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

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
- 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
- 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.

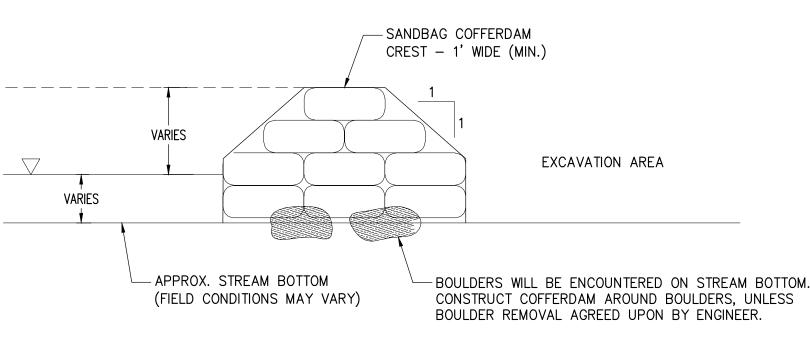
THE FOLLOWING BMPS WILL BE IMPLEMENTED DURING WATER BARRIER INSTALLATION:

- 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
- 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.

__INTAKE HOSE (IF NECESSARY) SPOIL PILE 10' FROM TOP OF BANK — SANDBAG COFFERDAM OPEN PIPELINE TRENCH — ___________ TRENCH PLUG-- SPARE PUMP - FILTER SOCK -SPILL CONTAINMENT DEVICE EROSION AND SEDIMENTATION CONTROL TO BE PLACED ACROSS THE EQUIPMENT CROSSING AT KEEP EQUIPMENT THE END OF THE DAY CROSSING FREE OF MUD/SOIL EQUIPMENT CROSSING WOOD MAT BRIDGE WHEN SHOWN ON THE PLAN=AND PROFILE DRAWINGS STREA **BANK** STRAW BALES OR SAND BAGS TO BE PLACED DURING NO CONSTRUCTION ACTIVITY DISCHARGE HOSE ENERGY DISSIPATOR AT THE END OF DISCHARGE (SEE DEWATERING ENERGY DISSIPATOR OUTLET DETAIL)

- SCHEDULE CONSTRUCTION DURING LOW FLOW PERIOD, IF POSSIBLE. 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.
- 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.

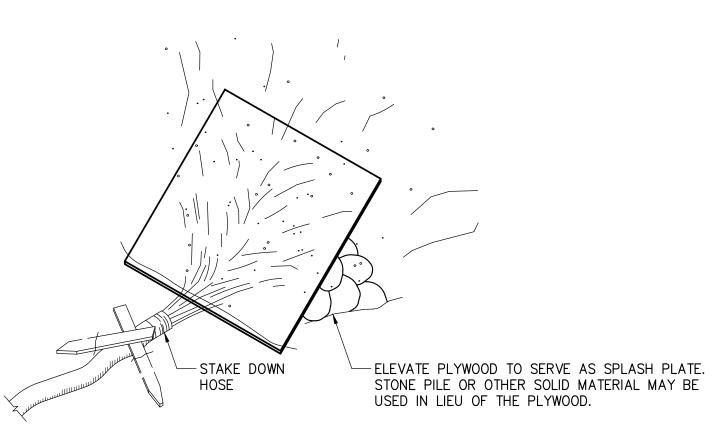
DAM AND PUMP AROUND STREAM CROSSING



SANDBAG COFFERDAM DETAIL

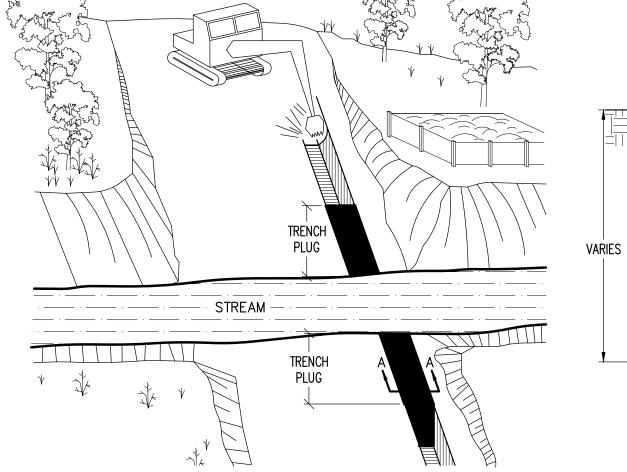
SAND BAGS SHALL BE FILTER FABRIC TYPE AND BE DOUBLE BAGGED.

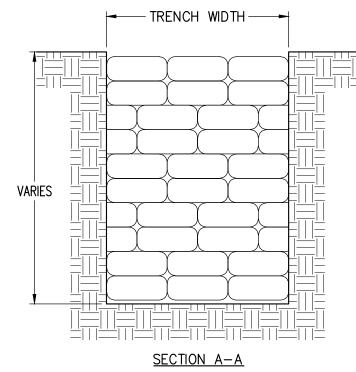
PORTADAM, BY PORTADAM, INC. SHALL BE CONSIDERED ACCEPTABLE SUBSTITUTE TO SAND BAGS.



-FILTER SOCK OR HAY BALES

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





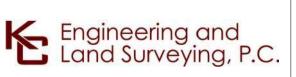
TRENCH PLUG DETAIL

SAND BAGS SHALL BE FILTER FABRIC TYPE AND BE DOUBLE BAGGED

PORTADAM, BY PORTADAM, INC. SHALL BE CONSIDERED ACCEPTABLE SUBSTITUTE TO SAND BAGS.









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ISSUED FOR CONSTRUCTION SUBMISSION DB APP DRAWN BY: BL DESIGNED BY: BL APPROVED BY: SL REV. NO. SUBMITTAL / REVISION DESCRIPTION

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN **EROSION AND SEDIMENT CONTROL DETAILS**

KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO.

C-603

AS NOTED DATE 0 SH.NO.

- 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
- C. CHECK DAMS ARE NOT INTENDED TO, AND WILL NOT, FILTER SEDIMENT FROM
- 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
- 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.

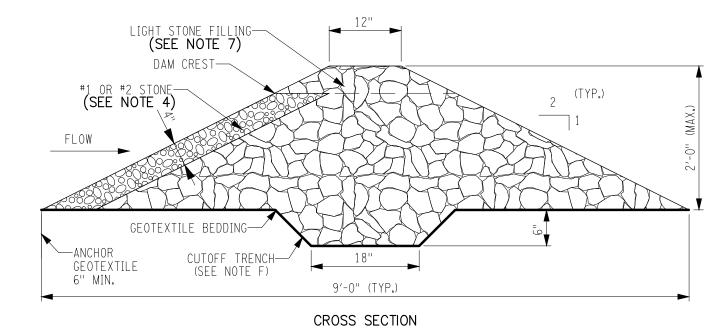
- 1. MAXIMUM DRAINAGE AREA CONTRIBUTING TO TEMPORARY STONE CHECK DAM
- 2. MEASURES SHALL BE INSPECTED EVERY (7) CALENDAR DAYS AND SHOULD BE INSPECTED AFTER EACH RUNOFF EVENT. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
- 3. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE 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.

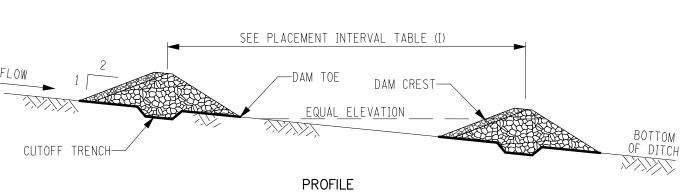
STONE CHECK	DAM PLACEMENT INTERVAL *
DITCH SLOPE	PLACEMENT INTERVAL (I) (BASED ON 2' HEIGHT)
1 %	200'
2 %	100′
3 %	66′
4 %	50′
5 %	40′
6 %	33′
8 %	25′
4.0 1/	1

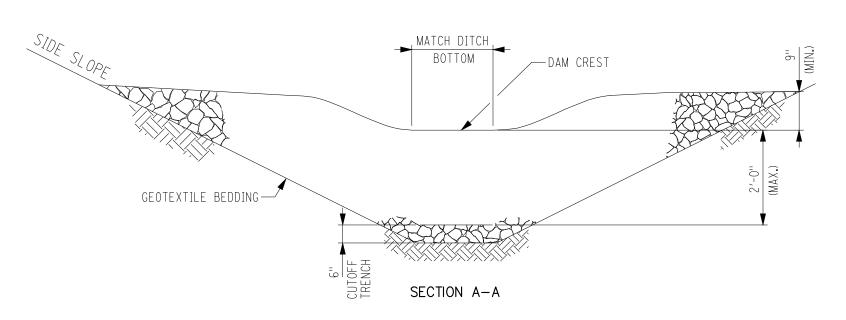
DITCH SLOPE	PLACEMENT INTERVAL (I) (BASED ON 2' HEIGHT)	
1 %	200′	* I = H / S
2 %	100′	 WHERE:
3 %	66′	WIILING.
4 %	50′	I = CHECK DAM
5 %	40'	SPACING INTERVAL
6 %	33′	H = CHECK DAM HEIGHT
8 %	25′	The street street treet
10 %	20′	S = CHANNEL SLOPE
		,

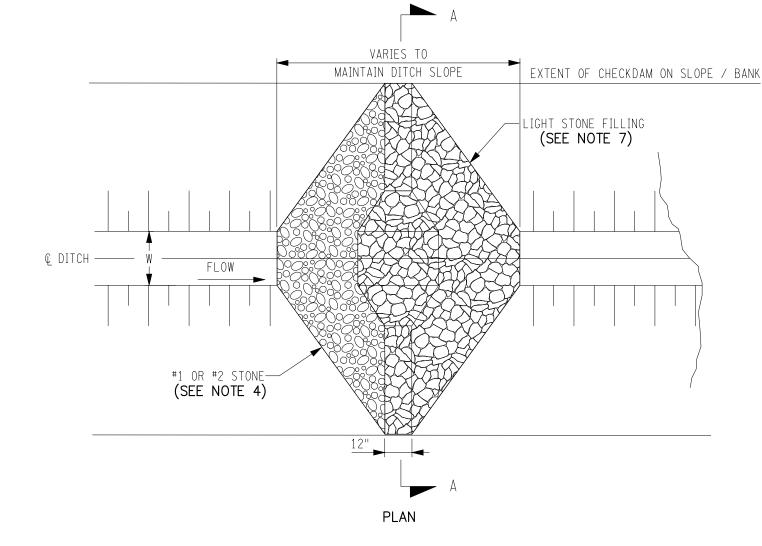
TEMPORARY CHEC	CK DAM VOLUMES
DITCH SIDE SLOPE	VOLUME (CY)
1:2	3.45 CY ±
1:3	4.25 CY ±
1 : 4	5.43 CY ±
1:6	7.81 CY ±

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

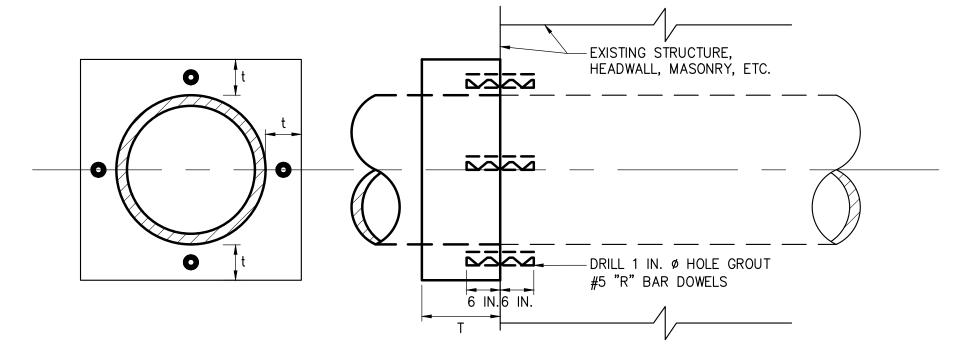








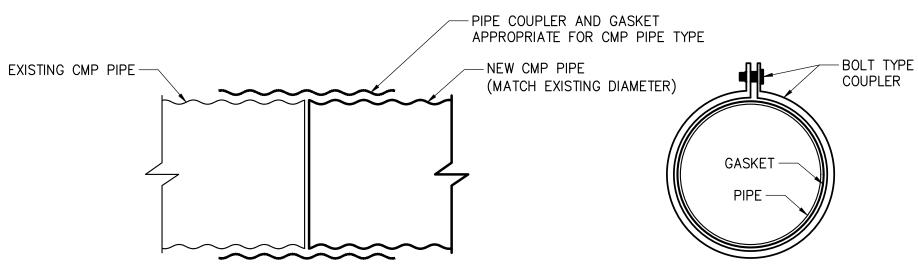
TEMPORARY CHECK DAM DETAIL



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

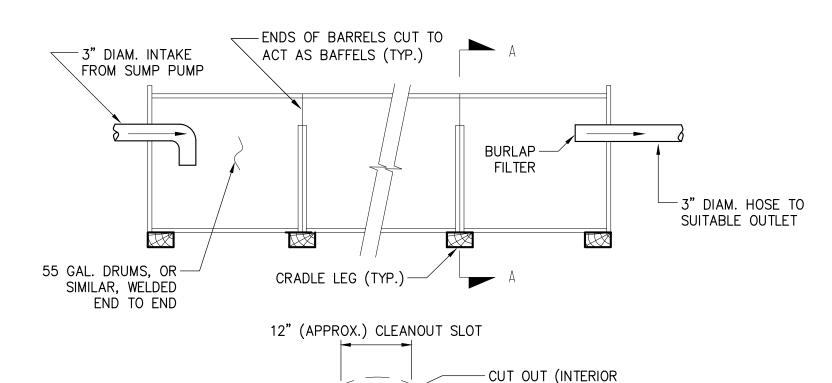
* SPACE EVENLY AROUND PIPE AS INDICATED.

CONCRETE COLLARS FOR PIPE EXTENSIONS



CORRUGATED METAL PIPE EXTENSIONS





SECTION A-A

ISSUED FOR CONSTRUCTION SUBMISSION

SUBMITTAL / REVISION DESCRIPTION

2" X 4" CRADLE

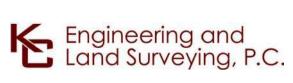
CONSTRUCTION SPECIFICATIONS

- 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
- 3. ALL SEDIMENT COLLECTED IN THE TANK SHALL BE DISPOSED OF IN A SEDIMENT TRAPPING DEVICE OR AS APPROVED BY THE INSPECTOR.

PORTABLE SEDIMENT TANK









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WALLS ONLY)

APPROX. 3/4 DIAM. OF BARREL END TO ACT AS BAFFLE

BL SL

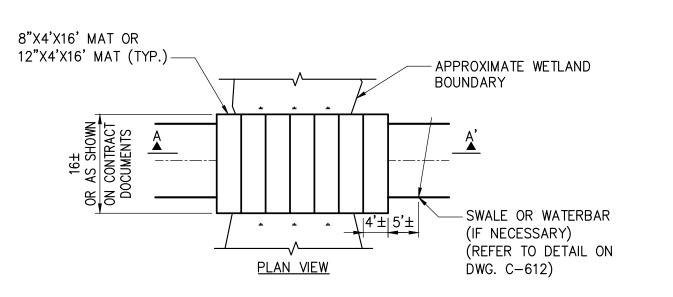
CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN EROSION AND SEDIMENT CONTROL DETAILS

DB APP DRAWN BY: BL DESIGNED BY: BL APPROVED BY: SL REV. NO.

KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO.

C-604

AS NOTED DATE



WATERWAY FLOW REFER TO NOTE 6 -APPROXIMATE WETLAND BOUNDARY - TIMBER MAT -SWALE OR WATERBAR (IF NECESSARY) (REFER TO DETAIL ON PLAN VIEW DWG. C-612)

8"X4'X16' MAT OR 12"X4'X16' MAT (TYP.)— EXISTING GRADE — ! APPROXIMATE WETLAND ! BOUNDARY - TRANSITION TO TIMBER MATS AS NECESSARY SECTION A-A'

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.

CLEAR SPAN, REFER TO NOTE 6 -APPROXIMATE WETLAND — EXISTING GRADE BOUNDARY - TRANSITION TO TIMBER MAX CLEAR SPAN MIN MATS AS NECESSARY -MIN 2 LAYERS OF SECTION B-B' CENTER MAT SUPPORT

> 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.

CONTRACTOR SHALL CONSULT WITH TEMPORARY STRUCTURES AND CONSTRUCTION DEVICES ENGINEER FOR APPROPRIATE MATTING SIZES AND LENGTHS AND REQUIRED SOIL BEARING PRESSURES.

OPTIONAL STEEL PL BASED ON

TIMBER MATTING (WETLAND CROSSING)

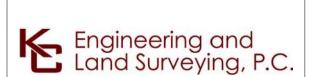
GENERAL NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL MIXED OAK WITH A MINIMUM BENDING STRESS OF 1250 PSI OR BETTER.

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









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AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

07/28/2023

ISSUED FOR CONSTRUCTION SUBMISSION

SUBMITTAL / REVISION DESCRIPTION

	CHAMPLAIN HUDSON POWER EXPRESS	
	CHAMILAIN HODOON LOVELY EXLINESS	
	SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN	
	,	
	WETLAND CROSSING DETAILS	

DB APP DRAWN BY: BL DESIGNED BY: BL APPROVED BY: SL REV. NO.

BL SL

C-611

AS NOTED DATE 0 SH.NO.

120174 DRAWING NO.

KIEWIT PROJECT NO. 21162 KC PROJECT NO.

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

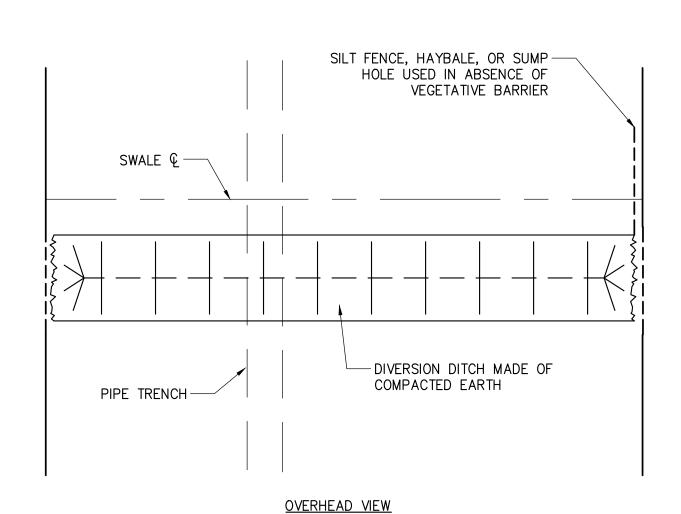
- 1. AT THE PROPOSED INTERCEPTOR DITCH LOCATION ESTABLISH A HORIZONTAL CONTOUR LINE (USING A POCKET TRANSIT OR HAND LEVEL) WHICH EXTENDS COMPLETELY ACROSS THE DISTURBED RIGHT-OF-WAY. THIS LINE WILL ALWAYS BE PERPENDICULAR TO THE DIRECTION OF WATER FLOW AND SHOULD BE PARALLEL TO THE MAP CONTOURS SHOWN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

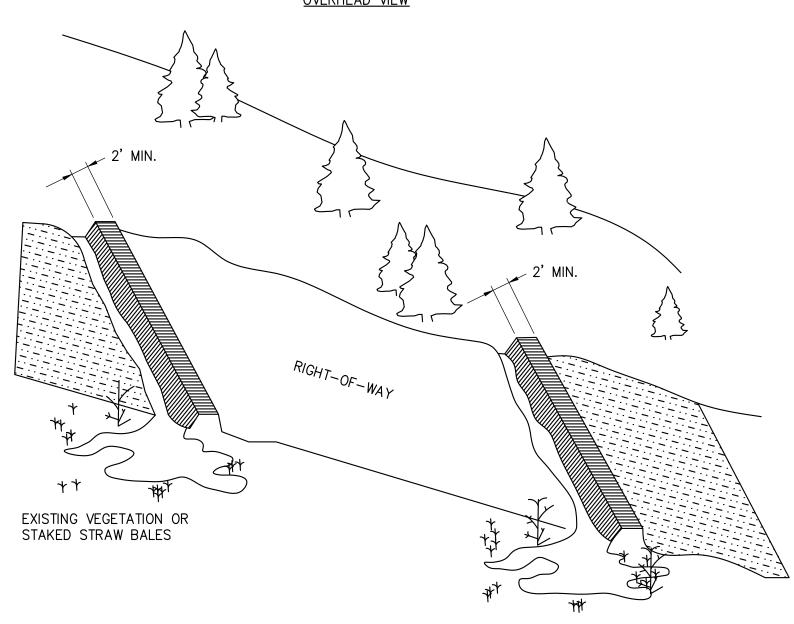
TEMPORARY DRAINAGE DITCH

- 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.

OUTEET	
4% FLOV	V 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





PERMANENT DIVERSION DITCH DETAIL

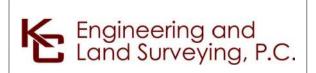
COMPACTED EARTH-18" MIN. HEIGHT MIN. WIDTH

1. WATERBARS ARE NOT USED IN THIS PACKAGE/SEGMENT. DETAILS ARE PROVIDED SHOULD WATERBARS BE DEEMED NECESSARY BY THE ENVIRONMENTAL INSPECTOR BASED ON FIELD CONDITIONS.

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









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0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	BL	SL	CHAMPLA SEGMENT 7 (PACKAG	Ε		PA	N AM
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: BL DE	ESIGNED BY:	BL	APPROVED BY:	SL	SCALE REV. NO.

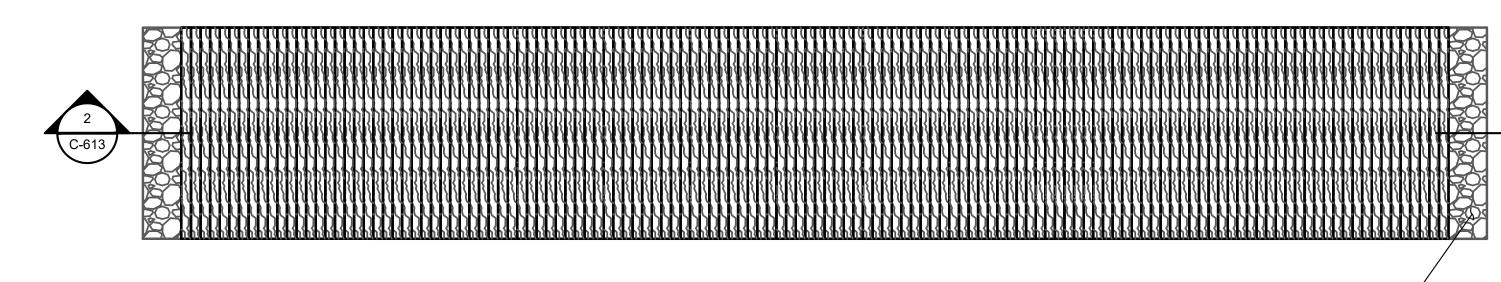
CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN WATERBAR DETAILS

KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO.

C-612

AS NOTED DATE

07/26/2023 OF 0 SH.NO.



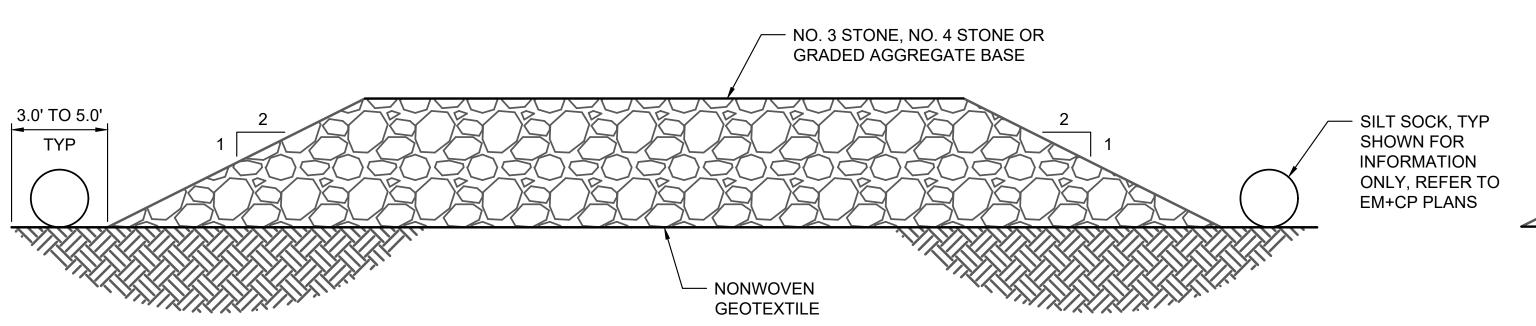
NO. 3 STONE, NO. 4 STONE OR GRADED AGGREGATE BASE

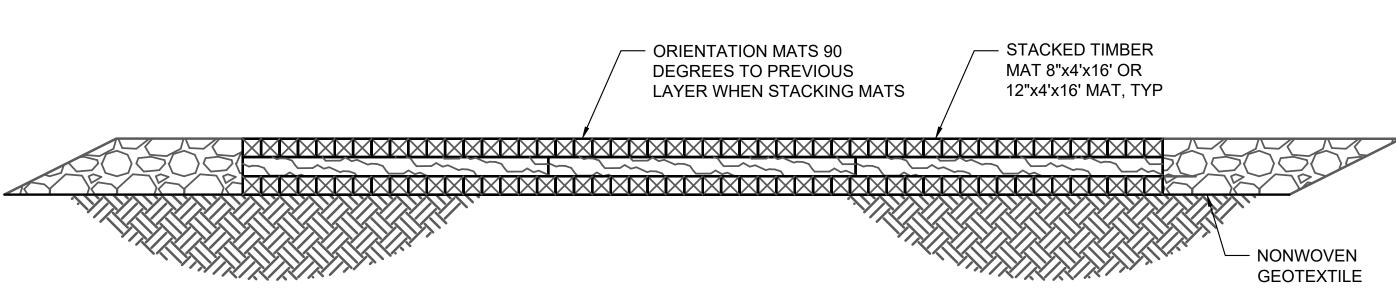
WETLAND AND AGRICULTURAL LANDS WORKING SURFACE PLAN - OPTION A

NOT TO SCAL

WETLAND AND AGRICULTURAL LANDS WORKING SURFACE PLAN - OPTION B

NOT TO SCALE







NOTES:

- 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.

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.

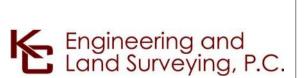


NOTES:

- 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.









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DATE SUBMITTAL / REVISION DESCRIPTION

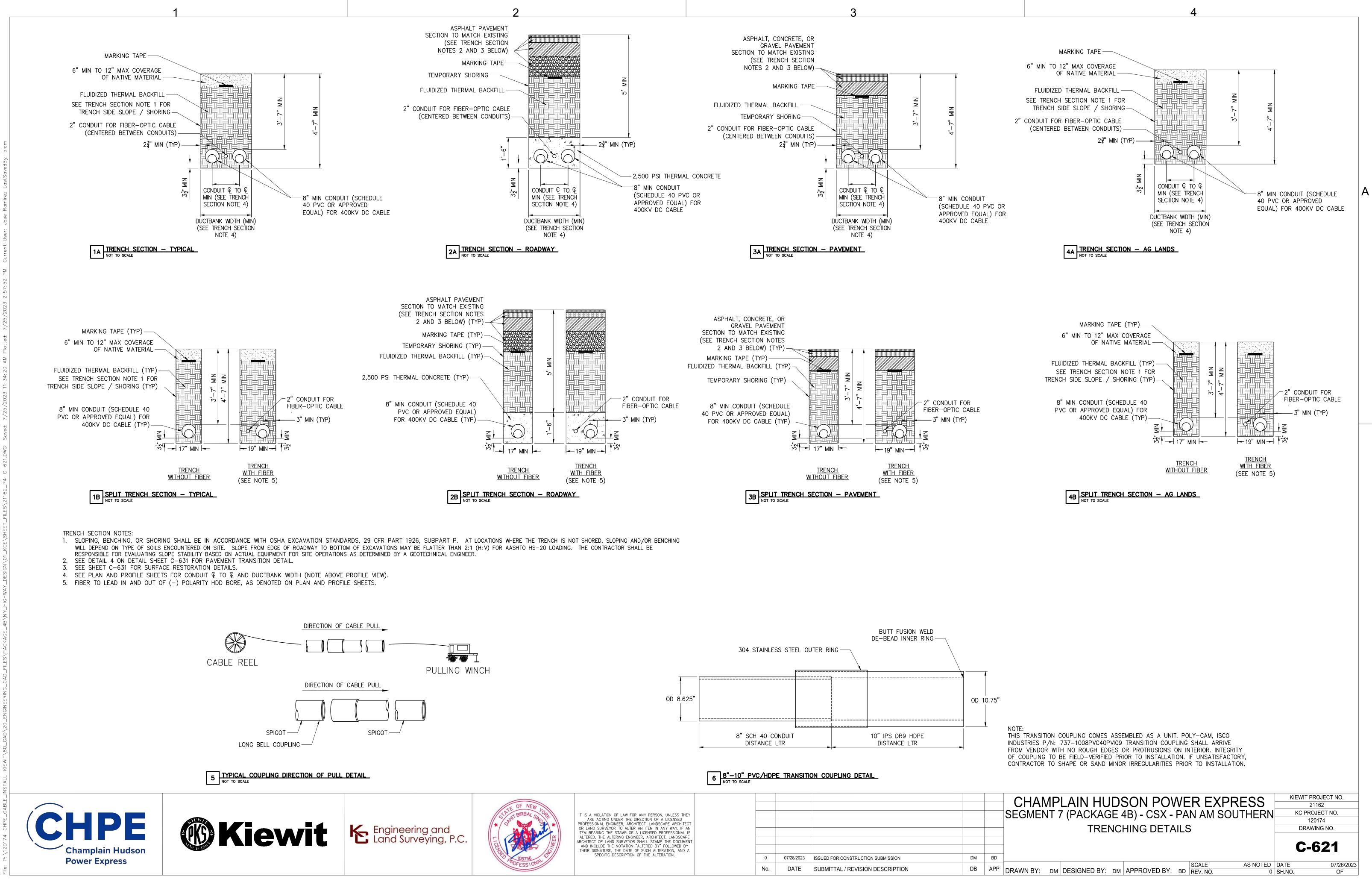
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
WETLAND AND AGRICULTURAL LAND
WORKING SURFACE

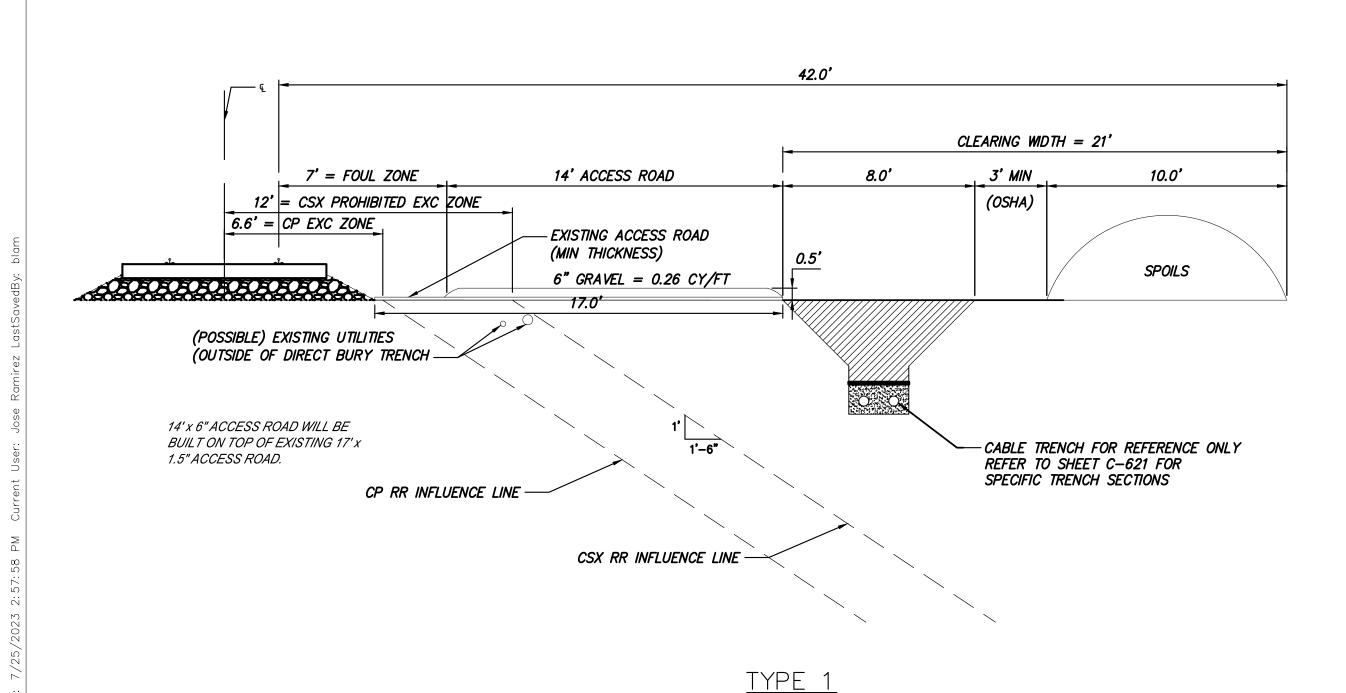
DB APP DRAWN BY: BL DESIGNED BY: BL APPROVED BY: SL REV. NO.

KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO.

