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

1237,7,9

Centerline: X LOCATION: Sketch: State: SD, NE County: Hange: Hange: Hange: Section: Multiple Range: Hange: Hange: Hange: Section: Multiple Report consists of 3 proposed route variations. The variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a deffort to determine reroutes through SD and NE.	These route variation	ariation): ons are proposed to	MP:	attached. attached map sheet XXX.X and side hills. T		
State: SD, NE County: Range: Section: Multiple Section: Multiple REASON FOR ROUTE VARIATION (Please include in This report consists of 3 proposed route variations. The variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a deffort to determine reroutes through SD and NE.	Multiple Centerline: reason for route variation combination of Fly	ariation): ons are proposed to	Quad Map: N/A Aerial Map: See MP:	attached. attached map sheet XXX.X and side hills. T	to	or the route
State: SD, NE County: Hange: Section: Multiple Range: Reason FOR ROUTE VARIATION (Please Include of This report consists of 3 proposed route variations. Trivariation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a deffort to determine reroutes through SD and NE.	Multiple Centerline: reason for route variation combination of Fly	ariation): ons are proposed to	Quad Map: N/A Aerial Map: See MP:	attached map sheet XXX.X and side hills. T	he reason fo	or the route
Township: Multiple Section: Multiple REASON FOR ROUTE VARIATION (Please include in this report consists of 3 proposed route variations. The variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a deffort to determine reroutes through SD and NE.	Multiple Centerline: reason for route variation combination of Fly	ariation): ons are proposed to yover video of Cent	Aerial Map: See MP:	XXX.X and side hills. T	he reason fo	or the route
REASON FOR ROUTE VARIATION (Please include reference in the second route variations. The variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a ceffort to determine reroutes through SD and NE.	reason for route variation combination of Fly	ariation): ons are proposed to yover video of Cent	MP:	XXX.X and side hills. T	he reason fo	or the route
REASON FOR ROUTE VARIATION (Please include rather than the second of the	reason for route variation	ariation): ons are proposed to yover video of Cent	o avoid side slopes	and side hills. T	he reason fo	or the route
This report consists of 3 proposed route variations. The variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a defort to determine reroutes through SD and NE.	These route variation	ons are proposed to				
This report consists of 3 proposed route variations. The variation is listed in the "Supplemental Info" tab. The route variations have been proposed based on a defort to determine reroutes through SD and NE.	These route variation	ons are proposed to				
DETAIL ROUTE VARIATION (Please describe route	variation in details			2 3/6-11/6	80,000	
Listed in "Supplemental Info" Tab.	variation in dotail).					A
ADDITIONAL IMPACTS (Please include any additional	al Impacts which m	nay affect cost; cro	essings, induction I	ends, etc.);	Salva Maii	11/41
Listed in "Cost Analysis" Tab.						
Originator: Engineering			10	Received by:		
Date: 7/6/2011					7/6/00	14
7/0/2011				Date: Fax	7/6/20 to: ?	
		WAY BEEFE	12			
Assigned Tracking Number: 0216-XX-P2-XXX	x.x-xxx.x-s		NEW PROPERTY AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON	Filed by:		
				Date:	to: ?	

Document Control Number:

Keystone Phase IV, US - Supplemental Information for Route Variation Report 0216 Prepared: 2011-07-06

RV ID	MP Start	MP End	d State	County	Section	Townshi	ip Range	Origina Lengt (ft)	al Rerou Length	te Change ir (ft) Length (ft	Max. Perp. Deviation (ft)	Reason for Variation	Brief Variation Description	Additional Impacts/Comments	Number of New Landowners impacted by reroute	Landowners on	Number of tracts Civil Survey purchased on original route.	y Civil Survey Needed (ft)				Biological Survey	Complete for	Biological Survey Complete for Proposed Corridor?	Cultural Survey Complete for Proposed Corridor?	Estimated Length Requiring new Environmental Surveys (ft)	Originator
0216-01	538.23	539.18	SD	Lyman	20, 21	103N	78W	5,027	4,35	1 -676	1142	To reroute C/L off side slope.	Route variation starts at MP 538.2 and deviates ~30° southeast from C/L for ~4,351ft to rejoin the current C/L near MP 539.2.	- Entry/Exit point of White River needs to be shifted further south to avoid PI	0	1	NO	4,351	NO	NO	NO	Yes	Yes	No	No	4,351	Engineering
0216-02	540.75	543.28	SD	Tripp	33,34 03,10,11	103N 102N	78W	13,380	6 13,66	55 279	810		Route variation starts at MP 540.8 and deviates ~9.5° northeast for ~3,826 ft. Then it turns slighlty south almost paralleling the curent C/L for ~4,523 ft. Then it continues for ~ 4,760 paralleling an existing field road until it shifts east ~555 ft. towards the current C/L to rejoin it near MP 543.3.	- Approximately ~5626 ft. off sideslope	0	1	NO	13,665	NO	NO	NO	Yes	Yes	No	No	13,665	Engineering
0216-03	711.80	712.92	NE	Greeley	9,16,15	19N	10W	5,905	5 5,96	7 62	558	To reroute to better location for road crossing to avoid side slopes.	Route variation starts at MP 711.8 and deviates ~7.5° east of current C/L. It continues in this direction for ~617 ft. Then turns southeast for ~5,350 ft to rejoin the C/L near MP 712.9.	- Approximately ~1680 ft. off sideslope	0	2	NO	5,967	NO	NO	NO	Yes	Yes	No	No	5,967	Engineering

