

KEYSTONE XL PIPELINE PROJECT

0384-SD-P4-425.5-425.8-S

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	<b>VARIATION TYPE:</b>	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	<b>LOCATION:</b>	Sketch: <input type="text" value="Attached"/>	Pictures: <input type="text" value="N/A"/>
	State: <input type="text" value="SD"/>	County: <input type="text" value="Haakon"/>	Quad Map: <input type="text" value="N/A"/>
	Township: <input type="text" value="07N"/>	Range: <input type="text" value="17E"/>	Aerial Map: <input type="text" value="See attached map sheet"/>
	Section: <input type="text" value="28"/>	Centerline: <input type="text" value="8/15/2012"/>	MP: <input type="text" value="425.49"/> to <input type="text" value="425.82"/>
3	<b>REASON FOR ROUTE VARIATION</b> (Please include reason for route variation):		
	<p>The primary reason for this route variation is to avoid impact to BLM tract (SD-ME-01187) and still avoid an HDD drill at the crossing of Narcelle Creek (Feature ID: exp-WB-13014, near MP 425.6). The Landowner (Howes Grazing) has requested the banks of the creek remain laid back for a cattle crossing after construction.</p> <p>Route variation RV-0252-01 (implemented to 08/15/2012 CL) shifted the CL/Workspaces west to avoid ridgelines, rough terrain and dropoffs and to avoid the need for an additional HDD in this area. However, due to lack of accurate information at the time, it was not known with certainty the owner of tract SD-ME-01187 (now USDI Bureau of Land Management). This proposed route variation will shift the CL east to avoid impacting this tract. This reroute is requested by Engineering based on input from the field.</p>		
	<b>DETAIL ROUTE VARIATION</b> (Please describe route variation in detail):		
	<p>The proposed route variation starts near MP 425.5 and deviates ~19.5° east of current centerline. It extends in this direction for ~918 ft. before making a turn south. It then continues for ~822 ft. and rejoins the current CL near MP 425.8.</p>		
	<b>ADDITIONAL IMPACTS</b> (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):		
	<p>2 Tracts are impacted by this Centerline reroute:                      ML-SD-ME-01187.000 (USDI Bureau of Land Management) (To be Offline)                      ML-SD-ME-01190.000 (Howes Grazing Association, Inc.)</p> <p>The proposed route variation falls outside of current environmental surveyed corridor, so additional costs associated with environmental surveys will be incurred.</p> <p>Costs savings include the elimination of a potential HDD drill (\$955,000) and the elimination of additional surveys (environmental and civil) for the potential pullback (~\$3,700). The use of the conventional open cut method (~1300/ft for a 4 ft. depth crossing) at the 2 crossings of Narcelle Creek yield construction costs: 1st crossing ~57 length [measured surveyed top of bank+15 ft. from each bank] ~\$74,100, and for the 2nd crossing ~ 98 length [measured surveyed top of bank+15 ft. from each bank] ~\$127,400. Rock &amp; Sheet piling costs were not included in the estimate. For a net estimated savings of ~757,200</p>		
	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" value="5"/> ft.	\$ <input type="text" value="1,648.98"/> \$ 360/ft
	Additional length of side-hill construction:	<input type="text" value="0"/> ft.	\$ <input type="text" value="-"/> \$ 19/ft
	Additional length of wetland construction:	<input type="text" value="0"/> ft.	\$ <input type="text" value="-"/> \$ 195/ft
	Additional bore length (Road, RR):	<input type="text"/> ft.	\$ <input type="text" value="-"/> \$ 540/ft
	Additional foreign line/pipeline crossings:	<input type="text"/> EA	\$ <input type="text" value="-"/> \$ 30,000/EA
	Additional water body crossing (streams, ponds, etc.):		
	35 - 65' +	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 185,000/EA
	10' - 19'	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 77,250/EA
	Less than 10'	<input type="text" value="0"/> EA	\$ <input type="text" value="-"/> \$ 32,500/EA
	Additional survey required:		
	Civil:	<input type="text" value="0.00"/> mile	\$ <input type="text" value="-"/> \$ 5,000/mile
	Cultural:	<input type="text" value="0.33"/> mile	\$ <input type="text" value="823.85"/> \$ 2,500/mile
	Biological:	<input type="text" value="0.33"/> mile	\$ <input type="text" value="922.71"/> \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from <b>ADDITIONAL IMPACTS</b> listed above:		\$ <input type="text" value="(757,200)"/> (757,200)
	Overall estimated costs of the route variation:	\$ <input type="text" value="(753,804.45)"/> (753,804.45)	(See "Additional Impacts" above)

