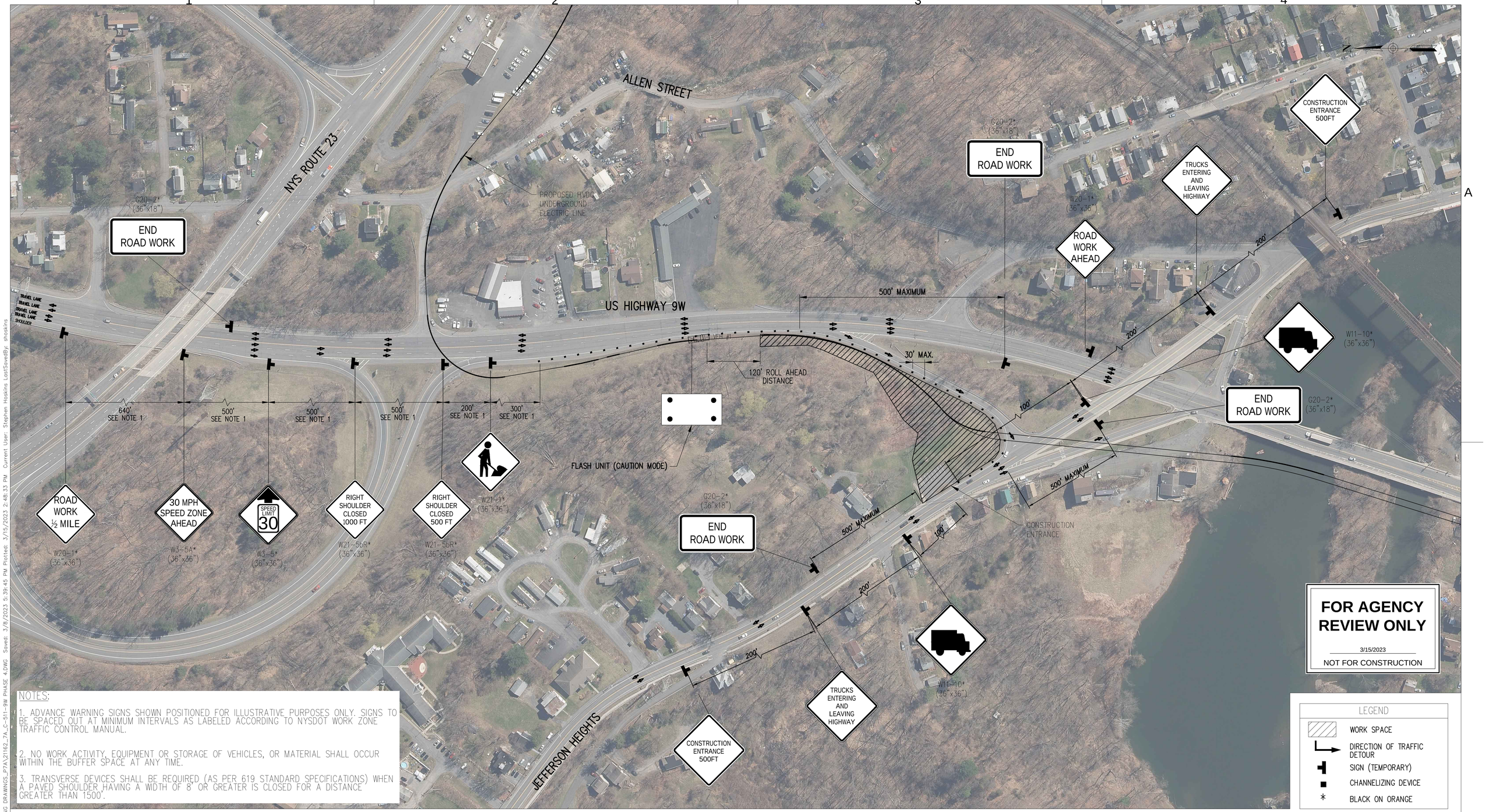

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A

FOR AGENCY REVIEW ONLY

3/15/2023

NOT FOR CONSTRUCTION

NOTES:

1. ADVANCE WARNING SIGNS SHOWN POSITIONED FOR ILLUSTRATIVE PURPOSES ONLY. SIGNS TO BE SPACED OUT AT MINIMUM INTERVALS AS LABELED ACCORDING TO NYSDOT WORK ZONE TRAFFIC CONTROL MANUAL.

2. NO WORK ACTIVITY, EQUIPMENT OR STORAGE OF VEHICLES, OR MATERIAL SHALL OCCUR WITHIN THE BUFFER SPACE AT ANY TIME.

3. TRANSVERSE DEVICES SHALL BE REQUIRED (AS PER 619 STANDARD SPECIFICATIONS) WHEN A PAVED SHOULDER HAVING A WIDTH OF 8' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 1500'.

LEGEND

- WORK SPACE
- DIRECTION OF TRAFFIC DETOUR
- SIGN (TEMPORARY)
- CHANNELIZING DEVICE
- * BLACK ON ORANGE

US HIGHWAY 9W (SB) TO MAIN STREET RAMP SHOULDER CLOSURE

NTS

CHPE Champlain Hudson Power Express

Kiewit

EDR a better environment

ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
B	03/15/2023	DRAFT FINAL SUBMISSION	SH	TD
A	12/02/2022	60% DRAFT SUBMISSION	SH	TD

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL

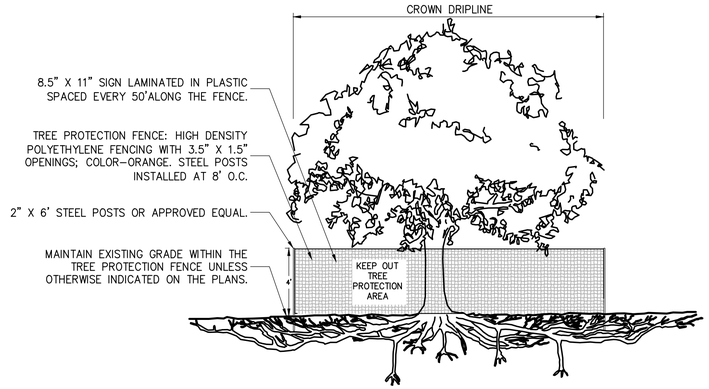
WORK ZONE TRAFFIC CONTROL
US HIGHWAY 9W (SB) TO MAIN STREET RAMP SHOULDER CLOSURE

KIEWIT PROJECT NO.	21162
EDR PROJECT NO.	21075
DRAWING NO.	C-511

DRAWN BY: SH | DESIGNED BY: SH | APPROVED BY: TD | SCALE AS SHOWN | REV. NO. B | DATE 3/15/2023 | SH.NO. OF

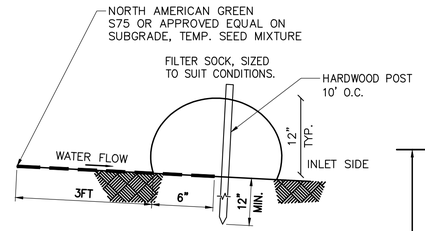
File: T:\21075 CHPE EM&CP\CAD\WORKING DRAWINGS_P7A\21162_7A_C-511-9W PHASE 4.DWG Saved: 3/8/2023 5:39:45 PM Plotted: 3/15/2023 2:48:33 PM Current User: Stephen Hoskins LastSavedBy: shoskins

SH

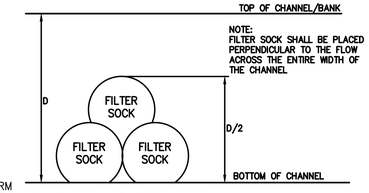


NOTES:
1. CONTRACTOR TO MAINTAIN INTEGRITY OF CONSTRUCTION FENCE FOR DURATION OF PROJECT.
2. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
3. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
4. SEE EROSION CONTROL PLANS FOR LOCATIONS OF TREE PROTECTION AREAS.

1 TREE PROTECTION
NOT TO SCALE

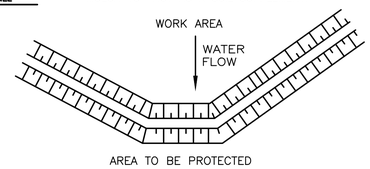


NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS.
2. ALL FILTER SOCKS SHALL BE 12" DIAMETER OR LARGER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTER BERM IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
4. WHERE THE BERM REQUIRES REPAIR, IT WILL BE ROUTINELY REPAIRED.
5. THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE BERM WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE BERM, OR AS DIRECTED BY THE OWNERS.
6. THE COMPOST FILTER BERM WILL BE REMOVED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE OWNERS.
7. INSTALL PERPENDICULAR TO FLOW.



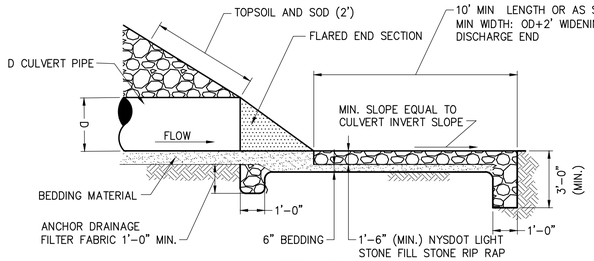
CHANNEL PLACEMENT

MAINTENANCE NOTES:
1. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES $\frac{1}{3}$ OF THE EXPOSED HEIGHT OF THE PRACTICE AND DISPOSED OF IN ACCORDANCE WITH THE SWPPP.
3. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED IN THE MANNER REQUIRED BY THE MANUFACTURER OR REPLACED WITHIN 24 HOURS OF INSPECTION NOTIFICATION.
4. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTO–DEGRADABLE FILTER SOCKS AFTER 1 YEAR. POLY–PROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. UPON STABILIZATION OF THE AREA CONTRIBUTORY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK SHALL BE REMOVED. FOR REMOVAL THE MESH CAN BE CUT AND COMPOST SPREAD AS AN ADDITIONAL MULCH TO ACT AS A SOIL SUPPLEMENT.

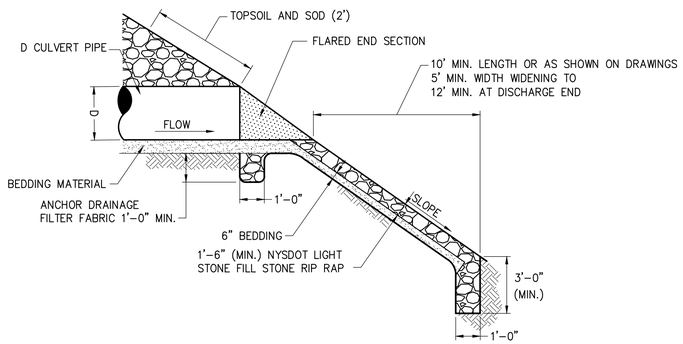


AT GRADE PLACEMENT

2 COMPOST FILTER SOCK DETAIL
SCALE: N.T.S.

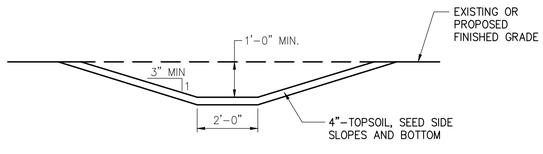


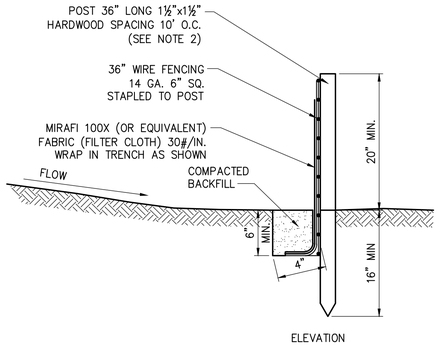
TYPICAL OUTFALL



TYPICAL OUTFALL ON SLOPE

5 TYPICAL GRASS DRAINAGE SWALE
SCALE: N.T.S.





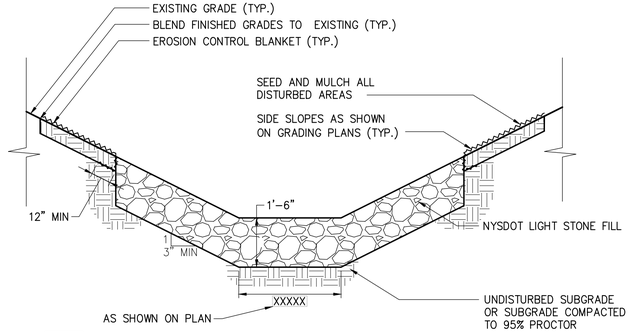
ELEVATION

NOTES:

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 FABRIC 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 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.

3 SILT FENCE
SCALE: N.T.S.

4 TYPICAL CULVERT OUTFALL RIP RAP
SCALE: N.T.S.



6 LIGHT STONE–LINED DRAINAGE CHANNEL
SCALE: N.T.S.

CHPE Champlain Hudson Power Express

Kiewit

Engineering and Land Surveying, P.C.

ISSUED FOR PERMITTING

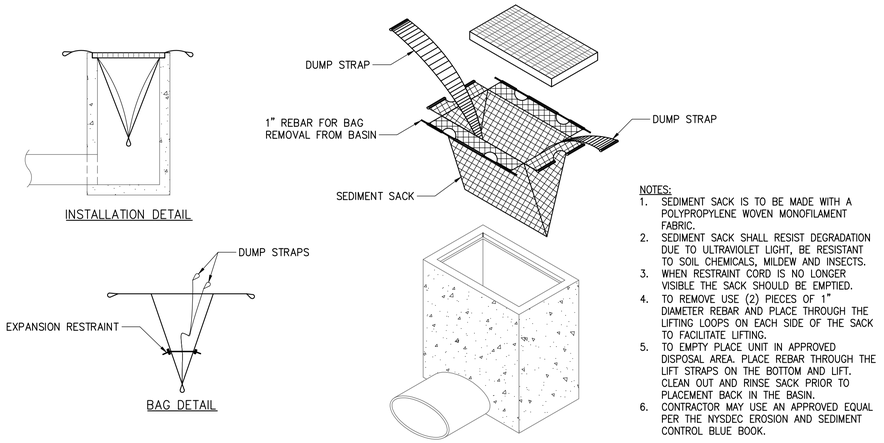
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
	03/24/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BV/AT	NH

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL

EROSION AND SEDIMENT CONTROL DETAILS

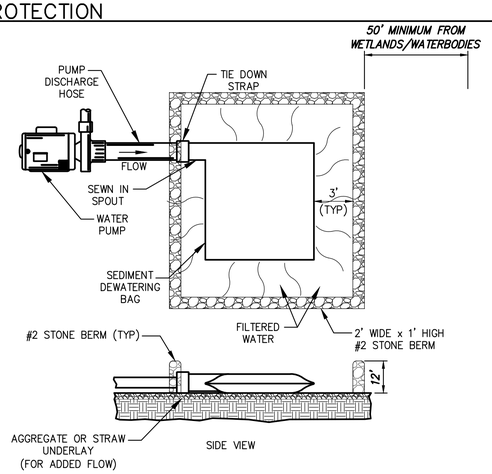
KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-601

DRAWN BY: BL | DESIGNED BY: SL | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F | DATE 03/17/2023 | SH.NO. XX OF



NOTES:
1. SEDIMENT SACK IS TO BE MADE WITH A POLYPROPYLENE WOVEN MONOFILAMENT FABRIC.
2. SEDIMENT SACK SHALL RESIST DEGRADATION DUE TO ULTRAVIOLET LIGHT, BE RESISTANT TO SOIL CHEMICALS, MILDEW AND INSECTS.
3. WHEN RESTRAINT CORD IS NO LONGER VISIBLE THE SACK SHOULD BE EMPTIED.
4. TO REMOVE USE (2) PIECES OF 1" DIAMETER REBAR AND PLACE THROUGH THE LIFTING LOOPS ON EACH SIDE OF THE SACK TO FACILITATE LIFTING.
5. TO EMPTY PLACE UNIT IN APPROVED DISPOSAL AREA. PLACE REBAR THROUGH THE LIFT STRAPS ON THE BOTTOM AND LIFT. CLEAN OUT AND RINSE SACK PRIOR TO PLACEMENT BACK IN THE BASIN.
6. CONTRACTOR MAY USE AN APPROVED EQUAL PER THE NYSDEC EROSION AND SEDIMENT CONTROL BLUE BOOK.

1 INLET PROTECTION
SCALE: N.T.S.



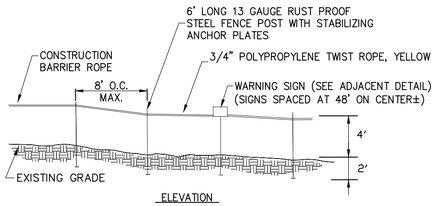
NOTE: THE SEDIMENT DEWATERING BAG WILL BE MANUFACTURED IN THE U.S.A. FROM A NONWOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

SEDIMENT DEWATERING BAG SPECIFICATIONS

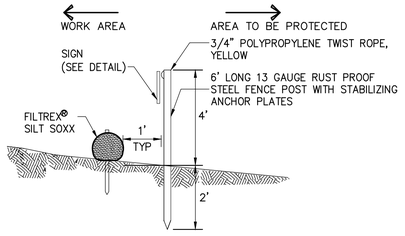
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	0.9 (205) x 0.9 (205)
Grab Tensile Elongation	ASTM D 4632	%	50 x 50
Puncture Strength	ASTM D 4833	kN (lbs)	0.58 (130)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2618 (380)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.36 (80) X 0.36 (80)
UV Resistence	ASTM D 4355	%	70
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.180 (80)
Flow Rate	ASTM D 4491	1/min/m² (gal/min/ft²)	3866 (95)
Permittivity	ASTM D 4491	Sec⁻¹	1.2

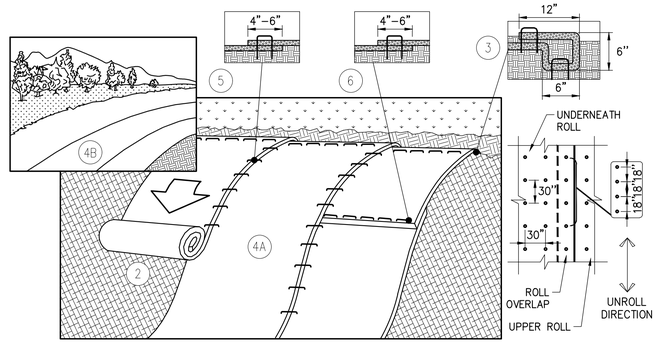
4 SEDIMENT DEWATERING BAG
SCALE: N.T.S.

2 WETLAND PROTECTION FENCE
SCALE: N.T.S.



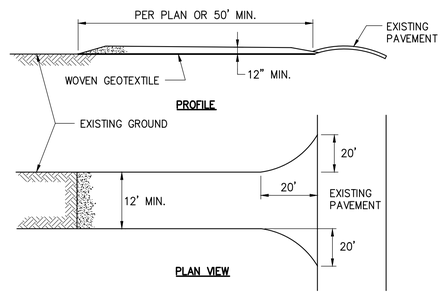
1. CONSTRUCTION BARRIER FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS PRIOR TO BEGINNING ANY WORK ADJACENT TO THESE AREAS.
2. THE CONTRACTOR SHALL INSTALL AT THE BEGINNING OF THE CONTRACT, AND MAINTAIN THROUGHOUT ITS DURATION.





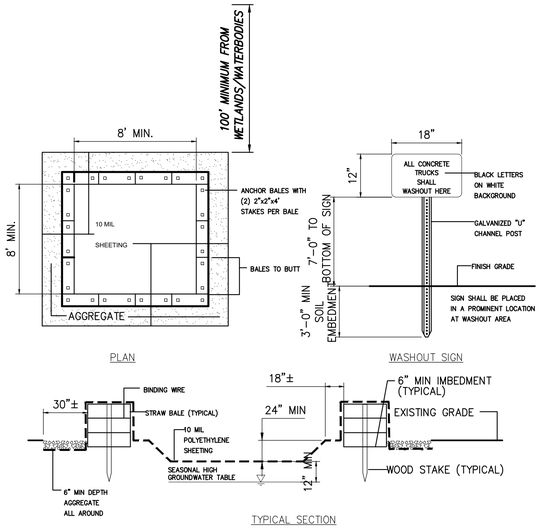
NOTE:
1. EROSION CONTROL BLANKETS TO BE INSTALLED ON SLOPES 3:1 OR GREATER (TYP.)
2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: DO NOT SEED PREPARED AREA. INSTALL WITH PAPER SIDE DOWN. INSTALL ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP x 6" WIDETRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
4. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
5. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
6. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPING AREA APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
7. TO PROPERLY SECURE THE BLANKETS IN LOOSE SOIL CONDITIONS, THE USE OF STAPLES OR STAKES GREATER THAN 6" MAY BE NECESSARY.

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



1. STONE SIZE–USE AASHTO M43 SIZE 3 COARSE AGGREGATE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN 12".
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ACCESS TO SITE.
5. WOVEN GEOTEXTILE FABRIC WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. EXISTING ROAD SIDE DRAINAGE SHALL BE MAINTAINED.
7. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
8. MAINTENANCE–THE ACCESS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT OR STONE SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
9. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
10. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

5 STABILIZED CONSTRUCTION ACCESS
SCALE: N.T.S.



MAINTENANCE NOTES:
1. ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING FACILITATES SHALL BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY. EXCESS RAINWATER THAT HAS ACCUMULATED OVER HARDENED CONCRETE SHALL BE PUMPED TO A STABILIZED AREA SUCH AS A GRASS FILTER STRIP.
2. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF SITE.
3. DISPOSAL OF THE HARDENED MATERIAL SHALL BE OFF–SITE IN A CONSTRUCTION/DEMOLITION LANDFILL.
4. THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.
5. INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON–DESIGNATED AREAS.
6. LOCATION(S) TO BE DETERMINED IN THE FIELD BY THE OWNER'S REPRESENTATIVE
7. CONCRETE WASHOUTS SHALL NOT BE LOCATED WITHIN 200' OF ANY KNOWN WELL.

6 CONCRETE WASHOUT AREA
SCALE: N.T.S.

CHPE Champlain Hudson Power Express | Kiewit | Engineering and Land Surveying, P.C.

ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
	03/24/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BV/AT	NH

DRAWN BY: BL | DESIGNED BY: SL | APPROVED BY: JL

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
EROSION AND SEDIMENT CONTROL DETAILS

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-602
SCALE	AS SHOWN
DATE	03/17/2023
REV. NO.	F
SH.NO.	XX OF

DEWATERING PLAN:
CONSTRUCTION ACTIVITY WITHIN THE STREAM SHALL BE PROHIBITED BETWEEN OCTOBER 1 THROUGH MAY 31 FOR ALL STREAMS DESIGNATED AS TROUT WATER OR SUITABLE FOR TROUT SPAWNING.

DEWATERING PROCEDURES:
TRAPPED WATER WITHIN THE TRENCH SHALL BE DISCHARGED INTO A PORTABLE SEDIMENT TANK OR SEDIMENT FILTER BAGS LOCATED AWAY FROM THE WATERBODY TO PREVENT SILT-LADEN WATER FROM FLOWING INTO THE WATERBODY.

DAM AND PUMP CROSSING PROCEDURES:
BEFORE THE INITIATION OF ANY IN-STREAM ACTIVITIES, ALL MATERIAL ASSOCIATED WITH THE DAM AND PUMP SITE SET-UP MUST BE ON-HAND. THESE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
A)WATER BARRIERS
B)DOWNSTREAM SPLASH PLATE
C)PUMPS (PRIMARY AND SECONDARY) AND HOSES
D)FUEL FOR PUMPS (STORED AT LEAST ONE HUNDRED (100) FEET FROM WATERBODY)
E)SPILL PREVENTION AND CONTROL MATERIALS (INCLUDING SECONDARY CONTAINMENT FOR PUMPS LOCATED WITHIN ONE HUNDRED (100) FEET OF WETLAND OR WATERBODY)

ONCE THE NECESSARY MATERIALS ARE ON-LOCATION, SITE SET-UP MAY BEGIN. THE FIRST STEP IS TO SELECT AN APPROPRIATE LOCATION FOR THE PUMP INTAKE HOSE(S) TO BE POSITIONED. DEPENDING UPON THE CHANNEL CHARACTERISTICS, EITHER A NATURALLY OCCURRING DEEP SPOT OR CHANNEL WILL BE SELECTED AS A "SUMP" OR A SUMP MAY NEED TO BE CREATED TO PROVIDE SUFFICIENT WATER DEPTH FOR THE SCREENED HOSE INTAKE(S). IF A NATURAL SUMP IS NOT AVAILABLE FOR THE INTAKE HOSE, AN IN-STREAM SUMP WILL BE CREATED BY EXCAVATING WITHIN THE STREAM CHANNEL AND SURROUNDING THE EXCAVATION USING SANDBAGS.

THE FOLLOWING BMPS SHALL BE IMPLEMENTED AT THE INTAKE OR SUMP SITE:
A)ALL EQUIPMENT, MATERIAL, AND CONSTRUCTION PERSONNEL NECESSARY FOR THE CROSSING SHALL BE ON-SITE BEFORE SET-UP BEGIN
SB)UPON COMPLETION OF THE WATERBODY CROSSING ANY SANDBAGS UTILIZED FOR A SUMP SHALL BE REMOVED AND THE STREAM CHANNEL RESTORED TO PRE-CONSTRUCTION CONDITION
C)THE SUMP SHALL BE OF SUFFICIENT DEPTH TO PREVENT THE ENTRAINMENT OF EXCESSIVE AMOUNTS OF SEDIMENT INTO THE SUMP INTAKE, HOSE AND PUMP

DURING THE ASSEMBLY OF THE UPSTREAM AND DOWNSTREAM WATER BARRIERS, THE PUMPING NETWORK SHALL BE SETUP TO BEGIN THE TRANSFER OF WATER AROUND THE CONSTRUCTION WORK AREA.

THE PUMP INTAKE AND DISCHARGE HOSES SHALL BE APPROPRIATELY PLACED AND OF SUFFICIENT LENGTH, BASED UPON SITE-SPECIFIC CONDITIONS. THE INTAKE HOSE SHALL BE SCREENED TO PREVENT THE ENTRAINMENT OF FISH. DISCHARGE HOSES SHALL BE PROVIDED WITH SUPPORT OVER THE DITCH-LINE AS NEEDED TO PREVENT EXCESSIVE SAGGING AND REDUCTION OF PUMPING CAPACITY.

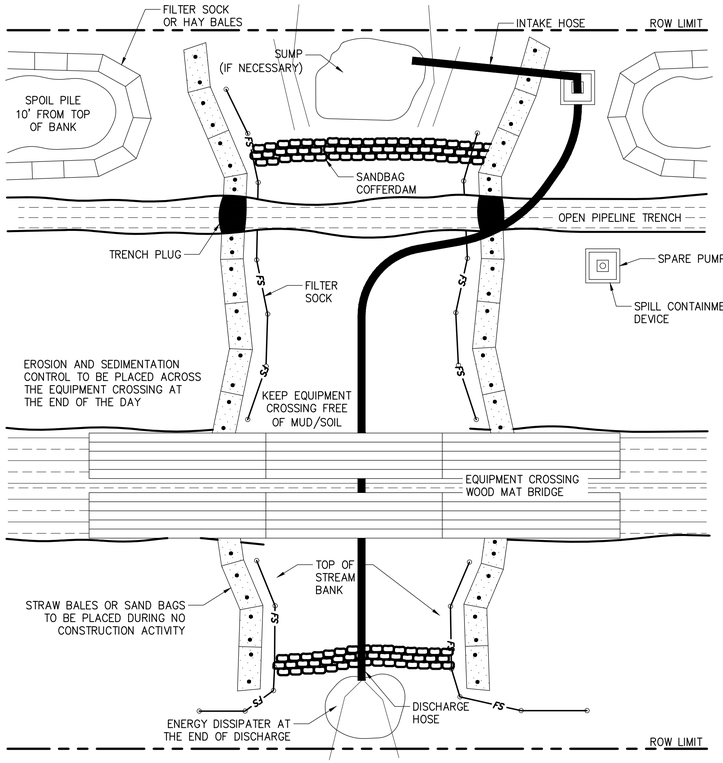
THE NUMBER AND SIZES OF PUMPS TO BE USED AT ANY CROSSING SHALL BE DEPENDENT UPON THE VOLUME OF WATER FLOWING AT THE TIME THE CROSSING IS MADE.