Keystone Phase IV, US - Cost Analysis for Route Variation Report 0216 Prepared: 2011-07-06

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		Total Cost
0216-01	-676	\$ (243,360.79)	0	\$ -	-676	\$ (12,844.00)	0	\$ -	0	\$ -	\$ 4,367.23	\$ 4,120.02	\$ -		\$ (247,717.54)
0216-02	279	\$ 100,280.32		\$ -	-5626	\$(106,894.00)	0	\$ -	0	\$ -	\$ 13,716.28	\$ 12,939.88	\$ -	\$ (100,000.00)	\$ (79,957.52)
0216-03	62	\$ 22,329.74	0	\$ -	-1680	\$ (31,920.00)	0	\$ -	0	\$ -	\$ 5,989.46	\$ 5,650.44	\$ -	\$ (20,000.00)	\$ (17,950.36)

Overall Estimated Costs of Routes Variations= \$ (345,625.42)

Keystone Phase IV, US - Approval form for Route Variation Report 0216

Prepared: 2011-07-06

RV ID		0216-01	0216-02	0216-03
LAND (HEO)	Approval (Y/N)	Υ	Υ	Y
LAND (UFS) Doug Riechley	Comments	- No Issues	- Landowner is difficult to dealt with but will approve if compensated accordingly.	-Permit. No requirements on road crossing in Greeley County No Land Issues.
ENGINEEDING (Transcareda)	Approval (Y/N)	Y	Υ	Υ
ENGINEERING (TransCanada) Meera Kothari / David Guien	Comments			
ENGINEEDING ()	Approval (Y/N)	Υ	Y	Y
ENGINEERING (exp) Butch Wallace	Comments	Route Variation tweaked and reviewed by Engineering.		
CONSTRUCTION (Towns Count)	Approval (Y/N)	Y	Y	Υ
CONSTRUCTION (TransCanada) Bobby Curbow	Comments			
	Approval (Y/N)	Y	Y	Y
ENVIRONMENTAL (exp) Jonathan Minton	Comments	- Requires additional Env. Survey	- Requires additional Env. Survey.	- Requires additional Env. Survey.
OAFFT/()	Approval (Y/N)	N/A	N/A	N/A
SAFETY (exp.) Jason Mllenbruch	Comments			
EACH ITIES (T	Approval (Y/N)	N/A	N/A	N/A
FACILITIES (TransCanada) Sandra Gigovic	Comments			
PROJECT MANAGEMENT	Approval (Y/N)	Y	Y	Y
(TransCanada) Alan Lietz	Comments			
PROJECT MANAGEMENT	Approval (Y/N)	Y- 8M	Y-Sm	Y - 8m
(TransCanada) Steve Marr	Comments	8/31/11	8/31/11	8/31/11

