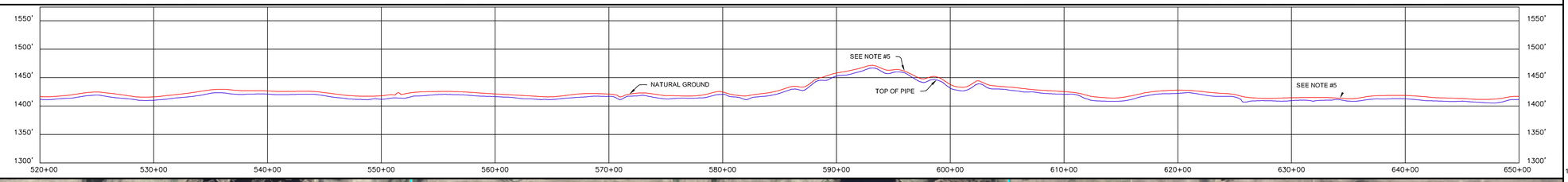
RIGHT-OF-WAY
HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

520+00 | ML-ND-BR-0316.0000 | 524+92 | ML-ND-BR-0317.0000 | ML-ND-BR-0317.0000 2 1/2 STREET SE 551+47 | ML-ND-BR-0318.0000 | 578+70 | ML-ND-BR-0319.0000 | 605+86 | ML-ND-BR-0320.0000 | 632+45 | ML-ND-BR-0321.0000 | 650+00

LAND USE

**PIPELINE PROFILE**

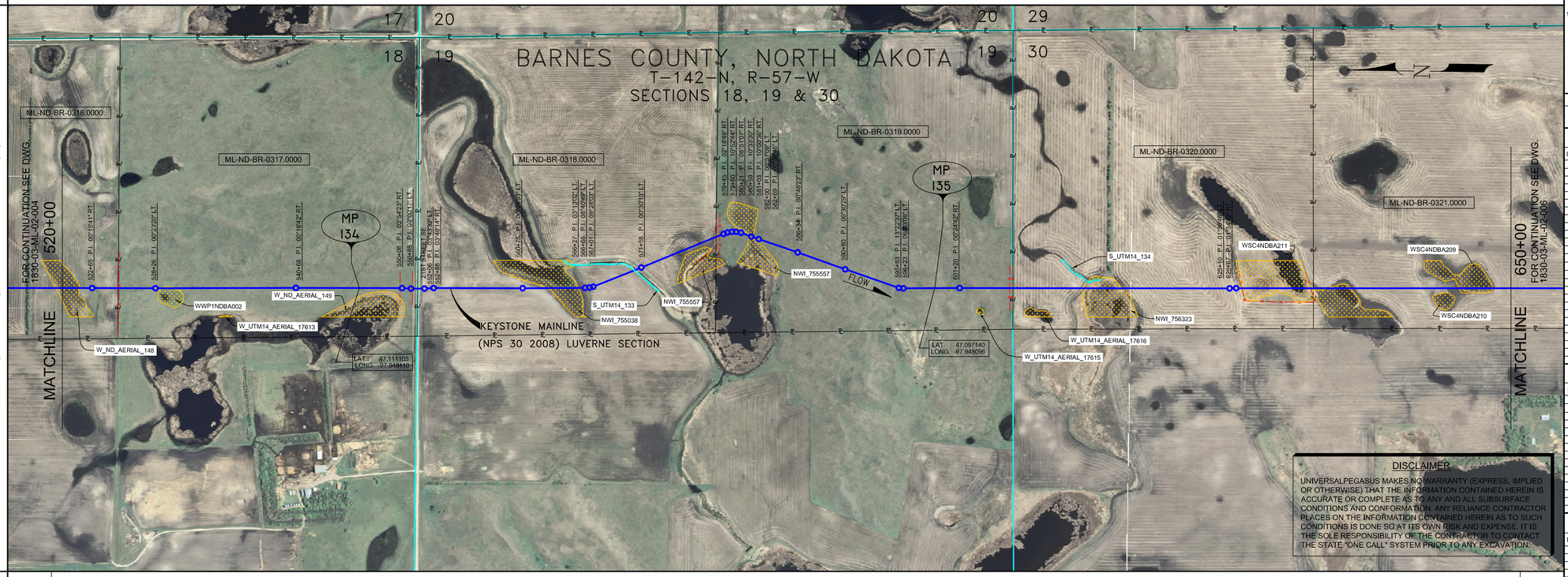
HORIZ. 1"=500' VER. 1"=100'
HORIZONTAL REPRESENTATION (2D)




