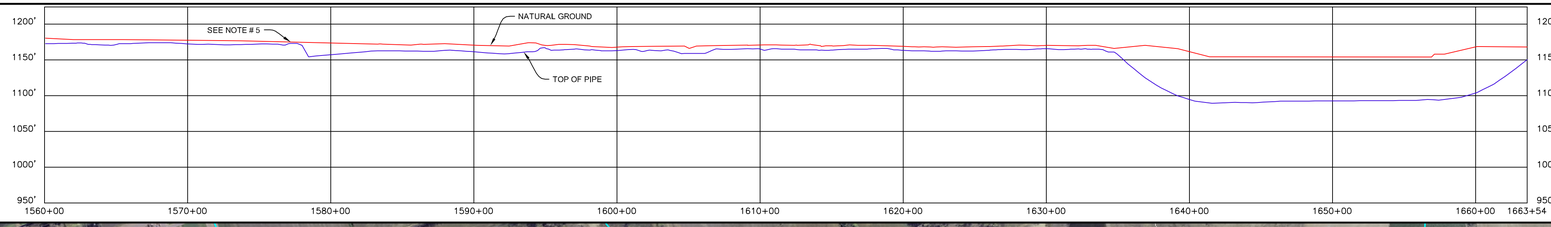
RIGHT-OF-WAY HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY
LENGTH
APPLICABLE DWG. NO.

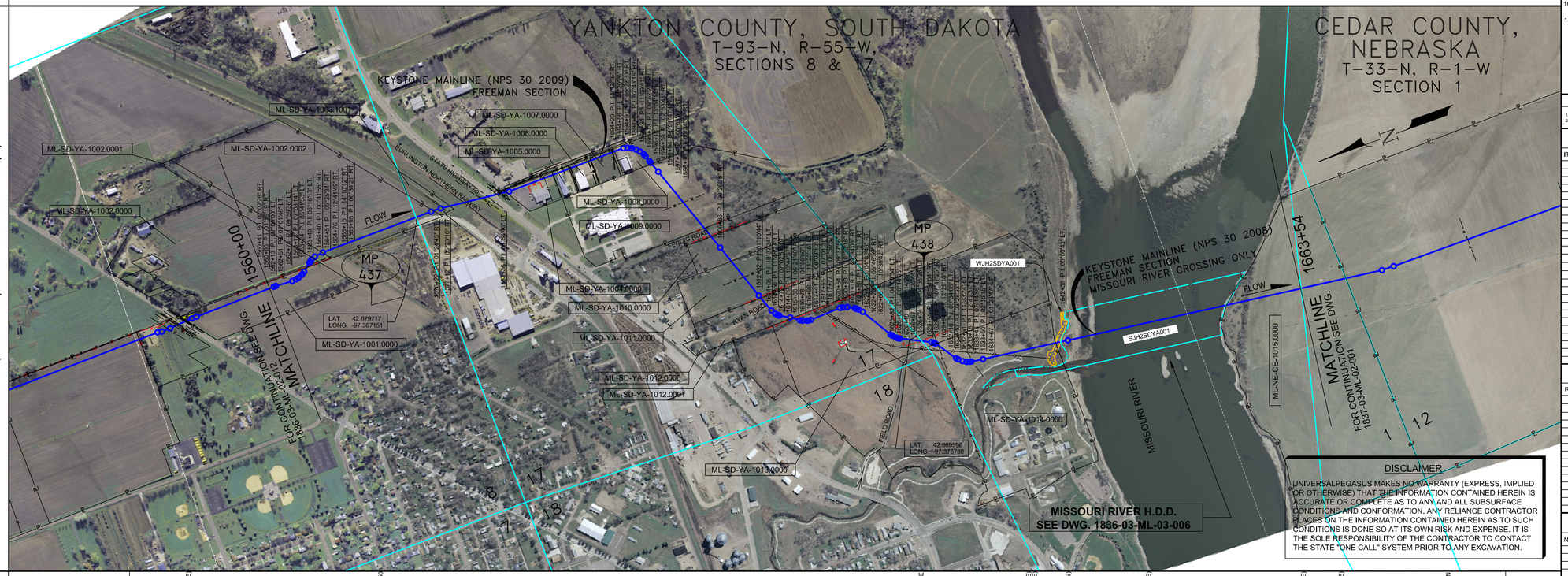
LAND USE

PIPELINE PROFILE

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



PIPELINE PLAN (SCALE 1" = 500')HORIZONTAL REPRESENTATION (2D)