KEYSTONE XL PIPELINE PROJECT - STEELE C PIPELINE ROUTE VARIATION FOR		Ţ		
VARIATION TYPE: Refinement:	Reroute:	X		
Centerline: X Valve Site:	X		Pump Station:	
			Turnp Glation.	
OCATION: Sketch: Attached	Pictures: S	ee attached		
State: Multiple County: Multiple	Quad Map: N	THE RESERVE AND ADDRESS OF THE PARTY OF THE	Water and the same of the same	
Township: Multiple Range: Multiple	Aerial Map: S	COLUMN TO A SECURIOR ST.	The state of the s	
Section: Multiple Centerline: 11/18/2010	MP:	XXX.X	to	XXX.X
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	e through Mont	ana, South D	akota, and Nebraska	à.
DETAIL ROUTE VARIATION (Please describe route variation in detail):		TUNIOR SON		
See respective Route Variation Files. No new landowners were affected by the proposed rou	ıte variations.			
RVs included: Discussed prior to 6/20/2011:				
Western Prairie Fringe Orchid Reroute (RV-0194)				
John Harter Reroute (RV-0195)				
Buzek Reroute (RV-0197)				
Discussed during 6/20/2011 Meeting:				
Reroute away from sidehiii (SOM Land) (RV-0209)				
Discussed during 6/21/2011 Meeting:				
Reroutes to avoid creek Crossings (RV-0199)				
MP 475 Reroute (RV-0200) Reroutes to lessen/reduce Pis (RV-0213)				
Reroutes to avoid waterwell; fence (RV-0214)				
Reroutes to avoid creeks, dropoffs, wetlands, etc. (RV-0215)				
Reroutes to avoid sideslopes/hilis (RV-0216) Reroutes to avoid pivot centers (RV-0217)				
Discussed during 8/10/2011 Meeting: HWY 73 Reroute (RV-0196)				
HWY 56 Reroute (RV-0219)				
Bad River HDD realignment reroute (RV-0220)				
MP 396 Reroute (RV-0224) Yellowstone River HDD Entry Pt (RV-0227)				
Pi Breakdowns of all previous RV's for new CL (RV-0228 and RV-0229)				
CK-MLV-06 and CK-11 Valves relocation (RV-0230)				New York
ADDITIONAL IMPACTS (Please include any additional impacts which may affect cost; crossi	ings, induction	bends, etc.):		
Made to the second of the seco				
s there an increase/decrease in the number of crossings?	Yes	- Committee	No	
f yes, please list:				
		17/4		1000
Originator	10	Described to		
Originator: Multiple		Received by	With the same of the same of	
Date: 8/12/2011		Date	8/12/2011 Fax to: ?	
	12			
RV-0194-0197, RV-0199-0200, RV-0209, RV-0213-0217, RV-0219- 0220, RV-0224, RV-0227-0230				
Assigned Tracking Number: VECU, NV-0227-0230		Filed by	<i>j</i> :	167 M AL
		Date	o:	
			Fax to: ?	W. Allah

^{*} Evaluation Criteria is located in Route Refinement and Reroute Process Section 3

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

ROUTE VARIATION	AUTHORIZATION FORM	Y SEGMENT)
Date: 8/12/2011	Tracking Number:	RV-0194-0197, RV-0199-0200, RV-0209, RV-0213-0217, RV-0219-0220, RV-0224, RV-0227-0230
Description: Western Prairie Fringe Orchid Reroute (RV-0194) John Harter Reroute (RV-0195) Buzzek Reroute (RV-0197) Reroute away from sidehill (SOM Land) (RV-0209)	MP: Originated By: Variation Form Attached:	XXX.X to XXX.X Multiple Yes X No
Iniversal Field - Land Doug Reichley	Variation: Approved	X Rejected
penting surjey	If Rejected Why?	P. R. 10/5)
ranaCanada- Engineering Meera Kothari	Variation Approved	X Rejected
and by David Guien on the 6/20 and 6/21 meetings.	If Rejected Why?	Date: 6/20, 6/21, & 8/10/11
xp - Engineering Butch Wallace	Variation: Approved	X Rejected
comments:	if Rejected Why?	Date: 6/20, 8/21, & 8/10/11
ransCanada - Construction Bobby Curbow	Variation: Approved	X Rejected
omments:	If Rejected Why?	Date: 8/20, 6/21, & 8/10/11
xp - Environmental Jonathan Minton	Variation: Approved	X Rejected
omments:	If Rejected Why?	Date: 6/20, 6/21, & 8/10/11
ECOM - Risk Assesment Heidi Tiliquist	Variation: Approved	N/A Rejected
N/A.	If Rejected Why?	Date:
scilities: Sandra Gigovic	Variation: Approved	N/A Rejected
omments: N/A. Does not affect Facilities.	If Rejected Why?	Date:
anaCanada - PM (NE) Robert Bradley	Variation: Approved	X Rejected
omments:		Date: 8/10/2011
	If Rejected Why?	AND THE REAL PROPERTY.
anaCanada - Senior PM Alan Lietz	Variation: Approved	X Rejected
mments: CM/ NA GPO (CP) LATE	11/1/10	Cate: 6/20, 6/21, & 8/10/11
Regulatory approvab	If Rejected Why?	
ansCanada - Manager Steve Marr	Variation: Approved	Rejected
mments:		Date: 2/3////
	If Rejected Why?	
rward to: Doug Reichley X Jonathan I		lan Lietz X
Meera Kothari X Heidi Tiliqu		teve Marr X