**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

**HORIZONTAL STATIONS (2D)**

MATCHLINE 520+00 | 522+65 P.I. 00°19'41" RT. | 525+04 FENCE (BARBED WIRE) | 528+26 P.I. 00°23'20" LT. 528+44 CL SLOUGH 528+18 CL SLOUGH 530+21 END SLOUGH | 540+68 P.I. 00°16'42" RT. | 549+90 FENCE (BARBED WIRE) 550+08 P.I. 02°54'23" RT. | 550+88 P.I. 03°00'17" LT. 551+01 FENCE (BARBED WIRE) | 551+36 EDGE OF ROAD 551+47 CL 21ST STREET SE | 551+59 EDGE OF ROAD 552+06 P.I. 01°43'33" LT. 552+88 P.I. 03°48'14" RT. | 560+75 P.I. 00°28'53" LT. | 566+27 P.I. 03°13'02" LT. 566+68 P.I. 08°40'49" LT. 567+01 P.I. 09°28'03" LT. | 570+12 TOP BANK CL DITCH 570+56 TOP BANK 571+58 P.I. 00°05'13" LT. | 578+74 FENCE (BARBED WIRE) 579+09 FENCE (BARBED WIRE) 579+45 P.I. 02°18'49" RT. 580+21 P.I. 08°51'07" RT. 580+44 P.I. 10°32'44" RT. 581+03 P.I. 10°00'36" RT. 582+00 P.I. 00°57'09" LT. 582+69 P.I. 00°38'46" LT. | 588+34 P.I. 00°48'23" RT. | 590+80 P.I. 00°36'29" LT. | 595+83 P.I. 13°22'37" LT. 596+23 P.I. 06°03'08" LT. | 601+20 P.I. 00°24'42" RT. | 605+62 FENCE (BARBED WIRE) 606+89 FENCE (BARBED WIRE) | 625+10 P.I. 01°38'46" LT. 625+67 P.I. 01°34'42" RT. | 629+13 BEGIN SLOUGH 629+20 FENCE (BARBED WIRE) | 629+88 CL SLOUGH | 632+30 FENCE (BARBED WIRE) 632+49 END SLOUGH | 634+24 BEGIN SLOUGH 635+00 CL SLOUGH 635+76 END SLOUGH | 642+25 BEGIN SLOUGH 642+44 CL SLOUGH | 645+02 END SLOUGH 645+57 BEGIN SLOUGH | 647+08 CL SLOUGH | 648+49 END SLOUGH | MATCHLINE 650+80