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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 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

PIPELINE DATA

STATION/DESCRIPTION

HORIZONTAL STATIONS (2D)

MATCHLINE 1560+00 | 1560+41 P.I. 06°42'28" RT. | 1562+15 P.I. 07°00'00" LT. | 1562+51 P.I. 07°00'00" LT. | 1564+06 P.I. 07°00'00" LT. | 1564+44 P.I. 07°00'00" LT. | 1565+07 P.I. 07°00'00" LT. | 1565+13 P.I. 07°00'14" LT. | 1565+42 P.I. 06°16'53" LT. | 1565+45 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1566+45 P.I. 05°23'04" RT. | 1566+70 P.I. 14°10'29" RT. | 1567+56 SANITARY SEWER 10.0' CLR. (ABOVE) | 1567+89 P.I. 01°24'50" RT. | 1576+16 P.I. 01°24'50" RT. | 1576+56 P.I. 05°23'10" RT. | 1577+29 4" MIDAMERICA PIPELINE COMPANY | 1578+48 VENT | 1579+21 TOP OF RAIL | 1579+27 BURLINGTON NORTHERN RAILWAY | 1580+56 ROAD BAR DITCH | 1580+69 SANITARY SEWER 10.0' CLR. (ABOVE) | 1580+78 TELEPHONE LINE | 1580+88 OVERHEAD POWERLINE | 1581+20 EDGE OF ROAD | 1581+33 STATE HIGHWAY 50 | 1581+81 EDGE OF ROAD | 1582+01 CL ARCHERY LANE | 1582+25 6" FOREIGN PIPELINE | 1582+35 ROAD BAR DITCH | 1582+41 WATER SUPPLY LINE | 1582+43 3" FOREIGN PIPELINE | 1582+46 TELEPHONE LINE | 1582+52 TELEPHONE LINE | 1582+55 UNDERGROUND POWERLINE | 1582+58 UNDERGROUND POWERLINE | 1582+59 OVERHEAD POWERLINE | 1582+62 UNDERGROUND POWERLINE | 1582+80 OVERHEAD POWERLINE | 1582+97 SANITARY SEWER | 1583+36 P.I. 06°54'46" LT. | 1586+70 6" MIDAMERICA PIPELINE COMPANY | 1587+52 TELEPHONE LINE | 1587+59 6" MIDAMERICA PIPELINE COMPANY | 1587+74 WATER SUPPLY LINE | 1588+50 UNDERGROUND POWERLINE | 1589+13 SANITARY SEWER | 1589+16 6" MIDAMERICA PIPELINE COMPANY | 1589+20 6" MIDAMERICA PIPELINE COMPANY | 1589+21 WATER SUPPLY LINE | 1590+85 TELEPHONE LINE | 1590+89 TELEPHONE LINE | 1591+08 WATER SUPPLY LINE | 1591+10 UNDERGROUND POWERLINE | 1593+17 SANITARY SEWER | 1593+18 WATER SUPPLY LINE | 1593+31 UNDERGROUND POWERLINE | 1593+37 1.5" FOREIGN PIPELINE | 1594+20 P.I. 14°12'16" RT. | 1594+41 P.I. 10°25'25" RT. | 1594+91 P.I. 10°25'25" RT. | 1595+39 P.I. 10°25'25" RT. | 1595+73 P.I. 08°15'28" RT. | 1596+54 P.I. 01°47'12" LT. | 1596+58 P.I. 02°53'41" RT. | 1596+64 P.I. 10°04'35" RT. | 1600+16 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1601+69 WATER SUPPLY LINE | 1604+45 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1604+48 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1610+22 WATER SUPPLY LINE | 1612+39 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1613+38 ROAD BAR DITCH | 1613+45 CL ARCHERY LANE | 1613+61 ROAD BAR DITCH | 1614+05 P.I. 10°37'34" LT. | 1614+12 P.I. 07°10'51" LT. | 1614+58 P.I. 10°37'34" LT. | 1614+88 P.I. 10°44'37" LT. | 1615+19 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1616+17 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1617+41 P.I. 08°08'10" LT. | 1617+77 P.I. 08°08'10" LT. | 1617+77 P.I. 08°25'52" LT. | 1619+16 8" FOREIGN PIPELINE 5.0' CLR. (ABOVE) | 1619+35 8" FOREIGN PIPELINE | 1620+56 P.I. 10°37'26" RT. | 1621+19 P.I. 09°33'21" RT. | 1621+58 P.I. 10°37'26" RT. | 1622+06 P.I. 04°03'58" RT. | 1622+23 P.I. 10°48'39" RT. | 1622+45 P.I. 04°09'54" LT. | 1626+40 P.I. 08°14'09" LT. | 1626+57 P.I. 08°25'54" LT. | 1626+89 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1627+99 CL FIELD ROAD | 1628+34 POWERLINE | 1628+54 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1629+55 P.I. 08°54'04" RT. | 1629+58 P.I. 08°54'04" RT. | 1630+15 UNDERGROUND POWERLINE | 1631+03 8" FOREIGN PIPELINE 5.0' CLR. (ABOVE) | 1632+46 P.I. 03°29'55" LT. | 1632+58 P.I. 03°29'55" LT. | 1633+18 P.I. 12°31'54" LT. | 1633+43 P.I. 07°14'56" LT. | 1634+06 TRANSITION PIECE | 1634+08 TRANSITION PIECE | 1634+08 TWO ENTRY WELD TIE-IN | 1634+08 P.I. 07°14'56" LT. | 1634+39 FOREIGN PIPELINE | 1641+68 WATER EDGE | 1642+40 P.I. 07°14'56" LT. | 1645+38 CL MISSOURI RIVER | 1646+30 WATER EDGE | MATCHLINE 1663+54

