

KEYSTONE XL PIPELINE PROJECT - STEELE CITY SEGMENT PIPELINE ROUTE VARIATION FORM			
1	<b>VARIATION TYPE:</b> Refinement: <input type="text"/> Reroute: <input checked="" type="checkbox"/>		
	Centerline: <input checked="" type="checkbox"/>	Valve Site: <input type="text"/>	Pump Station: <input type="text"/>
2	<b>LOCATION:</b> Sketch: <input type="text"/> Attached <input type="text"/> Pictures: <input type="text"/> N/A		
	State: <input type="text"/> SD	County: <input type="text"/> Haakon	Quad Map: <input type="text"/> N/A
	Township: <input type="text"/> 01N	Range: <input type="text"/> 25E	Aerial Map: <input type="text"/> See attached map sheet
	Section: <input type="text"/> 4	Centerline: <input type="text"/> 9/21/2011	MP: <input type="text"/> 482.96 to <input type="text"/> 483.24
3	<b>REASON FOR ROUTE VARIATION</b> (Please include reason for route variation):		
	Tweak based on Civil survey data of implemented RV-0215-03 on 8/14/11 CL to distance CL away from drop off.  This reroute is proposed by engineering based on civil survey data.		
	<b>DETAIL ROUTE VARIATION</b> (Please describe route variation in detail):		
	The proposed route variation starts at MP 483 and deviates ~14.5° southeast of current centerline and parallels RV-0215-03 for a total of ~1,483 ft where it rejoins the CL near MP 483.2.		
	<b>ADDITIONAL IMPACTS</b> (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):		
	The proposed reroute is ~18 ft longer than the current route. The reroute does not affect a new landowner. Reroute avoids a drop off, estimated cost savings \$6,000.00		
	Is there an increase/decrease in the number of crossings? Yes <input type="text"/> No <input checked="" type="checkbox"/>		
	If yes, please list: <input type="text"/>		
	<b>COST ANALYSIS</b> (costs incurred or saved from the route variation)		
	Additional length of route realignment:	<input type="text"/> 18 ft.	\$ 6,633.77 \$ 360/ft
	Additional length of side-hill construction:	<input type="text"/> ft.	\$ - \$ 19/ft
	Additional length of wetland construction:	<input type="text"/> 0 ft.	\$ - \$ 195/ft
	Additional bore length (Road, RR):	<input type="text"/> ft.	\$ - \$ 540/ft
	Additional foreign line/pipeline crossings:	<input type="text"/> EA	\$ - \$ 30,000/EA
	Additional water body crossing (streams, ponds, etc.):		
	35 - 65' +	<input type="text"/> EA	\$ - \$ 185,000/EA
	10' - 19'	<input type="text"/> 0 EA	\$ - \$ 77,250/EA
	Less than 10'	<input type="text"/> 0 EA	\$ - \$ 32,500/EA
	Additional survey required:		
	Civil:	<input type="text"/> 0.00 mile	\$ - \$ 5,000/mile
	Cultural:	<input type="text"/> 0.30 mile	\$ 750.00 \$ 2,500/mile
	Biological:	<input type="text"/> 0.30 mile	\$ 840.00 \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from <b>ADDITIONAL IMPACTS</b> listed above:		\$ (6,000)
	Overall estimated costs of the route variation:		\$ 2,223.77 (See "Additional Impacts" above)

