RIGHT-OF-WAY HORIZONTAL REPRESENTATION (2D)

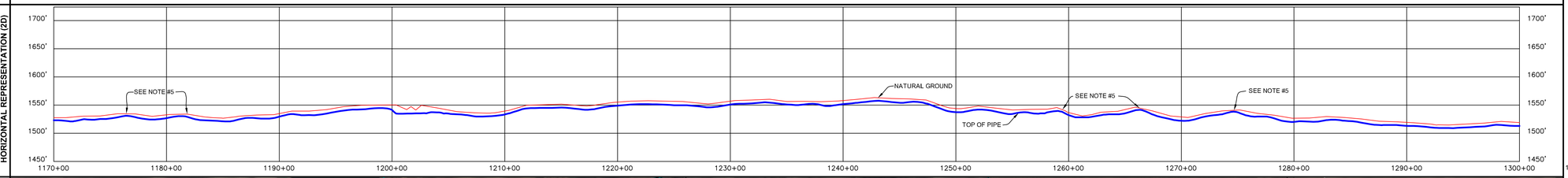
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

1170+00 | ML-ND-ST-0237.0000 | 1175+20 | ML-ND-ST-0238.0000 | 1200+69 | RD-ND-ST-0206.0000 STATE HIGHWAY 32 (13TH STREET) | 1202+69 | ML-ND-ST-0239.0000 | 1230+16 | ML-ND-ST-0240.0000 | 1231+92 | ML-ND-ST-0240.0001 | RD-ND-ST-0246.0001 12TH STREET NE | 1258+95 | ML-ND-ST-0241.0000 | 1289+04 | ML-ND-ST-0242.0000 | 1300+00

LAND USE

PIPELINE PROFILE

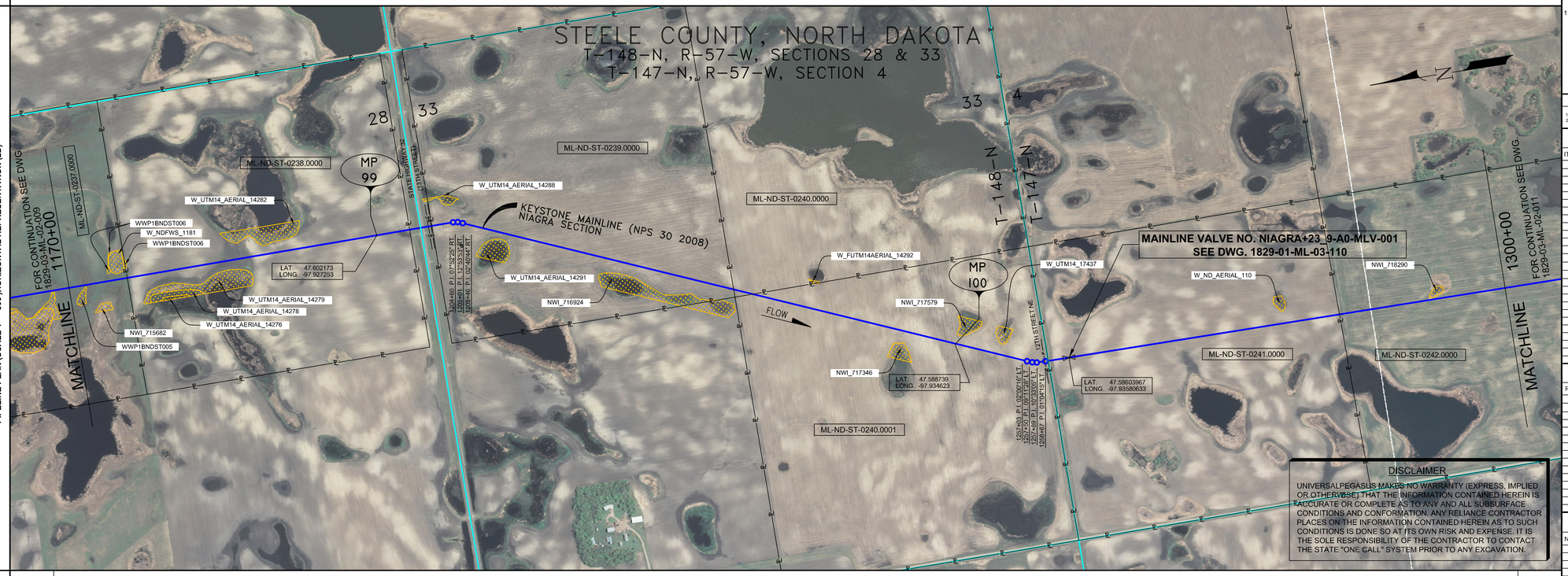
HORIZ. 1"=500' VER. 1"=100'
HORIZONTAL REPRESENTATION (2D)



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)



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
- (ZR) 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 WELLHEAD PROTECTION AREA

STATION/DESCRIPTION

HORIZONTAL STATIONS (2D)

