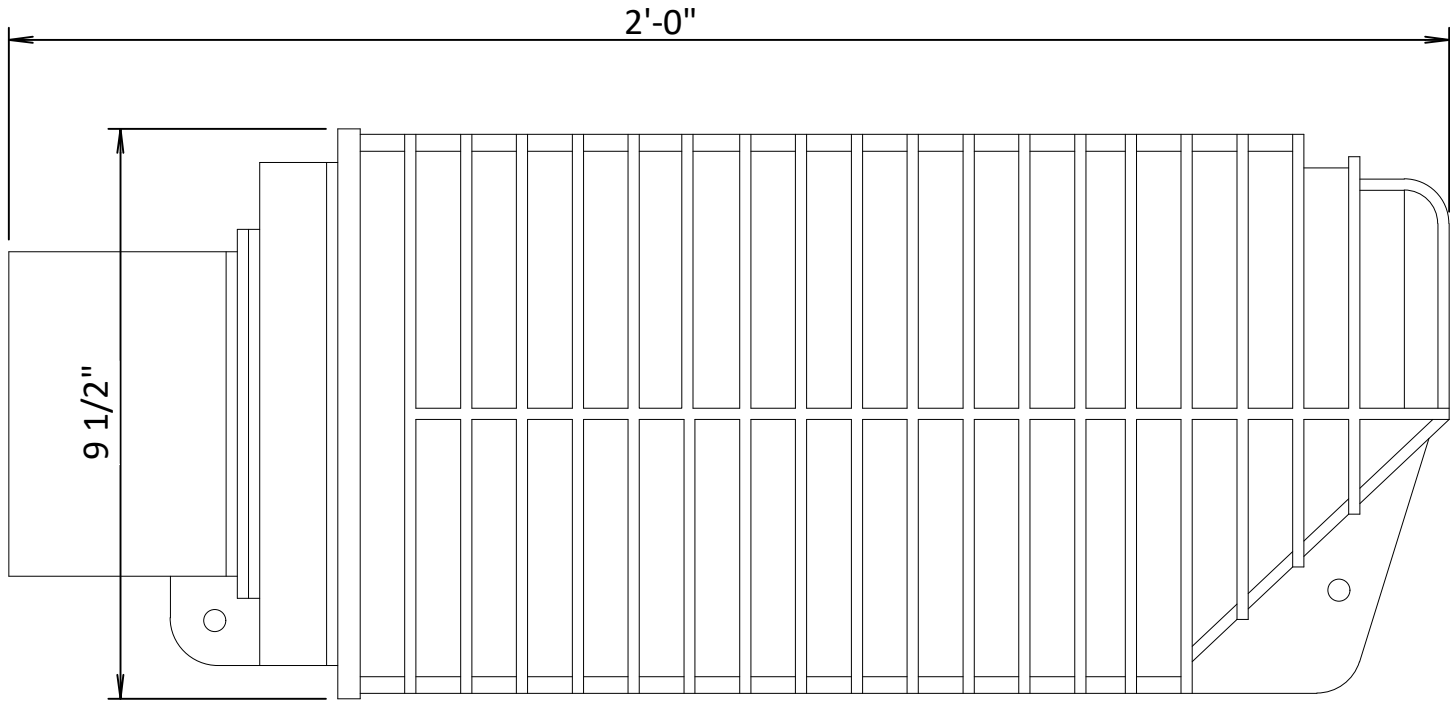
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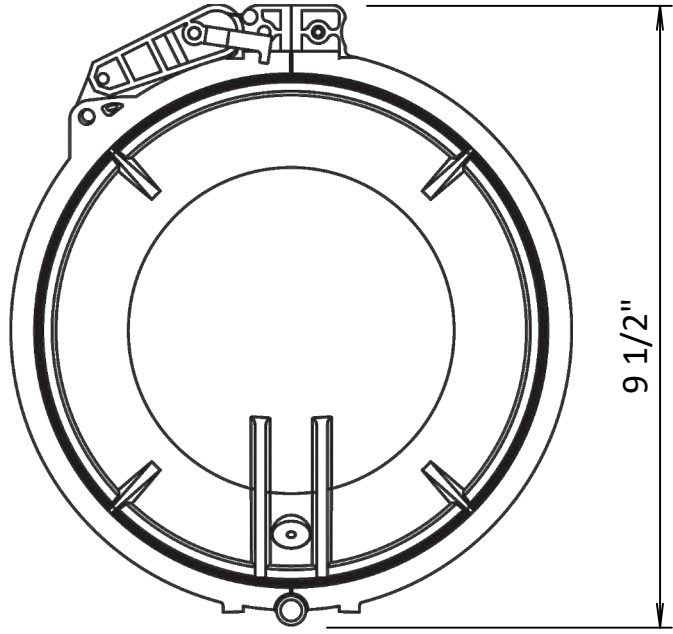
1. MAINTAIN 18" SWEEPS ON ALL CONDUITS.
2. DTS HUT FIBERS WILL SPLICE TO BLUE TUBE FIBER COLORS BLUE, ORANGE, GREEN AND BROWN.
3. SEE REFERENCE DOCUMENTS 2, 3, 4 AND 5 FOR PLACEMENT DETAILS.
4. FIBER OPTIC SPLICE CLOSURE ONLY IN SPECIFIC LOCATIONS. SEE PLAN AND PROFILES FOR DETAILS.