4	<b>LAND / TRANSCANADA</b> <span style="float: right;"><i>Tim Irons</i></span>	
	a) Is a new landowner affected by the proposed variation?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	b) Is proposed realignment outside the easement/workspace?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	c) Is realignment proposed to satisfy landowner request?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	-If yes, name of landowner(s)/track number(s): _____	
	d) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	If no, please explain why: _____	
5	<b>ENGINEERING/CONSTRUCTION / STATE PM</b> <span style="float: right;"><i>Meera Kothari</i></span>	
	a) Maximum deviation perpendicular to proposed alignment:	61 ft.
	b) Has the centerline been staked for construction?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	c) Does route variation affect HDD crossing alignment?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	d) Is realignment proposed for engineering/construction reasons?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	e) Will the route variation require the relocation of a pump station?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	f) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	If no, please explain why: _____	
6	<b>ENVIRONMENTAL / exp</b> <span style="float: right;"><i>Jonathan Minton</i></span>	
	a) Has the corridor been environmentally surveyed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	b) Has the proposed variation been environmentally surveyed?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	c) Was variation proposed to satisfy environmental issues?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	d) Was realignment proposed to satisfy agency request?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	-If yes, name of agency(s): _____	
	e) Environmental features:	
	Added (+): <input style="width: 150px; height: 40px;" type="text"/>	Subtracted (-): <input style="width: 150px; height: 40px;" type="text"/>
	Wetland ID # for newly impacted wetlands: _____	
	f) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	If no, please explain why: _____	
7	<b>ENGINEERING / FACILITIES AND HYDRAULICS</b> <i>(if applicable)</i> <span style="float: right;"><i>Sandra Gigovic</i></span>	
	a) Will the route variation require the relocation of a pump station?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	b) Will route variation impact hydraulics?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	c) Are additional valves required at HCA's or water crossing?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	d) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	If no, please explain why: _____	
8	<b>STAKEHOLDER RELATIONS / TCPL</b> <i>(if applicable)</i> <span style="float: right;"><i>Bud Andersen</i></span>	
	a) Does the variation result in any new stakeholders?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	b) Does the variation require follow-up with specific stakeholder groups?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	c) Was the variation proposed to satisfy stakeholder request?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	-If yes, please specify issue type (as it aligns to stakeholder database): _____	
	d) Has all the evaluation criteria been examined/provided for this specific discipline?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	If no, please explain why: _____	
9	Originator: <input type="text" value="Engineering"/> Date: <input type="text" value="9/22/2011"/>	10
		Received by: _____ Date: <input type="text" value="9/22/2011"/> Fax to: ?
11	Assigned Tracking Number: <input type="text" value="0239-SD-P2-482.9-483.2-I"/>	12
		Filed by: _____ Date: _____ Fax to: ?

0239-SD-P2-482.9-483.2-I

RV-0231, RV-0237, RV-0239, RV-0240, RV-0241

**KEYSTONE XL PIPELINE PROJECT - STEELE CITY SEGMENT  
PIPELINE ROUTE VARIATION FORM**

1  
**VARIATION TYPE:** Refinement:  X Reroute:  X  
 Centerline:  X Valve Site:  X Pump Station:

2  
**LOCATION:** Sketch:  Attached  Pictures:  N/A  
 State:  Multiple  County:  Multiple  Quad Map:  N/A  
 Township:  Multiple  Range:  Multiple  Aerial Map:  See attached map sheet  
 Section:  Multiple  Centerline:  11/18/2010  MP:  XXX.X  to  XXX.X

3  
**REASON FOR ROUTE VARIATION** (Please include reason for route variation):  
 The Reason for each Route Variation (RV) is given with the respective RV file.  
 These reroutes are proposed based on aerial/pictometry/Lydar/flyover analysis of current line through Montana, South Dakota, and Nebraska.

**DETAIL ROUTE VARIATION** (Please describe route variation in detail):  
 See respective Route Variation Files.  
 RVs Discussed during 9/20/2011 Meeting:  
 Montana -  
**MDEQ mandated reroutes (RV-0231)**  
**New Valves [CK-MLV-06B and MLV-06A] and 1 Valve [MLV-10] Relocation (RV-0237)**  
 South Dakota -  
**Refinement based on civil survey data of RV-0215-03 (to move CL away from dropoff) (RV-0239)**  
**Refinement based on civil survey data of RV-0214-04 (to avoid waterwell fence) (RV-0240)**  
 Nebraska -  
**To avoid crossing HWY 56 at high banks location (RV-0241)**

**ADDITIONAL IMPACTS** (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):

Is there an increase/decrease in the number of crossings? Yes  No   
 If yes, please list: \_\_\_\_\_