MATCHLINE 1170+00
1201+24 ROAD BAR DITCH
1201+26 EDGE OF ROAD
1201+49 RD-ND-ST-0206.0000 STATE HIGHWAY 32 (13TH STREET)
1201+65 EDGE OF ROAD
1203+12 ROAD BAR DITCH
1202+36 FIBER OPTIC CABLE
1202+62 TELEPHONE LINE
1204+69 P.I. 07°52'25" RT.
1205+01 P.I. 12°55'53" RT.
1205+46 P.I. 02°40'44" RT.
1219+11 6.8' CVR.
1239+08 P.I. 02°00'16" LT.
1239+56 P.I. 09°11'28" LT.
1239+96 P.I. 10°33'00" LT.
1239+55 ROAD BAR DITCH
1239+65 OVERHEAD POWERLINE
1239+77 P.I. 01°34'15" LT.
1239+94 EDGE OF ROAD
1239+95 ROAD BAR DITCH
1239+96 EDGE OF ROAD
1240+13 EDGE OF ROAD
1240+17 EDGE OF ROAD
1240+19 END ROCK DITCH
1260+89 NIAGRA+23_9-A0-MLV-001
1293+42 BEGIN SLOUGH
1293+72 CS SLOUGH
1293+89 END SLOUGH
MATCHLINE 1300+00

SLOPE STATIONS (3D)

MATCHLINE 1170+97
1176+66 6.3' CVR.
1182+94 5.0' CVR.
1193+65 7.1' CVR.
1198+74 M.P. 99
1201+37 15.2' CVR.
1202+29 ROAD BAR DITCH.
1202+54 EDGE OF ROAD
1202+69 RD-ND-ST-0206.0000 STATE HIGHWAY 32 (13TH STREET)
1202+85 EDGE OF ROAD
1203+14 ROAD BAR DITCH.
1203+38 FIBER OPTIC CABLE / 7' CLR. (ABOVE)
1203+48 TELEPHONE LINE / 7' CLR. (ABOVE)
1205+01 7.9' CVR.
1205+01 P.I. 12°55'53" RT.
1205+46 P.I. 02°40'44" RT.
1206+79 4.6' CVR.
1236+08 5.2' CVR.
1240+67 6.7' CVR.
1251+54 M.P. 100
1258+55 POWERLINE HT. = 25'
1259+77 P.I. 01°34'15" LT.
1259+94 EDGE OF ROAD
1259+95 ROAD BAR DITCH
1259+96 EDGE OF ROAD
1260+13 EDGE OF ROAD
1260+19 END ROCK DITCH
1260+77 4.8' CVR.
1261+97 NIAGRA+23_9-A0-MLV-001
1269+52 6.2' CVR.
1273+22 5.2' CVR.
1289+98 6.6' CVR.
1293+53 BEGIN SLOUGH
1293+73 CS SLOUGH
1293+89 END SLOUGH
1294+81 5.4' CVR.
MATCHLINE 1301+07

PIPELINE DATA

PIPE SLOPE REPRESENTATION (2D)

1170+97
(2) 3,060' FBE
1201+37
(3) 230' FBE & ARO BR.
1203+67
(2) 5,568' FBE
1258+55
(3) 80' FBE & ARO O.C.
1260+35
(1) 149' FBE
1261+84
(401) 25' FBE
FOR VALVE ASSEMBLY MATERIAL SEE DWG. 1829-01-ML-03-110
1262+09
(1) 59' FBE
1262+68
(2) 3,839' FBE
1293+49
1301+07

CPS (3D)

TEST SECTIONS (3D)

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
1	30" O.D. X 0.438" W.T., API -5LX-70 W/FBE COATING	208'
2	30" O.D. X 0.386" W.T., API -5LX-70 W/FBE COATING	12,467'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	310'
407	MAINLINE VALVE ASSEMBLY NIAGRA+23_9-A0-MLV-001 (+25')	1 EA
	PIPELINE MARKERS	1 EA
	PIPELINE WARNING SIGNS	4 EA
	CATHODIC TEST STATION	2 EA
	AERIAL MARKER	1 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
407	1829-01-ML-03-110	06	MAINLINE VALVE
			NIAGRA+23_9-A0-MLV-001
	1829-01-ML-03-111	00	MAINLINE VALVE
			NIAGRA+23_9-A0-MLV-001

REVISIONS

NO.	DATE	REV. BY	CHCK BY	APPRD BY	ENV APPRD	DESCRIPTION
1	5/12/08	UEI	RDG	LAG	SEC	ISSUE FOR CONSTRUCTION
2	10/11/23	UEI				ISSUED FOR AS-BUILT 1829-03-ML-02-010 REPLACES COVERAGE OF IFC DRAWINGS 1829-03-ML-02-015, 1829-03-ML-02-016, 1829-03-ML-02-017

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 PEGASUS INTERNATIONAL

KEYSTONE MAINLINE (NPS 30 2008) NIAGRA SECTION

F1A# 1829 | SPREAD 1A | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 98.47 TO M.P. 100.94

SHEET 10 OF 20 SHEETS

STA. 1170+97 TO STA. 1301+07 (3D)

DRAWING NO. 1829-03-ML-02-010 REV. 2

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