RIGHT-OF-WAY HORIZONTAL REPRESENTATION (2D)

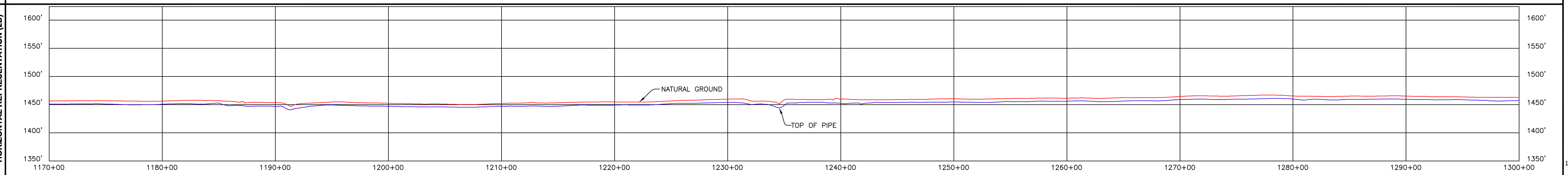
TRACT NUMBER / OWNERSHIP/AGENCY / LENGTH / APPLICABLE DWG. NO.

Station	Tract
1170+00	ML-SD-CK-0641.0000
1187+02	RD-SD-CK-0641.0000 166TH STREET
	ML-SD-CK-0642.0000
1206+55	ML-SD-CK-0642.0001
1212+70	ML-SD-CK-0643.0000
1239+58	RD-SD-CK-0643.0000 167TH STREET
	ML-SD-CK-0644.0000
1262+74	ML-SD-CK-0645.0000
1271+00	ML-SD-CK-0646.0000
1297+74	RD-SD-CK-0646.0000 168TH STREET
	ML-SD-CK-0647.0000
1300+00	

LAND USE

PIPELINE PROFILE

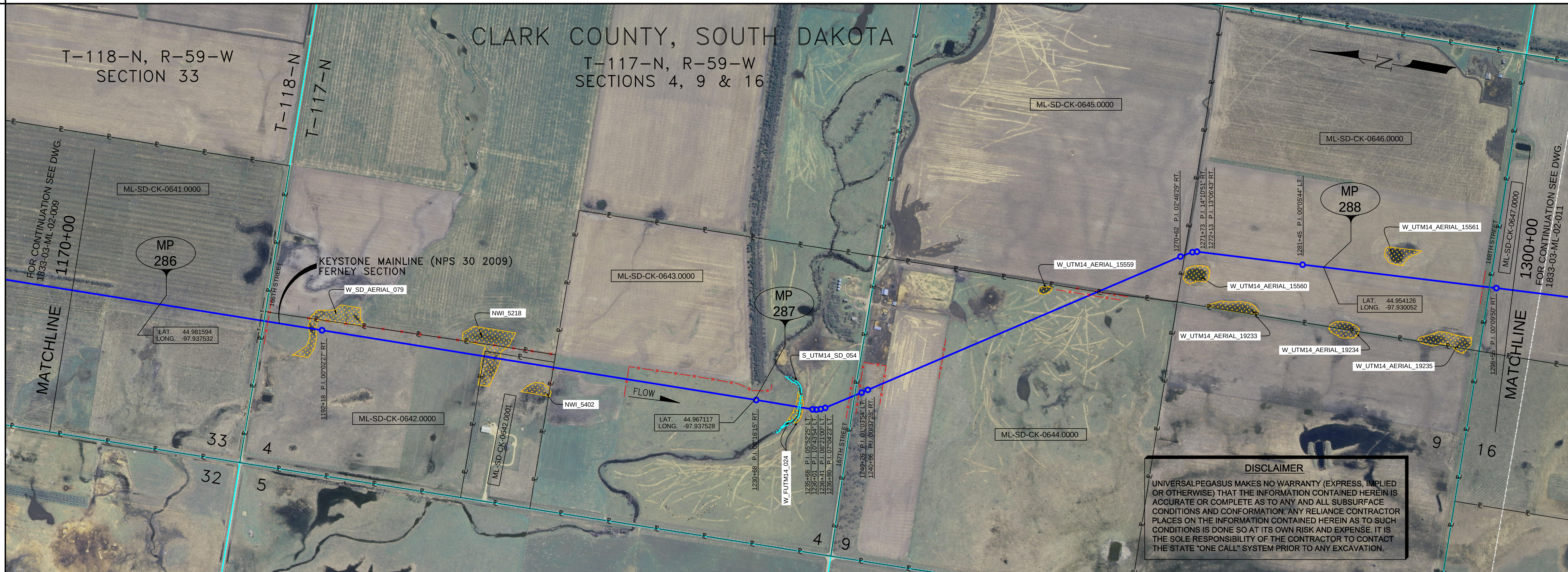
HORIZ: 1"=500' VER: 1"=100'
HORIZONTAL REPRESENTATION (2D)



