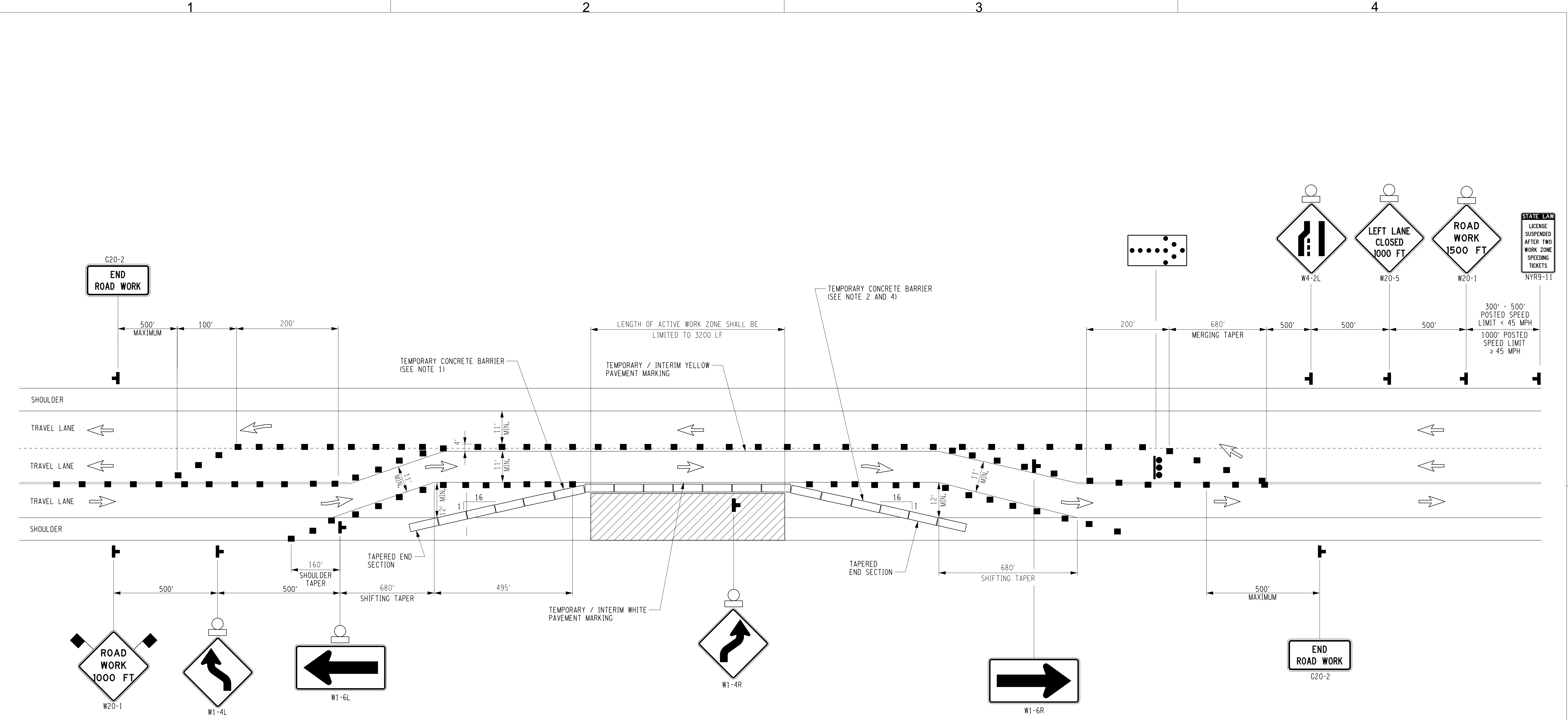


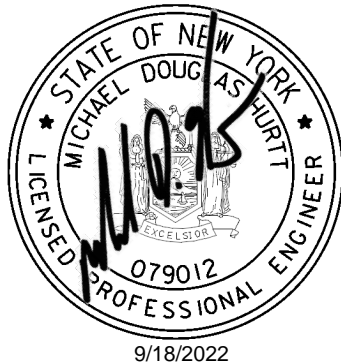
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NYS RTE 22  
INTERMEDIATE / LONG TERM STATIONARY  
LANE CLOSURE ON 3-LANE 2-WAY ROADWAY  
(NOT TO SCALE)

NOT FOR CONSTRUCTION  
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- NOTES:
1. WHEN PAVED SHOULDERS HAVING A WIDTH OF 8' OR MORE ARE CLOSED, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND TO DIRECT VEHICULAR TRAFFIC TO REMAIN IN THE TRAVELED WAY.
  2. LIMITS OF LONG-TERM LANE CLOSURE WITH TEMPORARY CONCRETE BARRIER SHALL BE ESTABLISHED BETWEEN EXISTING DRIVEWAYS AND SIDEROADS; UNLESS TEMPORARY SIGNALIZATION OF EXISTING DRIVEWAYS CAN BE PROVIDED AND COORDINATED WITH THE MAINLINE TEMPORARY SIGNALS, AS DIRECTED BY THE ENGINEER.
  3. LONG-TERM LAND CLOSURES ARE ANTICIPATED TO BE IN PLACE AT ANY ONE LOCATION FOR APPROXIMATELY ONE WEEK (7 DAYS).
  4. WORK SPACE LIMITS SHALL BE ESTABLISHED TO ALLOW FOR STANDARD DEFLECTION OF TEMPORARY CONCRETE BARRIER AS DEFINED IN SECTION 619 OF THE NYSDOT STANDARD SPECIFICATIONS.



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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

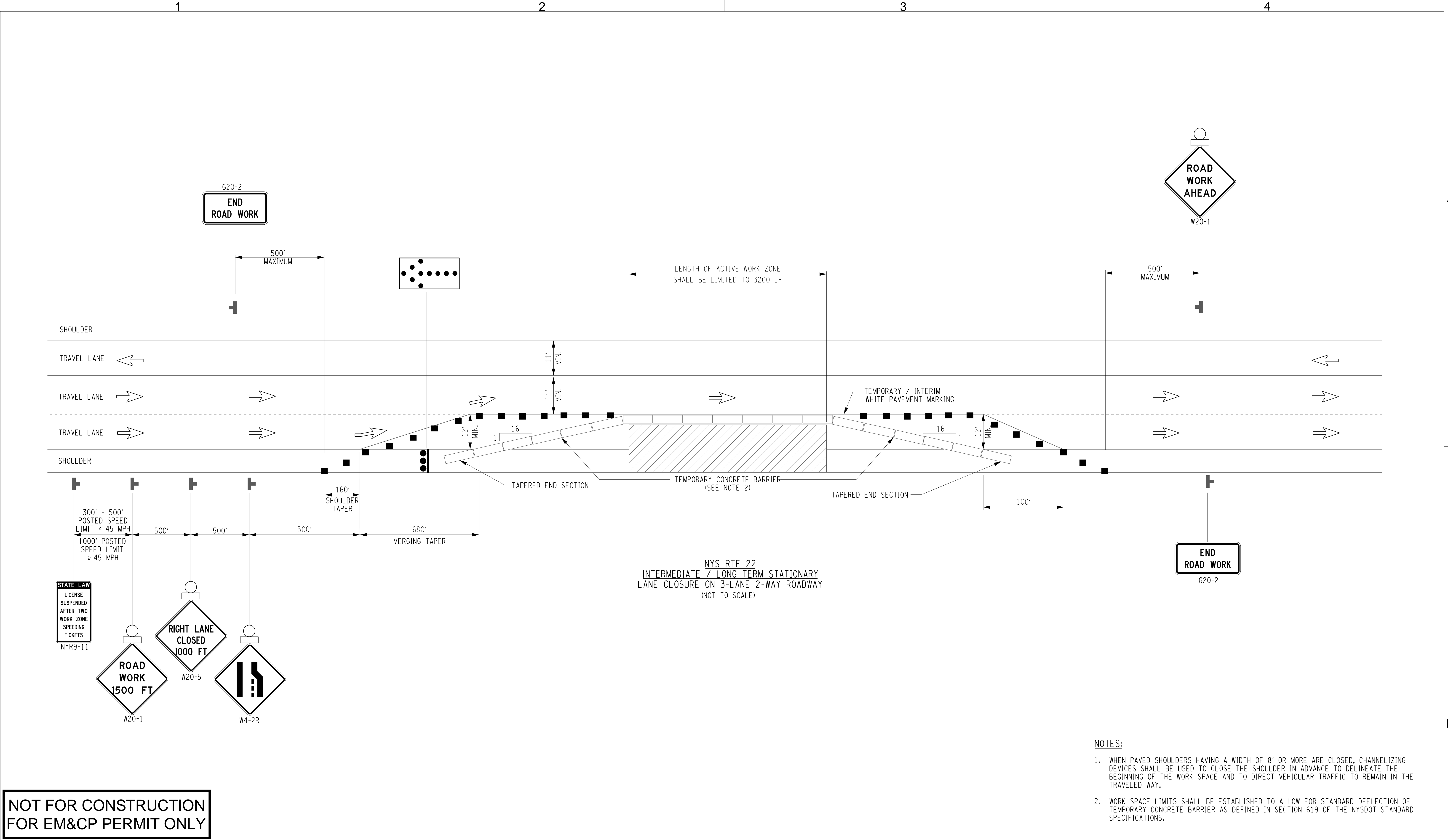
CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN


WORK ZONE TRAFFIC CONTROL DETAILS  
SHEET 9 OF 14

DRAWN BY: JAH    DESIGNED BY: JPS    APPROVED BY: MDH    SCALE AS SHOWN    REV. NO.


KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-511
DATE SH.NO.	09/21/2022 OF XXX

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/21/2022	FINAL EM&CP SUBMISSION	JS	MH

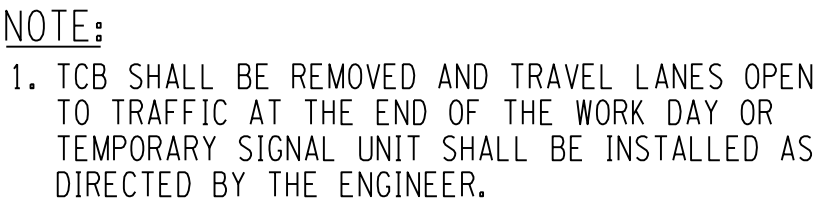
**CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**

WORK ZONE TRAFFIC CONTROL DETAILS  
SHEET 10 OF 14

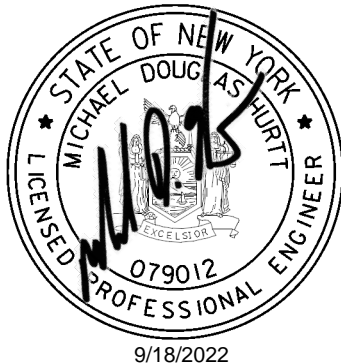
DRAWN BY: JAH	DESIGNED BY: JPS	APPROVED BY: MDH	SCALE AS SHOWN REV. NO.
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KIEWIT PROJECT NO. 21162		CHA PROJECT NO. 066076		DRAWING NO. <b>C-512</b>	
DATE 09/21/2022		SH.NO. OF XXX			





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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

# CHAMPLAIN HUDSON POWER EXPRESS

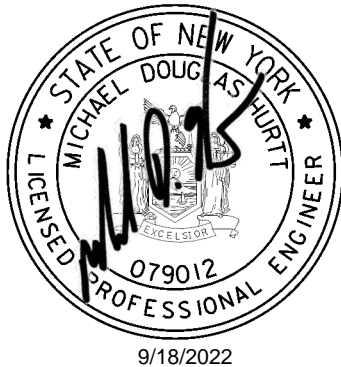
## SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN

WORK ZONE TRAFFIC CONTROL DETAILS  
SHEET 11 OF 14

KIEWIT PROJECT NO.	
21162	
CHA PROJECT NO.	
066076	
DRAWING NO.	
<b>C-513</b>	
DATE	09/21/2022
SH.NO.	OF XXX

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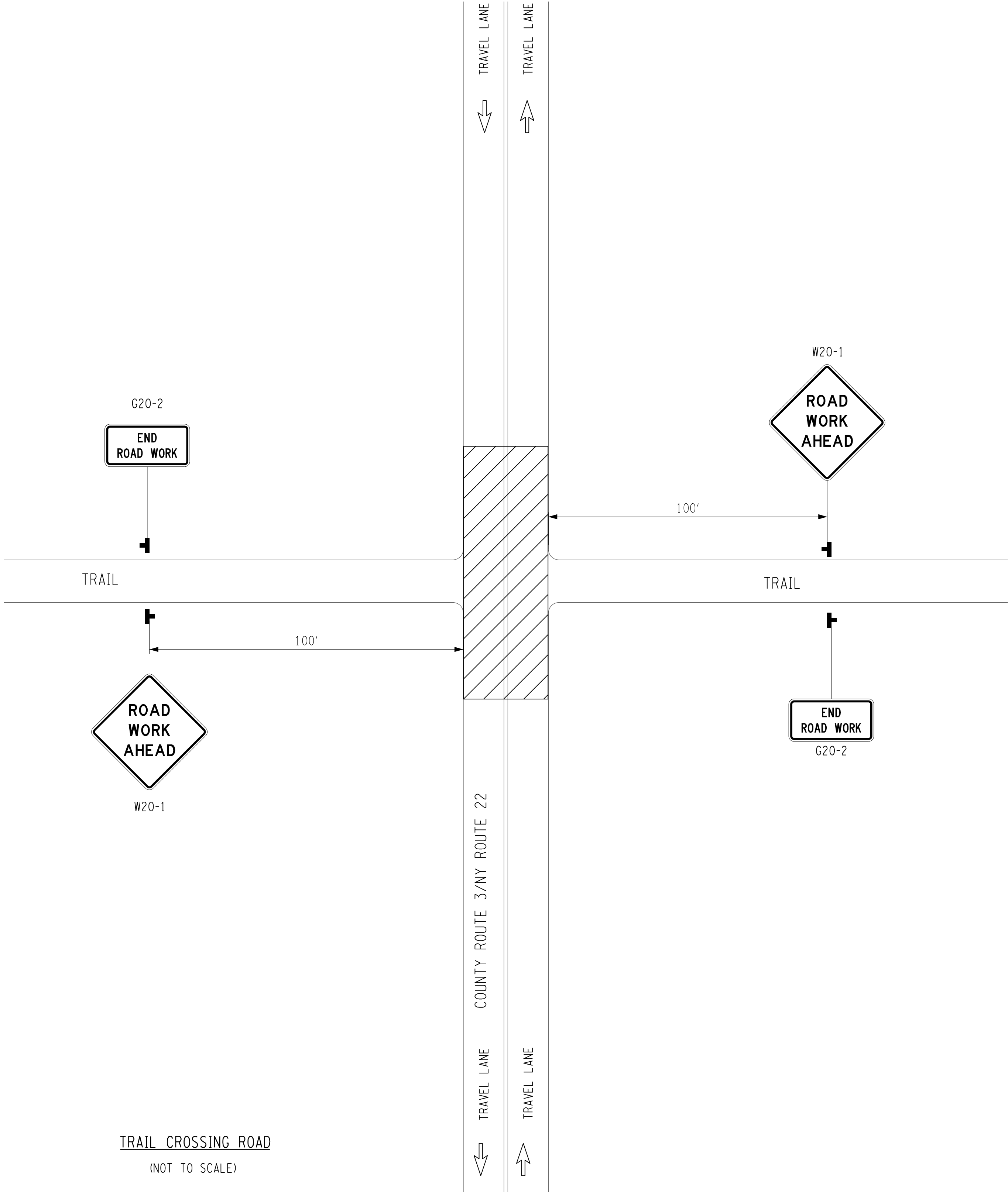
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN

WORK ZONE TRAFFIC CONTROL DETAILS  
SHEET 12 OF 14

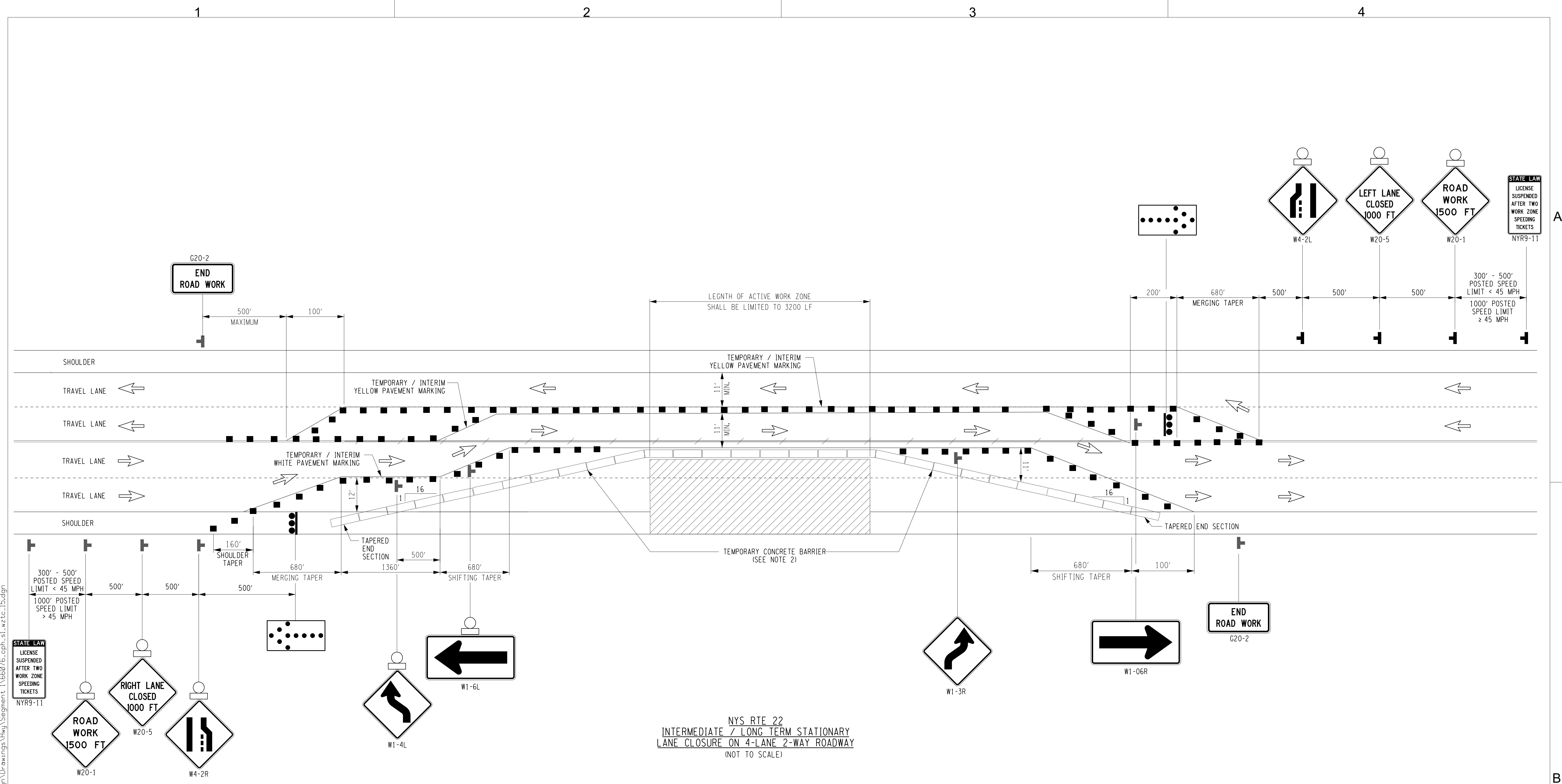
DRAWN BY: JAH	DESIGNED BY: JPS	APPROVED BY: MDH	SCALE AS SHOWN REV. NO.	DATE 09/21/2022 SH.NO. OF XXX
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- NOTES:
- 1. SEE EM&CP TABLE 1.5 FOR TRAIL LOCATIONS ON SHEET G-011.
  - 2. CONTRACTOR WILL INSTALL ADVANCED WARNING SIGNS WHEN THE TRAILS INTERSECT WORK ZONE.




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- NOTES:
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  - WORK SPACE LIMITS SHALL BE ESTABLISHED TO ALLOW FOR STANDARD DEFLECTION OF TEMPORARY CONCRETE BARRIER AS DEFINED IN SECTION 619 OF THE NYSDOT STANDARD SPECIFICATIONS.




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MICHAEL DOUGLAS PURTY  
LICENSED PROFESSIONAL ENGINEER  
079012  
9/18/2022

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**CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**

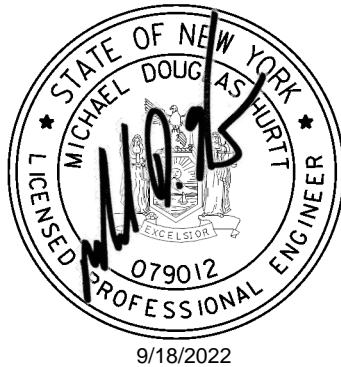
WORK ZONE TRAFFIC CONTROL DETAILS  
SHEET 13 OF 14

DRAWN BY: JAH	DESIGNED BY: JPS	APPROVED BY: MDH	SCALE AS SHOWN REV. NO.
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KIEWIT PROJECT NO. 21162	
CHA PROJECT NO. 066076	
DRAWING NO. <b>C-515</b>	
DATE SH.NO.	09/21/2022 OF XXX

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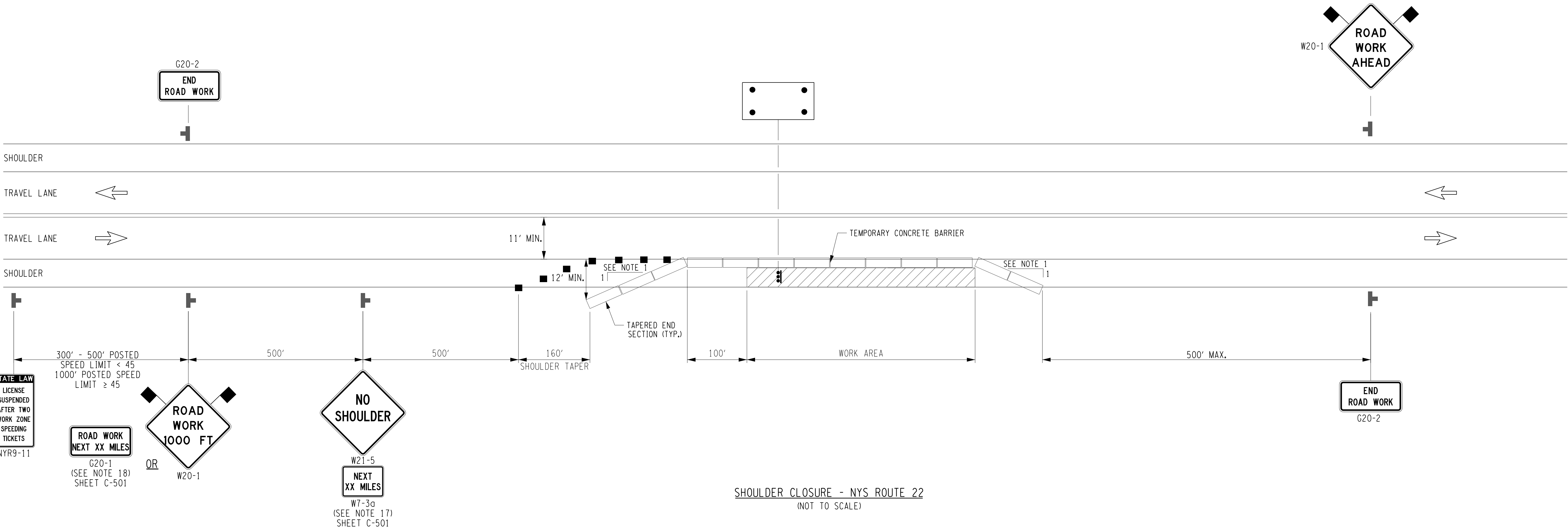
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CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN

WORK ZONE TRAFFIC CONTROL DETAILS  
SHEET 14 OF 14

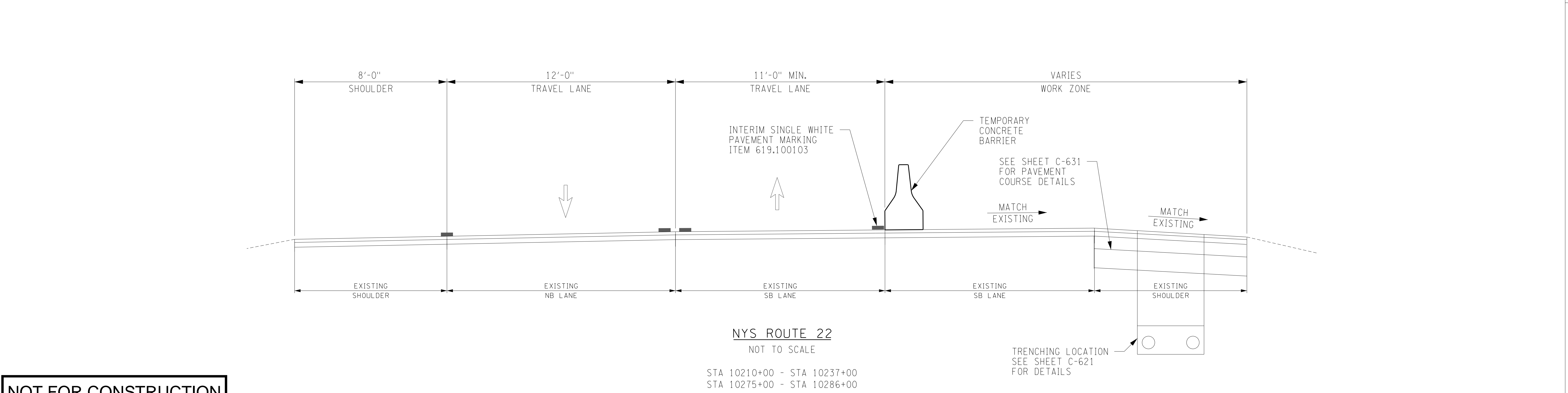
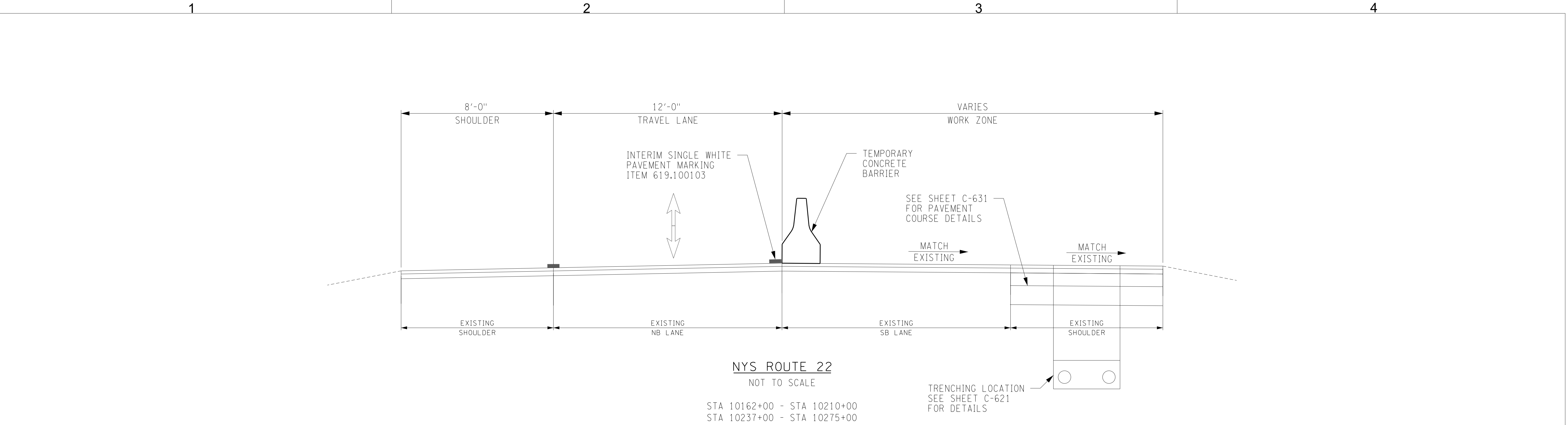
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CHA PROJECT NO.	066076
DRAWING NO.	C-516
DATE	09/21/2022
SH.NO.	OF XXX

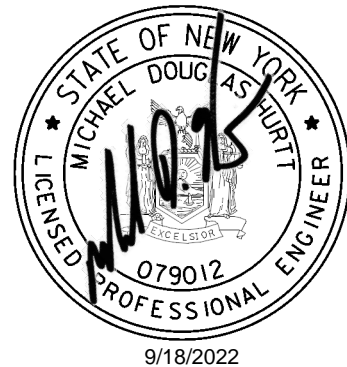


NOTE:  
1. TEMPORARY CONCRETE BARRIER TAPER SHALL BE 8:1 (30 MPH), 11:1 (40 MPH), 14:1 (50 MPH), AND 16:1 (55 MPH).

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION					DB	APP	

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SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**

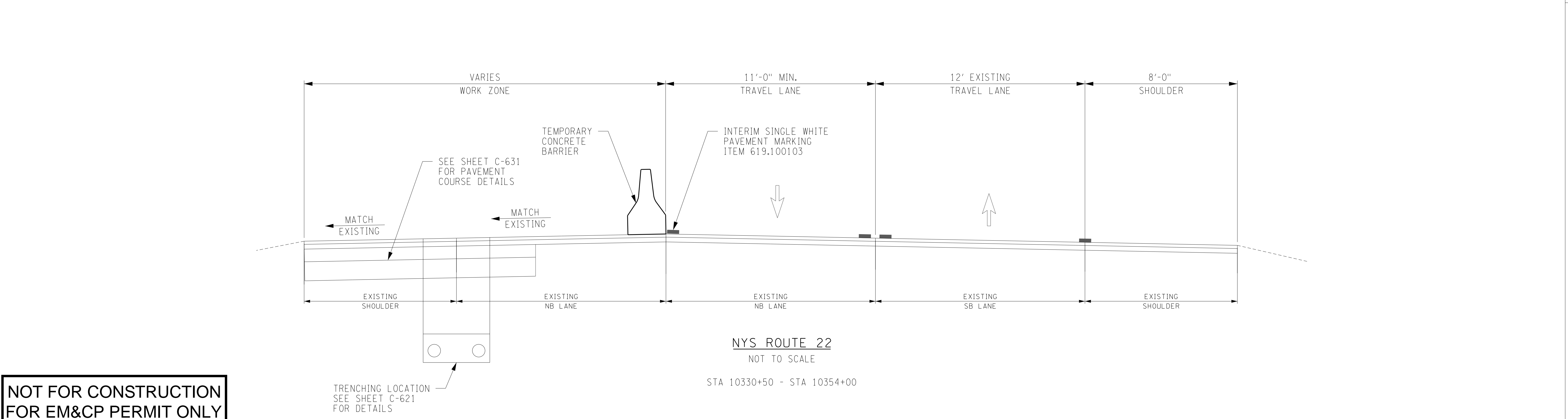
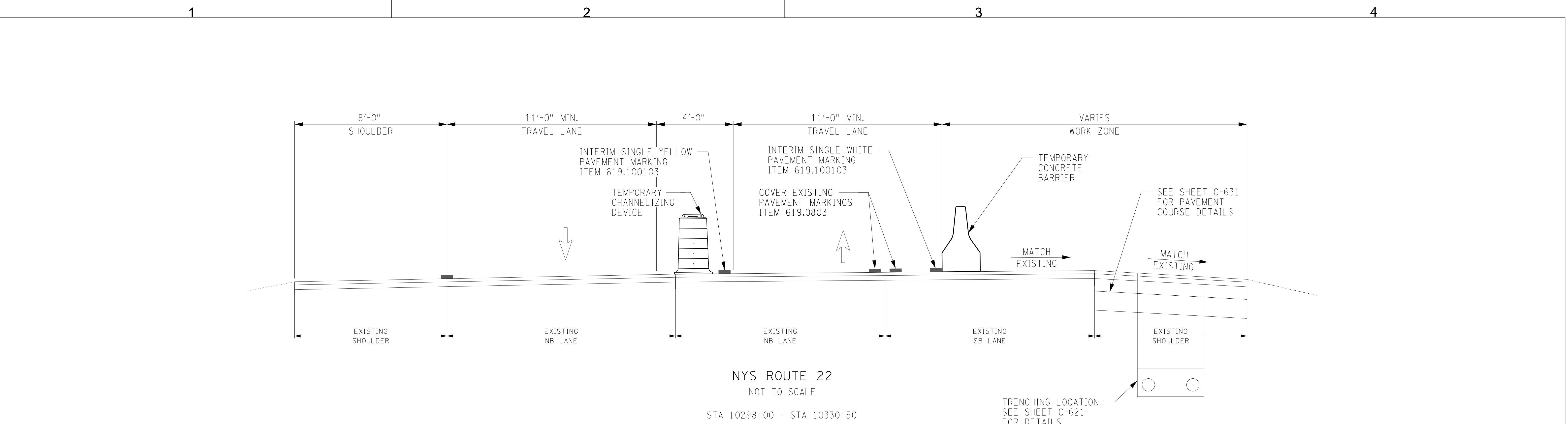
WORK ZONE TRAFFIC CONTROL  
TYPICAL SECTIONS  
SHEET 1 OF 3

KIEWIT PROJECT NO.		21162
CHA PROJECT NO.		066076
DRAWING NO.		<b>C-517</b>
DATE	09/21/2022	
SH.NO.	OF XXX	


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			REV. NO.		SH.NO.	OF XXX




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STATE OF NEW YORK  
MICHAEL DOUGLAS PURTY  
LICENSED PROFESSIONAL ENGINEER  
079012  
9/18/2022

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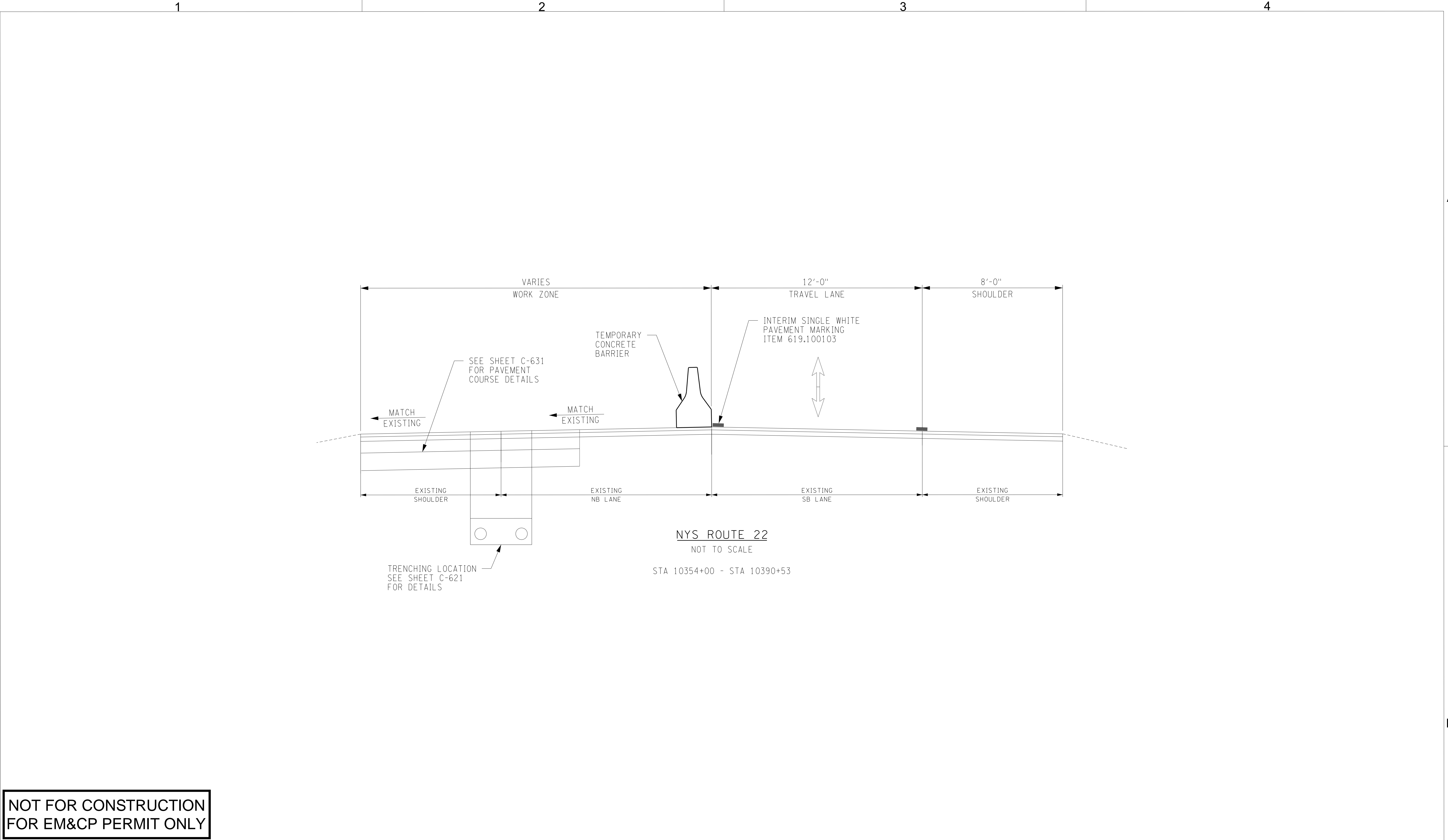
**CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**

WORK ZONE TRAFFIC CONTROL  
TYPICAL SECTIONS  
SHEET 2 OF 3

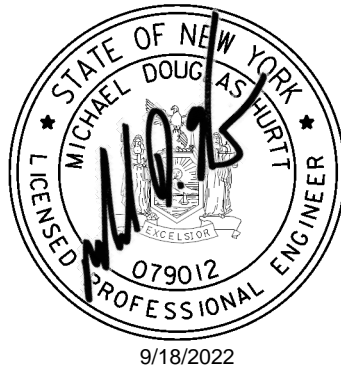
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DATE SH.NO.	09/21/2022 OF XXX				

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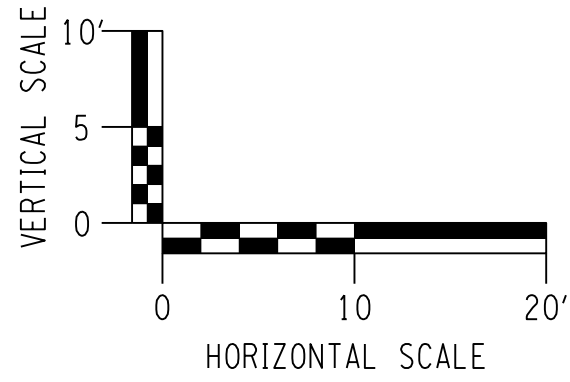
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

**CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**  
WORK ZONE TRAFFIC CONTROL  
TYPICAL SECTIONS  
SHEET 3 OF 3

DRAWN BY: JAH    DESIGNED BY: JPS    APPROVED BY: MDH    SCALE AS SHOWN    REV. NO.

