

**RIGHT-OF-WAY HORIZONTAL REPRESENTATION (2D)**  
 TRACT NUMBER  
 OWNERSHIP AGENCY  
 LENGTH APPLICABLE DWG. NO.

**LAND USE**

**PIPELINE PROFILE**  
 HORIZ: 1"=500' VER: 1"=100'  
 HORIZONTAL REPRESENTATION (2D)

**LEGEND**

- KEYSTONE PIPELINE
- STATE BOUNDARY
- COUNTY/TOWNSHIP
- SECTIONS
- NATIONAL OR STATE RESERVATION BOUNDARY
- PROPERTY LINE
- FENCE
- EXCLUSIONARY FENCE
- POWER LINE
- TELEPHONE LINE
- BURIED CABLE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER / DRAIN
- FOREIGN PIPELINE
- RAILROAD
- HIGHWAY / ROAD
- STREAM / DITCH
- WETLAND
- INTERSTATE ROUTE
- U.S. ROUTE
- STATE ROUTE
- POINT OF INTERSECTION (PI)
- PIPELINE MILEPOST
- DIRECTION OF FLOW
- HOUSE
- BUILDING
- WATER WELL
- MANLINE VALVE

**PIPELINE SCHEMATIC**

- HEAVY WALL PIPE
- WELD FITTING
- TRANSITION PIECE
- CASING PIPE
- CONCRETE COATING
- SET-ON WELDS
- PIPELINE WARNING SIGN
- PIPELINE MARKER
- MATERIAL ITEM
- GROUNDING MAT
- ZINC RIBBON
- AERIAL MARKER
- CATHODIC TEST STATION
- MAINLINE VALVE
- CHECK VALVE
- OPEN CUT
- BORE
- DRINKING WATER USA
- ECOLOGICAL USA
- HIGHLY POPULATED AREA
- OPERATOR (KEYSTONE) DEFINED
- OTHER POPULATED AREA
- SOURCE WATER PROTECTION AREA
- WELLHEAD PROTECTION AREA