REFERENCE DOCUMENTS

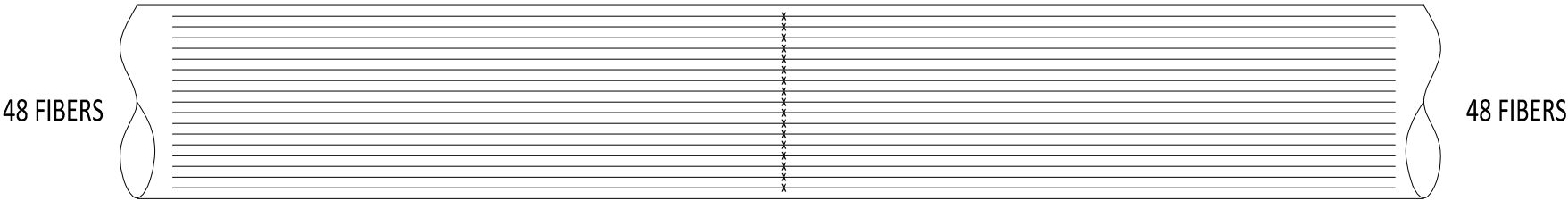
LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	FIBER OPTIC SPLICE CLOSURE	COMMSCOPE: MODEL NO. FOSC450-B6-6-24-1-83V
2	TRANSITION VAULT FIBER OPTIC DETAIL	C-850
3	DTS HUT CONNECTION FIBER OPTIC SPLICE AND HANDHOLE	C-851
4	ENCLOSED VAULT w/FIBER OPTICS	C-852
5	OPEN VAULT w/FIBER OPTICS HAND HOLE	C-853