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-519
DATE	09/21/2022
SH.NO.	OF XXX

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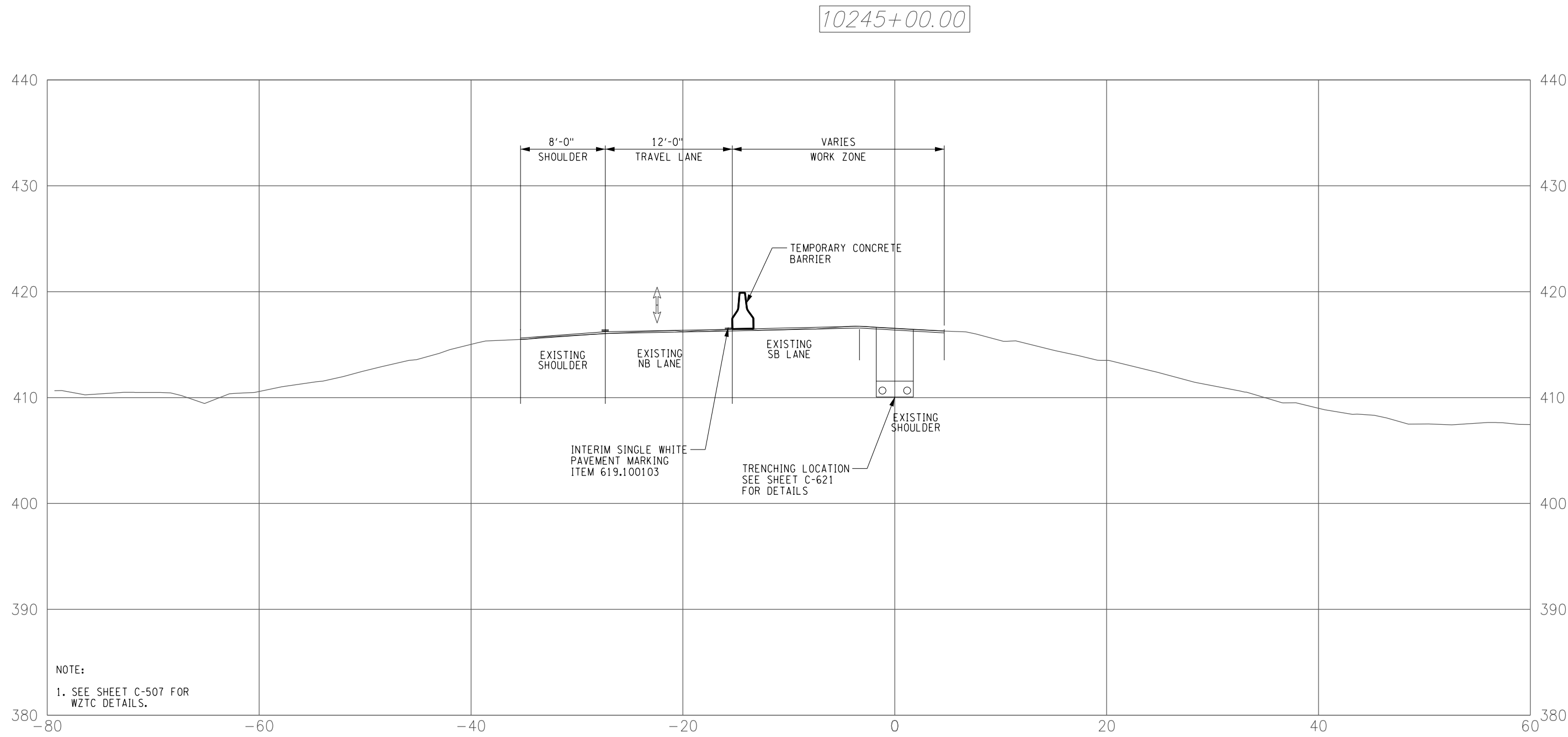
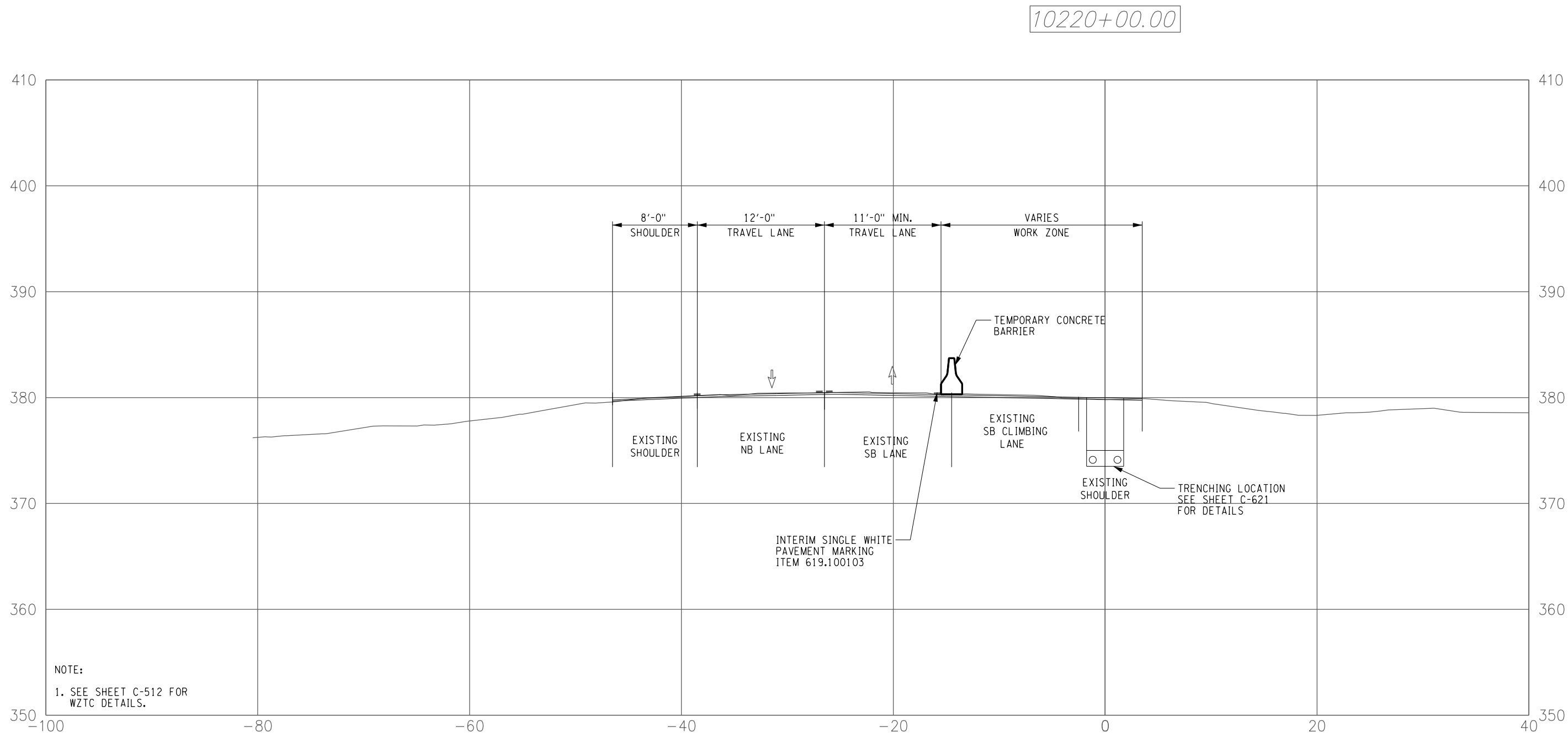
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

**CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**

**WORK ZONE TRAFFIC CONTROL  
CROSS SECTIONS  
SHEET 1 OF 5**

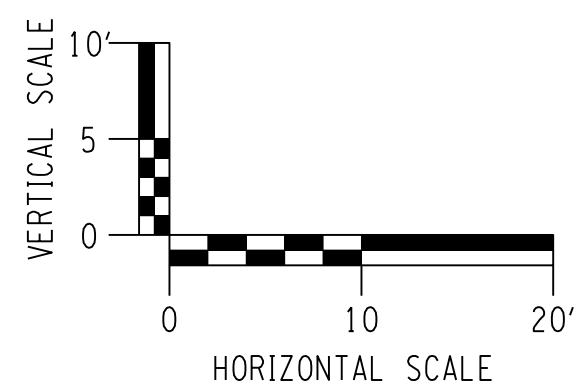
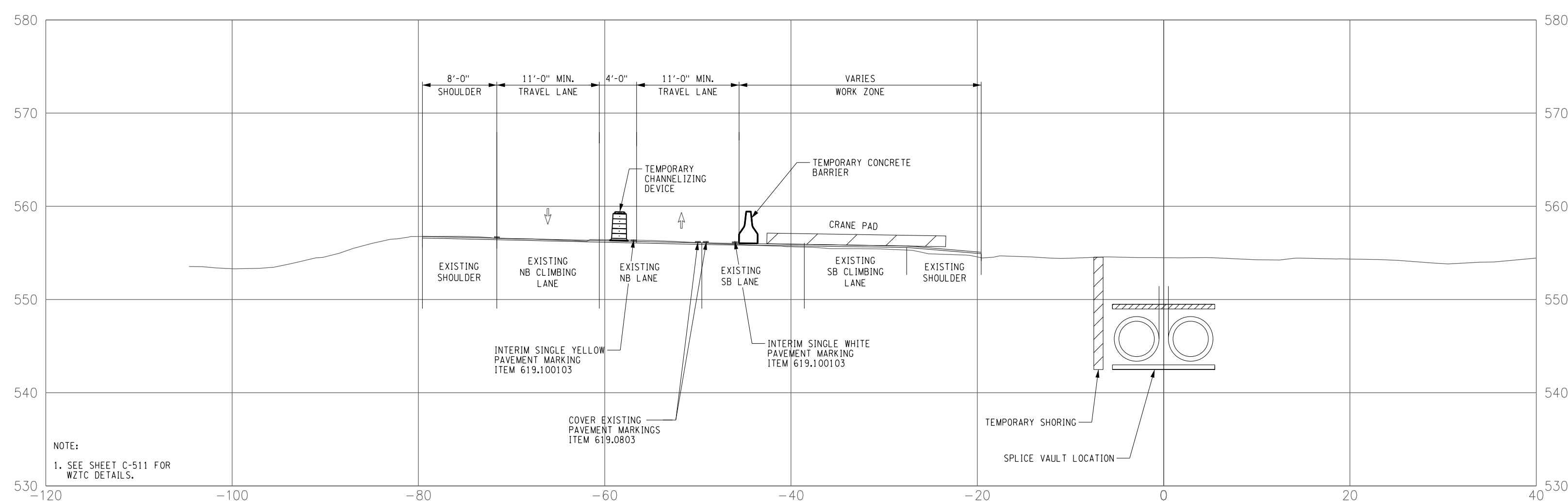
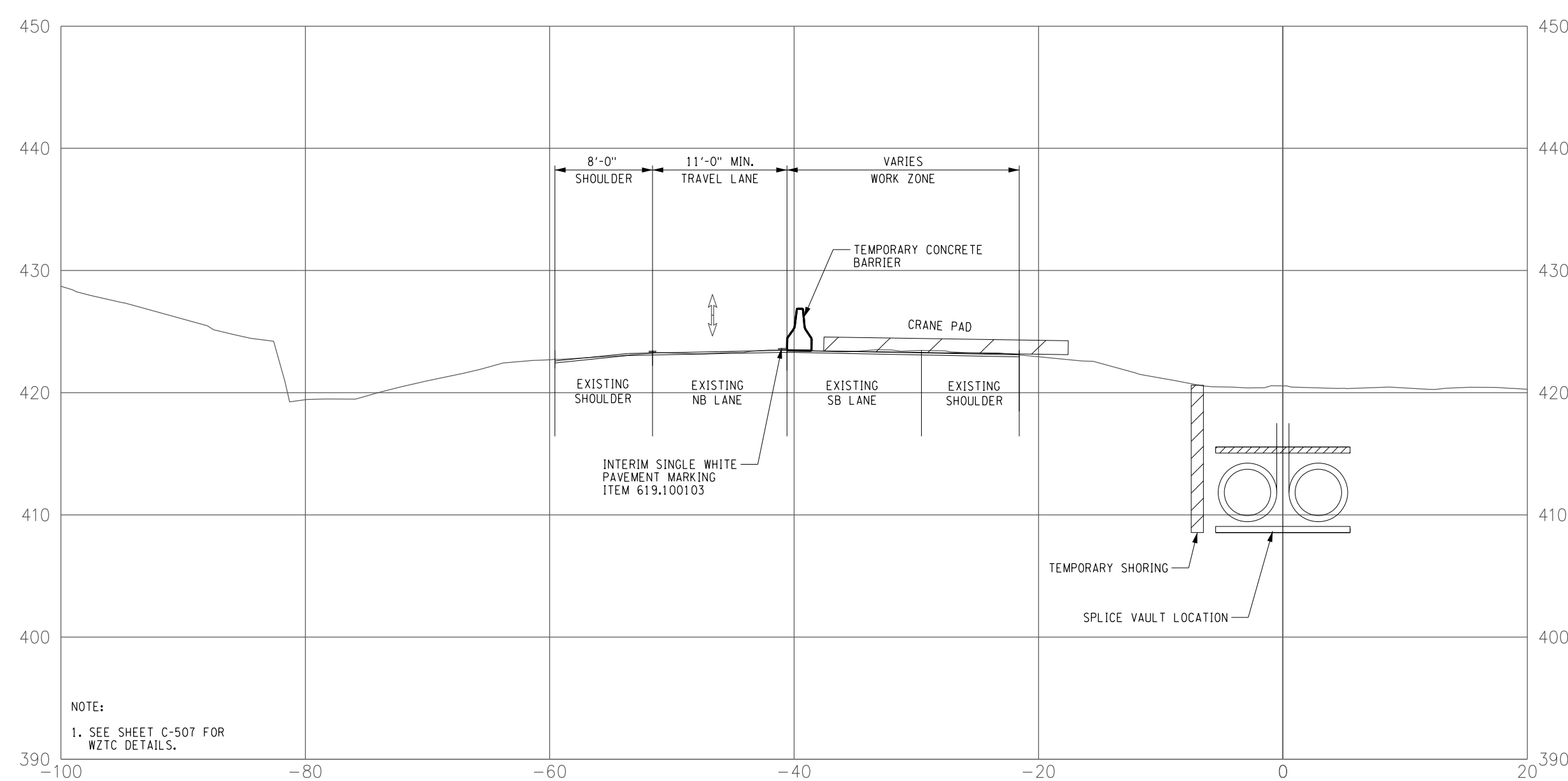
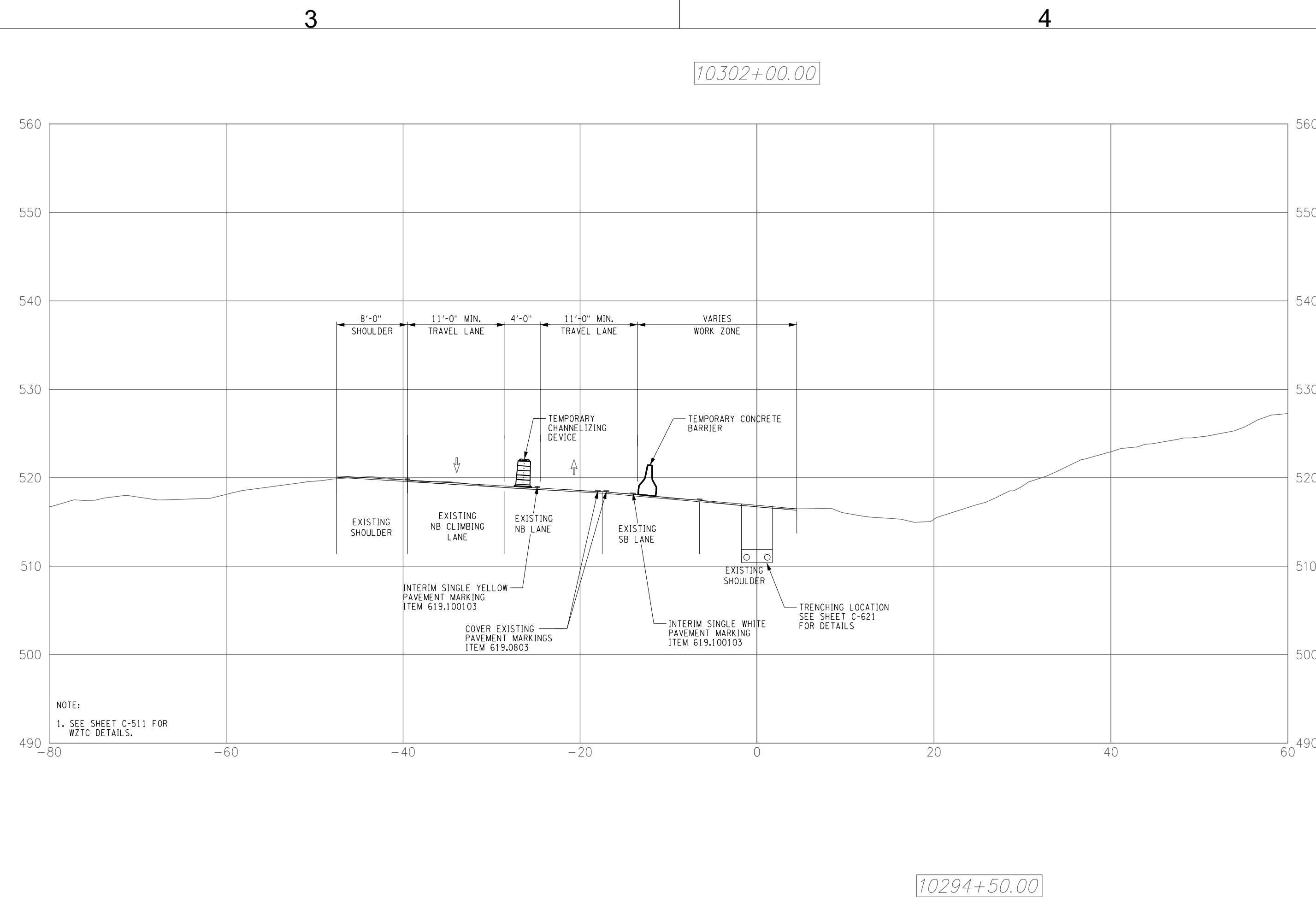
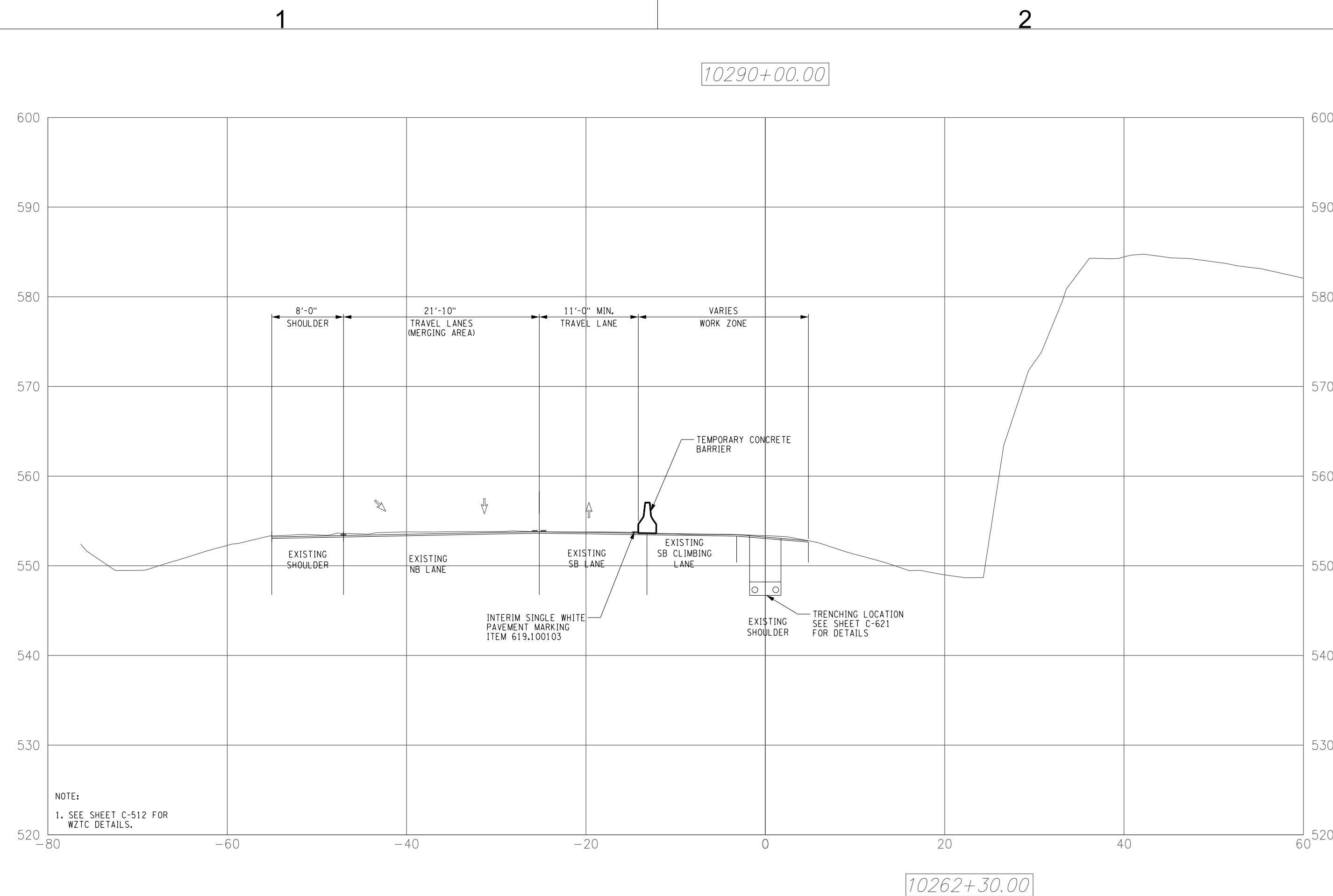
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KIEWIT PROJECT NO. 21162
CHA PROJECT NO. 066076
DRAWING NO. <b>C-520</b>



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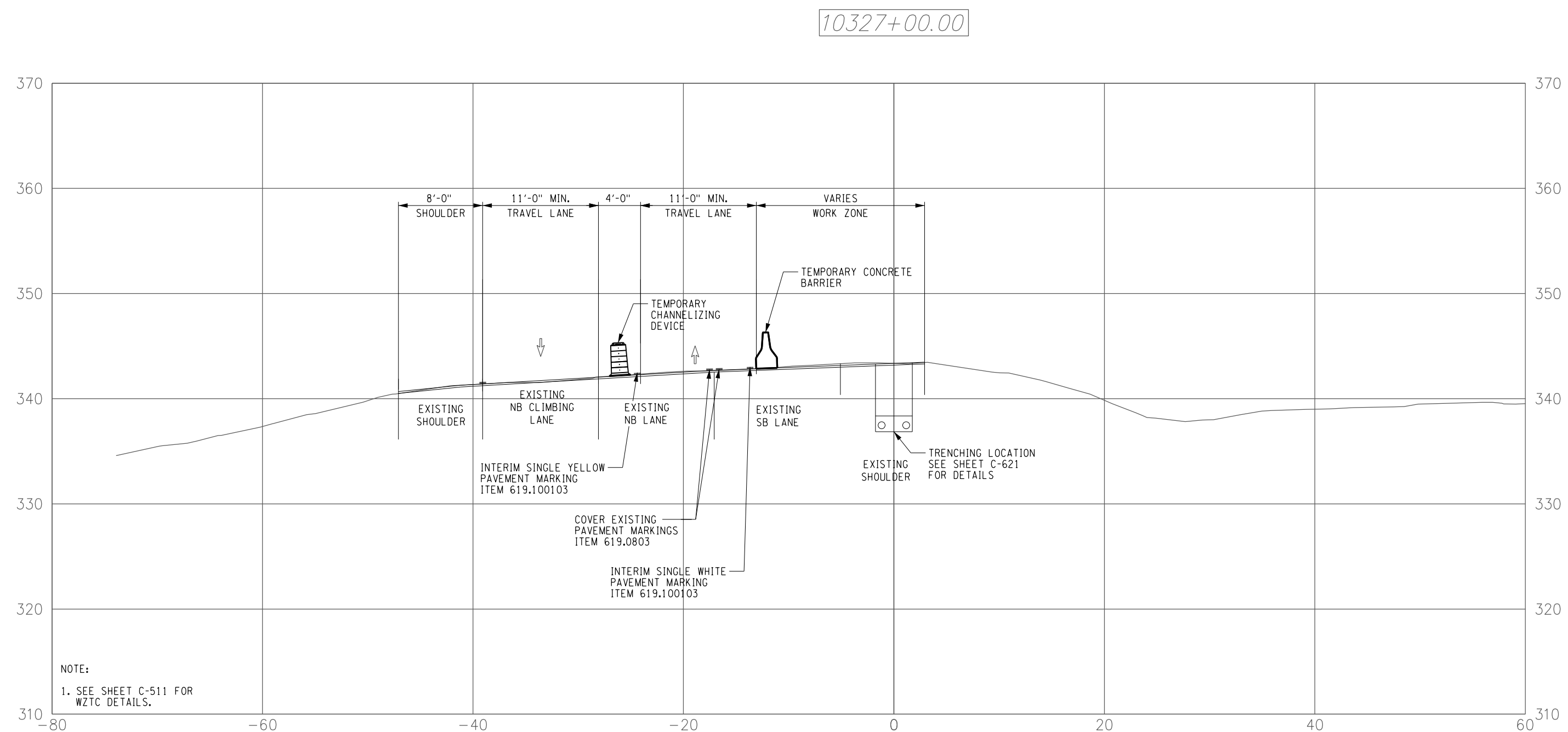
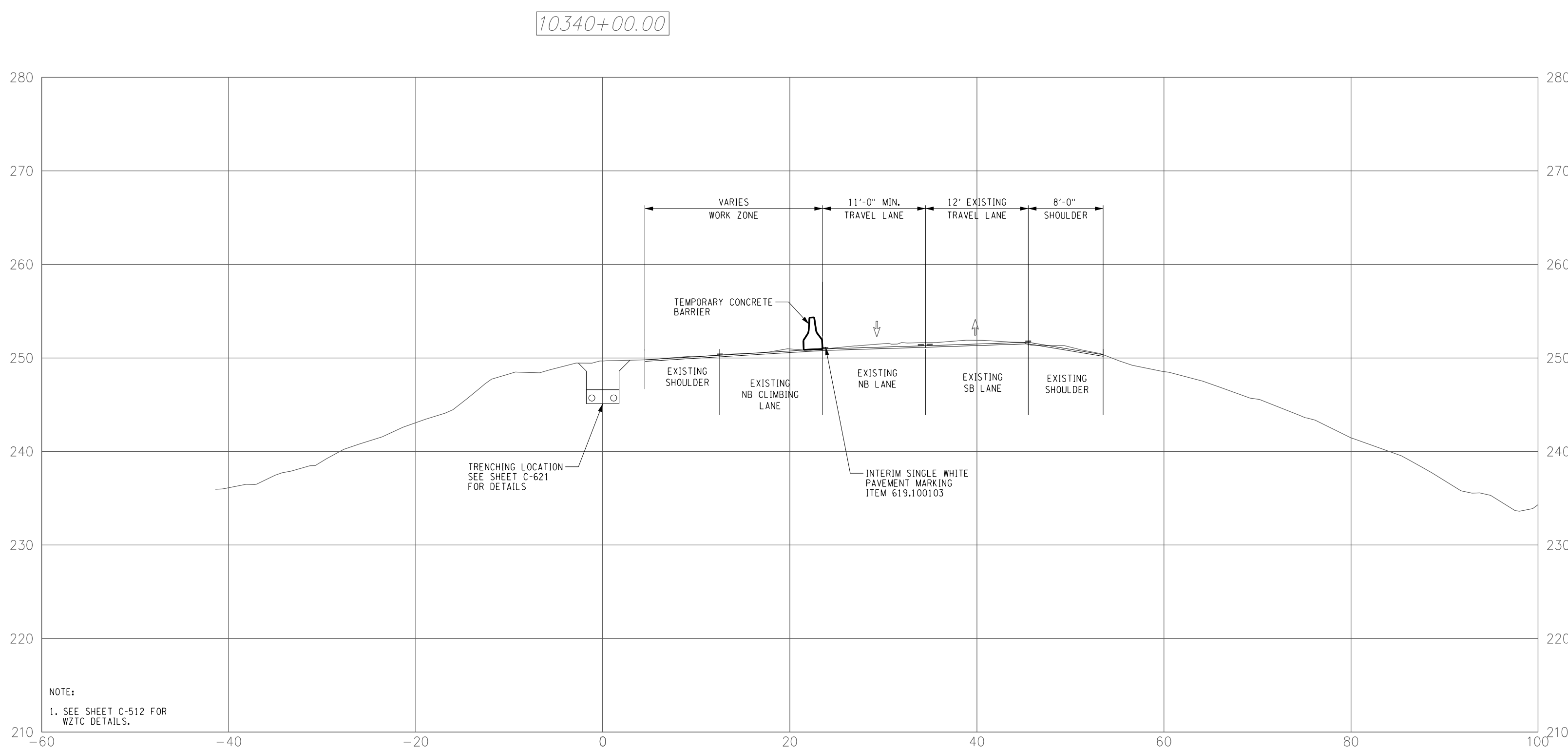


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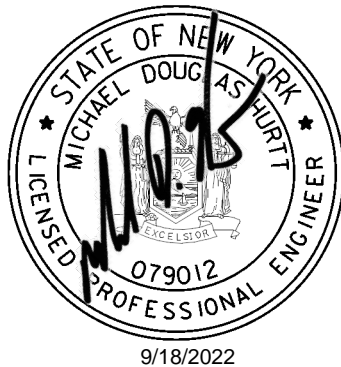
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

**CHAMPLAIN HUDSON POWER EXPRESS**  
**SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN**  
 WORK ZONE TRAFFIC CONTROL  
 CROSS SECTIONS  
 SHEET 2 OF 5

