

KEYSTONE XL PIPELINE PROJECT - STEELE CITY SEGMENT PIPELINE ROUTE VARIATION FORM			
<b>1 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"/>
<b>2 LOCATION:</b>			
Sketch:	<input type="text" value="Attached"/>	Pictures:	<input type="text" value="See attached."/>
State:	<input type="text" value="SD"/>	County:	<input type="text" value="Harding"/>
Township:	<input type="text" value="20N, 19N"/>	Range:	<input type="text" value="4E, 5E"/>
Section:	<input type="text" value="33, 4, 3, 10, 11, 12, 13, 18, 17"/>	Centerline:	<input type="text" value="3/26/2010"/>
		MP:	<input type="text" value="308.76"/> to <input type="text" value="315.32"/>
<b>3 REASON FOR ROUTE VARIATION</b> (Please include reason for route variation):			
<p>This reroute is proposed to avoid paleontological features on the landowner's tracts on the current centerline near the MP 310.5 (David Niemi and Bret Clanton ML-SD-HA-01390, ML-SD-HA-01410, ML-SD-HA-01420, ML-SD-HA-11425).</p> <p>This reroute has been proposed based on field reconnaissance by a field engineer and through consultation with landowners David Niemi and Bret Clanton.</p> <p>The proposed reroute is also surveyed biologically, culturally and paleontologically and has been cleared for construction.</p>			
<b>DETAIL ROUTE VARIATION</b> (Please describe route variation in detail):			
<p>The proposed reroute starts at ~ MP 308.8 and deviates (~22°) away from the centerline towards the south. It continues in this direction for 4,460 ft to have a better creek crossing location and to avoid any construction impacts to what is referred to as an ancient shoreline with ongoing paleontological excavations to the east in Sections 33 &amp; 34, T20N-R4E and Section 3, T19N-R4E. From here, the proposed reroute turns towards the southeast, crosses a drainage feature and continues in this direction for 16,340 ft. This location is selected by the landowner to avoid any construction impacts to paleontological resources on this property. Along its path the proposed reroute accommodates the landowner's request and avoids the landowner's hay fields and waterlines in Section 10 &amp; 11, T19N-R4E. It then turns towards the east and continues for 14,060 ft before turning towards the southeast to rejoin the current centerline at ~MP 315.32. Along its path, it passes through some drainage features in Section 11 &amp; 12, T19N-R4E and crosses US Highway 85 approximately 1,640 ft south of its current crossing location.</p>			
<b>ADDITIONAL IMPACTS</b> (Please include any additional impacts which may affect cost; crossings, induction bends, etc.):			
<p>The proposed reroute is ~2,430 ft longer than the original route and it adds an additional fitting to the centerline. The cost of material and installation of a single fitting is estimated to be \$30,000.</p> <p>The cost savings associated with avoiding the current paleontological excavations is very significant, a minimum length HDD to avoid a site would cost roughly \$1,000,000.</p>			
Is there an increase/decrease in the number of crossings?		Yes	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="2,430"/> ft.	\$ <input type="text" value="874,800.00"/>	\$ 360/ft
Additional length of side-hill construction:	<input type="text"/> ft.	\$ <input type="text" value="-"/>	\$ 19/ft
Additional length of wetland construction:	<input type="text" value="290"/> ft.	\$ <input type="text" value="56,550.00"/>	\$ 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"/> EA	\$ <input type="text" value="-"/>	\$ 185,000/EA
10' - 19'	<input type="text"/> EA	\$ <input type="text" value="-"/>	\$ 77,250/EA
Less than 10'	<input type="text" value="-1"/> EA	\$ <input type="text" value="(32,500.00)"/>	\$ 32,500/EA
Additional survey required:			
Civil:	<input type="text" value="7.02"/> mile	\$ <input type="text" value="35,100.00"/>	\$ 5,000/mile
Cultural:	<input type="text" value="7.02"/> mile	\$ <input type="text" value="17,550.00"/>	\$ 2,500/mile
Biological:	<input type="text" value="7.02"/> mile	\$ <input type="text" value="19,656.00"/>	\$ 2,800/mile
Miscellaneous costs saved or added due to route variation from <b>ADDITIONAL IMPACTS</b> listed above:		\$ <input type="text" value="30,000"/>	
Overall estimated costs of the route variation:	<input type="text" value="1,001,156"/>	(See "Additional Impacts" above)	

