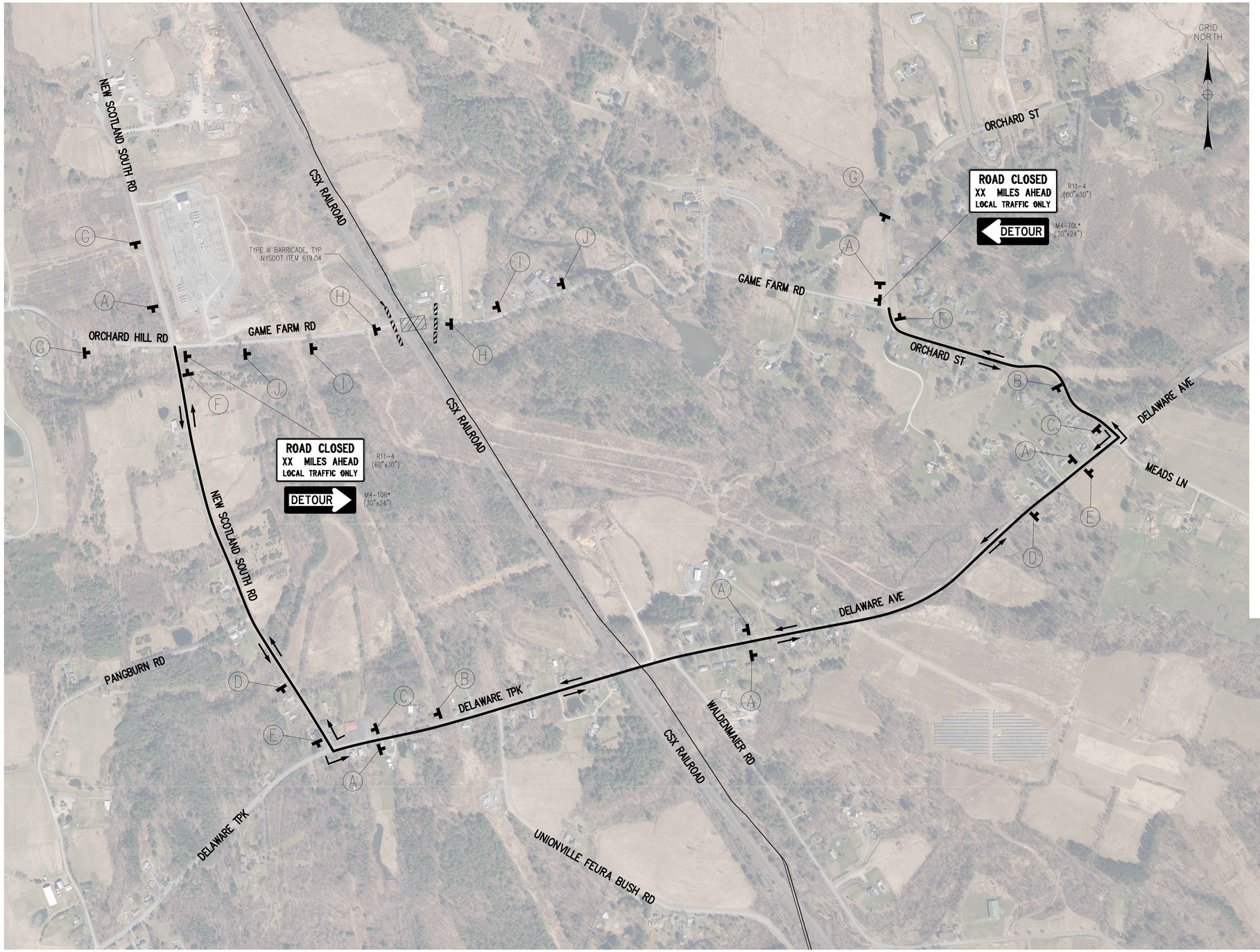


GAME FARM ROAD DETOUR PLAN

NTS

DETOUR SIGN SCHEDULE

A	Game Farm Rd / DETOUR ↑	D3-1* (30"x8"), M4-9* (30"x24")
B	Game Farm Rd / DETOUR ↱	D3-1* (30"x8"), M4-9R (MOD)* (30"x24")
C	Game Farm Rd / DETOUR →	D3-1* (30"x8"), M4-9R* (30"x24")
D	Game Farm Rd / DETOUR ↰	D3-1* (30"x8"), M4-9L (MOD)* (30"x24")
E	Game Farm Rd / DETOUR ←	D3-1* (30"x8"), M4-9L* (30"x24")
F	Game Farm Rd / END DETOUR	D3-1* (30"x8"), M4-9* (30"x24")
G	DETOUR AHEAD	W20-2* (36"x36")
H	ROAD CLOSED	R11-2 (48"x30")
I	ROAD CLOSED 500 FT	W20-3 (36"x36")
J	ROAD CLOSED 1000 FT	W20-3 (36"x36")

ISSUED FOR CONSTRUCTION

6/1/2023

LEGEND

- WORK SPACE
- DIRECTION OF TRAFFIC DETOUR
- SIGN (TEMPORARY)
- TYPE III BARRICADE
- * BLACK ON ORANGE

CHPE Champlain Hudson Power Express

Kiewit

EDR a better environment

STATE OF NEW YORK — THOMAS F. J. DISSINGER — 088323 — LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	JLB	TD

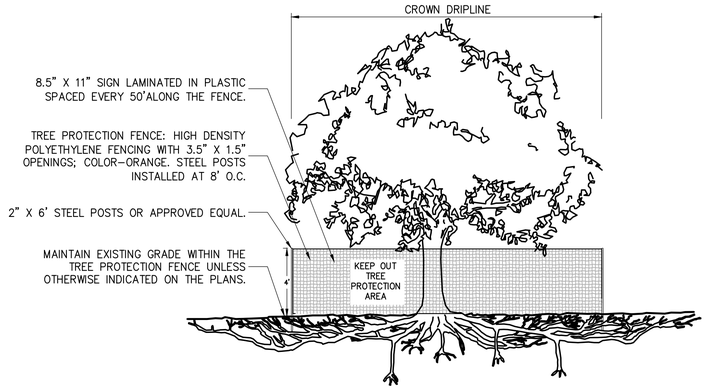
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM

WORK ZONE TRAFFIC CONTROL
GAME FARM ROAD DETOUR

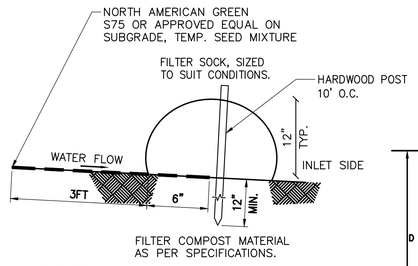
KIEWIT PROJECT NO.	21162
EDR PROJECT NO.	21075
DRAWING NO.	C-512

DRAWN BY: | DESIGNED BY: SH | APPROVED BY: TD | SCALE AS SHOWN | REV. NO. E | DATE 06/09/2023 | SH.NO. OF

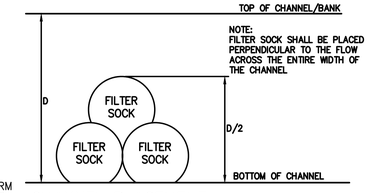


NOTES:
1. CONTRACTOR TO MAINTAIN INTEGRITY OF CONSTRUCTION FENCE FOR DURATION OF PROJECT.
2. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
3. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
4. SEE EROSION CONTROL PLANS FOR LOCATIONS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

1 TREE PROTECTION
NOT TO SCALE

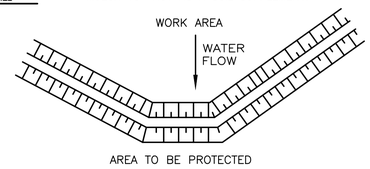


NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS.
2. ALL FILTER SOCKS SHALL BE 12" DIAMETER OR LARGER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTER BERM IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
4. WHERE THE BERM REQUIRES REPAIR, IT WILL BE ROUTINELY 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.



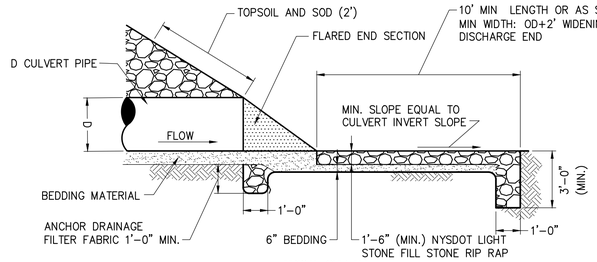
CHANNEL PLACEMENT

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.

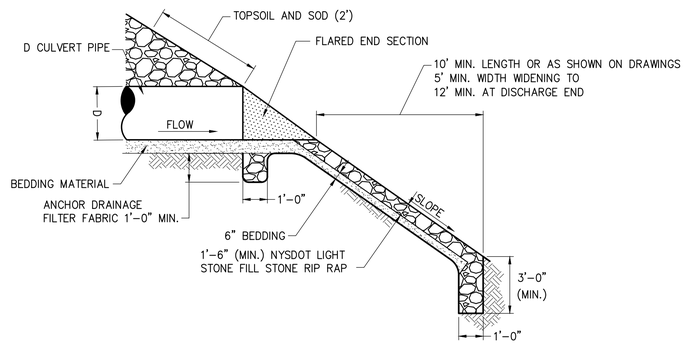


AT GRADE PLACEMENT

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

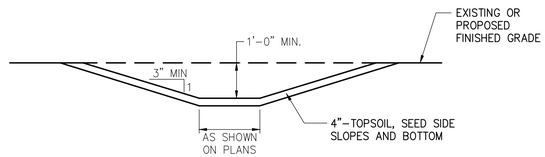


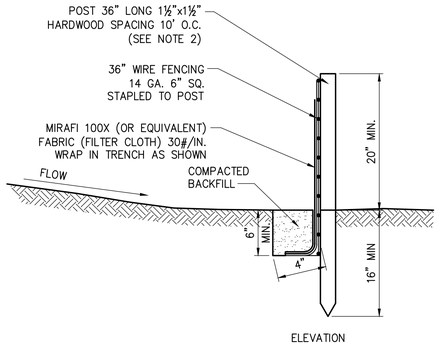
TYPICAL OUTFALL



TYPICAL OUTFALL ON SLOPE

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





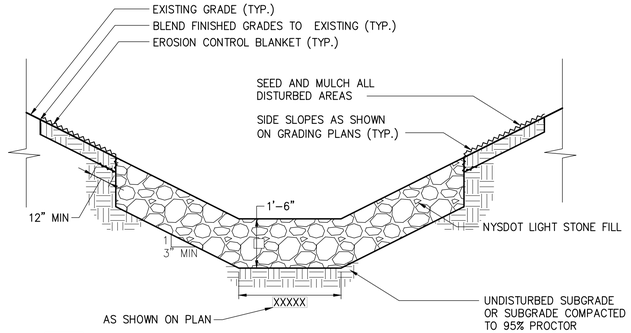
ELEVATION

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.

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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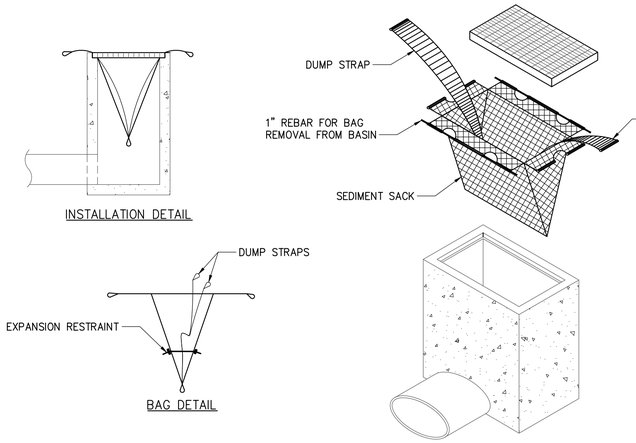
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
EROSION AND SEDIMENT CONTROL DETAILS

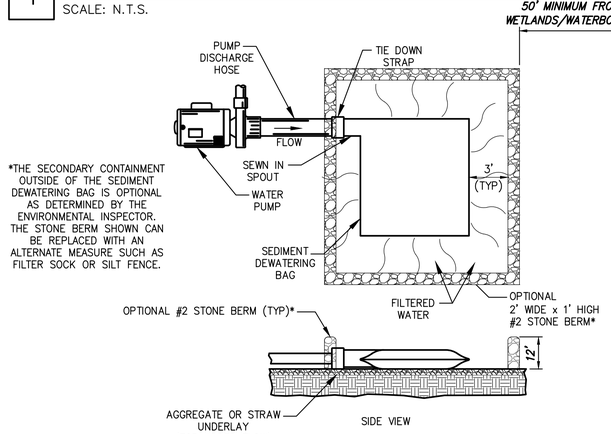
KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-601

DRAWN BY: | DESIGNED BY: MK | APPROVED BY: NH | SCALE AS SHOWN | REV. NO. 0 | DATE 6/2/2023 | 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.

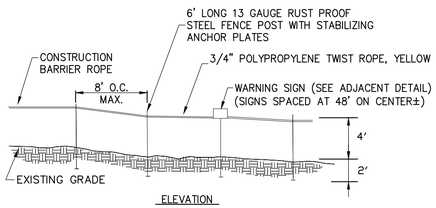


NOTE: THE SEDIMENT DEWATERING BAG WILL BE MANUFACTURED IN THE U.S.A. FROM A NONWOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

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

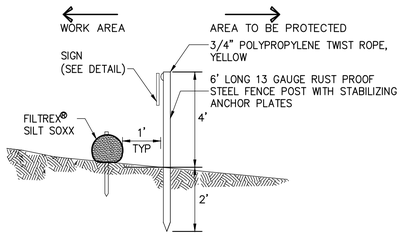
4 SEDIMENT DEWATERING BAG
SCALE: N.T.S.



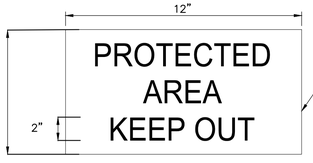
ELEVATION

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.

