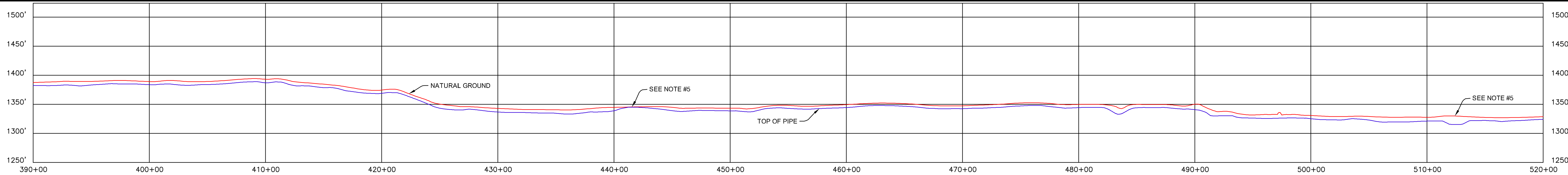
RIGHT-OF-WAY
HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

390+00	ML-ND-RS-0390.0000	398+33	ML-ND-RS-0391.0000	411+92	ML-ND-RS-0392.0000	427+84	ML-ND-RS-0393.0000	RD-ND-RS-0393.0000 65TH STREET	439+19	ML-ND-RS-0394.0000	467+75	ML-ND-RS-0395.0000	492+42	RD-ND-RS-0395.0000 117TH AVENUE	ML-ND-RS-0396.0000	RD-ND-RS-0396.0000 66TH STREET SE	497+26	ML-ND-RS-0397.0000	520+00

LAND USE

PIPELINE PROFILE

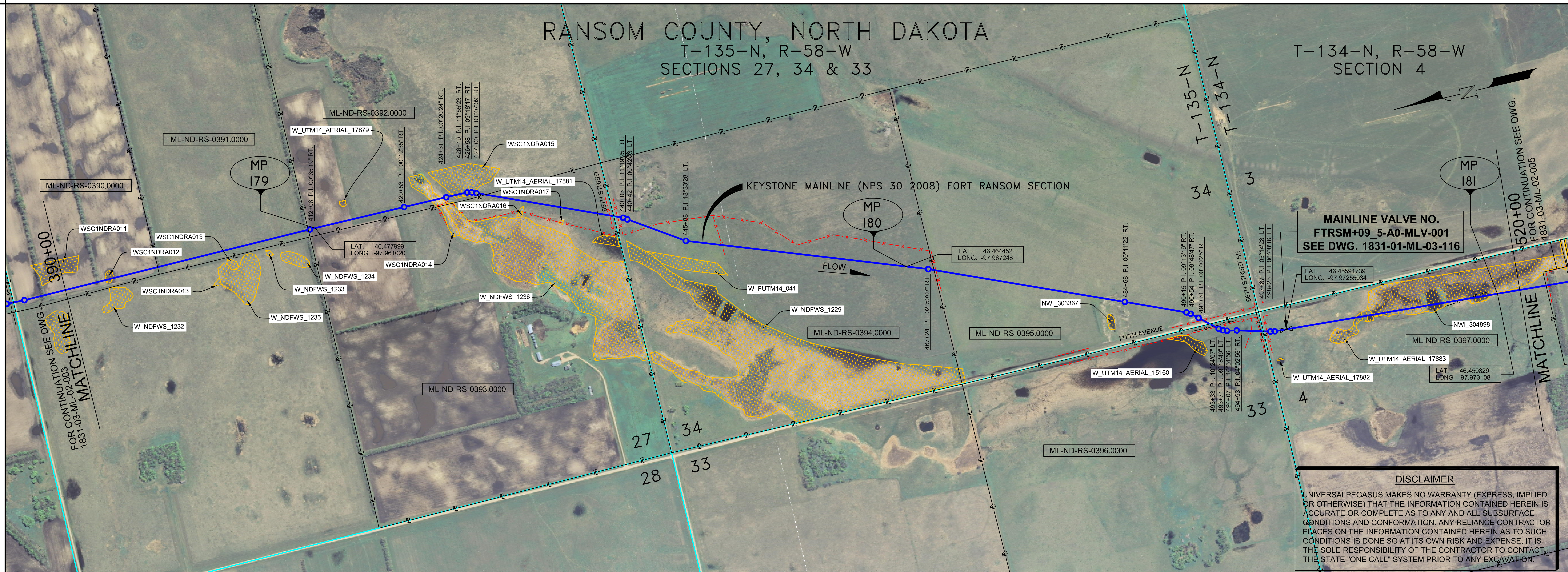
HORIZ: 1"=500' VER: 1"=100'
HORIZONTAL REPRESENTATION (2D)



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)



DISCLAIMER

UNIVERSALPEGASUS MAKES NO WARRANTY (EXPRESS, IMPLIED OR OTHERWISE) THAT THE INFORMATION CONTAINED HEREIN IS ACCURATE OR COMPLETE AS TO ANY AND ALL SUBSURFACE CONDITIONS AND CONFORMATION. ANY RELIANCE CONTRACTOR PLACES ON THE INFORMATION CONTAINED HEREIN AS TO SUCH CONDITIONS IS DONE SO AT ITS OWN RISK AND EXPENSE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE STATE "ONE CALL" SYSTEM PRIOR TO ANY EXCAVATION.