KIEWIT PROJECT NO.	
21162	
CHA PROJECT NO.	
066076	
DRAWING NO.	
<b>C-521</b>	
DATE	09/21/2022
SH.NO.	OF XXX



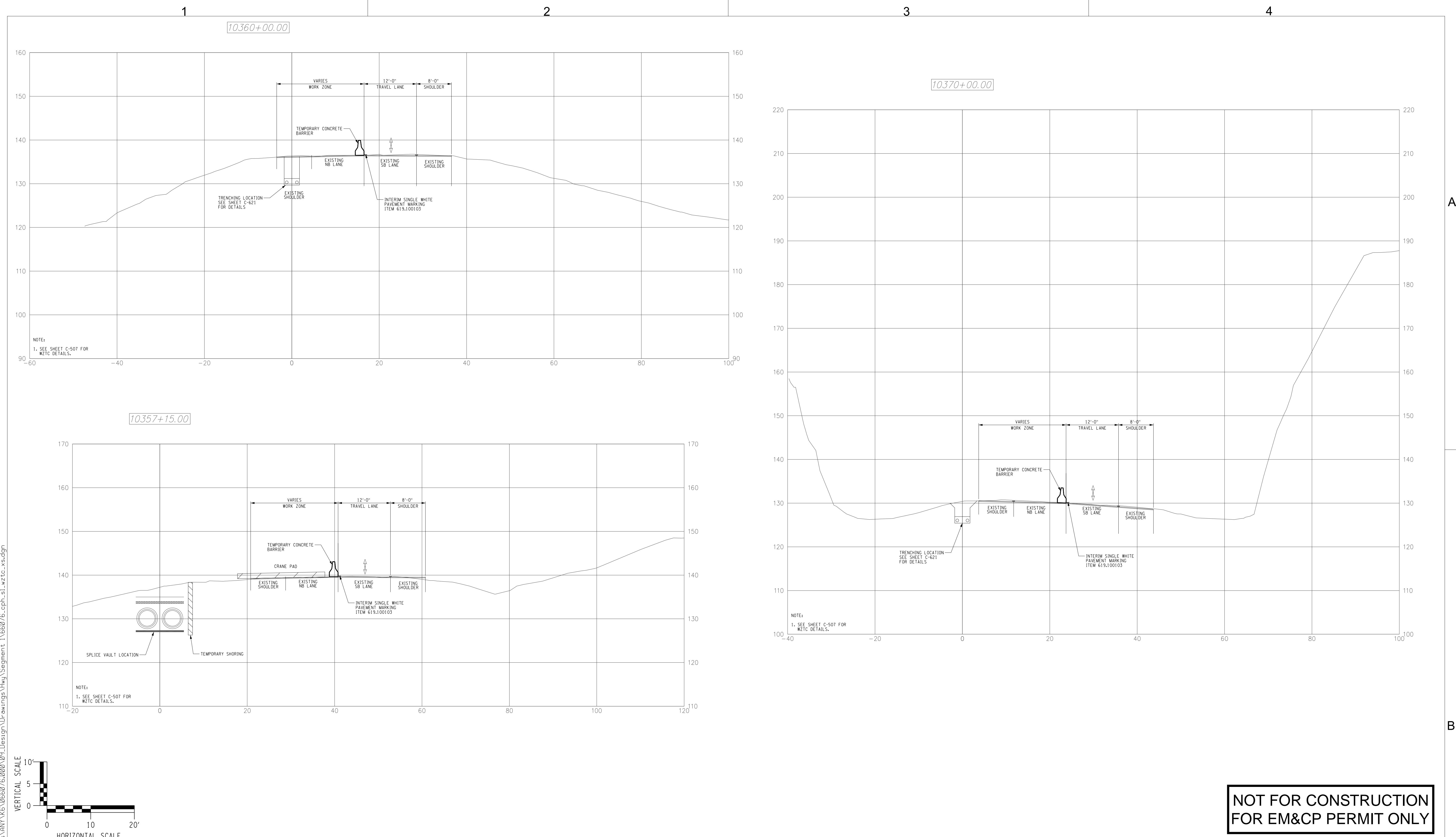
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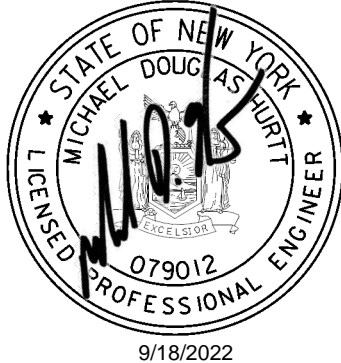
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						<div>CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN</div> <div>WORK ZONE TRAFFIC CONTROL CROSS SECTIONS SHEET 3 OF 5</div>				KIEWIT PROJECT NO. 21162	
										CHA PROJECT NO. 066076	
										DRAWING NO. <div>C-522</div>	
0	09/21/2022	FINAL EM&CP SUBMISSION	JS	MH							
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JAH	DESIGNED BY: JPS	APPROVED BY: MDH	SCALE REV. NO.	AS SHOWN	DATE SH.NO.	09/21/2022 OF XXX

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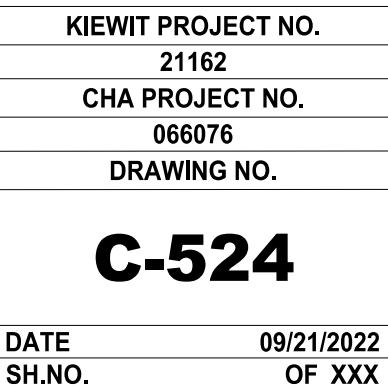
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

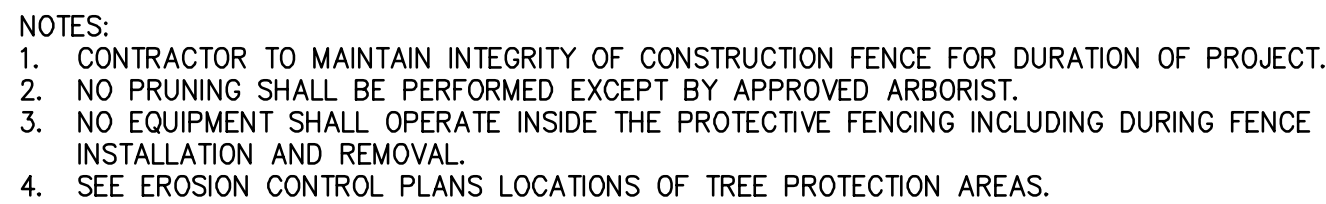
CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN  
WORK ZONE TRAFFIC CONTROL  
CROSS SECTIONS  
SHEET 4 OF 5

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-523
DATE	09/21/2022
SH.NO.	OF XXX

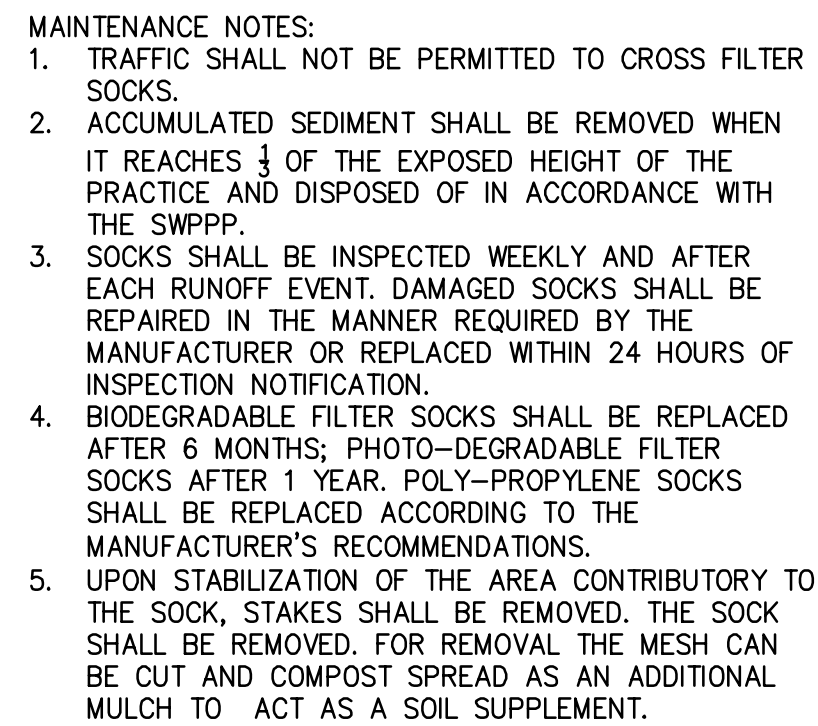
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			REV. NO.		SH.NO.	OF XXX



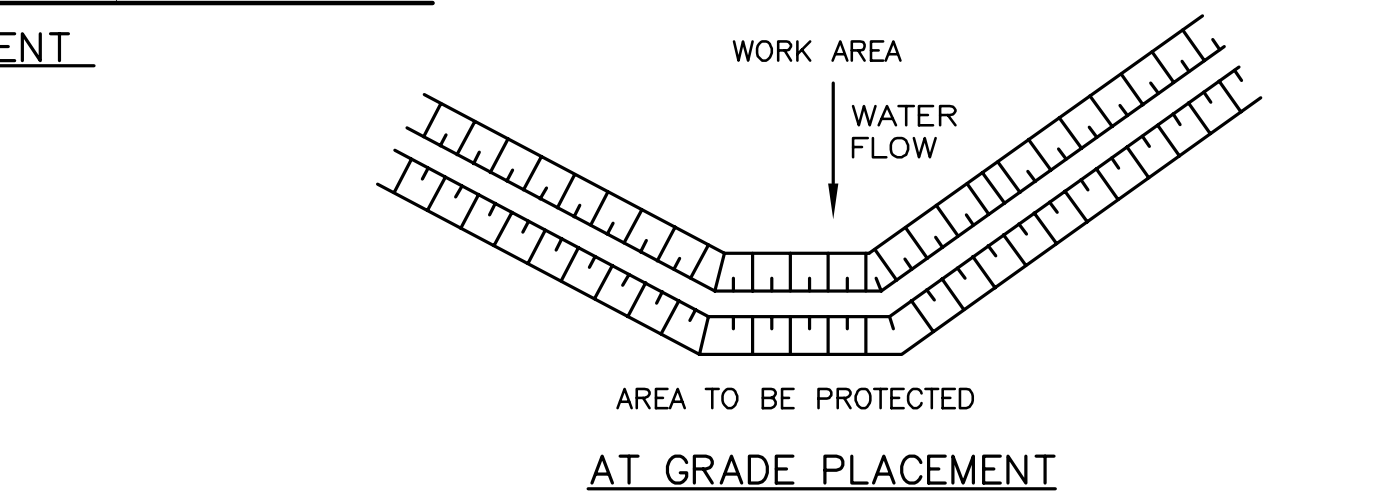




NOT TO SCALE



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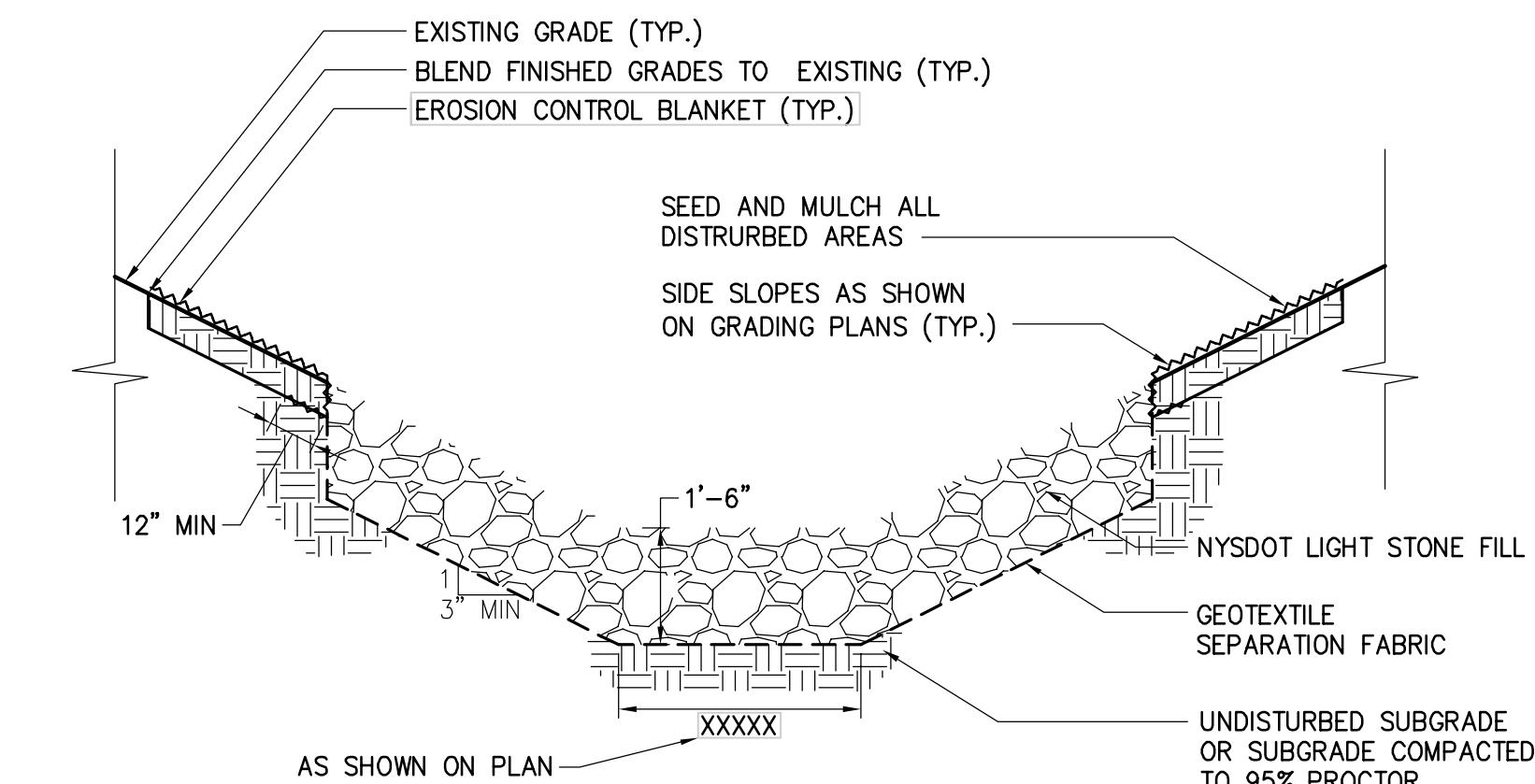


## SCALE: N.T.S.



1. TIE FABRIC TO WIRE FENCE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. IF EXTRA STRENGTH FABRIC (GREATER THAN 50#/INCH) IS USED, WIRE CAN BE DELETED IF POST SPACING IS REDUCED TO 6' O.C.
3. AT THE ENDS OF THE FENCING THE FIRST 20' SHALL BE TURNED UP THE SLOPE 2'.
4. POSTS SHOULD BE INCLINED TOWARD THE DIRECTION FLOW CAME FROM.
5. OVERLAP FABRIC A MINIMUM OF 6" AND FOLDED AT JOINTS. ATTACH FILTER FABRIS TO STAKES ALLOWING EXTENSION INTO TRENCH AS SHOWN; SECURE TO STAKES AS NOTED.
6. THE MAXIMUM AREA OF RUNOFF PER 100LF. OF FENCE SHALL NOT EXCEED 0.25 ACRES.
7. MAINTENANCE SHALL BE PERFORMED AS NECESSARY. THE FENCING SHALL BE CHECKED AFTER EVERY STORM TO ENSURE THEIR PROPER FUNCTIONING.
8. WHEN FENCE IS NO LONGER NEEDED, THE ACCUMULATED SILT, THE POSTS AND FABRIC SHALL BE REMOVED AND TRENCH BACK FILLED WITH TOPSOIL AND SEEDED.
9. FENCING SHOULD BE PLACED AS SHOWN ON THE DRAWING OR IF NOT SHOWN, 10' BEYOND THE TOE OF THE OF THE SLOPE AND AT A SPACING IN ACCORDANCE WITH THE TABLE.
10. EXCAVATE TRENCH AS PER DETAIL AND SET POSTS AT 10' O.C.
11. BACKFILL WITH COMPACTED, EXCAVATED SOIL FROM TRENCH.

SCALE: N.T.S.

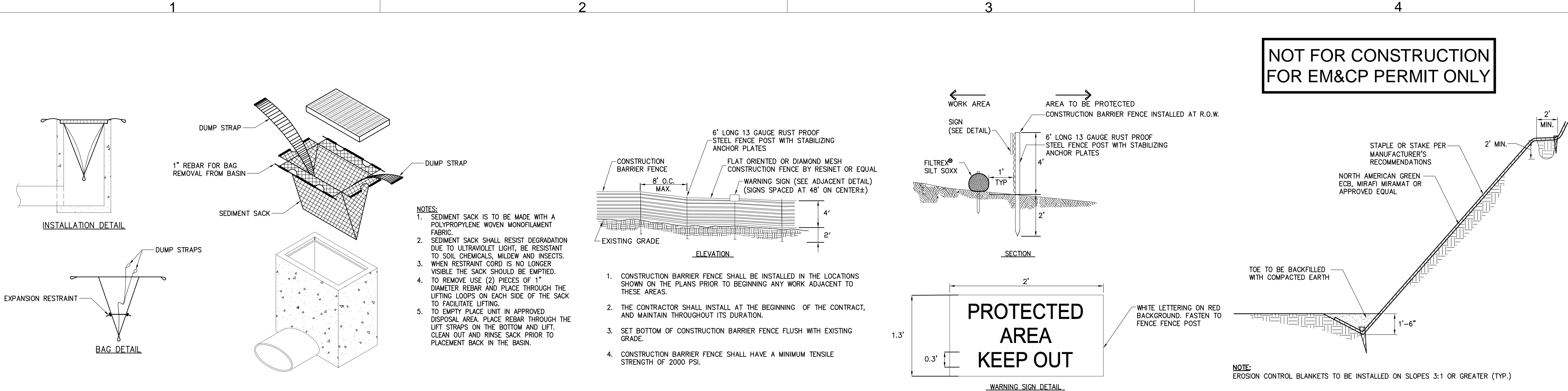


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SCALE: N.T.S



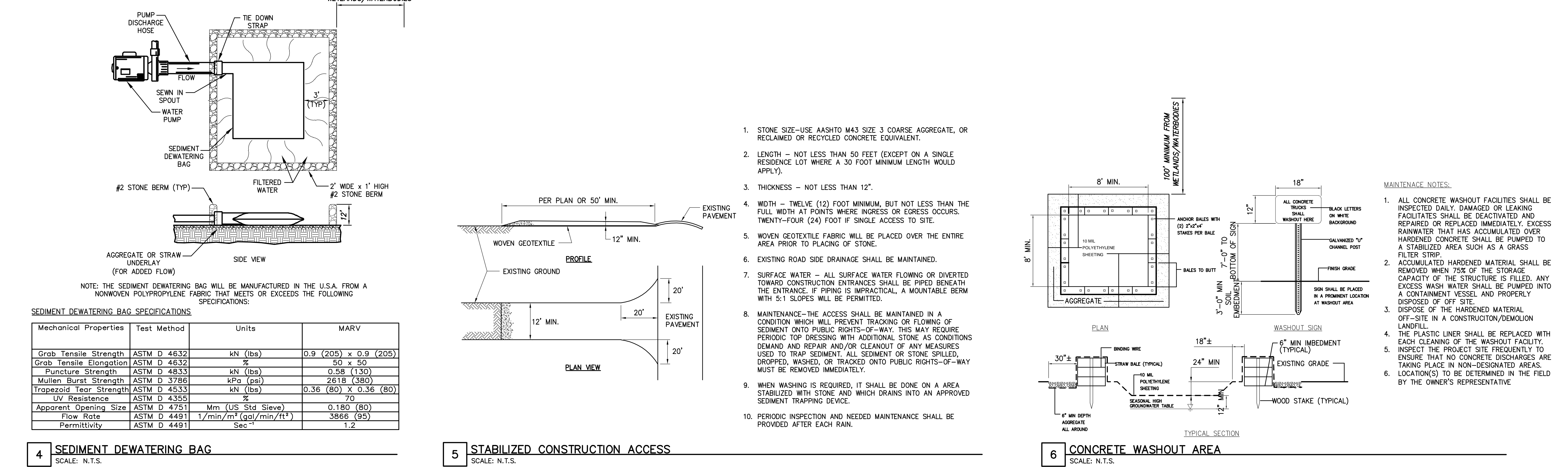
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1 **INLET PROTECTION**  
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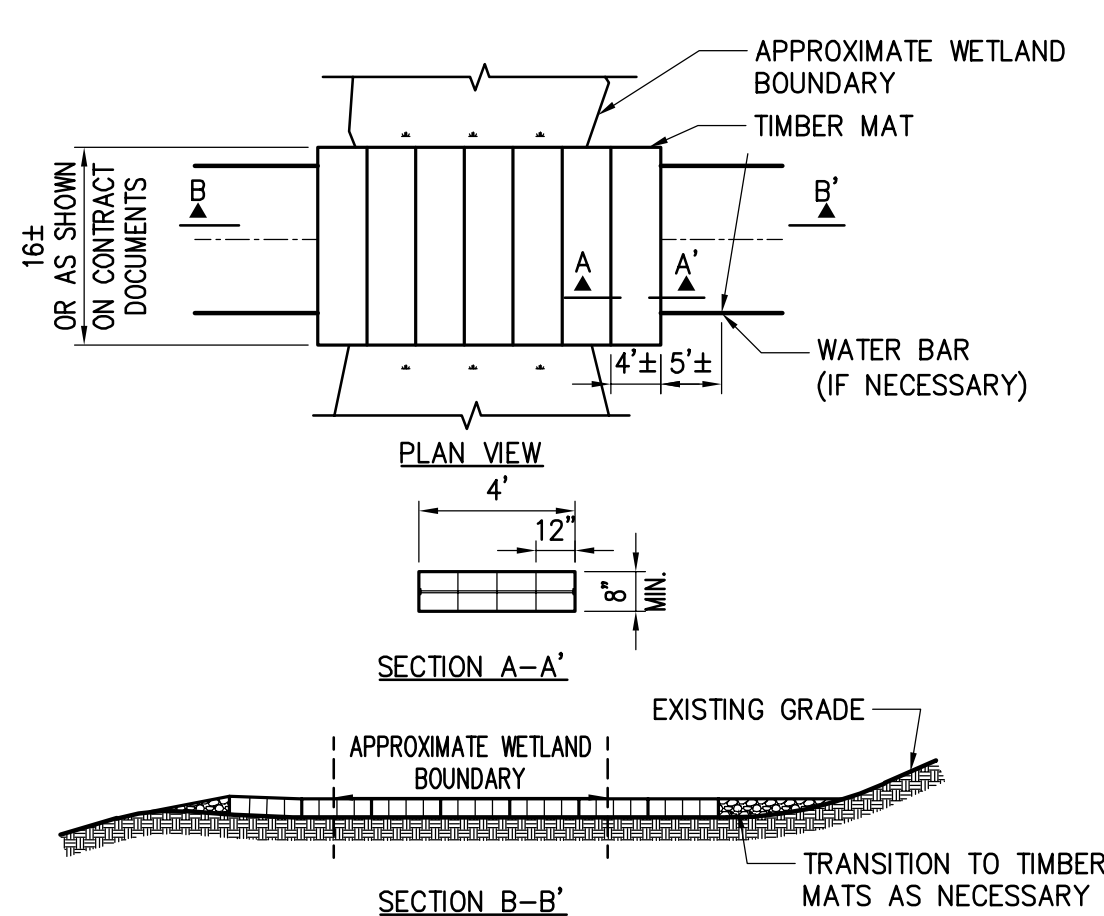
2 **WETLAND PROTECTION FENCE**  
SCALE: N.T.S.

3 **EROSION CONTROL BANK STABILIZATION DETAIL**  
SCALE: N.T.S.





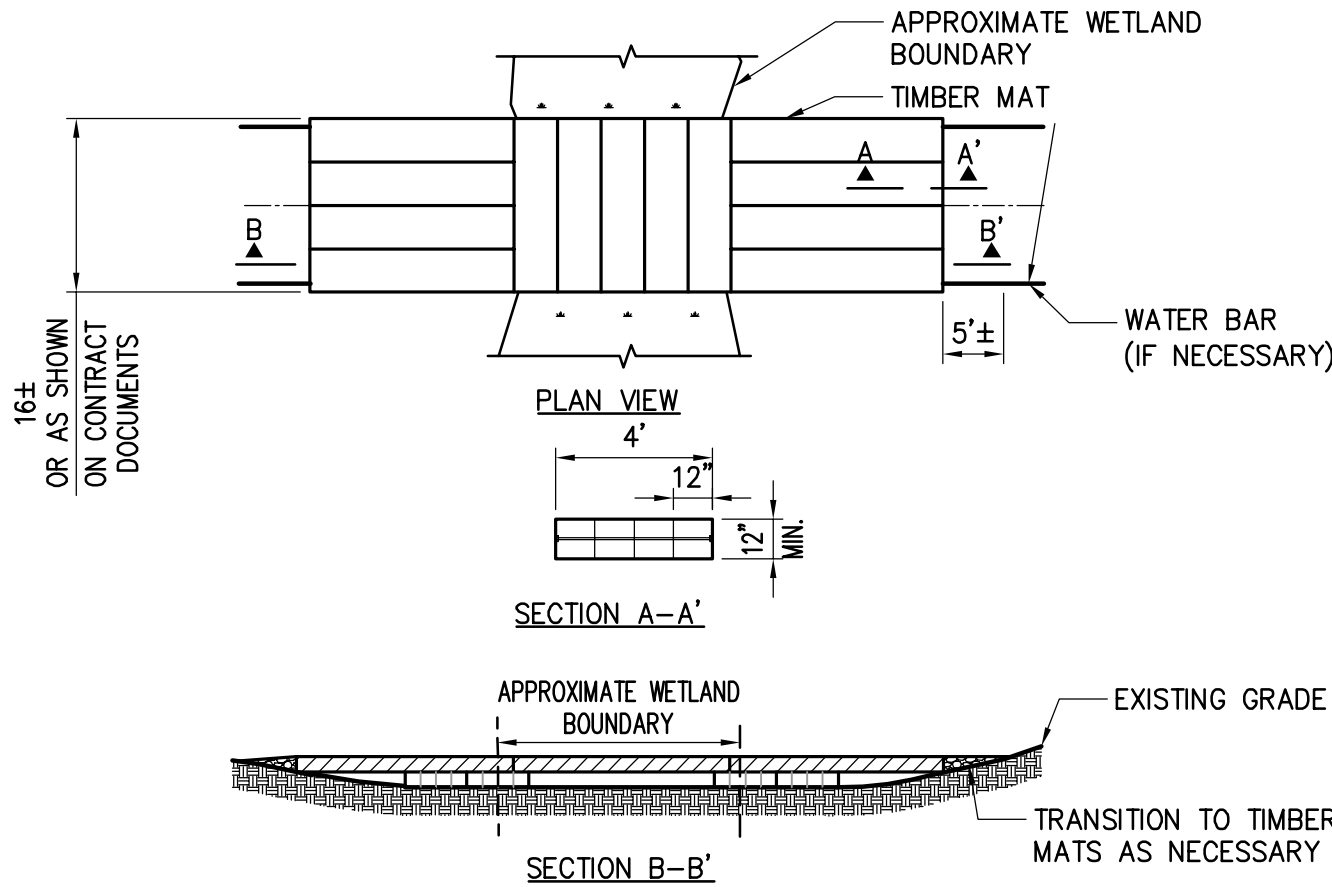
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- NOTES:
- TIMBER MATS SHOULD BE INSTALLED IN WETLANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
  - BASED ON ACTUAL SITE CONDITIONS, MULTIPLE LAYERS OF TIMBER MATS MAY BE REQUIRED.
  - TIMBER MAT SURFACE SHOULD BE LEVEL TO PREVENT EQUIPMENT AND VEHICLES FROM SLIDING OFF DURING MUDDY OR ICING CONDITIONS, AND PREVENT TIMBERS FROM BREAKING.
  - SEDIMENT TRACKED ONTO TIMBER MATTING SHOULD BE REMOVED AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING WETLAND DURING RAIN EVENTS. SEDIMENT SHOULD BE REMOVED TO A STABILIZED SOIL STOCKPILE OR OTHER APPROVED LOCATION.
  - PERIMETER EROSION AND SEDIMENT CONTROL ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
  - UNLESS PERMITTED FROM REMOVAL, STUMPS WITHIN THE WETLAND SHOULD REMAIN. THIS MAY REQUIRE ADDITIONAL TIMBERS TO BRIDGE ABOVE.
  - UPON REMOVAL OF TIMBER MATTING ALL SPLINTERED WOOD SHOULD BE REMOVED. IF EXPOSED SOILS ARE PRESENT STRAW MULCH SHOULD BE APPLIED.

NOTE: GEOTEXTILE FABRIC TO BE INSTALLED UNDER MATTING (TYP)

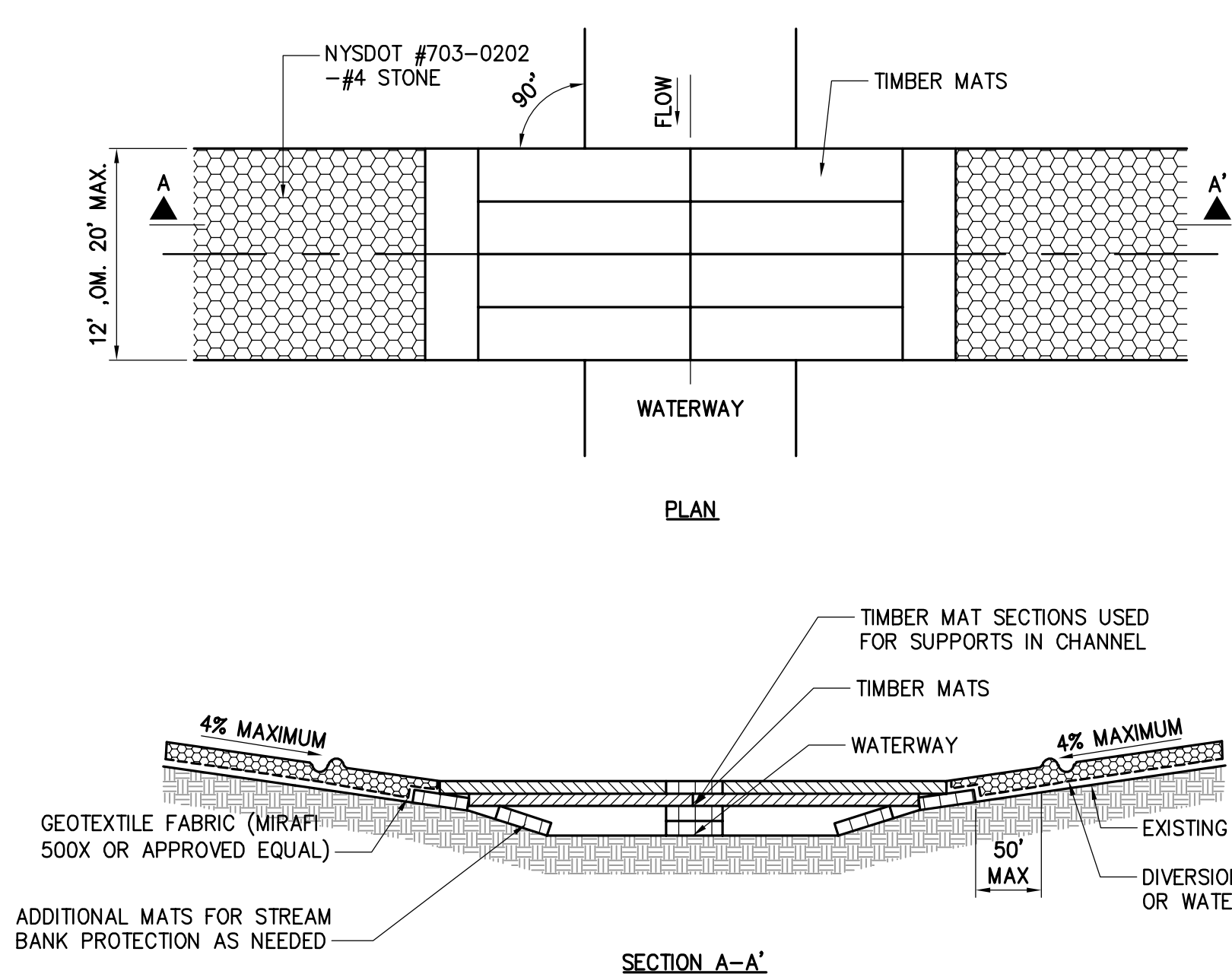
OPTION "A"  
NOT TO SCALE



- NOTES:
- TIMBER MATS SHOULD BE INSTALLED IN WETLANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
  - BASED ON ACTUAL SITE CONDITIONS, MULTIPLE LAYERS OF TIMBER MATS MAY BE REQUIRED.
  - TIMBER MAT SURFACE SHOULD BE LEVEL TO PREVENT EQUIPMENT AND VEHICLES FROM SLIDING OFF DURING MUDDY OR ICING CONDITIONS, AND PREVENT TIMBERS FROM BREAKING.
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  - PERIMETER EROSION AND SEDIMENT CONTROL ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
  - UNLESS PERMITTED FROM REMOVAL, STUMPS WITHIN THE WETLAND SHOULD REMAIN. THIS MAY REQUIRE ADDITIONAL TIMBERS TO BRIDGE ABOVE.
  - UPON REMOVAL OF TIMBER MATTING ALL SPLINTERED WOOD SHOULD BE REMOVED. IF EXPOSED SOILS ARE PRESENT STRAW MULCH SHOULD BE APPLIED.

NOTE: GEOTEXTILE FABRIC TO BE INSTALLED UNDER MATTING (TYP)

OPTION "B"  
NOT TO SCALE



NOTES:

- IN-STREAM EXCAVATION SHOULD BE COMPLETED IN ACCORDANCE WITH "TEMPORARY ACCESS WATERWAY CROSSING" ON PAGE 2.32 OF THE 2016 NYSDEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (OR NEWEST VERSION) AND THE CERTIFICATE.
- THE CONSTRUCTION OF ANY CROSSING SHOULD NOT CAUSE A SIGNIFICANT WATER LEVEL DIFFERENCE BETWEEN THE UPSTREAM AND DOWNSTREAM WATER SURFACE ELEVATIONS. IN-STREAM WORK WILL BE PROHIBITED WITHIN COLD WATER TROUT FISHERIES FROM OCTOBER 1 TO MAY 31.
- ALL FILL MATERIALS ASSOCIATED WITH THE ROADWAY APPROACH SHOULD BE LIMITED TO A MAXIMUM HEIGHT OF 2 FEET ABOVE THE EXISTING FLOOD PLAIN ELEVATION.
- A WATER DIVERTING STRUCTURE SUCH AS A SWALE OR WARE BAR SHOULD BE CONSTRUCTED (ACROSS THE ROADWAY ON BOTH ROADWAY APPROACHES) 50 FEET (MAXIMUM) ON EITHER SIDE OF THE WATERWAY CROSSING. THIS WILL PREVENT ROADWAY SURFACE RUNOFF FROM DIRECTLY ENTERING THE WATERWAY. THE 50 FEET MEASURED IS MEASURED FROM THE TOP OF THE WATERWAY BANK. IF THE ROADWAY APPROACH IS CONSTRUCTED WITH A REVERSE GRADE AWAY FROM THE WATERWAY, A SEPARATE DIVERTING STRUCTURE IS NOT REQUIRED.
- ALL CROSSINGS SHOULD HAVE ONE TRAFFIC LANE. THE MINIMUM WIDTH SHOULD BE 12 FEET WITH A MAXIMUM WIDTH OF 20 FEET.
- ANCHORS: TIMBER MATS SHOULD BE SECURELY ANCHORED AT ONLY ONE END, USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL ANCHORS. ANCHORING SHOULD BE SUFFICIENT TO PREVENT THE TIMBER MATS FORM FLOATING DOWNSTREAM AND POSSIBLY CAUSING AN OBSTRUCTION TO THE FLOW.

