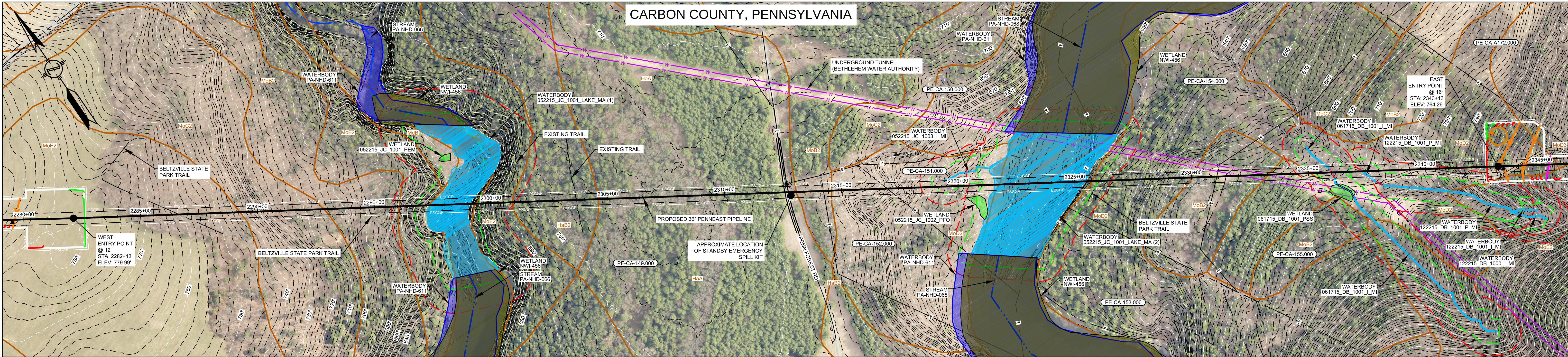


G:\PENNEAST\033754_PENNEAST_PIPELINE_EPC\DATA\PROD_STATE_PERMIT\WORK\PIPING\INGROSSION_SEDIMENT_CONTROL_PLAN\HDD_DETAILS\000-03-07-002.DWG PA188825



POHOPOCO CREEK (BELTZVILLE LAKE)/ WILD CREEK HDD PLAN VIEW
SCALE: 1" = 200'

CROSSING SPECIFIC HDD NOTES:

- ALL DIMENSIONS AND ELEVATIONS ARE IN FEET, UNLESS OTHERWISE SPECIFIED.
- ALL CHAINAGES ARE HORIZONTAL.
- CONTRACTOR SHALL DETERMINE FINAL LOCATIONS AND DIMENSIONS OF ALL MUD PITS NECESSARY TO ACCOMMODATE THEIR MEANS AND METHODS.
- CONTRACTOR TO STAGE ALL PERSONNEL AND EQUIPMENT WITHIN THE PERMITTED LIMIT OF DISTURBANCE AS DEPICTED ON THIS DRAWING, UNLESS OTHERWISE AUTHORIZED BY THE CLIENT.
- CONTRACTOR SHALL DETERMINE DIAMETER, GRADE, WALL THICKNESS AND ADDITIONAL LENGTH OF TEMPORARY CONDUCTOR CASINGS IF DEEMED NECESSARY BY THE CONTRACTOR. ANY INSTALLED TEMPORARY CONDUCTOR CASING SHALL BE FULLY REMOVED UPON COMPLETION OF PULLBACK OPERATIONS.
- THE MINIMUM ALLOWABLE DRILLING RADIUS SHALL BE 2,600 FEET BASED ON A 3-JOINT AVERAGE.
- EXISTING UTILITY LOCATIONS AND DEPTHS, INCLUDING PRIVATE SERVICES, ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION OPERATIONS. PENNSYLVANIA LAW REQUIRES AT LEAST 48 HOURS AND NO MORE THAN TEN (10) WORKING DAYS NOTICE BEFORE EXCAVATION OR DEMOLITION.
- HDD OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS.
- DOWNHOLE ANNUAL DRILLING FLUID PRESSURES SHALL BE MONITORED AT ALL TIMES DURING THE PILOT BORE DRILLING PROCESS. LOCATION OF MONITORING SHALL BE AS CLOSE TO THE DRILL BIT AS POSSIBLE.
- HDD CONTRACTOR SHALL BE PREPARED TO PUMP A CEMENT GROUT DOWNHOLE TO HELP SEAL LARGE PREFERENTIAL FLOW PATHWAYS AND RESTORE DRILLING FLUID FLOW WITHIN THE HDD BORE IN THE EVENT HISTORIC MINE WORKINGS ARE ENCOUNTERED AND EXCESSIVE DRILLING FLUID LOSSES OCCUR.
- PILOT BORE SHALL BE CONTINUOUSLY TRACKED AT ALL TIMES. CONTRACTOR SHALL USE A GYROSCOPIC GUIDANCE SYSTEM TO COMPLETE THE PILOT BORE INSTALLATION. NO BLIND SECTIONS SHALL BE PERMITTED, EVEN WHEN THE DRILL BIT IS UNDER WATER.
- IF THE CONTRACTOR ENCOUNTERS AN OBSTRUCTION THAT PREVENTS THE INSTALLATION ACCORDING TO THE PROJECT SPECIFICATIONS, THE CONTRACTOR SHALL PLACE A CEMENT BASED GROUT WITHIN THE BORE. WORK SHALL NOT RESUME UNTIL REVISED PLANS AND PROCEDURES HAVE BEEN SUBMITTED TO AND ACCEPTED BY THE OWNER.

