

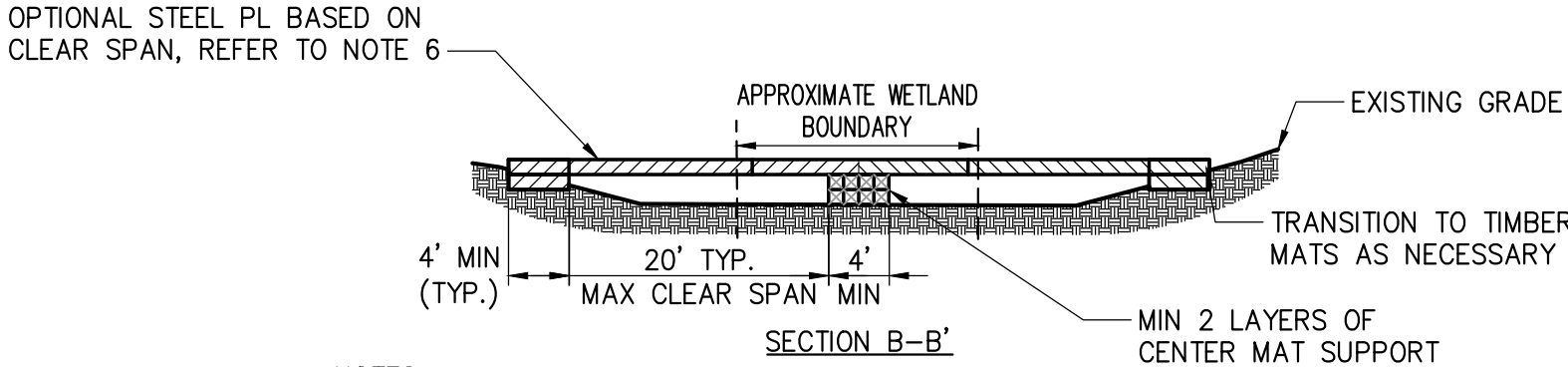
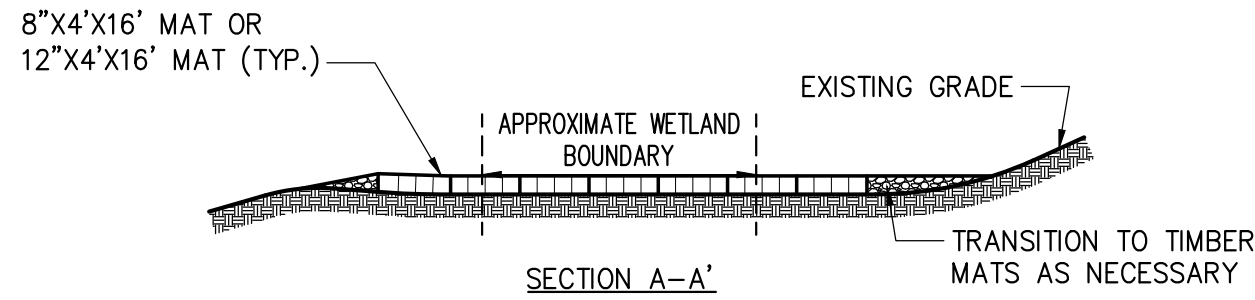
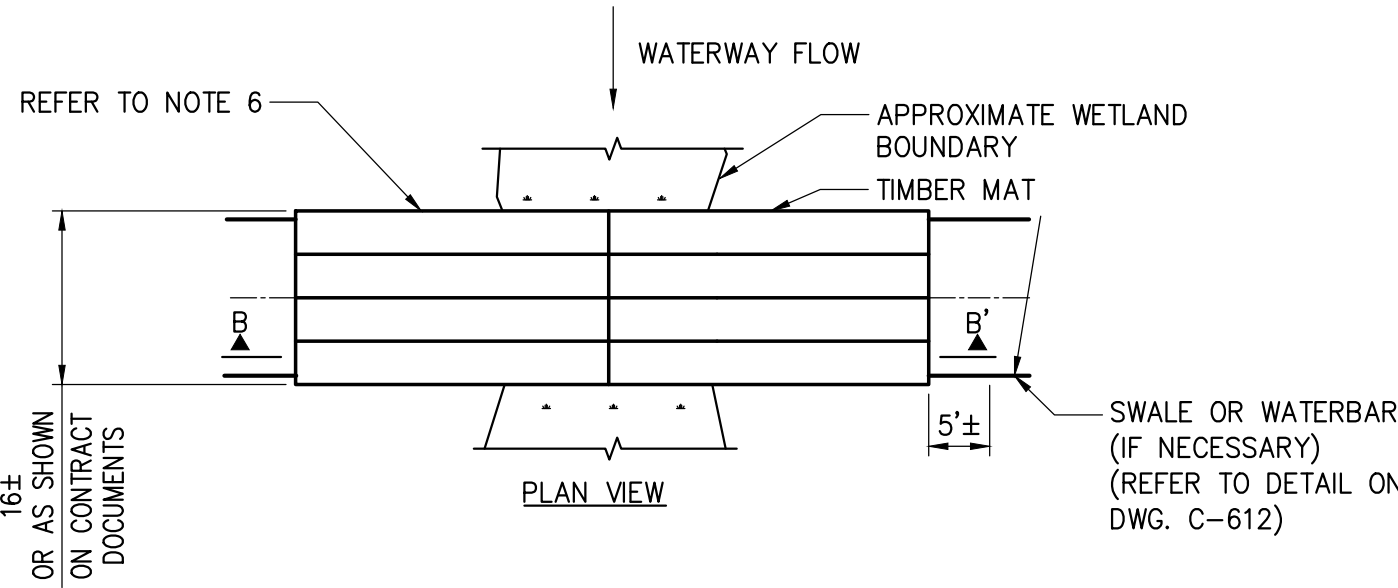
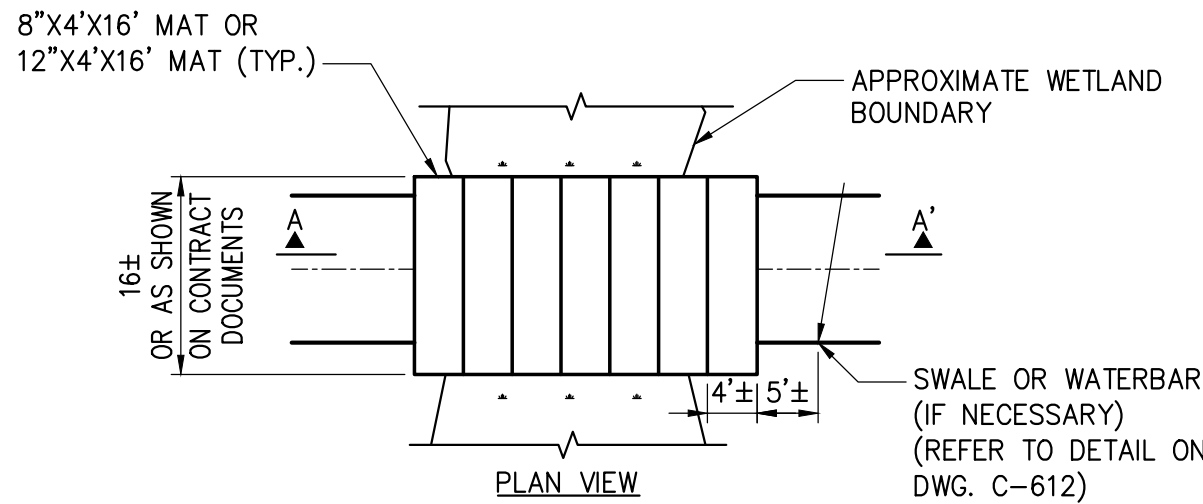
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3

4

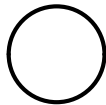


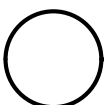
NOTES:

1. TIMBER MATS SHOULD BE INSTALLED IN WETLANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
2. FOR CROSSINGS WITH LARGER SPANS THE CONTRACTOR SHALL CONSULT WITH THE TEMPORARY STRUCTURES AND CONSTRUCTION DEVICES ENGINEER.
3. TIMBER MAT SURFACE SHOULD BE LEVEL TO PREVENT EQUIPMENT AND VEHICLES FROM SLIDING OFF DURING MUDDY OR ICING CONDITIONS, AND PREVENT TIMBERS FROM BREAKING.
4. SEDIMENT TRACKED ONTO TIMBER MATTING SHOULD BE REMOVED AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING WETLAND DURING RAIN EVENTS. SEDIMENT SHOULD BE REMOVED TO A STABILIZED SOIL STOCKPILE OR OTHER APPROVED LOCATION.
5. PERIMETER EROSION AND SEDIMENT CONTROLS ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
6. UNLESS PERMITTED FROM REMOVAL, STUMPS WITHIN THE WETLAND SHOULD REMAIN. THIS MAY REQUIRE ADDITIONAL TIMBERS TO BRIDGE ABOVE.
7. UPON REMOVAL OF TIMBER MATTING ALL SPLINTERED WOOD SHOULD BE REMOVED. IF EXPOSED SOILS ARE PRESENT STRAW MULCH SHOULD BE APPLIED.
8. ALL EQUIPMENTS SHOULD MAINTAIN A MINIMUM OF 2 FT SETBACK FROM EDGE OF THE MATS WHILE CROSSING.
9. SINGLE OR MULTIPLE LAYERS OF MATS SHALL BE PLACED BASED ON EXISTING SOIL CONDITIONS.

NOTES:

1. IN-STREAM EXCAVATION SHOULD BE COMPLETED IN ACCORDANCE WITH "TEMPORARY ACCESS WATERWAY CROSSING" ON PAGE 2.32 OF THE 2016 NYSDEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (OR NEWEST VERSION) AND IN ACCORDANCE WITH SECTION 9.1 WATER BODIES IN THE PROJECT EM&CP.
2. THE CONSTRUCTION OF ANY CROSSING SHOULD NOT CAUSE A SIGNIFICANT WATER LEVEL DIFFERENCE BETWEEN THE UPSTREAM AND DOWNSTREAM WATER SURFACE ELEVATIONS. FISH SPAWNING OR MIGRATION DATES CAN VARY ACROSS NEW YORK, AND RESTRICTIONS IMPOSED BY THE NYSDEC MY VARY AND MUST BE VERIFIED. REFER TO CERTIFICATE OF CONDITIONS.
3. ALL FILL MATERIALS ASSOCIATED WITH THE ROADWAY APPROACH SHOULD BE LIMITED TO A MAXIMUM HEIGHT OF 2 FT ABOVE THE EXISTING FLOOD PLAIN ELEVATION.
4. A WATER DIVERTING STRUCTURE SUCH AS A SWALE OR WATER BAR SHOULD BE CONSTRUCTED (ACROSS THE ROADWAY ON BOTH ROADWAY APPROACHES) 50 FEET (MAXIMUM) ON EITHER SIDE OF THE WATERWAY CROSSING. THIS WILL PREVENT ROADWAY SURFACE RUNOFF FROM DIRECTLY ENTERING THE WATERWAY. THE 50 FEET MEASURED IS MEASURED FROM THE TOP OF THE WATERWAY BANK. IF THE ROADWAY APPROACH IS CONSTRUCTED WITH A REVERSE GRADE AWAY FROM THE WATERWAY, A SEPARATE DIVERTING STRUCTURE IS NOT REQUIRED.
5. ALL EQUIPMENTS SHOULD MAINTAIN A MINIMUM OF 2 FT SETBACK FROM EDGE OF THE MATS WHILE CROSSING.
6. CONTRACTOR SHALL CONSULT WITH TEMPORARY STRUCTURES AND CONSTRUCTION DEVICES ENGINEER FOR APPROPRIATE MATTING SIZES AND LENGTHS AND REQUIRED SOIL BEARING PRESSURES.

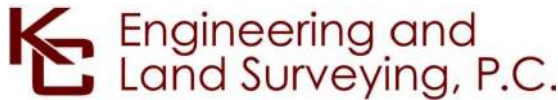
 **OPTION "A"**
NOT TO SCALE

 **OPTION "B"**
NOT TO SCALE

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

GENERAL NOTES:

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



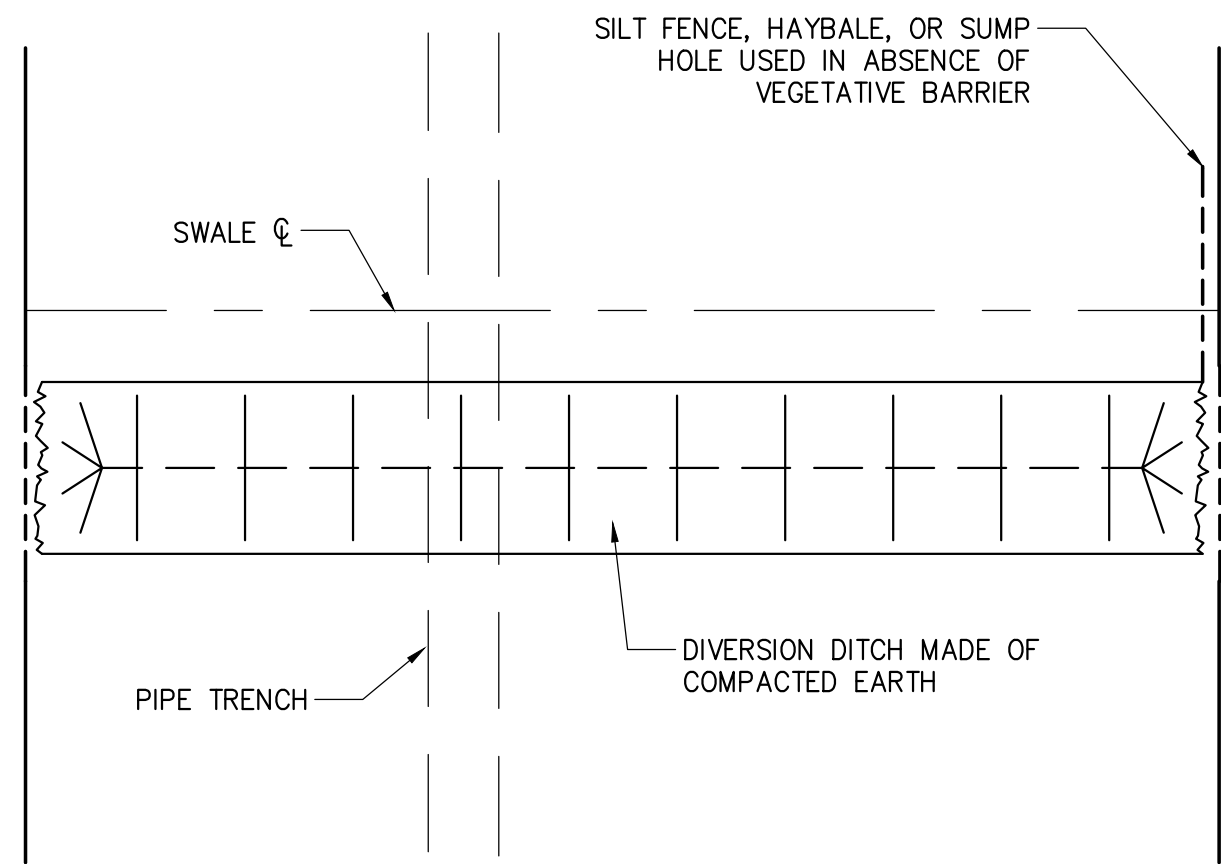
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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	BL	SL	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

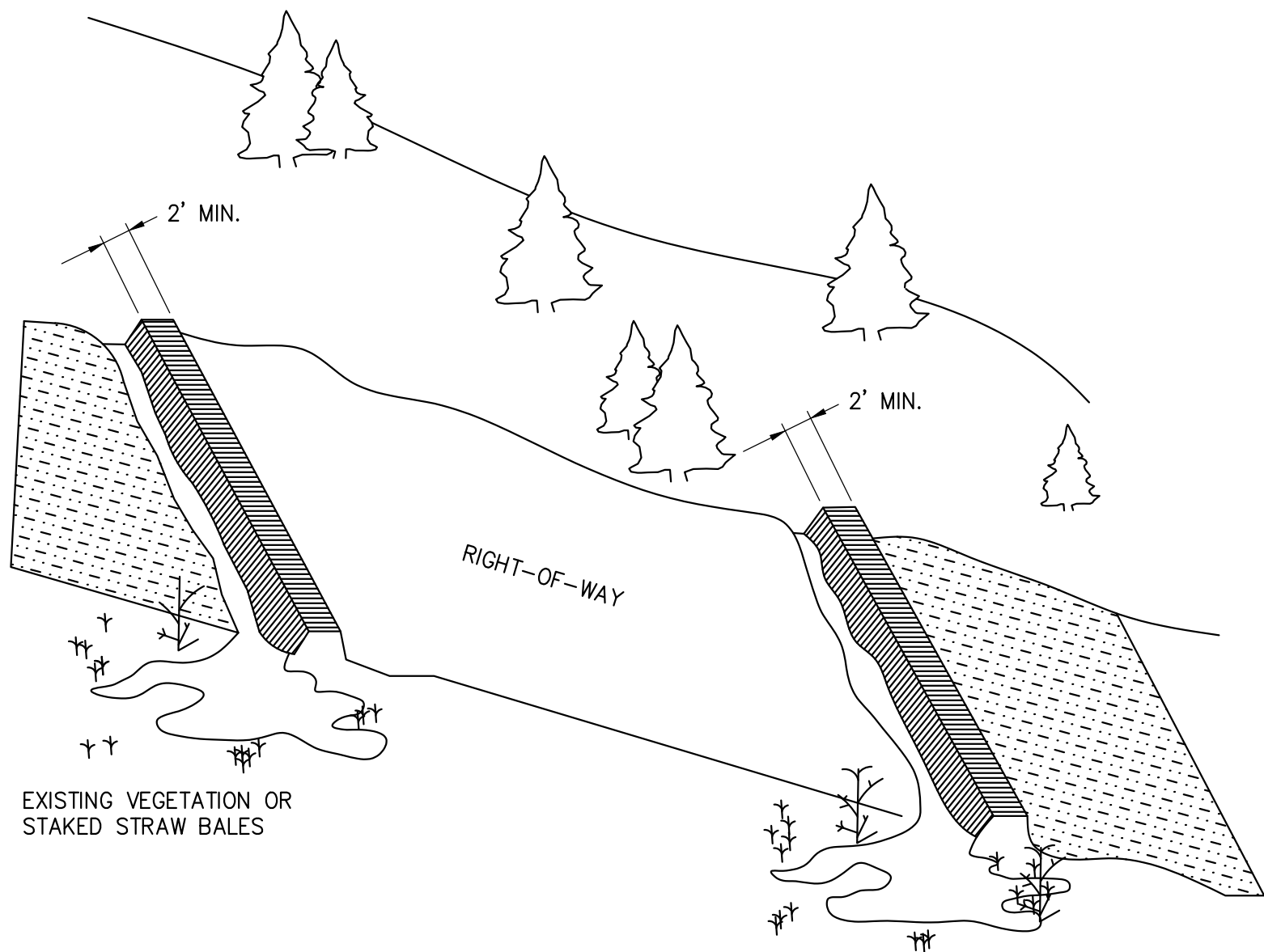
**CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
WETLAND CROSSING DETAILS**

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-611
DATE	07/26/2023
SH.NO.	OF

DRAWN BY:	BL	DESIGNED BY:	BL	APPROVED BY:	SL	SCALE	AS NOTED
						REV. NO.	0



OVERHEAD VIEW



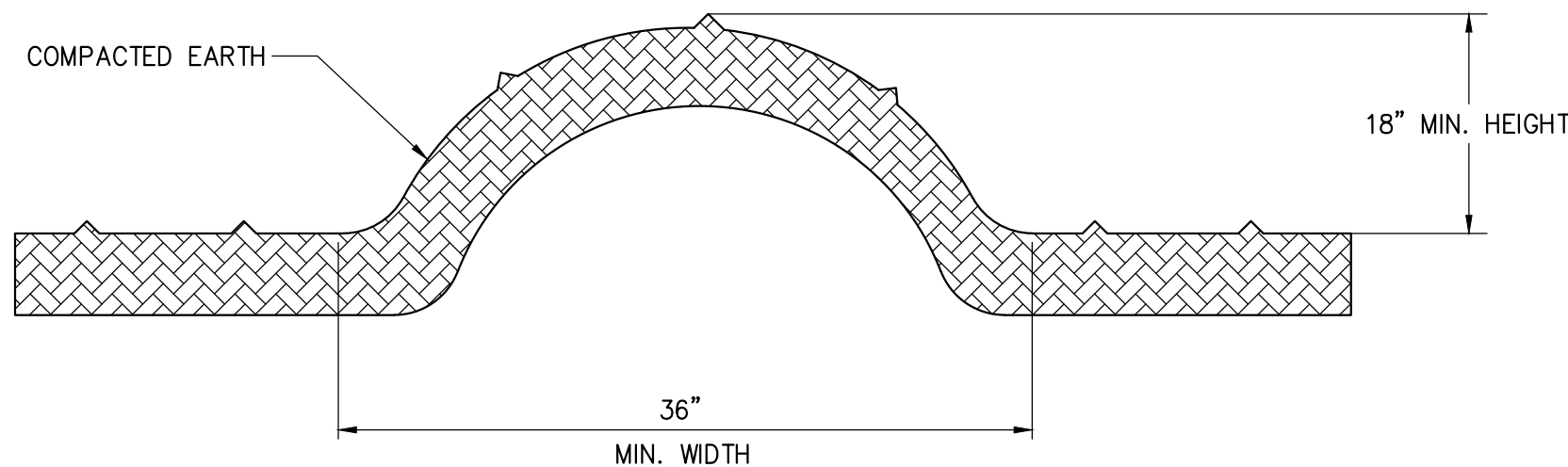
1. AT THE PROPOSED INTERCEPTOR DITCH LOCATION ESTABLISH A HORIZONTAL CONTOUR LINE (USING A POCKET TRANSIT OR HAND LEVEL) WHICH EXTENDS COMPLETELY ACROSS THE DISTURBED RIGHT-OF-WAY. THIS LINE WILL ALWAYS BE PERPENDICULAR TO THE DIRECTION OF WATER FLOW AND SHOULD BE PARALLEL TO THE MAP CONTOURS SHOWN ON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

TEMPORARY DRAINAGE DITCH

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.

1 PERMANENT DIVERSION DITCH DETAIL

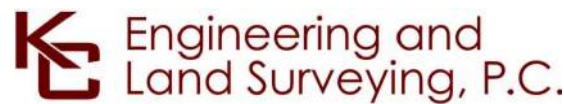
SCALE: N.T.S.



MINIMAL HEIGHT & WIDTH DIMENSIONS FOR WATERBAR CONSTRUCTION

SCALE: N.T.S.

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.



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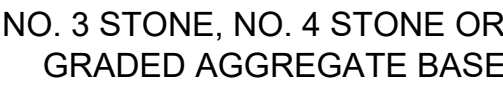
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

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

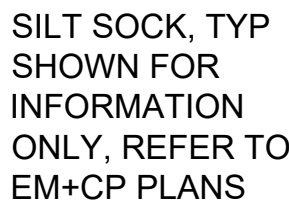
KIEWIT PROJECT NO.
21162
KC PROJECT NO.
120174
DRAWING NO.