OPTION "C"  
NOT TO SCALE

## 1 TIMBER MATTING

SCALE: N.T.S.



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0	09/21/2022	FINAL EM&CP SUBMISSION	JM	JR
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

## CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN WETLAND CROSSING DETAILS

DRAWN BY: xxx DESIGNED BY: xxx APPROVED BY: xxx SCALE AS NOTED REV. NO. X

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CHA PROJECT NO.	066076
DRAWING NO.	C-611
DATE	09/21/2022
SH.NO.	xxx OF xxx

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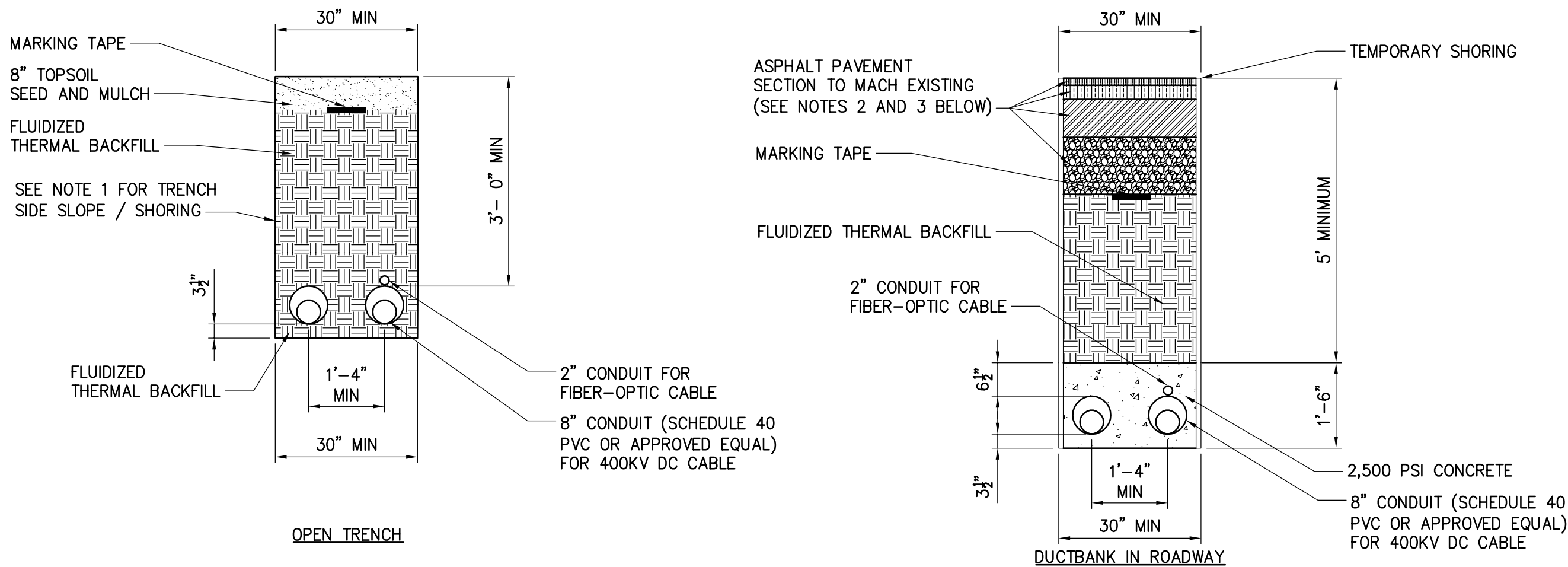
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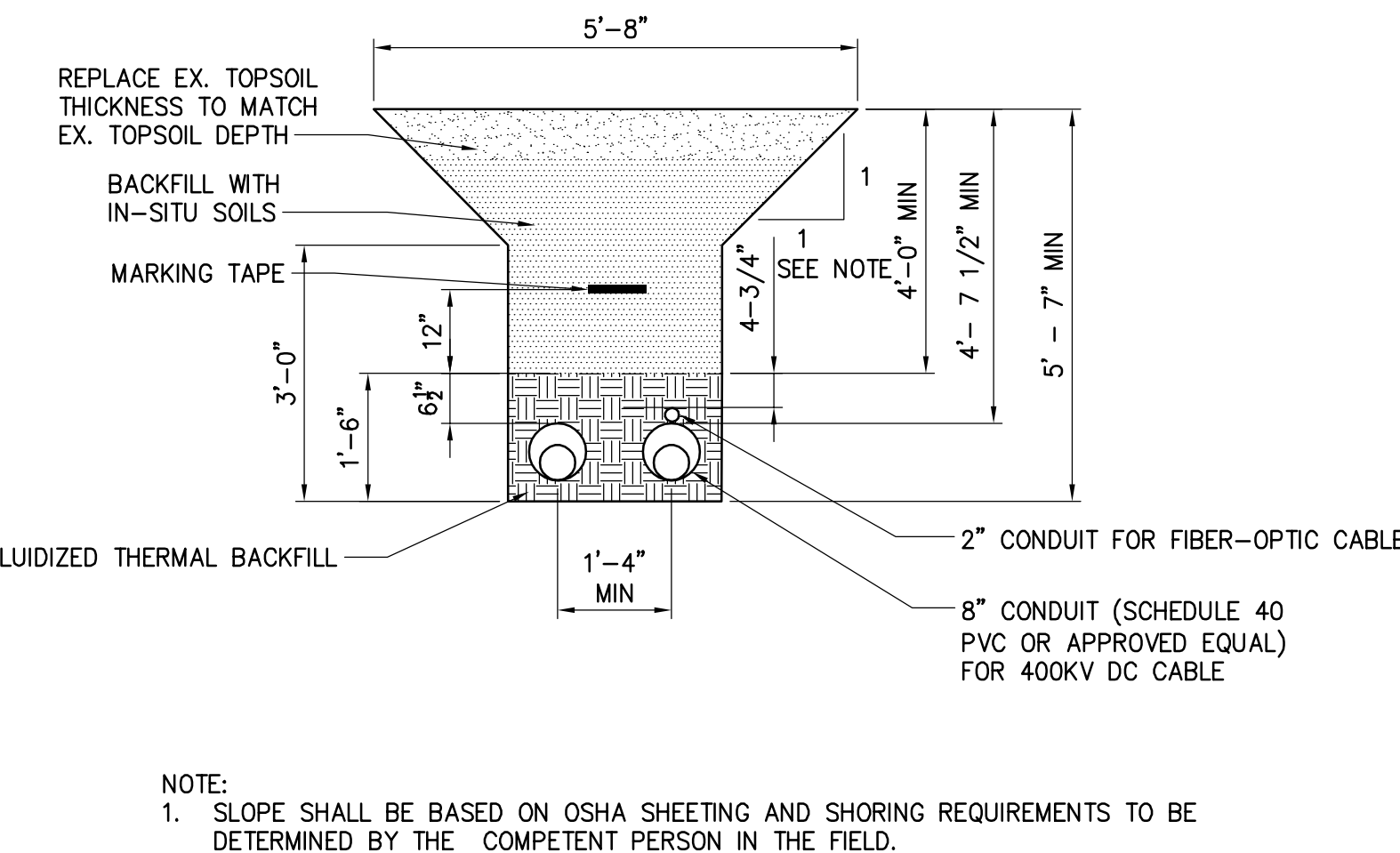
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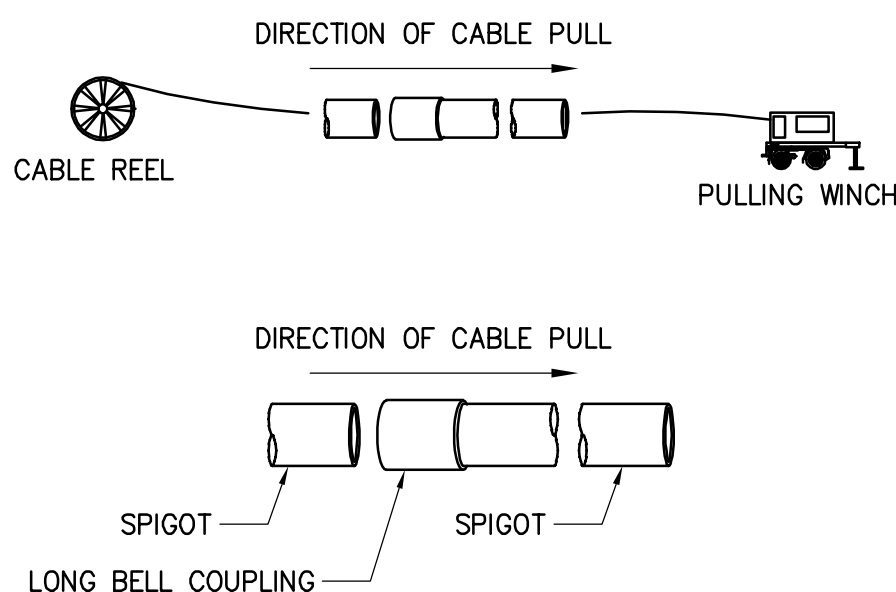
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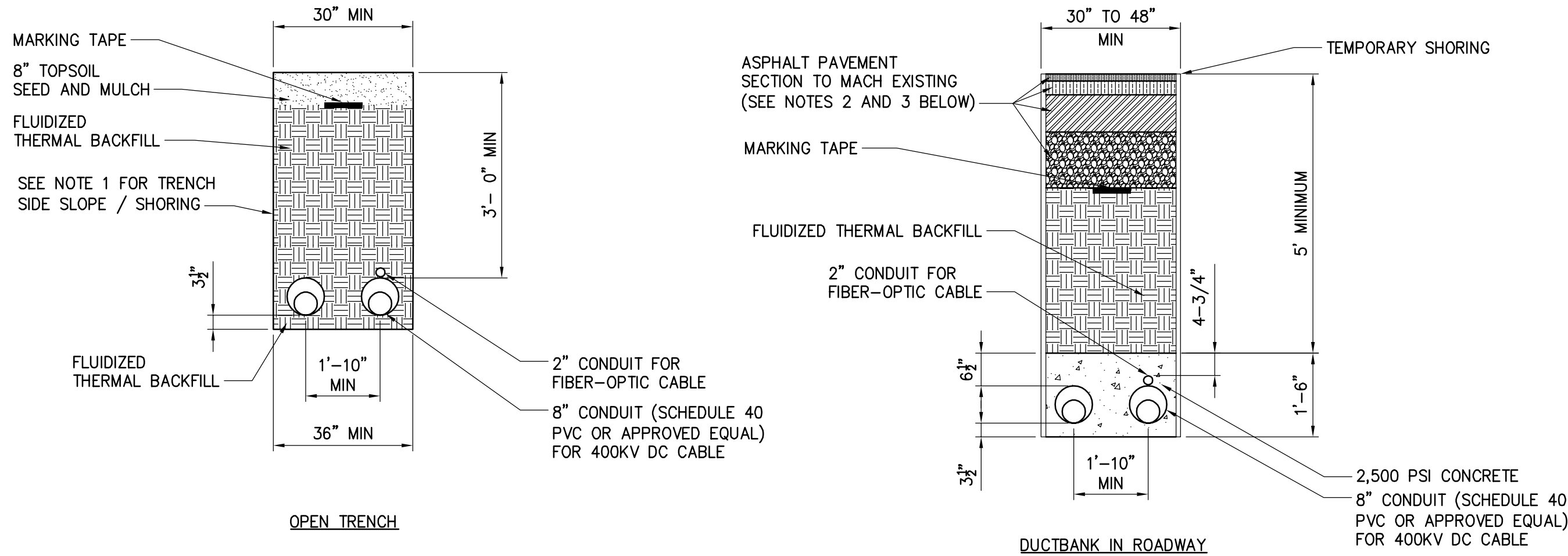
1 30" WIDTH, 16" CENTER TO CENTER SPACING  
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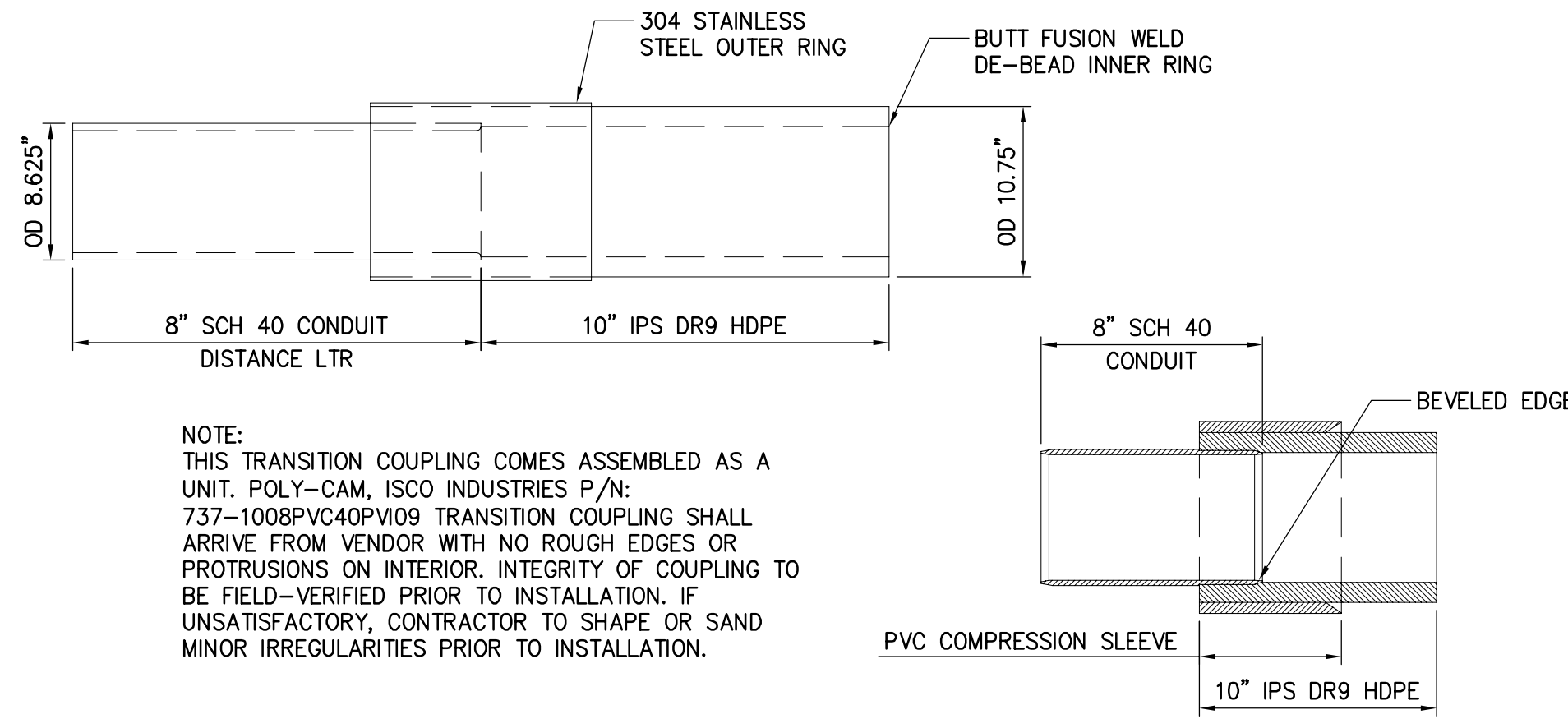
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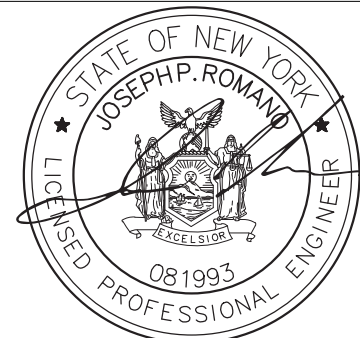
4 TYPICAL COUPLING DIRECTION OF PULL DETAIL  
NOT TO SCALE



2 36" WIDTH, 22" CENTER TO CENTER SPACING  
NOT TO SCALE



5 8"-10" PVC/HDPE TRANSITION COUPLING  
NOT TO SCALE



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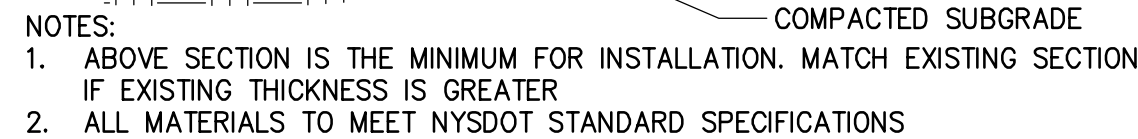
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN  
TRENCHING DETAILS

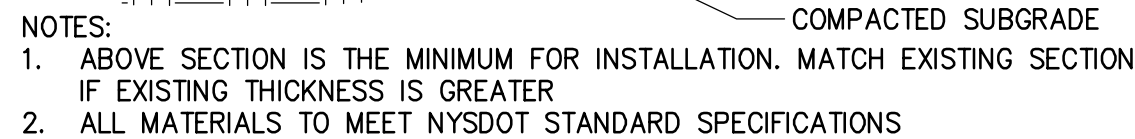
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CHA PROJECT NO.	066076
DRAWING NO.	C-621
DATE	09/21/2022
SH.NO.	XXX OF XXX

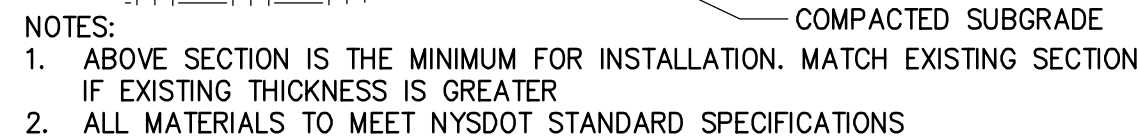




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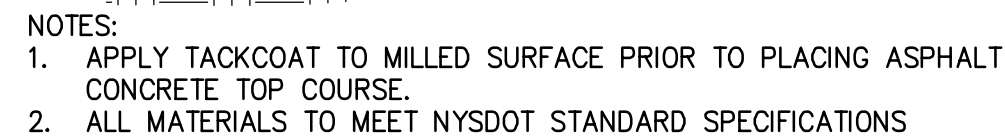
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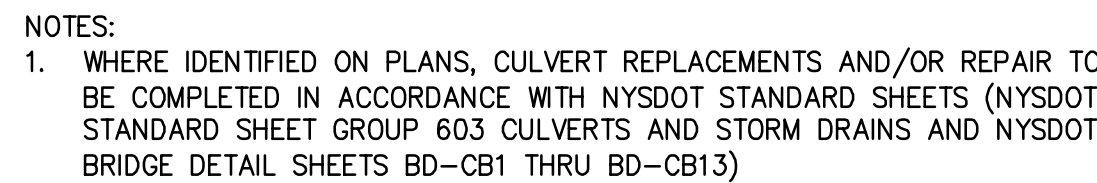
4

NOTES:  
<sup>1</sup> ESTIMATE CBR IN THE FIELD USING A DYNAMIC CONE PENETROMETER.  
<sup>2</sup> SEPARATOR GEOTEXTILE FABRIC SUCH AS MIRAFI 140N SHALL BE INCLUDED BENEATH GEOGRID LAYER ON COHESIVE SUBGRADE.  
<sup>3</sup> RIP RAP TO BE NYSDOT LIGHT STONE FILL.  
<sup>4</sup> A LAYER OF #57 STONE MAY BE REQUIRED ON TOP OF GEOTEXTILE TO PREVENT DAMAGING OR PUNCHING OF THE FABRIC.  
<sup>5</sup> GEOGRID AND GEOTEXTILES SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATION INCLUDING OVERLAP AND EDGE DETAILS.

NOTE:  
ACCESS ROAD SECTIONS PER KIEWIT GEOTECHNICAL



1/



8



9



11

DATE	09/21/2022
SH NO	XXX OF XXX





1. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES.
2. INSTALL MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.
3. INSTALL A SANDBAG COFFERDAM AT THE UPSTREAM END TO SUPPORT BY-PASS PUMPING.
4. INSTALL A RIPRAP APRON AT THE DOWNSTREAM END TO SUPPORT BY-PASS PUMPING.
5. INSTALL A TRENCH ACROSS THE ROAD TO RUN BY-PASS PUMPING PIPE AND BACKFILL OVER TOP OF THE PIPE WITH CRUSHED STONE TO MATCH THE GRADES OF THE EXISTING DRIVING SURFACE.
6. EXCAVATE THE DOWNSTREAM PORTION OF THE ROADWAY (FIRST HALF OF ROAD).
7. PREPARE SUBGRADE AND SUBBASE AND INSTALL HALF OF THE NEW CULVERT INLINE WITH THE EXISTING CULVERT. MATCH THE DOWNSTREAM INVERT TO THE TO THAT OF THE PREVIOUS DOWNSTREAM INVERT OF THE CULVERT REPLACED. (REMOVE A MINIMUM 100' OF PAVEMENT IN EACH DIRECTION FROM THE CULVERT)
8. INSTALL THE HEADWALL SECTION AND RIPRAP SECTION ALONG THE DOWNSTREAM SIDE (IF REQUIRED)
9. BACKFILL AND COMPACT IN LIFTS AROUND THE HALF SECTION OF NEWLY INSTALLED CULVERT AND INSTALL A COMPACTED CRUSHED STONE DRIVING SURFACE OVER TOP OF THE BACKFILLED AREA.
10. ADJUST MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES AS NECESSARY TO INSTALL THE SECOND HALF OF THE CULVERT.
11. EXCAVATE THE UPSTREAM PORTION OF ROADWAY (SECOND HALF OF ROAD).
12. PREPARE SUBGRADE AND SUBBASE AND INSTALL HALF OF THE CULVERT INLINE WITH THE NEWLY INSTALLED DOWNSTREAM PORTION OF CULVERT. MATCH THE UPSTREAM INVERT TO THE TO THAT OF THE PREVIOUS UPSTREAM INVERT OF THE CULVERT REPLACED. (REMOVE A MINIMUM 100' OF PAVEMENT IN EACH DIRECTION FROM THE CULVERT)
13. INSTALL THE HEADWALL SECTION AND RIPRAP SECTION ALONG THE UPSTREAM SIDE (IF REQUIRED)
14. ALLOW FLOW THROUGH THE NEWLY INSTALLED CULVERT BY REMOVING THE SANDBAG COFFERDAM.
15. BACKFILL AND COMPACT IN LIFTS THE EXCAVATED AREAS AROUND THE NEW CULVERT SECTION AND INSTALL A CRUSHED STONE DRIVING SURFACE.
16. ROUGH GRADE THE EMBANKMENT BACKFILL AND COMPACT IN LIFTS.
17. FINE GRADE THE ROADWAY SUBBASE AND BASE COURSES TO MATCH THE EXISTING GRADES.
18. INSTALL THE PORTION OF ROADWAY SECTION ABOVE THE INSTALLED CULVERT TO MATCH EX. GRADE.
19. TOPSOIL, SEED AND MULCH THE GRADED EMBANKMENT AREA.
20. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AT THE SUBSTANTIAL COMPLETION OF THE CULVERT REPLACEMENT

**BY-PASS PUMPING NOTE:**

1. CONTRACTOR SHALL PROVIDE 24-HOUR BY-PASS PUMPING OF THE STREAM DURING THE REMOVAL OF EXISTING CULVERT THROUGH THE INSTALLATION OF THE NEW CULVERT.

The diagram illustrates the construction of a sandbag cofferdam for a culvert excavation. A cross-section shows the cofferdam structure, which is 1' wide (min.) at the crest and has a 1:1 slope. The height of the cofferdam is indicated as 24" (min.). The excavation area is labeled "CULVERT EXCAVATION AREA". The stream bottom is shown as a dashed line, and the water level is indicated by a triangle symbol. The text "VARIES" is placed near the water level. A note states: "BOULDERS WILL BE ENCOUNTERED ON STREAM BOTTOM. CONSTRUCT COFFERDAM AROUND BOULDERS, UNLESS BOULDER REMOVAL AGREED UPON BY ENGINEER." The diagram also shows the "APPROX. STREAM BOTTOM (FIELD CONDITIONS MAY VARY)".

NOTE:

1. SAND BAGS SHALL BE FILTER FABRIC TYPE AND BE DOUBLE BAGGED.
2. PORTADAM, BY PORTADAM, INC. SHALL BE CONSIDERED ACCEPTABLE SUBSTITUTE TO SAND BAGS.

X	SANDBAG COFFERDAM DETAIL
	SCALE: N.T.S

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0	09/21/2022	FINAL EM&CP SUBMISSION	JM	JR
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

# CHAMPLAIN HUDSON POWER EXPRESS

## SEGMENT 1 (PACKAGE 1A) PUTNAM TO DRESDEN

### TYPICAL CULVERT REPLACEMENT SEQUENCING

#### DETAILS

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

C-632

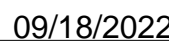
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			REV. NO.	

DATE	09/21/2023
SH.NO.	XXX OF XXX



FILE NAME =  
DATE/TIME = 14-MAR-2019 12:39FILE NAME =  
DATE/TIME = 14-MAR-2019 12:48FILE NAME =  
DATE/TIME = 14-MAR-2019 12:42

RELINING OF EXISTING ROADWAY CULVERTS SHALL BE IN ACCORDANCE WITH NYSDOT  
STANDARD SPECIFICATIONS – SECTION 706-09 CURED IN PLACE PIPE (CIPP) LINER



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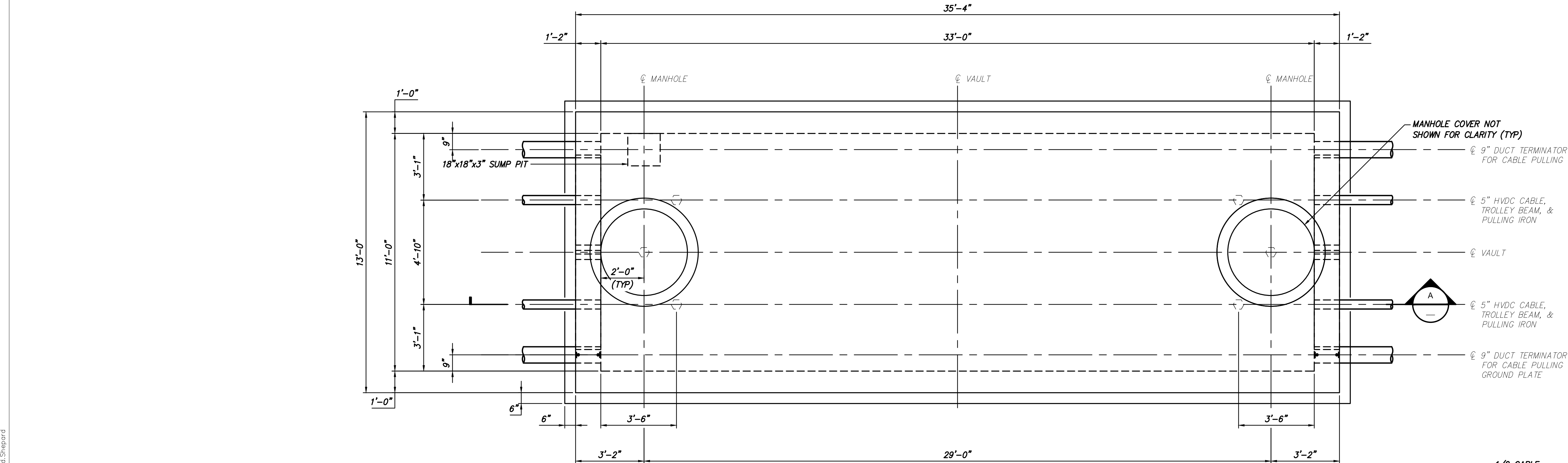
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			REV. NO.	

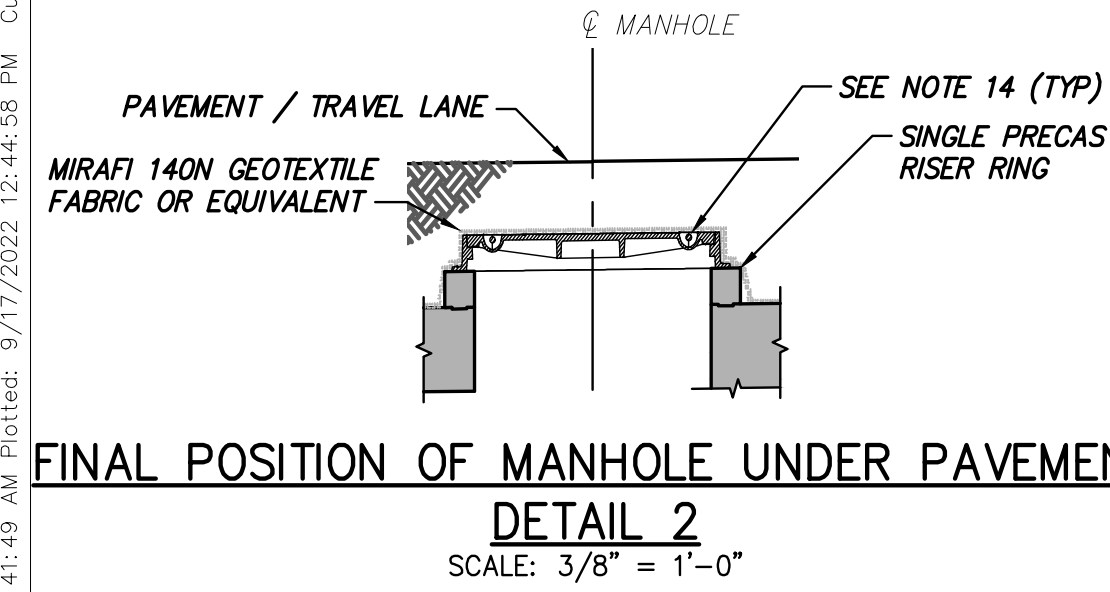
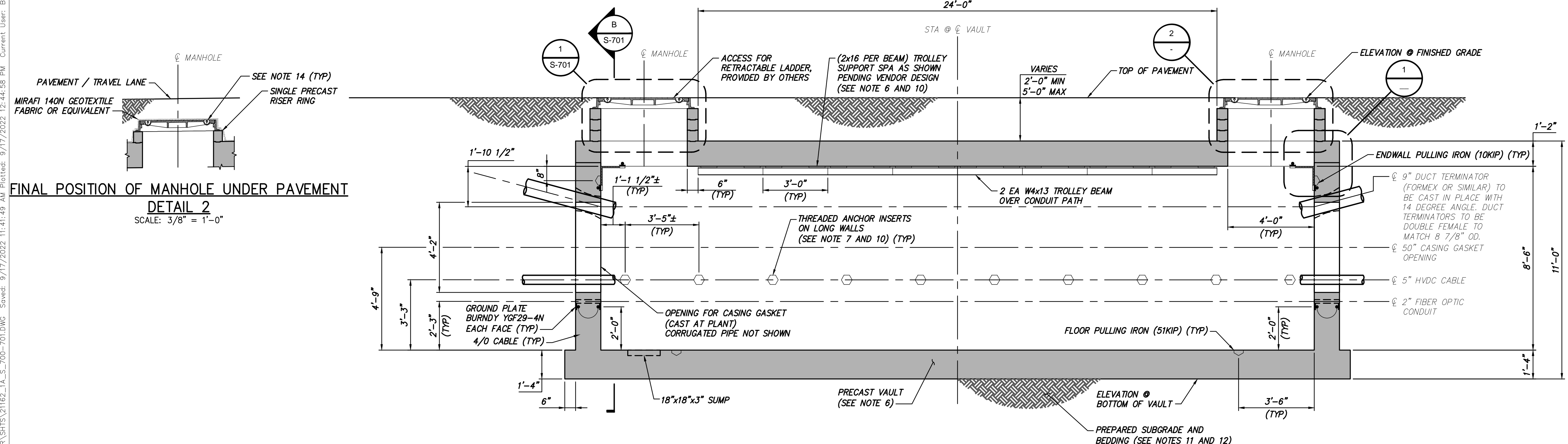
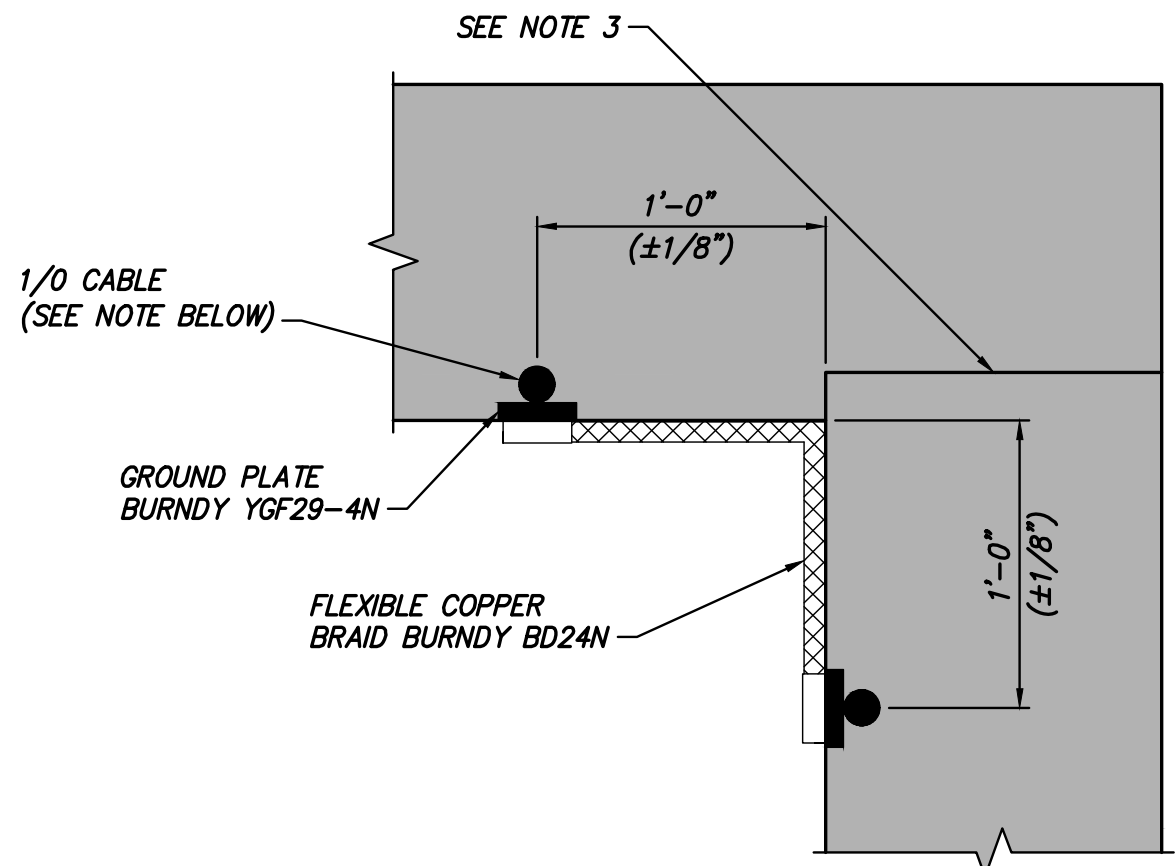
KIEWIT PROJECT NO.	
21162	
CHA PROJECT NO.	
066076	
DRAWING NO.	
C-633	
DATE	09/21/2022
SH.NO.	XXX OF XXX



File: P:\PROJECTS\KIE-CHPE\3-DES\07 STR\SHTS\21162\_1A\_S\_700-701.DWG Saved: 9/17/2022 11:41:49 AM Plotted: 9/17/2022 12:44:58 PM Current User: BradShepard LastSavedBy: BradShepard



- NOTES:
- EACH ENDWALL (8.5 FT x 11 FT) IS DESIGNED FOR A SINGLE 10,000 LB PULLING IRON FORCE. THE FLOOR SLAB IS DESIGN FOR A SINGLE 51,000 LB PULLING IRON FORCE. CABLE PULLING CREW SHALL NOT USE MORE THAN ONE PULLING IRON ON FLOOR CONCURRENTLY.
  - DESIGN LIVE LOAD: HS-20
  - EXTERIOR COATING & JOINT SEALERS/WATER STOPS TO BE USED BETWEEN PRECAST JOINTS, AS SPECIFIED.
  - MAXIMUM PRECAST PIECE PICK WEIGHT LIMITED TO 50,000 LB.
  - SEE ELECTRICAL DRAWINGS FOR CABLE RACKING DETAILS & GROUND WIRE DETAILS.
  - WALL THICKNESSES TO BE FINALIZED PER APPROVED VENDOR'S DESIGN. REFER TO APPROVED VENDOR SHOP DRAWINGS FOR WEIGHTS AND PICK POINTS.
  - THREADED ANCHOR WORKING LOAD SHALL BE 1,100 LB MINIMUM.
  - LINK SEAL TO BE USED BETWEEN CABLE CONDUIT AND PENETRATION SLEEVE, AS SPECIFIED.
  - ELECTRIC SUMP PUMP TO BE PROVIDED BY OTHERS.
  - SEE SHEET S-702 FOR ANCHOR AND EMBED LOCATIONS.
  - ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
  - 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 THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE BASED ON IN-SITU CONDITIONS.
  - PRECAST SUPPLIER TO COORDINATE WITH MANHOLE COVER SUPPLIER FOR FIT-UP ISSUES.
  - WHERE A MANHOLE IS LOCATED UNDER TRAVEL LANES, AFTER CABLE COMMISSIONING, ADDITIONAL RISERS TO BE REMOVED, MANHOLE FRAME AND COVER TO BE LOWERED TO FINAL POSITION. MANHOLE FRAME AND COVER 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.