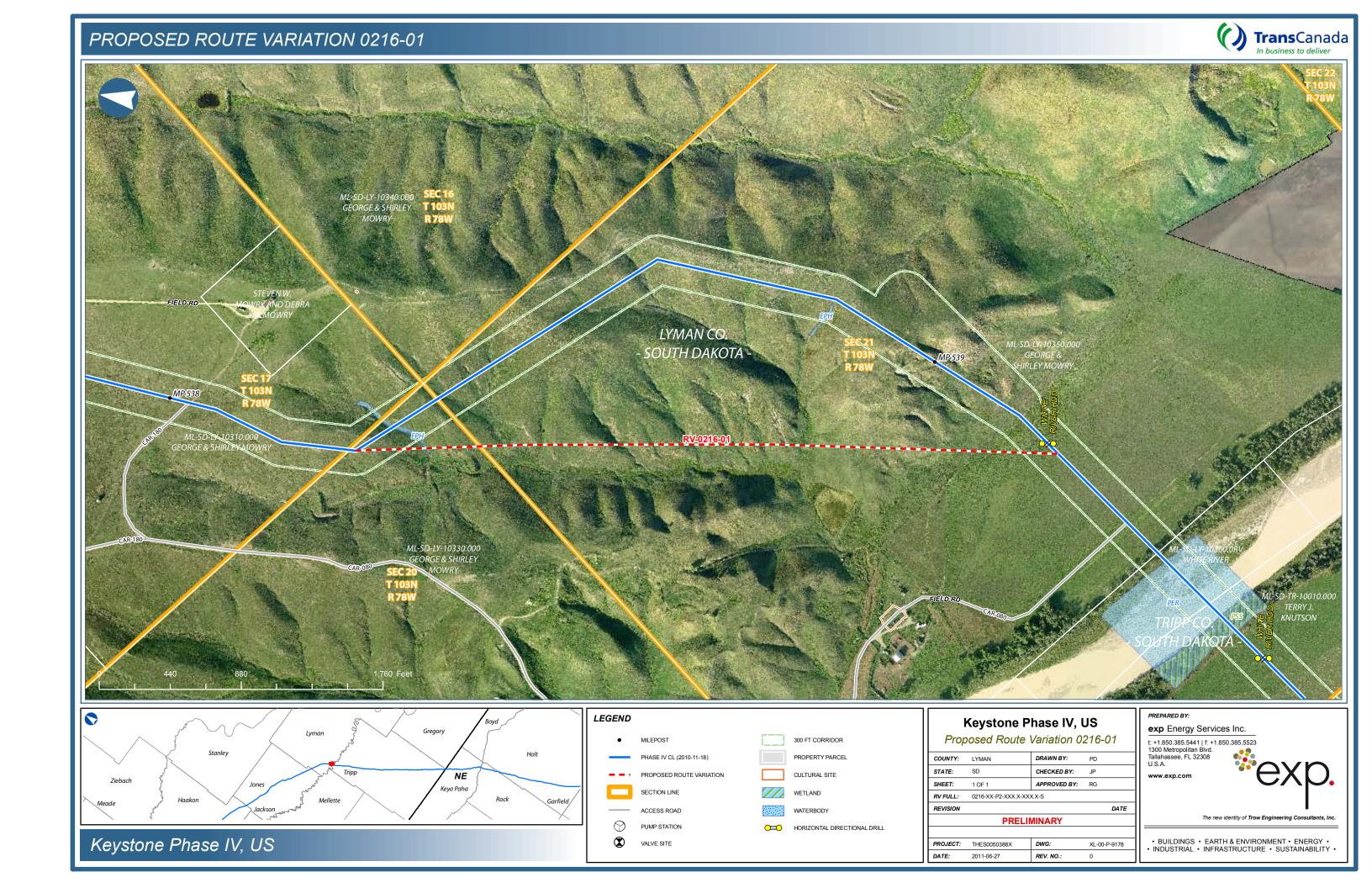
Document Control Number: KXL10-00006-01-AA-180 (Form 2)

