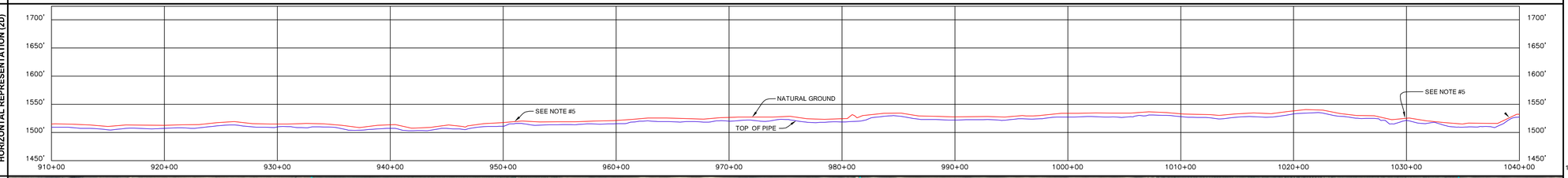
RIGHT-OF-WAY HORIZONTAL REPRESENTATION (2D)	910+00	ML-ND-NL-0226.0000	RD-ND-NL-0226.0000 16TH STREET NE	932+15	ML-ND-ST-0227.0000	944+18	ML-ND-ST-0228.0000	956+55	ML-ND-ST-0229.0000	RD-ND-ST-0229.0000 COUNTY ROAD 7 (17TH STREET NE)	980+90	ML-ND-ST-0230.0000	1007+48	ML-ND-ST-0231.0000	1035+51	RD-ND-ST-0231.0000 16TH STREET NE	ML-ND-ST-0232.0000	1040+00
TRACT NUMBER / OWNERSHIP/AGENCY / LENGTH / APPLICABLE DWG. NO.																		
LAND USE																		

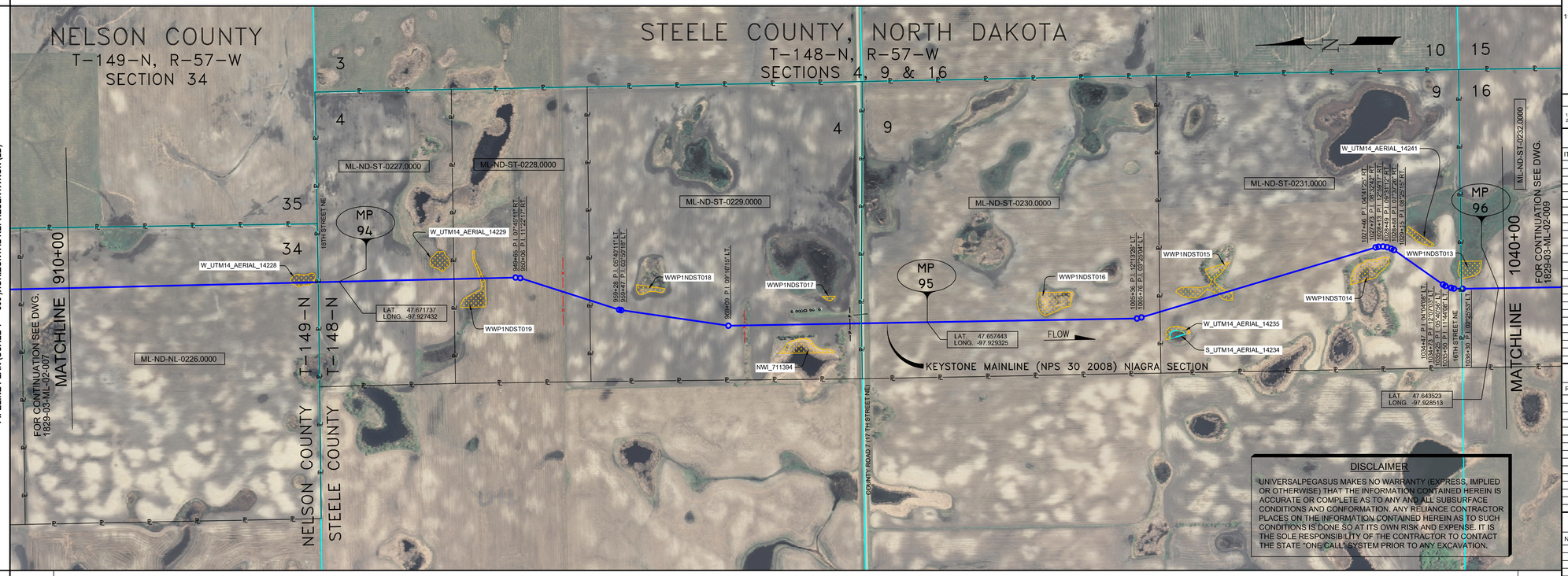
PIPELINE PROFILE — HORIZ. 1"=500' VER. 1"=100' HORIZONTAL REPRESENTATION (2D)



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
- 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
- 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 WELL-HEAD PROTECTION AREA