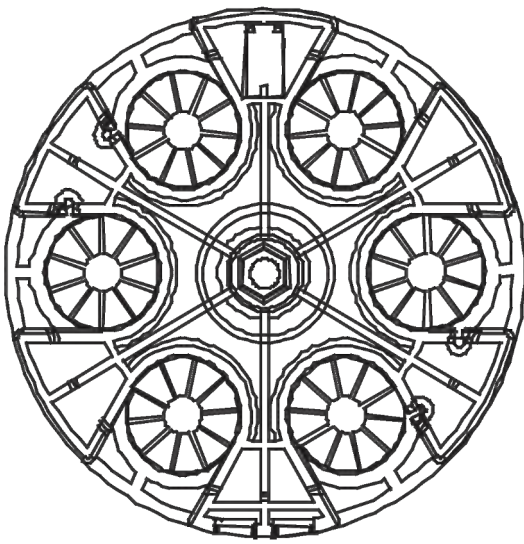
FIBER OPTIC SPLICE CLOSURE
NOT TO SCALE



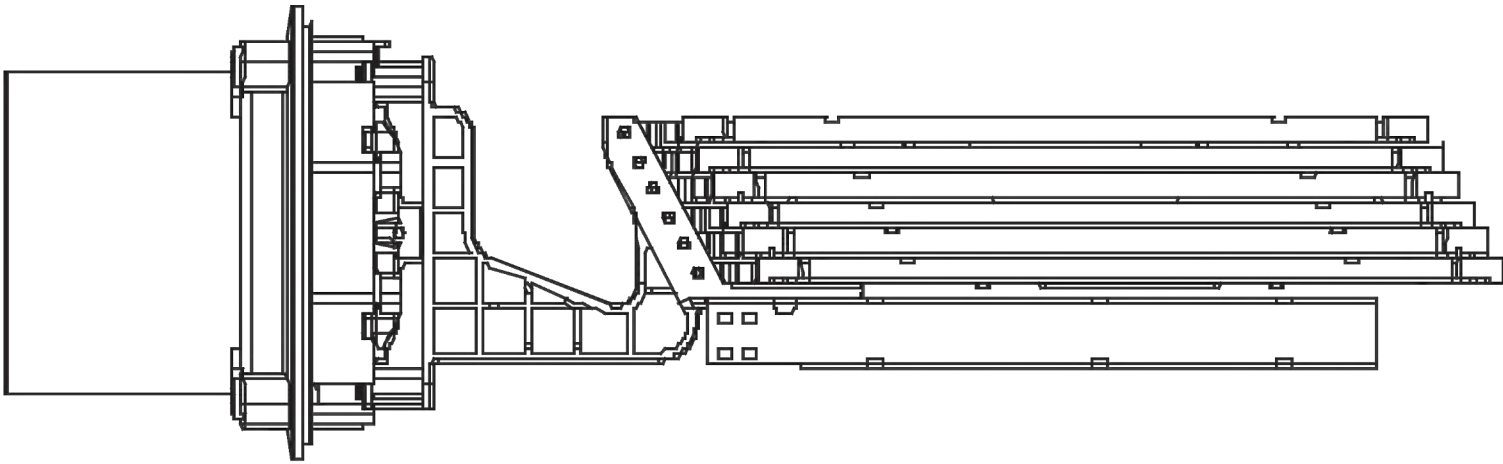
FIBER OPTIC SPLICE CLOSURE
NOT TO SCALE



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

CHAMPLAIN HUDSON POWER EXPRESS

FIBER OPTIC SPLICE DETAILS

DRAWN BY: DLMDESIGNED BY: NMAPPROVED BY: MKSCALE
REV. NO. 0

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-855
DATE	03/15/2023
SH.NO.	OF

File: R:\INFO\IPD\USA STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-856-SPRUC-ENCLOSURE.DWG Saved: 3/10/2023 10:34:56 AM Plotted: 3/15/2023 10:41:51 AM Current User: Douglas Mason LastSavedBy: Douglas Mason



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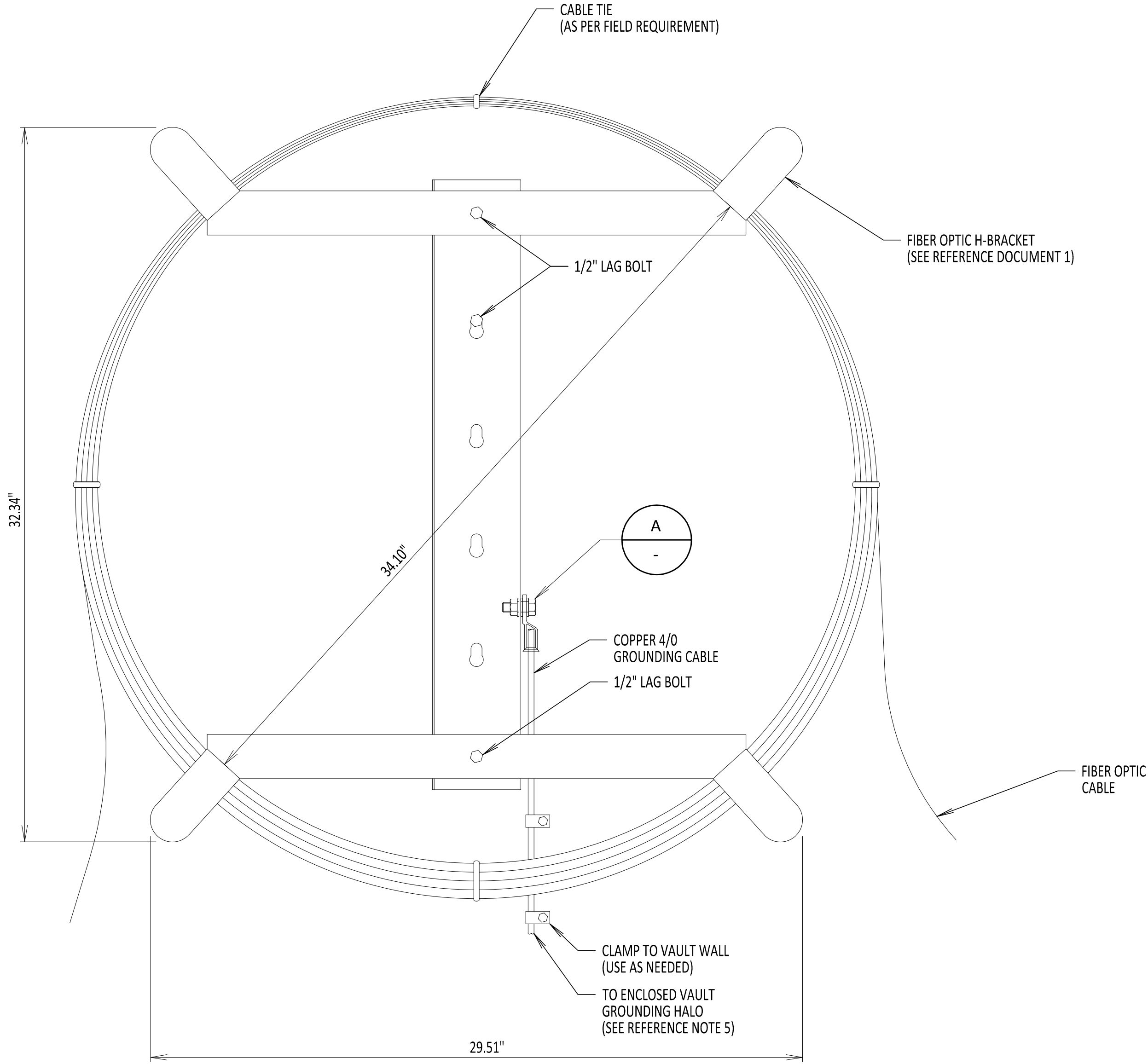
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