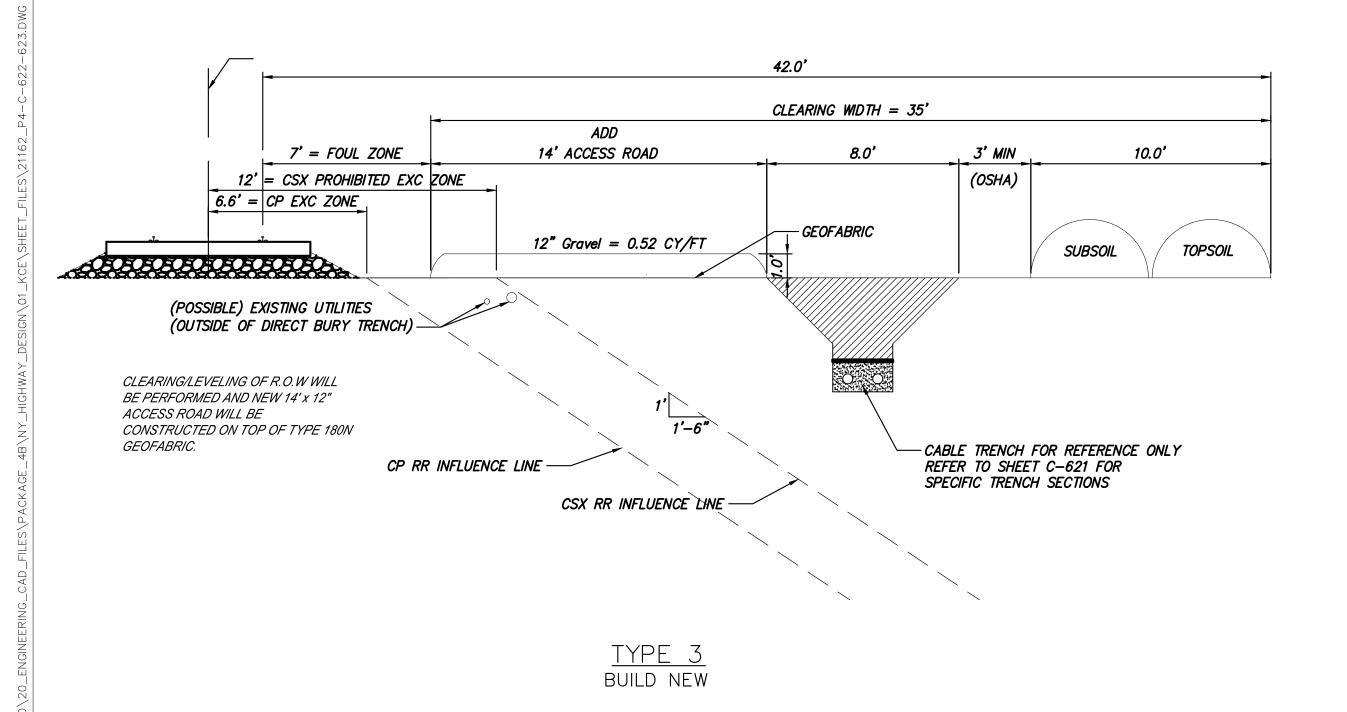
C-613

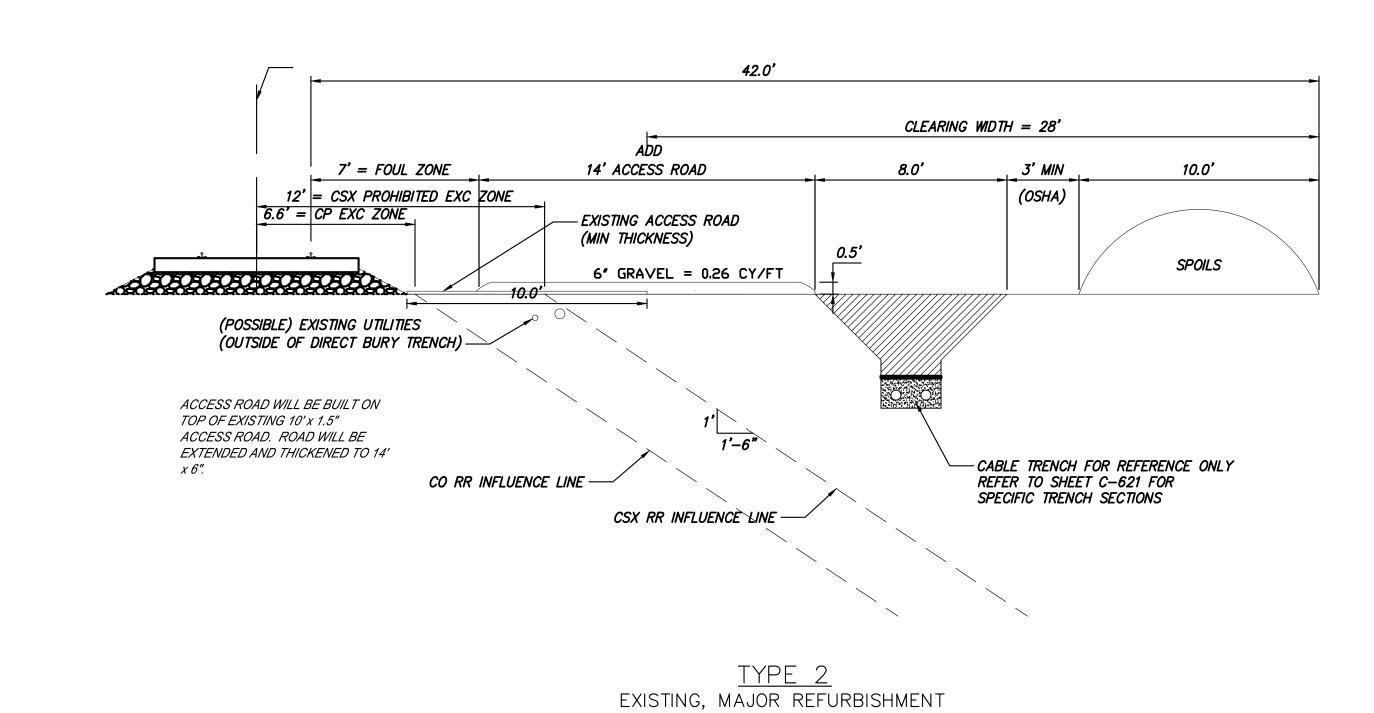
AS NOTED DATE 07/26/2023





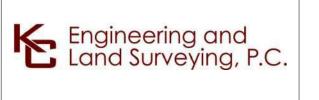
EXISTING, MINOR REFURBISHMENT

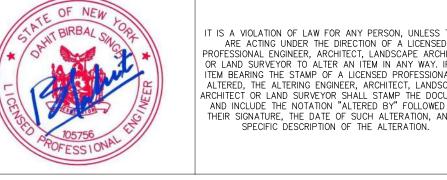












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07/28/2023 ISSUED FOR CONSTRUCTION SUBMISSION

DATE SUBMITTAL / REVISION DESCRIPTION

	CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN	
	TYPICAL ACCESS ROAD CROSS SECTIONS	

DB APP DRAWN BY: DM DESIGNED BY: DM APPROVED BY: BD REV. NO.

DM BD

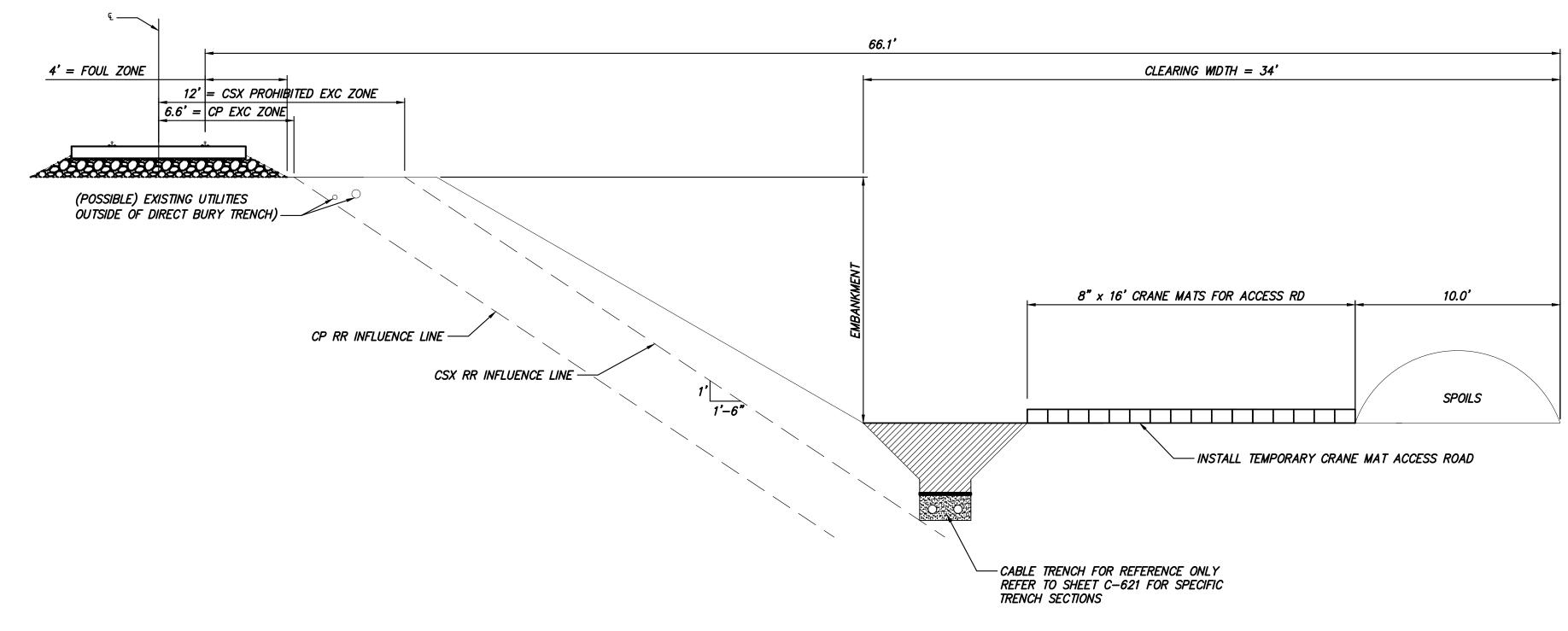
KIEWIT PROJECT NO.
21162
KC PROJECT NO.
120174
DRAWING NO.

C-622

AS NOTED DATE 07/26/20

66.1' ADD CLEARING (0.5' REFURBISH 14' ACCESS ROAD CLEARING WIDTH = 34' 4' = FOUL ZONE 12' = CSX PROHIBITED EXC ZONE + 4' BY EXISTING ROADWAY 6.6' = CP EXC ZONE -INSTALL GEOFABRIC 6" GRAVEL = 0.26 CY/FT (POSSIBLE) EXISTING UTILITIES (DUTSIDE OF DIRECT BURY TRENCH) -EXISTING ACCESS ROAD (MIN THICKNESS) ACCESS ROAD ADJ TO TRACK WILL BE BUILT ON TOP OF EXISTING 10' x 1.5" ACCESS ROAD. 8" x 16' CRANE MATS FOR ACCESS RD 10.0' ROAD WILL BE EXTENDED AND THICKENED TO 14' x 6". CP RR INFLUENCE LINE -CSX RR INFLUENCE SPOILS ---- INSTALL TEMPORARY CRANE MAT ACCESS ROAD -CABLE TRENCH FOR REFERENCE ONLY REFER TO SHEET C-621 FOR SPECIFIC TRENCH SECTIONS

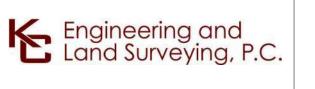
REFURBISH ACCESS NEXT TO RAIL. BUILD TEMP ACCESS AT TOE OF SLOPE



TYPE 5 BUILD TEMP ACCESS AT TOE OF SLOPE









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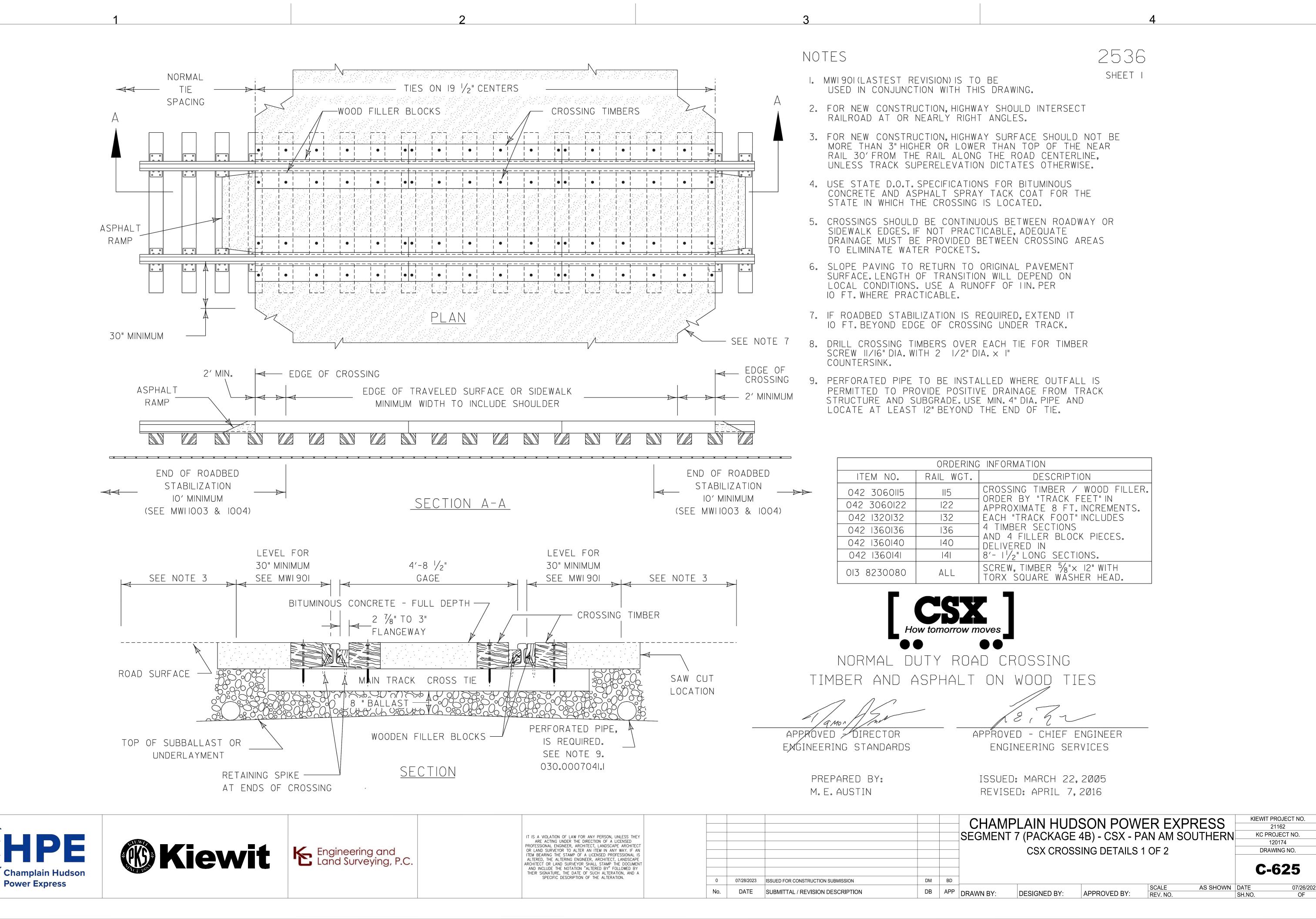
					CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN	
					TYPICAL ACCESS ROAD CROSS SECTIONS	
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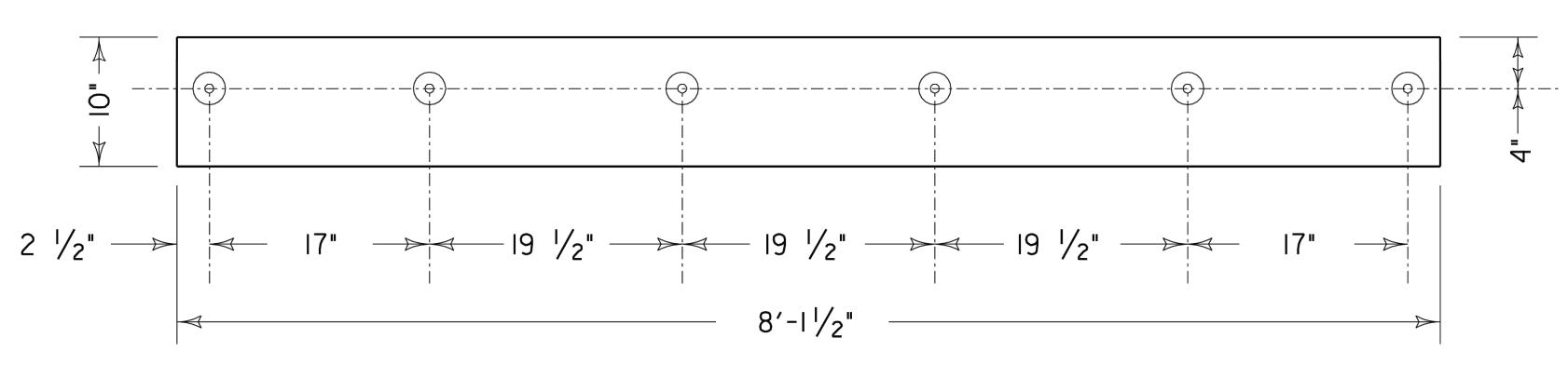
SUBMITTAL / REVISION DESCRIPTION

DB APP DRAWN BY: DM DESIGNED BY: DM APPROVED BY: BD REV. NO.

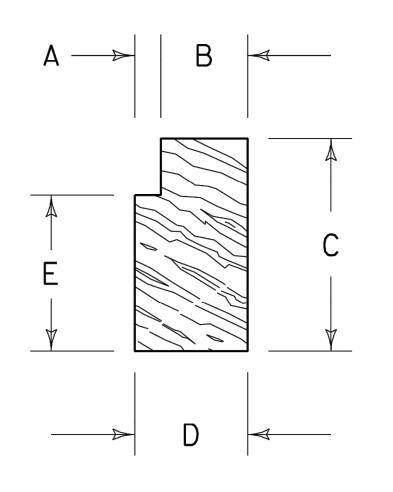
KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO. **C-623**

AS NOTED DATE

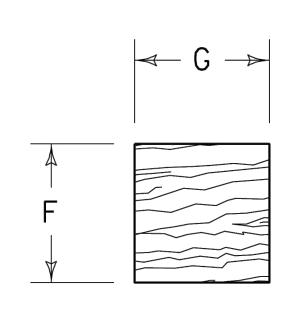




CROSSING TIMBER PLAN VIEW



FIELD SIDE FILLER BLOCK DETAIL



GAGE SIDE FILLER BLOCK DETAIL

RAIL WGT	А	В	С	D	E	F	G	Н
II5 RE	3/4	2 3/4	5 3/8	3 1/2	3 1/8	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
I32 RE	5/8	2 1/8	6	3 1/2	4 1/2	3 1/8	3 1/8	8
136 RE	5/8	2 1/8	6 1/4	3 1/2	4 1/2	3 1/8	3 1/8	8 3/8
140 RE	3/4	2 3/4	6 1/16	3 1/2	4 5/16	3 1/8	4	8 3/8
I4I RE	11/16	2 13/16	6 3/8	3 1/2	4 1/2	3 1/8	3 1/8	8 3/8

ALL DIMENSIONS ARE IN INCHES.

NOTES

- I. TIMBERS ARE NOT PREDRILLED UNLESS SPECIFIED IN THE REQUISITION.
- 2. GAGE AND FIELD TIMBERS ARE IDENTICAL.
- 3. TOLERANCES: A, E, AND G : $\frac{1}{16}$ " +/-ALL OTHERS : $\frac{1}{8}$ " +/-
- 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 IO LB / CU FT TREATMENT
- 6. TIMBERS & FILLERS TO BE MARKED FOR RAIL SIZE



TIMBER AND ASPHALT CROSSING CROSSING TIMBER AND FILLER BLOCK DETAILS

MAINTENANCE OF WAY

PREPARED BY: J. E. BEYERL

07/28/2023 ISSUED FOR CONSTRUCTION SUBMISSION

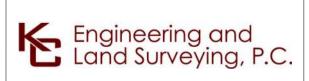
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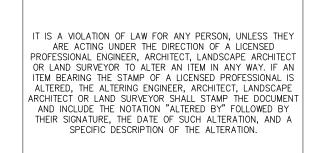
MARCH 22, 2005 REVISED: NOVEMBER 14, 2005

