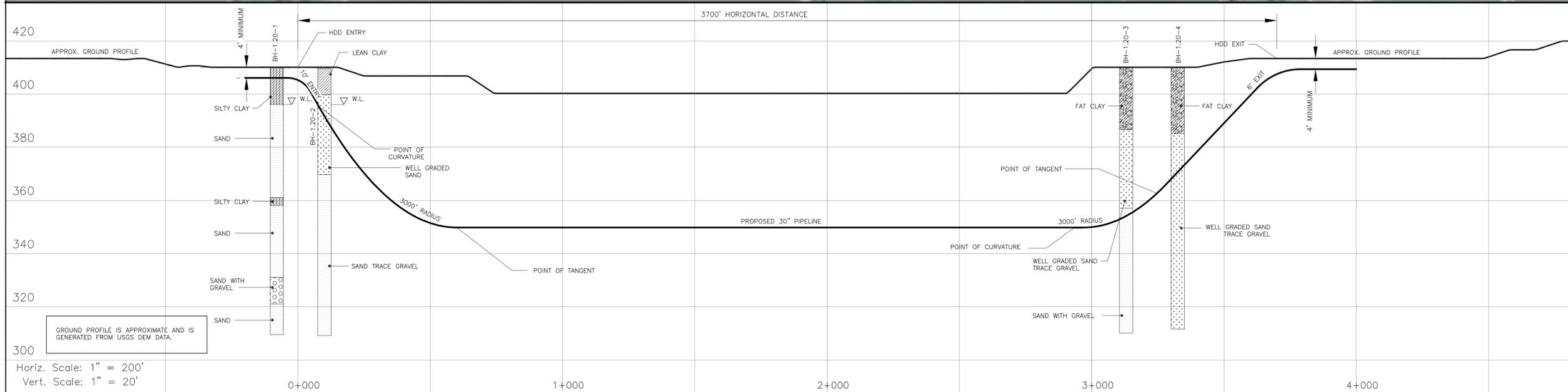




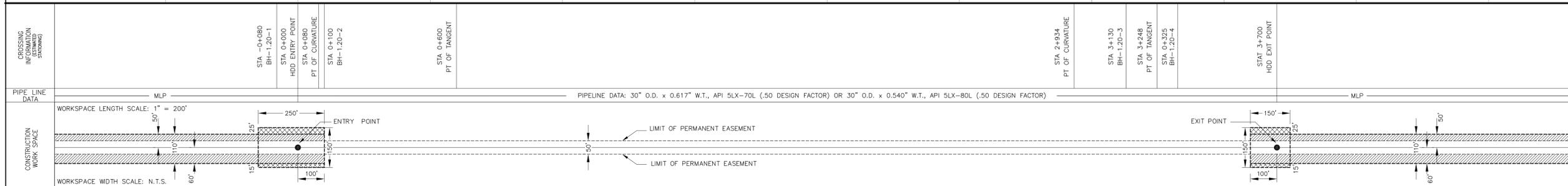
INSTALLATION NOTES:

- ACCESS: ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ROADS.
- 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).
- WATER SOURCE: DRILL WATER AND PRE-INSTALLATION HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
- 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.
- SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN AND THE CONSTRUCTION MITIGATION AND RECLAMATION PLAN.
- 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.
- PRIOR TO PIPE PULLBACK, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO KEYSTONE FOR APPROVAL.
- 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.
- 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 EXISTS 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.
- CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEED AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.
- 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 ITS OWN INTERPRETATION OF THIS FACTUAL BOREHOLE DATA OR DECIDE ON ITS OWN INVESTIGATION OF SUBSURFACE CONDITIONS.

Scale: 1" = 300'



Horiz. Scale: 1" = 200'
Vert. Scale: 1" = 20'



LEGEND:

- ENTRY OR EXIT POINT
- ⊗ GEOTECHNICAL BOREHOLE
- MLP MAINLINE PIPE
- WETLANDS
- 500FT-HI-246-1000 TYPICAL PROPERTY TRACT NO.
- TYPICAL PROPERTY LINES

EASEMENT/WORKSPACE:

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

TO BE DETERMINED

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

MATERIAL SUMMARY			REFERENCE DRAWINGS			REVISIONS					
NO.	DESCRIPTION	QTY.	NO.	DESCRIPTION	DWG. NO.	NO.	DATE	DESCRIPTION	BY	CHKD.	APPR.
0						0	NOV 15 06	PRELIMINARY DESIGN ISSUED FOR DOS SUPPLEMENTAL FILING	HF	JG	RG

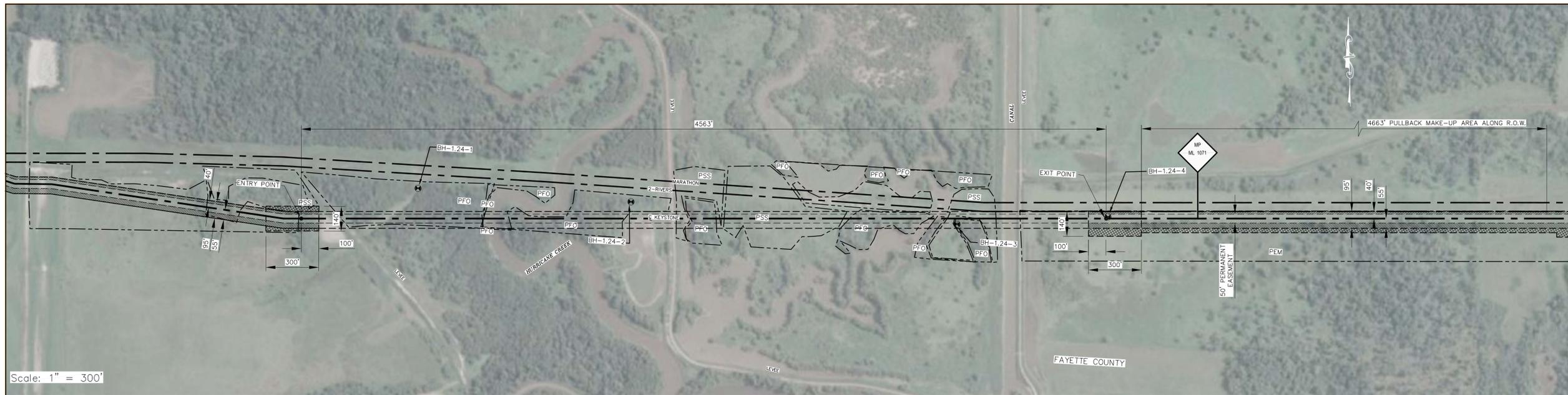
TROW PROJ. No.: THES0050388E
DATE: OCT.09.06
DESIGNED: HF
DRAWN: BK
CHECKED: JG
APPROVED: RG

TransCanada
In business to deliver
KEYSTONE PIPELINE PROJECT

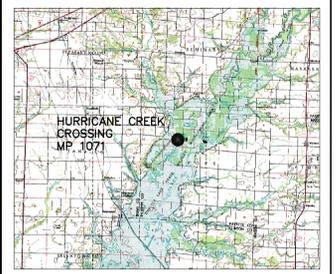
Trow Engineering Consultants Inc.
1300 Metropolitan Blvd, Suite 200
Tallahassee, Florida 32308
Phone: 1-850-385-5441
Fax: 1-850-385-5523

**MISSISSIPPI RIVER CROSSING
HDD INSTALLATION**
30" KEYSTONE PIPELINE
St. CHARLES COUNTY, MISSOURI
T47N-R8E, SEC. 9
MADISON COUNTY, ILLINOIS
T4N-R9W, SEC. 4
MP 1021

