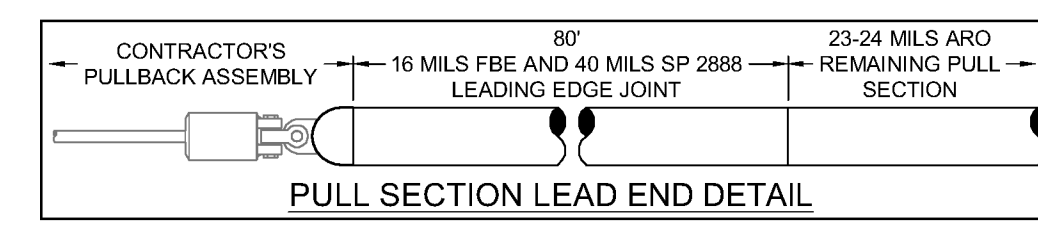
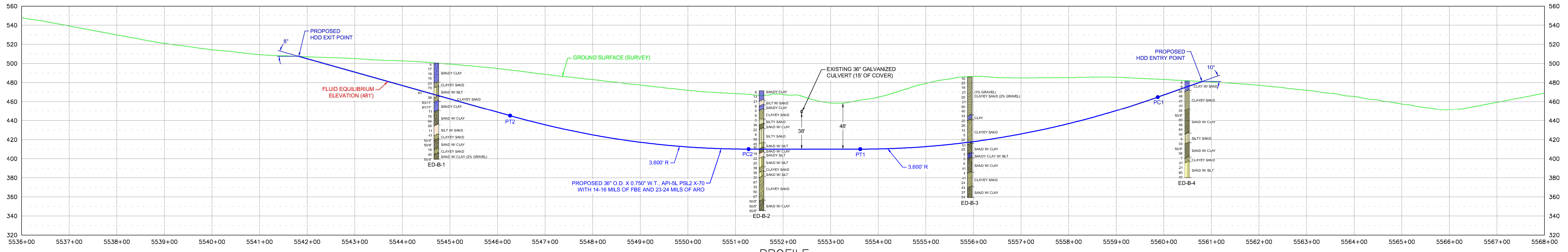
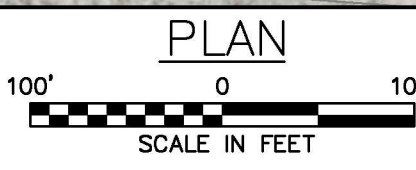


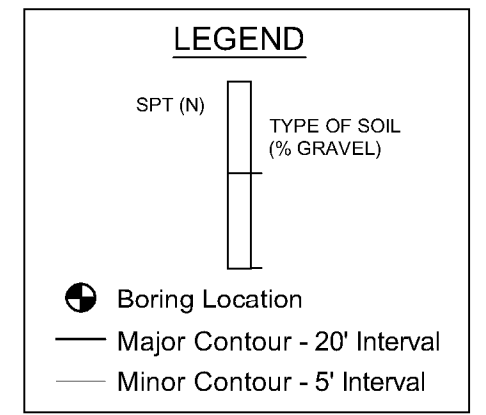
DATUM:
HORIZONTAL: UTM WITH NAD83 DATUM, ZONE 17, US FOOT; CENTRAL MERIDIAN 81° W
VERTICAL: NAVD 88

NOTE: THIS IS A FULL SIZE DRAWING THAT IS INTENDED TO BE PRINTED ON A 24" X 36" SHEET OF PAPER.



