

KEYSTONE XL PIPELINE PROJECT

0256-SD-P4-XXX.X-XXX.X-I

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM	
1	VARIATION TYPE: Refinement: <input type="text"/> Reroute: <input checked="" type="checkbox"/> Footprint: <input type="text"/> Design: <input type="text"/> Centerline: <input checked="" type="checkbox"/> Pump Station: <input type="text"/> Valve Site: <input type="text"/> CAR: <input type="text"/>
2	LOCATION: Sketch: <input type="text"/> Attached Pictures: <input type="text"/> N/A State: <input type="text"/> SD County: <input type="text"/> Multiple Quad Map: <input type="text"/> N/A Township: <input type="text"/> Multiple Range: <input type="text"/> Multiple Aerial Map: <input type="text"/> See attached map sheet Section: <input type="text"/> Multiple Centerline: <input type="text"/> 3/14/2012 MP: <input type="text"/> XXX.X to <input type="text"/> XXX.X
3	REASON FOR ROUTE VARIATION (Please include reason for route variation): This report consists of 3 proposed route variations. These route variations are proposed to eliminate PIs, straighten the route and to shorten the route. The reason for each route variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a combination of Flyover video of Centerline, LIDAR data, Pictometry and other aeriels.
	DETAIL ROUTE VARIATION (Please describe route variation in detail): Listed in "Supplemental Info" Tab. No new landowners have been affected by the proposed route variations. The tracts impacted are as follows: RV-0256-01 = 4 tracts impacted: ML-SD-HK-00830.000 (Carl Mathews & Gail V. Miller), ML-SD-HK-00860.000 (Midland Farms, LLC), ML-SD-HK-00870.000 (Midland Farms, LLC), and ML-SD-HK-00895.000 (Midland Farms, LLC). RV-0256-02 = 1 tract impacted (ML-SD-JO-10270.000, West Rio Land & Cattle LTD) RV-0256-03 = 3 tracts impacted: ML-SD-JO-10130.000 & ML-SD-JO-10150.000 (both tracts Michael D. & Joni Hunt); ML-SD-JO-10170 (David A. Weber)
	ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): Listed in "Cost Analysis" Tab.
9	Originator: <input type="text"/> Engineering Date: <input type="text"/> 3/22/2012
10	Received by: <input type="text"/> Date: <input type="text"/> 3/22/2012 Fax to: ?
11	Assigned Tracking Number: <input type="text"/> 0256-SD-P4-XXX.X-XXX.X-I
12	Filed by: <input type="text"/> Date: <input type="text"/> Fax to: ?

Keystone XL Pipeline - Supplemental Information for Route Variation Report 0256

Prepared: 2012-03-22

RV ID	MP Start	MP End	State	County	Section	Township	Range	Original Length (ft)	Reroute Length (ft)	Change in Length (ft)	Max. Perp. Deviation (ft)	Reason for Variation	Brief Variation Description	Additional Impacts/Comments	Originator
0256-01	454.69	456.25	SD	Haakon	29,30,32	04N	21E	8,234	8,072	-162	635	Reroute to eliminate PI/straighten the route.	Route variation starts near MP 454.7 and deviates ~15' west from C/L. It continues in this direction for ~ 928 ft. Then it turns slightly east and continues for 7,102 ft. before it turns east one last time for ~41.3 ft. to rejoin the CL near MP 456.2.		Engineering
0256-02	498.71	498.97	SD	Haakon	34	01N	27E	1,395	1,395	0	5	Reroute to move PI further away from road crossing.	Route variation starts near MP 498.7 and deviates ~8' northeast of C/L for ~ 33 ft. It then parallels the current CL for ~1,362 ft to rejoin it near MP 498.9.	Improve road crossing during construction.	Engineering
0256-03	493.05	494.50	SD	Jones	27,26, 25	01N	26E	7,679	7,615	-64	550	Reroute to shorten the route.	Route variation starts near MP 493.05 and deviates ~6' southeast of current C/L. It extends in this direction for ~2,565 ft. Then the reroute turns east and continues in this direction, towards the current CL, for ~5,057 ft. where it rejoins the CL near MP 494.5.		Engineering

