Late Filed Exhibit T-28

Data Request:

Provide Pembina Gorge/River/Forrest crossing depth of HDD and/or diagram.

Response:

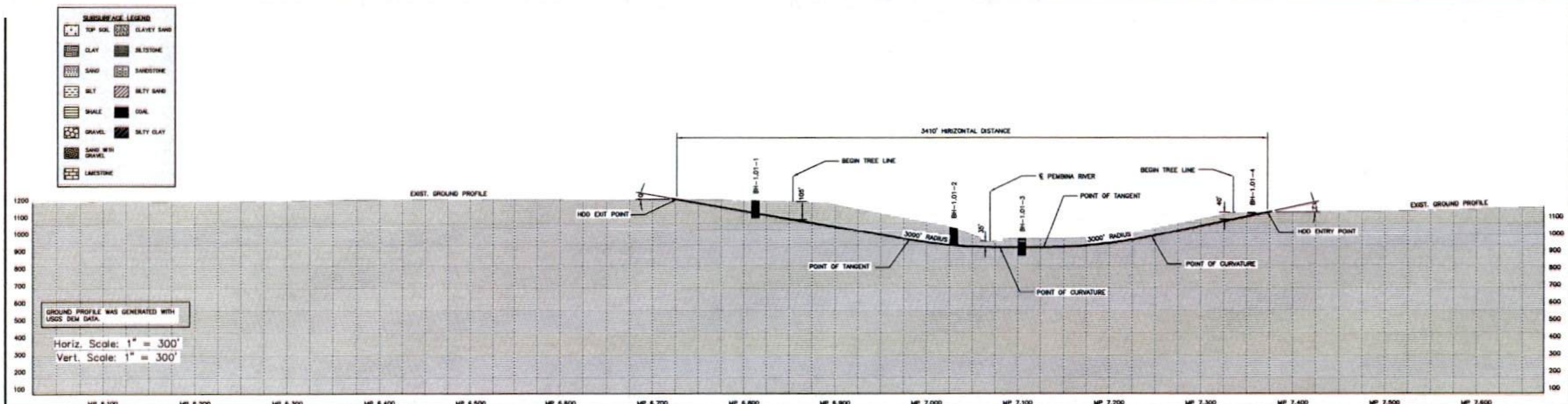
The proposed alignment of the Keystone pipeline project where it crosses the Pembina River in Pembina County just east of the Cavalier-Pembina county line. This area is east of the area generally considered to comprise the Pembina Gorge.

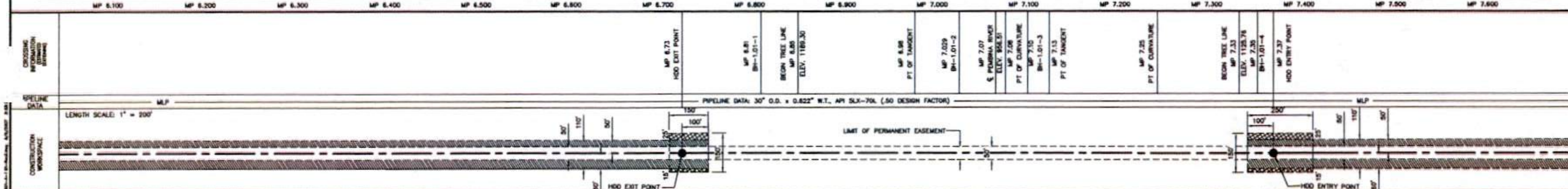
Attached is drawing no. K-38-P-6001-A-1.01 showing the preliminary profile for the proposed horizontal directional drill crossing of the Pembina River. In the profile of the drawing, there is depicted on the South side of the Pembina River "Begin Tree Line" and the depth of the pipe below the tree line is approximately 40 feet. Additionally, there is depicted on the North side of the Pembina River "Begin Tree Line" and the depth of the pipe below the tree line is approximately 105 feet. These points are the minimum distance from the top of the pipe to natural ground through the length of the drill except beneath the Pembina River bottom where the depth to the top of the pipe from the riverbed is 35 feet.

Response prepared by: L.A. Gray

INSTALLATION NOTES:

1. ACCESS: ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ROADS.
2. 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 AMOUNT NECESSARY TO STRING LOCATION WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
3. WATER SOURCE: DRILL WATER AND PRE-INSTALLATION HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
4. HYDROSTATIC TEST: PRE-INSTALLATION HYDROSTATIC TEST SHALL BE CONDUCTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING, A SIZING PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN AND THE CONSTRUCTION MITIGATION AND RECLAMATION PLAN.
6. 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.
7. PRIOR TO PIPE PULLBACK, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO KEYSTONE FOR APPROVAL.
8. 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 PULL BACK.
9. 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.
10. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.
11. GEOTECHNICAL DATA: BOREHOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY AND IS BASED ON PRELIMINARY BOREHOLE LOGS. CONTRACTOR SHALL UTILIZE IT'S OWN INTERPRETATION OF THIS FACTUAL BOREHOLE DATA OR DECIDE ON IT'S OWN INVESTIGATION OF SUBSURFACE CONDITIONS.





LEGEND:

- ENTRY OR EXIT POINT
- GEOTECHNICAL BOREHOLE
- MLP — MAINLINE PIPE
- KEYSTONE CENTERLINE
- WETLANDS
- WATER LEVEL
- TETRAULT WOODS STATE FOREST PROPERTY LINE

EASEMENT/WORKSPACE:

- PERMANENT EASEMENT
- TEMPORARY WORK SPACE
- ADDITIONAL TEMPORARY WORK SPACE

MITIGATION/RECLAMATION		
CLEAR AND GRADE METHOD		
TOPSOIL SALVAGE METHOD		
WATER CROSSING	STREAMS	
	WETLANDS	
STATIONS		
TEMPORARY EROSION CONTROL	EROSION CONTROL CODE	
	SLOPE BREAKER CODE	
PERMANENT EROSION CONTROL	EROSION CONTROL CODE	
	SLOPE BREAKER CODE	
RECLAMATION		
TIMING CONSTRAINTS		

TO BE DETERMINED

PRELIMINARY

MATERIAL SUMMARY

NO.	DESCRIPTION	QTY.

REFERENCE DRAWINGS

NO.	DESCRIPTION	DWG NO.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD	APPR
3	AUG 17 07	ISSUED FOR POST SOS FILING	AH	JG	RG
2	JUL 18 07	ISSUED FOR JULY 16, 2007 FOR USACOE FILING	EC	JG	RG
1	JUN 13 07	UPDATED BOREHOLE LOCATIONS	AH	JG	RG
0	FEB 23 07	PRELIMINARY DESIGN ISSUED CONSTRUCTION BID PACKAGE	HF	JG	RG

TROW PROJ. No.:	THES0050388E
DATE	Feb.21.2007
DESIGNED:	HF
DRAWN:	ALS
CHECKED:	JG
APPROVED:	RG

TransCanada
In business to deliver

KEYSTONE PIPELINE PROJECT

Trow Engineering Consultants Inc.
1300 Metropolitan Blvd. Suite 200
Tallahassee, Florida 32308
Phone: 1-850-385-5441
Fax: 1-850-385-5523
Trow

PEMBINA RIVER HDD INSTALLATION

30" KEYSTONE PIPELINE

PEMBINA COUNTY, NORTH DAKOTA

MP 7.1

SCALE	DRAWING No.:	REV.
AS NOTED	K-38-P-6001-A-1.01	3