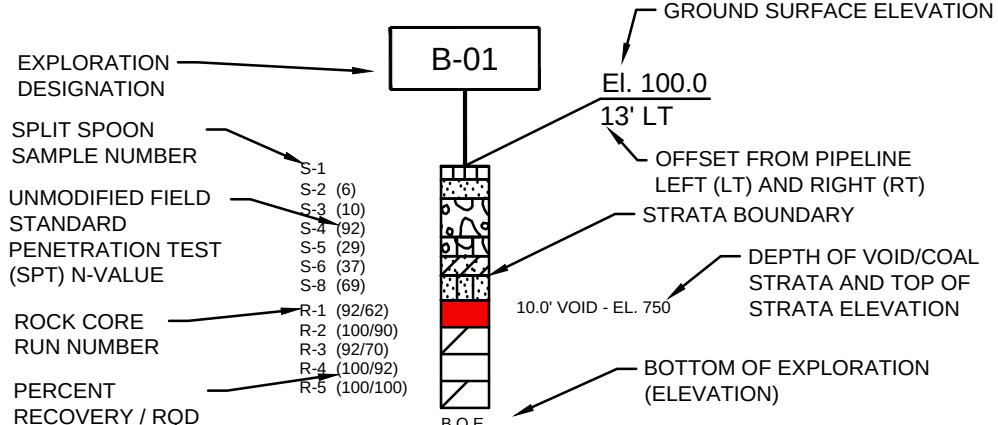
PILOT BORE DRILLING TOLERANCES SHALL BE AS FOLLOWS:

Item	Tolerance
Rib entry angle	Increase angle up to 1" (integer), but no decrease in angle allowed.
Rib entry location	As dictated by Owner. No changes without Owner approval.
Rib exit angle	Decrease angle up to 2" (integer), but no increases in exit angle allowed.
Rib exit location	Up to ten (10) feet shorter or longer.
Rib depth	Up to three (3) feet shallower depth allowed. Up to ten (10) feet increase in pipe design depth (casing) allowed.
Rib alignment	Up to ten (10) feet left or right of the Owner survey corridor but not within five (5) feet of the right-of-way/ easement boundary or any below grade utility or structure.