ENGINEERING

Kiewit

Power Express





		CHAMPLAIN HUDSON POWER EXPRESS
		$oxed{SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN}$
		```````````
		CSX CROSSING DETAILS 2 OF 2

DB APP DRAWN BY:

DM BD

SHEET 2 TIMBER SCREW <-- 2 1/2" DIA 3/4" 11/16" DIA -

2536

CROSSING TIMBER SECTION AT SCREW LOCATION

KIEWIT PROJECT NO.

21162

KC PROJECT NO. 120174

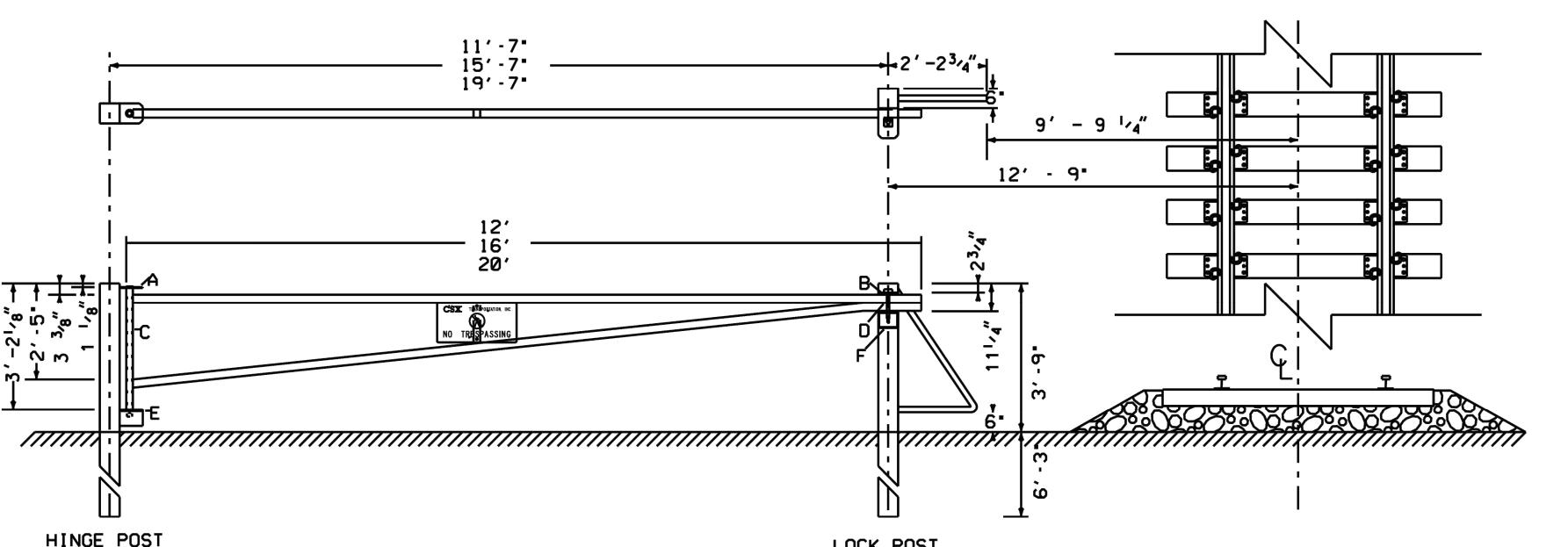
DRAWING NO.

**C-626** 

AS SHOWN DATE

APPROVED BY:

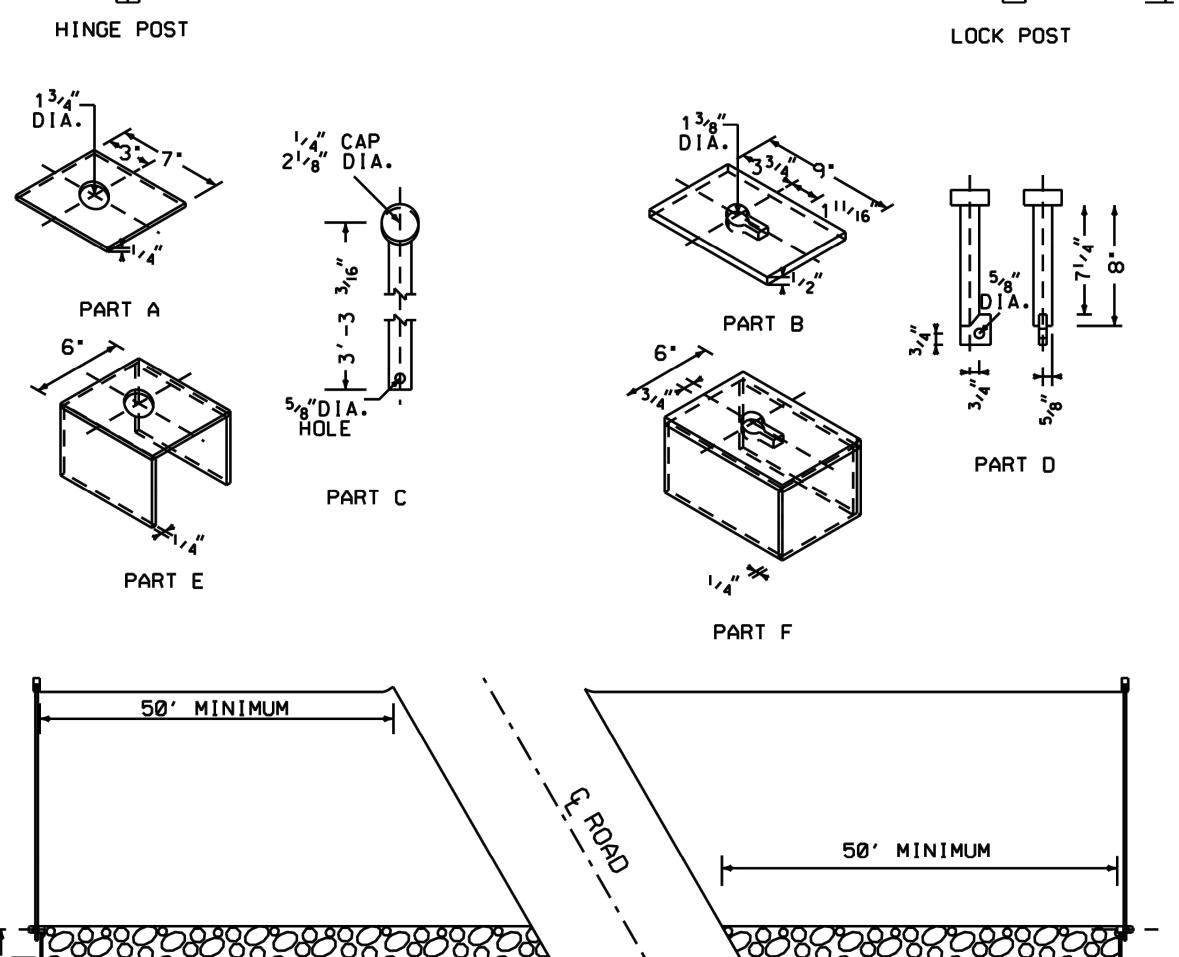
**DESIGNED BY:** 



2614

# NOTES

- METAL WEDGE SIGN MOUNT SHALL BE 2¹/₂" 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



RIGHT-OF-WAY SECURITY GATE

J. E. BEYERL FOR

APPROVED - DIRECTOR ENGINEERING STANDARDS

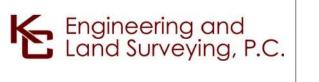
> PREPARED BY: M. E. AUSTIN

ENGINEERING

ISSUED: JANUARY 10, 2011 REVISED : INITIAL ISSUE







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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY:	DESIGN

N HUDSON POWER EXPRESS ACKAGE 4B) - CSX - PAN AM SOUTHERN CSX SECURITY GATE DETAIL

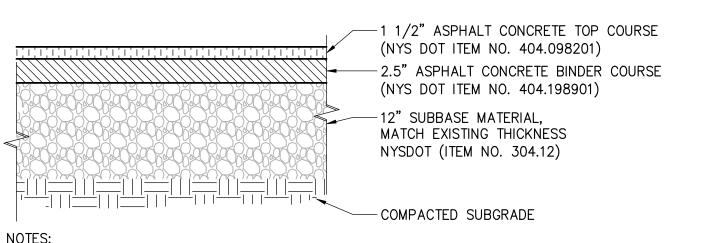
APPROVED BY:

DESIGNED BY:

KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO.

**C-627** 

AS SHOWN DATE



1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER

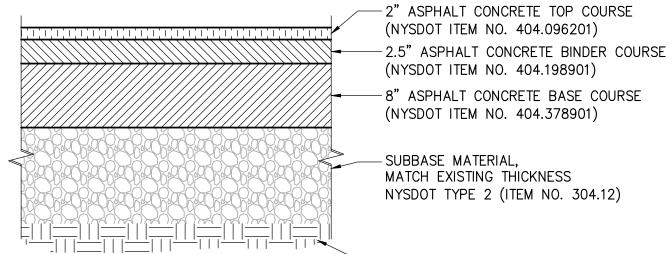
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS.

APPLY STRAIGHT TACK COAT BETWEEN PAVEMENT SECTIONS NYSDOT ITEM NO.407.0103 4. PRIVATE COMMERCIAL DRIVEWAYS TO UTILIZE COMMERCIAL DRIVEWAY SPECIFICATIONS AS

SHOWN ON THE NYSDOT STANDARD SHEETS.

## <u>ASPHALT CONCRETE PAVEMENT DETAIL</u>

(PRIVATE DRIVEWAY)



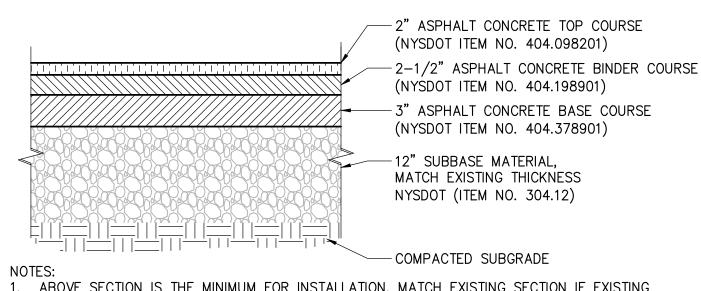
-COMPACTED SUBGRADE 1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF

EXISTING THICKNESS IS GREATER ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

3. APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM 407.0103

### ASPHALT CONCRETE PAVEMENT

<u>(WITHIN NYSDOT ROADWAYS)</u>



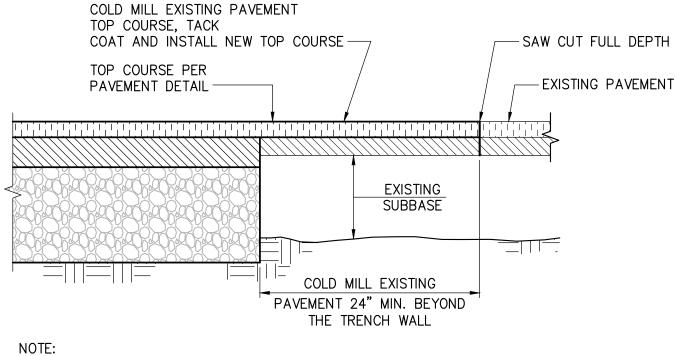
ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER

ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM NO.407.0103

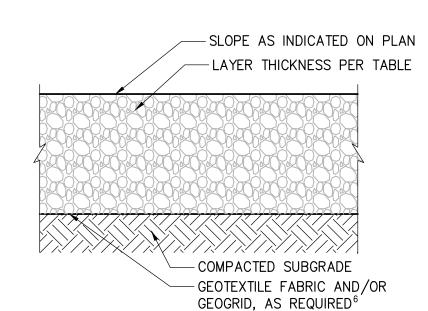
## ASPHALT CONCRETE PAVEMENT

(WITHIN COUNTY OR TOWN ROADWAYS)



1. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

PAVEMENT TRANSITION DETAIL



TEMPORARY ACCESS ROAD

SCALE: N.T.S.

TEMPORARY ACCESS ROAD SECTION^{1,2,3,4} MIRAFI RSI SERIES CBR⁵ **UNSTABILIZED** MIRAFI 180N GEOTEXTILE⁶ TENSAR BX1200 GEOGRID⁶ GEOTEXTILE⁶ 20 INCH RIP RAP⁷ 20 INCH RIP RAP⁷ 0.5 + 6 INCH AGGREGATE + 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 11 INCH AGGREGATE 18 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: TEMPORARY ACCESS ROAD SECTIONS PER KIEWIT ENGINEERING (NY) CORP.

AGGREGATE SHALL BE NYSDOT TYPE 2 CRUSHED AGGREGATE OR APPROVED ALTERNATIVE.

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

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. GEOGRID AND GEOTEXTILE

A GEOGRID AND GEOTEXTILES SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATION INCLUDING OVERLAP AND EDGE DETAILS.

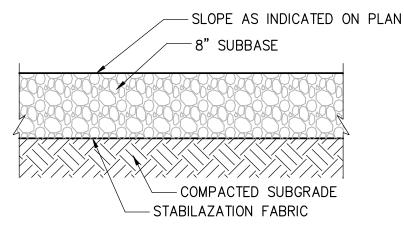
B SPECIFIED GEOTEXTILE OR GEOGRID MAY BE REPLACED BY EQUIVALENT MATERIAL APPROVED BY EOR.

 $^{
m C}$  GEOTEXTILE IS REQUIRED IN REGULATED WETLANDS AND AGRICULTURAL LANDS. D GEOTEXTILE SEPARATOR FABRIC IS REQUIRED BENEATH GEOGRID ON COHESIVE SUBGRADE

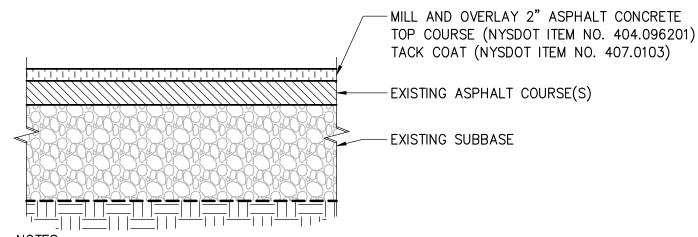
RIP RAP

A RIP RAP SHALL BE NYSDOT LIGHT STONE FILL OR APPROVED ALTERNATIVE

 $^{
m B}$  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.



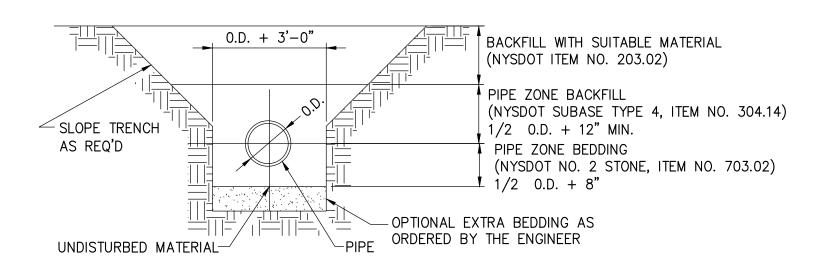
GRAVEL PAVEMENT SCALE: N.T.S.



1. APPLY TACKCOAT TO MILLED SURFACE PRIOR TO PLACING ASPHALT

CONCRETE TOP COURSE. 2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

MILL AND OVERLAY ASPHALT CONCRETE PAVEMENT DETAIL



1. WHERE IDENTIFIED ON PLANS, CULVERT REPLACEMENTS AND/OR REPAIR TO

BE COMPLETED IN ACCORDANCE WITH NYSDOT STANDARD SHEETS (NYSDOT

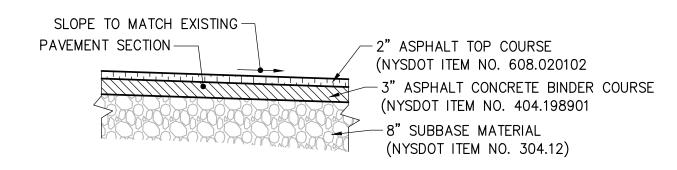
STANDARD SHEET GROUP 603 CULVERTS AND STORM DRAINS AND NYSDOT BRIDGE DETAIL SHEETS BD-CB1 THRU BD-CB13)

CULVERT REPLACEMENT

SLOPE TO MATCH EXISTING -WING WEDGE CURB PAVEMENT SECTION -- STABILIZATION SUBBASE COURSE MATCH EXISTING THICKNESS

1. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

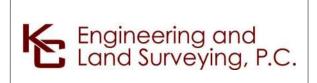
9 WING WEDGE CURB DETAIL



10 BIKE PATH RESTORATION DETAIL









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	SC	ALE
No.   DATE   SUBMITTAL / REVISION DESCRIPTION   DB   APP   DRAWN BY: DM   DESIGNED BY: DM   APPR	ROVED BY: BD RE	V. NO.

CHAMPLAIN HUDSON POWER EXPRESS 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN SURFACE RESTORATION DETAILS

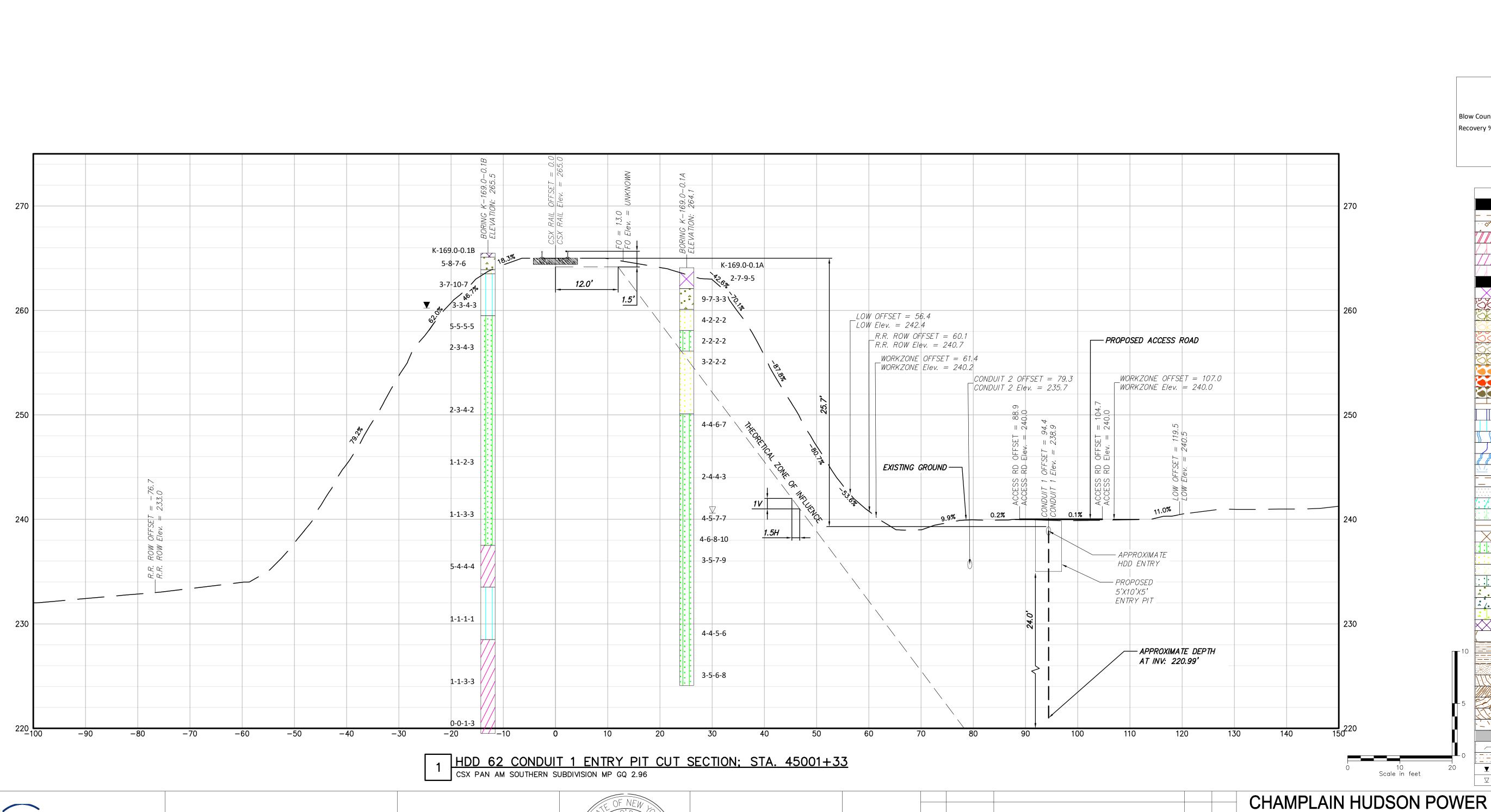
KIEWIT PROJECT NO. 21162 KC PROJECT NO. 120174 DRAWING NO.

**C-631** 

AS NOTED DAT

0 SH.NO.

07/26/2023



BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend
	ASPHALT	Asphalt
	Bedrock	Bedrock
🗘 .	Boulder	Boulder
	СН	Fat CLAY
/ / /	CH-MH	SILTY Fat CLAY
///	CL	Lean CLAY
	CL-ML	SILTY CLAY
/	CONCRETE	Concrete
$\times$	Fill	Fill
5/X-3	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
P ( )	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
XX	GW-GM	Well Graded GRAVEL with SILT
	Limestone MH	Limestone Elastic SILT
	MH ML	SILT
(( ((	ML DH	ORGANIC Fat CLAY
1)  )	DL DH	ORGANIC FAT CLAY
<u>(                                    </u>	OL/OH PT	DRGANIC SDIL
		PEAT
	Rock	Rock
· · · · · · · · · · · · · · · · · · ·	Sandstone	Sandstone
. //	32	CLAYEY SAND
<u>/</u>	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
<u> </u>	SM	SILTY SAND
: : : :	SP	Poorly Graded SAND
. /	SP-SC	Poorly Graded SAND with CLAY
<u>:  </u> : :	SP-SM	Poorly Graded SAND with SILT
<u>.</u>	SW	Well graded SAND
<u></u> /	SM-SC	Well Graded SAND with CLAY
XXX	SW-SM	Well Graded SAND with SILT
$\langle \chi \chi \rangle$	Topsoil	Topsoil
<u> </u>	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
1111	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gnelss
111	USGS 708	Gneiss
- /- /- /- /- /- /- /- /- /- /- /- /- /-	USGS 718	Granite 1
- 1	Void	Void
	Water	Water
	Water Weathered Rock	Water Undefined
<u> </u>		

Kiewit





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					SEGMENT 7	LAIN HU 7 (PACKAG 62 RAILR	SE 4	4B) - CSX -	PA	N AM S
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO						
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL	DESIGNED BY:	JDL	APPROVED BY:	JEO	SCALE REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 62 RAILROAD CROSS SECTION CUT

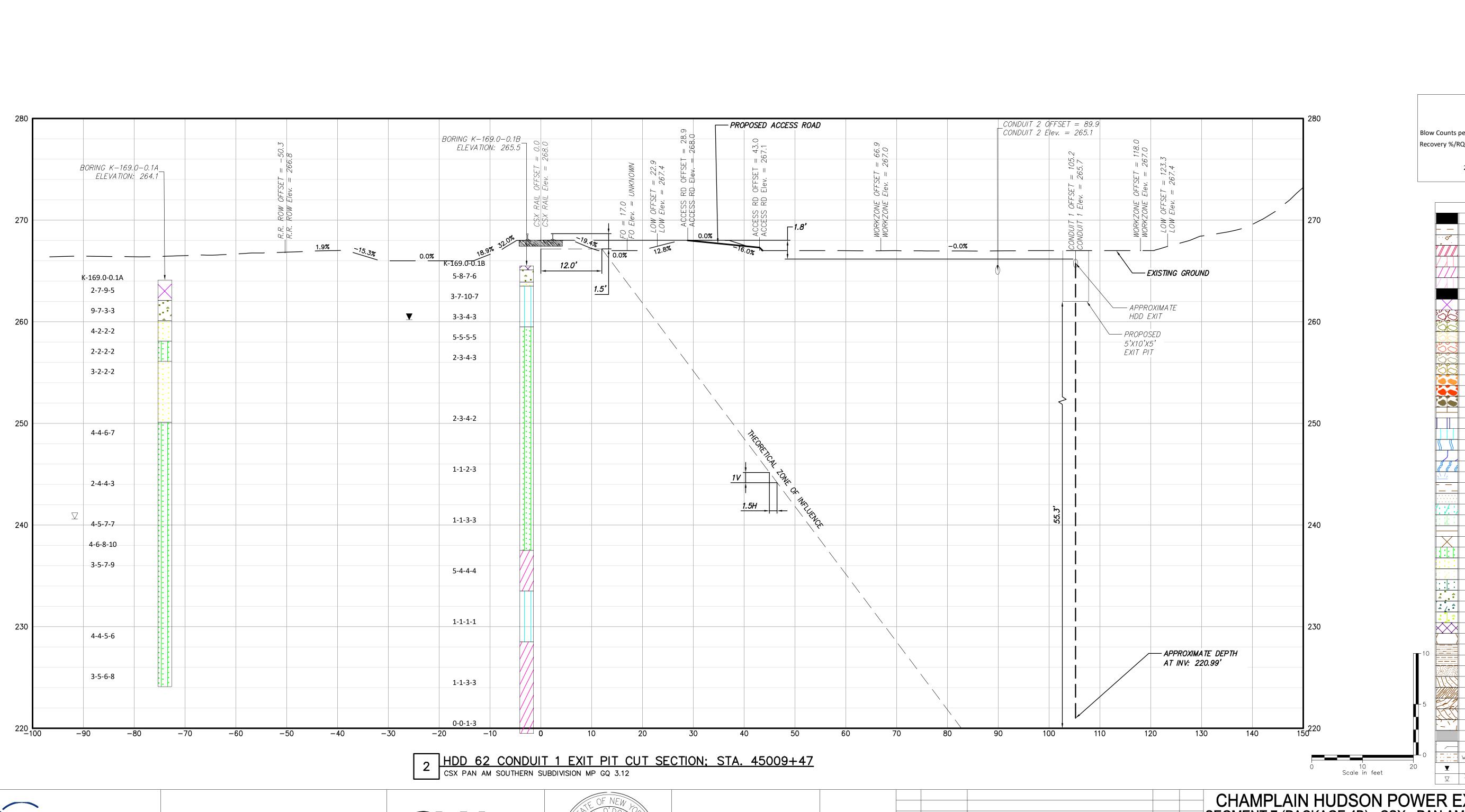
KIEWIT PROJECT NO. CHA PROJECT NO. DRAWING NO.

C-641

AS NOTED DATE

D SH.NO.

**Power Express** 



BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% — 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend ASPHALT Bedrock Bedrock Boulder Boulder Fat CLAY CH SILTY Fat CLAY CH-MH Lean CLAY CL-ML SILTY CLAY CONCRETE Concrete Fill Fill CLAYEY GRAVEL GC-GM SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY GP-GC Poorly Graded GRAVEL with SILT GP-GM Well Graded GRAVEL Well Graded GRAVEL with CLAY Well Graded GRAVEL with SILT ORGANIC Lean CLAY OL/OH ORGANIC SOIL PEAT Rock Rock Sandstone Sandstone CLAYEY SAND SILT, CLAYEY SAND 2C-2M SHALE Shale SILTSTONE SILTY SAND Poorly Graded SAND SP-SC Poorly Graded SAND with CLAY SP-SM Poorly Graded SAND with SILT SW Well graded SAND SM-SC Well Graded SAND with CLAY Well Graded SAND with SILT SW-SMTopsoil Gravel or Conglomerate 1 USGS 601 USGS 654 Subgraywacke nterbedded Sandstone and Shale USGS 702 USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Weathered Rock Undefined ▼ Water Table Water Table during drilling Water Table after drilling



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THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A
SPECIFIC DESCRIPTION OF THE ALTERATION.

SPB JEO 07/28/2023 ISSUED FOR CONSTRUCTION SUBMISSION DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. DATE SUBMITTAL / REVISION DESCRIPTION

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 62 RAILROAD CROSS SECTION CUT

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

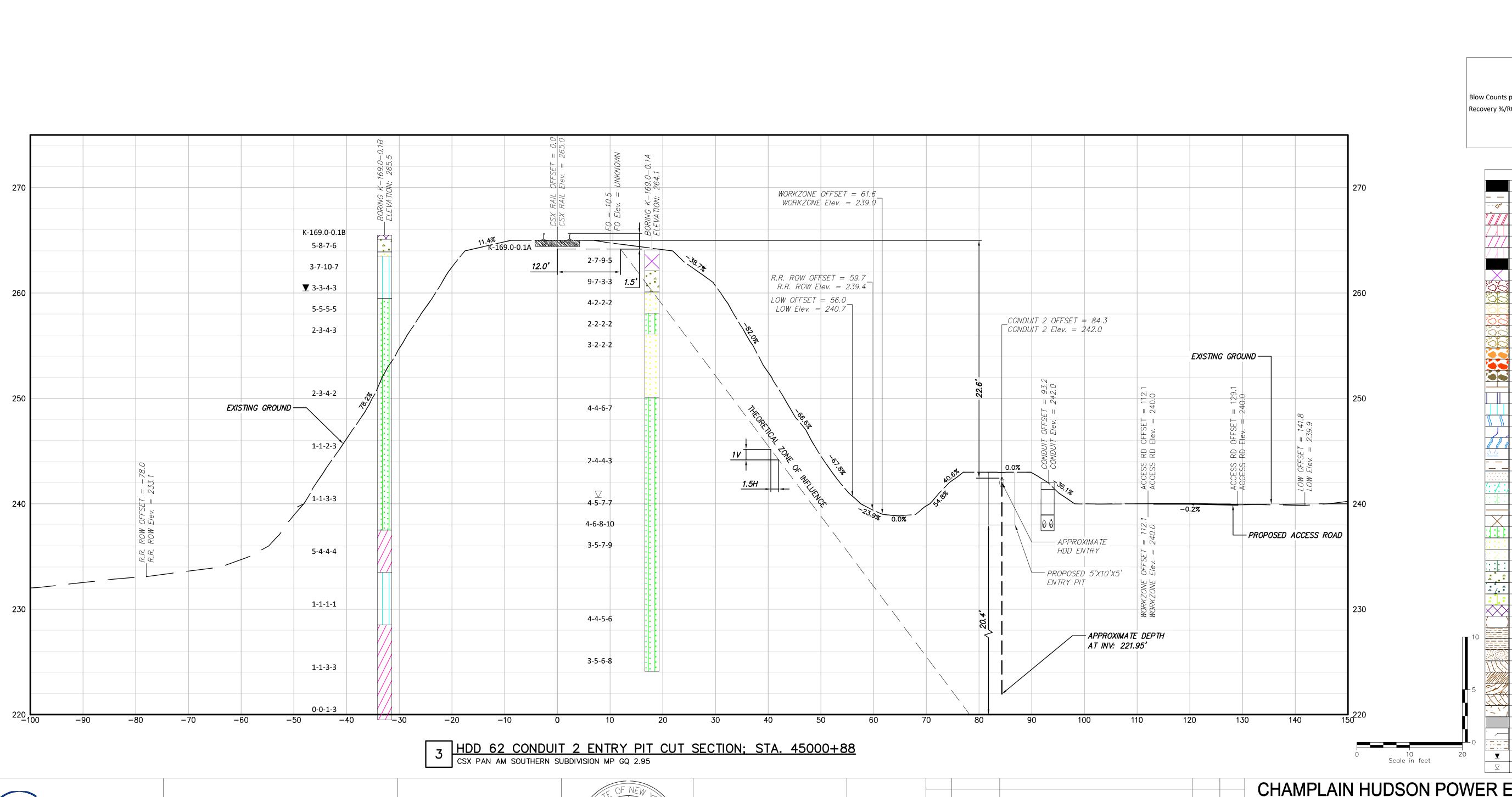
C-641.1

D SH.NO.

AS NOTED DATE







BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend ASPHALT Bedrock Bedrock Boulder Boulder Fat CLAY CH SILTY Fat CLAY CH-MH Lean CLAY SILTY CLAY CL-ML CONCRETE Concrete Fill Fill CLAYEY GRAVEL GC-GM SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY GP-GC Poorly Graded GRAVEL with SILT GP-GM Well Graded GRAVEL Well Graded GRAVEL with CLAY Well Graded GRAVEL with SILT Elastic SILT ORGANIC Lean CLAY OL/OH ORGANIC SOIL PEAT Rock Rock Sandstone Sandstone CLAYEY SAND SILT, CLAYEY SAND 2C-2M SHALE Shale SILTSTONE SILTY SAND Poorly Graded SAND SP-SC Poorly Graded SAND with CLAY Poorly Graded SAND with SILT SP-SM SW Well graded SAND SM-SC Well Graded SAND with CLAY Well Graded SAND with SILT SW-SMTopsoil Gravel or Conglomerate 1 USGS 601 USGS 654 Subgraywacke nterbedded Sandstone and Shale USGS 702 USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Weathered Rock Undefined ▼ Water Table Water Table during drilling Water Table after drilling

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



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SPB JEO 07/28/2023 ISSUED FOR CONSTRUCTION SUBMISSION DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. DATE SUBMITTAL / REVISION DESCRIPTION

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 62 RAILROAD CROSS SECTION CUT

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

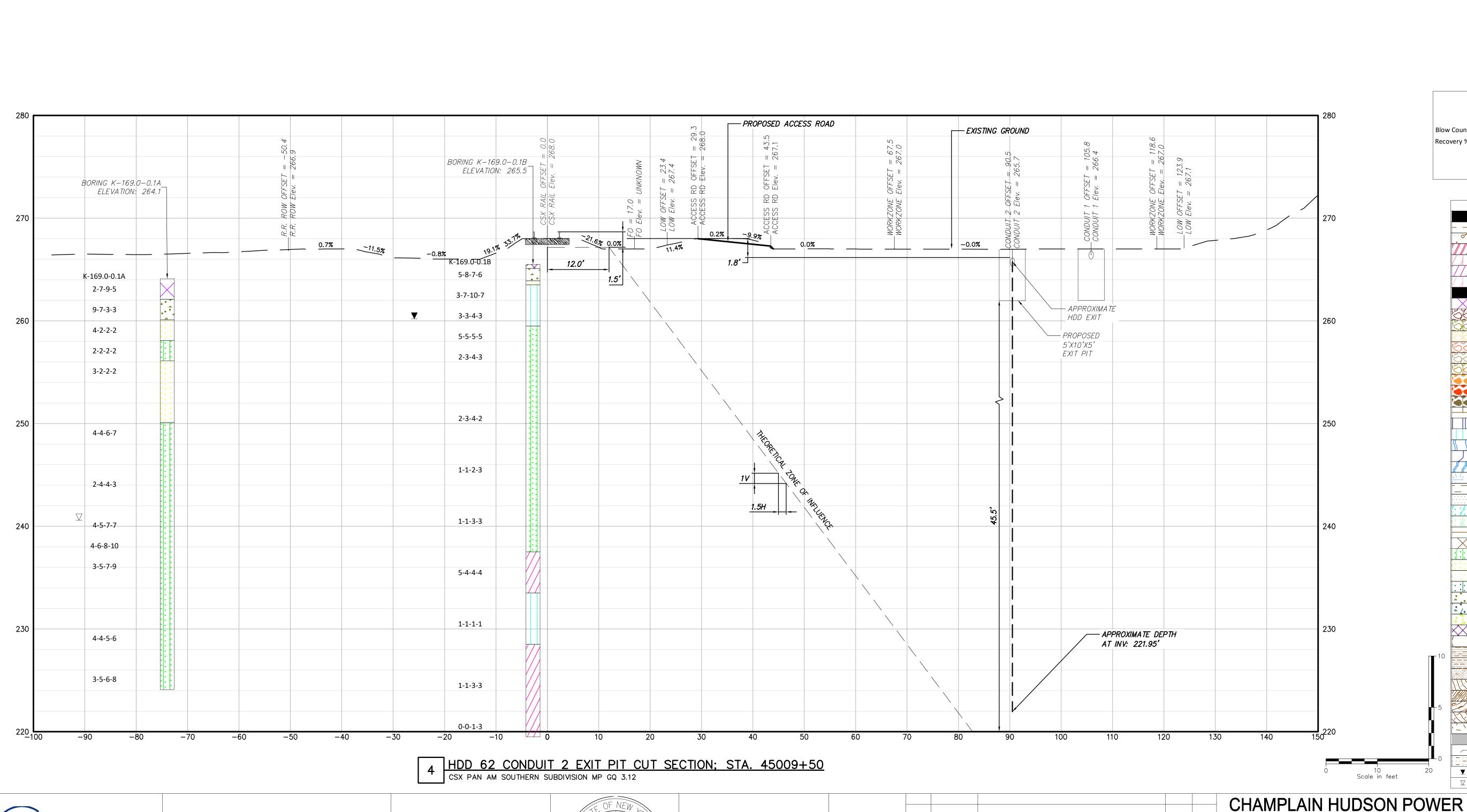
C-641.2

D SH.NO.

AS NOTED DATE

**Power Express** 





BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

ASPHALT  Bedrock  Boulder  CH  Fot CLAY  CH-MH  SILTY Fat CLAY  CL-ML  CL-ML  GC  CLAYEY GRAVEL  GG  GC  GLAYEY GRAVEL  GF-GM  SILTY CLAYEY GRAVEL  GP-GC  Foorly Graded GRAVEL with CLAY  GW-GM  GW-G				Legend
Boulder  CH  Fat CLAY  CH-MH  SILTY Fat CLAY  CL  Lean CLAY  CL-ML  SILTY CLAY  CDNCRETE  Fill  Fill  GC  CLAYEY GRAVEL  GM  SILTY GRAVEL  GM  SILTY GRAVEL  GP  Poorly Graded GRAVEL  GP-GC  GV-GC  Well Graded GRAVEL with SILT  Limestone  MH  Elastic SILT  ML  SILT  GLAYEY SAND  DL  GRANIC Fat CLAY  DL  GRANIC SDL  PT  PCAT  Rock  Rock  Sandstone  Sandstone  SC  CLAYEY SAND  SILT, CLAYEY SAND  SILT  SILT  Rock  Rock  Sandstone  Sandstone  SILT  SILT  PAL  Rock  Sondstone  Sondstone  Sondstone  SILT, CLAYEY SAND  SILT, CLAYEY SAND  SILT, CLAYEY SAND  SILT, CLAYEY SAND  SILT  SILT  Rock  Rock  Rock  Sondstone  Sondstone  Sondstone  Sondstone  Sondstone  Sondstone  Soll Siltstone  Siltsto			ASPHALT	Asphalt
CH Fat CLAY  CH-MH SILTY Fat CLAY  CL Lean CLAY  CL-ML SILTY CLAY  CDNCRETE Concrete  Fill Fill  GC CLAYEY GRAVEL  GC-GM SILTY GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GP-GC Poorly Graded GRAVEL with SILT  GW Well Graded GRAVEL with SILT  Linestone Linestone  MH Elastic SILT  ML SILTY  GLAYEY GRAVEL  GW-GM Well Graded GRAVEL with SILT  Linestone Linestone  MH Elastic SILT  ML SILT  GLAYEY SAND  GLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE SANDstone  SHALE Sittstone  SILTSTONE Sittstone  SILTSTONE Sittstone  SP-SC Poorly Graded SAND with CLAY  Well Graded SAND with CLAY  Well Graded SAND with CLAY  OL-GME GRAVEL WITH SILT  WELL SILTSTONE SITT  SHALE SILTSTONE SILTY SAND  SP-SC Poorly Graded SAND with CLAY  Well Graded SAND with CLAY  Well Graded SAND with CLAY  Well Graded SAND with SILT  SP-SM Poorly Graded SAND with SILT  SW Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglonerate 1  USGS 702 Quartzite  USGS 703 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Graite 1  Void Water  Water Table Water Table during drilling			Bedrock	Bedrock
CH-MH  CL Lean CLAY  CL Lean CLAY  CL Lean CLAY  CL-ML  CLAYE GRAVEL  GC CLAYEY GRAVEL  GC GLAYEY GRAVEL  GF Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GW-GG Well Graded GRAVEL with SILT  GW Well Graded GRAVEL with SILT  Limestone Limestone  MH Elastic SILT  GH DRGANIC Fat CLAY  DL DRGANIC Fat CLAY  DL DRGANIC Fat CLAY  DL DRGANIC SDIL  PT PEAT  Rock Rock  Sandstone  Sandstone  SILTY CAMEY WAND  SILTY GRAVEL  WELL Graded GRAVEL WITH SILT  Limestone Limestone  MH Elastic SILT  ML SILT  SILT  SILT  SILT  SILT  SILT  SILT  SILT  PEAT  Rock Rock  Sandstone  Sandstone  Sandstone  STILT CLAYEY SAND  STILT CLAYEY SAND  SHALE  SHALE  SHALE  SHALE  SHALE  SILTSTONE  SILTY SAND  Poorly Graded SAND with CLAY  Well Graded SAND with CLAY  Well Graded SAND with CLAY  Well Graded SAND with SILT  SP-SM Poorly Graded SAND with SILT  SW Well Graded SAND with SILT  SW-SC SC SC Schist  USGS 702  Gravel or Conglomerate 1  USGS 670  USGS 708  Gravel or Conglomerate 1  USGS 708  USGS	Ì		Boulder	Boulder
CL Lean CLAY  CL-ML SILTY CLAY  CDNCRETE Concrete  Fill Fill  GC CLAYEY GRAVEL  GM SILTY CLAYEY GRAVEL  GM SILTY GRAVEL  GP Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GV-GC Well Graded GRAVEL with SILT  Linestone Linestone  MH Elastic SILT  GL GRANIC Fat CLAY  GL-DH GRANIC SOIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SHALE Shale  SILTSTONE SILTS SAND  SP-SC Poorly Graded SAND with CLAY  SP-SC Well Graded SAND with SILT  SP-SM Poorly Graded SAND with SILT  Topsoil Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 702 Guertzite  USGS 708 Gneiss  USGS 708 Undefined  Vater Table Water Table during drilling	7		СН	Fat CLAY
CL Lean CLAY  CL-ML SILTY CLAY  CDNCRETE Concrete  Fill Fill  GC CLAYEY GRAVEL  GM SILTY CLAYEY GRAVEL  GM SILTY GRAVEL  GP Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GV-GC Well Graded GRAVEL with SILT  Linestone Linestone  MH Elastic SILT  GL GRANIC Fat CLAY  GL-DH GRANIC SOIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SHALE Shale  SILTSTONE SILTS SAND  SP-SC Poorly Graded SAND with CLAY  SP-SC Well Graded SAND with SILT  SP-SM Poorly Graded SAND with SILT  Topsoil Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 702 Guertzite  USGS 708 Gneiss  USGS 708 Undefined  Vater Table Water Table during drilling	ł	////	CH-MH	SILTY Fat CLAY
CL-ML SILTY CLAY  CDINCRETE Concrete  Fill Fill  GC CLAYEY GRAVEL  GC-MM SILTY CLAYEY GRAVEL  GM SILTY GRAVEL  GP Poorly Graded GRAVEL  GP Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with SILT  GV Well Graded GRAVEL with SILT  GW-GW Well Graded GRAVEL with SILT  Linestone Linestone  MH Elastic SILT  ML SILT  DH DRGANIC Fat CLAY  DL BRGANIC Fat CLAY  DL BRGANIC SDIL  PT PEAT  Rock Rock  Sandstone Sandstone  SANDSTONE  SILTY CLAYEY SAND  SILT, CLAYEY SAND  SILT, CLAYEY SAND  SILTSTONE Sitstone  SILTY SAND  SP-SC Poorly Graded SAND with SILT  SP-SM Poorly Graded SAND with SILT  SP-SM Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 702 Quartite  USGS 708 Gneiss  USGS 708 Undefined  Vater Table Water Table during drilling	ľ	7///		
CONCRETE FILL FILL FILL GC CLAYEY GRAVEL GC-GM SILTY CLAYEY GRAVEL GM SILTY GRAVEL GP GP Poorly Graded GRAVEL GP-GC Poorly Graded GRAVEL with SILT GW Well Graded GRAVEL with SILT GW Well Graded GRAVEL with SILT Limestone Umestone HM Elastic SILT GL GL GL GL GL GRANIC Fat CLAY GL GL GL GL GL GRANIC SOIL PT PEAT Rock Sandstone Sandstone SILT, CLAYEY SAND SILT, CLAYEY SAND SHALE SILTSTONE SILTY SAND SHALE SILTY SAND SP Poorly Graded SAND with SILT SP-SM Poorly Graded SAND with SILT FOOR SILTY SAND SP-SC Poorly Graded SAND with SILT SP-SM Well Graded SAND with SILT Topsoil Gravel or Canglomerate 1 USGS 654 USGS 670 USGS 705 USGS 708 Gravel or Canglomerate 1 USGS 708 Gravel USGS 708 USGS 708 Gravel USGS 708 Gravel USGS 708 Gravel USGS 708 Gravel USGS 708 USGS 708 Gravel USGS 708 US	ł	///		
