RIGHT-OF-WAY
HORIZONTAL REPRESENTATION (2D)
TRACT NUMBER
OWNERSHIP/AGENCY

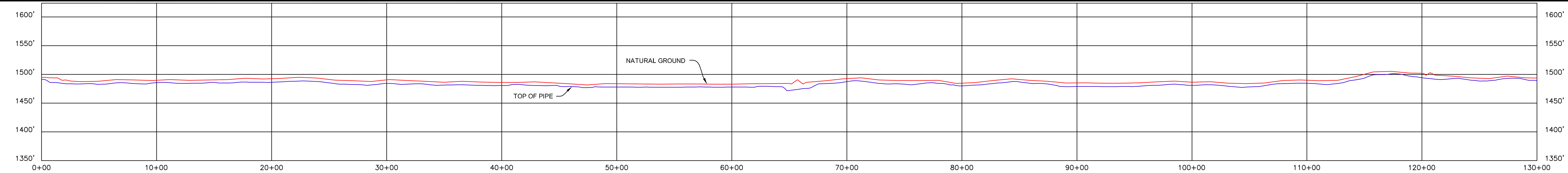
LENGTH
APPLICABLE DWG. NO.

Station	Tract
0+00	PS-ND-NL-0188.0000
2+18	ML-ND-NL-0188.0000
	RD-ND-NL-0188.0000 35TH STREET
11+86	ML-ND-NL-0189.0000
38+27	ML-ND-NL-0190.0000
	RD-ND-NL-0190.0000 COUNTY ROAD 4
65+71	ML-ND-NL-0191.0000
94+27	ML-ND-NL-0192.0000
	RD-ND-NL-0192.0000 33RD STREET
120+71	ML-ND-NL-0193.0000
130+00	

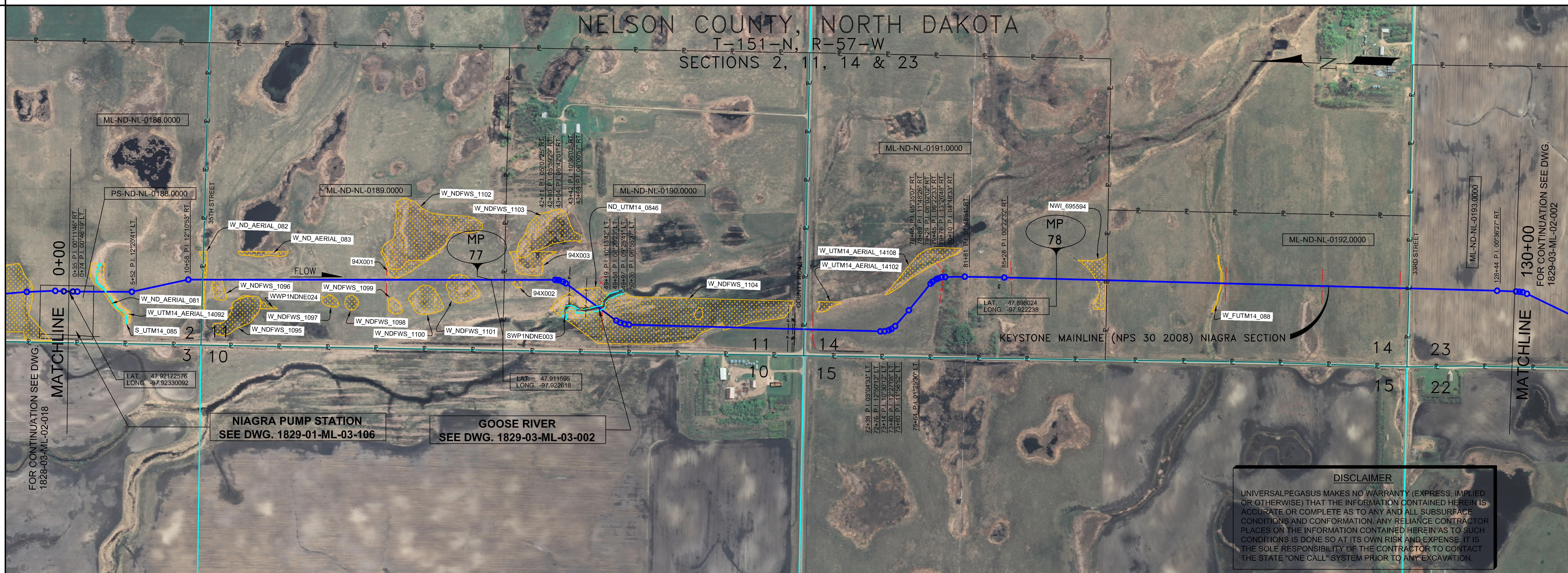
LAND USE

PIPELINE PROFILE

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



PIPELINE PLAN (SCALE 1" = 500')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 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 — PIPELINE DATA