4 **LAND / TransCanada** *Tina Hall*

a) Is a new landowner affected by the proposed variation? Yes  No

b) Is the affected landowner/tract a possible condemnation? Yes  No

c) Does proposed route variation impact Tribal Lands? Yes  No

d) Does proposed route variation impact any Federal/State Lands? Yes  No   
 -If yes, name type (i.e. USFWS, BLM, etc.):

e) Is proposed realignment outside the easement/workspace? Yes  No

f) Is realignment proposed to satisfy landowner request? Yes  No   
 -If yes, name of landowner(s)/track number(s):

g) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No   
 If no, please explain why:

5 **ENGINEERING/CONSTRUCTION - TransCanada** *Meera Kothari*

a) Maximum deviation perpendicular to proposed alignment:  ft.

b) Does variation (CL) (including workspaces) falls within 500 ft. MDEQ Corridor? Yes  No

c) Has the centerline been staked for construction? Yes  No

d) Does route variation affect HDD crossing alignment? Yes  No

e) Is realignment proposed for engineering/construction reasons? Yes  No

f) Will the route variation require the relocation of a pump station? Yes  No

g) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No   
 If no, please explain why:

6 **ENVIRONMENTAL - TransCanada** *Sandra Barnett*

a) Has the corridor been environmentally surveyed? Yes  No

b) Has the proposed variation been environmentally surveyed? Yes  No

c) Does proposed route variation impact Sage Grouse areas? Yes  No

d) Does route variation impact ABB areas? Yes  No

e) Was variation proposed to satisfy environmental issues? Yes  No

f) Was realignment proposed to satisfy agency request? Yes  No   
 -If yes, name of agency(s):

g) Environmental features:  
 Added (+):  Subtracted (-):   
 Wetland ID # for newly impacted wetlands:

h) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No   
 If no, please explain why:

7 **ENGINEERING / FACILITIES AND HYDRAULICS (if applicable)** *Sandra Gigovic*

a) Will the route variation require the relocation of a pump station? Yes  No

b) Will route variation impact hydraulics? Yes  No

c) Are additional valves required at HCA's or water crossing? Yes  No

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No   
 If no, please explain why:

8 **STAKEHOLDER RELATIONS / TCPL (if applicable)** *Bud Andersen*

a) Does the variation result in any new stakeholders? Yes  No

b) Does the variation require follow-up with specific stakeholder groups? Yes  No

c) Was the variation proposed to satisfy stakeholder request? Yes  No   
 -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  No   
 If no, please explain why:

