

KEYSTONE XL PIPELINE PROJECT

0414-SD-P4-XXX-X-XXX.X-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 type="text"/> Pump Station: <input type="text"/> Valve Site: <input checked="" type="checkbox"/> CAR: <input checked="" type="checkbox"/>		
2	<b>LOCATION:</b> Sketch: <input type="text"/> 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="02N"/> Range: <input type="text" value="24E"/> Aerial Map: <input type="text" value="See attached map sheet"/> Section: <input type="text" value="26"/> Centerline: <input type="text" value="3/14/2012"/> MP: <input type="text" value="XXX.X"/> to <input type="text" value="XXX.X"/>		
3	<b>REASON FOR ROUTE VARIATION</b> (Please include reason for route variation): <div style="border: 1px solid black; padding: 5px; min-height: 60px;">                     The primary reason for this footprint change is the relocation of MLV-20 per field reconnaissance recommendation.                 </div>		
	<b>DETAIL ROUTE VARIATION</b> (Please describe route variation in detail): <div style="border: 1px solid black; padding: 5px; min-height: 40px;">                     MLV-20: Per field reconnaissance performed of the proposed site on 6/19/2012. Proposed location upstream of CAR-161 is good location. Slightly higher ground with mild slope and all crop. Power is available downstream of road and access road is good and reported by Land to be county maintained. Recommendation to place valve on Coming inside of road due to dual power lines located south of field road.                 </div>		
	<b>ADDITIONAL IMPACTS</b> (Please include any additional impacts which may affect cost; crossings, induction bends, etc.): <div style="border: 1px solid black; padding: 5px; min-height: 80px;">                     1 Tract impacted:                      HK-11620 (Jerry Nemeec &amp; Sonia Nemeec) - Proposed MLV-20 new location.                      HK-11600 (Roger and Edna Dale) - Current MLV-20 location                 </div>		
	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="0"/> ft.	\$ - \$ 360/ft
	Additional length of side-hill construction:	<input type="text"/> ft.	\$ - \$ 19/ft
	Additional length of wetland construction:	<input type="text"/> 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" value="0"/> EA	\$ - \$ 185,000/EA
	10' - 19'	<input type="text" value="0"/> EA	\$ - \$ 77,250/EA
	Less than 10'	<input type="text" value="0"/> EA	\$ - \$ 32,500/EA
	Additional survey required:		
	Civil:	<input type="text" value="0.00"/> mile	\$ - \$ 5,000/mile
	Cultural:	<input type="text" value="0.00"/> mile	\$ - \$ 2,500/mile
	Biological:	<input type="text" value="0.00"/> mile	\$ - \$ 2,800/mile
	Miscellaneous costs saved or added due to route variation from <b>ADDITIONAL IMPACTS</b> listed above: <input type="text"/>		
	Overall estimated costs of the route variation:	<input type="text" value="\$ -"/> (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:  N/A 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:  Engineering  
 Date:  7/12/2012

10 Received by:   
 Date:  7/12/2012  
 Fax to: ?

11 Assigned Tracking Number:  0414-SD-P4-XXX.X-XXX.X-S

12 Filed by:   
 Date:   
 Fax to: ?

0414-SD-P4-XXX.X-XXX.X-S

# Keystone XL Pipeline - Supplemental Information for Route Variation Report 0414

Prepared: 2012-07-12

RV-ID	Status	Previous Scenario		New Scenario		Relocated Distance (miles)	Upstream distance to next motorised valve or PS (miles)	Downstream distance to next motorised valve or PS (miles)	Spread	Previous Scenario	New Scenario	County	State	Previous Scenario			New Scenario			Tag (Motor operated valve)	Tag (Check valve)	Tag (Manual valve)
		Milepost	Valve ID	Milepost	Valve ID					Type	Type			Legal	Latitude	Longitude	Legal	Latitude	Longitude			
0414-01		479.8	MLV-20	480.6	MLV-088	0.83			6	MOV	MOV	Haakon	South Dakota	027-02N-024E	44° 6' 20.541" N	101° 12' 27.348" W	026-002N-24E	44° 6' 2.567"N	101° 11' 33.262"W	260-HAKON-01A-B0-MLV-01		

RV-ID	New Scenario		Closest Road	Side	Previous Scenario		New Scenario		Required building setback	Distance from Road ROW/FENCE to valve (whichever greater) (ft)	Distance from CL of Road to valve (ft)
	Milepost	Valve ID			Tract Number	Owner	Tract Number	Owner			
0414-01	480.6	MLV-20	CAR-161	UPSTREAM	ML-SD-HK-11600.000	Roger Dale & Edna Dale	ML-SD-HK-11620.000	Jerry Nemeec & Sonia Nemeec	NONE	80	110.0