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

STATION/DESCRIPTION

HORIZONTAL STATIONS (2D)

- 390+00 MATCHLINE
- 393+68 BEGIN SLOUGH
- 393+99 CL SLOUGH
- 394+35 END SLOUGH
- 412+06 P.I. 00°35'19" RT.
- 420+53 P.I. 00°12'35" RT.
- 422+80 BEGIN SLOUGH
- 424+31 P.I. 00°20'24" RT.
- 424+85 CL SLOUGH
- 426+19 P.I. 11°55'23" RT.
- 426+58 P.I. 09°18'17" RT.
- 426+80 END SLOUGH
- 427+00 P.I. 01°07'09" RT.
- 431+02 BEGIN SLOUGH
- 431+24 CL SLOUGH
- 431+49 END SLOUGH
- 438+82 BEGIN ROCK SHIELD, FENCE (BARBED WIRE)
- 439+13 EDGE OF ROAD
- 439+19 CL 65TH STREET
- 439+24 EDGE OF ROAD
- 439+52 FENCE (BARBED WIRE)
- 439+66 END ROCK SHIELD
- 440+03 P.I. 11°19'25" RT.
- 440+42 P.I. 00°42'03" LT.
- 442+35 FENCE (BARBED WIRE)
- 445+88 P.I. 13°33'28" LT.
- 449+05 FENCE (BARBED WIRE)
- 467+24 P.I. 02°50'07" RT.
- 467+75 FENCE (BARBED WIRE)
- 467+92 FENCE (BARBED WIRE)
- 484+68 P.I. 00°11'22" RT.
- 490+15 P.I. 09°13'19" RT.
- 490+54 P.I. 08°48'47" RT.
- 491+31 P.I. 00°40'25" RT.
- 491+75 FENCE (BARBED WIRE)
- 492+23 EDGE OF ROAD
- 492+42 CL 117TH AVENUE
- 492+59 EDGE OF ROAD
- 492+86 FIBER OPTIC CABLE
- 493+02 FENCE (BARBED WIRE)
- 493+33 P.I. 10°24'07" LT.
- 493+71 P.I. 09°18'49" LT.
- 494+07 P.I. 10°51'56" LT.
- 494+93 P.I. 04°02'56" RT.
- 496+20 FENCE (WOOD)
- 496+94 FENCE (BARBED WIRE)
- 497+03 FIBER OPTIC CABLE
- 497+19 EDGE OF ROAD
- 497+26 CL 66TH STREET SE
- 497+33 EDGE OF ROAD
- 497+57 FENCE (BARBED WIRE)
- 497+87 P.I. 05°14'28" LT.
- 498+25 P.I. 06°08'16" LT.
- 499+42 FTRSM+09_5-A0-MLV-001
- 505+13 BEGIN SLOUGH
- 509+43 BEGIN ROCK SHIELD
- 511+13 CL SLOUGH
- 515+21 END ROCK SHIELD
- 515+32 FIBER OPTIC CABLE
- 518+09 END SLOUGH
- 520+00 MATCHLINE

SLOPE STATIONS (3D)