C-612

DATE	07/26/2023
SH.NO.	OF



WETLAND AND AGRICULTURAL LANDS WORKING SURFACE PLAN - OPTION B
NOT TO SCALE



2
C-613

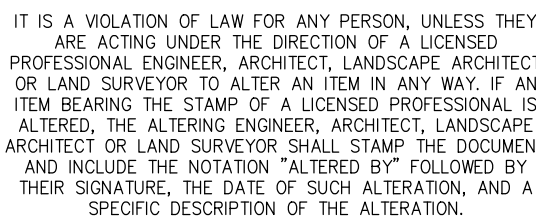
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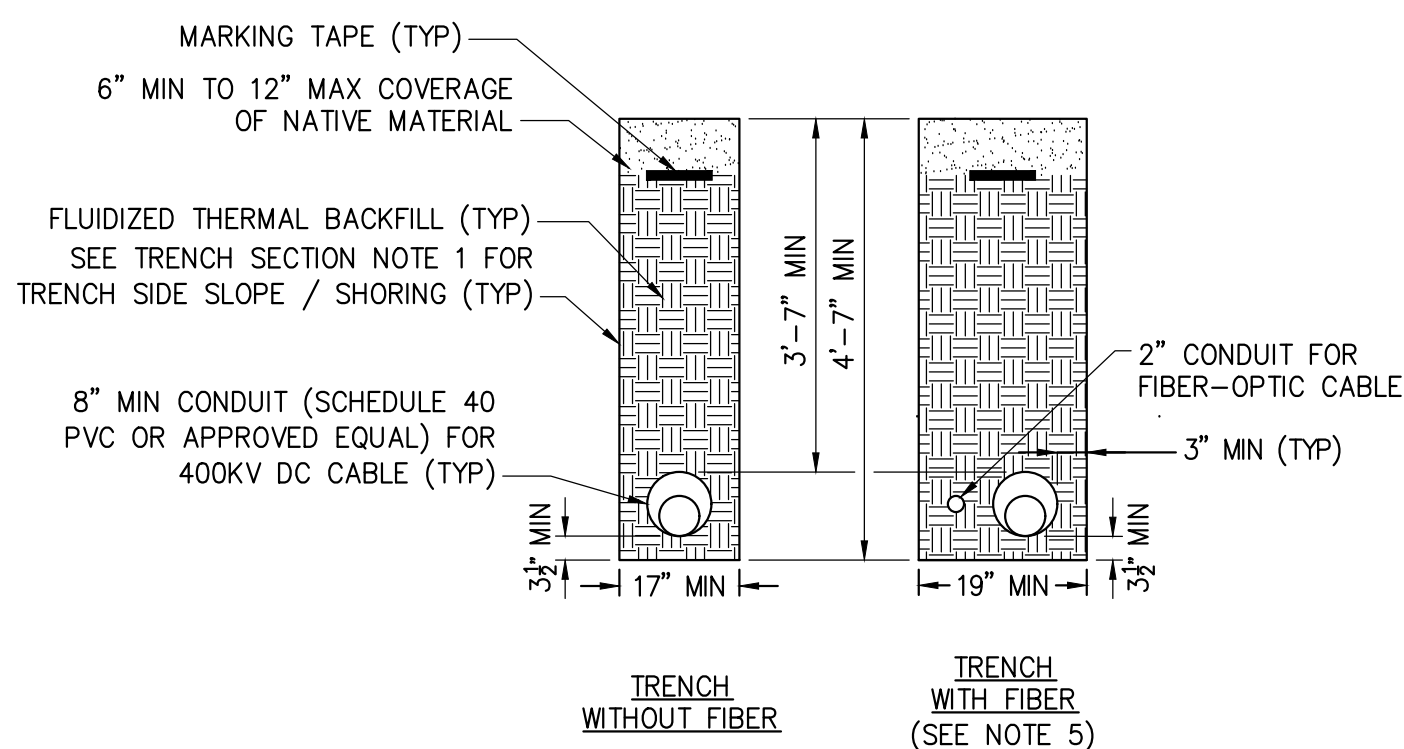
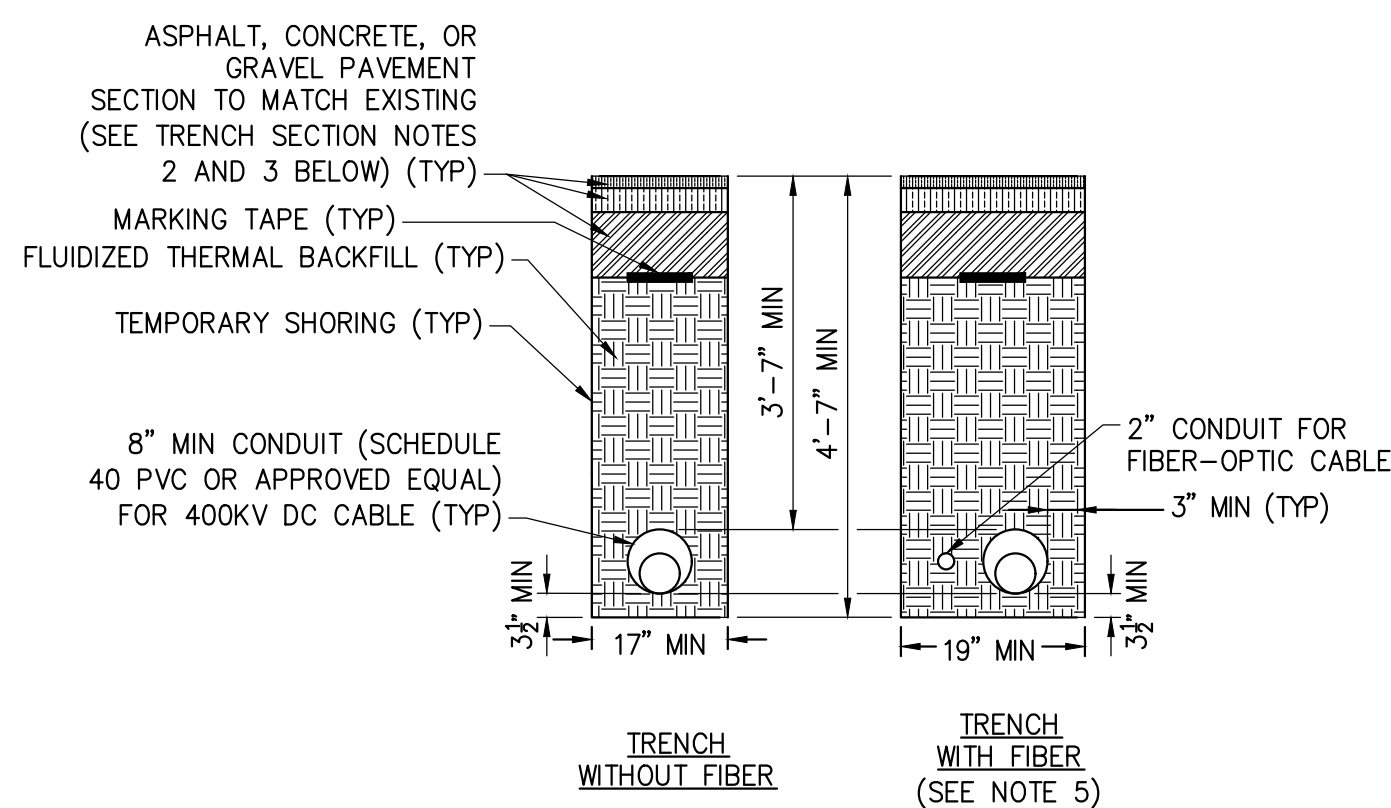
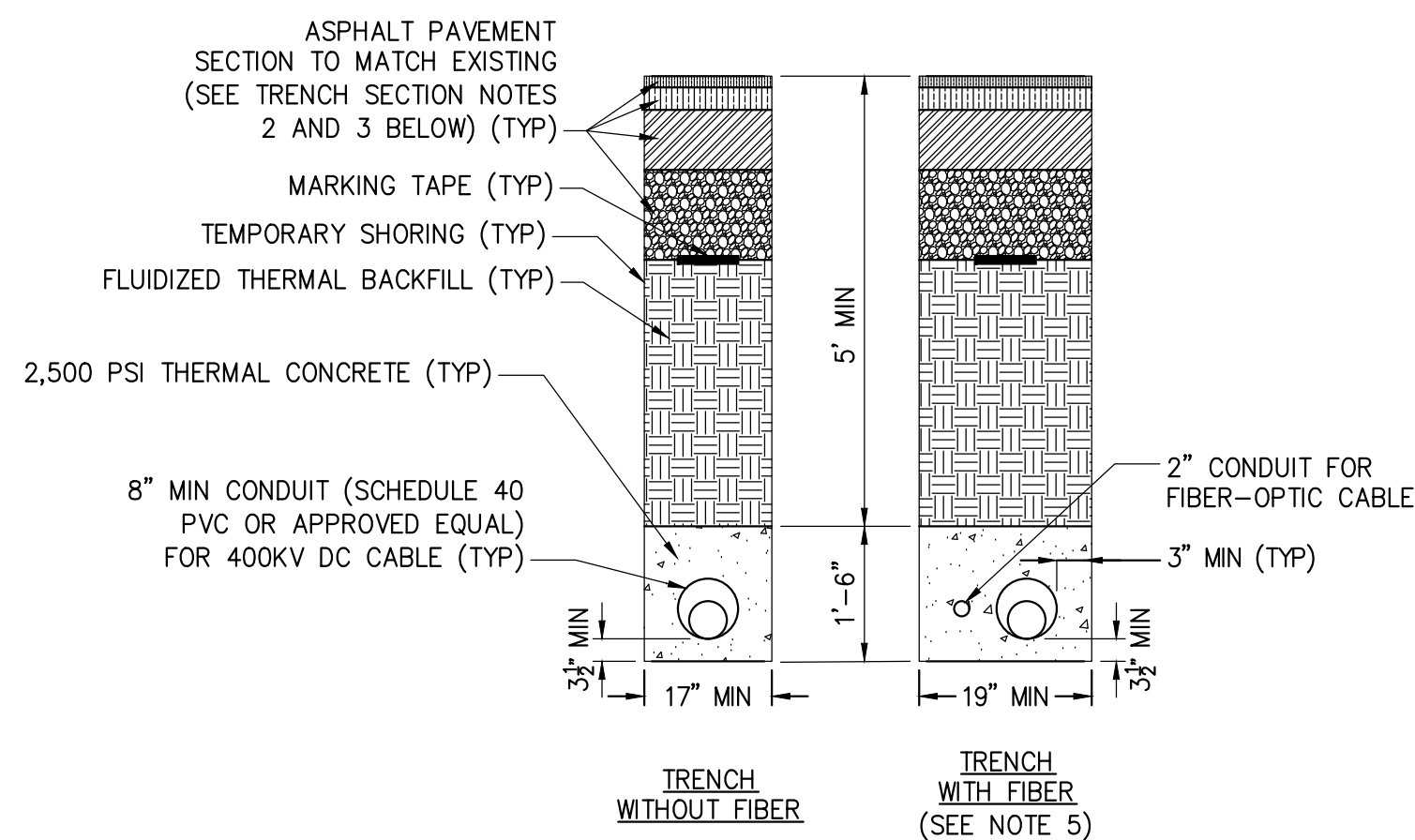
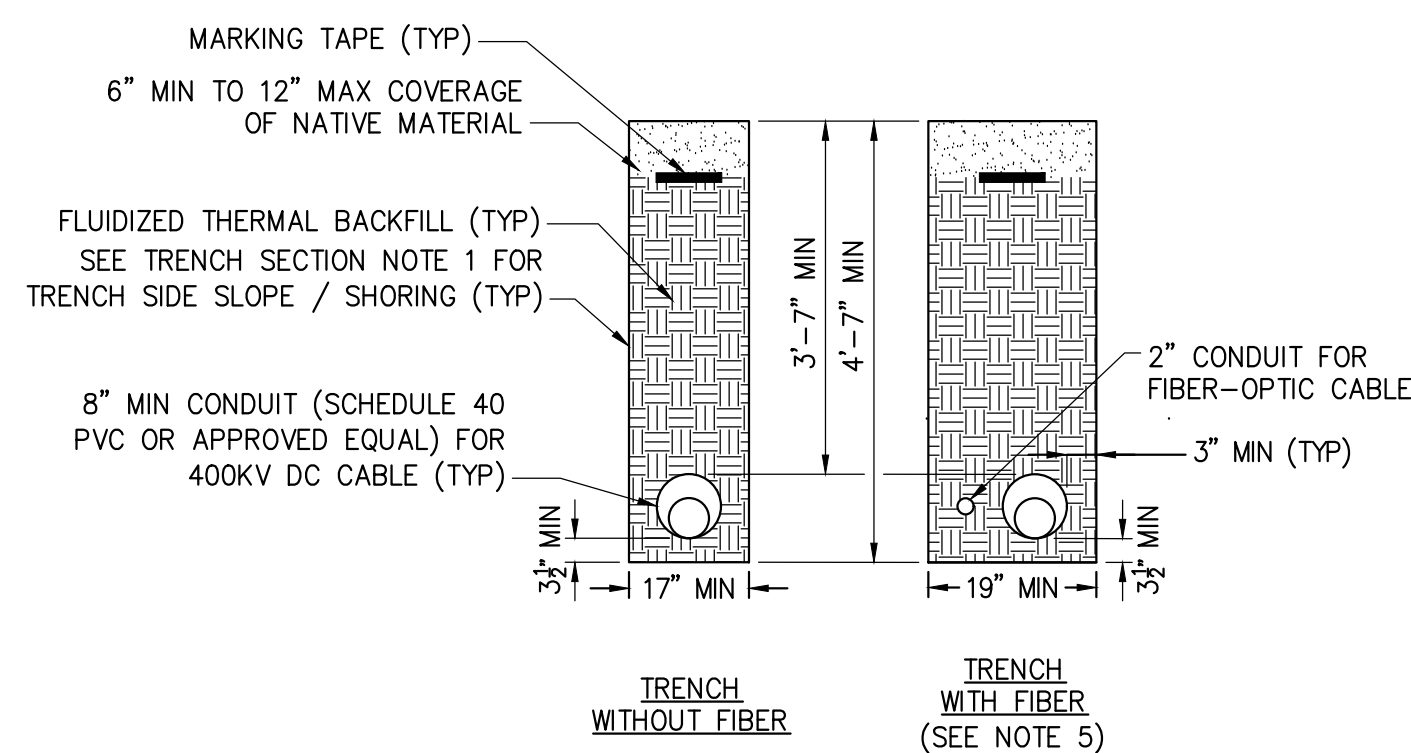
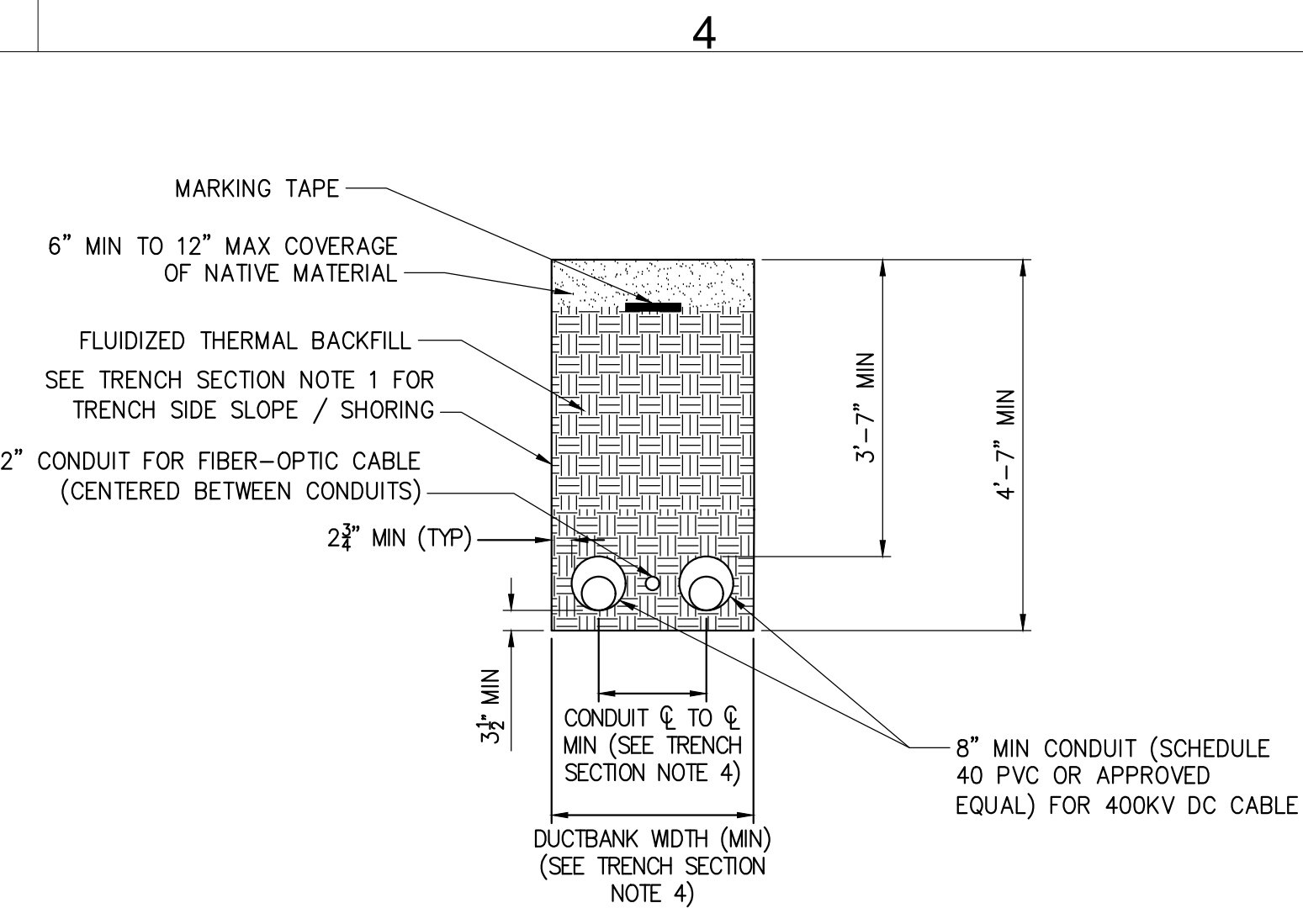
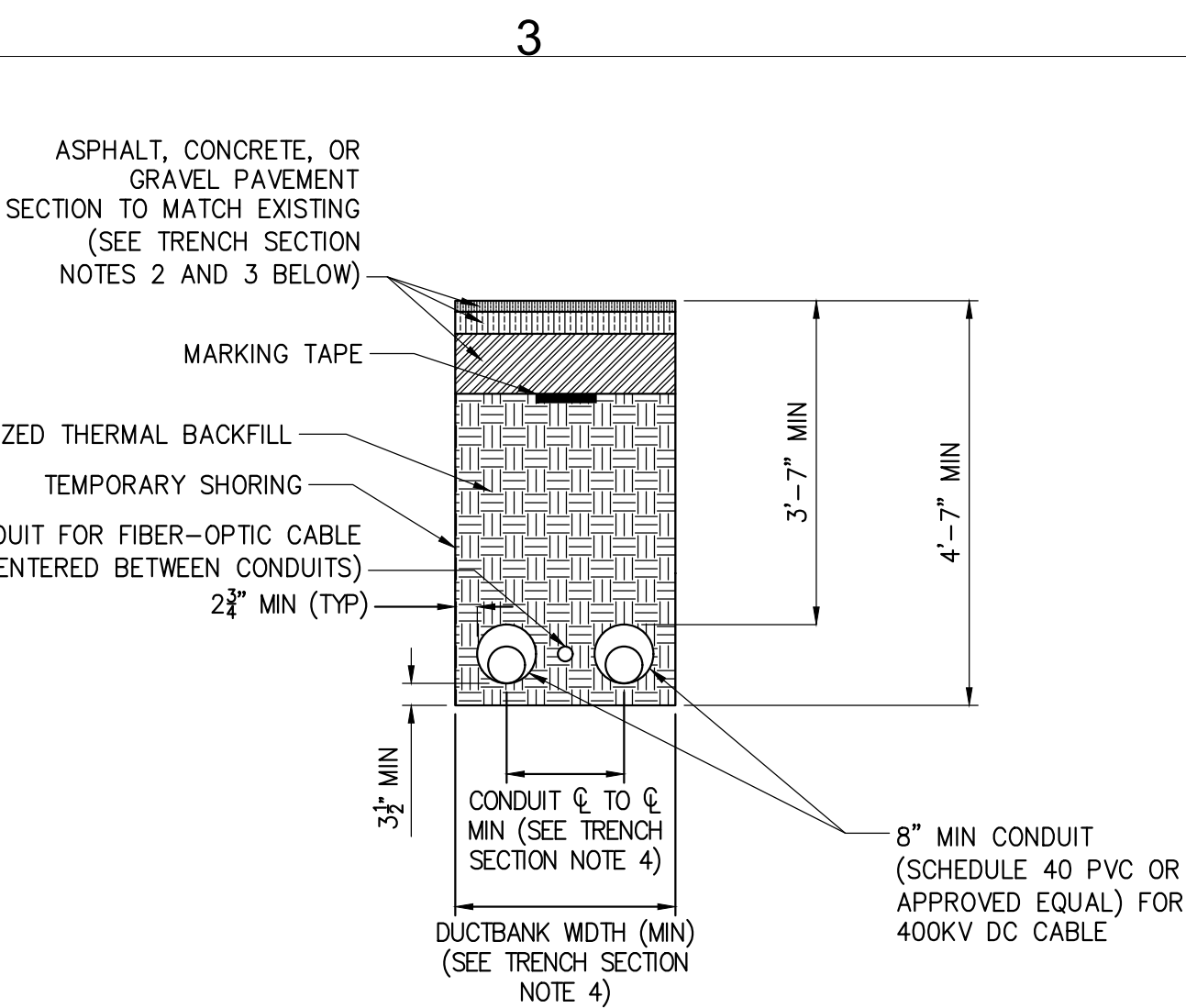
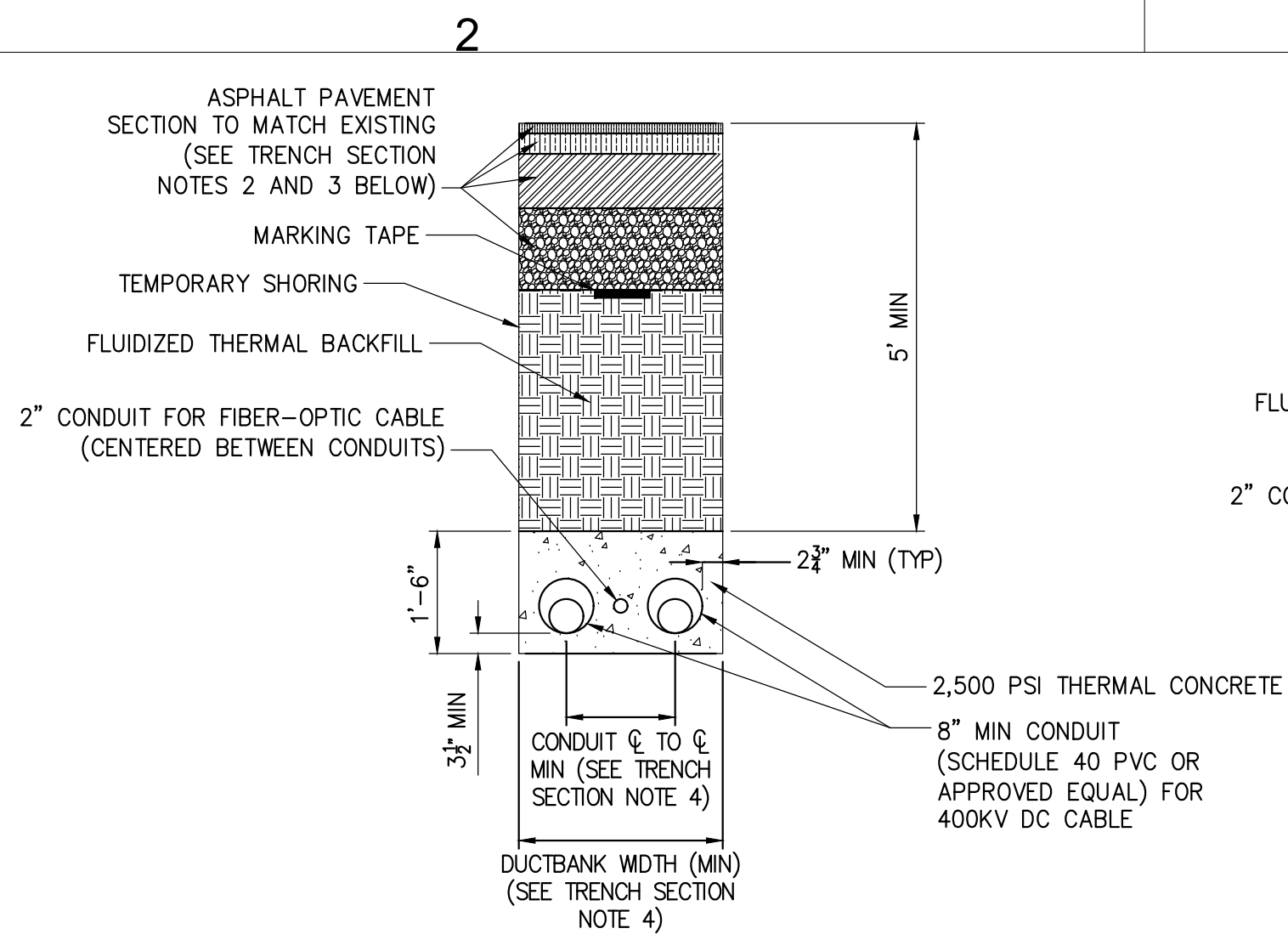
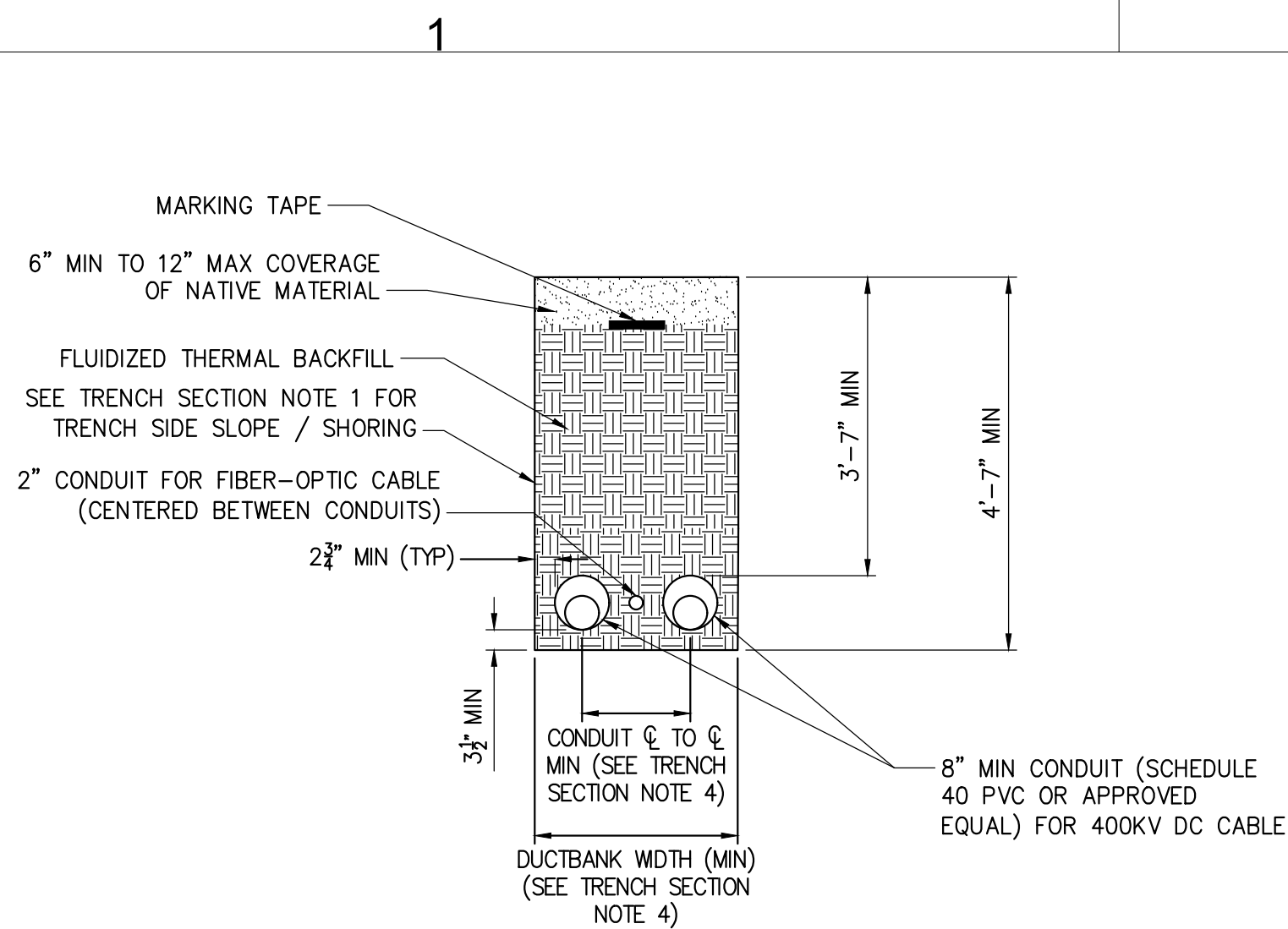
NOT TO SCALE

- NOTES:

1. TIMBER MATS SHOULD BE INSTALLED IN WETLANDS, AGRICULTURAL LANDS AND OTHER AREAS IF NECESSARY TO PREVENT RUTTING.
2. BASED ON ACTUAL SITE CONDITIONS, NUMBER OF TIMBER MAT LAYERS TO BE DETERMINED ON SITE.
3. TIMBER MAT SURFACE SHOULD BE LEVEL TO PREVENT EQUIPMENT AND VEHICLES FROM SLIDING OFF DURING MUDDY OR ICING CONDITIONS, AND PREVENT TIMBERS FROM BREAKING.
4. SEDIMENT TRACKED ONTO TIMBER MATTING SHOULD BE REMOVED AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING WETLAND AND AGRICULTURAL LAND DURING RAIN EVENTS. SEDIMENT SHOULD BE REMOVED TO A STABILIZED SOIL STOCKPILE OR OTHER APPROVED LOCATION.
5. PERIMETER EROSION AND SEDIMENT CONTROLS ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
6. UNLESS PERMITTED FROM REMOVAL, STUMPS WITHIN THE WETLAND SHOULD REMAIN. THIS MAY REQUIRE ADDITIONAL TIMBERS TO BRIDGE ABOVE.
7. UPON REMOVAL OF TIMBER MATTING ALL SPLINTERED WOOD SHOULD BE REMOVED. IF EXPOSED SOILS ARE PRESENT STRAW MULCH SHOULD BE APPLIED.
8. REFER TO EM+CP PLANS FOR EROSION CONTROL DETAILS.
9. REFER TO EM+CP PLANS FOR RESTORATION OF WETLAND.

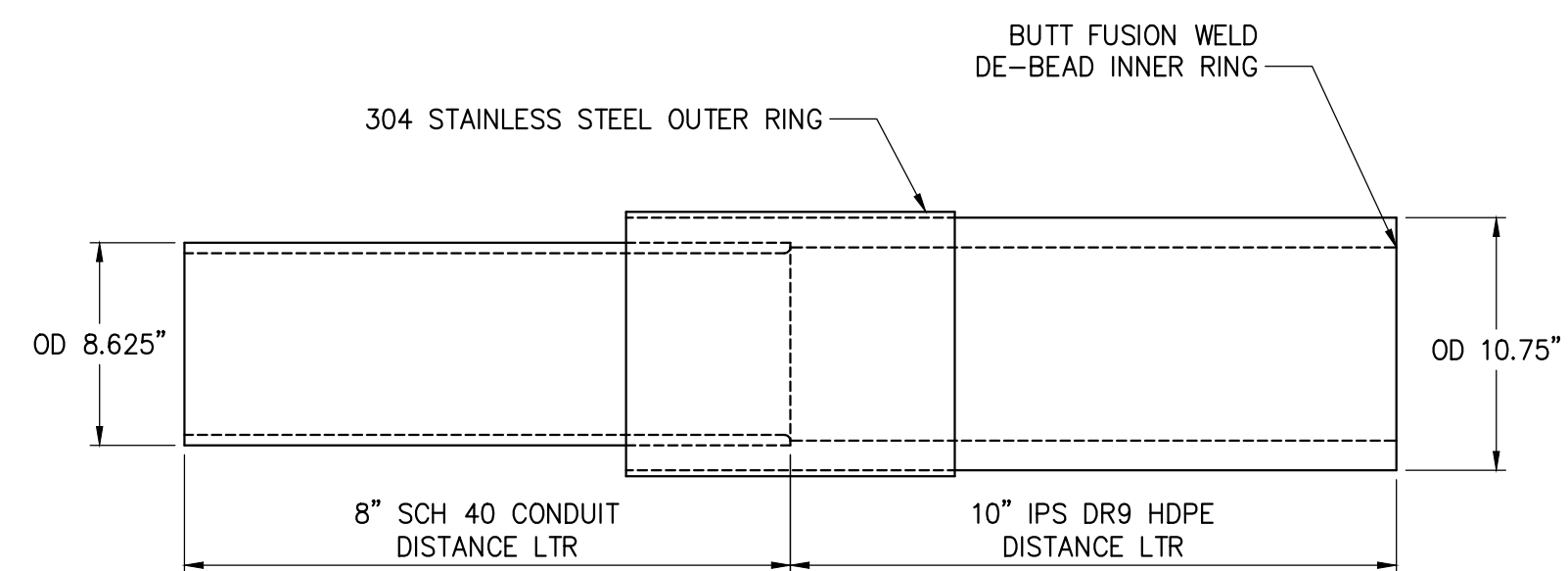
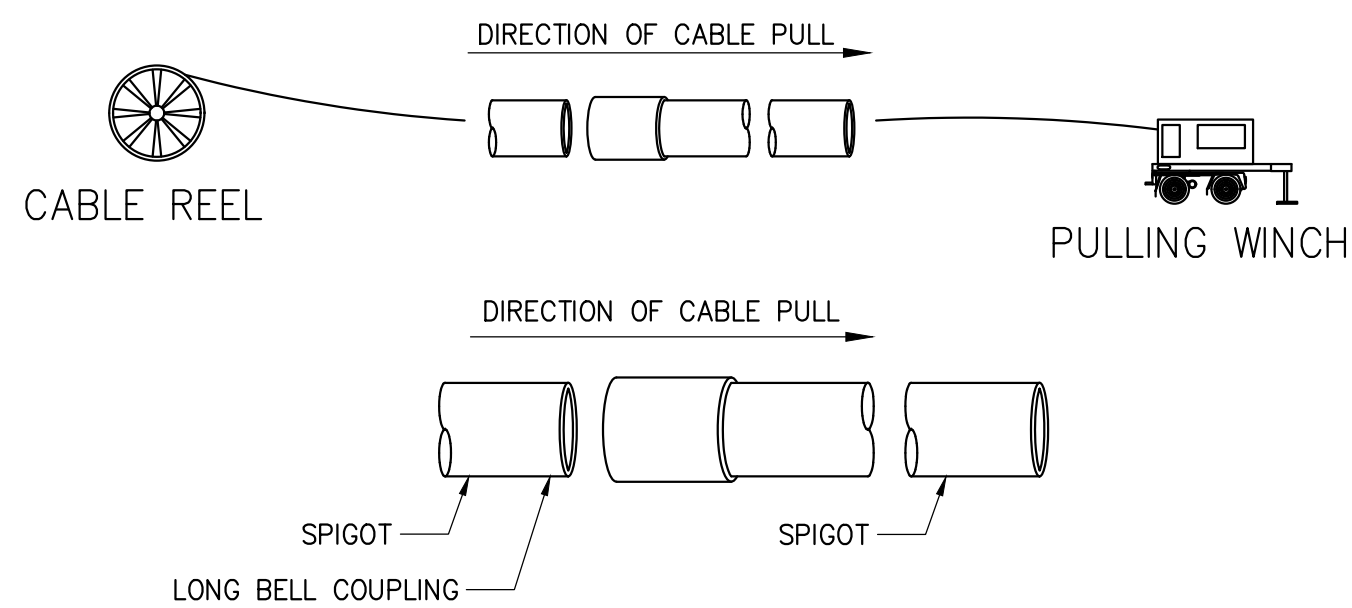
1. **TIMBER:**
 - A. **TIMBER SHALL BE SELECT STRUCTURAL MIXED OAK WITH A MINIMUM BENDING STRESS OF 1250 PSI OR BETTER.**
2. **CONTRACTOR TO VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCING WORK. ANY ERRORS, OMISSIONS, OR UNUSUAL CONDITIONS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY**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

[illegible]



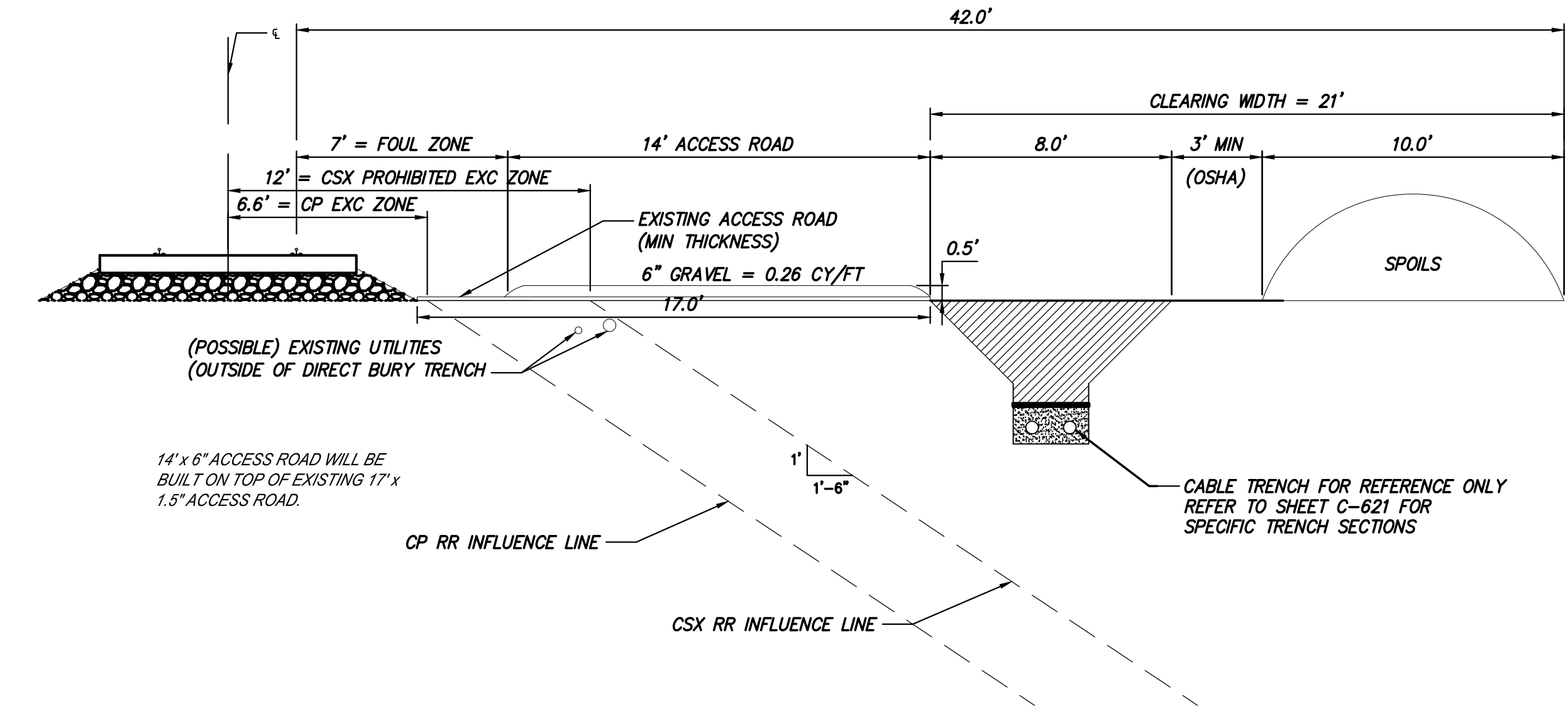
TRENCH SECTION NOTES:

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

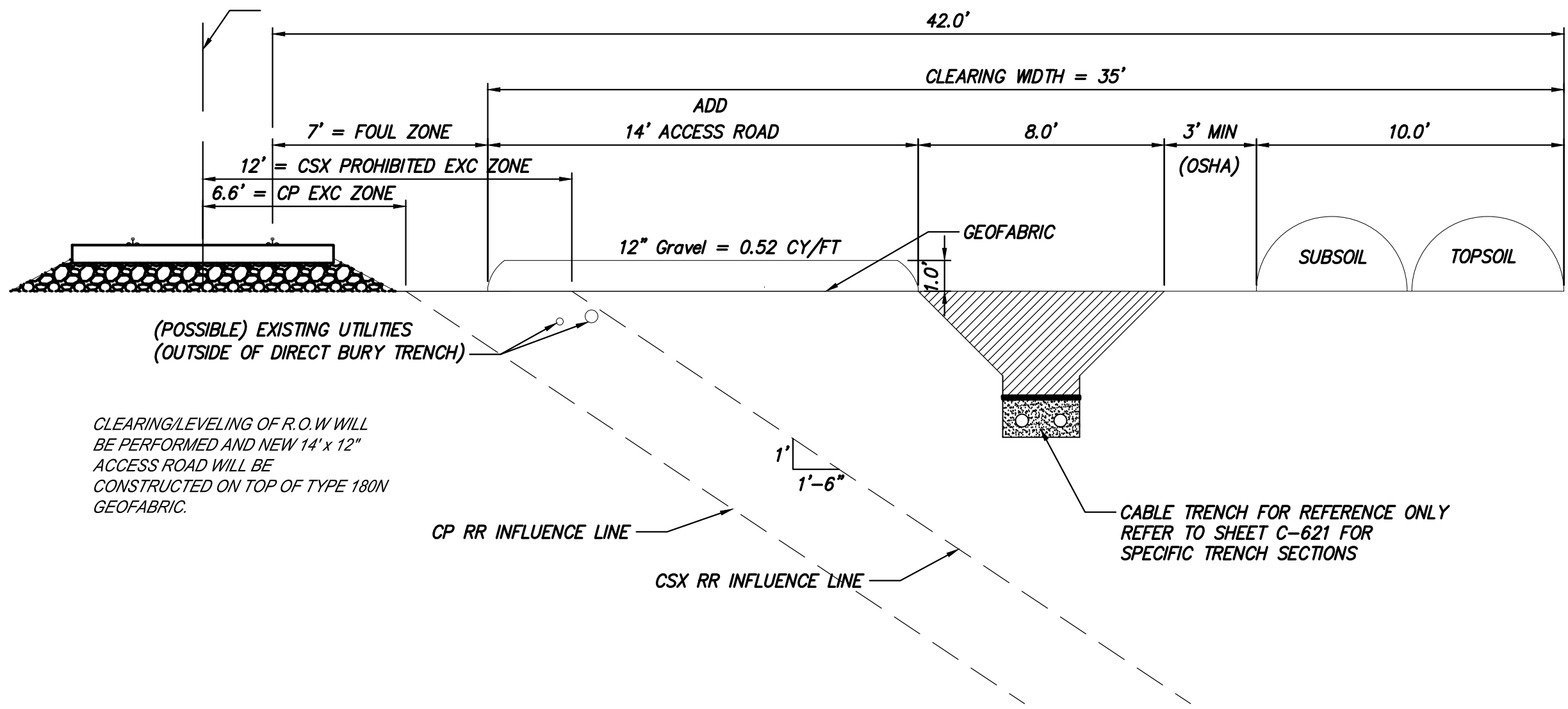


NOTE:
THIS TRANSITION COUPLING COMES ASSEMBLED AS A UNIT. POLY-CAM, ISCO INDUSTRIES P/N: 737-1008PVC40PVI09 TRANSITION COUPLING SHALL ARRIVE FROM VENDOR WITH NO ROUGH EDGES OR PROTRUSIONS ON INTERIOR. INTEGRITY OF COUPLING TO BE FIELD-VERIFIED PRIOR TO INSTALLATION. IF UNSATISFACTORY, CONTRACTOR TO SHAPE OR SAND MINOR IRREGULARITIES PRIOR TO INSTALLATION.