9 Originator:   
 Date:

10 Received by:   
 Date:   
 Fax to: ?

11 Assigned Tracking Number:

12 Filed by:   
 Date:   
 Fax to: ?

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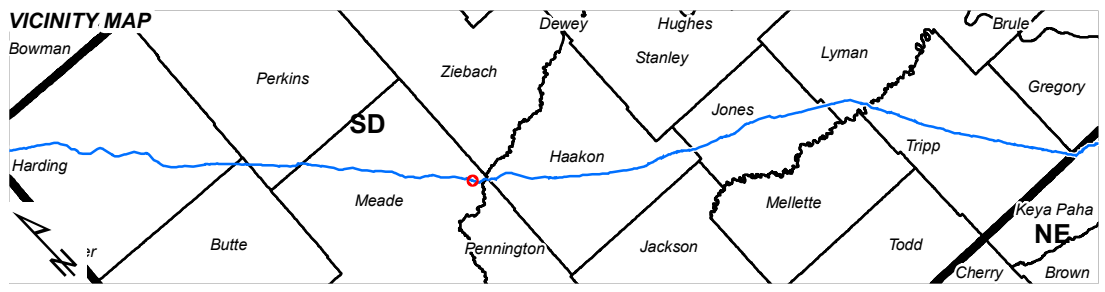
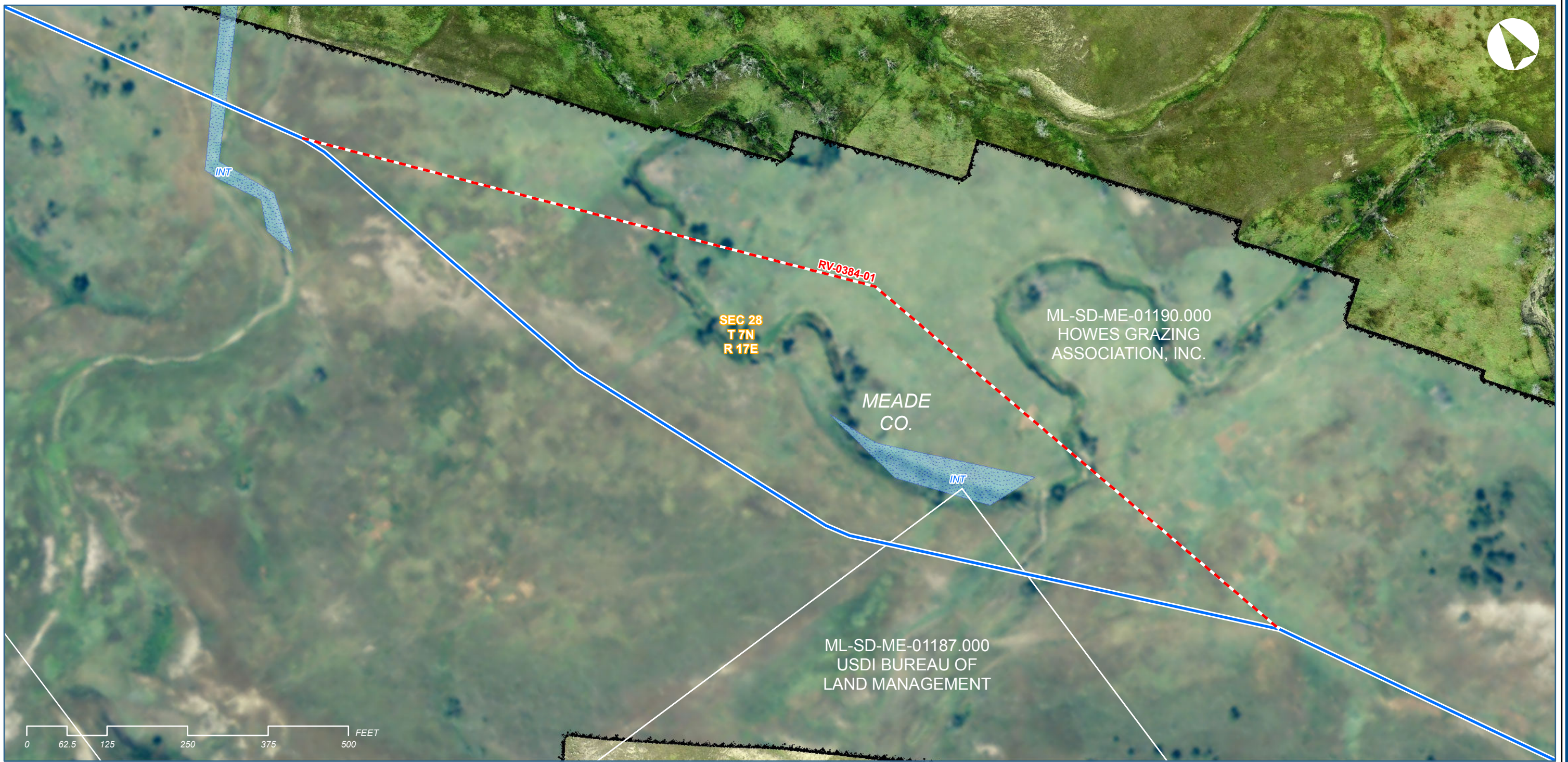
KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: 10/29/2012	Tracking Number: 0384-SD-P4-425.5-425.8-S
Description: The primary reason for this route variation is to avoid impact to BLM tract (SD-ME-01187) and still avoid an HDD drill at the crossing of Narcelle Creek (Feature ID: exp-WB-13014, near MP 425.6).	MP: 425.5 to 425.8 Originated By: Engineering Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>TransCanada - Land</b> Tina Hall	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 11-5-12
Comments:	If Rejected Why?
<b>TransCanada - Engineering</b> Meera Kothari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 11/4/12
Comments:	If Rejected Why?
<b>Exp - Engineering</b> Kevin McGlynn	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 12/11/12
Comments:	If Rejected Why?
<b>TransCanada - Environmental</b> Sandra Barnett	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 2-9-12
Comments:	If Rejected Why?
<b>Stantec - Risk Assessment</b> Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments: N/A.	If Rejected Why?
<b>TransCanada - 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: 12/11/12
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 - Area Manager</b> Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
Forward to: Tina Hall <input type="checkbox"/> Sandra Barnett <input type="checkbox"/> James Odom <input type="checkbox"/> Meera Kothari <input type="checkbox"/> Heidi Tillquist <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Kevin McGlynn <input type="checkbox"/> Alan Lietz <input type="checkbox"/> Steve Marr <input type="checkbox"/>	