DIRECTIONAL DRILL DATA EARTHEN DAM HDD		
DESCRIPTION	STATION (ft)	ELEVATION (ft)
ENTRY @ 10°	5560+80.52	481.13
P C 1 (10.00° @ 3,600 ft R.)	5559+87.27	464.69
P T 1	5553+62.14	410.00
P C 2 (8.00° @ 3,600 ft R.)	5551+27.58	410.00
P T 2	5546+26.55	445.03
EXIT @ 8°	5541+82.34	507.46
HORIZONTAL DISTANCE = 1898.17 ft		
DIRECTIONAL DRILL PIPE LENGTH = 1908.79 ft		

ITEM	REQUIRED TOLERANCES
PILOT HOLE ENTRY/LOCATION	UP TO 5 FEET AHEAD OF OR 5 FEET BEHIND THE ENTRY STAKE, BETWEEN 5 FEET LEFT OR 5 FEET RIGHT OF CENTERLINE. IN THE EVENT THE PILOT HOLE IS ADVANCED FROM EXIT TO ENTRY OR A PLOT HOLE INTERSECT IS PERFORMED, THIS TOLERANCE SHALL ALSO APPLY TO THE PILOT HOLE EXIT LOCATION.
PILOT HOLE EXIT LOCATION	UP TO 20 FEET BEYOND OR 10 FEET SHORT OF THE EXIT STAKE, BETWEEN 5 FEET LEFT AND 5 FEET RIGHT OF CENTERLINE.
MINIMUM ALLOWABLE THREE-JOINT COMBINED RADIUS	OVER ANY CONSECUTIVE THREE-JOINT SECTION SHALL NOT BE LESS THAN 2,100 FEET.
PILOT HOLE DEPTH	UP TO 2 FEET ABOVE THE DESIGN DRILL PROFILE ALLOWED, UP TO 15 FEET BELOW THE DESIGN DRILL PROFILE ALLOWED.
PILOT HOLE ALIGNMENT	SHALL REMAIN WITHIN 5 FEET NORTHEAST AND 10 FEET SOUTHWEST OF THE HDD ALIGNMENT.



- BASIS OF DESIGN:**
- PRODUCT PIPE WILL CONSIST OF 36" O.D. X 0.750" W.T., API-5L PSL2 X-70 PIPE WITH 14-16 MILS OF FUSION BONDED EPOXY (FBE) AND 23-24 MILS OF ABRASION RESISTANT OVERLAY (ARO).
 - THE MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) = 1,456 psi.
 - THE ASSUMED MAXIMUM OPERATING TEMPERATURE = 70° FAHRENHEIT.
 - THE MINIMUM ALLOWABLE THREE-JOINT COMBINED RADIUS (HORIZONTAL AND VERTICAL) OVER ANY CONSECUTIVE THREE-JOINT SECTION SHALL NOT BE LESS THAN 2,100 FEET.
 - THE MAXIMUM ALLOWABLE PULL FORCE = 2,880,000 lbs.

