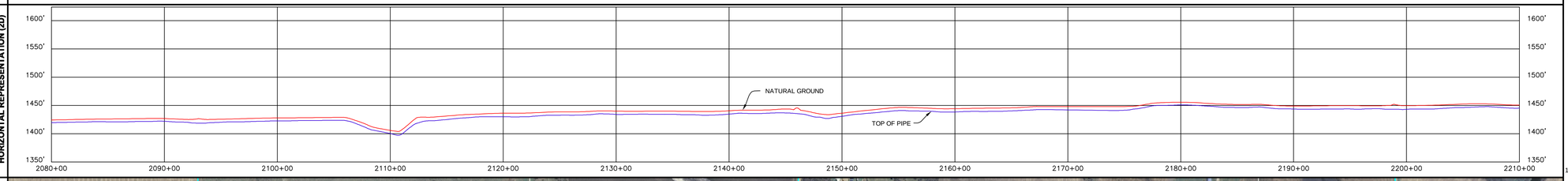
RIGHT-OF-WAY
HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

2080+00 | ML-SD-DY-0567.0000 | RD-SD-DY-0567.0000 137TH STREET | 2092+99 | ML-SD-DY-0569.0000 | 2119+39 | ML-SD-DY-0571.0000 | RD-SD-DY-0571.0000 (CR 20A / 138TH STREET) | 2146+02 | ML-SD-DY-0572.0000 | 2159+10 | ML-SD-DY-0573.0000 | 2172+37 | ML-SD-DY-0575.0000 | RD-SD-DY-0575.0000 139TH STREET | 2198+87 | ML-SD-DY-0576.0000 | 2210+00

LAND USE

PIPELINE PROFILE

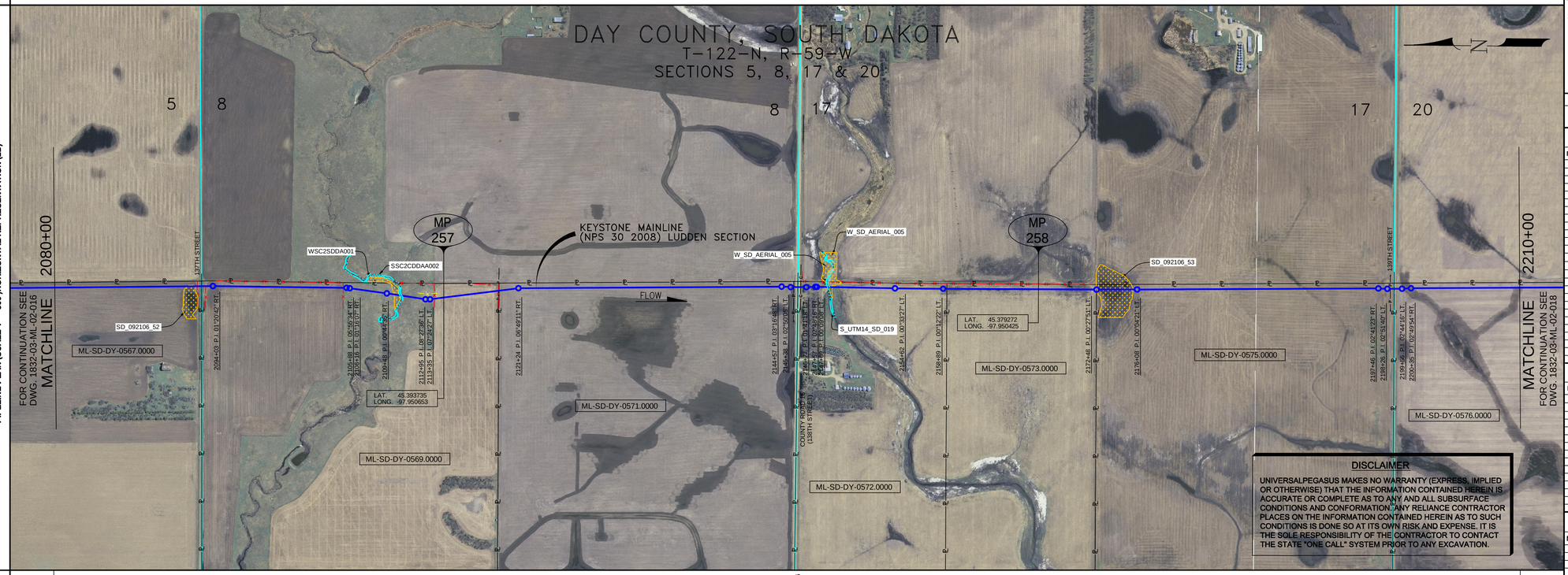
HORIZ: 1"=500' VER: 1"=100'
HORIZONTAL REPRESENTATION (2D)