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
MAINLINE VALVE
ML-XX-XX-0000.0000 TRACT NUMBER

PIPELINE PLAN (SCALE 1" = 500')HORIZONTAL REPRESENTATION (2D)



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PIPELINE SCHEMATIC

HEAVYWALL PIPE
WELD FITTING
TRANSITION PIECE
CASING PIPE
CONCRETE COATING
SET-ON WEIGHTS
PIPELINE WARNING SIGN
PIPELINE MARKER
MATERIAL ITEM
GROUNDING MAT
ZINC RIBBON
AERIAL MARKER
CATHODIC TEST STATION
MAINLINE VALVE
CHECK VALVE
O.C. OPEN CUT
BR. BORE

STATION/DESCRIPTION

PIPELINE DATA
D DRINKING WATER USA
E ECOLOGICAL USA
H HIGHLY POPULATED AREA
K OPERATOR (KEYSTONE) DEFINED
O OTHER POPULATED AREA
S SOURCE WATER PROTECTION AREA
W WELLHEAD PROTECTION AREA

HORIZONTAL STATIONS (2D)

1170+00 MATCHLINE
1186+73 TELEPHONE LINE
1186+92 EDGE OF ROAD
1187+02 CL 166TH STREET
1187+11 EDGE OF ROAD
1187+38 FENCE (HOG WIRE)
1191+04 BEGIN SLOUGH
1191+47 CL SLOUGH
1191+73 END SLOUGH
1192+18 P.I. 00°02'27" RT.
1212+71 FENCE (BARBED WIRE)
1219+22 FENCE (BARBED WIRE)
1230+68 P.I. 00°16'15" RT.
1234+34 WATER EDGE
1234+55 CL CREEK
1234+73 WATER EDGE
1235+68 P.I. 05°52'25" LT.
1236+01 P.I. 10°43'54" LT.
1236+41 P.I. 08°21'00" LT.
1236+80 P.I. 07°04'23" LT.
1239+11 FENCE (BARBED WIRE)
1239+47 EDGE OF ROAD
1239+58 CL 167TH STREET
1239+71 EDGE OF ROAD
1240+02 FENCE (BARBED WIRE)
1240+26 P.I. 01°03'54" LT.
1240+86 P.I. 00°37'23" RT.
1242+35 FENCE (BARBED WIRE)
1247+55 FENCE (BARBED WIRE)
1262+01 FENCE (BARBED WIRE)
1262+75 FENCE (HOG WIRE)
1270+62 P.I. 02°46'29" RT.
1271+73 P.I. 14°10'51" RT.
1272+13 P.I. 13°06'43" RT.
1281+45 P.I. 00°05'44" LT.
1297+35 FENCE (BARBED WIRE)
1297+61 EDGE OF ROAD
1297+74 CL 168TH STREET
1297+88 EDGE OF ROAD
1297+96 FENCE (BARBED WIRE)
1298+55 P.I. 00°09'50" RT.
1300+00 MATCHLINE

SLOPE STATIONS (3D)