Fill  GC  CLAYEY GRAVEL  GC-GM  SILTY CLAYEY GRAVEL  GM  SILTY GRAVEL  GM  SILTY GRAVEL  GP  Poorly Graded GRAVEL  GP-GC  Poorly Graded GRAVEL with CLAY  GP-GM  Well Graded GRAVEL with SILT  GW  Well Graded GRAVEL with SILT  Limestone  Limestone  MH  Elastic SILT  ML  SILT  GH  GRANIC Fat CLAY  GL/GH  PT  PEAT  Rock  Sandstone  Sandstone  Sandstone  Sandstone  SC  CLAYEY SAND  SHALE  SILTY SAND  SHALE  SILTY SAND  SHALE  SILTY SAND  SP-SC  Poorly Graded SAND with CLAY  Well graded SAND with SILT  SP-SM  Well Graded SAND with SILT  Topsoil  Gravel or Conglomerate 1  SUSGS 670  USGS 708  Graeiss  Granite 1  Void  Vold  Vater  Weathered Rock  Undefined  Water Table during drilling  Water Table during drilling  Vater Table Water Table during drilling	/	/ /		
GC CLAYEY GRAVEL  GC-GM SILTY CLAYEY GRAVEL  GM SILTY GRAVEL  GP Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GP-GM Poorly Graded GRAVEL with SILT  GW Well Graded GRAVEL with SILT  Limestone Clay  GW-GM Well Graded GRAVEL with SILT  Limestone Limestone  MH Elastic SILT  ML SILT  GH DRGANIC Fat CLAY  GL-GH GRAVEL WITH SILT  LIMESTONE CLAY  GL-GH GRAVEL WITH SILT  WE GRANIC SOLL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE SILTS SILTS  SHALE Shale  SILTSTONE SILTS SILTS  SP-SC Poorly Graded SAND WITH CLAY  POORLY GRADED SAND  POORLY GRADED SAND  POORLY GRADED SAND  LIMESTONE SILTS SAND  SP-SC Well Graded SAND with SILT  SW Well graded SAND with SILT  Topsoil Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 708 Graelss	ŀ			
GC-GM SILTY CLAYEY GRAVEL  GM SILTY GRAVEL  GP Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GP-GM Poorly Graded GRAVEL with SILT  GW Well Graded GRAVEL with SILT  GW-GC Well Graded GRAVEL with SILT  Limestone Limestone  MH Elastic SILT  ML SILT  GH GRANIC Fat CLAY  GL/GH GRAVEL WITH SILT  LIMESTONE SANDSTONE  SC CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE SILTSTONE  SILTY SAND  SP-SC Poorly Graded SAND with CLAY  POORLY Graded SAND with CLAY  POORLY Graded SAND with CLAY  SP-SM Well Graded SAND with CLAY  Well Graded SAND with CLAY  GLAYEY SAND  SC-SM SILTY SAND  SC-SM SILTY SAND  SHALE SILTY SAND  SP-SC Poorly Graded SAND with CLAY  SP-SM Well Graded SAND with CLAY  LINES SON Well Graded SAND with SILT  Topsoil Gravel or Conglomerate 1  USGS 601 Gravel or Conglomerate 1  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Void  Water Water  Water Table Water Table during drilling	1	5 Y 3		
GM SILTY GRAVEL  GP Poorly Graded GRAVEL  GP-GC Poorly Graded GRAVEL with CLAY  GP-GM Poorly Graded GRAVEL with SILT  GW Well Graded GRAVEL with SILT  GW-GC Well Graded GRAVEL with SILT  Limestone Limestone  MH Elastic SILT  ML SILT  GH GRGANIC Fat CLAY  GL/GH GRAVEL WITH SILT  LIMESTONE  GRANIC SOIL  PT PEAT  Rock Rock  Sandstone Sandstone  SC CLAYEY SAND  SHALE SHALE  SILTY SAND  SHALE SILTY SAND  SP-SC Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  A SW Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 702 Quartzite  USGS 708 Gneiss  USGS 708 Graits  USGS 708 Graits  USGS 708 Graits  Vater Water  Water Water  Water Table Water Table during drilling				
GP Poorly Graded GRAVEL  GP-GC Poorly Graded Gravel with CLAY  GP-GM Poorly Graded GRAVEL with SILT  GW Well Graded GRAVEL with SILT  GW-GC Well Graded GRAVEL with SILT  Limestone Limestone  MH Elastic SILT  ML SILT  DH DRGANIC Fat CLAY  DL/DH DRGANIC SUIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTUNE Sitstone  SILTSTUNE Sitstone  SP Poorly Graded SAND with CLAY  POORLY Graded SAND with SILT  SP-SC Poorly Graded SAND with SILT  SW Well Graded SAND with CLAY  Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 670 Interbedded Sandstone and Shale  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Water Water  Water Table Water Table during drilling  Value Table Water Table during drilling		90		
GP-GC Poorly Graded Gravel with CLAY GP-GM Poorly Graded GRAVEL with SILT GW Well Graded GRAVEL with SILT GW-GC Well Graded GRAVEL with SILT Limestone Limestone  MH Elastic SILT  ML SILT  DH DRGANIC Fat CLAY  DL/DH DRGANIC SUIL  PT PEAT  Rock Rock Sandstone Sc CLAYEY SAND  SILT, CLAYEY SAND  SHALE Shale  SILTSTUNE Siltstone  SILTSTUNE SILT SILT  SP-SM Poorly Graded SAND with CLAY  POORLY Graded SAND with SILT  SP-SM Well Graded SAND with SILT  SW Well Graded SAND with SILT  SW Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 670 Interbedded Sandstone and Shale  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Graite 1  Void Water Water  Water Table Water Table during drilling	ļ			
GP-GM Poorly Graded GRAVEL with SILT GW Well Graded GRAVEL GV-GC Well Graded GRAVEL with CLAY GV-GM Well Graded GRAVEL with SILT Linestone Linestone  MH Elastic SILT  DH DRGANIC Fat CLAY  DL/DH DRGANIC SOIL  PT PEAT  Rock Rock Sandstone Sandstone  SILT, CLAYEY SAND  SILT, CLAYEY SAND  SILTSTONE  SILTSTONE  SP Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  SW Well Graded SAND with SILT  SW Well Graded SAND with CLAY  Well Graded SAND with CLAY  Well Graded SAND with SILT  Topsoil  USGS 654  SUSGS 705  SChist  USGS 705  SChist  USGS 708  Greiss  USGS 718  Granite 1  Void  Vater Water  Water Table Water Table during drilling	ľ	50		,
GW Well Graded GRAVEL GV-GC Well Graded GRAVEL with CLAY GV-GM Well Graded GRAVEL with SILT Limestone Limestone  MH Elastic SILT  DH DRGANIC Fat CLAY  DL DH DRGANIC SDIL  PT PEAT  Rock Rock Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE Sitstone  SP Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  SW Well Graded SAND with SILT  Topsoil Topsoil  USGS 670 Interbedded Sandstone and Shale  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Water  Weathered Rock Undefined  ▼ Water Table Water Table during drilling	ľ	90		,
GV-GC Well Graded GRAVEL with CLAY GV-GM Well Graded GRAVEL with SILT  Limestone Limestone  MH Elastic SILT  ML SILT  DH DRGANIC Fat CLAY  DL/DH DRGANIC SDIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE Siltstone  SILTY SAND  SP Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  SW Well graded SAND with SILT  SW Well Graded SAND with SILT  SW-SC Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 6702 Quartzite  USGS 702 Quartzite  USGS 703 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Water  Water Table Water Table during drilling	ľ		GP-GM	Poorly Graded GRAVEL with SILT
GW-GM   Well Graded GRAVEL with SILT			GW	Well Graded GRAVEL
Limestone  MH  Elastic SILT  ML  SILT  DH  DRGANIC Fat CLAY  DL  DRGANIC Lean CLAY  DL/DH  PEAT  Rock  Sandstone  SC  CLAYEY SAND  SC-SM  SILT, CLAYEY SAND  SHALE  SILTSTONE  SM  SILTY SAND  SP-SC  Poorly Graded SAND with CLAY  SP-SM  Poorly Graded SAND with SILT  SW  Well graded SAND with SILT  SW-SC  Well Graded SAND with SILT  Topsoil  USGS 601  Gravel or Conglomerate 1  USGS 654  SUBGRAVE  USGS 705  USGS 708  USGS 708  Granite 1  Void  Void  Void  Water  Weathered Rock  Undefined  Water Table during drilling			GW-GC	Well Graded GRAVEL with CLAY
MH Elastic SILT  ML SILT  DH DRGANIC Fat CLAY  DL DRGANIC Lean CLAY  DL/DH DRGANIC SDIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE Siltstone  SM SILTY SAND  SP-SC Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  SW Well graded SAND with SILT  SW Well graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table during drilling		05	GW-GM	Well Graded GRAVEL with SILT
ML SILT  OH ORGANIC Fat CLAY  OL ORGANIC SOIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE Sitstone  SP-SC Poorly Graded SAND with CLAY  SP-SM Poorly Graded SAND with SILT  SW Well graded SAND with SILT  SW Well Graded SAND with SILT  SW-SC Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Water  Weathered Rock Undefined  Water Table Water Table during drilling	ŀ		Limestone	Limestone
□H □RGANIC Fat CLAY □L □RGANIC Fat CLAY □L/□H □RGANIC S□IL □PT PEAT □ Rock Rock □ Sandstone □ SC-SM SILT, CLAYEY SAND □ SHALE Shale □ SILTST□NE Sitstone □ SP Poorly Graded SAND □ SP-SC Poorly Graded SAND with CLAY □ SP-SM Well graded SAND with SILT □ SW SW-SC Well Graded SAND with SILT □ SW I Graded SAND with SILT □ SW SW-SM Well Graded SAND with SILT □ SW-SM Well Graded SAND with SILT			MH	Elastic SILT
DL DRGANIC Lean CLAY  DL/DH DRGANIC SDIL  PT PEAT  Rock Rock  Sandstone Sandstone  CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE Siltstone  SP Poorly Graded SAND  SP-SC Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  SW Well graded SAND with SILT  SW Well Graded SAND with SILT  SW-SC Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Vater  Weathered Rock Undefined  Water Table Water Table during drilling			ML	SILT
DL/DH  PT  PEAT  Rock  Rock  Sandstone  Sandstone  SC SAMSTONE  SILT, CLAYEY SAND  SHALE  SILTSTONE  SILTY SAND  SP-SC  Poorly Graded SAND with CLAY  SP-SC  Poorly Graded SAND with SILT  SW  Well Graded SAND with SILT  Topsoil  USGS 601  Gravel or Conglomerate 1  USGS 702  USGS 705  USGS 708  US			ПΗ	ORGANIC Fat CLAY
PT Rock Rock  Sandstone Sandstone  SC CLAYEY SAND  SHALE Shale  SILTSTONE SILTY SAND  SP-SC Poorly Graded SAND with CLAY  SP-SC Poorly Graded SAND with SILT  SP-SM Well Graded SAND with SILT  Topsoil Gravel or Conglomerate 1  USGS 601 Gravel or Conglomerate 1  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Water Table Water Table during drilling			ΠL	ORGANIC Lean CLAY
Rock Sandstone Sandstone SC CLAYEY SAND SC-SM SILT, CLAYEY SAND SHALE Shale SILTSTONE SILTY SAND SP Poorly Graded SAND SP-SC Poorly Graded SAND with CLAY SP-SM Poorly Graded SAND with SILT SW Well graded SAND with SILT SW-SC Well Graded SAND with SILT Topsoil Topsoil USGS 601 Gravel or Conglomerate 1 USGS 654 Subgraywacke USGS 702 Quartzite USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Vater Water Water Water Water Water Water Table Water Table during drilling		886	OL/OH	ORGANIC SOIL
Sandstone  Scandstone  Scandst	Ī	<u>\\ //</u>	PT	PEAT
SC CLAYEY SAND  SC-SM SILT, CLAYEY SAND  SHALE Shale  SILTSTONE Siltstone  SILTY SAND  SP Poorly Graded SAND  SP-SC Poorly Graded SAND with CLAY  SP-SM Poorly Graded SAND with SILT  SW Well graded SAND with SILT  SW-SC Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table Water Table during drilling	Ī		Rock	Rock
SC-SM SHALE Shale SILTSTONE SILTSTONE SILTY SAND SP Poorly Graded SAND with CLAY SP-SC Poorly Graded SAND with SILT SP-SM Poorly Graded SAND with SILT SW Well graded SAND with SILT SW-SC Well Graded SAND with SILT Topsoil USGS 601 Gravel or Conglomerate 1 USGS 654 Subgraywacke USGS 702 Quartzite USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 708 Gravel USGS 718 Granite 1 Void Void Water Water Water Water Water Table Water Table during drilling			Sandstone	Sandstone
SHALE  SILTSTONE  SILTY SAND  SP  Poorly Graded SAND with CLAY  Poorly Graded SAND with SILT  SW  Well graded SAND with SILT  SW  Well Graded SAND with SILT  Topsoil  USGS 601  Gravel or Conglomerate 1  USGS 670  Interbedded Sandstone and Shale  USGS 702  Quartzite  USGS 705  Schist  USGS 708  Gravel  USGS 708  USG	Ī	/: /: :)	SC	CLAYEY SAND
SILTSTONE  SM  SILTY SAND  SP  Poorly Graded SAND with CLAY  SP-SC  Poorly Graded SAND with SILT  SW  Well graded SAND with SILT  SW  Well Graded SAND with SILT  Topsoil  USGS 601  Gravel or Conglomerate 1  USGS 654  Subgraywacke  USGS 702  Quartzite  USGS 705  Schist  USGS 708  Gravel  USGS 708  Gravel  USGS 718  Granite 1  Void  Vater  Water Table  Vater Table  Vater Table  Volor SILTY SAND  SHOW  SAND  SHOW  SILTY  SHOW  SILTY  SPOND  SHOW  SILTY  SPOND  SHOW  SILTY  SPOND  SHOW  SHOW  SILTY  SPOND  SHOW  SHOW  SILTY  SPOND  SHOW  SHOW  SHOW  SHOW  SILTY  SPOND  SHOW  SHOW	Ī		2C-2M	SILT, CLAYEY SAND
SM SILTY SAND  SP Poorly Graded SAND  SP-SC Poorly Graded SAND with CLAY  SP-SM Poorly Graded SAND with SILT  Well graded SAND with SILT  SW Well Graded SAND with CLAY  SW-SM Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Graite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table Water Table during drilling	Ī		SHALE	Shale
SP—SC Poorly Graded SAND  SP—SC Poorly Graded SAND with CLAY  SP—SM Poorly Graded SAND with SILT  SW Well graded SAND with SILT  SW—SC Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Graite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table Water Table during drilling		$\times$	SILTSTONE	Siltstone
SP-SC Poorly Graded SAND with CLAY  SP-SM Poorly Graded SAND with SILT  Well graded SAND  SW-SC Well Graded SAND with CLAY  SW-SM Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 670 Interbedded Sandstone and Shale  USGS 702 Quartzite  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Vater Water  Water Table Water Table during drilling	Ī		SM	SILTY SAND
SP-SM Poorly Graded SAND with SILT  SW Well graded SAND  SW-SC Well Graded SAND with CLAY  SW-SM Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 670 Interbedded Sandstone and Shale  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Gneiss  USGS 718 Granite 1  Void Void  Water  Water Table Water Table during drilling	Ī		SP	Poorly Graded SAND
SW Well graded SAND  SW-SC Well Graded SAND with CLAY  SW-SM Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table during drilling	Ī		SP-SC	Poorly Graded SAND with CLAY
SW-SC Well Graded SAND with CLAY  SW-SM Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Water Water  Water Table Water Table during drilling	Ī		SP-SM	Poorly Graded SAND with SILT
SW-SK Well Graded SAND with SILT  Topsoil Topsoil  USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table dering drilling	Ì	* A	SW	Well graded SAND
Topsoil  USGS 601  USGS 654  Subgraywacke  USGS 670  Interbedded Sandstone and Shale  USGS 702  Quartzite  USGS 705  Schist  USGS 705  Schist  USGS 708  Gneiss  USGS 708  USGS 708  Granite 1  Void  Void  Vater  Water  Water  Water Table Water Table during drilling	1	_ /_ ^	SM-SC	Well Graded SAND with CLAY
USGS 601 Gravel or Conglomerate 1  USGS 654 Subgraywacke  USGS 670 Interbedded Sandstone and Shale  USGS 702 Quartzite  USGS 705 Schist  USGS 705 Schist  USGS 708 Gneiss  USGS 708 Granite 1  Void Void  Water Water  Weathered Rock Undefined  Water Table Water Table during drilling	Ì	4	SW-SM	Well Graded SAND with SILT
USGS 654  USGS 670  Interbedded Sandstone and Shale  USGS 702  Quartzite  USGS 705  Schist  USGS 705  Schist  USGS 708  Gneiss  USGS 708  Granite 1  Void  Void  Vater  Water  Water  Water Table during drilling		XXX	Topsoil	Topsoil
USGS 670 Interbedded Sandstone and Shale USGS 702 Quartzite USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Granite 1 Void Void Water Water Weathered Rock Undefined  Water Table Water Table during drilling	Į	/ × × \	USGS 601	Gravel or Conglomerate 1
USGS 670 Interbedded Sandstone and Shale USGS 702 Quartzite USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Granite 1 Void Void Water Water Weathered Rock Undefined  Water Table Water Table during drilling			USGS 654	Subgraywacke
USGS 702  USGS 705  Schist  USGS 705  Schist  USGS 708  Gneiss  USGS 708  Granite 1  Void  Void  Void  Vater  Water  Water  Water Table Water Table during drilling				
USGS 705  USGS 705  Schist  USGS 708  Gneiss  USGS 708  Granite 1  Void  Void  Vater  Water  Weathered Rock  Water Table during drilling	ľ			
USGS 705  USGS 708  USGS 708  USGS 708  Gneiss  USGS 718  Void  Void  Void  Vater  Water  Water  Water Table Water Table during drilling		7777		
USGS 708  USGS 708  Gneiss  USGS 718  Void  Void  Vater  Water  Weathered Rock  Undefined  Water Table during drilling	į			
USGS 708  USGS 718  Void  Void  Vater  Water  Weathered Rock  Vater Table  Water Table during drilling				
USGS 718  Void  Void  Vater  Water  Weathered Rock  Undefined  Vater Table  Vater Table during drilling	ŀ	1100		
Void  Void  Vater  Water  Weathered Rock  ✓ Undefined  ✓ Water Table  Water Table during drilling		<i>〈^/</i> /		
Water Water  □□□□□ Weathered Rock Undefined  ▼ Water Table Water Table during drilling				
<ul> <li>✓ Weathered Rock</li> <li>✓ Water Table</li> <li>✓ Water Table during drilling</li> </ul>	ļ			
▼ Water Table Water Table during drilling				
Delevied Veter	ļ	<u> </u>		