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.

NOT FOR CONSTRUCTION  
FOR EM&CP APPROVAL ONLY

Champlain Hudson Power Express

Kiewit

CHA

ANDREA F. GRWY  
LICENSED PROFESSIONAL ENGINEER  
094103  
9/21/2022

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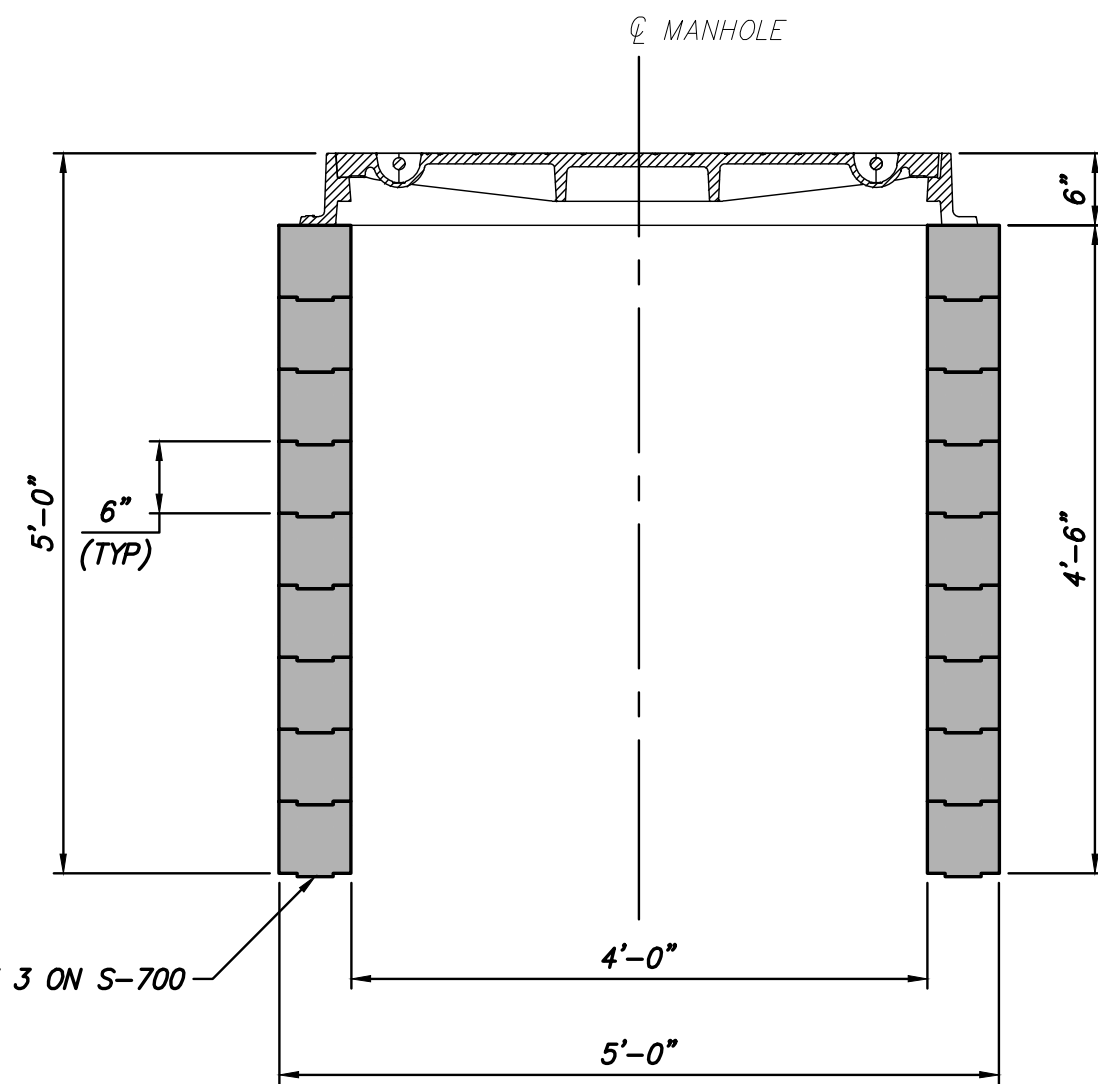
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	9/21/2022	FINAL EM&CP SUBMISSION	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 - PUTNAM TO DRESDEN  
SPLICE VAULT PLAN \_ ELEVATION

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

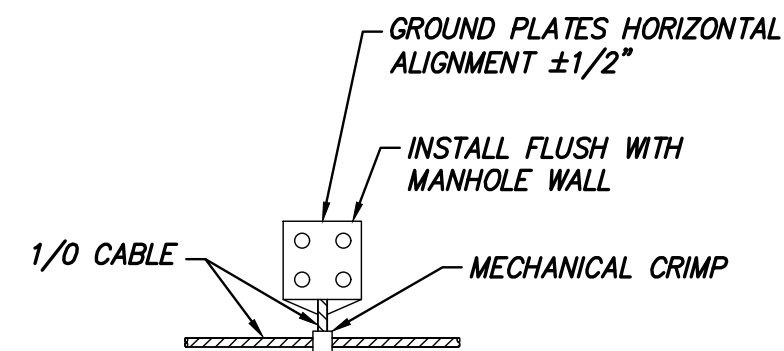
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	S-700
DATE	06/09/2022
SH.NO.	XX OF XXX





### MAXIMUM HEIGHT RISER DETAIL

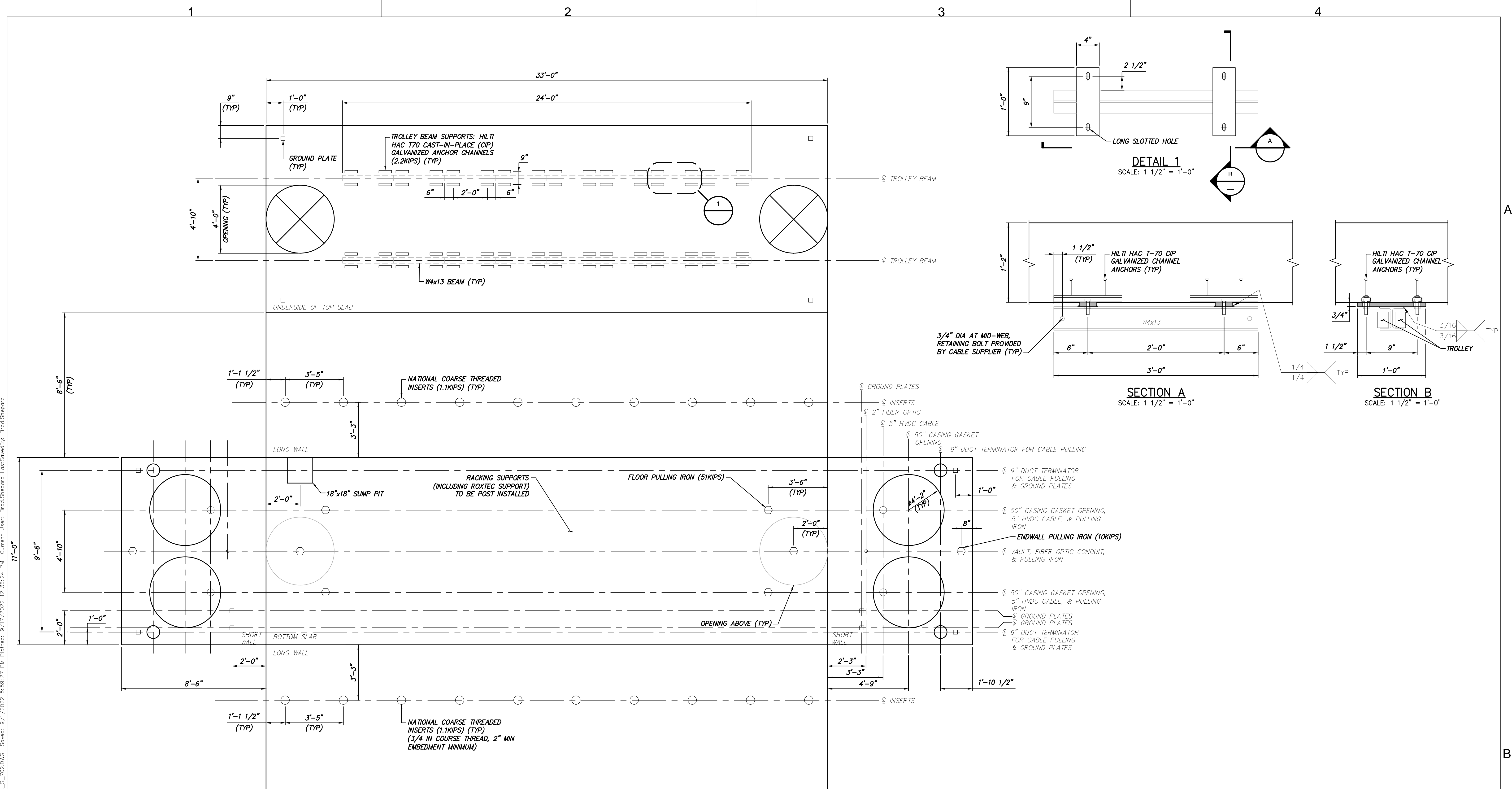
DETAIL 2  
SCALE: 1 1/2" = 1'-0"



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





**B**

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UNFOLDED INTERIOR VIEW  
SCALE: 3/8" = 1'-0"

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	9/21/2022	FINAL EM&CP SUBMISSION	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 - PUTNAM TO DRESDEN  
SPLICE VAULT ANCHOR & EMBED DETAILS

DRAWN BY: DRH

DESIGNED BY: JNK

APPROVED BY: OO

SCALE: AS SHOWN

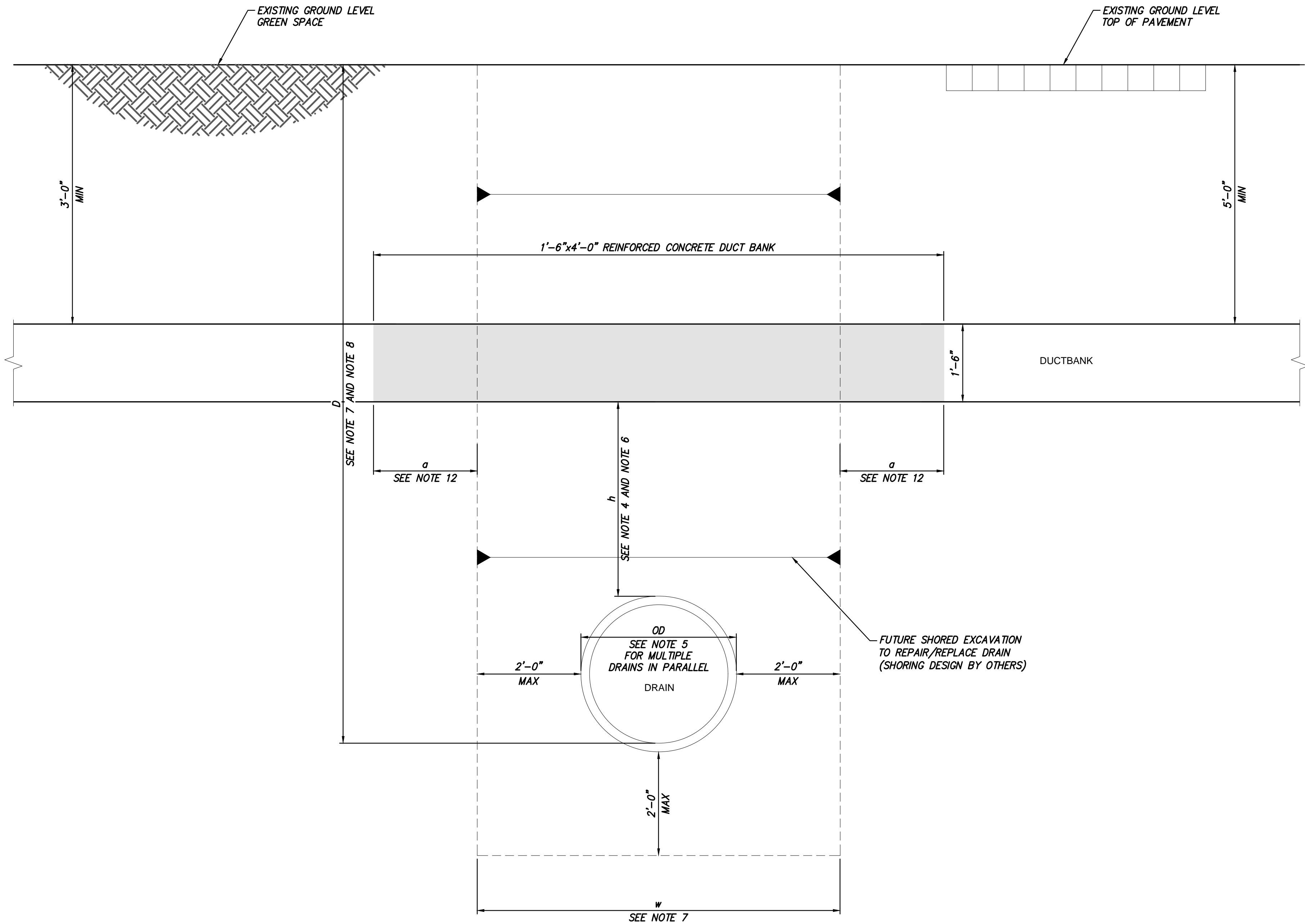
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CHA PROJECT NO. 066076  
DRAWING NO. S-702

DATE: 06/09/2022

SH.NO. XX OF XXX



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TYPICAL DUCT BANK SECTION OVER UTILITIES  
(FOR D < 14FT)  
SCALE: NTS

- NOTES:
1. TYPICAL SECTION AND FOLLOWING NOTES PROVIDED PROPOSED DESIGN CRITERIA TO BE APPLIED FOR DRAINS LOCATED BELOW THE DUCT BANK WITHIN THE NYS DOT RIGHT OF WAY, PENDING APPROVAL.
  2. EXCAVATION FOR / CONSTRUCTION OF FUTURE DRAIN REPAIRS/REPLACEMENTS, AND RELATED SHORING CALCULATIONS BY OTHERS.
  3. D = DISTANCE FROM EXISTING GROUND LEVEL TO DRAIN INVERT.
  4. h = DISTANCE FROM BOTTOM OF TRENCH PROTECTIVE CONCRETE/BOTTOM OF BRIDGING SUPPORT, TO TOP OF EXISTING DRAINAGE PIPE.
  5. FOR SINGLE PIPE, OD = OUTSIDE DIAMETER OF PIPE; FOR MULTIPLE PIPES IN PARALLEL, OD = DISTANCE BETWEEN OUTSIDE EDGES OF EXTERIOR PIPES.
  6. h IS ASSUMED TO BE 2FT MINIMUM.
  7. FOR D<14FT, ALL FUTURE EXCAVATIONS TO REPAIR/REPLACE EXISTING DRAINAGE PIPES WILL BE SHORED EXCAVATION, WITH MAXIMUM EXCAVATION WIDTH OF w=2FT+OD+2FT (DESIGN/CONSTRUCTION BY OTHERS).
  8. FOR D>14FT, TRENCH-LESS METHOD WILL BE USED TO REPAIR/REPLACE EXISTING DRAINAGE PIPES (DESIGN/CONSTRUCTION BY OTHERS).
  9. BRIDGING SUPPORT IS PROVIDED OVER LENGTH "w+2a".
  10. BRIDGING SUPPORT IS NOT PROVIDED WHEN D>14FT.
  11. BRIDGING SUPPORT IS DESIGNED TO CARRY DUCT BANK WEIGHT, ONLY. SOIL ABOVE THE DUCT BANK IS REMOVED BEFORE EXCAVATING UNDER THE DUCT BANK.
  12. "a" DIMENSION IS 2'-0" MINIMUM.
  13. "g" DIMENSION IS 2'-0" MINIMUM.

NOT FOR CONSTRUCTION  
FOR EM&CP APPROVAL ONLY



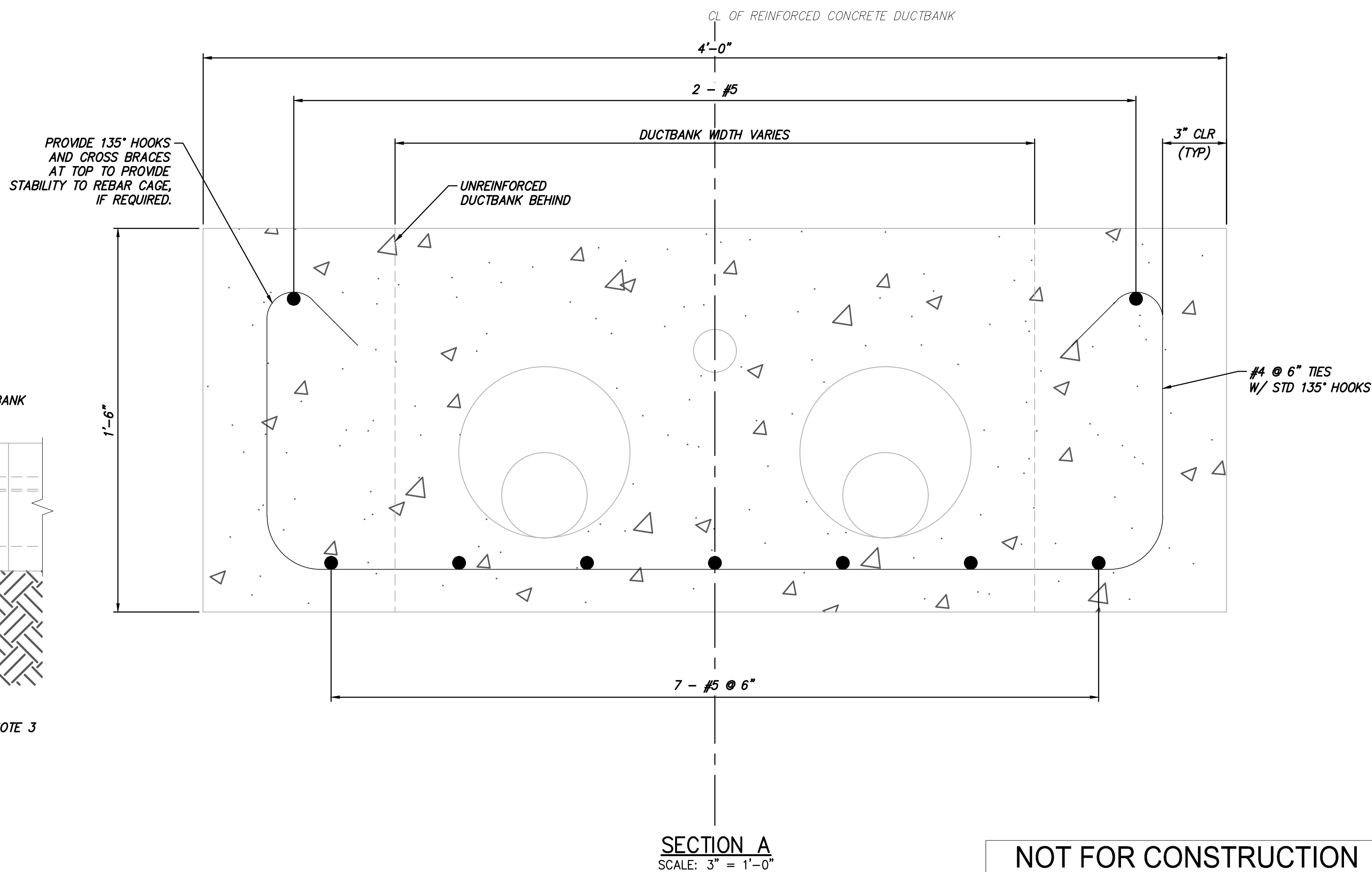
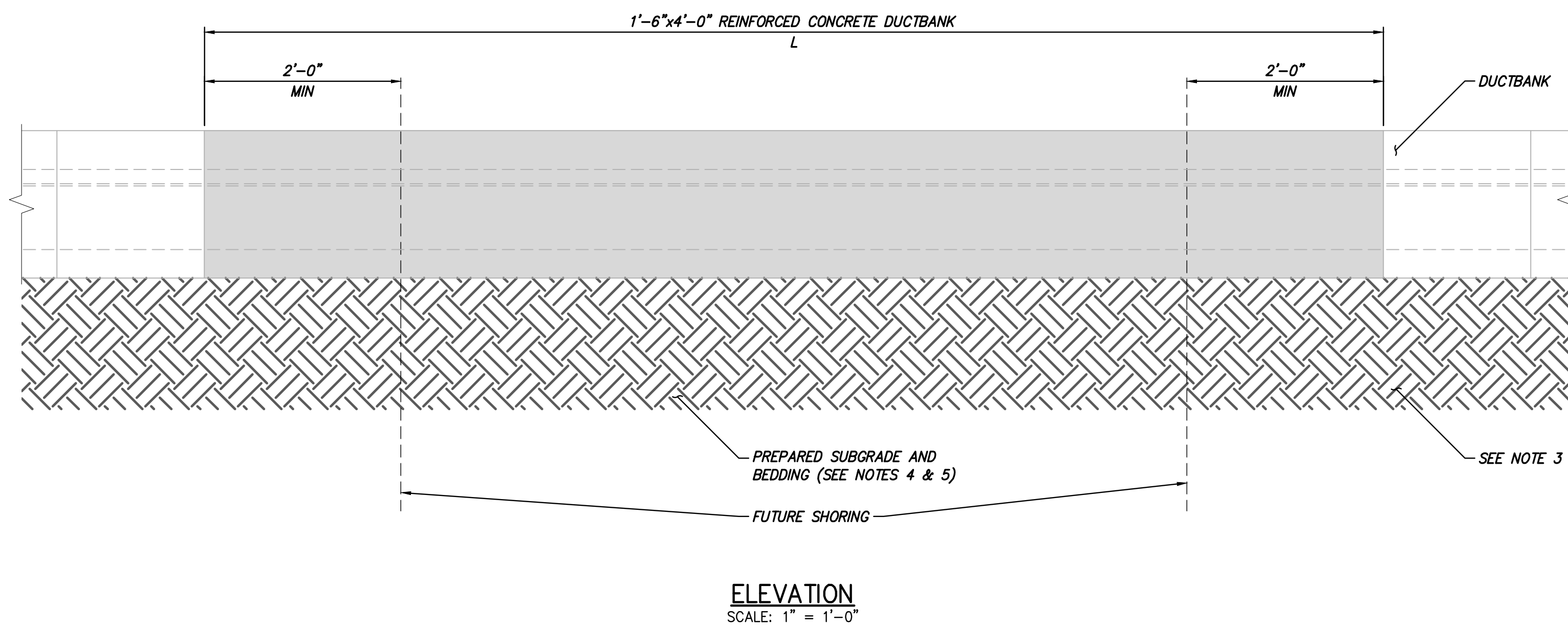
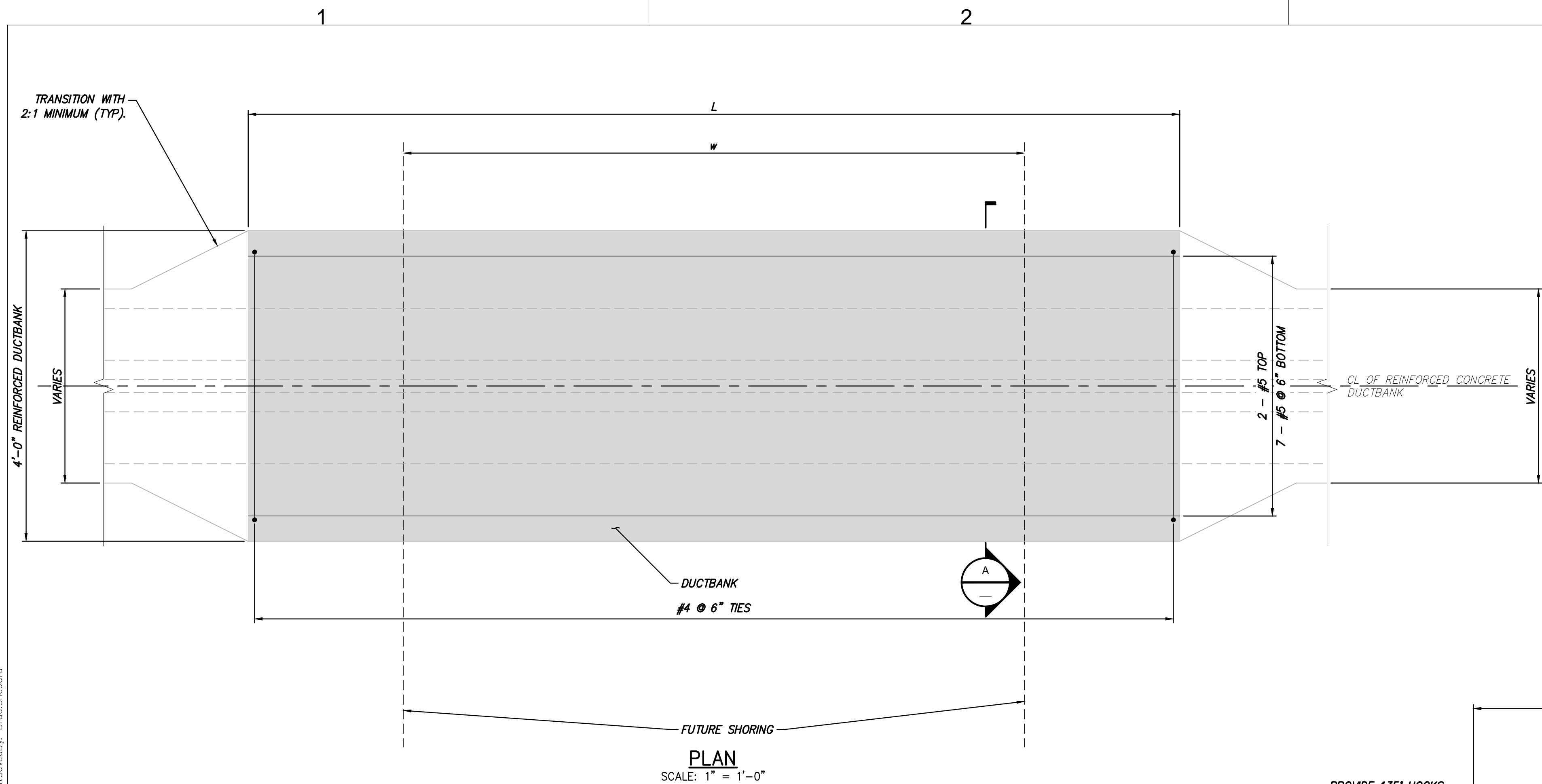
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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	9/21/2022	FINAL EM&CP SUBMISSION	JNK	OO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 - PUTNAM TO DRESDEN  
SELF-SUPPORTING STRUCTURE OVER UTILITIES

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	S-720
DATE	06/09/2022
SH.NO.	XX OF XXX





- NOTES:
1. REINFORCED CONCRETE DUCTBANK IS TO SUPPORT THE SELF WEIGHT OF THE DUCTBANK WITH 1'-6" HEIGHT. USE FOLLOWING FOR DESIGN:  

$$\text{SUPERIMPOSED DEAD LOAD} = 1'-6" \times 150 \text{ PCF} = 225 \text{ PSF}$$

$$\text{CONSTRUCTION LIVE LOAD} = 30 \text{ PSF}$$
  2. COMPLETELY REMOVE SOIL ABOVE THE DUCTBANK, BEFORE EXCAVATING UNDER DUCTBANK. DO NOT EXCAVATE UNDERNEATH DUCTBANK IF SOIL IS PRESENT ABOVE THE DUCTBANK.
  3. PREPARE SUBGRADE & FILL SIDES OF DUCTBANK SECTION BEFORE CASTING TRENCH CONCRETE.
  4. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
  5. 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.
  6. SEE SHEET S-720 FOR DEFINITION OF VARIABLES.
  7. MINIMUM CONCRETE STRENGTH  $f'c = 2.5 \text{ KSI}$  & GRADE 60 UNCOATED REBAR.