4  
**LAND / UNIVERSAL FIELD** *Doug Reichley*

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

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

c) Is realignment proposed to satisfy landowner request? Yes  No

-If yes, name of landowner(s)/track number(s): David Niemi and Bret Clanton

d) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No

If no, please explain why: \_\_\_\_\_

5  
**ENGINEERING/CONSTRUCTION / STATE PM** *David Guien*

a) Maximum deviation perpendicular to proposed alignment: 6,010 ft.

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

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

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

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

f) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No

If no, please explain why: \_\_\_\_\_

6  
**ENVIRONMENTAL / TROW** *Jonathan Minton*

a) Has the corridor been environmentally surveyed? Yes  No

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

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

d) Was realignment proposed to satisfy agency request? Yes  No

-If yes, name of agency(s): \_\_\_\_\_

e) Environmental features:

Added (+): S500HA010, S500HA011, W500HA002, W500HA003, W500HA004, W500HA005, W500HA006

Subtracted (-): S\_UTM13\_04674, S\_UTM13\_07059, S\_UTM13\_07060, S0353, W\_UTM13\_04737

Wetland ID # for newly impacted wetlands: W500HA002, W500HA003, W500HA004, W500HA005, W500HA006

f) Has all the evaluation criteria been examined/provided for this specific discipline? Yes  No

If no, please explain why: \_\_\_\_\_

7  
**ENGINEERING / FACILITIES AND HYDRAULICS** *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? **N/A to PS Enginee** 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** *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: Land  
 Date: 11/15/2010

10  
 Received by: \_\_\_\_\_  
 Date: 11/15/2010  
 Fax to: ?

11  
 Assigned Tracking Number: 0190-SD-P2-308.8-315.3-S

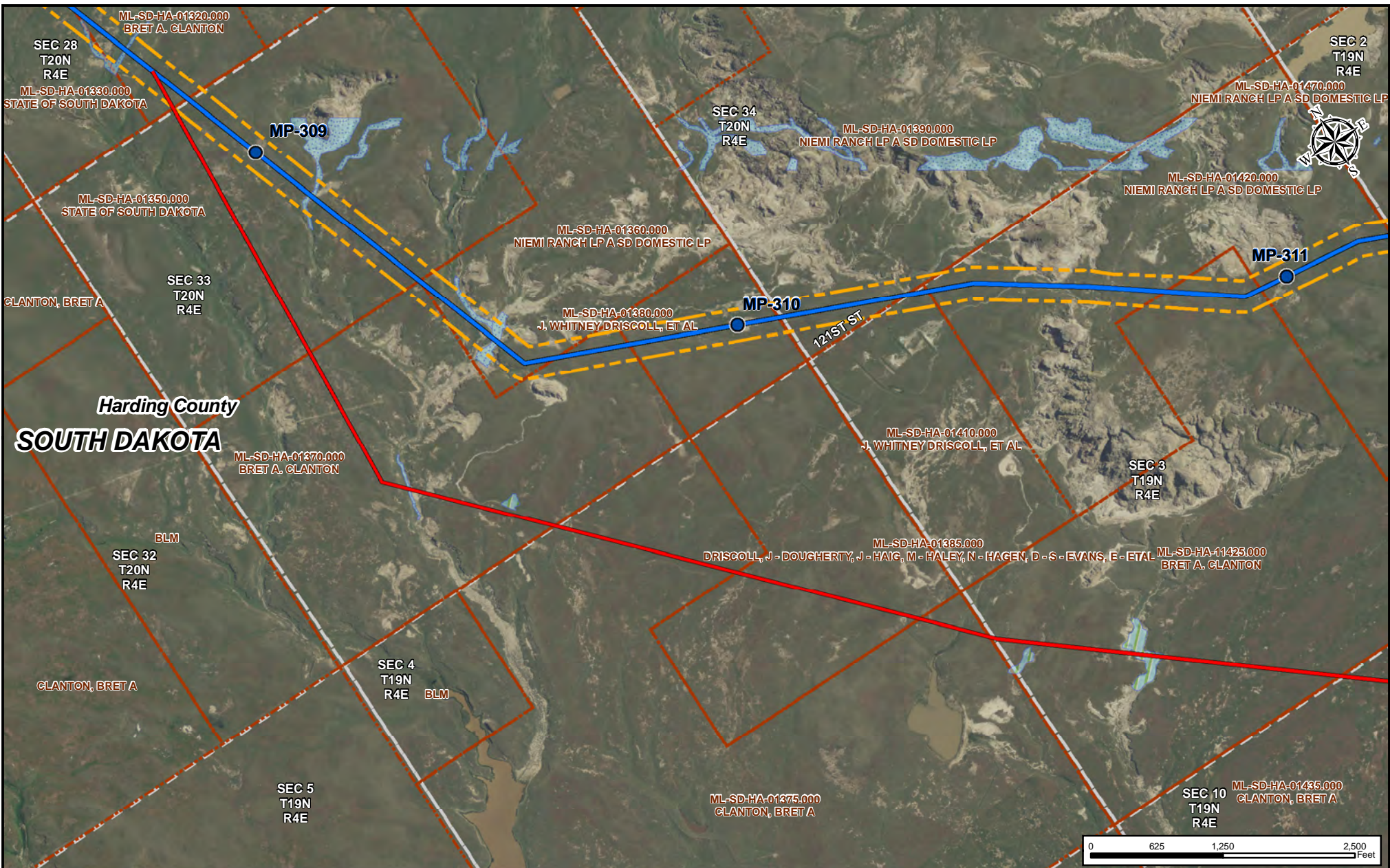
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 Filed by: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Fax to: ?

0190-SD-P2-308.8-315.3-S

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

0190-SD-P2-308.8-315.3-S

KEYSTONE PIPELINE PROJECT - U.S. PHASE IV (STEELE CITY SEGMENT) ROUTE VARIATION AUTHORIZATION FORM	
Date: <input type="text" value="11/15/2010"/> Description: <input type="text" value="David Niemi reroute to paleo resource features."/>	Tracking Number: <input type="text" value="0190-SD-P2-308.8-315.3-S"/> MP: <input type="text" value="308.8"/> to <input type="text" value="315.3"/> Originated By: <input type="text" value="Land"/> Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>Universal Field - Land</b> Doug Reichley Comments: <input type="text" value="Same landowners as original centerline"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>Doug Reichley</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>State PM - Construction / Eng.</b> David Guien Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>David Guien</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>Trow - Environmental</b> Jonathan Minton Comments: <input type="text" value="There are three paleo localities within the survey corridor of the Niemi reroute. All three are isolated finds that will require collection but do not warrant a route shift."/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>Jonathan Minton</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>AECOM - Risk Assessment</b> Heidi Tillquist Comments: <input type="text" value="This reroute increases the risk to a populated HCA and decreases the distance to groundwater HCAs. This reroute has a viable transport route to Buffalo. While not highly recommended, the route is permissible."/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>Heidi Tillquist</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>Project Management</b> Butch Wallace Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>R.E. Wallace</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>Stakeholder Relations</b> Bud Andersen Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>Bud Andersen</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>Facilities:</b> Sandra Gigovic Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>Sandra Gigovic</i> Date: <input type="text" value="11/15/2010"/> If Rejected Why? <input type="text"/>
<b>TransCanada:</b> Alan Lietz Comments: <input type="text"/>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> <i>Alan Lietz</i> Date: <input type="text" value="11/16/2010"/> If Rejected Why? <input type="text"/>
Forward to: Butch Wallace <input checked="" type="checkbox"/> Jonathan Minton <input checked="" type="checkbox"/> Heidi Tillquist <input checked="" type="checkbox"/> David Guien <input checked="" type="checkbox"/> Bud Andersen <input checked="" type="checkbox"/> Alan Lietz <input checked="" type="checkbox"/> Doug Reichley <input checked="" type="checkbox"/> Sandra Gigovic <input checked="" type="checkbox"/>	
<b>Dispute Resolution, if Required:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> Comments: <input type="text"/> Teleconference Required Yes <input type="checkbox"/> No <input type="checkbox"/> Decision: <input type="text"/>	
<b>Database -</b> <input type="text"/> Filed By: <input type="text"/> Date: <input type="text"/> Fax to: ?	<b>Database -</b> <input type="text"/> Filed By: <input type="text"/> Date: <input type="text"/> Fax to: ?



**Legend**

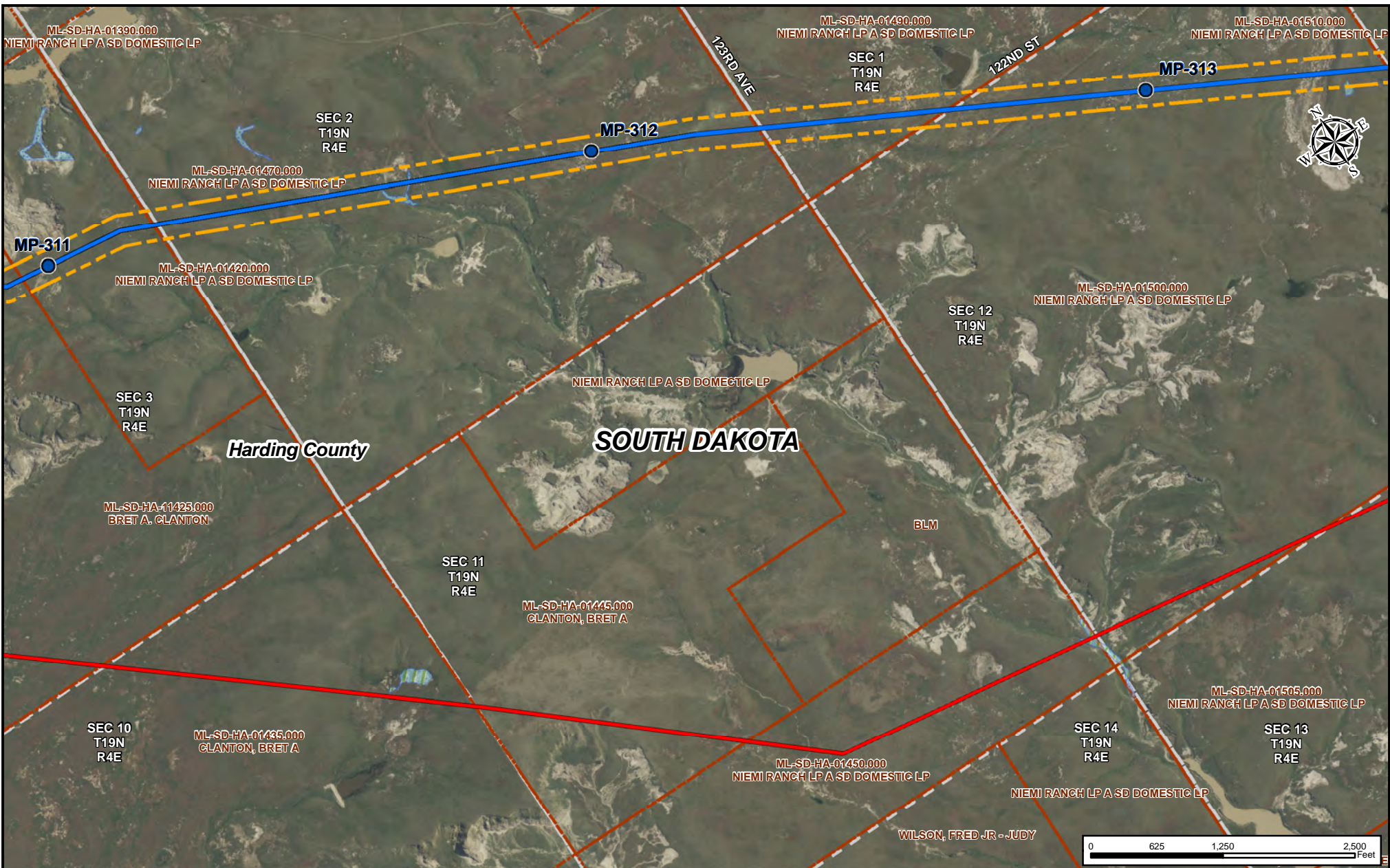
- Milepost
- Centerline (2010-03-26)
- Proposed Route Variation
- 300ft Corridor
- Cultural Feature
- Waterbody
- Wetland
- Parcel Boundary
- Section Line
- County Boundary
- State Boundary



**KEYSTONE US - PHASE IV PIPELINE PROJECT  
PROPOSED ROUTE VARIATION 0190  
HARDING COUNTY, SOUTH DAKOTA**

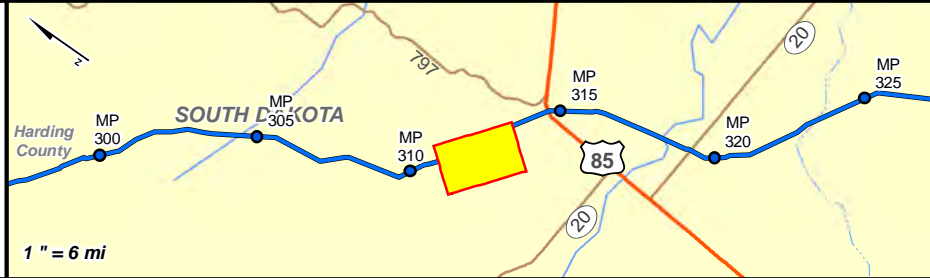
 Trow	DATE	PROJECT	MAP PARAMETERS		
	Nov 12, 2010	50388X	PROJECTION: UTM 13, NAD83, US FT SCALE: 1" = 1,250', 1:15,000		
DRAWN BY	CHECKED BY	APPROVED BY	ROUTE VARIATION NUMBER	SHEET	REV.
ACB	CPA	WSF	0190-SD-P2-308.8-315.3-S	001	0





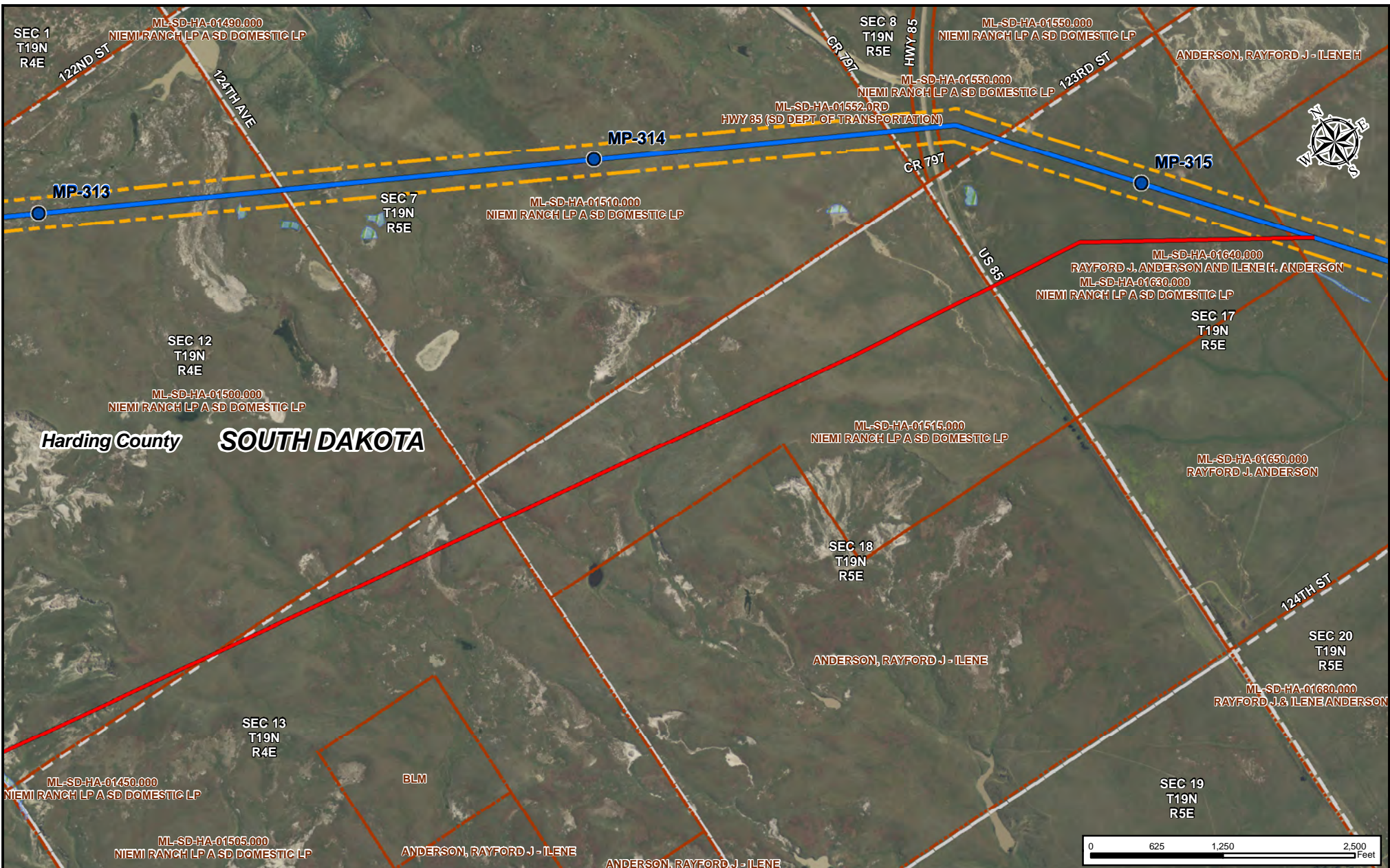
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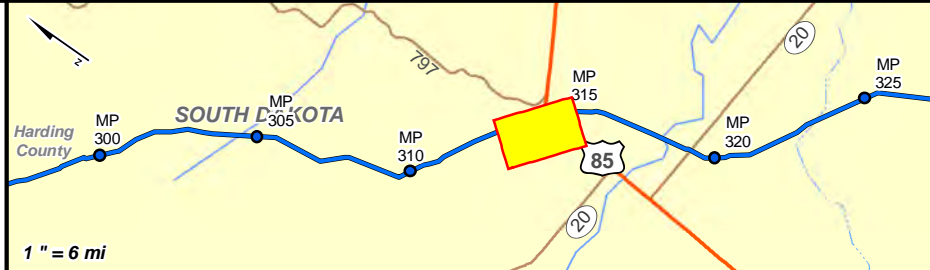
KEYSTONE US - PHASE IV PIPELINE PROJECT PROPOSED ROUTE VARIATION 0190 HARDING COUNTY, SOUTH DAKOTA					
 Trow	DATE	PROJECT	MAP PARAMETERS		
	Nov 12, 2010	50388X	PROJECTION: UTM 13, NAD83, US FT SCALE: 1" = 1,250', 1:15,000		
DRAWN BY	CHECKED BY	APPROVED BY	ROUTE VARIATION NUMBER	SHEET	REV.
ACB	CPA	WSF	0190-SD-P2-308.8-315.3-S	002	0





**Legend**

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KEYSTONE US - PHASE IV PIPELINE PROJECT PROPOSED ROUTE VARIATION 0190 HARDING COUNTY, SOUTH DAKOTA					
 Trow	DATE	PROJECT	MAP PARAMETERS		
	Nov 12, 2010	50388X	PROJECTION: UTM 13, NAD83, US FT SCALE: 1" = 1,250', 1:15,000		
DRAWN BY	CHECKED BY	APPROVED BY	ROUTE VARIATION NUMBER	SHEET	REV.
ACB	CPA	WSF	0190-SD-P2-308.8-315.3-S	003	0