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 (MP 00)
- DIRECTION OF FLOW
- HOUSE
- BUILDING (B)
- WATER WELL (W)
- 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
- (3) SET-ON WEIGHTS
- PIPELINE WARNING SIGN
- PIPELINE MARKER
- (1) MATERIAL ITEM
- (GM) GROUNDING MAT
- ZINC RIBBON
- (AM) AERIAL MARKER
- CATHODIC TEST STATION
- MAINLINE VALVE
- CHECK VALVE
- O.C. OPEN CUT
- BR. BORE

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)

MATCHLINE 2080+00 | 2092+99 FENCE (HOG WIRE) | 2093+88 EDGE OF ROAD | 2094+24 CL 137TH STREET | 2094+39 EDGE OF ROAD | 2094+64 FENCE (BARBED WIRE) | 2094+83 FENCE (BARBED WIRE) | 2095+28 P.I. 01°20'42" RT. | 2105+57 FENCE (BARBED WIRE) | 2105+88 CL DITCH | 2106+18 P.I. 01°16'07" RT. | 2109+48 P.I. 00°44'35" RT. | 2110+47 WATER EDGE | 2110+75 CL CREEK | 2110+95 WATER EDGE | 2112+05 P.I. 08°27'36" LT. | 2113+35 P.I. 07°24'27" LT. | 2113+73 FENCE (BARBED WIRE) | 2119+46 FENCE (BARBED WIRE) | 2119+47 POWERLINE | 2121+24 P.I. 06°49'11" RT. | 2144+57 P.I. 03°16'48" RT. | 2145+38 P.I. 02°50'05" LT. | 2145+64 OVERHEAD POWERLINE | 2146+08 EDGE OF ROAD | 2146+12 CL 138TH STREET (COUNTY HIGHWAY 20A) | 2146+27 FIBER OPTIC CABLE | 2146+77 P.I. 01°41'18" LT. | 2147+57 P.I. 02°48'16" RT. | 2147+67 P.I. 00°09'08" LT. | 2148+45 TOP BANK | 2148+78 CL DITCH | 2149+18 TOP BANK | 2154+62 P.I. 00°33'27" LT. | 2158+89 P.I. 00°12'22" LT. | 2172+48 P.I. 00°27'51" LT. | 2172+57 BEGIN SLOUGH | 2173+96 CL SLOUGH | 2175+58 END SLOUGH | 2176+08 P.I. 00°04'21" LT. | 2197+46 P.I. 02°41'23" RT. | 2198+53 OVERHEAD POWERLINE | 2198+97 CL 139TH STREET | 2199+59 EDGE OF ROAD | 2200+35 P.I. 02°49'54" RT. | MATCHLINE 2210+00

SLOPE STATIONS (3D)

