




- NOTES:
- DESIGNED PER AASHTO LRFD 9TH ED. THIS IS A BURIED STRUCTURE NOT EXPOSED TO DAILY TEMPERATURE CHANGES.
 - REINFORCED STRUCTURAL CONCRETE DUCTBANK IS TO SUPPORT THE SELF WEIGHT OF THE DUCTBANK WITH 1'-6" HEIGHT. USE FOLLOWING FOR DESIGN:
SELF WEIGHT=1'-6"x150PCF=225PSF
CONSTRUCTION LIVE LOAD=30PSF
 - COMPLETELY REMOVE SOIL ABOVE THE DUCTBANK, BEFORE EXCAVATING UNDER DUCTBANK. DO NOT EXCAVATE UNDERNEATH DUCTBANK IF SOIL IS PRESENT ABOVE THE DUCTBANK.
 - PREPARE SUBGRADE & FILL SIDES OF DUCTBANK SECTION BEFORE CASTING TRENCH CONCRETE.
 - ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
 - A MINIMUM BEDDING SECTION CONSISTING OF A 4-INCH THICK SELECT GRANULAR FILL SHALL BE PLACED ON TOP OF PREPARED SUBGRADE. ADDITIONAL BEDDING MAY BE REQUIRED AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE BASED ON IN-SITU CONDITIONS.
 - SEE SHEET S-720 FOR DEFINITION OF VARIABLES.
 - MINIMUM STRUCTURAL CONCRETE STRENGTH F'C=4.5 KSI FOR F2 CATEGORY FREEZE-THAW EXPOSURE. GRADE 60 UNCOATED REBAR.
 - THE DESIGN SIMPLE SPAN FOR REINFORCEMENT IS CONSIDERED AS "w + a" WITH A TOTAL LENGTH OF "w + 2a". SUPPORTS ARE ASSUMED AT a/2 AT EACH END OF THE REINFORCED DUCTBANK.
 - THE REINFORCEMENT IN SECTION-A CONSIDERS A MAXIMUM VALUE OF w=23'-0", IN ORDER TO SAFELY CARRY ITS OWN WEIGHT (+30 PSF LIVE LOAD).
 - FOR DUCTBANK AT WILLIS AVENUE BRIDGE LOCATION, THE FOLLOWING NOTES APPLY:
-LIGHTWEIGHT CONCRETE BACKFILL CONFORMING TO SECTION 6.10 OF NYC DEP GENERAL SPECIFICATIONS 11 - CONCRETE.
-MAXIMUM 75 PCF UNIT WEIGHT FOR LIGHTWEIGHT FILL.
-REDUCED THICKNESS OF LIGHTWEIGHT FILL IS ALLOWED FOR LOCATIONS WHERE UTILITIES ARE ENCOUNTERED.
-SEE DETAILS ON SHEET C-622, PACKAGE 8.

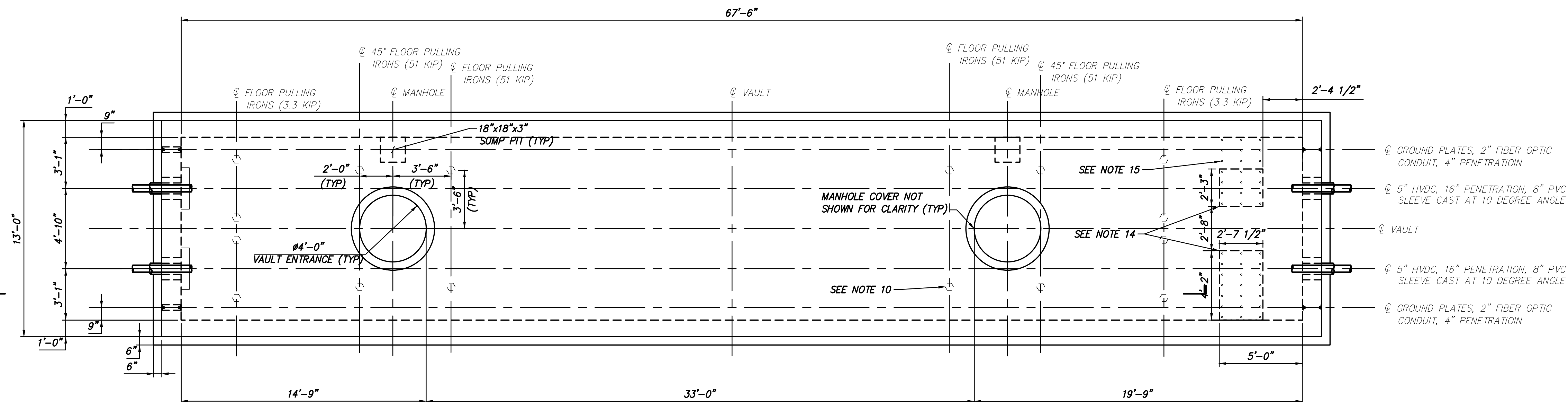




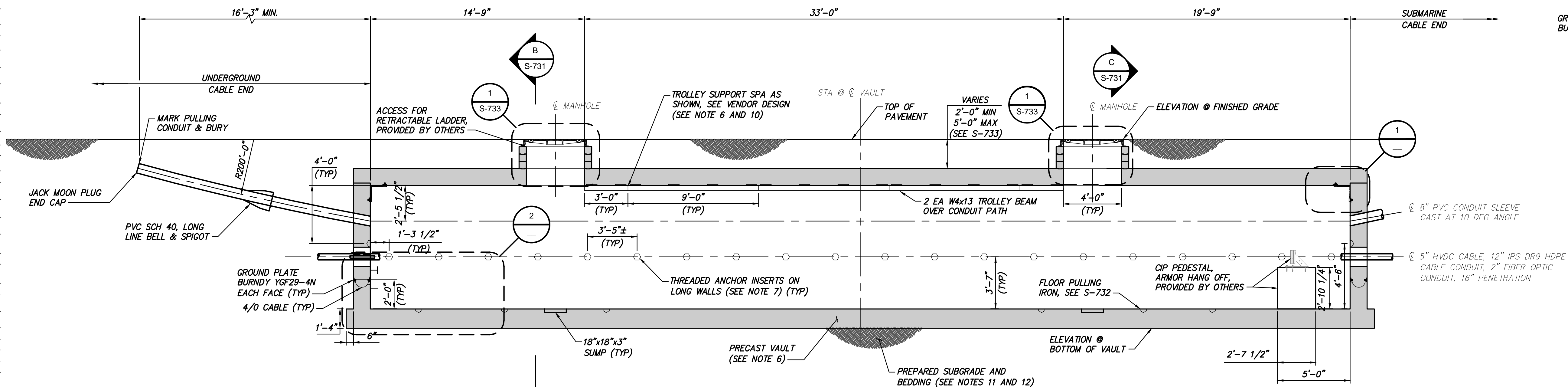
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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 |
|-----|------------|--|-----|-----|
| 2 | 05/03/2023 | RFC - VAULT UPDATES | JNK | OO |
| 1 | 02/10/2023 | REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES | JNK | OO |
| 0 | 12/21/2022 | IFC SUBMISSION | JNK | OO |

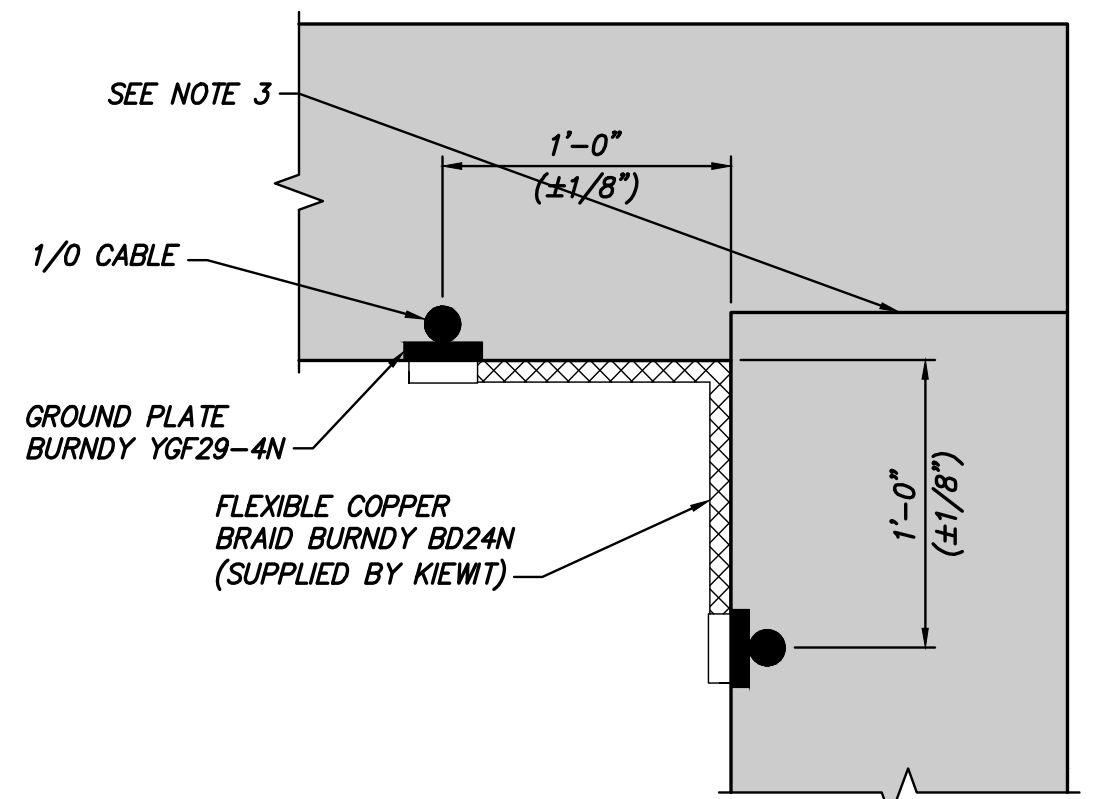
| CHAMPLAIN HUDSON POWER EXPRESS | | | KIEWIT PROJECT NO. 21162 | |
|--------------------------------|------------------|-----------------|--------------------------|---------|
| REINFORCING TRAY DETAILS | | | DRAWING NO. S-721 | |
| DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE: AS SHOWN | DATE: 2 |
| | | | REV. NO. | SH. NO. |



PLAN VIEW
SCALE: 1/4" = 1'-0"

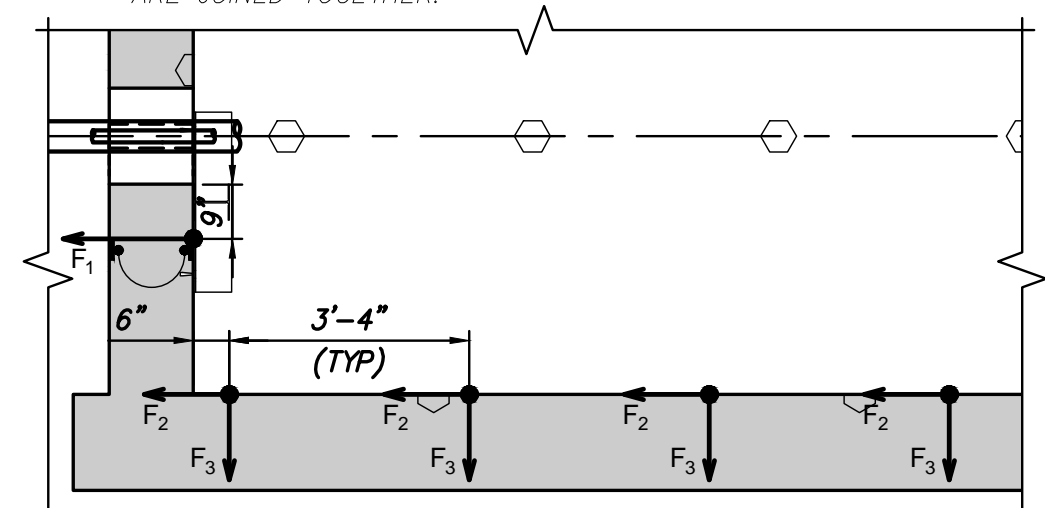


SECTION VIEW A
SCALE: 1/4" = 1'-0"



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

NOTE: USED TO ELECTRICALLY JOIN PRECAST CONCRETE SECTIONS TOGETHER. BY MEANS OF REBAR CONNECTIONS. TO BE APPLIED AT EACH PRECAST SECTION, SUCH THAT ALL SECTIONS ARE JOINED TOGETHER.



DETAIL 2
SCALE: 3/8" = 1'-0"

NOTE: FORCES PROVIDED IN DETAIL 2 ARE PER CABLE AND ARE THE RESULT OF POST-INSTALLED CABLE RACKING EQUIPMENT. FORCES ARE POSITIVE IN THE DIRECTION IN WHICH THEY ARE DRAWN AND ARE ALIGNED WITH @ HYDRO CABLE. RACKING FORCES ARE NOT CONCURRENT WITH FLOOR PULLING IRON OR ENDWALL PULLING IRON FORCES. RACKING INSTALLED AT LAND END OF VAULT.

$$F_1 = 9.0 \text{ KIP} \quad F_2 = 2.3 \text{ KIP} \quad F_3 = 7.9 \text{ KIP}$$



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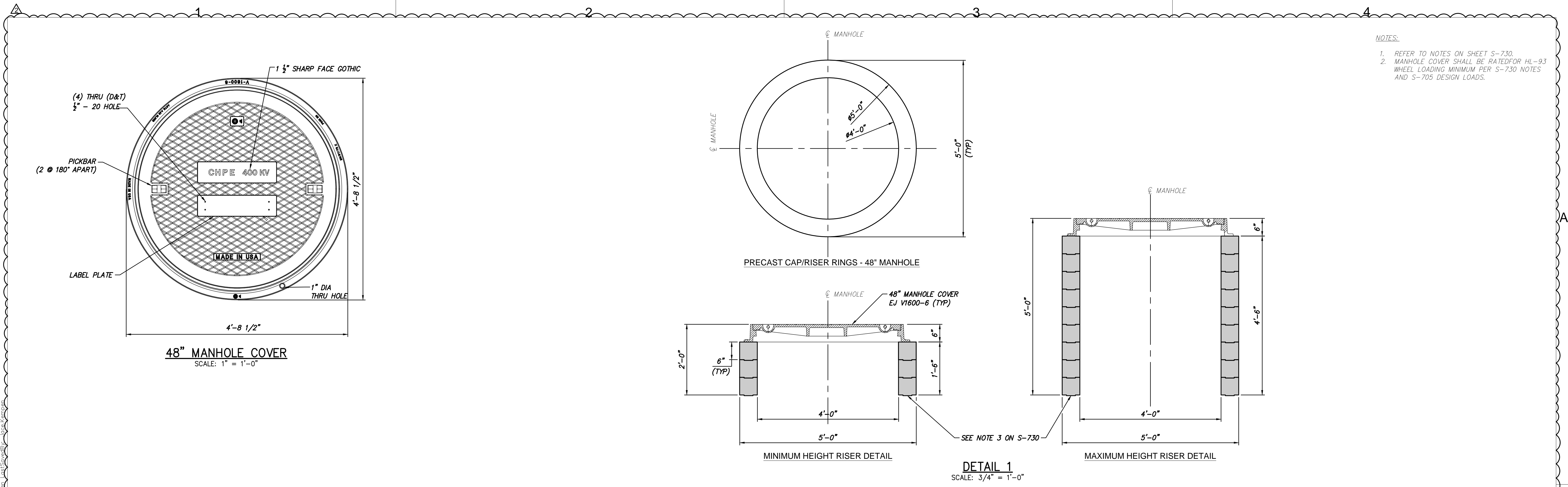
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| 2 | 05/03/2023 | RFC - VAULT UPDATES | | | JNK OO |
| 1 | 02/10/2023 | REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES | | | JNK OO |
| 0 | 12/21/2022 | IFC SUBMISSION | | | JNK OO |
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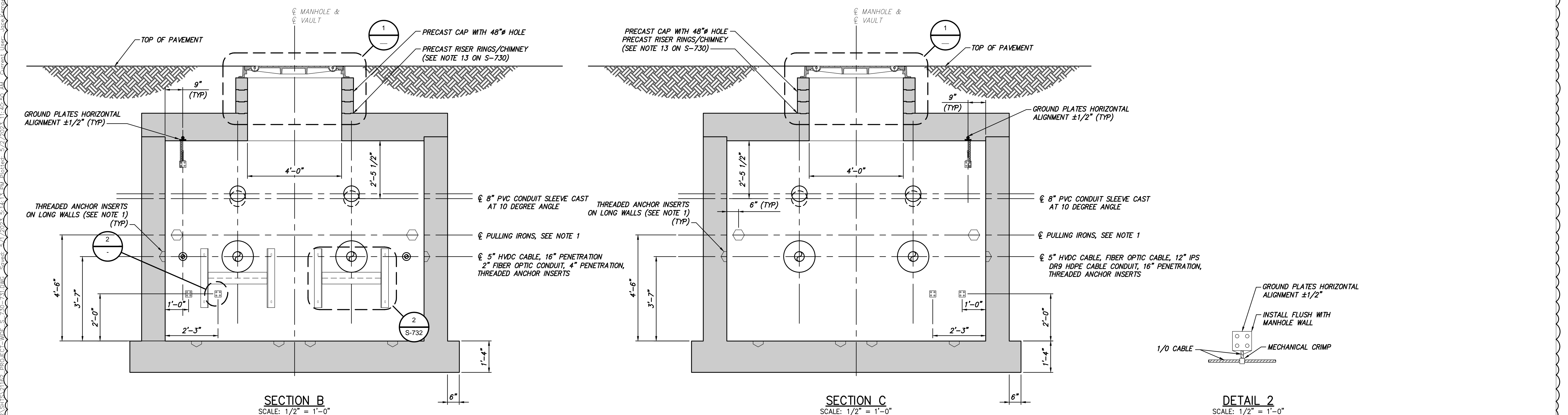
TRANSITION VAULT PLAN AND ELEVATION



| | | | | |
|---------------|------------------|-----------------|----------------|--------|
| DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | DATE |
| | | | REV. NO. 2 | SH.NO. |


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|--------------------|
| KIEWIT PROJECT NO. |
| 21162 |
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| |
| DRAWING NO. |
| S-730 |
| |
| TE |
| .NO. |



- NOTES:
- REFER TO NOTES ON SHEET S-730.
 - MANHOLE COVER SHALL BE RATED FOR HL-93 WHEEL LOADING MINIMUM PER S-730 NOTES AND S-705 DESIGN LOADS.







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| 0 | 12/21/2022 | IFC SUBMISSION | JNK | OO |

CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT SECTION AND DETAILS

DRAWN BY: DRH

DESIGNED BY: JNK

APPROVED BY: OO

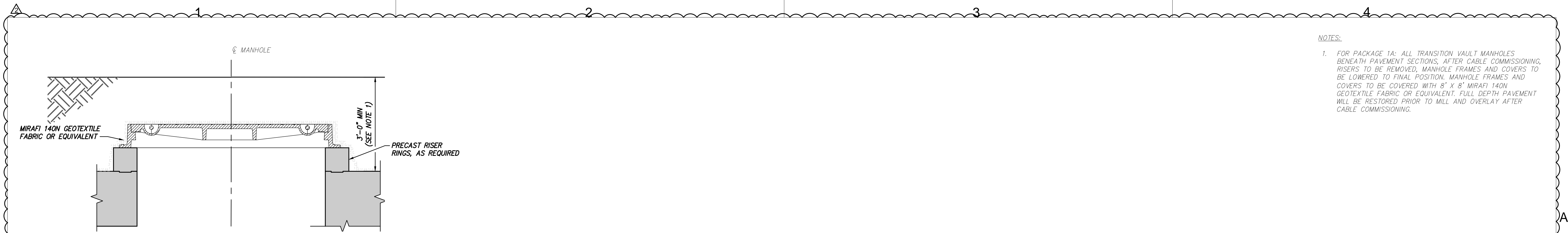
SCALE: AS SHOWN

DATE: 2

KIEWIT PROJECT NO. 21162

DRAWING NO. S-731

$$\frac{V_N}{2}$$



FINAL POSITION OF MANHOLE
DETAIL 1
SCALE: 3/8" = 1'-0"

- NOTES:
- FOR PACKAGE 1A: ALL TRANSITION VAULT MANHOLES BENEATH PAVEMENT SECTIONS, AFTER CABLE COMMISSIONING, RISERS TO BE REMOVED, MANHOLE FRAMES AND COVERS TO BE LOWERED TO FINAL POSITION. MANHOLE FRAMES AND COVERS TO BE COVERED WITH 8' X 8' MIRAFI 140N GEOTEXTILE FABRIC OR EQUIVALENT. FULL DEPTH PAVEMENT WILL BE RESTORED PRIOR TO MILL AND OVERLAY AFTER CABLE COMMISSIONING.

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| 0 | 12/21/2022 | IFC SUBMISSION | JNK | OO | |
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CHAMPLAIN HUDSON POWER EXPRESS