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □		<b>Y</b>	Water Table Delayed Water	

**Kiewit** 

**Power Express** 





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.

					CHAMP SEGMENT HDD	7 (PAC	KAGE	<b>4E</b>		- PA	N AM S
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	_						
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL	DESIGNE	<b>D BY:</b> JE	DL A	APPROVED BY:	JEO	SCALE REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 62 RAILROAD CROSS SECTION CUT

KIEWIT PROJECT NO. CHA PROJECT NO. DRAWING NO.

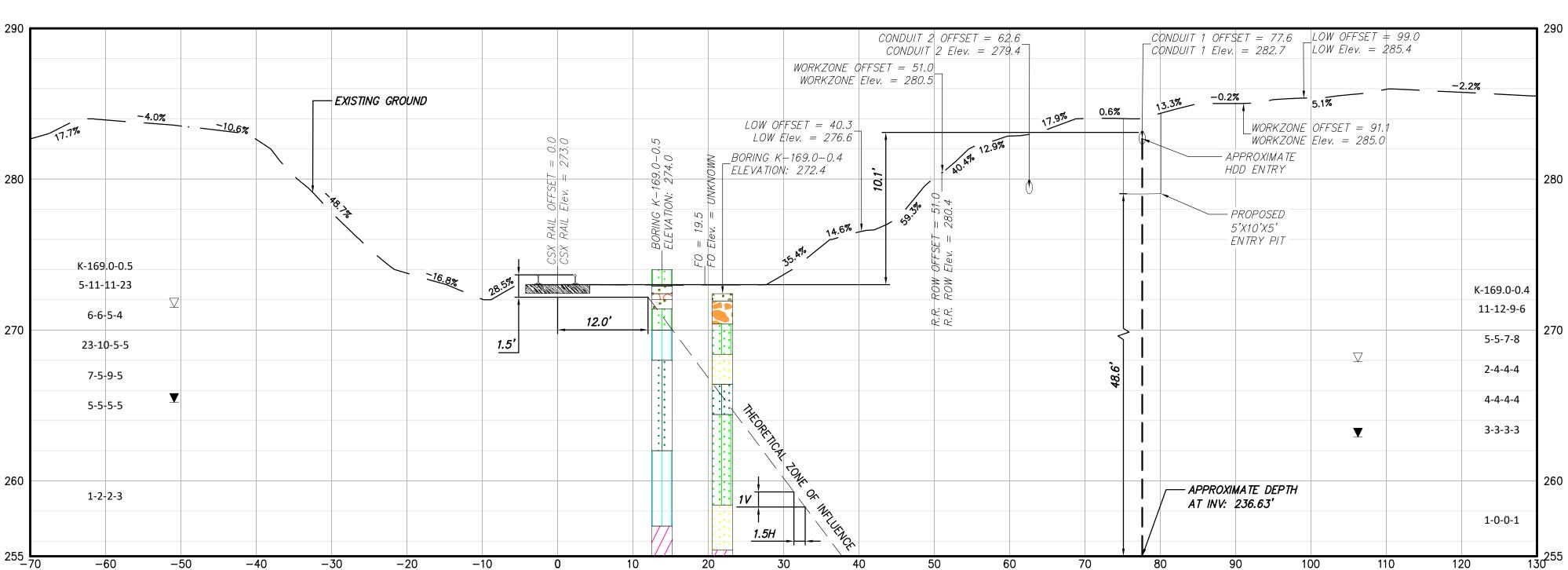
C-641.3

AS NOTED DATE

D SH.NO.

BORING K-169.0-0.4 ELEVATION: 272.4 BORING K-169.0-0.5 R.R. ROW OFFSET = 43.7| ELEVATION: 274.0 R.R. ROW Elev. = 284.0 EXISTING GROUND 12 R.R. ROW OFFSET = -43.6R.R. ROW Elev. = 280.8OFF. Elev  $\mathcal{O} \mathcal{O}$ <u>0.</u>0% 280 LOW OFFSET = 58.212.1%  $LOW\ Elev. = 281.3$ *12.0*′ K-169.0-0.5 5-11-11-23 K-169.0-0.4 – APPROXIMATE HDD EXIT 11-12-9-6 6-6-5-4 - PROPOSED 270 5'X10'X5' 5-5-7-8 23-10-5-5 EXIT PIT 2-4-4-4 7-5-9-5 4-4-4-4 5-5-5-5 3-3-3-3 260 ---- APPROXIMATE DEPTH AT 1-2-2-3 INV: 236.63' 1-0-0-1 -50 -20 120

2 HDD 62A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45027+04 CSX PAN AM SOUTHERN SUBDIVISION MP QG 3.65



**Power Express** 





ACHITECT, 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	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DF

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 62A RAILROAD CROSS SECTION CUT

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

**C-642** 

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

Bedrock

Boulder

Fat CLAY

SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL

Well Graded GRAVEL with CLAY

Well Graded GRAVEL with SILT

ORGANIC Lean CLAY

ORGANIC SOIL

PEAT

Rock

Sandstone

CLAYEY SAND

SILT, CLAYEY SAND

Shale

SILTY SAND

Poorly Graded SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY

Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke nterbedded Sandstone and Shale

Schist

Schist

Gneiss

Gneiss

Granite 1

Void

Water

Undefined

Water Table during drilling

Water Table after drilling

Recovery %/RQD % = 95%/90% - 11000psi =UCS

ASPHALT

Bedrock

Boulder

CH

CH-MH

CL-ML CONCRETE

Fill

GC-GM

GP-GC GP-GM

GW-GM

OL/OH

Rock

Sandstone

2C-2M

SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SW-SM

Topsoil

USGS 601

USGS 654

USGS 702 USGS 705

USGS 705

USGS 708

USGS 708

USGS 718

Void

Weathered Rock

▼ Water Table

Blow Counts per 6" = 10-10-10

AS NOTED DATE DRAWN BY: RAC DESIGNED BY: RAC APPROVED BY: JEO REV. NO. D SH.NO.

-20 HDD 62A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45020+02 CSX PAN AM SOUTHERN SUBDIVISION MP QG 3.32 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 ALTERED. THE ALTERING ENGINEER. ARCHITECT. LANDSCAPE

Delayed Water Table

ELEVATION: 272.4 BORING K-169.0-0.5_ LOW OFFSET = 58.2R.R. ROW OFFSET = 43.7 LOW Elev = 281.3ELEVATION: 274.0 R.R. ROW Elev. = 284.0R.R. ROW OFFSET = -43.6R.R. ROW Elev. = 280.8EXISTING GROUND 11 0  $\mathcal{O} \mathcal{O}$ <u>0.</u>0% 280 12.0° K-169.0-0.5 1.5 5-11-11-23 K-169.0-0.4 11-12-9-6 — APPROXIMATE 6-6-5-4 HDD EXIT 270 5-5-7-8 — PROPOSED 23-10-5-5 5'X10'X5'  $\nabla$ EXIT PIT 2-4-4-4 7-5-9-5 4-4-4-4 5-5-5-5 3-3-3-3 260 — APPROXIMATE DEPTH AT 1-2-2-3 INV: 235.00° 1-0-0-1

WORKZONE OFFSET = 51.1 CONDUIT 2 OFFSET = 62.3WORKZONE Elev. = 282.1 CONDUIT OFFSET = 77.3CONDUIT Elev. = 283.9_____0.0%___ LOW OFFSET = 40.1 EXISTING GROUND LOW Elev. = 278.2 0.0% 0.2% _BORING K-169.0-0.4 ELEVATION: 272.4 280 1.3% APPROXIMATE HDD ENTRY PROPOSED 5'X10'X5' ENTRY PIT K-169.0-0.5 5-11-11-23 K-169.0-0.4 11-12-9-6 6-6-5-4 *12.0*′ 270 5-5-7-8 23-10-5-5 2-4-4-4 7-5-9-5 4-4-4-4 5-5-5-5 3-3-3-3 260 — APPROXIMATE DEPTH AT 1-2-2-3 INV: 235.00' 1-0-0-1 1.5H -30 -20 -10

HDD 62A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45019+88 CSX PAN AM SOUTHERN SUBDIVISION MP QG 3.32

HDD 62A CONDUIT 2 EXIT PIT CUT SECTION; STA. 45027+04 CSX PAN AM SOUTHERN SUBDIVISION MP QG 3.65

**Power Express** 





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Ī	0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
	No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DR

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 62A RAILROAD CROSS SECTION CUT

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

C-642.1

RAWN BY: RAC DESIGNED BY: RAC APPROVED BY: JEO REV. NO.

AS NOTED DATE D SH.NO.

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration

Legend

Bedrock

Boulder

Fat CLAY

SILTY Fat CLAY

Lean CLAY SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL

Well Graded GRAVEL with CLAY

Well Graded GRAVEL with SILT

ORGANIC Lean CLAY

ORGANIC SOIL

PEAT

Rock

Sandstone

CLAYEY SAND SILT, CLAYEY SAND

Shale

SILTY SAND

Poorly Graded SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke nterbedded Sandstone and Shale

Schist

Schist

Gneiss

Gneiss

Granite 1

Void

Water

Undefined

Water Table during drilling

Water Table after drilling

3D strip logs have no exaggeration

Recovery %/RQD % = 95%/90% - 11000psi =UCS

ASPHALT

Bedrock

Boulder

CH

CH-MH

CL-ML CONCRETE

Fill

GC-GM

GP-GC GP-GM

GW-GM

OL/OH

Rock

Sandstone

2C-2M

SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SW-SM

Topsoil

USGS 601

USGS 654

USGS 702

USGS 705

USGS 705

USGS 708

USGS 708

USGS 718

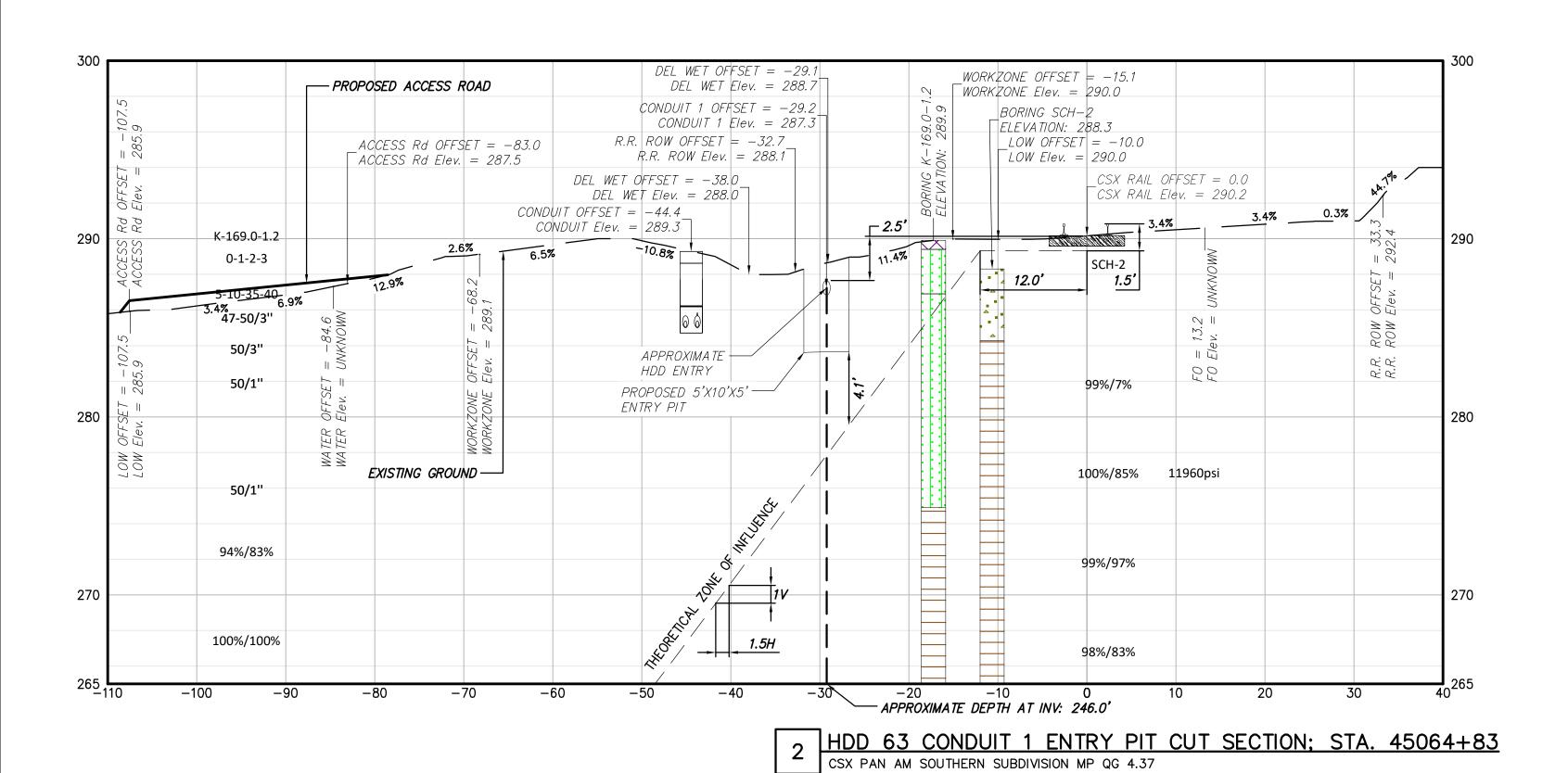
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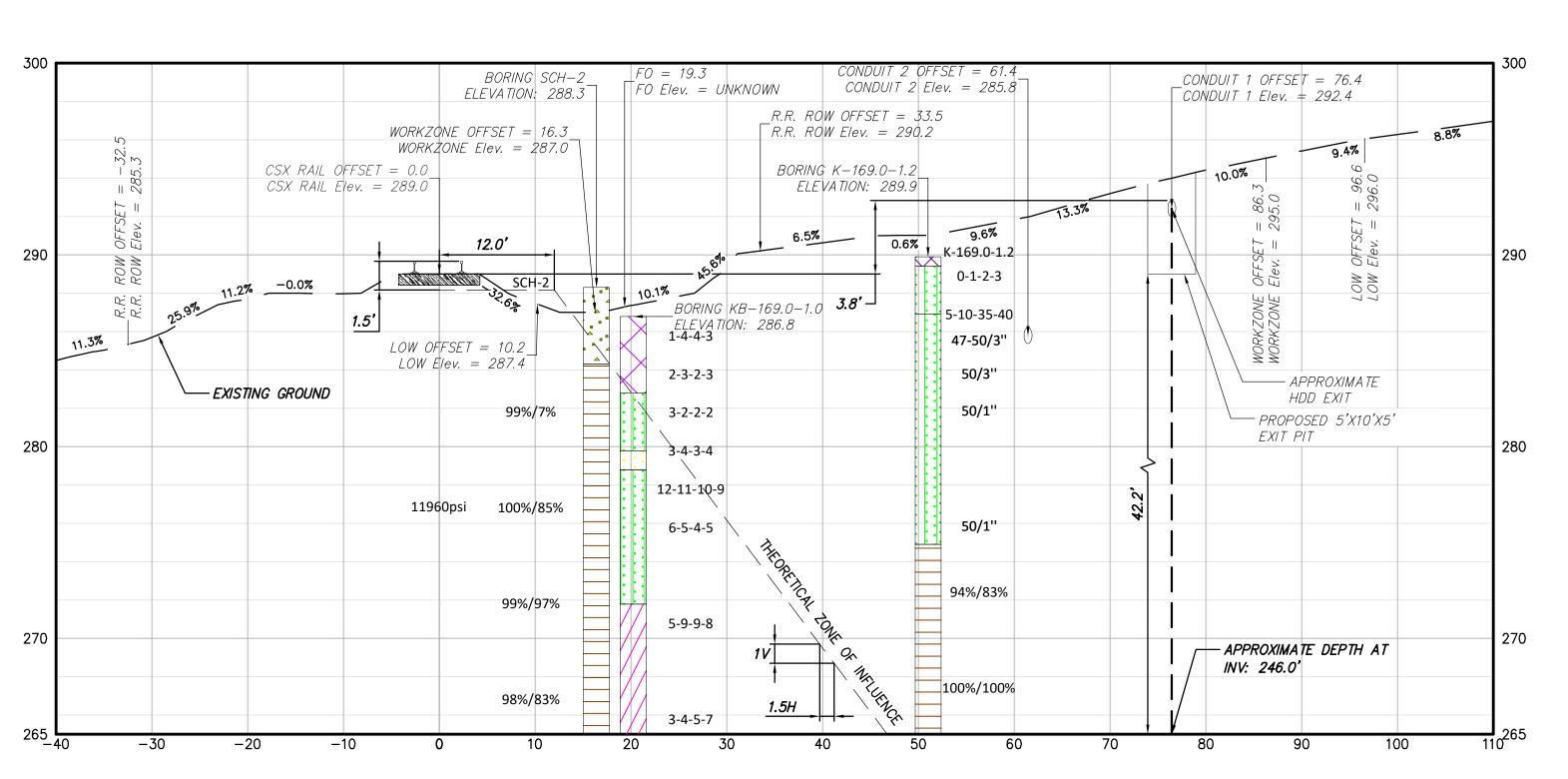
Weathered Rock

Delayed Water Table

▼ Water Table

Blow Counts per 6" = 10-10-10





HDD 63 CONDUIT 1 EXIT PIT CUT SECTION; STA. 45052+59 CSX PAN AM SOUTHERN SUBDIVISION MP QG 4.13

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

		Legena
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷	Boulder	Boulder
/////	СН	Fat CLAY
/ / /	CH-MH	SILTY Fat CLAY
////	CL	Lean CLAY
///	CL-ML	SILTY CLAY
/ /	CONCRETE	Concrete
1 Y 2	Fill	Fill
S S	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
ŞŞ	GM	SILTY GRAVEL
SS	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
5	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
05	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
( '( '	ОН	ORGANIC Fat CLAY
<u> </u>	DL DL	DRGANIC Lean CLAY
<u> </u>	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
		Sandstone
/. • <u>/</u> . •	Sandstone	
/ /	32	CLAYEY SAND
. 1	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
<u>::::::</u>	SM	SILTY SAND
	SP	Poorly Graded SAND
: /: :	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
<u> </u>	SM-SC	Well Graded SAND with CLAY
<u>.</u>	SW-SM	Well Graded SAND with SILT
	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
7777	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
11	USGS 708	Gneiss
<i>{\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>		
<u> </u>	USGS 718	Granite 1
	Vold	Void
	Water	Water
	Weathered Rock	Undefined
<b>T</b>	Water Table	Water Table during drilling
$\nabla$	Delayed Water	Water Table after drilling









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.

	CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 63 RAILROAD CROSS SECTION CUT

SPB JEO

07/28/2023 ISSUED FOR CONSTRUCTION SUBMISSION

DATE SUBMITTAL / REVISION DESCRIPTION

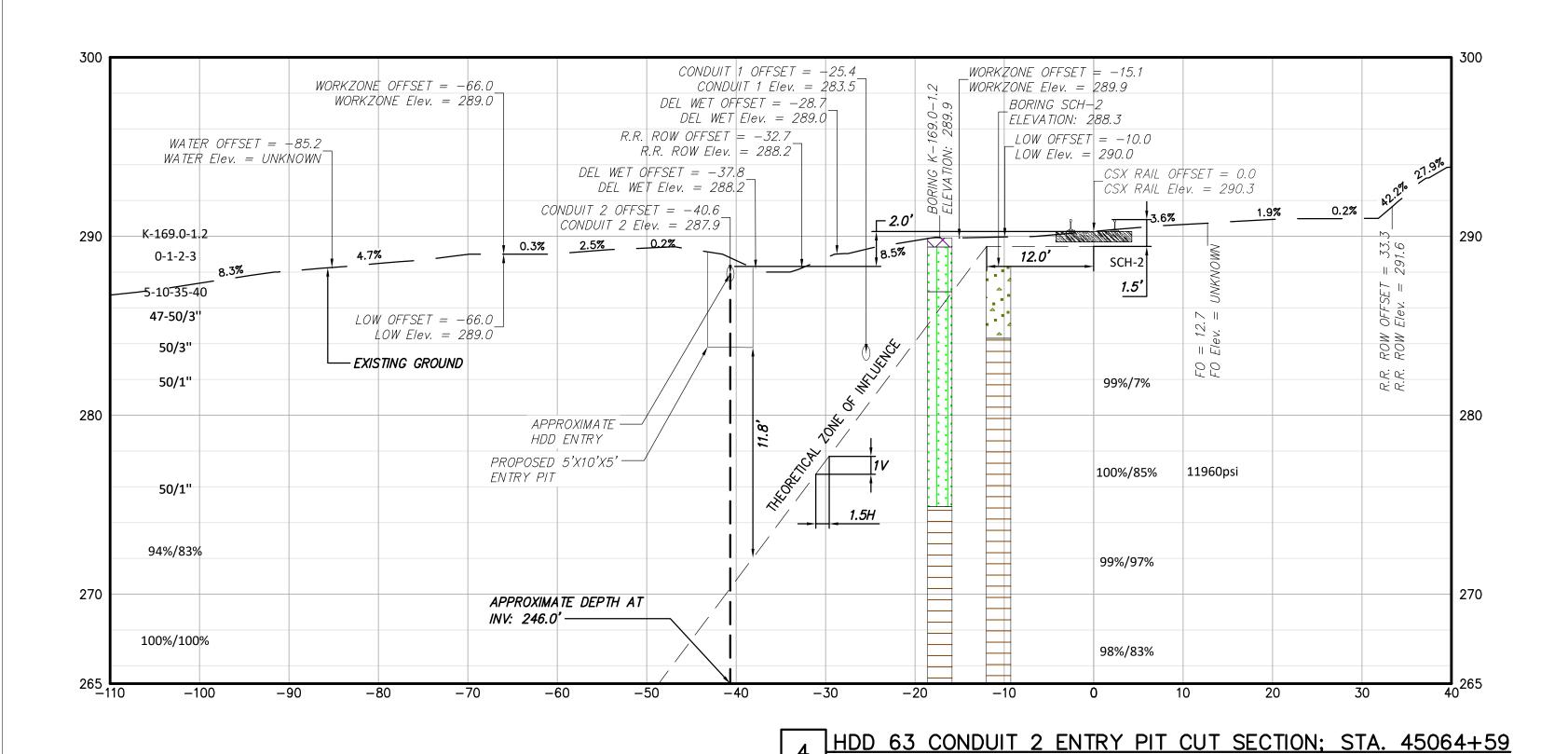
21162 CHA PROJECT NO. DRAWING NO.

**C-643** 

D SH.NO.

AS NOTED DATE

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.



CSX PAN AM SOUTHERN SUBDIVISION MP QG 4.36

CONDUIT 2 OFFSET = 61.7BORING SCH-2 FO = 19.2CONDUIT OFFSET = 76.1— EXISTING GROUND ELEVATION: 288.3 FO Elev. = UNKNOWN CONDUIT 2 Elev. = 290.2 CONDUIT Elev. = 294.0BORING K-169.0-1.2 WORKZONE OFFSET = 16.3 ELE VATION: 289.9  $WORKZONE\ Elev. = 287.0$ 32. CSX RAIL OFFSET = 0.0 BORING KB-169.0-1.0 ELEVATION: 286.8 CSX RAIL Elev. = 289.0 <u>C</u> ⊕ K-169.0-1.2 290 290 0-1-2-3 0.0% - APPROXIMATE 5-10-35-40 HDD EXIT 47-50/3'' LOW OFFSET = 10.5LOW Elev. = 287.3 2-3-2-3 50/3" 50/1" 99%/7% 3-2-2-2 — *PROPOSED 5'X10'X5'* EXIT PIT 280 280 3-4-3-4 12-11-10-9 11960psi 100%/85% —— 50/1" 6-5-4-5 94%/83% 99%/97% 5-9-9-8 270 — APPROXIMATE DEPTH AT INV: 246.0' 100%/100% 98%/83% 3-4-5-7

> HDD 63 CONDUIT 2 EXIT PIT CUT SECTION; STA. 45052+38 CSX PAN AM SOUTHERN SUBDIVISION MP QG 4.13

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

ASPHALT Bedrock Bedrock Boulder Boulder Fat CLAY CH SILTY Fat CLAY CH-MH Lean CLAY SILTY CLAY CL-ML CONCRETE Concrete Fill Fill CLAYEY GRAVEL GC-GM SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY GP-GC GP-GM Poorly Graded GRAVEL with SILT Well Graded GRAVEL Well Graded GRAVEL with CLAY GW-GM Well Graded GRAVEL with SILT Limestone Elastic SILT ORGANIC Lean CLAY OL/OH ORGANIC SOIL PEAT Rock Rock Sandstone Sandstone CLAYEY SAND SILT, CLAYEY SAND 2C-2W SHALE Shale SILTSTONE Siltstone SILTY SAND Poorly Graded SAND SP-SC Poorly Graded SAND with CLAY SP-SM Poorly Graded SAND with SILT Well graded SAND SW SM-SC Well Graded SAND with CLAY Well Graded SAND with SILT SW-SMTopsoil Topsoil Gravel or Conglomerate 1 USGS 601 USGS 654 Subgraywacke Interbedded Sandstone and Shale USGS 702 USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Undefined Weathered Rock ▼ Water Table Water Table during drilling □ Delayed Water Table Water Table after drilling







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 ALTERED. THE ALTERING ENGINEER. ARCHITECT. LANDSCAPE ACHIERD, 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.

						CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM HDD 63 RAILROAD CROSS SECTION
-	0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
	No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

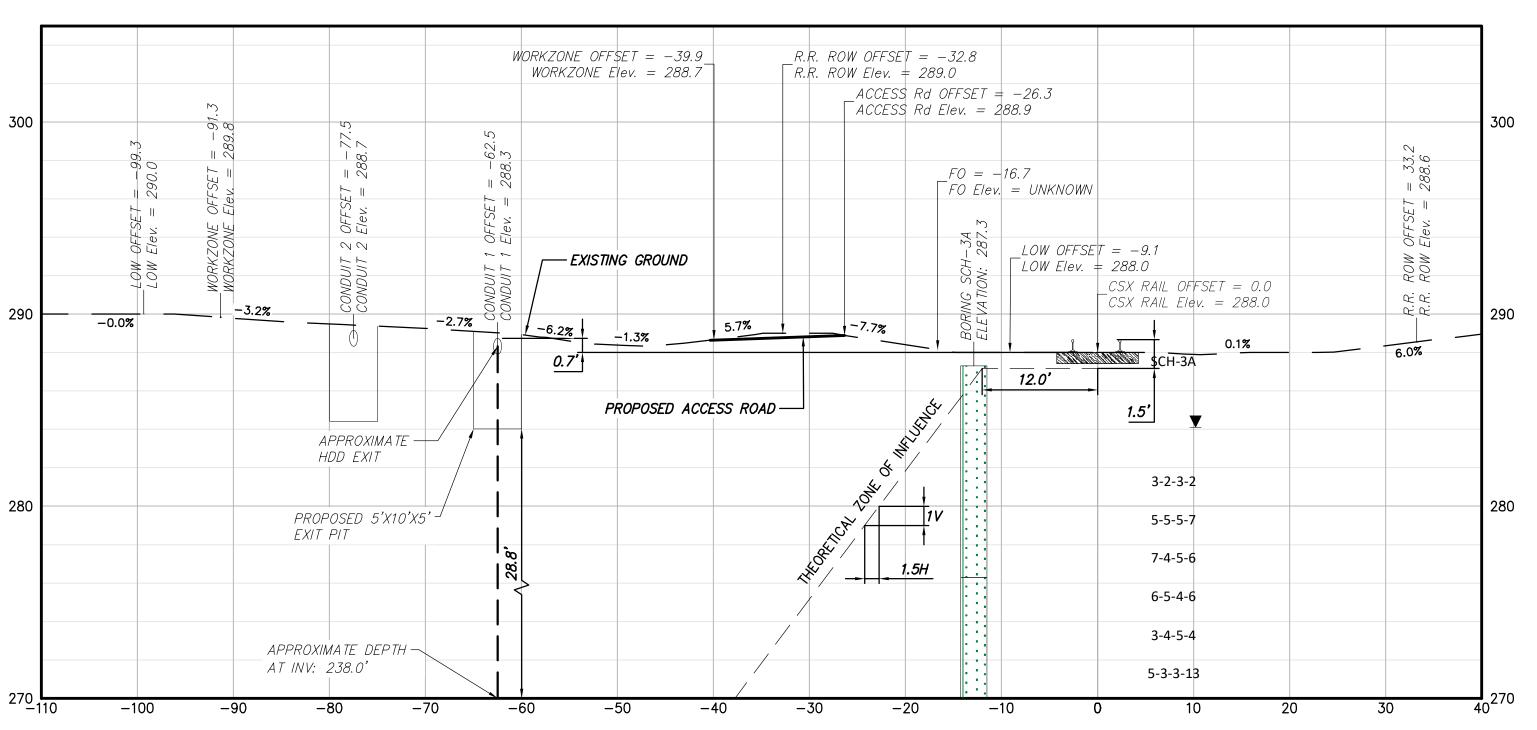
CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN	
SEGIVILIA (FACINAGE 4D) - COX - FAIN AIN SOUTHLINIA	Г
HDD 63 RAILROAD CROSS SECTION CUT	

Scale in feet

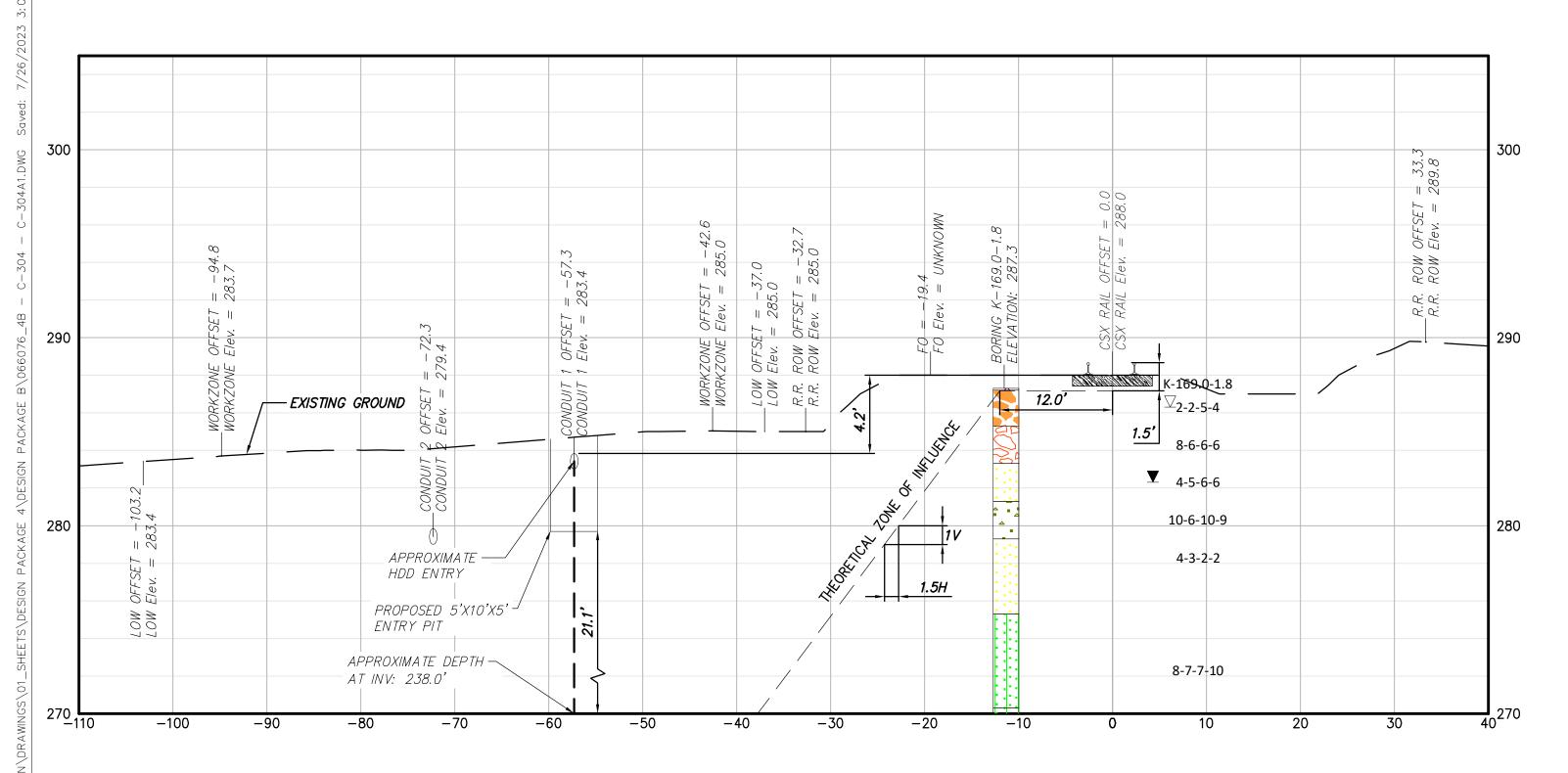
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

C-643.1

AS NOTED DATE D SH.NO.



HDD 64 CONDUIT 1 EXIT PIT CUT SECTION; STA. 45112+04
CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.25



HDD 64 CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45098+75
CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.01

Champlain Hudson **Power Express** 





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
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SPECIFIC DESCRIPTION OF THE ALTERATION.

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0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	D

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN	
HDD 64 RAILROAD CROSS SECTION CUT	_

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

Water Table after drilling

C-644

AS NOTED DATE DB | APP | DRAWN BY: ZH | DESIGNED BY: ZH | APPROVED BY: JEO | REV. NO. D SH.NO.

□ Delayed Water Table

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

Asphalt

Bedrock

Boulder

Fat CLAY

SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete Fill

CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL

Well Graded GRAVEL with CLAY

Well Graded GRAVEL with SILT

Limestone Elastic SILT

ORGANIC Fat CLAY

ORGANIC Lean CLAY

ORGANIC SOIL

PEAT

Rock

Sandstone

CLAYEY SAND

SILT, CLAYEY SAND

Shale

Siltstone

Recovery %/RQD % = 95%/90% - 11000psi =UCS

ASPHALT

Bedrock

Boulder

CH

CH-MH

CL-ML

CONCRETE

Fill

GC-GM

GP-GC

GP-GM

GW

GW-GC

GW-GM

Limestone

OL/OH

Rock

Sandstone

2C-2M

SHALE

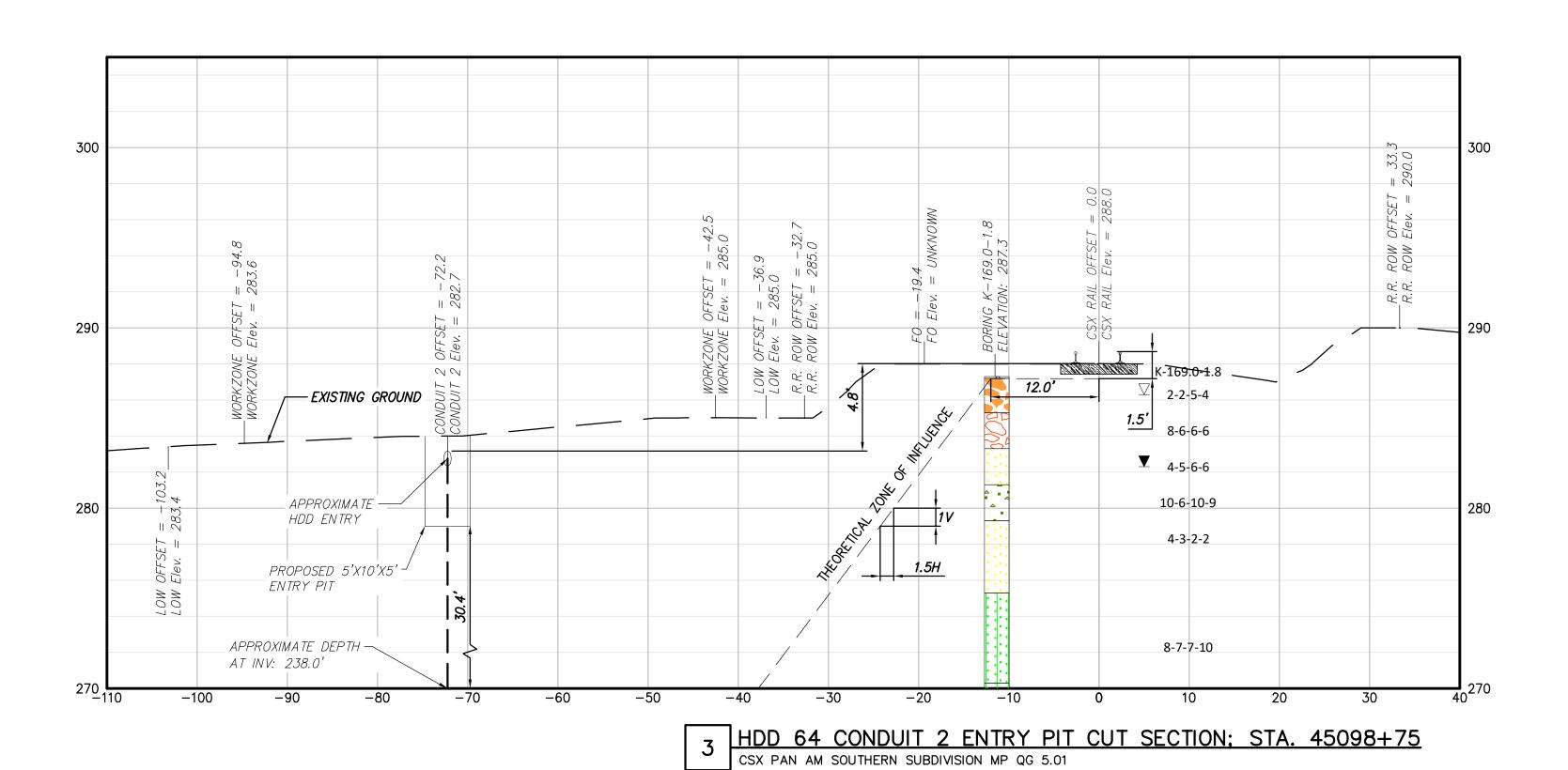
SILTSTONE

Blow Counts per 6" = 10-10-10

SILTY SAND Poorly Graded SAND SP SP-SC Poorly Graded SAND with CLAY Poorly Graded SAND with SILT SP-SM Well graded SAND SW SM-SC Well Graded SAND with CLAY Well Graded SAND with SILT SW-SMTopsoil Topsoil Gravel or Conglomerate 1 USGS 601 USGS 654 Subgraywacke Interbedded Sandstone and Shale USGS 702 USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Water Undefined Weathered Rock ▼ Water Table Water Table during drilling Scale in feet



HDD 64 CONDUIT 2 EXIT PIT CUT SECTION; STA. 45112+05 CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.25



GC-GM SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY GP-GC Poorly Graded GRAVEL with SILT GP-GM Well Graded GRAVEL Well Graded GRAVEL with CLAY GW-GM Well Graded GRAVEL with SILT Limestone Elastic SILT ORGANIC Fat CLAY ORGANIC Lean CLAY OL/OH ORGANIC SOIL PEAT Rock Rock Sandstone Sandstone CLAYEY SAND SILT, CLAYEY SAND 2C-2M SHALE Shale SILTSTONE Siltstone SILTY SAND SP Poorly Graded SAND SP-SC Poorly Graded SAND with CLAY SP-SM Poorly Graded SAND with SILT SW Well graded SAND

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration

Legend

Bedrock

Boulder

Fat CLAY SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

3D strip logs have no exaggeration

Recovery %/RQD % = 95%/90% - 11000psi =UCS

ASPHALT Bedrock

Boulder

CH

CH-MH

CL-ML

CONCRETE

Fill

SM-SC

SW-SM

Topsoil

USGS 601

USGS 654

USGS 670

USGS 702 USGS 705

USGS 705

Blow Counts per 6" = 10-10-10

USGS 708 USGS 708 USGS 718 Void Weathered Rock ▼ Water Table Water Table during drilling

10 Scale in feet Delayed Water Table CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN

HDD 64 RAILROAD CROSS SECTION CUT

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

Well Graded SAND with CLAY

Well Graded SAND with SILT

Topsoil Gravel or Conglomerate 1

Subgraywacke

nterbedded Sandstone and Shale

Schist

Schist

Gneiss

Gneiss

Granite 1

Void

Water

Undefined

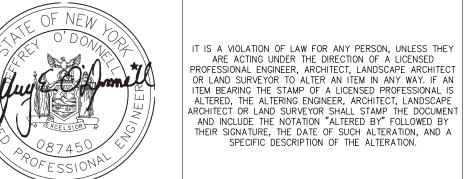
Water Table after drilling

C-644.1

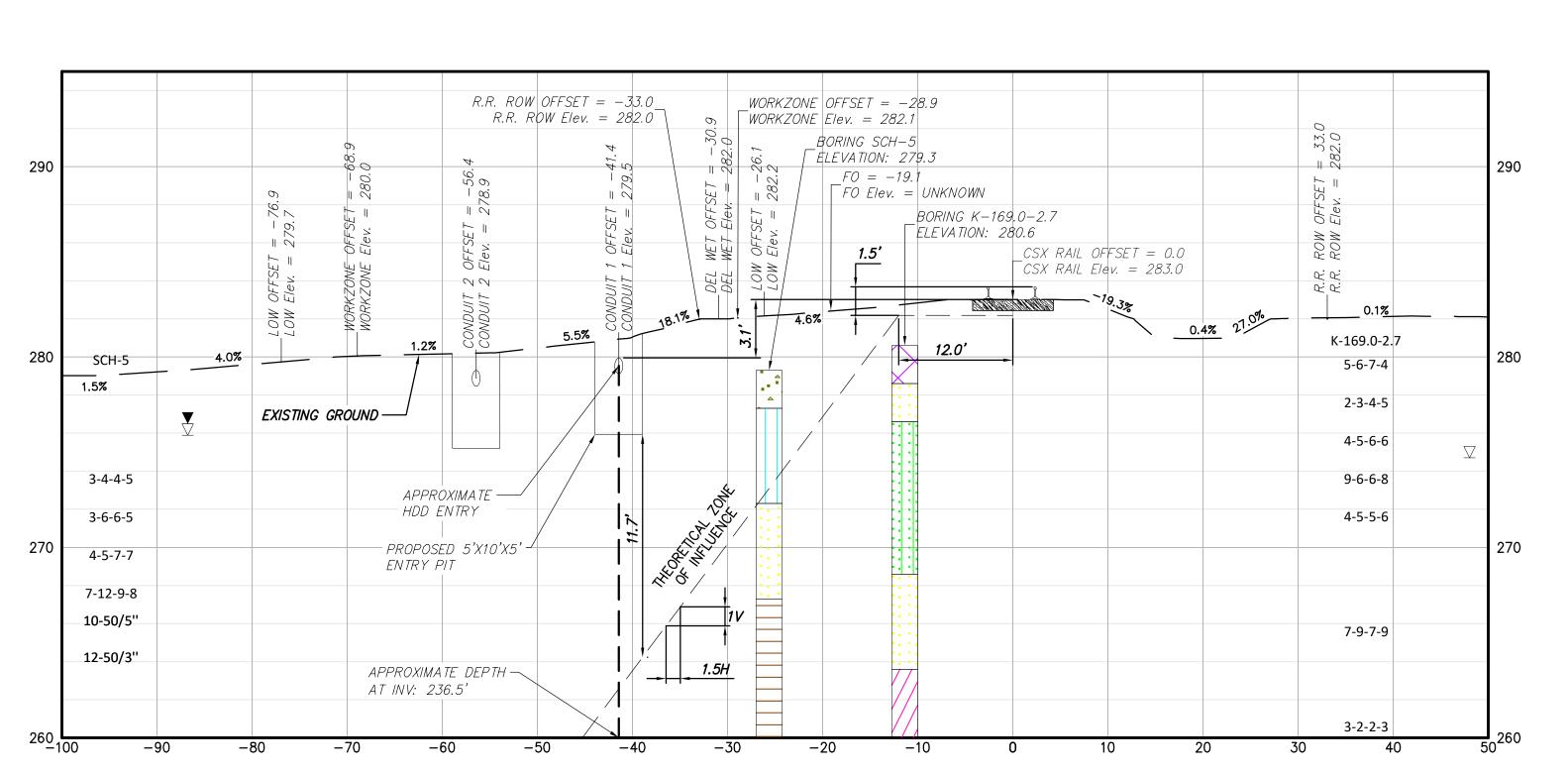
Champlain Hudson **Power Express** 







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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	L



HDD 64A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45139+76 CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.78

HDD 64A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45149+04

CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.95

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷	Boulder	Boulder
	СН	Fat CLAY
////	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
<del>/ / / /</del>	CL-ML	SILTY CLAY
/ /	CONCRETE	Concrete
$\times$	Fill	Fill
5 X 3	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
$\frac{1}{2}$		Poorly Graded Gravel with CLAY
	GP-GC	Poorly Graded GRAVEL with SILT
	GP-GM	•
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
	DΗ	ORGANIC Fat CLAY
	OL.	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
<u> </u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
· /: :/	2C	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
- / -	SHALE	Shale
X	SILTSTONE	Siltstone
111	SM	SILTY SAND
	SP	Poorly Graded SAND
• • • •	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
<b>A</b> *	2M-2C	Well Graded SAND with CLAY
<u> </u>		
	SW-SM	Well Graded SAND with SILT
$\sim$	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
1.1.1.1.1		
	USGS 705	Schist
	USGS 705 USGS 705	Schist Schist
	USGS 705	Schist
	USGS 705 USGS 708	Schist Gneiss
	USGS 705 USGS 708 USGS 708	Schist Gneiss Gneiss
	USGS 705 USGS 708 USGS 708 USGS 718	Schist Gneiss Gneiss Granite 1
	USGS 705 USGS 708 USGS 708 USGS 718 Void	Schist Gneiss Gneiss Granite 1 Void
▼	USGS 705 USGS 708 USGS 708 USGS 718 Void Water	Schist Gneiss Gneiss Granite 1 Void Water

Champlain Hudson **Power Express** 





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	CHAMPLAIN HUDSON POWER EXPRESS
	SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
	,
	HDD 64A RAILROAD CROSS SECTION CUT

SPB JEO

Scale in feet

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

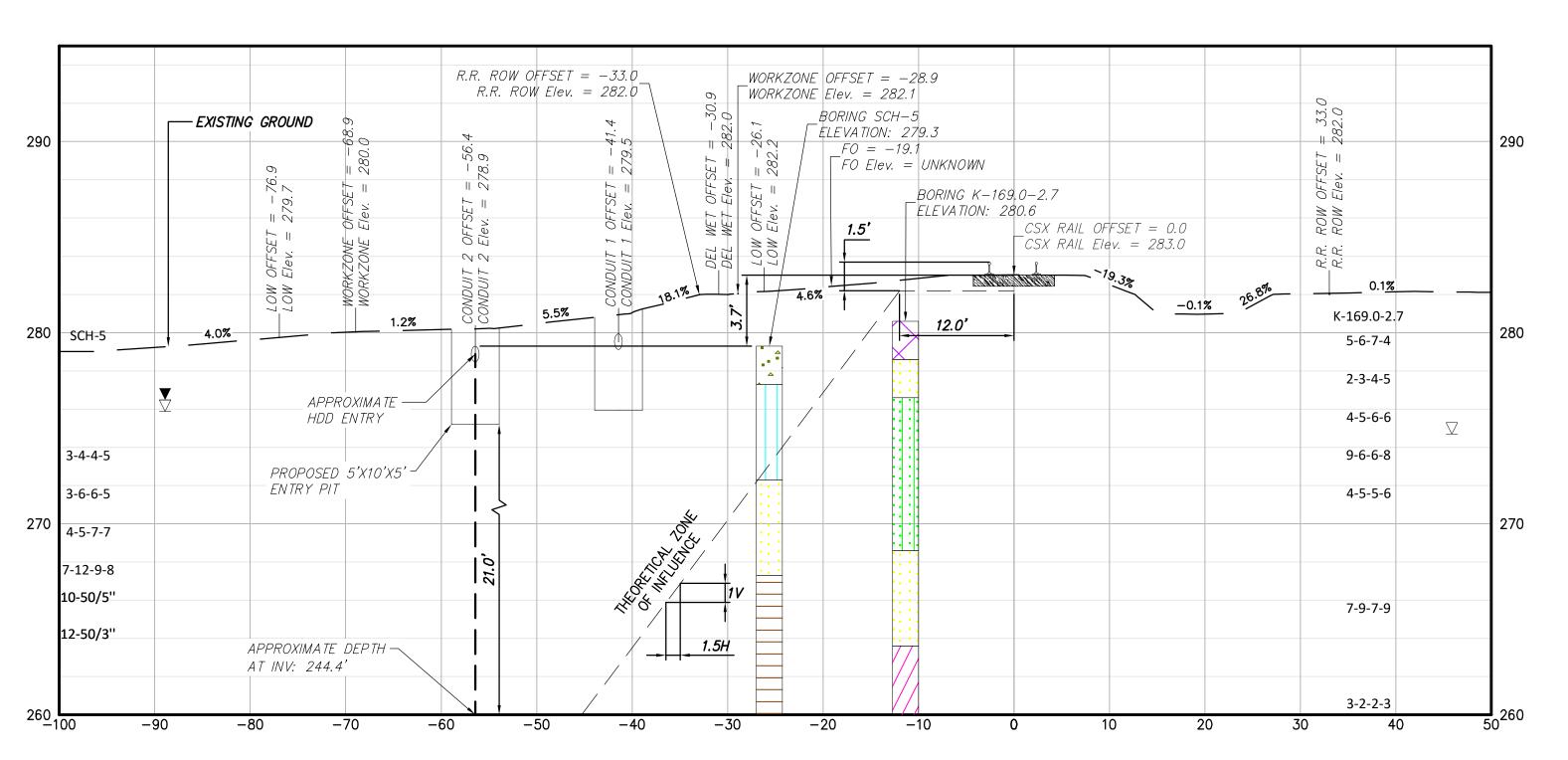
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

**C-645** 

AS NOTED DATE D SH.NO.

ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAP
ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUME
AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY
THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND
SPECIFIC DESCRIPTION OF THE ALTERATION.

HDD 64A CONDUIT 2 EXIT PIT CUT SECTION; STA. 45149+04 CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.95



HDD 64A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45139+76
CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.78

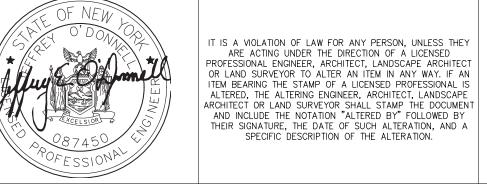
BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend
	ASPHALT	Asphalt
· · • • ·	Bedrock	Bedrock
,	Boulder	Boulder
// // //	CH	Fat CLAY
/ // /	CH-MH	SILTY Fat CLAY
///	CL	Lean CLAY
/	CL-ML	SILTY CLAY
	CONCRETE	Concrete
ND G	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
Ö	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	МН	Elastic SILT
	ML	SILT
() ()	DΗ	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
886	OL/OH	ORGANIC SOIL
\ /	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
(: :/: : _/	2C	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
- / -	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
	SP-SC	Poorly Graded SAND with CLAY
• :	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
	SW-SC	- Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
XXX	Topsoil	Topsoil
/ × × \	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
7777	USGS 705	Schist
	USGS 705	Schist
((())(()) ()	USGS 708	Gneiss
1	USGS 708	Gneiss
<del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>	USGS 718	Granite 1
	Void	Void
	Vola	Void
·	Weathered Rock	Undefined  Water Table during drilling
▼	Water Table	

Champlain Hudson **Power Express** 







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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DF

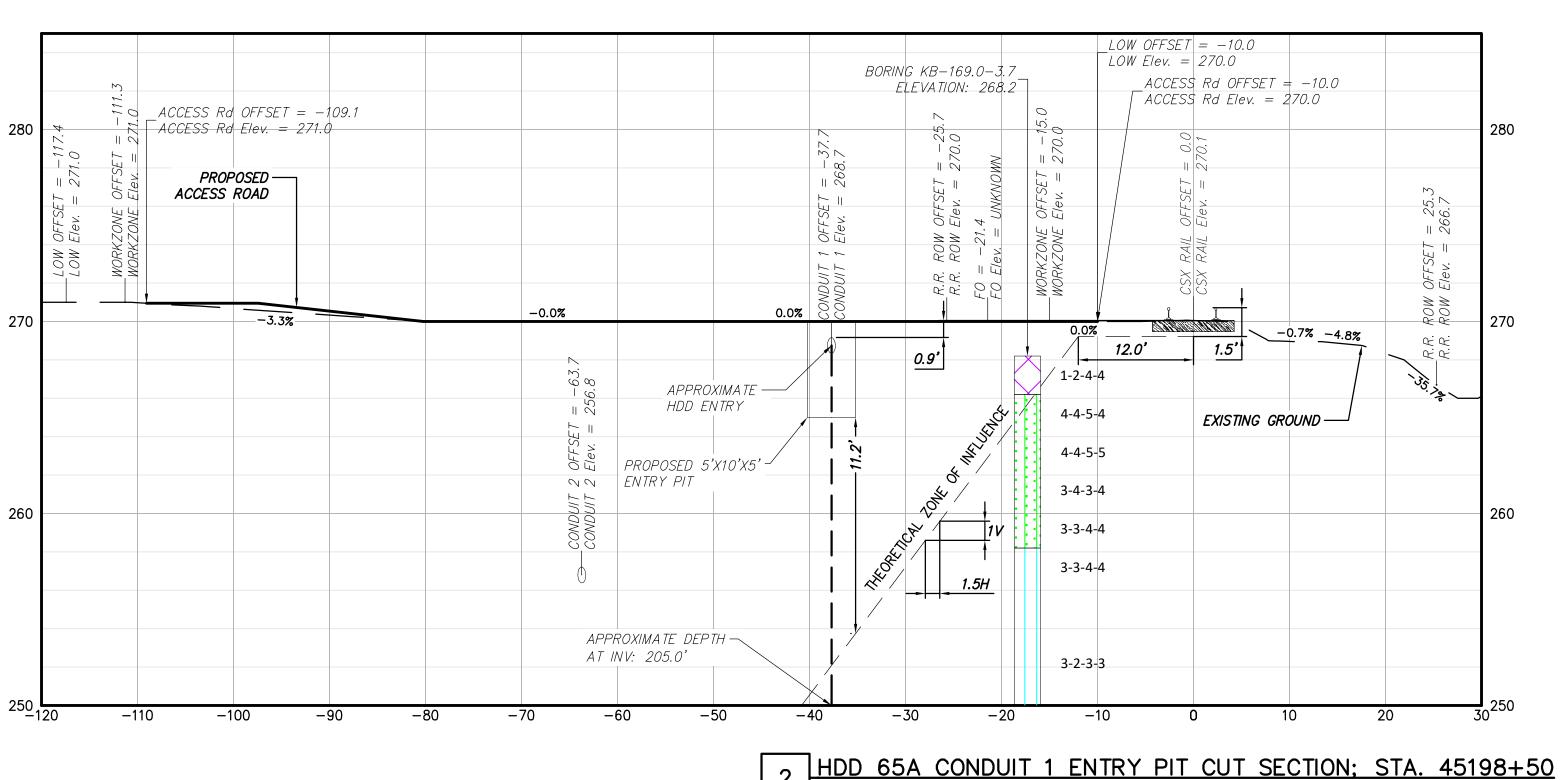
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 64A RAILROAD CROSS SECTION CUT

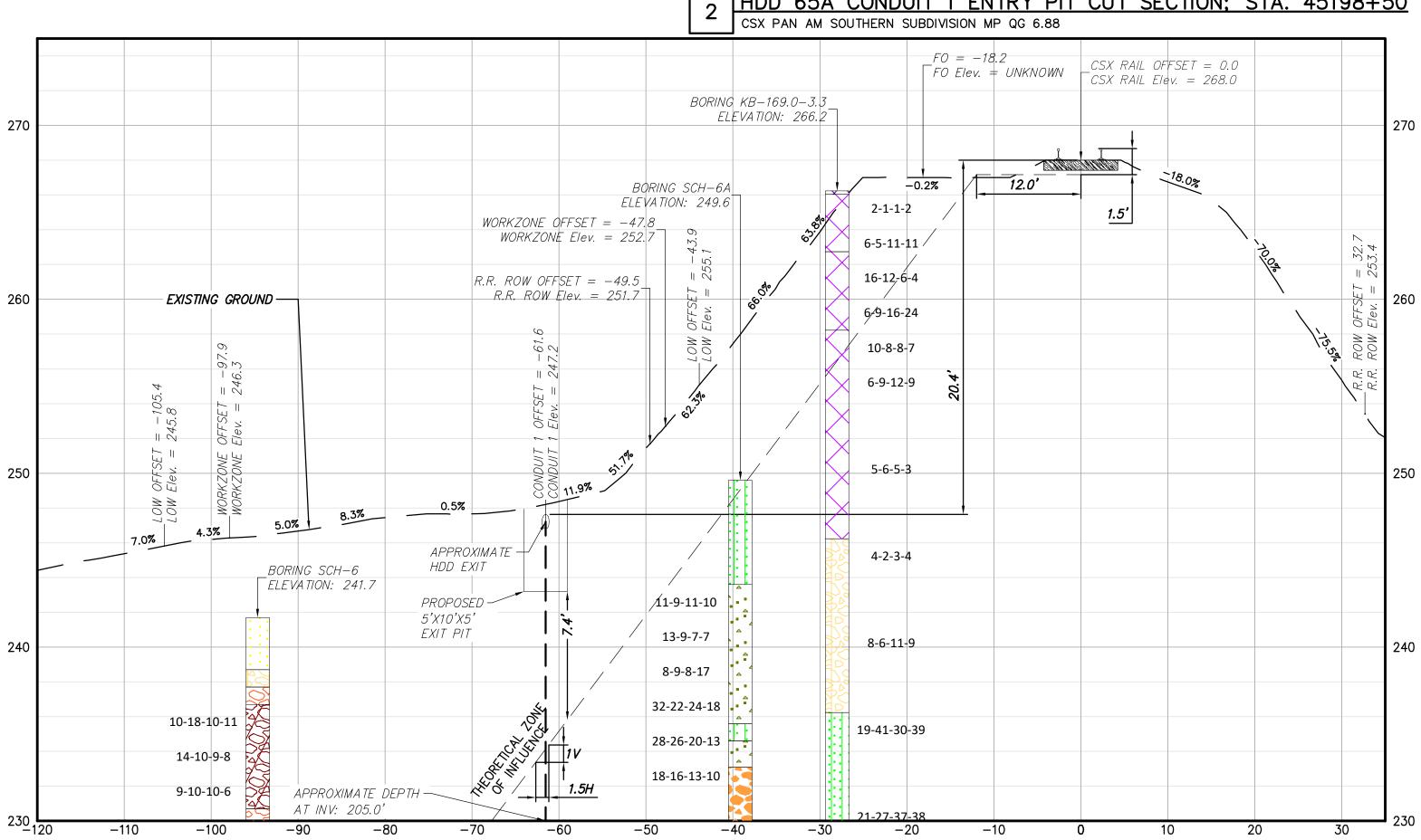
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

C-645.1

AS NOTED DATE DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

D SH.NO.





HDD 65A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45172+68
CSX PAN AM SOUTHERN SUBDIVISION MP QG 6.40

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

		Legeno
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷 .	Boulder	Boulder
	СН	Fat CLAY
/ / /	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
7	CL-ML	SILTY CLAY
/ /	CONCRETE	Concrete
	Fill	Fill
12 Y 3	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	
		SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	МН	Elastic SILT
	ML	SILT
(( ((	ОН	ORGANIC Fat CLAY
" J"	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
<u>/ / /</u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
/ <b>.</b> ·/· ·	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
. / - •	SHALE	Shale
	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
. /	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
4	SW	Well graded SAND
<u> </u>	SW-SC	Well Graded SAND with CLAY
4 . ·	SW-SM	Well Graded SAND with SILT
$\times\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
1111	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
11	USGS 708	Gneiss
7/7/	USGS 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
▼	Water Table	Water Table during drilling
$\nabla$	Delayed Water	Water Table after drilling







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

-	0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM S  HDD 65A RAILROAD CROSS SECTION
ŀ	•	0772072020	ICCOLD I CIX CONCINCOTION CODMICCION			SCALE
	No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

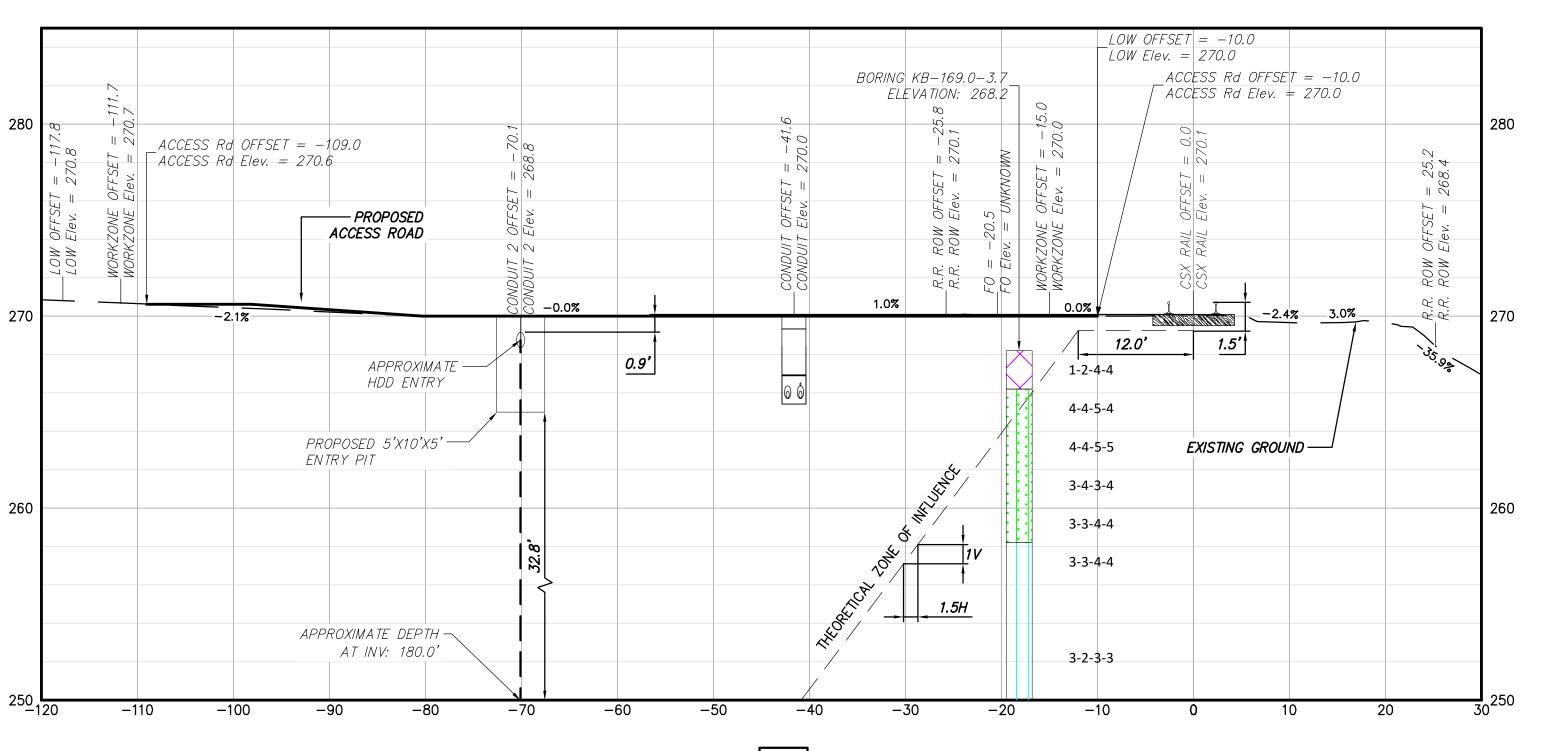
CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 65A RAILROAD CROSS SECTION CUT

10 Scale in feet

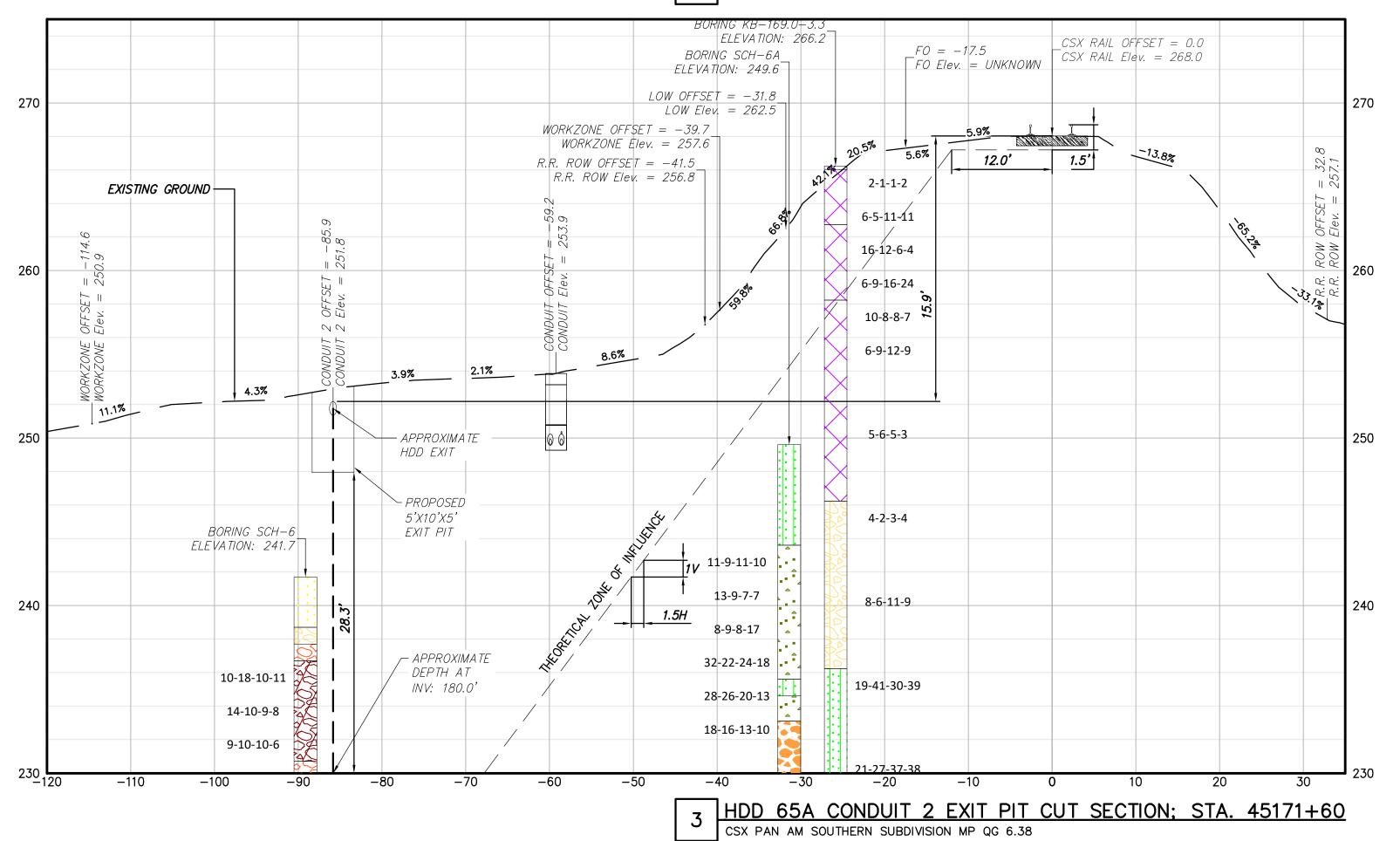
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

**C-646** 

AS NOTED DATE D SH.NO.



HDD 65A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45198+97 CSX PAN AM SOUTHERN SUBDIVISION MP QG 6.88



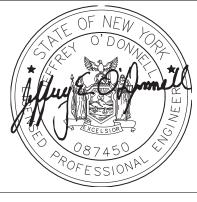
BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

	ASPHALT	Asphalt
	Bedrock	Bedrock
, O.	Boulder	Boulder
	СН	Fat CLAY
7 ] [	CH-MH	SILTY Fat CLAY
///	CL	Lean CLAY
////	CL-ML	SILTY CLAY
/	CONCRETE	Concrete
	Fill	Fill
<u> </u>	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
50	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
00	GP-GM	Poorly Graded GRAVEL with SILT
33	GW	Well Graded GRAVEL
55	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
(( ((	ОН	ORGANIC Fat CLAY
1) 1)	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
: /: :/	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
• ;- :	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
. , .	SW-SC	Well Graded SAND with CLAY
- / " "	SW-SM	Well Graded SAND with SILT
	Topsoil	Topsoil
XX	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
<b>FFF</b>	USGS 702	Quartzite
	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
1/1/	USGS 708	Gneiss
7//	USGS 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
_ :: ::	wed vilered KOCK	
▼	Water Table	Water Table during drilling









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	0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM HDD 65A RAILROAD CROSS SECTION
ł						SCALE
	No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

MPLAIN HUDSON POWER EXPRESS ENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN IDD 65A RAILROAD CROSS SECTION CUT

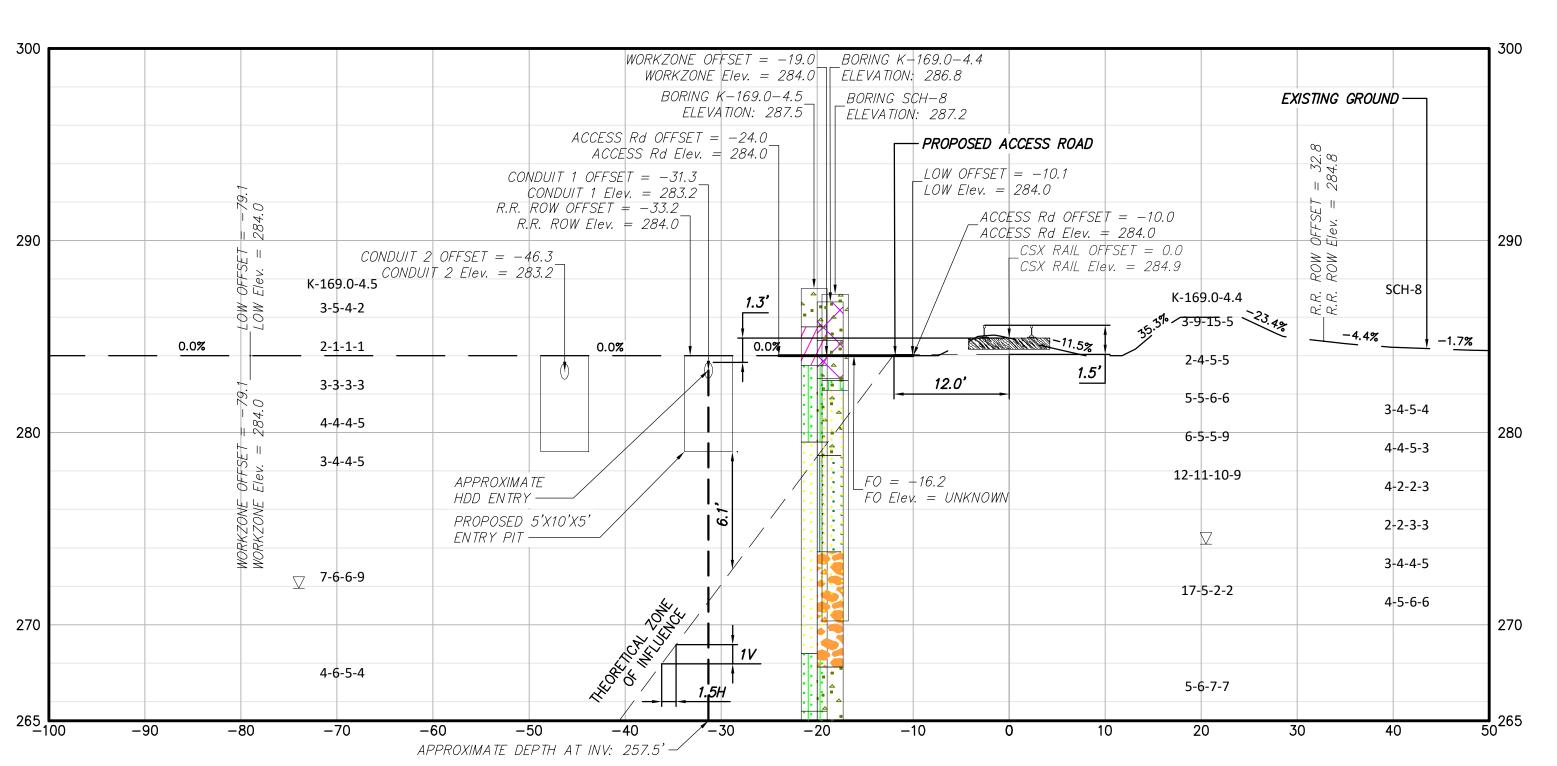
10 Scale in feet

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

C-646.1

AS NOTED DATE D SH.NO.





1 HDD 66 CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45228+93
CSX PAN AM SOUTHERN SUBDIVISION MP QG 7.45

BORING LOG STRIP LEGEND

B101

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

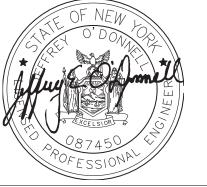
2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

			Legend
		ASPHALT	Asphalt
F	_	Bedrock	Bedrock
	<b>⇔</b> **	Boulder	Boulder
		СН	Fat CLAY
/		CH-MH	SILTY Fat CLAY
	77	CL	Lean CLAY
/		CL-ML	SILTY CLAY
		CONCRETE	Concrete
	$\times$	Fill	Fill
55	7	GC	CLAYEY GRAVEL
15		GC-GM	SILTY CLAYEY GRAVEL
2		GM	SILTY GRAVEL
200	200	GP	Poorly Graded GRAVEL
50	γ γ	GP-GC	Poorly Graded Gravel with CLAY
2		GP-GM	Poorly Graded GRAVEL with SILT
		GW	Well Graded GRAVEL
7	<del>~</del>	GW-GC	Well Graded GRAVEL with CLAY
>	1	GW-GM	Well Graded GRAVEL with SILT
		Limestone	Limestone
		MH	Elastic SILT
	+	ML	SILT
((	((	DH	ORGANIC Fat CLAY
1))	·		DRGANIC FUT CLAY
3			
(C)	( (	OL/OH	ORGANIC SOIL
		PT	PEAT
-		Rock	Rock
7.	• 4 •	Sandstone	Sandstone
-	//	SC	CLAYEY SAND
	1	SC-SM	SILT, CLAYEY SAND
		SHALE	Shale
	$\stackrel{\wedge}{\longrightarrow}$	SILTSTONE	Siltstone
		SM	SILTY SAND
1		SP	Poorly Graded SAND
	/.	SP-SC	Poorly Graded SAND with CLAY
		SP-SM	Poorly Graded SAND with SILT
4		SW	Well graded SAND
_	<u>/</u> . •	SM-SC	Well Graded SAND with CLAY
		MS-MS	Well Graded SAND with SILT
Ķ	XX	Topsoil	Topsoil
(	)	USGS 601	Gravel or Conglomerate 1
		USGS 654	Subgraywacke
		USGS 670	Interbedded Sandstone and Shale
		USGS 702	Quartzite
7,		USGS 705	Schist
		USGS 705	Schist
		USGS 708	Gneiss
X	111	USGS 708	Gneiss
,		USGS 718	Granite 1
		Void	Void
		Water	Water
-		Weathered Rock	Undefined
-	<u>- · · ·                                </u>	Water Table	Water Table during drilling
	$\overline{\nabla}$	Delayed Water	Water Table after drilling









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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.

					CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 66 RAILROAD CROSS SECTION CUT
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	

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

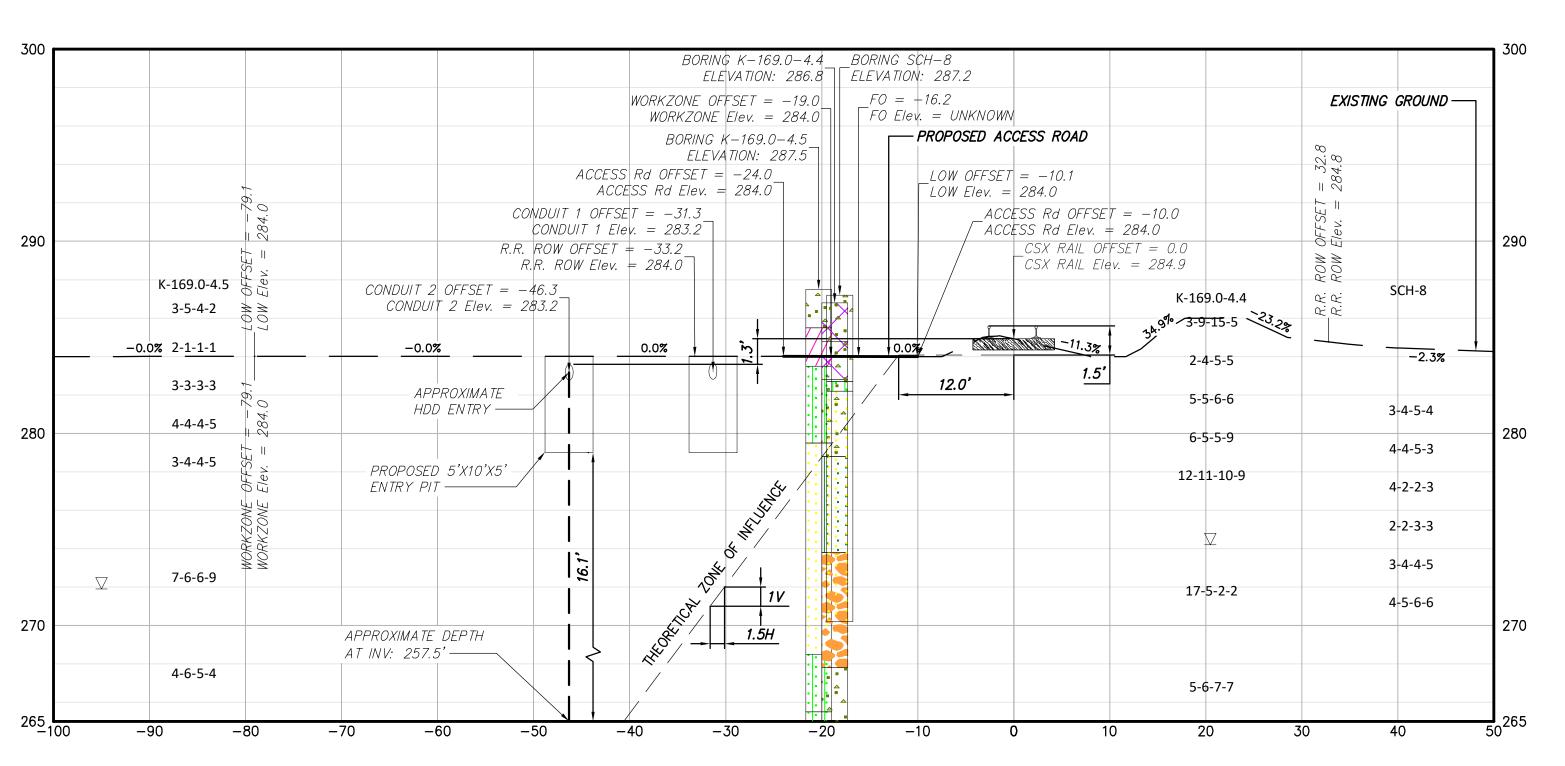
C-647

AS NOTED DATE
D SH.NO.

DATE SUBMITTAL / REVISION DESCRIPTION

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

HDD 66 CONDUIT 2 EXIT PIT CUT SECTION; STA. 45238+54 CSX PAN AM SOUTHERN SUBDIVISION MP QG 7.63



HDD 66 CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45228+93 CSX PAN AM SOUTHERN SUBDIVISION MP QG 7.45

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% — 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend			
	ASPHALT	Asphalt			
	Bedrock	Bedrock			
	Boulder	Boulder			
	СН	Fat CLAY			
/ / /	CH-MH	SILTY Fat CLAY			
////	CL	Lean CLAY			
	CL-ML	SILTY CLAY			
	CONCRETE	Concrete			
X	Fill	Fill			
15/X-3	GC	CLAYEY GRAVEL			
	GC-GM	SILTY CLAYEY GRAVEL			
56	GM	SILTY GRAVEL			
2003	GP	Poorly Graded GRAVEL			
	GP-GC	Poorly Graded Gravel with CLAY			
	GP-GM	Poorly Graded GRAVEL with SILT			
	GW	Well Graded GRAVEL			
	GW-GC	Well Graded GRAVEL with CLAY			
XX	GW-GM	Well Graded GRAVEL with SILT			
	Limestone	Limestone			
	MH	Elastic SILT			
	ML	SILT			
(( ((	ПН	ORGANIC Fat CLAY			
)) <u>)</u> )		ORGANIC Lean CLAY			
55	OL/OH	ORGANIC SOIL			
	PT	PEAT			
	Rock	Rock			
	Sandstone	Sandstone			
/. ·/. ·	SC SC	CLAYEY SAND			
. //	SC-SM	SILT, CLAYEY SAND			
. 1.		Shale			
	SHALE SILTSTONE	Siltstone			
	SM	SILTY SAND			
	SP	Poorly Graded SAND			
		Poorly Graded SAND with CLAY			
. /. •	SP-SC				
	SP-SM	Poorly Graded SAND with SILT			
<u> </u>	SW	Well graded SAND			
<u> </u>	SW-SC	Well Graded SAND with CLAY			
	SW-SM	Well Graded SAND with SILT			
$\sim$	Topsoil	Topsoil			
<u> </u>	USGS 601	Gravel or Conglomerate 1			
	USGS 654	Subgraywacke			
	USGS 670	Interbedded Sandstone and Shale			
<b>FFF</b>	USGS 702	Quartzite			
	USGS 705	Schist			
	USGS 705	Schist			
	USGS 708	Gnelss			
	USGS 708	Gneiss			
	USGS 718	Granite 1			
	Void	Void			
	Water	Water			
	Weathered Rock	Undefined			
•	Water Table	Water Table during drilling			
$\nabla$	Delayed Water Table	Water Table after drilling			

Champlain Hudson **Power Express** 





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	07/09/0002		CDD		CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM HDD 66 RAILROAD CROSS SECTION
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

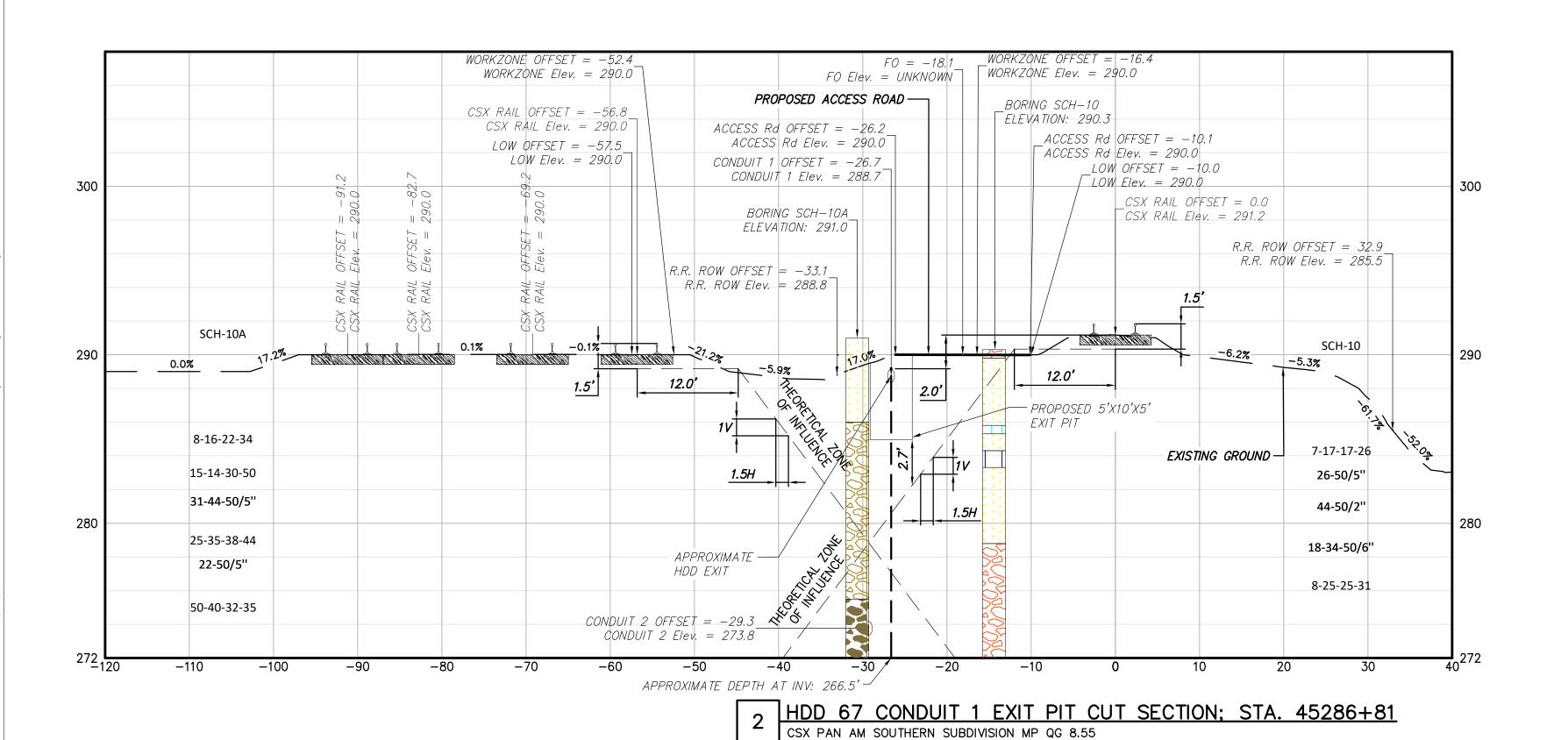
CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 66 RAILROAD CROSS SECTION CUT

10 Scale in feet

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

C-647.1

AS NOTED DATE D SH.NO.



BORING SCH-10 WORKZONE OFFSET = -17.7ELEVATION: 290.3 WORKZONE Elev. = 292.5 FO = -22.8PROPOSED ACCESS ROAD FO Elev. = UNKNOWN ACCESS | Rd | OFFSET = | -24.2|ACCESS Rd OFFSET = -10.0ACCESS Rd Elev. = 292.2 ACCESS Rd Elev. = 292.9 CONDUIT 1 OFFSET = -29.7LOW OFFSET = -9.925 CONDUIT 1 Elev. = 290.0 300 300 BORING SCH-10A CSX RAIL OFFSET = 0.0 ELEVATION: 291.0 CSX RAIL Elev. = 293.7 R.R. ROW OFFSET = -33.0R.R. ROW Elev.  $= 291.0^{-}$ -3.8% <u>-2.</u>6% -3.7% -2.3%-0.0% -4.7% 12.0° -0.7% SCH-10 290 290 SCH-10A APPROXIMATE -- EXISTING GROUND HDD ENTRY - PROPOSED ACCESS ROAD 9.2% PROPOSED 5'X10'X5' 7-17-17-26 ENTRY PIT 8-16-22-34 26-50/5"  $CONDUIT 2 OFFSET = -44.4_$ 15-14-30-50 44-50/2" CONDUIT 2 Elev. = 275.1 280 280 31-44-50/5" 18-34-50/6" 25-35-38-44 8-25-25-31 22-50/5" 50/6'' -50 -40 - APPROXIMATE DEPTH

1 CSX PAN AM SOUTHERN SUBDIVISION MP QG 8.42

Blow Counts per 6" = 10-10-10
Recovery %/RQD % = 95%/90%

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

Legend

ASPHALT Bedrock Bedrock Boulder Boulder Fat CLAY CH SILTY Fat CLAY CH-MH Lean CLAY SILTY CLAY CL-ML CONCRETE Concrete Fill Fill CLAYEY GRAVEL GC-GM SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL GP-GC Poorly Graded Gravel with CLAY GP-GM Poorly Graded GRAVEL with SILT Well Graded GRAVEL Well Graded GRAVEL with CLAY GW-GM Well Graded GRAVEL with SILT ORGANIC Lean CLAY OL/OH ORGANIC SOIL PEAT Rock Rock Sandstone Sandstone CLAYEY SAND SILT, CLAYEY SAND 2C-2M SHALE Shale SILTSTONE SILTY SAND Poorly Graded SAND Poorly Graded SAND with CLAY SP-SC SP-SM Poorly Graded SAND with SILT Well graded SAND SW SM-SC Well Graded SAND with CLAY Well Graded SAND with SILT SW-SMTopsoil Topsoil Gravel or Conglomerate 1 USGS 601 USGS 654 Subgraywacke nterbedded Sandstone and Shale USGS 702 USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Undefined Weathered Rock ▼ Water Table Water Table during drilling Delayed Water Table Water Table after drilling







					CHAMPLAIN HUDS SEGMENT 7 (PACKAGE 48
					HDD 67 RAILROAD
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	

DATE SUBMITTAL / REVISION DESCRIPTION

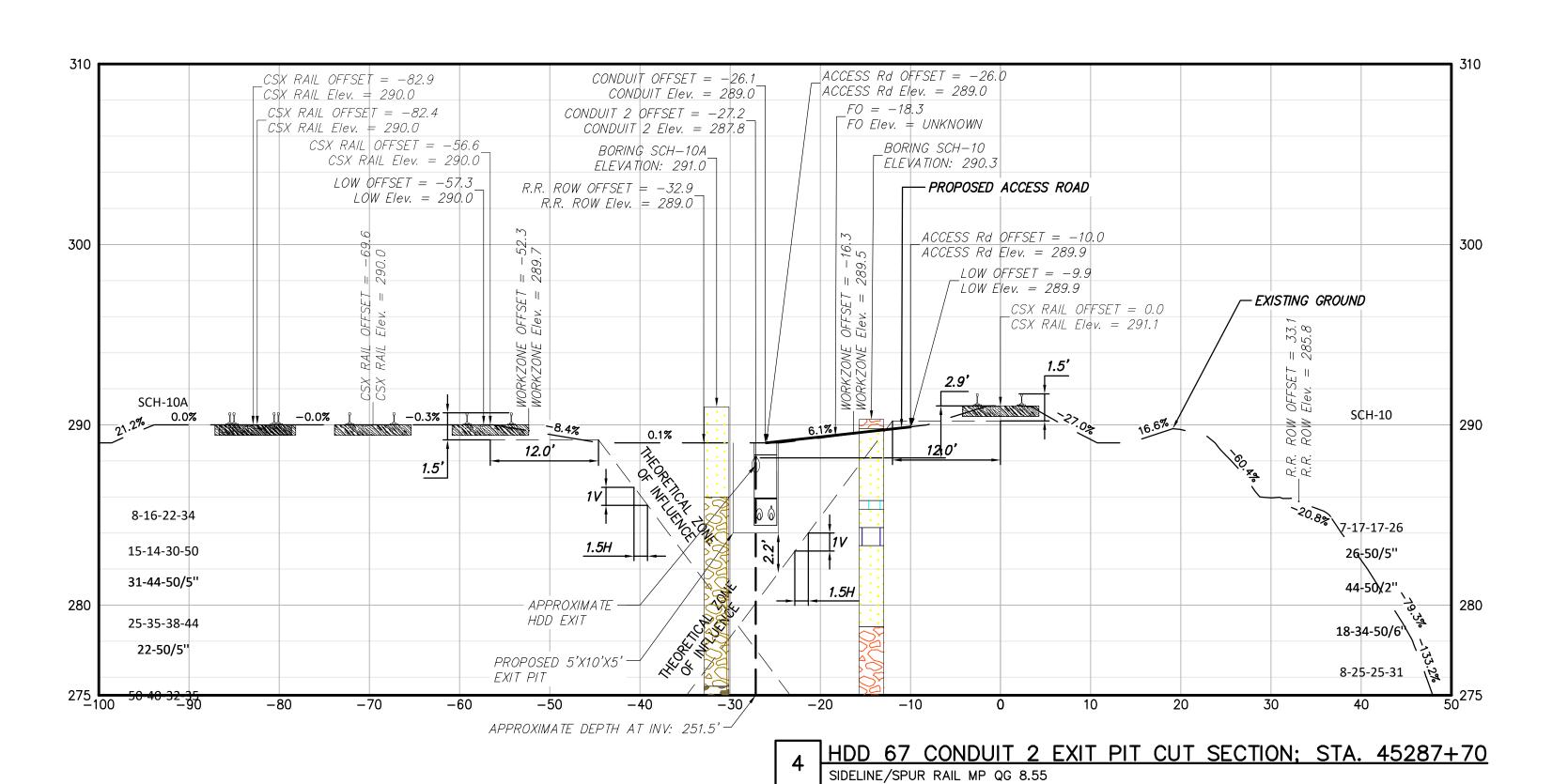
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 67 RAILROAD CROSS SECTION CUT

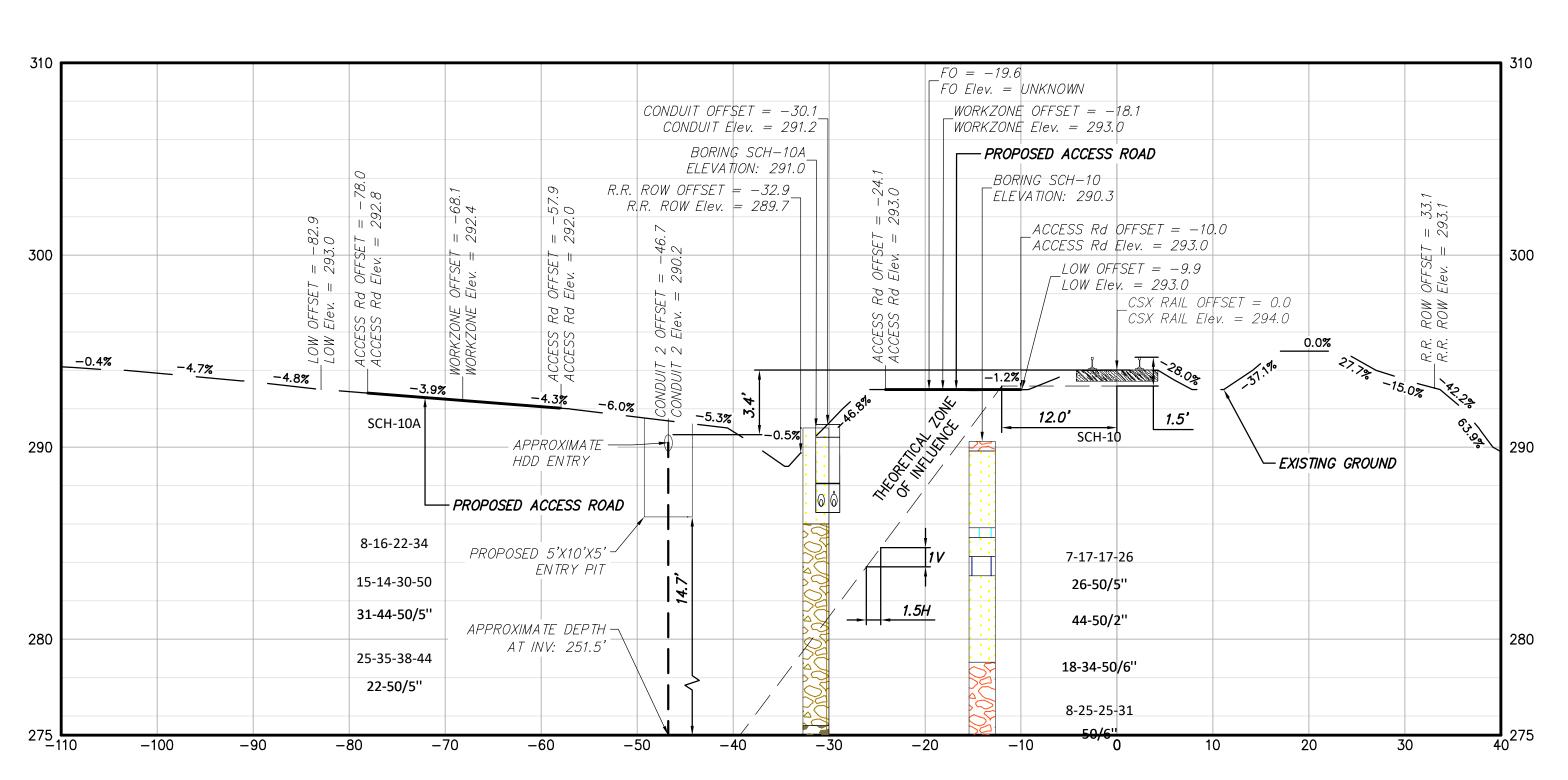
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

**C-648** 

SPB JEO

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. D SH.NO.





HDD 67 CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45279+00 SIDELINE/SPUR RAIL MP QG 8.40

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	СН	Fat CLAY
<del>"""</del>	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
<del>///</del> //	CL-ML	SILTY CLAY
/1 1	CONCRETE	Concrete
$\times$	Fill	Fill
2773	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
NO.	GP-GC	
		Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
$\Box\Box\Box$	MH	Elastic SILT
	ML	SILT
	ΩН	ORGANIC Fat CLAY
	OL OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
<u>///</u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
· ·/· : )	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
- / -	SHALE	Shale
X	SILTSTONE	Siltstone
11.	SM	SILTY SAND
	SP	Poorly Graded SAND
• • ,• •	SP-SC	Poorly Graded SAND with CLAY
. 1	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
<b>4</b> •	SW-SC	Well Graded SAND with CLAY
<u>^</u> / , "		
	SW-SM	Well Graded SAND with SILT
$\sim$	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
类类	USGS 702	Quartzite
	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
1/1 1/1	USGS 708	Gneiss
(22/2	USCS 710	Granite 1
	USGS 718	
	Void Void	Void
		Void Water
	Void	
<u> </u>	Void Water	Water







PROF OR L ITEM	A VIOLATION OF LAW FOR ANY PERSON, UNLE ARE ACTING UNDER THE DIRECTION OF A LICEN ESSIONAL ENGINEER, ARCHITECT, LANDSCAPE A AND SURVEYOR TO ALTER AN ITEM IN ANY WA BEARING THE STAMP OF A LICENSED PROFESS ERED, THE ALTERING ENGINEER, ARCHITECT, LAY TECT OR LAND SURVEYOR SHALL STAMP THE I
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	L
					4

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 67 RAILROAD CROSS SECTION CUT

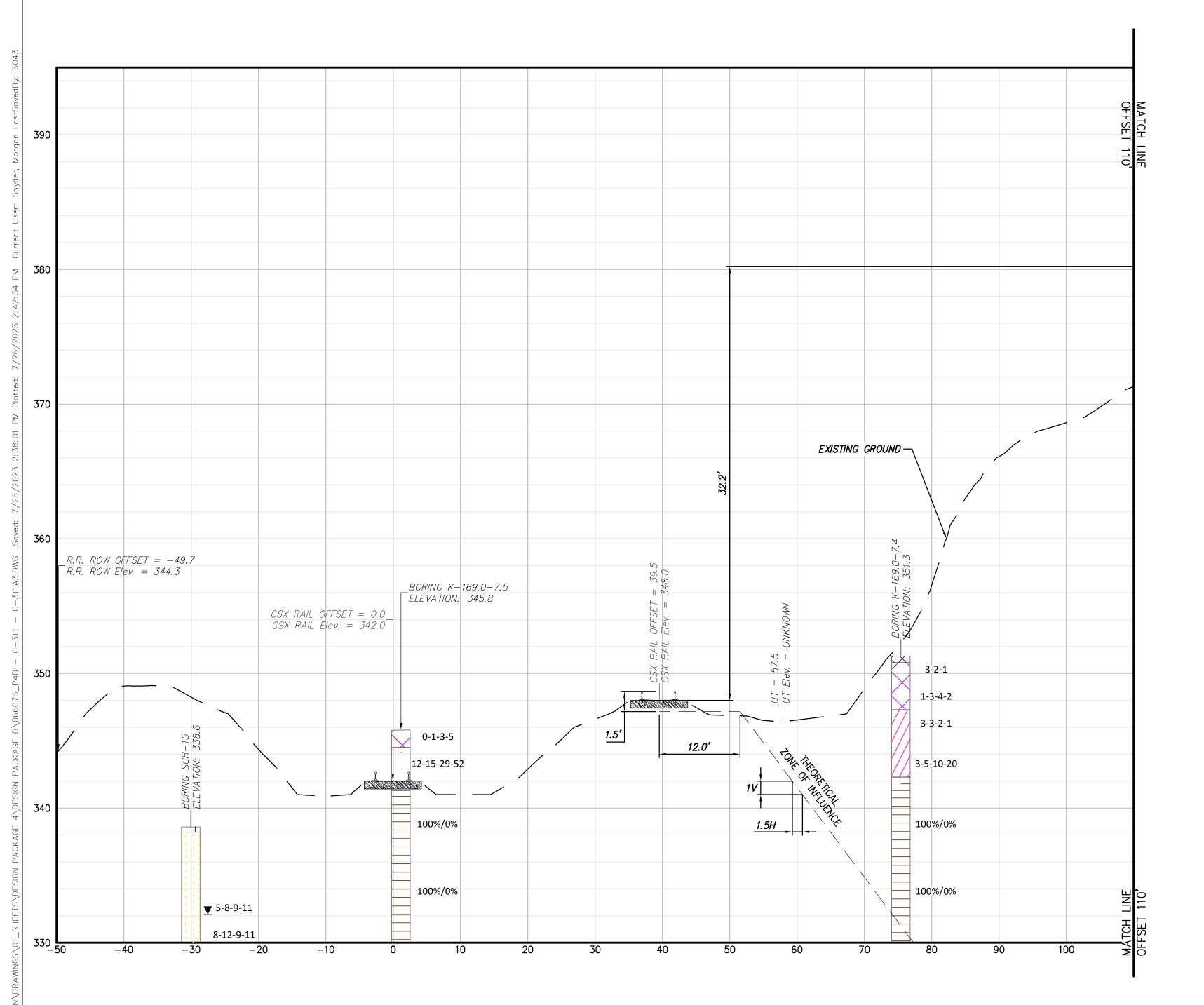
10 Scale in feet

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

C-648.1

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. AS NOTED DATE

D SH.NO.



1 HDD 69A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45375+64
CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.92

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

Legend

		Legeno
	ASPHALT	Asphalt
	Bedrock	Bedrock
· · 🗘 .	Boulder	Boulder
·/////	СН	Fat CLAY
<u>//                                   </u>	CH-MH	SILTY Fat CLAY
7/1/	CL	Lean CLAY
<del>/ / / /</del>	CL-ML	SILTY CLAY
<u> </u>	CONCRETE	Concrete
V Y 3	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
ÖÖ	GP	Poorly Graded GRAVEL
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	МН	Elastic SILT
	ML	SILT
( ( ( (	ОН	ORGANIC Fat CLAY
<del>"   "   "   "   "   "   "   "   "   "  </del>	OL	ORGANIC Lean CLAY
\$ \$ 3	OL/OH	DRGANIC SDIL
	PT	PEAT
	Rock	Rock
<del></del>	Sandstone	Sandstone
· · / ·	SC SC	
. //		CLAYEY SAND
. 1	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
<u> </u>	SM	SILTY SAND
	SP	Poorly Graded SAND
: /. :	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
4 . 4	SW	Well graded SAND
<u> </u>	SW-SC	Well Graded SAND with CLAY
4	N2-M2	Well Graded SAND with SILT
$\langle \times \rangle$	Topsoil	Topsoil
, , ,	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
7777	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
17	USGS 708	Gneiss
<del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>		
	USGS 718	Granite 1
	Vold	Vold