RV ID	Civil Survey Complete?	Civil Survey Needed (ft)	Moves Pump Station?	Moves Valve Site?	In Co-located Area?	Does route variation impact ABB areas?	Biological Survey Complete for Existing Corridor?	Cultural Survey Complete for Existing Corridor?	Biological Survey Complete for Proposed Corridor?	Cultural Survey Complete for Proposed Corridor?	Estimated Length Requiring new Environmental Surveys (ft)	Number of New Landowners impacted by reroute	Number of Landowners on current route impacted by reroute	Is the affected landowner a possible condemnation?	Number of tracts purchased on original route.	Does proposed route variation impact Tribal Lands?	Does proposed route variation impact any Federal/State Lands?
0256-01	NO	8,072	NO	NO	NO	NO	Yes	Yes	No	No	6,500	0	2		2	NO	NO
0256-02	NO	1,395	NO	NO	NO	NO	Yes	Yes	Yes	Yes	0	0	1		1	NO	NO
0256-03	YES	0	NO	NO	NO	NO	Yes	Yes	No	No	7,615	0	3		3	NO	NO

Keystone XL Pipeline - Cost Analysis for Route Variation Report 0256

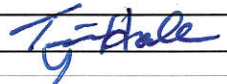







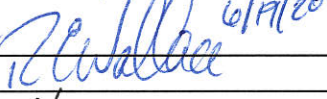
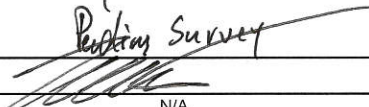