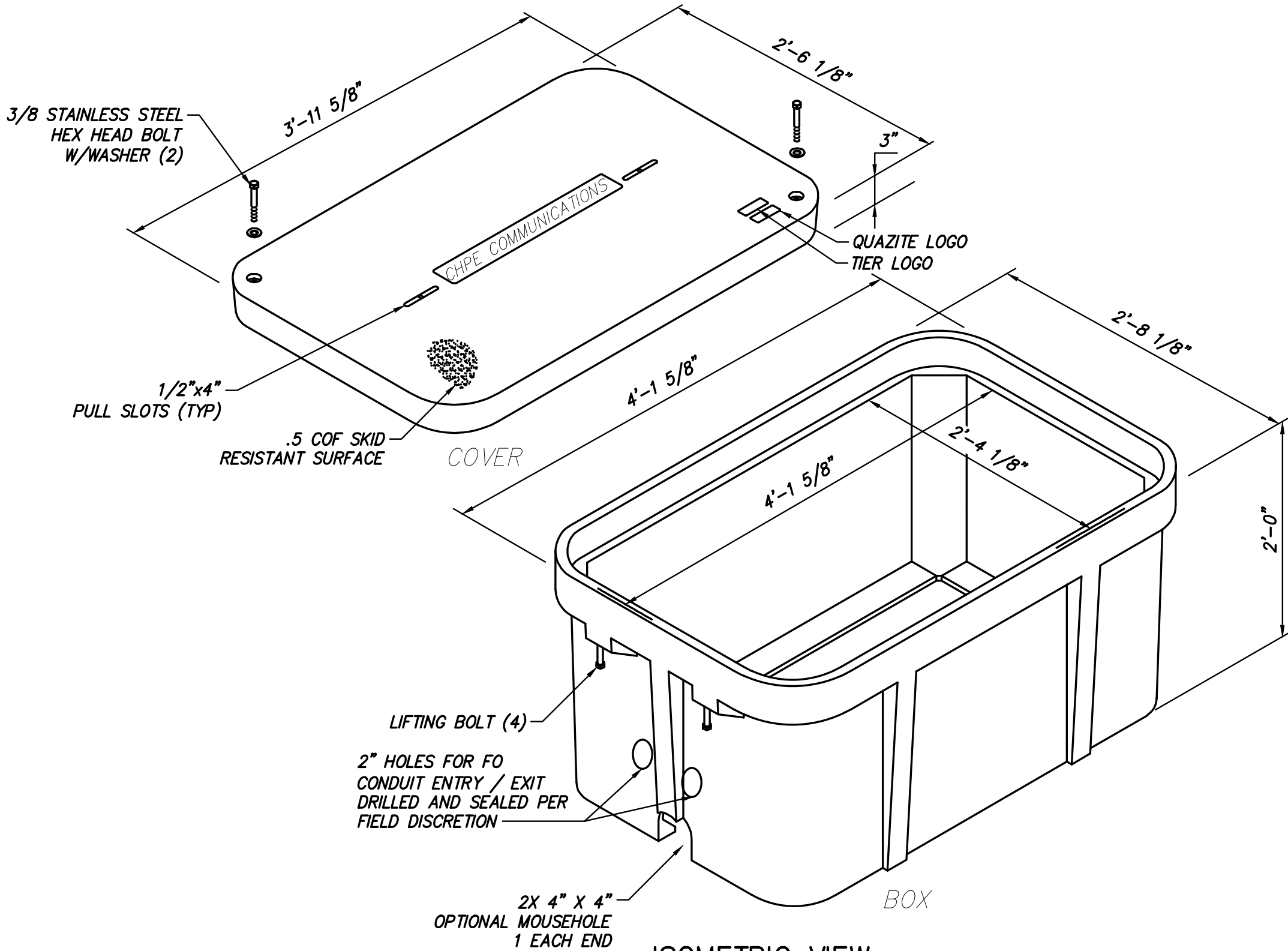
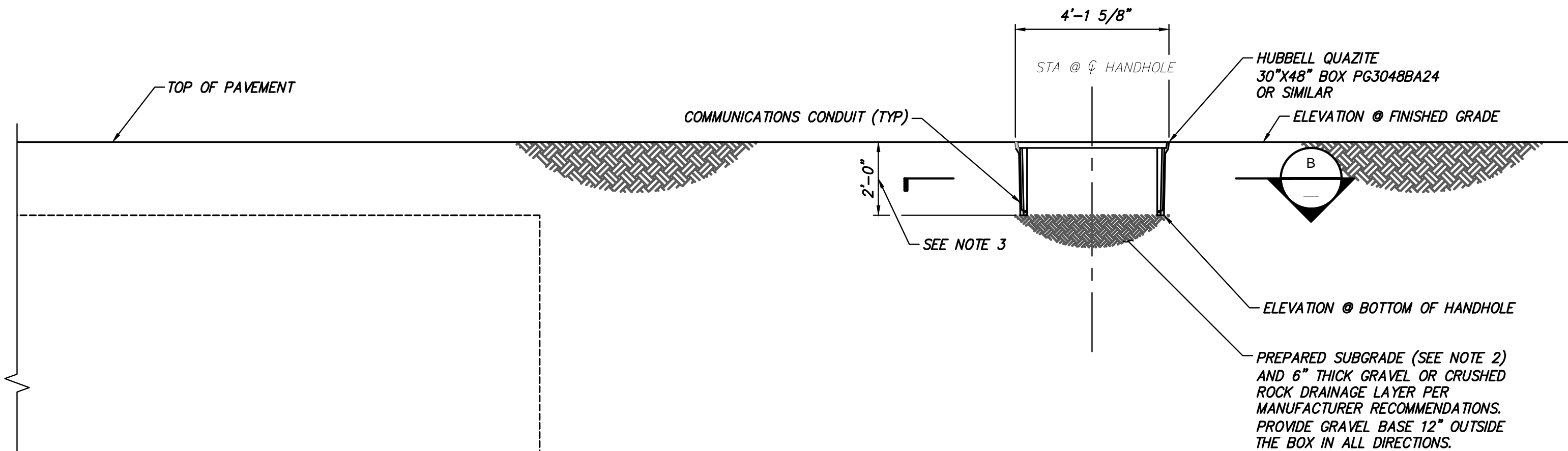
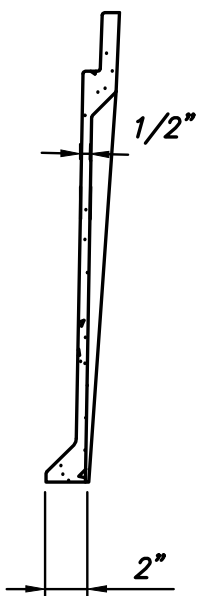
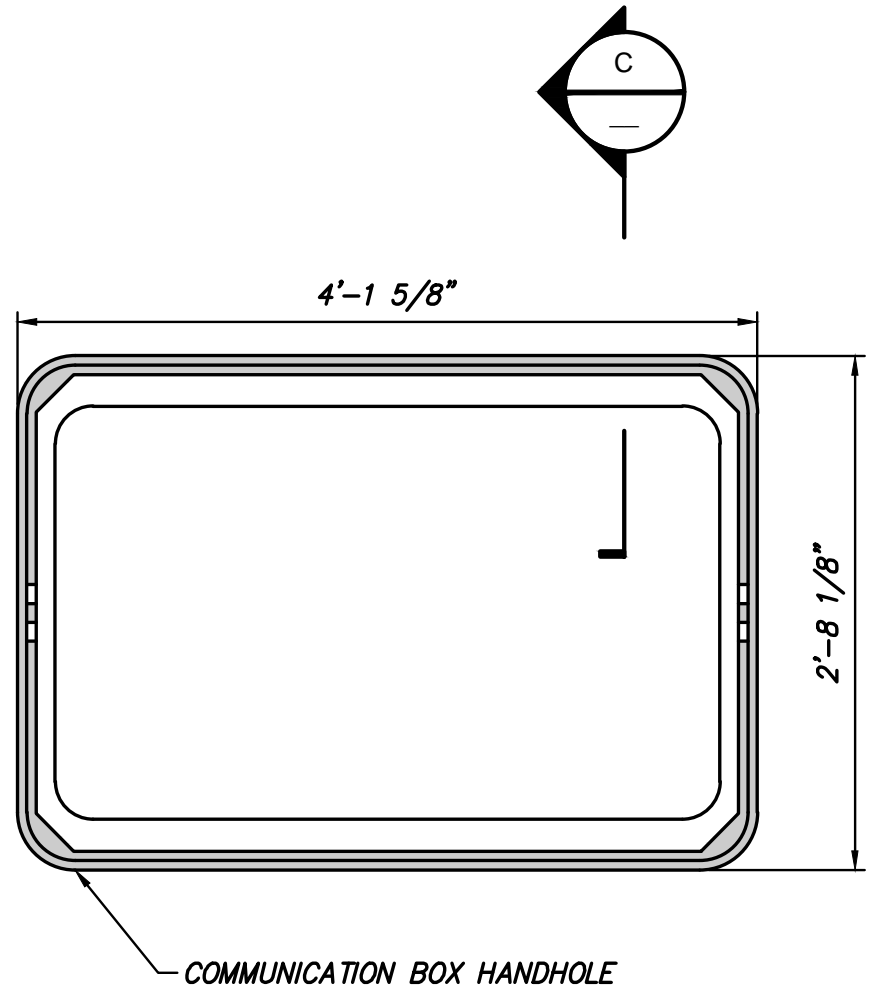
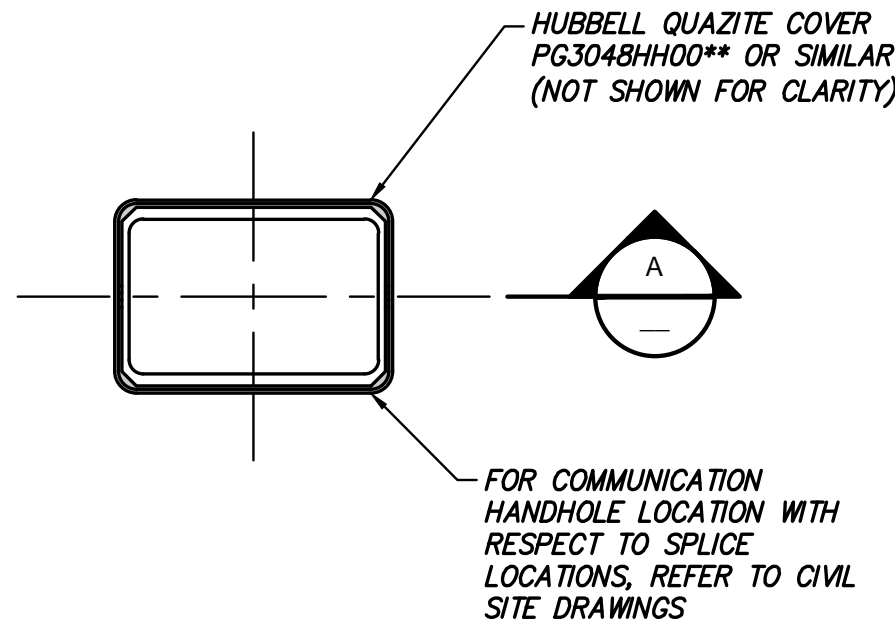
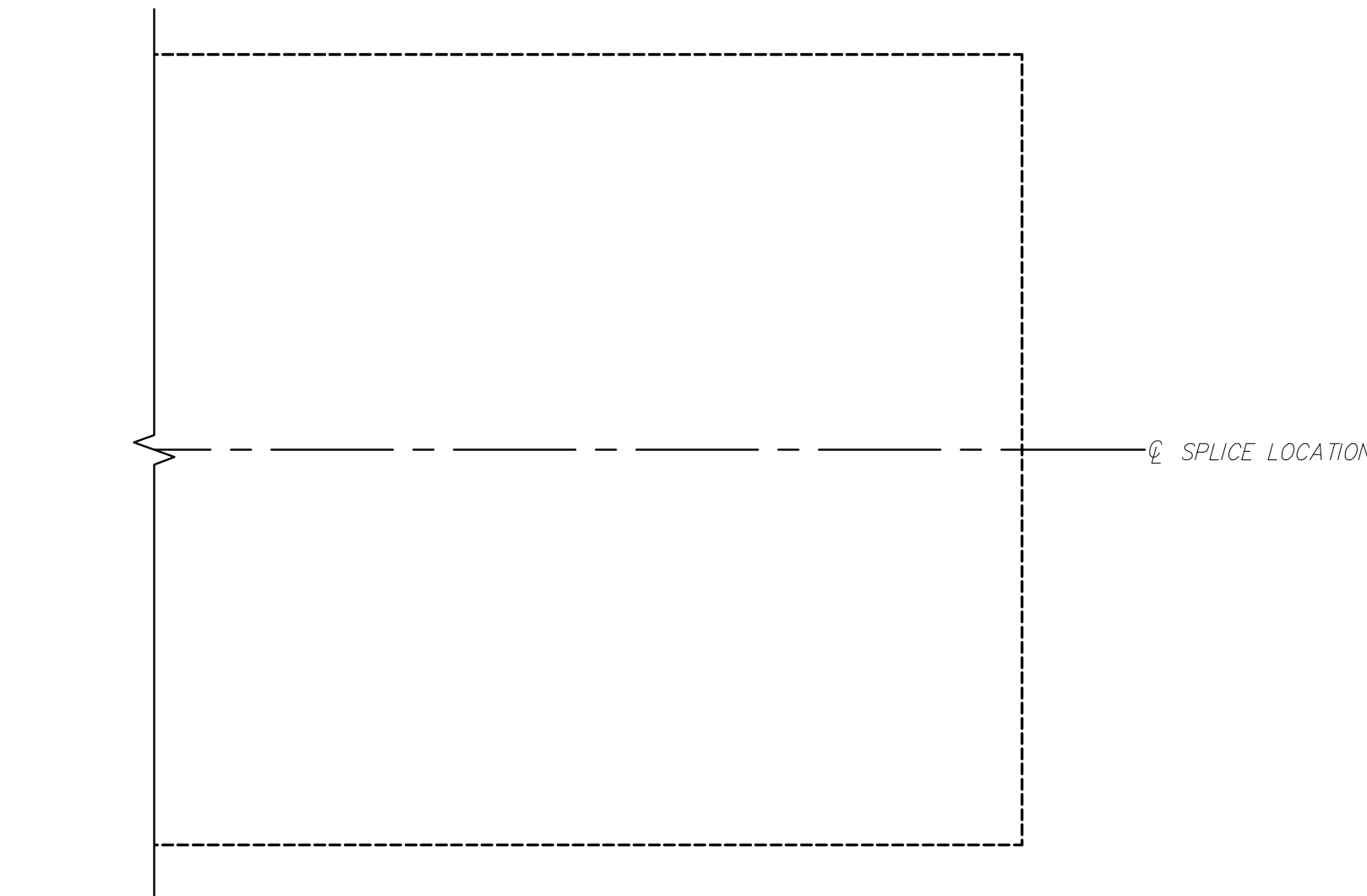
TRANSITION VAULT DETAILS

DRAWN BY: DRH DESIGNED BY: JNK APPROVED BY: OO SCALE AS SHOWN DATE
REV. NO. 2 SH.NO.

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| KIEWIT PROJECT NO. | 21162 |
| DRAWING NO. | S-733 |
| DATE | |
| SH.NO. | |

NOTES:

- DESIGN LIVE LOAD: ANSI TIER 22 (OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC). VERTICAL DESIGN LOAD= 22,500 LBS; LATERAL DESIGN LOAD= 800 PSF. QUAZITE OR SIMILAR.
- ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
- MINIMUM 4 FT OF COVER OVER TOP OF BOX WHEN LOCATED WITHIN AGRICULTURAL LANDS. MAXIMUM COVER IS 4.5 FT OVER TOP OF BOX.



HUBBELL QUAZITE 30"x48" CORRUGATED WALL ASSEMBLY
PART NO. PG3048HH00** AND PG3048BA24



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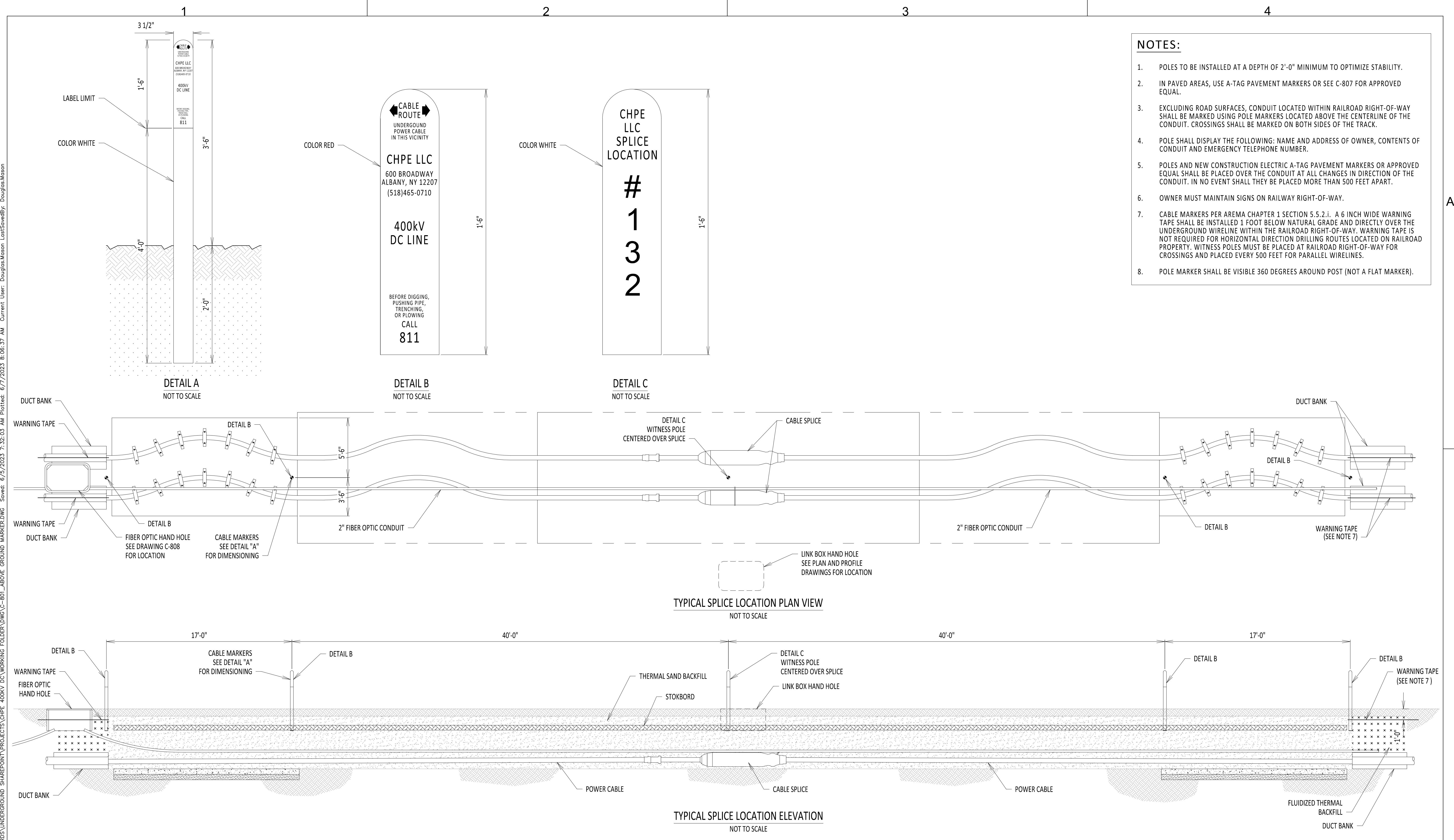
CHAMPLAIN HUDSON POWER EXPRESS


FRP COMMUNICATION HANDHOLES

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| DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE REV. NO. | AS SHOWN 2 | DATE SH. NO. |
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| KIEWIT PROJECT NO. 21162 |
| DRAWING NO. S-771 |

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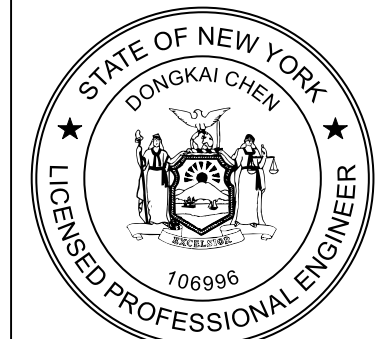




Champlain Hudson Power Express



Kiewit



STATE OF NEW YORK
DONGKAI CHEN
106996
LICENSED PROFESSIONAL ENGINEER

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| 0 | 06/08/2023 | ISSUED FOR CONSTRUCTION SUBMISSION | | DLM ASM |

CHAMPLAIN HUDSON POWER EXPRESS

ABOVE GROUND MARKING DETAILS

DRAWN BY: DLM

DESIGNED BY:

APPROVED BY: ASM

SCALE
REV. NO.

KIEWIT PROJECT NO.
21162

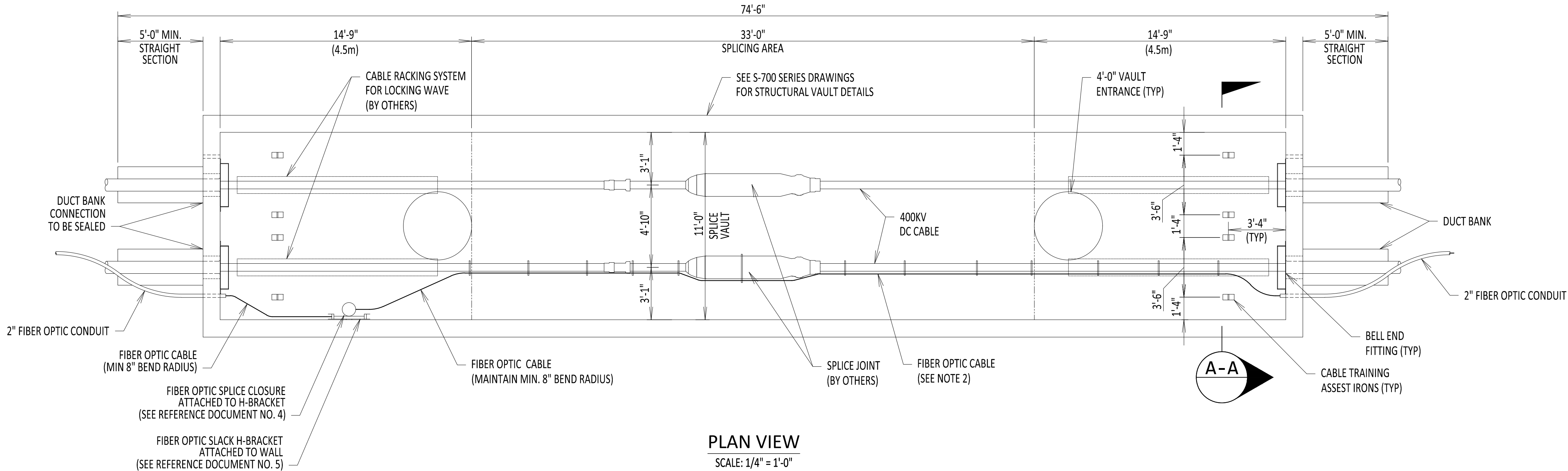
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066076

DRAWING NO.
C-801

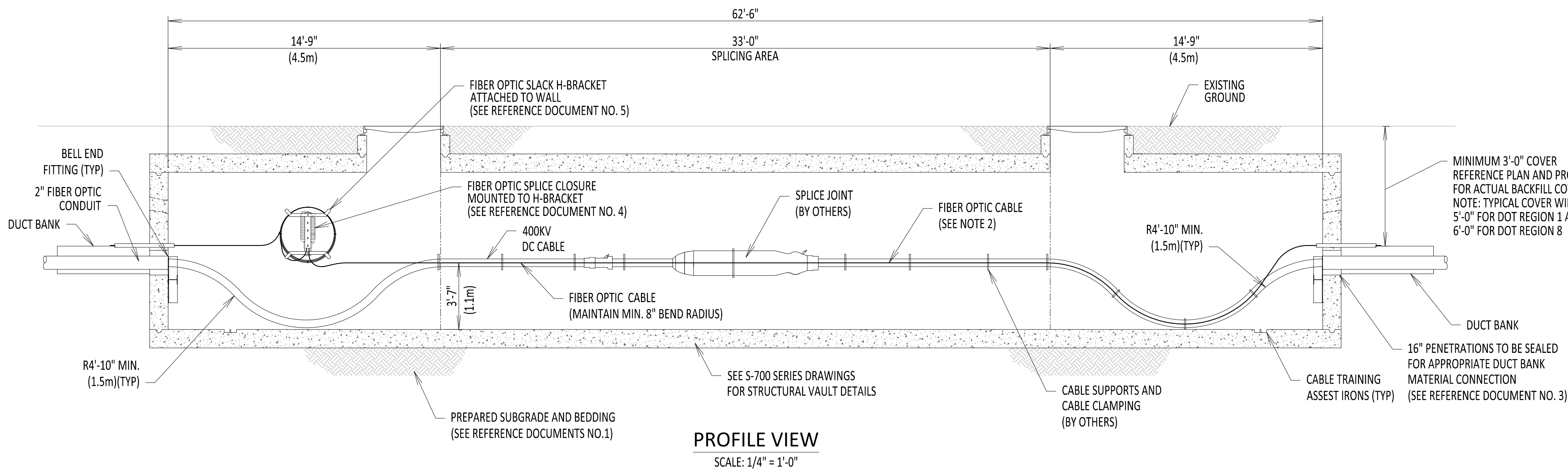
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06/08/2023

SH.NO.
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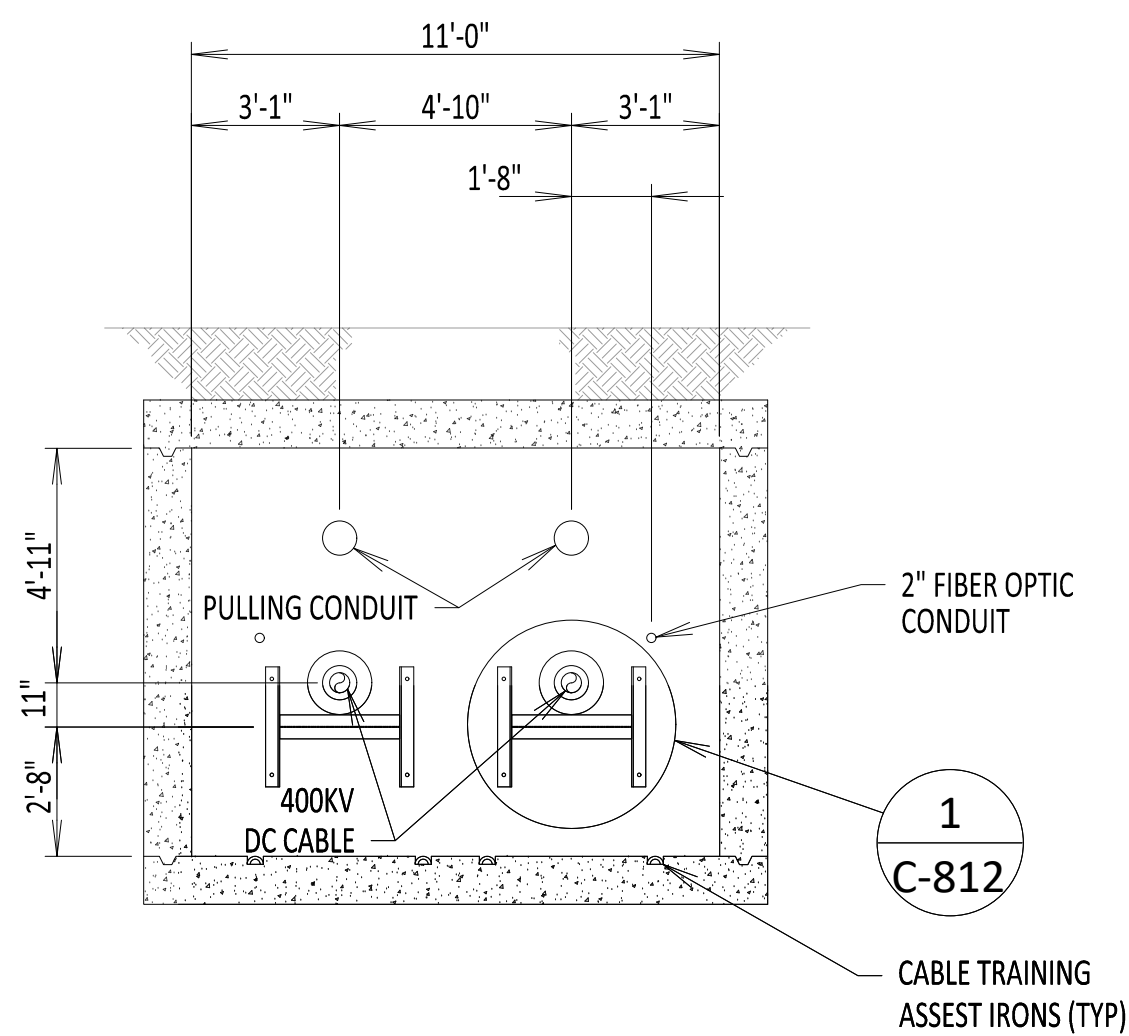
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PLAN VIEW
SCALE: 1/4" = 1'-0"



PROFILE VIEW
SCALE: 1/4" = 1'-0"

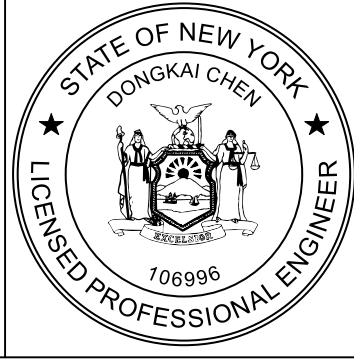


SECTION A-A
SCALE: 1/4" = 1'-0"

1. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
2. A MINIMUM BEDDING SECTION CONSISTING OF A 4-INCH THICK MUDMAT OR 4-INCH THICK SELECT GRANULAR FILL SHALL BE PLACED ON TOP OF PREPARED SUBGRADE. ADDITIONAL BEDDING MAY BE REQUIRED AS DIRECTED BY GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE BASED ON IN-SITU CONDITIONS.