BMPS TO BE IMPLEMENTED DURING PUMP SET-UP INCLUDE:
A)PUMPS SHALL BE FUELED PRIOR TO PLACING THEM IN POSITION
B)IF IT IS NECESSARY TO REFUEL DURING THE PUMP OPERATION, EXTRA CARE SHALL BE TAKEN TO AVOID SPILLAGE AND SPILL CONTROL MATERIALS WILL BE READILY AVAILABLE ON SITE
C)SECONDARY CONTAINMENT SHALL BE PLACED UNDER THE PUMPS AS AN ADDITIONAL PRECAUTIONARY MEASURE TO PROTECT AGAINST ACCIDENTAL LEAKAGE OR SPILL
D)FUEL FOR FILLING THE PUMPS SHALL NOT BE STORED WITHIN ONE HUNDRED (100) FEET OF THE WATERBODY
E)THE INTAKE HOSE SHALL BE SCREENED TO PREVENT THE ENTRAINMENT OF FISH
F)THE END OF THE DISCHARGE HOSE SHALL BE MOUNTED UPON A SPLASH PLATE OR SIMILAR DEVICE OR IN A MANNER THAT WILL DISSIPATE THE ENERGY OF THE DISCHARGING WATER AND REDUCE OR ELIMINATE STREAMBED SCOUR
G)IF HOSES CROSS THE TEMPORARY ACCESS ROAD, THEY SHALL BE PROTECTED FROM TRAVELING EQUIPMENT
H)PUMP(S) SHALL BE OF SUFFICIENT CAPACITY TO TRANSFER TWICE THE CAPACITY OF THE ENTIRE STREAMFLOW AROUND THE CONSTRUCTION WORK AREA
I)RESERVE OR BACKUP PUMP(S) SHALL BE KEPT ON SITE AT ALL TIMES.

WATER BARRIER INSTALLATION

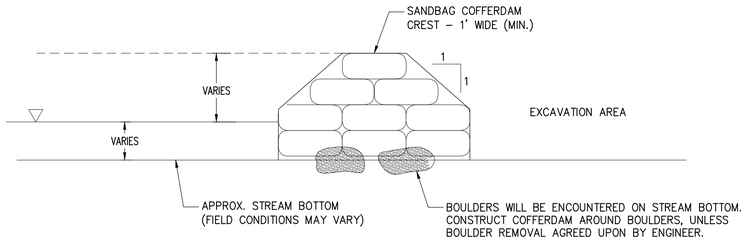
BETWEEN THE PUMP HOSE INTAKE OR SUMP HOLE AREA AND THE TRENCH, AS WELL AS DOWNSTREAM OF THE TRENCH, DAMS OF RELATIVELY IMPERVIOUS MATERIAL SHALL BE INSTALLED. THE UPSTREAM DAM SHALL BE COMPLETED FIRST. EVERY REASONABLE EFFORT SHALL BE MADE TO CONSTRUCT THE DAMS AS WATER TIGHT AS POSSIBLE.

THE FOLLOWING BMPS WILL BE IMPLEMENTED DURING WATER BARRIER INSTALLATION:
A)DAMS SHALL BE CONSTRUCTED OF EITHER SANDBAGS, WATER BLADDERS, STEEL PLATES, PORTA-DAMS OR EQUIVALENT OR "JERSEY BARRIERS" AND PLASTIC SHEETING OR A COMBINATION THEREOF
B)THE DAMS SHALL BE CONSTRUCTED OF SUFFICIENT HEIGHT TO ALLOW ADEQUATE FREEBOARD UNDER REASONABLY EXPECTED WATER LEVELS OR FLOWS AND PROVIDE FOR SOME IMPOUNDMENT OF WATER
C)PRIOR TO COMPLETION OF THE DAMS, THE PUMP(S) MUST BE STARTED IN ORDER TO PROVIDE DOWNSTREAM FLOW OF WATER AROUND THE CONSTRUCTION WORK AREA
D)THE RATE OF PUMPING SHALL BE MONITORED TO MINIMIZE DRAINING OF THE INTAKE SUMP AND THE RESULTING CESSATION IN FLOW. ALTERNATIVELY, PUMPING SHALL BE MONITORED AND INCREASED AS NECESSARY TO PREVENT OVERTOPPING OF THE DAMS.



GENERAL SEQUENCE:
1. SCHEDULE CONSTRUCTION DURING LOW FLOW PERIOD, IF POSSIBLE.
2. SET UP PUMP AND HOSE AS SHOWN, OR USE PRACTICAL ALTERNATIVES. PUMP SHOULD HAVE TWICE THE PUMPING CAPACITY OR ANTICIPATED FLOW. HAVE STANDBY PUMP ON SITE. DEPENDING ON STREAM FLOW,DIG SUMP HOLE TO CONCENTRATE WATER AT INTAKE.
3. INSTALL UPSTREAM DAM COMPOSED OF SANDBAGS, METAL PLATING OR A COMBINATION OF BOTH. INSTALL DOWNSTREAM DAM, IF REQUIRED, TO KEEP STREAM BED DRY.
4. AFTER DAMS ARE IN PLACE, IT MAY BE NECESSARY TO USE ADDITIONAL PUMPS TO HANDLE STREAM FLOW.
5. EXCAVATE TRENCH AND LOWER IN PIPE UNDER HOSE. MOVE HOSE AS REQUIRED OR DISCONNECT, IF TEMPORARY FLOW BLOCKAGE IS ACCEPTABLE. BACKFILL TRENCH.
6. DISMANTLE DOWNSTREAM DAM, THEN UPSTREAM DAM. KEEP PUMP RUNNING TO MAINTAIN STREAM FLOW.
7. RESTORE STREAM BANKS AND APPROACHES FOR A MINIMUM DISTANCE OF AT LEAST 50 FEET FROM THE STREAM EDGES AND PERMANTENTLY STABLIZE WITHIN 1 DAY OF INITIAL RESTORATION.

1 DAM AND PUMP AROUND STREAM CROSSING
SCALE: N.T.S.



2 SANDBAG COFFERDAM DETAIL
SCALE: N.T.S.

NOTES:
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

CHPE Champlain Hudson Power Express

Kiewit

Engineering and Land Surveying, P.C.

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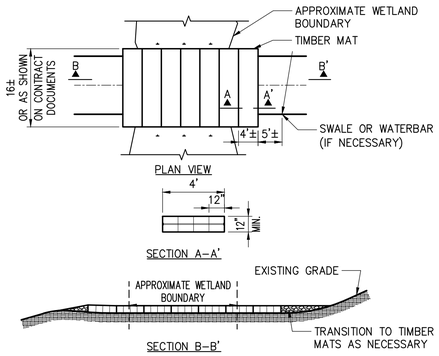
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
	03/24/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BV/AT	NH

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
EROSION AND SEDIMENT CONTROL DETAILS

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	**C-603**

DRAWN BY: BL | DESIGNED BY: SL | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F | DATE 03/17/2023 | SH.NO. XX OF

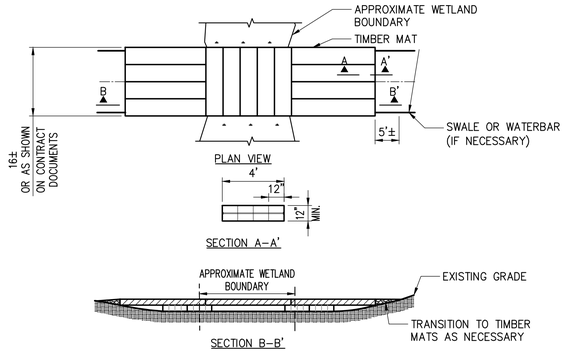
File: P:\120174-CHPE_CABLE_INSTALL-KIEWIT\60_CAD\20_ENGINEERING_CAD_FILES\PACKAGE_7A\NY_ENVIRONMENTAL_(EROSION_CONTROL)\01_ACE\SHEET_FILES\21162_7A_ESC-DETAILS-C603.DWG Saved: 3/16/2023 10:11:01 AM Plotted: 3/17/2023 11:51:26 AM Current User: Sean Lenahan LastSavedBy: blarn



NOTES:
1. TIMBER MATS SHOULD BE INSTALLED IN WETLANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
2. BASED ON ACTUAL SITE CONDITIONS, MULTIPLE LAYERS OF TIMBER MATS MAY BE REQUIRED.
3. TIMBER MAT SURFACE SHOULD BE LEVEL TO PREVENT EQUIPMENT AND VEHICLES FROM SLIDING OFF DURING MUDDY OR ICING CONDITIONS, AND PREVENT TIMBERS FROM BREAKING.
4. 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.
5. PERIMETER EROSION AND SEDIMENT CONTROL ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
6. UNLESS PERMITTED FROM REMOVAL, STUMPS WITHIN THE WETLAND SHOULD REMAIN. THIS MAY REQUIRE ADDITIONAL TIMBERS TO BRIDGE ABOVE.
7. 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:
1. TIMBER MATS SHOULD BE INSTALLED IN WETLANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
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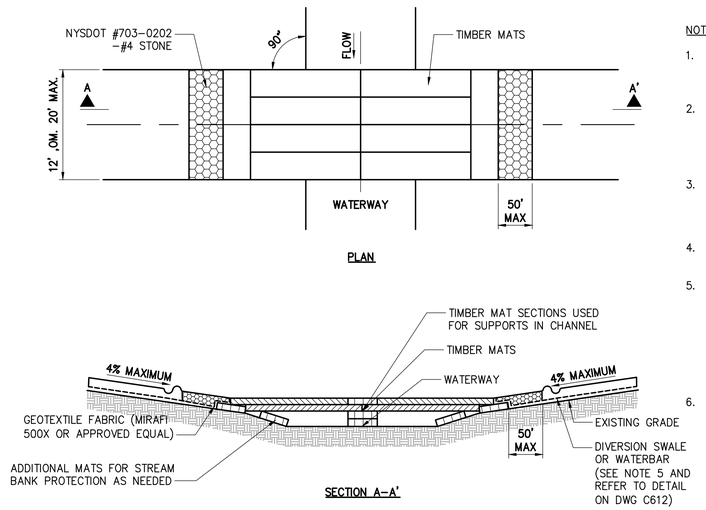
5. PERIMETER EROSION AND SEDIMENT CONTROL ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
6. UNLESS PERMITTED FROM REMOVAL, STUMPS WITHIN THE WETLAND SHOULD REMAIN. THIS MAY REQUIRE ADDITIONAL TIMBERS TO BRIDGE ABOVE.
7. UPON REMOVAL OF TIMBER MATTING ALL SPLINTERED WOOD SHOULD BE REMOVED. 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:

1. 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).
2. THE CONSTRUCTION OF ANY CROSSING SHOULD NOT CAUSE A SIGNIFICANT WATER LEVEL DIFFERENCE BETWEEN THE UPSTREAM AND DOWNSTREAM WATER SURFACE ELEVATIONS. FISH SPAWNING OR MIGRATION DATES CAN VARY ACROSS NEW YORK, AND RESTRICTIONS IMPOSED BY THE NYSDEC MY VARY AND MUST BE VERIFIED.
3. THE TEMPORARY WATERWAY CROSSING SHOULD BE AT RIGHT ANGLES TO THE STREAM WHERE APPROACH CONDITIONS DICTATE, THE CROSSINGS MAY VARY 15 DEGREES FROM A LINE DRAWN PERPENDICULAR TO THE CENTERLINE OF THE STREAM AT THE INTENDED CROSSING LOCATION.
4. ALL FILL MATERIALS ASSOCIATED WITH THE ROADWAY APPROACH SHOULD BE LIMITED TO A MAXIMUM HEIGHT OF 2 FEET ABOVE THE EXISTING FLOOD PLAIN ELEVATION.
5. A WATER DIVERTING STRUCTURE SUCH AS A SWALE OR WATERBAR 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.
6. ALL CROSSINGS SHOULD HAVE ONE TRAFFIC LANE. THE MINIMUM WIDTH SHOULD BE 12 FEET WITH A MAXIMUM WIDTH OF 20 FEET.

OPTION "C"
NOT TO SCALE

1 TIMBER MATTING (WETLAND CROSSING)
SCALE: N.T.S.

CHPE Champlain Hudson Power Express

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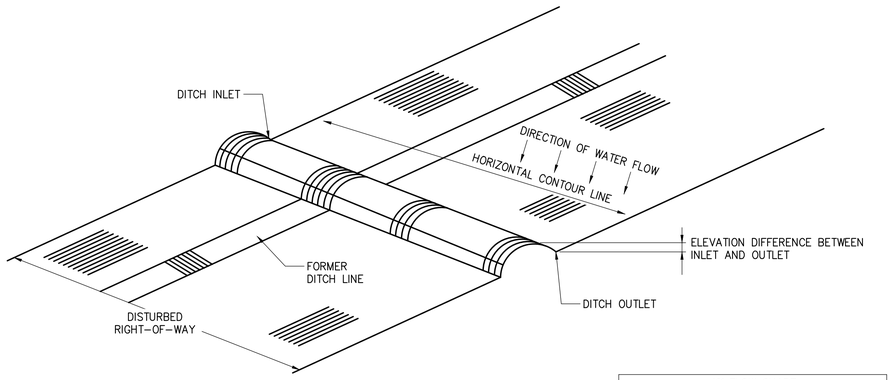
	03/24/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BV/AT	NH

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
WETLAND CROSSING DETAILS

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-611

DRAWN BY: BL | DESIGNED BY: SL | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F | DATE 03/17/2023 | SH.NO. XX OF



4% FLOW CHART	
HORIZONTAL DISTANCE BETWEEN WATERBAR INLET & OUTLET (FEET)	ELEVATION DISTANCE BETWEEN WATERBAR INLET AND OUTLET (FEET)
75	3
100	4
125	5
150	6
175	7

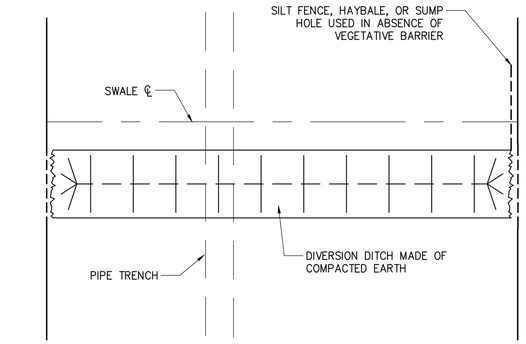
WATER SHALL BE DIVERTED OFF THE DISTURBED RIGHT-OF-WAY AT AN OUTSLOPE OF THREE TO FIVE PERCENT BY CONSTRUCTING DIVERSION DITCH ACCORDING TO THE FOLLOWING PROCEDURES:

1. AT THE PROPOSED INTERCEPTOR DITCH LOCATION ESTABLISH A HORIZONTAL CONTOUR LINE (USING A POCKET TRANSIT OR HAND LEVEL) WHICH EXTENDS COMPLETELY ACROSS THE DISTURBED RIGHT-OF-WAY. THIS LINE WILL ALWAYS BE PERPENDICULAR TO THE DIRECTION OF WATER FLOW AND SHOULD BE PARALLEL TO THE MAP CONTOURS SHOWN ON THE PLAN DRAWINGS.
2. DETERMINE WHICH SIDE OF THE RIGHT-OF-WAY IS BEST SUITED FOR THE DITCH OUTLET (EVALUATE VEGETATION DENSITY, LOCAL TOPOGRAPHY, ETC.) AND DEVIATE DIKE AWAY FROM THE HORIZONTAL CONTOUR LINE SLIGHTLY DOWNWARD TOWARD THE SELECTED OUTLET SIDE MAINTAINING A THREE TO FIVE PERCENT SLOPE. AS AN EXAMPLE, THE CHART AT THE RIGHT SHOWS DIMENSIONS ASSUMING A FOUR PERCENT SLOPE.
3. WHEN OUTLETTING NEAR WATER BODIES, STREAMS, DITCHES, & CROP FIELDS, A FILTER FENCE OR STRAW BALE FENCE SHOULD BE PLACED ON OUTLET END OF THE DIVERSION DITCH.

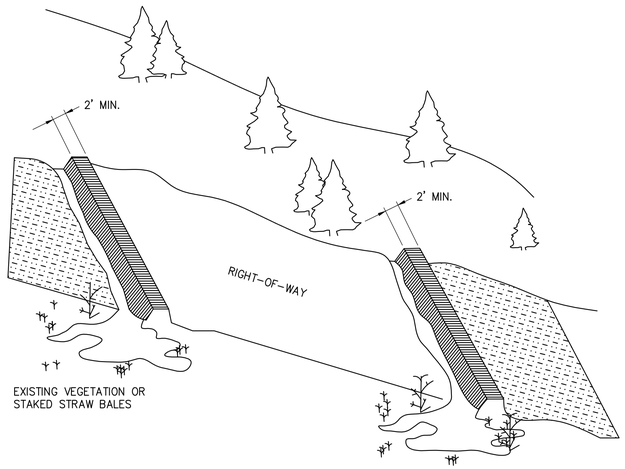
TEMPORARY DRAINAGE DITCH

NOTES:

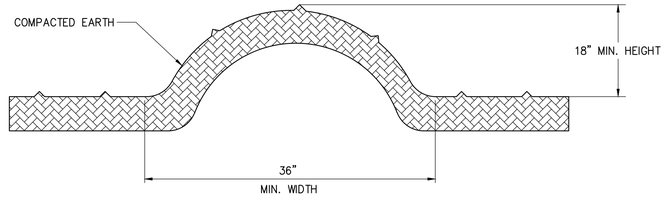
1. TEMPORARY DIVERSION DITCH SHOULD BE BUILT SIMILAR TO THE PERMANENT DITCH CONFIGURATION BUT THE DIMENSION CAN BE SCALED BACK.
2. MAXIMUM HEIGHT SHOULD BE 12" AND SHOULD BE COMPACTED.
3. SPACING BETWEEN DIVERSION DITCHES AND SKEW OF THE DIVERSION DITCHES CAN VARY FROM THE PERMANENT DIVERSION DITCHES.
4. WHEN CONSTRUCTING TEMPORARY DIVERSION DITCHES THEY SHOULD BE FUNCTIONAL, WHILE MAINLINE CONSTRUCTION IS PROCEEDING, UNTIL RESTORATION BEGINS AND PERMANENT DIVERSION DITCHES ARE THEN CONSTRUCTED.



OVERHEAD VIEW



1 PERMANENT DIVERSION DITCH DETAIL
SCALE: N.T.S.



2 MINIMAL HEIGHT & WIDTH DIMENSIONS FOR WATERBAR CONSTRUCTION
SCALE: N.T.S.

CHPE Champlain Hudson Power Express

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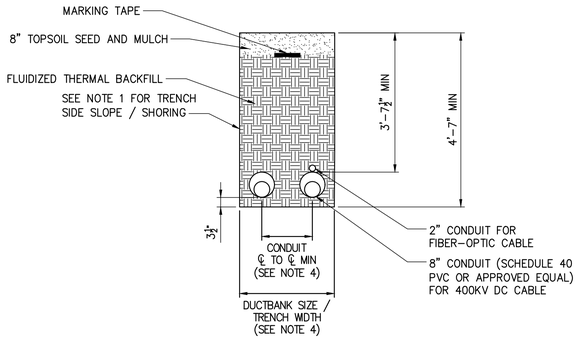
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL

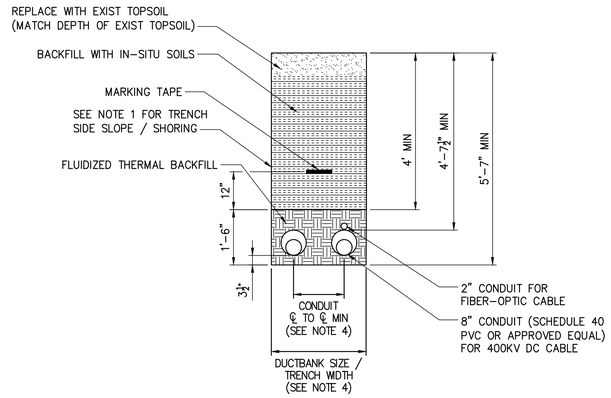
WATERBAR DETAILS

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-612

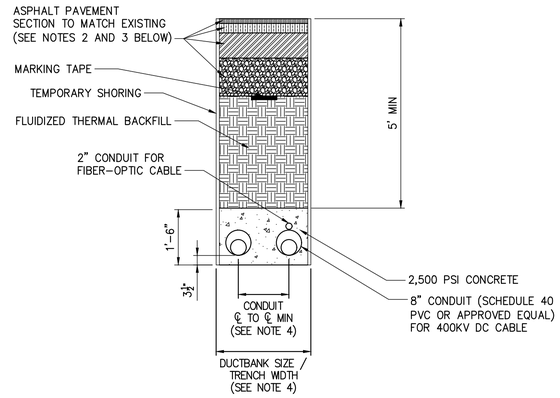
DRAWN BY: BL | DESIGNED BY: SL | APPROVED BY: JL | SCALE AS SHOWN | REV. NO. F | DATE 03/17/2023 | SH.NO. XX OF



OPEN TRENCH



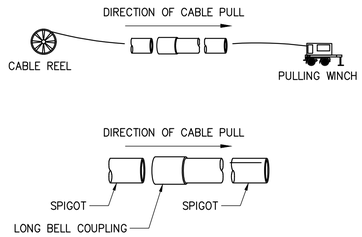
OPEN TRENCH WITHIN AGRICULTURAL LANDS



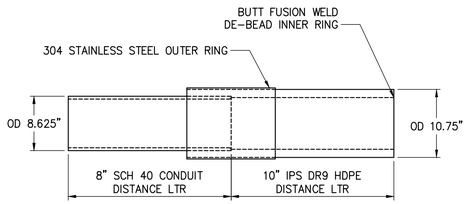
DUCTBANK IN ROADWAY

NOTES:
1. SLOPING, BENCHING, OR SHORING SHALL BE IN ACCORDANCE WITH OSHA EXCAVATION STANDARDS, 29 CFR PART 1926, SUBPART P. AT LOCATIONS WHERE THE TRENCH IS NOT SHORED, SLOPING AND/OR BENCHING WILL DEPEND ON TYPE OF SOILS ENCOUNTERED ON SITE. SLOPE FROM EDGE OF ROADWAY TO BOTTOM OF EXCAVATIONS MAY BE FLATTER THAN 2:1 (H:V) FOR AASHTO HS-20 LOADING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EVALUATING SLOPE STABILITY BASED ON ACTUAL EQUIPMENT FOR SITE OPERATIONS AS DETERMINED BY A GEOTECHNICAL ENGINEER.
2. SEE DETAIL 4 ON DETAIL SHEET C-631 FOR PAVEMENT TRANSITION DETAIL.
3. SEE SHEET C-631 FOR SURFACE RESTORATION DETAILS.
4. SEE PLAN AND PROFILE SHEETS FOR CONDUIT ℄ TO ℄ AND DUCTBANK SIZE TRENCH WIDTH (NOTE ABOVE PROFILE VIEW).

1 TYPICAL TRENCHING DETAILS
NOT TO SCALE



2 TYPICAL COUPLING DIRECTION OF PULL DETAIL
NOT TO SCALE



3 8"-10" PVC/HDPE TRANSITION COUPLING DETAIL
NOT TO SCALE

NOTE:
THIS TRANSITION COUPLING COMES ASSEMBLED AS A UNIT. POLY-CAM, ISCO INDUSTRIES P/N: 737-1008PVC40PV109 TRANSITION COUPLING SHALL ARRIVE FROM VENDOR WITH NO ROUGH EDGES OR PROTRUSIONS ON INTERIOR. INTEGRITY OF COUPLING TO BE FIELD-VERIFIED PRIOR TO INSTALLATION. IF UNSATISFACTORY, CONTRACTOR TO SHAPE OR SAND MINOR IRREGULARITIES PRIOR TO INSTALLATION.

CHPE Champlain Hudson Power Express

Kiewit

TETRA TECH

TETRA TECH ENGINEERING AND SURVEYING P.C.
(A NEW YORK PROFESSIONAL CORPORATION)

ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
F	3/17/2023	FINAL SUBMISSION	BV	TK
E	01/24/2023	DRAFT FINAL SUBMISSION	BV	TK
D	11/16/2022	PRELIMINARY DRAFT FINAL SUBMISSION	BV	TK
C	04/29/2022	60% DESIGN SUBMISSION	BV	TK
B	03/22/2022	PRELIMINARY DESIGN DEVELOPMENT	BV	TK
A	02/14/2022	PRELIMINARY PROGRESS	BV	TK

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
TRENCHING DETAILS

KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	C-621

DRAWN BY: AR | DESIGNED BY: BV | APPROVED BY: TK | SCALE AS SHOWN | REV. NO. F | DATE 03/17/2023 | SH.NO. OF

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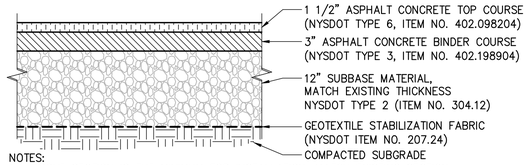
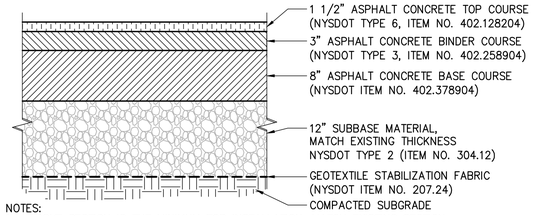


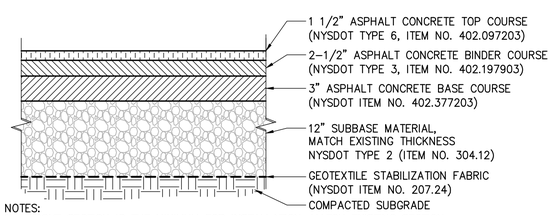
NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

1 ASPHALT CONCRETE PAVEMENT DETAIL (PRIVATE DRIVEWAY)
SCALE: N.T.S.



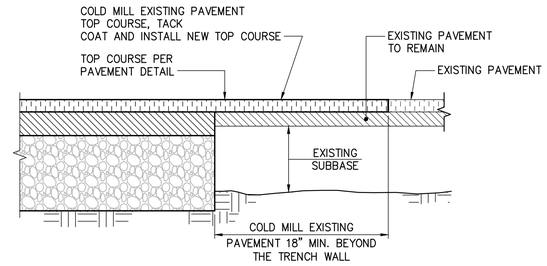
NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

2 ASPHALT CONCRETE PAVEMENT (WITHIN NYSDOT ROADWAYS)
SCALE: N.T.S.



NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

3 ASPHALT CONCRETE PAVEMENT (WITHIN COUNTY OR TOWN ROADWAYS)
SCALE: N.T.S.



NOTE:
1. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

4 PAVEMENT TRANSITION DETAIL
SCALE: N.T.S.

TEMPORARY ACCESS ROAD SECTION[1,2,3,4]				
CBR[5]	UNSTABILIZED	MIRAFI 180N GEOTEXTILE[6]	TENSAR BX1200 GEOGRID[6]	MIRAFI RSI SERIES GEOTEXTILE[6]
0.5	--	20 INCH RIP RAP[7] + 6 INCH AGGREGATE	--	20 INCH RIP RAP[7] + 4 INCH AGGREGATE (RS580I)
1.0	--	18 INCH AGGREGATE	12 INCH AGGREGATE	15 INCH AGGREGATE (RS280I)
1.5	--	12 INCH AGGREGATE	9 INCH AGGREGATE	9 INCH AGGREGATE (RS280I)
2.0	18 INCH AGGREGATE	11 INCH AGGREGATE	6 INCH AGGREGATE	9 INCH AGGREGATE (RS280I)
3.0+	15 INCH AGGREGATE	8 INCH AGGREGATE	6 INCH AGGREGATE	9 INCH AGGREGATE (RS280I)

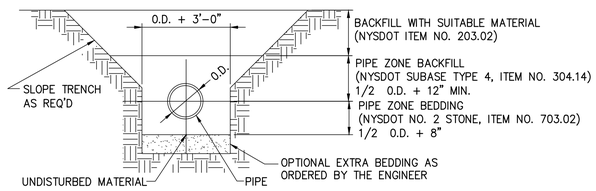
NOTES:
1 TEMPORARY ACCESS ROAD SECTIONS PER KIEWIT ENGINEERING (NY) CORP.
2 AGGREGATE SHALL BE NYSDOT TYPE 2 CRUSHED AGGREGATE OR APPROVED ALTERNATIVE.
3 DESIGN CONSIDERS 1,000 PASSES OF MAXIMUM 22-KIP AXLE LOAD AND A DESIGN RUT DEPTH OF 3 INCHES. ADDITIONAL AXLE PASSES, HEAVIER AXLE LOADS, AND DETERIORATED SUBGRADE CONDITIONS MAY REQUIRE THICKER AGGREGATE SECTIONS OR ADDITIONAL MAINTENANCE.
4 ALTERNATE TEMPORARY ACCESS ROAD DESIGNS MAY BE PROVIDED BY KIEWIT ENGINEERING, AS REQUIRED, BASED ON FIELD CONDITIONS AND TRAFFIC LOADING.
5 ESTIMATE CBR IN THE FIELD USING A DYNAMIC CONE PENETROMETER OR ALTERNATIVE METHOD APPROVED BY GEOTECHNICAL ENGINEER OF RECORD (EOR). CBR OF IN-SITU SOIL MAY VARY SEASONALLY DUE TO FREEZE/THAW AND BASED ON MOISTURE CONDITIONS.
6 GEOGRID AND GEOTEXTILE
A GEOGRID AND GEOTEXTILES SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATION INCLUDING OVERLAP AND EDGE DETAILS.
B SPECIFIED GEOTEXTILE OR GEOGRID MAY BE REPLACED BY EQUIVALENT MATERIAL APPROVED BY EOR.
C GEOTEXTILE IS REQUIRED IN REGULATED WETLANDS AND AGRICULTURAL LANDS.
D GEOTEXTILE SEPARATOR FABRIC IS REQUIRED BENEATH GEOGRID ON COHESIVE SUBGRADE
7 RIP RAP
A RIP RAP SHALL BE NYSDOT LIGHT STONE FILL OR APPROVED ALTERNATIVE.
B A LAYER OF #57 STONE IS RECOMMENDED ON TOP OF GEOTEXTILE TO PREVENT DAMAGING OR PUNCHING OF THE GEOTEXTILE FABRIC WHERE RIP RAP IS USED.

