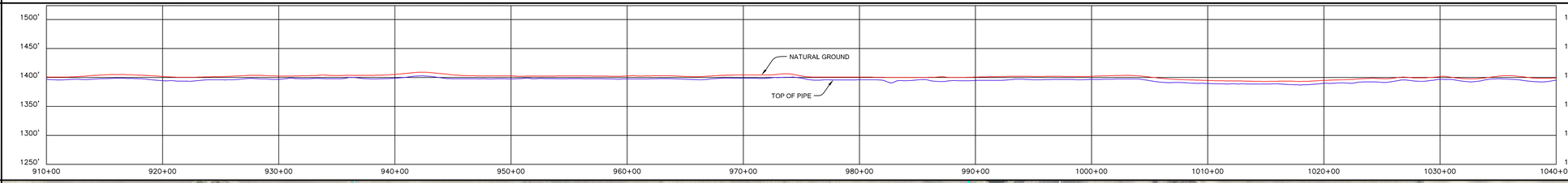
RIGHT-OF-WAY HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

910+00	ML-ND-BR-0333.0000	923+70	ML-ND-BR-0334.0000	RD-ND-BR-0334.0000 28TH STREET 933+61	ML-ND-BR-0335.0000	939+02	ML-ND-BR-0336.0000	974+16	ML-ND-BR-0337.0000	987+04	ML-ND-BR-0338.0000	1013+54	ML-ND-BR-0339.0000	1040+00

LAND USE

PIPELINE PROFILE

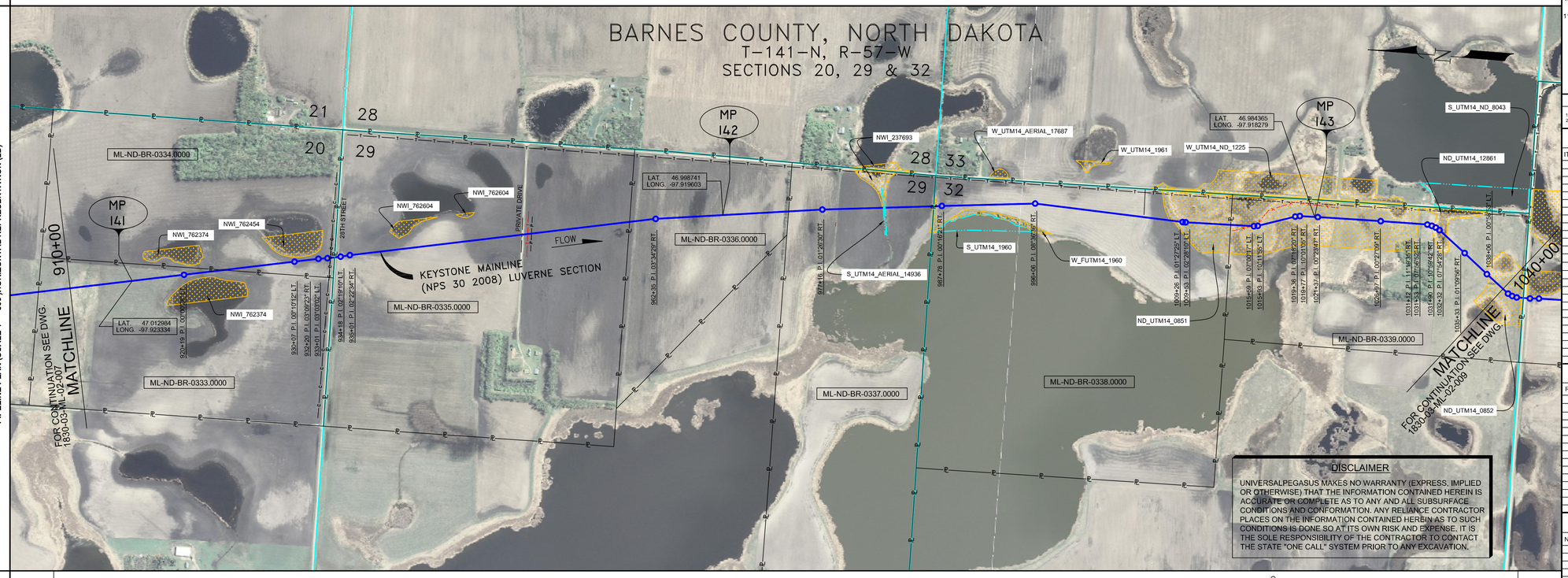
HORIZ. 1"=500' VER. 1"=100'
HORIZONTAL REPRESENTATION (2D)



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
- 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)

