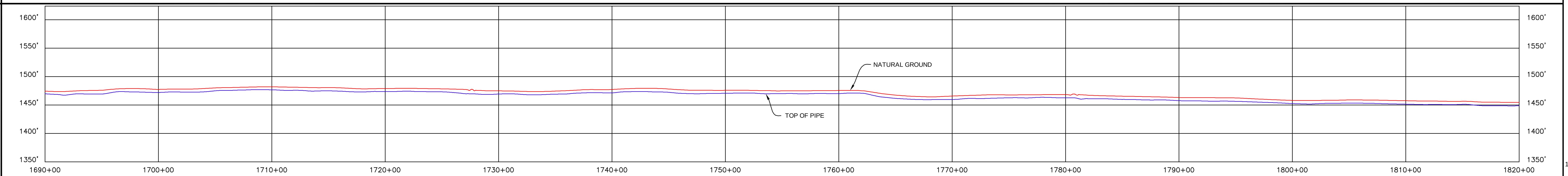
RIGHT-OF-WAY
HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

Station	Tract
1690+00	ML-SD-CK-0664.0000
1701+19	ML-SD-CK-0665.0000
1727+55	RD-SD-CK-0665.0000 176TH STREET
	ML-SD-CK-0666.0000
1754+14	ML-SD-CK-0667.0000
1780+62	RD-SD-CK-0667.0000 COUNTY ROAD 48 (177TH STREET)
	ML-SD-CK-0668.0000
1807+61	ML-SD-CK-0669.0000
1820+00	

LAND USE

PIPELINE PROFILE

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



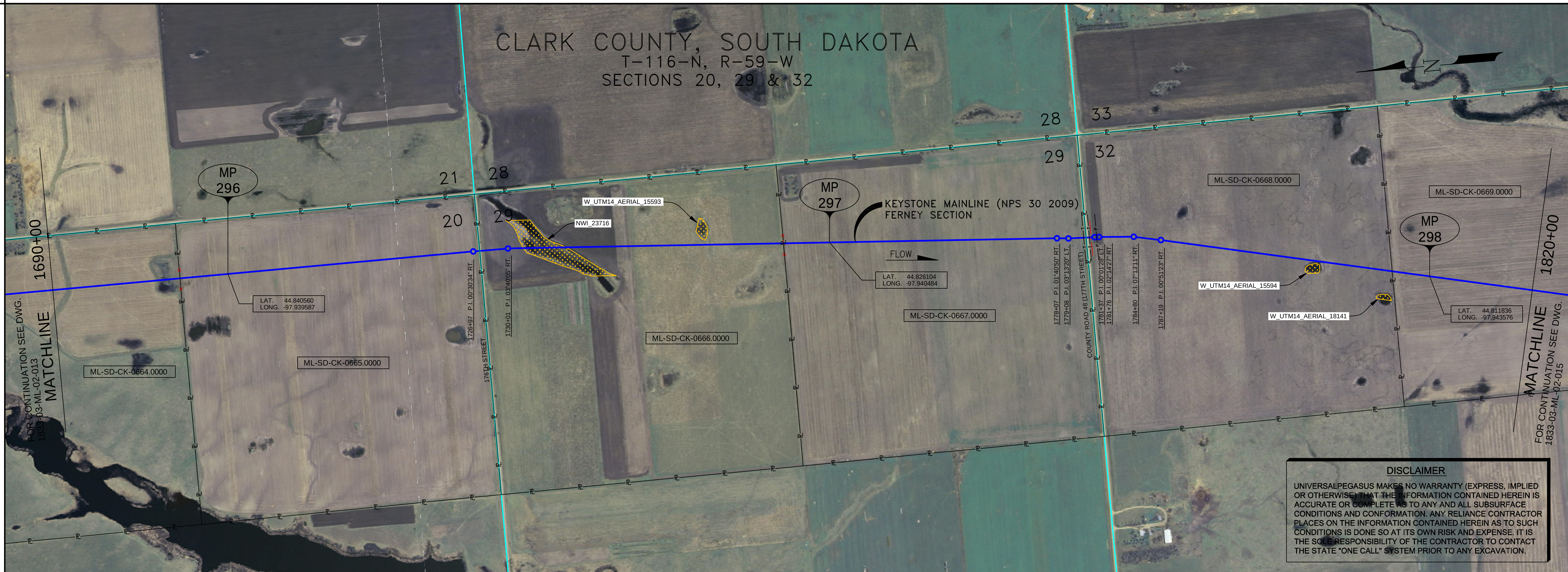
GENERAL NOTES

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.