5 TEMPORARY ACCESS ROAD
SCALE: N.T.S.

6 GRAVEL PAVEMENT
SCALE: N.T.S.

NOTES:
1. APPLY TACKCOAT TO MILLED SURFACE PRIOR TO PLACING ASPHALT CONCRETE TOP COURSE.
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

7 MILL AND OVERLAY ASPHALT CONCRETE PAVEMENT DETAIL
SCALE: N.T.S.



NOTES:
1. WHERE IDENTIFIED ON PLANS, CULVERT REPLACEMENTS AND/OR REPAIR TO BE COMPLETED IN ACCORDANCE WITH NYSDOT STANDARD SHEETS (NYSDOT STANDARD SHEET GROUP 603 CULVERTS AND STORM DRAINS AND NYSDOT BRIDGE DETAIL SHEETS BD-CB1 THRU BD-CB13)

8 CULVERT REPLACEMENT
SCALE: N.T.S.

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Kiewit

TETRA TECH
TETRA TECH ENGINEERING AND SURVEYING P.C.
(A NEW YORK PROFESSIONAL CORPORATION)

ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
F	3/17/2023	FINAL SUBMISSION	BV	TK
E	01/24/2023	DRAFT FINAL SUBMISSION	BV	TK
D	11/16/2022	PRELIMINARY DRAFT FINAL SUBMISSION	BV	TK
	04/29/2022	60% DESIGN SUBMISSION	BV	TK
B	03/22/2022	PRELIMINARY DESIGN DEVELOPMENT	BV	TK
A	02/14/2022	PRELIMINARY PROGRESS	BV	TK

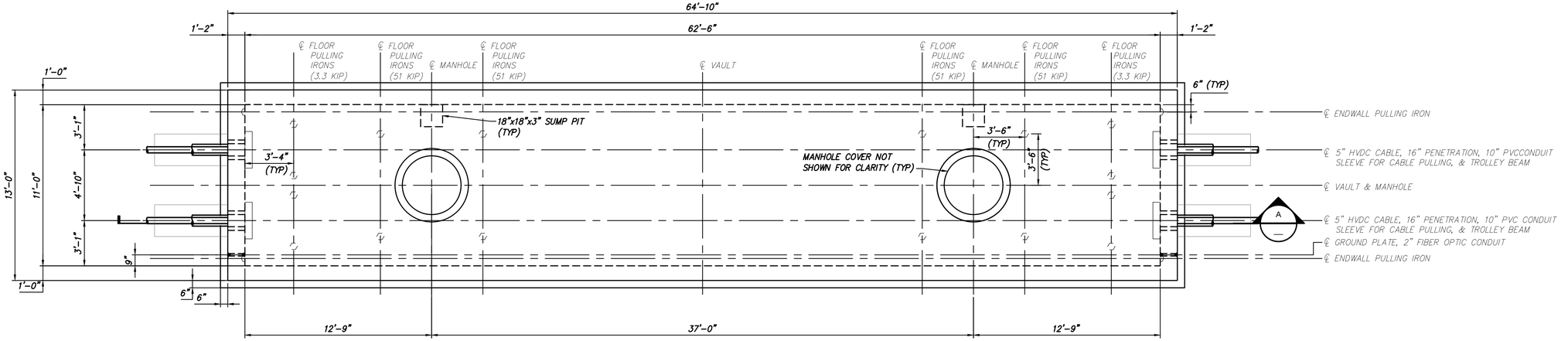
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 11 (PACKAGE 7A) - CSX: CATSKILL
SURFACE RESTORATION DETAILS

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

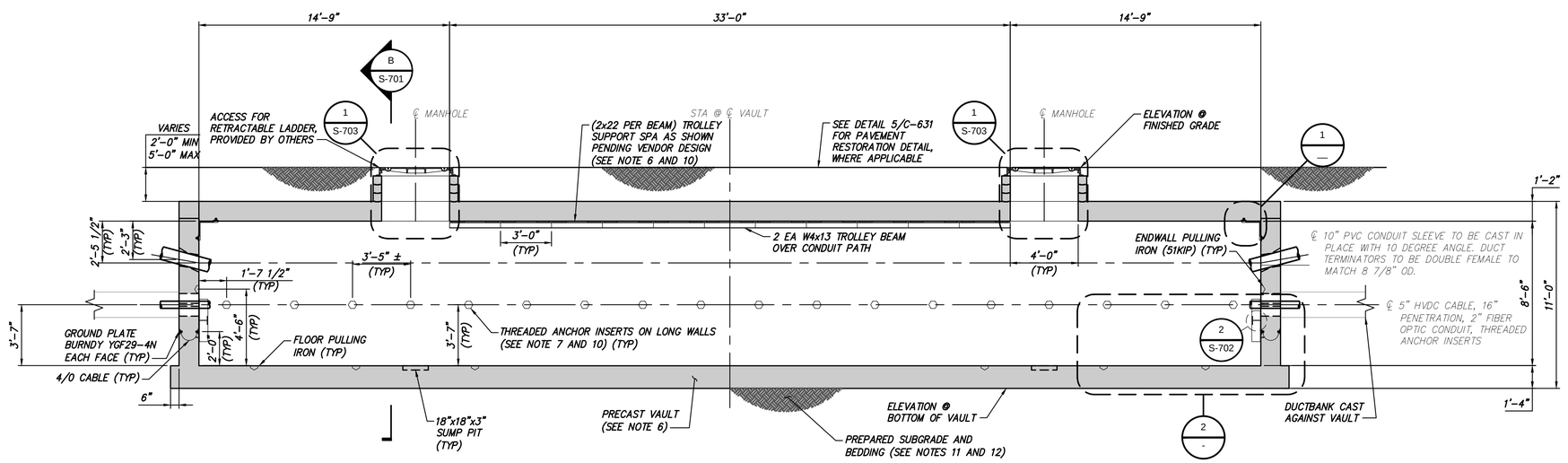
KIEWIT PROJECT NO.	21162
TT PROJECT NO.	204-3701
DRAWING NO.	C-631
DATE	03/17/2023
SH.NO.	-- OF

NOTES:

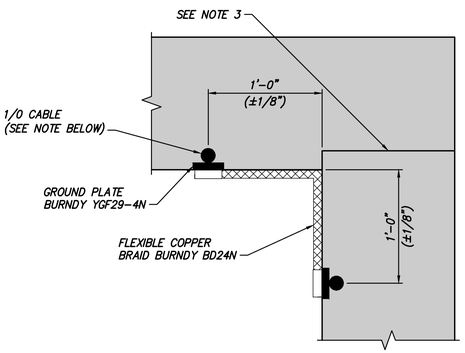
1. EACH ENDWALL (8.5 FT x 11 FT) IS DESIGNED FOR A SINGLE 51,000 LB PULLING IRON FORCE. THE FLOOR SLAB IS DESIGNED FOR FOUR CONCURRENT 3,300 LB PULLING IRON FORCES AND A SINGLE 51,000 LB PULLING IRON FORCE. SEE DETAIL 2 FOR RACKING FORCES AT EACH END.
2. DESIGN LIVE LOAD: HL-93.
3. EXTERIOR COATING & JOINT SEALERS/WATER STOPS TO BE USED BETWEEN PRECAST JOINTS, AS SPECIFIED.
4. MAXIMUM PRECAST PIECE PICK WEIGHT LIMITED TO 50,000 LB.
5. SEE ELECTRICAL DRAWINGS FOR CABLE RACKING DETAILS & GROUND WIRE DETAILS.
6. WALL THICKNESSES TO BE FINALIZED PER APPROVED VENDOR'S DESIGN. REFER TO APPROVED VENDOR SHOP DRAWINGS FOR WEIGHTS AND PICK POINTS.
7. THREADED ANCHOR WORKING LOAD SHALL BE 1,100 LB MINIMUM.
8. LINK SEAL TO BE USED BETWEEN CABLE CONDUIT AND PENETRATION SLEEVE, AS SPECIFIED.
9. ELECTRIC SUMP PUMP TO BE PROVIDED BY OTHERS.
10. SEE SHEET S-702 FOR ANCHOR AND EMBED LOCATIONS.
11. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
12. 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.
13. PRECAST SUPPLIER TO COORDINATE WITH MANHOLE COVER SUPPLIER FOR FIT-UP ISSUES.
14. BACKFILL AREA AROUND VAULT WITH FLUIDIZED THERMAL BACKFILL (FTB) UP TO TOP OF TOP SLAB. ABOVE TOP SLAB, BACKFILL WITH SCREENED NATIVE SOIL TO BE COMPACTED PER EARTHWORK SPECIFICATION.
15. FOR LIMITS OF EXCAVATION, SEE CIVIL PLAN DRAWINGS.



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

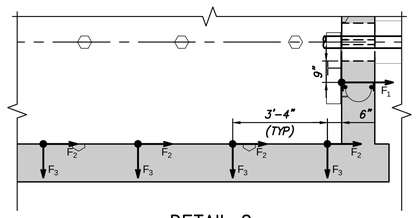


SECTION VIEW A
SCALE: 1/4" = 1'-0"



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 ℄ HVDC CABLE. RACKING FORCES ARE NOT CONCURRENT WITH FLOOR PULLING IRON OR ENDWALL PULLING IRON FORCES. RACKING INSTALLED AT EACH END OF THE VAULT, FORCES APPLIED SYMMETRICALLY AT EACH END.

F_1 = 9.0 KIP F_2 = 2.3 KIP F_3 = 7.9 KIP

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0	03/17/2023	FINAL SUBMITTAL	JNK	OO

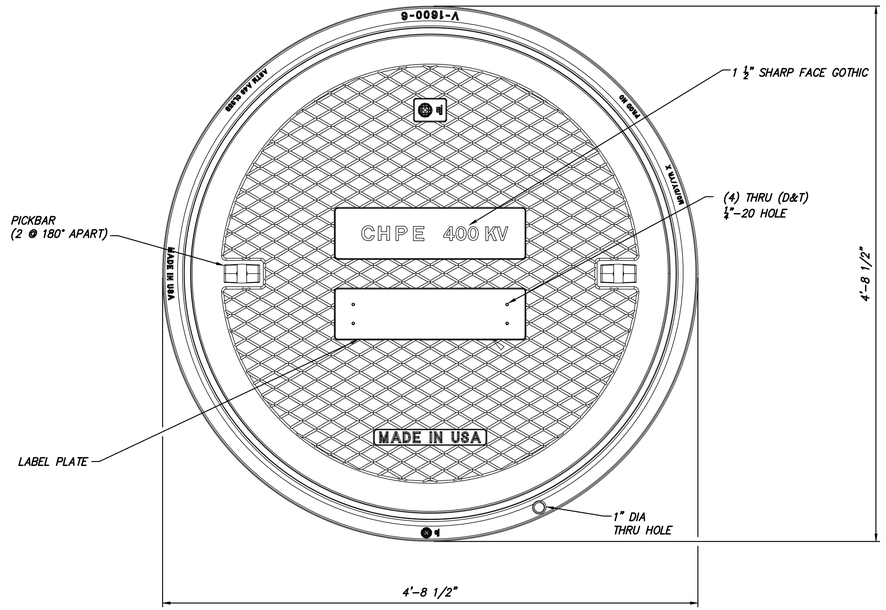
CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT PLAN AND ELEVATION

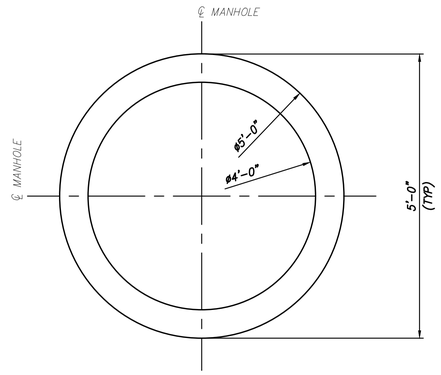
KIEWIT PROJECT NO. 21162

DRAWING NO. S-700

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



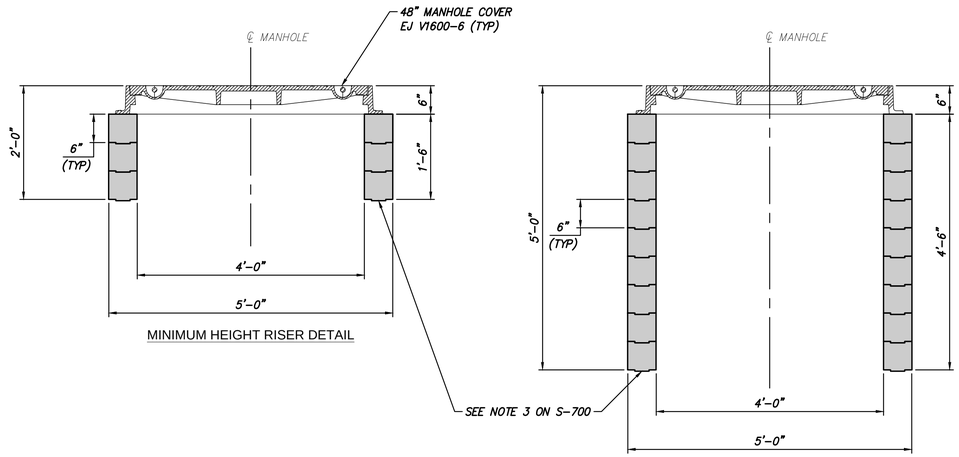
MANHOLE COVER
SCALE: 1 1/2" = 1'-0"



PRECAST CAP/RISER RINGS

NOTES:

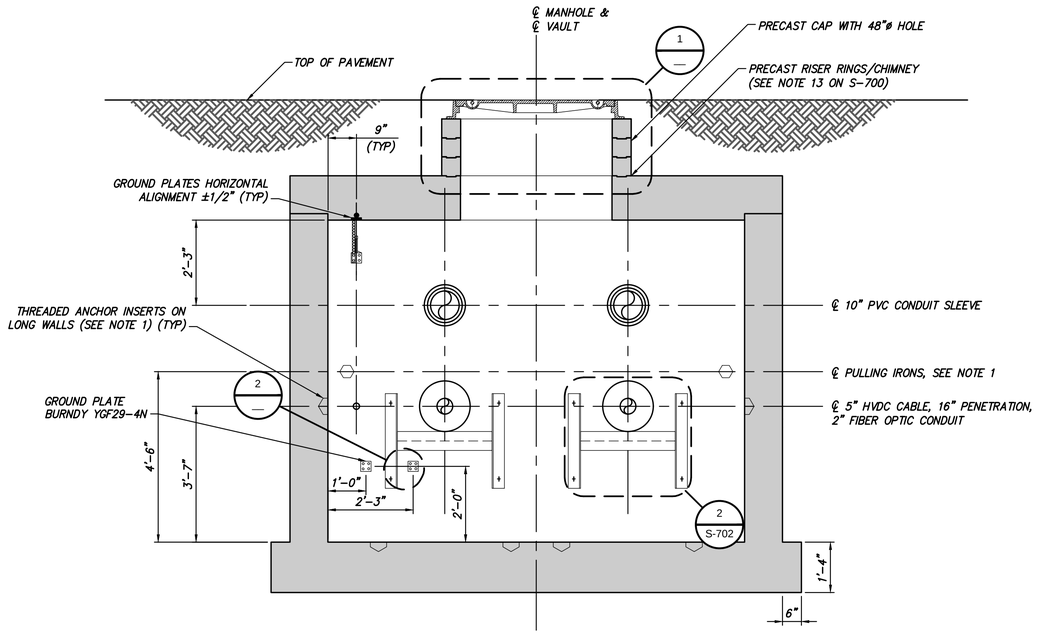
1. REFER TO NOTES ON SHEET S-700.
2. MANHOLE COVER SHALL BE RATED FOR HS-20 WHEEL LOADING MINIMUM.



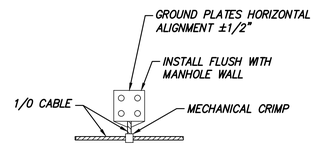
MINIMUM HEIGHT RISER DETAIL

MAXIMUM HEIGHT RISER DETAIL

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



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



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

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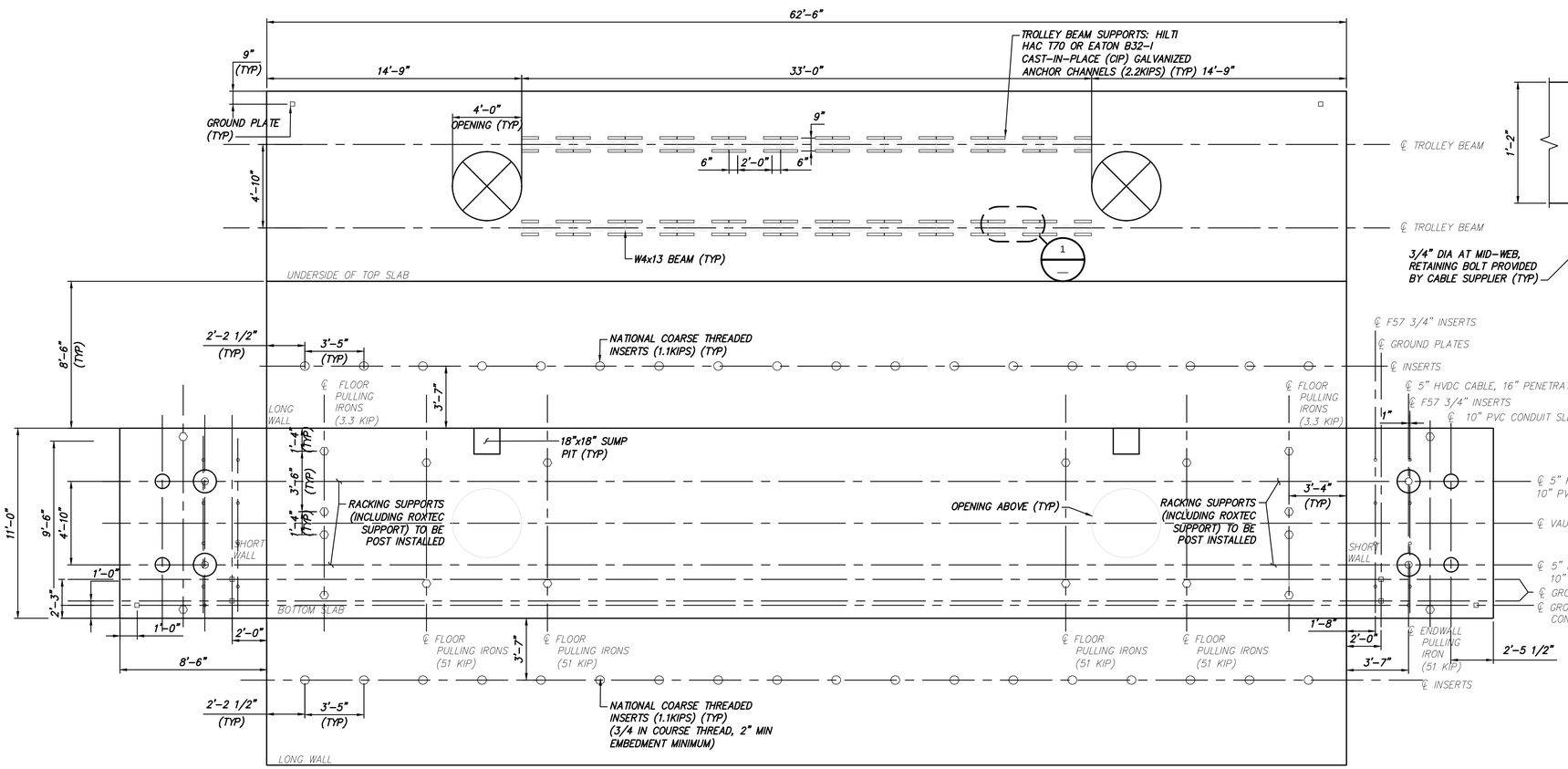
CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT SECTION AND DETAILS

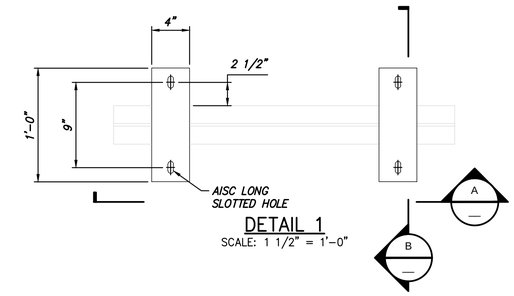
KIEWIT PROJECT NO. 21162

DRAWING NO. S-701

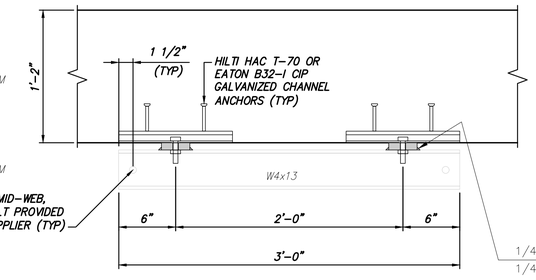
DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO. | DATE | SH.NO. XX



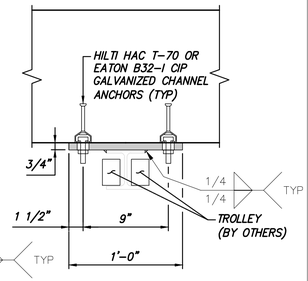
UNFOLDED INTERIOR VIEW
SCALE: 1/4" = 1'-0"



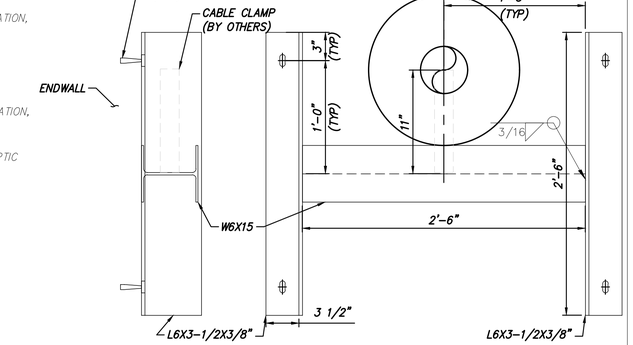
DETAIL 1
SCALE: 1 1/2" = 1'-0"



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



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



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

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

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0	03/17/2023	FINAL SUBMITTAL	JNK	OO

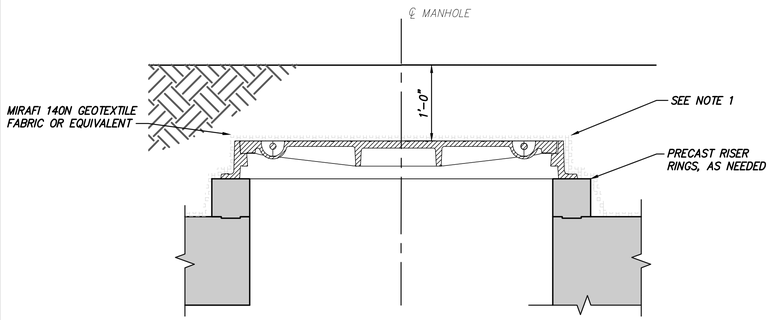
CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT ANCHOR AND EMBED DETAILS

KIEWIT PROJECT NO. 21162

DRAWING NO. S-702

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



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

NOTES:

1. FOR ALL SPLICE VAULT MANHOLES IN PACKAGES 1A AND 1B: 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.

A

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CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT DETAILS

KIEWIT PROJECT NO. 21162

DRAWING NO. S-703

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

B

DESIGN SPECIFICATIONS

1. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020
2. NYSDOT LRFD BRIDGE DESIGN SPECIFICATIONS, 2021
3. NYSDOT LRFD BLUE PAGES, 2021
4. AREMA MANUAL FOR RAILWAY ENGINEERING, VOLUME 2 STRUCTURES, 2016
5. ASCE 7-16 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES

DESIGN LOADS

1. DEAD LOADS
   - 1.1. CONCRETE UNIT WEIGHT = 150 PCF
   - 1.2. STEEL UNIT WEIGHT = 490 PCF
2. SUPERIMPOSED DEAD LOADS
   - 2.1. WEIGHT OF TWO HVDC CABLES + ONE FIBER OPTIC CABLE AND ASSOCIATED CONDUIT = 47.53 PLF
   - 2.2. WEIGHT OF CABLE TRAY = 20.57 PLF
   - 2.3. PULLING IRON, TROLLEY BEAM, ANCHORAGE, EMBED FORCES NOTED ON DRAWINGS WHERE APPLICABLE.
3. EARTH LOADS
   - 3.1. SOIL BACKFILL UNIT WEIGHT = 125 PCF
4. LIVE LOAD SURCHARGE
   - 4.1. 100 PSF MINIMUM
5. LIVE LOADS
   - 5.1. 300 PSF MINIMUM AT GROUND SURFACE OF TRENCH SECTIONS AND VAULTS.
   - 5.2. HL-93
   - 5.3. COOPER E-80
6. WIND LOADS
   - 6.1. 50 PSF TRANSVERSE
   - 6.2. 10 PSF LONGITUDINAL
7. SNOW LOADS
   - 7.1. 50 PSF
8. WATER
   - 8.1. STRUCTURES ARE ASSUMED TO BE SUBMERGED.
9. THERMAL LOADS
   - 9.1. STRUCTURES ARE SUBJECT TO THERMOMECHANICAL LOADING FROM HVDC CABLES.
10. SEISMIC LOADING
    - 10.1. BURIED STRUCTURES ARE NOT SUBJECT TO SEISMIC PROVISIONS.