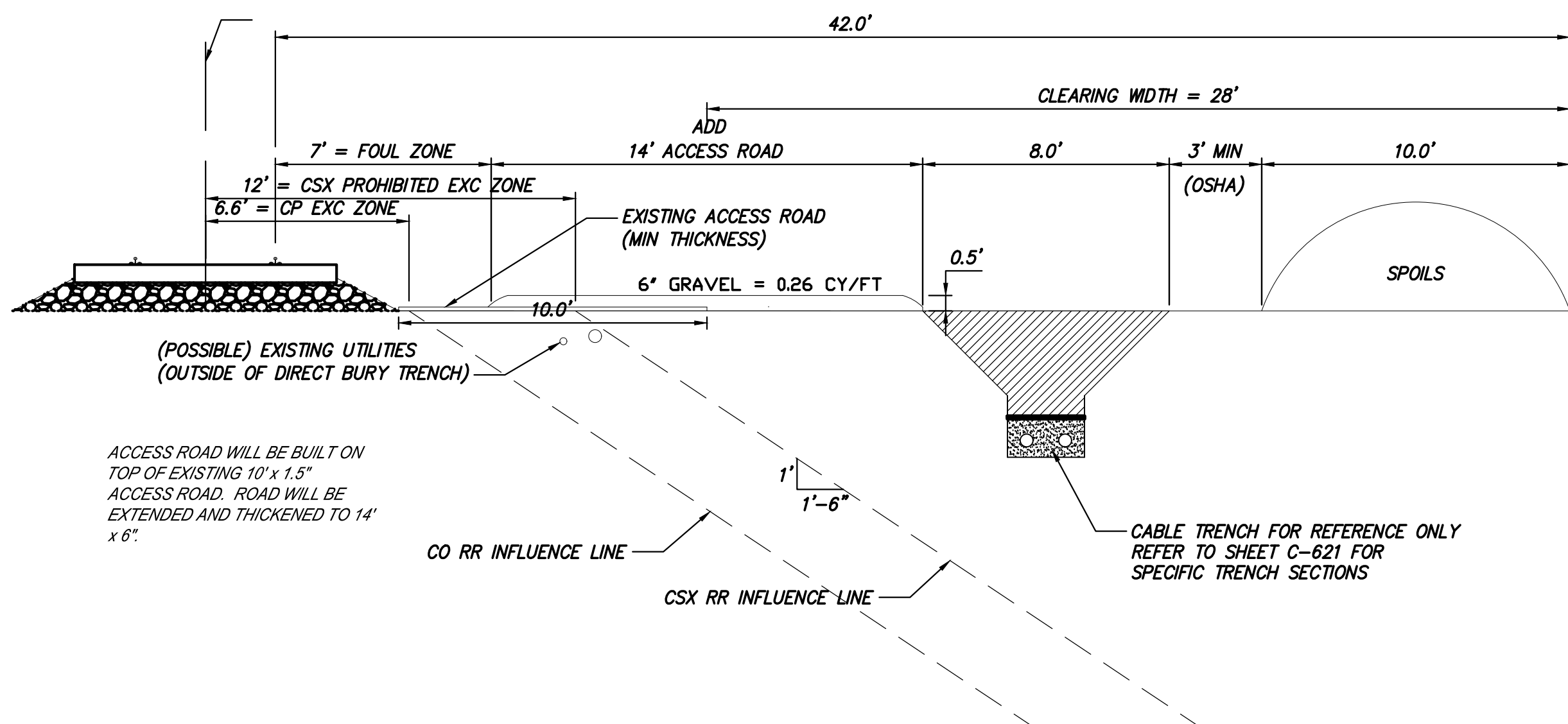
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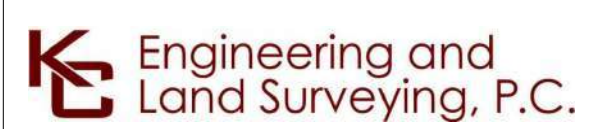


TYPE 1
EXISTING, MINOR REFURBISHMENT



TYPE 3
BUILD NEW



TYPE 2
EXISTING, MAJOR REFURBISHMENT



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

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

DRAWN BY: DM

DESIGNED BY: DM

APPROVED BY: BD

SCALE AS NOTED

REV. NO.

KIEWIT PROJECT NO. 21162

KC PROJECT NO. 120174

DRAWING NO. C-622

DATE 07/26/2023

SH.NO. OF



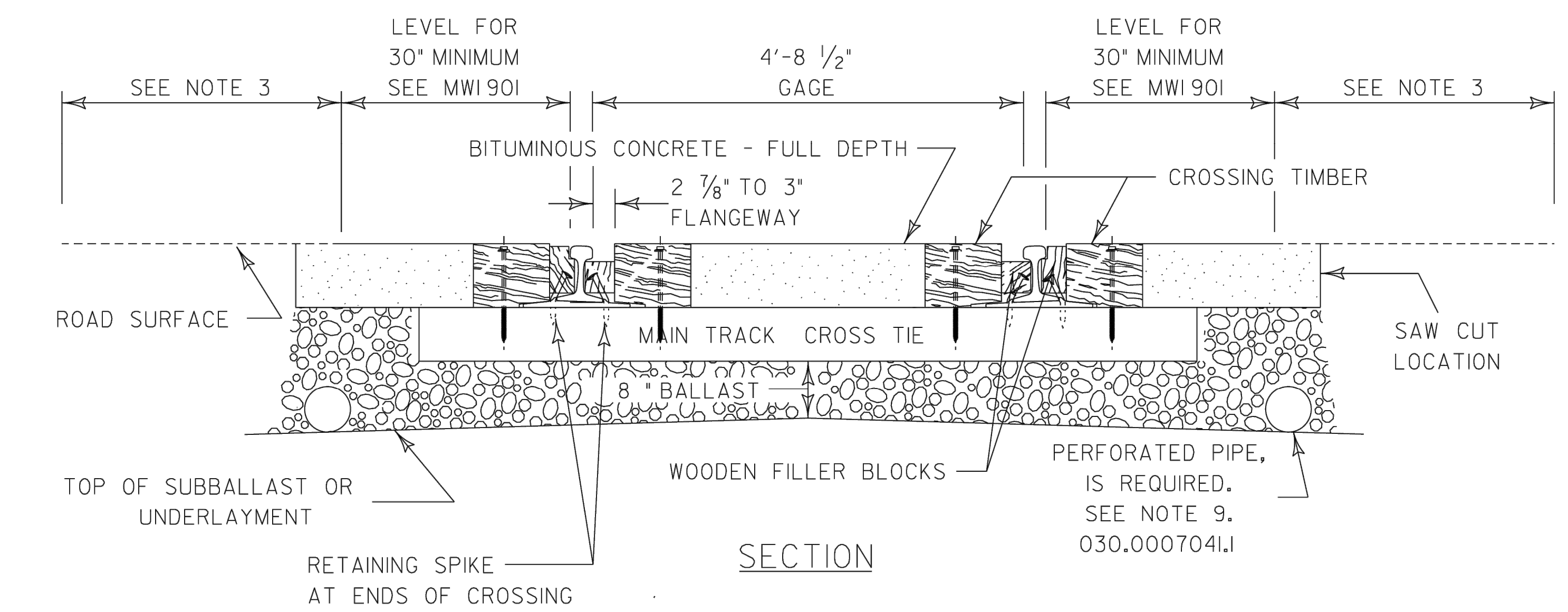
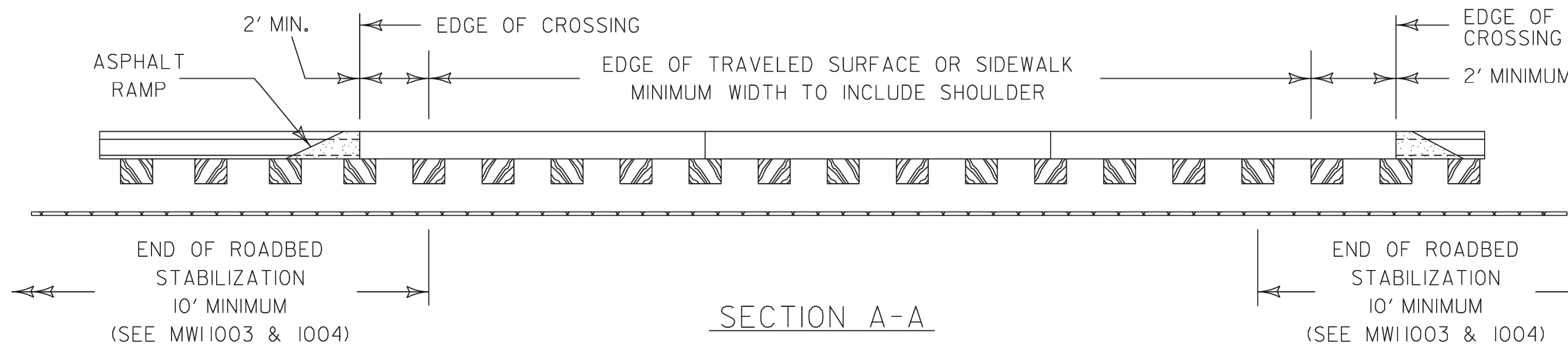
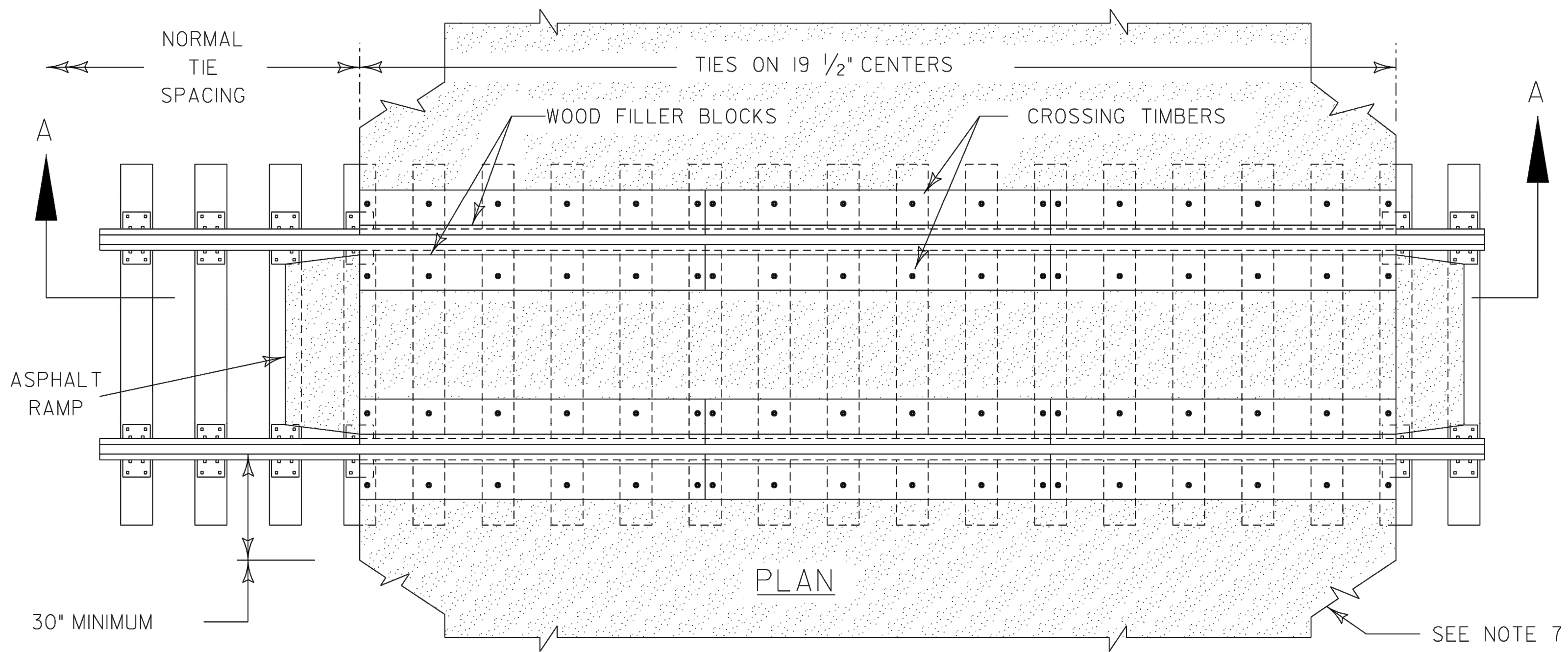
REFURBISH ACCESS NEXT TO RAIL. BUILD TEMP ACCESS AT TOE OF SLOPE

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							KIEWIT PROJECT NO. 21162	
													KC PROJECT NO. 120174	
													DRAWING NO.	
													C-623	
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	DM	BD										
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY:	DM	DESIGNED BY:	DM	APPROVED BY:	BD	SCALE REV. NO.	AS NOTED 0	DATE SH.NO.	07/26/2023 OF



NOTES

2536
SHEET 1

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

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



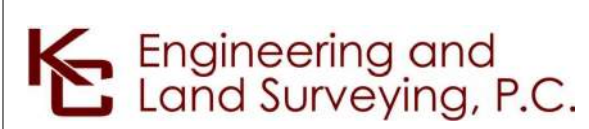
NORMAL DUTY ROAD CROSSING
TIMBER AND ASPHALT ON WOOD TIES

APPROVED - DIRECTOR
ENGINEERING STANDARDS

APPROVED - CHIEF ENGINEER
ENGINEERING SERVICES

PREPARED BY:
M. E. AUSTIN

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



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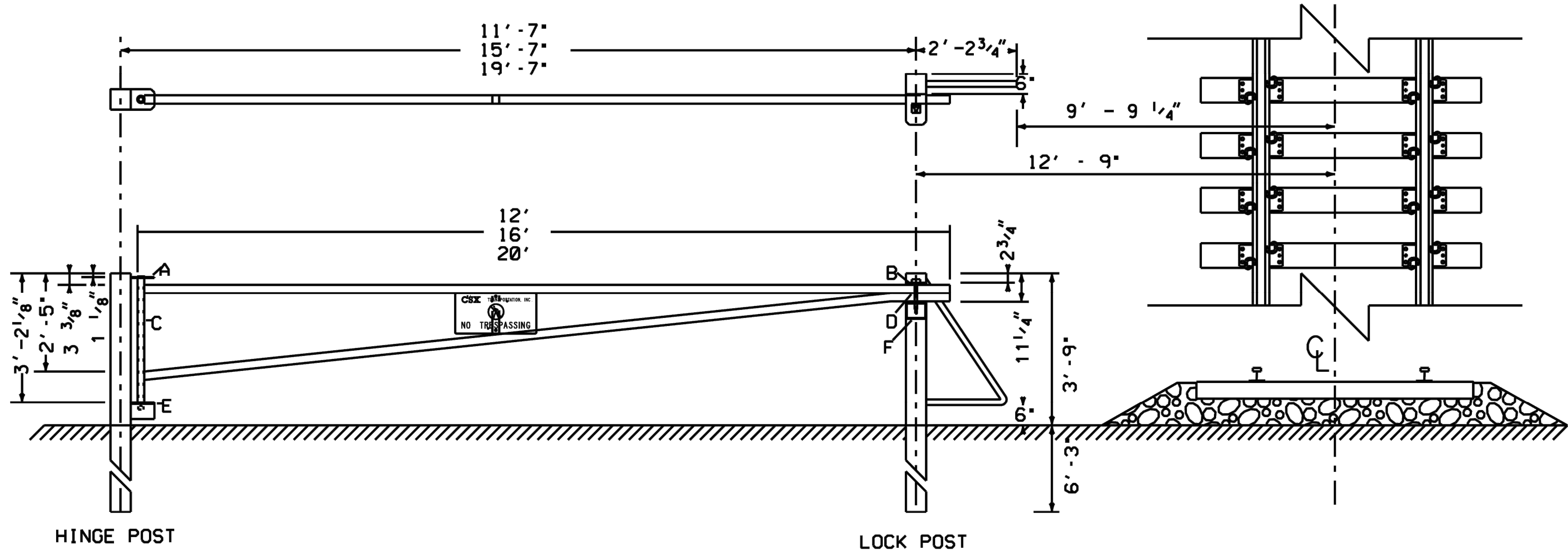
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
CSX CROSSING DETAILS 1 OF 2

KIEWIT PROJECT NO.		21162
KC PROJECT NO.		120174
DRAWING NO.		C-625
DATE	07/26/2023	
SH.NO.	OF	

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE	AS SHOWN
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	DM	BD					

DATE	07/26/2023
SH.NO.	OF

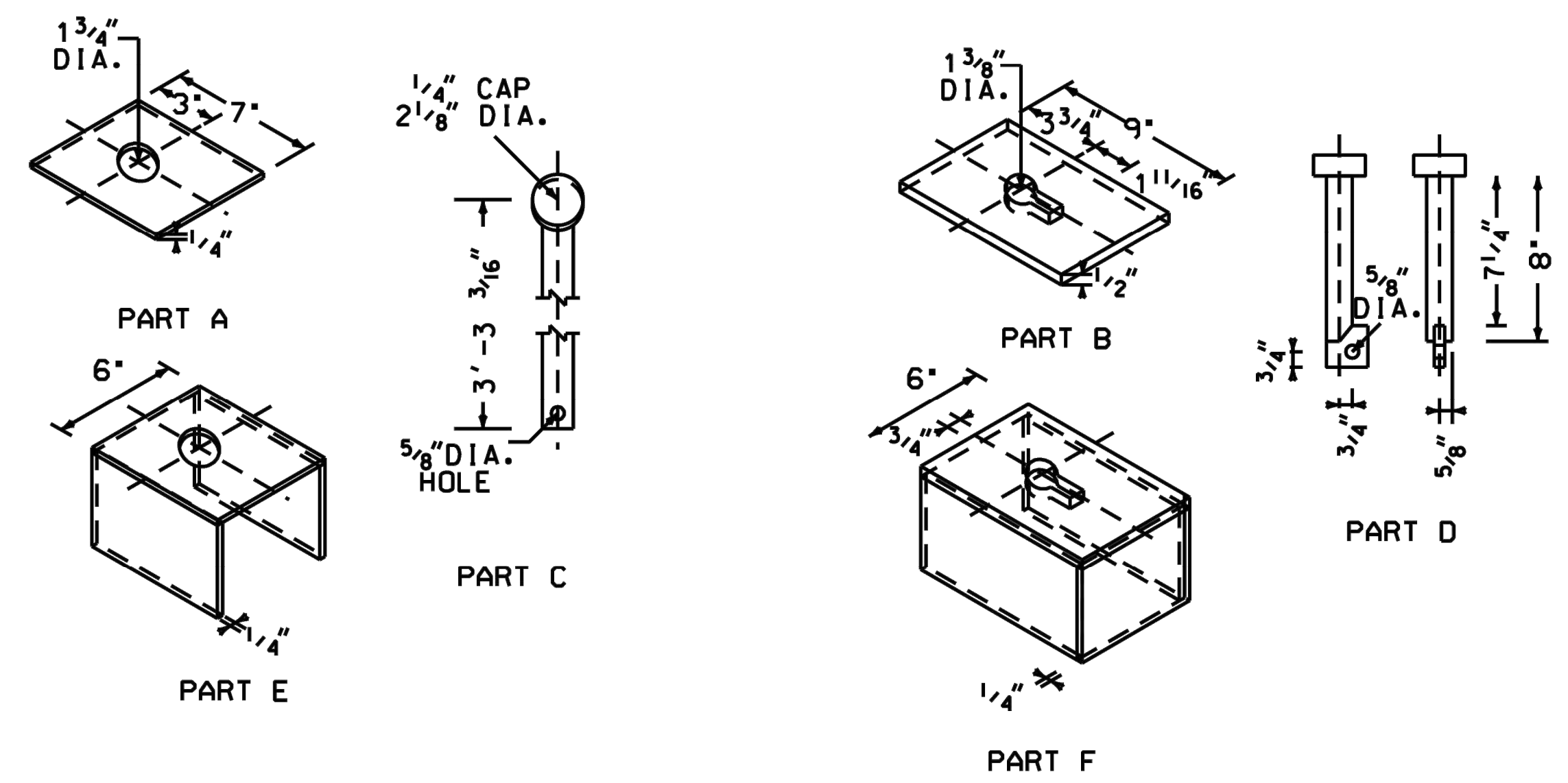
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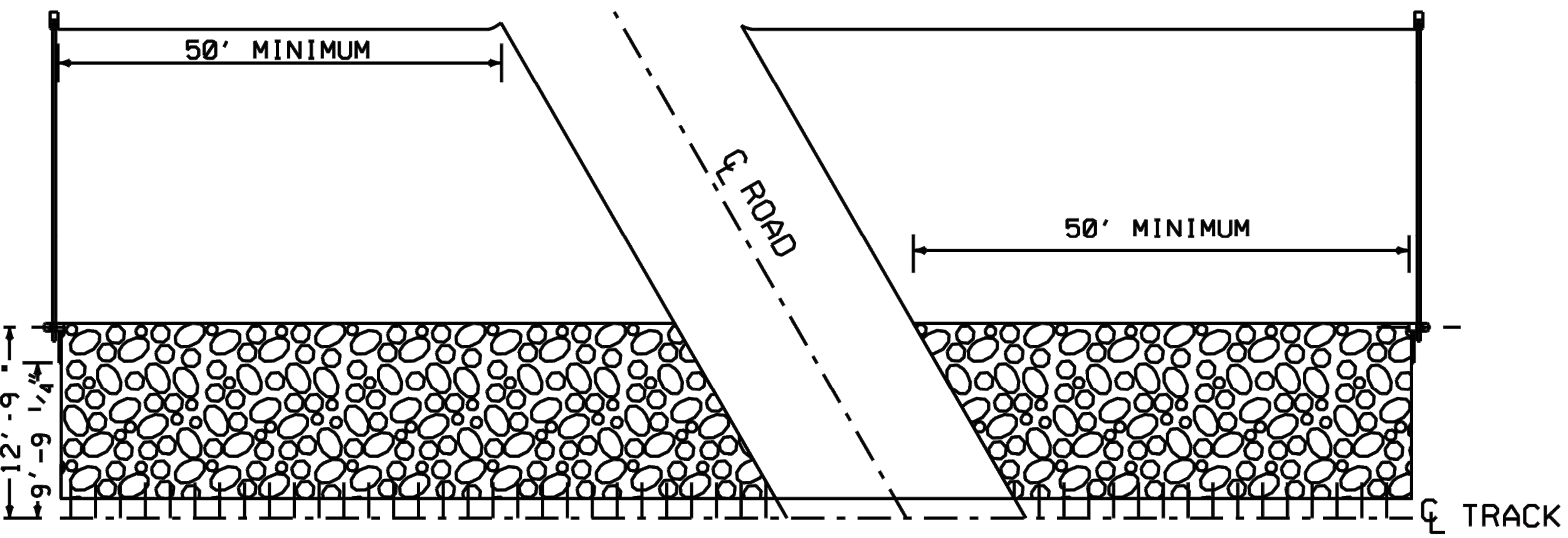
2614

NOTES

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



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



RIGHT-OF-WAY SECURITY GATE

J. E. BEYERL FOR
APPROVED - DIRECTOR
ENGINEERING STANDARDS

J. E. Beyerl
APPROVED - VICE PRESIDENT
ENGINEERING

PREPARED BY:
M. E. AUSTIN

ISSUED: JANUARY 10, 2011
REVISED : INITIAL ISSUE



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
CSX SECURITY GATE DETAIL

KIEWIT PROJECT NO.	21162
KC PROJECT NO.	120174
DRAWING NO.	C-627
DATE	07/26/2023
SH.NO.	OF

No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE	AS SHOWN
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	DM	BD					

1

1 1/2" ASPHALT CONCRETE TOP COURSE
(NYS DOT ITEM NO. 404.098201)

2.5" ASPHALT CONCRETE BINDER COURSE
(NYS DOT ITEM NO. 404.198901)

12" SUBBASE MATERIAL,
MATCH EXISTING THICKNESS
NYS DOT (ITEM NO. 304.12)

COMPACTED SUBGRADE

NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER.
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS.
3. APPLY STRAIGHT TACK COAT BETWEEN PAVEMENT SECTIONS NYSDOT ITEM NO.407.0103.
4. PRIVATE COMMERCIAL DRIVEWAYS TO UTILIZE COMMERCIAL DRIVEWAY SPECIFICATIONS AS SHOWN ON THE NYSDOT STANDARD SHEETS.

1

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

2

2" ASPHALT CONCRETE TOP COURSE
(NYSDOT ITEM NO. 404.096201)

2.5" ASPHALT CONCRETE BINDER COURSE
(NYSDOT ITEM NO. 404.198901)

8" ASPHALT CONCRETE BASE COURSE
(NYSDOT ITEM NO. 404.378901)

SUBBASE MATERIAL,
MATCH EXISTING THICKNESS
NYS DOT TYPE 2 (ITEM NO. 304.12)

COMPACTED SUBGRADE

NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER.
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS.
3. APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM 407.0103.

2

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

3

2" ASPHALT CONCRETE TOP COURSE
(NYSDOT ITEM NO. 404.098201)

2-1/2" ASPHALT CONCRETE BINDER COURSE
(NYSDOT ITEM NO. 404.198901)

3" ASPHALT CONCRETE BASE COURSE
(NYSDOT ITEM NO. 404.378901)

12" SUBBASE MATERIAL,
MATCH EXISTING THICKNESS
NYS DOT (ITEM NO. 304.12)

COMPACTED SUBGRADE

NOTES:
1. ABOVE SECTION IS THE MINIMUM FOR INSTALLATION. MATCH EXISTING SECTION IF EXISTING THICKNESS IS GREATER.
2. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS.
3. APPLY STRAIGHT TACK COAT TO BETWEEN PAVEMENT SECTIONS NYSDOT ITEM NO.407.0103.

3

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

4

COLD MILL EXISTING PAVEMENT
TOP COURSE, TACK
COAT AND INSTALL NEW TOP COURSE

TOP COURSE PER
PAVEMENT DETAIL

SAW CUT FULL DEPTH

EXISTING PAVEMENT

EXISTING SUBBASE

COLD MILL EXISTING
PAVEMENT 24" MIN. BEYOND
THE TRENCH WALL

NOTE:
1. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

4

PAVEMENT TRANSITION DETAIL
SCALE: N.T.S.

5

SLOPE AS INDICATED ON PLAN

LAYER THICKNESS PER TABLE

COMPACTED SUBGRADE

GEOTEXTILE FABRIC AND/OR
GEOGRID, AS REQUIRED⁵

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

5

TEMPORARY ACCESS ROAD
SCALE: N.T.S.

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

6

GRAVEL PAVEMENT
SCALE: N.T.S.

SLOPE AS INDICATED ON PLAN

8" SUBBASE

COMPACTED SUBGRADE

STABILIZATION FABRIC

7

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

MILL AND OVERLAY 2" ASPHALT CONCRETE
TOP COURSE (NYSDOT ITEM NO. 404.096201)
TACK COAT (NYSDOT ITEM NO. 407.0103)

EXISTING ASPHALT COURSE(S)

EXISTING SUBBASE

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

8

O.D. + 3'-0"

SLOPE TRENCH
AS REQ'D

BACKFILL WITH SUITABLE MATERIAL
(NYSDOT ITEM NO. 203.02)

PIPE ZONE BACKFILL
(NYSDOT SUBASE TYPE 4, ITEM NO. 304.14)
1/2 O.D. + 12" MIN.

PIPE ZONE BEDDING
(NYSDOT NO. 2 STONE, ITEM NO. 703.02)
1/2 O.D. + 8"

OPTIONAL EXTRA BEDDING AS
ORDERED BY THE ENGINEER

UNDISTURBED MATERIAL

PIPE

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

8

CULVERT REPLACEMENT
SCALE: N.T.S.

9

SLOPE TO MATCH EXISTING
PAVEMENT SECTION

WING WEDGE CURB

STABILIZATION
FABRIC

SUBBASE COURSE
MATCH EXISTING THICKNESS

NOTE:
1. ALL MATERIALS TO MEET NYSDOT STANDARD SPECIFICATIONS

9

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

10

SLOPE TO MATCH EXISTING
PAVEMENT SECTION

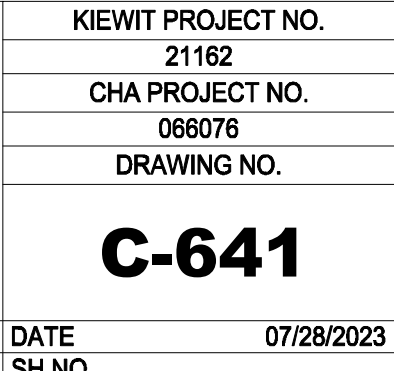
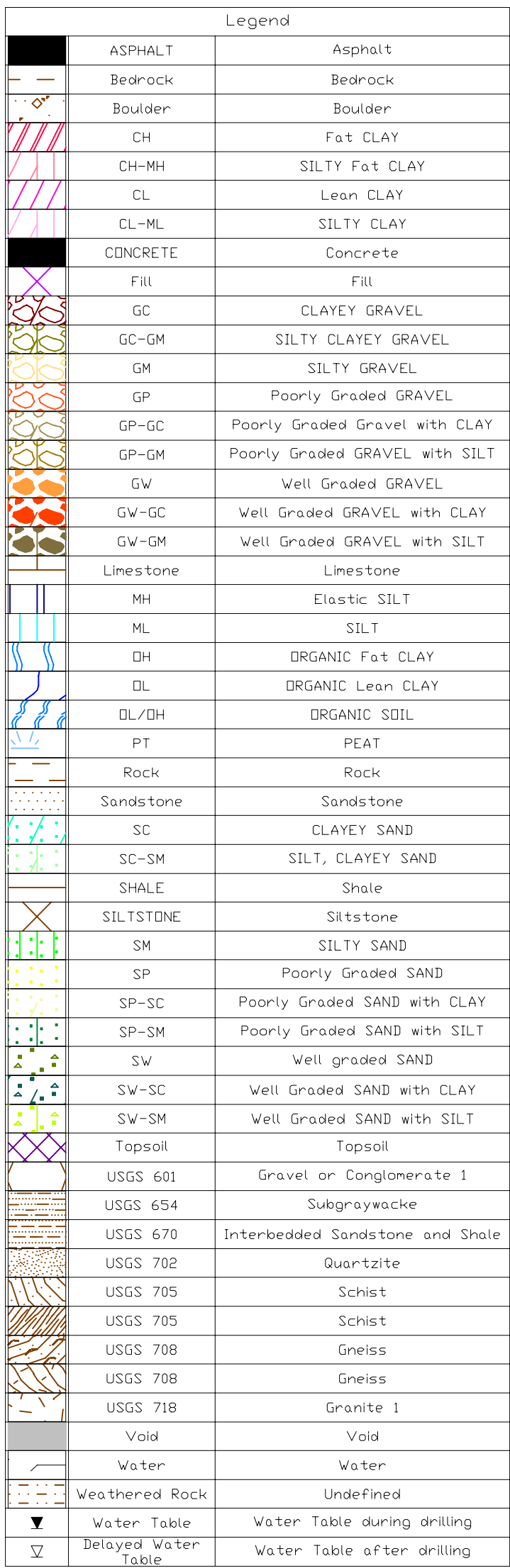
2" ASPHALT TOP COURSE
(NYSDOT ITEM NO. 608.020102)

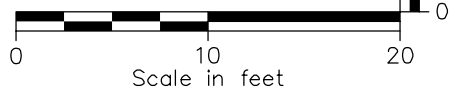
3" ASPHALT CONCRETE BINDER COURSE
(NYSDOT ITEM NO. 404.198901)

8" SUBBASE MATERIAL
(NYSDOT ITEM NO. 304.12)

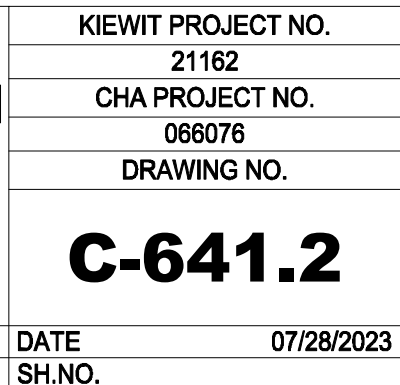
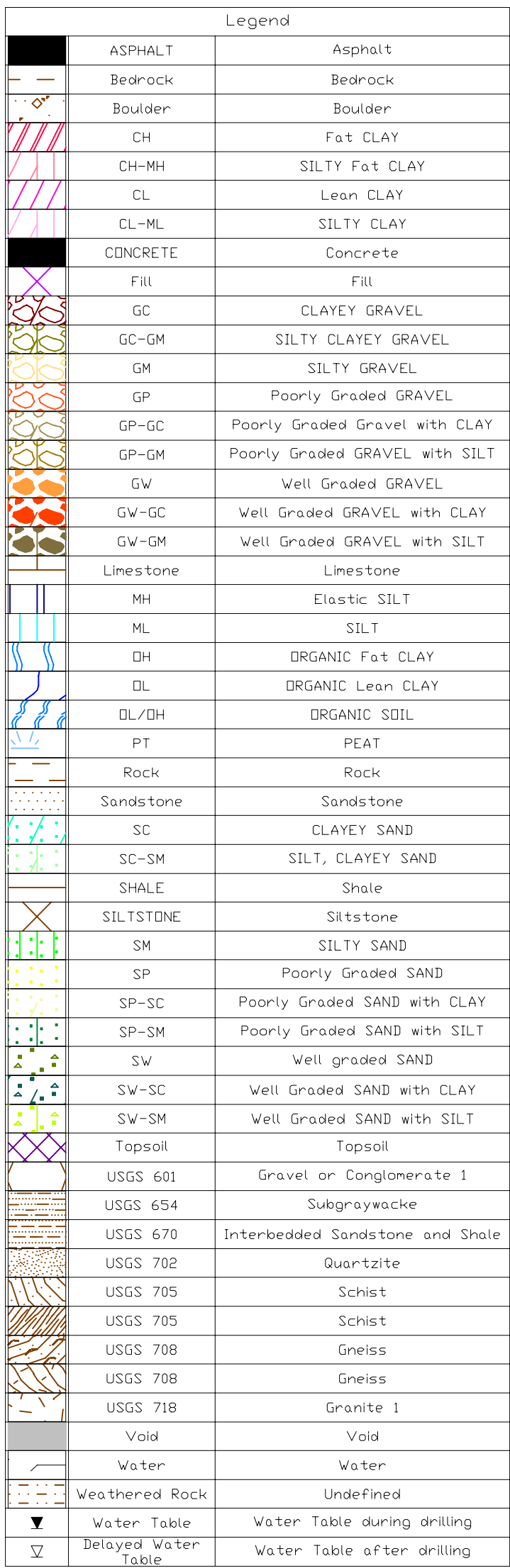
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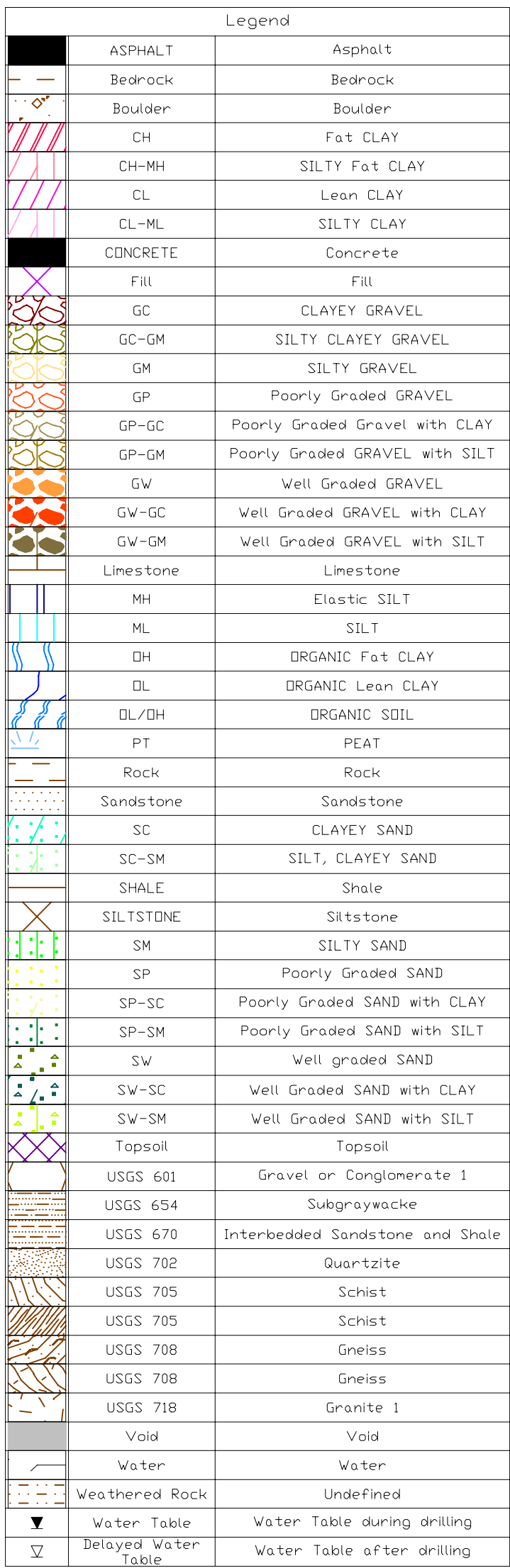
BIKE PATH RESTORATION DETAIL
SCALE: N.T.S.