A

B

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0	9/21/2022	FINAL EM&CP SUBMISSION	JNK	OO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

# CHAMPLAIN HUDSON POWER EXPRESS

## SEGMENT 1 - PUTNAM TO DRESDEN

### SELF-SUPPORTING STRUCTURE DETAILS

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

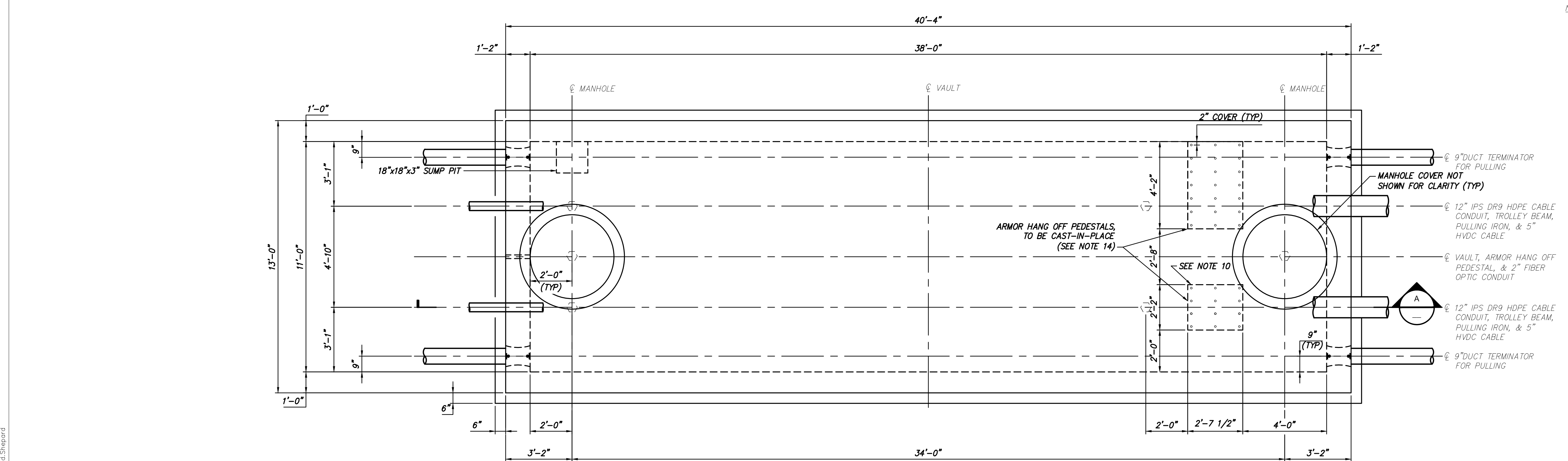
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DATE	06/09/2023
SH.NO.	XX OF XX

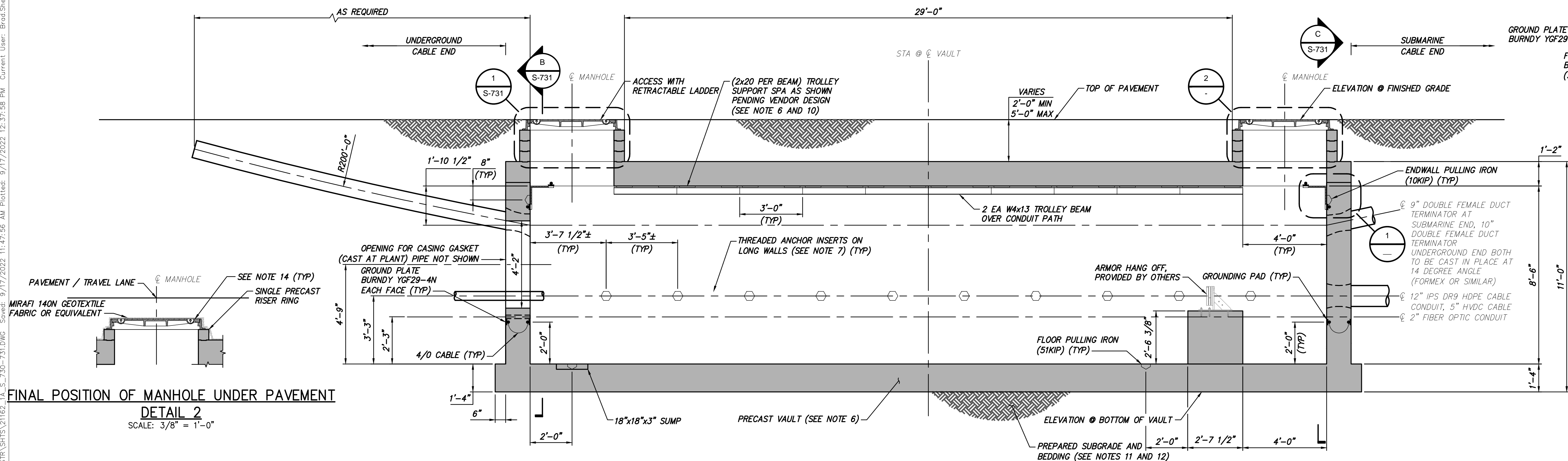
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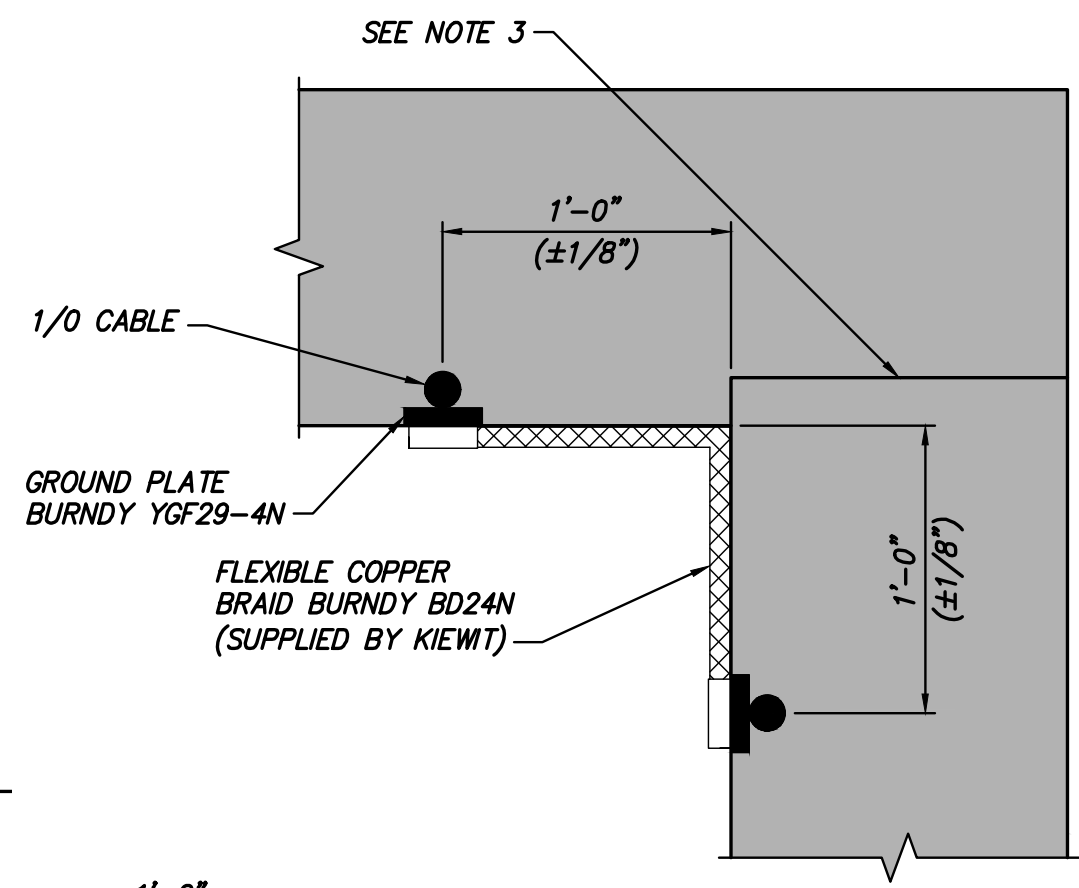


PLAN VIEW  
SCALE: 3/8" = 1'-0"



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

- NOTES:
- EACH ENDWALL (8.5 FT x 11 FT) IS DESIGNED FOR A SINGLE 10,000 LB PULLING IRON FORCE. THE FLOOR SLAB IS DESIGNED FOR A SINGLE 51,000 LB PULLING IRON FORCE. CABLE PULLING CREW SHALL NOT USE MORE THAN ONE PULLING IRON ON FLOOR CONCURRENTLY.
  - DESIGN LIVE LOAD: HS-20
  - EXTERIOR COATING & JOINT SEALERS/WATER STOPS TO BE USED BETWEEN PRECAST JOINTS, AS SPECIFIED.
  - MAXIMUM PRECAST PIECE PICK WEIGHT LIMITED TO 50,000 LB.
  - SEE ELECTRICAL DRAWINGS FOR CABLE RACKING DETAILS & GROUND WIRE DETAILS. (FUTURE SUBMISSION)
  - WALL THICKNESSES TO BE FINALIZED PER APPROVED VENDOR'S DESIGN. REFER TO APPROVED VENDOR SHOP DRAWINGS FOR WEIGHTS AND PICK POINTS.
  - THREADED ANCHOR WORKING LOAD SHALL BE 1,100 LB MINIMUM.
  - LINK SEAL TO BE USED BETWEEN CABLE CONDUIT AND PENETRATION SLEEVE, AS SPECIFIED.
  - ELECTRIC SUMP PUMP TO BE PROVIDED BY THE OPERATOR.
  - SEE SHEET S-732 FOR ANCHOR AND EMBED LOCATIONS.
  - ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
  - 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 THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE BASED ON IN-SITU CONDITIONS.
  - PRECAST SUPPLIER TO COORDINATE WITH MANHOLE COVER SUPPLIER FOR FIT-UP ISSUES.
  - WHERE MANHOLE IS LOCATED UNDER TRAVEL LANES, AFTER CABLE COMMISSIONING, ADDITIONAL RISERS TO BE REMOVED MANHOLE FRAME AND COVER TO BE LOWERED TO FINAL POSITION. MANHOLE FRAME AND COVER 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.
  - 4'-2" ARMOR HANG OFF PEDESTAL TO RESIST 17,000 LB TOTAL LATERAL FORCE APPLIED AT 3'-3" DUE TO HVDC AND FIBER OPTIC HANG OFFS. 2'-2" ARMOR HANG OFF PEDESTAL TO RESIST 11,000 LB TOTAL LATERAL FORCE AT 3'-3" DUE TO HVDC ARMOR HANG OFF.







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.

FINAL POSITION OF MANHOLE UNDER PAVEMENT  
DETAIL 2  
SCALE: 3/8" = 1'-0"

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0	9/21/2022	FINAL EM&CP SUBMISSION	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS  
SEGMENT 1 - PUTNAM TO DRESDEN  
TRANSITION VAULT PLAN \_ ELEVATION

DRAWN BY: DRH

DESIGNED BY: JNK

APPROVED BY: OO

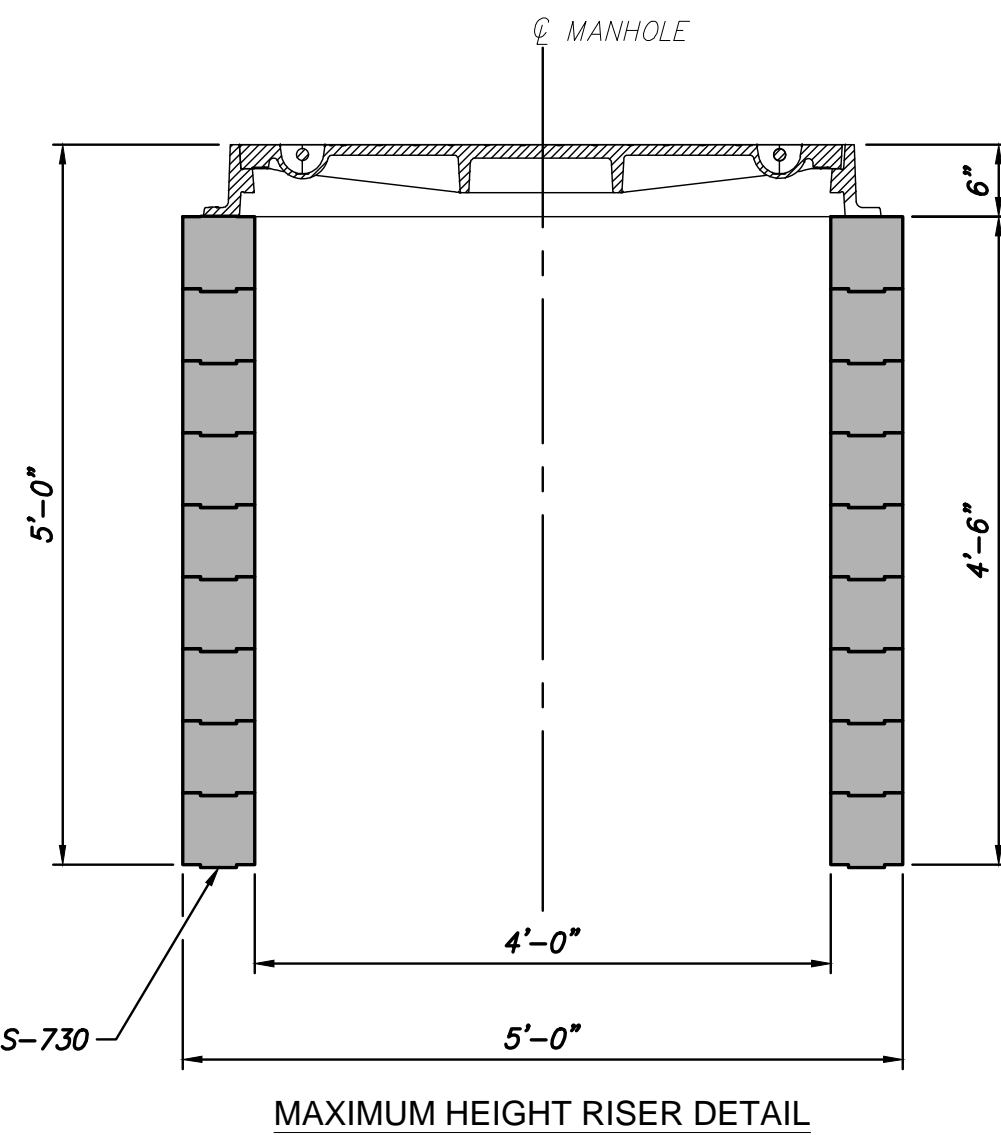
SCALE: AS SHOWN

KIEWIT PROJECT NO. 21162  
CHA PROJECT NO. 066076  
DRAWING NO. S-730

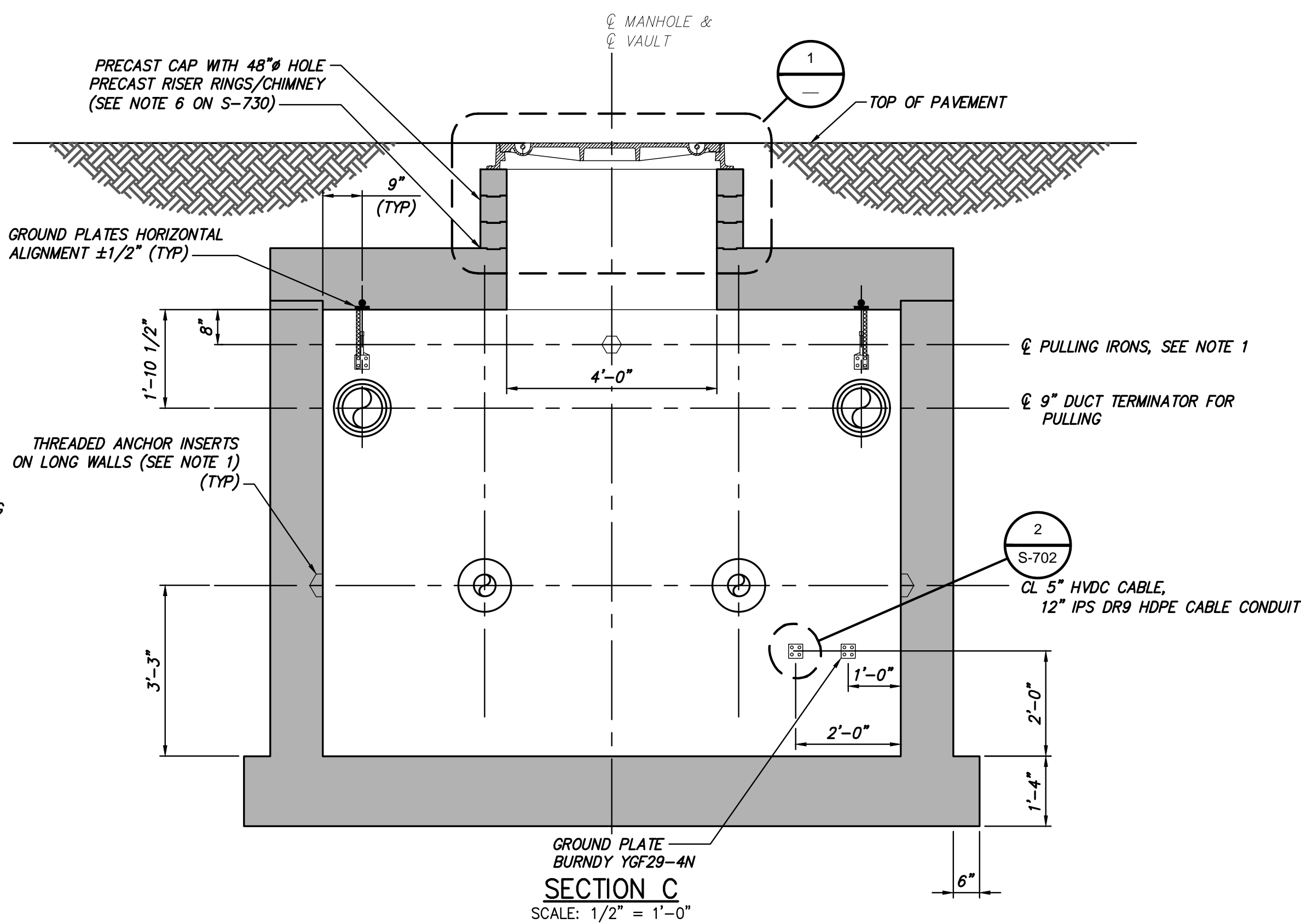
DATE 06/09/2022  
SH.NO. XX OF XXX



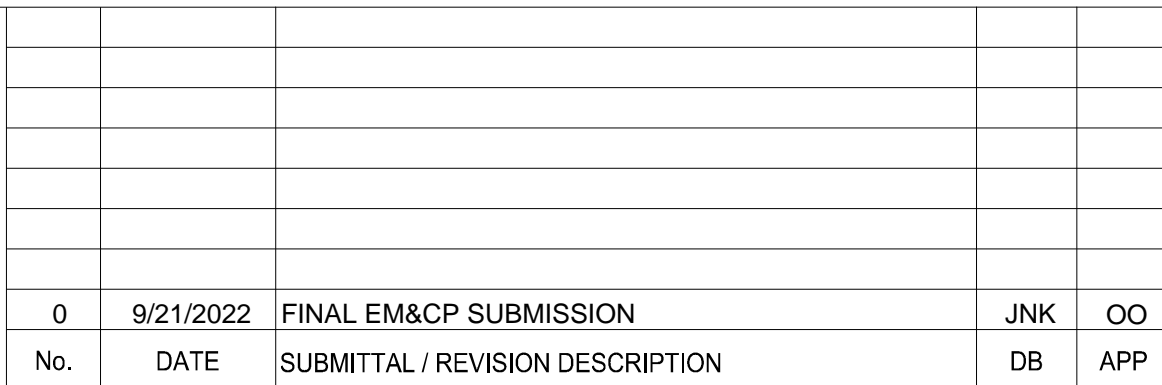
1. REFER TO NOTES ON SHEET S-730.



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



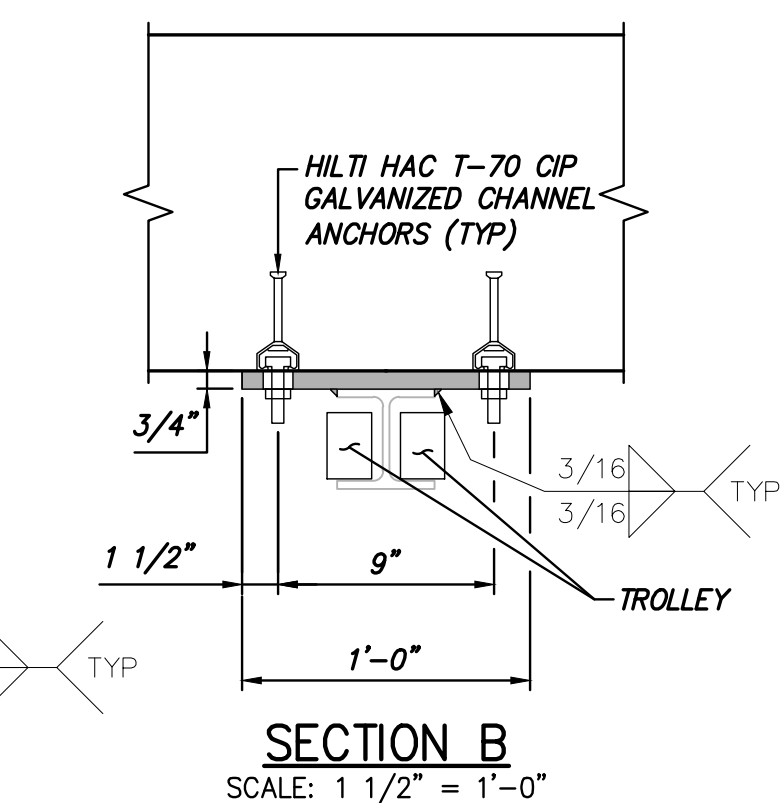
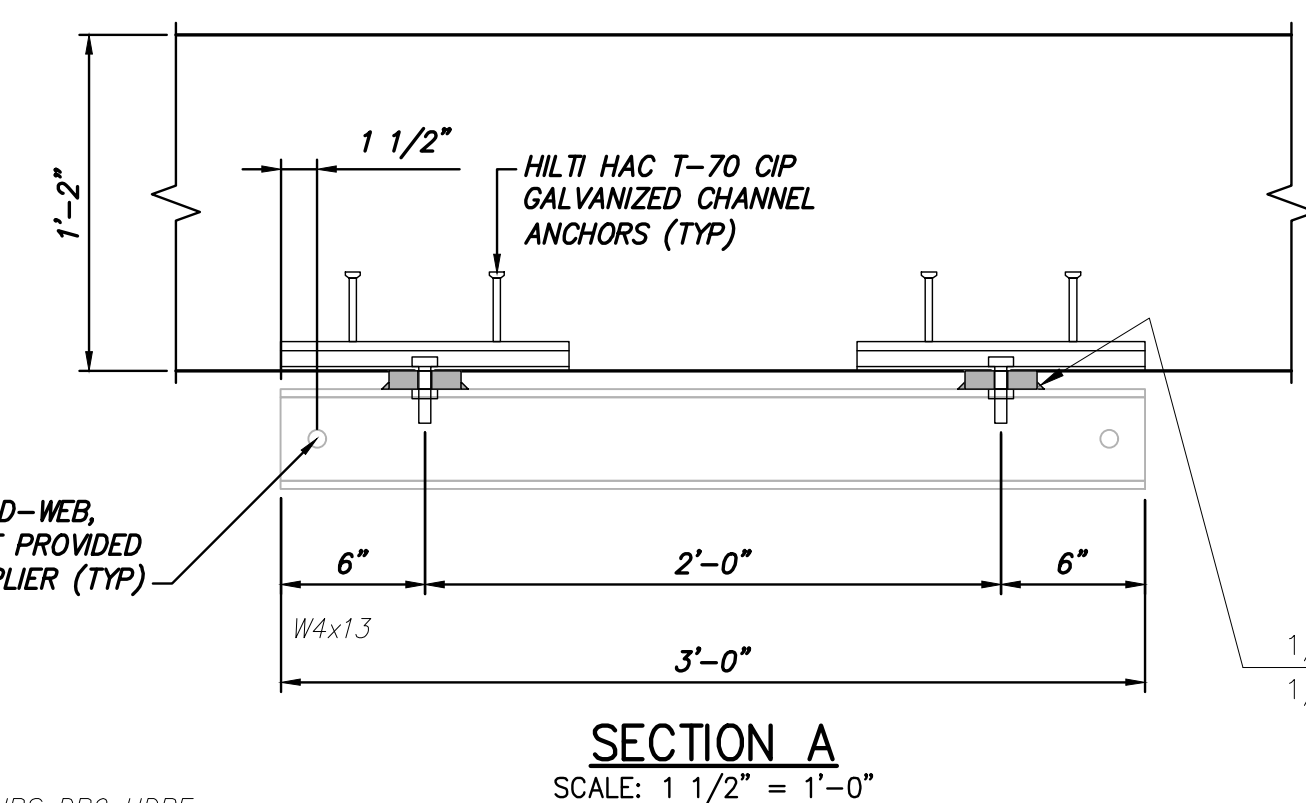
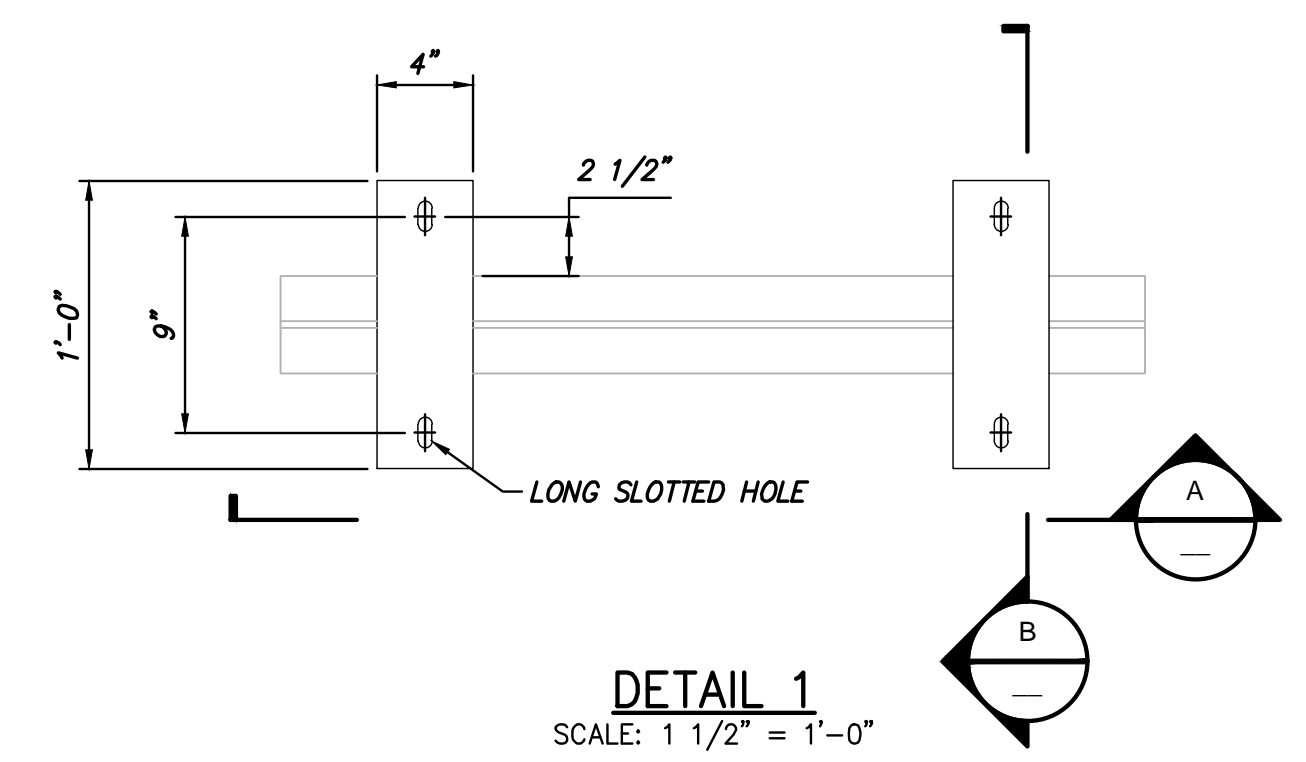
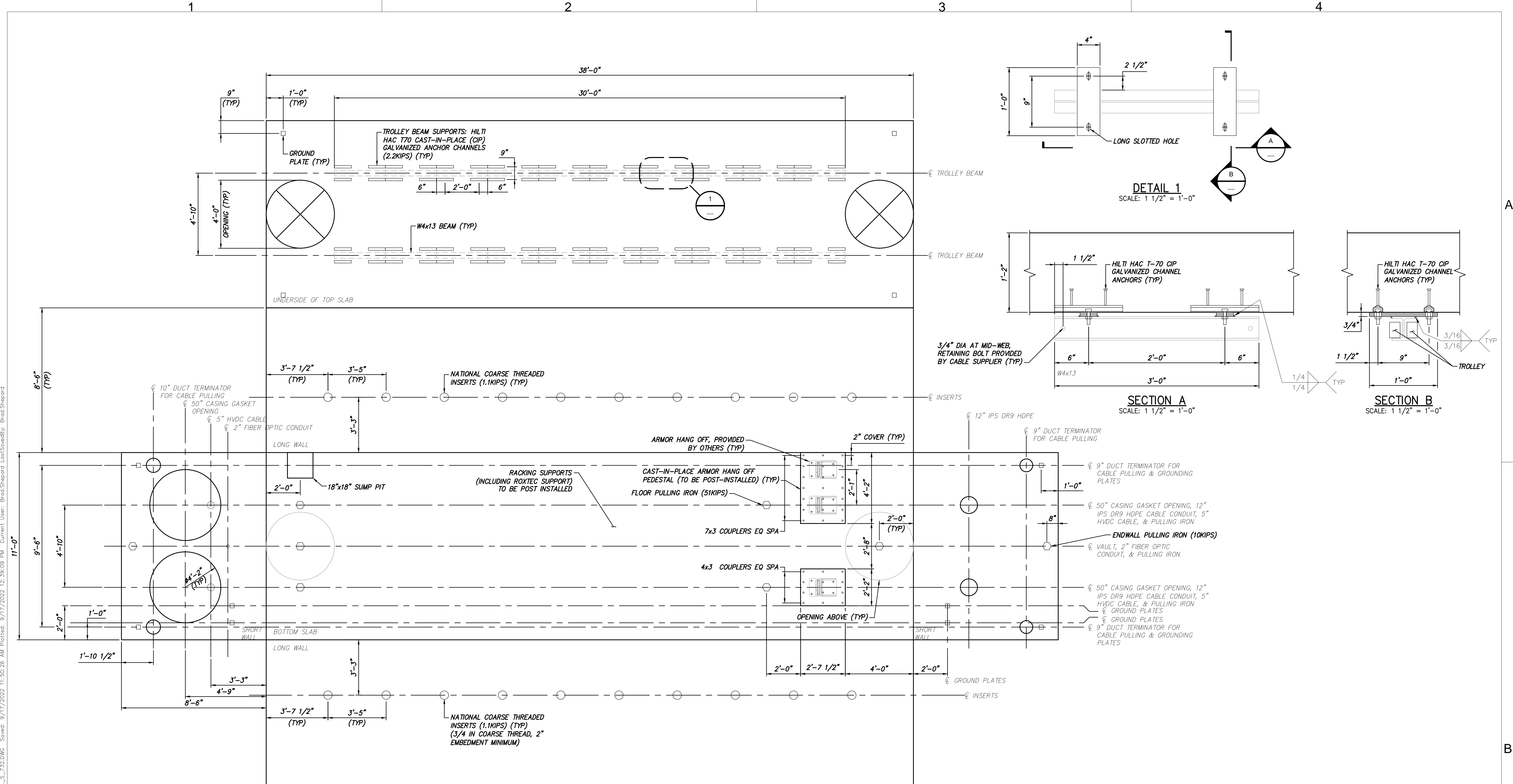
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KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	

DATE	06/09/2022
SH.NO.	XX OF XXX





UNFOLDED INTERIOR VIEW  
SCALE: 3/8" = 1'-0"

NOT FOR CONSTRUCTION  
FOR EM&CP APPROVAL ONLY

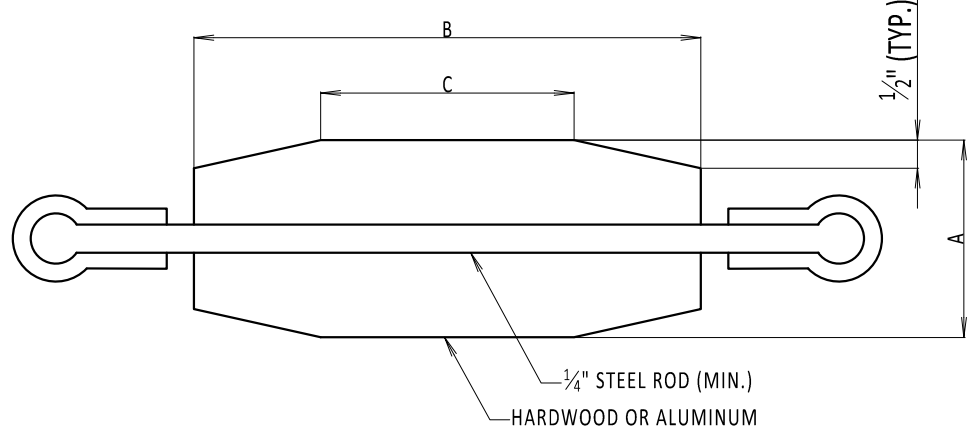
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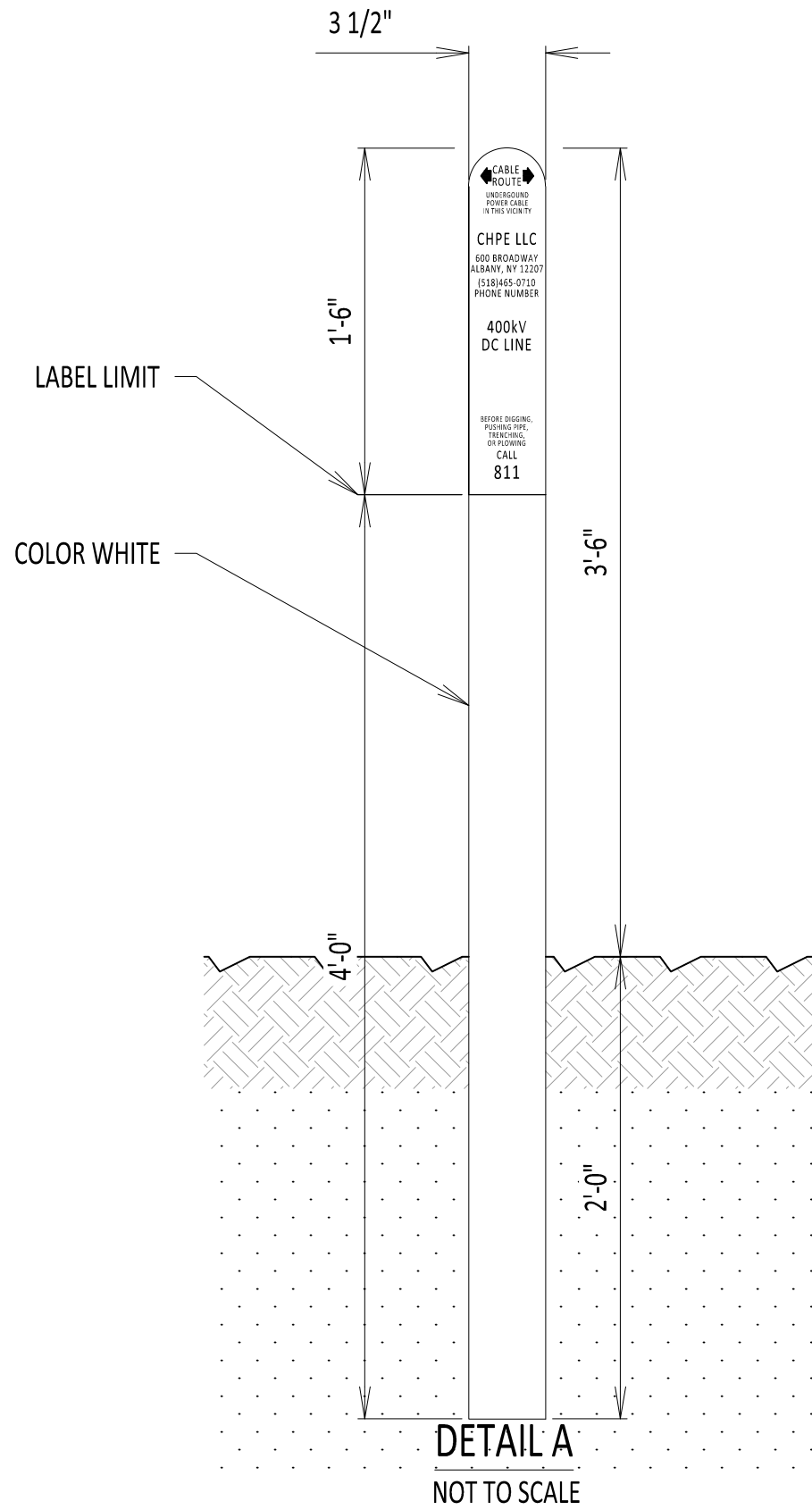
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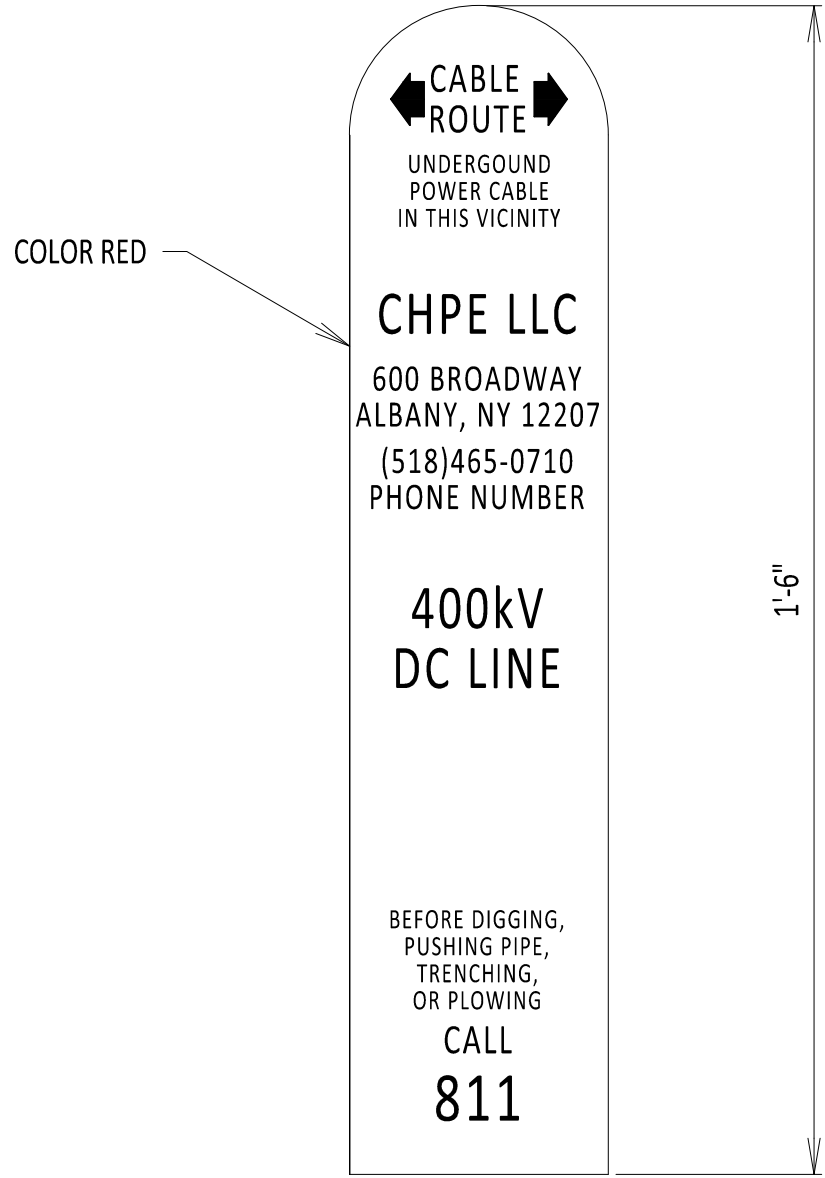
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CONDUIT INFORMATION					MANDREL DIM.			
CONDUIT TYPE	SCH.	NOMINAL CONDUIT SIZE	MINIMUM CONDUIT RADIUS	CONDUIT O.D.	CONDUIT I.D.	A	B	C
PVC	40	8"	8'-0"	8.625"	7.942"	7.481"	18.5"	10"
PVC	40	8"	10'-0"	8.625"	7.942"	7.481"	20.5"	11"
PVC	40	8"	12'-0"	8.625"	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"