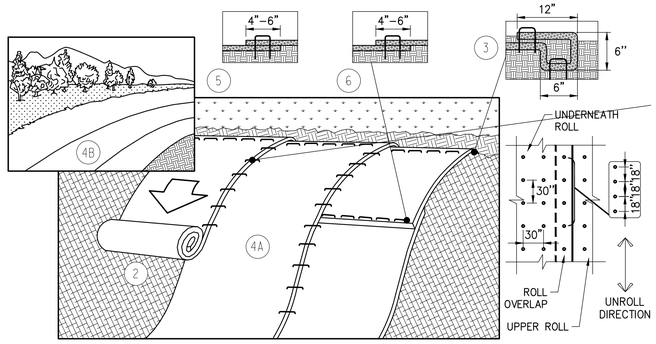
2 WETLAND PROTECTION FENCE
SCALE: N.T.S.



SECTION



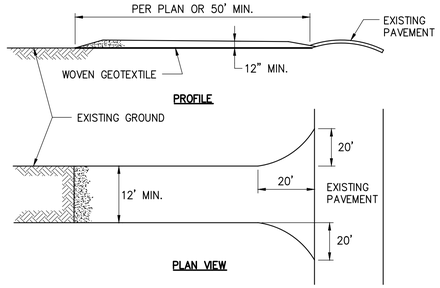
WARNING SIGN DETAIL (OR APPROVED EQUAL)



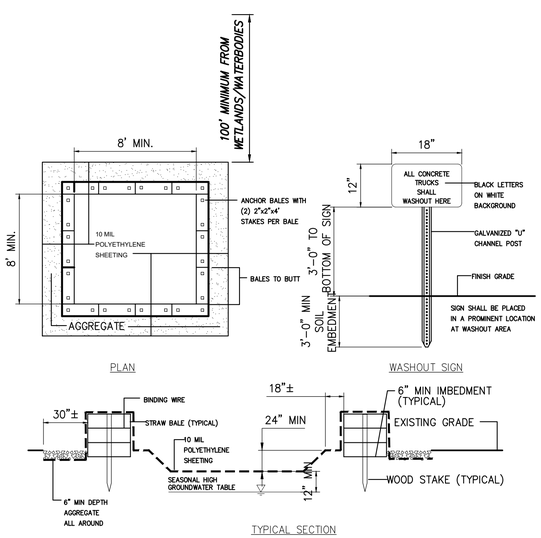
NOTE:
1. EROSION CONTROL BLANKETS TO BE INSTALLED ON SLOPES 3:1 OR GREATER (TYP.)
2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: DO NOT SEED PREPARED AREA. INSTALL WITH PAPER SIDE DOWN. INSTALL ACCORDING TO MANUFACTURERS INSTRUCTIONS.
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.

STATE OF NEW YORK · MANUEL DALE HARDEN · 103692 · LICENSED PROFESSIONAL ENGINEER

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
EROSION AND SEDIMENT CONTROL DETAILS

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	**C-602**

DRAWN BY: | DESIGNED BY: MK | APPROVED BY: NH | SCALE AS SHOWN | DATE 6/2/2023 | REV. NO. 0 | 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 BEGINS
B) 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.

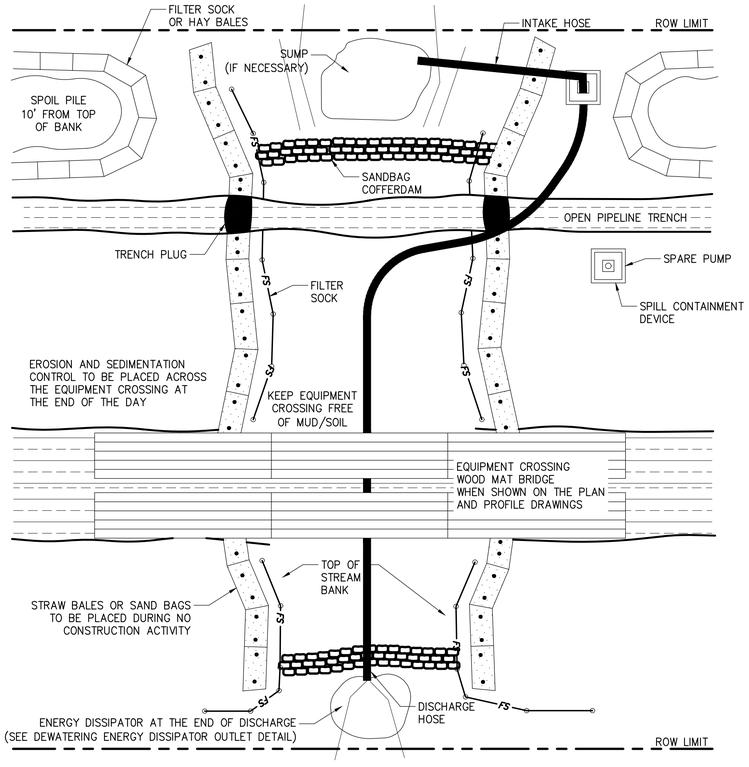
BMPS TO BE IMPLEMENTED DURING PUMP SET–UP INCLUDE:

D) PUMPS SHALL BE FUELED PRIOR TO PLACING THEM IN POSITION
E) 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
F) SECONDARY CONTAINMENT SHALL BE PLACED UNDER THE PUMPS AS AN ADDITIONAL PRECAUTIONARY MEASURE TO PROTECT AGAINST ACCIDENTAL LEAKAGE OR SPILL
G) FUEL FOR FILLING THE PUMPS SHALL NOT BE STORED WITHIN ONE HUNDRED (100) FEET OF THE WATERBODY
H) THE INTAKE HOSE SHALL BE SCREENED TO PREVENT THE ENTRAINMENT OF FISH
I) 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
J) IF HOSES CROSS THE TEMPORARY ACCESS ROAD, THEY SHALL BE PROTECTED FROM TRAVELING EQUIPMENT
K) PUMP(S) SHALL BE OF SUFFICIENT CAPACITY TO TRANSFER TWICE THE CAPACITY OF THE ENTIRE STREAMFLOW AROUND THE CONSTRUCTION WORK AREA
L) 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:

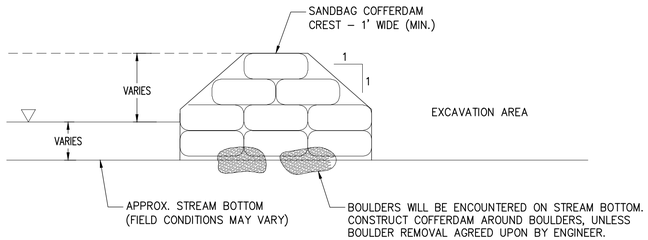
A) DAMS SHALL BE CONSTRUCTED OF EITHER SANDBAGS, WATER BLADDERS, STEEL PLATES, PORTA–DAMS OR EQUIVALENT OR "JERSEY BARRIERS" AND PLASTIC SHEETING OR A COMBINATION THEREOF
B) THE DAMS SHALL BE CONSTRUCTED OF SUFFICIENT HEIGHT TO ALLOW ADEQUATE FREEBOARD UNDER REASONABLY EXPECTED WATER LEVELS OR FLOWS 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.



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

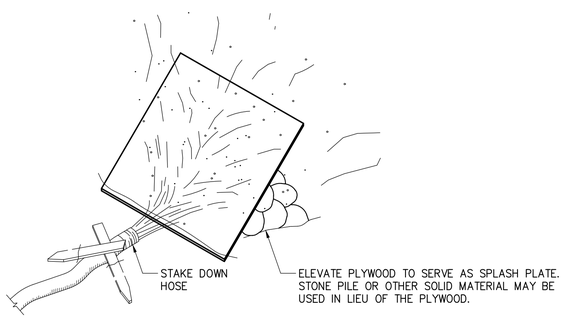
GENERAL SEQUENCE:

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.

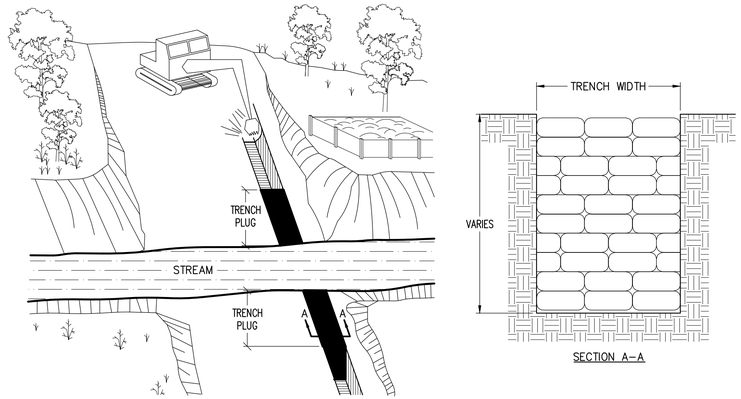


2 SANDBAG COFFERDAM DETAIL
SCALE: N.T.S.

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.



3 DEWATERING ENERGY DISSIPATOR OUTLET DETAIL
SCALE: N.T.S.



4 TRENCH PLUG 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

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CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
EROSION AND SEDIMENT CONTROL DETAILS

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

DRAWN BY: | DESIGNED BY: MK | APPROVED BY: NH | SCALE AS SHOWN | DATE 6/2/2023 | REV. NO. 0 | SH.NO. XX OF

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APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY IN THE CHANNEL.
B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE UPSTREAM SIDE OF THE CHECK DAM DUE TO DECREASED VELOCITY.
C. CHECK DAMS ARE NOT INTENDED TO, AND WILL NOT, FILTER SEDIMENT FROM TURBID WATER.
D. SLOPES EXCEEDING 10% SHALL INCLUDE A CHANNEL PROTECTIVE LINING.
E. AVOID PLACEMENT OF STONE CHECK DAMS WITHIN ROADWAY CLEAR ZONES, INSTEAD CONSIDER SEDIMENT FILTER LOG CHECK DAMS OR PREFABRICATED CHECK DAM.
F. CHECK DAMS SHALL BE ANCHORED IN THE CHANNEL BY A CUT OFF TRENCH 1.5 FEET WIDE AND 0.5 FEET DEEP AND LINED WITH FILTER FABRIC TO PREVENT SOIL MIGRATION.
G. THE UPSTREAM DAM TOE SHALL BE AT EQUAL ELEVATION TO THE DOWN STREAM DAM CREST.

GENERAL NOTES:

1. MAXIMUM DRAINAGE AREA CONTRIBUTING TO TEMPORARY STONE CHECK DAM SHALL BE 2 ACRES.
2. MEASURES SHALL BE INSPECTED EVERY (7) CALENDAR DAYS AND SHOULD BE INSPECTED AFTER EACH RUNOFF EVENT. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
3. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
4. COARSE AGGREGATE FACING MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF SIZE DESIGNATION #1 OR #2 OF TABLE 703-4 FROM SECTION 703-02 OF THE NYSDOT STANDARD SPECIFICATIONS. STONE FILLING CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF LIGHT STONE FILLING.
5. THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM SHALL BE PROTECTED FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. DURING INSPECTIONS ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCE BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. REFER TO SECTION 733-21 OF THE NYSDOT STANDARD SPECIFICATIONS FOR LIGHT STONE FILL GRADATION.

STONE CHECK DAM PLACEMENT INTERVAL *	
DITCH SLOPE	PLACEMENT INTERVAL (I) (BASED ON 2" HEIGHT)
1 %	200'
2 %	100'
3 %	66'
4 %	50'
5 %	40'
6 %	33'
8 %	25'
10 %	20'

* I = H / S

WHERE:

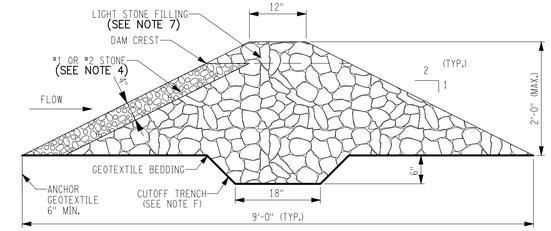
I = CHECK DAM SPACING INTERVAL

H = CHECK DAM HEIGHT

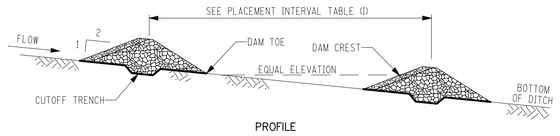
S = CHANNEL SLOPE

TEMPORARY CHECK DAM VOLUMES	
DITCH SIDE SLOPE	VOLUME (CY)
1 : 2	3.45 CY ±
1 : 3	4.25 CY ±
1 : 4	5.43 CY ±
1 : 6	7.81 CY ±

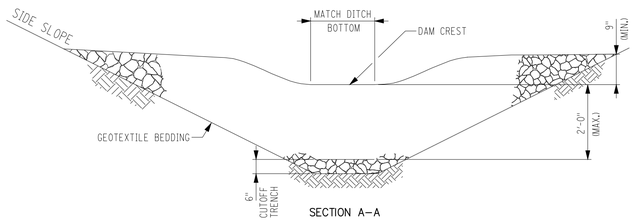
BASED ON V SHAPED DITCH SECTION
FOR TRAPEZOIDAL DITCH, ADD
1.70 CUBIC YARD / YARD OF DITCH WIDTH



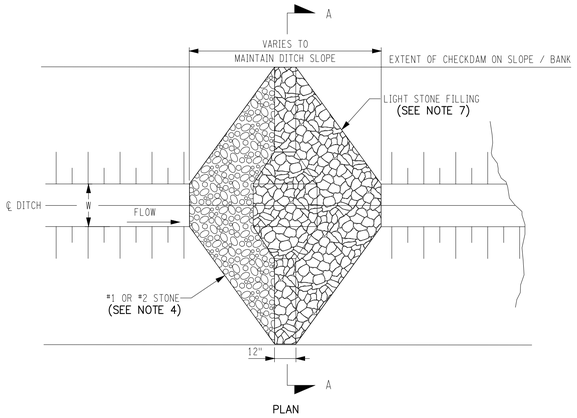
CROSS SECTION



PROFILE



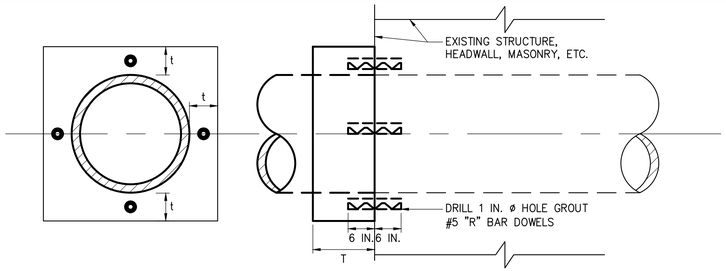
SECTION A-A



PLAN

1 TEMPORARY CHECK DAM DETAIL

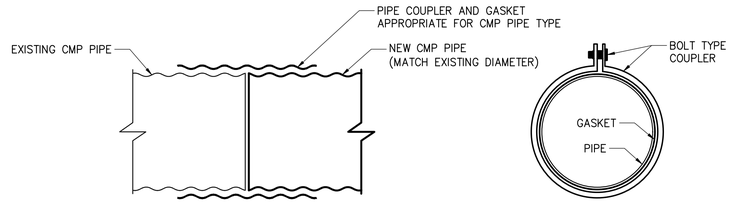
SCALE: N.T.S.