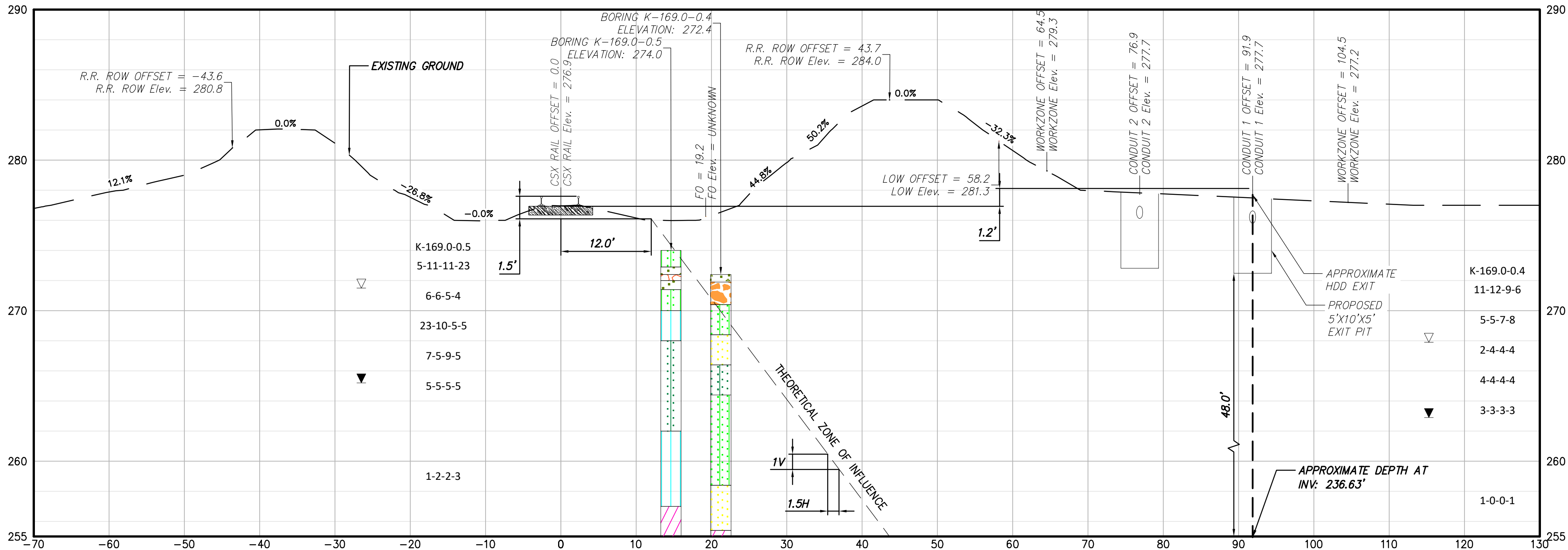


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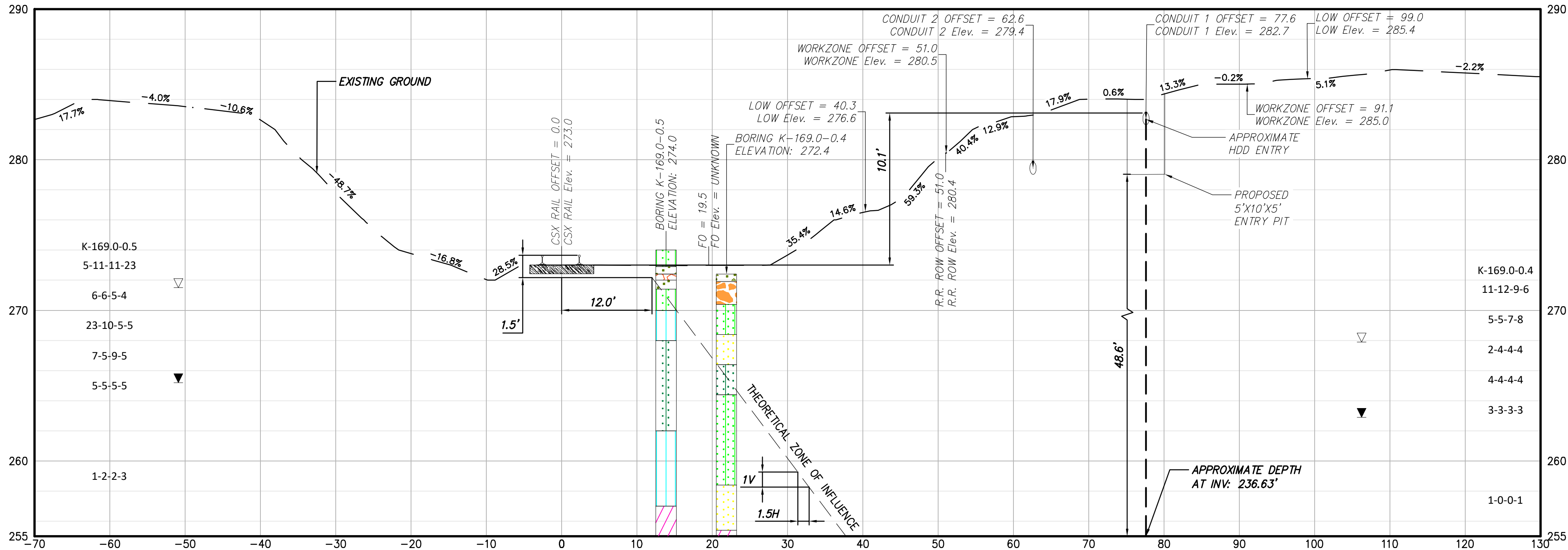




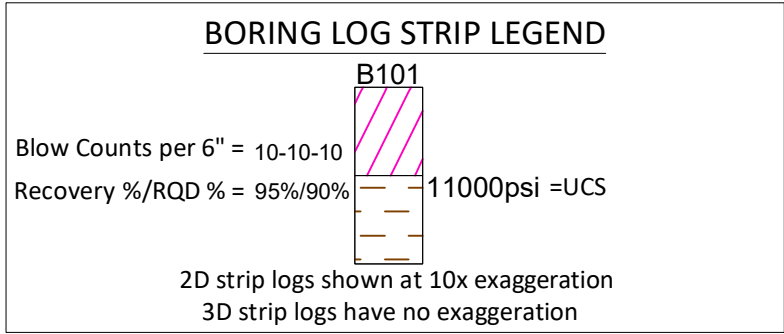
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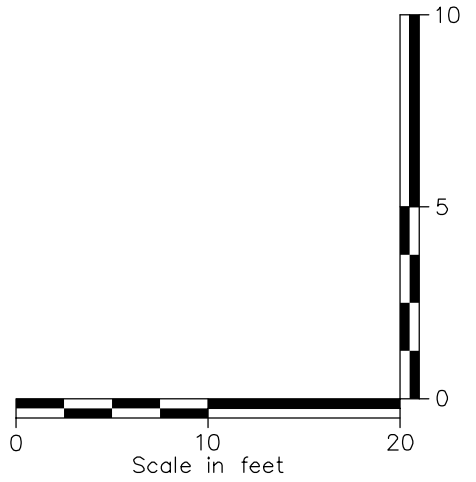
2 HDD 62A CONDUIT 1 EXIT PIT CUT SECTION; STA. 45027+04
CSX PAN AM SOUTHERN SUBDIVISION MP QG 3.65



1 HDD 62A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45020+02
CSX PAN AM SOUTHERN SUBDIVISION MP QG 3.32



Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	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
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table during drilling	Water Table during drilling
	Water Table after drilling	Water Table after drilling



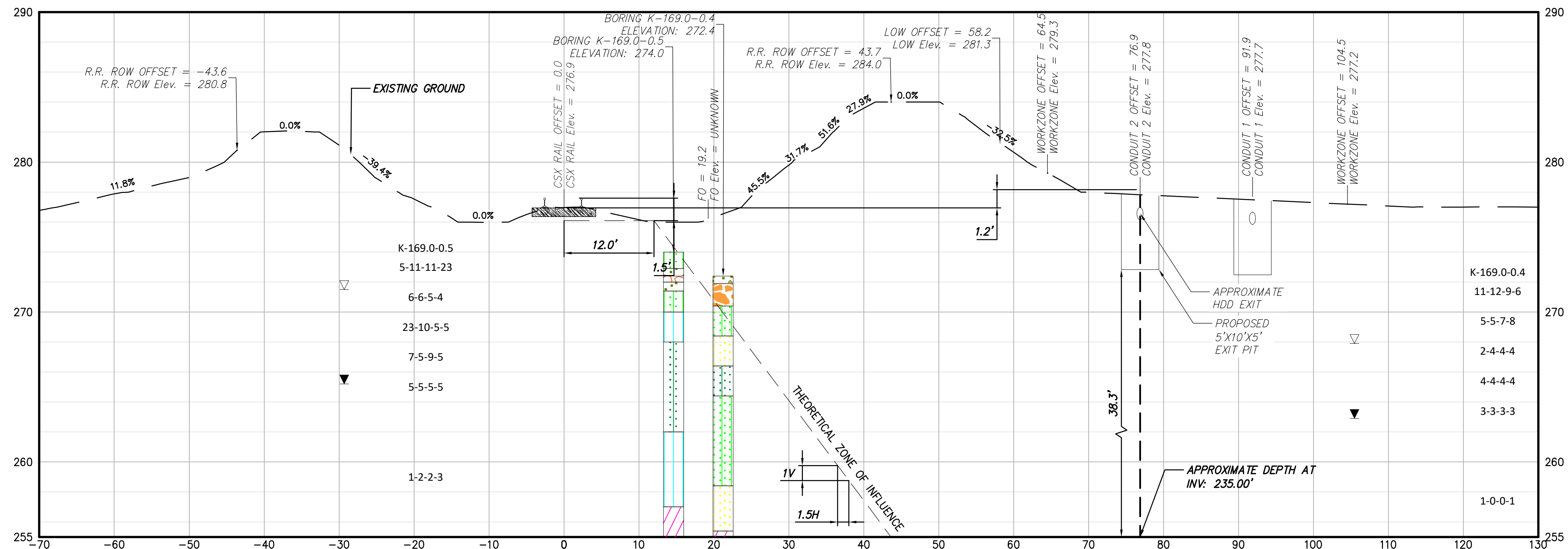
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE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

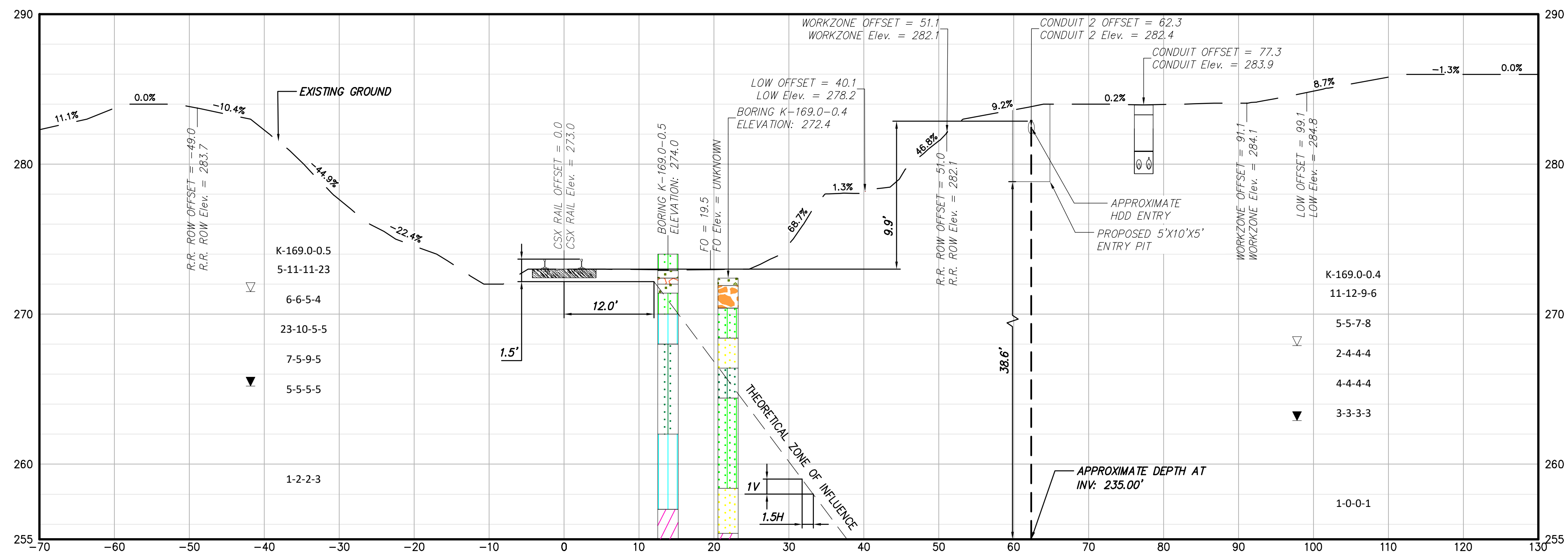
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 62A RAILROAD CROSS SECTION CUT

DRAWN BY: RAC DESIGNED BY: RAC APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	068076
DRAWING NO.	C-642
DATE	07/28/2023




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



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

BORING LOG STRIP LEGEND



Blow Counts per 6" = 10-10-10

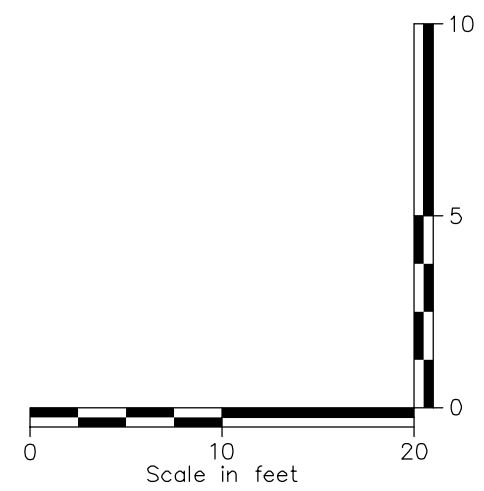
Recovery %/RQD % = 95%/90%

11000psi =UCS

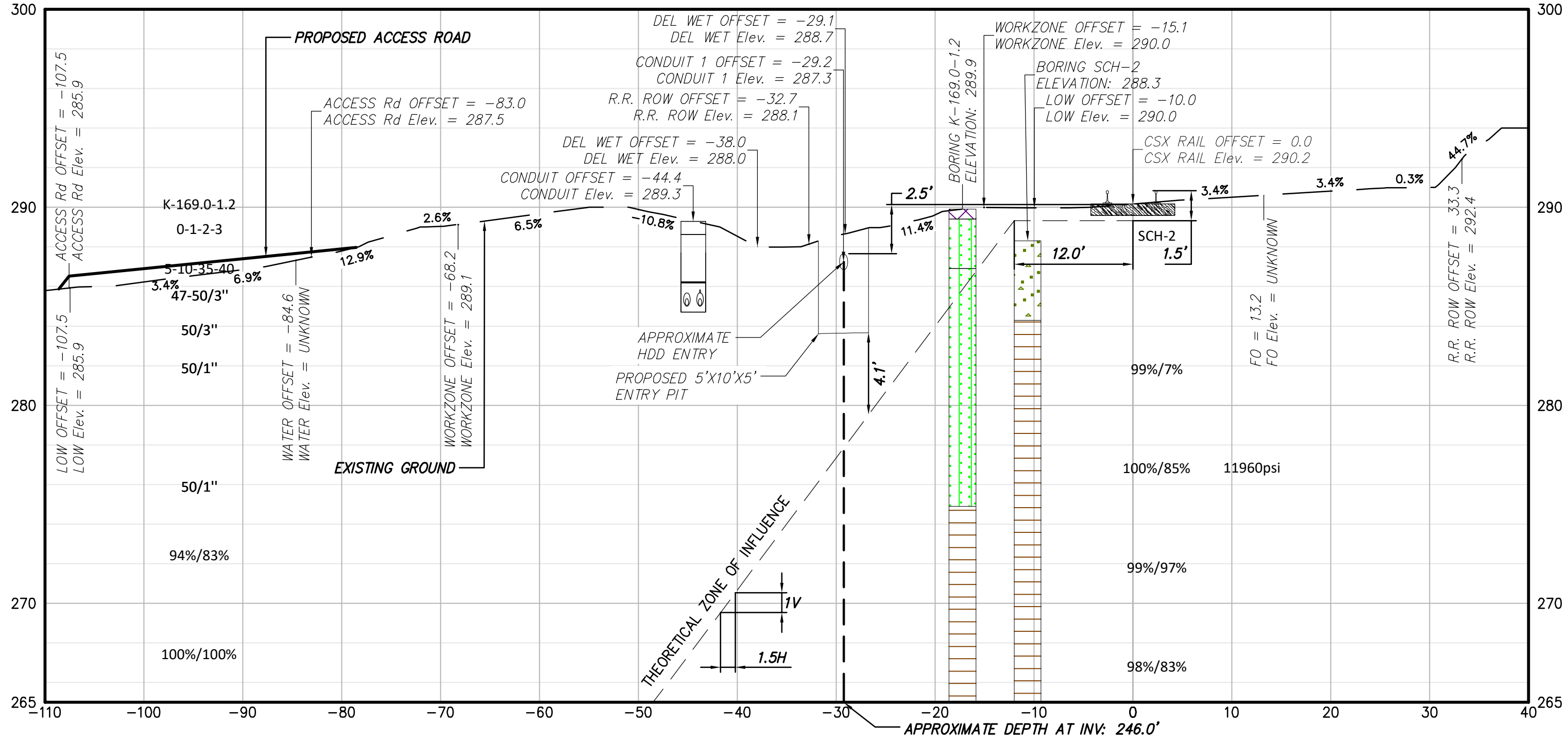
2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

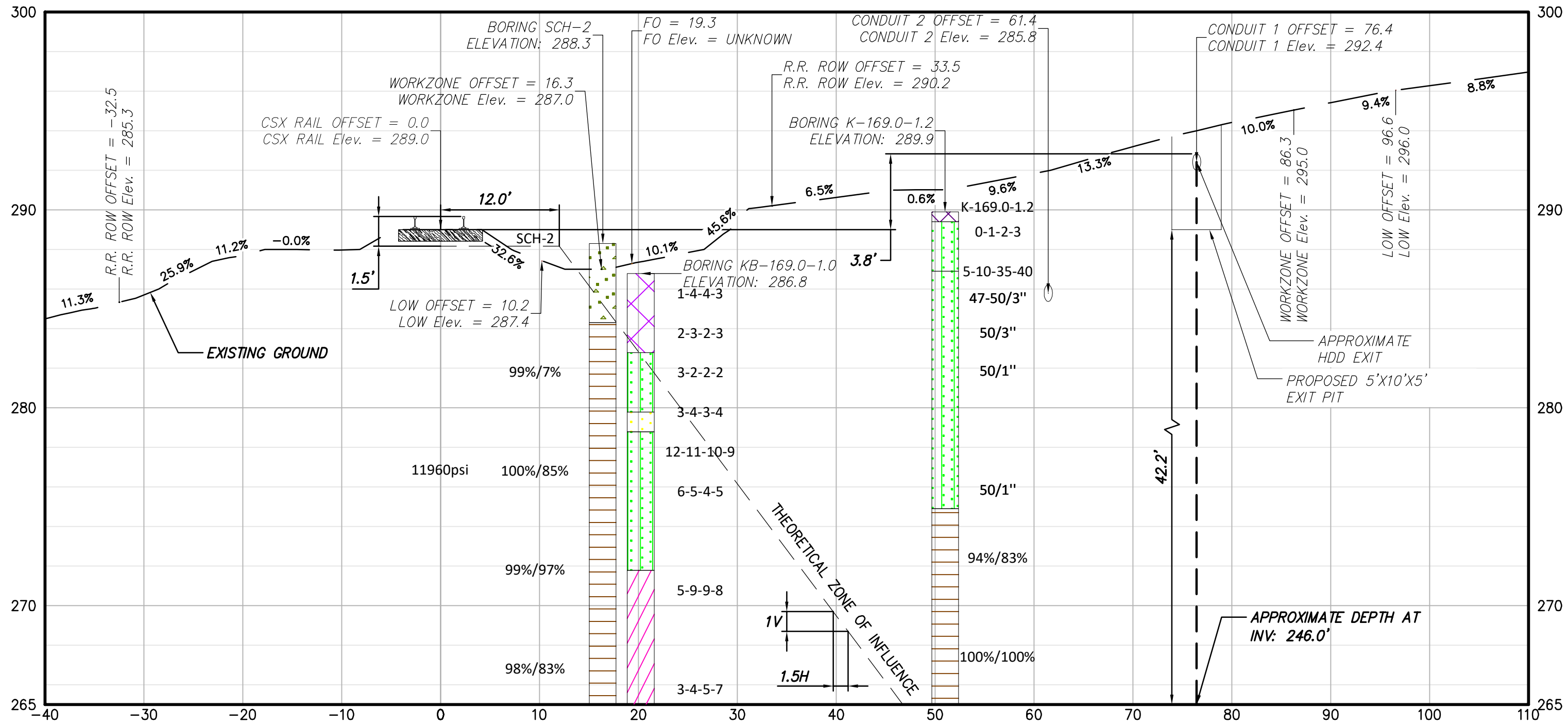
Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
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	GC-GM	SILTY CLAYEY GRAVEL
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	GW-GM	Well Graded GRAVEL with SILT
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	ML	SILT
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
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	SW-SC	Well Graded SAND with CLAY
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	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling



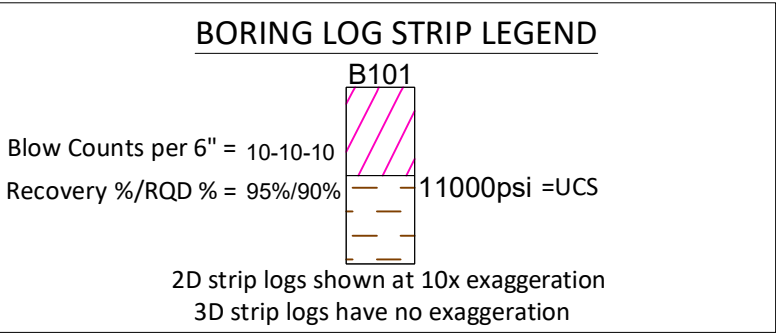
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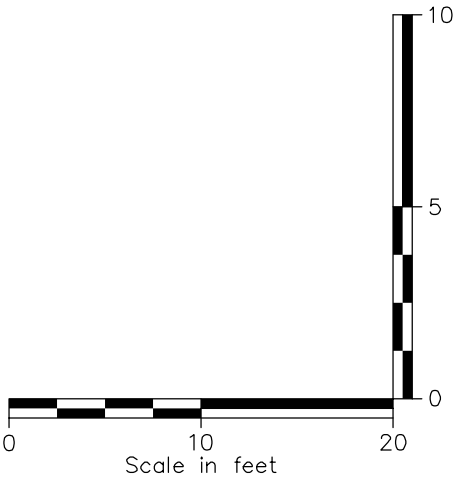
2 HDD 63 CONDUIT 1 ENTRY PIT CUT SECTION: STA. 45064+83
CSX PAN AM SOUTHERN SUBDIVISION MP QG 4.37



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



Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
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	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
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	SC	CLAYEY SAND
	SC-SM	SILT, CLAYEY SAND
	SHALE	Shale
	SILTSTONE	Siltstone
	SM	SILTY SAND
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	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
	Topsail	Topsail
	USGS 601	Gravel or Conglomerate 1
	USGS 654	Subgraywacke
	USGS 670	Interbedded Sandstone and Shale
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	USGS 705	Schist
	USGS 705	Schist
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	USGS 708	Gneiss
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	Weathered Rock	Undefined
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	Delayed Water Table	Water Table after drilling



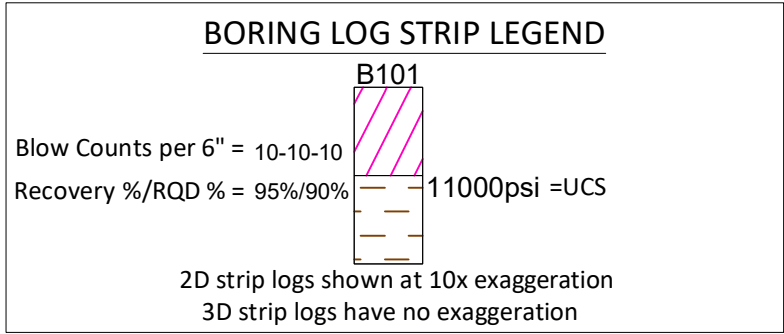
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE 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.

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

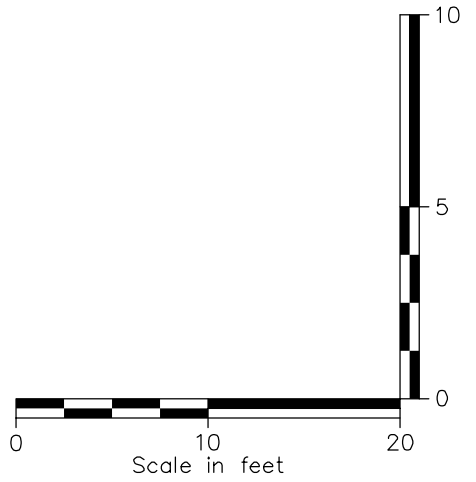
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 63 RAILROAD CROSS SECTION CUT

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	068076
DRAWING NO.	C-643
DATE	07/28/2023



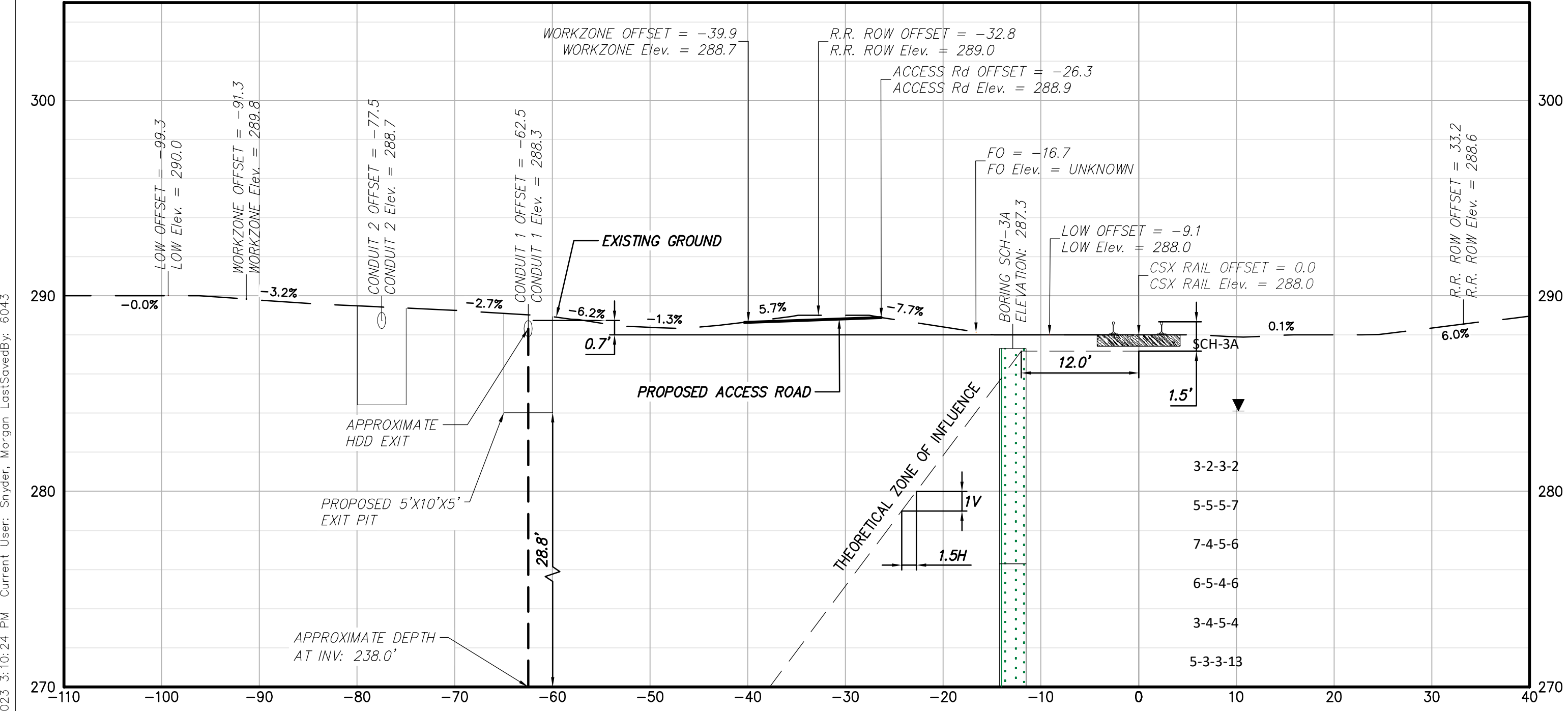
Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded 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
	DLH	ORGANIC Fat CLAY
	DL	ORGANIC Lean CLAY
	DL/GH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgravel
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling



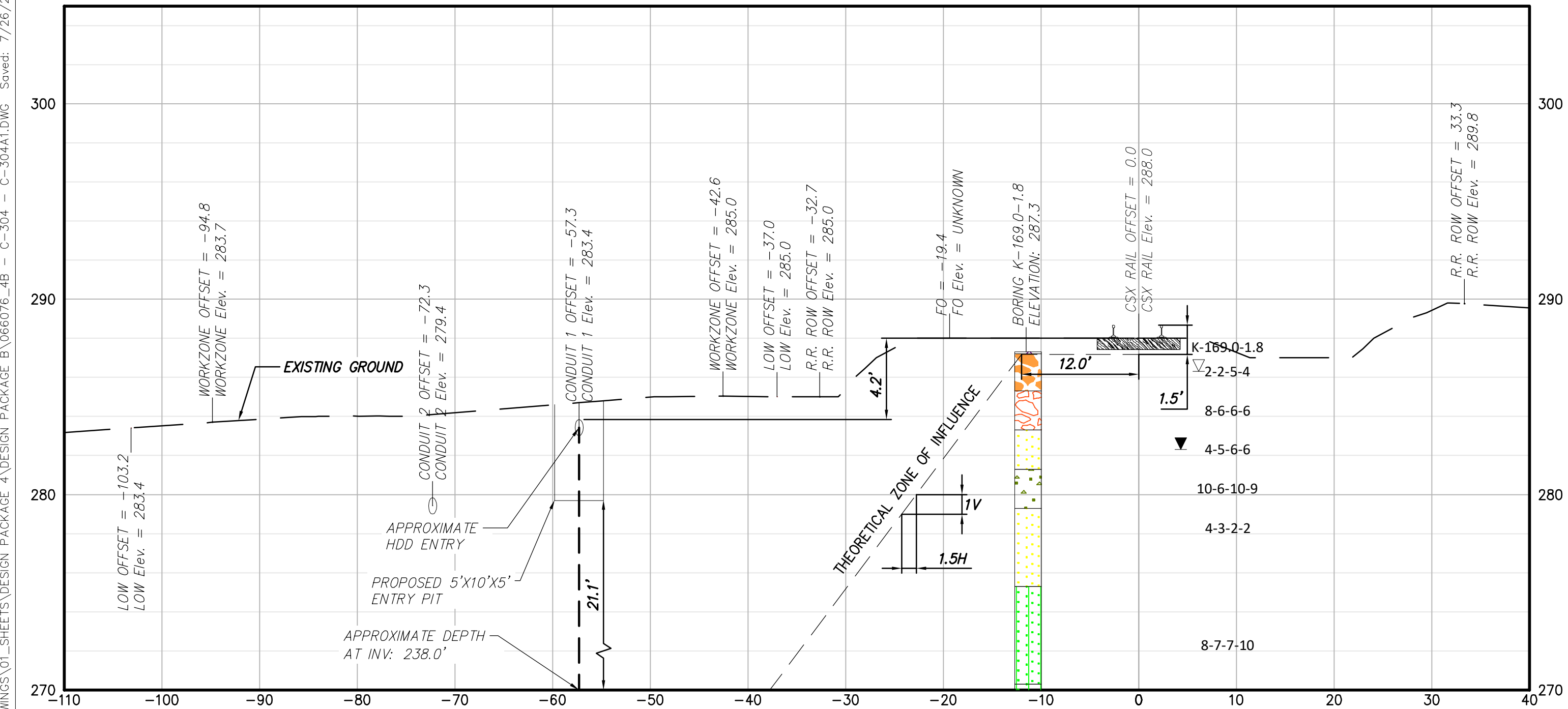
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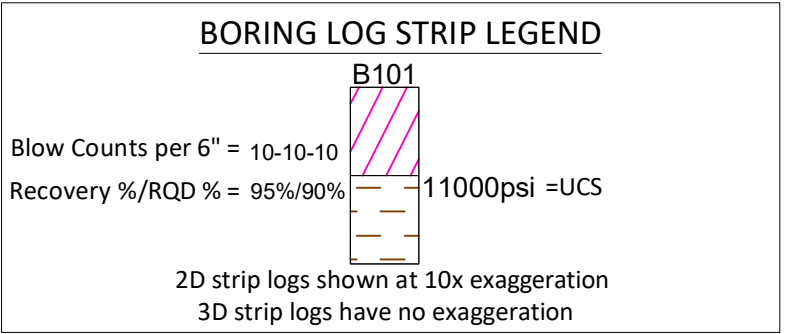
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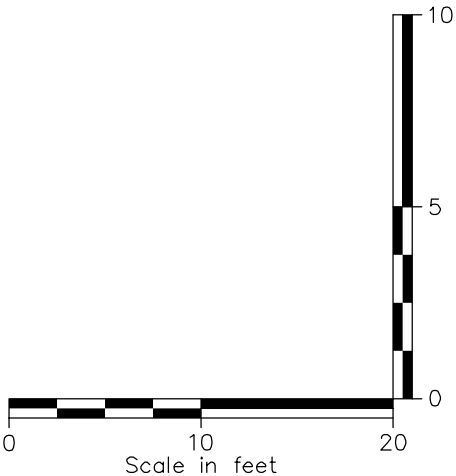
2 HDD 64 CONDUIT 1 EXIT PIT CUT SECTION: STA. 45112+04
CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.25



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



Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	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
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsail	Topsail
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water Table	Water Table after drilling



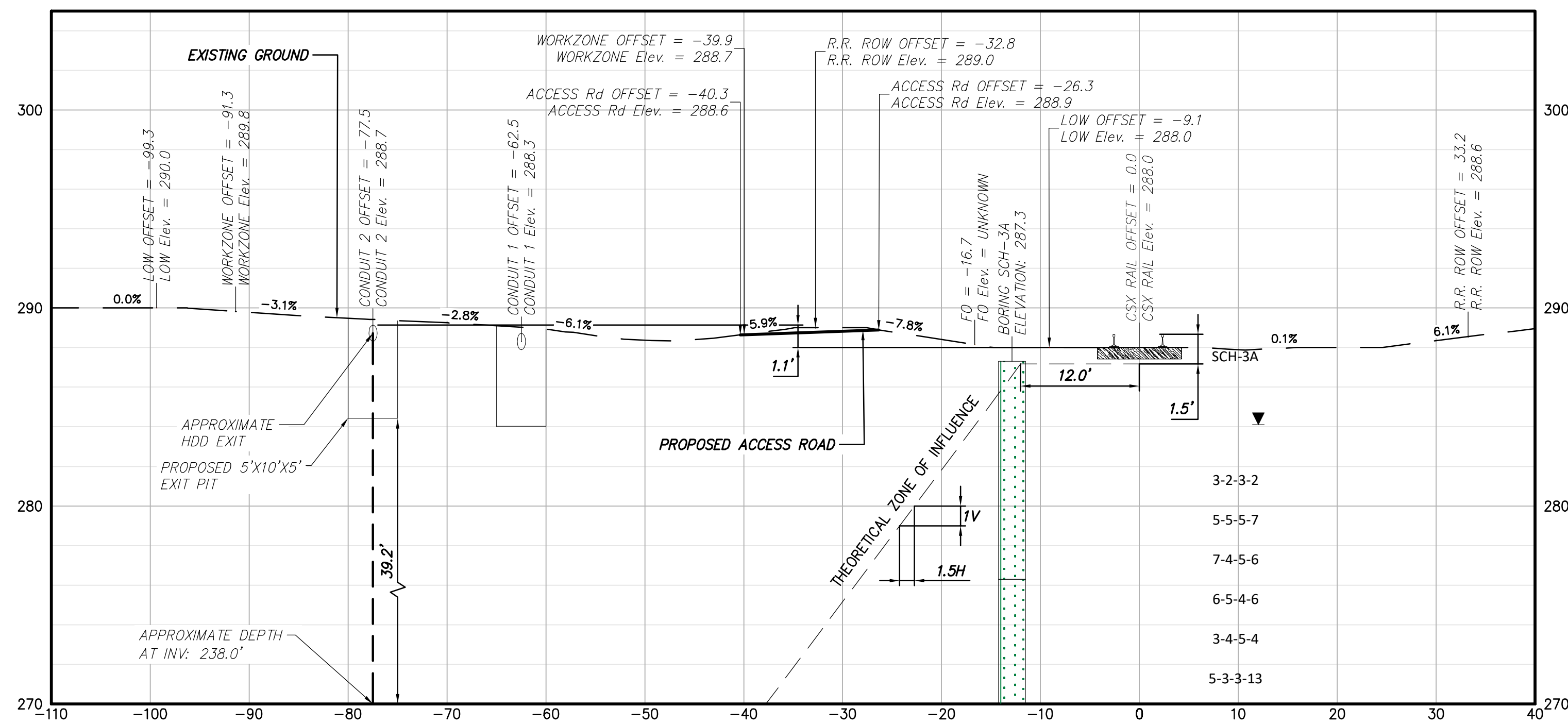
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

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

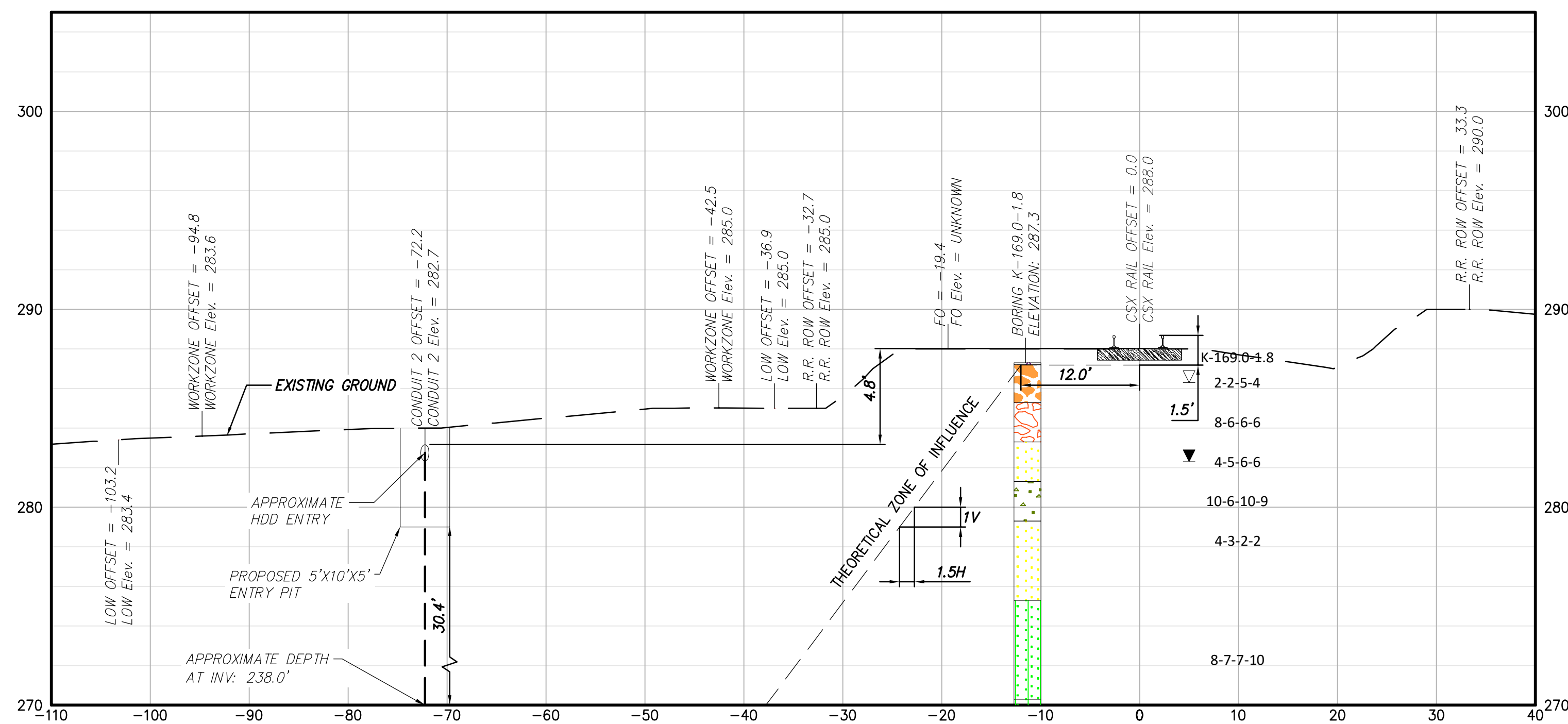
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REV. NO. D SH.NO.

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-644
DATE	07/28/2023



4 HDD 64 CONDUIT 2 EXIT PIT CUT SECTION: STA. 45112+05

CSX PAN AM SOUTHERN SUBDIVISION MP QG 5.25



3 HDD 64 CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45098+75

BORING LOG STRIP LEGEND







































Blow Counts per 6" = 10-10-10

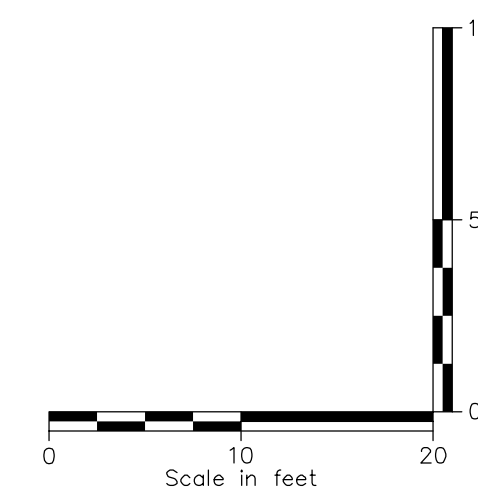
Recovery %/RQD = 95%/90%

11000psi = UCS

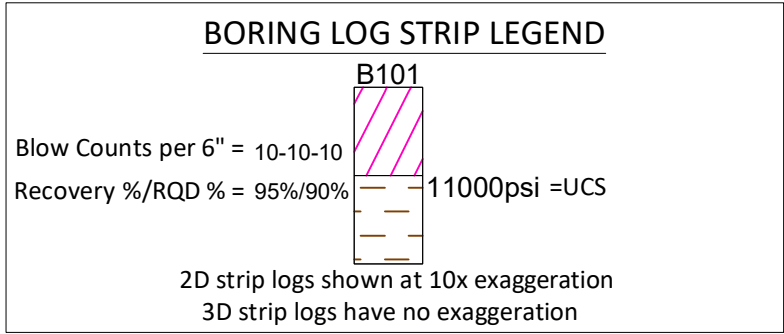
2D strip logs shown at 10x exaggeration

3D strip logs have no exaggeration

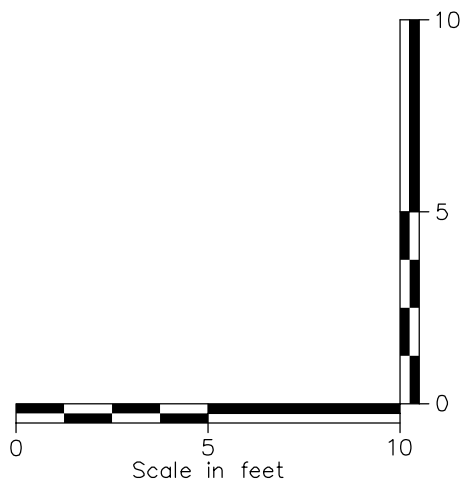
Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded GRAVEL with SILT
	GW	Well Graded GRAVEL
	GW-GC	Well Graded GRAVEL with CLAY
	GW-GM	Well Graded GRAVEL with SILT
	Limestone	Limestone
	MH	Elastic SILT
	ML	SILT
	DH	ORGANIC Fat CLAY
	DL	ORGANIC Lean CLAY
	DL/DH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgroywacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling



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Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	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
	OLH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/GH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgravel
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
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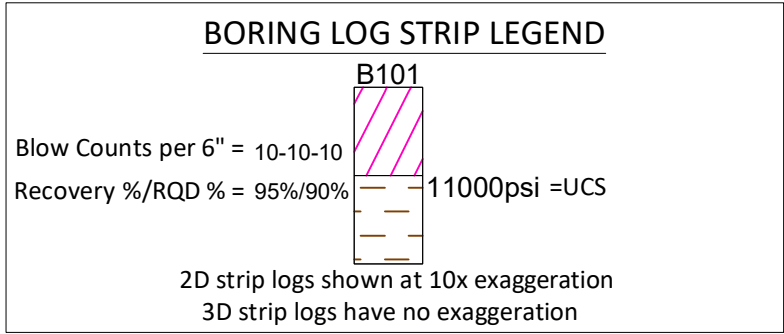
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

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

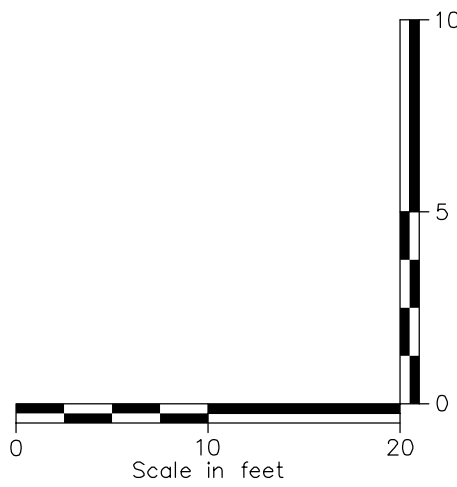
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CHA PROJECT NO.
066076
DRAWING NO.

C-645

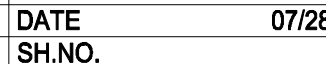
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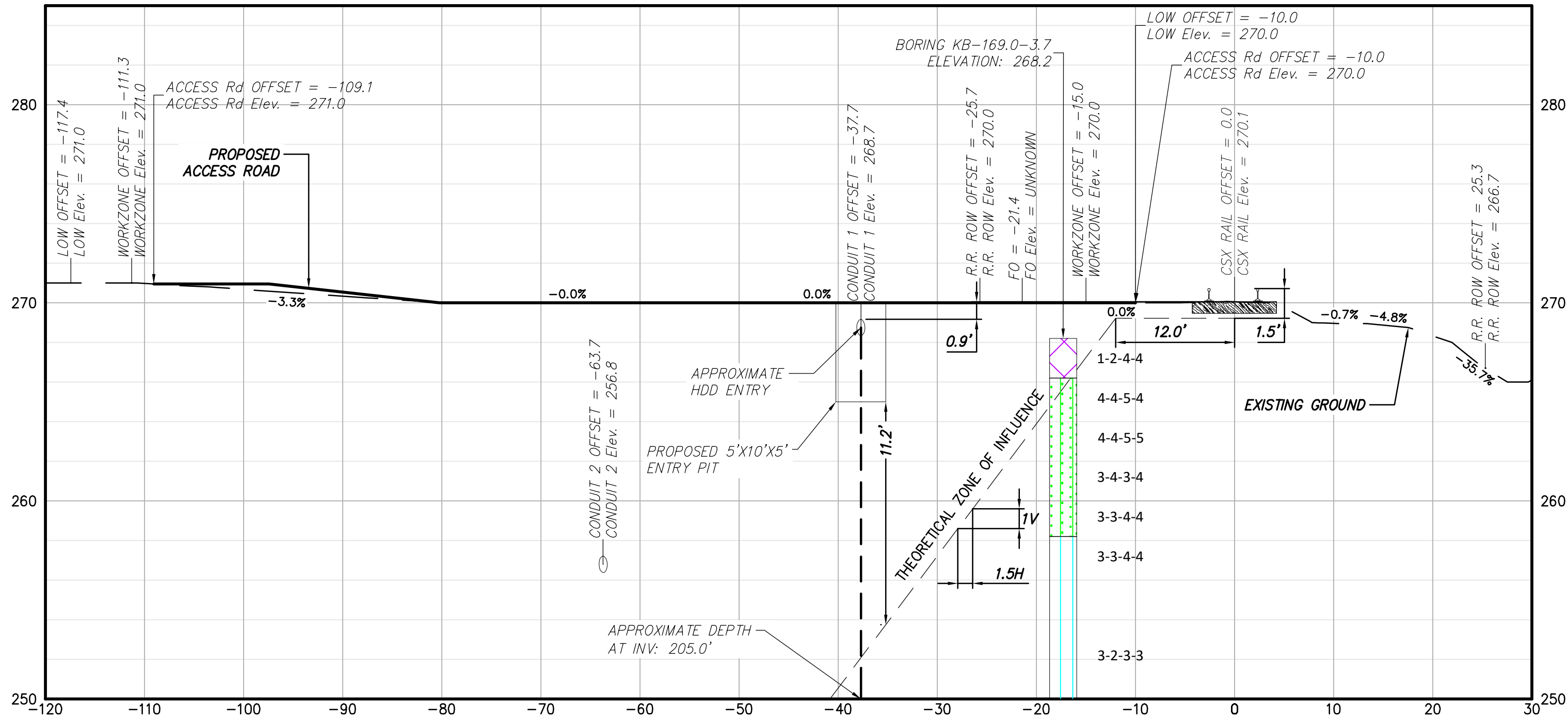
Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded 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
	OLH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/GH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgravel
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling



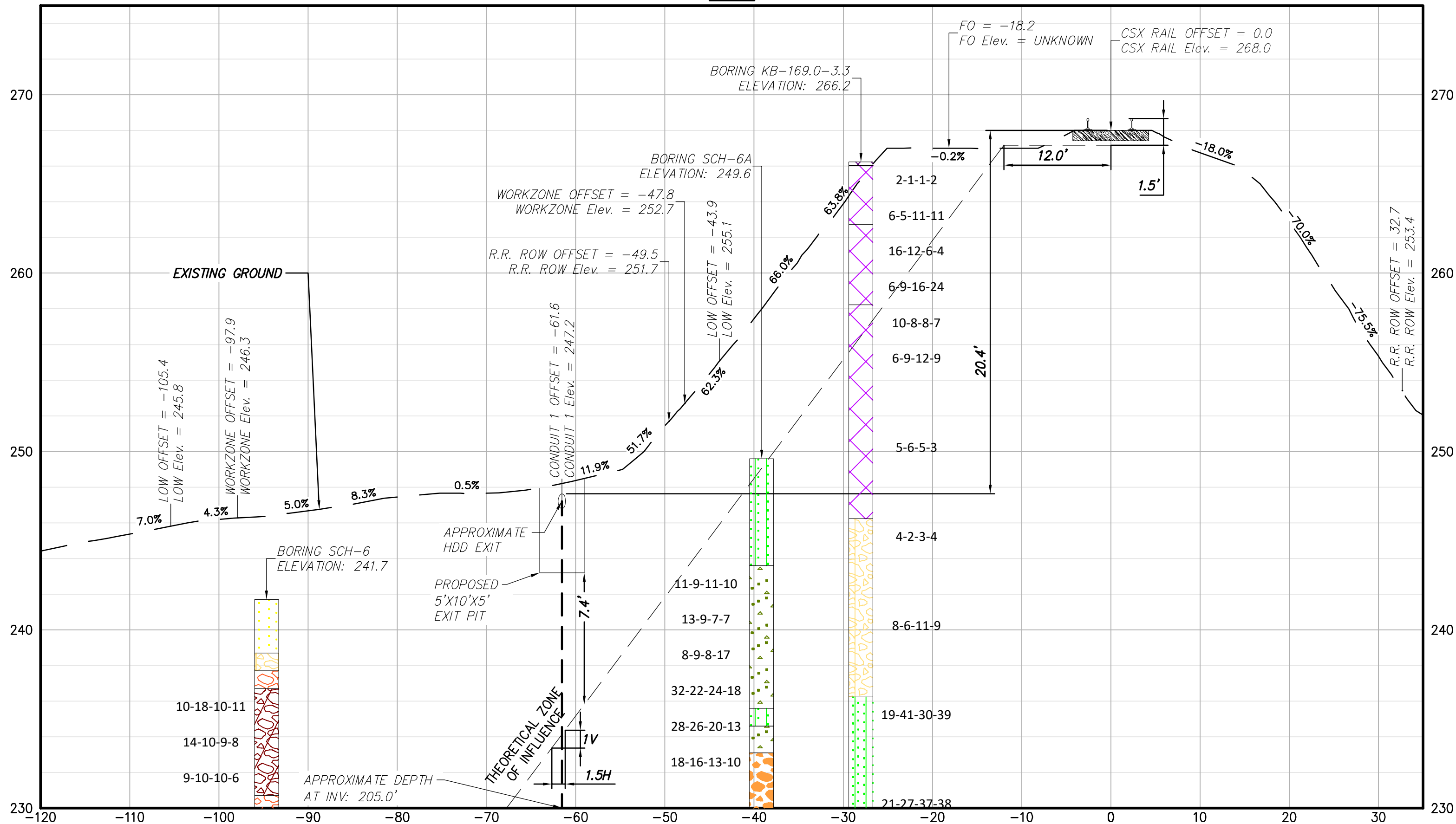
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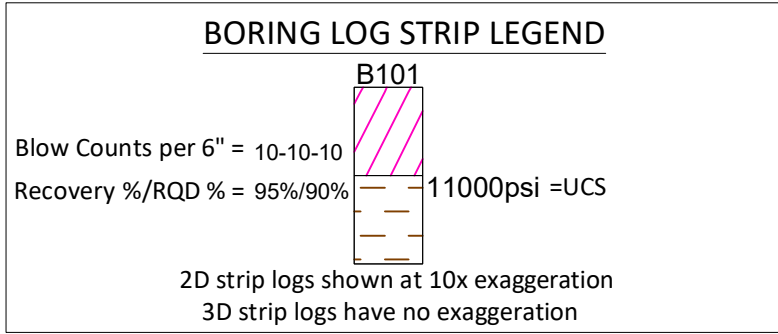
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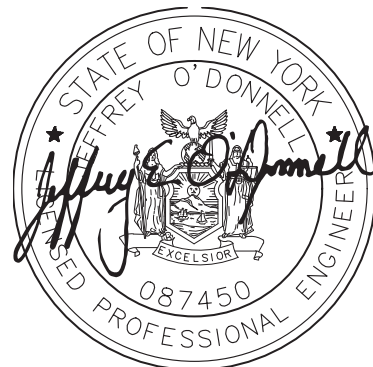
2 HDD 65A CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45198+50
CSX PAN AM SOUTHERN SUBDIVISION MP QG 6.88



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



Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	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
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsail	Topsail
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water Table	Water Table after drilling



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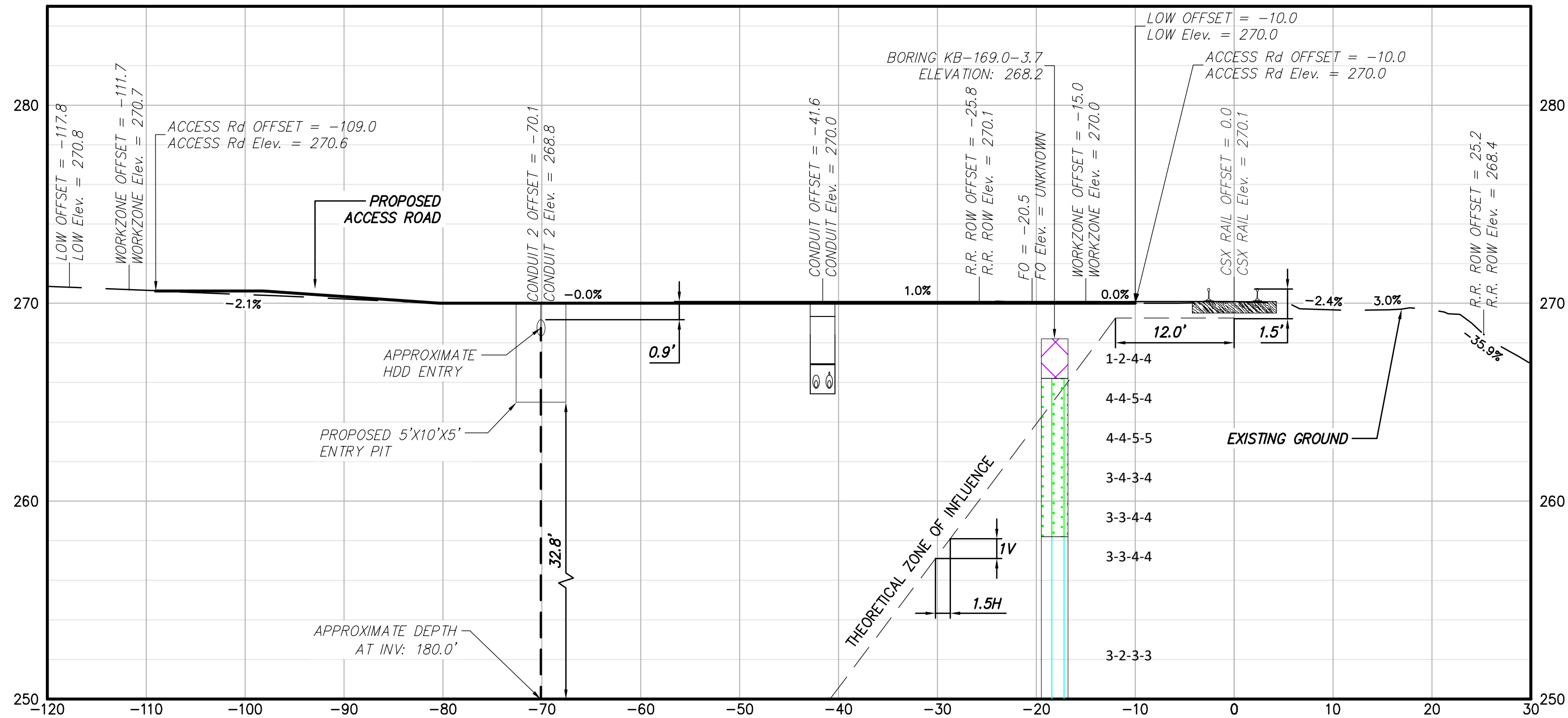
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

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

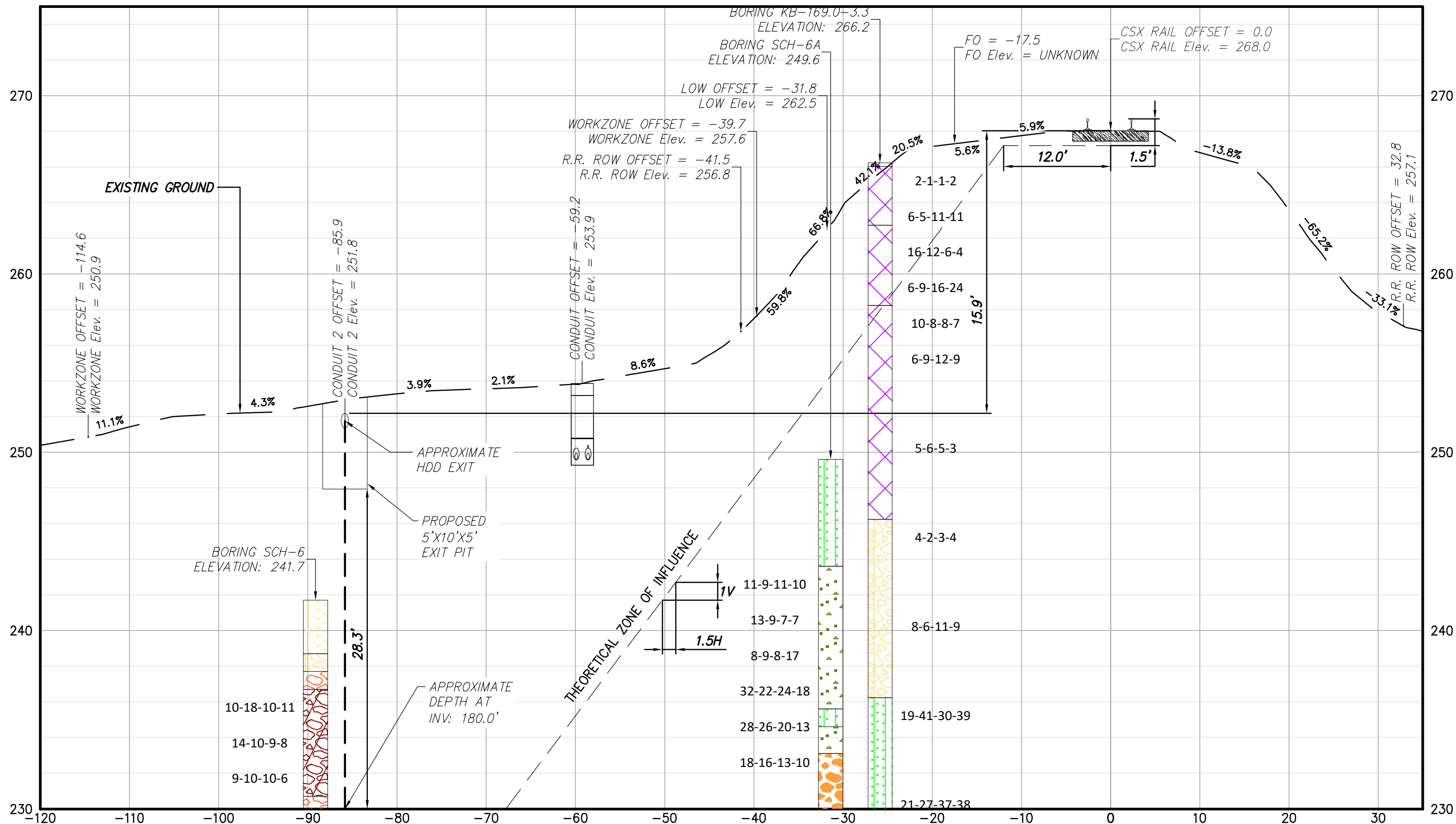
DRAWN BY:	JDL	DESIGNED BY:	JDL	APPROVED BY:	JEO	SCALE	AS NOTED	DATE	07/28/2023
REV. NO.								SH. NO.	