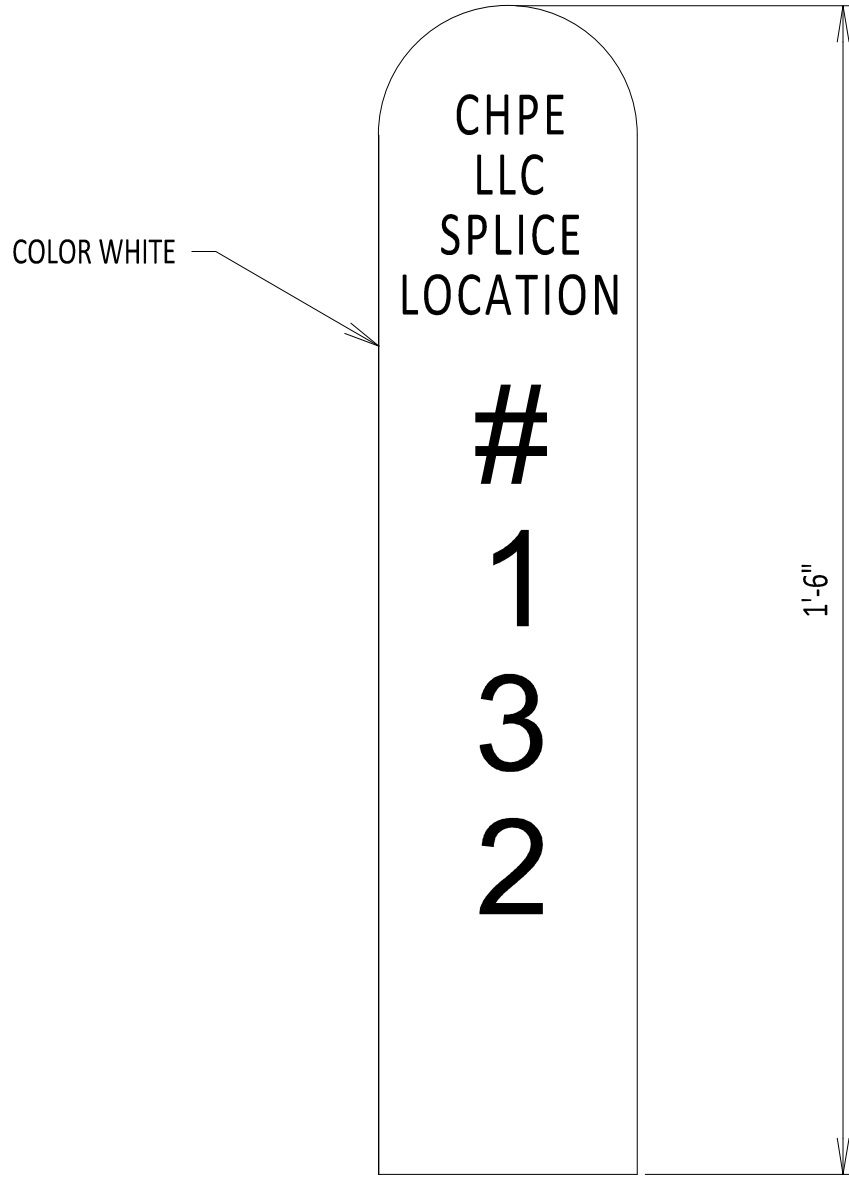
TYPICAL MANDREL DETAIL  
NOT TO SCALE



DETAIL A  
NOT TO SCALE



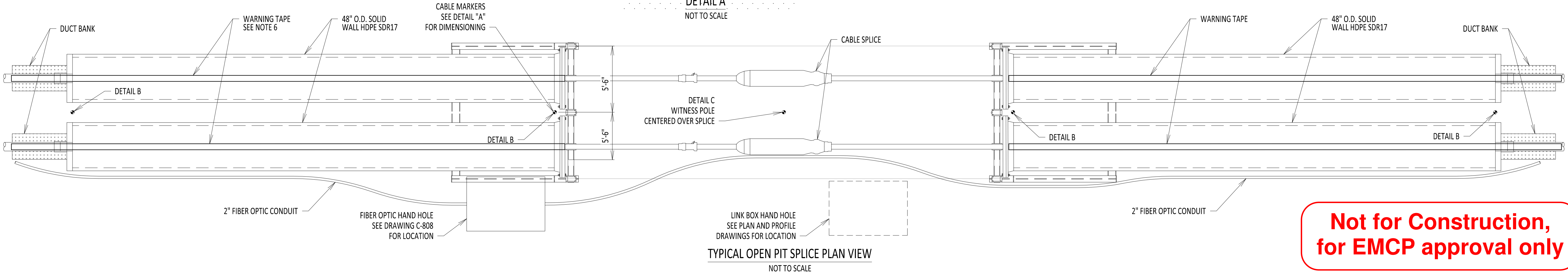
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NOT TO SCALE



DETAIL C  
NOT TO SCALE

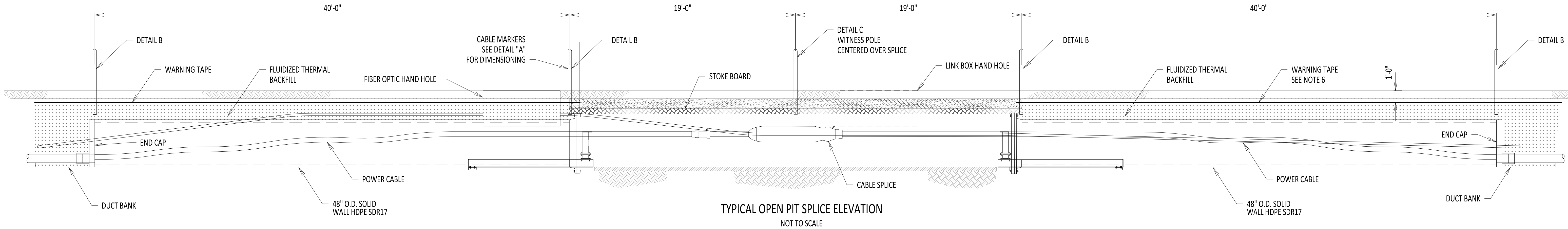
NOTES:

- POLES TO BE INSTALLED AT A DEPTH OF 2'-0" MINIMUM TO OPTIMIZE STABILITY.
- EXCLUDING ROAD SURFACES, CONDUIT LOCATED WITHIN RAILROAD RIGHT-OF-WAY SHALL BE MARKED USING POLE MARKERS LOCATED ABOVE THE CENTERLINE OF THE CONDUIT. CROSSINGS SHALL BE MARKED ON BOTH SIDES OF THE TRACK.
- POLE SHALL DISPLAY THE FOLLOWING: NAME AND ADDRESS OF OWNER, CONTENTS OF CONDUIT, CONDUIT DEPTH BELOW GRADE, AND EMERGENCY TELEPHONE NUMBER.
- POLES SHALL BE PLACED OVER THE PIPE AT ALL CHANGES IN DIRECTION OF THE CONDUIT. IN NO EVENT SHALL THEY BE PLACED MORE THAN 500 FEET APART.
- OWNER MUST MAINTAIN SIGNS ON RAILWAY RIGHT-OF-WAY.
- CABLE MARKERS PER AREMA CHAPTER 1 SECTION 5.5.2.i. A 6 INCH WIDE WARNING TAPE SHALL BE INSTALLED 1 FOOT BELOW NATURAL GRADE AND DIRECTLY OVER THE UNDERGROUND WIRELINE WITHIN THE RAILROAD RIGHT-OF-WAY. WARNING TAPE IS NOT REQUIRED FOR HORIZONTAL DIRECTION DERILLING ROUTES LOCATED ON RAILROAD PROPET. WITNESS POLES MUST BE PLACED AT RAILROAD RIGHT-OF-WAY FOR CROSSINGS AND PLACED EVERY 500 FEET FOR PARALLEL WIRELINES.



TYPICAL OPEN PIT SPLICE PLAN VIEW  
NOT TO SCALE

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TYPICAL OPEN PIT SPLICE ELEVATION  
NOT TO SCALE



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

CHAMPLAIN HUDSON POWER EXPRESS

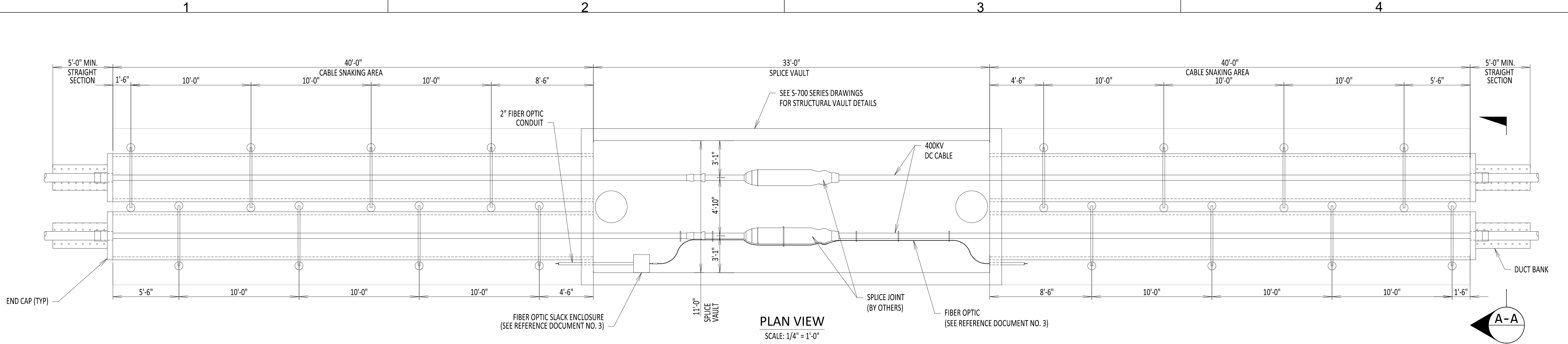
ABOVE GROUND  
MARKING DETAILS

DRAWN BY:	DLM	DESIGNED BY:	SD	APPROVED BY:	ASM	SCALE	REV. NO.	DATE	09/16/2022
								SH.NO.	OF XXX

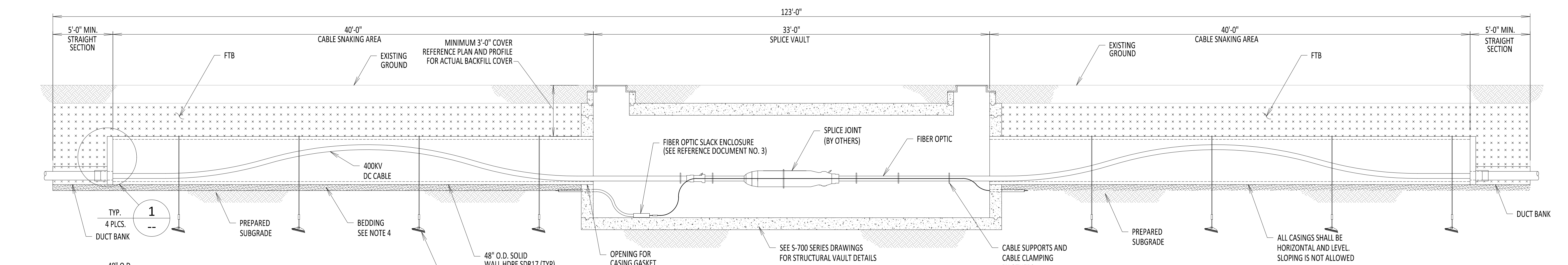
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-801



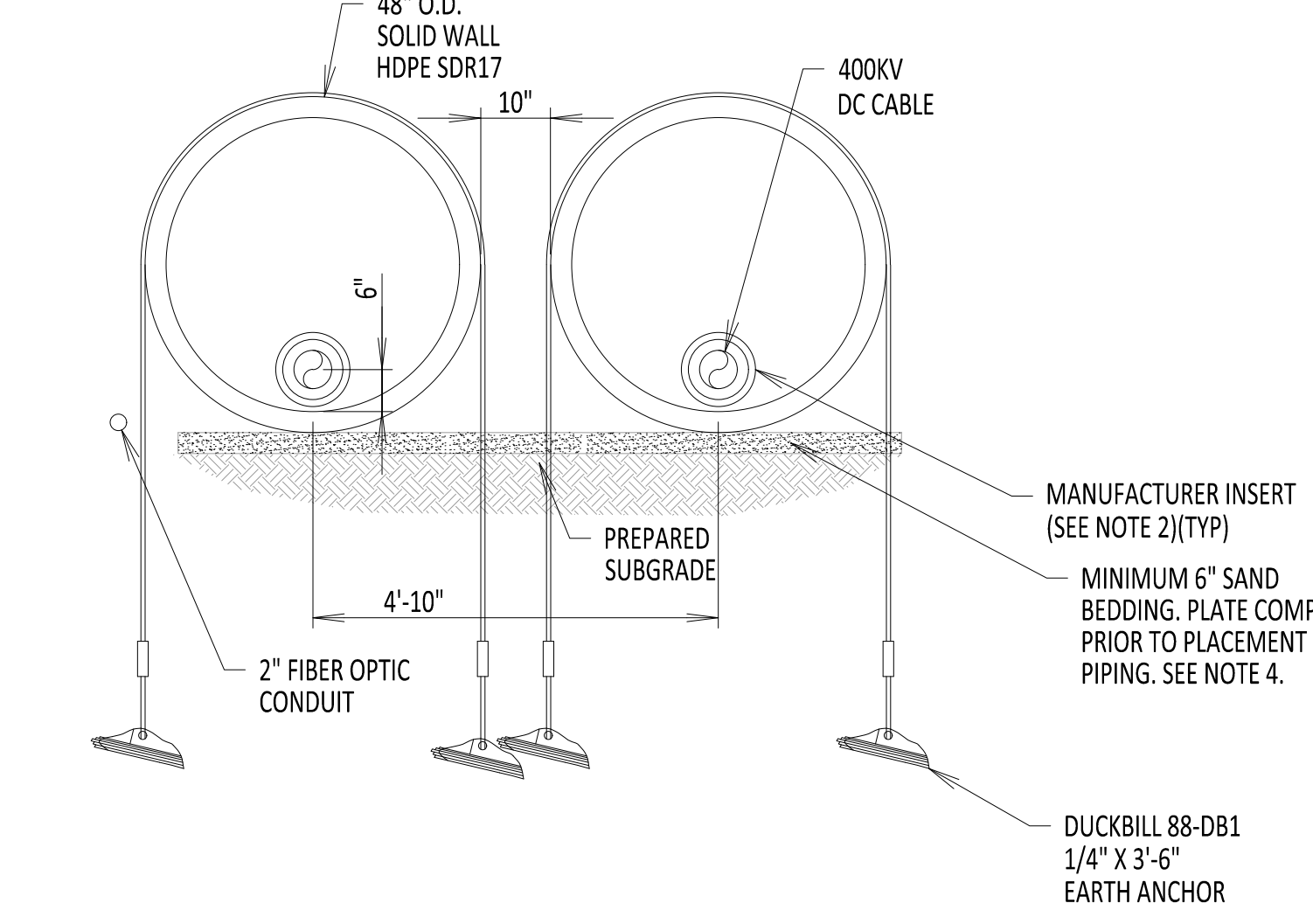
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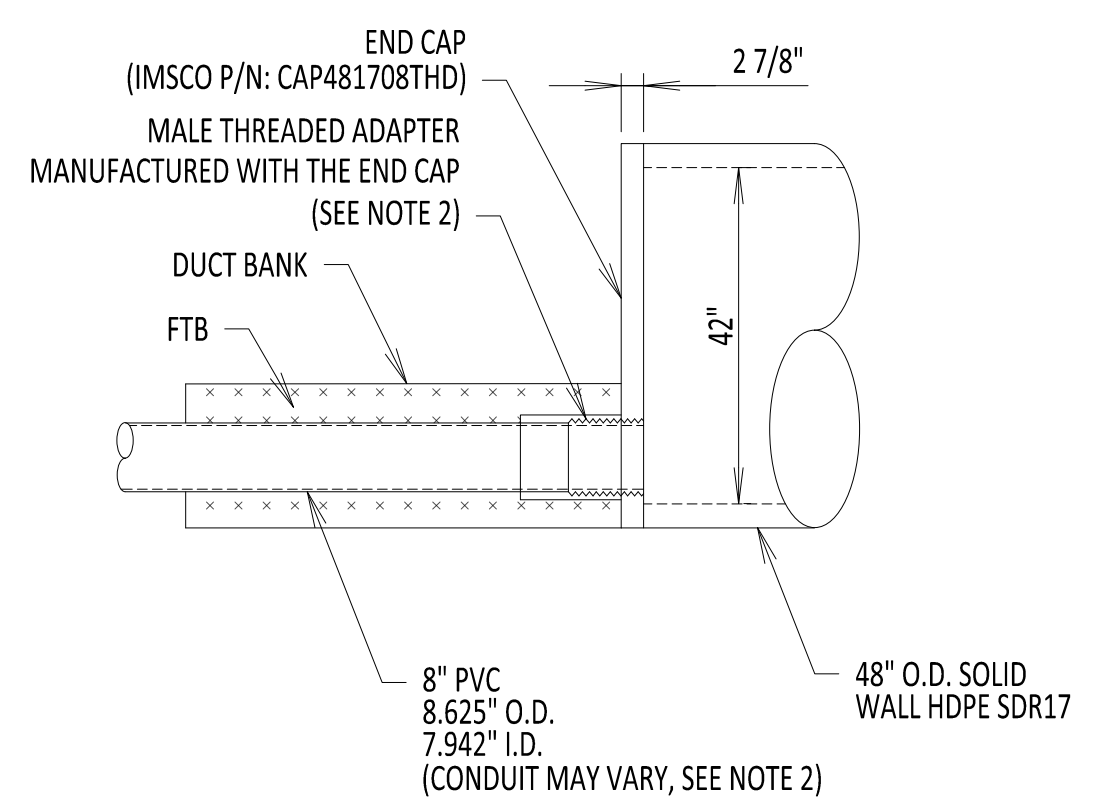
PLAN VIEW  
SCALE: 1/4" = 1'-0"



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



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



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

- NOTES:**
1. DUCKBILL ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS FOR MACHINE OR HAND INSTALLATION. ONE ANCHOR SHALL BE PULL TESTED AT EACH SPLICE 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: MTKSKPVC08ADPT FOR 8 INCH PVC CONDUIT; P/N: TF1009SSMPT FOR 10 INCH HDPE DR9 CONDUIT; P/N: TF1207SSMPT FOR 12 INCH HDPE DR7 CONDUIT) NO EXCEPTIONS.
  3. EXPANSION VESSEL CASING DESIGN IS BASED ON INFORMATION PROVIDED BY NKT APRIL 20, 2022 IN THE TECHNICAL REPORT TITLED "CHPE LAND CABLE JOINT LOCATION DESIGN CONSIDERATIONS"
  4. MINIMUM 6" BEDDING. REFERENCE DOCUMENT 4.
  5. SEE A LOK PREMIUM FOR INSTALLATION INSTRUCTION.

**REFERENCE DOCUMENTS**

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	STRUCTURAL VAULT DRAWING	S-700
2	TYPICAL VAULT GROUNDING DETAILS	C-803
3	ENCLOSED VAULT WITH FIBER OPTICS	C-852
4	TRENCHING AND BACKFILLING SPEC.	312333

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

**CHAMPLAIN HUDSON POWER EXPRESS**

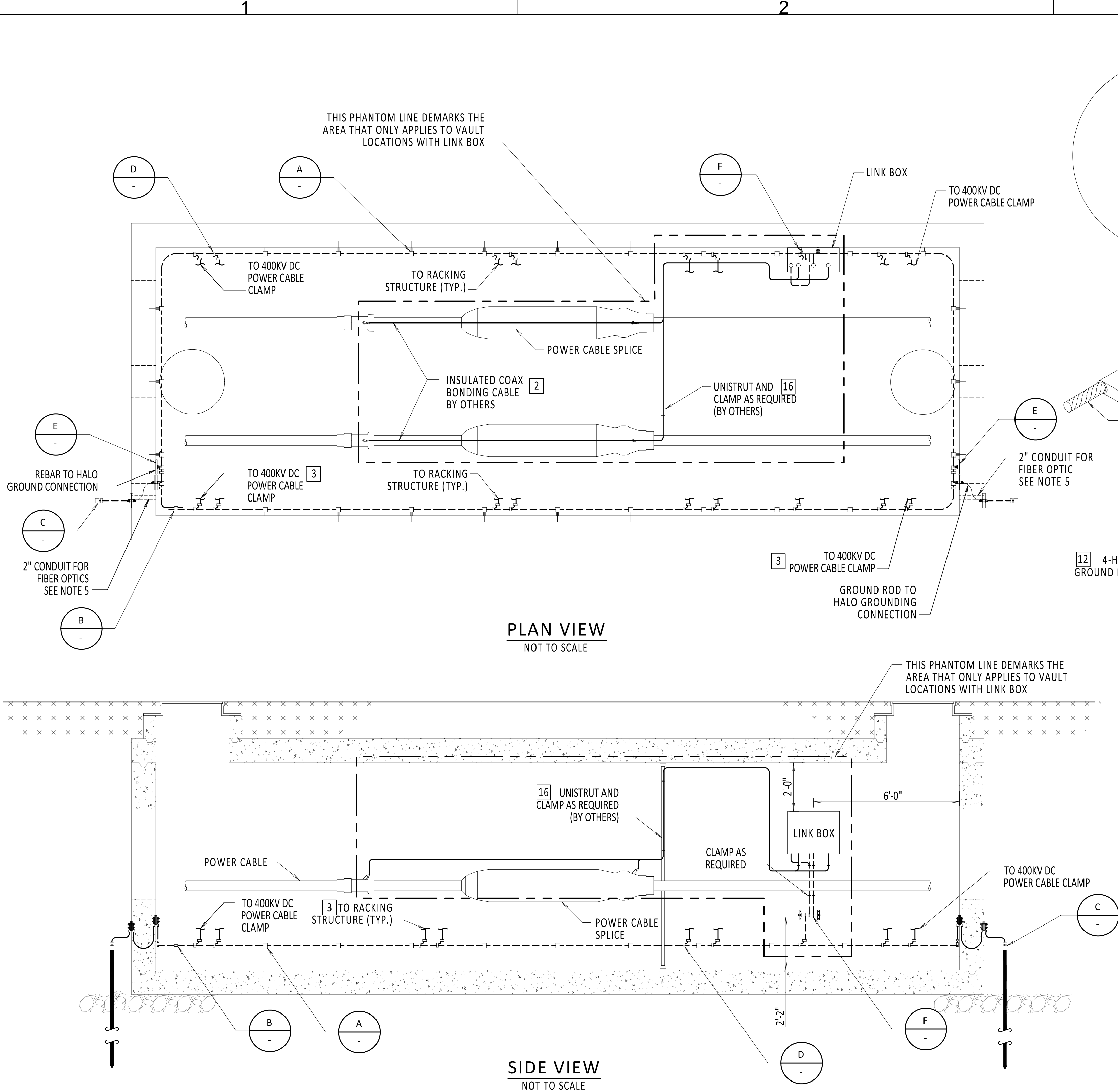
**TYPICAL VAULT  
CASING DETAILS**

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								SH.NO.	OF XXX

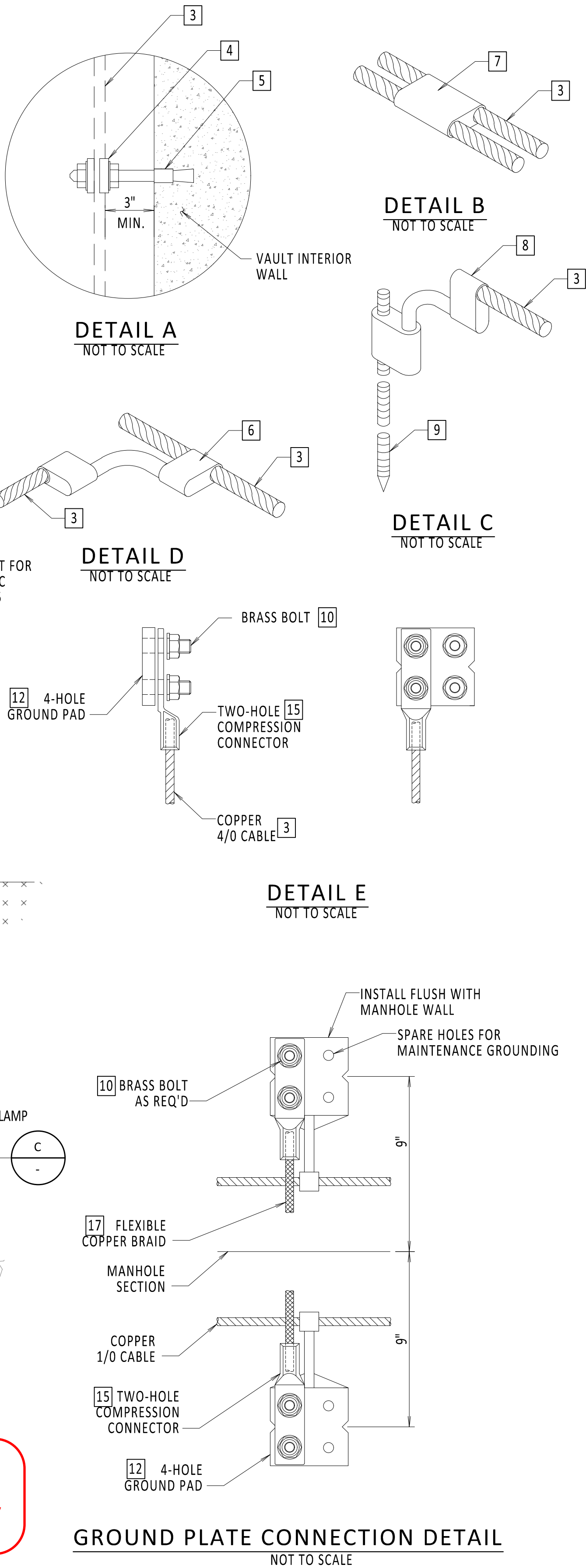
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CHA PROJECT NO.	066076
DRAWING NO.	<b>C-802</b>
DATE	09/16/2022
SH.NO.	OF XXX



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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 OB BARE COPPER CONDUCTOR TO VAULT WALL.
- LINK BOX WILL CONTAIN FOUR DISCONNECTING LINKS, AS PROVIDED BY VENDOR.
- POLYWATER FST SHALL BE USED TO SEAL CONDUIT.
- ALL STEEL MEMBERS AND HARDWARE TO BE ASTM 304 STAINLESS STEEL.
- 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.
- ALL SPLICE VAULT SECTIONS TO BE GROUNDING USING GROUND PLATE CONNECTION DETAIL.

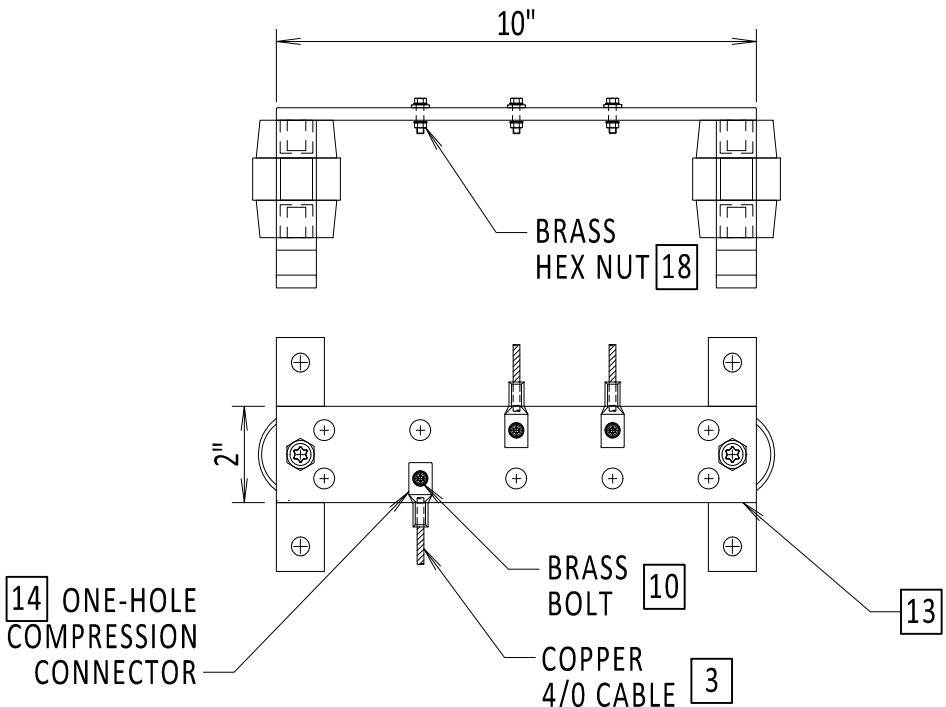
BILL OF MATERIALS

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

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



DETAIL F  
NOT TO SCALE

CHAMPLAIN HUDSON POWER EXPRESS

TYPICAL VAULT GROUNDING DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-803
DATE	09/16/2022
SH.NO.	OF XXX



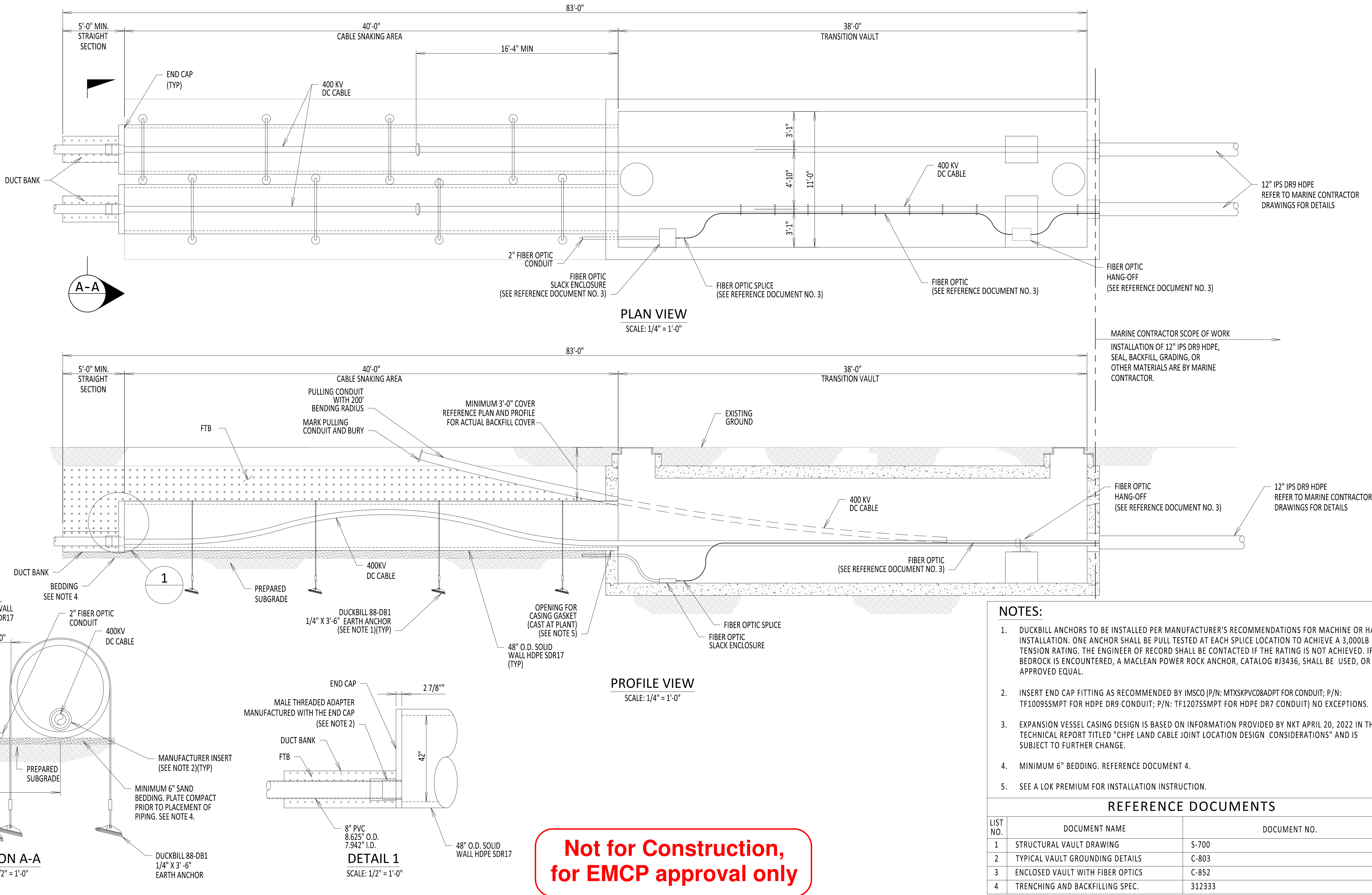
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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	09/16/2022	EM&CP REGULATORY RE-SUBMISSION	SD	ASM	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

DRAWN BY:	DLM	DESIGNED BY:	SD	APPROVED BY:	ASM	SCALE	NOT TO SCALE
						REV. NO.	