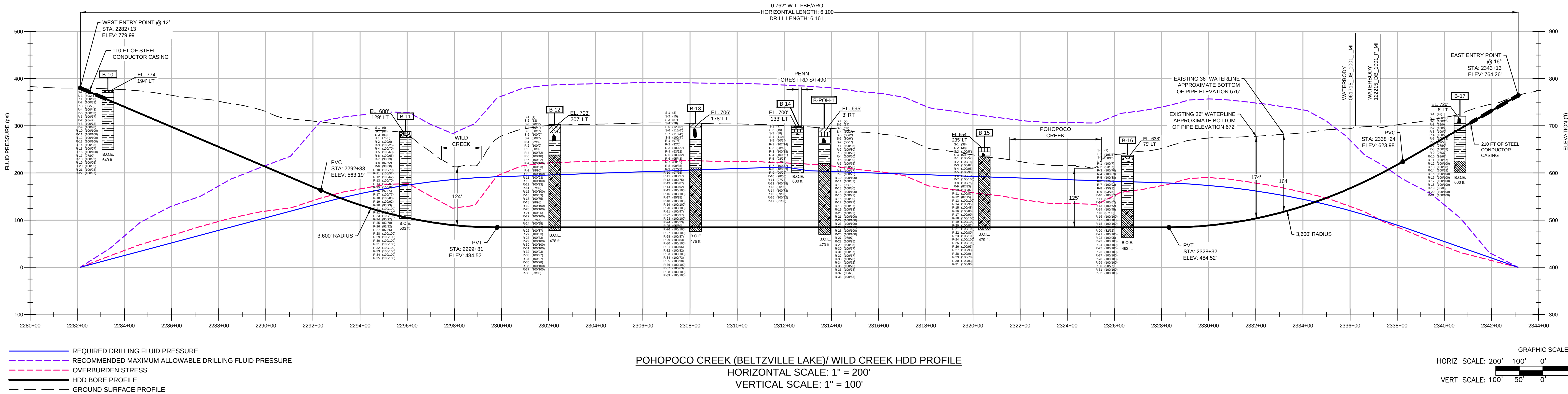
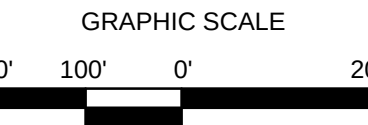
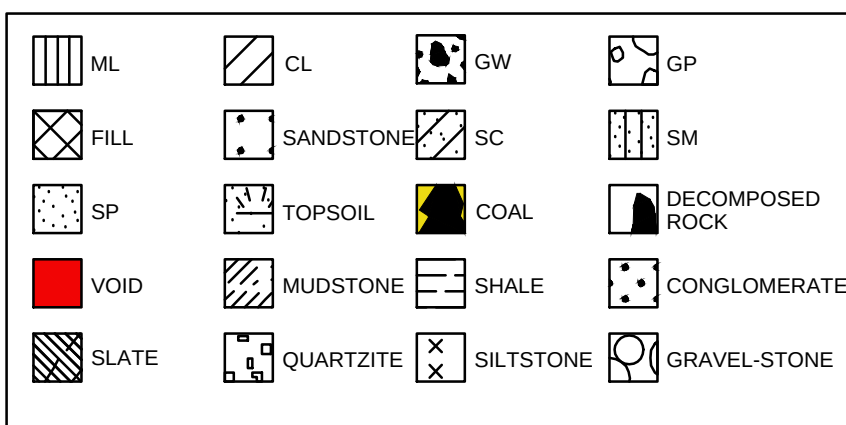
CROSS SECTIONS PRESENTS SUMMARY BOREHOLE LOG GRAPHICS, SEE FULL BOREHOLE LOG FOR DETAILS.

Wild Creek	Pohopoco Creek
10 year flow: 1470 cfs	10 year flow: 4470 cfs
Max stream depth: 25 feet	Max stream depth: 24 feet
Approximate cross section area: 1800 sq. ft.	Approximate cross section area: 3900 sq. ft.
Approximate linear flow rate: 1.04 fpi	Approximate linear flow rate: 1.13 fpi

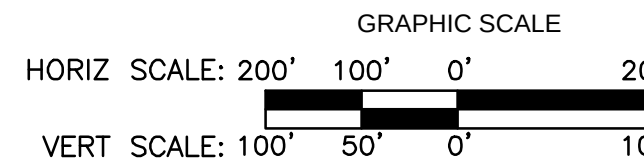
BORING LEGEND



SOIL AND ROCK STRATAGRAPHIC LEGEND



POHOPOCO CREEK (BELTZVILLE LAKE)/ WILD CREEK HDD PROFILE
HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 100'



- NOTES:
- THE CONTOURS AND IMAGERY SHOWN WERE PROVIDED BY PICTOMETRY, 2015. ADDITIONAL CONTOURS AND IMAGERY SUPPLEMENTED FROM PASDA.
 - EXISTING FEATURE SURVEYED PERFORMED BY MOTT MACDONALD 2015 THRU 2018. ADDITIONAL FEATURES DIGITIZED FROM IMAGERY. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR.
 - PROPERTY LINES DEPICTED ON THIS PLAN ARE BASED ON GIS TAX MAP DATA AND RECTIFIED PROPERTY LINES AND ARE NOT THE RESULT OF A BOUNDARY SURVEY.
 - WATERBODY INFORMATION PROVIDED BY AECOM 2015 THRU 2018.

DWG. NO.	TITLE
000-03-01-087	ALIGNMENT SHEET
000-03-01-088	ALIGNMENT SHEET
000-03-01-089	ALIGNMENT SHEET

REVISIONS	DATE	DRAWN	CK	APPR
A	10/2018	JL (MM)	AJD (MM)	MJD (MM)
B	10/2019	AJD (MM)	MMM (MM)	MJD (MM)

APPROVALS	DATE
DRAWN BY	10/15/2018
CHECKED BY	DATE
CAF (MM)	10/15/2018
ENG. APPROVAL	DATE
MDN (MM)	10/15/2018
P.M. APPROVAL	DATE
MAW (MM)	10/15/2018

CLIENT APPROVAL	DATE
DATE	



SCALE	DRAWING NO.	REVISION
AS SHOWN	000-03-07-002	A