INSIDE DIA. IN.	"t" IN.	"T" IN.	NO. DOWLES REQUIRED *
THRU 19	9	12	4
20 – 29	9	12	4
30 – 39	9	12	6
40 – 49	9	12	8
50 – 59	12	18	8
60 – 69	12	18	8
70 – 79	12	18	10
80 – 89	12	18	12

* SPACE EVENLY AROUND PIPE AS INDICATED.

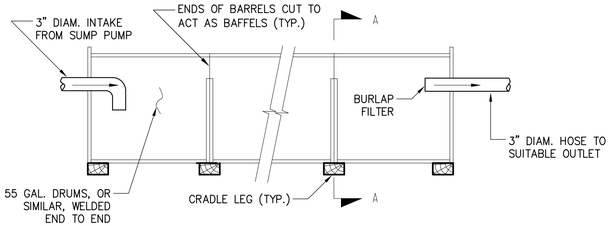
CONCRETE COLLARS FOR PIPE EXTENSIONS

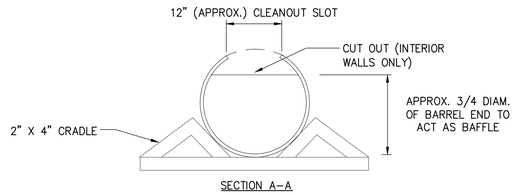


CORRUGATED METAL PIPE EXTENSIONS

2 PIPE EXTENSION DETAIL

SCALE: N.T.S.





SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. CLEAN OUT THE SEDIMENT TANK WHEN ONE THIRD (1/3) FILLED WITH SILT.
2. STEEL DRUMS ARE USED AS AN EXAMPLE DUE TO THEIR READY AVAILABILITY. ANY TANKS MAY BE USED, PROVIDING THAT THE VOLUME REQUIREMENTS ARE MET.
3. ALL SEDIMENT COLLECTED IN THE TANK SHALL BE DISPOSED OF IN A SEDIMENT TRAPPING DEVICE OR AS APPROVED BY THE INSPECTOR.

3 PORTABLE SEDIMENT TANK

SCALE: N.T.S.

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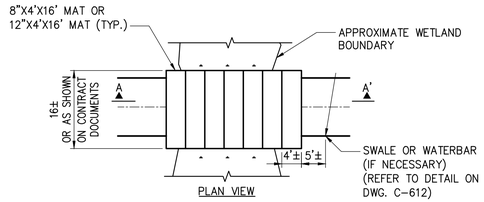
CHAMPLAIN HUDSON POWER EXPRESS

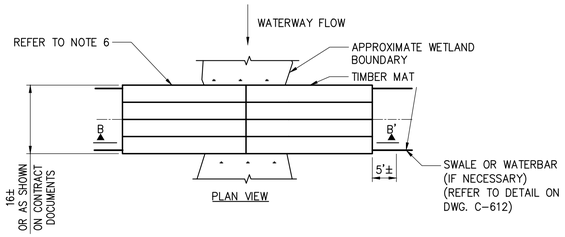
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM

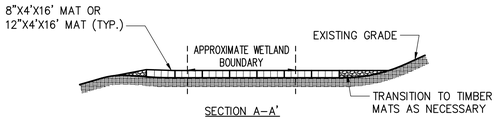
EROSION AND SEDIMENT CONTROL DETAILS

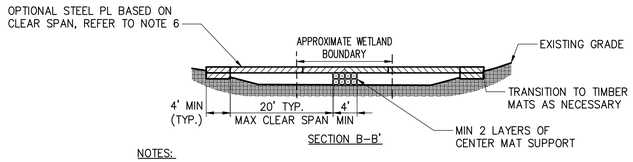
KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-604

DRAWN BY: | DESIGNED BY: MK | APPROVED BY: NH | SCALE AS SHOWN | REV. NO. 0 | DATE 6/2/2023 | SH.NO. XX OF









NOTES:
1. TIMBER MATS SHOULD BE INSTALLED IN WETLANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
2. FOR CROSSINGS WITH LARGER SPANS THE CONTRACTOR SHALL CONSULT WITH THE TEMPORARY STRUCTURES AND CONSTRUCTION DEVICES ENGINEER.
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 CONTROLS 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.
8. ALL EQUIPMENTS SHOULD MAINTAIN A MINIMUM OF 2 FT SETBACK FROM EDGE OF THE MATS WHILE CROSSING.
9. SINGLE OR MULTIPLE LAYERS OF MATS SHALL BE PLACED BASED ON EXISTING SOIL CONDITIONS.

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) AND IN ACCORDANCE WITH SECTION 9.1 WATER BODIES IN THE PROJECT EM&CP.
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. REFER TO CERTIFICATE OF CONDITIONS.
3. ALL FILL MATERIALS ASSOCIATED WITH THE ROADWAY APPROACH SHOULD BE LIMITED TO A MAXIMUM HEIGHT OF 2 FT ABOVE THE EXISTING FLOOD PLAIN ELEVATION.
4. A WATER DIVERTING STRUCTURE SUCH AS A SWALE OR WATER BAR SHOULD BE CONSTRUCTED (ACROSS THE ROADWAY ON BOTH ROADWAY APPROACHES) 50 FEET (MAXIMUM) ON EITHER SIDE OF THE WATERWAY CROSSING. THIS WILL PREVENT ROADWAY SURFACE RUNOFF FROM DIRECTLY ENTERING THE WATERWAY. THE 50 FEET MEASURED IS MEASURED FROM THE TOP OF THE WATERWAY BANK. IF THE ROADWAY APPROACH IS CONSTRUCTED WITH A REVERSE GRADE AWAY FROM THE WATERWAY, A SEPARATE DIVERTING STRUCTURE IS NOT REQUIRED.
5. ALL EQUIPMENTS SHOULD MAINTAIN A MINIMUM OF 2 FT SETBACK FROM EDGE OF THE MATS WHILE CROSSING.
6. CONTRACTOR SHALL CONSULT WITH TEMPORARY STRUCTURES AND CONSTRUCTION DEVICES ENGINEER FOR APPROPRIATE MATTING SIZES AND LENGTHS AND REQUIRED SOIL BEARING PRESSURES.

OPTION "A"
NOT TO SCALE

OPTION "B"
NOT TO SCALE

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

GENERAL NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL MIXED OAK WITH A MINIMUM BENDING STRESS OF 1250 PSI OR BETTER.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCING WORK. ANY ERRORS, OMISSIONS, OR UNUSUAL CONDITIONS ARE TO BE REPORTED TO THE TEMPORARY STRUCTURES AND CONSTRUCTION DEVICES ENGINEER IMMEDIATELY.

CHPE Champlain Hudson Power Express

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Luling.Yang Digitally signed by Luling.Yang
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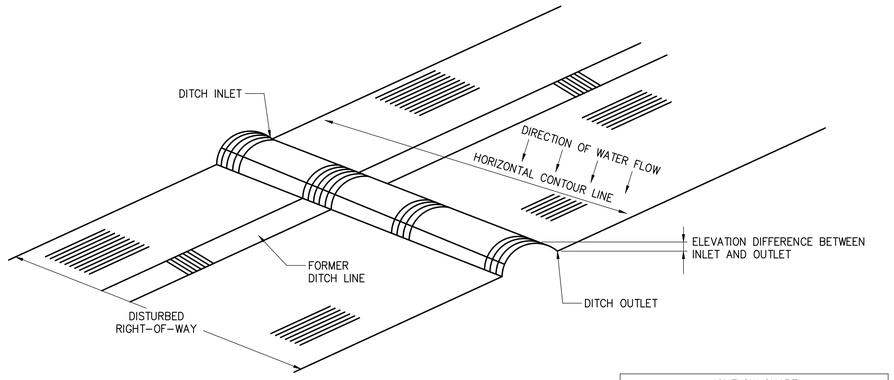
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
WETLAND CROSSING DETAILS

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

DRAWN BY: | DESIGNED BY: MK | APPROVED BY: NH | SCALE AS SHOWN | REV. NO. 0 | DATE 3/23/2023 | SH.NO. XX OF



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:

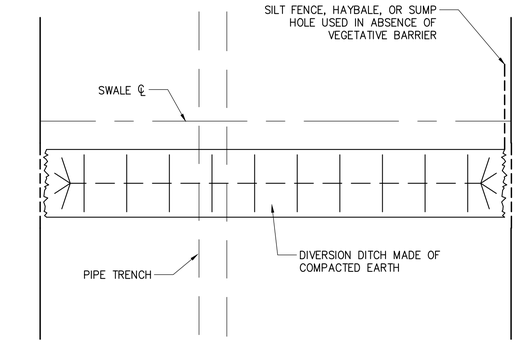
1. AT THE PROPOSED INTERCEPTOR DITCH LOCATION ESTABLISH A HORIZONTAL CONTOUR LINE (USING A POCKET TRANSIT OR HAND LEVEL) WHICH EXTENDS COMPLETELY ACROSS THE DISTURBED RIGHT-OF-WAY. THIS LINE WILL ALWAYS BE PERPENDICULAR TO THE DIRECTION OF WATER FLOW AND SHOULD BE PARALLEL TO THE MAP CONTOURS SHOWN ON 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.

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

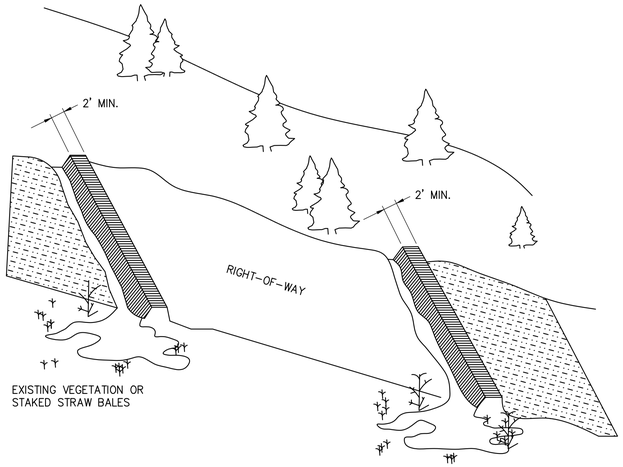
TEMPORARY DRAINAGE DITCH

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.

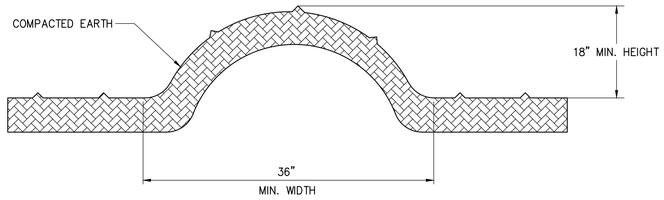


OVERHEAD VIEW



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

Kiewit

Engineering and Land Surveying, P.C.