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KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: 10/28/2012	Tracking Number: 0384-SD-P4-425.5-425.8-S
Description: The primary reason for this route variation is to avoid impact to BLM tract (SD-ME-01187) and still avoid an HDD drill at the crossing of Narceña Creek (Feature ID: exp-WB-13014, near MP 425.6).	MP: 425.5 to 425.8
	Originated By: Engineering
	Variation Form Attached: Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
TransCanada - Land Tina Hall	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Engineering Meera Kohan	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Exp - Engineering Kevin McGlynn	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Environmental Sandra Barnett	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Stantec - Risk Assessment Heidi Takala	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments: N/A	Date:
	If Rejected Why?
TransCanada - Facilities Sandra Giguere	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>
Comments: N/A. Does not affect facilities	Date: Dec 5, 2012
	If Rejected Why?
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - PM (South Dakota) James Odon	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Area Manager Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Forward to: Tina Hall <input type="checkbox"/> Meera Kohan <input type="checkbox"/> Kevin McGlynn <input type="checkbox"/>	Sandra Barnett <input type="checkbox"/> Heidi Takala <input type="checkbox"/> Sandra Giguere <input type="checkbox"/> Alan Lietz <input type="checkbox"/>
	James Odon <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Marr <input type="checkbox"/>

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**LEGEND**

- MILEPOST
- KEYSTONE XL CL (2012-08-15)
- - - PROPOSED ROUTE VARIATION
- ▭ SECTION LINE
- ACCESS ROAD
- ▭ PUMP STATION
- ⊗ VALVE
- ▭ PROPERTY PARCEL
- ▭ CULTURAL SITE
- ▨ WETLAND
- ▨ WATERBODY

**KEYSTONE XL PROJECT**

*Proposed Route Variation 0384-01*

COUNTY:	MEADE	DRAWN BY:	CR
STATE:	SOUTH DAKOTA	CHECKED BY:	JP
REV. NO.:	0	REVISION	ISSUED FOR REVIEW.
		DATE	2012-10-29

**PRELIMINARY**

DATE:	2012-10-29	PROJECTION:	NAD83   UTM13 N
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PREPARED BY:

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