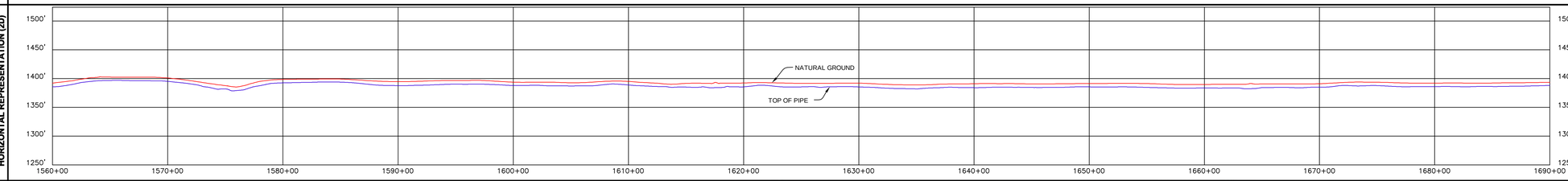
RIGHT-OF-WAY
HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

1560+00 | ML-SD-KB-0749.0000 | RD-SD-KB-0749.0000 219TH STREET | 1563+75 | ML-SD-KB-0750.0000 | RD-SD-KB-0750.0000 230TH STREET | 1617+52 | ML-SD-MN-0752.0000 | RD-SD-MN-0752.0000 221ST STREET | 1664+01 | ML-SD-MN-0753.0000 | 1690+00

LAND USE

## PIPELINE PROFILE

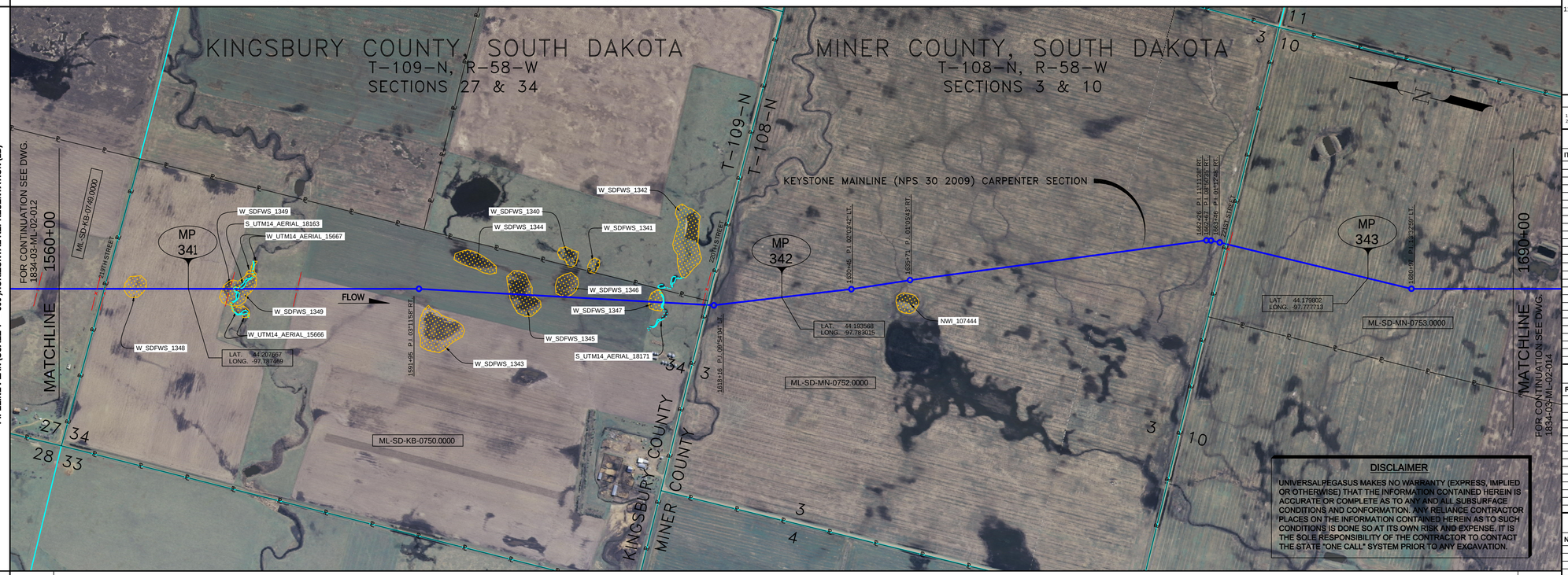
HORIZ: 1"=500' VER: 1"=100'
HORIZONTAL REPRESENTATION (2D)