HORIZONTAL STATIONS (2D)

0+00 CENTERLINE OF MLV NAGRA-A0-MOV-0102
0+35 P.I. 00°11'46" RT.
0+74 P.I. 00°46'19" LT.
2+59 BEGIN SLOUGH
3+46 CL SLOUGH
4+05 END SLOUGH
5+52 P.I. 12°20'41" LT.
10+58 P.I. 12°10'53" RT.
11+76 EDGE OF ROAD
11+86 CL 35TH STREET
11+96 EDGE OF ROAD
27+92 FENCE
42+71 P.I. 05°07'25" RT.
42+90 P.I. 05°59'29" RT.
43+04 P.I. 08°42'01" RT.
43+42 P.I. 10°36'02" RT.
43+68 P.I. 06°00'57" RT.
44+10 OVERHEAD POWERLINE
45+92 OVERHEAD POWERLINE
47+28 CL GOOSE RIVER
47+67 FENCE (BARBED WIRE)
49+19 P.I. 10°13'42" LT.
49+58 P.I. 08°20'23" LT.
49+97 P.I. 09°25'41" LT.
50+35 P.I. 06°55'37" LT.
64+32 UNDERGROUND POWERLINE
64+71 WATER SUPPLY LINE
64+86 OVERHEAD POWERLINE
64+89 OVERHEAD POWERLINE
65+15 ROAD BAR DITCH
65+56 EDGE OF ROAD
65+71 CL COUNTY ROAD 4
65+86 EDGE OF ROAD
66+19 ROAD BAR DITCH
66+46 FENCE (BARBED WIRE)
72+39 P.I. 03°04'33" LT.
72+76 P.I. 12°50'12" LT.
73+14 P.I. 10°30'12" LT.
73+40 P.I. 12°27'08" LT.
73+80 P.I. 11°56'52" LT.
75+64 P.I. 01°25'30" LT.
78+65 P.I. 05°35'07" RT.
78+89 P.I. 11°48'26" RT.
79+29 P.I. 08°02'02" RT.
79+45 P.I. 06°22'33" RT.
79+76 P.I. 13°26'48" RT.
79+96 FENCE
80+10 P.I. 04°48'33" RT.
81+81 P.I. 01°48'51" RT.
85+28 P.I. 00°22'32" RT.
85+87 FENCE (BARBED WIRE)
94+27 FENCE
104+69 FENCE
113+14 FENCE
119+94 FENCE (BARBED WIRE)
120+61 EDGE OF ROAD
120+71 CL 33RD STREET
120+79 EDGE OF ROAD
128+44 P.I. 00°36'27" RT.
MATCHLINE 130+00

SLOPE STATIONS (3D)