KEYSTONE XL PIPELINE PROJECT

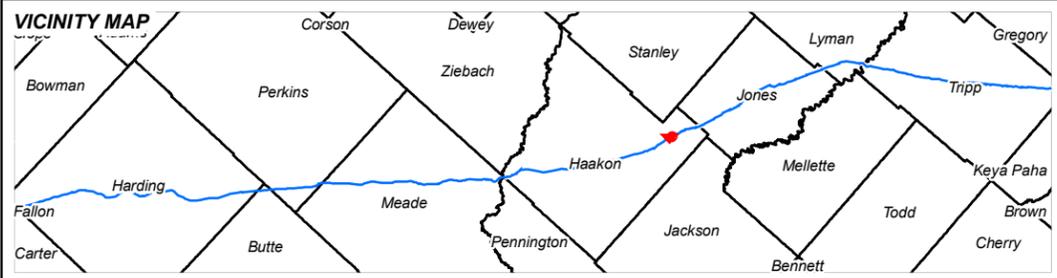
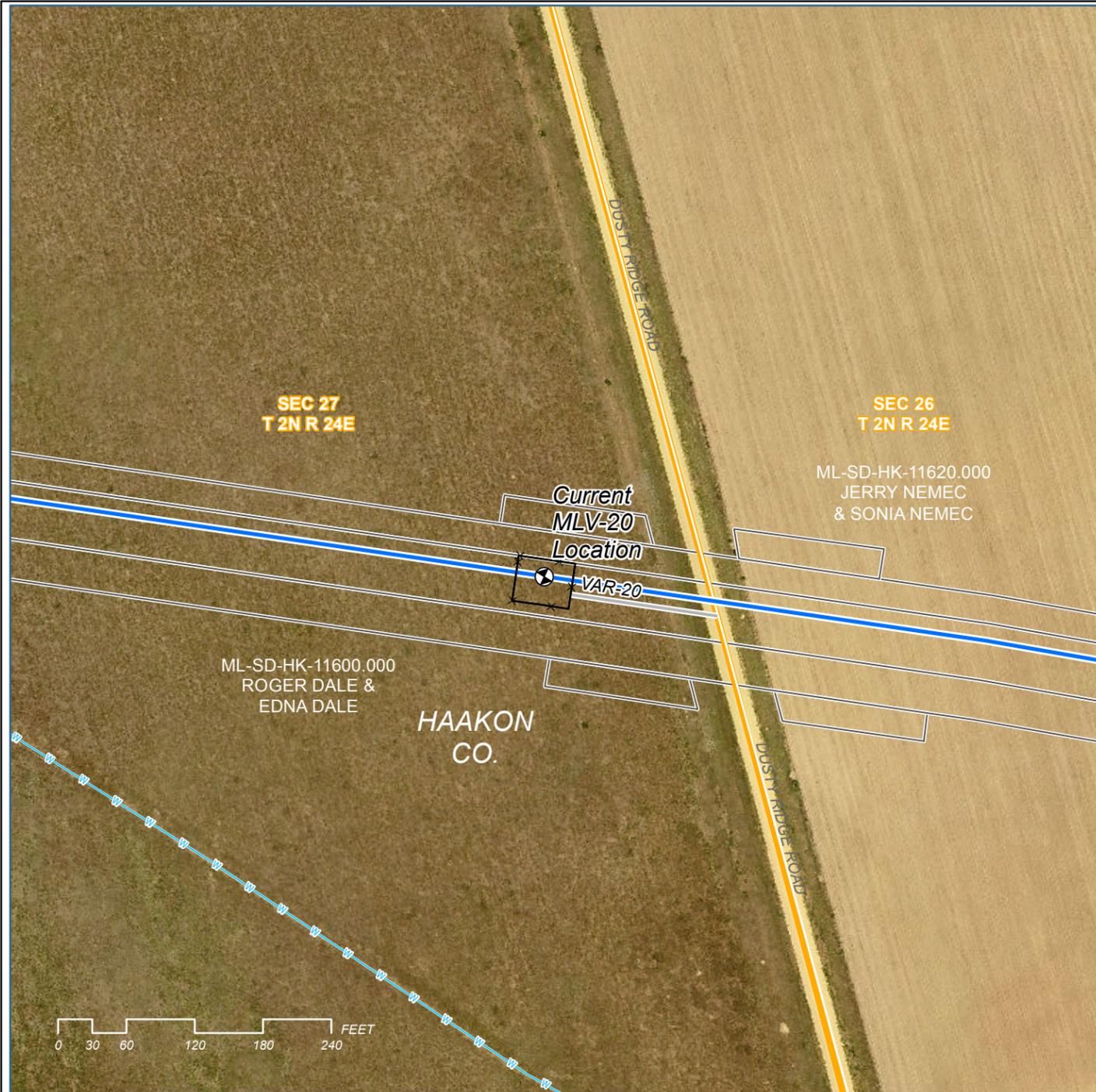
0414-SD-P4-XXX X-XXX X-5