REFERENCE DOCUMENTS

| LIST NO. | DOCUMENT NAME | DOCUMENT NO. |
|----------|------------------------------------|--------------|
| 1 | STRUCTURAL VAULT DRAWING | S-700 |
| 2 | TYPICAL VAULT GROUNDING DETAILS | C-803 |
| 3 | DUCT BANK CONNECTION DETAILS | C-812 |
| 4 | FIBER OPTIC SPLICE DETAILS | C-855 |
| 5 | FIBER OPTIC H-FRAME BRACKET DETAIL | C-856 |



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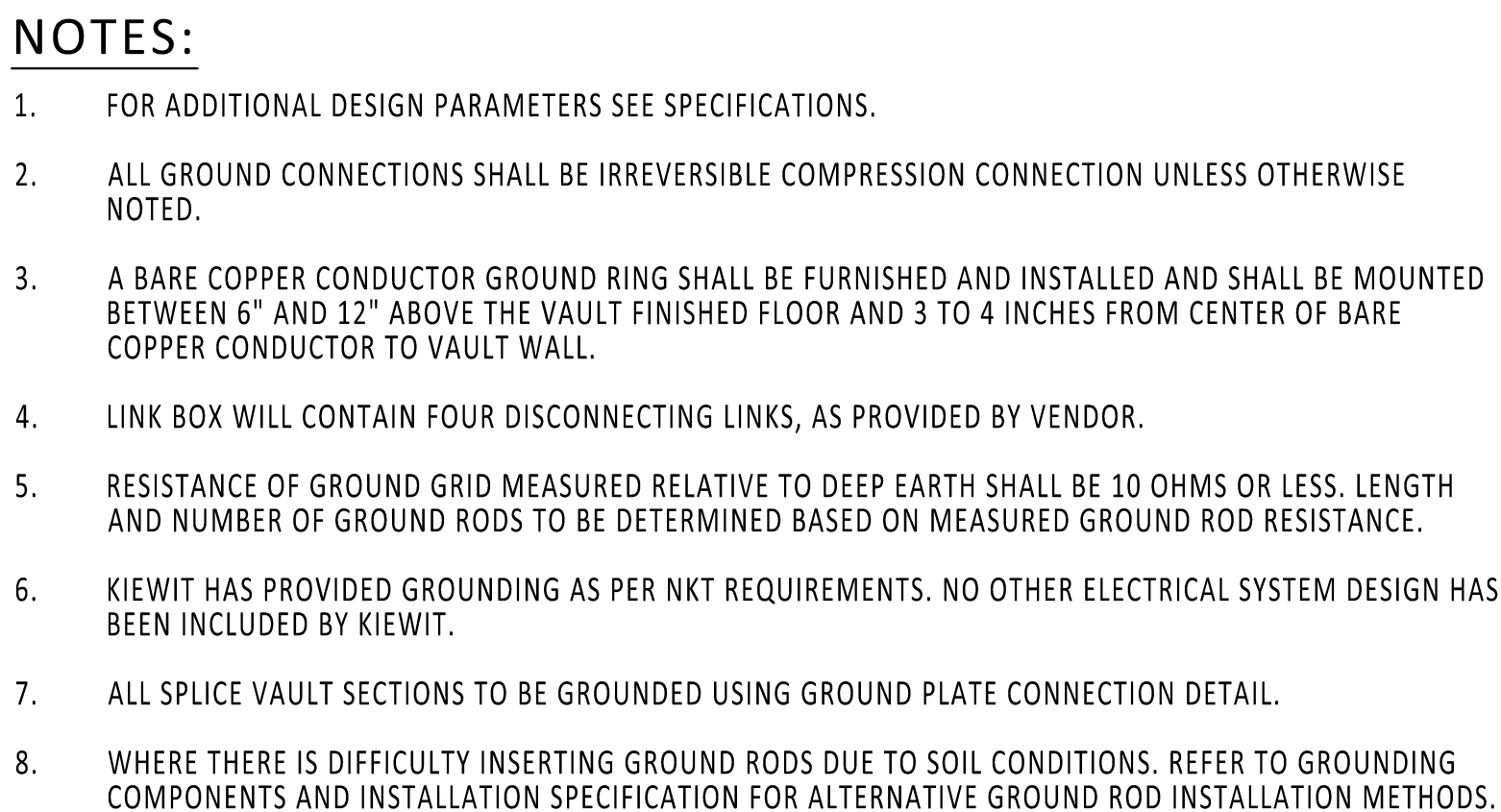
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| No. | DATE | SUBMITTAL / REVISION DESCRIPTION | DB | APP |
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CHAMPLAIN HUDSON POWER EXPRESS

TYPICAL VAULT
DETAILS

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| DRAWN BY: | DESIGNED BY: SD | APPROVED BY: ASM | SCALE REV. NO. | DATE SH. NO. |
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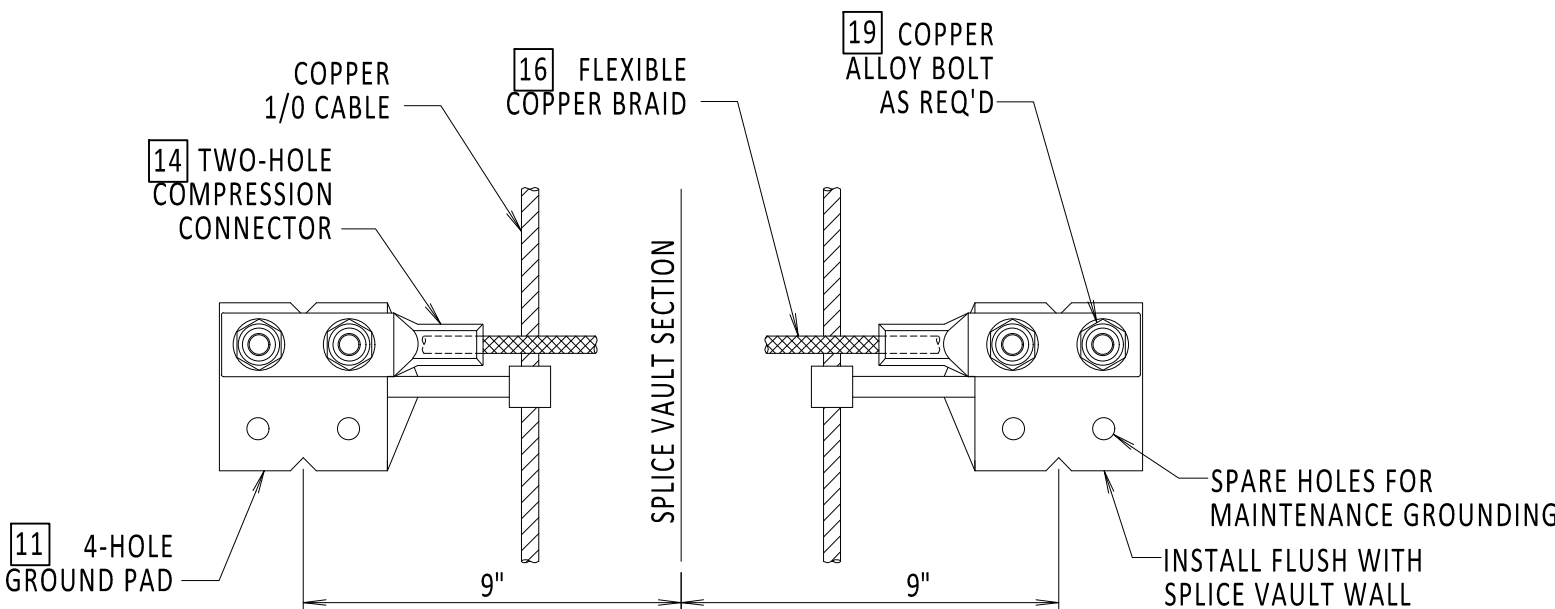
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| KIEWIT PROJECT NO. | 21162 |
| CHA PROJECT NO. | 066076 |
| DRAWING NO. | C-802 |
| DATE | 06/08/2023 |
| SH. NO. | OF |



| 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 C CONNECTOR | BURNDY YGHC29C29 | KIEWIT | KIEWIT |
| 7 | COMPRESSION CONNECTION TO GROUND ROD | BURNDY YGHR29C34 | KIEWIT | KIEWIT |
| 8 | 3/4" X 10'-0" GROUND ROD | NVENT ERICO 613400 | KIEWIT | KIEWIT |
| 9 | SILICON BRONZE HEX HEAD CAP SCREW | STS INDUSTRIAL #HHSB0370075 | KIEWIT | KIEWIT |
| 10 | POLYWATER FST SEALANT | POLYWATER | KIEWIT | KIEWIT |
| 11 | FOUR-HOLE GROUNDING PLATE | BURNDY YGF294N | KIEWIT | KIEWIT |
| 12 | GROUNDING BUSBAR & ASSEMBLY | NVENT ERICO EGBA14210BB | KIEWIT | KIEWIT |
| 13 | ONE HOLE LUG COMPRESSION TERMINAL | BURNDY YAV28L60 | KIEWIT | KIEWIT |
| 14 | TWO HOLE LONG BARREL LUG | BURNDY YA282N | KIEWIT | KIEWIT |
| 15 | UNISTRUT AND SUNDRIES | STAINLESS STEEL | NKT | NKT |
| 16 | FLEXIBLE COPPER BRAID | BURNDY BD24N | KIEWIT | KIEWIT |
| 17 | SILICON BRONZE HEX NUT | STS INDUSTRIAL #NFSB0370000 | KIEWIT | KIEWIT |
| 18 | COMPRESSION LUG | ABB 120M16-A | KIEWIT | KIEWIT |
| 19 | SILICON BRONZE HEX HEAD CAP SCREW | AFT BB-VS1160-B | KIEWIT | KIEWIT |
| 20 | SILICON BRONZE TAP BOLT | FASTENAL 74N94 | KIEWIT | KIEWIT |
| 21 | SILICON BRONZE SPLIT LOCK WASHER | GRAINGER 11U954 | KIEWIT | KIEWIT |
| 22 | SILICON BRONZE HEX NUT | GRAINGER 1WE52 | KIEWIT | KIEWIT |

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

| LIST NO. | DOCUMENT NAME | DOCUMENT NO. |
|----------|--------------------------|--------------|
| 1 | STRUCTURAL VAULT DRAWING | S-700 |
| 2 | GROUNDING SPECIFICATIONS | 260526.01 |



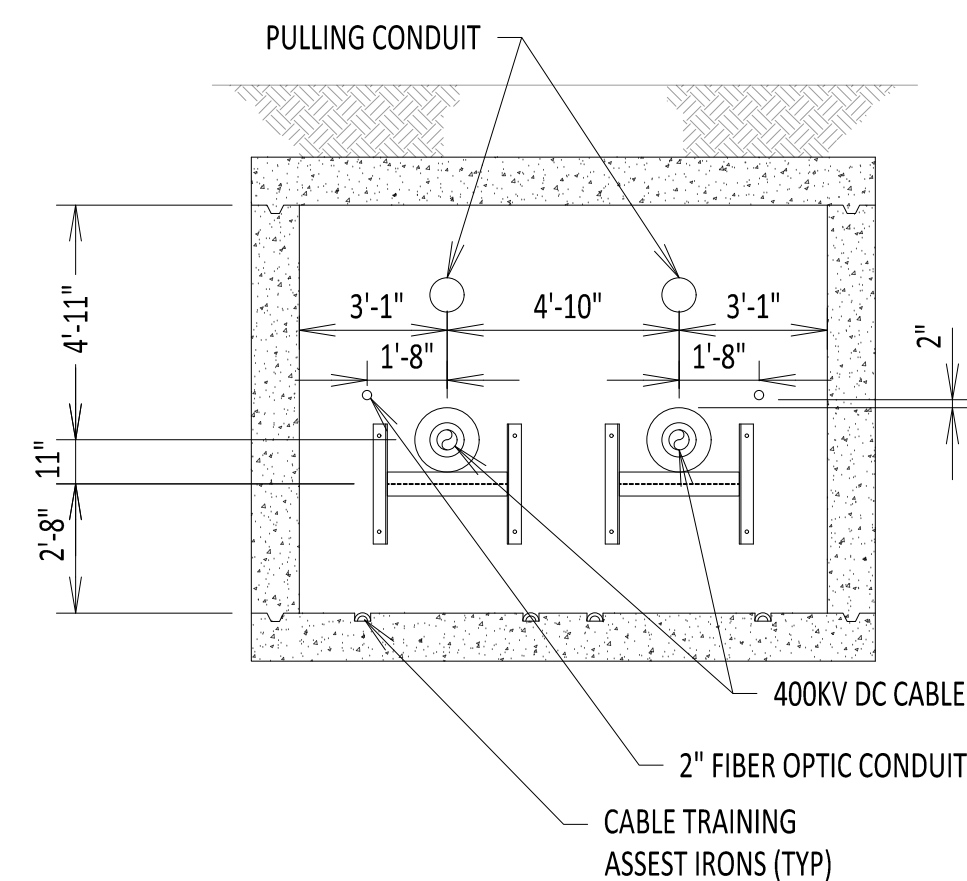
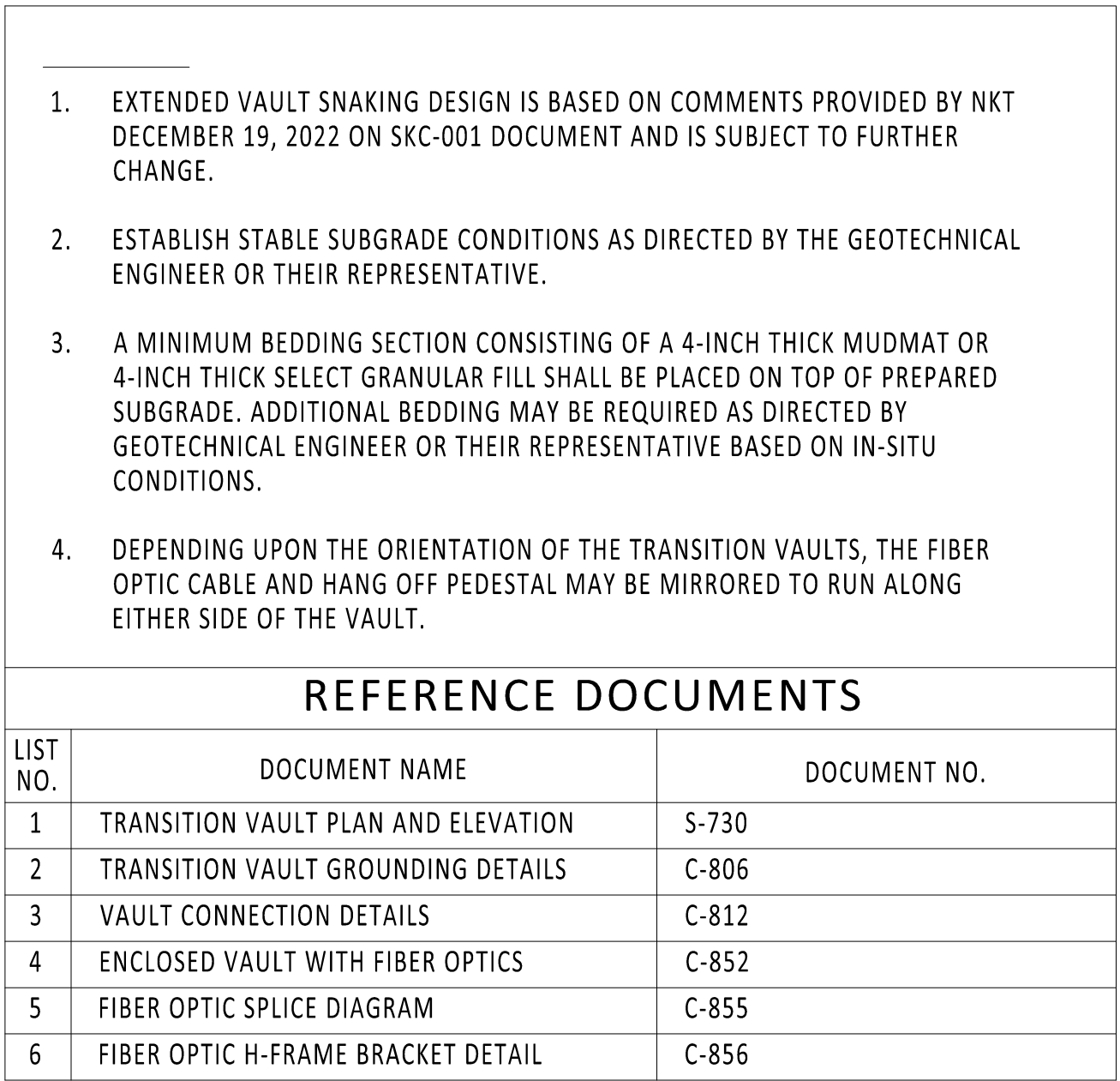
GROUND PLATE CONNECTION DETAIL

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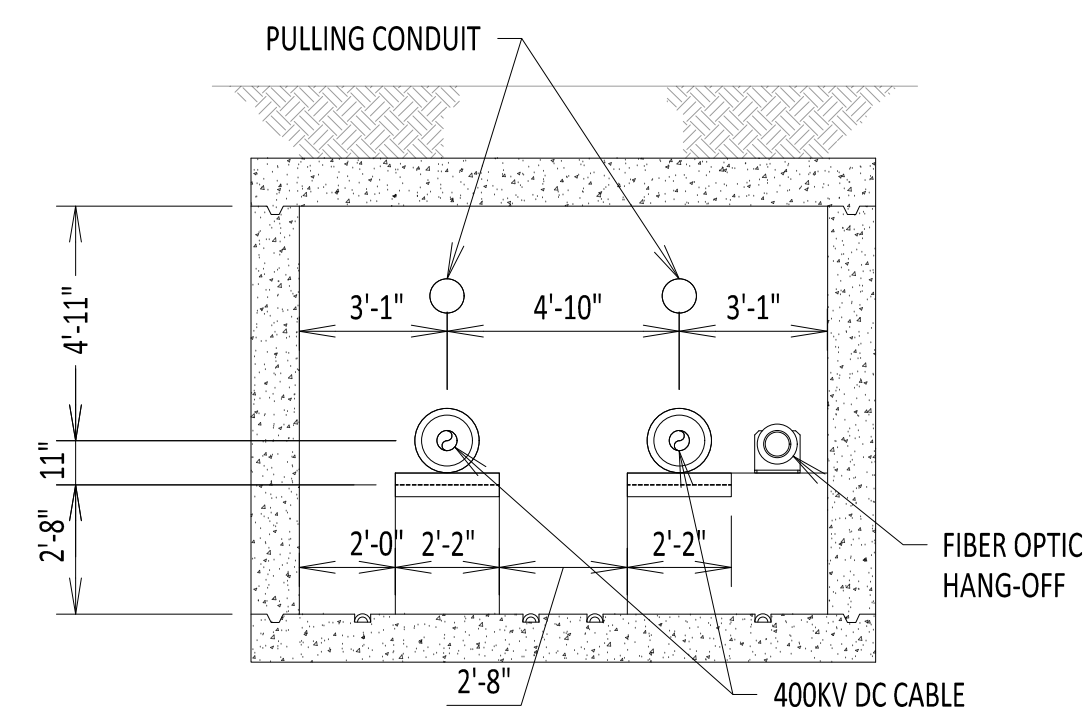
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| 0 | 06/08/2023 | ISSUED FOR CONSTRUCTION SUBMISSION | DLM | ASM |
| No. | DATE | SUBMITTAL / REVISION DESCRIPTION | DB | APP |

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

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| DATE | 06/08/2023 |
| SH.NO. | OF |

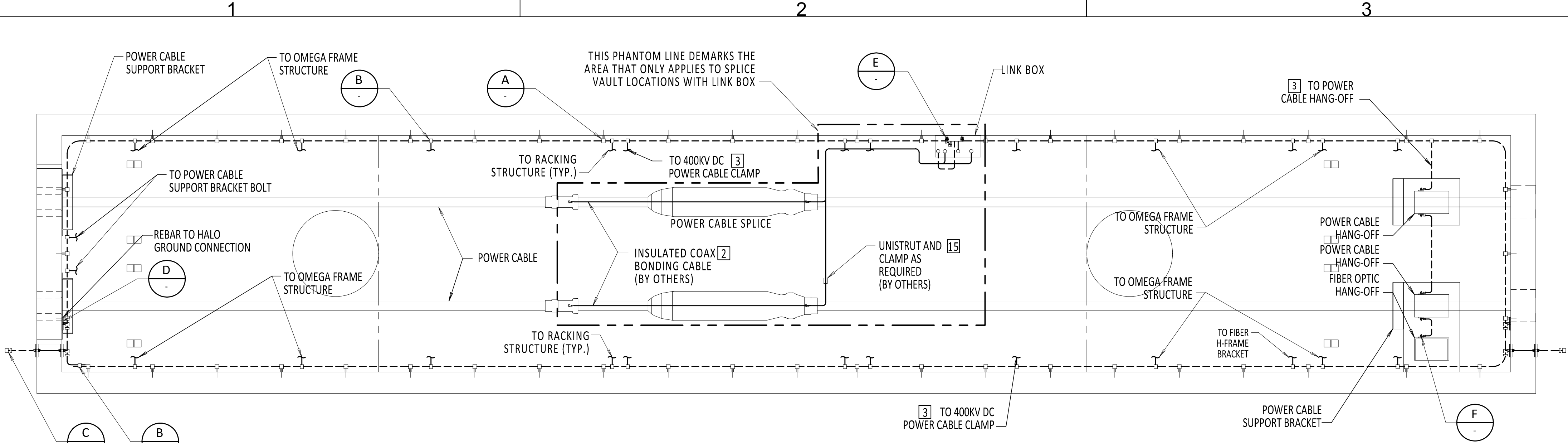


SECTION A-A
SCALE: 1/4" = 1'-0"

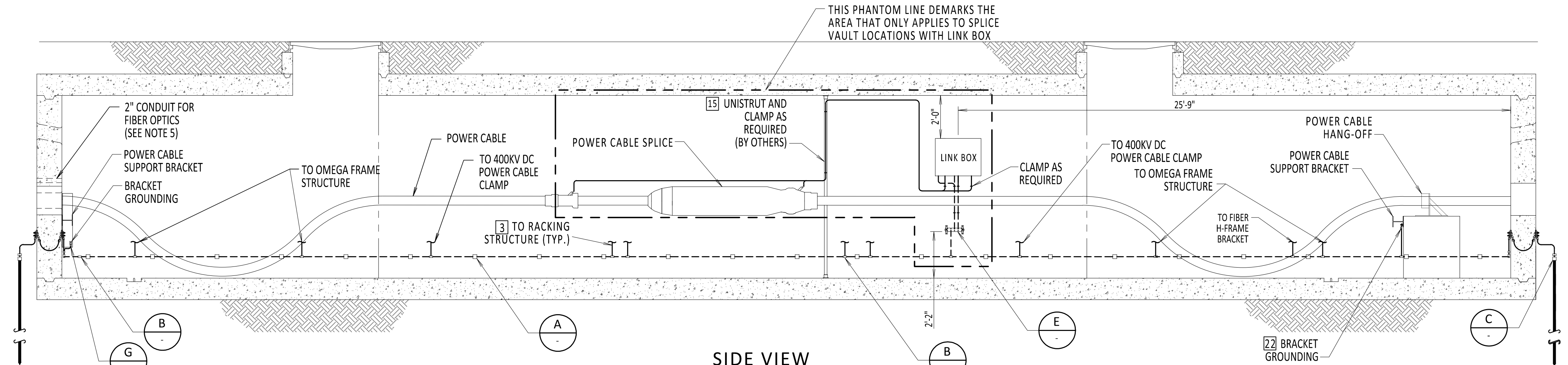


SECTION B-B
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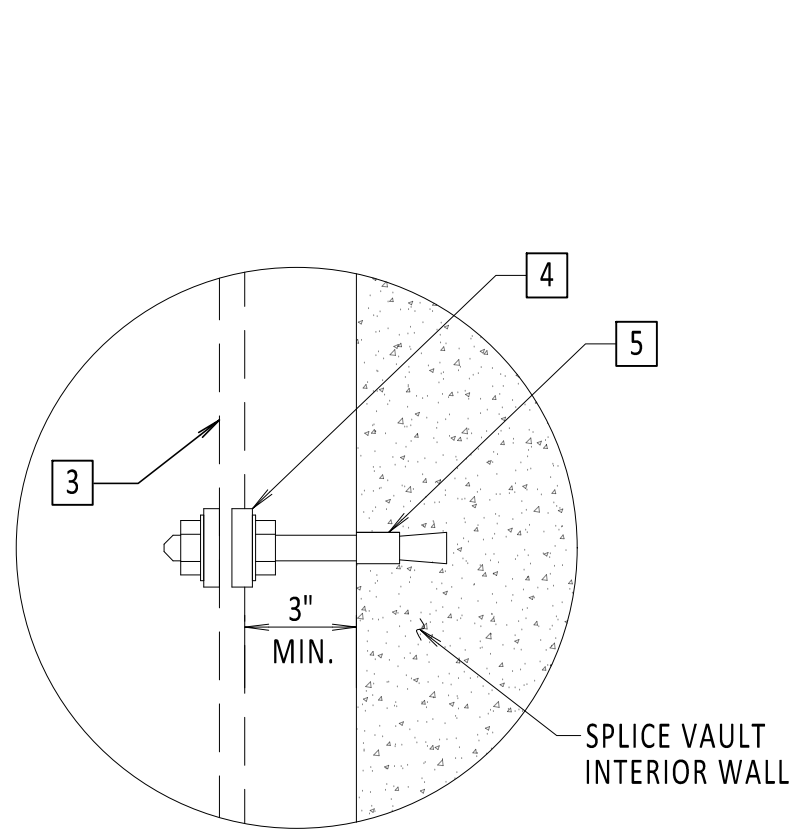
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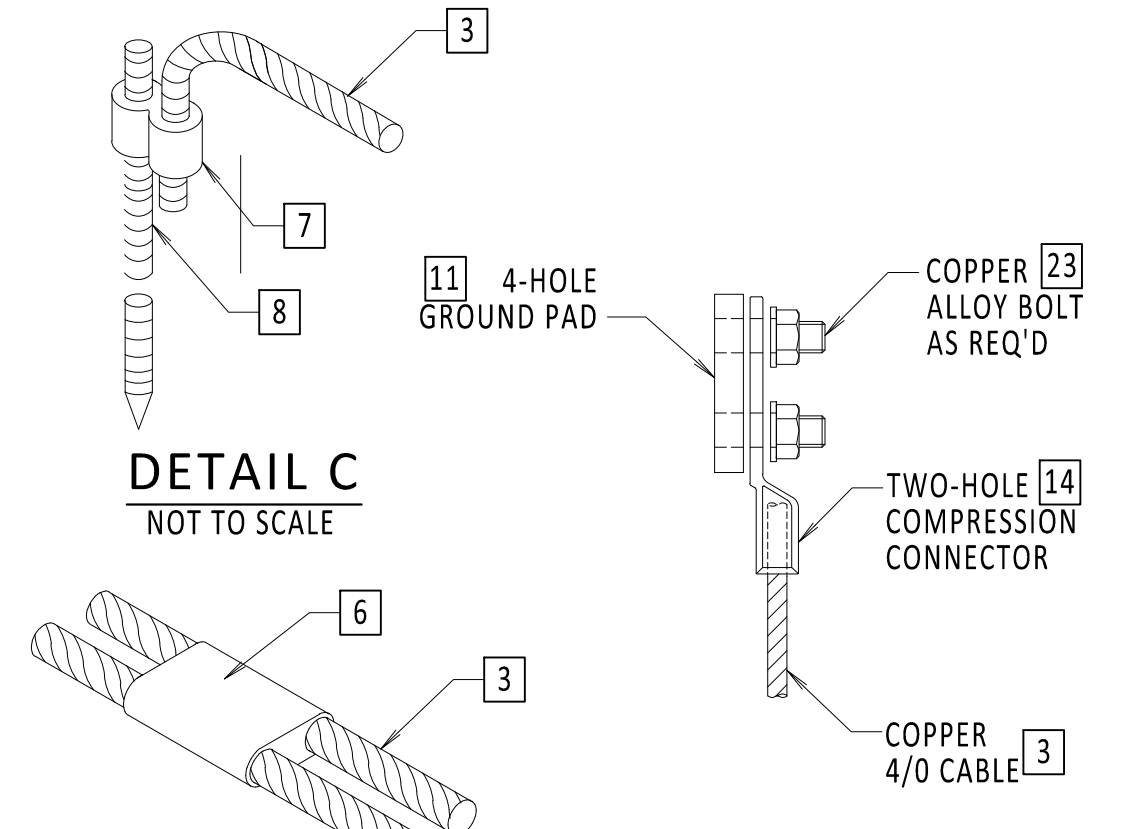
PLAN VIEW
NOT TO SCALE