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-646
DATE	07/28/2023

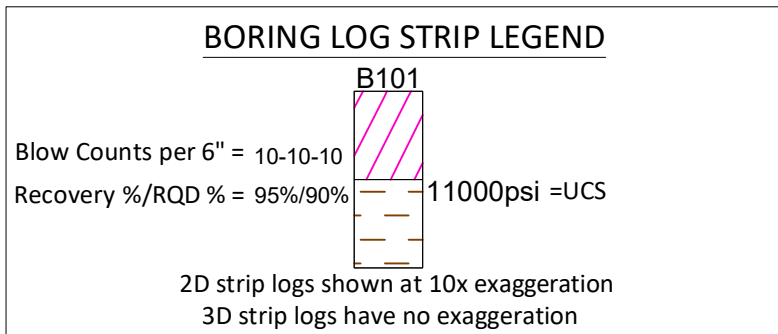
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4 HDD 65A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45198+97
CSX PAN AM SOUTHERN SUBDIVISION MP QG 6.88



3 HDD 65A CONDUIT 2 EXIT PIT CUT SECTION; STA. 45171+60
CSX PAN AM SOUTHERN SUBDIVISION MP QG 6.38



Legend		
ASPHALT	Asphalt	Asphalt
Bedrock	Bedrock	Bedrock
Boulder	Boulder	Boulder
CH	Fat CLAY	Fat CLAY
CH-MH	SILTY Fat CLAY	SILTY Fat CLAY
CL	Lean CLAY	Lean CLAY
CL-ML	SILTY CLAY	SILTY CLAY
CDNCRETE	Concrete	Concrete
FILL	Fill	Fill
GC	CLAYEY GRAVEL	CLAYEY GRAVEL
GC-GM	SILTY CLAYEY GRAVEL	SILTY CLAYEY GRAVEL
GM	SILTY GRAVEL	SILTY GRAVEL
GP	Poorly Graded GRAVEL	Poorly Graded GRAVEL
GP-GC	Poorly Graded Gravel with CLAY	Poorly Graded Gravel with CLAY
GP-GM	Poorly Graded GRAVEL with SILT	Poorly Graded GRAVEL with SILT
GW	Well Graded GRAVEL	Well Graded GRAVEL
GW-GC	Well Graded GRAVEL with CLAY	Well Graded GRAVEL with CLAY
GW-GM	Well Graded GRAVEL with SILT	Well Graded GRAVEL with SILT
Limestone	Limestone	Limestone
MH	Elastic SILT	Elastic SILT
ML	SILT	SILT
DH	ORGANIC Fat CLAY	ORGANIC Fat CLAY
DL	ORGANIC Lean CLAY	ORGANIC Lean CLAY
DL/DH	ORGANIC SOIL	ORGANIC SOIL
PT	PEAT	PEAT
Rock	Rock	Rock
Sandstone	Sandstone	Sandstone
SC	CLAYEY SAND	CLAYEY SAND
SC-SM	SILT, CLAYEY SAND	SILT, CLAYEY SAND
SHALE	Shale	Shale
SILTSTONE	Siltstone	Siltstone
SM	SILTY SAND	SILTY SAND
SP	Poorly Graded SAND	Poorly Graded SAND
SP-SC	Poorly Graded SAND with CLAY	Poorly Graded SAND with CLAY
SP-SM	Poorly Graded SAND with SILT	Poorly Graded SAND with SILT
SW	Well graded SAND	Well graded SAND
SW-SC	Well Graded SAND with CLAY	Well Graded SAND with CLAY
SW-SM	Well Graded SAND with SILT	Well Graded SAND with SILT
Topsail	Topsail	Topsail
USGS 601	Gravel or Conglomerate 1	Gravel or Conglomerate 1
USGS 654	Subgraywacke	Subgraywacke
USGS 670	Interbedded Sandstone and Shale	Interbedded Sandstone and Shale
USGS 702	Quartzite	Quartzite
USGS 705	Schist	Schist
USGS 705	Schist	Schist
USGS 708	Gneiss	Gneiss
USGS 708	Gneiss	Gneiss
USGS 718	Granite 1	Granite 1
Void	Void	Void
Water	Water	Water
Weathered Rock	Undefined	Undefined
Water Table	Water Table during drilling	Water Table during drilling
Delayed Water Table	Water Table after drilling	Water Table after drilling



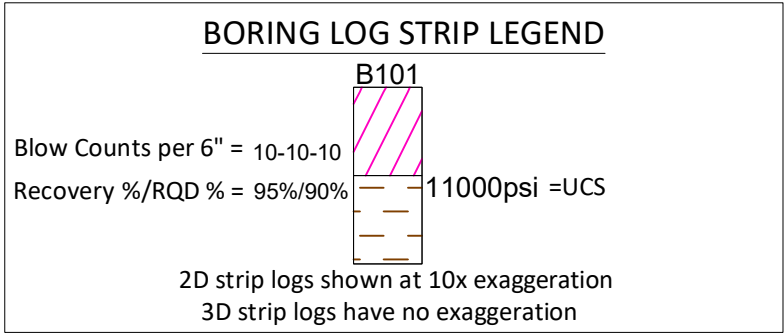
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0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

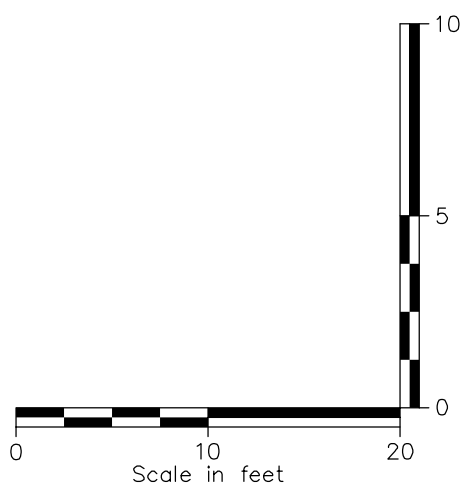
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 65A RAILROAD CROSS SECTION CUT

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-646.1
DATE	07/28/2023

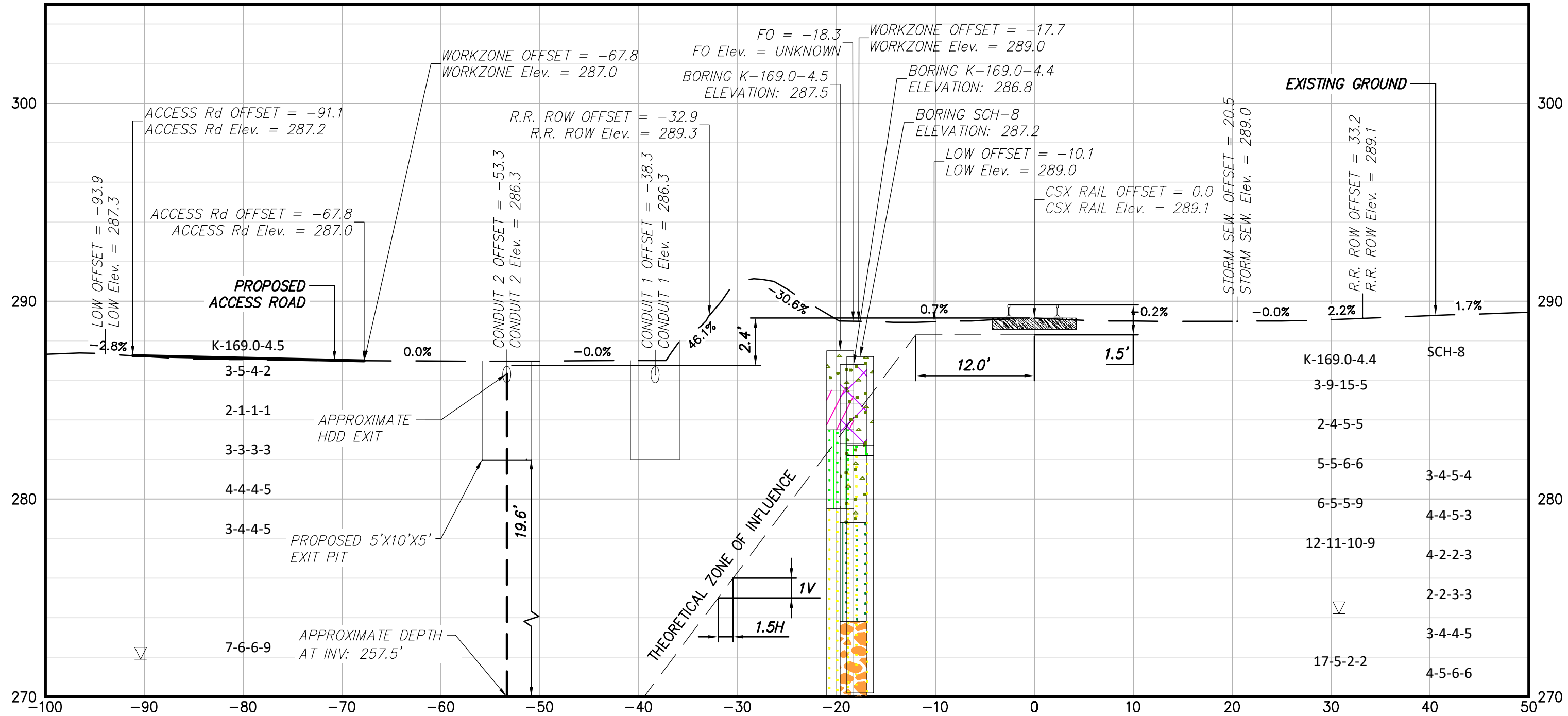


	Legend	
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded 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
	OLH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/GH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgruwacke
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling

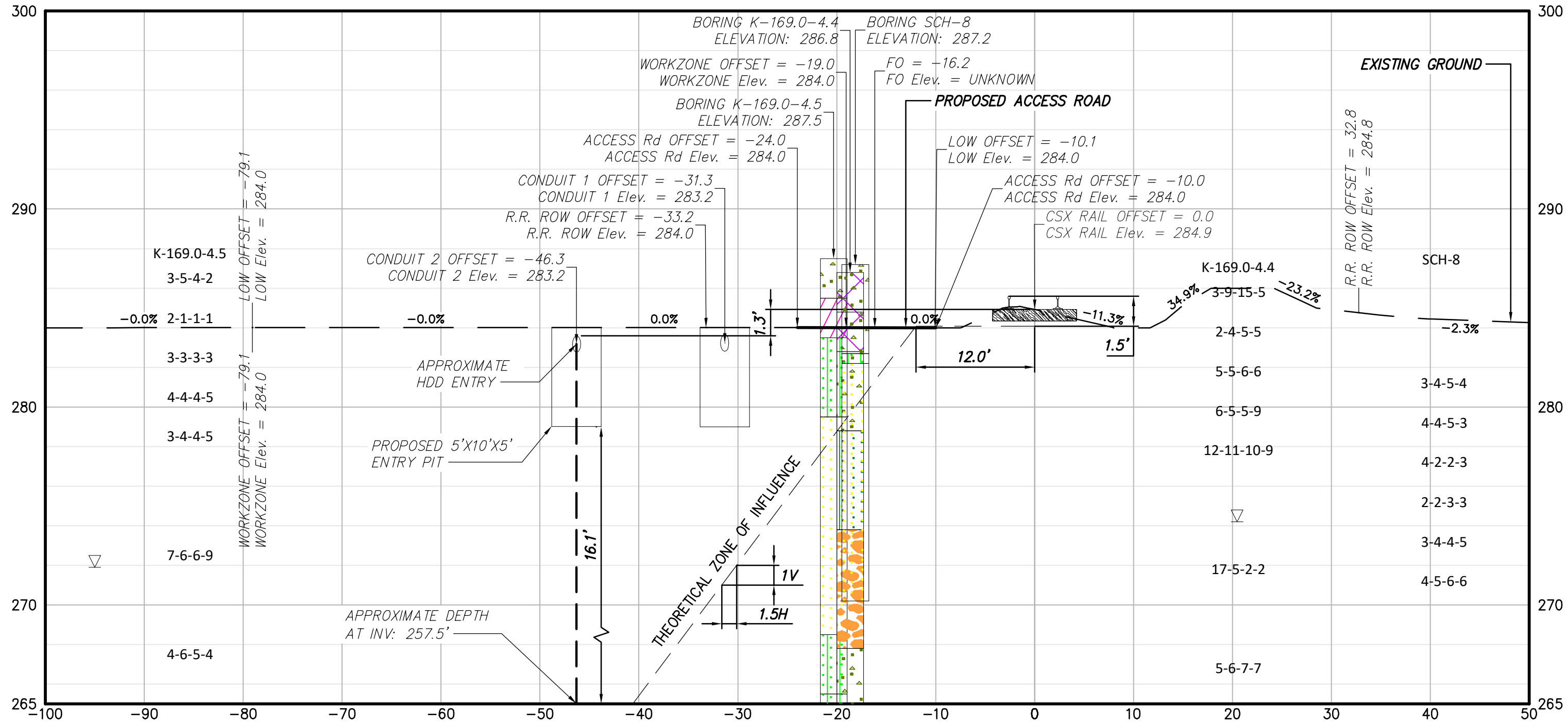


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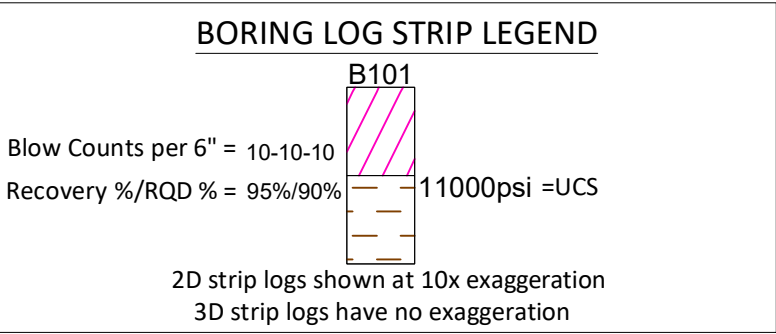




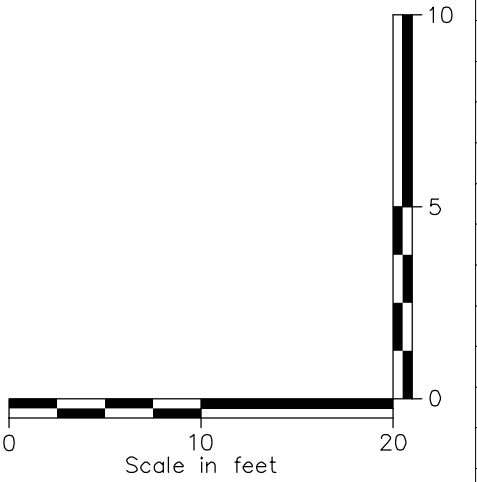
4 HDD 66 CONDUIT 2 EXIT PIT CUT SECTION; STA. 45238+54
CSX PAN AM SOUTHERN SUBDIVISION MP QG 7.63



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



Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CDCONCRETE	Concrete
	FILL	Fill
	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
	MH	Elastic SILT
	ML	SILT
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	DL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsail	Topsail
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table during drilling	Water Table during drilling
	Water Table after drilling	Water Table after drilling



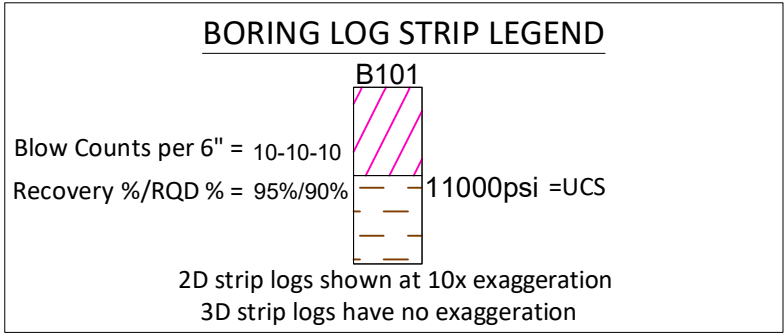
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

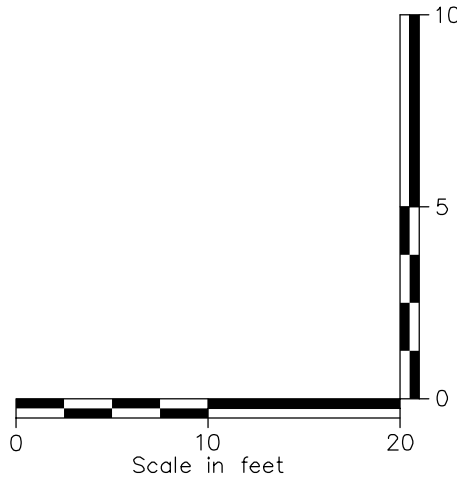
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 66 RAILROAD CROSS SECTION CUT

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023
REV. NO. D SH.NO.

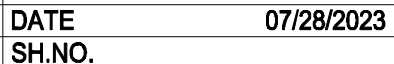
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CHA PROJECT NO.	068076
DRAWING NO.	C-647.1
DATE	07/28/2023

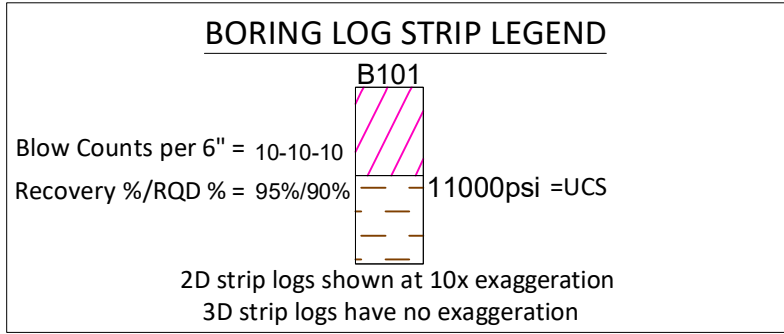


Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	Boulder	Boulder
	CH	Fat CLAY
	CH-MH	SILTY Fat CLAY
	CL	Lean CLAY
	CL-ML	SILTY CLAY
	CONCRETE	Concrete
	Fill	Fill
	GC	CLAYEY GRAVEL
	GC-GM	SILTY CLAYEY GRAVEL
	GM	SILTY GRAVEL
	GP	Poorly Graded GRAVEL
	GP-GC	Poorly Graded Gravel with CLAY
	GP-GM	Poorly Graded 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
	OLH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/GH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgravel
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling

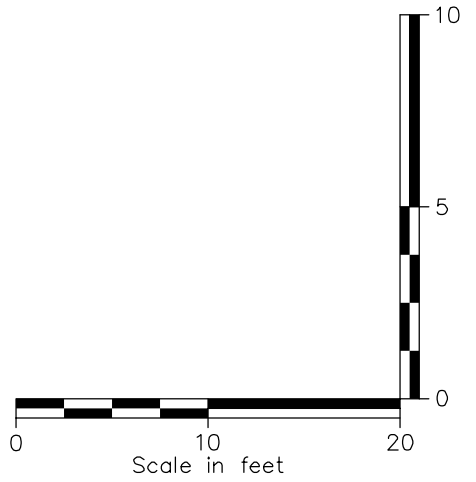


1 HDD 67 CONDUIT 1 ENTRY PIT CUT SECTION; STA. 45280+08
CSX PAN AM SOUTHERN SUBDIVISION MP QG 8.42





Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	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
	OLH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/GH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	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	Subgravel
	USGS 670	Interbedded Sandstone and Shale
	USGS 702	Quartzite
	USGS 705	Schist
	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
	Delayed Water Table	Water Table after drilling



Kiewit



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



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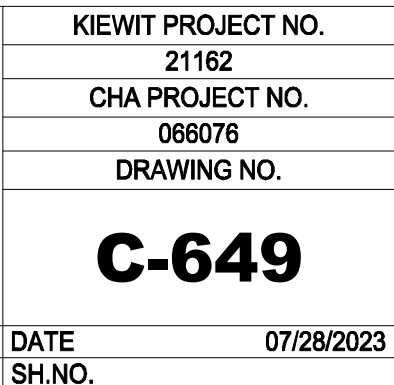
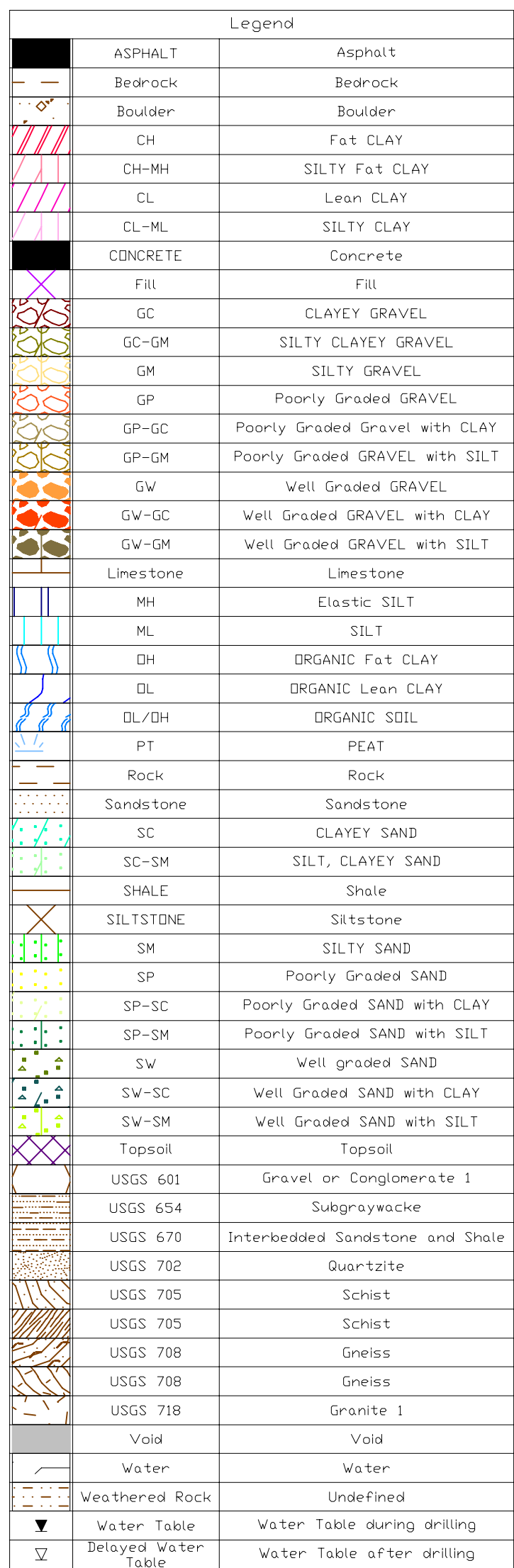
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

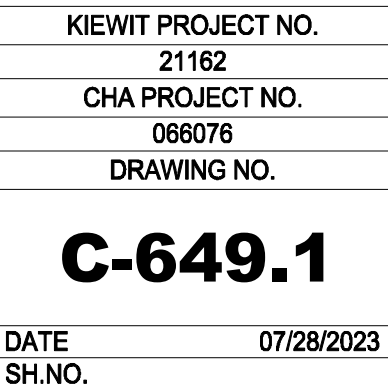
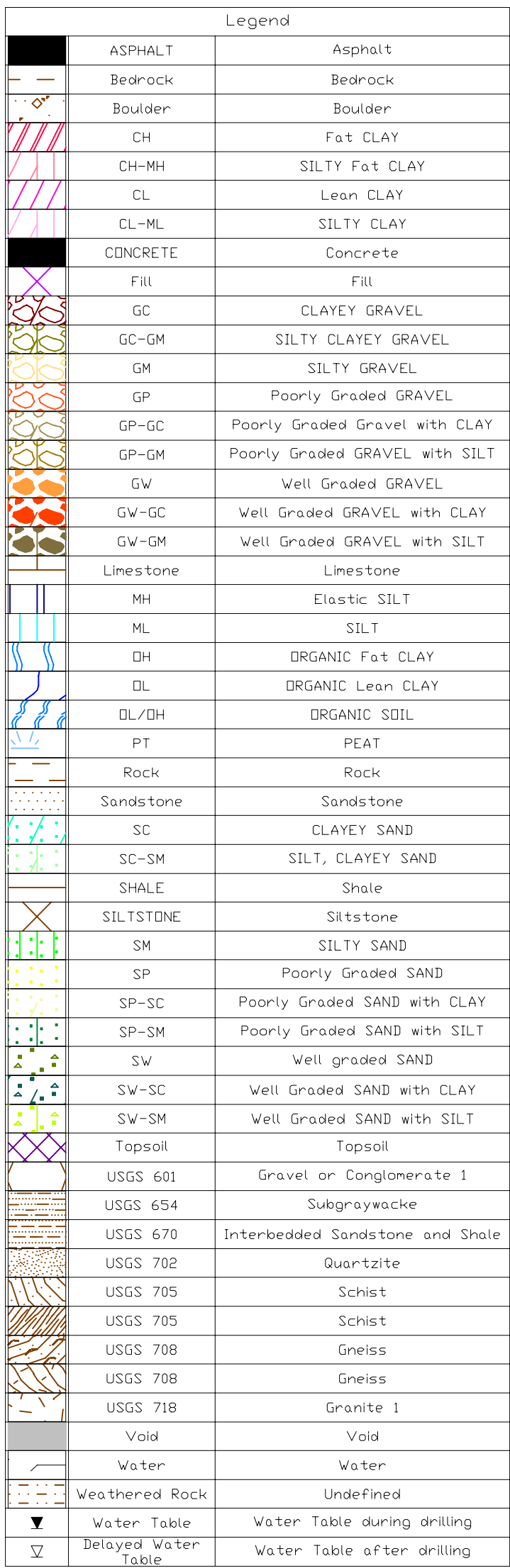
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 67 RAILROAD CROSS SECTION CUT

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

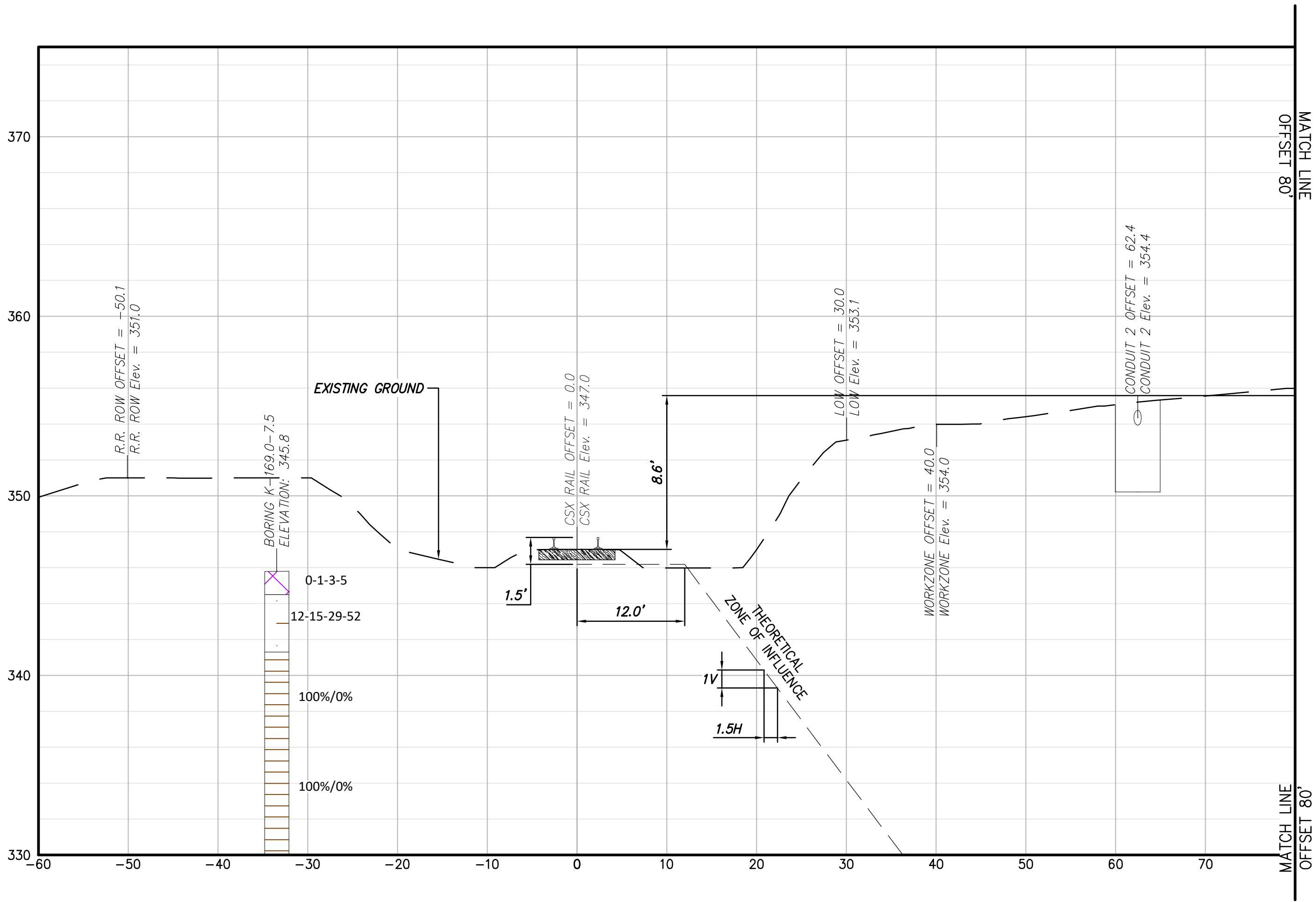
C-648.1

DATE	07/28
SH.NO.	





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

BORING LOG STRIP LEGEND

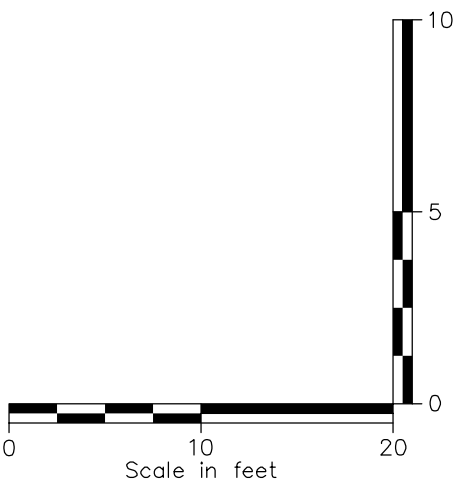
B101

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
	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
	SILT
	ORGANIC Fat CLAY
	ORGANIC Lean CLAY
	ORGANIC SOIL
	PEAT
	Rock
	Sandstone
	CLAYEY SAND
	SILT, CLAYEY SAND
	Shale
	Siltstone
	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
	Topsail
	Gravel or Conglomerate 1
	Subgraywacke
	Interbedded Sandstone and Shale
	Quartzite
	Schist
	Schist
	Gneiss
	Gneiss
	Granite 1
	Void
	Water
	Undefined
	Water Table during drilling
	Water Table after drilling



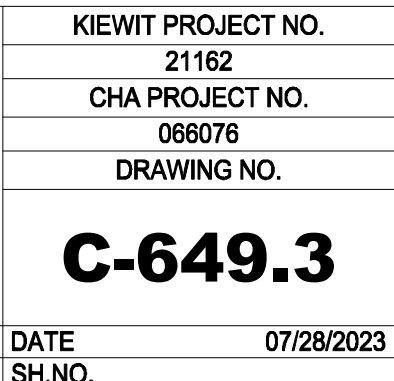
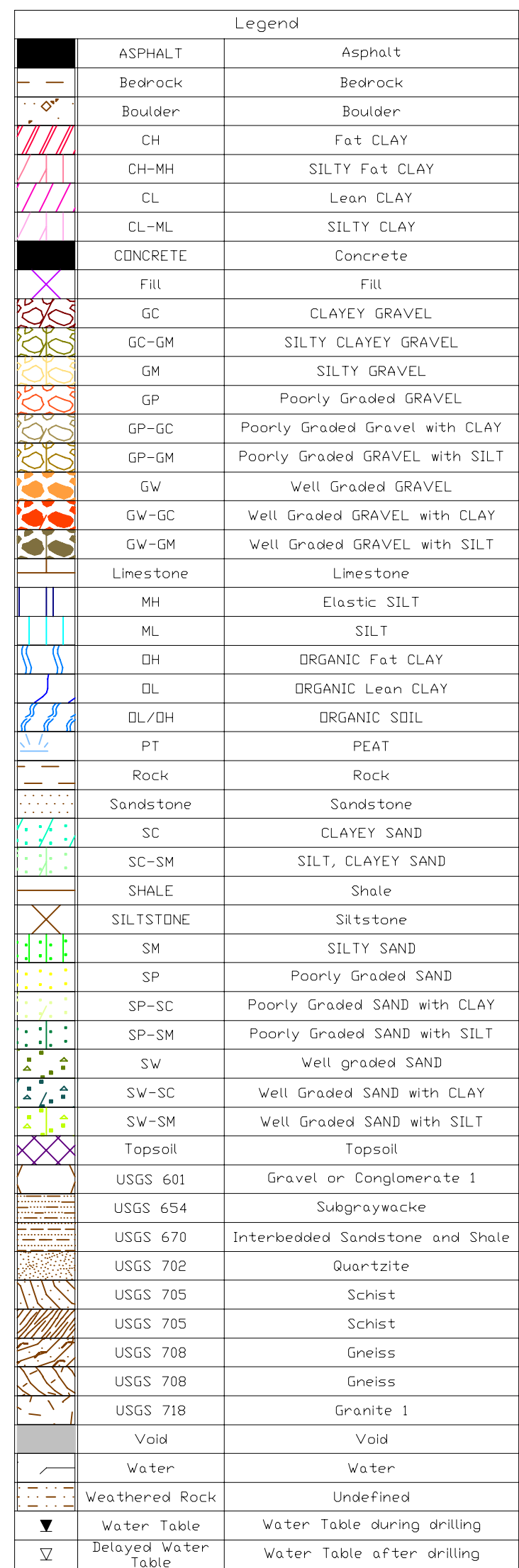
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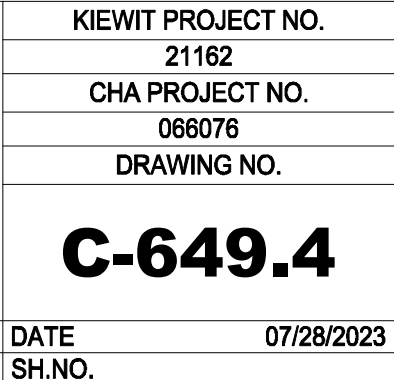
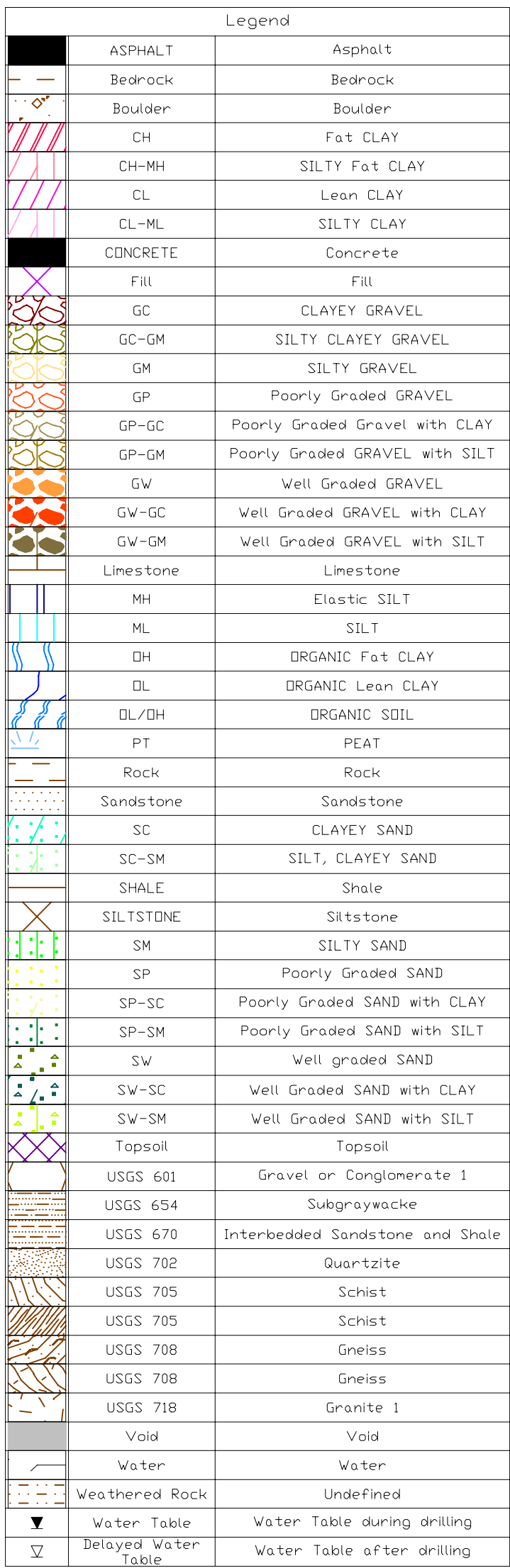
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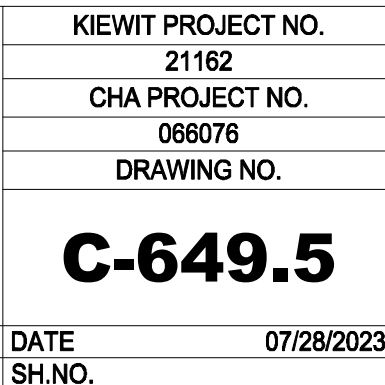
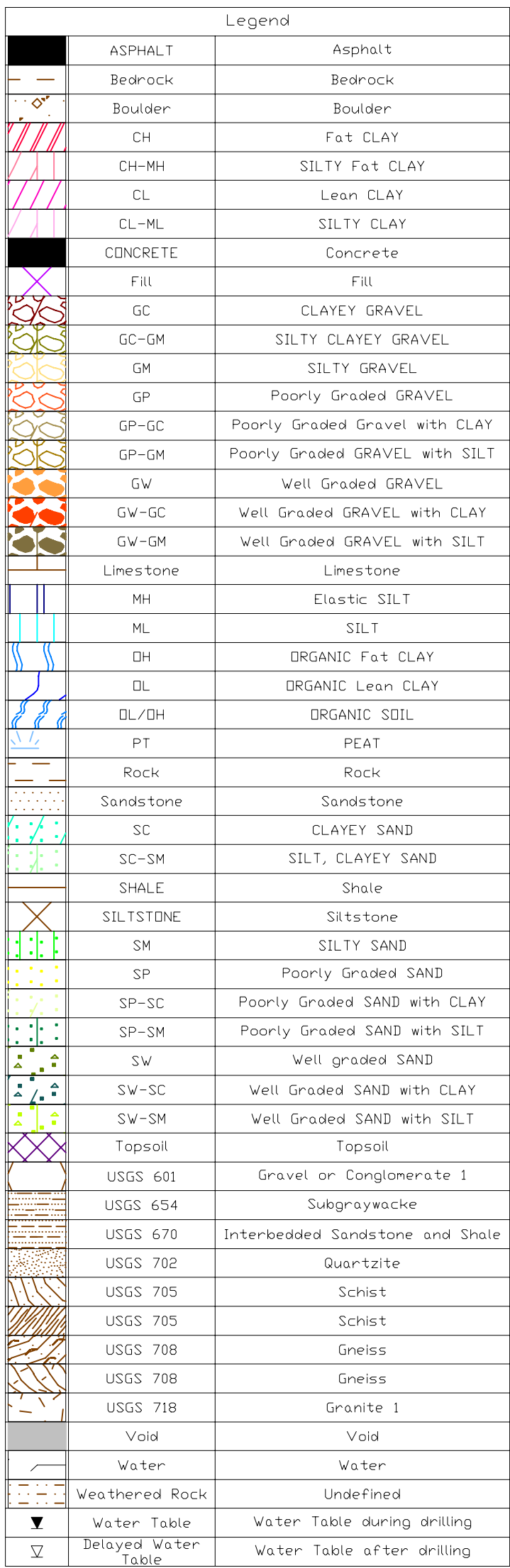
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 69A RAILROAD CROSS SECTION CUT