STATE OF NEW YORK · MATTHEW DALE HAGER · 103692 · LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	MK	NH

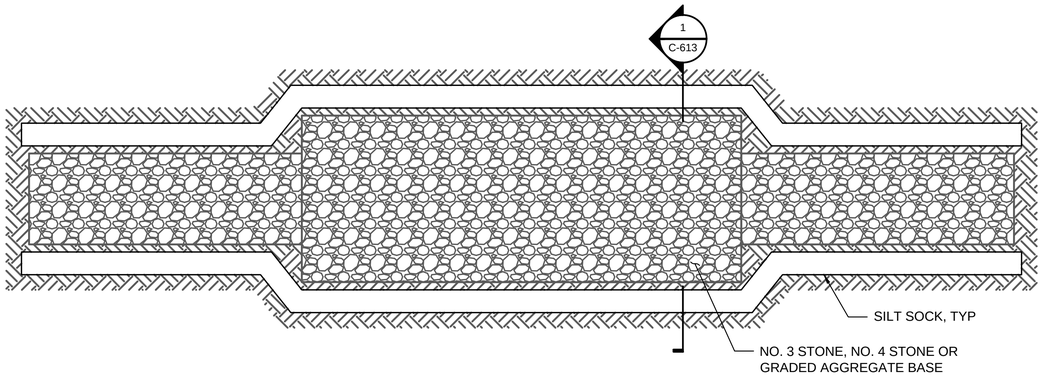
DRAWN BY: | DESIGNED BY: MK | APPROVED BY: NH | SCALE AS SHOWN | REV. NO. 0 | DATE 6/2/2023 | SH.NO. XX OF

CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM

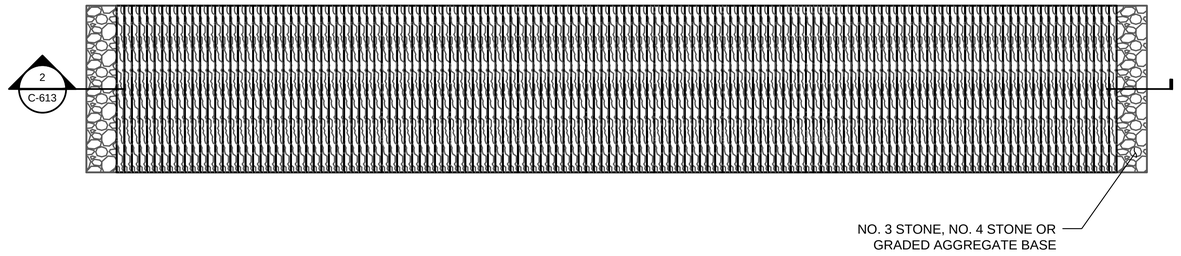
WATERBAR DETAILS

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



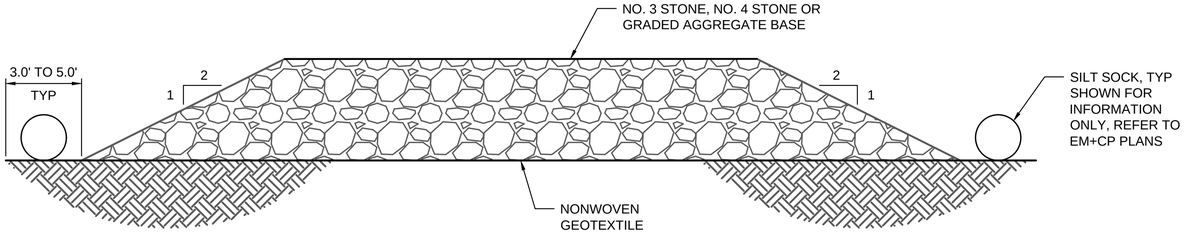
WETLAND AND AGRICULTURAL LANDS WORKING SURFACE PLAN - OPTION A

NOT TO SCALE



WETLAND AND AGRICULTURAL LANDS WORKING SURFACE PLAN - OPTION B

NOT TO SCALE

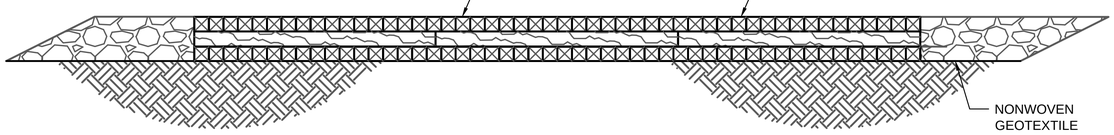


1 C-613 **SECTION**

NOT TO SCALE

NOTES:

1. UNDERCUT AND REMOVE TOP SOIL PRIOR TO PLACING GEOTEXTILE FABRIC.
2. A LAYER OF CLEAN CRUSHED STONE SHALL BE LAID ON TOP OF THE GEOTEXTILE FABRIC.
3. GEOTEXTILE FABRIC SHALL EXTEND AT LEAST 3 FT TO 5 FT BEYOND THE EDGE OF STONE PLACEMENT TO MINIMIZE STONE ENTERING THE WETLAND AND FACILITATE REMOVAL OF THE ROAD.
4. SUITABLE CROSS DRAINING SHALL BE PROVIDED ACROSS THE ROAD FOR STREAM CHANNELS AND SURFACE FLOW.
5. REFER TO EM+CP PLANS FOR EROSION CONTROL DETAILS.
6. REFER TO EM+CP PLANS FOR RESTORATION OF WETLAND.



2 C-613 **SECTION**

NOT TO SCALE

NOTES:

1. TIMBER MATS SHOULD BE INSTALLED IN WETLANDS, AGRICULTURAL LANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
2. BASED ON ACTUAL SITE CONDITIONS, NUMBER OF TIMBER MAT LAYERS TO BE DETERMINED ON SITE.
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 AND AGRICULTURAL LAND DURING RAIN EVENTS. SEDIMENT SHOULD BE REMOVED TO A STABILIZED SOIL STOCKPILE OR OTHER APPROVED LOCATION.
5. PERIMETER EROSION AND SEDIMENT CONTROLS 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.
8. REFER TO EM+CP PLANS FOR EROSION CONTROL DETAILS.
9. REFER TO EM+CP PLANS FOR RESTORATION OF WETLAND.

GENERAL NOTES:

1. TIMBER:
   A. TIMBER SHALL BE SELECT STRUCTURAL MIXED OAK WITH A MINIMUM BENDING STRESS OF 1250 PSI OR BETTER.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCING WORK. ANY ERRORS, OMISSIONS, OR UNUSUAL CONDITIONS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
3. NONWOVEN GEOTEXTILE SHALL BE MIRAFI 180N OR EQUIVALENT APPROVED BY EOR.

CHPE Champlain Hudson Power Express

Kiewit

Engineering and Land Surveying, P.C.

STATE OF NEW YORK · LIULING YANG · 101896-1 · LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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0	03/24/23	ISSUED FOR CONSTRUCTION SUBMISSION	MK	YL

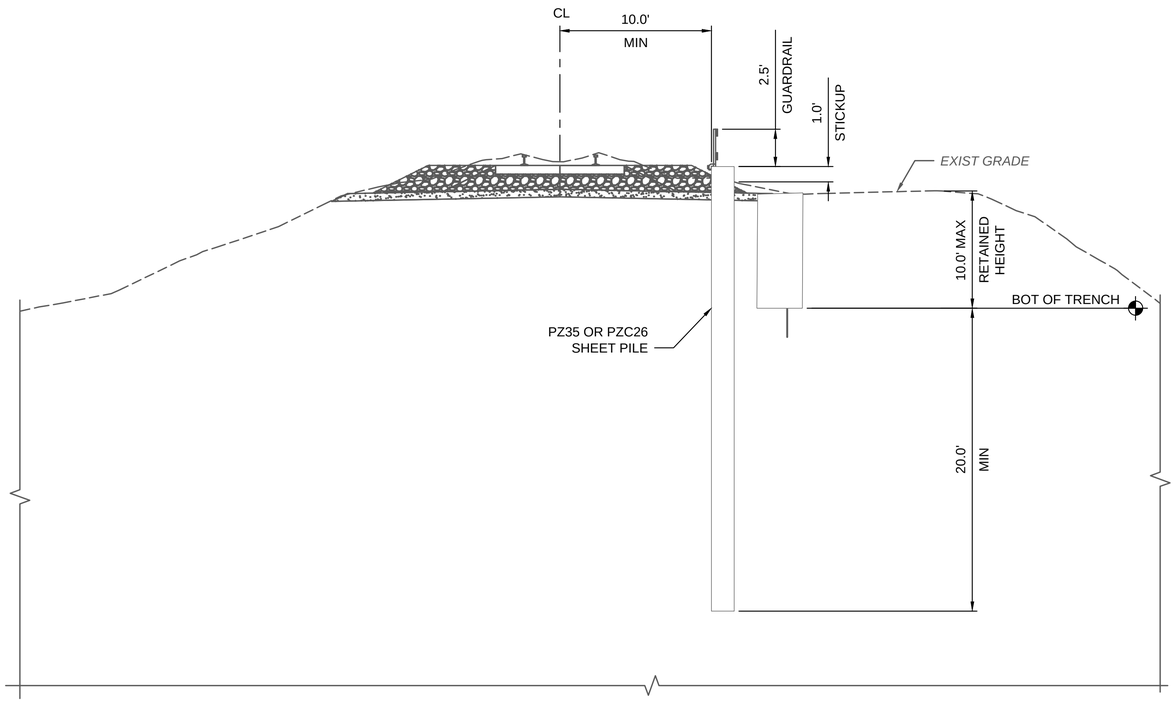
CHAMPLAIN HUDSON POWER EXPRESS

SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM

WETLAND AND AGRICULTURAL LAND WORKING SURFACE

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-613

DRAWN BY: | DESIGNED BY: MK | APPROVED BY: YL | SCALE AS SHOWN | REV. NO. 0 | DATE 5/8/2023 | SH.NO. | OF



TYPICAL SHEET PILE SHORING

SCALE: 1"=5'

NOTE: KIEWIT POLICY REQUIRES CONSULTATION WITH THE KIEWIT TEMPORARY STRUCTURES / CONSTRUCTION DEVICES EOR PRIOR TO PROCUREMENT OF MATERIALS OR FIELD IMPLEMENTATION OF THIS DATA.

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · LULING YANG · 701896-1 · LICENSED PROFESSIONAL ENGINEER

Luling.Yang

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

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BV	TK

CHAMPLAIN HUDSON POWER EXPRESS

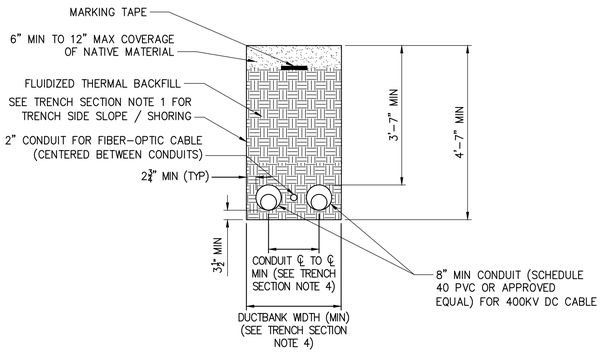
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM

TYPICAL TEMPORARY SHORING DETAILS

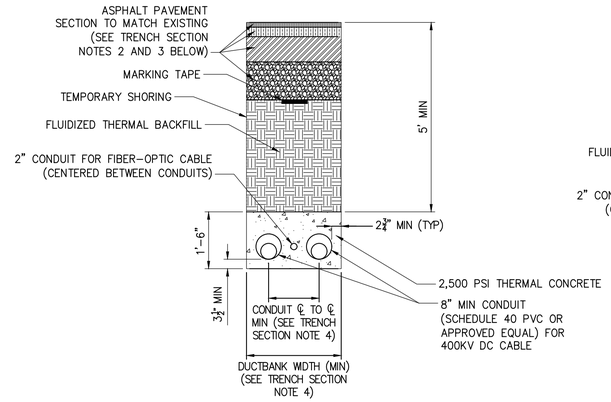
KIEWIT PROJECT NO. 21162

DRAWING NO. C-614

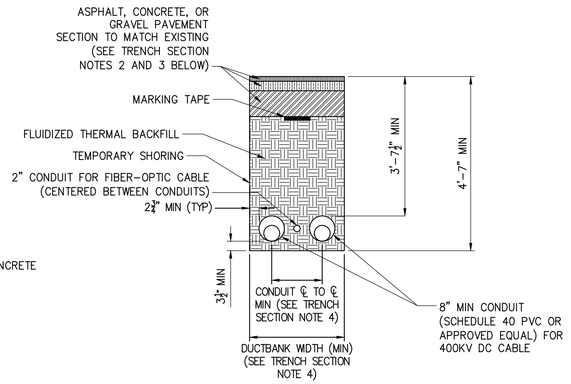
DRAWN BY: AR | DESIGNED BY: BV | APPROVED BY: TK | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. ## OF



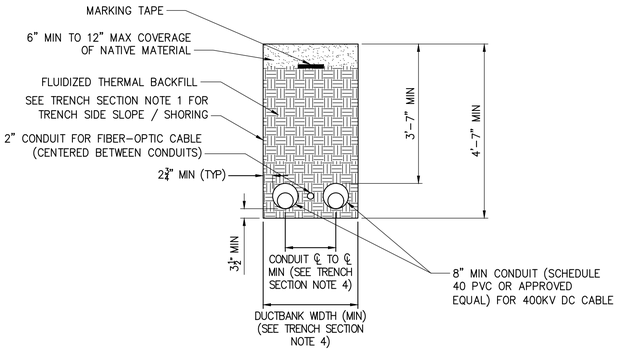
1A TRENCH SECTION – TYPICAL
NOT TO SCALE



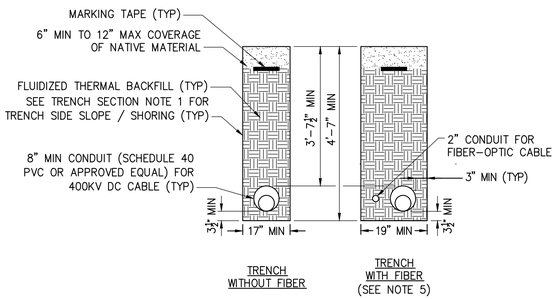
2A TRENCH SECTION – ROADWAY
NOT TO SCALE



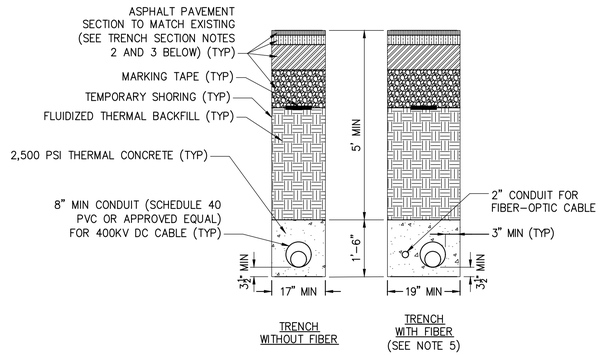
3A TRENCH SECTION – PAVEMENT
NOT TO SCALE



4A TRENCH SECTION – AG LANDS
NOT TO SCALE



1B SPLIT TRENCH SECTION – TYPICAL
NOT TO SCALE



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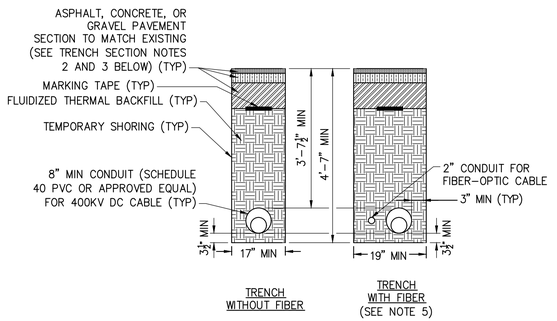
NOT TO SCALE



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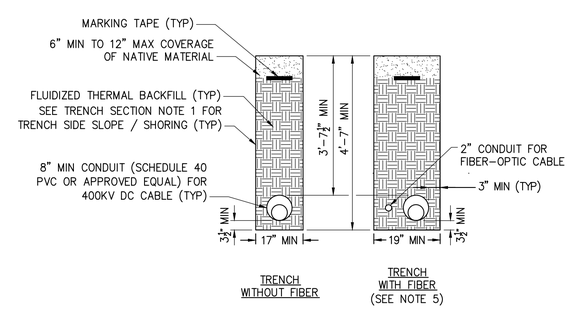
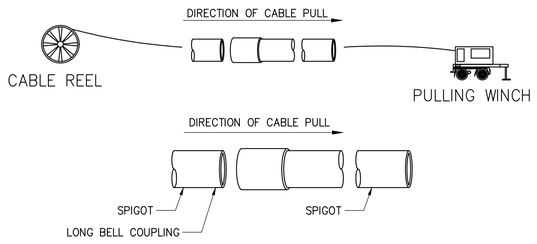
NOT TO SCALE

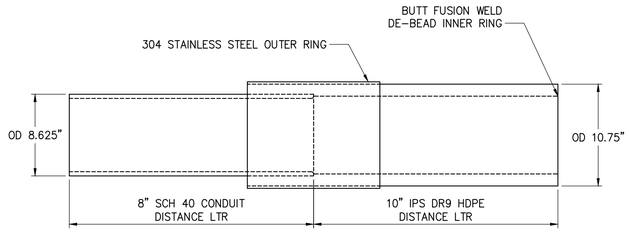


4B SPLIT TRENCH SECTION – AG LANDS
NOT TO SCALE

TRENCH SECTION 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 WIDTH (NOTE ABOVE PROFILE VIEW).
5. FIBER TO LEAD IN AND OUT OF (–) POLARITY HDD BORE, AS DENOTED ON PLAN AND PROFILE SHEETS.