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

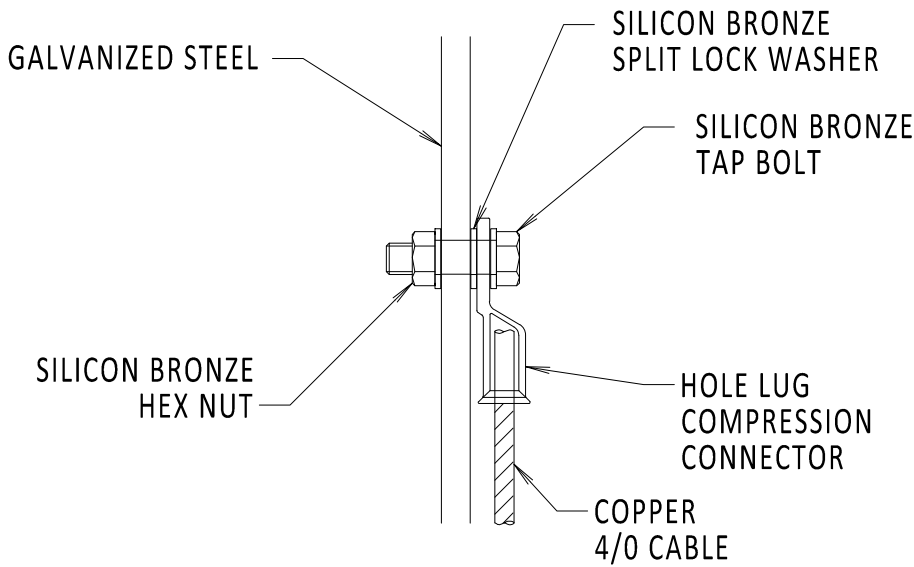
NOT TO SCALE

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