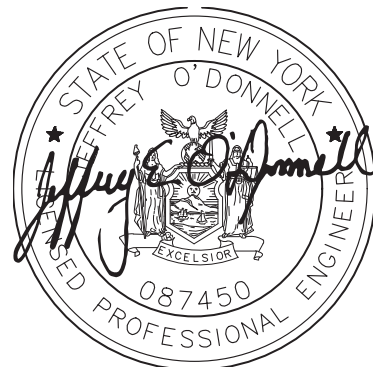
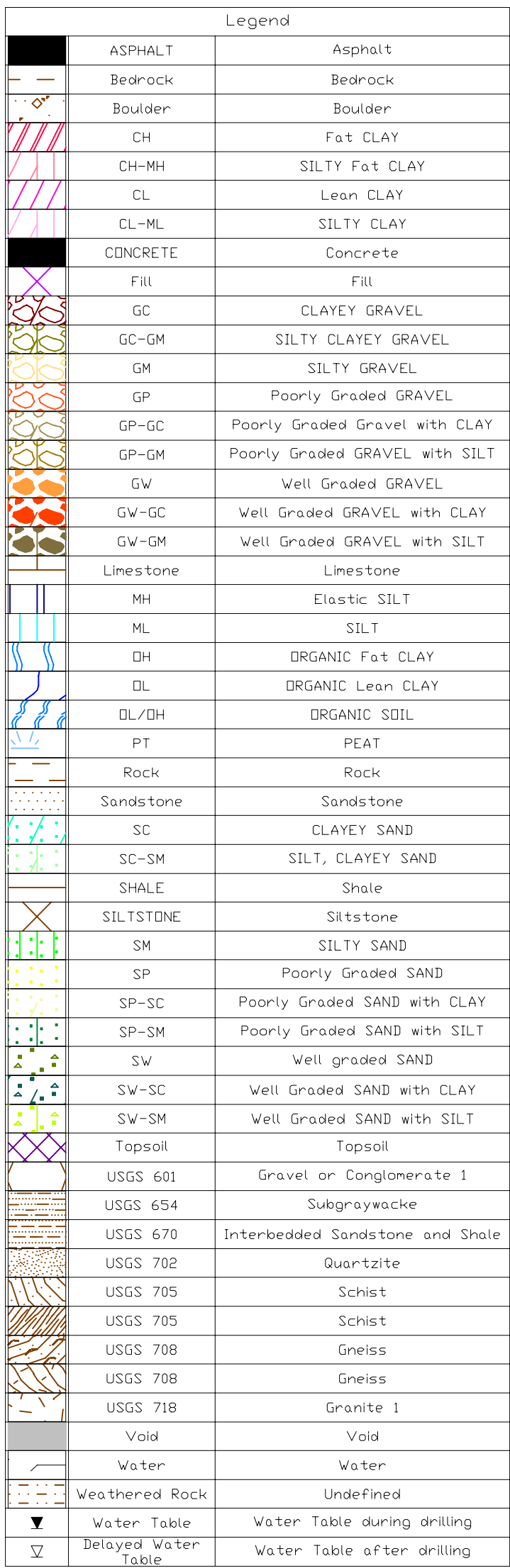
DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023
REV.NO. E SH.NO.

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-649.2
DATE	07/28/2023



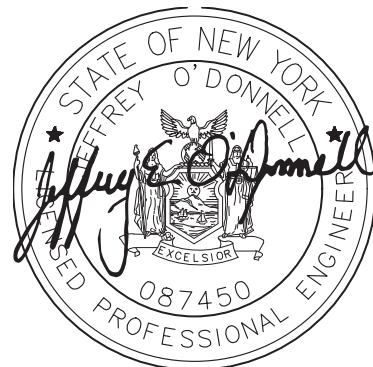
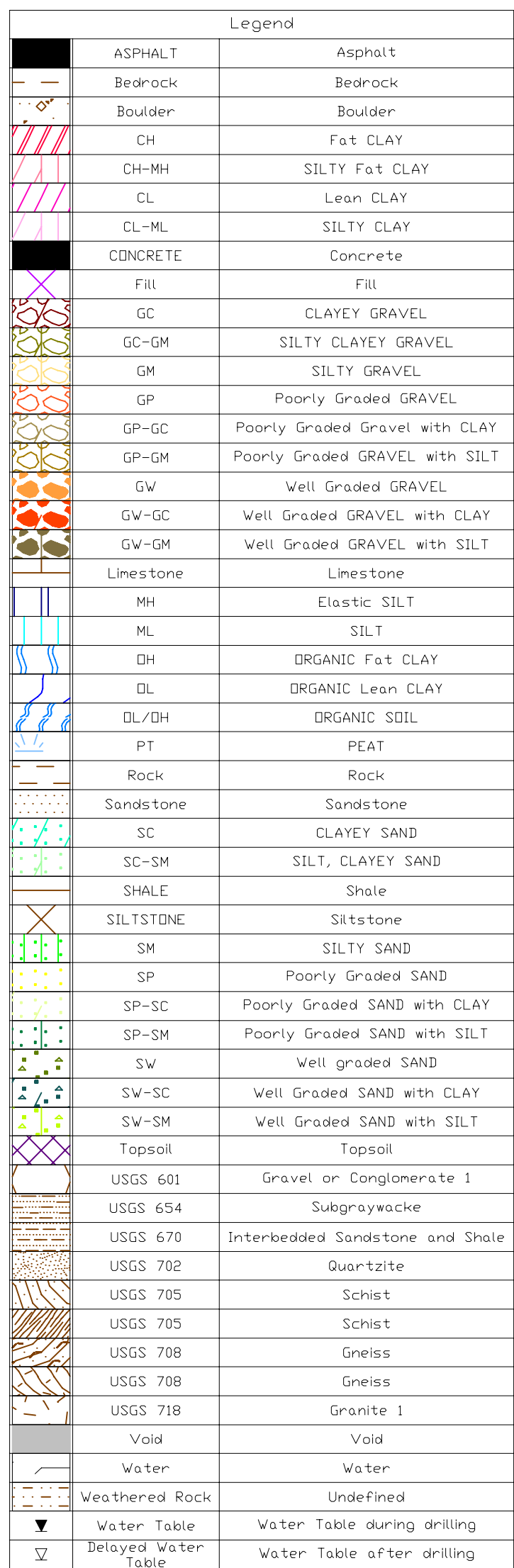






C-649.6

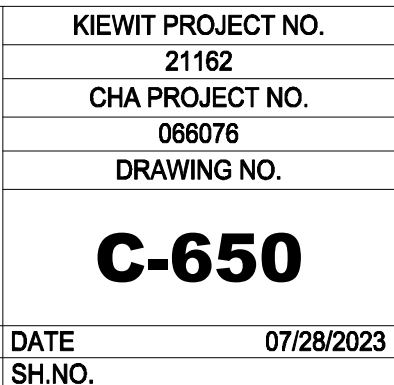
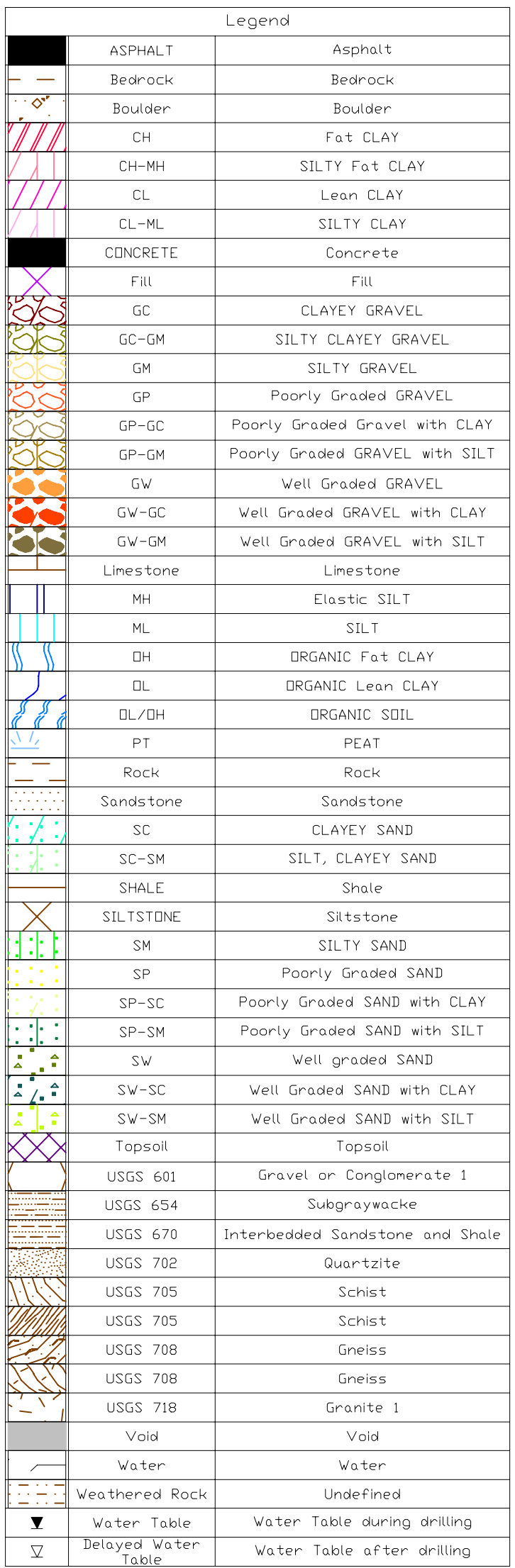
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													CHA PROJECT NO. 068076			
													DRAWING NO.			
													C-649.6			
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION			SPB	JEO										
No.	DATE	SUBMITTAL / REVISION DESCRIPTION			DB	APP	DRAWN BY:	JDL	DESIGNED BY:	JDL	APPROVED BY:	JEO	SCALE REV. NO.	AS NOTED E	DATE SH.NO.	07/28/2023

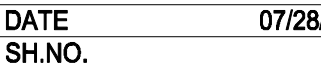


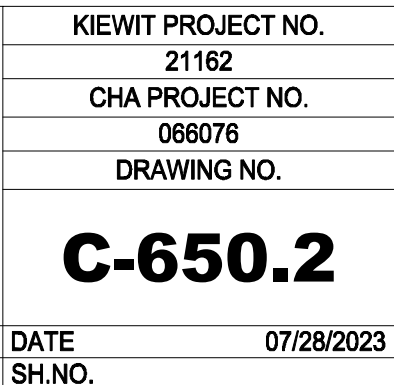
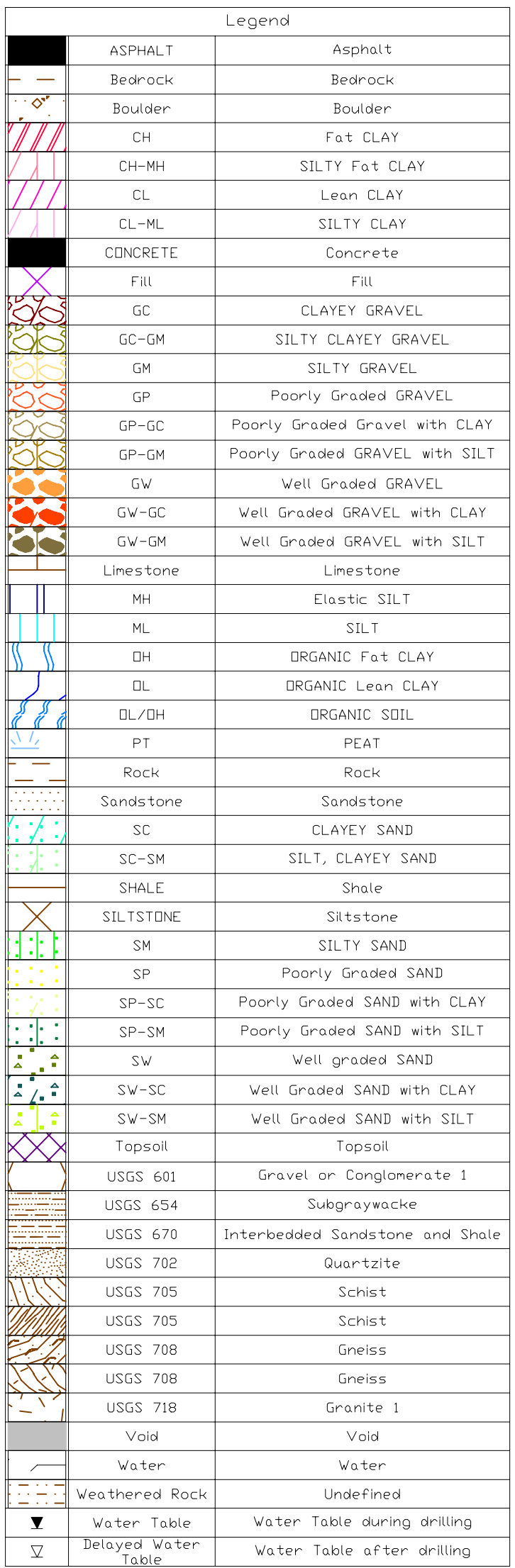
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No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

C-649.7

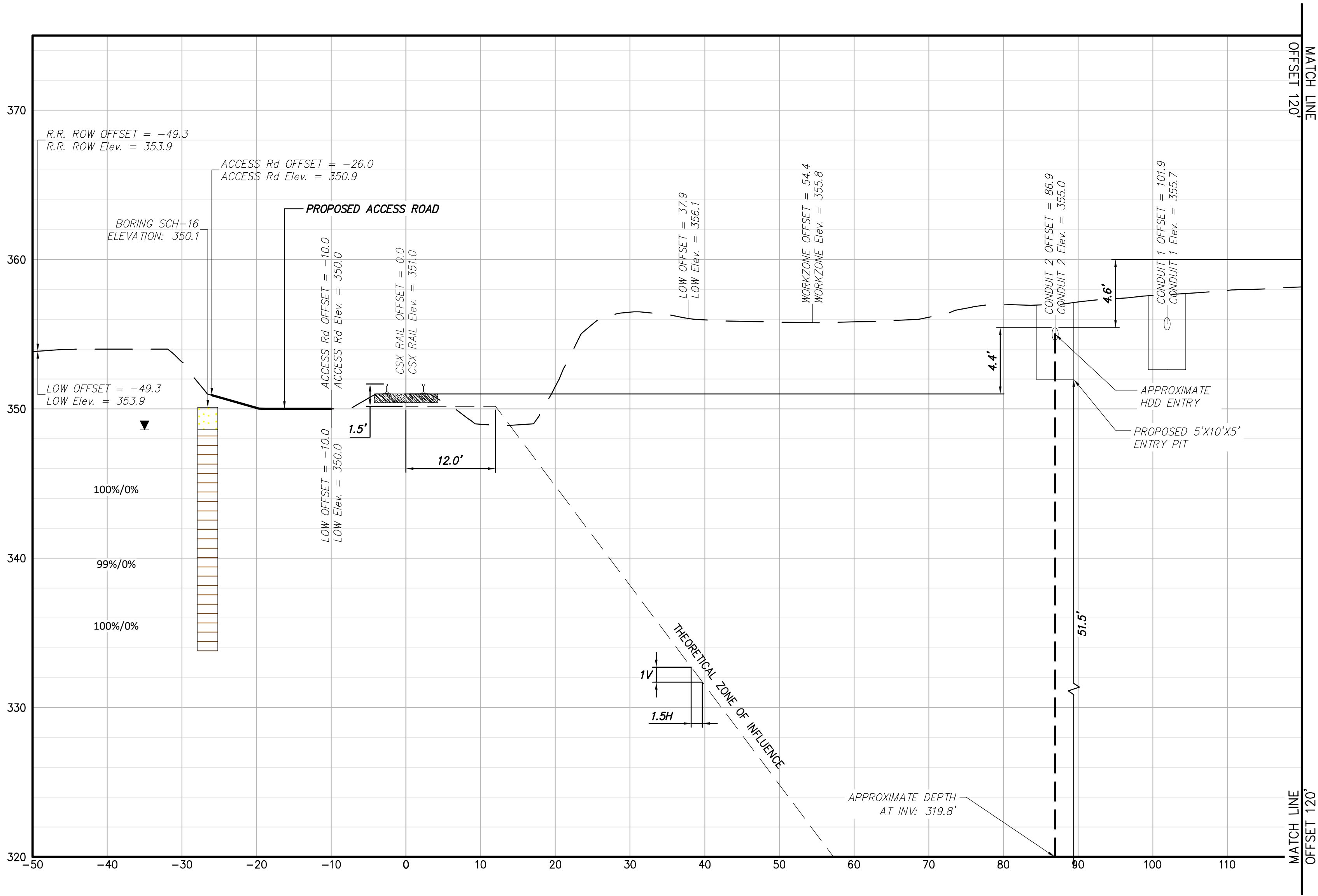
DATE	07/28/2023
SH. NO.	







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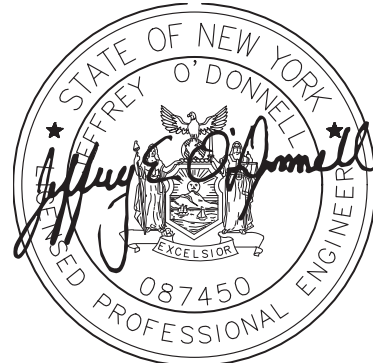
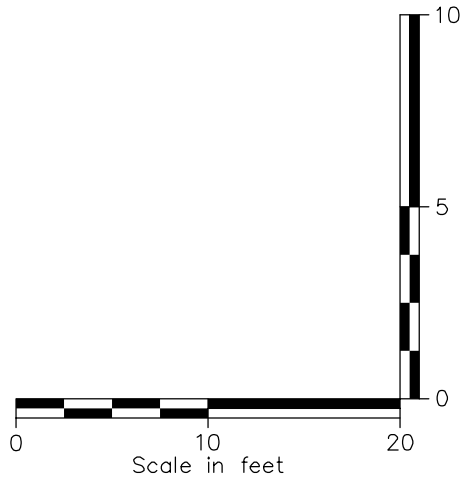
3 HDD 70A CONDUIT 2 ENTRY PIT CUT SECTION: STA. 45414+13
CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.14

BORING LOG STRIP LEGEND

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

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
	FILL	Fill
	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
	MH	Elastic SILT
	ML	SILT
	DH	ORGANIC Fat CLAY
	DL	ORGANIC Lean CLAY
	DL/DH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsail	Topsail
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water Table	Water Table after drilling



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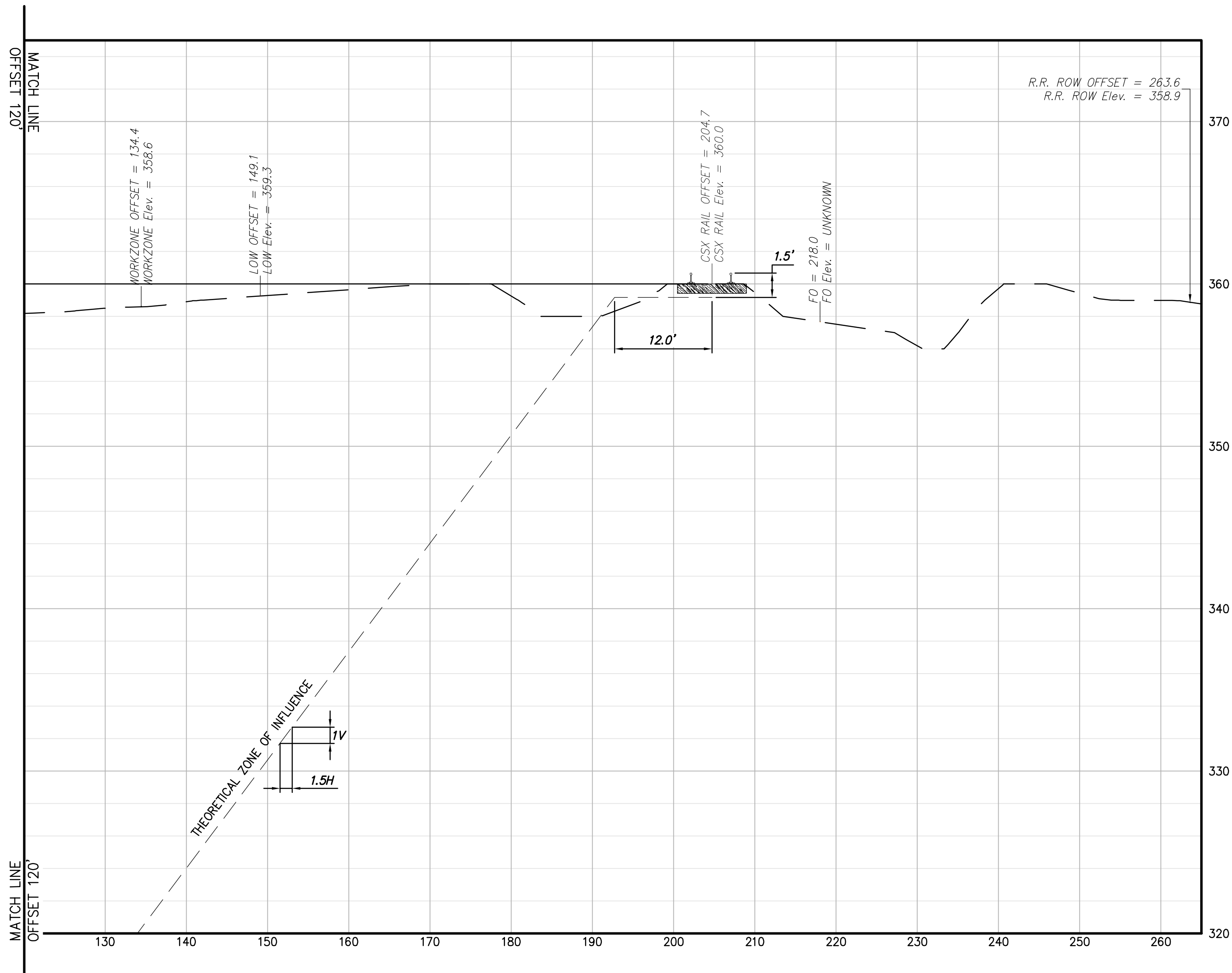
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO	
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP	

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

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

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-650.3
DATE	07/28/2023
SH.NO.	

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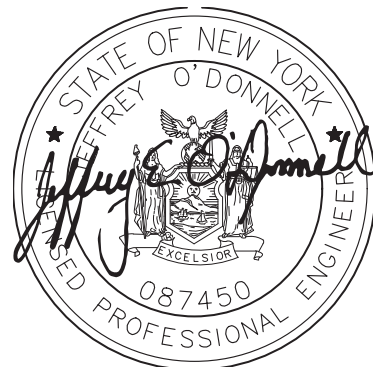
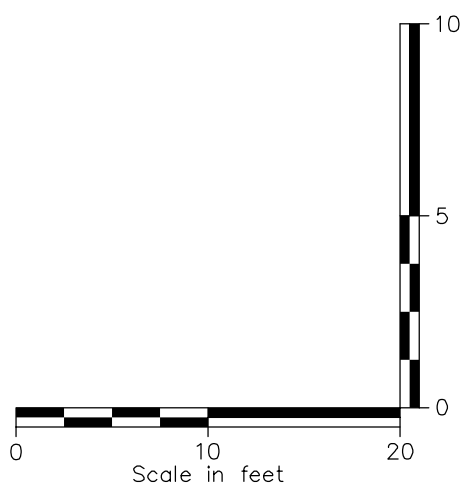
3 HDD 70A CONDUIT 2 ENTRY PIT CUT SECTION; STA. 45414+13
CSX PAN AM SOUTHERN SUBDIVISION MP QG 35.14

BORING LOG STRIP LEGEND

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

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
	FILL	Fill
	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
	MH	Elastic SILT
	ML	SILT
	DH	ORGANIC Fat CLAY
	DL	ORGANIC Lean CLAY
	DL/DH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsail	Topsail
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water Table	Water Table after drilling



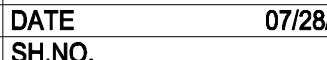
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0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION				SPB	JEO		
No.	DATE	SUBMITTAL / REVISION DESCRIPTION				DB	APP		

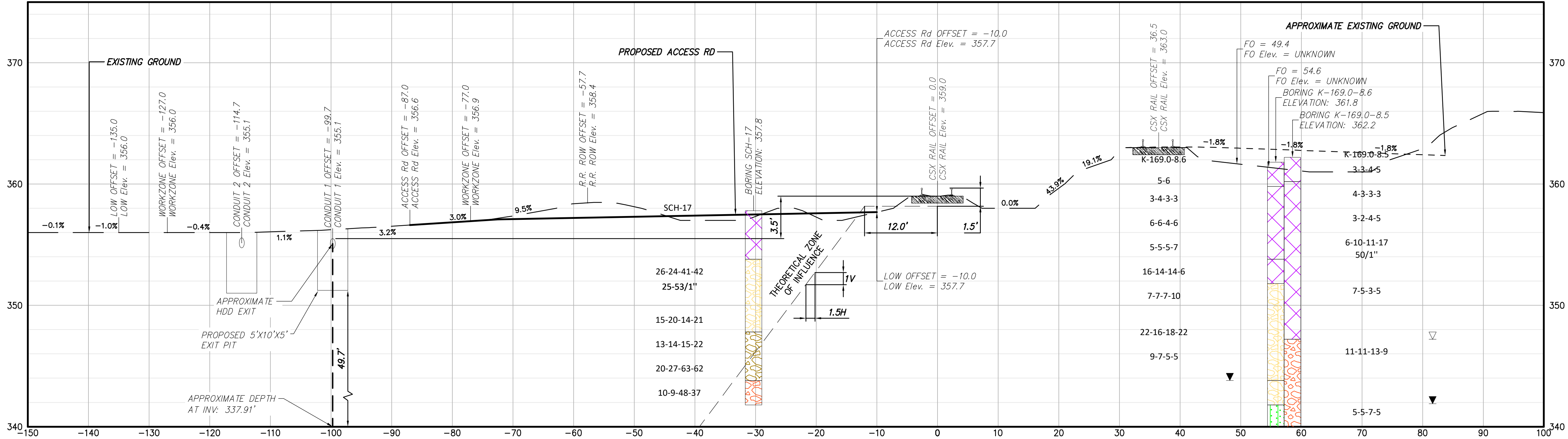
CHAMPLAIN HUDSON POWER EXPRESS
SEGMENT 7 (PACKAGE 4B) - CSX - PAN AM SOUTHERN
HDD 70A RAILROAD CROSS SECTION CUT

DRAWN BY: JDL DESIGNED BY: JDL APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023
REV. NO. E SH.NO.