**ENVIRONMENTAL MITIGATION/RECLAMATION STATIONS (2D)**

TOPSOIL SALVAGE METHOD

STREAMS

WETLANDS

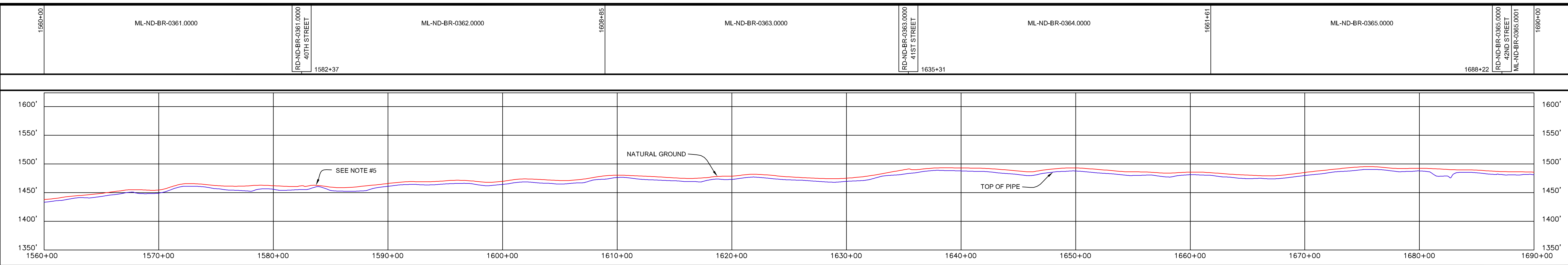
TIMING CONSTRAINTS

**STATIONS**

MONITORING

RECLAMATION

SPECIAL CONSIDERATIONS



**DISCLAIMER**  
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- GENERAL NOTES**
- 1) ALL CHAINAGES ARE IN FEET UNLESS OTHERWISE SPECIFIED.
  - 2) DATUM ELEVATION AND PROJECTION ARE BASED ON MEAN SEA LEVEL AND NAD 83.
  - 3) FIELD PIPE LOCATING REQUIRED TO DETERMINE PLACEMENT OF PIPELINE WITHIN PERMANENT EASEMENT.
  - 4) UNLESS OTHERWISE NOTED, 48 INCHES MINIMUM COVER EXCEPT 36 INCHES IN AREAS OF CONSOLIDATED ROCK.
  - 5) NO ACTUAL AS-BUILT GROUND SHOTS WERE TAKEN AT THIS LOCATION. THE PROFILE REPRESENTS A PROJECTION FROM SHOTS TAKEN AT 150' TO 250' INTERVALS.
  - 6) THE TYPE OF COATING APPLIED TO THE FIELD WELDS DURING THE ORIGINAL CONSTRUCTION WAS TWO COMPONENT LIQUID EPOXY. THE COATING PRODUCTS USED WERE DENSOL 7200 OR SPC SP-2888.
  - 7) THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALPER PIG RUN, WAS SEPTEMBER 23, 2009 FOR M.P. 114.00 TO M.P. 130.00, AUGUST 05, 2009 FOR M.P. 129.90 TO M.P. 168.72 AND AUGUST 07, 2009 M.P. 168.73 TO M.P. 168.68.
  - 8) ORIGINAL IN-SERVICE DATE OF THE KEYSTONE PIPELINE (PHASE 1): JUNE 30, 2010.
  - 9) CPS CALCULATION DATE: MAY 2010.
  - 10) ORION STATION SERIES NUMBER: 1182700.
  - 11) TO DETERMINE THE MILE POST AT A GIVEN LOCATION, ADD THE 3D STATION NUMBER FROM THIS SEGMENT TO STATION NUMBER 6528+28 AND DIVIDE BY 5280.

**OPERATING AND TEST PRESSURE**

1. THE MAXIMUM OPERATING PRESSURE (MOP) IS 1440 PSIG.
2. THE MINIMUM TEST PRESSURE WAS 1601 PSIG.

**BILL OF MATERIALS (3D)**

ITEM NO.	DESCRIPTION	QUANTITY
2	30" O.D. X 0.386" W.T. API 5LX-70 W/FBE COATING	12,778'
3	30" O.D. X 0.516" W.T. API 5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	236'

PIPELINE MARKERS 0 EA  
 PIPELINE WARNING SIGNS 3 EA  
 CATHODIC TEST STATION 4 EA  
 AERIAL MARKER 1 EA

**REFERENCE DRAWINGS**

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE

**REVISIONS**

NO.	DATE	REV. BY	CHK. BY	APP. BY	REV. DATE	DESCRIPTION
1	5/17/08	UEI	RDG	LAC	SEC	ISSUE FOR CONSTRUCTION
2	10/17/09	UEI				ISSUED FOR AS-BUILT 1830-03-ML-02-013 REPLACES COVERAGE OF IFC DRAWINGS 1830-03-ML-02-020 1830-03-ML-02-021 1830-03-ML-02-022

**ENGINEERING RECORDS**

DRAWN BY	INITIAL	DATE	ENY. APPRD.	INITIAL	DATE
UEI		10/01/18			

CHECKED BY: [Signature] APPRD BY: [Signature] COMPANY APPROVED: [Signature]

**PROFESSIONAL ENGINEER**

NAME	STATE	LIC#	REV#	DATE
LOYS A. GRAY, III	ND	PE5714		

**SCALE:** 0 125 250 500 Feet

**TransCanada**  
*In business to deliver*

KEYSTONE MAINLINE (NPS 30 2008) LUVERNE SECTION

SCALE: 1830 SPREAD 2A DISCIPLINE 03

**AS-BUILT ALIGNMENT**

M.P. 153.21 TO M.P. 155.68  
 SHEET 13 OF 20 SHEETS  
 STA. 1561+49 TO STA. 1691+63 (3D)

DRAWING NO. 1830-03-ML-02-013 REV. 2

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