MATERIALS:

1. REINFORCED CONCRETE
   - 1.1. f'c = 5,000 PSI AT 28 DAYS, UNO
   - 1.2. F3 FREEZE-THAW CATEGORY WHERE NOTED
2. REINFORCING STEEL
   - 2.1. ASTM A706, GRADE 60, UNO
3. STRUCTURAL STEEL
   - 3.1. ASTM A36, UNO
4. BOLTS
   - 4.1. ASTM A325, UNO
5. NUTS
   - 5.1. ASTM A563, UNO
6. WASHERS
   - 6.1. ASTM F436, UNO
7. POLYMER CONCRETE
   - 7.1. ANSI/SCTE 77 2013
8. REINFORCED THERMOSETTING RESIN CONDUIT
   - 8.1. NEC 355
9. PVC
   - 9.1. SCH 40

ABBREVIATIONS:

APPR	APPROACH
BRG	BEARING
CIP	CAST IN PLACE
CL	CENTERLINE
CLR	CLEAR COVER
DIA	DIAMETER
EL	ELEVATION
G	GIRDER
HS	HIGH STRENGTH
ICS	INTERMEDIATE CONDUIT SUPPORT
ID	INSIDE DIAMETER
IPS	IRON PIPE SIZE
KSI	KIPS PER SQUARE INCH
LLV	LONG LEG VERTICAL
NOM	NOMINAL
OD	OUTSIDE DIAMETER
PC	PRECAST
PL	PLATE
PROT	PROTECTIVE
PVC	POLYVINYL CHLORIDE
RT	ROUTE
STA	STATION
SW	STANDARD WALL
T	THICKNESS
UNO	UNLESS NOTED OTHERWISE

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

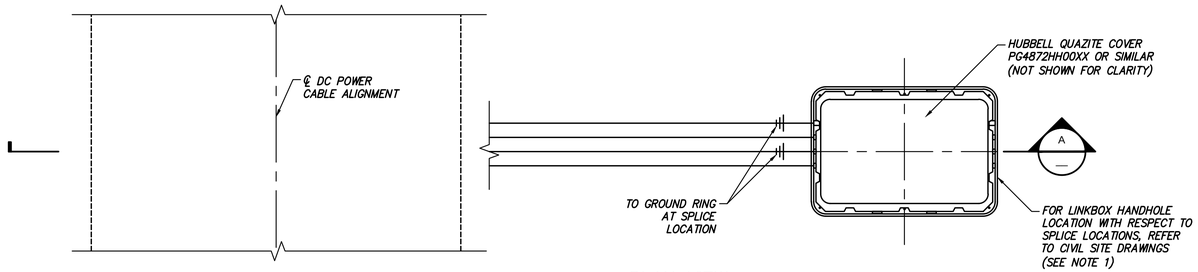
STRUCTURAL GENERAL NOTES AND ABBREVIATIONS

DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO.

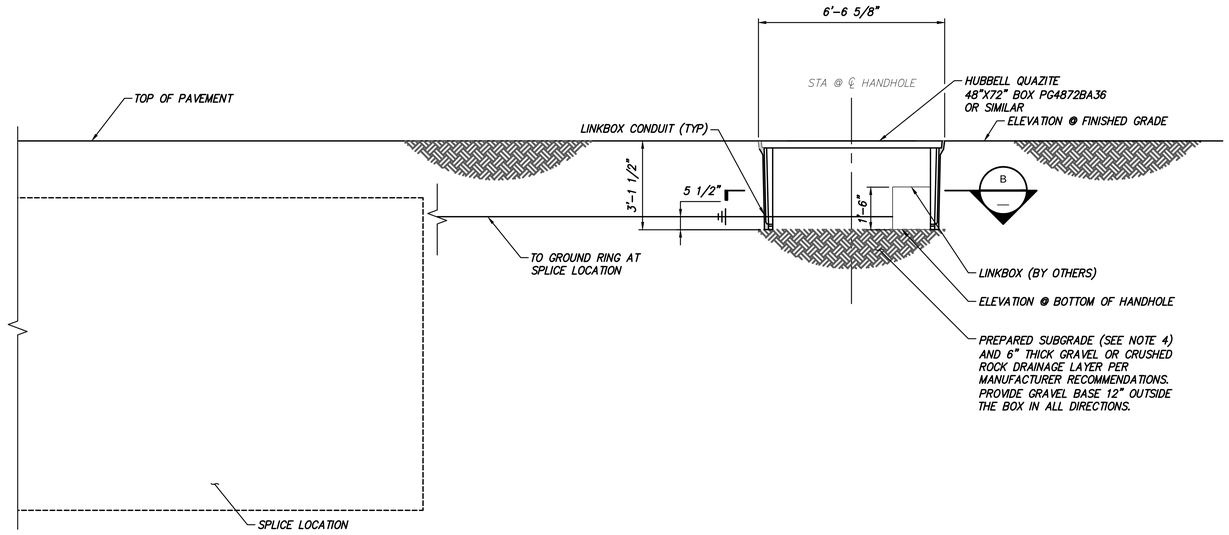
KIEWIT PROJECT NO. 21162

DRAWING NO. S-705

DATE | SH.NO. XX



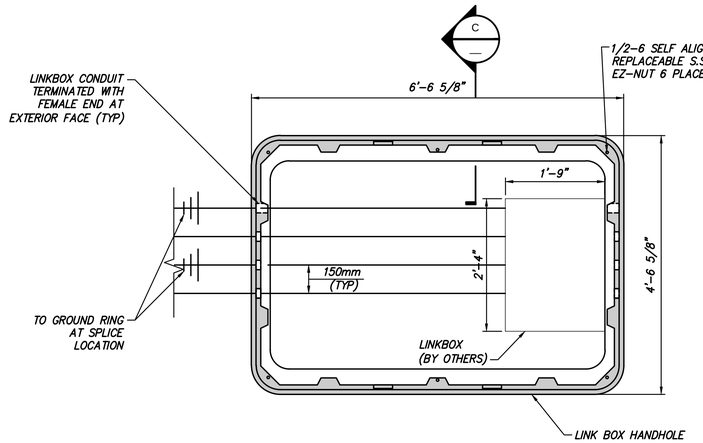
PLAN VIEW
SCALE: 3/8" = 1'-0"



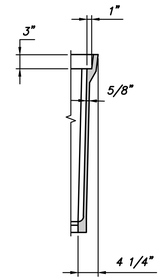
SECTION A
SCALE: 3/8" = 1'-0"

NOTES:

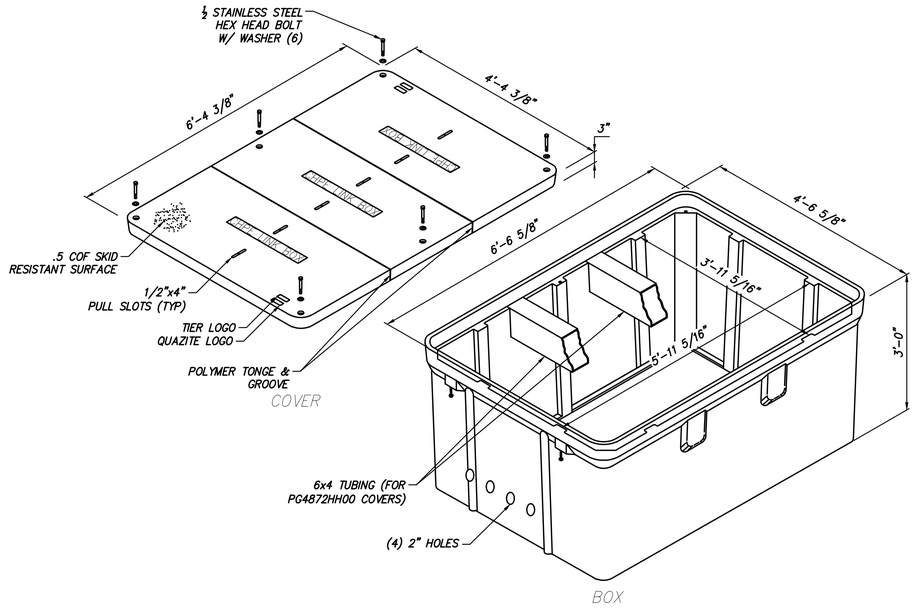
1. FOR LINK BOX DETAILS SEE ELECTRICAL DRAWINGS.
2. DESIGN LIVE LOAD: ANSI TIER 22 (OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC). VERTICAL DESIGN LOAD= 22,500 LBS; LATERAL DESIGN LOAD= 800 PSF.
3. APPROXIMATE DEMANDS FROM COOPER E-80 LIVE LOADING AT 25 FT DISTANCE, 6 FT BELOW GROUND: LATERAL DESIGN LOAD= 270 PSF.
4. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.



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



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



ISOMETRIC VIEW
SCALE: NTS

HUBBELL QUAZITE 48"x72" CORRUGATED WALL ASSEMBLY
PART NO. PG4872HH00XX AND PG4872BA36

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1	03/17/2023	FINAL SUBMITTAL	JNK	OO
0	01/26/2023	DRAFT FINAL SUBMITTAL	JNK	OO

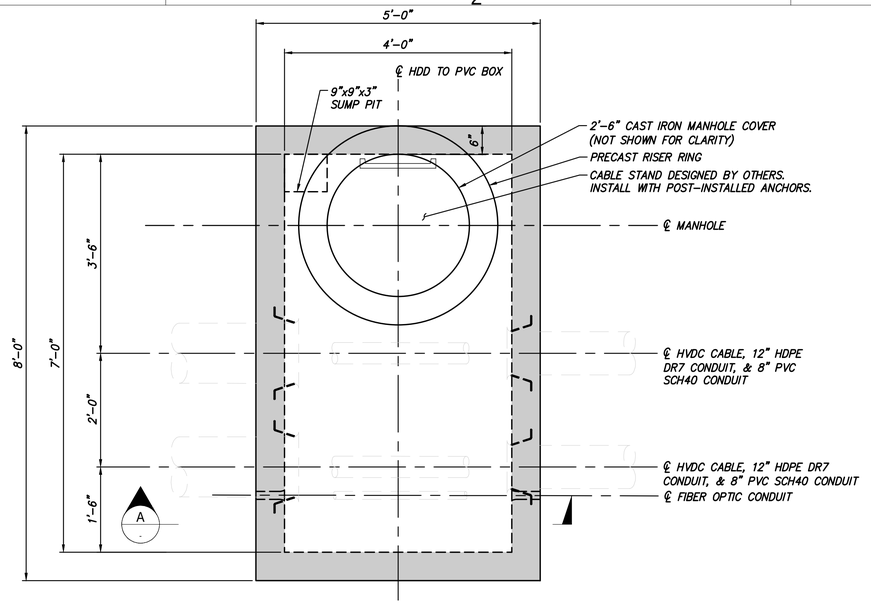
CHAMPLAIN HUDSON POWER EXPRESS

FRP LINK BOX HANDHOLES

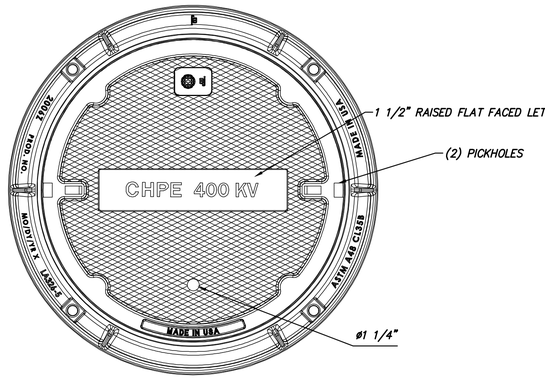
KIEWIT PROJECT NO. 21162

DRAWING NO. S-711

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



DOUBLE CONDUIT TRANSITION MANHOLE TOP VIEW
SCALE: 3/4" = 1'-0"



MANHOLE DETAIL
SCALE: 1" = 8'-0"

NOTES:

1. DESIGN OF CONCRETE BOX PER AASHTO-LRFD & NYSDOT-LRFD. REFER TO PROJECT DESIGN CRITERIA REPORT FOR DETAILS.
2. MINIMUM CONCRETE STRENGTH F'C=5KSI AND GRADE 60 UNCOATED REBAR. WEIGHT OF STANDARD CONCRETE SECTION IS 150PCF.
3. BACKFILL: UNDRAINED IMPORTED GRANULAR SOIL AT REST PROPERTIES ARE USED FOR DESIGN, WITH 90PCF FLUID PRESSURE. FOR IMPORTED GRANULAR FILL, KA=0.31, KO=0.47, KP=3.25 ARE USED. UNIT WEIGHT OF GRANULAR BACKFILL IS 125PCF.
4. FLOWABLE FILL: SCENARIO EXISTS WHERE FLOWABLE FILL IS APPLIED TO SIDE WALLS OF BOX IN LIEU OF EARTHEN BACKFILL. THE UNIT WEIGHT OF FLOWABLE FILL IS 140PCF. THE HYDROSTATIC PRESSURE OF FLOWABLE FILL IS CRITICAL AS COMPARED TO ITS HARDENED STATE. WHEN HARDENED, IT IS ASSUMED THAT FLOWABLE FILL HAS KO=0.
5. ALLOWABLE VERTICAL SOIL PRESSURE = 2,000PSF, ULTIMATE FRICTION COEFFICIENT = 0.25.
6. HORIZONTAL EARTH PRESSURE PER AASHTO LRFD §3.11.5.1 (WITH KO). LATERAL EARTH PRESSURE PER AASHTO LRFD §12.11.2.2.1.
8. LIVE LOADING PER AASHTO LFRD §3.6.1.2.1, AS ENVELOPE OF:
   - DESIGN TRUCK LOAD
   - DESIGN TANDEM LOAD
   - 300PSF MINIMUM VERTICAL LIVE LOAD PER GEOTECHNICAL REPORT.

   LIVE LOAD DISTRIBUTION THROUGH EARTH FILL PER AASHTO LRFD §3.6.1.2.6a.
7. LIVE LOAD SURCHARGE:

   CASE 1: WITHIN NYSDOT RIGHT OF WAY, HS-20 LIVE LOADING (AASHTO LFRD §3.6.1.2.1) + 260PSF LATERAL LIVE LOAD SURCHARGE (AASHTO LRFD §3.11.6.4).

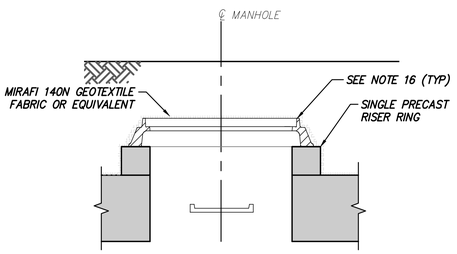
   CASE 2: WITHIN RAILWAY RIGHT OF WAY, NO HS-20 LIVE LOADING + 270PSF LATERAL LIVE LOAD SURCHARGE ONLY (PEAK COOPER E80 LOADING AT 25FT AWAY FROM TRACK CENTERLINE).
8. WATER LOAD PER AASHTO LRFD §3.7.1. SPECIFIC WEIGHT OF WATER = 62.4PCF.
   ALL BOXES ARE ASSUMED TO BE SUBMERGED.
   FOR WATER LOAD ON WALLS USE UNDRAINED AT-REST CONDITION (90PCF x H) FOR LATERAL EARTH PRESSURE.

   BUOYANCY PER AASHTO LRFD §3.7.1. SATISFY MINIMUM FS = 1.1 AGAINST BUOYANCY.
9. LOADING CONSIDERATION:
   DURING CONSTRUCTION: (FLOWABLE FILL)
   - LATERAL LOADS FROM (140PCF x HEIGHT OF FLOWABLE FILL)
   - DC
   - NO APPLICATION OF DW, EV, LS, (LL+IM)

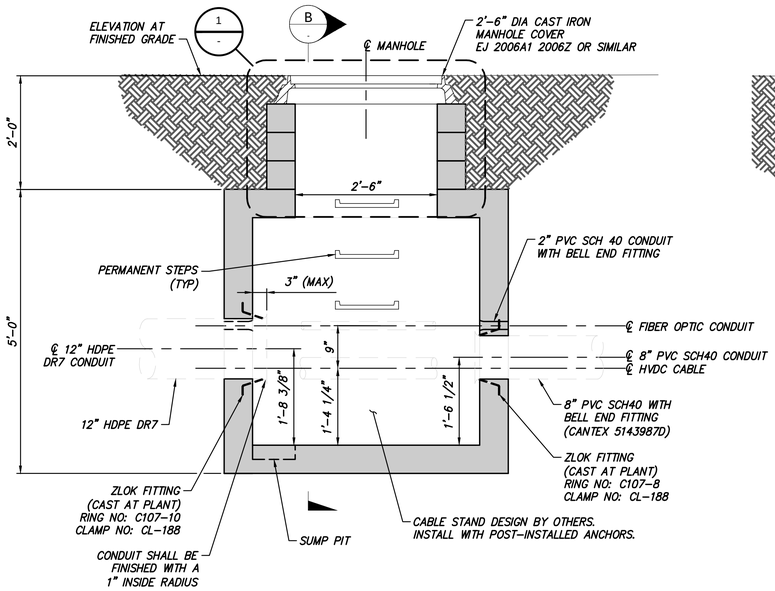
   IN-SERVICE:
   - LATERAL LOADS FROM (90PCF x HEIGHT OF FILL)
   - DC, DW, EV, LS, (LL+IM), WA
10. LOAD COMBINATIONS PER AASHTO LRFD §3.4.1 & §12.5, §C12.11.2.1, §C1.3.4.
    SERVICE LIMIT STATES:
    - 1.00DC + 1.00DW + 1.00EV + 1.00(LL+IM) + 1.00EH + 1.00LS + 1.00WA
    - 1.00DC + 1.00DW + 1.00EV + 1.00(LL+IM) + 1.00EH + 1.00WA
    - 1.00DC + 1.00EV + 1.00EH + 1.00LS + 1.00WA

    STRENGTH LIMIT STATES:
    - 1.25DC + 1.50DW + (1.30)(1.05)EV + 1.75(LL+IM) + (1.35)(1.05)EH+ 1.75LS + 1.00WA
    - 1.25DC + 1.50DW + (1.30)(1.05)EV + 1.75(LL+IM) + (0.90/1.05)EH + 1.00WA
    - 0.90DC + 0.65DW + (0.90/1.05)EV + (1.35)(1.05)EH + 1.75LS + 1.00WA
11. RESISTANCE FACTORS PER AASHTO LRFD Table 12.5.5-1 & §5.5.4.2.
    FOR REINFORCED CONCRETE CAST-IN-PLACE BOX STRUCTURES:
    - FLEXURE=0.90
    - SHEAR=0.85

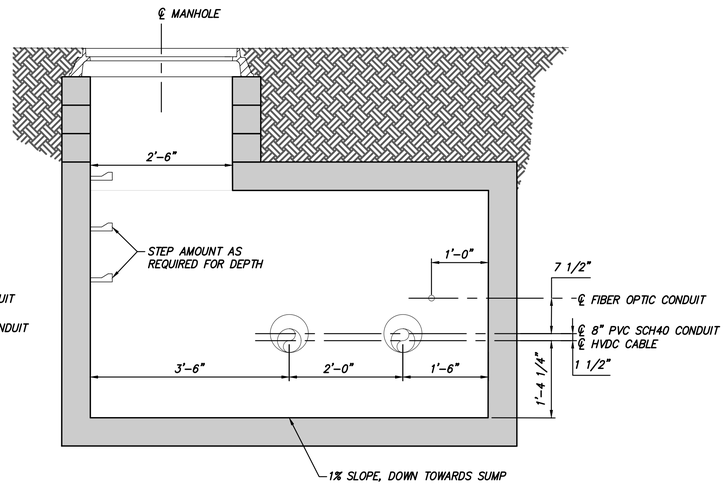
    FOR REINFORCED CONCRETE PRECAST BOX STRUCTURES:
    - FLEXURE=1.00
    - SHEAR=0.90
12. FLEXURE DESIGN PER AASHTO LRFD §5.6, §5.12.7 and Section 12. CRACK CONTROL PER AASHTO LRFD 5.6.7, § 5.10, §5.7.2.6, §12.11.4, AND § 5.4.2.6. (CLASS II EXPOSURE CONDITION).
    REINFORCEMENT PER AASHTO LRFD §5.6.2, §5.6.4.2, §5.10 and §12.11
    REFER TO PROVISIONS OF AASHTO LRFD §5.7, §5.10, §5.12.7 and Section 12 FOR SHEAR.
13. CONCRETE COVER PER AASHTO LRFD §12.11.5.4 and §5.10.1, TAKEN AS 1.0IN MINIMUM FOR PRECAST CONCRETE EXPOSED TO EARTH, CATEGORY A UNCOATED BARS.
14. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
15. A MINIMUM BEDDING SECTION CONSISTING OF A 4-INCH THICK MUDMAT OR 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.
16. 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 5' X 5' MIRAFI 140N GEOTEXTILE FABRIC OR EQUIVALENT. FULL DEPTH PAVEMENT WILL BE RESTORED PRIOR TO MILL AND OVERLAY AFTER CABLE COMMISSIONING.



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



DOUBLE CONDUIT TRANSITION SECTION A
SCALE: 3/4" = 1'-0"



DOUBLE CONDUIT TRANSITION SECTION B
SCALE: 3/4" = 1'-0"

CHPE Champlain Hudson Power Express

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
1	03/17/2023	FINAL SUBMITTAL	JNK	OO
0	01/26/2023	DRAFT FINAL SUBMITTAL	JNK	OO

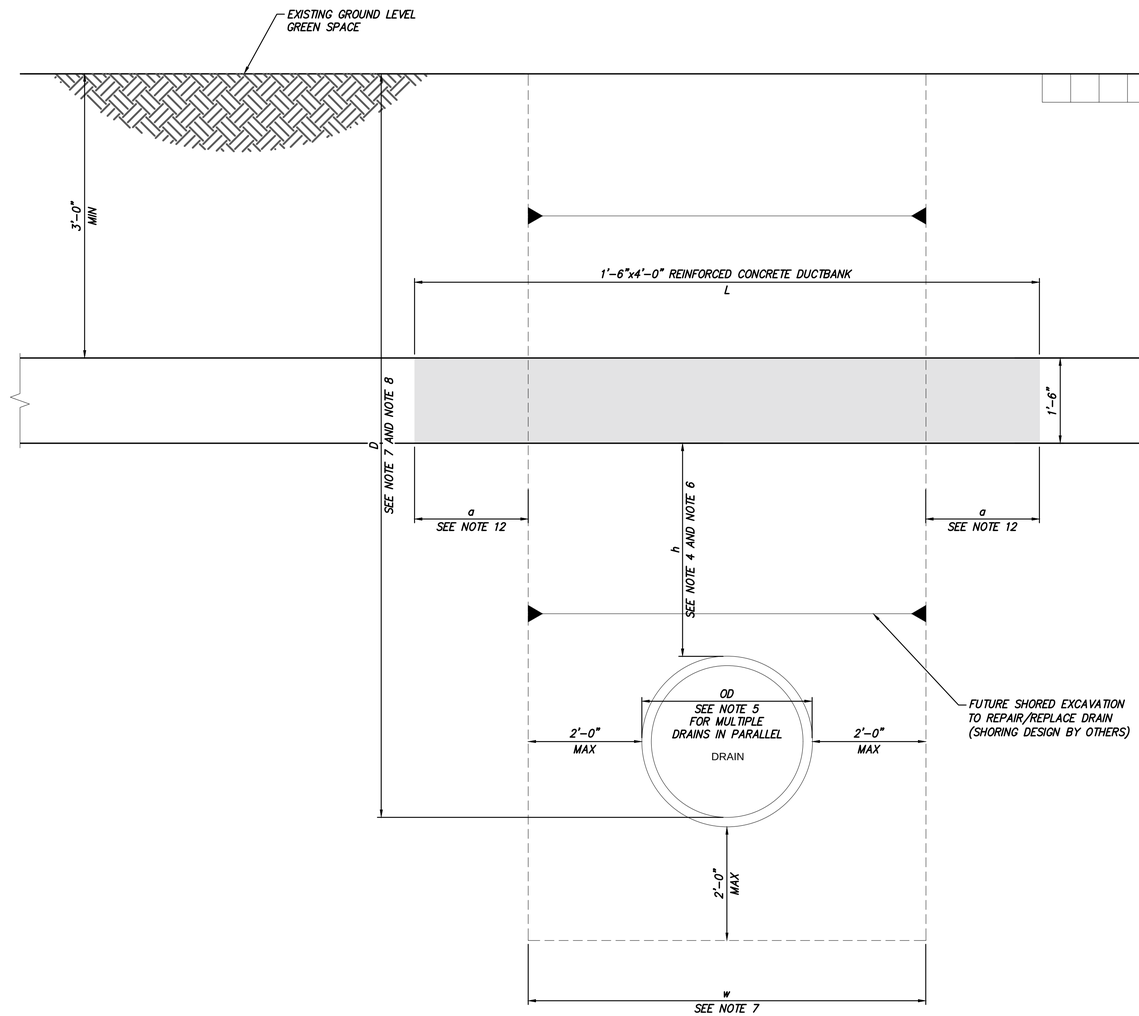
CHAMPLAIN HUDSON POWER EXPRESS

HDD TRANSITION BOX MANHOLE DETAILS

KIEWIT PROJECT NO. 21162

DRAWING NO. S-715

DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO. 0 | DATE | SH.NO.



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 NYSDOT 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. REFER TO CIVIL PLAN & PROFILE DRAWINGS FOR VALUE OF "h".
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 L = 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.