RV-0194, 0195, 0197, RV-0199-0200, RV-0209, RV-0213-0217

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

	KEYSTONE PIPELINE PROJECT - U ROUTE VARIATION	.S. PHASE IV (STEELE CITY SEGMENT) AUTHORIZATION FORM
Date:	8/12/2011	Tracking Number: RV-0194, 0195, 0197, RV-0199-0200, RV-0209, RV-0213-0217
Description:	Western Prairie Fringe Orchid Renote (RV-0196), John Harter Renote (RV-0195); Buzek Renote (RV-0197); Renote awer form cideltill (SOM Land) (RV-0209); Renotes to evoid creek Crossings (RV-0199); MP 475 Renote (RV-0200); Renotes to lessen/reduce Pls (RV-0213); Renotes to avoid waterwell; fence (RV-0214);	MP: XXX.X to XXX.X Originated By: Multiple Variation Form Attached: Yes X No
Universal F	leid - Land Doug Reichley	Variation: Approved X Rejected
Comments:	Singural	Date: 6/20, 6/21, & 8/10/11 If Rejected Why? Dr. G. 10/5/11
IranaCanac	fa- Engineering Meera Kothari	Variation: Approved X Rejected
Comments:	and by David Gulen on the 6/20 and 6/21 meetings. for the are Kothan,	Date: 8/20, 6/21, & 6/10/11 If Rejected Why?
Exp - Engine Comments:	earing Butch Wallace	Variation: Approved X Rejected Date: 6/20, 6/21, & 8/10/11
		Date: 6/20, 8/21, 8 8/10/11 If Rejected Why?
	a - Construction Bobby Curbow	Variation: Approved X Rejected
Comments:	ne (ny-arita)	Date: 6/20, 6/21, & 8/10/11 If Rejected Why?
Exp - Enviro	nmental Jonathan Minton	Variation: Approved X Rejected
Comments:	fending Survey Complotion	Date: 6/20, 6/21, & 8/10/11 If Rejected Why?
A THE PARTY OF THE	a - Environmental Stephen Craycroft	Variation: Approved X Rejected
Comments:	Personal Control of the Control of t	Date: 6/20, 6/21, & 6/10/11 If Rejected Why?
Facilities:	Sandra Gigovic	Variation: Approved NA Rejected
Comments:	N/A. Does not affect Facilities.	If Rejected
		Why?
	k Assessment Heidi Tiliquist	Variation: Approved Rejected
		If Rejected Why?
IransCanada	- Senior PM Alan Lietz	Variation: Approved X Rejected
Comments:	powlif appearing	Date: 6/20, 6/21, & 8/10/11 If Rejected Why?
TransCanada Comments:	- Manager Steve Marr	Variation: ApprovedRejected
		If Rejected Why?
	Doug Reichley X Jonathan Meera Kotharl X Stephen C Sutch Wallace X Heldi Tiliq Bobby Curbow X Sandra Gl	Craycroft X Steve Marr X

RV-0194, 0195, 0197, RV-0199-0200, RV-0209, RV-0213-0217



TransCanada In business to deliver PROPOSED ROUTE VARIATION 0216-02 TRIPP CO. SOUTH DAKOTA 1,720 Feet LEGEND **Keystone Phase IV, US exp** Energy Services Inc. t: +1.850.385.5441 | f: +1.850.385.5523 1300 Metropolitan Blvd. Tallahassee, FL 32308 U.S.A. Proposed Route Variation 0216-02 300 FT CORRIDOR PHASE IV CL (2010-11-18) PROPERTY PARCEL COUNTY: CHECKED BY: STATE: NE PROPOSED ROUTE VARIATION CULTURAL SITE Ziebach APPROVED BY: RG SECTION LINE RV FULL: 0216-XX-P2-XXX.X-XXX.X-S REVISION ACCESS ROAD **PRELIMINARY** The new identity of Trow Engineering Consultants, Inc. PUMP STATION HORIZONTAL DIRECTIONAL DRILL Keystone Phase IV, US • BUILDINGS • EARTH & ENVIRONMENT • ENERGY • • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY • VALVE SITE PROJECT: THES0050388X XL-00-P-9178 REV. NO.:

TransCanada In business to deliver PROPOSED ROUTE VARIATION 0216-02 T 103N R 78W TRIPP CO. SOUTH DAKOTA -LEGEND **Keystone Phase IV, US** exp Energy Services Inc. t: +1.850.385.5441 | f: +1.850.385.5523 1300 Metropolitan Blvd. Tallahassee, FL 32308 U.S.A. Proposed Route Variation 0216-02 300 FT CORRIDOR PHASE IV CL (2010-11-18) PROPERTY PARCEL COUNTY: CHECKED BY: STATE: NE PROPOSED ROUTE VARIATION CULTURAL SITE APPROVED BY: RG SECTION LINE RV FULL: 0216-XX-P2-XXX.X-XXX.X-S REVISION ACCESS ROAD **PRELIMINARY** The new identity of Trow Engineering Consultants, Inc. PUMP STATION HORIZONTAL DIRECTIONAL DRILL Keystone Phase IV, US • BUILDINGS • EARTH & ENVIRONMENT • ENERGY • • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY • VALVE SITE PROJECT: THES0050388X XL-00-P-9178 REV. NO.: