

KEYSTONE XL PIPELINE PROJECT

0385-SD-P4-439.9-440.2-1

KEYSTONE XL PIPELINE PROJECT PIPELINE ROUTE VARIATION FORM			
1	VARIATION TYPE:	Refinement: <input type="text"/>	Reroute: <input checked="" type="checkbox"/> X
		Centerline: <input checked="" type="checkbox"/> X	Footprint: <input type="text"/> Design: <input type="text"/>
		Pump Station: <input type="text"/>	Valve Site: <input type="text"/> CAR: <input type="text"/>
2	LOCATION:	Sketch: <input type="text" value="Attached"/>	Pictures: <input type="text" value="N/A"/>
	State: <input type="text" value="SD"/>	County: <input type="text" value="HK"/>	Quad Map: <input type="text" value="N/A"/>
	Township: <input type="text" value="05N, (06N)"/>	Range: <input type="text" value="019E"/>	Aerial Map: <input type="text" value="See attached map sheet"/>
	Section: <input type="text" value="005, (032)"/>	Centerline: <input type="text" value="8/15/2012"/>	MP: <input type="text" value="440.00"/> to <input type="text" value="440.16"/>
3	REASON FOR ROUTE VARIATION (Please include reason for route variation):		
	<p>The primary reason for this route variation is to avoid crossing the West River Lyman Jones Waterline (WAT-14650 &-14651, 3 diameter) multiple times. Additionally, this proposed reroute improves the crossing angle of 205th st from 59° to 69°.</p> <p>This proposed reroute is requested by Engineering and is proposed based on the recommendations from the CPMS 60% Design Review. The proposed reroute was drawn based on a combination of aerial imagery, Pictometry, and LIDAR data.</p>		
	DETAIL ROUTE VARIATION (Please describe route variation in detail):		
	<p>The proposed route variation starts near MP 440.0 and deviates ~10.5° southwest of the current centerline. It extends in this direction for ~315 ft. The reroute then turns slightly east and continues for ~210 ft. The proposed route variation, makes a final turn east towards the current CL, where it extends for ~ 359 ft. to rejoin the current CL near MP 440.2.</p>		
	ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):		
	<p>2 Tracts are impacted by this centerline reroute: ML-SD-HK-00310.000 (Kelly Blair) ML-SD-HK-00320.000 (Seven Blackfoot Ranch, LLC)</p> <p>The proposed route variation falls within the current environmental surveyed corridor, so no additional costs associated with environmental surveys will be incurred. Additionally, it eliminates 2 bore crossings of the WRLJ waterline (~40 ft.) and reduces the bore length at the road crossing.</p>		
	Is there an increase/decrease in the number of crossings?	Yes <input type="text"/>	No <input checked="" type="checkbox"/> X
	If yes, please list: <input type="text"/>		
	COST ANALYSIS (costs incurred or saved from the route variation)		
	Additional length of route realignment:	<input type="text" value="13"/> ft.	\$ <input type="text" value="4,596.85"/> \$ 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" value="-40"/> ft.	\$ <input type="text" value="(21,600.00)"/> \$ 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="0.17"/> mile	\$ <input type="text" value="837.00"/> \$ 5,000/mile
	Cultural:	<input type="text" value="0.00"/> mile	\$ <input type="text" value="-"/> \$ 2,500/mile
	Biological:	<input type="text" value="0.00"/> mile	\$ <input type="text" value="-"/> \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from ADDITIONAL IMPACTS listed above:	<input type="text"/>	
	Overall estimated costs of the route variation:	\$ <input type="text" value="(16,166.15)"/> (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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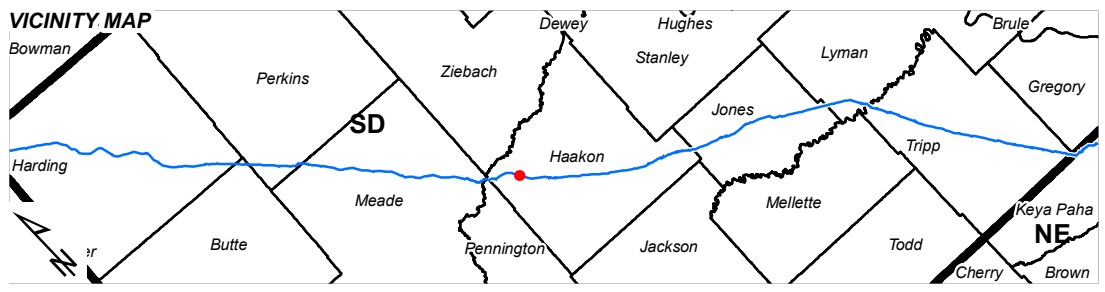
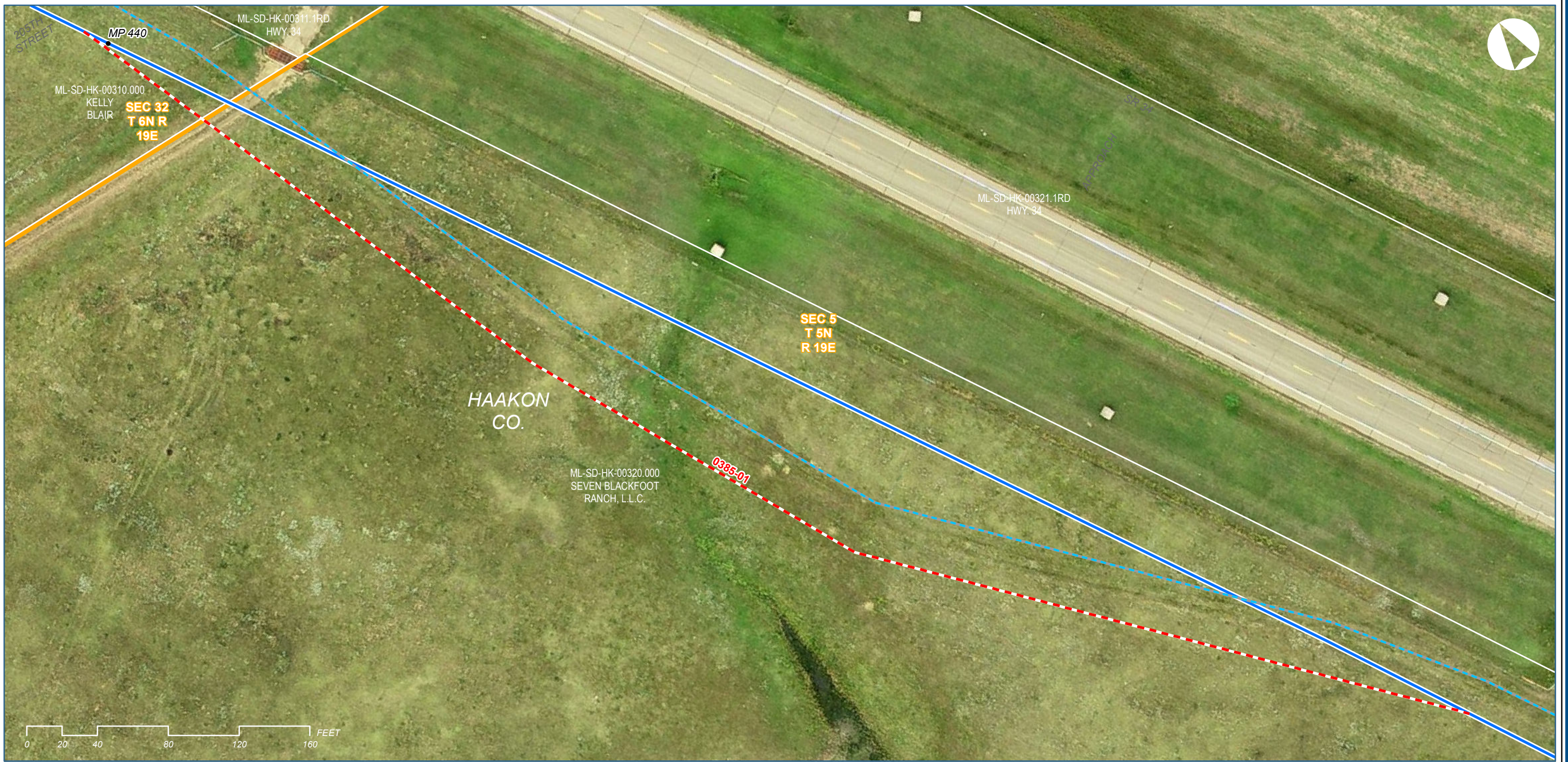
KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM	
Date: 10/29/2012	Tracking Number: 0385-SD-P4-439.9-440.2-1
Description: The primary reason for this route variation is to avoid crossing the West River Lyman Jones Waterline (WAT-14850 6-14851, 3 diameter) multiple times. Additionally, this proposed reroute improves the crossing angle of 205th at from 59° to 69°.	MP: 440.0 to 440.2 Originated By: Engineering
TransCanada - Land Tina Hall	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 11-5-12
Comments:	If Rejected Why?
TransCanada - Engineering Meera Kohari	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 11/2/12
Comments:	If Rejected Why?
Exo - Engineering Kevin McGlynn	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 12/14/12
Comments:	If Rejected Why?
TransCanada - Environmental Sandra Barnett	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 12/14/12
Comments:	If Rejected Why?
Stantec - Risk Assessment Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments: N/A	If Rejected Why?
TransCanada - Facilities Sandra Gigovio	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments: N/A. Does not affect facilities	If Rejected Why?
TransCanada - PM (Montana) Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
TransCanada - PM (South Dakota) James Odom	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: 12/10/12
Comments:	If Rejected Why?
TransCanada - PM (Nebraska) Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
TransCanada - Area Manager Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date:
Comments:	If Rejected Why?
Forward to: Tina Hall <input type="checkbox"/> Meera Kohari <input type="checkbox"/> Kevin McGlynn <input type="checkbox"/>	Sandra Barnett <input type="checkbox"/> Heidi Tillquist <input type="checkbox"/> Sandra Gigovio <input type="checkbox"/> Alan Lietz <input type="checkbox"/>
	James Odom <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Marr <input type="checkbox"/>

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Description: The primary reason for this route variation is to avoid crossing the West River Lyman Jones Waterline (WAT-14630 & 14651, 3 diameter) multiple times. Additionally, this proposed reroute improves the crossing angle of 205h at from 59° to 89°.	MP: 440.0 to 440.2
	Originated By: Engineering
	Variation Form Attached: Yes: X No:
TransCanada - Land Tina Hall	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Engineering Meera Kolhari	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Exo - Engineering Kevin McOlyny	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - Environmental Sandra Barmen	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
Stantec - Risk Assessment Heidi Tibbquist	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 Lutz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>
Comments:	Date:
	If Rejected Why?
TransCanada - PM (South Dakota) James Odum	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"/> Sandra Barmen <input type="checkbox"/> James Odum <input type="checkbox"/> Meera Kolhari <input type="checkbox"/> Heidi Tibbquist <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Kevin McOlyny <input type="checkbox"/> Sandra Giguere <input type="checkbox"/> Steve Marr <input type="checkbox"/> Alan Lutz <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
- Foreign Utilities**
- - - CAB
- - - FIB
- - - GAS
- - - OEL
- - - OIL
- - - PL
- - - TEL
- - - WAT

KEYSTONE XL PROJECT

Proposed Route Variation 0385-01

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

PRELIMINARY

DATE:	2012-10-29	PROJECTION:	NAD83 UTM14 N
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PREPARED BY:

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