9  
 Originator:  Multiple   
 Date:  11/1/2011

10  
 Received by: \_\_\_\_\_  
 Date:  11/1/2011   
 Fax to: ?

11  
 Assigned Tracking Number:  RV-0231, RV-0237, RV-0239, RV-0240, RV-0241

12  
 Filed by: \_\_\_\_\_  
 Date:  \_\_\_\_\_   
 Fax to: ?

RV-0231, RV-0237, RV-0239, RV-0240, RV-0241



KEYSTONE PIPELINE PROJECT - U.S. PHASE IV (STEELE CITY SEGMENT)

KEYSTONE PIPELINE PROJECT - U.S. PHASE IV (STEELE CITY SEGMENT) ROUTE VARIATION AUTHORIZATION FORM		
Date: 11/1/2011	Tracking Number: RV-0231, RV-0237, RV-0239, RV-0240, RV-0241	MP: XXX.X to XXX.X
Description: MDEC mandated reroutes (RV-0231). New Valves (CK-MLV-06B and MLV-06A) and 1 Valve (MLV-10) Relocation (RV-0237). Refinement based on civil survey data of RV-0215-03 to move CL away from dropoff (RV-0239). Refinement based on civil survey data of RV-0214-04 (to avoid waterwell fence) (RV-0240). To avoid crossing HWY 56 at high banks location (RV-0241)	Originated By: Multiple	Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>TransCanada - Land</b> Tim Irons	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11/9/11
Comments:	If Rejected Why?	
<b>TransCanada - Engineering</b> Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11-7-11
Comments:	If Rejected Why?	
<b>Exp - Engineering</b> Butch Wallace	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11-7-2011
Comments:	If Rejected Why?	
<b>TransCanada - Construction</b> Bobby Curbow	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments:	If Rejected Why?	
<b>Exp - Environmental</b> Jonathan Minton	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11/15/11
Comments: Looking for options to 0231-04 RV-0231-05 runs parallel to Pending all survey for rest	If Rejected Why?	
<b>AECOM - Risk Assessment</b> Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments: N/A.	If Rejected Why?	
<b>Facilities:</b> Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:
Comments: N/A. Does not affect facilities	If Rejected Why?	
<b>TransCanada - PM (Montana)</b> Alan Lietz	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11/18/11
Comments: pending bid cultural survey clearance.	If Rejected Why?	
<b>TransCanada - PM (South Dakota)</b> James O'Donoghue	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 12-12-11
Comments:	If Rejected Why? NEBRASKA REROUTE	
<b>TransCanada - PM (NE)</b> Robert Bradley	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 01-12-12
Comments: Only signing for SD portion of attached. R.V. 0231-01	If Rejected Why?	
<b>TransCanada - Phase IV Area Manager</b> Steve Marr	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 03-16-12
Comments:	If Rejected Why?	
Forward to:	Tim Irons <input checked="" type="checkbox"/> Jonathan Minton <input checked="" type="checkbox"/> Alan Lietz <input checked="" type="checkbox"/>	Meera Kothari <input checked="" type="checkbox"/> #REF! <input checked="" type="checkbox"/> Steve Marr <input checked="" type="checkbox"/>
	Butch Wallace <input checked="" type="checkbox"/> #REF! <input checked="" type="checkbox"/>	Bobby Curbow <input checked="" type="checkbox"/> #REF! <input checked="" type="checkbox"/>

RV-0231, RV-0237, RV-0239, RV-0240, RV-0241

RV-0231-04 passes through 2 eligible cultural sites. Alternates should be considered

Approved pending additional changes to 0231-04 and 0231-05. All others approved pending survey completion