0+00 CENTERLINE OF MLV NAGRA-A0-MOV-0102
0+37 P.I. 00°11'46" RT.
0+76 P.I. 00°46'19" LT.
2+11 6.7' CVR.
2+20 PUMP STATION PROPERTY LINE
2+60 BEGIN SLOUGH
3+48 CL SLOUGH
4+07 END SLOUGH
5+54 P.I. 12°20'41" LT.
9+64 4.1' CVR.
10+61 P.I. 12°10'53" RT.
11+79 EDGE OF ROAD
11+89 CL 35TH STREET
11+99 EDGE OF ROAD
17+77 6.8' CVR.
27+95 FENCE
35+01 4.8' CVR.
37+14 M.P. 77
42+75 P.I. 05°07'25" RT.
42+95 P.I. 05°59'29" RT.
6.4' CVR.
43+09 P.I. 08°42'01" RT.
43+47 P.I. 10°36'02" RT.
43+73 P.I. 06°00'57" RT.
44+15 OVERHEAD POWERLINE, HT. = UNK.
45+97 OVERHEAD POWERLINE, HT. = UNK.
47+33 CL GOOSE RIVER
44+42 4.6' CVR.
47+72 FENCE (BARBED WIRE)
49+08 6.0' CVR.
49+24 P.I. 10°13'42" LT.
49+64 P.I. 08°20'23" LT.
50+02 P.I. 09°25'41" LT.
50+41 P.I. 06°55'37" LT.
63+52 4.8' CVR.
64+39 UNDERGROUND POWERLINE 4.6' CVR. CLR. UNK.
64+77 WATER SUPPLY LINE 10.5' CVR. CLR. UNK.
64+92 OVERHEAD POWERLINE, HT. = 25'
64+96 OVERHEAD POWERLINE, HT. = 25'
65+07 12.4' CVR.
65+22 ROAD BAR DITCH 11.1' CVR.
65+63 EDGE OF ROAD
65+78 CL COUNTY ROAD 4
65+93 EDGE OF ROAD
66+26 ROAD BAR DITCH 8.1' CVR.
66+53 FENCE (BARBED WIRE)
72+47 P.I. 03°04'33" LT.
72+84 P.I. 12°50'12" LT.
5.8' CVR.
73+22 P.I. 10°30'12" LT.
73+48 P.I. 12°27'08" LT.
73+89 P.I. 11°56'52" LT.
75+72 P.I. 01°25'30" LT.
78+74 P.I. 05°35'07" RT.
78+98 P.I. 11°48'26" RT.
79+37 P.I. 08°02'02" RT.
79+54 P.I. 06°22'33" RT.
79+85 P.I. 13°26'48" RT.
80+05 FENCE
81+18 4.2' CVR.
80+19 P.I. 04°48'33" RT.
81+90 P.I. 01°48'51" RT.
85+37 P.I. 00°22'32" RT.
85+97 FENCE (BARBED WIRE)
89+94 M.P. 78
90+74 6.3' CVR.
94+37 FENCE
101+67 5.2' CVR.
104+79 FENCE
113+25 FENCE
120+05 FENCE (BARBED WIRE), 7.5' CVR.
120+73 EDGE OF ROAD
120+83 CL 33RD STREET
120+91 EDGE OF ROAD
128+56 P.I. 00°36'27" RT.
MATCHLINE 130+13

PIPE SLOPE REPRESENTATION (3D)

0+00 — (406) 260' FOR PUMP STATION ASSEMBLY MATERIAL SEE DWG. NO. 1829-01-ML-03-106 — 2+60
(2) 909' FBE — 11+69
(3) 80' FBE & ARO O.C. — 12+49
(2) 5,258' FBE — 65+07
(3) 160' FBE & ARO BR. — 66+67
80+01
86+00
93+37
(2) 5,378' FBE — 120+45
(3) 80' FBE & ARO BR. — 121+25
(2) 888' FBE — 130+13

CPS (3D)

TEST SECTIONS (3D): TEST SECTION 1A-4 ILTO-020-2010

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 16, 2009 FOR M.P. 66.90 TO M.P. 88.54, SEPTEMBER 16, 2009 FOR M.P. 88.54 TO M.P. 114.00 AND SEPTEMBER 23, 2009 FOR M.P. 114.00 TO M.P. 130.00.
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 4028+46 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	12,433'
3	30" O.D. X 0.516" W.T., API -5LX-70 W/FBE COATING & ABRASION RESISTANT OVERCOAT	320'
406	NIAGRA PUMP STATION ASSEMBLY (+260')	1 EA
	PIPELINE MARKERS	0 EA
	PIPELINE WARNING SIGNS	6 EA
	CATHODIC TEST STATION	2 EA
	AERIAL MARKER	0 EA

REFERENCE DRAWINGS

REF. NO.	DRAWING NO.	REV. NO.	DRAWING TITLE
406	1829-01-ML-03-106	06	NIAGRA PUMP STATION
	1829-01-ML-03-107	00	NIAGRA PUMP STATION
	1829-01-ML-03-108	00	NIAGRA PUMP STATION
O.C.	1829-03-ML-03-002	03	GOOSE RIVER OPEN CUT

REVISIONS

NO.	DATE	REV. BY	CHCK. BY	APPRD. BY	ENV. APPRD.	DESCRIPTION
1	5/12/08	UEI	RDG	LAG	SEC	ISSUED FOR CONSTRUCTION
2	10/11/23	UEI				ISSUED FOR AS-BUILT 1829-03-ML-02-001 REPLACES COVERAGE OF IFC DRAWINGS 1829-03-ML-02-001, 1829-03-ML-02-002

ENGINEERING RECORDS

	INITIAL	DATE		INITIAL	DATE
DRAWN BY	UEI	10/01/11	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

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UNIVERSAL ENSCO, INC.

KEYSTONE MAINLINE (NPS 30 2008) NIAGRA SECTION

FIA# 1829 | SPREAD 1A | DISCIPLINE 03

AS-BUILT ALIGNMENT

M.P. 76.30 TO M.P. 78.76

SHEET 1 OF 20 SHEETS

STA. 0+00 TO STA. 130+13 (3D)

DRAWING NO. 1829-03-ML-02-001 REV. 2

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