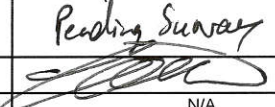
Prepared: 2012-03-22

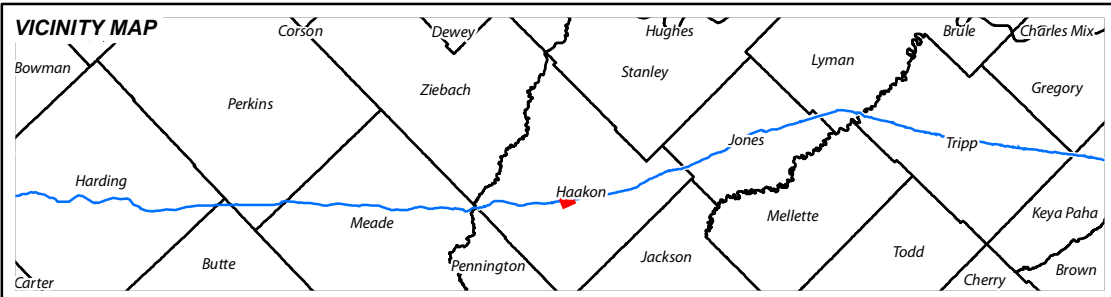
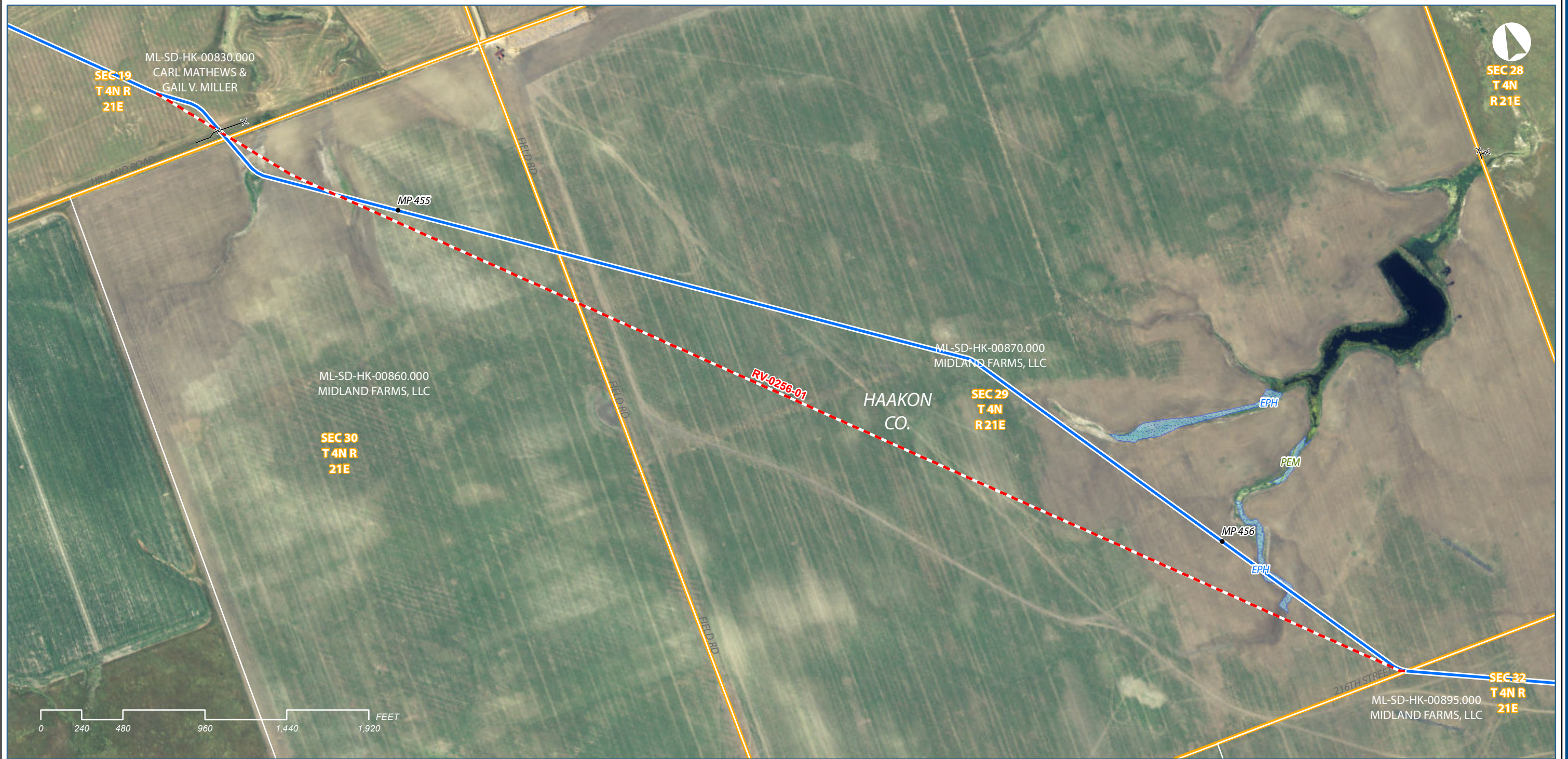
RV ID	Additional length (ft)	Cost \$360/ft	Additional length of wetland construction (ft)	Cost \$195/ft	Additional length of side hill construction (ft)	Cost \$19/ft	Additional bore length (ft)	Cost \$540/ft	Additional Waterbody crossings	Cost (\$77,250/EA btw 10' - 19') (\$32,500/EA < 10')	Cost of Environmental survey (\$5,300/mile)	Cost of Civil survey (\$5,000/mile)	Approximate cost for land purchased on current centerline	Miscellaneous cost for additional impacts	Total Cost
0256-01	-162	\$ (58,465.37)	0	\$ -	0	\$ -	0	\$ -	0	\$ -	\$ 6,524.62	\$ 7,643.77	\$ -		\$ (44,296.98)
0256-02	0.3	\$ 116.60	0	\$ -	0	\$ -	0	\$ -	0	\$ -	\$ -	\$ 1,321.34	\$ -	\$ (10,000.00)	\$ (8,562.06)
0256-03	-64	\$ (22,995.74)	0	\$ -	0	\$ -	0	\$ -	0	\$ -	\$ 7,643.47	\$ -	\$ -		\$ (15,352.27)

Overall Estimated Costs of Routes Variations= \$ (68,211.32)

Keystone XL Pipeline - Approval form for Route Variation Report 0256

Prepared: 2012-03-22

RV ID		0256-01	0256-02	0256-03
LAND (TransCanada) Tina Hall	Approval (Y/N)	Y	Y	Y
	Comments			
	Signature			
ENGINEERING (TransCanada) Meera Kothari	Approval (Y/N)			
	Comments			
	Signature			
ENGINEERING (exp) Butch Wallace	Approval (Y/N)			
	Comments			
	Signature	 4/19/2012	 4/19/2012	 4/19/2012
ENVIRONMENTAL (exp) Jonathan Minton	Approval (Y/N)			
	Comments			
	Signature	 Pending Survey	 Pending Survey	 Pending Survey
FACILITIES (TransCanada) Sandra Gigovic	Approval (Y/N)	N/A	N/A	N/A
	Comments			
	Signature			
PROJECT MANAGEMENT - MONTANA (TransCanada) Alan Lietz	Approval (Y/N)			
	Comments			
	Signature			
PROJECT MANAGEMENT - SOUTH DAKOTA (TransCanada) James Odom	Approval (Y/N)			
	Comments			
	Signature			
PROJECT MANAGEMENT - NEBRASKA (TransCanada) Robert Bradley	Approval (Y/N)			
	Comments			
	Signature			
KEYSTONE XL MANAGER (TransCanada) Steve Marr	Approval (Y/N)			
	Comments			
	Signature			