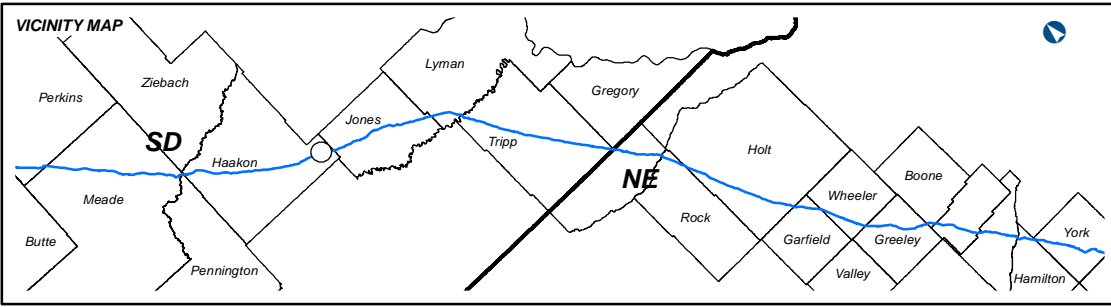
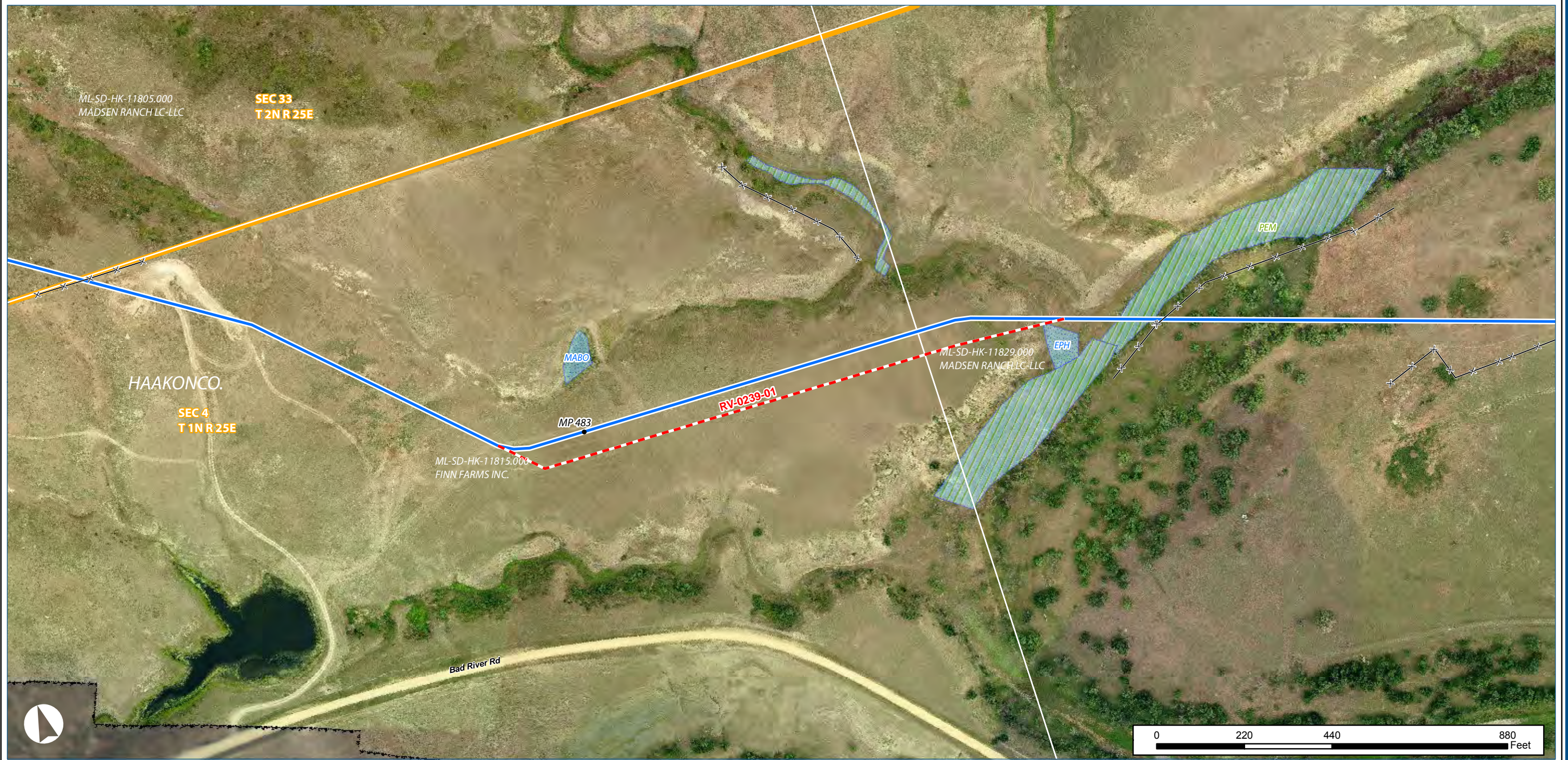
THIS DOCUMENT WAS DELAYED BY OTHERS AND DIDN'T REACH NEBRASKA UNTIL THE MORNING 12-12-11 DUE TO THE S.H. REROUTE THAT IS CURRENTLY UNDERWAY THIS NE. AROUTE IS MEET. I'M SIGNING THIS FOR DOCUMENTATION PURPOSES ONLY.