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)



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	12,817'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	191'
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	6 EA
	CATHODIC TEST STATION	2 EA
	AERIAL MARKER	0 EA

REFERENCE DRAWINGS

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

PIPELINE SCHEMATIC

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

PIPELINE DATA — STATION/DESCRIPTION

HORIZONTAL STATIONS (2D)

Station	Description
1690+00	MATCHLINE
1701+19	FENCE (BARBED WIRE)
1726+97	P.I. 00°30'34" RT.
1727+46	EDGE OF ROAD
1727+55	CL 176TH STREET
1727+62	EDGE OF ROAD
1730+01	P.I. 03°40'05" RT.
1754+14	FENCE (BARBED WIRE)
1778+07	P.I. 01°40'50" RT.
1779+08	P.I. 03°13'20" LT.
1780+42	TELEPHONE LINE
1780+51	EDGE OF ROAD
1780+62	CL COUNTY ROAD 48 (177TH STREET)
1780+72	EDGE OF ROAD
1780+91	TELEPHONE LINE
1781+06	FENCE (BARBED WIRE)
1781+37	P.I. 00°01'28" LT.
1781+55	UNDERGROUND POWERLINE
1781+76	P.I. 02°14'27" RT.
1784+80	P.I. 07°13'11" RT.
1787+19	P.I. 00°51'23" RT.
1820+00	MATCHLINE

SLOPE STATIONS (3D)

Station	Description
1691+20	MATCHLINE
1692+54	5.8' CVR.
1702+40	FENCE (BARBED WIRE)
1706+64	M.P. 296
1707+45	5.0' CVR.
1728+19	P.I. 00°30'34" RT.
1728+44	7.1' CVR.
1728+68	EDGE OF ROAD
1728+77	CL 176TH STREET
1728+85	EDGE OF ROAD
1731+24	P.I. 03°40'05" RT.
1737+80	5.2' CVR.
1748+08	5.9' CVR.
1755+35	5.2' CVR.
1755+37	FENCE (BARBED WIRE)
1759+44	M.P. 297
1779+32	P.I. 01°40'50" RT.
1780+33	P.I. 03°13'20" LT.
1781+67	TELEPHONE LINE 5.6' CVR. 3.0' CLR. (ABOVE)
1781+76	EDGE OF ROAD 6.6' CVR.
1781+77	CL COUNTY ROAD 48 (177TH STREET)
1781+87	EDGE OF ROAD
1781+97	TELEPHONE LINE 5.0' CVR. 3.5' CLR. (ABOVE)
1782+16	
1782+31	FENCE (BARBED WIRE)
1782+62	P.I. 00°01'28" LT.
1782+80	UNDERGROUND POWERLINE 5.5' CVR. 1.5' CLR. (ABOVE)
1783+02	P.I. 02°14'27" RT.
1784+81	5.0' CVR.
1786+05	P.I. 07°13'11" RT.
1788+45	P.I. 00°51'23" RT.
1793+79	6.1' CVR.
1800+18	5.2' CVR.
1812+24	M.P. 298
1819+12	6.2' CVR.
1821+28	MATCHLINE

PIPE SLOPE REPRESENTATION (3D)

Station	Item
1691+20	
1702+41	
	(2) 3,716' FBE
1728+36	
	(3) 80' FBE & ARO BR.
1729+16	
1732+81	(20)
1735+64	
1775+35	
	(2) 5,216' FBE
1781+32	
	(3) 111' FBE & ARO BR.
1782+43	
	(2) 3,885' FBE
1821+28	

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

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-02-014 REPLACES COVERAGE OF IFC DRAWINGS 1833-03-ML-02-022, 1833-03-ML-02-023

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. 295.71 TO M.P. 298.17

SHEET 14 OF 20 SHEETS

STA. 1691+20 TO STA. 1821+28 (3D)

DRAWING NO. 1833-03-ML-02-014 REV. 2