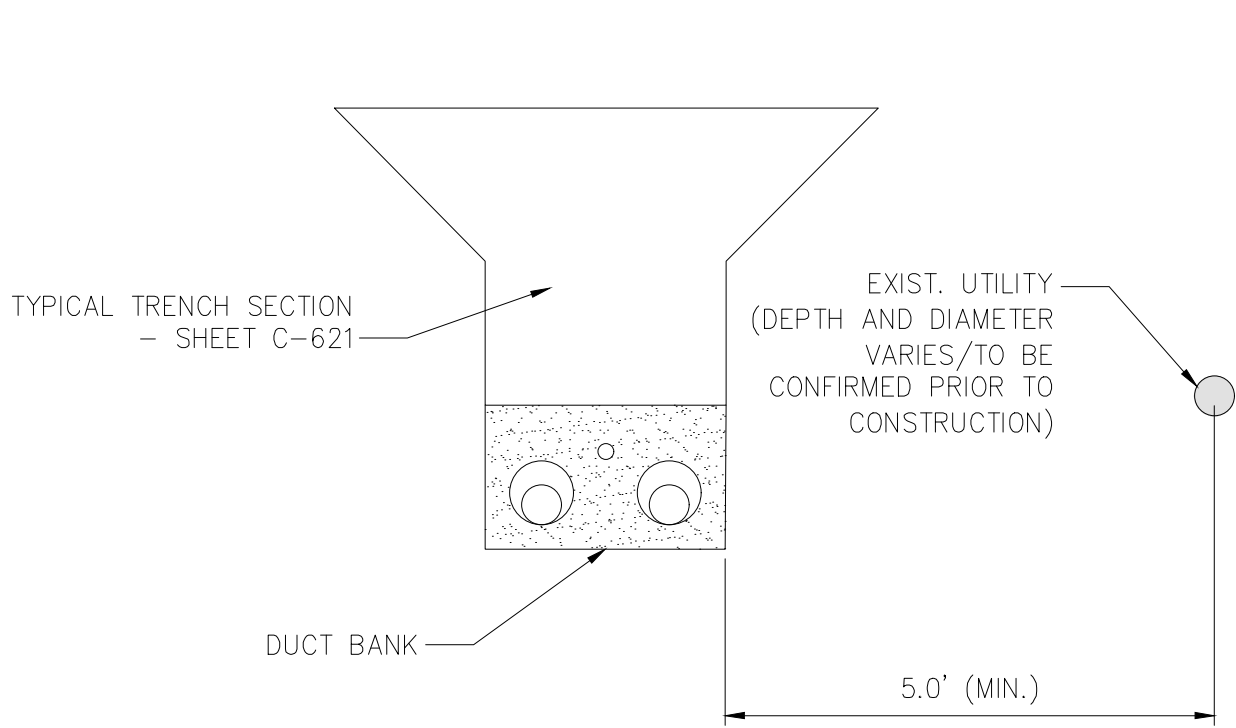
DETAIL A

NOT TO SCALE

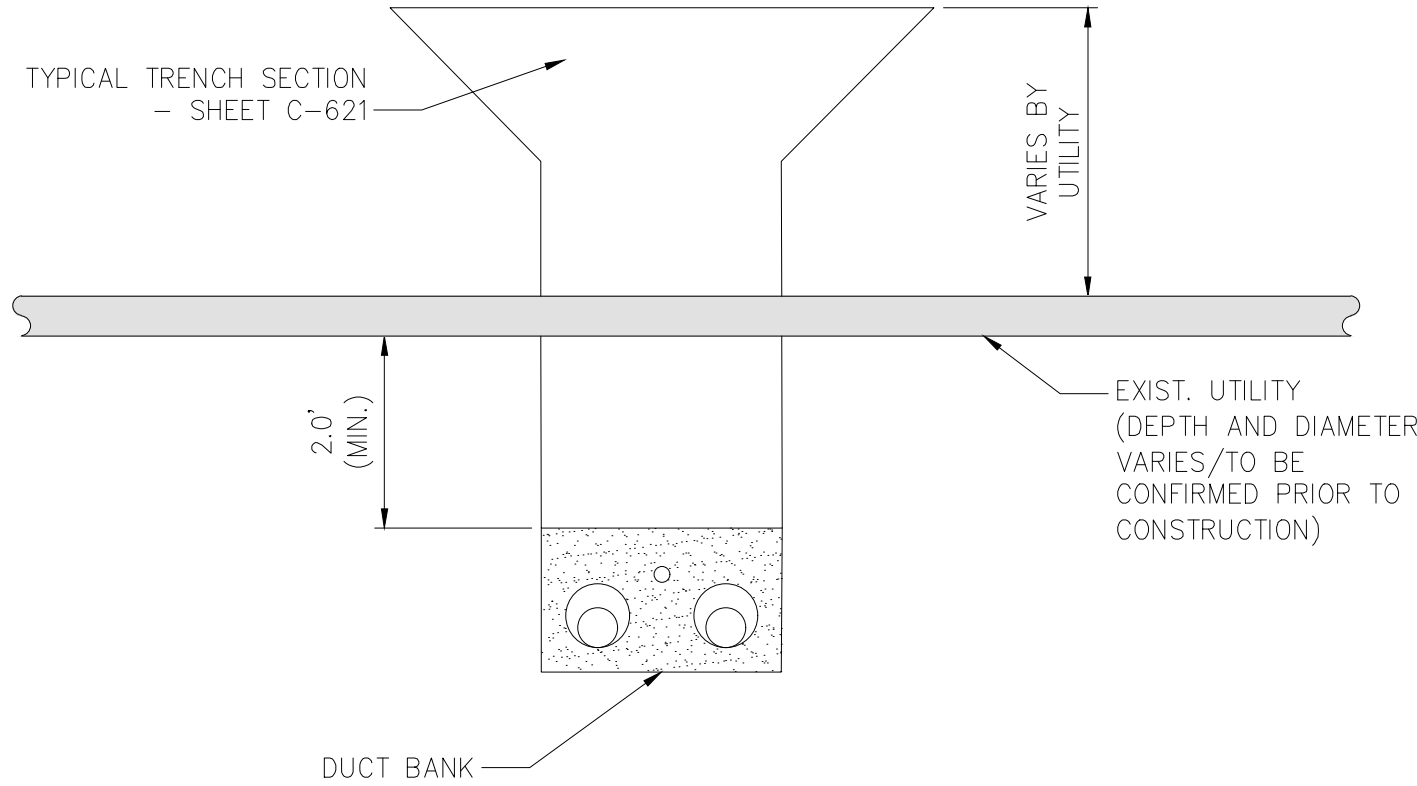
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NATIONAL GRID NOTES