SLOPE STATIONS (3D)

MATCHLINE 1561+94 | 1562+35 P.I. 06°42'28" RT. | 1562+41 P.I. 06°42'28" RT. | 1562+15 P.I. 07°00'00" LT. | 1562+51 P.I. 07°00'00" LT. | 1564+06 P.I. 07°00'00" LT. | 1564+44 P.I. 07°00'00" LT. | 1565+07 P.I. 07°00'14" LT. | 1565+13 P.I. 07°00'14" LT. | 1565+42 P.I. 06°16'53" LT. | 1565+45 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1566+45 P.I. 05°23'04" RT. | 1566+70 P.I. 14°10'29" RT. | 1567+56 SANITARY SEWER 10.0' CLR. (ABOVE) | 1567+89 P.I. 01°24'50" RT. | 1576+16 P.I. 01°24'50" RT. | 1576+56 P.I. 05°23'10" RT. | 1577+29 4" MIDAMERICA PIPELINE COMPANY | 1578+48 OVERBEND 2.5° | 1579+27 TOP OF RAIL | 1579+68 BURLINGTON NORTHERN RAILWAY | 1580+45 P.I. 02°37'42" LT. | 1580+56 ROAD BAR DITCH. | 1580+69 SANITARY SEWER 10.0' CLR. (ABOVE) | 1580+78 TELEPHONE LINE | 1580+88 OVERHEAD POWERLINE | 1581+20 EDGE OF ROAD | 1581+33 STATE HIGHWAY 50 | 1581+81 EDGE OF ROAD | 1582+01 CL ARCHERY LANE | 1582+25 6" FOREIGN PIPELINE | 1582+35 ROAD BAR DITCH | 1582+41 WATER SUPPLY LINE | 1582+43 3" FOREIGN PIPELINE | 1582+46 TELEPHONE LINE | 1582+52 TELEPHONE LINE | 1582+55 UNDERGROUND POWERLINE | 1582+58 UNDERGROUND POWERLINE | 1582+59 OVERHEAD POWERLINE | 1582+62 UNDERGROUND POWERLINE | 1582+80 OVERHEAD POWERLINE | 1582+97 SANITARY SEWER | 1583+36 P.I. 06°54'46" LT. | 1586+70 6" MIDAMERICA PIPELINE COMPANY | 1587+52 TELEPHONE LINE | 1587+59 6" MIDAMERICA PIPELINE COMPANY | 1587+74 WATER SUPPLY LINE | 1588+50 UNDERGROUND POWERLINE | 1589+13 SANITARY SEWER | 1589+16 6" MIDAMERICA PIPELINE COMPANY | 1589+20 6" MIDAMERICA PIPELINE COMPANY | 1589+21 WATER SUPPLY LINE | 1590+85 TELEPHONE LINE | 1590+89 TELEPHONE LINE | 1591+08 WATER SUPPLY LINE | 1591+10 UNDERGROUND POWERLINE | 1593+17 SANITARY SEWER | 1593+18 WATER SUPPLY LINE | 1593+31 UNDERGROUND POWERLINE | 1593+37 1.5" FOREIGN PIPELINE | 1594+20 P.I. 14°12'16" RT. | 1594+41 P.I. 10°25'25" RT. | 1594+91 P.I. 10°25'25" RT. | 1595+39 P.I. 10°25'25" RT. | 1595+73 P.I. 