5 TYPICAL COUPLING DIRECTION OF PULL DETAIL
NOT TO SCALE



6 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: 737-1008PVC40PVI09 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

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

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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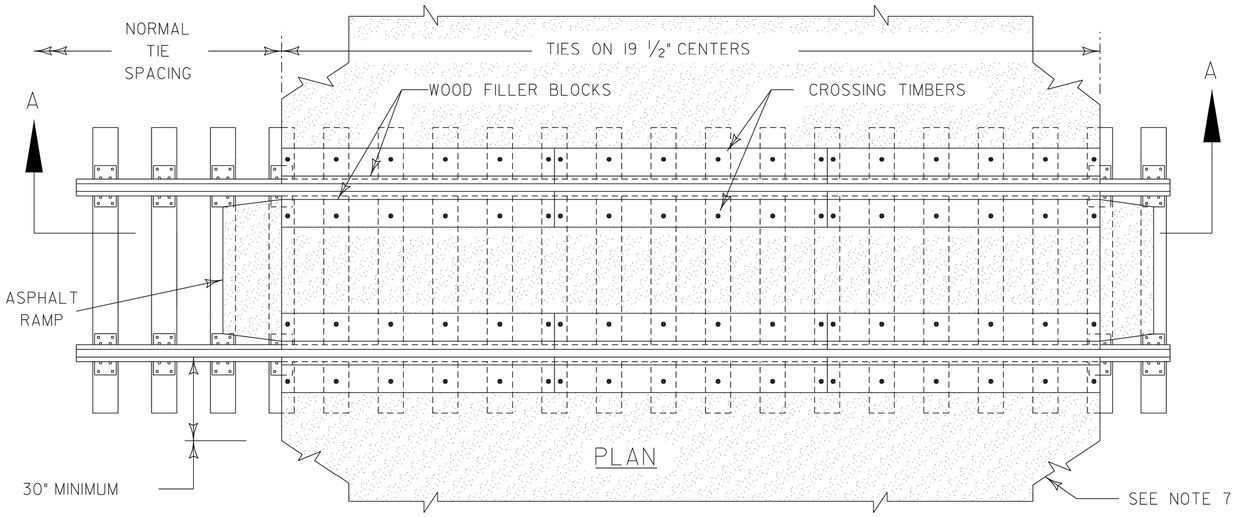
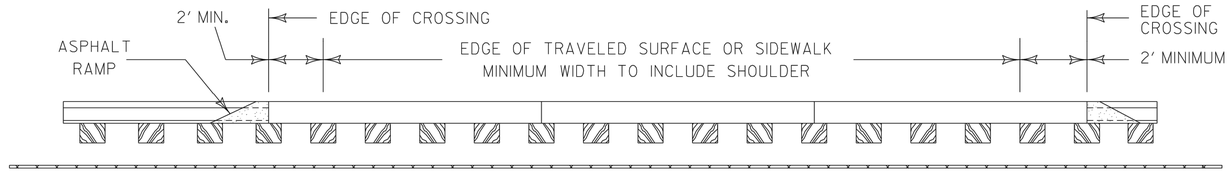
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
TRENCHING DETAILS

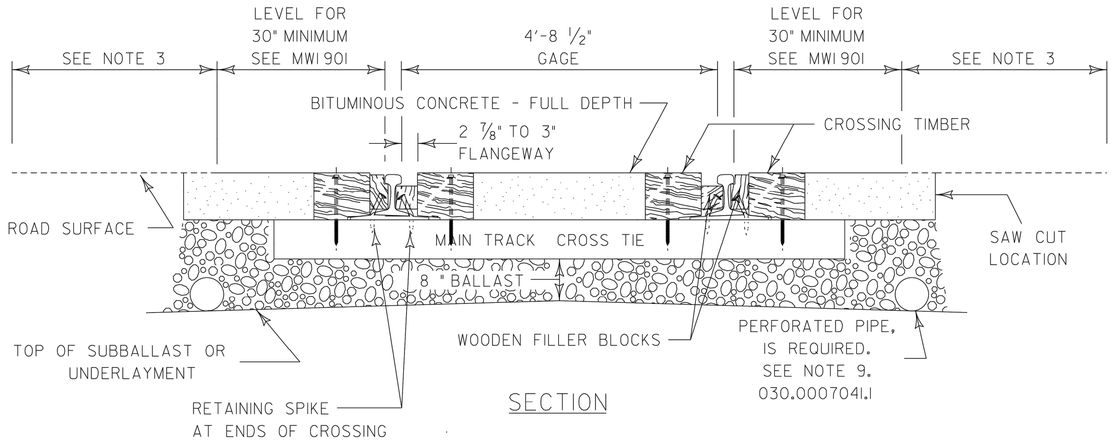
KIEWIT PROJECT NO. 21162

DRAWING NO. **C-621**

DRAWN BY: | DESIGNED BY: | APPROVED BY: | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. | OF







NOTES

2536

SHEET 1

1. MWI 901 (LASTEST REVISION) IS TO BE USED IN CONJUNCTION WITH THIS DRAWING.
2. FOR NEW CONSTRUCTION, HIGHWAY SHOULD INTERSECT RAILROAD AT OR NEARLY RIGHT ANGLES.
3. FOR NEW CONSTRUCTION, HIGHWAY SURFACE SHOULD NOT BE MORE THAN 3" HIGHER OR LOWER THAN TOP OF THE NEAR RAIL 30' FROM THE RAIL ALONG THE ROAD CENTERLINE, UNLESS TRACK SUPERELEVATION DICTATES OTHERWISE.
4. USE STATE D.O.T. SPECIFICATIONS FOR BITUMINOUS CONCRETE AND ASPHALT SPRAY TACK COAT FOR THE STATE IN WHICH THE CROSSING IS LOCATED.
5. CROSSINGS SHOULD BE CONTINUOUS BETWEEN ROADWAY OR SIDEWALK EDGES. IF NOT PRACTICABLE, ADEQUATE DRAINAGE MUST BE PROVIDED BETWEEN CROSSING AREAS TO ELIMINATE WATER POCKETS.
6. SLOPE PAVING TO RETURN TO ORIGINAL PAVEMENT SURFACE. LENGTH OF TRANSITION WILL DEPEND ON LOCAL CONDITIONS. USE A RUNOFF OF 1 IN. PER 10 FT. WHERE PRACTICABLE.
7. IF ROADBED STABILIZATION IS REQUIRED, EXTEND IT 10 FT. BEYOND EDGE OF CROSSING UNDER TRACK.
8. DRILL CROSSING TIMBERS OVER EACH TIE FOR TIMBER SCREW 11/16" DIA. WITH 2 1/2" DIA. x 1" COUNTERSINK.
9. PERFORATED PIPE TO BE INSTALLED WHERE OUTFALL IS PERMITTED TO PROVIDE POSITIVE DRAINAGE FROM TRACK STRUCTURE AND SUBGRADE. USE MIN. 4" DIA. PIPE AND LOCATE AT LEAST 12" BEYOND THE END OF TIE.

ORDERING INFORMATION		
ITEM NO.	RAIL WGT.	DESCRIPTION
042 3060115	115	CROSSING TIMBER / WOOD FILLER. ORDER BY "TRACK FEET" IN APPROXIMATE 8 FT. INCREMENTS. EACH "TRACK FOOT" INCLUDES 4 TIMBER SECTIONS AND 4 FILLER BLOCK PIECES. DELIVERED IN 8'- 1 1/2" LONG SECTIONS.
042 3060122	122	
042 1320132	132	
042 1360136	136	
042 1360140	140	
042 1360141	141	
013 8230080	ALL	SCREW, TIMBER 5/8"x 12" WITH TORX SQUARE WASHER HEAD.

CSX How tomorrow moves

NORMAL DUTY ROAD CROSSING
TIMBER AND ASPHALT ON WOOD TIES

APPROVED - DIRECTOR ENGINEERING STANDARDS

APPROVED - CHIEF ENGINEER ENGINEERING SERVICES

PREPARED BY: M. E. AUSTIN

ISSUED: MARCH 22, 2005
REVISED: APRIL 7, 2016

CHPE Champlain Hudson Power Express

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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION		

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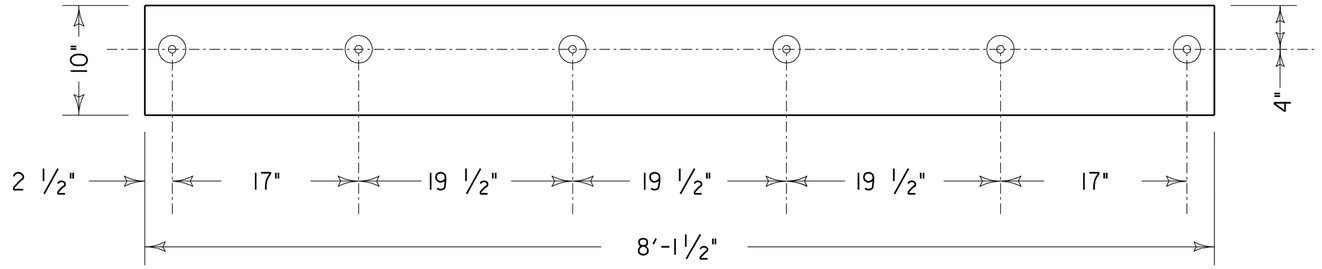
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
CSX CROSSING DETAILS 1 OF 2

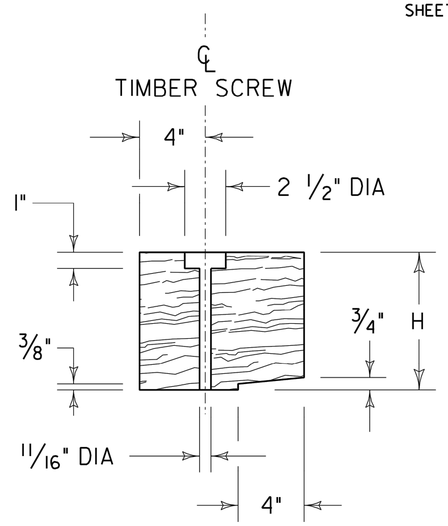
KIEWIT PROJECT NO. 21162

DRAWING NO. **C-625**

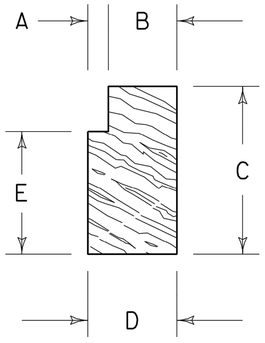
SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. ---- OF



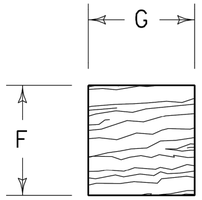
CROSSING TIMBER
PLAN VIEW



CROSSING TIMBER
SECTION AT SCREW LOCATION



FIELD SIDE
FILLER BLOCK DETAIL



GAGE SIDE
FILLER BLOCK DETAIL

NOTES

1. TIMBERS ARE NOT PREDRILLED UNLESS SPECIFIED IN THE REQUISITION.
2. GAGE AND FIELD TIMBERS ARE IDENTICAL.
3. TOLERANCES:
   A, E, AND G : 1/16" +/-
   ALL OTHERS : 1/8" +/-
4. CROSSING TIMBER TO BE OAK OR GUM. TREATMENT PER MW SPEC 99001 LIKE CROSSTIES
5. FILLER BLOCKS TO BE SOUTHERN YELLOW PINE GRADE 2 WITH 10 LB / CU FT TREATMENT
6. TIMBERS & FILLERS TO BE MARKED FOR RAIL SIZE

RAIL WGT	A	B	C	D	E	F	G	H
115 RE	3/4	2 3/4	5 3/8	3 1/2	3 7/8	3 3/8	4	7 1/2
122 CB	3/4	2 3/4	5 5/8	3 1/2	4	3 5/8	4	7 1/2
132 RE	5/8	2 7/8	6	3 1/2	4 1/2	3 7/8	3 7/8	8
136 RE	5/8	2 7/8	6 1/4	3 1/2	4 1/2	3 7/8	3 7/8	8 3/8
140 RE	3/4	2 3/4	6 1/16	3 1/2	4 5/16	3 7/8	4	8 3/8
141 RE	11/16	2 13/16	6 3/8	3 1/2	4 1/2	3 7/8	3 7/8	8 3/8

ALL DIMENSIONS ARE IN INCHES.