ISSUED FOR USE

- GENERAL REQUIREMENTS:**
- CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS (SPECTRA ENERGY CONSTRUCTION SPECIFICATION "ONSHORE PIPELINES AND METER STATIONS", SPECIFICATION NUMBER CS-PL18) AND REQUIREMENTS PER SABAL TRAIL TRANSMISSION CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
 - CONTRACTOR IS RESPONSIBLE FOR CALLING GEORGIA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM SABAL TRAIL TRANSMISSION PRIOR TO INITIATING HDD OPERATIONS.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
 - THE HDD DRILL RIG SHALL BE POSITIONED ON THE ENTRY SIDE OF THE CROSSING UNLESS OTHERWISE APPROVED BY THE PROJECT TEAM. THE USE OF DUAL DRILL RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
 - ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
 - MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
 - CONTRACTOR SHALL DISPOSE OF EXCESS FLUID IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INDIRECTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL, AND DISPOSED OF IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. ALL DISPOSAL LOCATIONS SHALL BE REVIEWED AND APPROVED BY SABAL TRAIL TRANSMISSION IN ADVANCE.
 - WATER FOR DRILLING FLUID AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
 - PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS.
 - CONTRACTOR SHALL DISPOSE OF EXCESS FLUID IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INDIRECTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL, AND DISPOSED OF IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. ALL DISPOSAL LOCATIONS SHALL BE REVIEWED AND APPROVED BY SABAL TRAIL TRANSMISSION IN ADVANCE.
 - PRIOR TO REAMING, THE CONTRACTOR SHALL SUBMIT AS-DRILLED DATA AND CALCULATED LOCATION TO THE COMPANY FOR APPROVAL OF THE PILOT HOLE.
- REAMING REQUIREMENTS:**
- AFTER COMPLETION OF THE PILOT HOLE, THE HDD CONTRACTOR SHALL MAINTAIN A CONTINUOUS STRING OF DRILL PIPE DOWNHOLE BETWEEN ENTRY AND EXIT AT ALL TIMES EXCEPT WHEN RE-ESTABLISHING A CONTINUOUS STRING OF DRILL PIPE IN THE EVENT OF A TWIST OFF DOWNHOLE.
 - THE HDD CONTRACTOR SHALL COMPLETE AT A MINIMUM ONE (1) SWAB PASS TO EVALUATE THE CONDITION OF THE HOLE PRIOR TO PULLBACK OPERATIONS. THE HDD CONTRACTOR SHALL MEET WITH SABAL TRAIL TRANSMISSION AND REVIEW THE DATA COLLECTED DURING THE REAMING AND SWAB PASSES BEFORE PULLBACK OPERATIONS BEGIN.
- INSTALLATION REQUIREMENTS:**
- THE CONTRACTOR WILL BE REQUIRED TO SUPPLY A PULLBACK LIFTING PROCEDURE, INCLUDING SUPPORT SPACING AND HEIGHT, AS PART OF THEIR FINAL HDD WORK PLAN.
 - CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
 - THE MAXIMUM ALLOWABLE DISTANCE BETWEEN PIPE SUPPORTS SHALL BE NO GREATER THAN 200 FEET UNLESS APPROVED BY SABAL TRAIL TRANSMISSION.
 - THE MINIMUM ALLOWABLE RADIUS OF CURVATURE FOR HANDLING AND POSITIONING THE CARRIER PIPE IN PREPARATION FOR PULLBACK OPERATIONS IS 800 FEET.
 - THE HDD CONTRACTOR SHALL PROVIDE WITH THEIR HDD WORK PLAN THE MAXIMUM ANTICIPATED PULL FORCE REQUIRED TO INSTALL THE CARRIER PIPE AND THE MAXIMUM ALLOWABLE PULL FORCE THAT CAN BE APPLIED TO THEIR DOWNHOLE TOOLING.
 - IF A PNEUMATIC HAMMER IS UTILIZED DURING PULLBACK OPERATIONS, THE RATE OF ADVANCEMENT MUST BE NO LESS THAN 100 FEET PER 4 HOURS FOR CONTINUED OPERATION TO BE ALLOWED. IN THE EVENT THAT A PNEUMATIC HAMMER IS UTILIZED DURING THE INSTALLATION PROCESS, AN IN-LINE INSPECTION TOOL RUN TO BE COMPLETED AT THE EXPENSE OF THE CONTRACTOR MAY BE REQUESTED AT SABAL TRAIL TRANSMISSION'S DISCRETION PRIOR TO ACCEPTANCE OF THE INSTALLATION.
- POST-INSTALLATION REQUIREMENTS:**
- THE HDD CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCING AND SUBMITTING AN AS-BUILT DRAWING OF THE PILOT HOLE SURVEY DATA WITHIN TWO WEEKS OF THE COMPLETION OF PULLBACK OPERATIONS. THIS SHALL INCLUDE A TABULATION OF THE SUPPORTING AS-BUILT SURVEY DATA USED TO GENERATE THE DRAWING.

IC#	ITEM NO.	DESCRIPTION	LN. FT.	DWG. NO.	DESCRIPTION	REV	DRN	DATE	ISSUED FOR USE	DESCRIPTION	REVISIONS																																																																							
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