	Water	Water
	Weathered Rock	Undefined
▼ ∇	Weathered Rock  Water Table  Delayed Water	Undefined  Water Table during drilling  Water Table after drilling

KIEWIT PROJECT NO.

CHA PROJECT NO.

DRAWING NO.

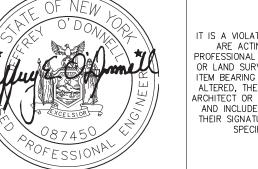
**C-649** 

AS NOTED DATE
E SH.NO.









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PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT
OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN
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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.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 69A RAILROAD CROSS SECTION CUT

SPB JEO

07/28/2023 ISSUED FOR CONSTRUCTION SUBMISSION

DATE SUBMITTAL / REVISION DESCRIPTION

10 Scale in feet

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

PROPOSED ACCESS ROAD -LOW OFFSET = 143.2 $LOW\ Elev. = 376.1$ ~ ~ 2 2  $\mathcal{K}$   $\mathcal{K}$ — APPROXIMATE HDD ENTRY - PROPOSED 5'X10'X5' ENTRY PIT 00 360 340 - APPROXIMATE DEPTH AT INV: 290.2'

HDD 69A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45375+64
CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.92

 □ Delayed Water Table Water Table after drilling CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 69A RAILROAD CROSS SECTION CUT

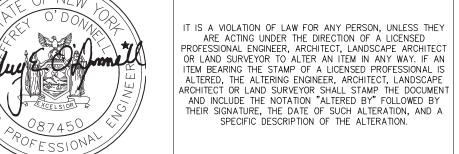
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

C-649.1

**Power Express** 







					$\rfloor S$
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	_

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. DATE SUBMITTAL / REVISION DESCRIPTION

AS NOTED DATE E SH.NO.

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

Bedrock

Boulder

Fat CLAY SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL Well Graded GRAVEL with CLAY

Well Graded GRAVEL with SILT Limestone Elastic SILT

ORGANIC Lean CLAY

ORGANIC SOIL PEAT

Rock

Sandstone CLAYEY SAND SILT, CLAYEY SAND

Shale

SILTY SAND Poorly Graded SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke Interbedded Sandstone and Shale

Schist

Schist

Gneiss

Gneiss

Granite 1

Void Water

Undefined

Water Table during drilling

Recovery %/RQD % = 95%/90% - 11000psi =UCS

Blow Counts per 6" = 10-10-10

ASPHALT Bedrock

Boulder

CH

CH-MH

CL-ML

CONCRETE

Fill

GC-GM

GP-GC

GP-GM

GW-GM

OL/OH

Rock

Sandstone

2C-2M SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SW-SMTopsoil

USGS 601 USGS 654

USGS 702 USGS 705

USGS 705

USGS 708

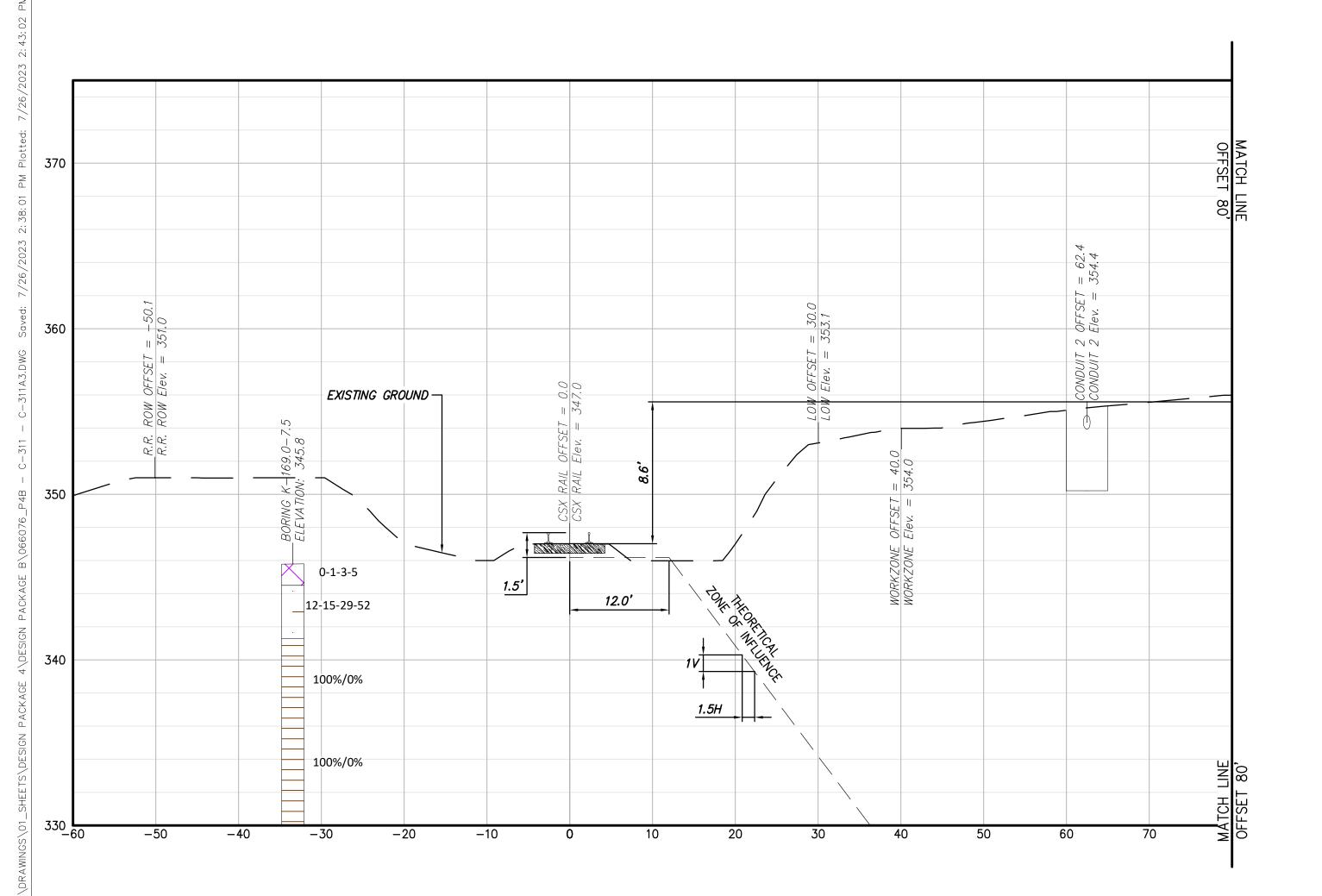
USGS 708

USGS 718

Void

Weathered Rock

▼ Water Table



2 HDD 69A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45398+84 CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.60

Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

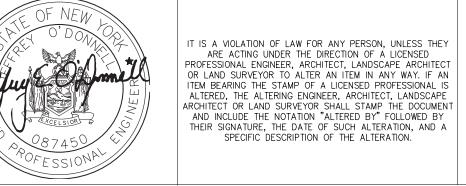
BORING LOG STRIP LEGEND

		Legena
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷 .	Boulder	Boulder
	СН	Fat CLAY
/ / /	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
////	CL-ML	SILTY CLAY
/ /	CONCRETE	Concrete
	Fill	Fill
1 × × ×	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
$\delta \delta$		
	GP-GC	Poorly Graded Gravel with CLAY
00	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
$\Box$	MH	Elastic SILT
	ML	SILT
	DH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
<u>\\ //</u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
\. :\.	2C	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
: /: :	SP-SC	Poorly Graded SAND with CLAY
• : :	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
* /- ^Δ	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
XXX	Topsoil	Topsoil
/ × × \	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
7711	USGS 705	Schist
	USGS 705	Schist
11	USGS 708	Gneiss
<i>〈〉〉</i> 〉	USGS 708	Gneiss
<u>`                                    </u>	USGS 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	weathered Rock	
<b>Y</b>	Water Table  Delayed Water	Water Table during drilling  Water Table after drilling









No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	L
					١.
					1

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 69A RAILROAD CROSS SECTION CUT

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

C-649.2

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

AS NOTED DATE E SH.NO.

PROPOSED ACCESS ROAD = 152. 357.2 Rd Rd  $\mathcal{K}$ CONDUIT 169.0– 351.3 HDD EXIT — PROPOSED 5'X10'X5' 3-2-1 350 EXIT PIT 1-3-4-2 3-3-2-1 3-5-10-20 340 100%/0% 100%/0% - APPROXIMATE DEPTH AT INV: 290.2' ▼ 5-8-9-11 8-12-9-11

HDD 69A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45398+84
CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.60

 □ Delayed Water Table CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 69A RAILROAD CROSS SECTION CUT

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

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

Bedrock Boulder

Fat CLAY

SILTY Fat CLAY

Lean CLAY SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL

Poorly Graded GRAVEL

Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL

Well Graded GRAVEL with CLAY Well Graded GRAVEL with SILT Limestone Elastic SILT

ORGANIC Lean CLAY

ORGANIC SOIL

PEAT

Rock

Sandstone CLAYEY SAND

SILT, CLAYEY SAND

Shale

SILTY SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke

Interbedded Sandstone and Shale

Schist

Schist

Water Table during drilling

Water Table after drilling

Recovery %/RQD % = 95%/90% - 11000psi =UCS

Blow Counts per 6" = 10-10-10 /

ASPHALT Bedrock

Boulder

CH-MH

CL-ML CONCRETE

Fill

GC-GM

GP-GC

GP-GM

OL/OH

Rock

Sandstone

2C-2M SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SW-SMTopsoil

USGS 601

USGS 654

USGS 702

USGS 705

USGS 705

C-649.3

**Power Express** 





IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY
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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

					SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM \$
					HDD 69A RAILROAD CROSS SECTION
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	SCALE SCALE
110.	DAIL	OUDIVITIAL / INLAIGION DECORIF HON		^  '	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

AS NOTED DATE

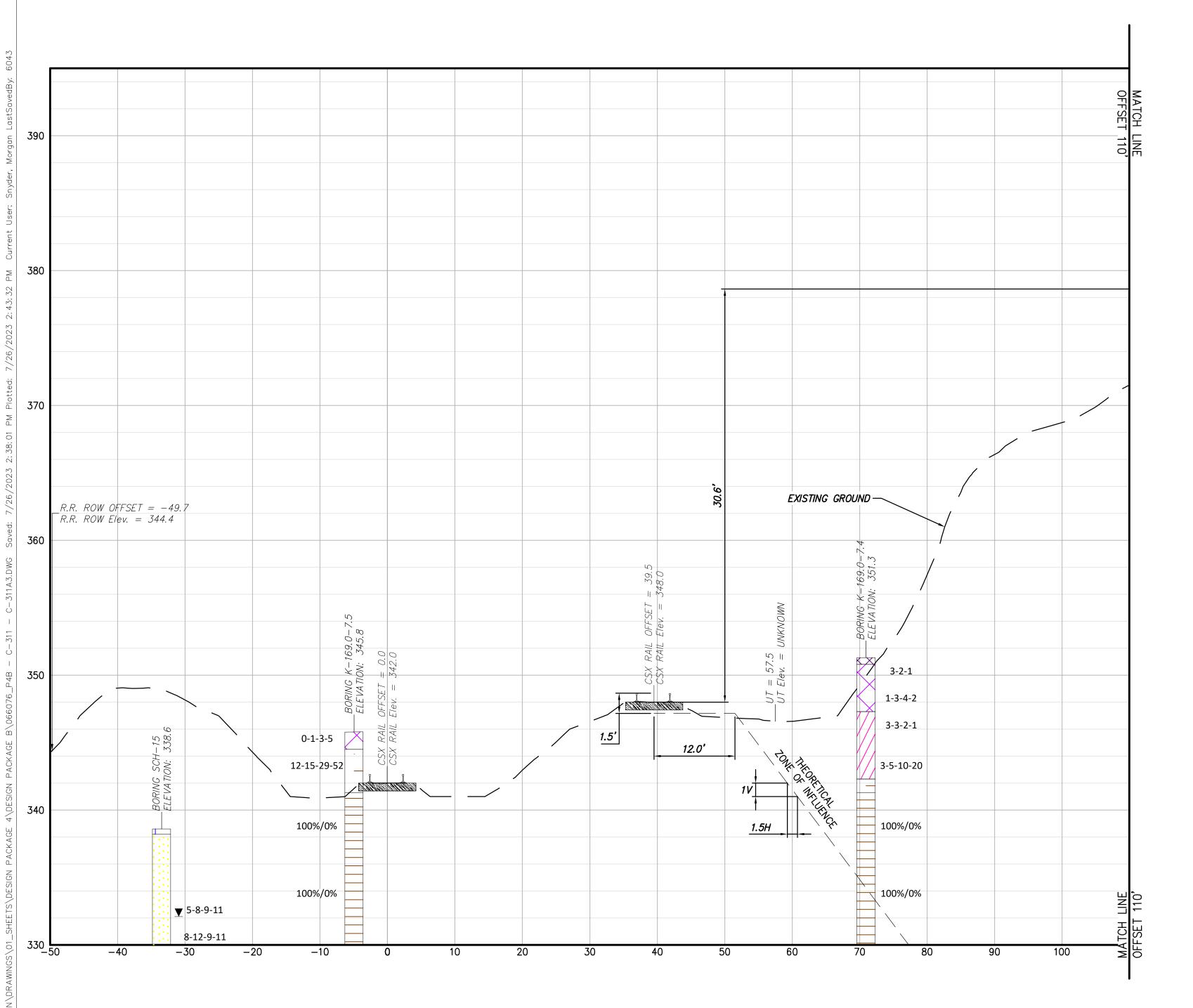
SH.NO.

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

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.

USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Weathered Rock Undefined

▼ Water Table



3 HDD 69A CONDUIT 2 EXIT PIT CUT SECTION; STA. 45375+64
CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.92

Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration ASPHALT

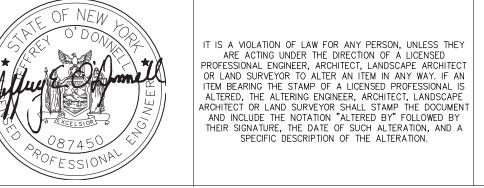
BORING LOG STRIP LEGEND

	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	СН	Fat CLAY
/ / /	CH-MH	SILTY Fat CLAY
////	CL	Lean CLAY
////	CL-ML	SILTY CLAY
/ /1 1	CONCRETE	Concrete
$\times$	Fill	Fill
75	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
200	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone MH	Limestone
		Elastic SILT
(( ((	ML	SILT
\\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	OH OH	ORGANIC Fat CLAY
	OL OL	ORGANIC Lean CLAY
ÜÜ Ü	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
/ / ·	Sandstone	Sandstone
/ /	SC	CLAYEY SAND
1.	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
/	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
<u>.</u>	S.M.	Well graded SAND
<u> </u>	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
$\times$	Topsoil	Topsoil
()	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
17 17	USGS 708	Gneiss
/\/\		Granite 1
- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	USGS 718	
	USGS 718 Void	Void
		Void Water
	Void	
¥	Void Water	Water









0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM S HDD 69A RAILROAD CROSS SECTION
-					SCALE
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS	
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN	L
	ŀ
HDD 69A RAILROAD CROSS SECTION CUT	L

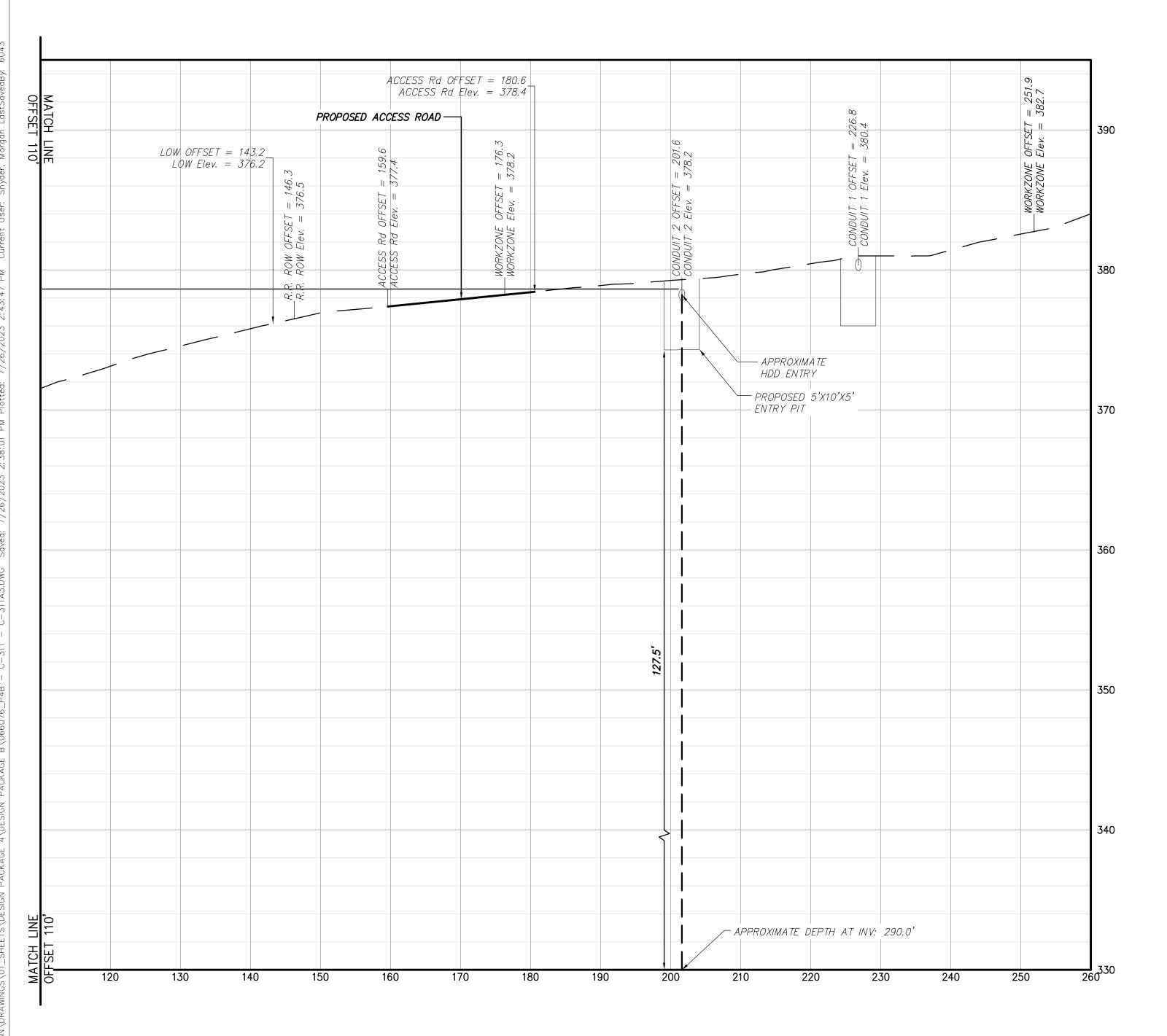
10 Scale in feet

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

C-649.4

AS NOTED DATE

E SH.NO.



3 HDD 69A CONDUIT 2 EXIT PIT CUT SECTION; STA. 45375+64
CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.92

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

Legend

ASPHALT Bedrock Bedrock Boulder Boulder CH Fat CLAY SILTY Fat CLAY CH-MH Lean CLAY CL-ML SILTY CLAY CONCRETE Concrete Fill Fill CLAYEY GRAVEL GC-GM SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY GP-GC Poorly Graded GRAVEL with SILT GP-GM Well Graded GRAVEL Well Graded GRAVEL with CLAY GW-GM Well Graded GRAVEL with SILT Limestone Limestone Elastic SILT ORGANIC Fat CLAY ORGANIC Lean CLAY OL/OH ORGANIC SOIL PEAT Rock Rock Sandstone Sandstone CLAYEY SAND SILT, CLAYEY SAND 2C-2W SHALE Shale SILTSTONE SILTY SAND SP Poorly Graded SAND SP-SC Poorly Graded SAND with CLAY SP-SM Poorly Graded SAND with SILT SW Well graded SAND SM-SC Well Graded SAND with CLAY Well Graded SAND with SILT SW-SMTopsoil Topsoil Gravel or Conglomerate 1 USGS 601 USGS 654 Subgraywacke Interbedded Sandstone and Shale USGS 702 USGS 705 Schist USGS 705 Schist USGS 708 Gneiss USGS 708 Gneiss USGS 718 Granite 1 Void Void Water Weathered Rock Undefined ▼ Water Table Water Table during drilling □ Delayed Water Table Water Table after drilling









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.
SPECIFIC DESCRIPTION OF THE ALTERATION.

					CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
					HDD 69A RAILROAD CROSS SECTION CUT
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	

DATE SUBMITTAL / REVISION DESCRIPTION

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

CHA PROJECT NO.

21162

CHA PROJECT NO.

066076

DRAWING NO.

C-649.5

AS NOTED **DATE 07/28/20** E **SH.NO**.

EXISTING GROUND — 00 = 0.0347.0 WORKZONE OFFSET = 40.1 WORKZONE Elev. = 354.0 APPROXIMATE
HDD EXIT PROPOSED 5'X10'X5' EXIT PIT 0-1-3-5 1.5' 12.0° 12-15-29-52 100%/0% 1.5H 100%/0% / APPROXIMATE DEPTH AT INV: 290.0'

4 HDD 69A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45398+84 CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.60

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10 Recovery %/RQD % = 95%/90% - 11000psi =UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

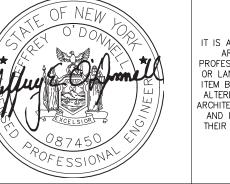
Legend

		Legeno
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷 .	Boulder	Boulder
	СН	Fat CLAY
////	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
	CL-ML	SILTY CLAY
/ /1	CONCRETE	Concrete
$\times$	Fill	Fill
15 X 3	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
2003	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
<b>)</b>	OH	ORGANIC Fat CLAY
1	OL.	ORGANIC Lean CLAY
<i>(( ( (</i>	OL/OH	ORGANIC SOIL
	PT	PEAT
<del></del>	Rock	Rock
	Sandstone	Sandstone
//	SC	CLAYEY SAND
1: 1:	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
. /	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
<u>.</u>	S.M.	Well graded SAND
<u> </u>	ZM-ZC	Well Graded SAND with CLAY
	SM-SW	Well Graded SAND with SILT
$\langle \rangle \rangle$	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
1111	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
1717	USGS 708	Gneiss
<del></del>	USGS 718	Granite 1
	Vold	Void
	Water	Water
	W U (C)	w u vei
· - · · -	Wenthanad Park	Undafinad
	Weathered Rock Water Table	Undefined Water Table during drilling









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THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A	
SPECIFIC DESCRIPTION OF THE ALTERATION.	

	07/00/0000				SEGMENT 7	7 (PACKA	GE 4		- PA	N AM S
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO						
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL	DESIGNED BY	; JDL	APPROVED BY	; JEO	SCALE REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 69A RAILROAD CROSS SECTION CUT

KIEWIT PROJECT NO. CHA PROJECT NO. DRAWING NO.

C-649.6

AS NOTED DATE
E SH.NO.

— PROPOSED ACCESS ROAD = 235. 359.6 BORING K-169.0-7.4 ELEVATION: 351.3 R. R. R. R. *12.0*′ 3-2-1 1.5H BORING SCH-15 ELEVATION: 338.6 3-5-10-20 100%/0% **▼** 5-8-9-11 8-12-9-11

HDD 69A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45398+84 CSX PAN AM SOUTHERN SUBDIVISION MP QG 34.60

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN

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

C-649.7

**Power Express** 





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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO

HDD 69A RAILROAD CROSS SECTION CUT

DB APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

AS NOTED DATE SH.NO.

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

Bedrock Boulder

Fat CLAY SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL

Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL Well Graded GRAVEL with CLAY Well Graded GRAVEL with SILT Limestone Elastic SILT

ORGANIC Lean CLAY

ORGANIC SOIL

PEAT

Rock

Sandstone CLAYEY SAND SILT, CLAYEY SAND

Shale

SILTY SAND Poorly Graded SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke

Schist

Schist

Gneiss

Gneiss

Granite 1

Void Water

Undefined

Water Table during drilling Water Table after drilling

Interbedded Sandstone and Shale

Recovery %/RQD % = 95%/90% - 11000psi =UCS

Blow Counts per 6" = 10-10-10

ASPHALT Bedrock

Boulder

CH-MH

CL-ML

CONCRETE

Fill

GC-GM

GP-GC

GP-GM

OL/OH

Rock

Sandstone

2C-2M

SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SW-SMTopsoil

USGS 601 USGS 654

USGS 702

USGS 705

USGS 705

USGS 708

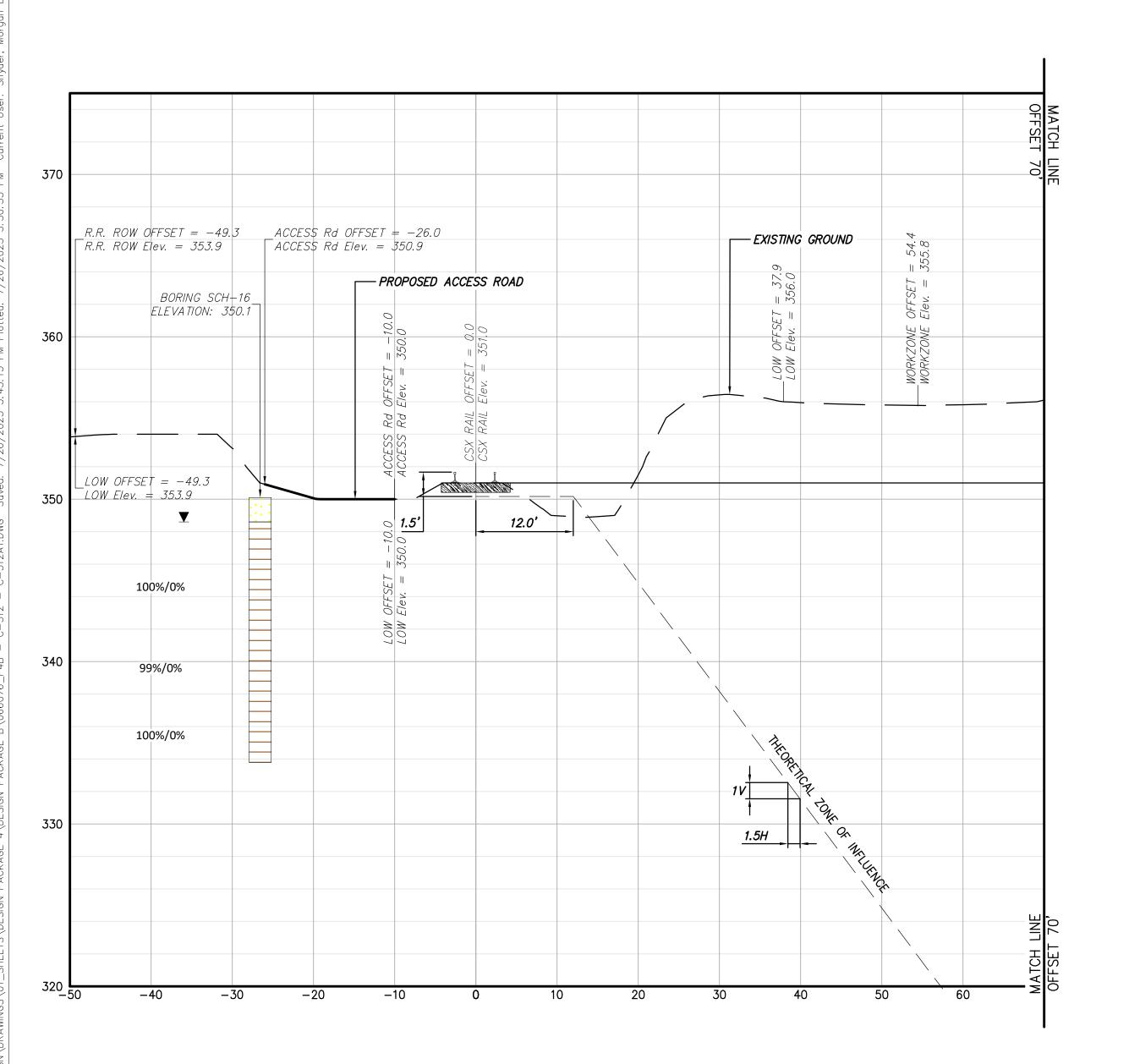
USGS 708

USGS 718

Void

Weathered Rock

▼ Water Table



HDD 70A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45414+13
CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.14

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10Recovery %/RQD % = 95%/90% 11000psi=UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷 .	Boulder	Boulder
	СН	Fat CLAY
/ // /	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
777	CL-ML	SILTY CLAY
/ /1 1	CONCRETE	Concrete
$\times$	Fill	Fill
7 × 3	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	•
		Well Graded GRAVEL with CLAY
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
<del>- '-</del>	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
<u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	DH	ORGANIC Fat CLAY
		ORGANIC Lean CLAY
<u>ÄÄ</u>	OL/OH	ORGANIC SOIL
<u>\\ //</u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
<u> </u>	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
: /: :	SP-SC	Poorly Graded SAND with CLAY
<u>:</u> :::	SP-SM	Poorly Graded SAND with SILT
4	SM	Well graded SAND
<u>.</u> /. ^	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsoil	Topsoil
/ * \	USGS 601	Gravel or Conglomerate 1
`	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
7777	USGS 705	Schist
	USGS 705	Schist
((())(()) [-]	USGS 708	Gneiss
11/1	USGS 708	Gneiss
7777	USGS 718	Granite 1
	Void	Void
	Water	Water
	Water Weathered Rock	Undefined
	Water Table	Undefined  Water Table during drilling
<b>Y</b>	water lable	waver rable doning drilling







					SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM HDD 70A RAILROAD CROSS SECTION
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	_
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 70A RAILROAD CROSS SECTION CUT

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

Water Table after drilling

**C-650** 

AS NOTED DATE
E SH.NO.

□ Delayed Water

Table

R.R. ROW OFFSET = 263.7 R.R. ROW Elev. = 358.9 370 360 12.0' ---- APPROXIMATE HDD ENTRY 350 — *PROPOSED 5'X10'X5'* ENTRY PIT 340 330 APPROXIMATE DEPTH -AT INV: 318.1'

HDD 70A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45414+13
CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.14

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10Recovery %/RQD % = 95%/90% - 11000psi=UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