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0	01/26/2023	DRAFT FINAL SUBMITTAL	JNK	OO

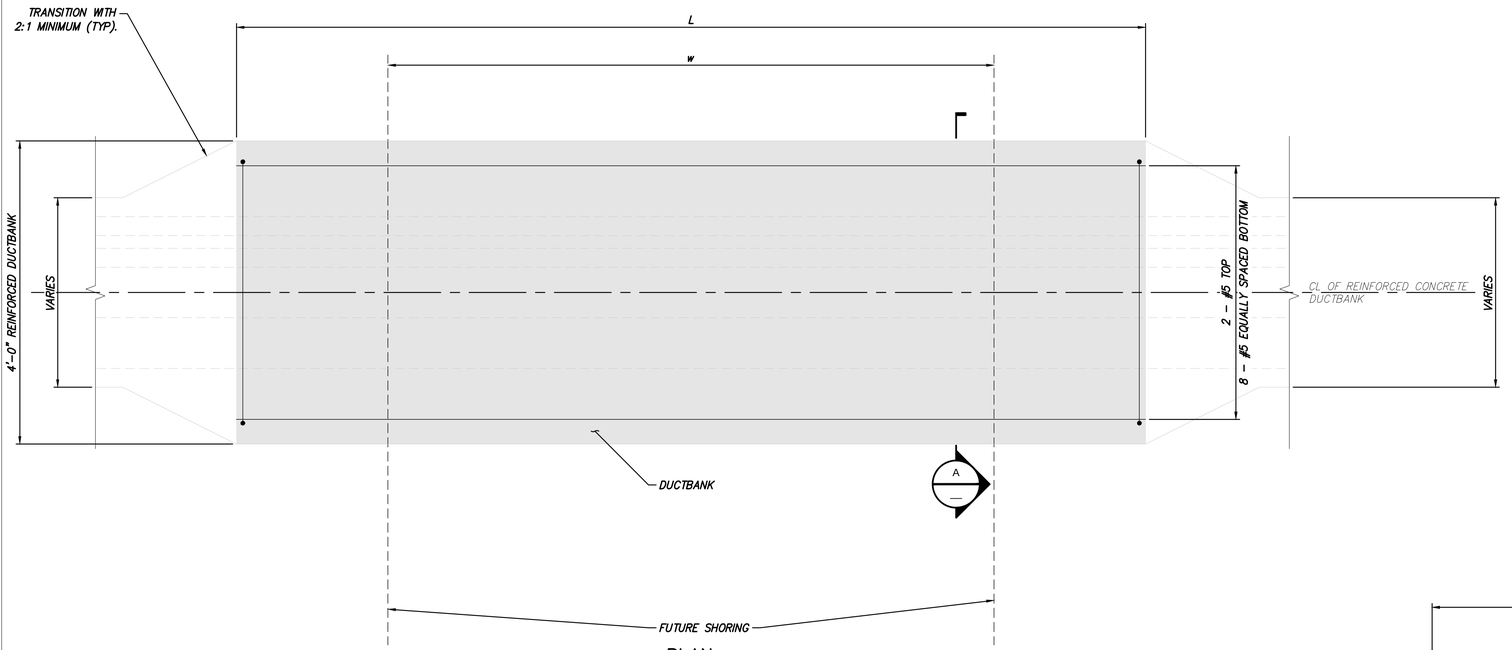
CHAMPLAIN HUDSON POWER EXPRESS

REINFORCING TRAY OVER UTILITIES

KIEWIT PROJECT NO. 21162

DRAWING NO. S-720

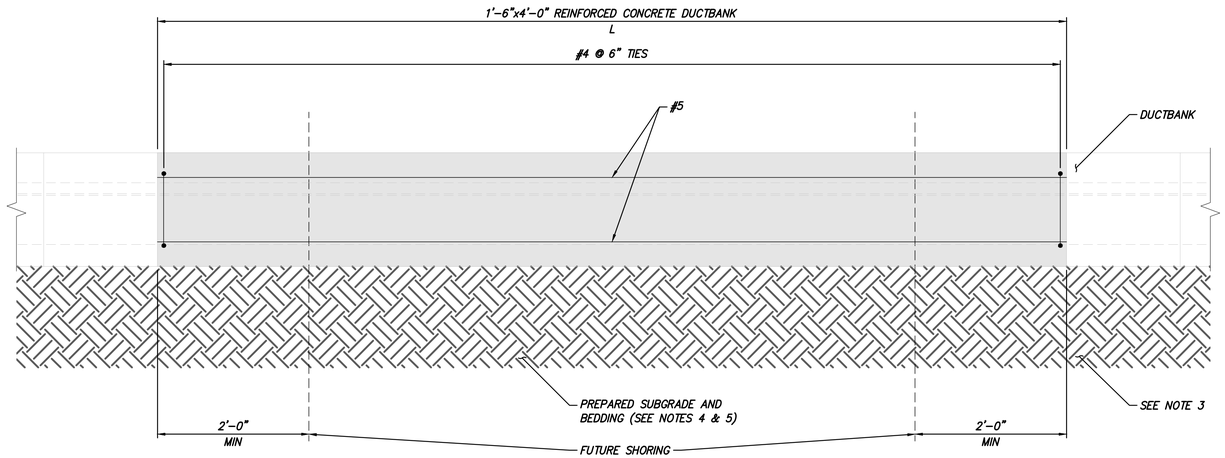
DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO. | DATE | SH.NO. XX



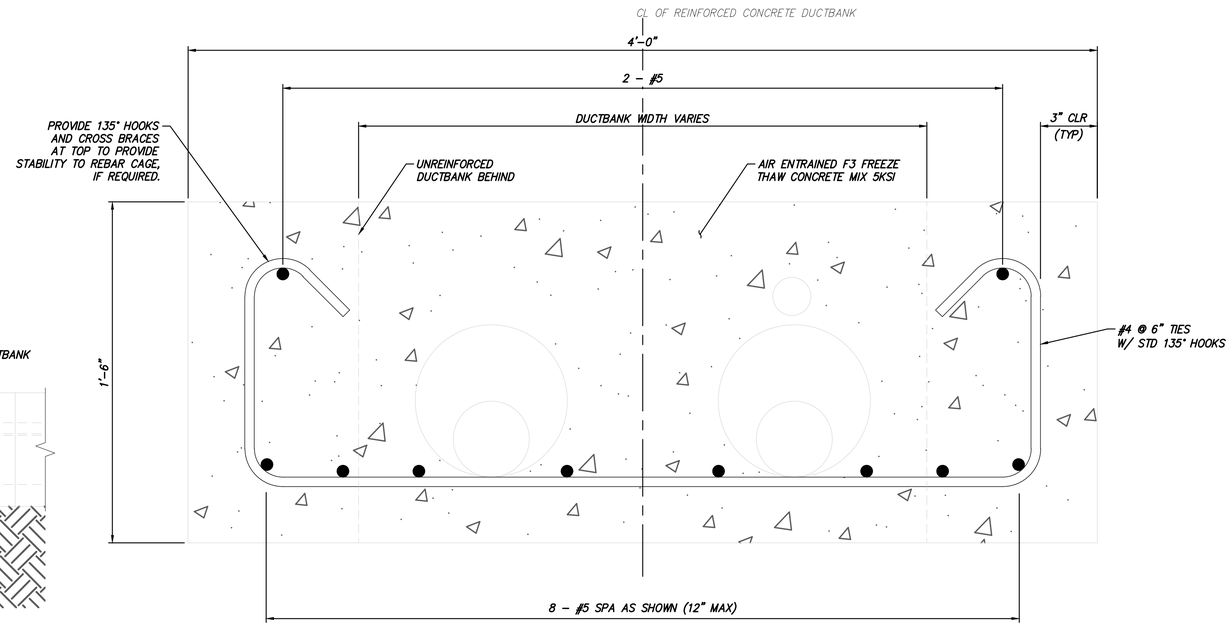
PLAN
SCALE: 1" = 1'-0"

NOTES:

1. DESIGNED PER AASHTO LRFD 9TH ED. THIS IS A BURIED STRUCTURE NOT EXPOSED TO DAILY TEMPERATURE CHANGES.
2. REINFORCED 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
3. COMPLETELY REMOVE SOIL ABOVE THE DUCTBANK, BEFORE EXCAVATING UNDER DUCTBANK. DO NOT EXCAVATE UNDERNEATH DUCTBANK IF SOIL IS PRESENT ABOVE THE DUCTBANK.
4. PREPARE SUBGRADE & FILL SIDES OF DUCTBANK SECTION BEFORE CASTING TRENCH CONCRETE.
5. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
6. 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.
7. SEE SHEET S-720 FOR DEFINITION OF VARIABLES.
8. MINIMUM CONCRETE STRENGTH F'C=5.0 KSI FOR F3 CATEGORY FREEZE-THAW EXPOSURE. GRADE 60 UNCOATED REBAR.
9. 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.
10. 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).



ELEVATION
SCALE: 1" = 1'-0"



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

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
1	03/17/2023	FINAL SUBMITTAL	JNK	OO
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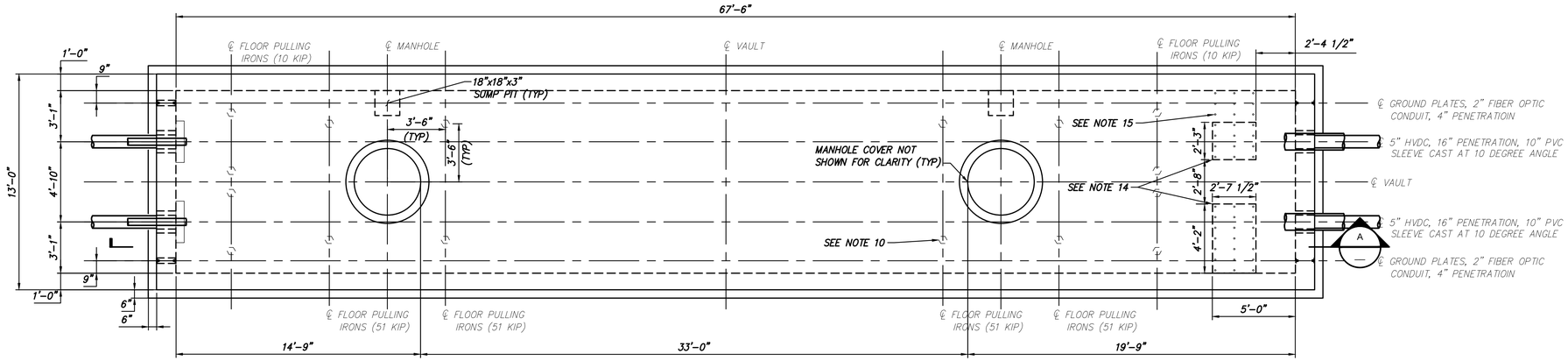
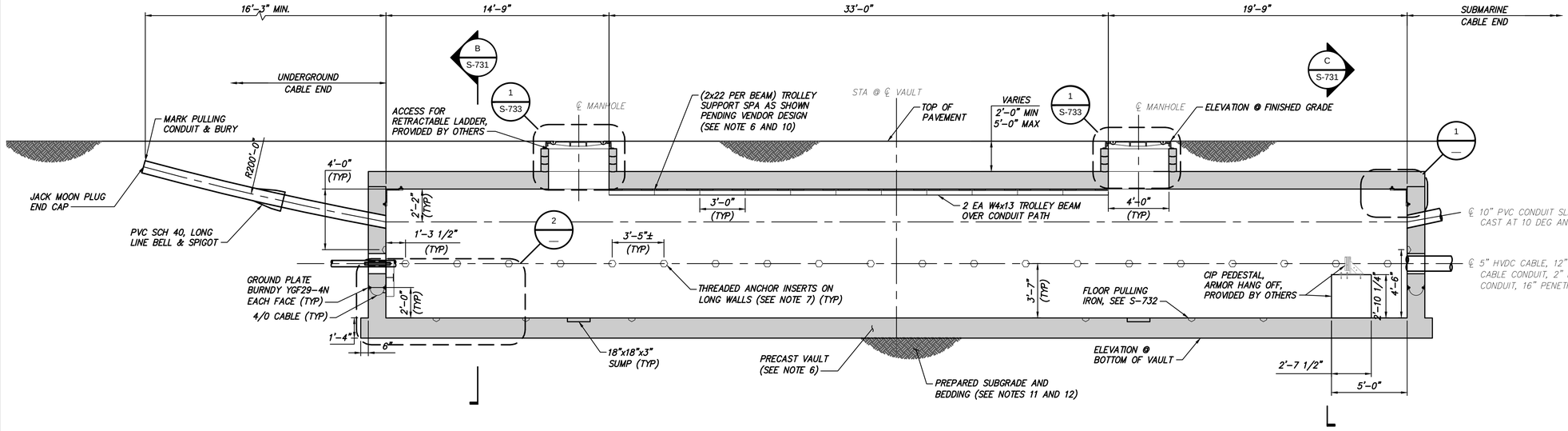
REINFORCING TRAY DETAILS

KIEWIT PROJECT NO. 21162
DRAWING NO. S-721

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



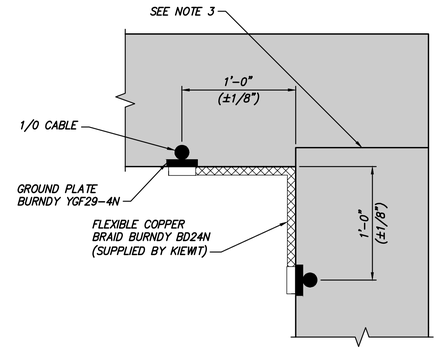
PLAN VIEW
SCALE: 1/4" = 1'-0"



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

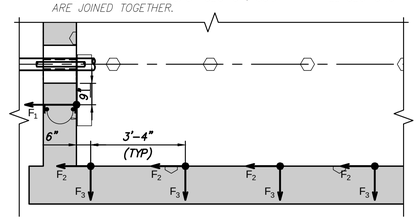
NOTES:

1. 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.
2. DESIGN LIVE LOAD: HL-93
3. EXTERIOR COATING & JOINT SEALERS/WATER STOPS TO BE USED BETWEEN PRECAST JOINTS, AS SPECIFIED.
4. MAXIMUM PRECAST PIECE PICK WEIGHT LIMITED TO 50,000 LB.
5. SEE ELECTRICAL DRAWINGS FOR CABLE RACKING DETAILS & GROUND WIRE DETAILS. (FUTURE SUBMISSION)
6. WALL THICKNESSES TO BE FINALIZED PER APPROVED VENDOR'S DESIGN. REFER TO APPROVED VENDOR SHOP DRAWINGS FOR WEIGHTS AND PICK POINTS.
7. THREADED ANCHOR WORKING LOAD SHALL BE 1,100 LB MINIMUM.
8. LINK SEAL TO BE USED BETWEEN CABLE CONDUIT AND PENETRATION SLEEVE, AS SPECIFIED.
9. ELECTRIC SUMP PUMP TO BE PROVIDED BY THE OPERATOR.
10. SEE SHEET S-732 FOR ANCHOR AND EMBED LOCATIONS.
11. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
12. 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.
13. PRECAST SUPPLIER TO COORDINATE WITH MANHOLE COVER SUPPLIER FOR FIT-UP ISSUES.
14. ARMOR HANG OFF PEDESTALS TO BE CAST IN PLACE. 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'-3" ARMOR HANG OFF PEDESTAL TO RESIST 11,000 LB TOTAL LATERAL FORCE AT 3'-3" DUE TO HVDC ARMOR HANG OFF.
15. DEPENDING UPON THE ORIENTATION OF THE TRANSITION VAULTS, THE FIBER OPTIC CABLE AND HANG OFF PEDESTALS MAY BE MIRRORED ABOUT THE CENTERLINE OF THE VAULT TO RUN ALONG EITHER SIDE OF THE VAULT. PROVIDE 7X3 REBAR COUPLERS EACH SIDE TO ACCOUNT FOR BOTH CONFIGURATIONS.



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 ℄ HVDC 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 KIP F_2 = 2.3 KIP F_3 = 7.9 KIP

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0	01/26/2023	DRAFT FINAL SUBMITTAL	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT PLAN AND ELEVATION

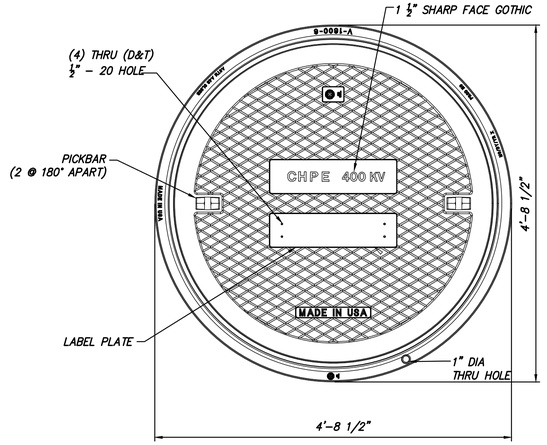
DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO.

KIEWIT PROJECT NO. 21162

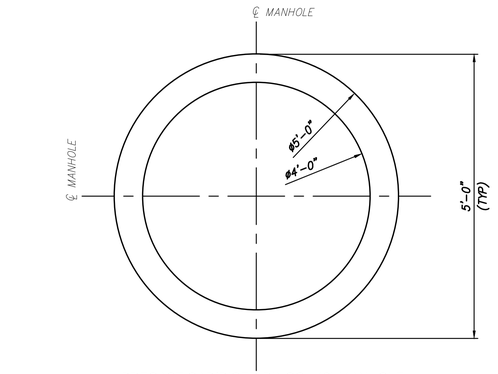
DRAWING NO. S-730

DATE | SH.NO. XX

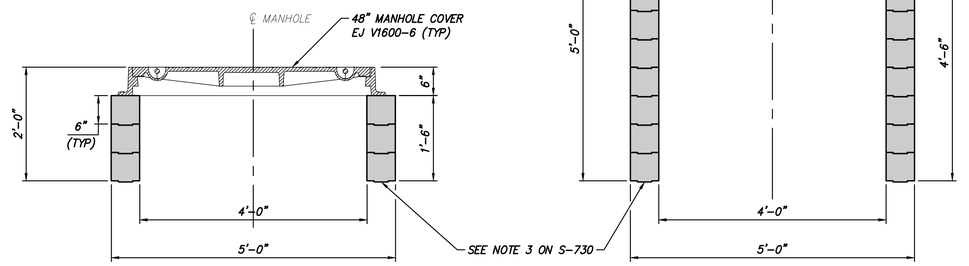
File: P:\KIE-CHPE\3-DES\07 STR\SHTS\21162_PROJECT-WIDE_S_730-731.DWG Saved: 3/10/2023 1:09:46 PM Plotted: 3/15/2023 11:49:24 AM Current User: Jack.Kempen LastSavedBy: Jack.Kempen



48" MANHOLE COVER
SCALE: 1" = 1'-0"



PRECAST CAP/RISER RINGS - 48" MANHOLE



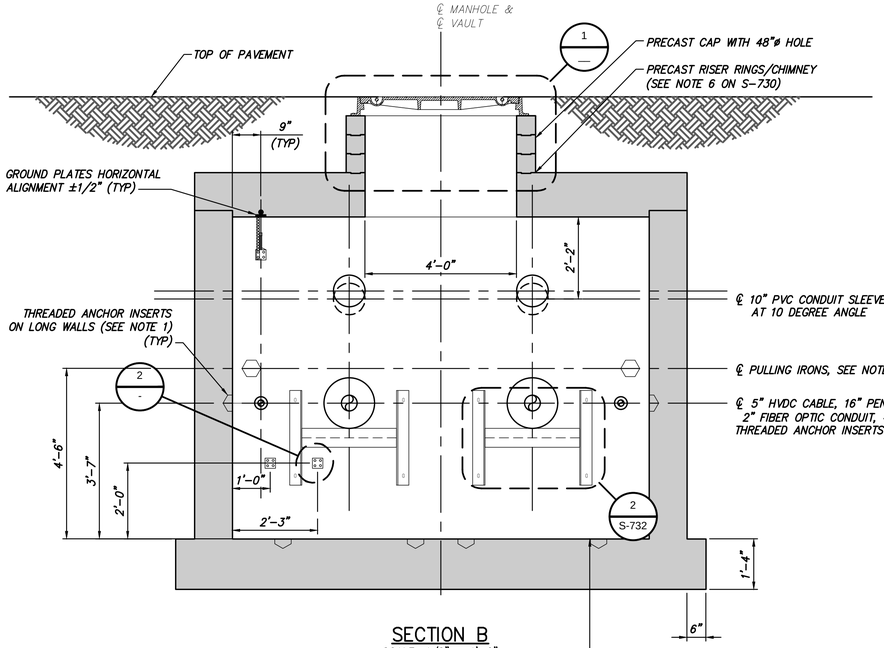
MINIMUM HEIGHT RISER DETAIL

MAXIMUM HEIGHT RISER DETAIL

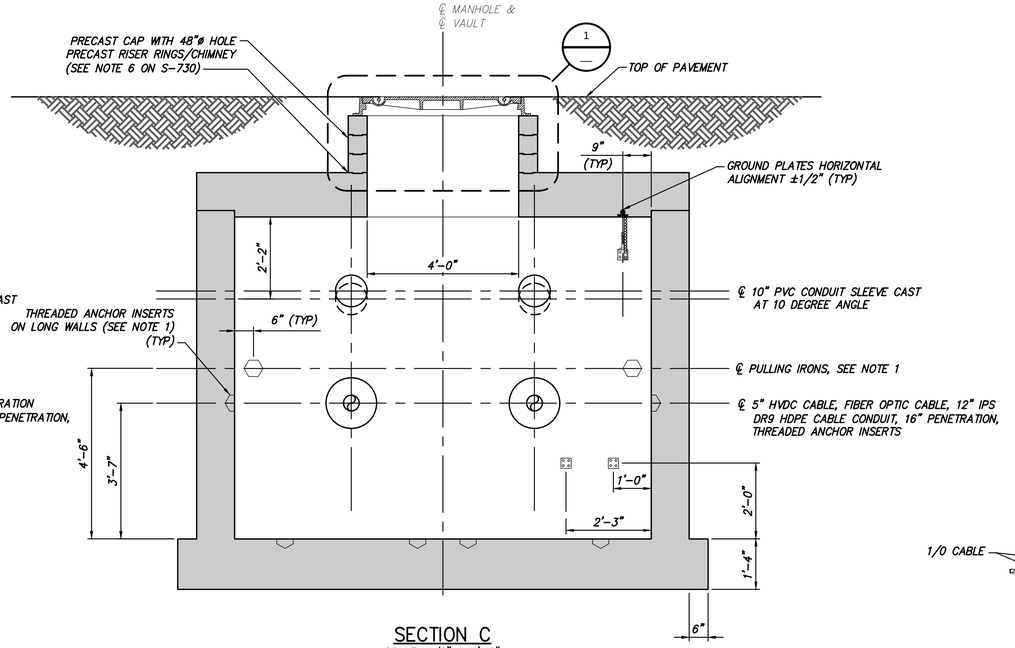
DETAIL 1
SCALE: 3/4" = 1'-0"

NOTES:

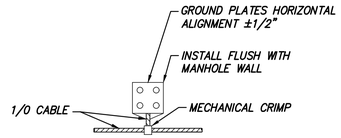
1. REFER TO NOTES ON SHEET S-730.



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



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



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

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12'-8 1/8"

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CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT SECTION AND DETAILS

KIEWIT PROJECT NO. 21162

DRAWING NO. S-731

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

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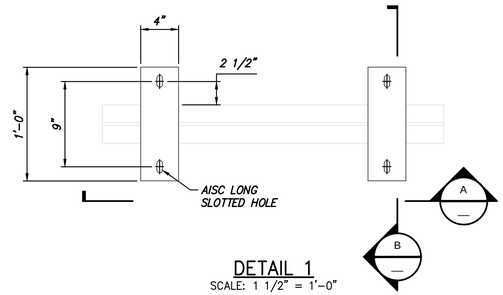
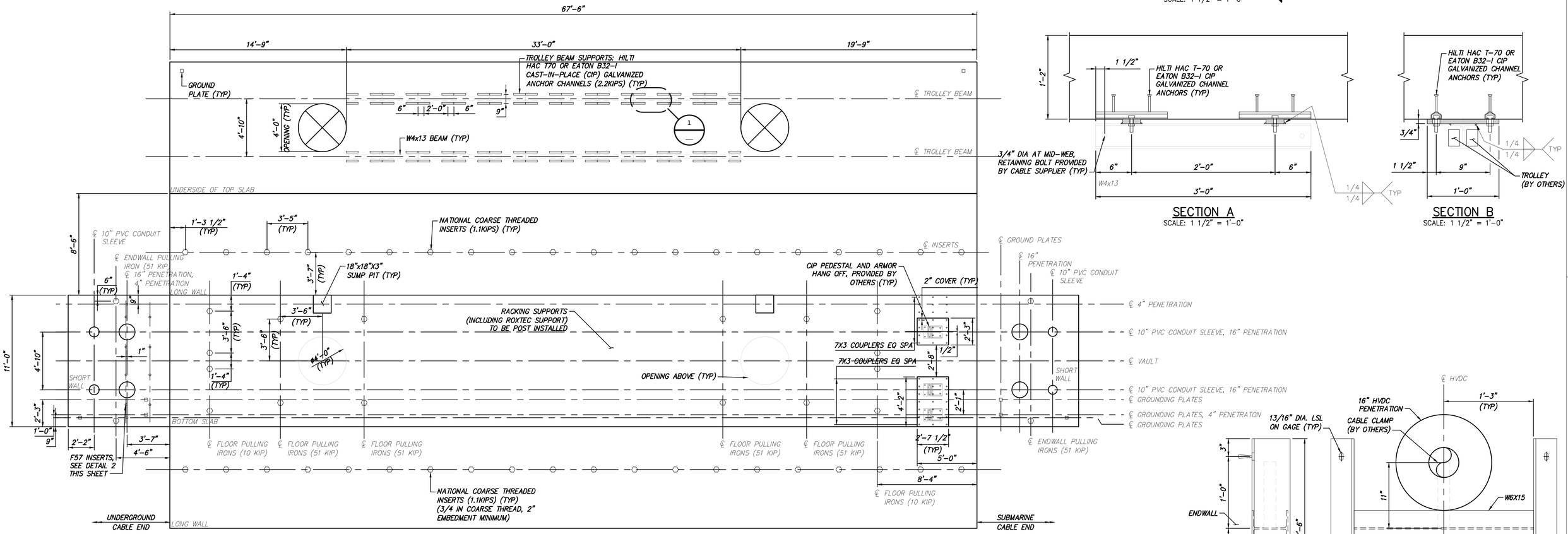


DETAIL 1
SCALE: 1 1/2" = 1'-0"



UNFOLDED INTERIOR VIEW
SCALE: 1/4" = 1'-0"

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

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

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

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
1	03/17/2023	FINAL SUBMITTAL	JNK	OO
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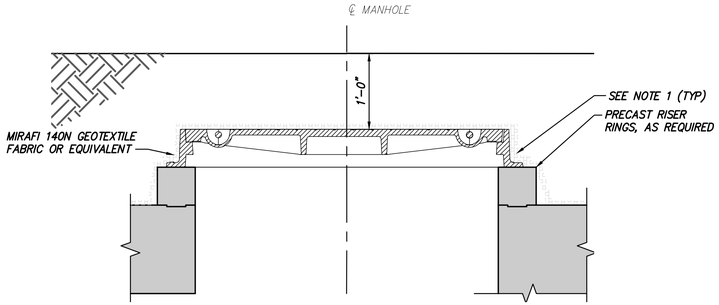
CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT ANCHOR AND EMBED DETAILS

KIEWIT PROJECT NO. 21162

DRAWING NO. S-732

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



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

NOTES:

1. FOR PACKAGE 1A: ALL TRANSITION VAULT MANHOLES, 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.

CHPE Champlain Hudson Power Express

Kiewit

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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0	01/26/2023	DRAFT FINAL SUBMITTAL	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT DETAILS

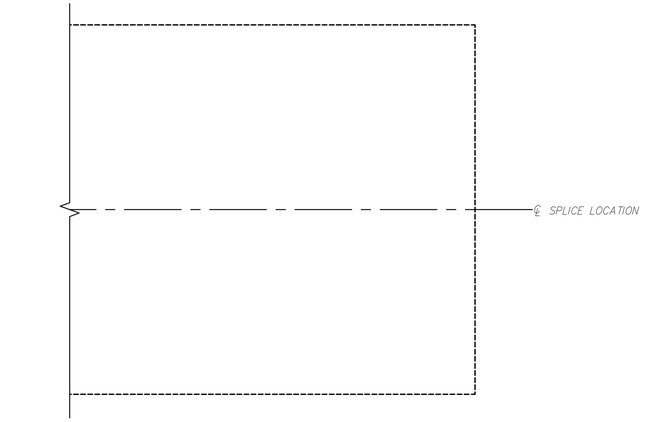
KIEWIT PROJECT NO. 21162

DRAWING NO. S-733

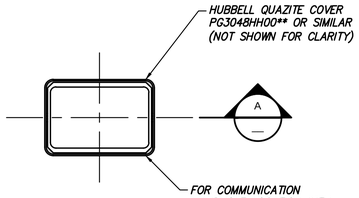
DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO. 1 | DATE | SH.NO.

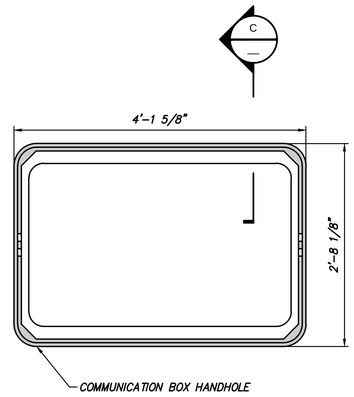
NOTES:

1. 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.
2. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
3. MINIMUM 4 FT OF COVER OVER TOP OF BOX WHEN LOCATED WITHIN AGRICULTURAL LANDS. MAXIMUM COVER IS 4.5 FT OVER TOP OF BOX.

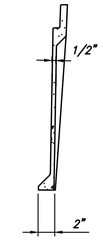


PLAN VIEW
SCALE: 3/8" = 1'-0"

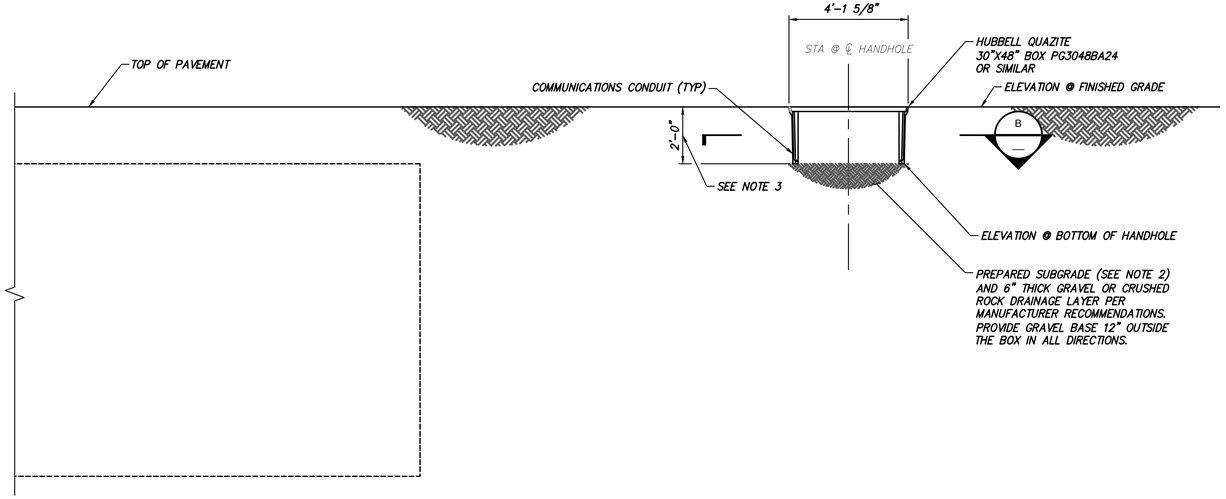




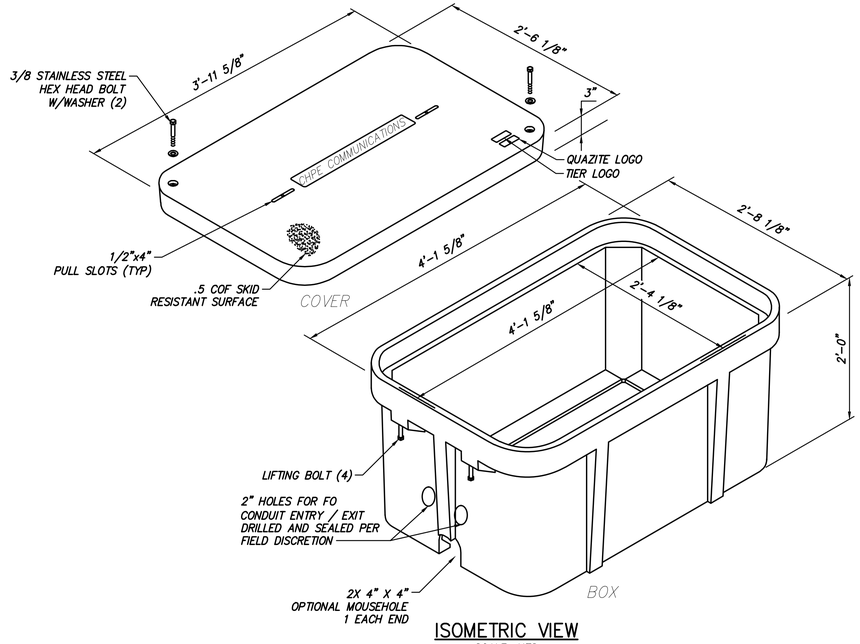
SECTION B
SCALE: 1" = 1'-0"



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



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



ISOMETRIC VIEW
SCALE: NTS

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

CHPE Champlain Hudson Power Express

Kiewit

ISSUED FOR PERMITTING

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
1	03/17/2023	FINAL SUBMITTAL	JNK	OO
0	01/26/2023	DRAFT FINAL SUBMITTAL	JNK	OO

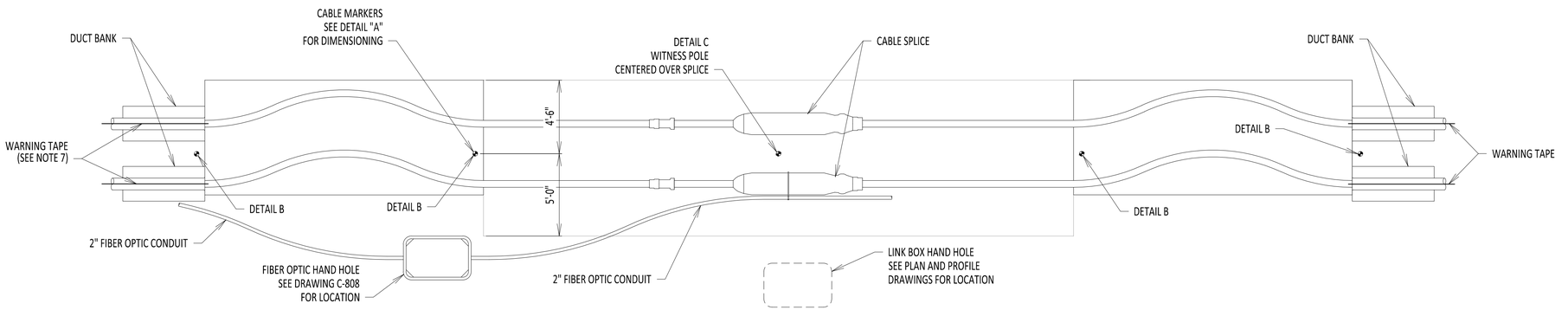
CHAMPLAIN HUDSON POWER EXPRESS

FRP COMMUNICATION HANDHOLES

KIEWIT PROJECT NO. 21162
DRAWING NO. S-771

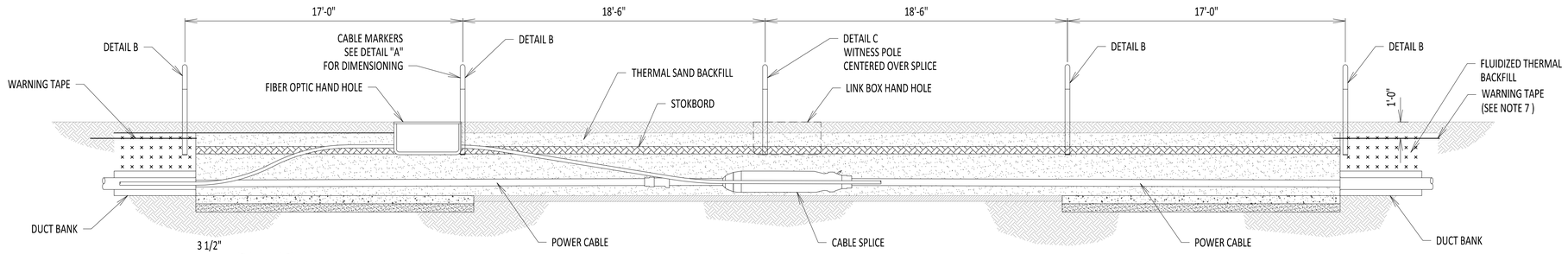
DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO. | DATE 12/16/2022 | SH.NO.

File: P:\KIE-CHPE\3-DES\07 STR\SHTS\21162_PROJECT-WIDE_S_771.DWG Saved: 3/10/2023 1:16:24 PM Plotted: 3/15/2023 11:51:17 AM Current User: JackKempen LastSavedBy: JackKempen



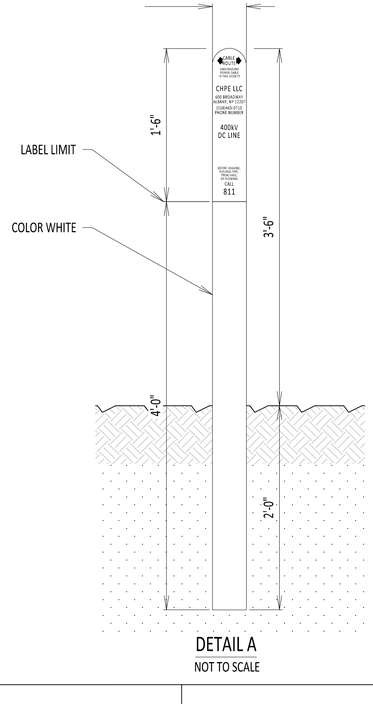
TYPICAL SPLICE LOCATION PLAN VIEW

NOT TO SCALE



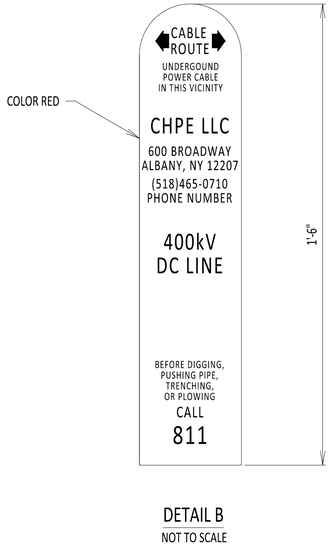
TYPICAL SPLICE LOCATION ELEVATION

NOT TO SCALE



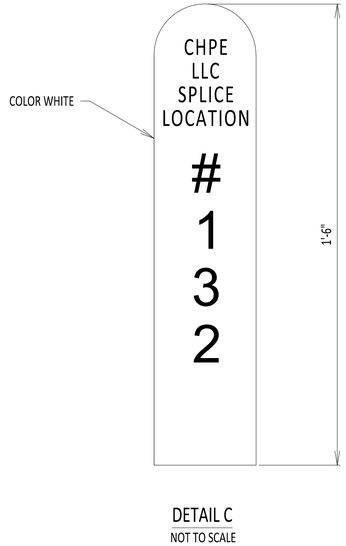
DETAIL A

NOT TO SCALE



DETAIL B

NOT TO SCALE



DETAIL C

NOT TO SCALE

NOTES:

1. POLES TO BE INSTALLED AT A DEPTH OF 2'-0" MINIMUM TO OPTIMIZE STABILITY.
2. IN PAVED AREAS, USE A-TAG PAVEMENT MARKERS OR APPROVED EQUAL
3. 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.
4. POLE SHALL DISPLAY THE FOLLOWING: NAME AND ADDRESS OF OWNER, CONTENTS OF CONDUIT, CONDUIT DEPTH BELOW GRADE, AND EMERGENCY TELEPHONE NUMBER.
5. POLES AND NEW CONSTRUCTION ELECTRIC A-TAG PAVEMENT MARKERS OR APPROVED EQUAL 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.
6. OWNER MUST MAINTAIN SIGNS ON RAILWAY RIGHT-OF-WAY.
7. 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 DRILLING ROUTES LOCATED ON RAILROAD PROPERTY. WITNESS POLES MUST BE PLACED AT RAILROAD RIGHT-OF-WAY FOR CROSSINGS AND PLACED EVERY 500 FEET FOR PARALLEL WIRELINES.
8. POLE MARKER LABEL SHALL BE VISIBLE 360 DEGREES AROUND POST. USE AT LEAST TWO LABELS PER POLE, AND ADD MORE AS NECESSARY TO MEET THIS REQUIREMENT.

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · DONGKAI CHEN · 106996 · LICENSED PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

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

CHAMPLAIN HUDSON POWER EXPRESS

MARKING DETAILS

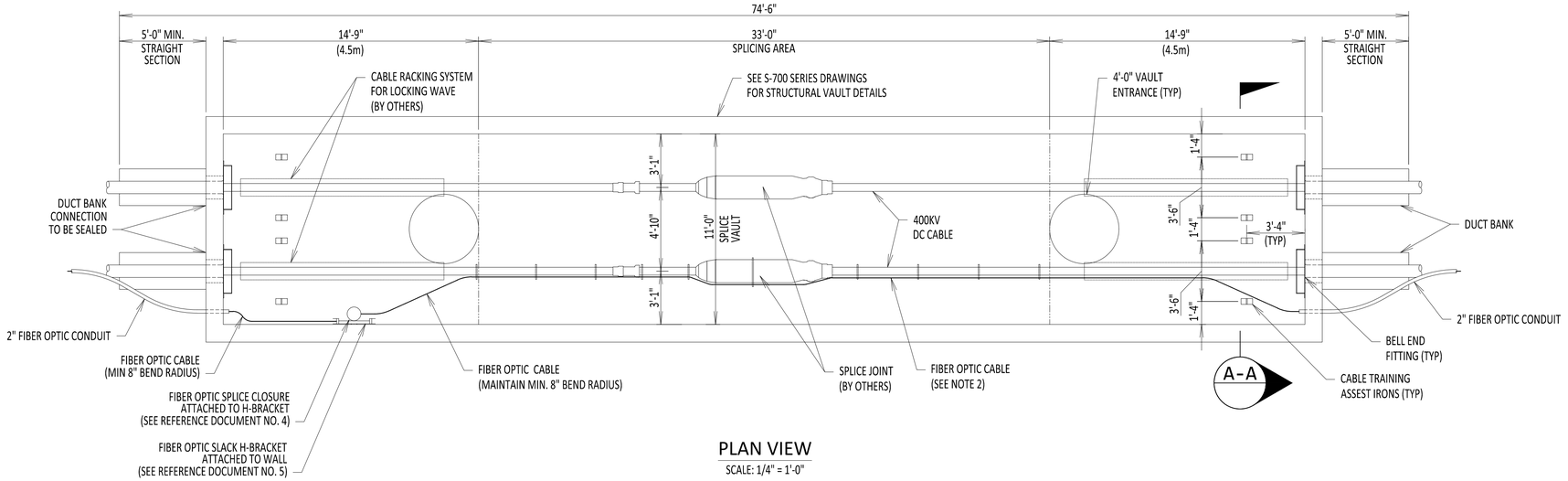
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-801**
DRAWN BY: DLM	DESIGNED BY:
APPROVED BY: ASM	SCALE
REV. NO. 0	DATE 03/15/2023
SH.NO.	OF

NOTES:

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.

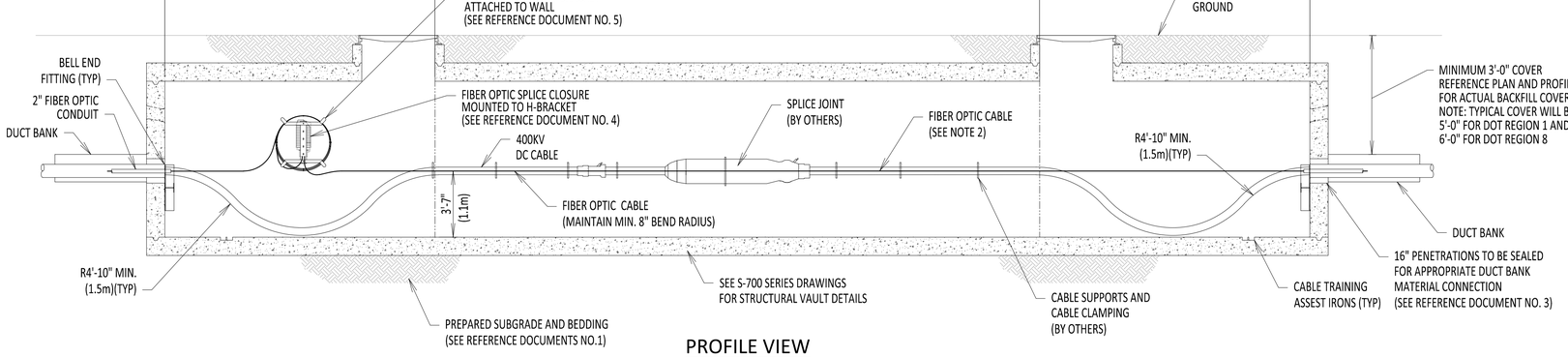
REFERENCE DOCUMENTS

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



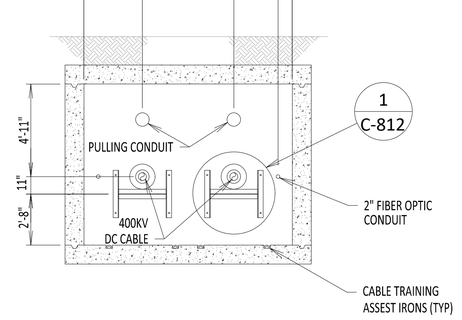
PLAN VIEW

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



PROFILE VIEW

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



SECTION A-A

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

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · DONGKAI CHEN · 106996 · LICENSED PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

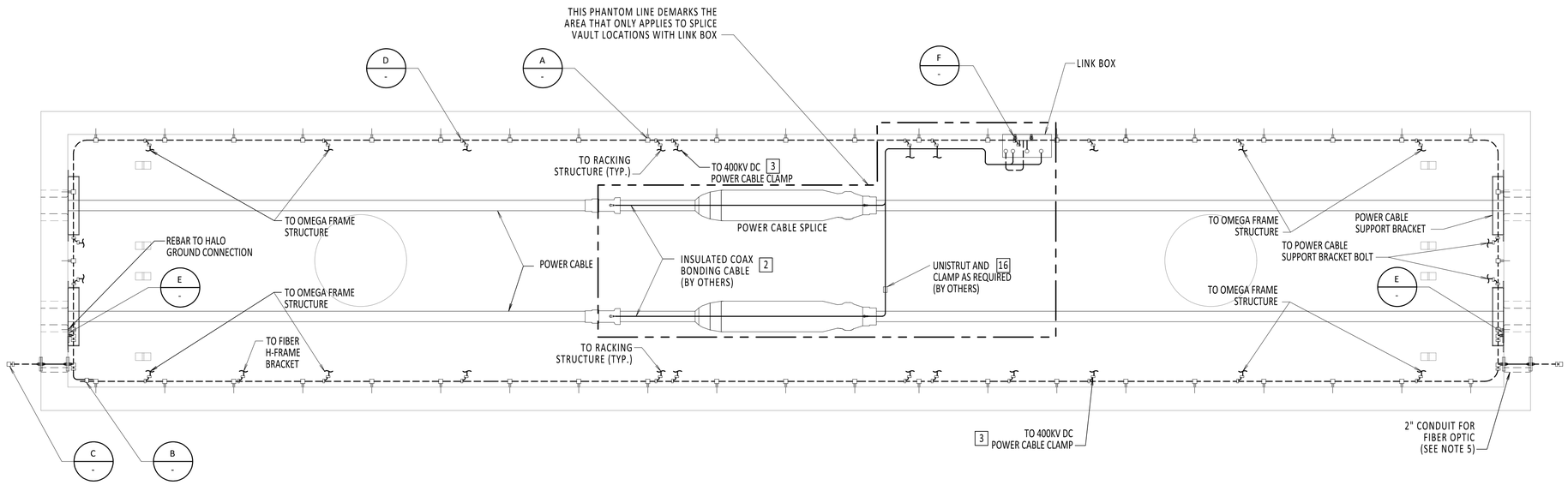
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

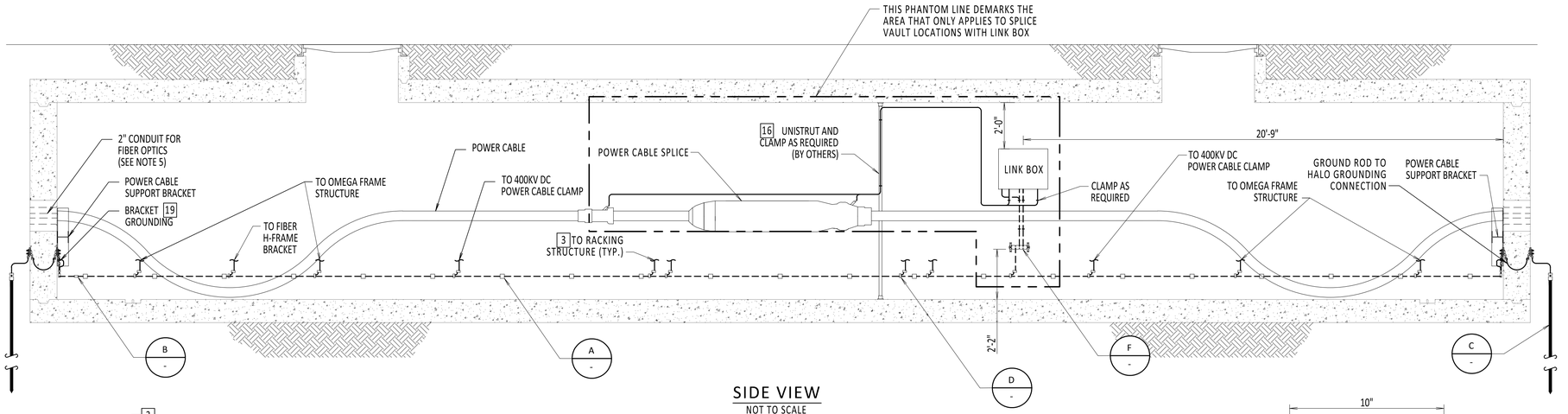
TYPICAL VAULT DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-802**
DATE	03/15/2023
SH.NO.	OF

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



PLAN VIEW
NOT TO SCALE



SIDE VIEW
NOT TO SCALE

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. ALL SPLICE VAULT SECTIONS TO BE GROUNDED USING GROUND PLATE CONNECTION DETAIL.

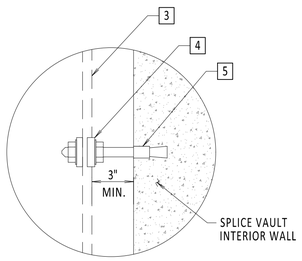
BILL OF MATERIALS

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	FLEXIBLE COPPER BRAID	BURNDY BD24N	KIEWIT	KIEWIT
18	BRASS HEX NUT	GRAINGER 1WE22	KIEWIT	KIEWIT
19	COMPRESSION LUG	ABB 120M16-A	KIEWIT	KIEWIT
20	SILICON BRONZE HEX HEAD CAP SCREW	AFT BB-VS1160-B	KIEWIT	KIEWIT

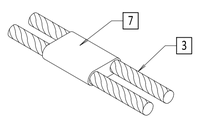
APPROVED EQUAL MATERIAL MAY BE SUBMITTED FOR REVIEW AND APPROVAL.
QUANTITIES ARE MINIMUM - PROVIDER IS RESPONSIBLE FOR ALL MATERIAL ITEMS AND QUANTITIES.

REFERENCE DOCUMENTS

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



DETAIL A
NOT TO SCALE



DETAIL B
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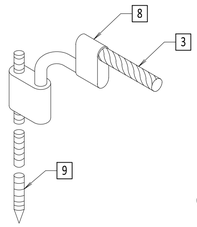

DETAIL C
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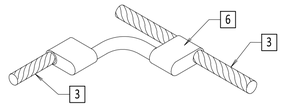
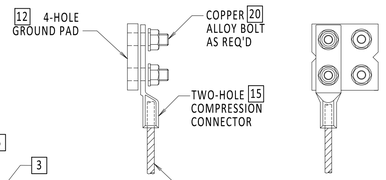


DETAIL D
NOT TO SCALE



DETAIL E
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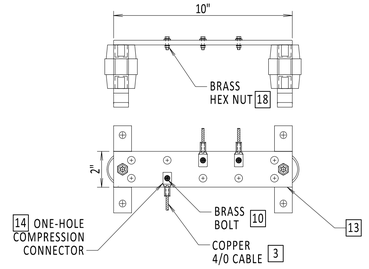

DETAIL F
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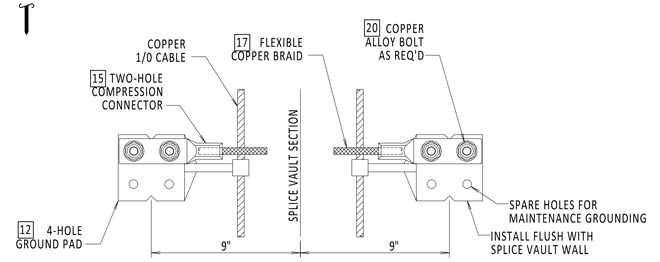


GROUND PLATE CONNECTION DETAIL
NOT TO SCALE

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · MICHAEL REIHS WHEELER · LICENSED PROFESSIONAL ENGINEER · 103646

ISSUED FOR PERMITTING

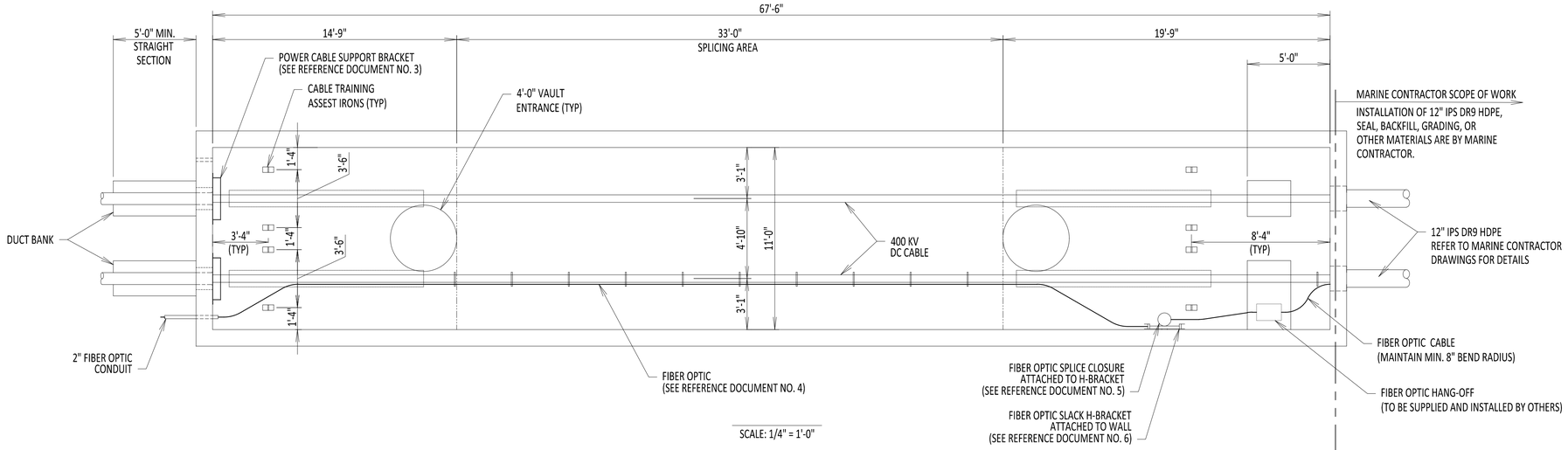
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

TYPICAL VAULT GROUNDING DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-803

DRAWN BY: DLM | DESIGNED BY: SD | APPROVED BY: ASM | SCALE: NOT TO SCALE | DATE: 03/15/2023 | REV. NO. 0 | SH.NO. OF

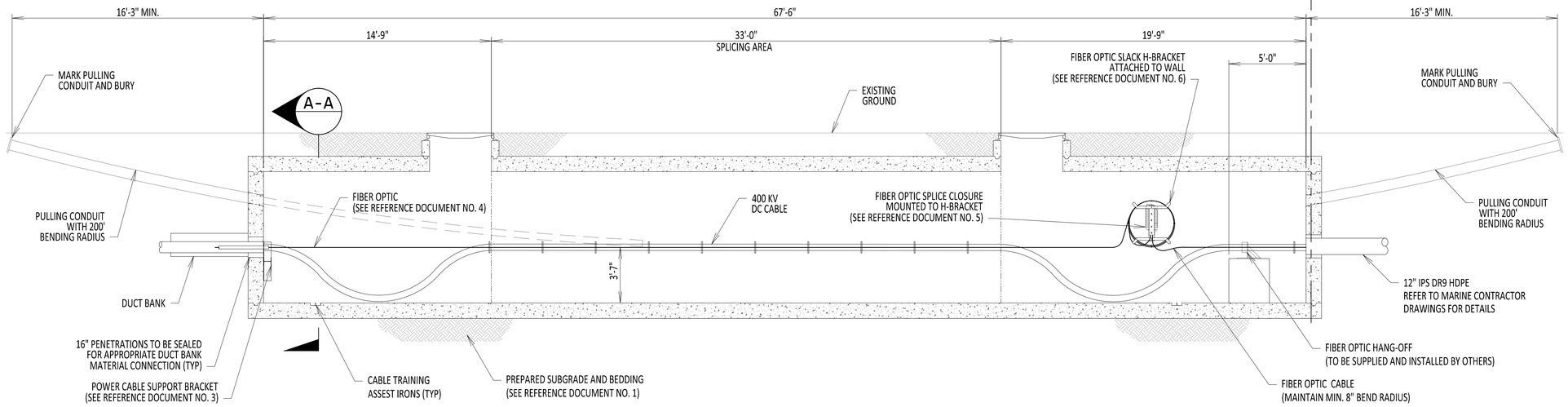


SCALE: 1/4" = 1'-0"

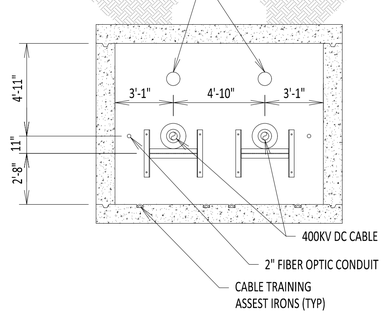
1. EXTENDED VAULT SNAKING DESIGN IS BASED ON COMMENTS PROVIDED BY NKT DECEMBER 19, 2022 ON SKC-001 DOCUMENT AND IS SUBJECT TO FURTHER CHANGE.
2. ESTABLISH STABLE SUBGRADE CONDITIONS AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.
3. A MINIMUM BEDDING SECTION CONSISTING OF A 4-INCH THICK 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.
4. DEPENDING UPON THE ORIENTATION OF THE TRANSITION VAULTS, THE FIBER OPTIC CABLE AND HANG OFF PEDESTAL MAY BE MIRRORED TO RUN ALONG EITHER SIDE OF THE VAULT.