1170+84 MATCHLINE
1178+64 M.P. 286
1187+57 TELEPHONE LINE 5.3' CVR. 3.0' CLR. (ABOVE)
1187+76 EDGE OF ROAD
1187+85 CL 166TH STREET
1187+95 EDGE OF ROAD
1188+21 FENCE (HOG WIRE)
1191+89 BEGIN SLOUGH
1192+32 CL SLOUGH
1192+57 END SLOUGH
1193+02 P.I. 00°02'27" RT.
1213+56 FENCE (BARBED WIRE)
1220+08 FENCE (BARBED WIRE)
1231+44 M.P. 287
1231+54 P.I. 00°16'15" RT.
1235+21 WATER EDGE
1235+42 CL CREEK
1235+60 WATER EDGE
1236+56 P.I. 05°52'25" LT.
1236+89 P.I. 10°43'54" LT.
1237+29 P.I. 08°21'00" LT.
1237+68 P.I. 07°04'23" LT.
1239+99 FENCE (BARBED WIRE)
1240+35 EDGE OF ROAD
1240+46 CL 167TH STREET
1240+60 EDGE OF ROAD
1240+90 FENCE (BARBED WIRE)
1241+15 P.I. 01°03'54" LT.
1241+74 P.I. 00°37'23" RT.
1243+24 FENCE (BARBED WIRE)
1248+44 FENCE (BARBED WIRE)
1260+91 5.2' CVR.
1262+90 FENCE (BARBED WIRE)
1262+90 5.5' CVR.
1263+64 FENCE (HOG WIRE)
1271+52 P.I. 02°46'29" RT.
1272+63 P.I. 14°10'51" RT.
1273+03 P.I. 13°06'43" RT.
1282+36 P.I. 00°05'44" LT.
1284+24 M.P. 288
1298+27 FENCE (BARBED WIRE)
1298+52 EDGE OF ROAD
1298+65 CL 168TH STREET
1298+79 EDGE OF ROAD
1298+86 6.9' CVR.
1298+87 FENCE (BARBED WIRE)
1299+46 P.I. 00°09'50" RT.
1300+91 MATCHLINE

PIPE SLOPE REPRESENTATION (3D)

From	To	Item	Length / Coating
1170+84	1187+49	2	1,665' FBE
1187+49	1188+23	3	74' FBE & ARO BR.
1188+23	1239+86	2	5,163' FBE
1239+86	1241+05	3	119' FBE & ARO BR.
1241+05	1298+46	2	5,741' FBE
1298+46	1299+26	3	80' FBE & ARO O.C.
1299+26	1300+91	2	165' FBE

Marker stations: 1213+57, 1220+07, 1248+43, 1263+65

CPS (3D)

TEST SECTIONS (3D): TEST SECTION 3B-1 ILTO-025-2010

ENVIRONMENTAL MITIGATION/RECLAMATION STATIONS (2D)

TOPSOIL SALVAGE METHOD
STREAMS
WETLANDS
TIMING CONSTRAINTS
STATIONS
MONITORING
RECLAMATION
SPECIAL CONSIDERATIONS

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 DENSO 7200 OR SPC SP-2888.
7) THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALIPER PIG RUN, WAS OCTOBER 08, 2009 FOR M.P. 259.21 TO M.P. 301.75 AND OCTOBER 10, 2009 FOR M.P. 301.75 TO M.P. 343.98.
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 13922+16 AND DIVIDE BY 5280.

OPERATING AND TEST PRESSURE

1. THE MAXIMUM OPERATING PRESSURE (MOP) IS 1440 PSIG.
2. THE MINIMUM TEST PRESSURE WAS 1801 PSIG.

BILL OF MATERIALS (3D)

ITEM NO.	DESCRIPTION	QUANTITY
2	30" O.D. X 0.386" W.T., API -5LX-70 W/FBE COATING	12,734'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	273'
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	10 EA
	CATHODIC TEST STATION	3 EA
	AERIAL MARKER	0 EA

REFERENCE DRAWINGS

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

REVISIONS

NO.	DATE	REV. BY	CHCK. BY	APPRD. BY	ENV. APPRD.	DESCRIPTION
1	5/12/08	UEI	RDG	LAG	SEC	ISSUED FOR CONSTRUCTION
2	10/12/08	UEI				ISSUED FOR AS-BUILT 1833-03-ML-02-010 REPLACES COVERAGE OF IFC DRAWINGS 1833-03-ML-02-015, 1833-03-ML-02-016, 1833-03-ML-02-017

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/02/08	ENV. APPRD.		
CHECKED BY			APPRD. BY		
			COMPANY APPROVED		

PROFESSIONAL ENGINEER

NAME	STATE	LIC#	REV#	DATE
LOYS ALVIN GRAY, III	SD	CE9004		

SCALE: 0 125 250 500 Feet

TransCanada
In business to deliver

UNIVERSAL ENSCO, INC.

KEYSTONE MAINLINE (NPS 30 2009) FERNEY SECTION

FIA# 1833 | SPREAD 3B | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 285.85 TO M.P. 288.32

SHEET 10 OF 20 SHEETS

STA. 1170+84 TO STA. 1300+91 (3D)

DRAWING NO. 1833-03-ML-02-010 REV. 2