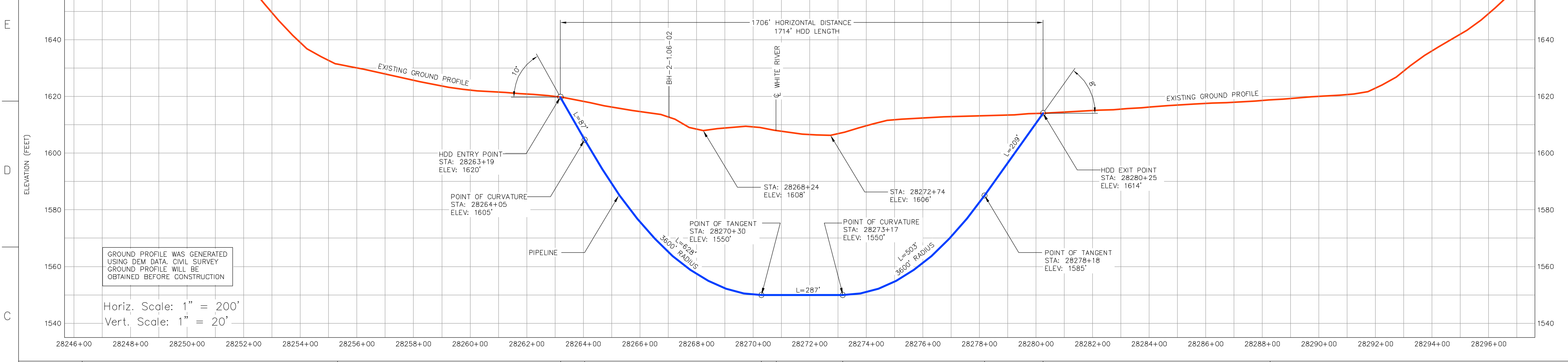
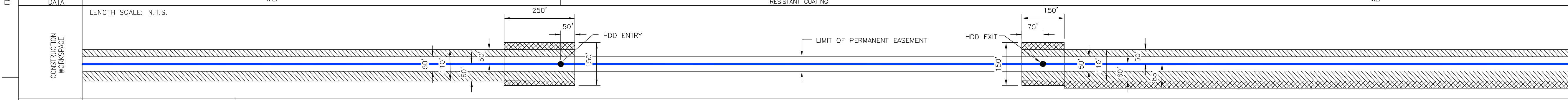


- INSTALLATION NOTES**
- 1) ACCESS: ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY FROM PUBLIC OR APPROVED PRIVATE ROADS.
 - 2) VEHICLE AND EQUIPMENT ACCESS CROSSING MAY BE INSTALLED IF APPROVED BY THE ENVIRONMENTAL INSPECTOR.
 - 3) WORK SPACE: WORK SPACE LIMITS ARE DEPICTED. CLEARING WILL BE RESTRICTED TO THE WORK SPACES INDICATED AT THE ENTRY AND EXIT POINTS AND PULLBACK MAKE-UP AREA ALONG THE RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS IS LIMITED TO THE MINIMUM AMOUNT NECESSARY TO STRING LOCATION WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
 - 4) WATER SOURCE: DRILL WATER AND PRE-INSTALLATION HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE. THE CONTRACTOR SHALL SCREEN THE INTAKE HOSE TO PREVENT THE ENTRAINMENT OF FISH OR DEBRIS AND IN ACCORDANCE WITH THE CONSTRUCTION MITIGATION AND RECLAMATION PLAN (CMRP) AND PROJECT REQUIREMENTS. THE HOSE SHALL BE KEPT OFF THE BOTTOM OF THE WATER BODY.
 - 5) HYDROSTATIC TEST: PRE-INSTALLATION HYDROSTATIC TEST SHALL BE CONDUCTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE CONTRACTOR SHALL DISCHARGE HYDROSTATIC TEST WATER IN ACCORDANCE WITH PROJECT PERMITS. DISCHARGES WILL BE BACK TO THE WATER SOURCE UNLESS OTHERWISE DIRECTED BY THE ENVIRONMENTAL INSPECTOR. DISCHARGES SHALL NOT CAUSE EROSION OR SEDIMENTATION. TO REDUCE THE VELOCITY OF THE DISCHARGE, THE CONTRACTOR SHALL UTILIZE AN ENERGY-DISSIPATING DEVICE AS DESCRIBED IN THE CMRP.
 - 6) SPILL-PREVENTION: ALL PUMPS SHALL BE SET IN SECONDARY CONTAINMENT AND IN ACCORDANCE WITH THE SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC). EQUIPMENT AND PUMPS OPERATING WITHIN 100 FEET OF ANY WATER BODY OR WETLAND SHALL BE OPERATED AND REFUELED IN ACCORDANCE WITH THE SPCC PLAN. EQUIPMENT REFUELING AND STORAGE OF HAZARDOUS MATERIALS, FUELS, ETC. SHALL BE CONDUCTED AT LEAST 100 FEET FROM WATER BODIES AND WETLANDS. EACH CONSTRUCTION CREW SHALL HAVE ON HAND SUFFICIENT TOOLS AND MATERIALS TO STOP LEAKS AND SUPPLIES OF ABSORBENT AND BARRIER MATERIALS TO ALLOW RAPID CONTAINMENT AND RECOVERY OF SPILLED MATERIALS.
 - 7) EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
 - 8) TOPSOIL SHALL BE STRIPPED AS REQUIRED BY PROJECT DOCUMENTS.
 - 9) PRIOR TO PIPE PULLBACK, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO KEYSTONE FOR APPROVAL.
 - 10) INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
 - 11) MUD DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING MUD AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING MUD WHICH INADVERTENTLY EXITS AT POINTS OTHER THAN THE ENTRY AND EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
 - 12) CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDDED AS SPECIFIED IN PROJECT DOCUMENTS.
 - 13) MINIMAL WORKING SPACE DIMENSIONS ARE SHOWN. LARGER AREAS MAY BE NEEDED IN IRREGULAR TERRAIN. UPDATED DIMENSIONS MAY BE PROVIDED AFTER LOCAL TOPOGRAPHICAL SURVEYS ARE PERFORMED.