MATCHLINE 2081+24 | 2092+99 FENCE (HOG WIRE) | 2093+88 EDGE OF ROAD | 2094+24 CL 137TH STREET | 2094+39 EDGE OF ROAD | 2094+64 FENCE (BARBED WIRE) | 2094+83 FENCE (BARBED WIRE) | 2095+28 P.I. 01°20'42" RT. | 2106+82 FENCE (BARBED WIRE) | 2107+13 CL DITCH | 2107+41 P.I. 01°16'07" RT. | 2110+23 4.8' CVR. | 2110+74 P.I. 00°44'35" RT. | 2111+73 WATER EDGE | 2112+05 CL CREEK | 2112+22 WATER EDGE | 2113+46 8.9' CVR. | 2113+95 P.I. 08°27'36" LT. | 2114+03 P.I. 07°24'27" LT. | 2115+02 FENCE (BARBED WIRE) | 2115+67 M.P. 257 | 2118+41 5.5' CVR. | 2120+74 FENCE (BARBED WIRE) | 2120+76 OVERHEAD POWERLINE | 2121+53 P.I. 06°49'11" RT. | 2123+54 6.6' CVR. | 2129+67 5.3' CVR. | 2145+67 P.I. 03°16'48" RT. 6.5' CVR. | 2146+67 P.I. 02°50'05" LT. | 2146+94 OVERHEAD POWERLINE | 2147+18 EDGE OF ROAD | 2147+23 CL 138TH STREET (COUNTY HIGHWAY 20A) | 2147+42 FIBER OPTIC CABLE | 2147+57 FIBER OPTIC CABLE | 2148+06 P.I. 01°41'18" LT. | 2148+36 P.I. 02°48'16" RT. | 2148+59 P.I. 00°09'08" LT. | 2149+15 TOP BANK | 2149+79 6.9' CVR. | 2149+78 CL DITCH | 2150+46 TOP BANK | 2154+92 P.I. 00°33'27" LT. | 2160+20 P.I. 00°12'22" LT. | 2167+16 5.4' CVR. | 2169+67 M.P. 258 | 2173+79 P.I. 00°27'51" LT. | 2173+89 BEGIN SLOUGH | 2175+27 CL SLOUGH | 2176+89 END SLOUGH | 2177+39 P.I. 00°04'21" LT. | 2178+70 4.7' CVR. | 2198+79 P.I. 02°41'23" RT. | 2199+85 OVERHEAD POWERLINE | 2200+08 EDGE OF ROAD | 2200+20 CL 139TH STREET | 2200+32 EDGE OF ROAD | 2200+88 P.I. 02°49'54" RT. | 2201+06 P.I. 02°44'16" LT. | 2208+52 5.1' CVR. | MATCHLINE 2211+85

PIPE SLOPE REPRESENTATION (2D)

2081+24 | ② 1,264' FBE | 2093+88 | ③ 80' FBE & ARO O.C. | 2094+68 | 2106+82 | 2111+79 | 2112+09 | 2115+01 | ② 5,219' FBE | 2146+67 | ③ 99' FBE & ARO BR. | 2147+86 | 2149+73 | 2150+35 | ② 5,192' FBE | 2199+79 | ③ 80' FBE & ARO BR. | 2200+59 | ② 1,076' FBE | 2211+85

CPS (3D)

TEST SECTIONS (3D): TEST SECTION 2A-4 ILTO-024-2010

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 01, 2009 FOR M.P. 195.68 TO M.P. 218.50, SEPTEMBER 02, 2009 FOR M.P. 218.50 TO M.P. 259.00 AND OCTOBER 08, 2009 FOR M.P. 259.21 TO M.P. 301.75.

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 11453+73 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	12,752'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	259'
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	11 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	6/11/08	UEI	RDG	LAG	SE	ADDED CROSSING DETAILS
3	10/12/06	UEI				ISSUED FOR AS-BUILT 1832-03-ML-02-017 REPLACES COVERAGE OF IFC DRAWINGS 1832-03-ML-02-026, 1832-03-ML-02-027, 1832-03-ML-02-028

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/02/01	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 PEGASUS INTERNATIONAL

KEYSTONE MAINLINE (NPS 30 2008) LUDDEN SECTION

FUA# 1832 | SPREAD 2A | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 256.34 TO M.P. 258.81

SHEET 17 OF 19 SHEETS

STA. 2081+24 TO STA. 2211+35 (3D)

DRAWING NO. 1832-03-ML-02-017 REV. 3