REFERENCE DOCUMENTS

LIST NO.	DOCUMENT NAME	DOCUMENT NO.
1	TRANSITION VAULT PLAN AND ELEVATION	S-730
2	TRANSITION VAULT GROUNDING DETAILS	C-806
3	VAULT CONNECTION DETAILS	C-812
4	ENCLOSED VAULT WITH FIBER OPTICS	C-852
5	FIBER OPTIC SPLICE DIAGRAM	C-855
6	FIBER OPTIC H-FRAME BRACKET DETAIL	C-856



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



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

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · DONGKAI CHEN · LICENSED PROFESSIONAL ENGINEER · 106996

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.

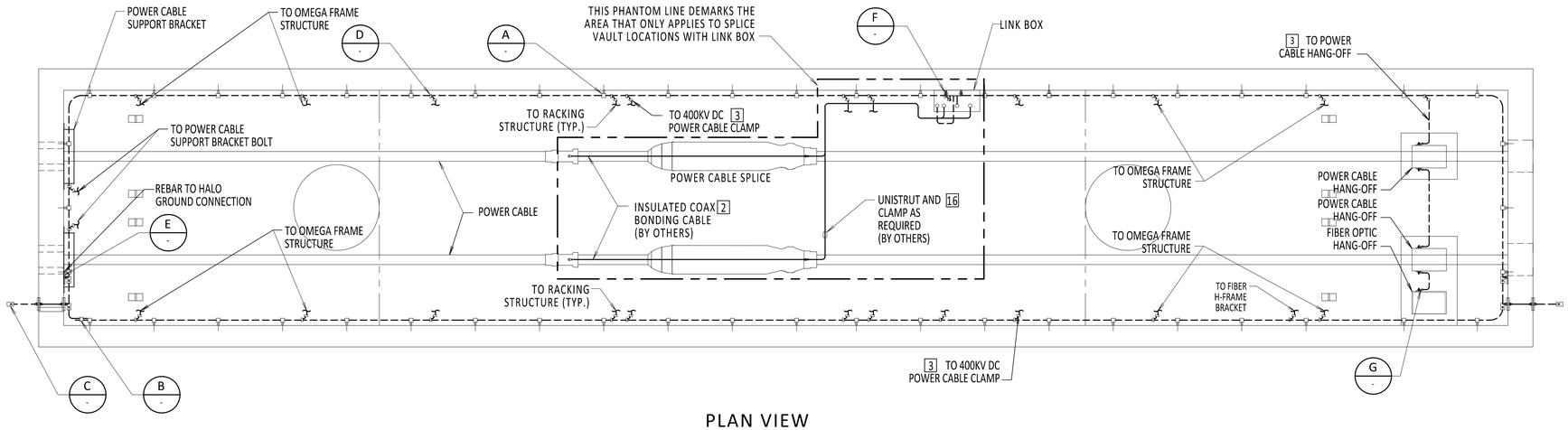
ISSUED FOR PERMITTING

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

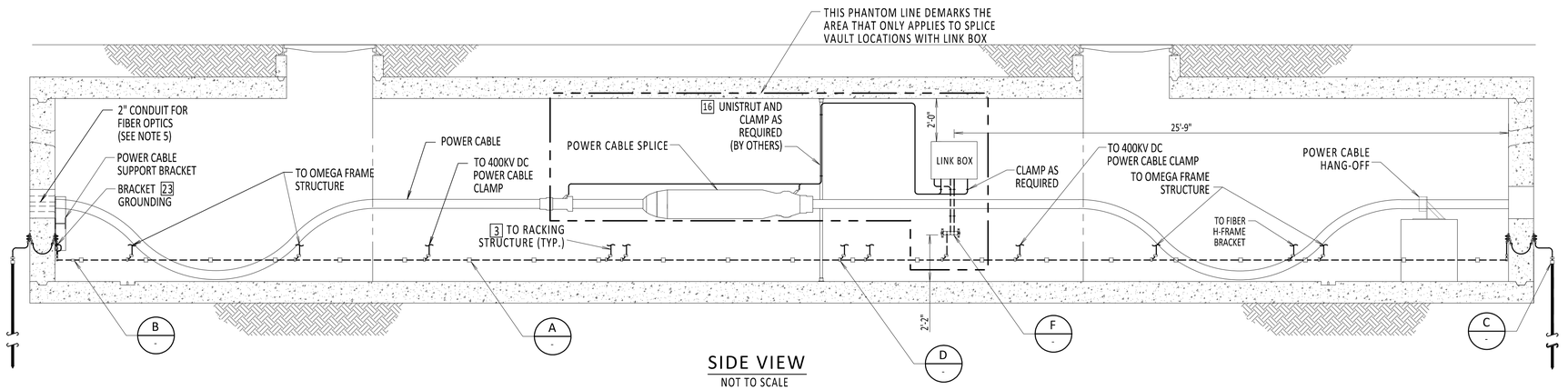
CHAMPLAIN HUDSON POWER EXPRESS

EXTENDED SNAKING DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-805
DRAWN BY:	
DESIGNED BY:	SS
APPROVED BY:	ASM
SCALE	
REV. NO.	0
DATE	03/15/2023
SH.NO.	OF



PLAN VIEW
NOT TO SCALE



SIDE VIEW
NOT TO SCALE

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 SPLICE VAULT SECTIONS TO BE GROUNDED USING GROUND PLATE CONNECTION DETAIL.

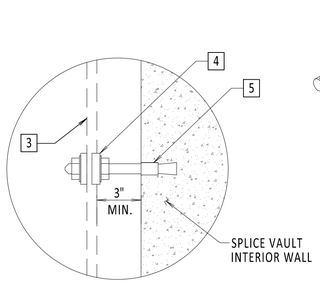
BILL OF MATERIALS

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
23	COMPRESSION LUG	ABB 120M16-A	KIEWIT	KIEWIT
24	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



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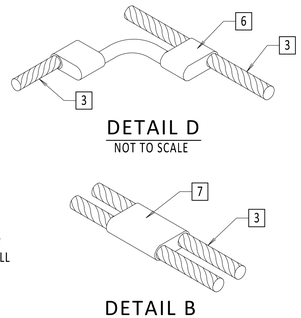

DETAIL B
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DETAIL D
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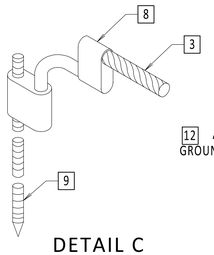

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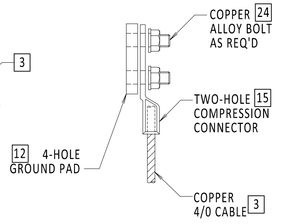

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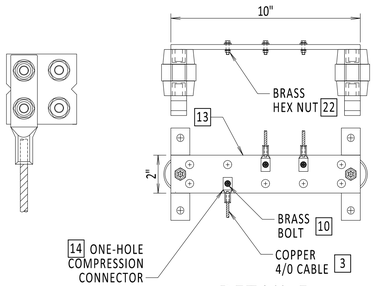

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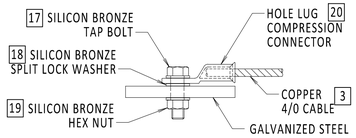

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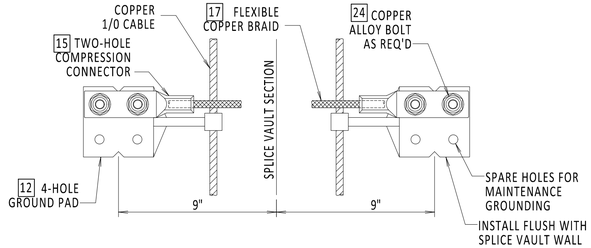

GROUND PLATE CONNECTION DETAIL
NOT TO SCALE

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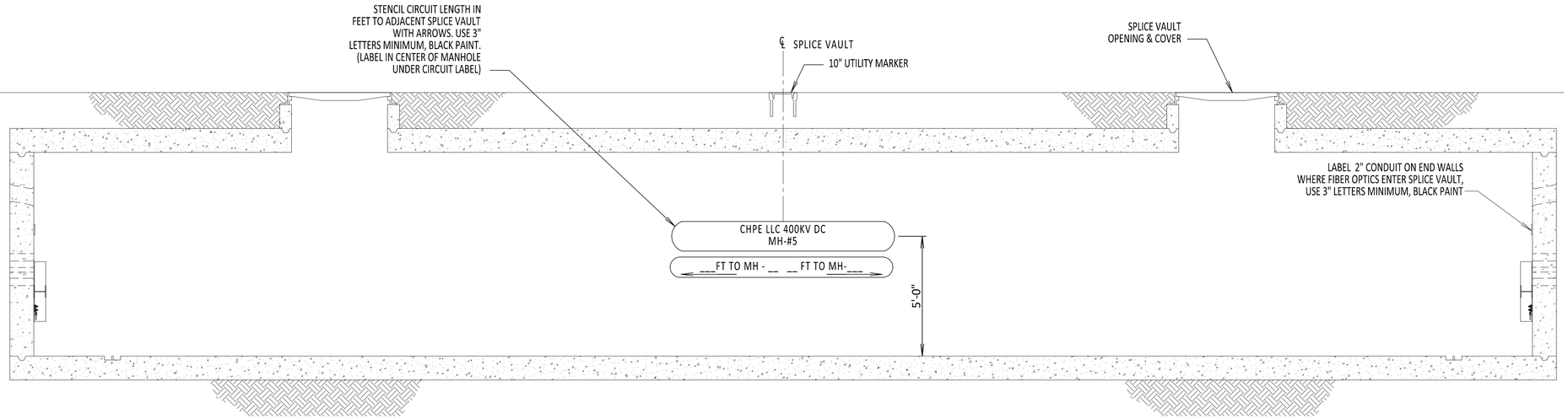
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT GROUNDING DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-806**

DRAWN BY: KMG | DESIGNED BY: | APPROVED BY: ASM | SCALE: NOT TO SCALE | REV. NO. 0 | DATE 03/15/2023 | SH.NO. OF



INSIDE SPLICE VAULT
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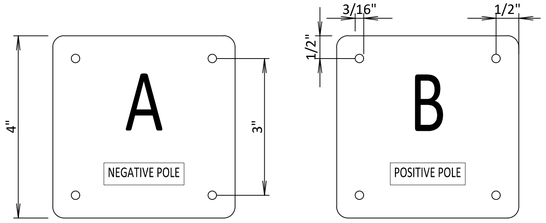
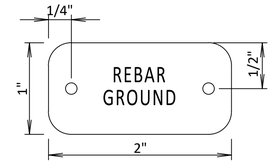


DC CABLE IDENTIFICATION TAGS
NOT TO SCALE



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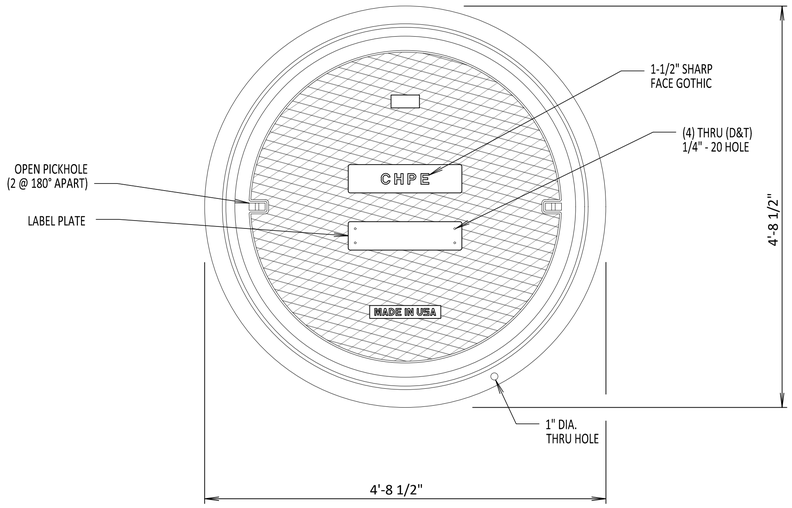
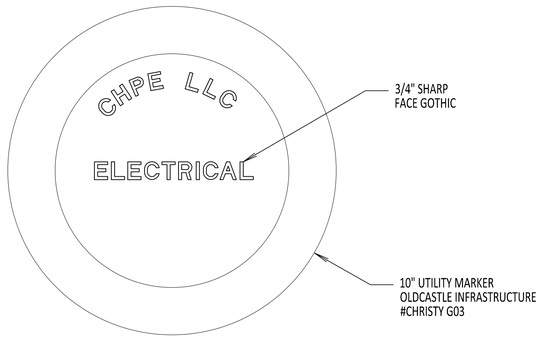


SPLICE VAULT LID MARKINGS PLAN VIEW
NOT TO SCALE



UTILITY MARKER DETAIL
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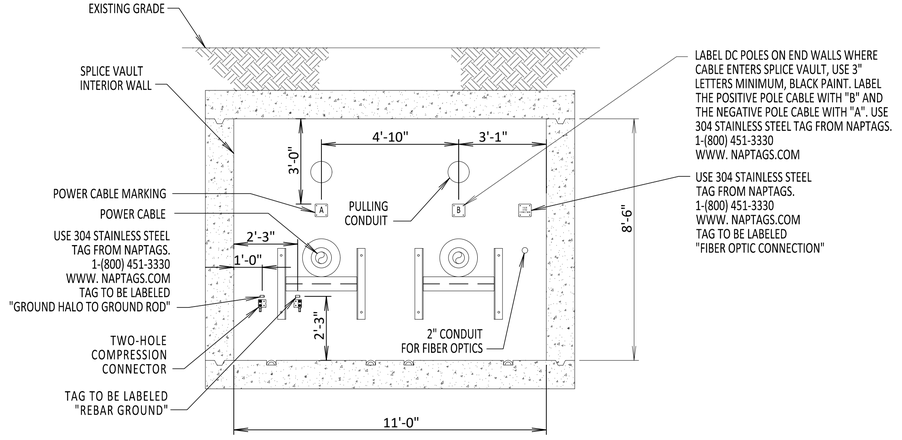

INSIDE ENDWALL VIEW
NOT TO SCALE

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

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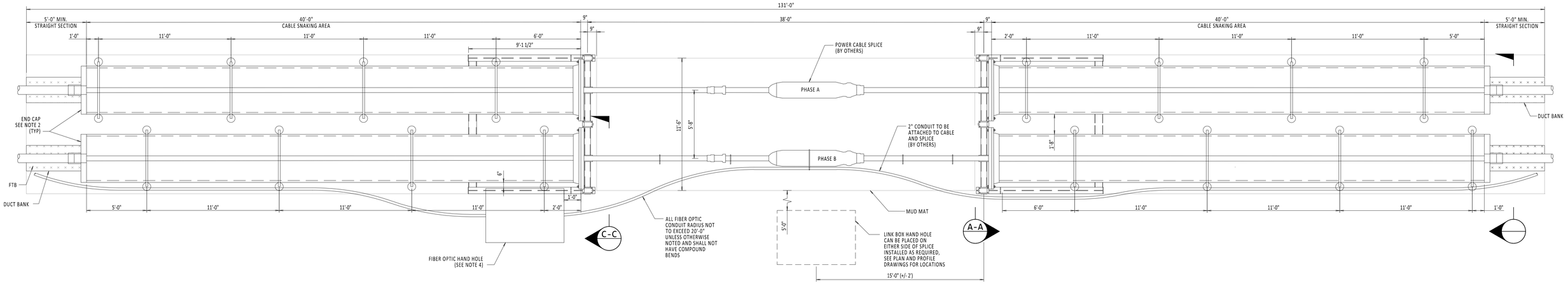
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

SPLICE VAULT AND CABLE MARKING DETAILS

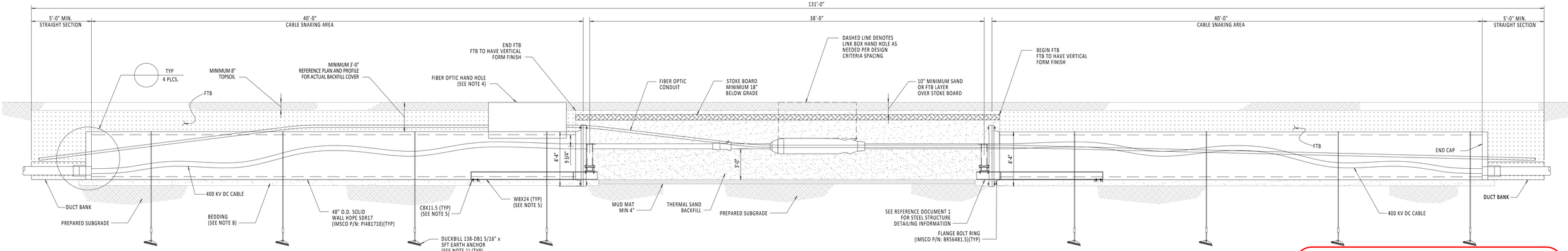
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-807**

DRAWN BY: DLM | DESIGNED BY: SD | APPROVED BY: ASM | SCALE | DATE 03/15/2023 | REV. NO. 0 | SH.NO. OF



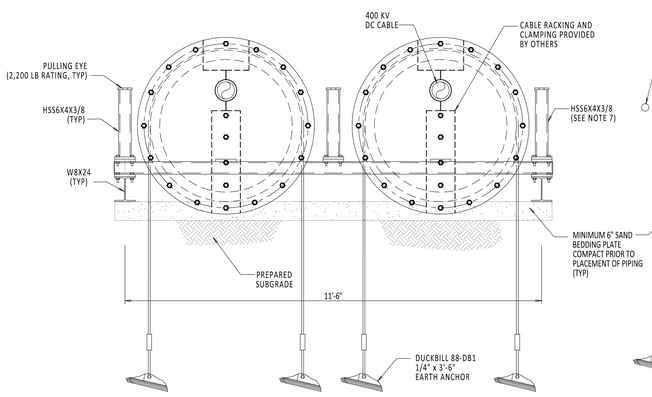
OPEN SPLICE LOCATION

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



OPEN SPLICE LOCATION

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



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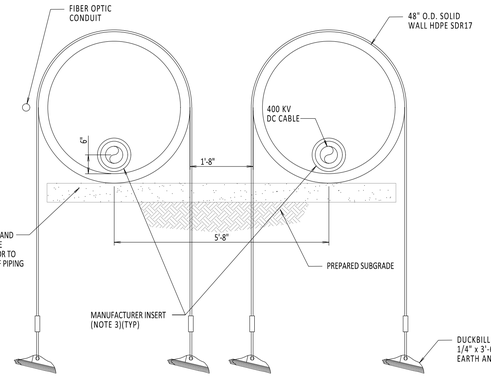

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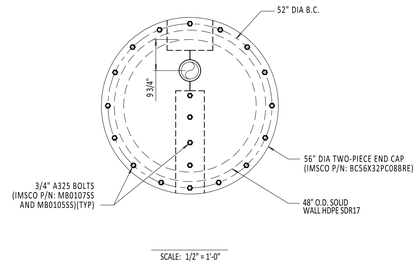

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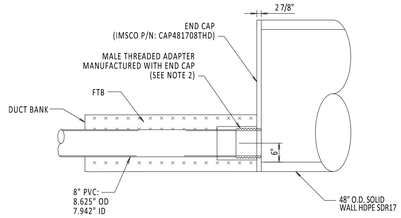

SCALE: 1/2" = 1'-0"

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1. 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.
2. INSERT END CAP FITTING AS RECOMMENDED BY IMSCO (P/N: MTXSXPVC08ADPT FOR 8 INCH PVC CONDUIT; P/N: TF10095SMPT FOR 10 INCH HDPE DR9 CONDUIT; P/N: TF12075SMPT FOR 12 INCH HDPE DR7 CONDUIT) NO EXCEPTIONS.
3. SEE REFERENCE DOCUMENTS 2.
4. SEE REFERENCE DOCUMENT 3.
5. STEEL MEMBERS TO BE CAST INTO THE FLOWABLE THERMAL BACKFILL.
6. EXPANSION VESSEL CASING DESIGN IS BASED ON INFORMATION PROVIDED BY NKT APRIL 20, 2022 IN THE TECHNICAL REPORT TITLED "CHPE LAND CABLE JOINT LOCATION DESIGN CONSIDERATIONS" AND IS SUBJECT TO FURTHER CHANGE.
7. HSS ASSEMBLY TO BE INSTALLED FOR CABLE SNAKING OPERATION ONLY. ASSEMBLY SHALL NOT BE INSTALLED DURING BACKFILL.
8. MINIMUM 6" BEDDING. SEE REFERENCE DOCUMENT 4.

REFERENCE DOCUMENTS

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

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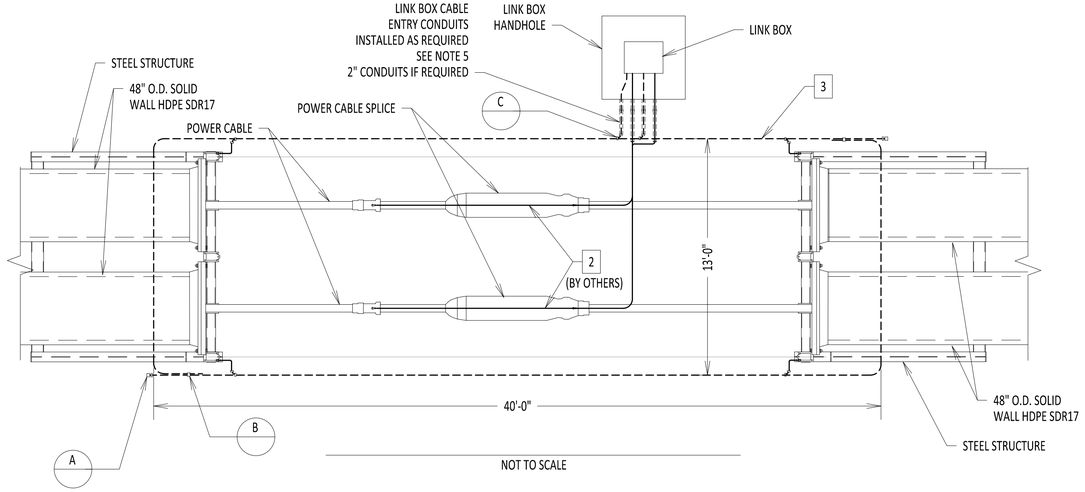
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/16/2022	EM&CP REGULATORY RE-SUBMISSION	SS	ASM

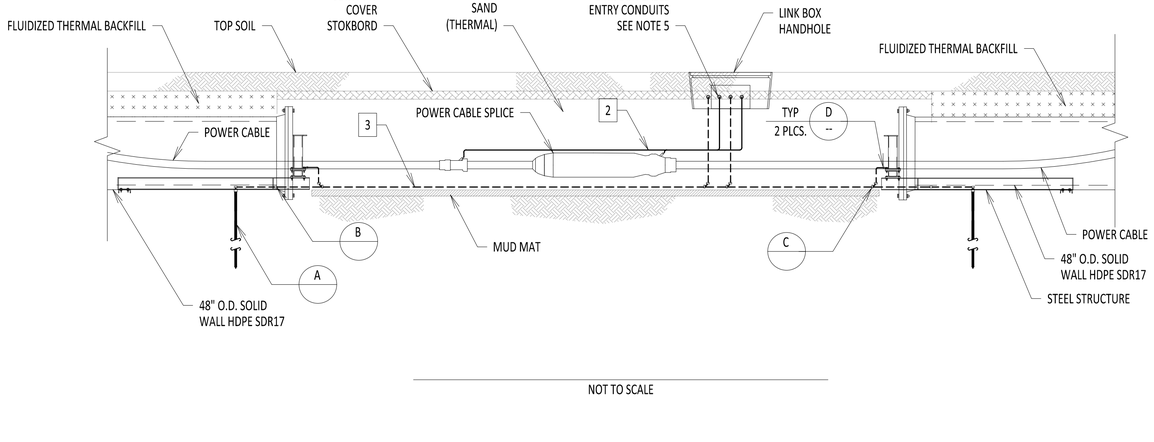
CHAMPLAIN HUDSON POWER EXPRESS

TYPICAL OPEN PIT SPLICE CASING DETAILS

DRAWN BY: DLM | DESIGNED BY: SS | APPROVED BY: ASM | SCALE | REV. NO.