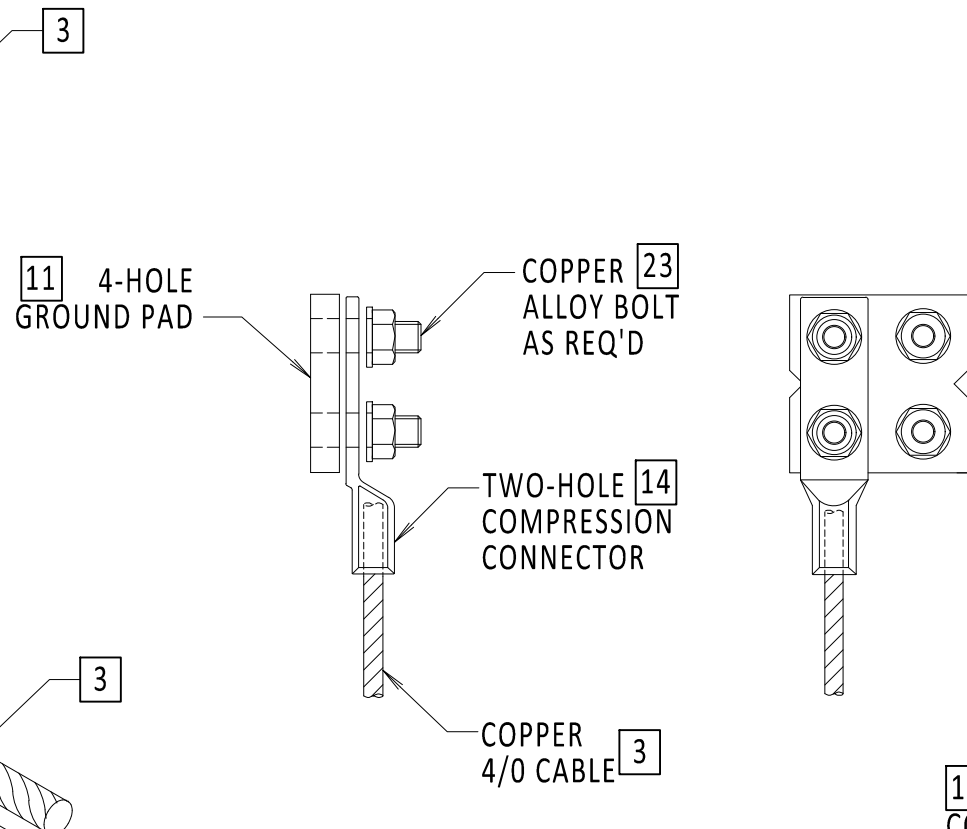
SIDE VIEW
NOT TO SCALE



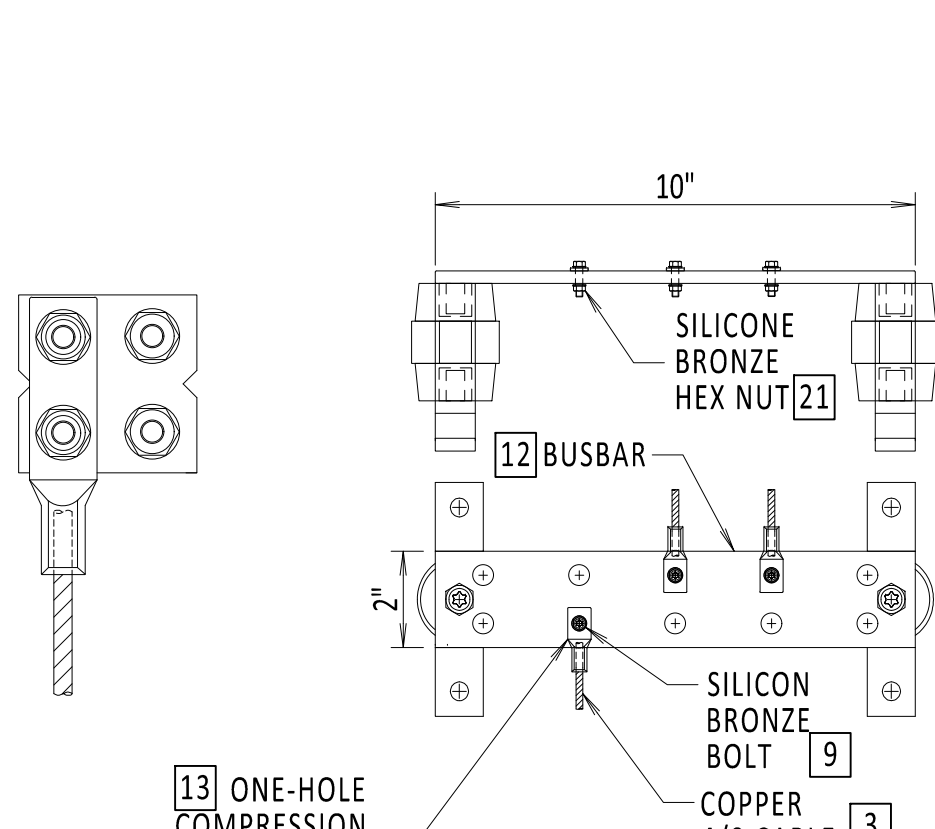
DETAIL A
NOT TO SCALE



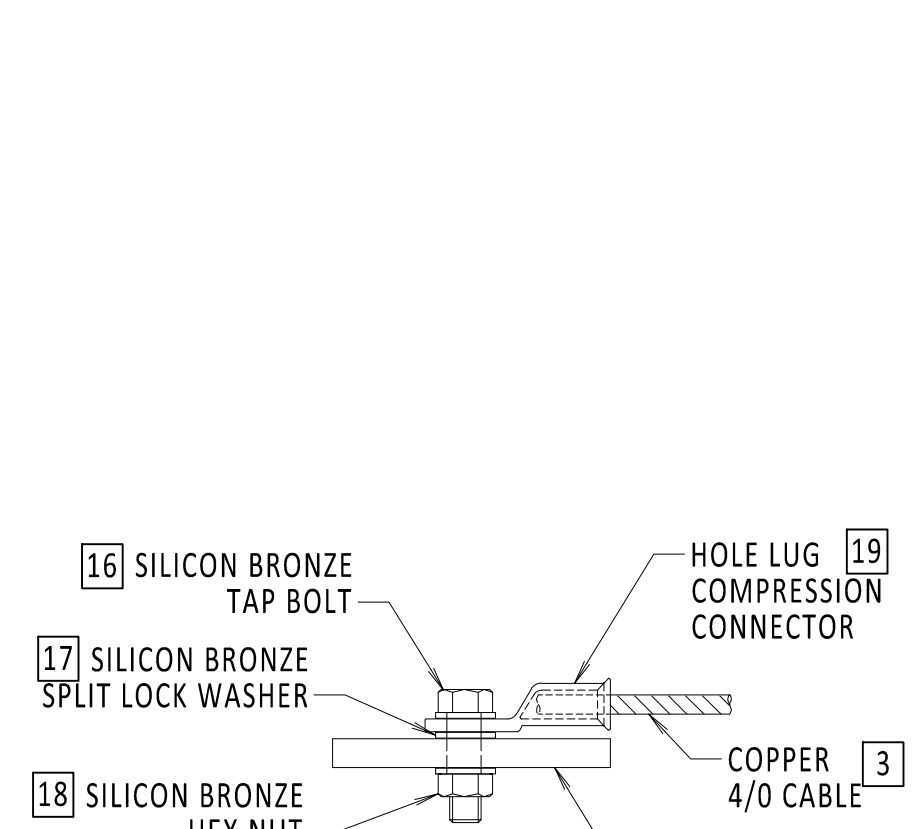
DETAIL B
NOT TO SCALE



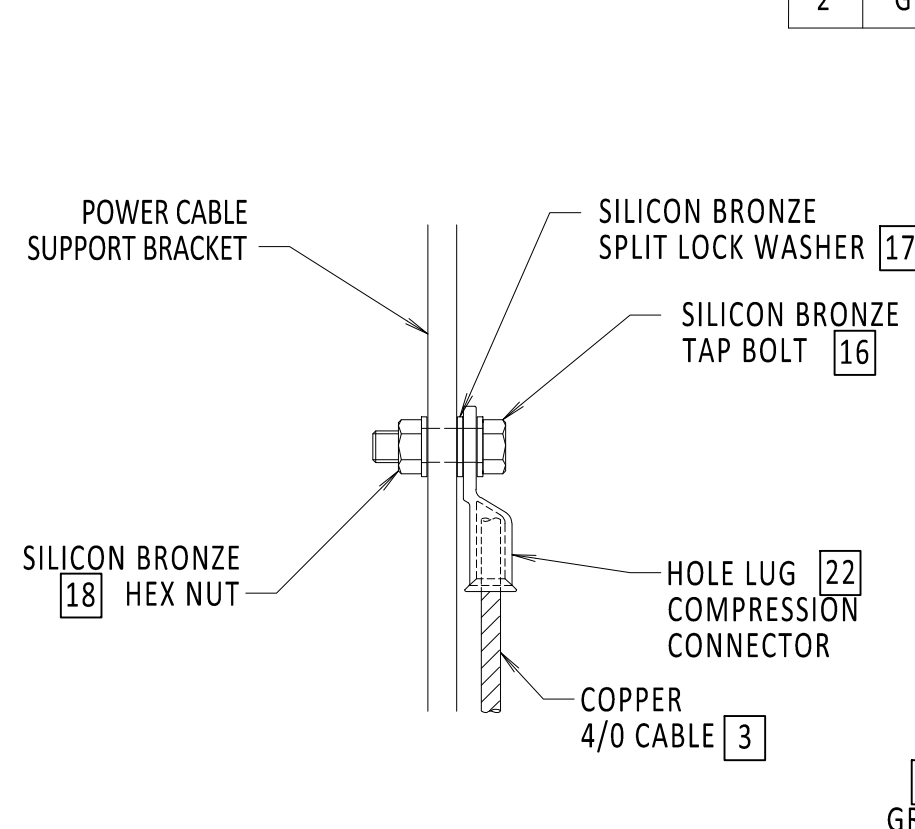
DETAIL D
NOT TO SCALE



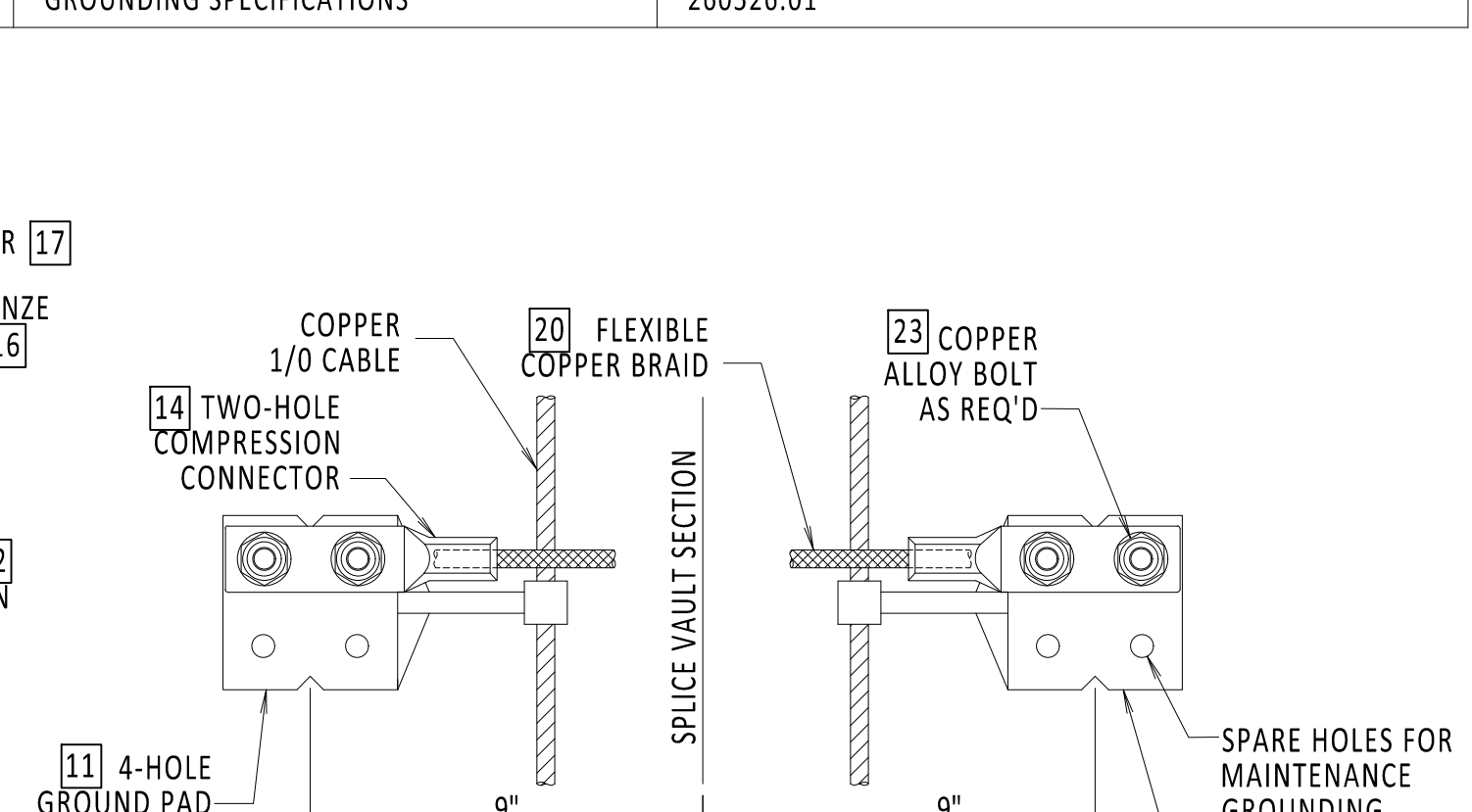
DETAIL E
NOT TO SCALE



DETAIL F
NOT TO SCALE



DETAIL G
NOT TO SCALE



GROUND PLATE CONNECTION DETAIL
NOT TO SCALE

NOTES:

- FOR ADDITIONAL DESIGN PARAMETERS SEE SPECIFICATIONS.
- ALL GROUND CONNECTIONS SHALL BE IRREVERSIBLE COMPRESSION CONNECTION UNLESS OTHERWISE NOTED.
- A BARE COPPER CONDUCTOR GROUND RING SHALL BE FURNISHED AND INSTALLED AND SHALL BE MOUNTED BETWEEN 6" AND 12" ABOVE THE VAULT FINISHED FLOOR AND 3 TO 4 INCHES FROM CENTER OF BARE COPPER CONDUCTOR TO VAULT WALL.
- LINK BOX WILL CONTAIN FOUR DISCONNECTING LINKS, AS PROVIDED BY VENDOR.
- 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.
- FIBER OPTIC HANG-OFF TO INCLUDE MARINE FIBER OPTIC CABLE SLACK STORAGE AND IN-LINE FIBER OPTIC SPLICE. (BY OTHERS)
- ALL SPLICE VAULT SECTIONS TO BE GROUNDED USING GROUND PLATE CONNECTION DETAIL.
- WHERE THERE IS DIFFICULTY INSERTING GROUND RODS DUE TO SOIL CONDITIONS. REFER TO GROUNDING COMPONENTS AND INSTALLATION SPECIFICATION FOR ALTERNATIVE GROUND ROD INSTALLATION METHODS.

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 C CONNECTOR | BURNDY YGHC29C29 | KIEWIT | KIEWIT |
| 7 | COMPRESSION CONNECTION TO GROUND ROD | BURNDY YGHR29C34 | KIEWIT | KIEWIT |
| 8 | 3/4" X 10'-0" GROUND ROD | NVENT ERICO 613400 | KIEWIT | KIEWIT |
| 9 | SILICON HEX HEAD CAP SCREW | STS INDUSTRIAL #HHSB0370075 | KIEWIT | KIEWIT |
| 10 | POLYWATER FST SEALANT | POLYWATER | KIEWIT | KIEWIT |
| 11 | FOUR-HOLE GROUNDING PLATE | BURNDY YGF294N | KIEWIT | KIEWIT |
| 12 | GROUNDING BUSBAR & ASSEMBLY | NVENT ERICO EGBA14210BB | KIEWIT | KIEWIT |
| 13 | ONE HOLE LUG COMPRESSION TERMINAL | BURNDY YAV28L60 | KIEWIT | KIEWIT |
| 14 | TWO HOLE LONG BARREL LUG | BURNDY YA282N | KIEWIT | KIEWIT |
| 15 | UNISTRUT AND SUNDRIES | STAINLESS STEEL | NKT | NKT |
| 16 | SILICON BRONZE TAP BOLT | FASTENAL 74954 | KIEWIT | KIEWIT |
| 17 | SILICON BRONZE SPLIT LOCK WASHER | GRAINGER 1NU94 | KIEWIT | KIEWIT |
| 18 | SILICON BRONZE HEX NUT | GRAINGER 1WE52 | KIEWIT | KIEWIT |
| 19 | HOLE LUG COMPRESSION CONNECTOR | BURNDY YA28 | KIEWIT | KIEWIT |
| 20 | FLEXIBLE COPPER BRAID | BURNDY BD24N | KIEWIT | KIEWIT |
| 21 | SILICON BRONZE HEX NUT | STS INDUSTRIAL #NFSB0370000 | KIEWIT | KIEWIT |
| 22 | COMPRESSION LUG | ABB 120M16-A | KIEWIT | KIEWIT |
| 23 | 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-730 |
| 2 | GROUNDING SPECIFICATIONS | 260526.01 |



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 |

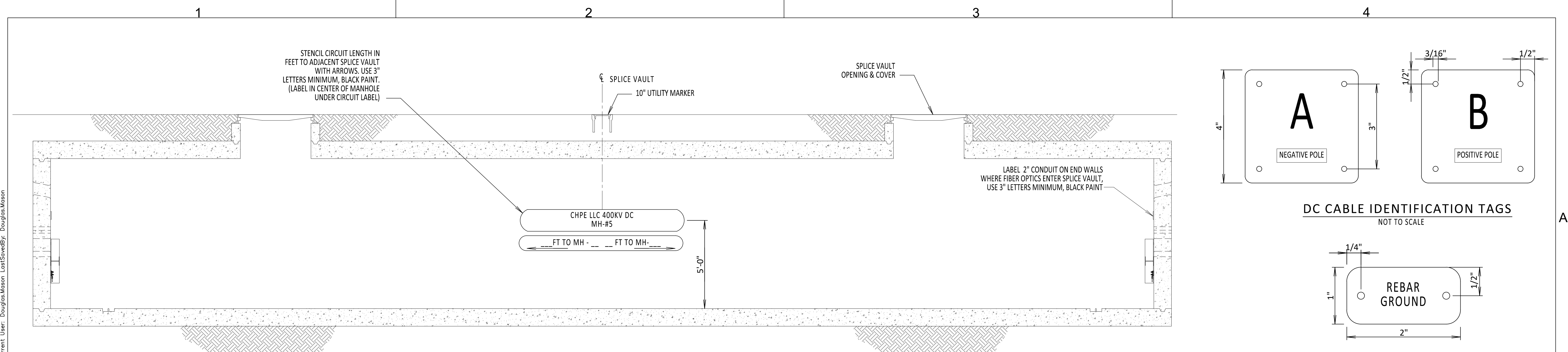
CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT
GROUNDING DETAILS

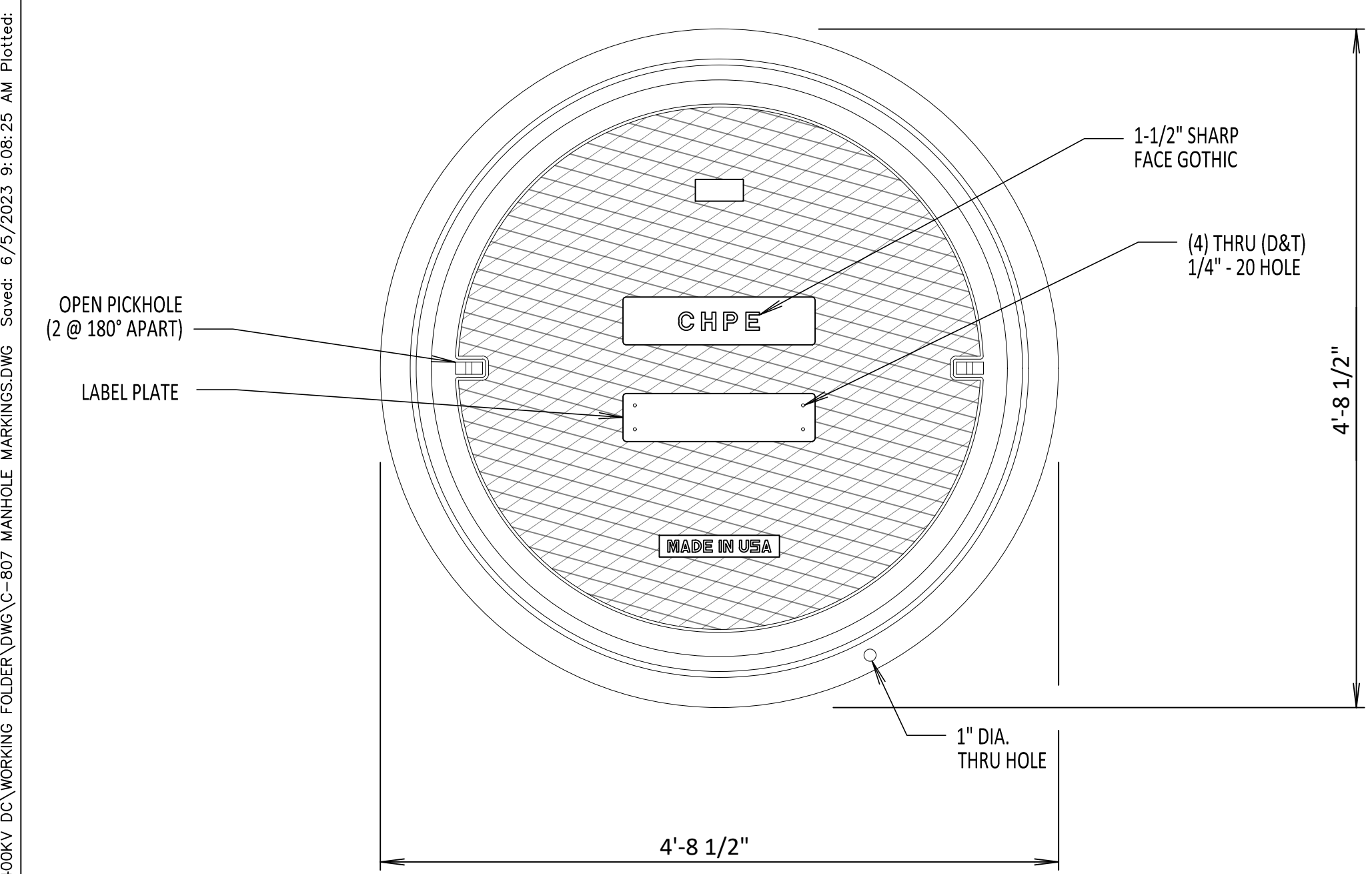
DRAWN BY: KMG DESIGNED BY: SD APPROVED BY: ASM SCALE: NOT TO SCALE DATE: 06/08/2023

| | |
|--------------------|------------|
| KIEWIT PROJECT NO. | 21162 |
| CHA PROJECT NO. | 066076 |
| DRAWING NO. | C-806 |
| DATE | 06/08/2023 |
| SH.NO. | OF |

