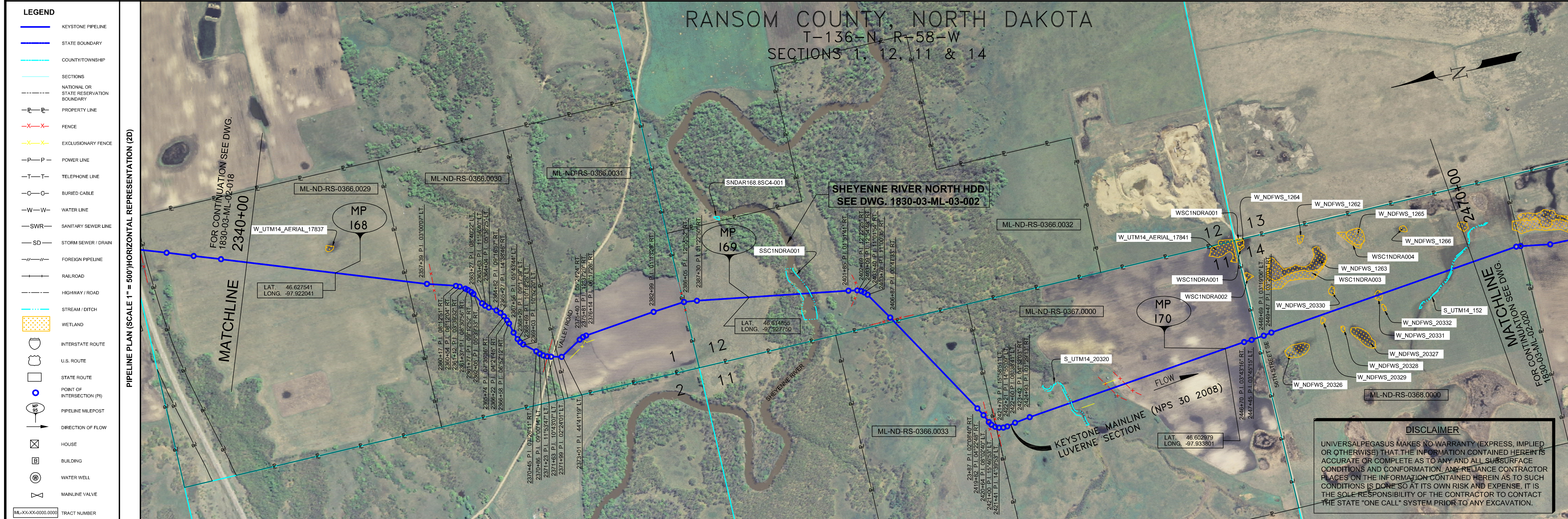


- GENERAL NOTES**
- 1) ALL CHAINAGES ARE IN FEET UNLESS OTHERWISE SPECIFIED.
  - 2) DATUM ELEVATION AND PROJECTION ARE BASED ON MEAN SEA LEVEL AND NAD 83.
  - 3) FIELD PIPE LOCATING REQUIRED TO DETERMINE PLACEMENT OF PIPELINE WITHIN PERMANENT EASEMENT.
  - 4) UNLESS OTHERWISE NOTED, 48 INCHES MINIMUM 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 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 1601 PSIG.

**BILL OF MATERIALS (3D)**

ITEM NO.	DESCRIPTION	QUANTITY
1	30" O.D. X 0.438" W.T., API-5LX-70 W/FBE COATING	3,287'
2	30" O.D. X 0.386" W.T., API-5LX-70 W/FBE COATING	5,454'
3	30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	181'
4	30" O.D. X 0.622" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	4,150'
102B	30" x 45" 3 DIA RAD WELD FITTING 0.438" W.T., Y-70	1EA
PIPELINE MARKERS		0 EA
PIPELINE WARNING SIGNS		13 EA
CATHODIC TEST STATION		2 EA
AERIAL MARKER		0 EA

**REFERENCE DRAWINGS**

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
HDD	1830-03-ML-03-002	7	SHEYENNE RIVER NORTH HDD

**REVISIONS**

NO.	DATE	REV. BY	CHKD. BY	APPRD. BY	DESCRIPTION
1	5/17/08	UEI	RDG	LAG	ISSUED FOR CONSTRUCTION
2	8/10/08	UEI	RDG	LAG	SHEYENNE RIVER HDD INSTALLATION
3	10/11/08	UEI			ISSUED FOR AS-BUILT
					1830-03-ML-02-019 REPLACES COVERAGE OF IFC DRAWINGS
					1830-03-ML-02-030, 1830-03-ML-02-031

**ENGINEERING RECORDS**

DRAWN BY	INITIAL	DATE	ENY APPRD.	INITIAL	DATE
UEI		10/01/18			

**PROFESSIONAL ENGINEER**

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

SCALE: 0 125 250 500 Feet



KEYSTONE MAINLINE (NPS 30 2008) LUVIERNE SECTION  
 FWF 1830 SPREAD 2A DISCIPLINE 03

**AS-BUILT ALIGNMENT**

M.P. 168.00 TO M.P. 170.48  
 SHEET 19 OF 20 SHEETS  
 STA. 2342+29 TO STA. 2472+94 (3D)  
 DRAWING NO. 1830-03-ML-02-019 REV. 3

PIPELINE SCHEMATIC	HORIZONTAL STATIONS (2D)	STATION DESCRIPTION	STATIONS (3D)	PIPELINE DATA	STATIONS (3D)
HEAVY WALL PIPE	2374+38 P.I. 0370007' LT.	2374+38 P.I. 0370007' LT.	2374+38	2342+29	2342+29
WELD FITTING	2374+47 FENCE (60 WIRE)	2374+47 FENCE (60 WIRE)	2374+47	2342+29	2342+29
TRANSITION PIECE	2374+76 P.I. 0812611' RT.	2374+76 P.I. 0812611' RT.	2374+76	2342+29	2342+29
CASING PIPE	2383+33 P.I. 0373932' RT.	2383+33 P.I. 0373932' RT.	2383+33	2342+29	2342+29
CONCRETE COATING	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
SET-ON WELDS	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
PIPELINE WARNING SIGN	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
PIPELINE MARKER	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
MATERIAL ITEM	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
GROUNDING MAT	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
ZINC BARRIER	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
AERIAL MARKER	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
CATHODIC TEST STATION	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
MAINLINE VALVE	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
CHECK VALVE	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
OPEN CUT	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
BORE	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
DRINKING WATER USA	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
ECOLOGICAL USA	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
HIGHLY POPULATED AREA	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
OPERATOR (KEYSTONE) DEFINED	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
OTHER POPULATED AREA	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
SOURCE WATER PROTECTION AREA	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29
WELLHEAD PROTECTION AREA	2383+43 P.I. 0373932' RT.	2383+43 P.I. 0373932' RT.	2383+43	2342+29	2342+29

TEST SECTIONS (3D)	TEST SECTION 2A-1 ILTO-022-2010	TEST SECTION 2A-2 ILTO-022-2010
TOPSOIL SALVAGE METHOD		
STREAMS		
WETLANDS		
TIMING CONSTRAINTS		
<b>STATIONS</b>		
MONITORING		
RECLAMATION		
SPECIAL CONSIDERATIONS		

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