08°15'28" RT. | 1596+54 P.I. 01°47'12" LT. | 1596+58 P.I. 02°53'41" RT. | 1596+64 P.I. 10°04'35" RT. | 1600+16 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1601+69 WATER SUPPLY LINE | 1603+70 WATER SUPPLY LINE | 1604+45 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1604+48 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1610+22 WATER SUPPLY LINE | 1612+39 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1613+38 ROAD BAR DITCH | 1613+45 CL ARCHERY ROAD | 1613+61 ROAD BAR DITCH. | 1614+05 P.I. 10°37'34" LT. | 1614+12 P.I. 07°10'51" LT. | 1614+58 P.I. 10°37'34" LT. | 1614+88 P.I. 10°44'37" LT. | 1615+19 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1616+17 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1617+41 P.I. 08°08'10" LT. | 1617+77 P.I. 08°08'10" LT. | 1617+77 P.I. 08°25'52" LT. | 1619+16 8" FOREIGN PIPELINE 5.0' CLR. (ABOVE) | 1619+35 8" FOREIGN PIPELINE | 1620+56 P.I. 10°37'26" RT. | 1621+19 P.I. 09°33'21" RT. | 1621+58 P.I. 10°37'26" RT. | 1622+06 P.I. 04°03'58" RT. | 1622+23 P.I. 10°48'39" RT. | 1622+45 P.I. 04°09'54" LT. | 1626+40 P.I. 08°14'09" LT. | 1626+57 P.I. 08°25'54" LT. | 1626+89 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1627+99 CL FIELD ROAD | 1628+34 POWERLINE | 1628+54 FENCE (BARBED WIRE) 1.0' CLR. (ABOVE) | 1629+55 P.I. 08°54'04" RT. | 1629+58 P.I. 08°54'04" RT. | 1630+15 UNDERGROUND POWERLINE | 1630+67 CL FIELD ROAD | 1631+03 8" FOREIGN PIPELINE 5.0' CLR. (ABOVE) | 1632+46 P.I. 03°29'55" LT. | 1632+58 P.I. 03°29'55" LT. | 1633+18 P.I. 12°31'54" LT. | 1633+43 P.I. 07°14'56" LT. | 1634+06 TRANSITION PIECE | 1634+08 TRANSITION PIECE | 1634+08 TWO ENTRY WELD TIE-IN | 1634+08 P.I. 07°14'56" LT. | 1634+21 P.I. 03°29'55" LT. | 1634+43 P.I. 03°29'55" LT. | 1634+58 P.I. 12°31'54" LT. | 1634+59 P.I. 07°14'56" LT. | 1634+59 FOREIGN PIPELINE | 1637+29 | 1637+29 | 1641+68 WATER EDGE | 1642+40 P.I. 07°14'56" LT. | 1645+38 CL MISSOURI RIVER | 1646+30 WATER EDGE | MATCHLINE 1663+66

PIPE SLOPE REPRESENTATION (3D)

1561+94 | ⑥ 338' FBE | 1565+32 | ③ 120' FBE & ARO O.C. | 1566+52 | ⑥ 1,389' FBE | 1579+20 | 1579+68 | 1579+88 | 1580+11 | 1580+45 | ⑥ 477' FBE & ARO BR. 36" CASING 451' | 1584+96 | 1585+16 | ⑥ 2,148' FBE | 1606+66 | 1606+86 | ③ 120' FBE & ARO O.C. | 1607+06 | ⑥ 723' FBE | 1615+09 | 1615+29 | ③ 80' FBE & ARO O.C. | 1618+19 | ⑥ 2,060' FBE | 1635+49 | ③ 80' FBE & ARO O.C. | 1637+29 | ④ 2,837' FBE & ARO | 1665+66

TYPE 'B' | TYPE '4' | TYPE 'F2' | TYPE 'F4' | TYPE 'F2'

TEST STATION IS LOCATED AT STA. NO. 1585+18

CPS (3D)

TEST SECTIONS (3D)

TEST SECTION 4B-2 ILTO-028-2010 | 1635+10 | TEST SECTION 4B-3 ILTO-028-2010

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) TWO TYPES OF COATING WERE APPLIED TO THE FIELD WELDS DURING THE ORIGINAL CONSTRUCTION. ONE TYPE WAS TWO COMPONENT LIQUID EPOXY, THE PRODUCTS USED WERE DENSO 7200 OR SPC SP-2888. THE OTHER TYPE THAT WAS APPLIED TO THE FIELD WELDS WAS FBE, THE PRODUCT NAME WAS 3M 6223 11G.

7) THE SUBSTANTIAL CONSTRUCTION COMPLETION DATE, BASED ON CALIPER PIG RUN, WAS AUGUST 17, 2009 FOR M.P. 403.90 TO 422.96 AND OCTOBER 28, 2009 FOR M.P. 422.96 TO 463.18.

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 21496+76 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
3	30" O.D. X 0.516" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	877'
4	30" O.D. X 0.622" W.T., API-5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	2,837'
6	30" O.D. X 0.429" W.T., API-5LX-70 W/FBE COATING	6,658'
20	30" - 22.5° 3 DIA RAD WELD FITTING 0.515" W.T., Y-70	1 EA
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	8 EA
	CATHODIC TEST STATION	5 EA
	AERIAL MARKER	0 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
HDD	1836-03-ML-03-006	14	MISSOURI RIVER AT YANKTON HDD INSTALLATION

REVISIONS

NO.	DATE	REV. BY	CHCK BY	APPRD BY	ENV. APPRD.	DESCRIPTION
1	5/12/08	UEI	RDG	LAG	SEC	ISSUED FOR CONSTRUCTION
2	10/12/16	UEI				ISSUED FOR AS-BUILT 1836-03-ML-02-013 REPLACES COVERAGE OF IFC DRAWINGS 1836-03-ML-02-020, 1836-03-ML-02-021

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/03/01	ENV. APPRD.		
CHECKED BY			APPRD. BY		
			COMPANY APPROVED		

PROFESSIONAL ENGINEER

NAME	STATE	LIC#	REV#	DATE
LOYS ALVIN GRAY, III	SD	CE9004		
LOYS A. GRAY, III	NE	E-11956		

SCALE: 0 125 250 500 Feet

TransCanada — In business to deliver

UNIVERSAL PEGASUS INTERNATIONAL

KEYSTONE MAINLINE (NPS 30 2009) FREEMAN SECTION

PJA# 1836 | SPREAD 4B | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 436.72 TO M.P. 438.68

SHEET 13 OF 13 SHEETS

STA. 1561+94 TO STA. 1665+66 (3D)

DRAWING NO. 1836-03-ML-02-013 REV. 2