**SLOPE STATIONS (3D)**

MATCHLINE 520+61 | 521+23 4.9° CVR. 523+26 P.I. 00°19'41" RT. | 525+65 FENCE (BARBED WIRE) | 528+87 P.I. 00°23'20" LT. 529+14 CL SLOUGH 529+79 CL SLOUGH 530+42 END SLOUGH | 541+30 P.I. 00°16'42" RT. | 546+84 M.P. 134 | 550+52 FENCE (BARBED WIRE) 550+70 P.I. 02°54'23" RT. | 551+50 P.I. 03°00'17" LT. 551+63 FENCE (BARBED WIRE) | 551+98 EDGE OF ROAD 552+09 CL 21ST STREET SE 552+10 10.5° CVR. 552+21 EDGE OF ROAD 552+69 P.I. 01°43'33" LT. 553+50 P.I. 03°48'14" RT. | 561+38 P.I. 00°28'53" LT. | 565+56 4.4° CVR. 566+90 P.I. 03°13'02" LT. 567+31 P.I. 08°40'49" LT. 567+64 P.I. 09°28'03" LT. | 570+76 TOP BANK 570+49 CL DITCH 571+18 TOP BANK 572+23 P.I. 00°05'13" LT. | 579+39 FENCE (BARBED WIRE) 579+74 FENCE (BARBED WIRE) 580+10 P.I. 02°18'49" RT. 580+45 P.I. 10°32'44" RT. 580+86 P.I. 08°51'07" RT. 581+44 P.I. 10°00'36" RT. 581+68 P.I. 00°57'09" LT. 582+86 P.I. 00°38'46" LT. 583+35 6.2° CVR. 587+00 P.I. 00°48'23" RT. | 588+18 4.5° CVR. | 591+48 P.I. 00°36'29" LT. | 592+92 5.7° CVR. | 596+52 P.I. 13°22'37" LT. 596+93 P.I. 06°03'08" LT. | 596+02 4.8° CVR. 599+41 6.6° CVR. 599+74 M.P. 135 601+93 P.I. 00°24'42" RT. | 606+37 FENCE (BARBED WIRE) 606+63 FENCE (BARBED WIRE) | 612+09 4.6° CVR. | 616+11 6.4° CVR. | 625+58 4.8° CVR. 625+86 P.I. 01°38'46" LT. 628+45 P.I. 01°34'42" RT. 9.8° CVR. | 629+13 BEGIN SLOUGH 629+20 FENCE (BARBED WIRE) 629+97 | 629+66 CL SLOUGH | 633+08 FENCE (BARBED WIRE) 633+27 END SLOUGH | 635+03 BEGIN SLOUGH 635+78 CL SLOUGH 636+57 END SLOUGH | 643+14 BEGIN SLOUGH 643+33 CL SLOUGH | 645+81 END SLOUGH 646+36 BEGIN SLOUGH | 647+87 CL SLOUGH | 649+29 END SLOUGH 649+31 6.3° CVR. | MATCHLINE 650+80

**PIPE SLOPE REPRESENTATION (2D)**

520+61 | 525+664 | ② 3,109' FBE | 551+70 | ③ 80' FBE & ARO BR. | 552+50 | 563+74 | (15) | 566+75 | 571+35 | 571+86 | ② 5,374' FBE | 579+38 | 606+24 | ③ 79' FBE & ARO BR. | 607+03 | 612+34 | (25) | 616+74 | ② 4,377' FBE | 627+15 | 632+77 | 633+22 | (29) | 637+50 | 643+65 | (32) | 649+09 | 650+80

**PIPELINE DATA**

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. 195.66.

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. | 12,860' |
| 3 | 30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT | 159' |
| | PIPELINE MARKERS | 0 EA |
| | PIPELINE WARNING SIGNS | 7 EA |
| | CATHODIC TEST STATION | 2 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 | 10/11/28 | UEI | | | | ISSUED FOR AS-BUILT 1830-03-ML-02-005, REPLACES COVERAGE OF IFC DRAWINGS 1830-03-ML-02-007, 1830-03-ML-02-008, 1830-03-ML-02-009 |

## 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

TransCanada — In business to deliver

UNIVERSAL PEGASUS INTERNATIONAL

KEYSTONE MAINLINE (NPS 30 2008) LUVERNE SECTION

P(A)# 1830 | SPREAD 2A | DISCIPLINE 03

# AS-BUILT ALIGNMENT

M.P. 133.50 TO M.P. 135.97

SHEET 5 OF 20 SHEETS

STA. 520+61 TO STA. 650+80 (3D)

DRAWING NO. 1830-03-ML-02-005 REV. 2

Z:\00_KEYSTONE_AS_BUILT\4-alignment sheets for North Dakota\ND1830_ASBUILTWD1830-005.dwg, 3/9/2011 2:23:00 PM, pdfFactory.pc3