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM		
Date: <u>7/12/2012</u>		Tracking Number: <u>0414-SD-P4-XXX X-XXX X-5</u>
Description: <u>The primary reason for this footprint change is the relocation of MLV-20 per field reconnaissance recommendation.</u>		MP: <u>XXX X</u> to <u>XXX X</u> Originated By: <u>Engineering</u> Variation Form Attached: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>TransCanada - Land</b> Tina Hall Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - Engineering</b> Meera Kohari Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: <u>7/12/12</u> If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>Eng - Engineering</b> Butch Wallace Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/> Date: <u>7-13-2012</u> If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - Environmental</b> Sandra Barnett Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>Stantec - Risk Assessment</b> Heidi Tilquist Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - Facilities</b> Sandra Glogvic Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - PM (Montana)</b> Alan Lietz Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - PM (South Dakota)</b> James Odom Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - PM (Nebraska)</b> Robert Bradley Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<b>TransCanada - Area Manager</b> Steve Marr Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Date: If Rejected Why? <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
Forward to: Tina Hall <input type="checkbox"/> Meera Kohari <input type="checkbox"/> Butch Wallace <input type="checkbox"/>	Sandra Barnett <input type="checkbox"/> Heidi Tilquist <input type="checkbox"/> Sandra Glogvic <input type="checkbox"/> Alan Lietz <input type="checkbox"/>	James Odom <input type="checkbox"/> Robert Bradley <input type="checkbox"/> Steve Marr <input type="checkbox"/>

KEYSTONE XL PIPELINE PROJECT

KEYSTONE XL PIPELINE PROJECT ROUTE VARIATION AUTHORIZATION FORM		
Date: <u>7/12/2012</u>	Tracking Number: <u>0414-SD-P4-XXX.X-XXX.X-S</u>	
Description: The primary reason for this footprint change is the relocation of MLV-20 per field reconnaissance recommendation.	MP: <u>XXX.X</u> to <u>XXX.X</u>	
	Originated By: <u>Engineering</u>	
	Variation Form Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<u>TransCanada - Land</u> Tina Hall	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>TransCanada- Engineering</u> Meera Kothari	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>Exp - Engineering</u> Butch Wallace	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>TransCanada- Environmental</u> Sandra Barnett	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>Stantec - Risk Assesment</u> Heidi Tillquist	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>TransCanada - Facilities</u> Sandra Gigovic	Variation: Approved <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: <u>Sept 7, 2012</u>	
	If Rejected Why? <input type="text"/>	
<u>TransCanada - PM (Montana)</u> Alan Lietz	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>TransCanada - PM (South Dakota)</u> James Odom	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>TransCanada - PM (Nebraska)</u> Robert Bradley	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
<u>TransCanada - Area Manager</u> Steve Marr	Variation: Approved <input type="checkbox"/> Rejected <input type="checkbox"/>	
Comments: <input type="text"/>	Date: _____	
	If Rejected Why? <input type="text"/>	
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"/>	Bulch Wallace <input type="checkbox"/> Sandra Gigovic <input type="checkbox"/> Steve Marr <input type="checkbox"/>
	Alan Lietz <input type="checkbox"/>	

0414-SD-P4-XXX.X-XXX.X-S



**LEGEND**

- MILEPOST
- KEYSTONE XL CL (2012-03-14)
- PROPOSED ROUTE VARIATION
- SECTION LINE
- ACCESS ROAD
- PUMP STATION
- +
 POWER POLE
- OVERHEAD POWER LINE
- PROPERTY PARCEL
- CULTURAL SITE
- WETLAND
- WATERBODY

KEYSTONE XL PROJECT		
Proposed Valve Relocation 0414-01		
COUNTY:	HAAKON	DRAWN BY: PD
STATE:	SOUTH DAKOTA	CHECKED BY: JP
REV. NO.:	REVISION	DATE
0	ISSUED FOR REVIEW.	2012-07-11
PRELIMINARY		
DATE:	2012-07-11	PROJECTION: NAD83   UTM14 N

PREPARED BY:  
**exp** Energy Services Inc.  
 t: +1.850.385.5441 | f: +1.850.385.5523  
 1300 Metropolitan Blvd.  
 Tallahassee, FL 32308  
 U.S.A.  
[www.exp.com](http://www.exp.com)

The new identity of Trow Engineering Consultants, Inc.

• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •  
 • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

DWG:	XL-30-P-9200	SHEET:	1
------	--------------	--------	---