LEGEND

- MILEPOST
- KEYSTONE XL CL (2012-03-14)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- ▭ PUMP STATION
- ⊗ VALVE
- ⊗ SURVEYED FENCE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▨ WETLAND
- ▨ WATERBODY
- ▭ 500FT MDEQ CORRIDOR

KEYSTONE PHASE IV, US
Proposed Route Variation 0256-01

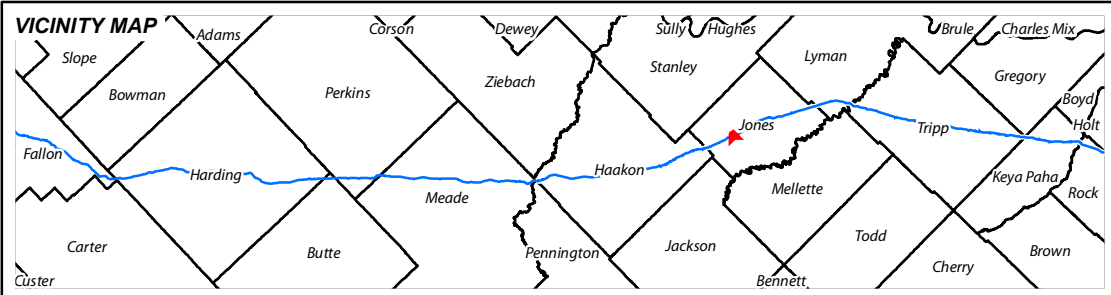
COUNTY:	HAAKON	DRAWN BY:	PD
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	REVISION	DATE	
0	ISSUED FOR REVIEW.	2012-03-19	
PRELIMINARY			
DATE:	2012-03-19	PROJECTION:	NAD83 UTM14 N

PREPARED BY:
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DWG: XL-30-P-9200 SHEET: 1



LEGEND

- MILEPOST
- PHASE IV CL (2010-09-21)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- ▭ PUMP STATION
- ⊗ VALVE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▨ WETLAND
- ▨ WATERBODY
- ▭ 500FT MDEQ CORRIDOR
- HDD ENTRY / EXIT

KEYSTONE PHASE IV, US

Proposed Route Variation 0256-02

COUNTY:	JONES	DRAWN BY:	PD
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	REVISION	DATE	
0	ISSUED FOR REVIEW.	2011-11-28	