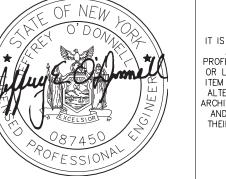
Legend

		Legeno
	ASPHALT	Asphalt
	Bedrock	Bedrock
🔷 .	Boulder	Boulder
	СН	Fat CLAY
/ / /	CH-MH	SILTY Fat CLAY
777	CL	Lean CLAY
7	CL-ML	SILTY CLAY
/ /	CONCRETE	Concrete
	Fill	Fill
12 Y 3	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	
		SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	МН	Elastic SILT
	ML	SILT
(( ((	ОН	ORGANIC Fat CLAY
" J"	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
<u>/ / /</u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
/ <b>.</b> ·/· ·	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
. / - •	SHALE	Shale
	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
. /	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
4	SW	Well graded SAND
<u> </u>	SW-SC	Well Graded SAND with CLAY
4 . ·	SW-SM	Well Graded SAND with SILT
$\times\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Topsoil	Topsoil
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
1111	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
11	USGS 708	Gneiss
7/7/	USGS 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
▼	Water Table	Water Table during drilling
$\nabla$	Delayed Water	Water Table after drilling









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

0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM S HDD 70A RAILROAD CROSS SECTION
			DB		SCALE
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	P DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 70A RAILROAD CROSS SECTION CUT

KIEWIT PROJECT NO. CHA PROJECT NO. DRAWING NO.

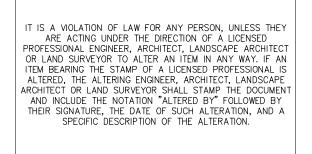
C-650.1

AS NOTED DATE
E SH.NO.

HDD 70A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45432+00 CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.38

Kiewit





					CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM
					HDD 70A RAILROAD CROSS SECTION
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 70A RAILROAD CROSS SECTION CUT

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

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

Legend

Bedrock

Boulder Fat CLAY SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT Well Graded GRAVEL Well Graded GRAVEL with CLAY Well Graded GRAVEL with SILT

Elastic SILT

ORGANIC Fat CLAY ORGANIC Lean CLAY

> ORGANIC SOIL PEAT

> > Rock

Sandstone CLAYEY SAND SILT, CLAYEY SAND

Shale

SILTY SAND Poorly Graded SAND Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke

Interbedded Sandstone and Shale

Schist

Schist

Gneiss

Gneiss

Granite 1

Void

Undefined

Water Table during drilling

Water Table after drilling

| Recovery %/RQD % = 95%/90% | 11000psi=UCS

ASPHALT Bedrock

Boulder

CH-MH

CL-ML

CONCRETE

GC-GM

GP-GC

OL/OH

Rock

Sandstone

2C-2W SHALE

SILTSTONE

SP-SC SP-SM

SW

SM-SC

SW-SMTopsoil

USGS 601 USGS 654

USGS 670

USGS 702 USGS 705

USGS 705

USGS 708

USGS 708

USGS 718

Void

Weathered Rock

▼ Water Table

□ Delayed Water Table

Blow Counts per 6" = 10-10-10

AS NOTED DATE

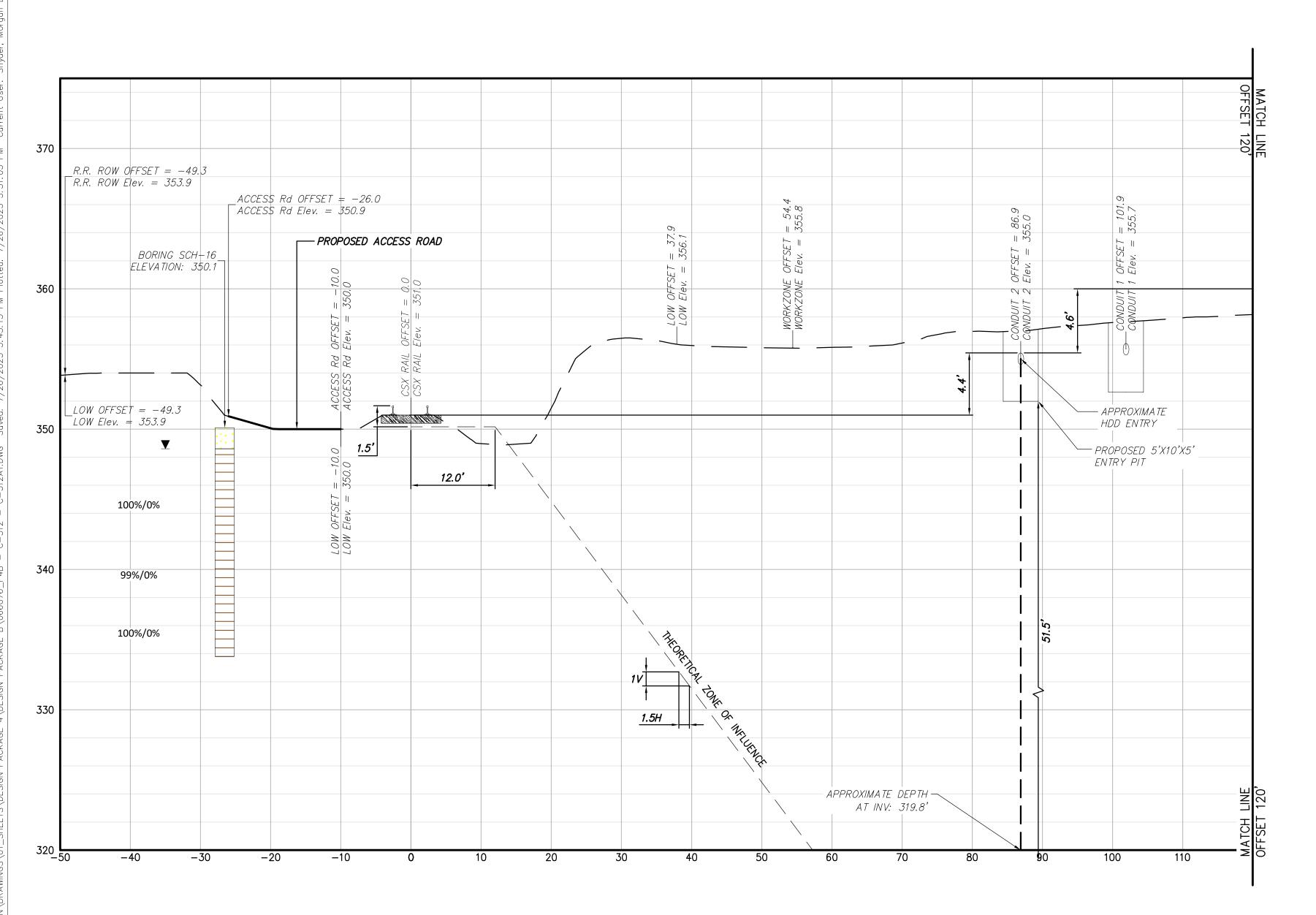
E SH.NO.

C-650.2

		UNKNOWN UNKNOWN UNKNOWN UNKNOWN Elev. = 10 10 10 10 10 10 10 10 10 10 10 10 10 1	
	PROPOSED ACCESS ROAD		
	$ACCESS \ Rd \ OFFSET = -38.8$ $ACCESS \ Rd \ Elev. = 350.5$	BORING KB-169.0-7.9  ELEVATION: $351.5$	
60	4 - 65 - 80.0 - 5.7.2 - 5.7.2 - 5.7.2 - 5.7.2 - 5.7.2 - 5.7.2	A. B. C.	360
	1.0 — 91. 1.0 — 5. 2.49. — 8. 1.0	SX RAIL 6	
	OFFSET = 35  Elev. = 35  ZONE OFFSET  2 OFFSET  2 Elev. = 50  W OFFSET  1 OFFSET		
	LOW OFFSET  LOW FIEW.  WORKZONE O  WORKZONE E  WORKZONE E  WORKZONE E  WORKZONE C  CONDUIT 2 OFF  CONDUIT 2 EIEW.  R.R. ROW EIEW.  4.3'	The state of the s	
550		1-3-4-6 12.0'	350
		7-7-7-6	
	APPROXIMATE HDD ENTRY	2-55/4" 4-4-4-3	
	PROPOSED 5'X10'X5' — ENTRY PIT		
340		100%/27%	340
		100%/50%	
330		100%/55%	330
	APPROXIMATE DEPTH		
	APPROXIMATE DEPTH AT INV: 318.1' 6132ps	100%/85%	
320 -100	0 -90 -80 -70 -60 -50 -40	-30 -20 10 0 10 20 30 40 50 60 70 80 90 100 110	120







3 HDD 70A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45414+13 CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.14

BORING LOG STRIP LEGEND Blow Counts per 6" = 10-10-10Recovery %/RQD % = 95%/90% 11000psi=UCS 2D strip logs shown at 10x exaggeration 3D strip logs have no exaggeration

		Legend
	ASPHALT	Asphalt
	Bedrock	Bedrock
<i>""</i>	Boulder	Boulder
	CH	Fat CLAY
/_/	CH-MH	SILTY Fat CLAY
///	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
00	GP	Poorly Graded GRAVEL
00	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
00	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	МН	Elastic SILT
	ML	SILT
(( ((	ОН	ORGANIC Fat CLAY
"J"	OL.	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
<u>\\ //</u>	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
· /: :/	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
- 71-	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	SW	Well graded SAND
- /- A	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsoil	Topsoil
X X	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
7777	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
11	USGS 708	Gneiss
3/2/	USGS 718	Granite 1
	Void	Void
	Water	Water
	Water Weathered Rock	water Undefined
II	II wearneried KOCK	undetined
▼	Water Table	Water Table during drilling









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					CHAMPLAIN HUDSON POWER EX SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM S HDD 70A RAILROAD CROSS SECTION
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO.

CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 70A RAILROAD CROSS SECTION CUT

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

**C-650.3** 

AS NOTED DATE

E SH.NO.

R.R. ROW OFFSET = 263.6 R.R. ROW Elev. = 358.9 350 340 330

3 HDD 70A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45414+13
CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.14

Blow Counts per 6" = 10-10-10

Recovery %/RQD % = 95%/90%——11000psi=UCS

2D strip logs shown at 10x exaggeration
3D strip logs have no exaggeration

Legend

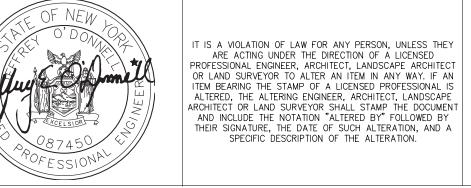
ASPHALT

	- Bedrock	Bedrock
🗘	Boulder	Boulder
	СН	Fat CLAY
/ //	CH-MH	SILTY Fat CLAY
1//	/ CL	Lean CLAY
///	CL-ML	SILTY CLAY
/ /1	CONCRETE	Concrete
	Fill	Fill
75 X	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
200	GP	Poorly Graded GRAVEL
P V	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
7	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	
(( ((	<u> </u>	SILT  DRGANIC Fat CLAY
<u> </u>	) DH	
		ORGANIC Lean CLAY
<i>(i)</i>	OL/OH	ORGANIC SOIL
	PT	PEAT
<u> </u>	Rock	Rock
/_ · /	Sandstone	Sandstone
/-	sc sc	CLAYEY SAND
1. 1	SC-2M	SILT, CLAYEY SAND
	SHALE	Shale
X	SILTSTONE	Siltstone
	SM	SILTY SAND
	SP	Poorly Graded SAND
. /.	SP-SC	Poorly Graded SAND with CLAY
	SP-SM	Poorly Graded SAND with SILT
	<b>₽</b>	Well graded SAND
<u> </u>	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
$\times$	Topsoil	Topsoil
<u> </u>	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
)././.	USGS 705	Schist
	USGS 705	Schist
	USGS 708	Gneiss
11	USGS 708	Gneiss
- 1	USGS 718	Granite 1
	Void	Void
_	Water	Water
:	· Weathered Rock	Undefined
▼	Water Table	Water Table during drilling
	Delaved Water	Value Talala a Chara alaun









No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	ı
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	L
					(

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 70A RAILROAD CROSS SECTION CUT

10 Scale in feet

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

Water Table after drilling

C-650.4

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. E SH.NO.

370 PROPOSED ACCESS ROAD — 370 ACCESS Rd OFFSET = -38.8ACCESS Rd Elev. = 350.5 CONDUIT 1 OFFSET = -39.5BORING KB-169.0-7.9 CONDUIT 1 Elev. = 349.7 ELEVATION: 351.5 Elev. = 63.9 Elev. = 63.9 Elev. = 6 R.R. ROW OFFSET = -51.2R. R. R. R.R. ROW Elev. = 350.1 ZONE OF ZONE EIE JW OFFS. Rd Rd S S $\mathcal{O} \mathcal{O}$ 12.0° 1-3-4-6 350 350 7-7-7-6 4-4-4-3 APPROXIMATE ---2-55/4" HDD ENTRY PROPOSED 5'X10'X5' — ENTRY PIT 340 100%/27% 100%/50% 330 100%/55% APPROXIMATE DEPTH -AT INV: 319.8' 6132psi 100%/85% -20 100%/93%

4 HDD 70A CONDUIT 2 EXIT PIT CUT SECTION; STA. 45432+27 CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.38

CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 70A RAILROAD CROSS SECTION CUT

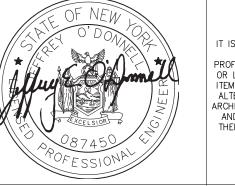
KIEWIT PROJECT NO.
21162
CHA PROJECT NO.
066076
DRAWING NO.

C-650.5

Champlain Hudson Power Express







LAND SURVEYOR SHALL STAMP THE DOCUMENT E THE NOTATION "ALTERED BY" FOLLOWED BY URE, THE DATE OF SUCH ALTERATION, AND A IFIC DESCRIPTION OF THE ALTERATION.
------------------------------------------------------------------------------------------------------------------------------------------------------------

0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JE
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	AF

JEO

APP DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO REV. NO. E

AS NOTED DATE
E SH.NO.

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration

Legend

Bedrock

Boulder

Fat CLAY

SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete

Fill

CLAYEY GRAVEL

SILTY CLAYEY GRAVEL

SILTY GRAVEL

Poorly Graded GRAVEL

Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT

Well Graded GRAVEL

Well Graded GRAVEL with CLAY

Well Graded GRAVEL with SILT

Limestone

Elastic SILT

ORGANIC Fat CLAY

ORGANIC Lean CLAY

ORGANIC SOIL
PEAT

Rock

Sandstone
CLAYEY SAND
SILT, CLAYEY SAND

Shale

SILTY SAND
Poorly Graded SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT

Well graded SAND

Well Graded SAND with CLAY

Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke
nterbedded Sandstone and Shale

Schist

Schist

Gneiss

Gneiss

Granite 1

Void Water

Undefined

Water Table during drilling

Water Table after drilling

3D strip logs have no exaggeration

| Recovery %/RQD % = 95%/90% - 11000psi=UCS

ASPHALT

Bedrock

Boulder

CH

CH-MH

CL-ML

CONCRETE

Fill

GC-GM

GP-GC

GP-GM

GW-GM

OL/OH

Rock

Sandstone

SC-SM SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SW-SM

Topsoil

USGS 601

USGS 654

USGS 702 USGS 705

USGS 708

USGS 708

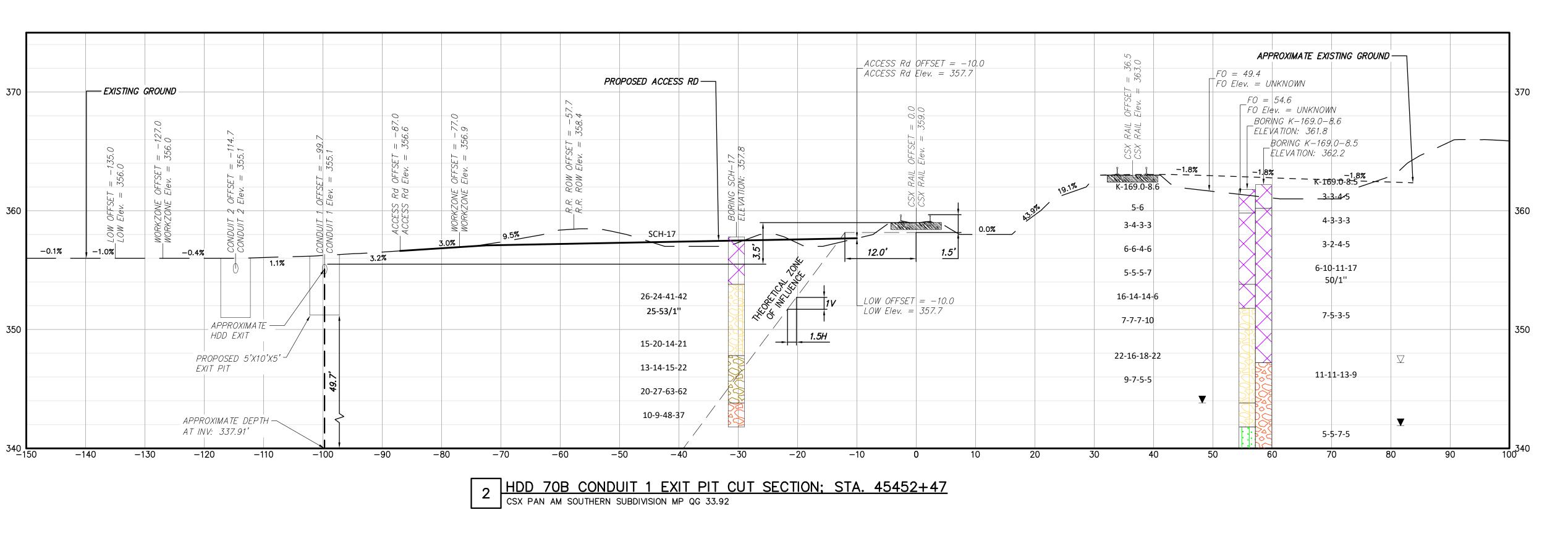
USGS 718

Void

Weathered Rock

▼ Water Table

Blow Counts per 6" = 10-10-10



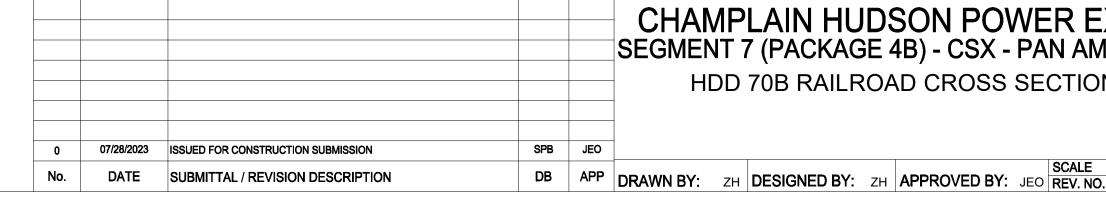
CONDUIT 1 OFFSET = -93.4BORING K-169.0-8.6 ELEVATION: 361.8 CONDUIT 1 Elev. = 355.7CSX RAIL OFFSET = 39.3 FO = 56.0CONDUIT 2 OFFSET = -108.4370 CSX RAIL Elev. = 363.7 CONDUIT 2 Elev. = 355.0 FO Elev. = UNKNOWN LOW OFFSET = -9.3PROPOSED ACCESS RD-LOW Elev. = 356.7 BORING K-169.0-8.5 ACCESS Rd OFFSET = -19.3ELEVATION: 362.2 ACCESS Rd Elev. = 356.0 60 K-169.0-8.5 K-169.0-8.6 3-3-4-5 1.9' 4-3-3-3 3-4-3-3 OFF Ele SCH-17 3-2-4-5 -1.7% Ø.0% 12.0' 6-10-11-17 5-5-5-7 50/1'' 26-24-41-42 16-14-14-6 25-53/1" 7-5-3-5 EXISTING GROUND ---7-7-7-10 APPROXIMATE HDD ENTRY 15-20-14-21 PROPOSED 5'X10'X5' 22-16-18-22 ENTRY PIT 13-14-15-22 11-11-13-9 9-7-5-5 20-27-63-62 10-9-48-37 APPROXIMATE DEPTH -AT INV: 337.91' 5-5-7-5

HDD 70B CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45446+55 CSX PAN AM SOUTHERN SUBDIVISION MP QG 33.82





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CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN HDD 70B RAILROAD CROSS SECTION CUT

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

C-651

07/28/2023

**Power Express** 





AS NOTED DATE D SH.NO.

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration

Legend

Bedrock

Boulder

Fat CLAY

SILTY Fat CLAY

Lean CLAY

SILTY CLAY

Concrete

Fill CLAYEY GRAVEL

SILTY CLAYEY GRAVEL SILTY GRAVEL Poorly Graded GRAVEL Poorly Graded Gravel with CLAY

Poorly Graded GRAVEL with SILT Well Graded GRAVEL Well Graded GRAVEL with CLAY

Well Graded GRAVEL with SILT

DRGANIC Fat CLAY

ORGANIC Lean CLAY

ORGANIC SOIL PEAT

Rock

Sandstone

CLAYEY SAND

SILT, CLAYEY SAND

Shale

SILTY SAND

Poorly Graded SAND

Poorly Graded SAND with CLAY

Poorly Graded SAND with SILT Well graded SAND

Well Graded SAND with CLAY

Well Graded SAND with SILT

Gravel or Conglomerate 1

Subgraywacke

Schist

Schist

Gneiss

Gneiss

Granite 1 Void

Water

Undefined

Water Table during drilling

Water Table after drilling

terbedded Sandstone and Shale

3D strip logs have no exaggeration

Recovery %/RQD % = 95%/90% - 11000psi =UCS

ASPHALT

Bedrock

Boulder

СН

CH-MH

CL-ML CONCRETE

Fill

GC-GM

GP-GC GP-GM

GW-GM

OL/OH

Rock

Sandstone

2C-2M SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SM-SM

Topsoil

USGS 601

USGS 654

USGS 702

USGS 705

USGS 705

USGS 708

USGS 708

USGS 718

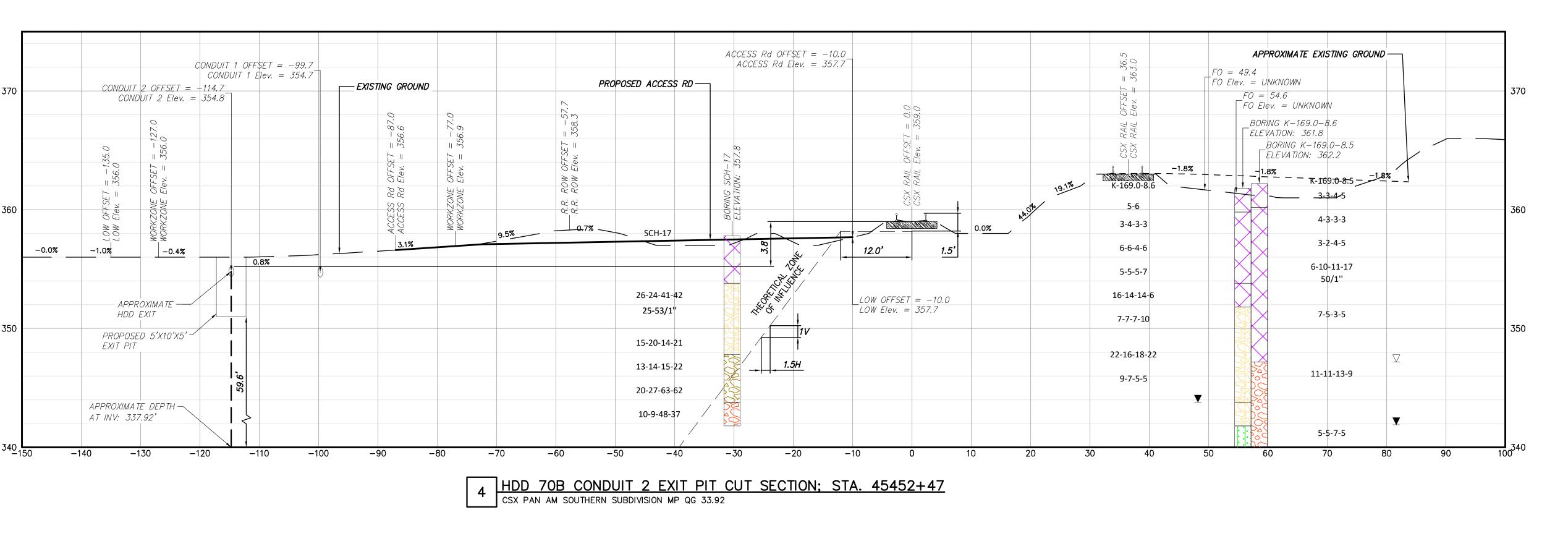
Void

Weathered Rock

Delayed Water Table

▼ Water Table

Blow Counts per 6" = 10-10-10



BORING K-169.0-8.6 CONDUIT 1 OFFSET = -93.4ELEVATION: 361.8 CONDUIT 1 Elev. = 355.7 FO = 56.0370 CONDUIT 2 OFFSET = -108.4FO Elev. = UNKNOWN CONDUIT 2 Elev. = 355.1 PROPOSED ACCESS RD-LOW OFFSET = -9.3|CSX|RAIL|OFFSET = 39.3CSX RAIL Elev. = 363.7 BORING K-169.0-8.5/ ACCESS Rd OFFSET = -19.3ELEVATION: 362.2 ACCESS Rd Elev. = 356.0 F0 F0 K-169.0-8.5 K-169.0-8.6 3-3-4-5 *2.5*′ 4-3-3-3 OFF Elev SCH-17 -2.4%-7.2**%** 6.1% 3-2-4-5 -2.4% __2.5%_ -0.0% 0.0% 12.0' 6-10-11-17 4.4% 5-5-5-7 50/1" APPROXIMATE 26-24-41-42 16-14-14-6 EXISTING GROUND -HDD ENTRY 25-53/1" 7-5-3-5 7-7-7-10 350 15-20-14-21 PROPOSED 5'X10'X5': ENTRY PIT 22-16-18-22 13-14-15-22 11-11-13-9 9-7-5-5 20-27-63-62 10-9-48-37 APPROXIMATE DEPTH AT INV: 337.92' 5-5-7-5 -130 -100

HDD 70B CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45446+55 CSX PAN AM SOUTHERN SUBDIVISION MP QG 33.82

Delayed Water Table CHAMPLAIN HUDSON POWER EXPRESS SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN

HDD 70B RAILROAD CROSS SECTION CUT

Scale in feet

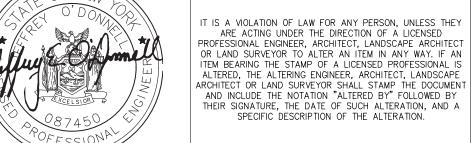
KIEWIT PROJECT NO. 21162 CHA PROJECT NO. 066076 DRAWING NO.

C-651.1

**Power Express** 







No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO

DRAWN BY: ZH DESIGNED BY: ZH APPROVED BY: JEO REV. NO.

AS NOTED DATE D SH.NO.

BORING LOG STRIP LEGEND

2D strip logs shown at 10x exaggeration

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Boulder

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SILTY Fat CLAY

Lean CLAY

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Poorly Graded GRAVEL with SILT Well Graded GRAVEL Well Graded GRAVEL with CLAY

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CLAYEY SAND

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Poorly Graded SAND with SILT Well graded SAND

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Well Graded SAND with SILT

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CH-MH

CL-ML CONCRETE

Fill

GC-GM

GP-GC GP-GM

GW-GM

OL/OH

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Sandstone

2C-2M

SHALE

SILTSTONE

SP-SC

SP-SM

SW

SM-SC

SM-SM

Topsoil

USGS 601

USGS 654

USGS 702

USGS 705

USGS 705

USGS 708

USGS 708

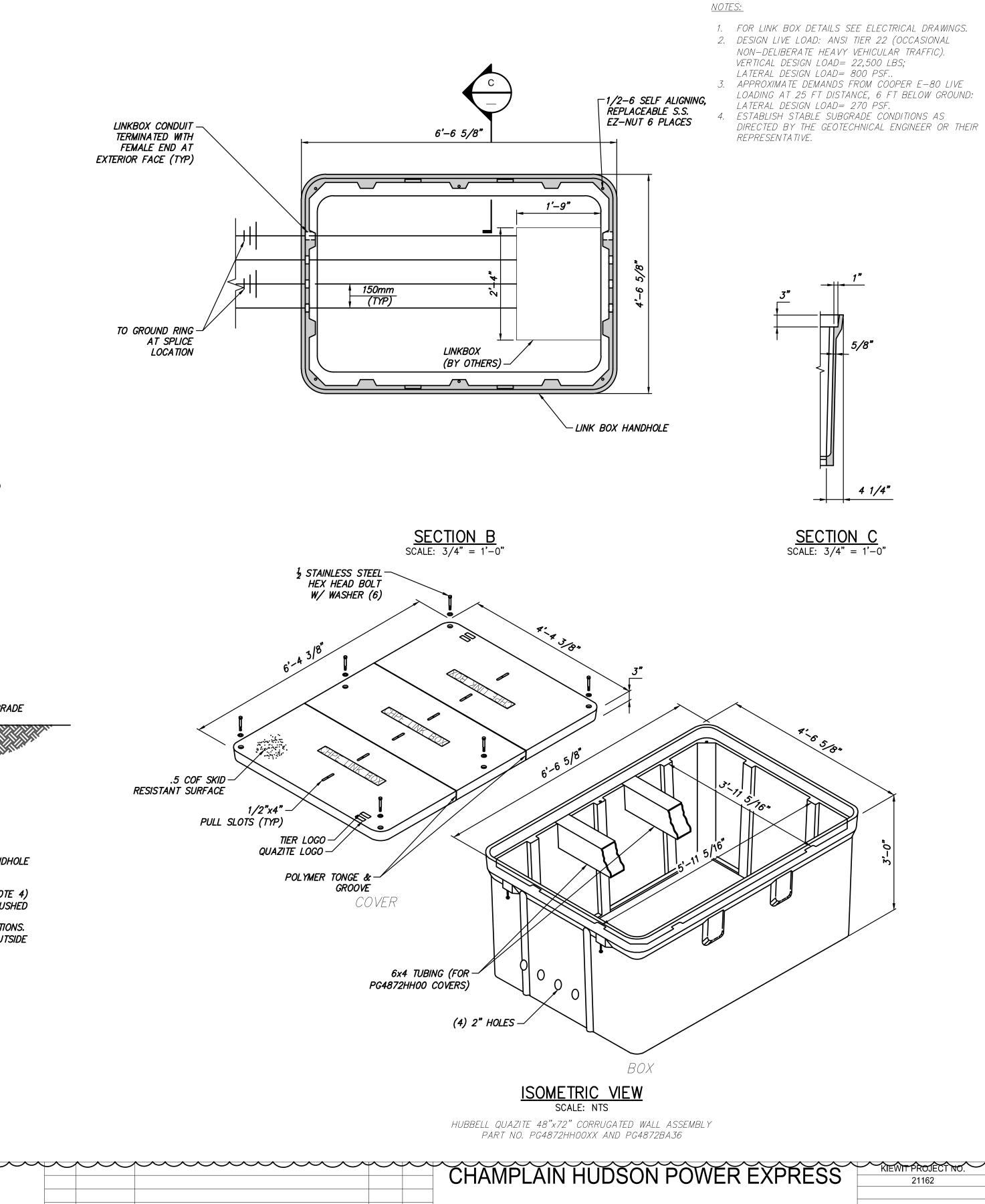
USGS 718

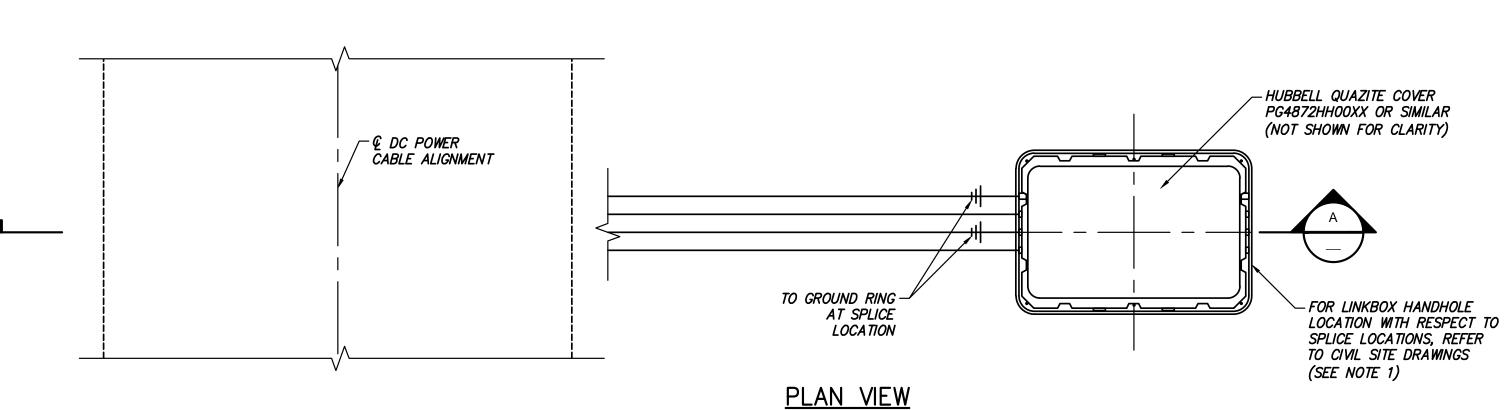
Void

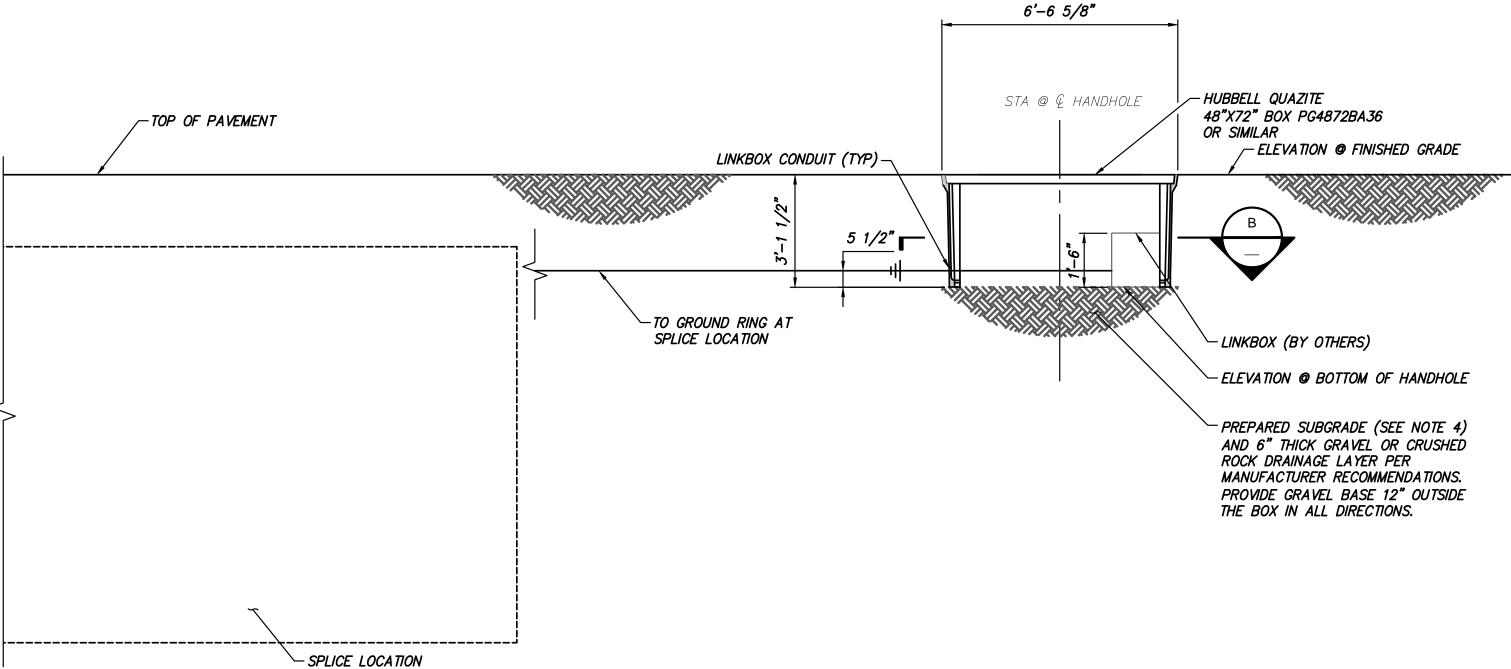
Weathered Rock

▼ Water Table

Blow Counts per 6" = 10-10-10







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

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

**Power Express** 





IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED 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.

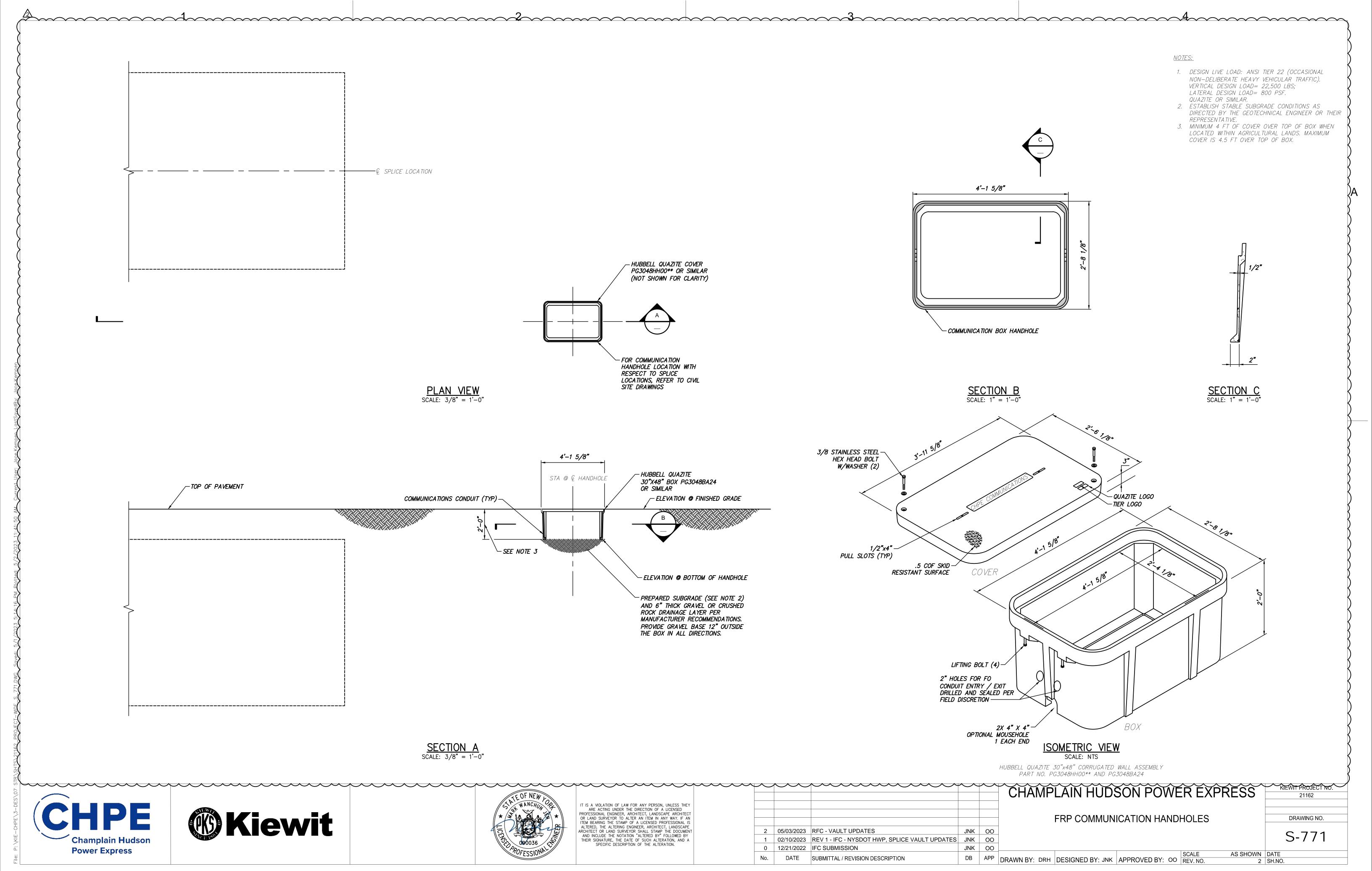
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2 05/03/2023 RFC - VAULT UPDATES 02/10/2023 REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES JNK OO 0 12/21/2022 IFC SUBMISSION DB | APP | DRAWN BY: DRH | DESIGNED BY: JNK | APPROVED BY: OO | REV. NO. DATE SUBMITTAL / REVISION DESCRIPTION

FRP LINK BOX HANDHOLES

DRAWING NO. S-711

AS SHOWN DATE



В