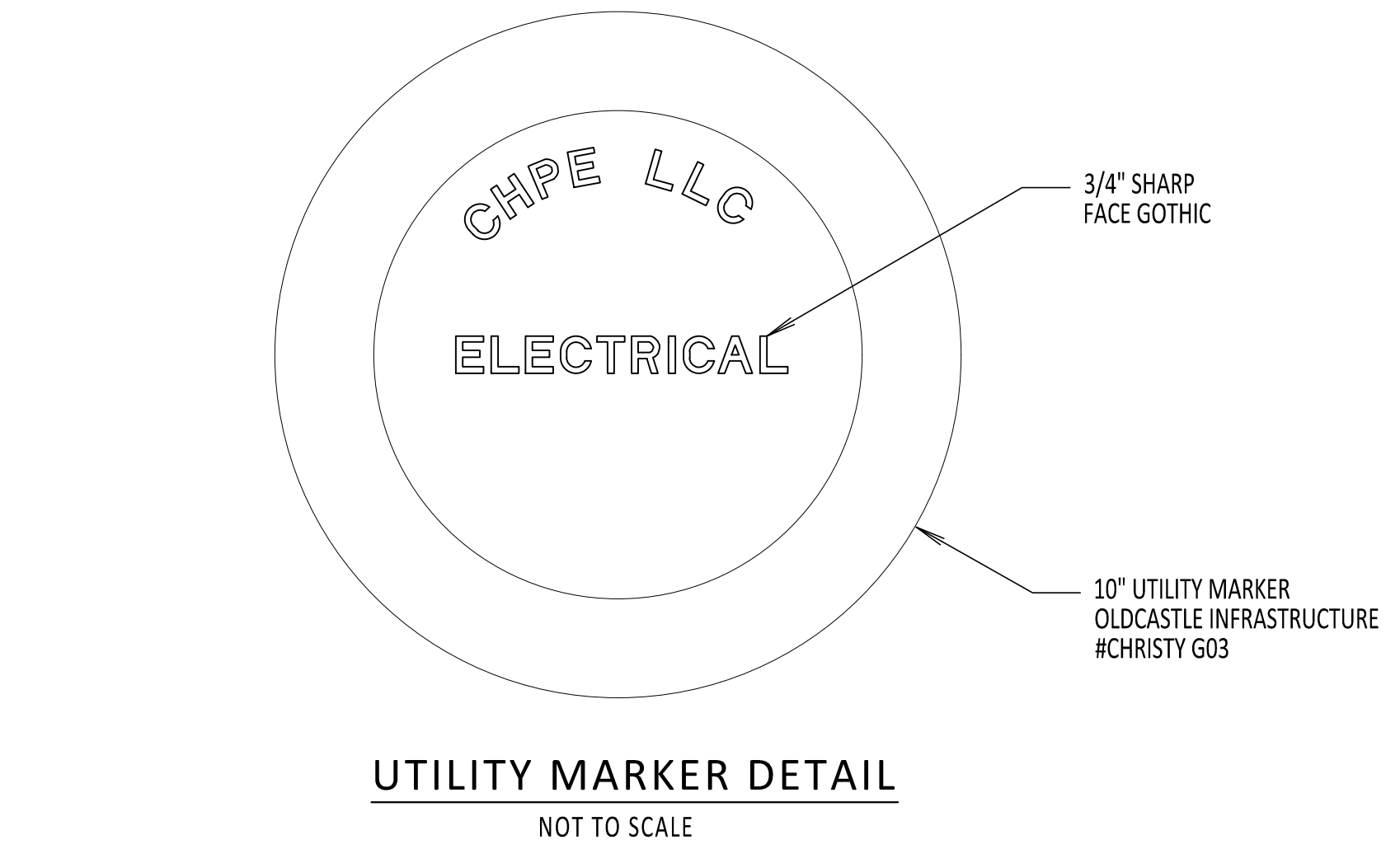
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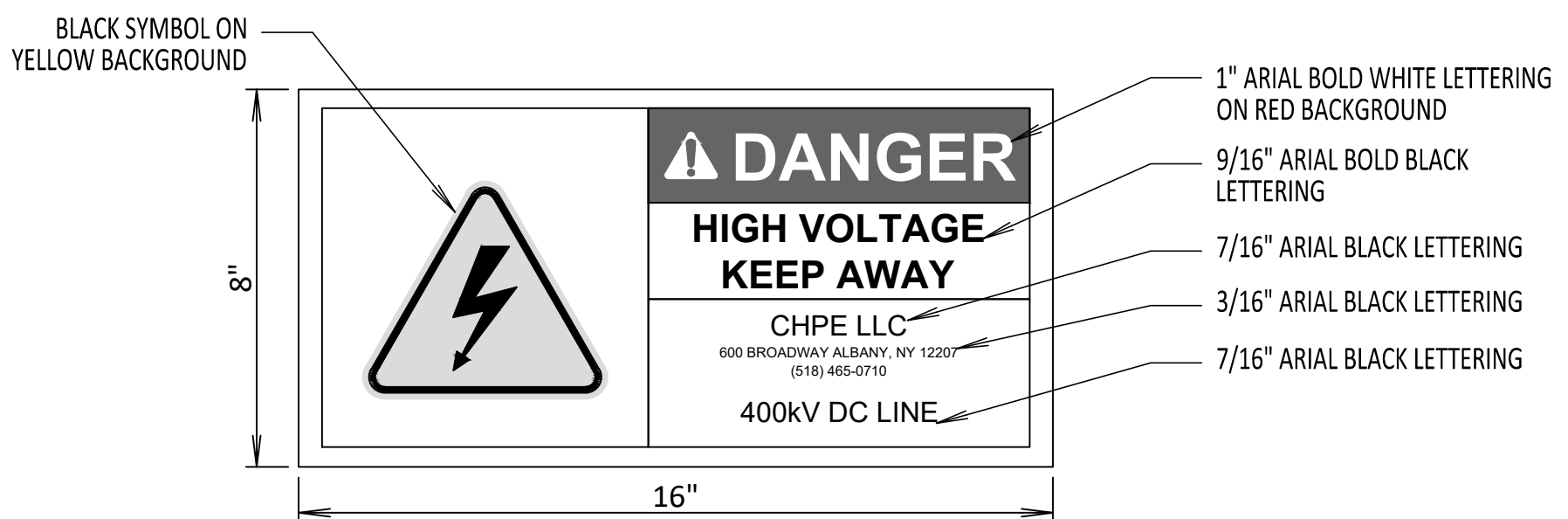
INSIDE SPLICE VAULT
NOT TO SCALE



SPLICE VAULT LID MARKINGS PLAN VIEW
NOT TO SCALE

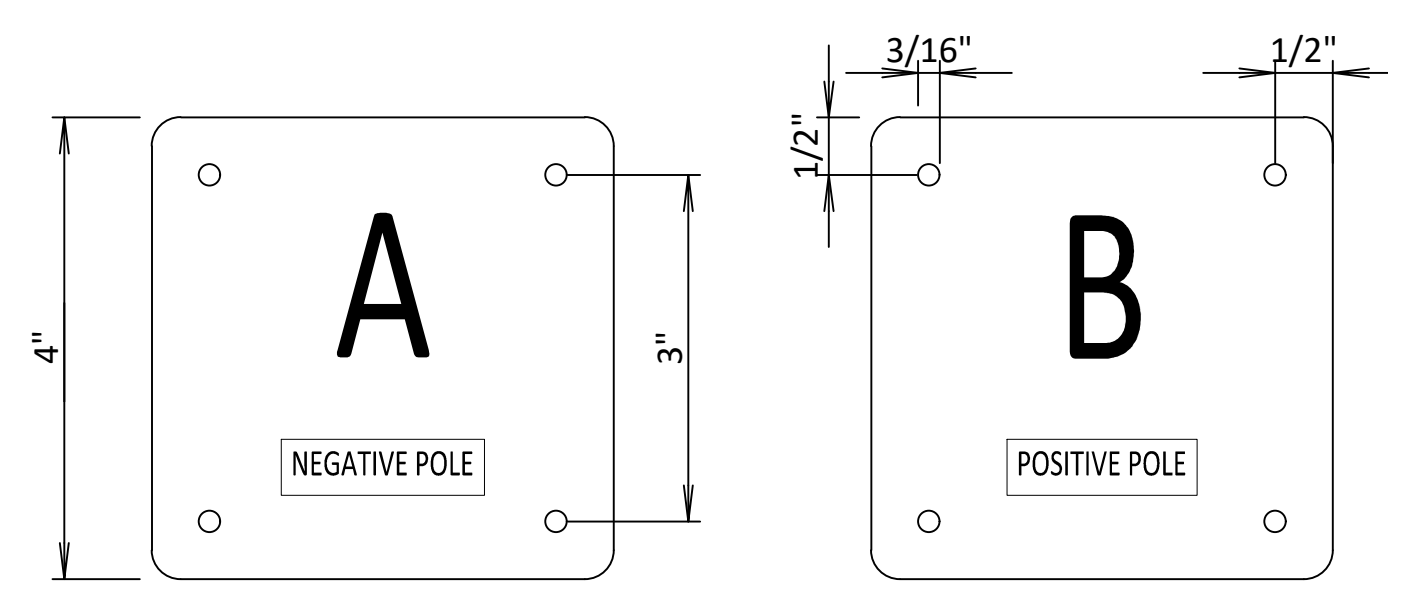


UTILITY MARKER DETAIL
NOT TO SCALE

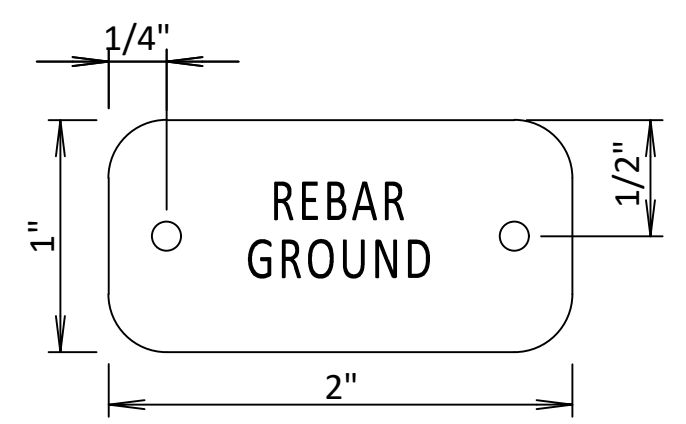


DETAIL 1 - CABLE TRAY WARNING LABEL
NOT TO SCALE

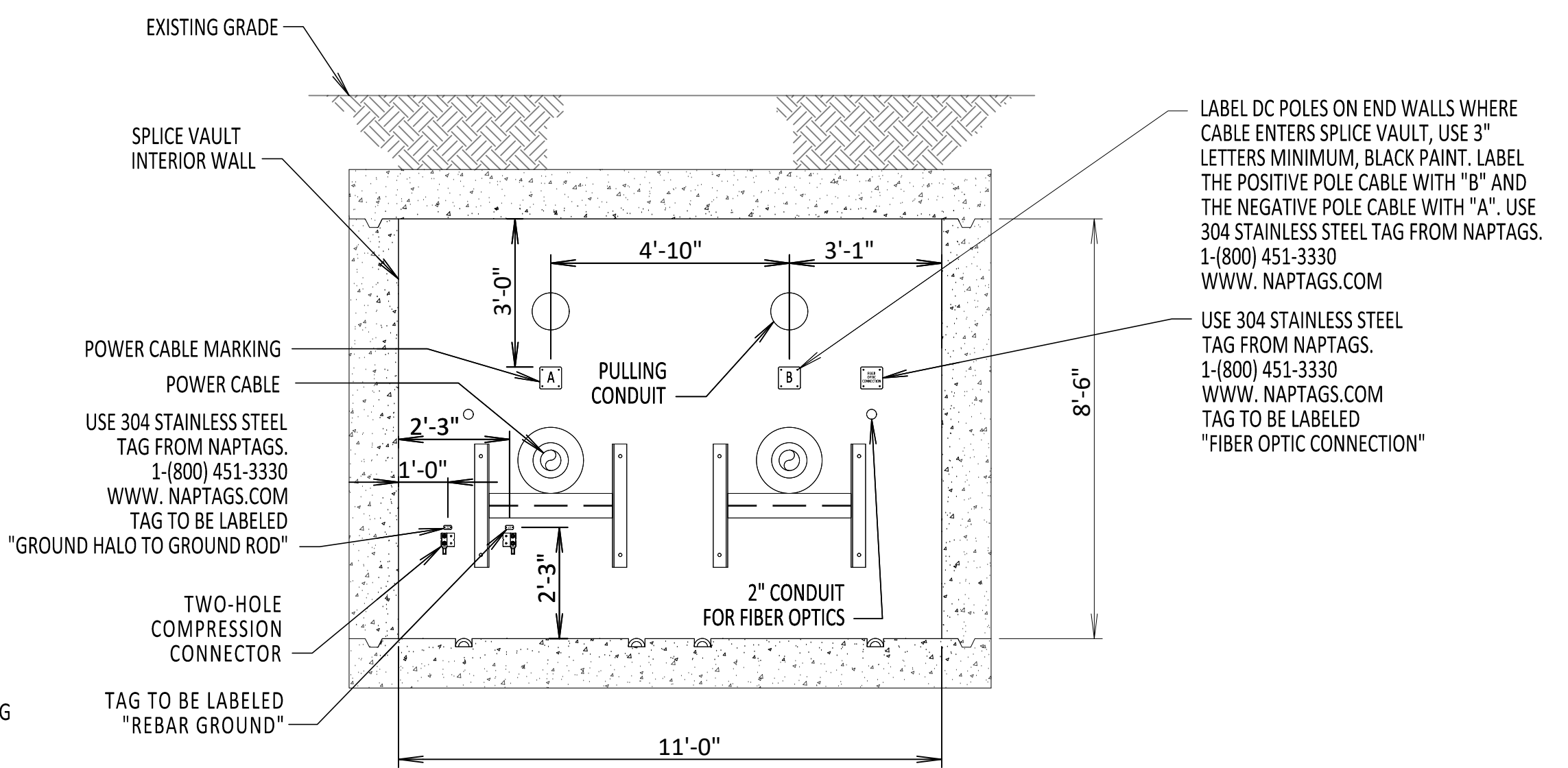
NOTE:
1. AFFIX DETAIL 1 LABEL TO THE CABLE TRAY BRIDGE ATTACHMENT AND AT 10-FOOT INTERVALS ALONG THE ENTIRE LENGTH OF THE CABLE TRAY ON THE BRIDGE



DC CABLE IDENTIFICATION TAGS
NOT TO SCALE




IDENTIFICATION TAGS
NOT TO SCALE




INSIDE ENDWALL VIEW
NOT TO SCALE


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



Champlain Hudson Power Express



Kiewit



DONGKAI CHEN
106996
LICENSED PROFESSIONAL ENGINEER

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

CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT AND CABLE MARKING DETAILS

| | | | | | | | |
|-----------|-----|--------------|----|--------------|-----|-------|----------|
| DRAWN BY: | DLM | DESIGNED BY: | SD | APPROVED BY: | ASM | SCALE | REV. NO. |
| | | | | | | | 0 |

KIEWIT PROJECT NO. 21162

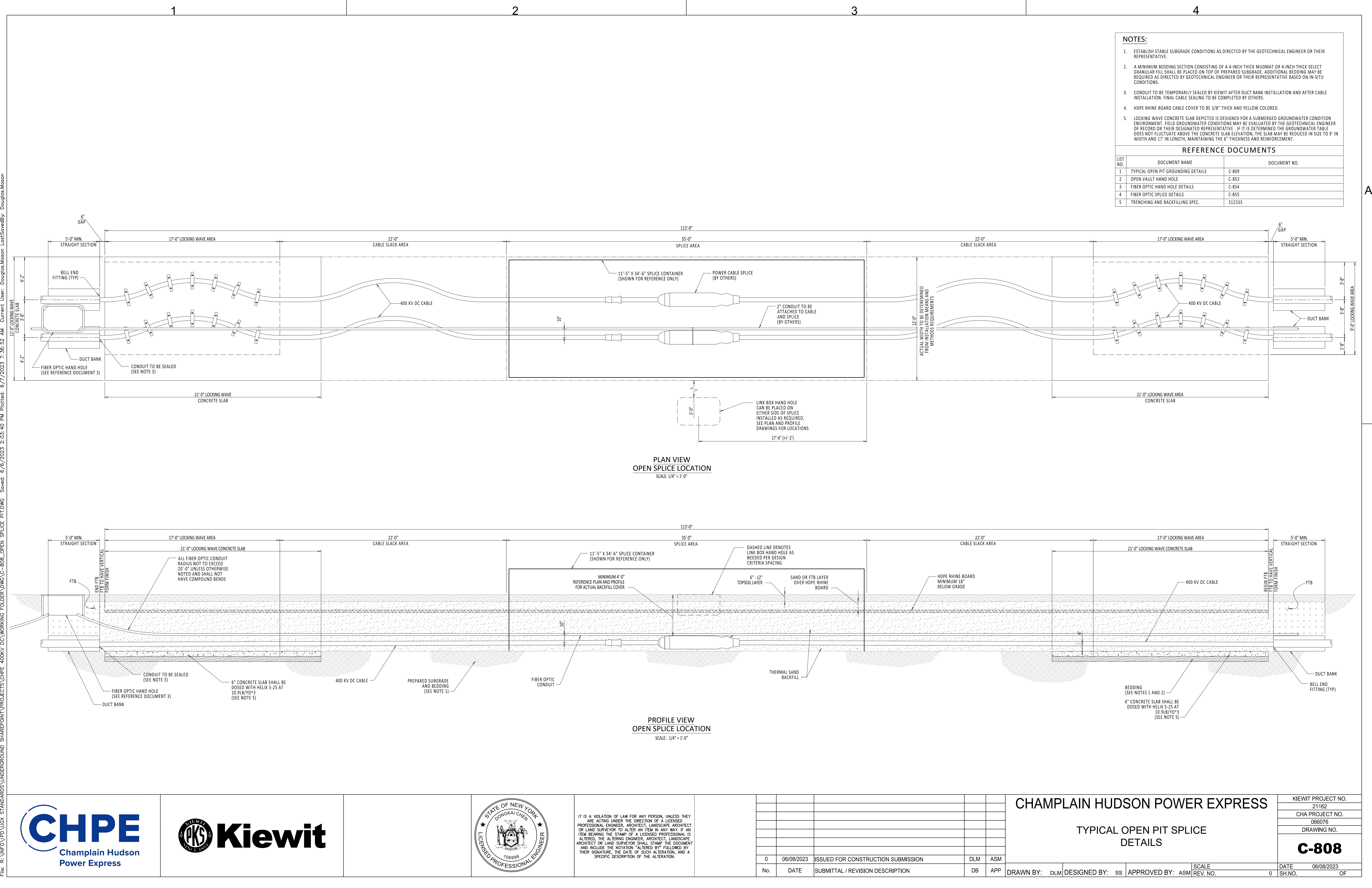
CHA PROJECT NO. 066076

DRAWING NO. **C-807**

DATE 06/08/2023

SH.NO. OF

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CHPE

Champlain Hudson Power Express

PKS

Kiewit

STATE OF NEW YORK

DONGKAI CHEN

106996

LICENSED 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.

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

DRAWN BY:

DLM

DESIGNED BY:

ss

APPROVED BY:

ASM

SCALE

REV. NO.

0

CHAMPLAIN HUDSON POWER EXPRESS

TYPICAL OPEN PIT SPLICE DETAILS

KIEWIT PROJECT NO.

21162

CHA PROJECT NO.

066076

DRAWING NO.

C-808

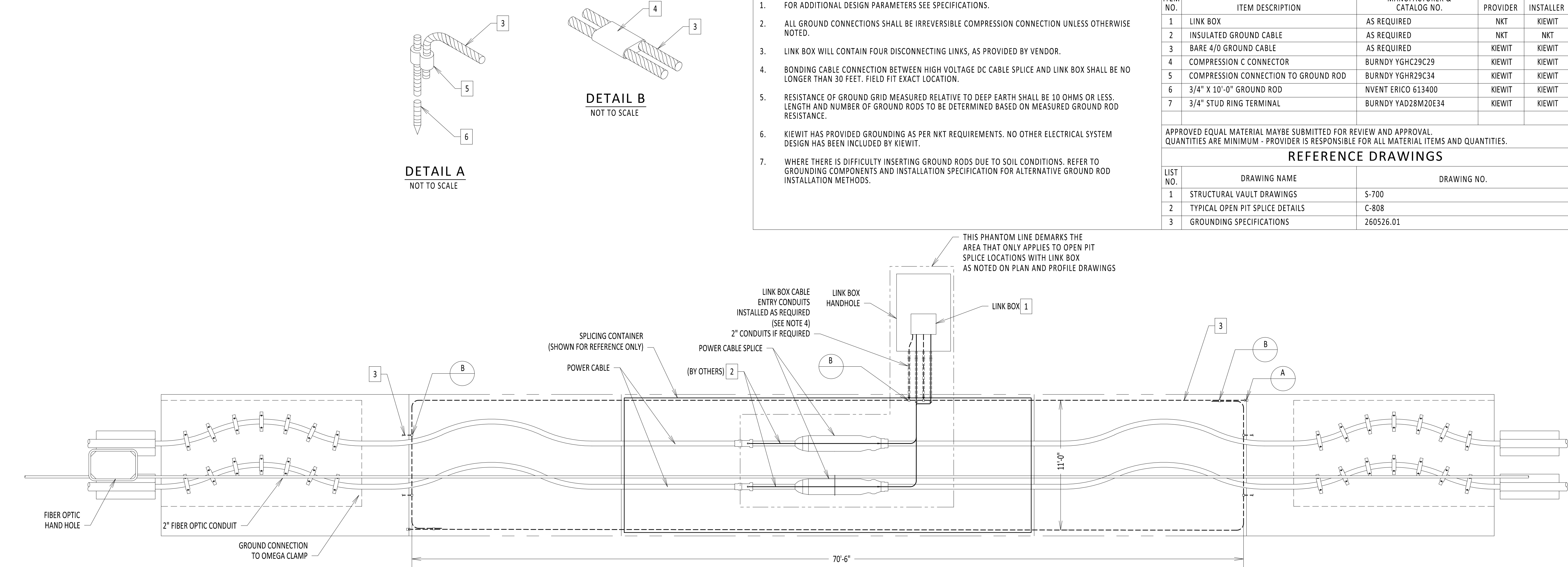
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06/08/2023

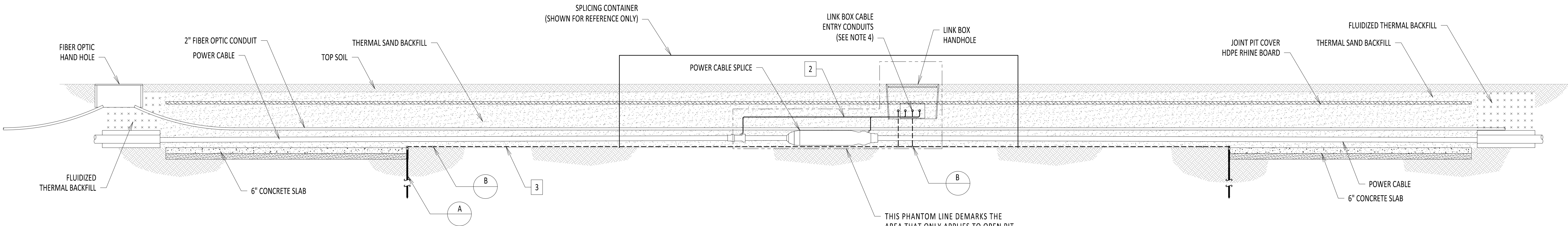
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OF