PRELIMINARY

DATE:	2011-11-28	PROJECTION:	NAD83 UTM14 N
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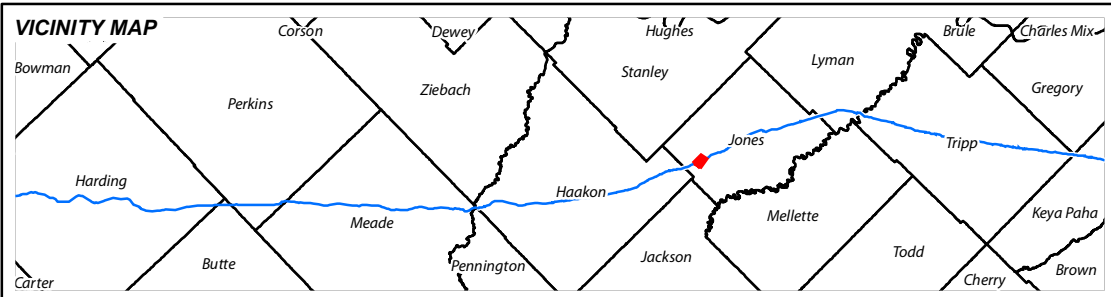
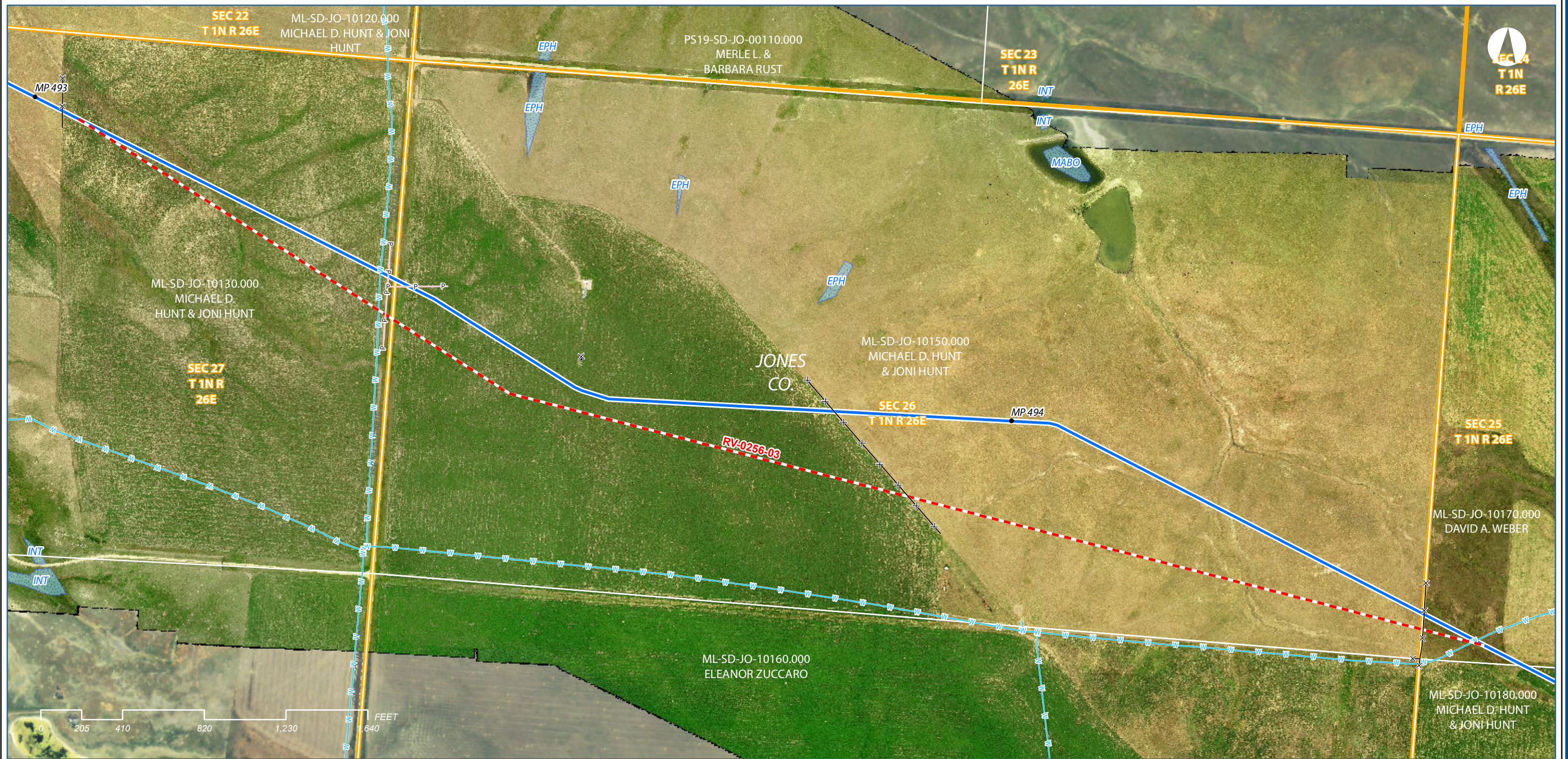
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DWG:	XL-30-P-9200	SHEET:	1
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LEGEND

- MILEPOST
- ✕ SURVEYED FENCE
- KEYSTONE XL CL (2012-03-14)
- ▭ PROPERTY PARCEL
- - - PROPOSED ROUTE VARIATION
- ▭ CULTURAL SITE
- ▭ SECTION LINE
- ▨ WETLAND
- ACCESS ROAD
- ▨ WATERBODY
- ▭ PUMP STATION
- ▭ 500FT MDEQ CORRIDOR
- ⊗ VALVE
- ▬ CULVERT

KEYSTONE XLPROJECT

Proposed Route Variation 0256-03

COUNTY:	JONES	DRAWN BY:	PD
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	0	REVISION	ISSUED FOR REVIEW.
		DATE	2012-03-21

PRELIMINARY

DATE:	2012-03-21	PROJECTION:	NAD83 UTM14 N
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DWG:	XL-30-P-9200	SHEET:	1
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