CROSSING INFORMATION (STANDARD)	28265+31 P.L. 1231.05" RT.	
	28263+19 HDD ENTRY POINT	
PIPELINE DATA	PIPELINE DATA: 36" O.D. X 0.741" W.T., API 5L PS2 X70 WITH 14-16 MILS OF FBE EXTERNAL COATING, DUAL COATED 20-30 MILS OF ABRASION RESISTANT COATING	
	28264+05 PT OF CURVATURE	
CONSTRUCTION WORKSPACE	28270+30 PT OF TANGENT	
	28270+82 Q WHITE RIVER	
ENVIRONMENTAL MITIGATION/RECLAMATION	28273+17 PT OF CURVATURE	
	28278+18 PT OF TANGENT	
ENVIRONMENTAL MITIGATION/RECLAMATION	28280+25 HDD EXIT POINT	
	28285+28 APPROX. Q UNNAMED ROAD	



ENVIRONMENTAL MITIGATION/RECLAMATION	TOPSOIL SALVAGE METHOD	
	STREAMS	
ENVIRONMENTAL MITIGATION/RECLAMATION	WETLANDS	
	TIMING CONSTRAINTS	
ENVIRONMENTAL MITIGATION/RECLAMATION	MILEPOST	
	MONITORING	
ENVIRONMENTAL MITIGATION/RECLAMATION	RECLAMATION	
	SPECIAL CONSIDERATIONS	

- LEGEND**
- POINT OF INTERSECTION (P.I.)
 - ENTRY OR EXIT POINT
 - GEOTECHNICAL BOREHOLE
 - POWERPOLE
 - MLP
 - MAINLINE PIPE
 - PIPELINE
 - FOREIGN PIPELINE
 - EDGE OF WATER
 - PRIVATE ACCESS SHOULDER ROAD
 - COUNTY BOUNDARY
 - WATER LEVEL
 - USACE CONSTRUCTION REFERENCE POINT
 - WETLANDS
 - PERMANENT EASEMENT
 - TEMPORARY EASEMENT
 - EXTRA WORKSPACE

REFERENCE DRAWINGS	
DRAWING No	TITLE
ML HDD XREF	ML_14_HDD_XREF.dwg
ML PROFILE XREF	XL_PROFILE_UTM13_14_CL_July31_08_Interv100scaleH200V20
TRANSCANADA BORDER	TC_UD_BR.dwg
NOTES-LEGEND	NOTES-LEGEND.dwg
AERIAL	ortho_1-1_1n_s_sd085_2008_1.sid / LYMAN_2008_CLIPPED
QUAD	drg_s_ne085.sid
CENTERLINE	CL_XL_Ph_2_UTM_14_20080731.shp

REVISION			APPROVAL							
REV No	DATE	DESCRIPTION	PROJECT CODE	DRAFTER	DRAFTING CHECKER	DESIGNER	DESIGN CHECKER	PROJECT MANAGER	COMPANY	
0	11.19.08	ISSUED FOR UNITED STATES DEPARTMENT OF STATE (7.31.08 CL)	THES0050388X	JB	JP	HF	RB	RG	TROW	

PROFESSIONAL ENGINEER/RPT		PERMIT/ ENG. APPROVAL	
			DATE
REV. NO.	DATE	PERMIT NUMBER:	

Trow
TROW ENGINEERING
CONSULTANTS INC.

ConocoPhillips

TransCanada
in business to deliver

FIA # - CHAINAGE: MP 535.4 DISCIPLINE # 03

WHITE RIVER HDD INSTALLATION
KEYSTONE XL PROJECT
LYMAN COUNTY, SOUTH DAKOTA

SCALE AS SHOWN DRAWING No XL-03-ML-03-006 REV 0