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SPLICE LOCATION GROUNDING PLAN VIEW
NOT TO SCALE



SPLICE LOCATION GROUNDING ELEVATION
NOT TO SCALE



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

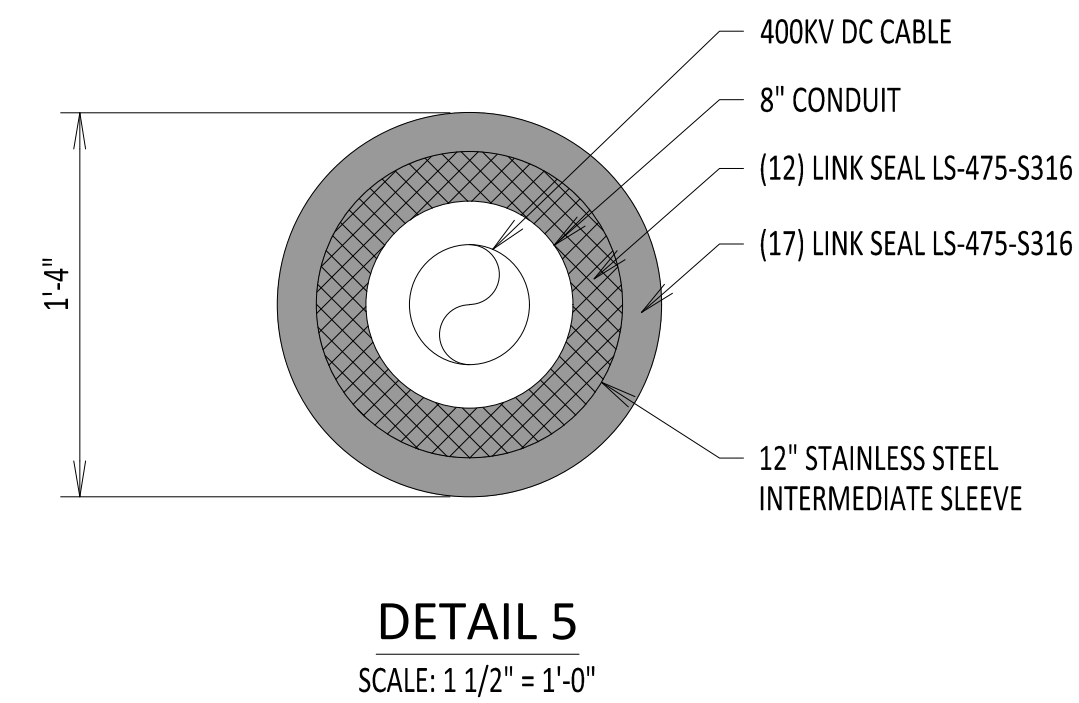
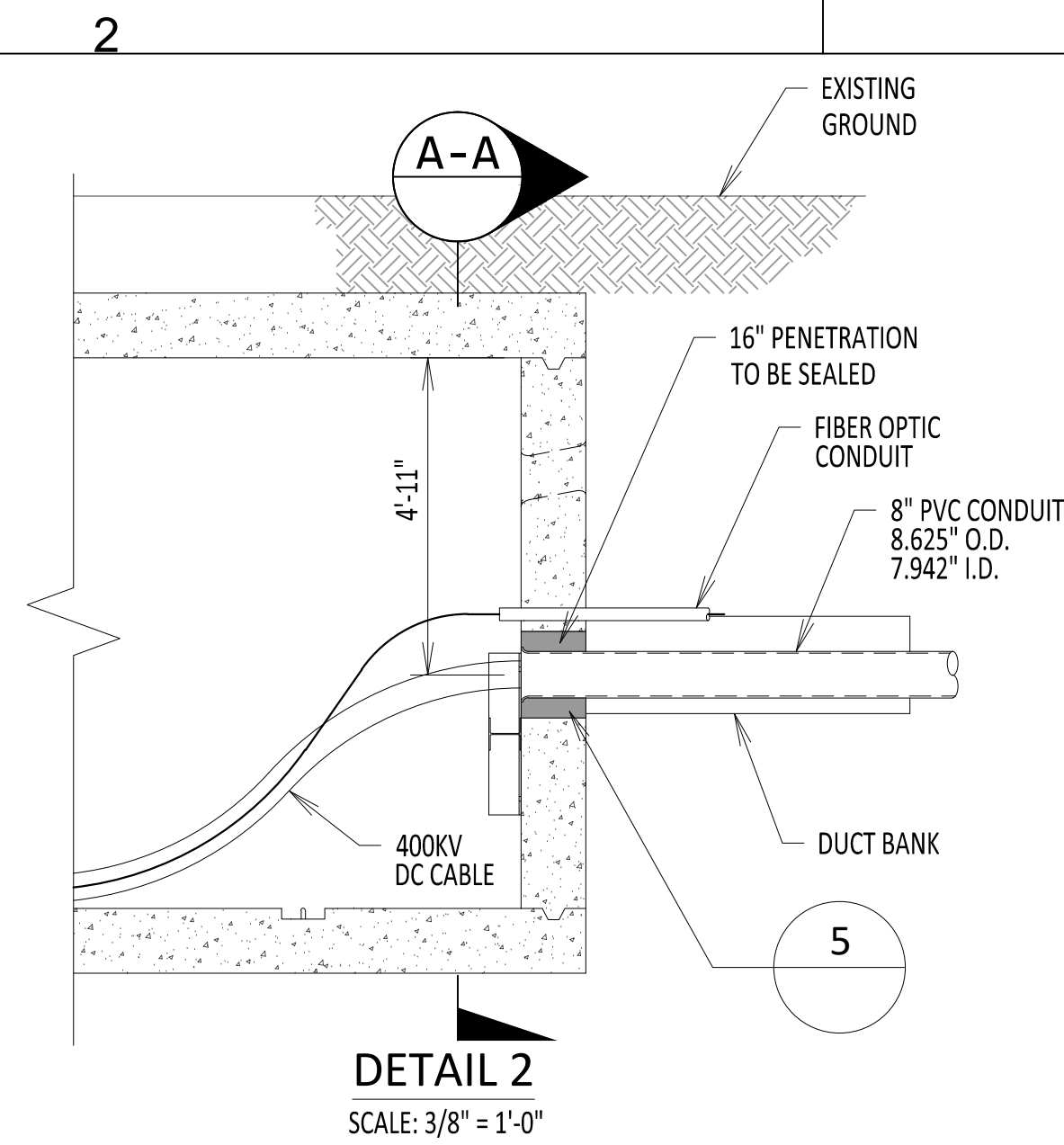
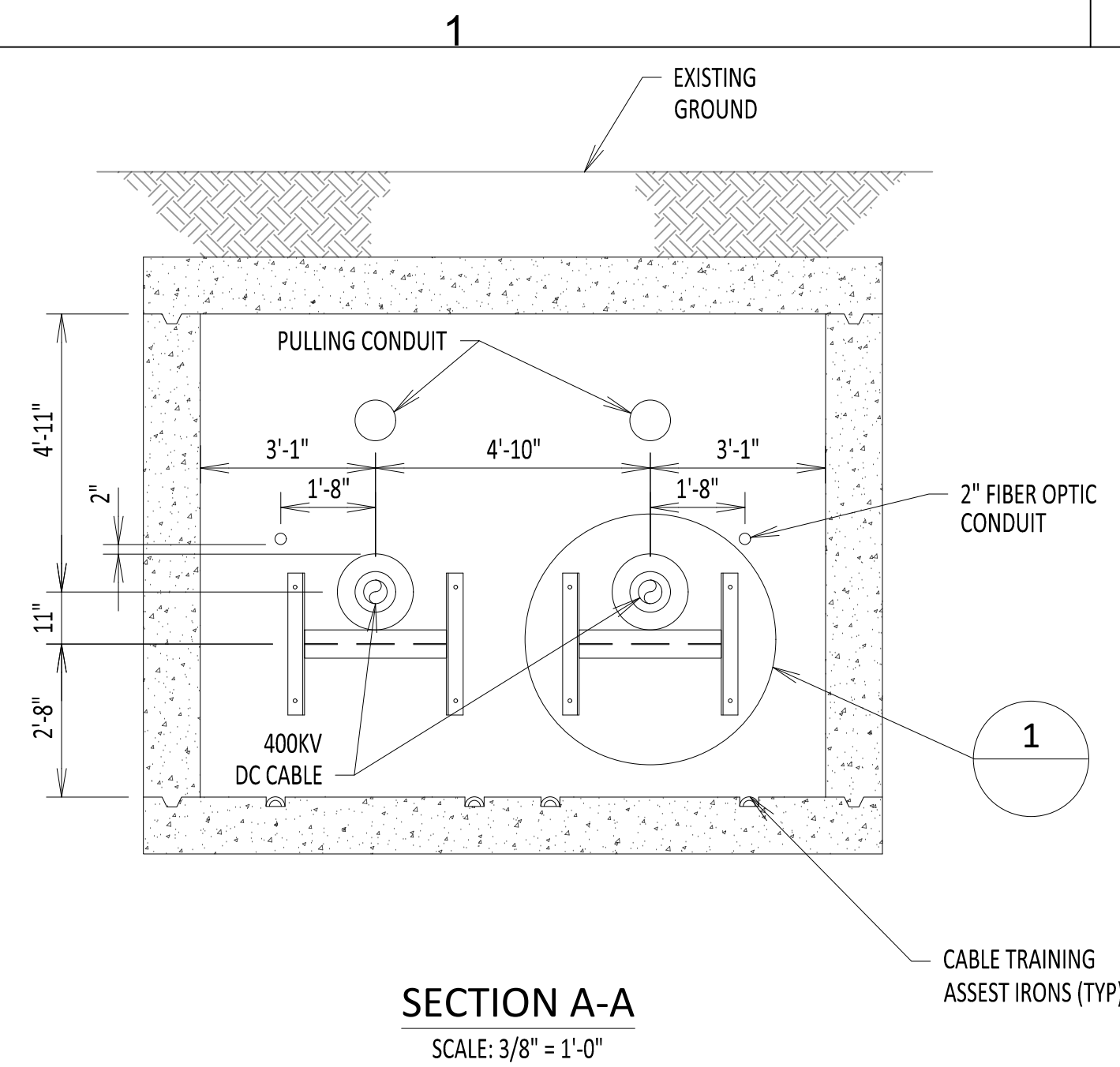
CHAMPLAIN HUDSON POWER EXPRESS

OPEN PIT SPLICE
GROUNDING DETAILS


| | | | | |
|-----------|-----------------|------------------|---------------------|------------------|
| DRAWN BY: | DESIGNED BY: SD | APPROVED BY: ASM | SCALE: NOT TO SCALE | DATE: 06/08/2023 |
| | | | REV. NO. 0 | SH.NO. OF |

| | |
|--------------------|------------|
| KIEWIT PROJECT NO. | 21162 |
| CHA PROJECT NO. | 066076 |
| DRAWING NO. | C-809 |
| DATE | 06/08/2023 |
| SH.NO. | OF |

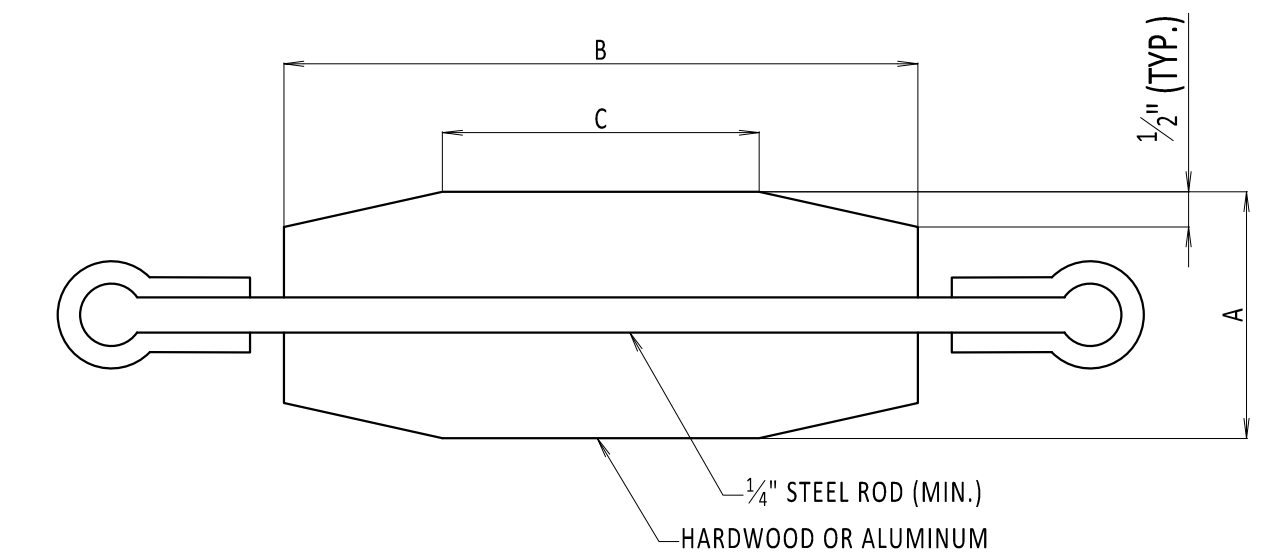
Profile to Location Grounding Elevation



NOTE:

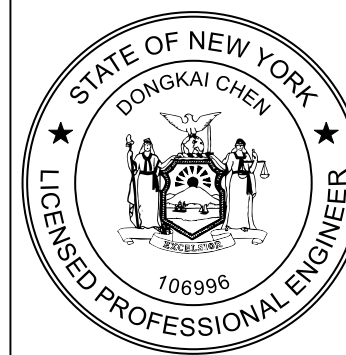
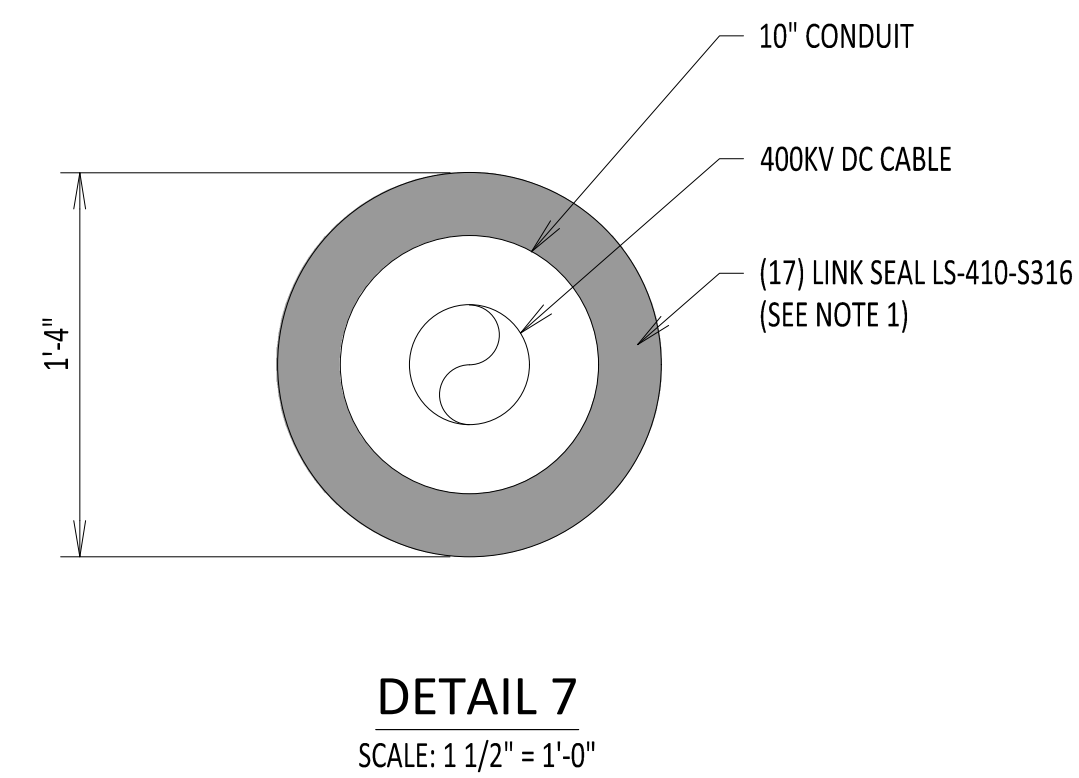
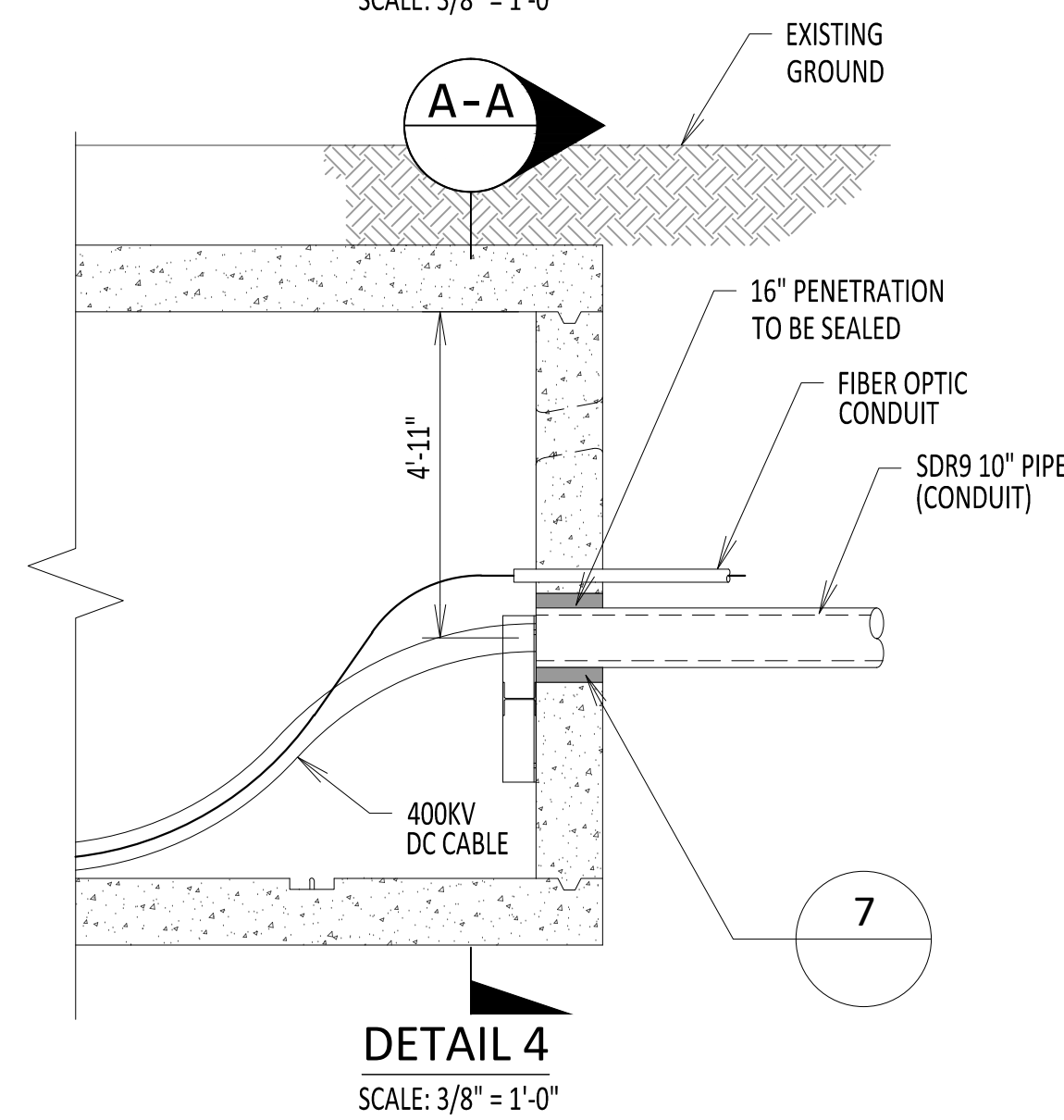
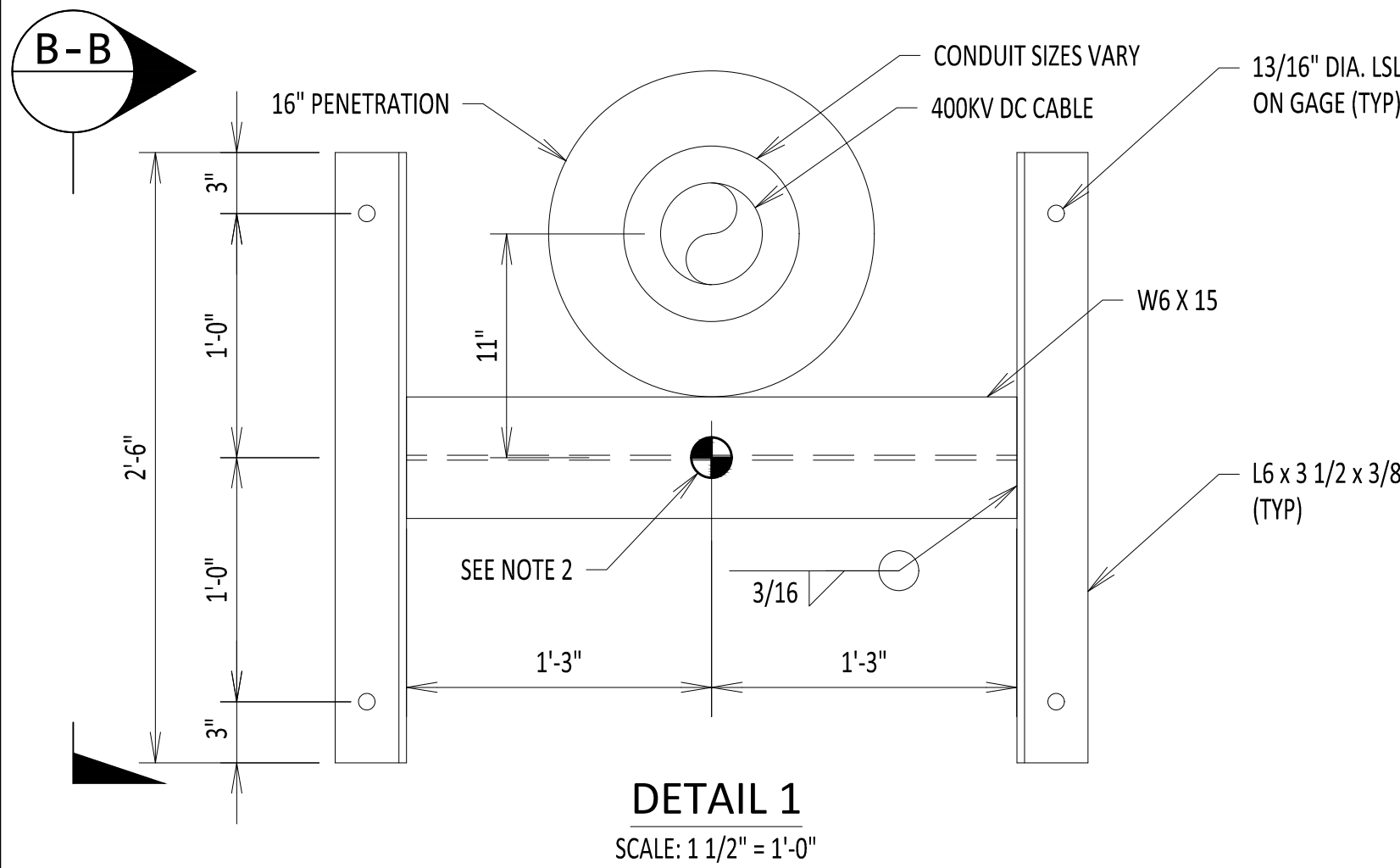
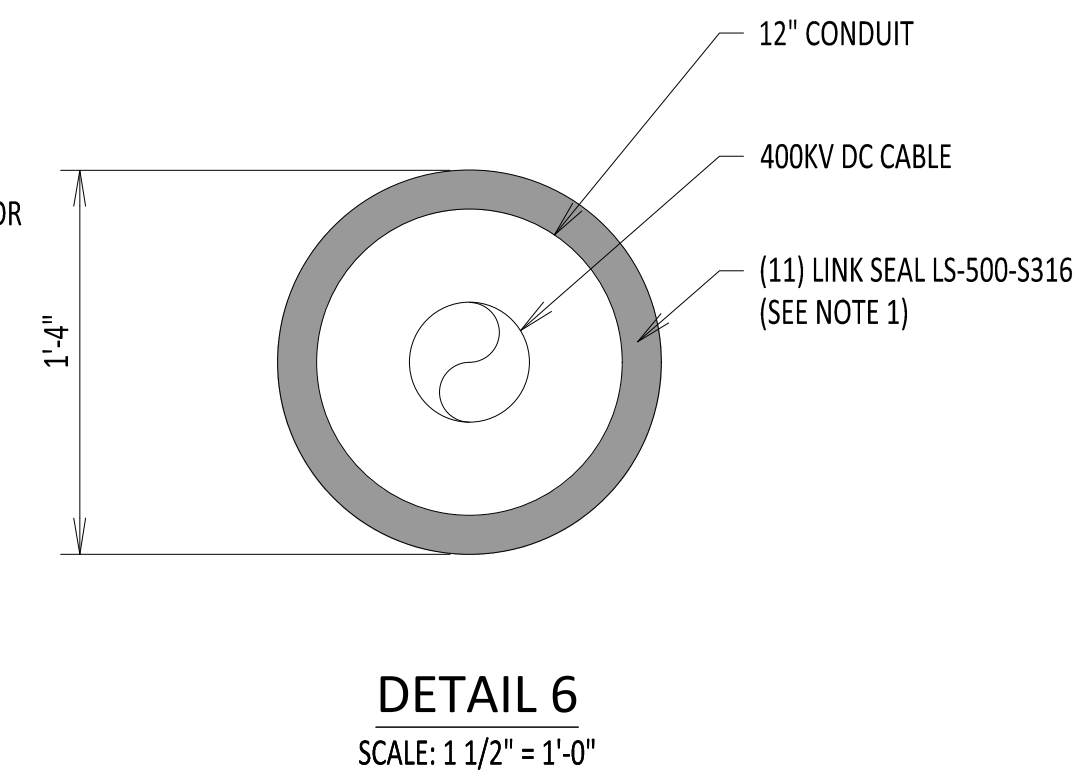
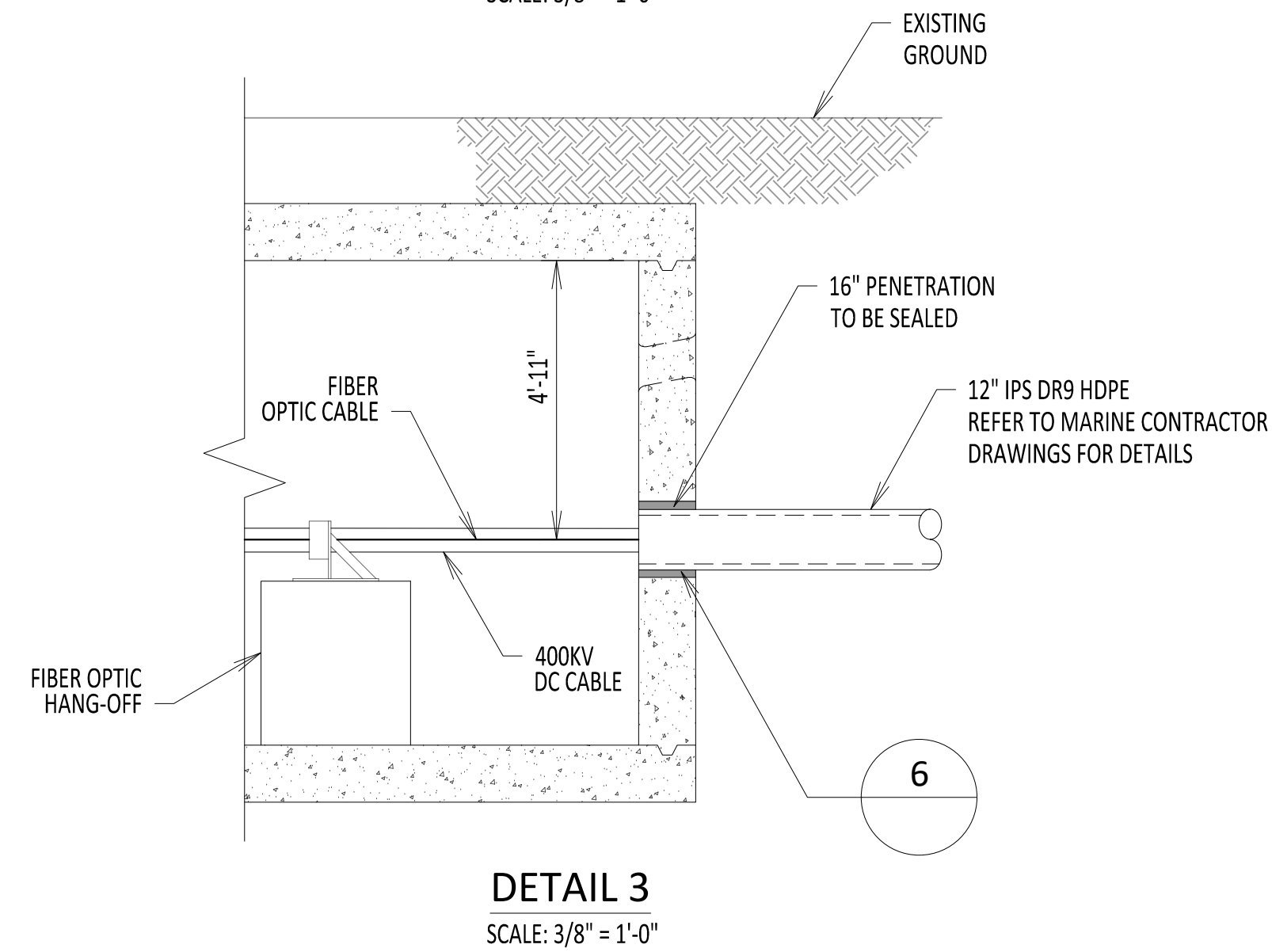
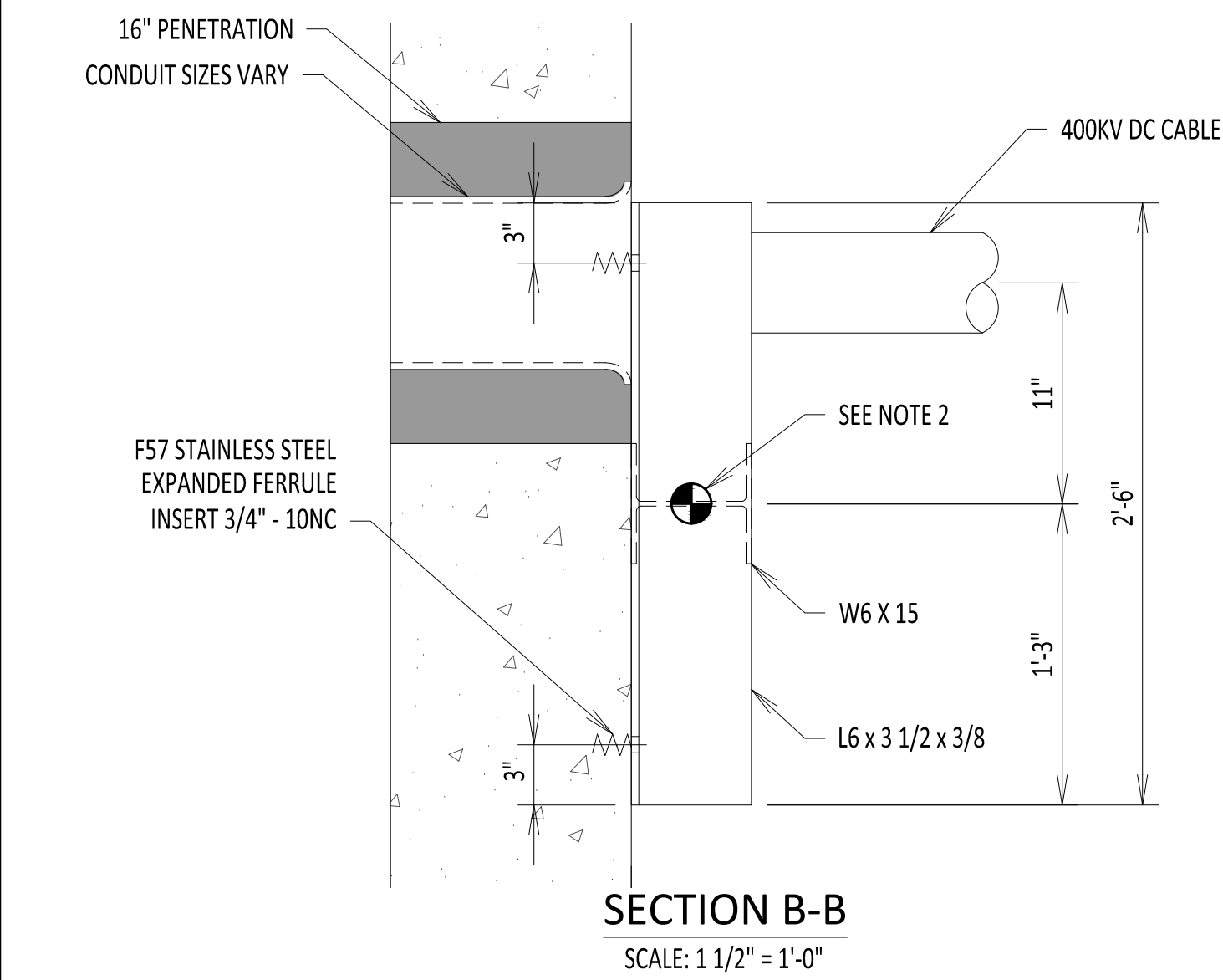
1. NUMBER OF LINK SEAL WILL VARY WHEN APPLYING TO 10" CONDUIT AND 12" CONDUIT.
2.  INDICATES LOCATION OF ATTACHMENT. END WALL CABLE CLAMP (BY OTHERS) TO BE ATTACHED CENTERED ON W6 WEB. CABLE AXIAL LOAD SHALL NOT EXCEED 9KIPS (ULTIMATE).