MATCHLINE 910+00 | 919+29 BEGIN SLOUGH | 920+19 P.I. 00°00'28" LT. | 921+47 CL SLOUGH | 923+20 END SLOUGH | 930+97 P.I. 00°10'12" LT. | 933+28 P.I. 00°03'22" RT. | 933+52 EDGE OF ROAD | 933+68 EDGE OF ROAD | 934+01 P.I. 02°22'34" RT. | 930+30 FIBER OPTIC CABLE | 950+28 EDGE OF ROAD | 950+38 EDGE OF ROAD | 950+42 EDGE OF ROAD | 950+91 TELEPHONE LINE | 951+24 OVERHEAD POWERLINE | 962+35 P.I. 03°34'29" RT. | 977+16 P.I. 01°26'39" RT. | 987+28 P.I. 00°16'21" RT. | 988+24 BEGIN DRAIN | 988+77 END DRAIN | 996+06 P.I. 08°36'36" RT. | 1007+27 BEGIN SLOUGH | 1008+61 END SLOUGH | 1009+53 P.I. 02°28'10" LT. | 1015+56 FENCE | 1016+08 BEGIN SLOUGH | 1016+41 CL SLOUGH | 1017+11 END SLOUGH | 1018+81 BEGIN SLOUGH | 1019+77 P.I. 10°01'05" RT. | 1021+37 P.I. 00°23'47" RT. | 1026+97 P.I. 00°27'09" RT. | 1031+12 P.I. 11°19'35" RT. | 1031+53 P.I. 07°36'52" RT. | 1031+61 BEGIN SLOUGH | 1032+32 P.I. 07°54'28" RT. | 1032+46 CL SLOUGH | 1033+30 END SLOUGH | 1035+33 P.I. 01°09'56" RT. | 1038+06 P.I. 00°38'53" LT. | MATCHLINE 1040+00

SLOPE STATIONS (3D)

MATCHLINE 910+97 | 916+54 M.P. 141 | 920+28 BEGIN SLOUGH | 921+19 P.I. 00°00'28" LT. | 921+47 CL SLOUGH | 924+17 END SLOUGH | 931+04 P.I. 00°10'12" LT. | 933+28 P.I. 00°03'22" RT. | 933+52 EDGE OF ROAD | 933+68 EDGE OF ROAD | 934+01 P.I. 02°22'34" RT. | 934+28 FIBER OPTIC CABLE 5' O.VR. | 934+52 EDGE OF ROAD | 934+68 EDGE OF ROAD | 935+01 P.I. 02°22'34" RT. | 950+28 EDGE OF ROAD | 950+38 EDGE OF ROAD | 950+42 EDGE OF ROAD | 950+91 TELEPHONE LINE 45' O.VR. | 951+24 OVERHEAD POWERLINE, HT = 23' | 963+34 P.I. 03°34'29" RT. | 967+50 5.4' CVR. | 969+34 M.P. 142 | 978+17 P.I. 01°26'39" RT. | 979+48 5.2' CVR. | 983+58 BEGIN DRAIN | 983+78 END DRAIN | 987+79 P.I. 00°16'21" RT. | 997+06 P.I. 08°36'36" RT. | 1009+30 BEGIN SLOUGH | 1009+48 CL SLOUGH | 1009+61 END SLOUGH | 1010+55 P.I. 02°28'10" LT. | 1016+69 FENCE | 1016+77 P.I. 10°11'55" LT. | 1016+96 P.I. 10°11'55" LT. | 1017+11 BEGIN SLOUGH | 1017+41 CL SLOUGH | 1017+63 END SLOUGH | 1018+44 BEGIN SLOUGH | 1018+64 END SLOUGH | 1019+81 P.I. 10°01'05" RT. | 1020+81 P.I. 10°01'05" RT. | 1022+14 M.P. 143 | 1022+41 P.I. 00°23'47" RT. | 1024+22 5.5' CVR. | 1027+78 5.5' CVR. | 1028+01 P.I. 00°27'09" RT. | 1029+00 5.1' CVR. | 1032+16 P.I. 11°19'35" RT. | 1032+57 P.I. 07°36'52" RT. | 1032+66 BEGIN SLOUGH | 1032+86 P.I. 07°54'28" RT. | 1033+37 P.I. 07°54'28" RT. | 1033+51 CL SLOUGH | 1034+35 END SLOUGH | 1036+38 P.I. 01°09'56" RT. | 1038+00 6.3' CVR. | 1039+11 P.I. 00°38'53" LT. | MATCHLINE 1041+06

PIPE SLOPE REPRESENTATION (2D)

910+97 | 920+55 ② 2,332' FBE (22) 924+11 | 929+25 (19) 932+53 | 932+70 933+69 | 934+19 ③ 80' FBE & ARO BR. 934+99 | ② 5,240' FBE | 987+59 ③ 80' FBE & ARO 988+19 | 1007+16 (53) 1016+35 ② 5,287' FBE 1017+63 (28) 1022+23 | 1041+06

CPS (3D)

TEST SECTIONS (3D) — TEST SECTION 2A-1 ILTO-022-2010

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 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. 195.68.

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+26 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	12,859'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	160'
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	2 EA
	CATHODIC TEST STATION	1 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	6/11/08	UEI	RDG	LAG	SEC	PIPE LENGTH REVISED
3	10/11/28	UEI				ISSUED FOR AS-BUILT
						1830-03-ML-02-008
						REPLACES COVERAGE OF
						IFC DRAWINGS
						1830-03-ML-02-012,
						1830-03-ML-02-013,
						1830-03-ML-02-014

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/01/18	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

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UNIVERSAL ENGINEERING SCIENCES

KEYSTONE MAINLINE (NPS 30 2008) LUVERNE SECTION

F/A#	SPREAD	DISCIPLINE
1830	SPREAD 2A	DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 140.89 TO M.P. 143.36

SHEET 8 OF 20 SHEETS

STA. 910+97 TO STA. 1041+06 (3D)

DRAWING NO. 1830-03-ML-02-008 REV. 3

Z:\00_KEYSTONE_AS_BUILT\4-alignment sheets for North Dakota\ND1830_ASBUILTND1830-008.dwg, 3/9/2011 2:32:14 PM, pdfFactory.pc3