CSX TRANSPORTATION

TIMBER AND ASPHALT CROSSING
CROSSING TIMBER AND FILLER BLOCK DETAILS

J. Kapczynski
APPROVED - CHIEF ENGINEER
MAINTENANCE OF WAY

James D. Bayley
APPROVED - VICE PRESIDENT
ENGINEERING

PREPARED BY:
J. E. BEYERL

ISSUED: MARCH 22, 2005
REVISED: NOVEMBER 14, 2005

CHPE Champlain Hudson Power Express

Kiewit

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
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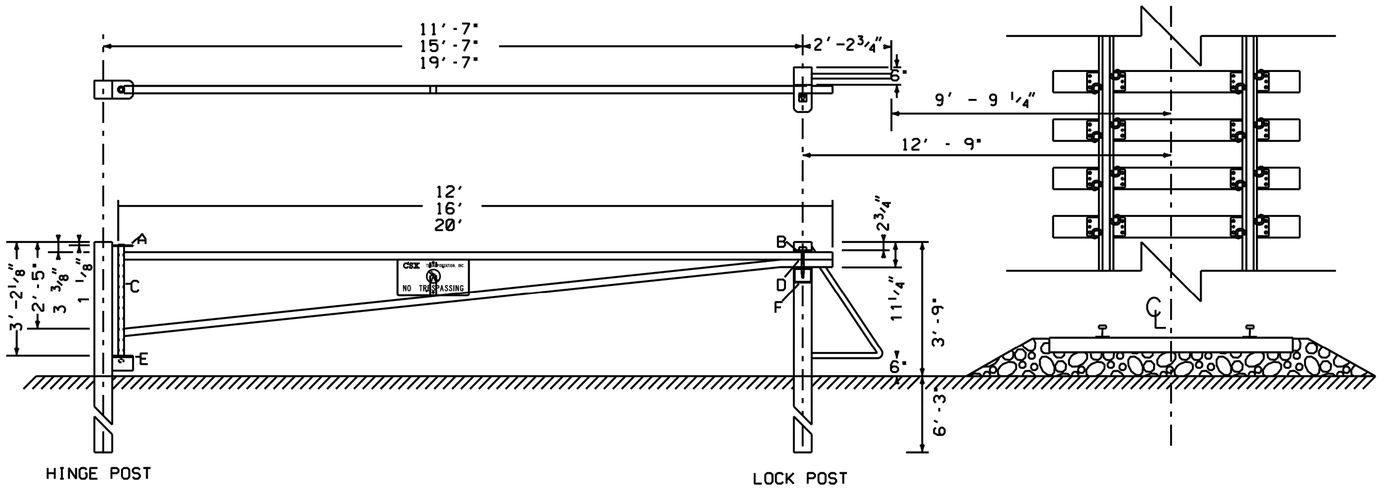
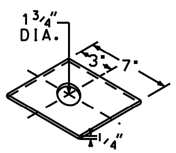
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
CSX CROSSING DETAILS 2 Of 2

KIEWIT PROJECT NO. 21162
DRAWING NO. C-626

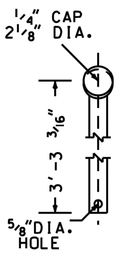
DRAWN BY: | DESIGNED BY: | APPROVED BY: | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. ---- OF

2614





PART A



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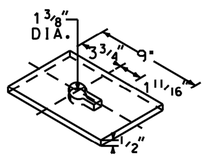

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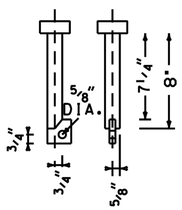

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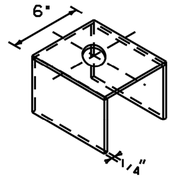

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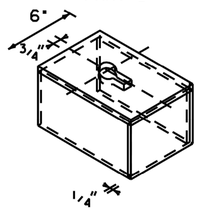

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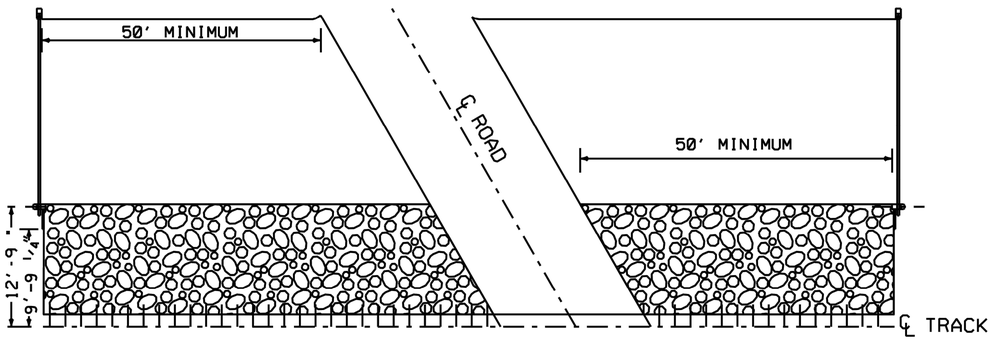


NOTES

1. METAL WEDGE SIGN MOUNT SHALL BE 2 1/2" WIDE, WELDED IN THE CENTER OF THE GATE WITH HOLES DRILLED FOR THE ATTACHMENT OF NO TRESPASSING SIGN
2. SIGN SPECIFICATION IS FOUND IN STANDARD DRAWING 2703
3. ENTIRE GATE ASSEMBLY TO BE PAINTED AREMA YELLOW.
4. CSX SWITCH LOCK TO BE USED FOR GATE LOCK.

DESCRIPTION	UNITS	CLASS	ITEM NUMBER
GATE, RIGHT OF WAY, 12'	EACH	014	0409045
GATE, RIGHT OF WAY, 16'	EACH	014	0409043
GATE, RIGHT OF WAY, 20'	EACH	014	0409041
LOCK, SWITCH AMERICAN H10	EACH	450	0008580

CSX TRANSPORTATION

RIGHT-OF-WAY SECURITY GATE

J. E. BEYERL FOR
APPROVED - DIRECTOR
ENGINEERING STANDARDS

PREPARED BY:
M. E. AUSTIN

APPROVED - VICE PRESIDENT
ENGINEERING

ISSUED: JANUARY 10, 2011
REVISED : INITIAL ISSUE

CHPE Champlain Hudson Power Express

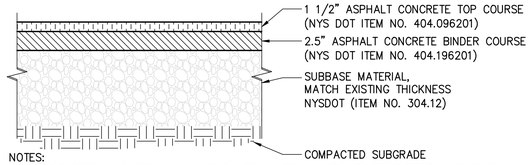
Kiewit

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION		

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
SECURITY GATE DETAIL

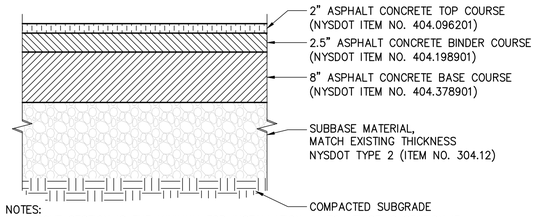
KIEWIT PROJECT NO. 21162
DRAWING NO. C-627

DRAWN BY: | DESIGNED BY: | APPROVED BY: | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. ---- OF



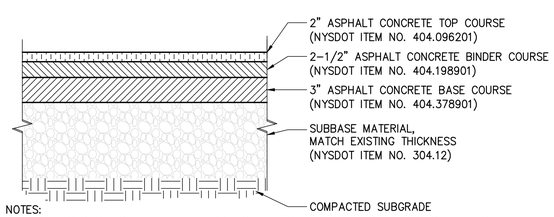
NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS.
3. APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM407.0103

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



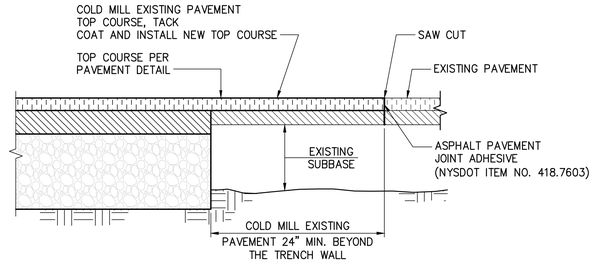
NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS
3. APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM407.0103

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



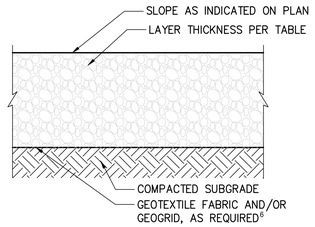
NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS
3. APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM407.0103

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 (WITHIN NYSDOT, COUNTY, OR TOWN ROADWAYS)
SCALE: N.T.S.

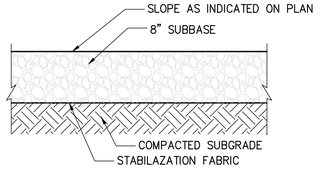


5 TEMPORARY ACCESS ROAD
SCALE: N.T.S.

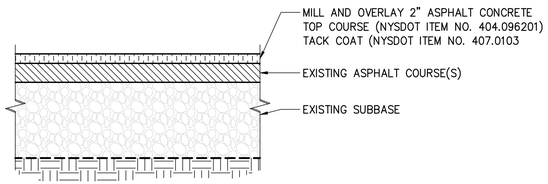
TEMPORARY ACCESS ROAD SECTION[1,2,3,4]

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.

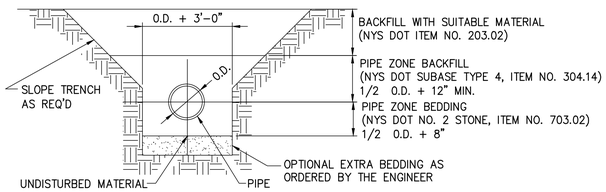


6 GRAVEL PAVEMENT
SCALE: N.T.S.



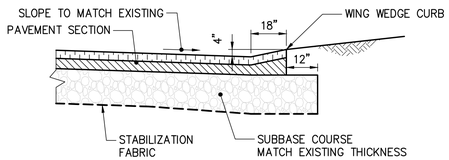
NOTES:
1. APPLY TACKCOAT TO MILLED SURFACE PRIOR TO PLACING ASPHALT CONCRETE TOP COURSE.
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

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.



NOTE:
1. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

9 WING WEDGE CURB DETAIL
SCALE: N.T.S.

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · ROBERT JASON NEIN · 088948 · LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	06/09/2023	ISSUED FOR CONSTRUCTION SUBMISSION		

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 8 (PACKAGE 5A) - CSX: ROTTERDAM - BETHLEHEM
SURFACE RESTORATION DETAILS

KIEWIT PROJECT NO. 21162

DRAWING NO. C-631

DRAWN BY: | DESIGNED BY: | APPROVED BY: | SCALE AS SHOWN | REV. NO. 0 | DATE 06/09/2023 | SH.NO. | OF

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
   - 5.4. ANSI-SCTE TIER 22 (FOR HANDHOLES ONLY, SEE MATERIALS 7.1 BELOW)
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.
   - 9.2. TEMPERATURE GRADIENT.
10. SEISMIC LOADING
    - 10.1. BURIED STRUCTURES ARE NOT SUBJECT TO SEISMIC PROVISIONS.

MATERIALS:

1. REINFORCED CONCRETE
   - 1.1. f'c = 4,500 PSI AT 28 DAYS, UNO
   - 1.2. F2 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 2017
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

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · MARK WANCHUN JU · 099036 · LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
2	05/03/2023	RFC - VAULT UPDATES	JNK	OO
1	02/10/2023	REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES	JNK	OO
0	12/21/2022	IFC SUBMISSION	JNK	OO