KEYSTONE PIPELINE PROJECT - U.S. PHASE IV (STEELE CITY SEGMENT)

0239-SD-P2-482-9-483-2-1

KEYSTONE PIPELINE PROJECT - U.S. PHASE IV (STEELE CITY SEGMENT) ROUTE VARIATION AUTHORIZATION FORM			
Date: 9/22/2011	Tracking Number: 0239-SD-P2-482-9-483-2-1	MP: 483.0 to 483.2	
Description: Reroute based on civil survey data of RV-215-03 (reroute away from dropoff).	Originated By: Engineering	Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<b>TransCanada - Land</b> Tim Irons	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11/9/11	
Comments:	If Rejected Why?		
<b>TransCanada - Engineering</b> Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments:	If Rejected Why?		
<b>Exp - Engineering</b> Butch Wallace	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments:	If Rejected Why?		
<b>TransCanada - Construction</b> Bobby Curbow	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments:	If Rejected Why?		
<b>Exp - Environmental</b> Jonathan Minton	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 11/15/11	
Comments:	If Rejected Why?		
<b>AECOM - Risk Assessment</b> Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments: N/A	If Rejected Why?		
<b>Facilities:</b> Sandra Gigovic	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments: N/A. Does not affect facilities	If Rejected Why?		
<b>TransCanada - PM (Montana)</b> Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments:	If Rejected Why?		
<b>TransCanada - PM (South Dakota)</b> James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Date: 01/12/12	
Comments:	If Rejected Why?		
<b>TransCanada - PM (Nebraska)</b> Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments:	If Rejected Why?		
<b>TransCanada - Phase IV Area Manager</b> Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	Date:	
Comments:	If Rejected Why?		
Forward to:	Tim Irons <input type="checkbox"/>	Jonathan Minton <input type="checkbox"/>	James Odom <input type="checkbox"/>
	Meera Kothari <input type="checkbox"/>	Heidi Tillquist <input type="checkbox"/>	Robert Bradley <input type="checkbox"/>
	Butch Wallace <input type="checkbox"/>	Sandra Gigovic <input type="checkbox"/>	Steve Marr <input type="checkbox"/>
	Bobby Curbow <input type="checkbox"/>	Alan Lietz <input type="checkbox"/>	





**LEGEND**

- MILEPOST
- PHASE IV CL (2011-08-14)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- ▭ PUMP STATION
- ⊗ VALVE SITE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▨ WETLAND
- ▨ WATERBODY
- FENCE

**KEYSTONE PHASE IV, US**  
*Proposed Route Variation 0239-01*

COUNTY:	HAAKON	DRAWN BY:	PD
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
RV FULL:	0239-XX-P2-XXX.X-XXX.X-1		
REV. NO.:	REVISION	DATE	
0	ISSUED FOR REVIEW.	2011-09-16	
<b>PRELIMINARY</b>			
DATE:	2011-09-16	PROJECTION:	NAD83   UTM14 N

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DWG:	XL-00-P-9200	SHEET:	1
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