| MANDREL SIZE DATA TABLE | | | | | | | | |
|-------------------------|------|----------------------|------------------------|--------------|--------------|--------------|-------|-----|
| CONDUIT INFORMATION | | | | | | MANDREL DIM. | | |
| CONDUIT TYPE | SCH. | NOMINAL CONDUIT SIZE | MINIMUM CONDUIT RADIUS | CONDUIT O.D. | CONDUIT I.D. | A | B | C |
| PVC | 40 | 8" | 8'-0" | 8.625" | 7.942" | 7.481" | 18.5" | 10" |
| PVC | 40 | 8" | 10'-0" | 8.625" | 7.942" | 7.481" | 20.5" | 11" |
| PVC | 40 | 8" | 12'-0" | 8.625" | 7.942" | 7.481" | 22.5" | 12" |
| HDPE | DR7 | 10" | 8'-0" | 10.75" | 7.49" | 7.481" | 18.5" | 10" |
| HDPE | DR7 | 10" | 10'-0" | 10.75" | 7.49" | 7.481" | 20.5" | 11" |
| HDPE | DR7 | 10" | 12'-0" | 10.75" | 7.49" | 7.481" | 22.5" | 12" |
| HDPE | DR9 | 10" | 8'-0" | 10.75" | 8.22" | 7.481" | 18.5" | 10" |
| HDPE | DR9 | 10" | 10'-0" | 10.75" | 8.22" | 7.481" | 20.5" | 11" |
| HDPE | DR9 | 10" | 12'-0" | 10.75" | 8.22" | 7.481" | 22.5" | 12" |
| FRE | - | 8" | 8'-0" | 8.9" | 8.4" | 7.481" | 18.5" | 10" |
| FRE | - | 8" | 10'-0" | 8.9" | 8.4" | 7.481" | 20.5" | 11" |
| FRE | - | 8" | 12'-0" | 8.9" | 8.4" | 7.481" | 22.5" | 12" |



TYPICAL MANDREL DETAIL

NOT TO SCALE



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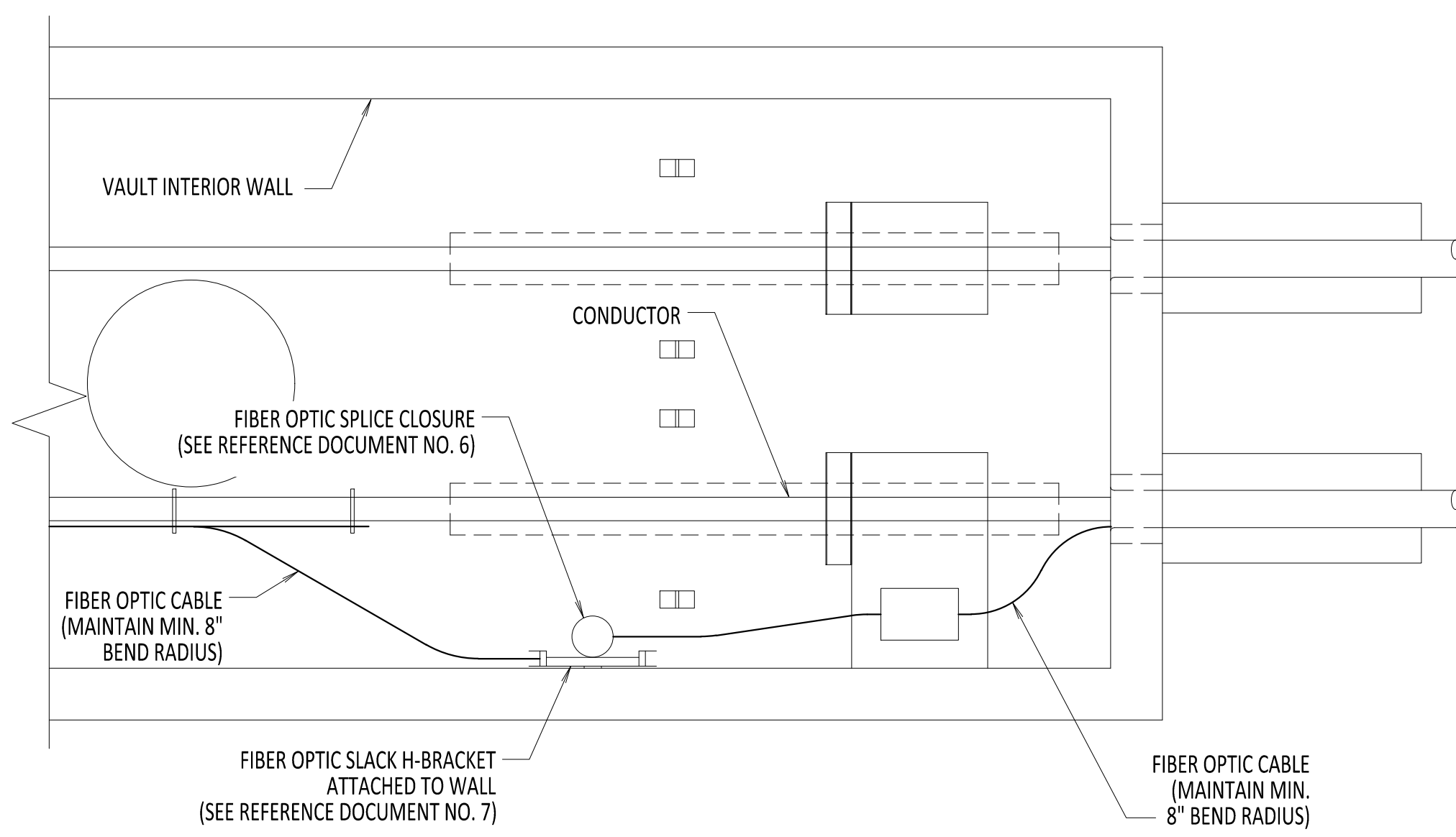
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| 0 | 06/08/2023 | ISSUED FOR CONSTRUCTION SUBMISSION | DLM | ASR |
| No. | DATE | SUBMITTAL / REVISION DESCRIPTION | DB | APP |

CHAMPLAIN HUDSON POWER EXPRESS

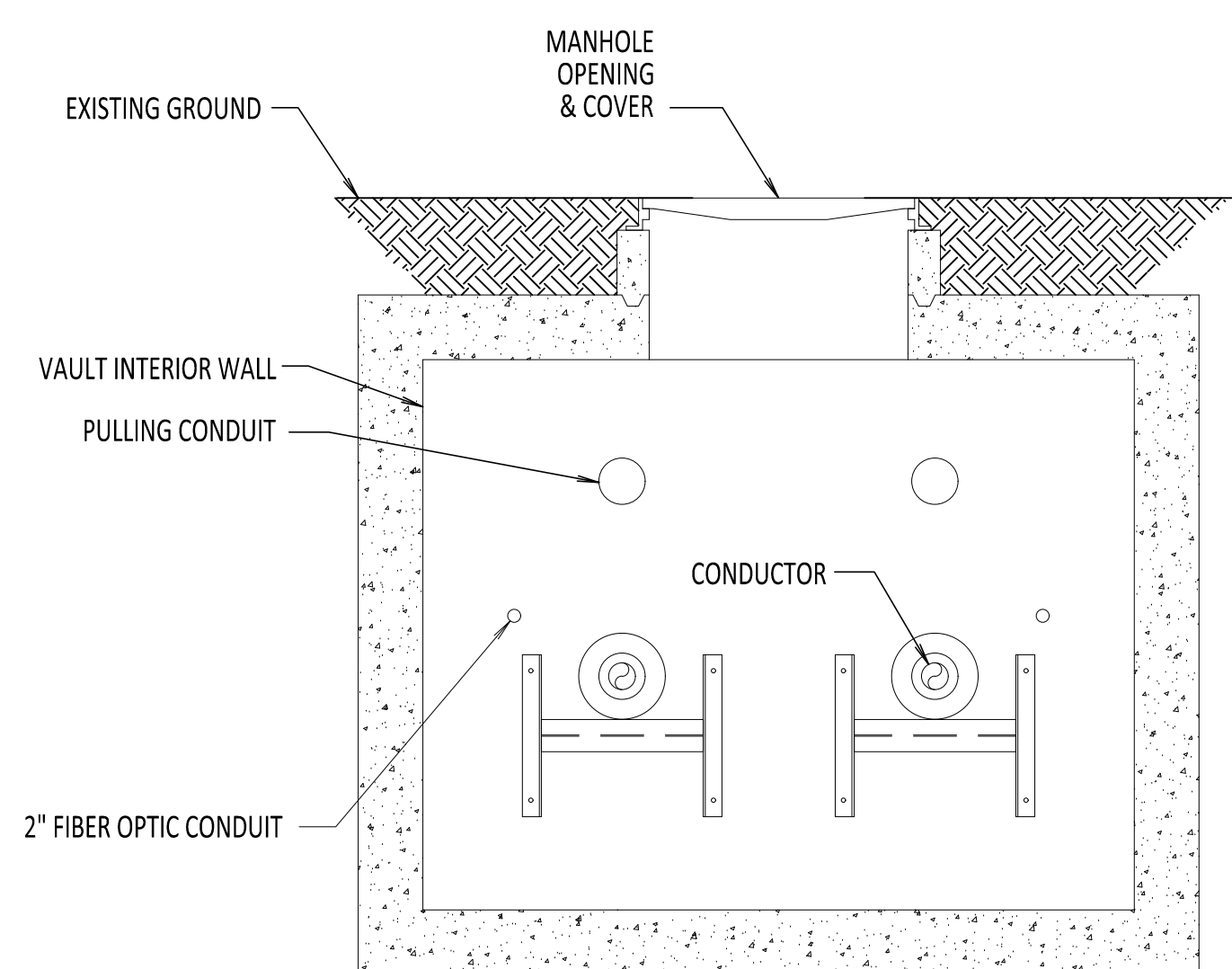
VAULT CONNECTION DETAILS

| | |
|--------------------|------------|
| KIEWIT PROJECT NO. | |
| 21162 | |
| CHA PROJECT NO. | |
| 066076 | |
| DRAWING NO. | |
| C-812 | |
| DATE | 06/08/2023 |
| BY NO. | OF |

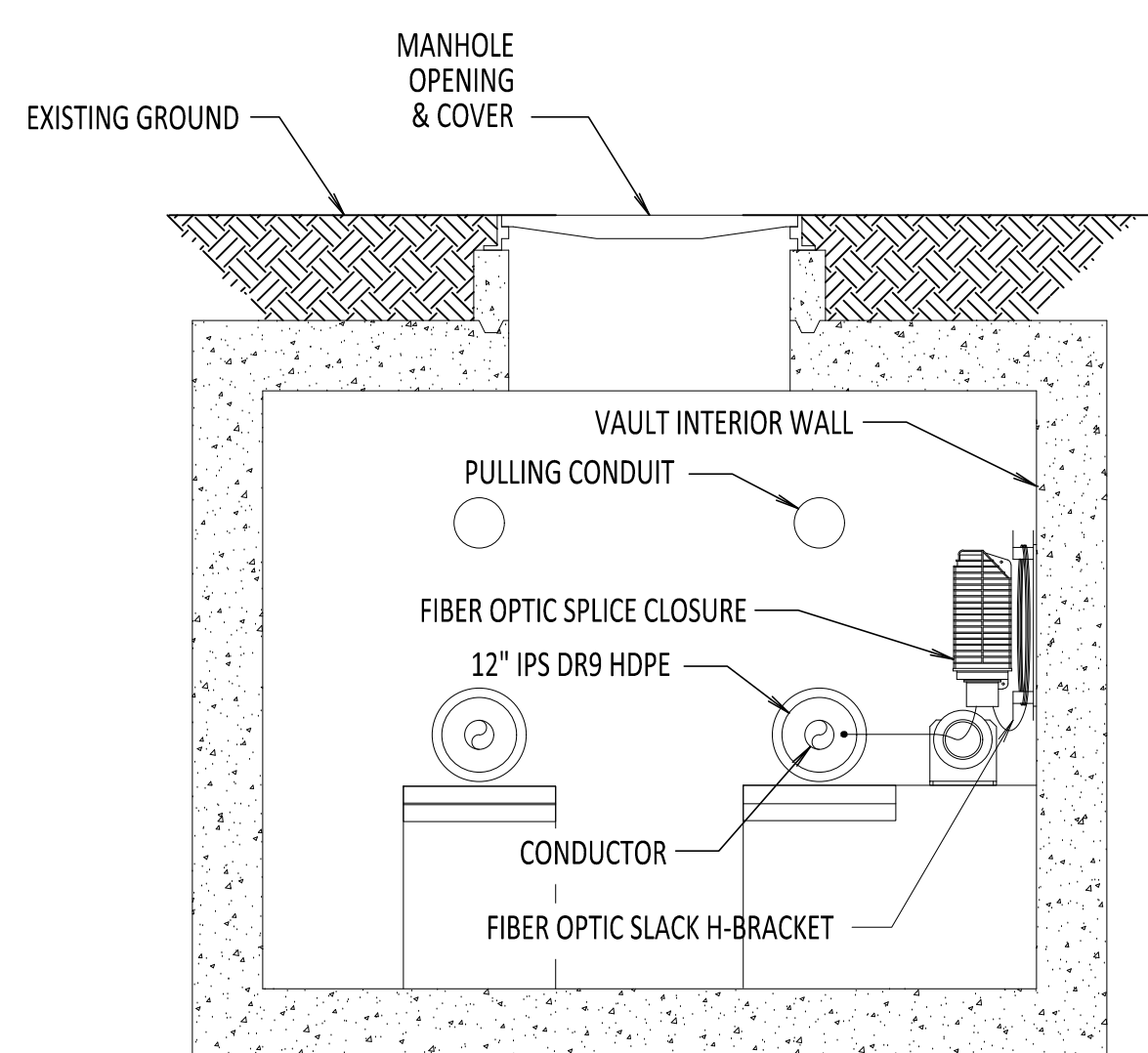
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PARTIAL TRANSITION VAULT PLAN VIEW
SCALE: 3/8" = 1'-0"



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.

2.

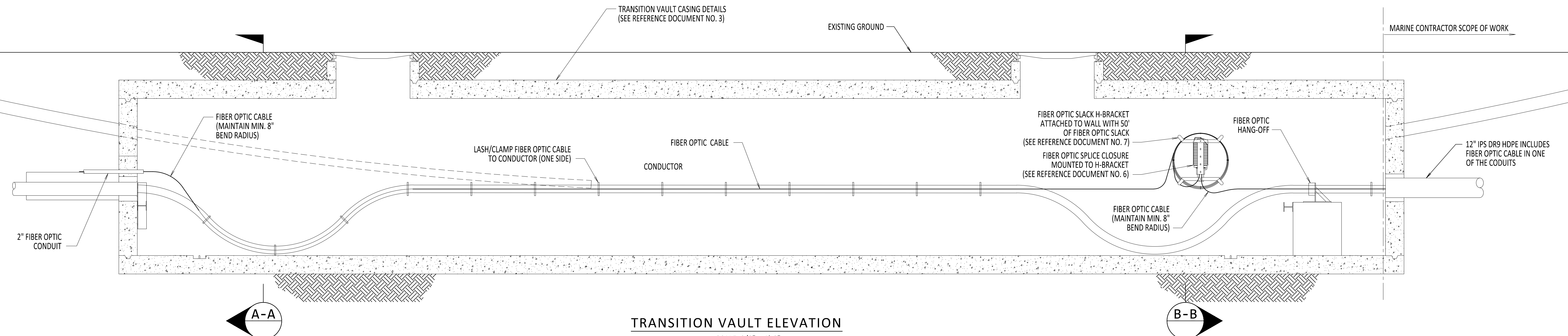
FIBER OPTIC CABLE SHALL FOLLOW THE NEGATIVE POLE HVDC CABLE NOTED ON THE PLAN AND PROFILE DRAWINGS, UNLESS OTHERWISE STATED. IN THE CASE THAT THE FIBER OPTIC CABLE ENTRY IS NOT ALIGNED WITH THE NEGATIVE POLE, THE FIBER OPTIC CONFIGURATION HEREIN SHALL BE MIRRORED ON THE OPPOSITE SIDE.

3.

SEE REFERENCE DOCUMENT 5 FOR DETAILS ON ROUTING FIBER TO DTS HUT.

REFERENCE DOCUMENTS

| LIST NO. | DOCUMENT NAME | DOCUMENT NO. |
|----------|--|--------------|
| 1 | TRANSITION VAULT PLAN AND ELEVATION | S-730 |
| 2 | TRANSITION VAULT SECTION AND DETAILS | S-731 |
| 3 | TRANSITION VAULT EXTENDED SNAKING DETAILS | C-805 |
| 4 | TRANSITION VAULT GROUNDING DETAILS | C-806 |
| 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 |



TRANSITION VAULT ELEVATION
SCALE: 3/8" = 1'-0"



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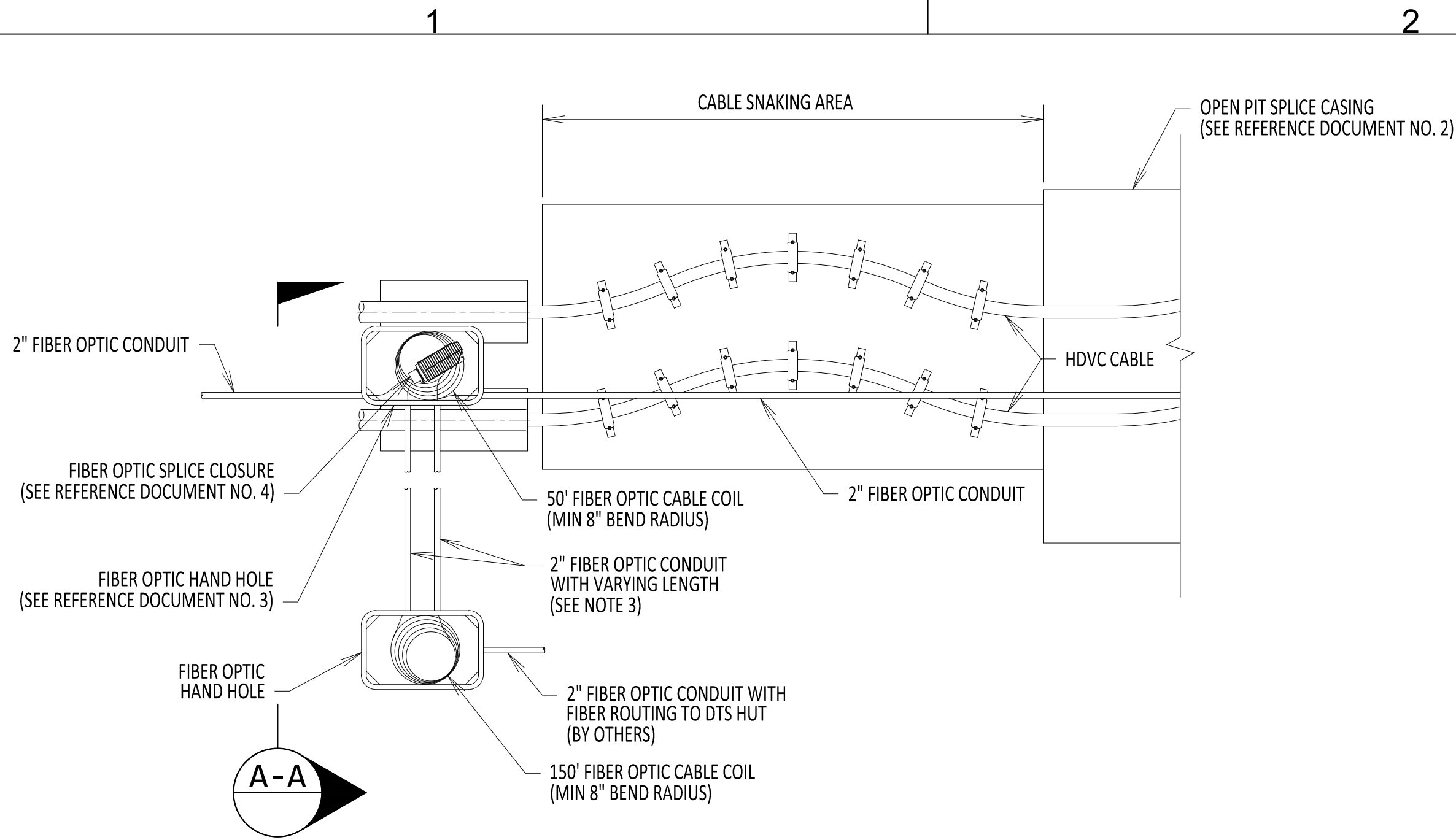
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TRANSITION VAULT
FIBER OPTIC DETAIL