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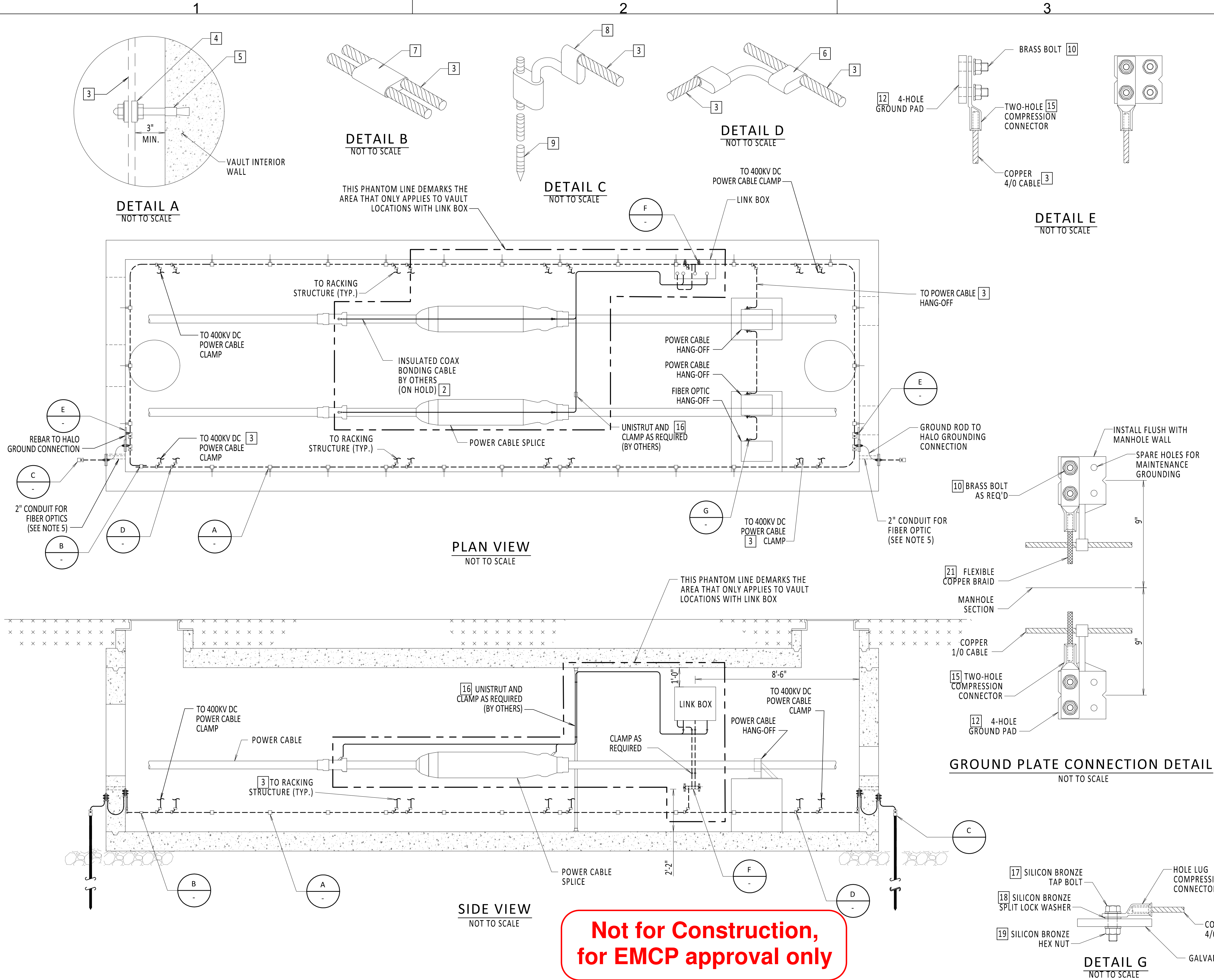
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B

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-805
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SH.NO.	OF XXX



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NOTES:

1. FOR ADDITIONAL DESIGN PARAMETERS SEE SPECIFICATIONS.
2. ALL GROUND CONNECTIONS SHALL BE IRREVERSIBLE COMPRESSION CONNECTION UNLESS OTHERWISE NOTED.
3. 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.
4. LINK BOX WILL CONTAIN FOUR DISCONNECTING LINKS, AS PROVIDED BY VENDOR.
5. POLYWATER FST SHALL BE USED TO SEAL CONDUIT.
6. ALL STEEL MEMBERS AND HARDWARE TO BE ASTM 304 STAINLESS STEEL.
7. 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.
8. KIEWIT HAS PROVIDED GROUNDING AS PER NKT REQUIREMENTS. NO OTHER ELECTRICAL SYSTEM DESIGN HAS BEEN INCLUDED BY KIEWIT.
9. FIBER OPTIC HANG-OFF TO INCLUDE MARINE FIBER OPTIC CABLE SLACK STORAGE AND IN-LINE FIBER OPTIC SPLICE. (BY OTHERS)
10. ALL SPICE VAULT SECTIONS TO BE GROUNDED USING GROUND PLATE CONNECTION DETAIL.

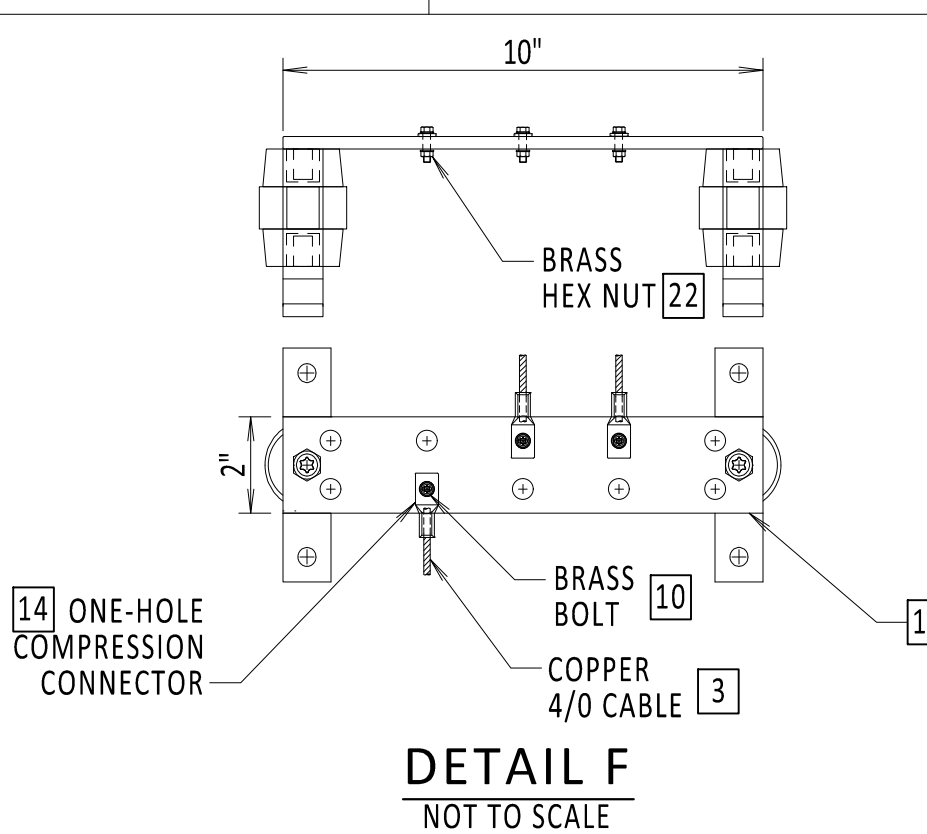
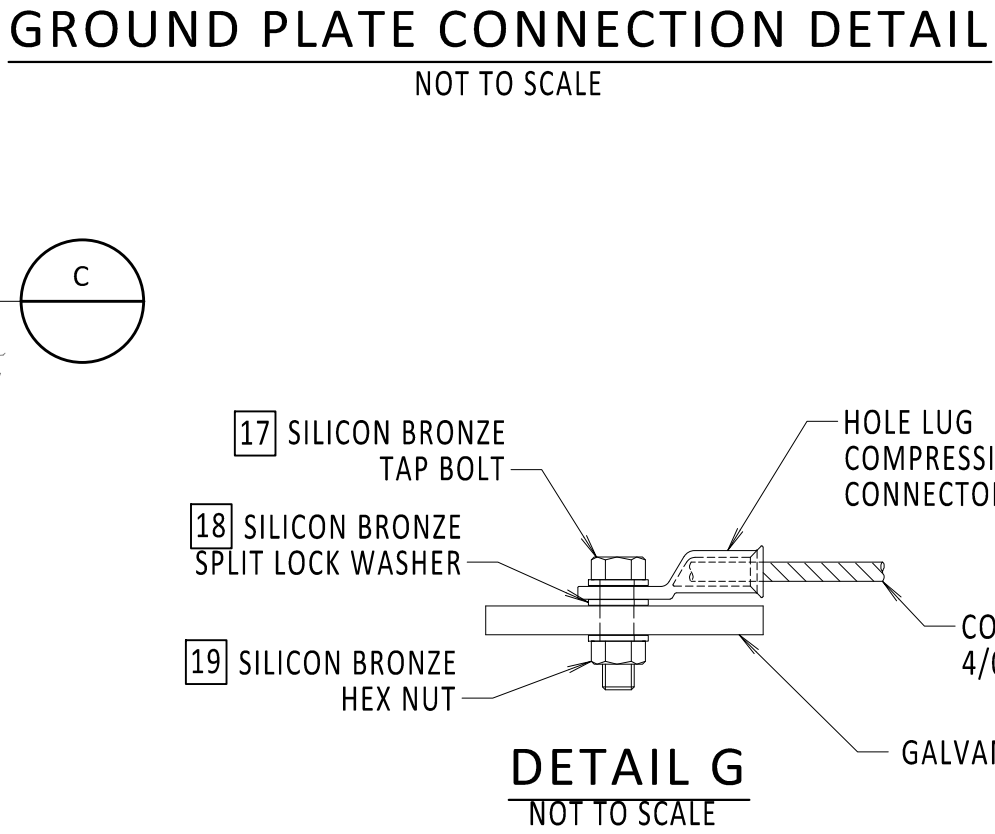
BILL OF MATERIALS

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	SILICON BRONZE TAP BOLT	FASTENAL 74954	KIEWIT	KIEWIT
18	SILICON BRONZE SPLIT LOCK WASHER	GRAINGER 1NU94	KIEWIT	KIEWIT
19	SILICON BRONZE HEX NUT	GRAINGER 1WE52	KIEWIT	KIEWIT
20	HOLE LUG COMPRESSION CONNECTOR	BURNDY YA28	KIEWIT	KIEWIT
21	FLEXIBLE COPPER BRAID	BURNDY BD24N	KIEWIT	KIEWIT
22	BRASS HEX NUT	GRAINGER 1WE22	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



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

CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT  
GROUNDING DETAILS

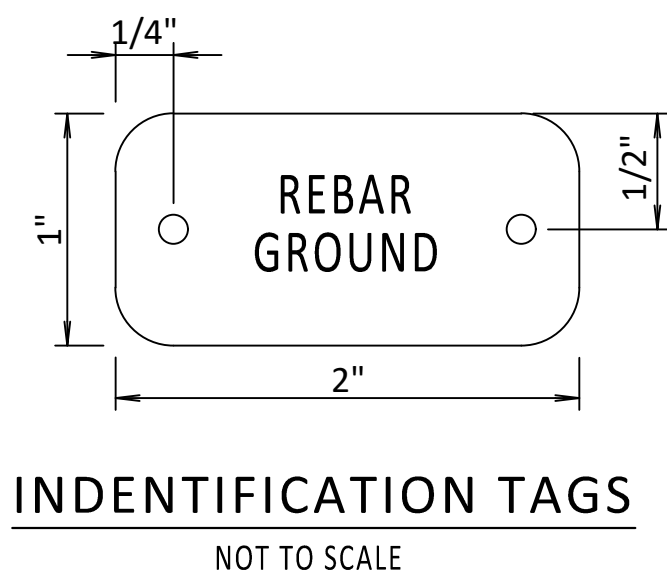
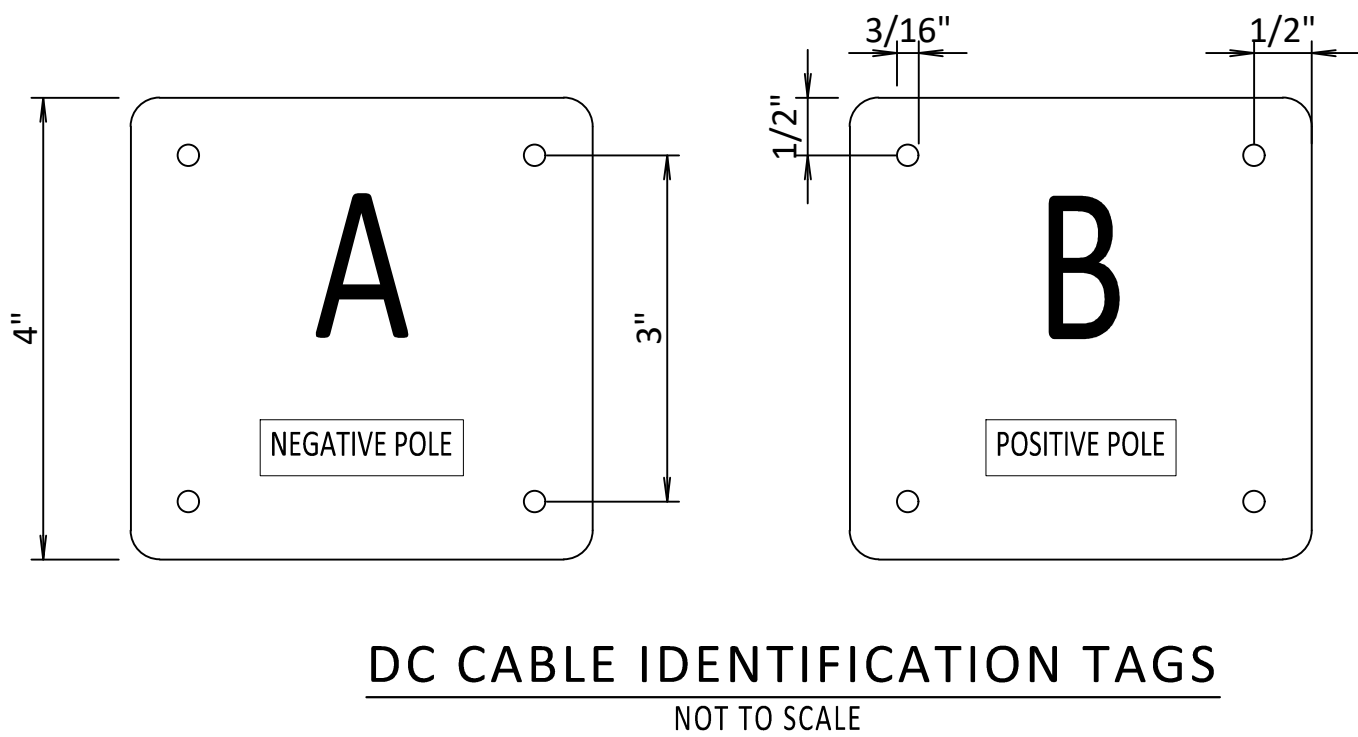
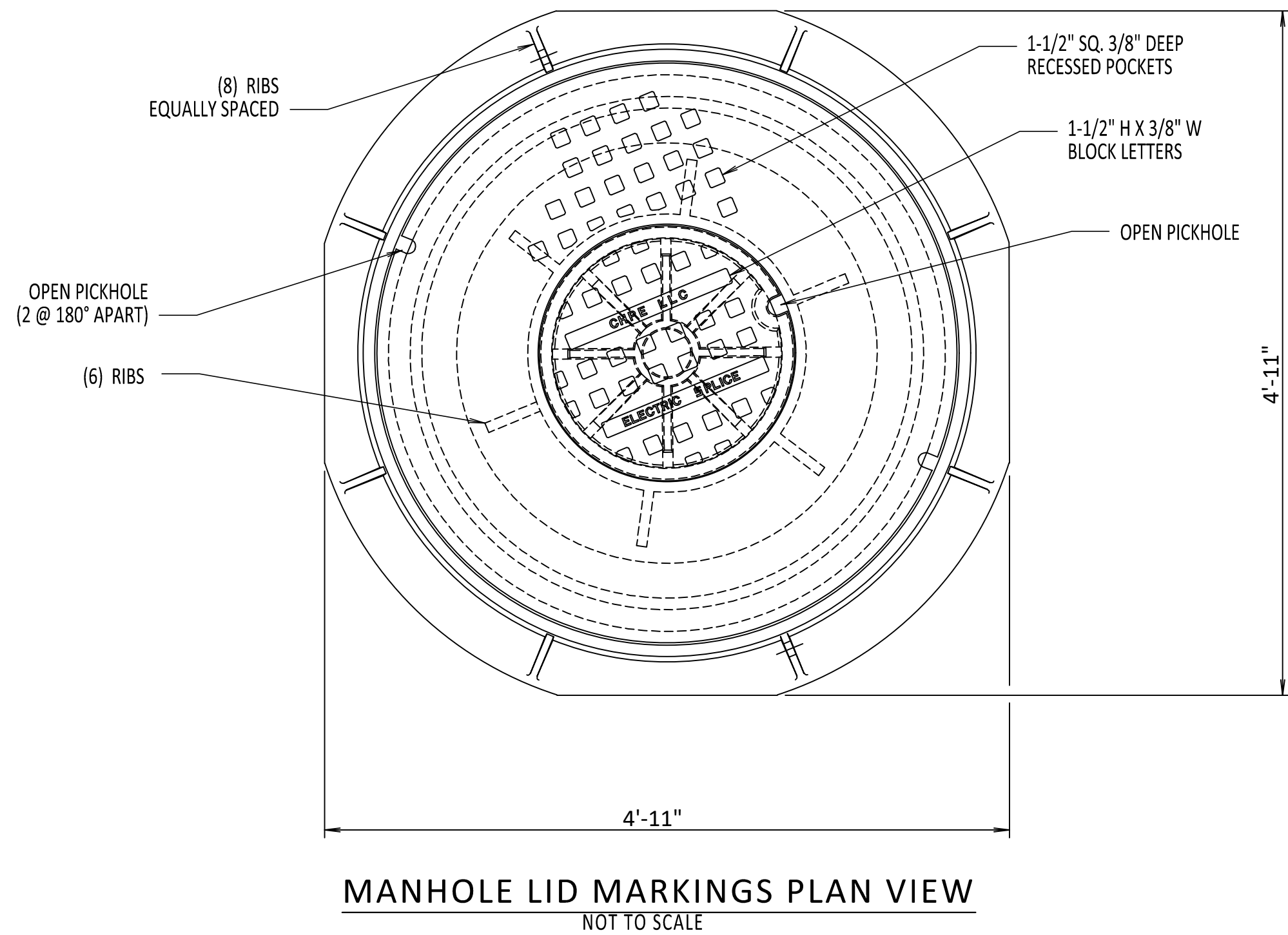
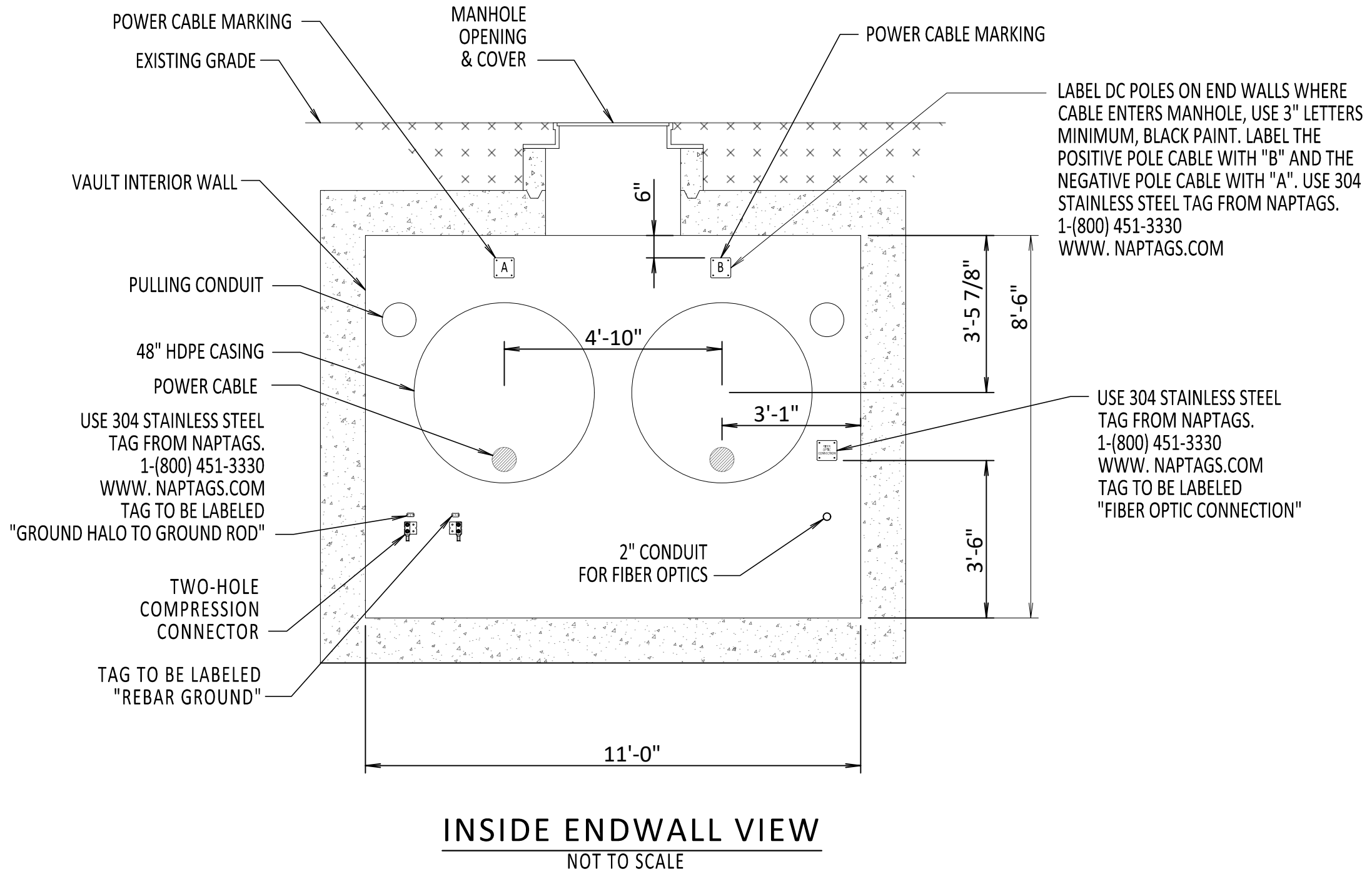
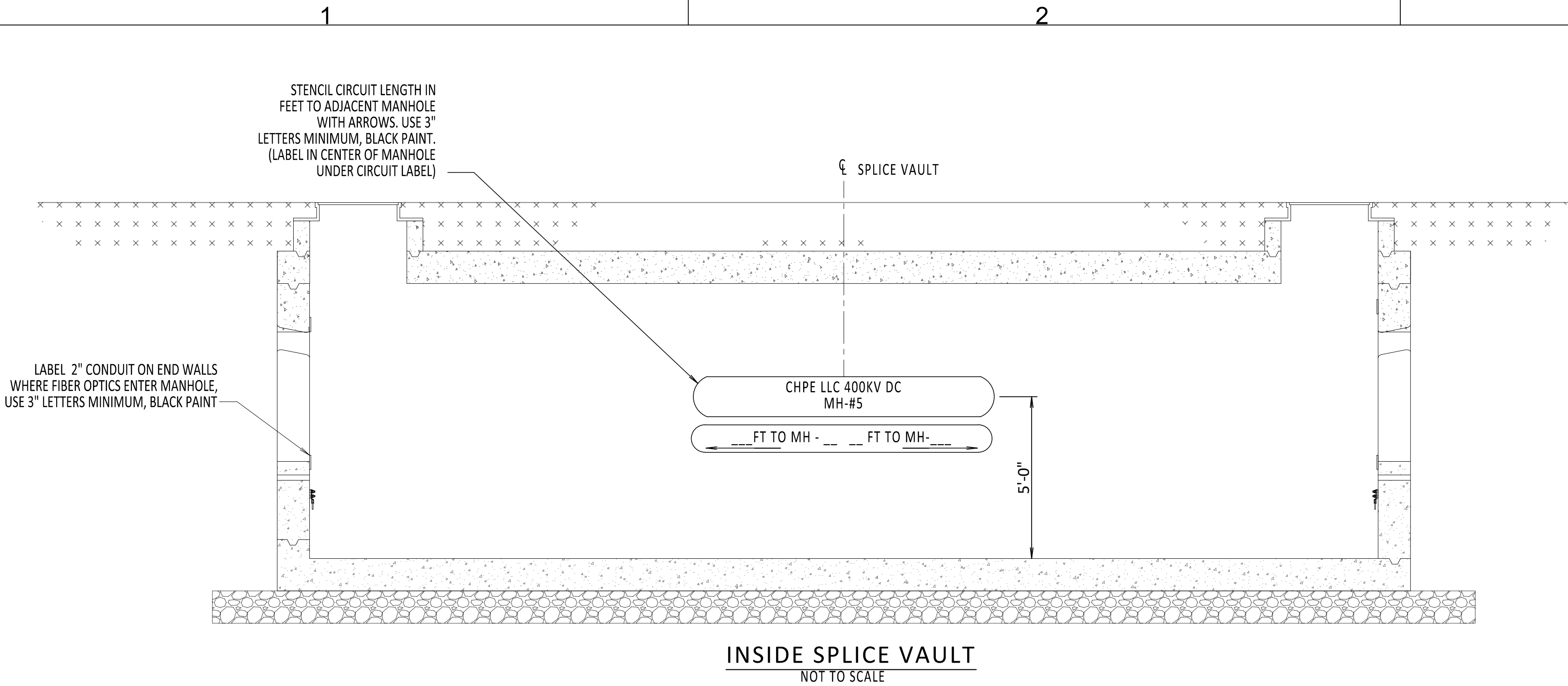
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C-806

SH.NO. OF XXX



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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP					

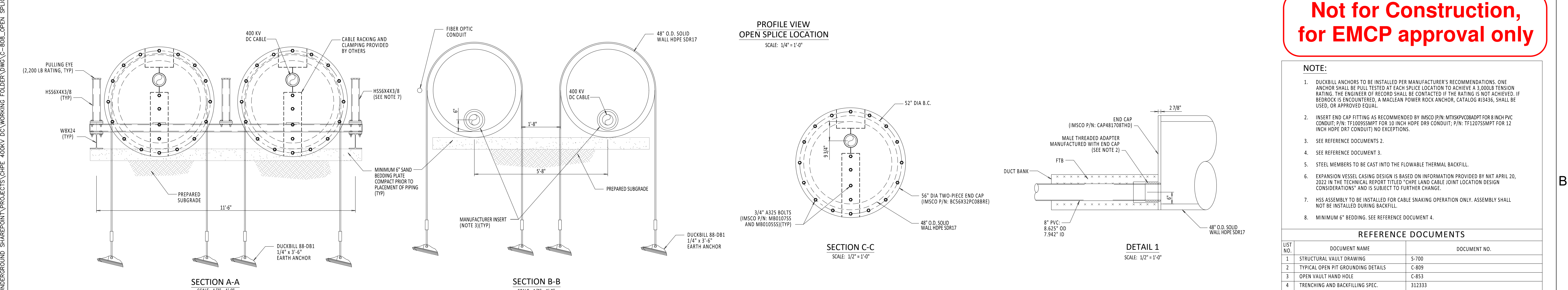
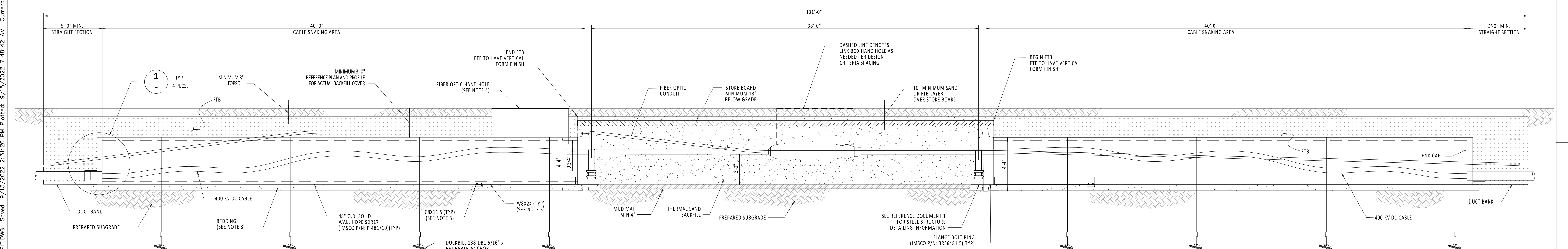
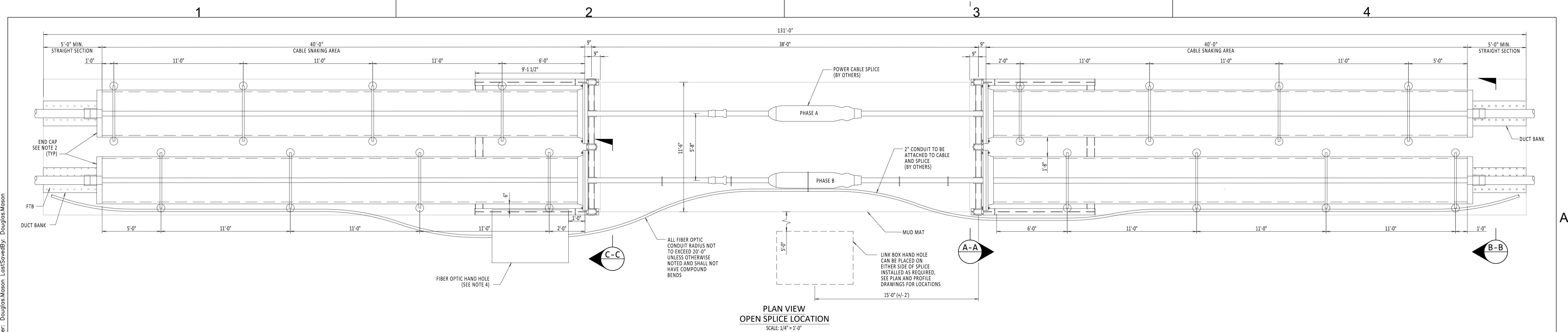
CHAMPLAIN HUDSON POWER EXPRESS  
MANHOLE MARKING DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-807
DATE	09/16/2022
SH.NO.	OF XXX

DRAWN BY:	DLM	DESIGNED BY:	SD	APPROVED BY:	ASM	SCALE	REV.NO.
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**NOTE:**


- DUCKBILL ANCHORS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. ONE ANCHOR SHALL BE PULL TESTED AT EACH SPLICE 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.
- INSERT END CAP FITTING AS RECOMMENDED BY IMSCO (P/N: MTXSKPVC08ADPT FOR 8 INCH PVC CONDUIT; P/N: TF1008SSMPT FOR 10 INCH HDPE DR9 CONDUIT; P/N: TF1207SSMPT FOR 12 INCH HDPE DR7 CONDUIT) NO EXCEPTIONS.
- SEE REFERENCE DOCUMENTS 2.
- SEE REFERENCE DOCUMENT 3.
- STEEL MEMBERS TO BE CAST INTO THE FLOWABLE THERMAL BACKFILL.
- EXPANSION VESSEL CASING DESIGN IS BASED ON INFORMATION PROVIDED BY NKT APRIL 20, 2022 IN THE TECHNICAL REPORT TITLED "CHPE LAND CABLE JOINT LOCATION DESIGN CONSIDERATIONS" AND IS SUBJECT TO FURTHER CHANGE.
- HSS ASSEMBLY TO BE INSTALLED FOR CABLE SNAKING OPERATION ONLY. ASSEMBLY SHALL NOT BE INSTALLED DURING BACKFILL.
- MINIMUM 6" BEDDING. SEE REFERENCE DOCUMENT 4.

**REFERENCE DOCUMENTS**


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



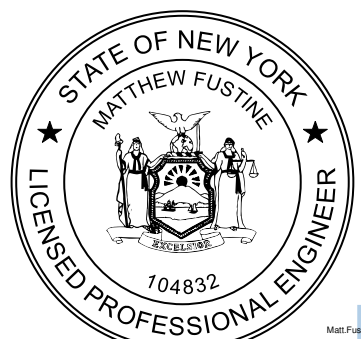
**CHPE**  
Champlain Hudson  
Power Express



**Kiewit**



**CHA**  
III Winners Circle, PO Box 5269  
Albany, NY 12205-0269  
518.453.4500 • www.chacompanies.com



STATE OF NEW YORK  
MATTHEW FUSINE  
104832  
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.

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0	09/16/2022	EM&CP REGULATORY RE-SUBMISSION	SS	ASM

**CHAMPLAIN HUDSON POWER EXPRESS**

**TYPICAL OPEN PIT SPLICE CASING DETAILS**

DRAWN BY: DLM DESIGNED BY: ss APPROVED BY: ASM SCALE: 1/2" = 1'-0"

KIEWIT PROJECT NO. 21162  
CHA PROJECT NO. 066076  
DRAWING NO. **C-808**

DATE 09/16/2022  
SH.NO. OF XXX