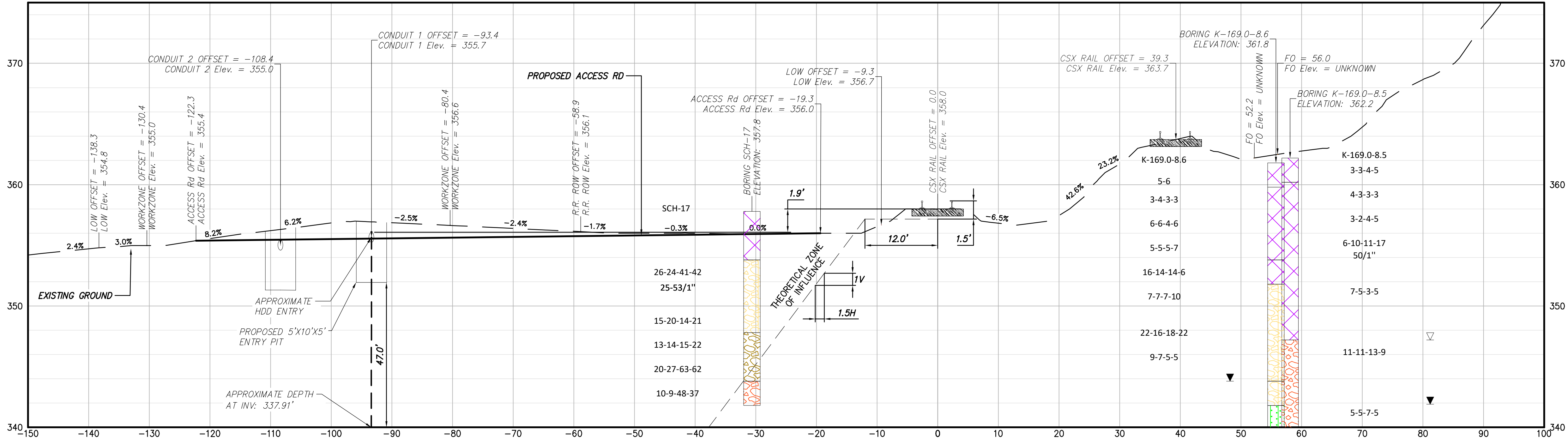
KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-650.4
DATE	07/28/2023



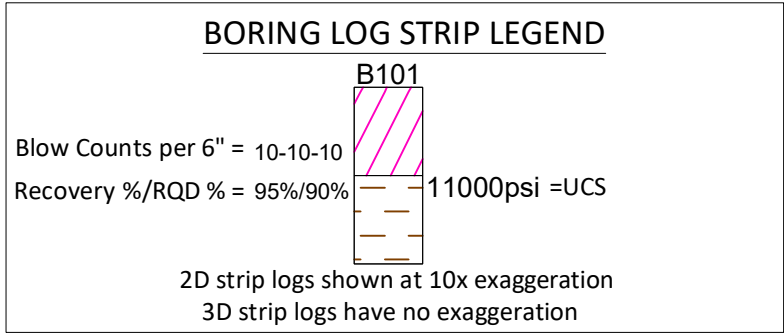
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2 HDD 70B CONDUIT 1 EXIT PIT CUT SECTION: STA. 45452+47
CSX PAN AM SOUTHERN SUBDIVISION MP QG 33.92



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



Legend		
	ASPHALT	Asphalt
	Bedrock	Bedrock
	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
	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
	OH	ORGANIC Fat CLAY
	OL	ORGANIC Lean CLAY
	OL/OH	ORGANIC SOIL
	PT	PEAT
	Rock	Rock
	Sandstone	Sandstone
	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
	SW	Well graded SAND
	SW-SC	Well Graded SAND with CLAY
	SW-SM	Well Graded SAND with SILT
	Topsail	Topsail
	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 718	Granite 1
	Void	Void
	Water	Water
	Weathered Rock	Undefined
	Water Table	Water Table during drilling
	Delayed Water Table	Water Table after drilling



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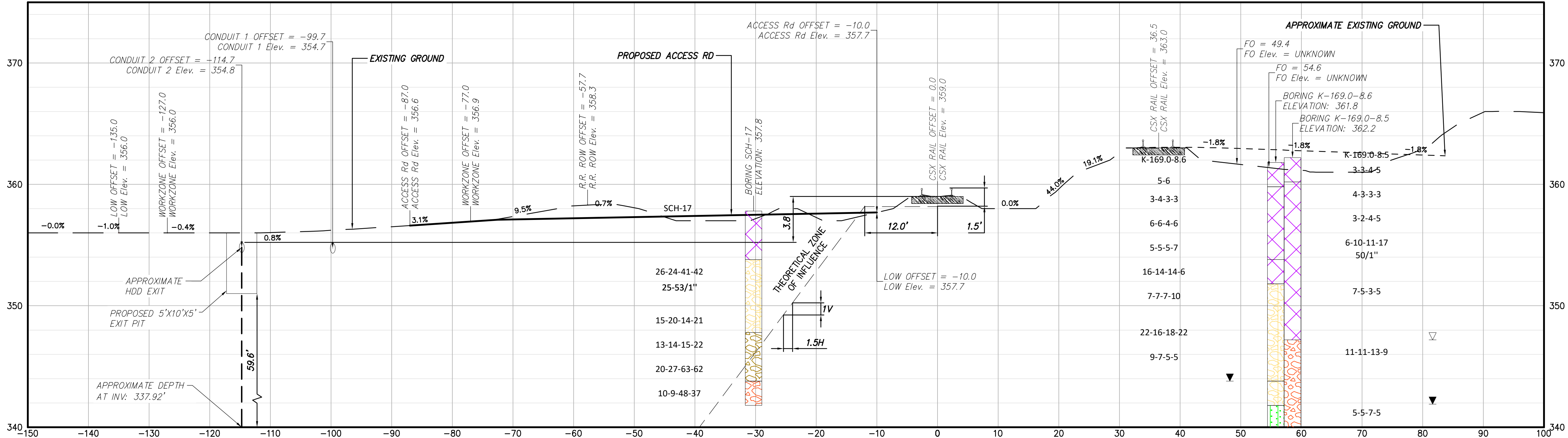
0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP

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

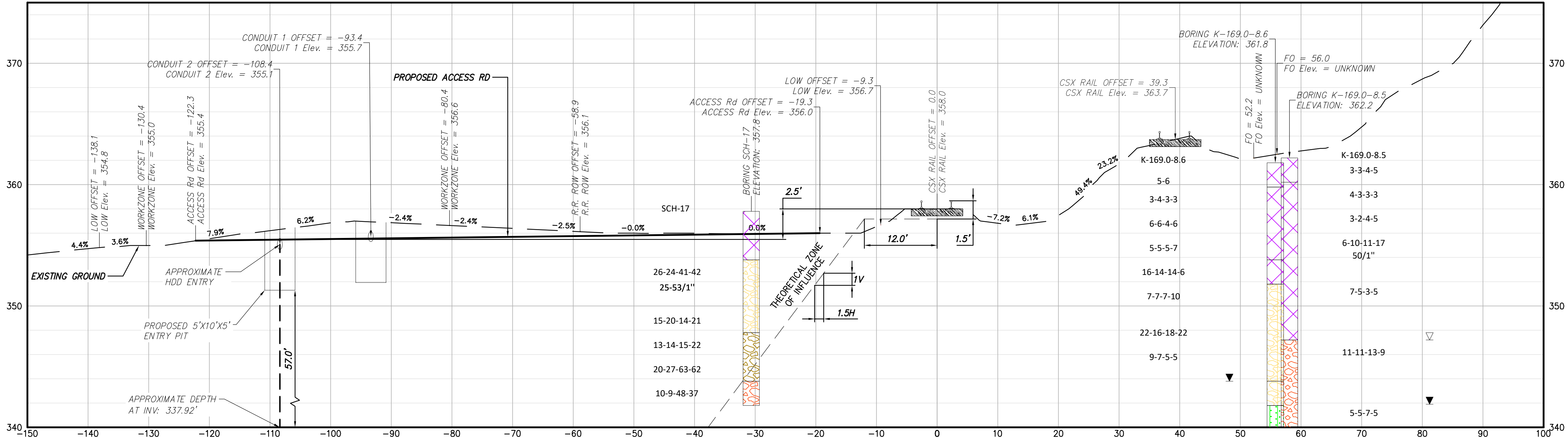
DRAWN BY: ZH DESIGNED BY: ZH APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023

KIEWIT PROJECT NO.	21162
CHA PROJECT NO.	066076
DRAWING NO.	C-651
DATE	07/28/2023

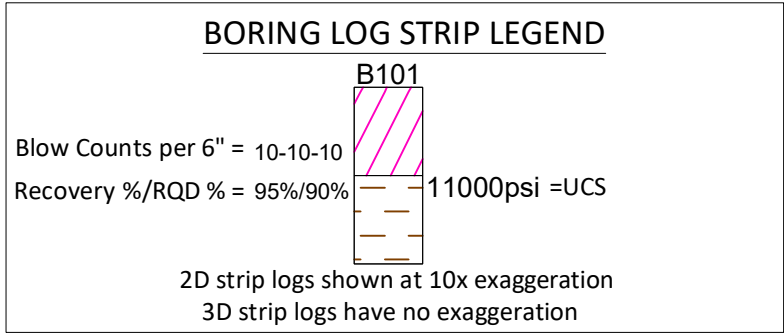
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4 HDD 70B CONDUIT 2 EXIT PIT CUT SECTION: STA. 45452+47
CSX PAN AM SOUTHERN SUBDIVISION MP QG 33.92



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



Legend		
ASPHALT	Asphalt	
Bedrock	Bedrock	
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	
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	
OH	ORGANIC Fat CLAY	
OL	ORGANIC Lean CLAY	
OL/OH	ORGANIC SOIL	
PT	PEAT	
Rock	Rock	
Sandstone	Sandstone	
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	
SW	Well graded SAND	
SW-SC	Well Graded SAND with CLAY	
SW-SM	Well Graded SAND with SILT	
Topsail	Topsail	
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 718	Granite 1	
Void	Void	
Water	Water	
Weathered Rock	Undefined	
Water Table	Water Table during drilling	
Delayed Water Table	Water Table after drilling	



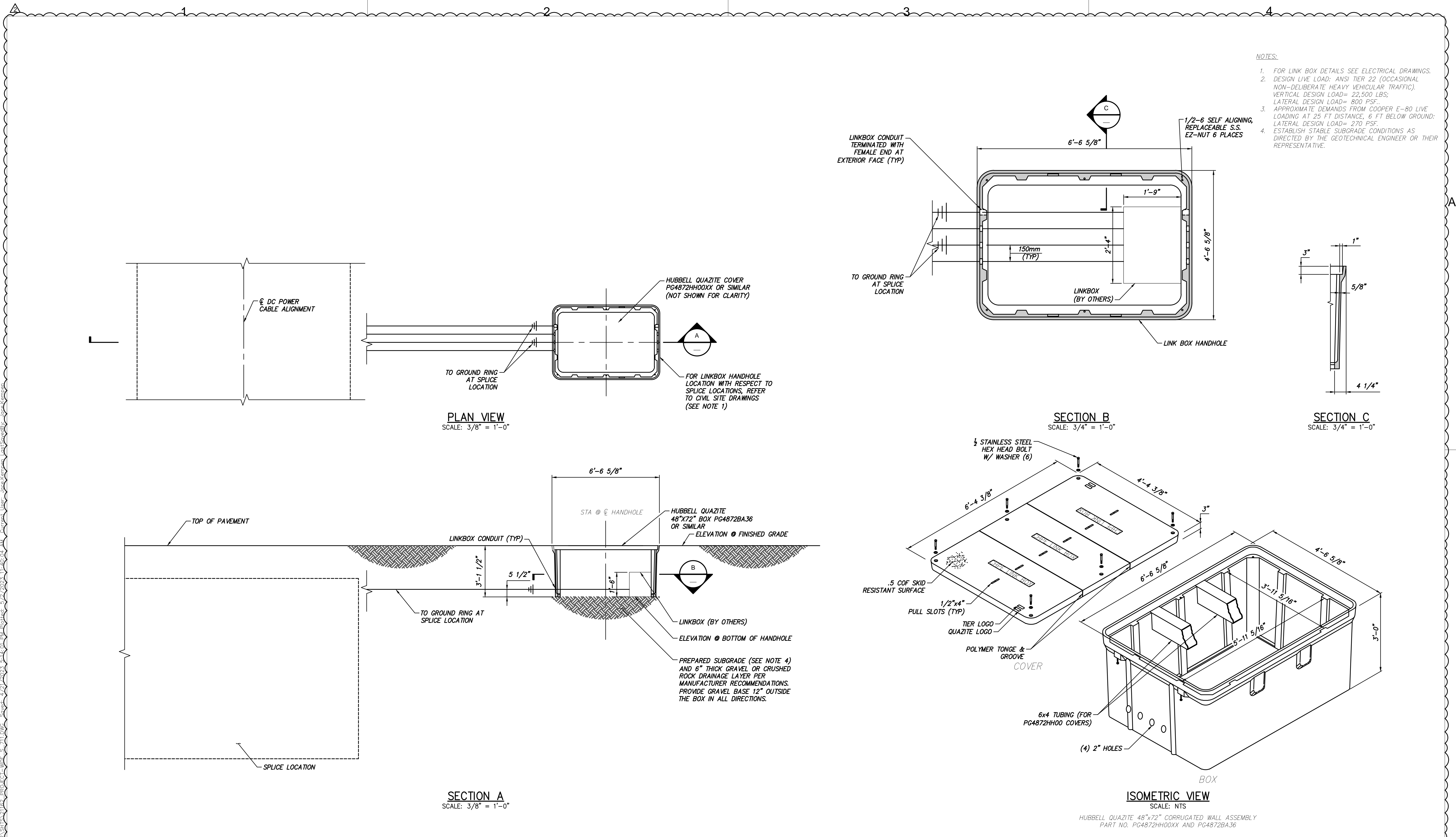
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0	07/28/2023	ISSUED FOR CONSTRUCTION SUBMISSION	SPB	JEO
No.	DATE	SUBMITTAL / REVISION DESCRIPTION	DB	APP


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

DRAWN BY: ZH DESIGNED BY: ZH APPROVED BY: JEO SCALE AS NOTED DATE 07/28/2023


KIEWIT PROJECT NO. 21162
CHA PROJECT NO. 066076
DRAWING NO. C-651.1




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



Champlain Hudson
Power Express





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

CHAMPLAIN HUDSON POWER EXPRESS

FRP LINK BOX HANDHOLES

DRAWN BY: DRH

DESIGNED BY: JNK

APPROVED BY: OO

SCALE
REV. NO.

AS SHOWN

DATE
5/03/2023

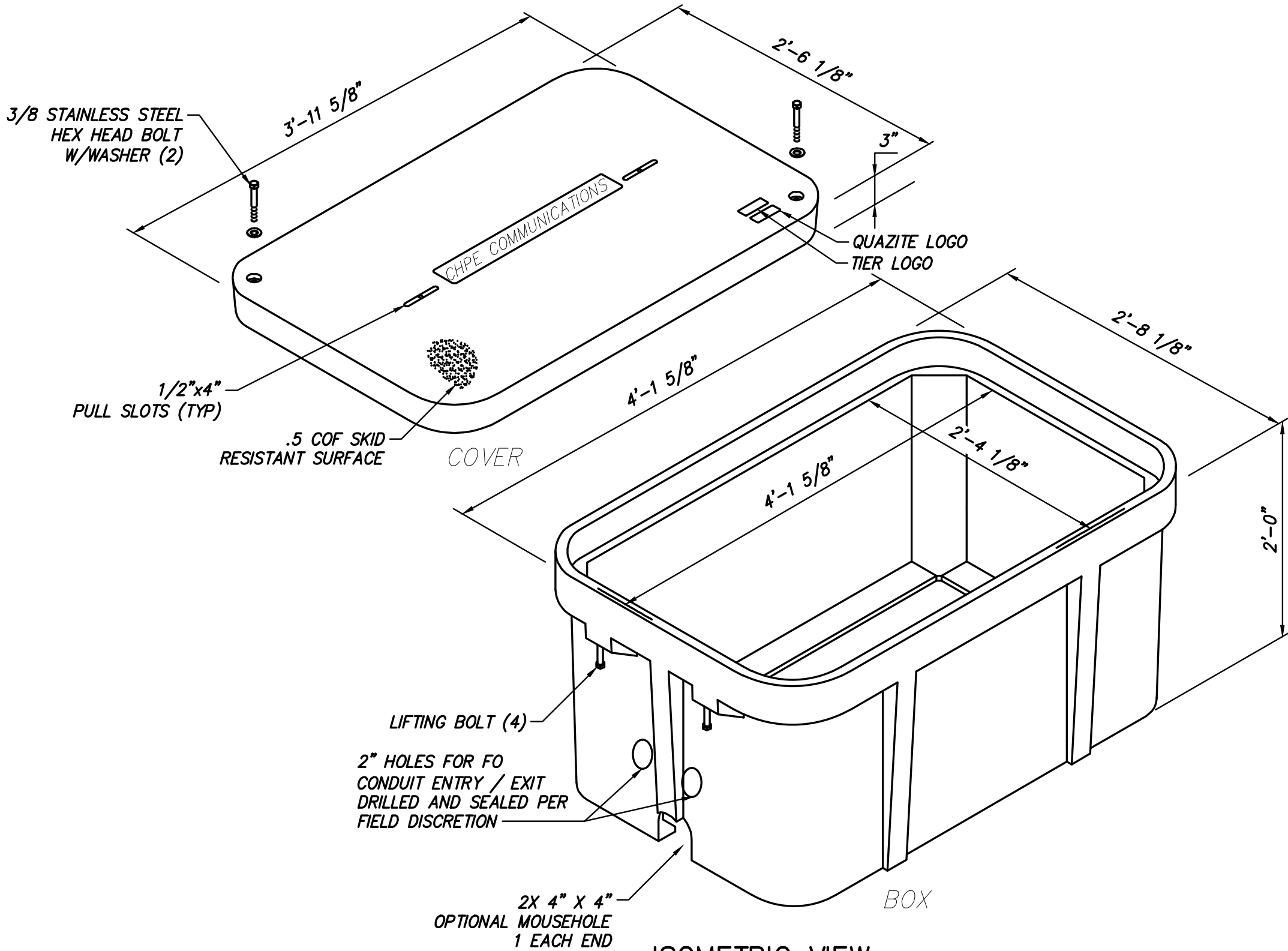
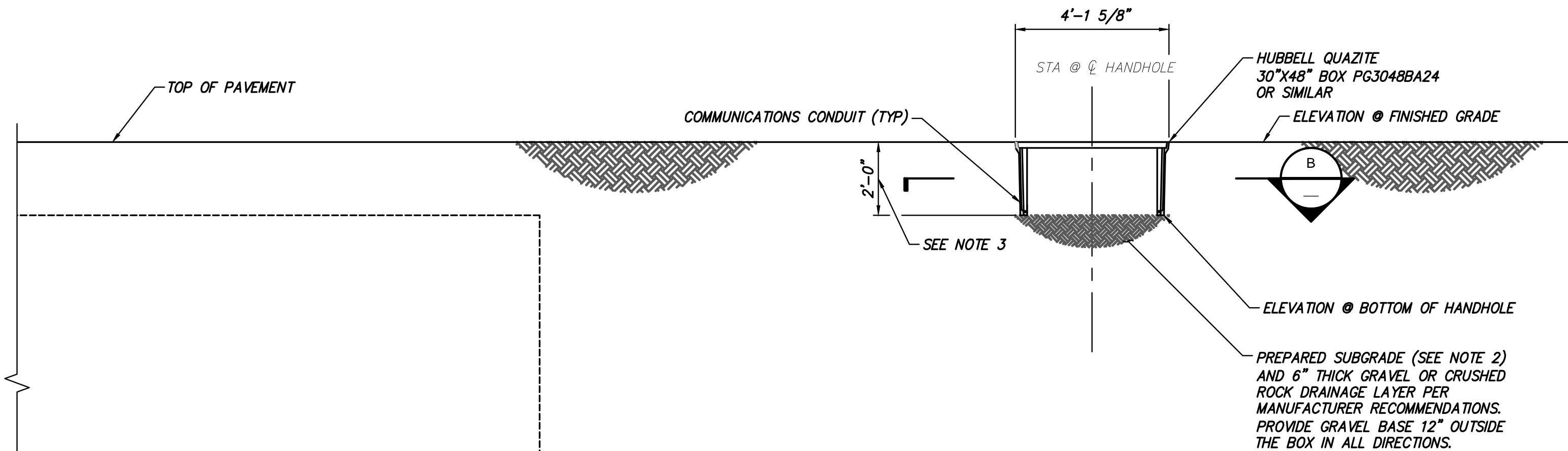
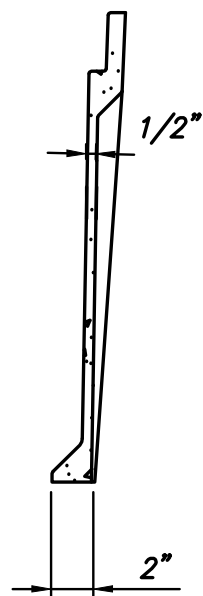
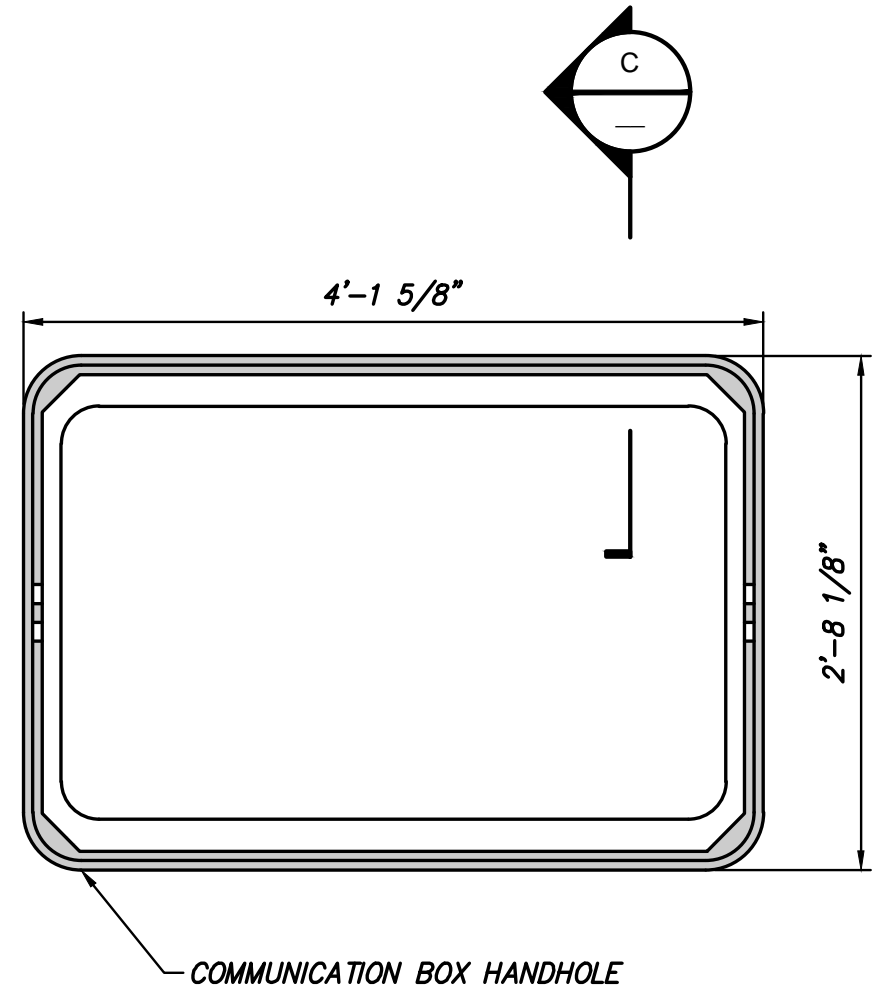
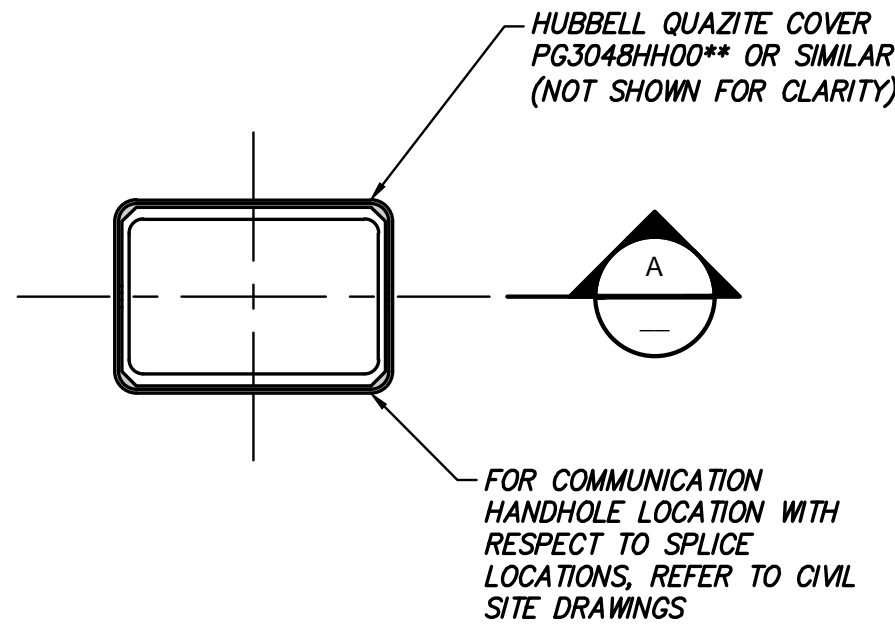
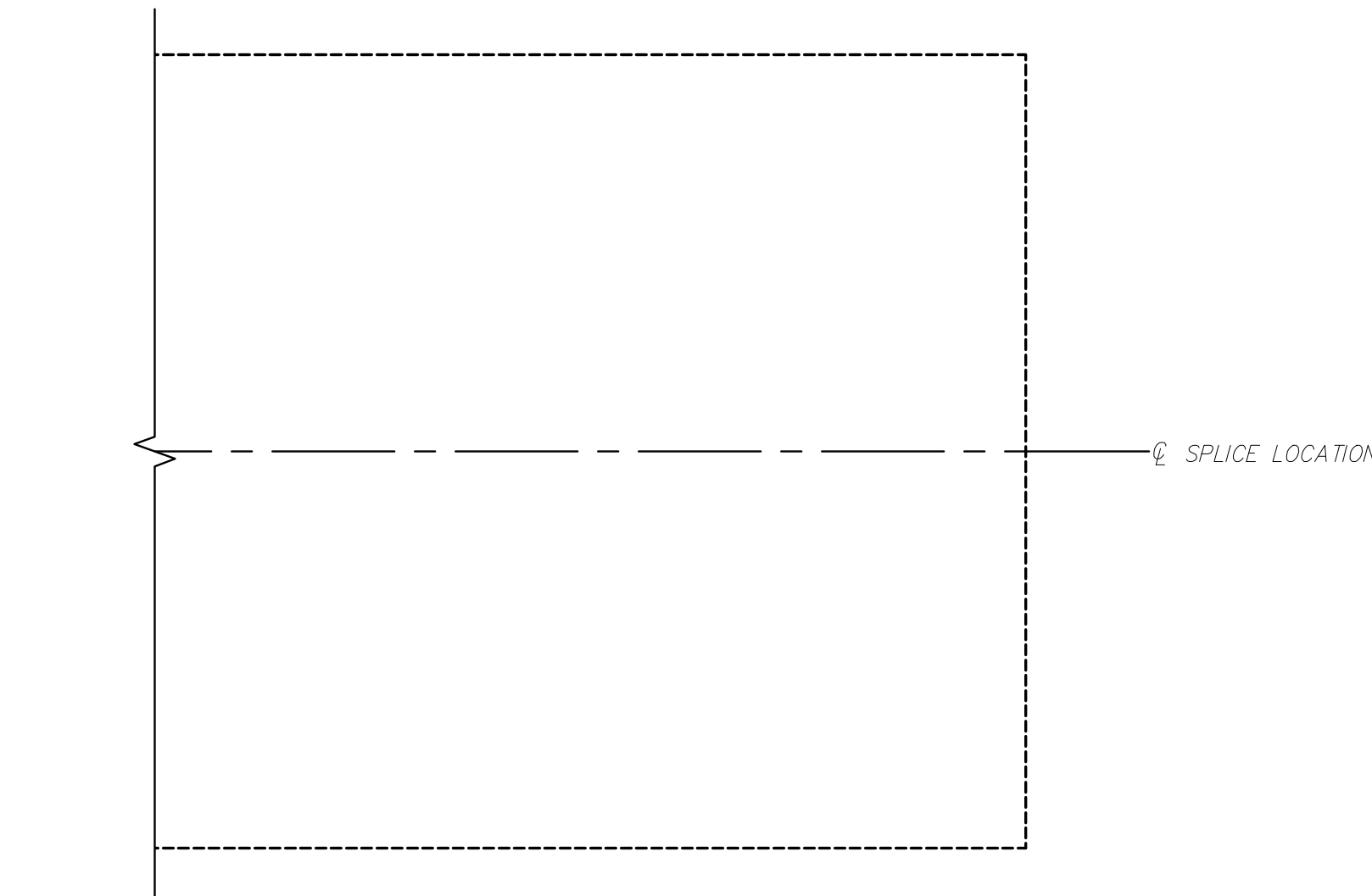
KIEWIT PROJECT NO.
21162

DRAWING NO.
S-711

DATE
5/03/2023

NOTES:

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



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



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1	02/10/2023	REV 1 - IFC - NYSDOT HWP, SPLICE VAULT UPDATES	JNK	OO
0	12/21/2022	IFC SUBMISSION	JNK	OO

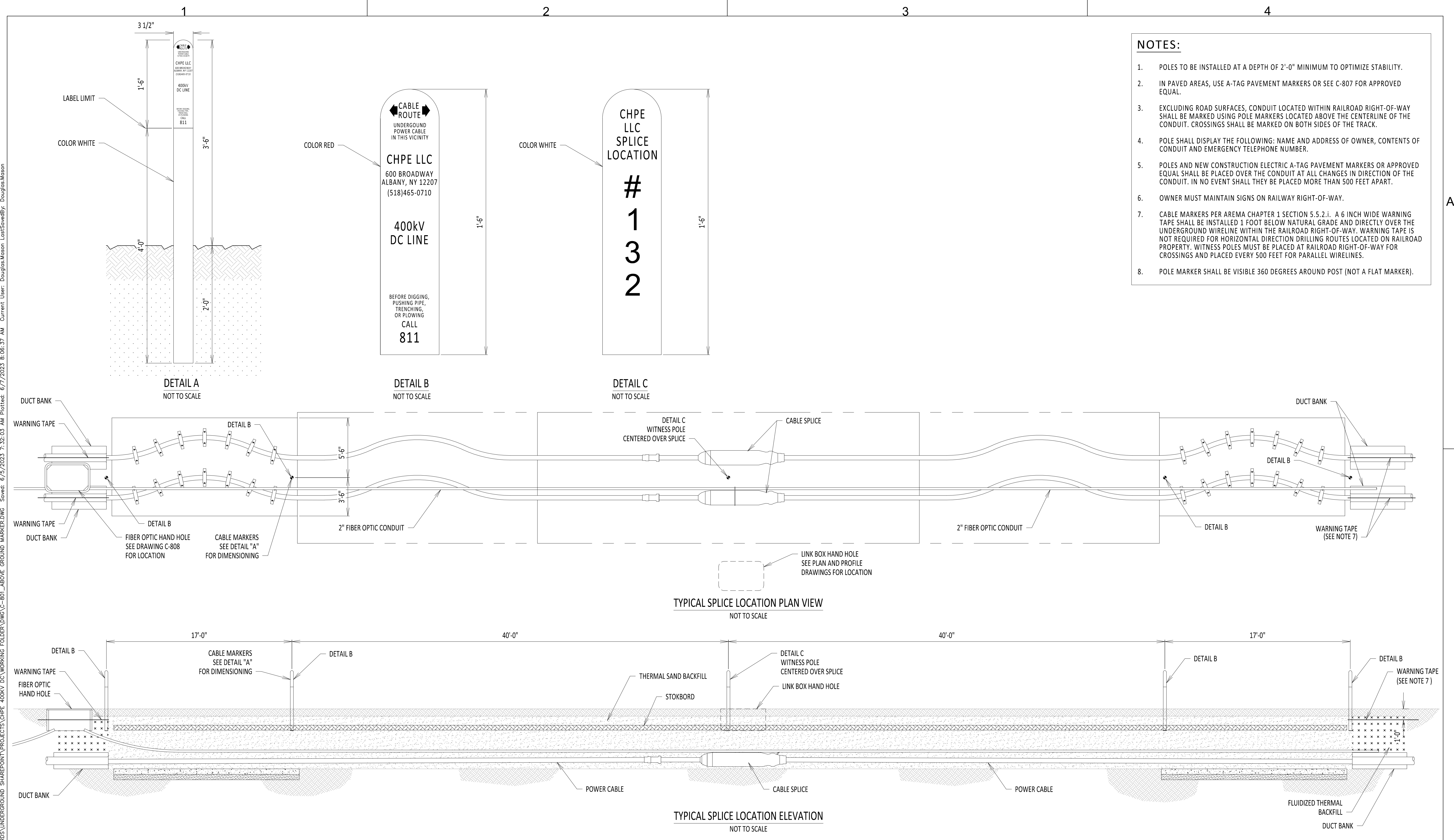
CHAMPLAIN HUDSON POWER EXPRESS

FRP COMMUNICATION HANDHOLES


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


File: R:\INFO\PD\USG STANDARDS\UNDERGROUND SHAREPOINT\PROJECTS\CHPE 400KV DC WORKING FOLDER\DWG\C-801_ABOVE GROUND MARKER.DWG Saved: 6/5/2023 7:32:03 AM Plotted: 6/7/2023 8:06:37 AM Current User: Douglas.Mason LastSavedBy: Douglas.Mason




- NOTES:**
- POLES TO BE INSTALLED AT A DEPTH OF 2'-0" MINIMUM TO OPTIMIZE STABILITY.
 - IN PAVED AREAS, USE A-TAG PAVEMENT MARKERS OR SEE C-807 FOR APPROVED EQUAL.
 - EXCLUDING ROAD SURFACES, CONDUIT LOCATED WITHIN RAILROAD RIGHT-OF-WAY SHALL BE MARKED USING POLE MARKERS LOCATED ABOVE THE CENTERLINE OF THE CONDUIT. CROSSINGS SHALL BE MARKED ON BOTH SIDES OF THE TRACK.
 - POLE SHALL DISPLAY THE FOLLOWING: NAME AND ADDRESS OF OWNER, CONTENTS OF CONDUIT AND EMERGENCY TELEPHONE NUMBER.
 - POLES AND NEW CONSTRUCTION ELECTRIC A-TAG PAVEMENT MARKERS OR APPROVED EQUAL SHALL BE PLACED OVER THE CONDUIT AT ALL CHANGES IN DIRECTION OF THE CONDUIT. IN NO EVENT SHALL THEY BE PLACED MORE THAN 500 FEET APART.
 - OWNER MUST MAINTAIN SIGNS ON RAILWAY RIGHT-OF-WAY.
 - CABLE MARKERS PER AREMA CHAPTER 1 SECTION 5.5.2.i. A 6 INCH WIDE WARNING TAPE SHALL BE INSTALLED 1 FOOT BELOW NATURAL GRADE AND DIRECTLY OVER THE UNDERGROUND WIRELINE WITHIN THE RAILROAD RIGHT-OF-WAY. WARNING TAPE IS NOT REQUIRED FOR HORIZONTAL DIRECTION DRILLING ROUTES LOCATED ON RAILROAD PROPERTY. WITNESS POLES MUST BE PLACED AT RAILROAD RIGHT-OF-WAY FOR CROSSINGS AND PLACED EVERY 500 FEET FOR PARALLEL WIRELINES.
 - POLE MARKER SHALL BE VISIBLE 360 DEGREES AROUND POST (NOT A FLAT MARKER).



Champlain Hudson Power Express



Kiewit



STATE OF NEW YORK
DONGKAI CHEN
106996
LICENSED PROFESSIONAL ENGINEER

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

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

CHAMPLAIN HUDSON POWER EXPRESS

ABOVE GROUND MARKING DETAILS

DRAWN BY: DLM

DESIGNED BY:

APPROVED BY: ASM

SCALE
REV. NO.

KIEWIT PROJECT NO.
21162

CHA PROJECT NO.
066076

DRAWING NO.
C-801

DATE
06/08/2023

SH.NO.
OF