SCALE: AS NOTED
DRAWING No.: K-29-P-6001-A-1.20
REV. 1

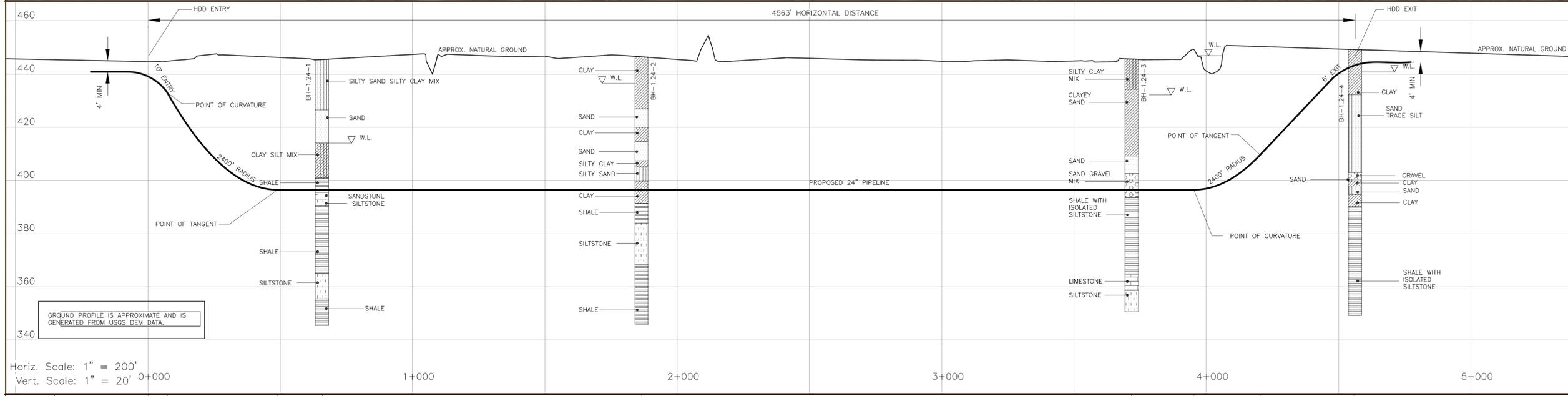


Scale: 1" = 300'



INSTALLATION NOTES:

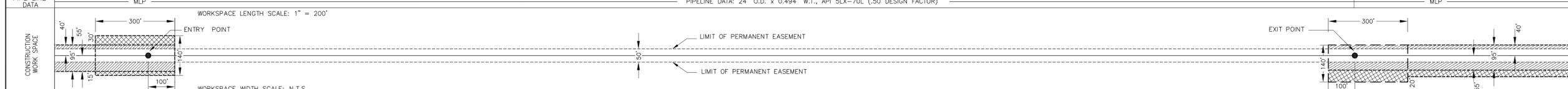
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Ground profile is approximate and is generated from USGS DEM data.

Horiz. Scale: 1" = 200'
Vert. Scale: 1" = 20'

CROSSING INFORMATION (AS SHOWN)	STA 0+000 HDD ENTRY POINT	STA 0+980 PT OF CURVATURE	STA 0+496 PT OF TANGENT	STA 1+658 BH-1.24-1	STA 1+665 BH-1.24-2	STA 3+718 BH-1.24-3	STA 3+400 PT OF CURVATURE	STA 3+651 PT OF TANGENT	STA 4+963 HDD EXIT POINT	STA 4+965 BH-1.24-4
PIPE LINE DATA	MLP PIPELINE DATA: 24" O.D. x 0.494" W.T., API 5LX-70L (.50 DESIGN FACTOR) MLP									



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														

- LEGEND:**
- ENTRY OR EXIT POINT
 - ⊗ GEOTECHNICAL BOREHOLE
 - MLP MAINLINE PIPE
 - WETLANDS
 - 500FT-RI-246-1000 TYPICAL PROPERTY TRACT NO.
 - TYPICAL PROPERTY LINES

- EASEMENT/WORKSPACE:**
- PERMANENT EASEMENT
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MATERIAL SUMMARY			REFERENCE DRAWINGS			REVISIONS					
NO.	DESCRIPTION	QTY.	NO.	DESCRIPTION	DWG. NO.	NO.	DATE	DESCRIPTION	BY	CHKD.	APPR.
0						0	NOV 15 06	PRELIMINARY DESIGN ISSUED FOR DOS SUPPLEMENTAL FILING	HF	JG	RG

DRAFT

TROW PROJ. No.: THES0050388E
DATE: OCT.09.06
DESIGNED: HF
DRAWN: BK
CHECKED: JG
APPROVED: RG

TransCanada
In business to deliver
KEYSTONE PIPELINE PROJECT

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1300 Metropolitan Blvd, Suite 200
Tallahassee, Florida 32308
Phone: 1-850-385-5441
Fax: 1-850-385-5523

**HURRICANE CREEK AT FAYETTE
HDD INSTALLATION**

**24" KEYSTONE PIPELINE
FAYETTE COUNTY ILLINOIS
T4N-R1W
MP 1071**

SCALE: AS NOTED
DRAWING No.: K-38-P-6001-A-1.24
REV. 1