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-808**
DATE	09/16/2022
SH.NO.	OF XXX





NOTES:

1. FOR ADDITIONAL DESIGN PARAMETERS SEE SPECIFICATIONS.
2. ALL GROUND CONNECTIONS SHALL BE IRREVERSIBLE COMPRESSION CONNECTION UNLESS OTHERWISE NOTED.
3. LINK BOX WILL CONTAIN FOUR DISCONNECTING LINKS, AS PROVIDED BY VENDOR.
4. POLYWATER FST SHALL BE USED TO SEAL CONDUIT.
5. BONDING CABLE CONNECTION BETWEEN HIGH VOLTAGE DC CABLE SPLICE AND LINK BOX SHALL BE NO LONGER THAN 30 FEET. FIELD FIT EXACT LOCATION.
6. 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.
7. KIEWIT HAS PROVIDED GROUNDING AS PER NKT REQUIREMENTS. NO OTHER ELECTRICAL SYSTEM DESIGN HAS BEEN INCLUDED BY KIEWIT.

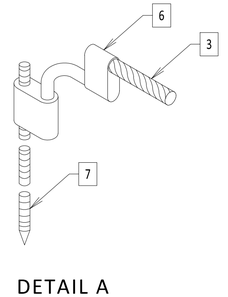
BILL OF MATERIALS

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

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

REFERENCE DRAWINGS

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



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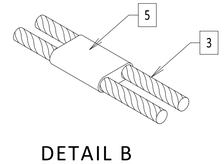

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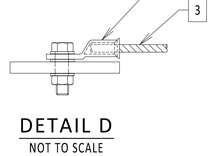

DETAIL D
NOT TO SCALE

DETAIL C
NOT TO SCALE

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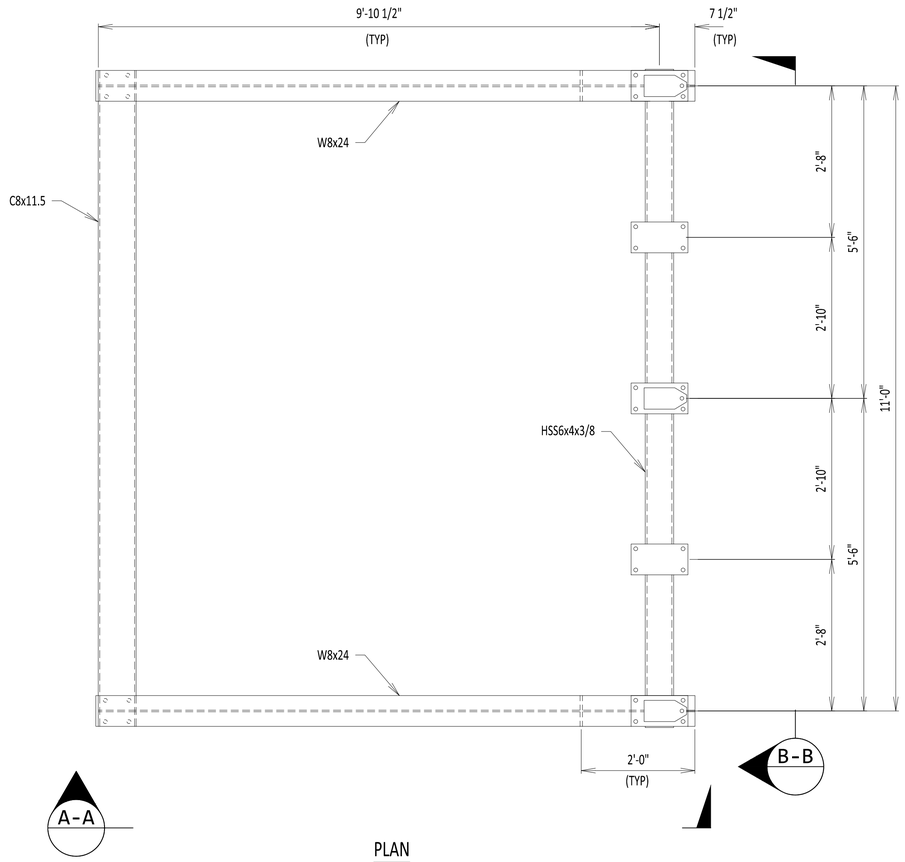
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/16/2022	EM&CP REGULATORY RE-SUBMISSION	SD	ASM

DRAWN BY: | DESIGNED BY: SD | APPROVED BY: ASM

CHAMPLAIN HUDSON POWER EXPRESS

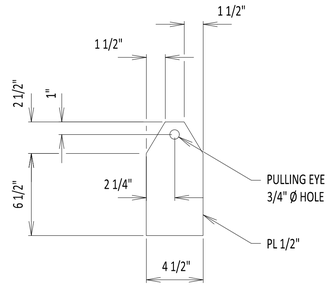
OPEN PIT SPLICE GROUNDING DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-809**
SCALE	NOT TO SCALE
DATE	09/16/2022
REV. NO.	
SH.NO.	OF XXX



PLAN

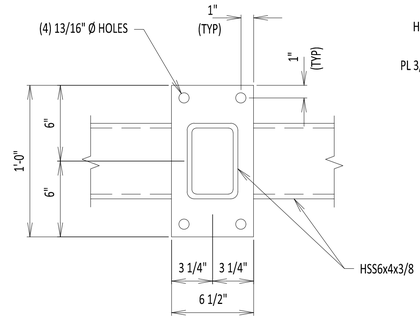
SCALE: 3/4" = 1'-0"



PULLING EYE

DETAIL 1

SCALE: 2" = 1'-0"



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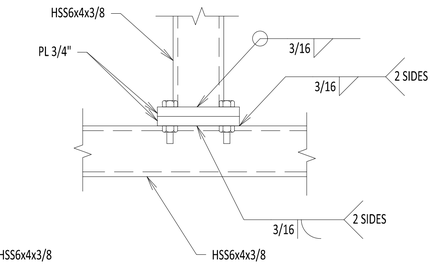

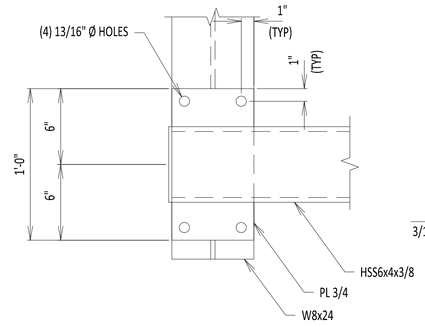

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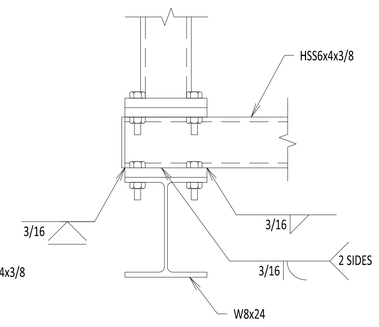
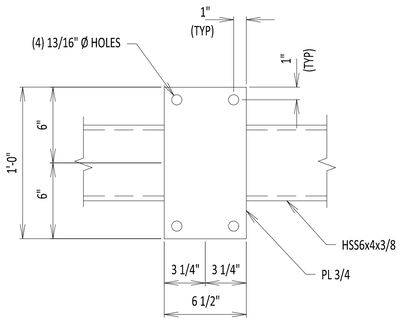
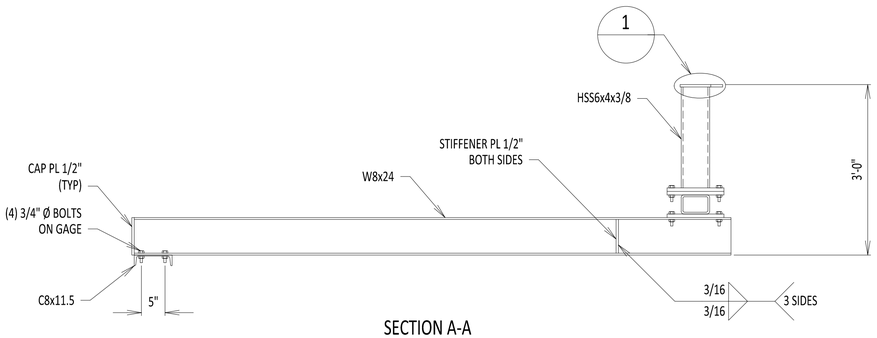
SCALE: 2" = 1'-0"





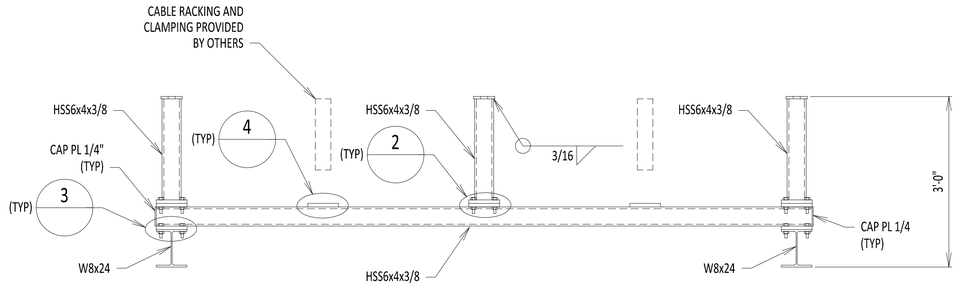
DETAIL 4

SCALE: 2" = 1'-0"



SECTION A-A

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



SECTION B-B

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

NOTES:

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

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STATE OF NEW YORK · MATTHEW FUSTRIE · 104832 · LICENSED PROFESSIONAL ENGINEER

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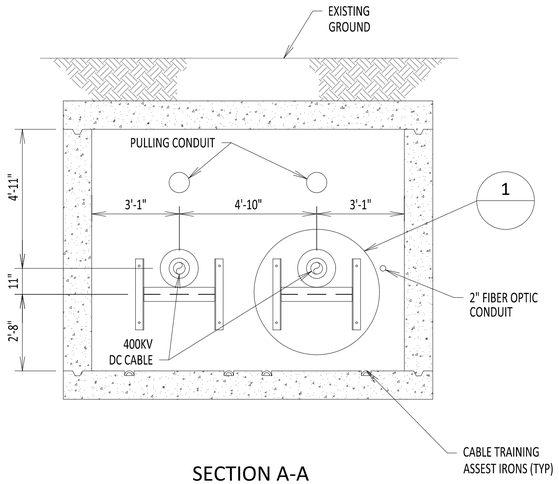
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	09/16/2022	EM&CP REGULATORY RE-SUBMISSION	AJH	MRF

CHAMPLAIN HUDSON POWER EXPRESS

STEEL SUPPORT DETAILS

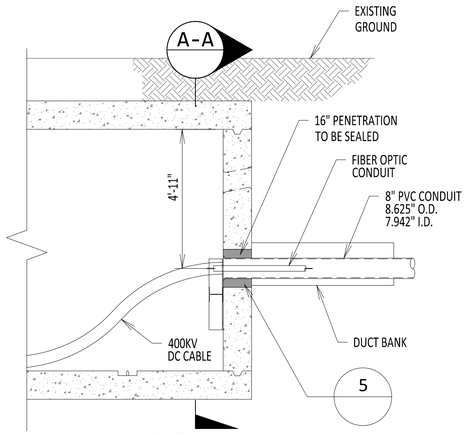
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-811

DRAWN BY: DLM | DESIGNED BY: | APPROVED BY: MRF | SCALE | REV. NO. | DATE 08/25/2022 | SH.NO. 1 OF 1



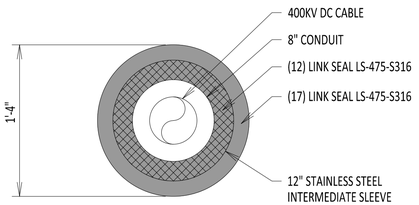
SECTION A-A

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



DETAIL 2

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



DETAIL 5

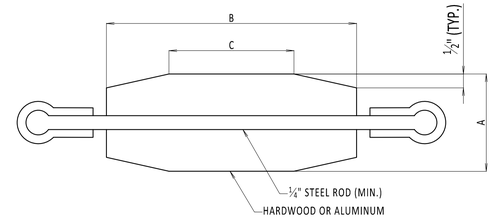
SCALE: 1 1/2" = 1'-0"

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).

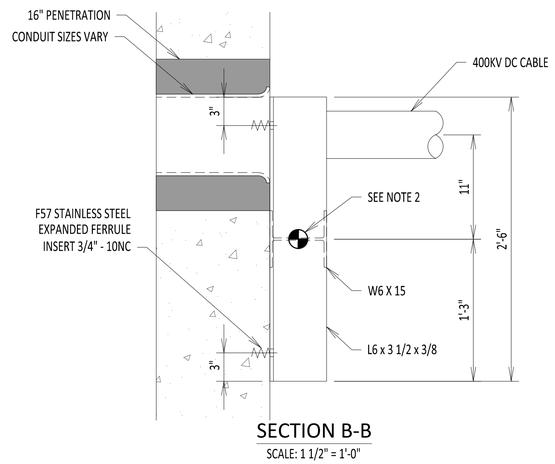
MANDREL SIZE DATA TABLE

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"



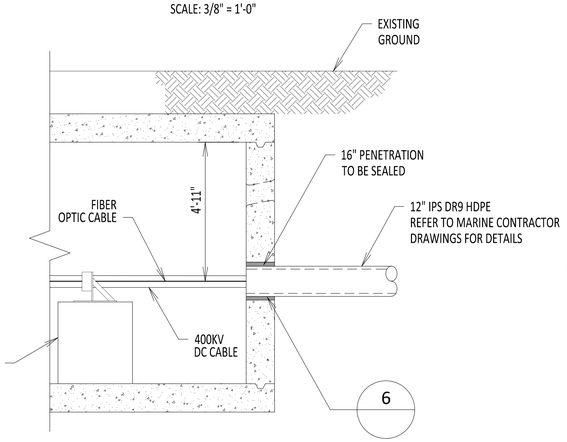
TYPICAL MANDREL DETAIL

NOT TO SCALE



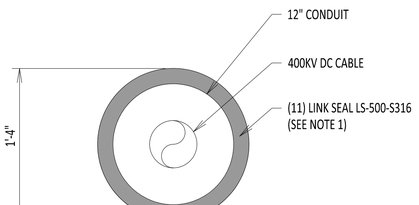
SECTION B-B

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



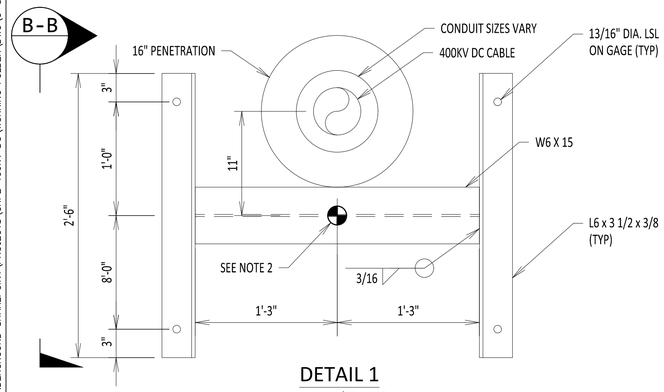
DETAIL 3

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



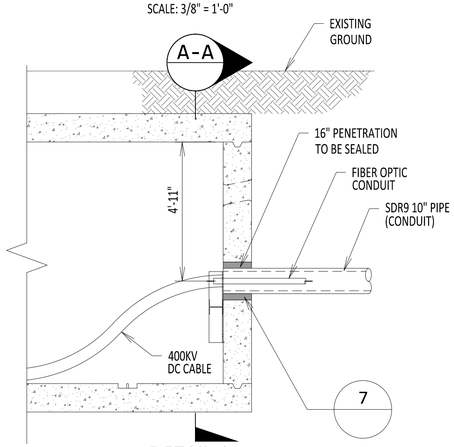
DETAIL 6

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



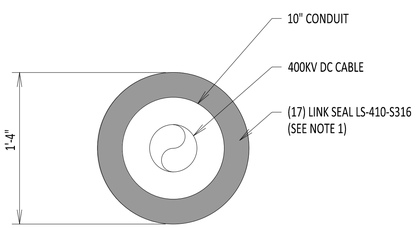
DETAIL 1

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



DETAIL 4

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



DETAIL 7

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

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · DONGKAI CHEN · 106996 · LICENSED PROFESSIONAL ENGINEER

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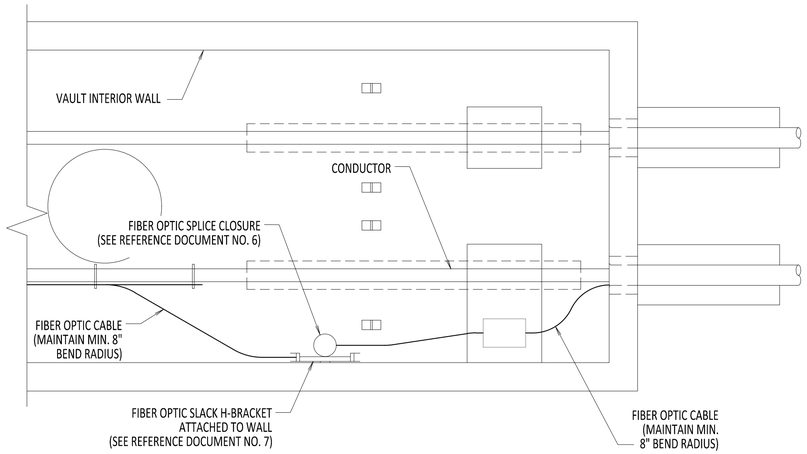
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

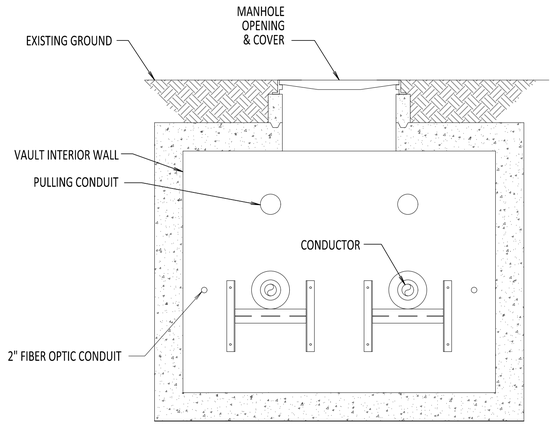
VAULT CONNECTION DETAILS

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-812

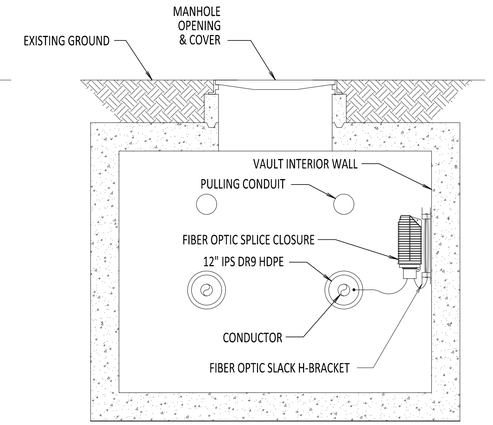
DRAWN BY: DLM | DESIGNED BY: SS | APPROVED BY: ASM | SCALE: NOT TO SCALE | REV. NO. 0 | DATE 03/15/2023 | SH.NO. OF



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



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

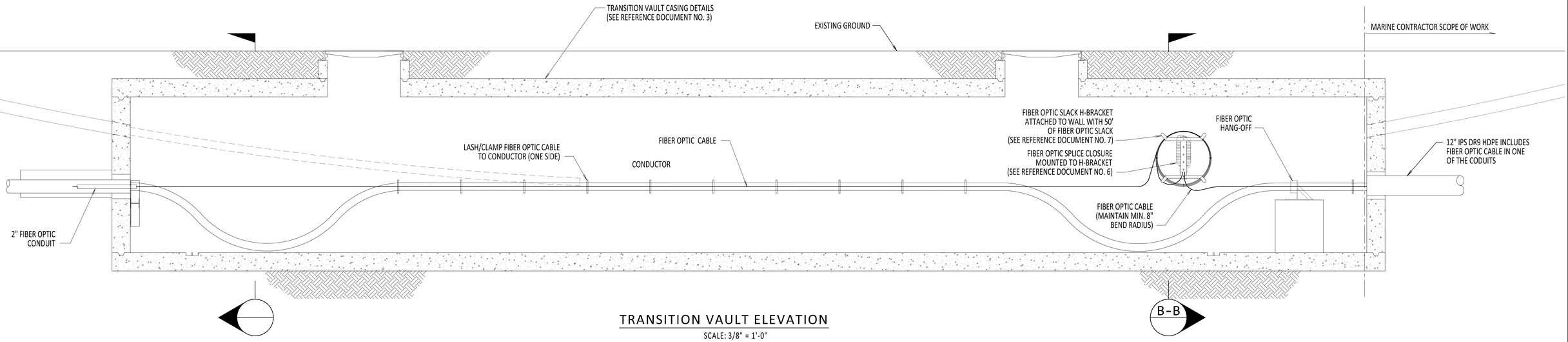


SECTION B-B
SCALE: 3/8" = 1'-0"

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"

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · MICHAEL REIHS WHEELER · LICENSED PROFESSIONAL ENGINEER · 103646

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0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

TRANSITION VAULT
FIBER OPTIC DETAIL

DRAWN BY: DLM | DESIGNED BY: NM | APPROVED BY: MK

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-850**
SCALE	
DATE	03/15/2023
REV. NO.	0
SH.NO.	OF

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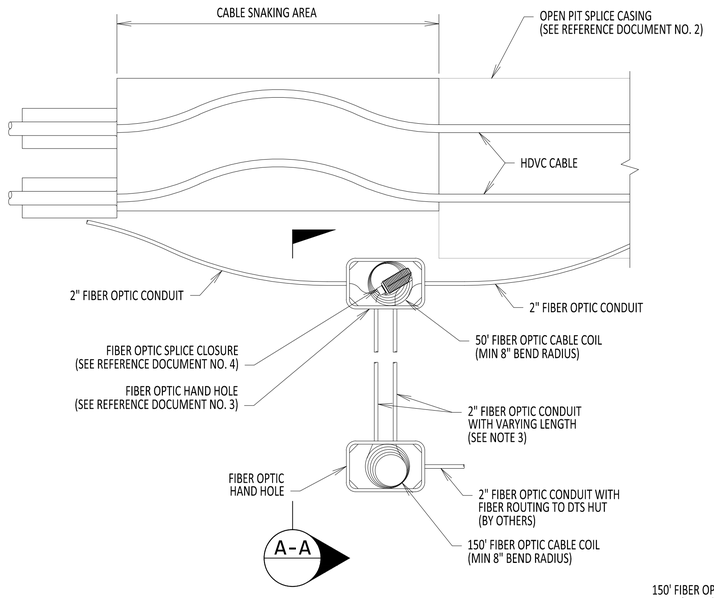
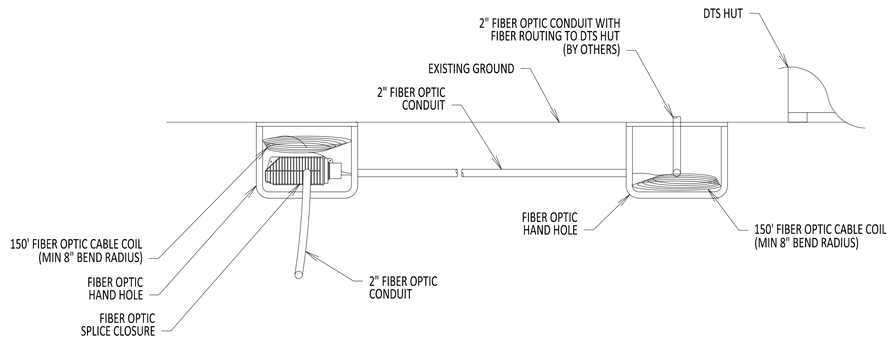


PLAN VIEW

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

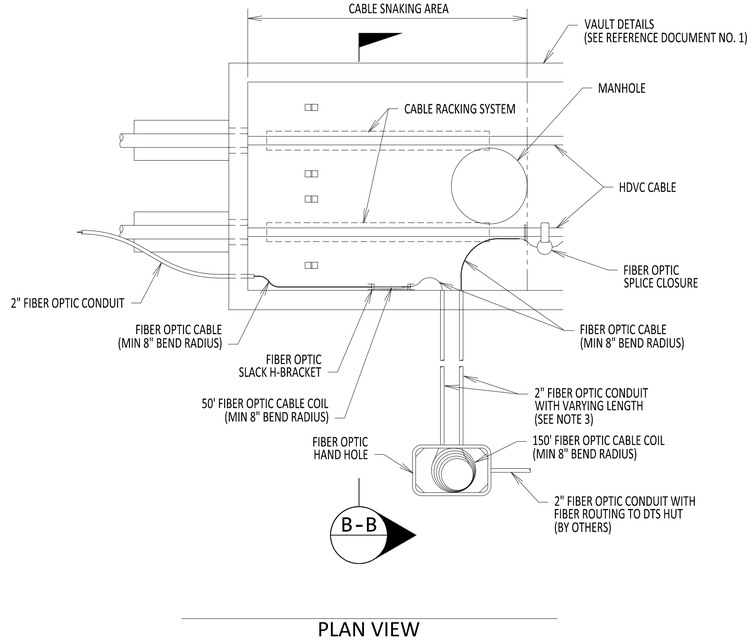


SCALE: 1/2" = 1'-0"

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.

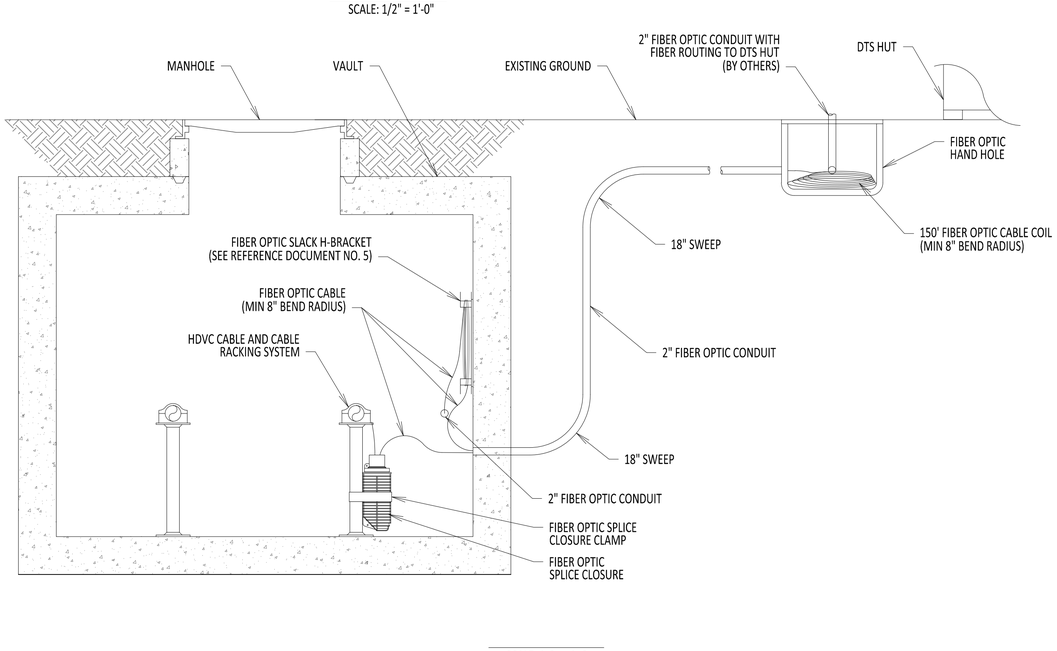
REFERENCE DOCUMENTS

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



PLAN VIEW

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



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

CHPE Champlain Hudson Power Express

Kiewit

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0	03/15/2023	ISSUED FOR CONSTRUCTION	DLM	ASM

CHAMPLAIN HUDSON POWER EXPRESS

DTS HUT CONNECTION
FIBER OPTIC SPLICE AND HAND HOLE

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	**C-851**

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