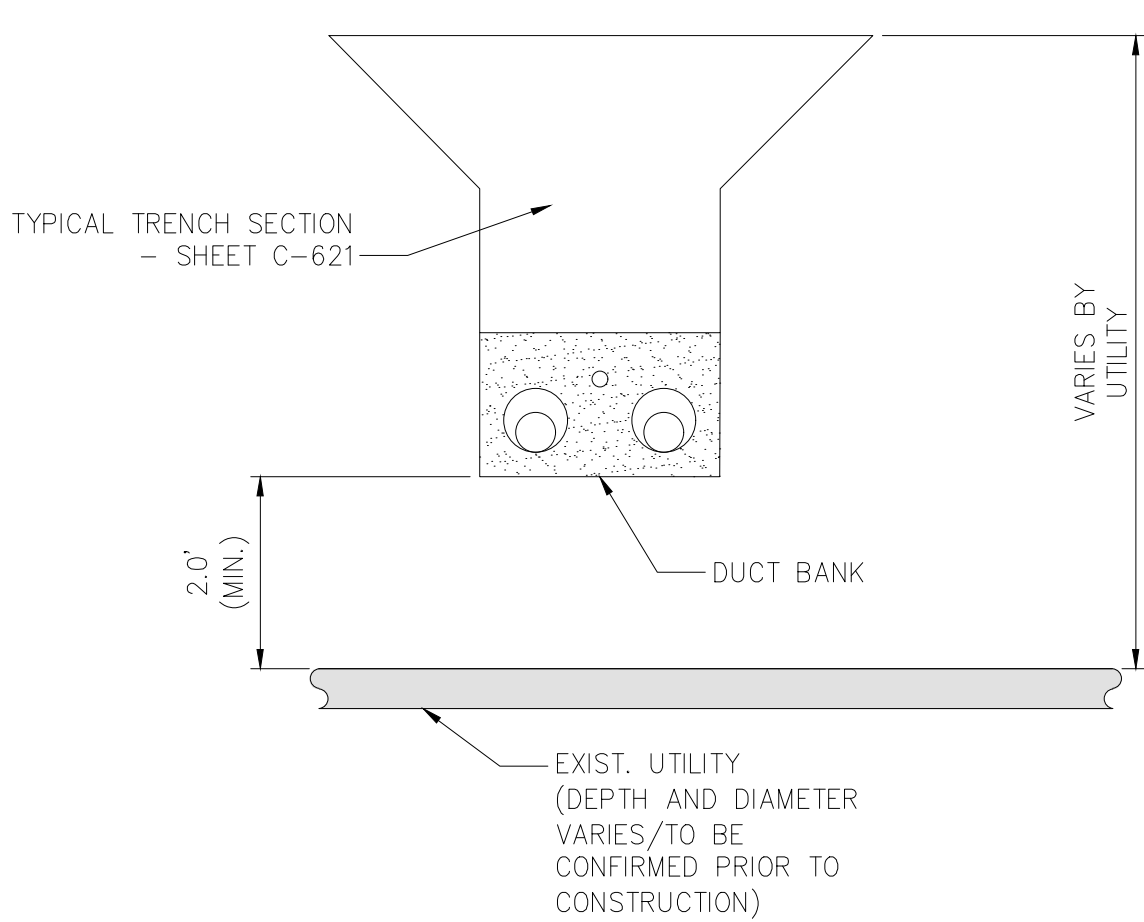
1. THE CONTRACTOR SHALL OBSERVE AND ABIDE BY THE APPLICABLE POWER LINE SAFETY REGULATIONS 29 C.F.R. § 1926.1406 – 1926.1411.
2. THE CONTRACTOR SHALL TRAIN EMPLOYEES WORKING AS DEDICATED SPOTTERS IN ACCORDANCE WITH 29 C.F.R. § 1926.1408(G)(2).
3. CONSTRUCTION UNDER TRANSMISSION LINES REQUIRES A DEDICATED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



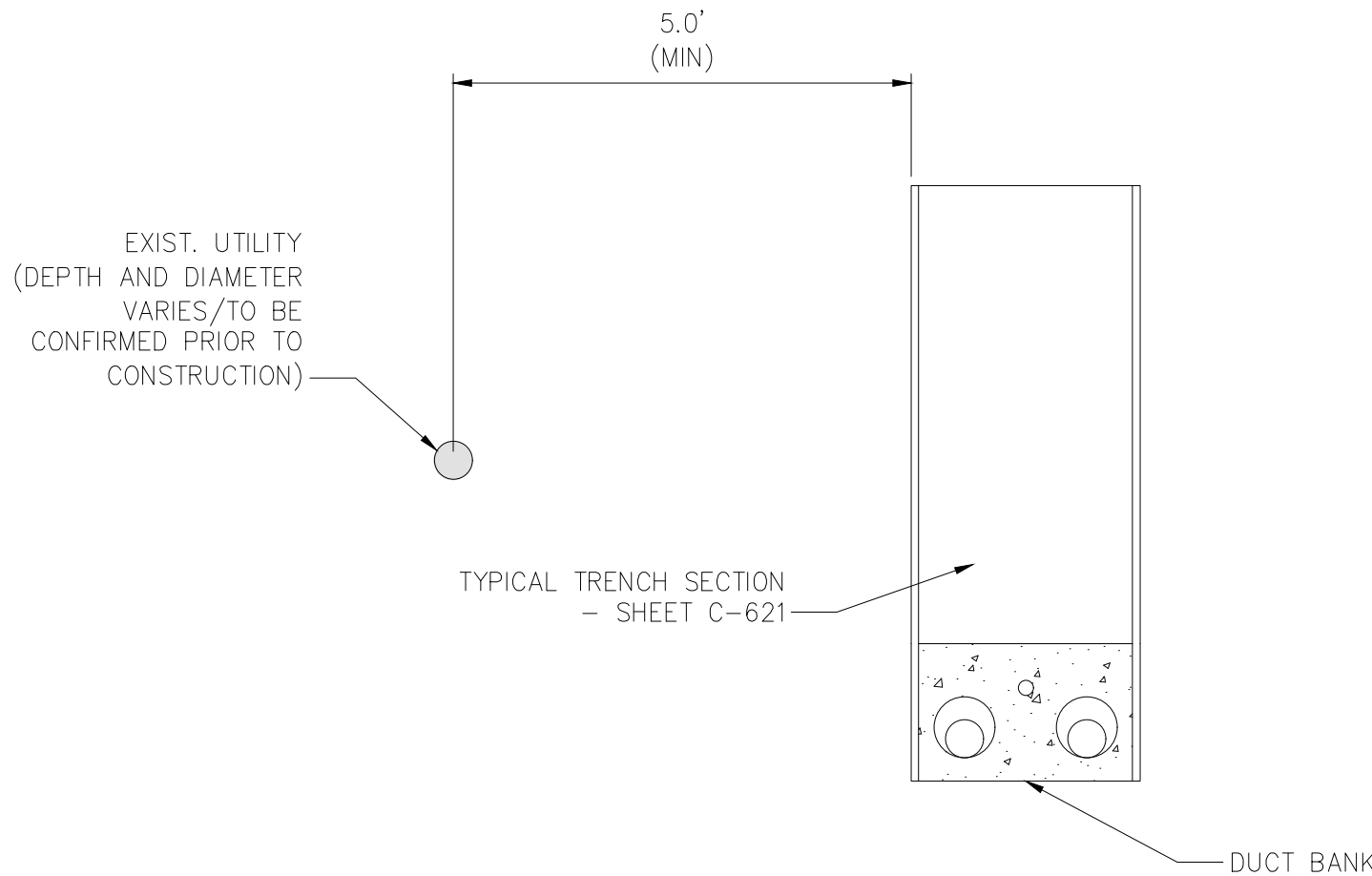
1 OPEN TRENCH - HORIZONTAL SEPARATION
NOT TO SCALE