## 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

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

STATION/DESCRIPTION

### HORIZONTAL STATIONS (2D)

MATCHLINE 1560+00
1562+38 FENCE (BARBED WIRE) CROSSING
1563+07 CL 219TH STREET
1563+27 EDGE OF ROAD
1564+11 FENCE (BARBED WIRE)
1575+18 FENCE (BARBED WIRE) CROSSING
1575+79 WATER EDGE
1575+97 WATER EDGE
1581+17 FENCE (BARBED WIRE)
1591+95 P.I. 03°11'58" RT.
1617+13 FENCE (BARBED WIRE) CROSSING
1617+41 EDGE OF ROAD
1617+64 EDGE OF ROAD
1618+16 P.I. 08°56'48" LT.
1630+35 P.I. 02°03'42" LT.
1635+71 P.I. 01°05'43" RT.
1662+26 P.I. 11°11'28" RT.
1662+45 P.I. 08°50'35" RT.
1663+36 P.I. 01°12'48" RT.
1664+41 CL 221ST STREET
1664+59 EDGE OF ROAD
1664+38 FENCE (BARBED WIRE) CROSSING
1680+97 P.I. 13°35'59" LT.
MATCHLINE 1690+00

### SLOPE STATIONS (3D)

MATCHLINE 1560+91
1564+21 6.6' CVR. 1564+29 FENCE (BARBED WIRE) CROSSING
1564+41 CL 219TH STREET
1564+62 EDGE OF ROAD
1564+72 EDGE OF ROAD
1564+92 FENCE (BARBED WIRE)
1572+41 M.P. 341
1576+10 FENCE (BARBED WIRE) CROSSING
1576+31 W.T. CVR.
1576+78 CL CREEK
1576+89 WATER EDGE
1582+10 FENCE (BARBED WIRE) CROSSING
1584+67 5.7' CVR.
1592+88 P.I. 03°11'58" RT.
1599+74 5.8' CVR.
1613+45 5.8' CVR.
1618+08 FENCE (BARBED WIRE) CROSSING
1618+38 EDGE OF ROAD
1618+56 EDGE OF ROAD
1618+85 FENCE (BARBED WIRE) CROSSING
1619+10 P.I. 08°56'48" LT.
1625+21 M.P. 342
1631+40 P.I. 02°03'42" LT.
1632+50 6.3' CVR.
1636+67 P.I. 01°05'43" RT.
1649+02 6.0' CVR.
1662+34 6.8' CVR.
1662+45 P.I. 11°11'28" RT.
1663+53 P.I. 08°50'35" RT.
1664+44 P.I. 01°12'48" RT.
1664+58 FENCE (BARBED WIRE) CROSSING
1664+68 CL 221ST STREET
1664+86 EDGE OF ROAD
1665+33 FENCE (BARBED WIRE) CROSSING
1673+69 6.4' CVR.
1678+01 M.P. 343
1681+25 6.0' CVR.
1681+94 P.I. 13°35'59" LT.
1687+20 6.3' CVR.
MATCHLINE 1690+97

### PIPE SLOPE REPRESENTATION (2D)

1560+91
② 330' FBE
1564+21
③ 78' FBE & ARO O.C.
1564+99
1576+10
② 5,306' FBE
1580+10
1618+05
③ 80' FBE & ARO BR.
1618+85
② 4,573' FBE
1664+58
⑦ 79' FBE BR.
1665+37
② 2,560' FBE
1690+97

CPS (3D)

TEST SECTIONS (3D)

TEST SECTION 3B-2
ILTO-026-2010

## 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 OCTOBER 10, 2009 FOR M.P. 301.75 TO M.P. 343.98 AND OCTOBER 31, 2009 FOR M.P. 343.98 TO 377.31.
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 16432+39 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 | 12,769' |
| 3 | 30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT | 158' |
| 7 | 30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING | 79' |
| | PIPELINE MARKERS | 0 EA |
| | PIPELINE WARNING SIGNS | 8 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 | 10/2/15 | UEI | | | | ISSUED FOR AS-BUILT |
| | | | | | | 1834-03-ML-02-013 |
| | | | | | | REPLACES COVERAGE OF |
| | | | | | | IFC DRAWINGS |
| | | | | | | 1834-03-ML-02-020, |
| | | | | | | 1834-03-ML-02-021, |
| | | | | | | 1834-03-ML-02-022 |

## ENGINEERING RECORDS

| | INITIAL | DATE | | INITIAL | DATE |
|---|---|---|---|---|---|
| DRAWN BY | UEI | 10/02/15 | 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 2009) CARPENTER SECTION

| F/A# | SPREAD | DISCIPLINE |
|---|---|---|
| 1834 | SPREAD 3B | DISCIPLINE 03 |

# AS-BUILT ALIGNMENT

M.P. 340.78 TO M.P. 343.25

SHEET 13 OF 20 SHEETS

STA. 1560+91 TO STA. 1690+97 (3D)

DRAWING NO. 1834-03-ML-02-013 REV. 2