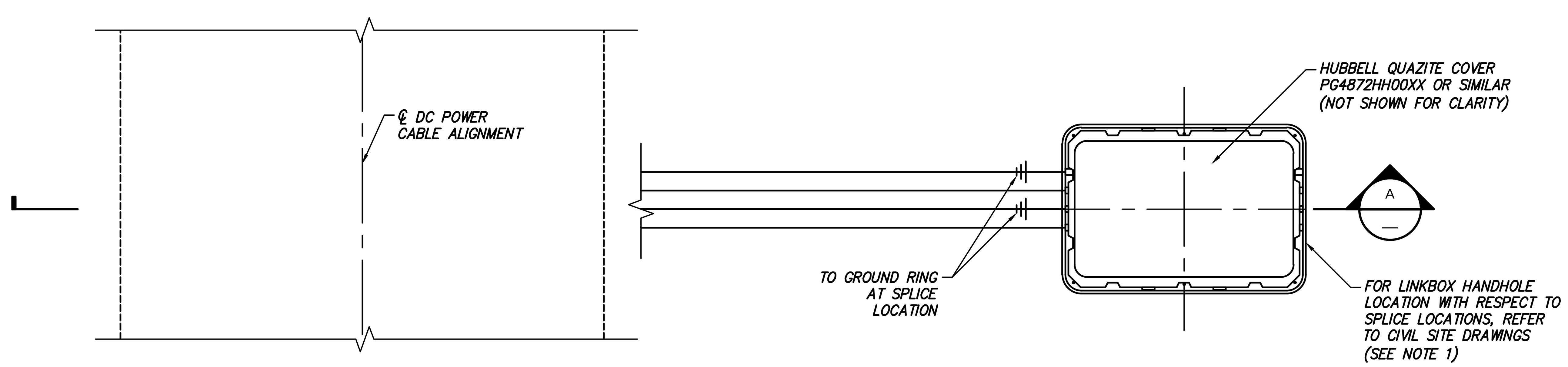
CHAMPLAIN HUDSON POWER EXPRESS

STRUCTURAL GENERAL NOTES AND ABBREVIATIONS

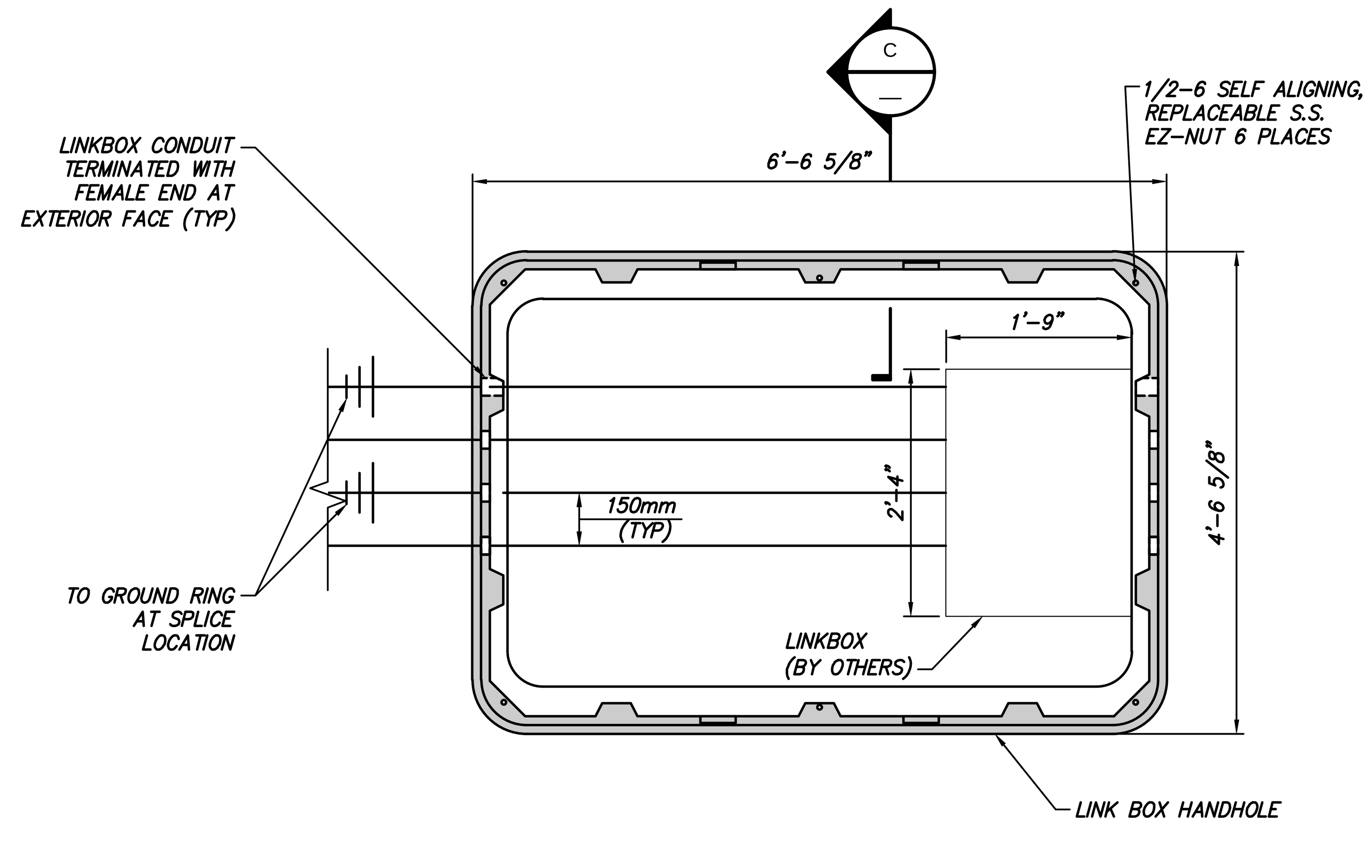
KIEWIT PROJECT NO. 21162

DRAWING NO. S-705

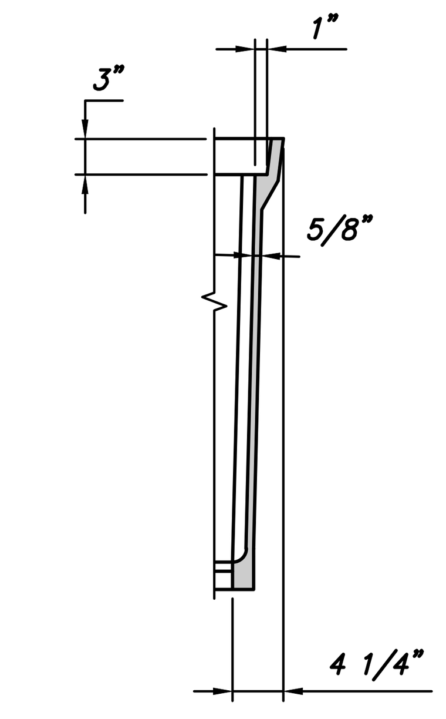
DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | SCALE AS SHOWN | REV. NO. 2 | DATE | SH.NO.



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



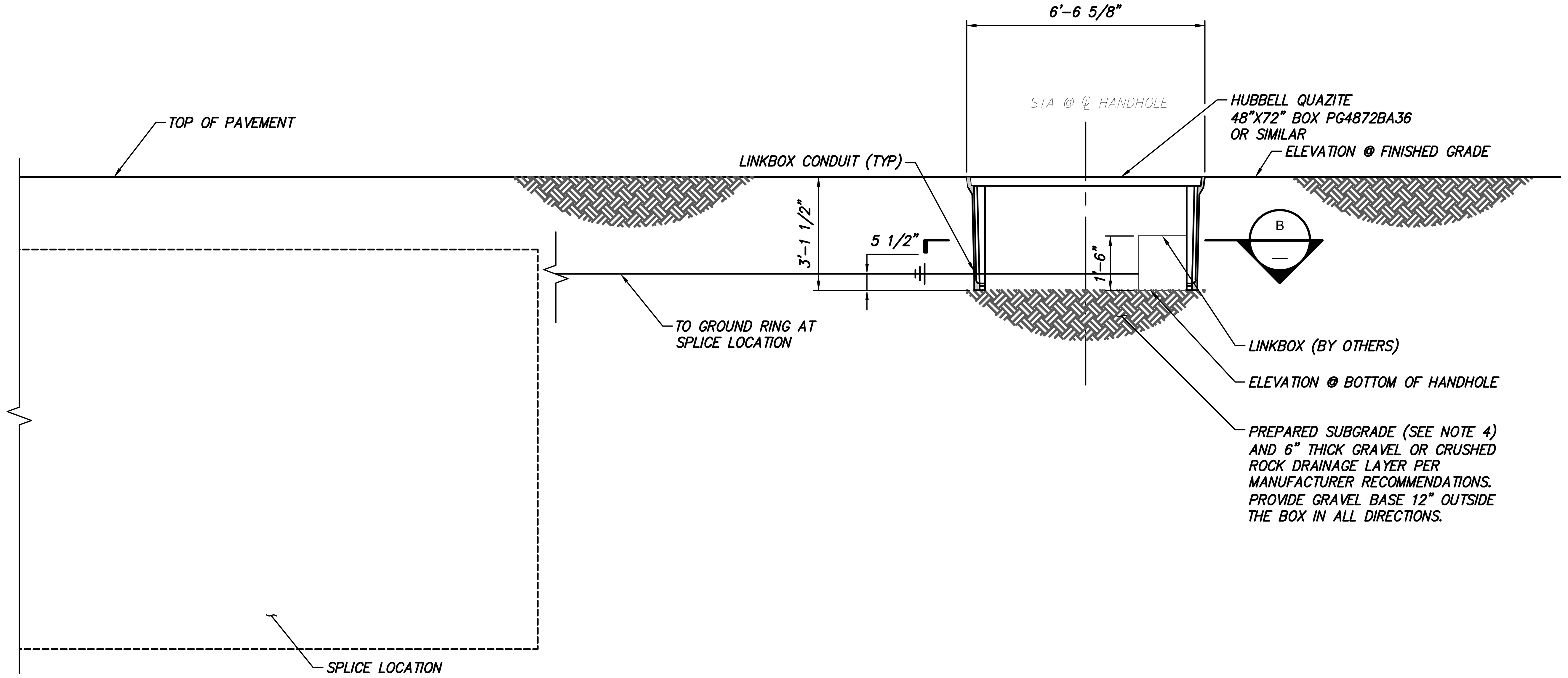
SECTION B
SCALE: 3/4" = 1'-0"



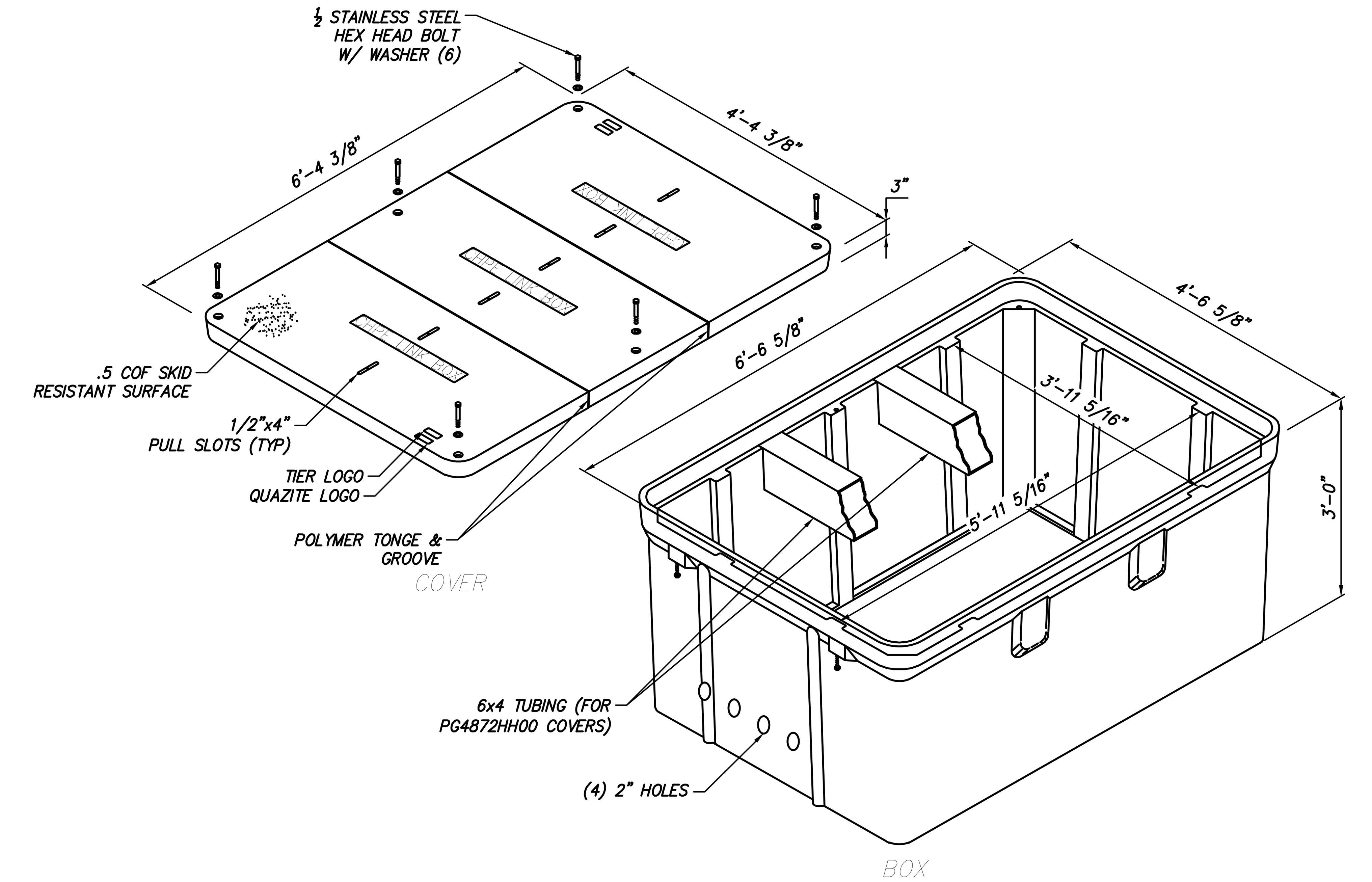
SECTION C
SCALE: 3/4" = 1'-0"

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



ISOMETRIC VIEW
SCALE: NTS

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

CHPE Champlain Hudson Power Express

Kiewit

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

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
2	05/03/2023	RFC - VAULT UPDATES	JNK	OO
1	02/10/2023	REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES	JNK	OO
0	12/21/2022	IFC SUBMISSION	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS

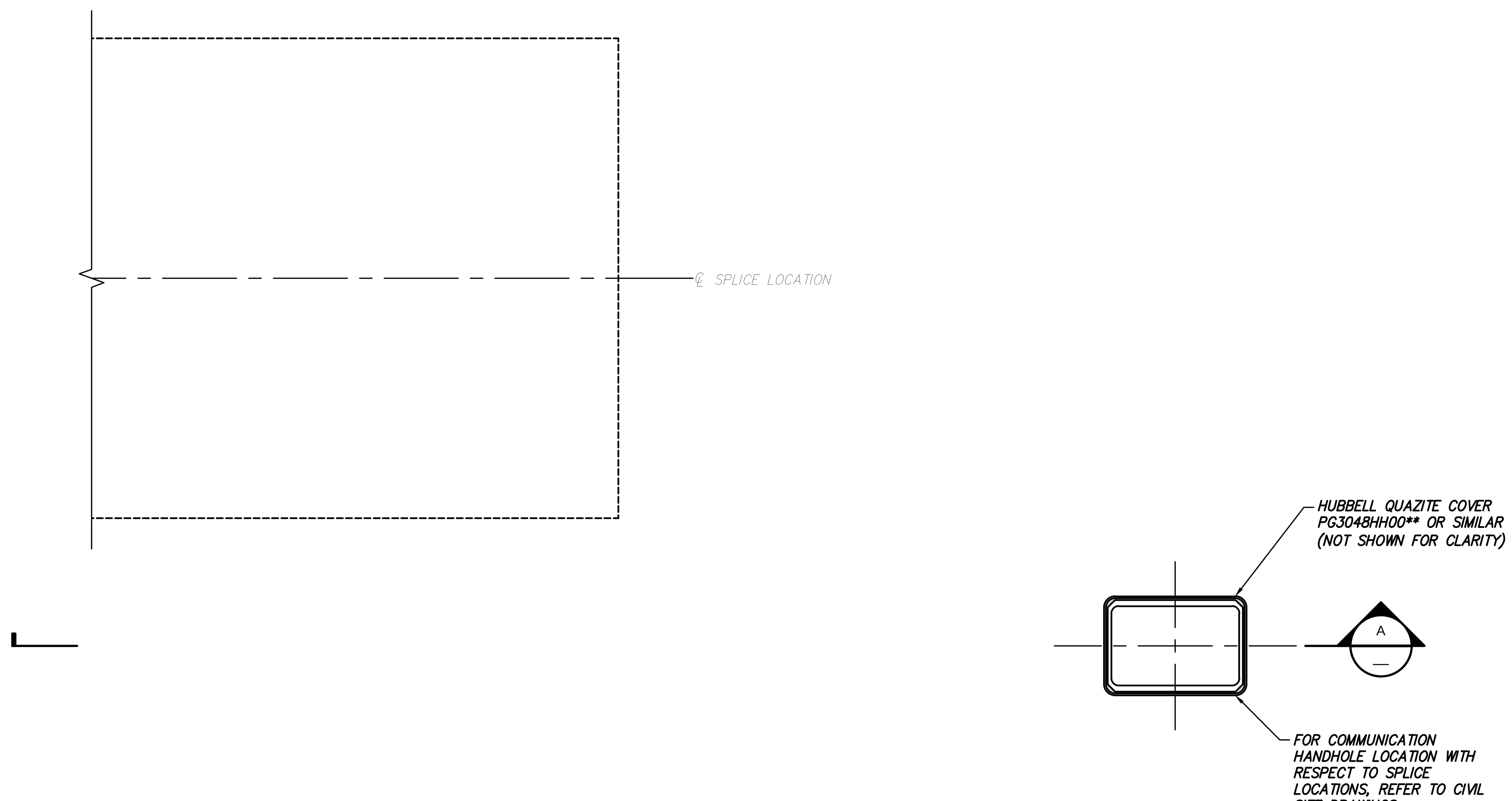
FRP LINK BOX HANDHOLES

KIEWIT PROJECT NO. 21162

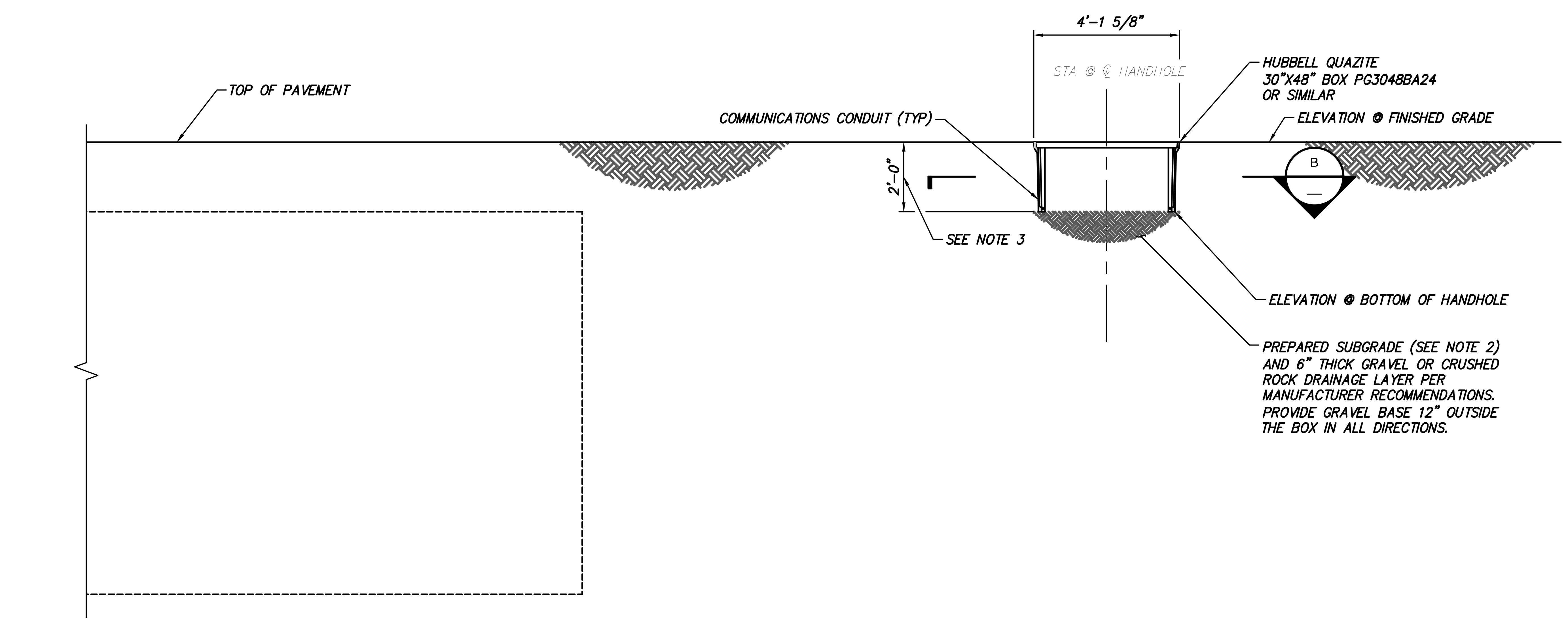
DRAWING NO. S-711

DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO

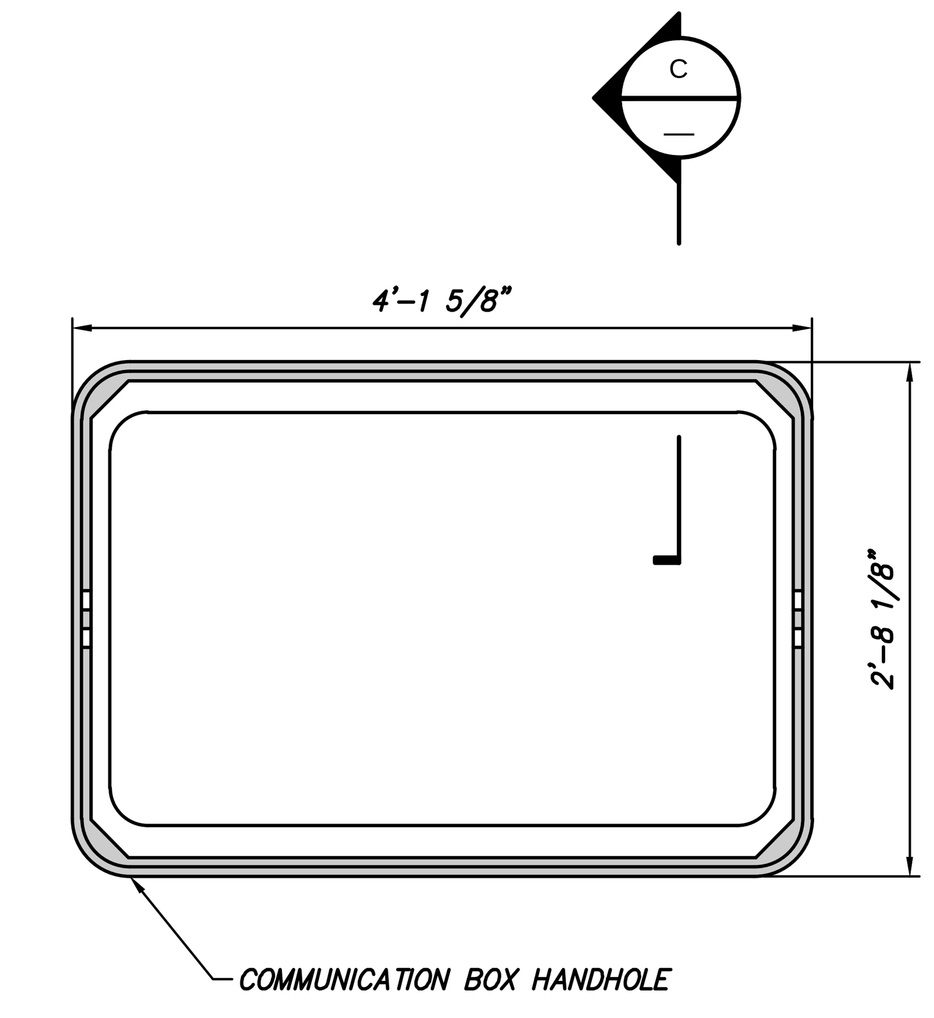
SCALE: AS SHOWN | REV. NO. 2 | DATE 5/03/2023 | SH.NO.



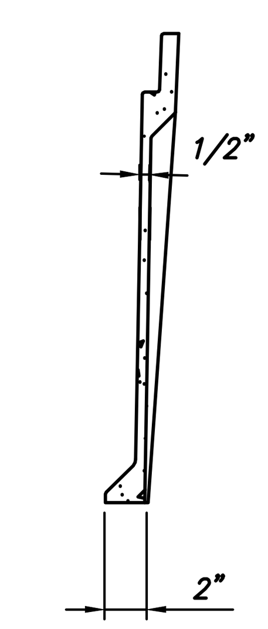
PLAN VIEW
SCALE: 3/8" = 1'-0"



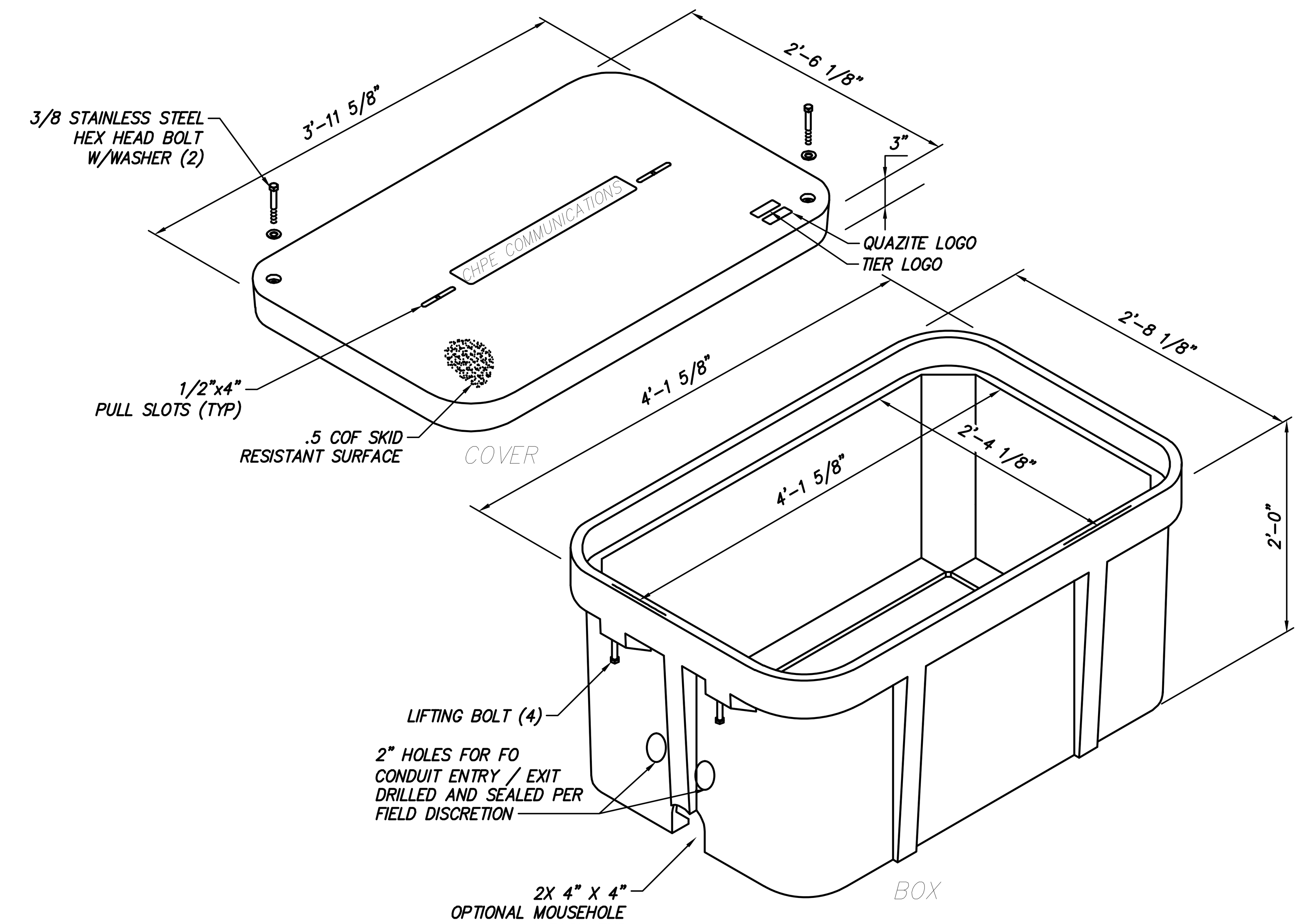
SECTION A
SCALE: 3/8" = 1'-0"



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



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



ISOMETRIC VIEW
SCALE: NTS

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

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.

CHPE Champlain Hudson Power Express

Kiewit

STATE OF NEW YORK · MARK WANCHUN JEN · 090036 · LICENSED PROFESSIONAL ENGINEER

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
2	05/03/2023	RFC - VAULT UPDATES	JNK	OO
1	02/10/2023	REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES	JNK	OO
0	12/21/2022	IFC SUBMISSION	JNK	OO

CHAMPLAIN HUDSON POWER EXPRESS

FRP COMMUNICATION HANDHOLES

DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO

SCALE: AS SHOWN
REV. NO. 2

KIEWIT PROJECT NO. 21162

DRAWING NO. S-771

DATE

SH.NO.