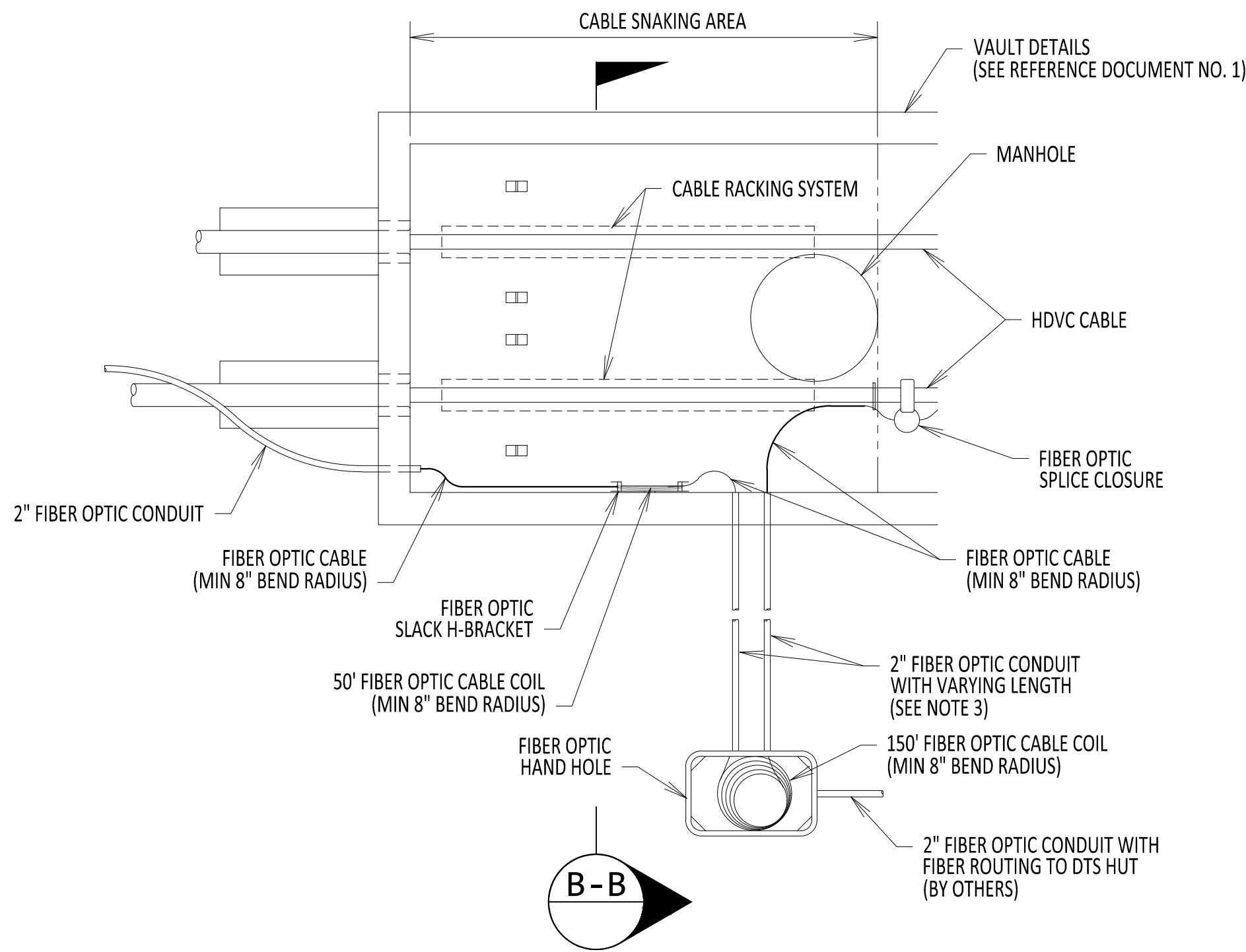
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| KIEWIT PROJECT NO. | 21162 |
| CHA PROJECT NO. | 066076 |
| DRAWING NO. | C-850 |
| DATE | 06/08/2023 |
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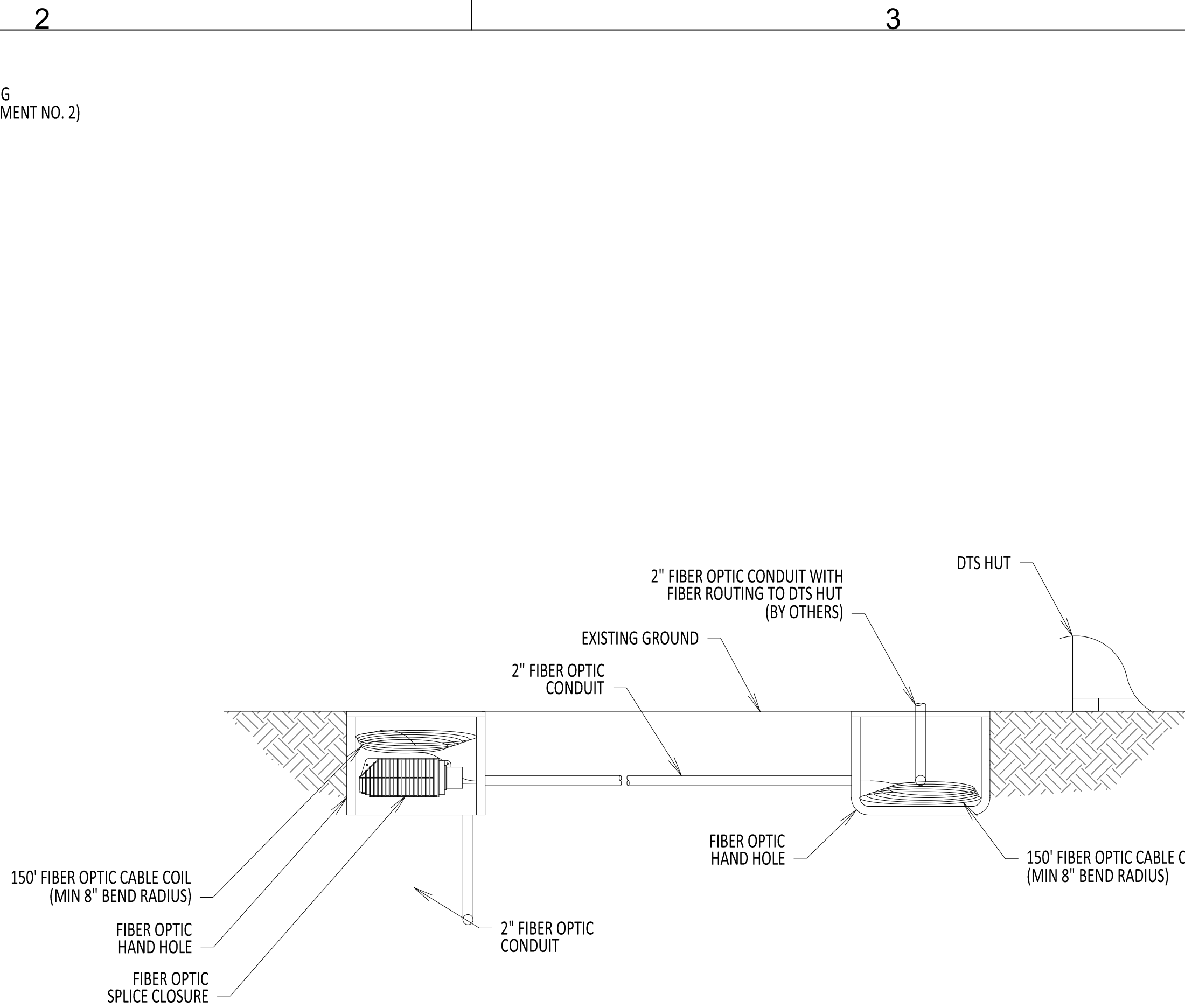
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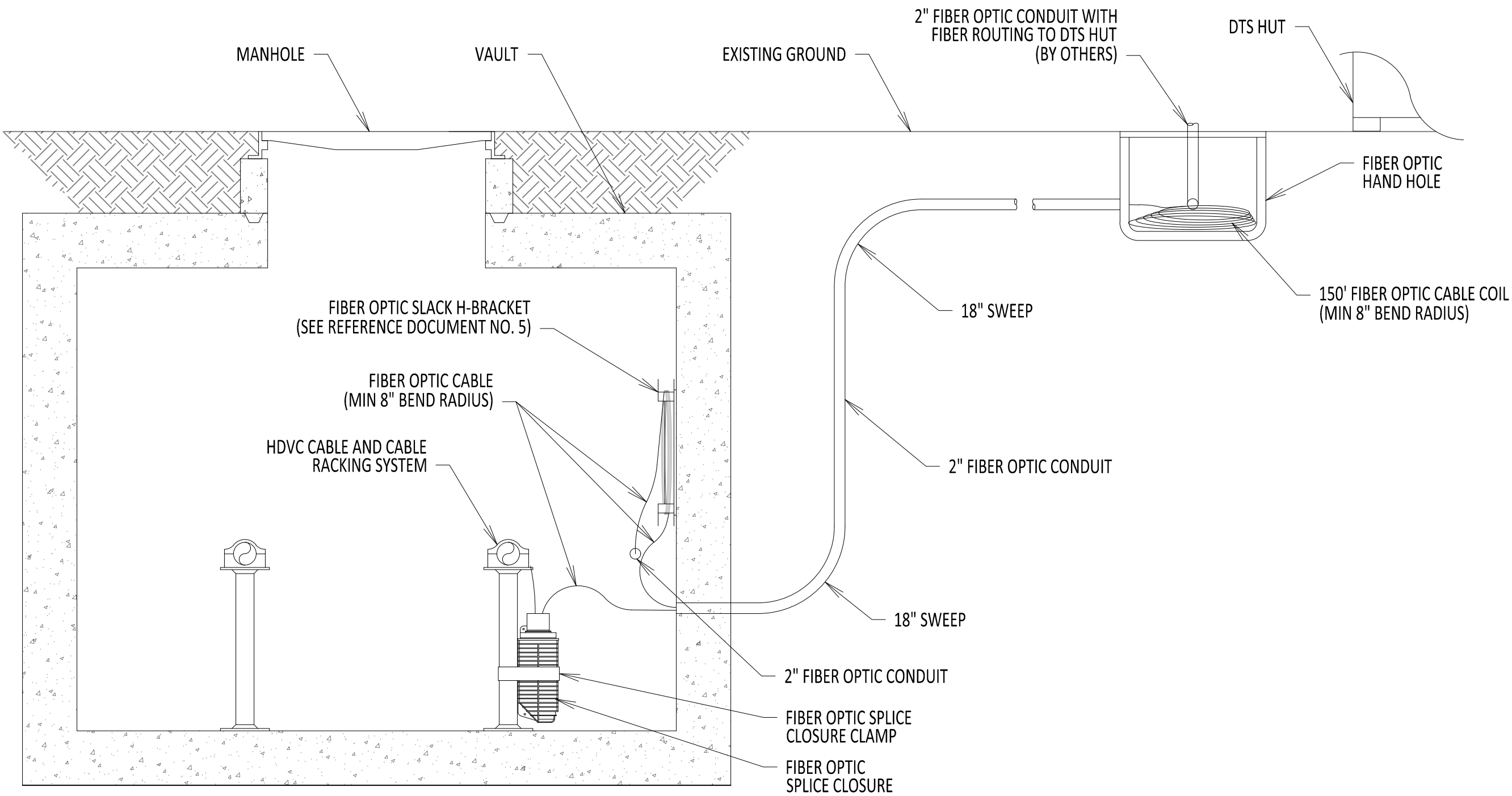
OPEN PIT DTS HUT CONNECTION
PLAN VIEW
SCALE: 1/4" = 1'-0"



ENCLOSED VAULT DTS HUT CONNECTION
PLAN VIEW
SCALE: 1/4" = 1'-0"



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



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

NOTES:

1. MAINTAIN A MINIMUM FIBER OPTIC CABLE BEND RADIUS OF 8" UNLESS OTHERWISE STATED (WHEN BENDING THE CABLE).
2. SPLICES WITH DTS HUTS ARE ONLY AT DESIGNATED VAULTS/SPLICE LOCATIONS. SEE PLAN AND PROFILES FOR DETAILS.
3. SEE PLAN AND PROFILES FOR LATEST DISTANCES TO DTS HUT.

REFERENCE DOCUMENTS

| LIST NO. | DOCUMENT NAME | DOCUMENT NO. |
|----------|-------------------------------------|--------------|
| 1 | TYPICAL VAULT DETAILS | C-802 |
| 2 | TYPICAL OPEN PIT SPLICE DETAILS | C-808 |
| 3 | FIBER OPTIC HAND HOLE DETAILS | C-854 |
| 4 | FIBER OPTIC SPLICE DETAILS | C-855 |
| 5 | FIBER OPTIC H-FRAME BRACKET DETAILS | C-856 |



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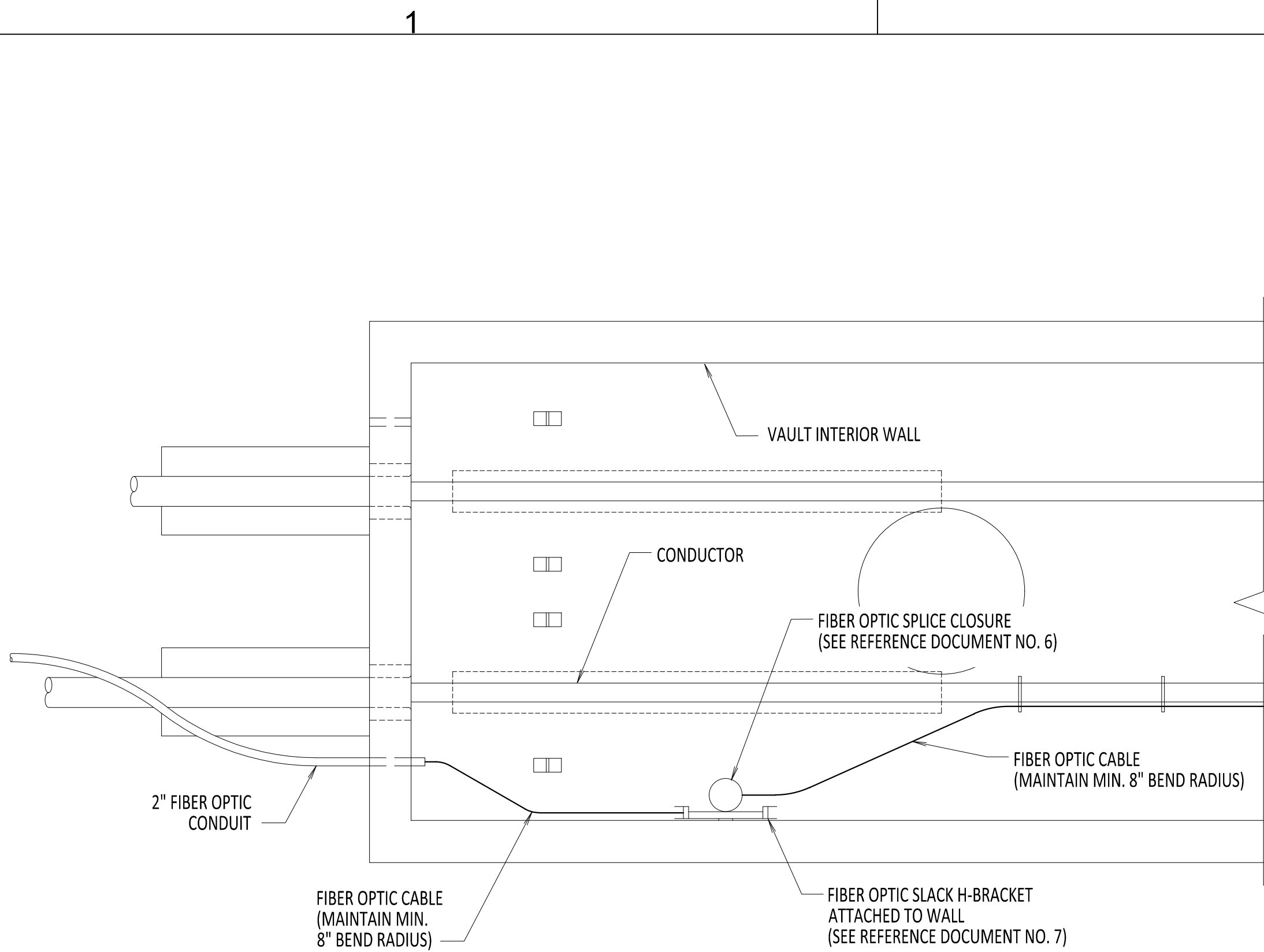
DTS HUT CONNECTION
FIBER OPTIC SPLICE AND HAND HOLE

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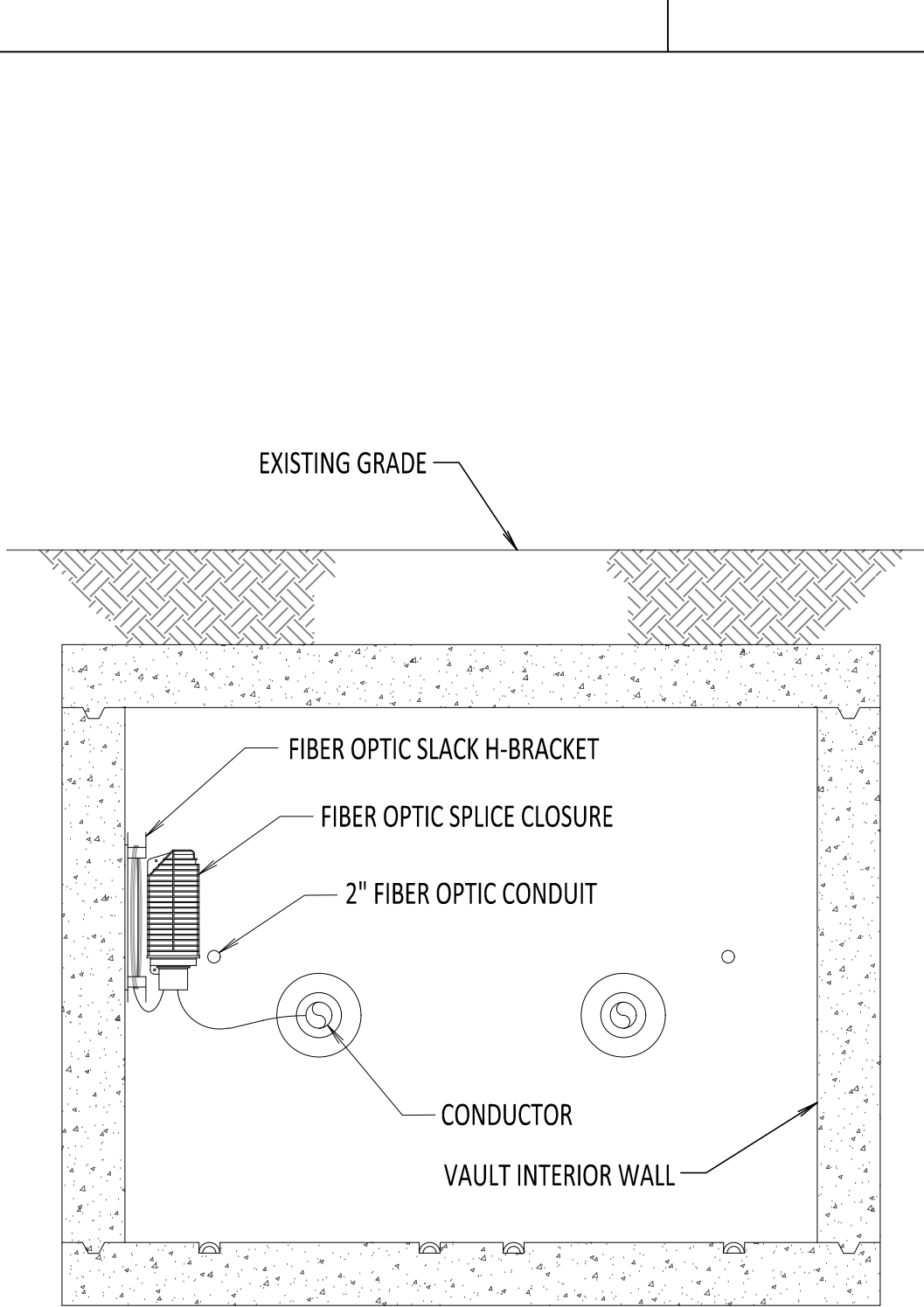
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| CHA PROJECT NO. | 066076 |
| DRAWING NO. | C-851 |
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ENCLOSED VAULT DTS HUT CONNECTION

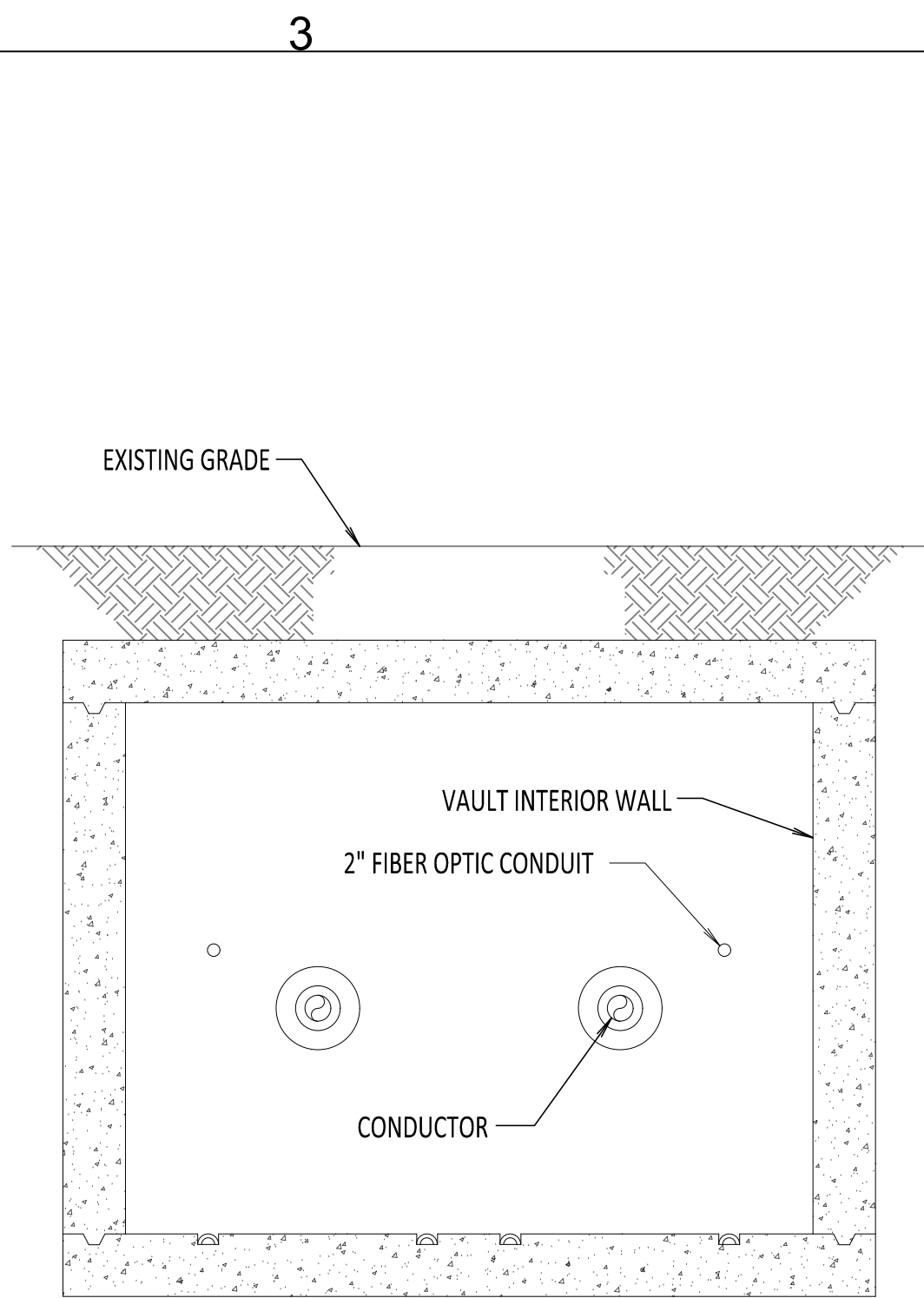
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ENCLOSED VAULT w/ FIBER OPTIC CABLE PLAN VIEW
SCALE: 3/8" = 1'-0"



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

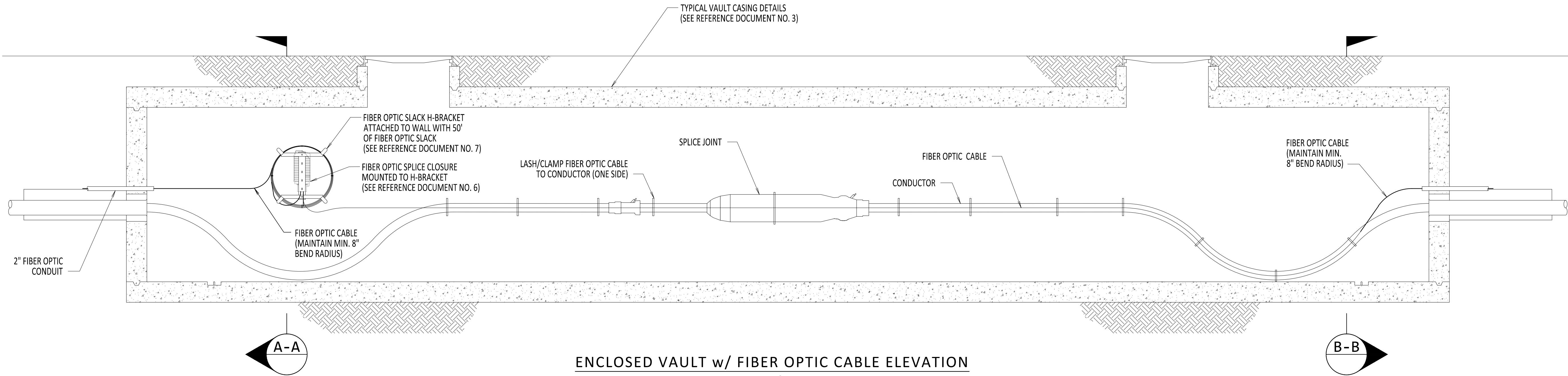


SECTION B-B
SCALE: 3/8" = 1'-0"

- 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 MIRRORED 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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**ENCLOSED VAULT
w/ FIBER OPTICS**

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| DRAWING NO. | C-852 |
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