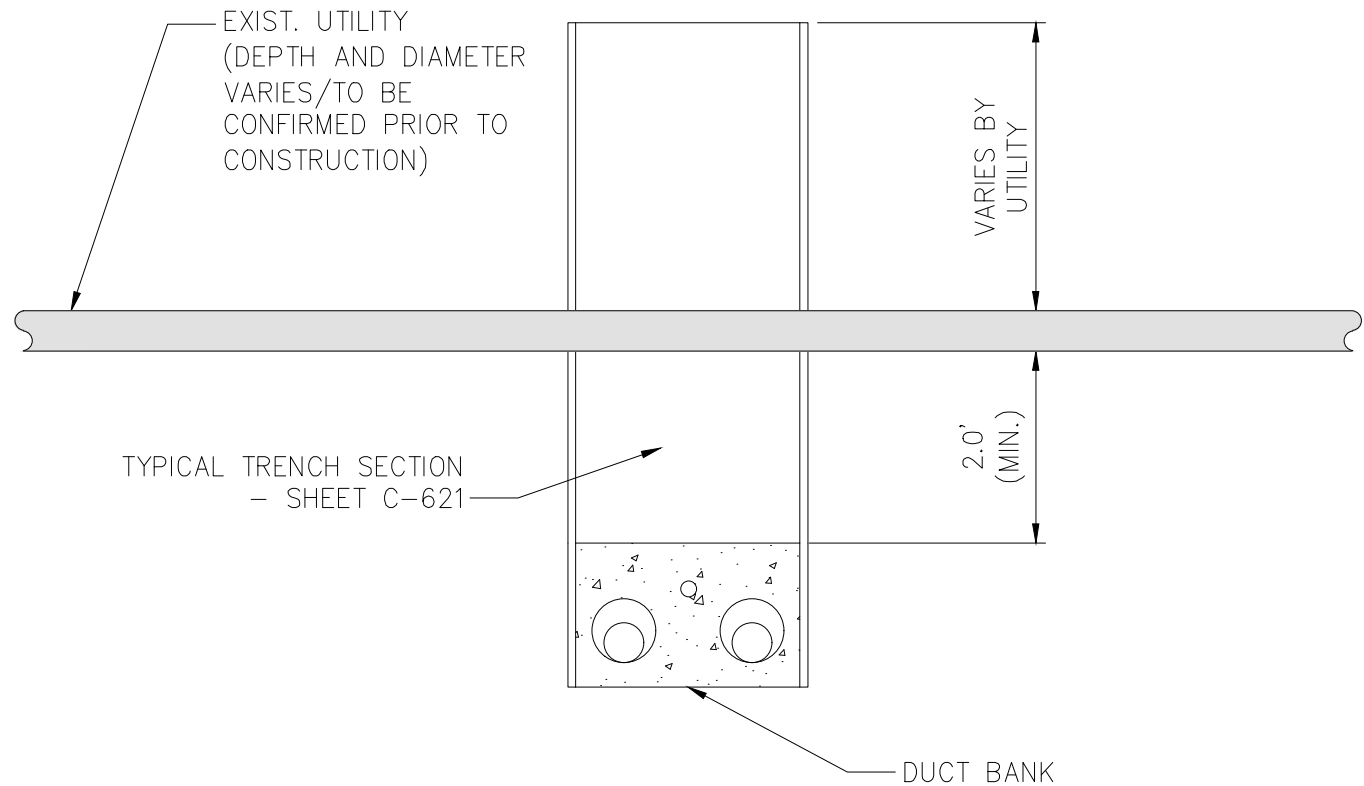
2 OPEN TRENCH - VERTICAL SEPARATION (UNDER)
NOT TO SCALE