HORIZONTAL STATIONS (2D): MATCHLINE 910+00; 932+05 EDGE OF ROAD; 932+15 CL 16TH STREET NE; 932+25 EDGE OF ROAD; 946+41 BEGIN SLOUGH; 946+62 CL SLOUGH; 946+83 END SLOUGH; 960+46 P.I. 07°45'11" RT.; 960+46 P.I. 11°22'17" RT.; 964+06 FENCE; 969+29 P.I. 05°40'11" LT.; 969+47 P.I. 09°56'16" LT.; 969+69 P.I. 09°16'15" LT.; 970+49 FENCE (BARBED WIRE); 979+89 OVERHEAD POWERLINE; 980+77 EDGE OF ROAD; 980+90 (COUNTY ROAD 7 (17TH STREET NE)); 981+03 EDGE OF ROAD; 996+39 BEGIN SLOUGH; 996+63 CL SLOUGH; 997+83 END SLOUGH; 1005+36 P.I. 12°13'26" LT.; 1005+76 P.I. 03°23'54" LT.; 1012+63 BEGIN SLOUGH; 1013+43 CL SLOUGH; 1014+50 END SLOUGH; 1027+46 P.I. 04°41'22" RT.; 1028+22 P.I. 06°44'54" RT.; 1028+94 P.I. 12°09'17" RT.; 1029+31 P.I. 09°31'12" RT.; 1029+68 P.I. 05°25'15" RT.; 1029+97 P.I. 08°25'15" RT.; 1034+47 P.I. 04°04'06" LT.; 1034+73 P.I. 12°20'53" LT.; 1035+26 P.I. 05°40'56" LT.; 1035+40 EDGE OF ROAD; 1035+50 P.I. 11°14'06" LT.; 1035+51 CL 16TH STREET NE; 1035+62 EDGE OF ROAD; 1036+30 P.I. 02°25'53" LT.; MATCHLINE 1040+00

SLOPE STATIONS (3D): MATCHLINE 910+71; 917+32 6.2' CVR.; 931+65 4.7' CVR.; 932+79 EDGE OF ROAD; 932+95 CL 16TH STREET NE; 932+99 EDGE OF ROAD; 933+28 7.4' CVR.; 934+74 M.P. 94; 938+02 4.9' CVR.; 941+18 7.0' CVR.; 947+15 BEGIN SLOUGH; 947+32 CL SLOUGH; 947+49 END SLOUGH; 960+46 P.I. 07°45'11" RT.; 960+46 P.I. 11°22'17" RT.; 964+81 FENCE; 969+29 P.I. 05°40'11" LT.; 969+47 P.I. 09°56'16" LT.; 962+05 4.5' CVR.; 969+69 P.I. 09°16'15" LT.; 971+26 FENCE (BARBED WIRE); 971+60 6.4' CVR.; 980+46 OVERHEAD POWERLINE, HT. = 30'; 981+35 EDGE OF ROAD; 981+65 (COUNTY ROAD 7 (17TH STREET NE)); 981+81 EDGE OF ROAD; 982+42 9.1' CVR.; 984+49 5.3' CVR.; 987+94 M.P. 95; 997+14 BEGIN SLOUGH; 997+32 CL SLOUGH; 998+42 END SLOUGH; 1004+80 6.7' CVR.; 1006+15 P.I. 12°13'26" LT.; 1006+35 P.I. 03°23'54" LT.; 1009+53 5.1' CVR.; 1013+42 BEGIN SLOUGH; 1013+62 CL SLOUGH; 1014+23 CL SLOUGH; 1015+30 END SLOUGH; 1027+94 4.7' CVR.; 1028+22 P.I. 04°41'22" RT.; 1028+27 P.I. 06°44'54" RT.; 1028+94 P.I. 12°09'17" RT.; 1029+31 P.I. 09°31'12" RT.; 1029+68 P.I. 05°25'15" RT.; 1029+97 P.I. 08°25'15" RT.; 1035+30 P.I. 04°04'06" LT.; 1035+40 EDGE OF ROAD; 1035+50 P.I. 11°14'06" LT.; 1036+23 EDGE OF ROAD; 1036+35 CL 16TH STREET NE; 1036+45 EDGE OF ROAD; 1036+50 P.I. 02°25'53" LT.; 1037+37 5.7' CVR.; 1040+34 M.P. 96; MATCHLINE 1040+83

PIPE SLOPE REPRESENTATION (3D): 910+71; ② 2,179' FBE; 932+50; ③ 78' FBE & ARO O.C.; 933+28; 947+10; 947+58; ② 4,780' FBE; 971+32; 981+08; ③ 119' FBE & ARO BR.; 982+27; 1004; ② 5,390' FBE; 1013+31; 1015+10; 1036+17; ③ 81' FBE & ARO O.C.; 1036+98; ② 385' FBE; 1040+83

CPS (3D)

TEST SECTIONS (3D): TEST SECTION 1A-5 ILTO-020-2010; 945+20; TEST SECTION 1A-5 ILTO-021-2010

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 AUGUST 16, 2009 FOR M.P. 66.90 TO M.P. 88.54, SEPTEMBER 16, 2009 FOR M.P. 88.54 TO M.P. 114.00 AND SEPTEMBER 23, 2009 FOR M.P. 114.00 TO M.P. 130.00.

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 4028+46 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	278'
	PIPELINE MARKERS	4 EA
	PIPELINE WARNING SIGNS	6 EA
	CATHODIC TEST STATION	3 EA
	AERIAL MARKER	1 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	10/11/23	UEI				ISSUED FOR AS-BUILT 1829-03-ML-02-008 REPLACES COVERAGE OF IFC DRAWINGS, 1829-03-ML-02-012, 1829-03-ML-02-013, 1829-03-ML-02-014

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/01/11	ENV. APPRD.		
CHECKED BY			APPRD. BY		
			COMPANY APPROVED		

PROFESSIONAL ENGINEER

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

SCALE: 0 125 250 500 Feet

TransCanada — In business to deliver

UNIVERSAL

KEYSTONE MAINLINE (NPS 30 2008) NIAGRA SECTION

FIA# 1829 | SPREAD 1A | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 93.54 TO M.P. 96.01

SHEET 8 OF 20 SHEETS

STA. 910+71 TO STA. 1040+83 (3D)

DRAWING NO. 1829-03-ML-02-008 REV. 2

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