- 390+47 MATCHLINE
- 394+15 BEGIN SLOUGH
- 394+46 CL SLOUGH
- 394+82 END SLOUGH
- 403+70 6.1' CVR.
- 412+54 P.I. 00°35'19" RT.
- 413+04 M.P. 179
- 421+02 P.I. 00°12'35" RT.
- 423+15 4.8' CVR.
- 423+29 BEGIN SLOUGH
- 424+35 6.3' CVR.
- 424+81 P.I. 00°20'24" RT.
- 425+35 CL SLOUGH
- 426+70 P.I. 11°55'23" RT.
- 427+08 P.I. 09°18'17" RT.
- 427+30 END SLOUGH
- 427+51 P.I. 01°07'09" RT.
- 431+53 BEGIN SLOUGH
- 431+75 CL SLOUGH
- 432+00 END SLOUGH
- 435+60 6.1' CVR.
- 439+33 BEGIN ROCK SHIELD
- 439+34 FENCE (BARBED WIRE)
- 439+65 EDGE OF ROAD
- 439+70 CL 65TH STREET
- 439+75 EDGE OF ROAD
- 439+94 7.2' CVR.
- 440+04 FENCE (BARBED WIRE)
- 440+17 END ROCK SHIELD
- 440+54 P.I. 11°19'25" RT.
- 440+94 P.I. 00°42'03" LT.
- 442+87 FENCE (BARBED WIRE)
- 446+40 P.I. 13°33'28" LT.
- 449+57 FENCE (BARBED WIRE)
- 465+84 M.P. 180
- 467+77 P.I. 02°50'07" RT.
- 468+28 FENCE (BARBED WIRE)
- 468+46 FENCE (BARBED WIRE)
- 484+85 9.2' CVR.
- 485+23 P.I. 00°11'22" RT.
- 488+46 5.7' CVR.
- 490+70 P.I. 09°13'19" RT.
- 491+10 P.I. 08°48'47" RT.
- 491+88 P.I. 00°40'25" RT.
- 492+32 FENCE (BARBED WIRE)
- 492+79 EDGE OF ROAD
- 492+99 CL 117TH AVENUE
- 493+16 EDGE OF ROAD
- 493+43 FIBER OPTIC CABLE 5.0' CVR. 3.5' CLR. (ABOVE)
- 493+58 FENCE (BARBED WIRE)
- 493+90 P.I. 10°24'07" LT.
- 494+28 P.I. 09°18'49" LT.
- 494+64 P.I. 10°51'56" LT.
- 495+50 P.I. 04°02'56" RT.
- 496+08 6.1' CVR.
- 496+77 FENCE (WOOD)
- 497+51 FENCE (BARBED WIRE)
- 497+60 TELEPHONE LINE 6.4' CVR. 3.4' CLR. (ABOVE)
- 497+77 EDGE OF ROAD
- 497+83 CL 66TH STREET SE
- 497+90 EDGE OF ROAD
- 498+14 FENCE (BARBED WIRE)
- 498+45 P.I. 05°14'28" LT.
- 498+83 P.I. 06°08'16" LT.
- 499+99 FTRSM+09_5-A0-MLV-001
- 505+71 BEGIN SLOUGH
- 510+01 BEGIN ROCK SHIELD
- 511+71 CL SLOUGH
- 515+80 END ROCK SHIELD
- 515+91 FIBER OPTIC CABLE 5.9' CVR. 2.9' CLR. (ABOVE)
- 518+64 M.P. 181
- 518+69 END SLOUGH
- 520+58 MATCHLINE

PIPELINE DATA — PIPE SLOPE REPRESENTATION (3D)

- 390+47 – 439+14: ② 4,867' FBE
- 439+14 – 440+33: ③ 119' FBE & ARO O.C.
- 440+33 – 492+09: ② 5,176' FBE
- 492+09 – 493+70: ③ 161' FBE & ARO BR.
- 493+70 – 497+44: ② 374' FBE
- 497+44 – 498+24: ③ 80' FBE & ARO BR.
- 498+24 – 499+87: ① 163' FBE
- 499+87 – 500+12: (411) 25' FOR VALVE ASSEMBLY MATERIAL SEE DWG. 1831-01-ML-03-116
- 500+12 – 500+14: ① 2' FBE
- 500+14 – 520+58: ② 2,044' FBE
- 180; 498+99; 506+13; (56); 515+78; 516+13; (19); 519+29

CPS (3D)

TEST SECTIONS (3D): TEST SECTION 2A-2 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 AUGUST 07, 2009 FOR M.P. 168.73 TO M.P. 195.68 AND SEPTEMBER 01, 2009 FOR M.P. 195.68 TO M.P. 218.50.
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 9038+16 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	165'
2	30" O.D. X 0.386" W.T., API -5LX-70 W/FBE COATING	12,461'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	360'
411	MAINLINE VALVE ASSEMBLY (+25') FTRSM+09_5-A0-MLV-001	1 EA
	PIPELINE MARKERS	0 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
411	1831-01-ML-03-116	6	MAINLINE VALVE FTRSM+09_5-A0-MLV-001
	1831-01-ML-03-117	0	MAINLINE VALVE FTRSM+09_5-A0-MLV-001

REVISIONS

NO.	DATE	REV. BY	CHCK. BY	APPRD. BY	ENV. APPRD	DESCRIPTION
1	5/12/08	UEI	RDG	LAG	SEC	ISSUED FOR CONSTRUCTION
2	10/12/02	UEI				ISSUED FOR AS-BUILT 1831-03-ML-02-004 REPLACES COVERAGE OF IFC DRAWINGS 1831-03-ML-02-005, 1831-03-ML-02-006, 1831-03-ML-02-007

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/01/25	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 ENSCO, INC.

KEYSTONE MAINLINE (NPS 30 2008) FORT RANSOM SECTION

FIA# 1831 | SPREAD 2A | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 178.57 TO M.P. 181.04
SHEET 4 OF 19 SHEETS
STA. 390+47 TO STA. 520+58 (3D)

DRAWING NO. 1831-03-ML-02-004 REV. 2

Z:\00_KEYSTONE_AS_BUILT\4-alignment sheets for North Dakota\ND1831_ASBUILT\ND1831-004.dwg, 3/10/2011 6:57:38 AM, pdfFactory.pc3