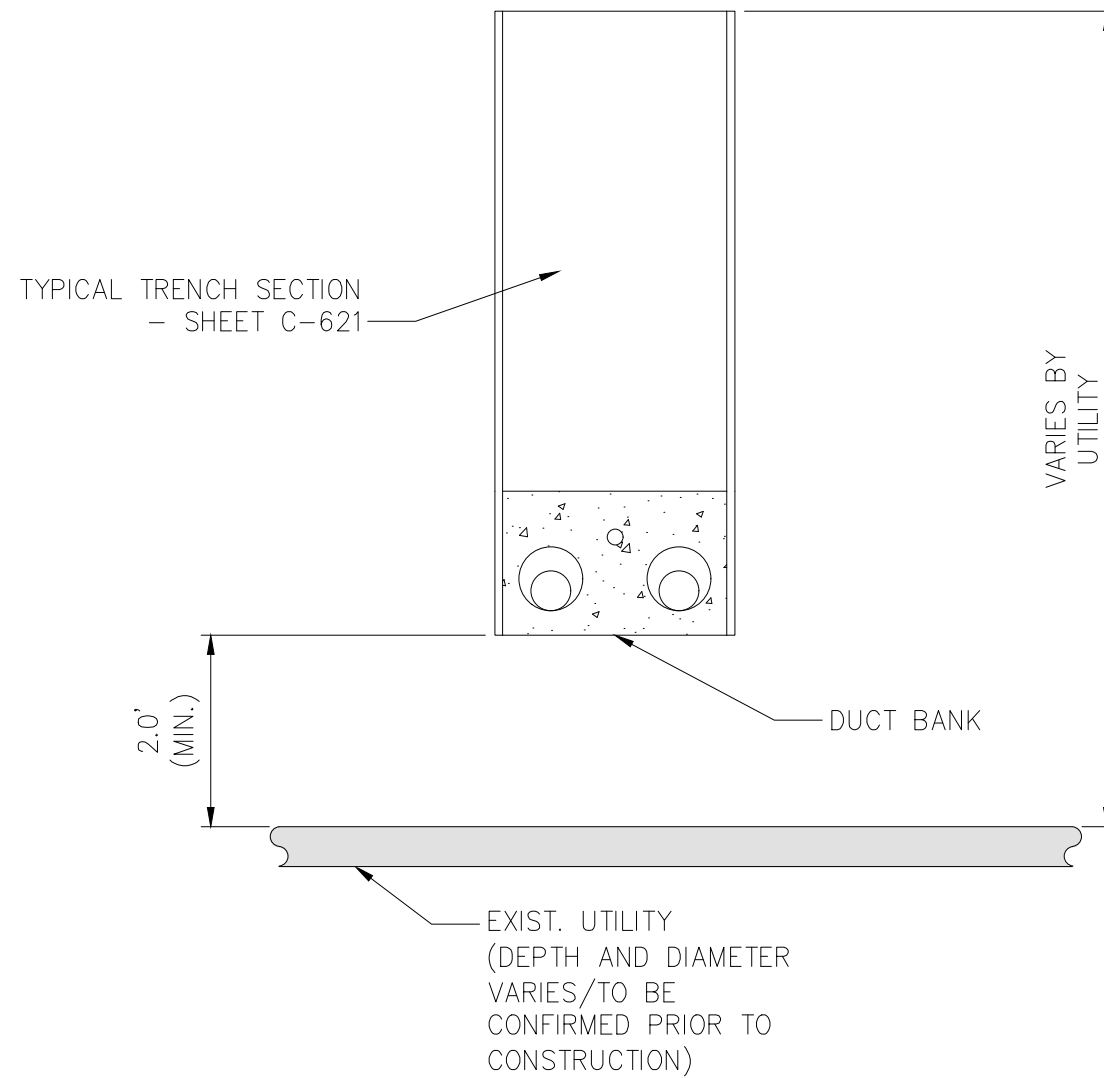
3 OPEN TRENCH - VERTICAL SEPARATION (OVER)
NOT TO SCALE



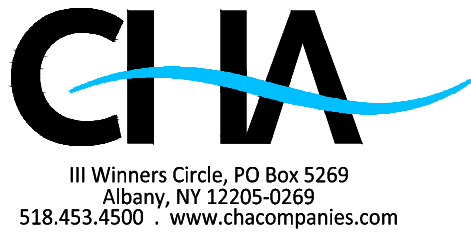
4 TYPICAL DUCTBANK IN ROADWAY - HORIZONTAL SEPARATION
NOT TO SCALE



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