Figure 2.1.4-1

TYPICAL 110' CONSTRUCTION RIGHT-OF-WAY
(36" PIPELINE)

WITH TOPSOIL REMOVAL ONLY OVER TRENCH LINE

SPOIL SIDE

TOPSOIL

3'

PIPEDLINE

SPOIL

12'

25'

TEMPORARY ADDITIONAL ROW FOR CONSTRUCTION

15'

4' (MINIMUM COVER)

50'

PERMANENT ROW

35'

TEMPORARY ADDITIONAL ROW FOR CONSTRUCTION

70'

110'

CONSTRUCTION ROW

(1) ALTERNATE TOPSOIL PLACEMENT LOCATIONS

REVISED DRAWING - 3/29/2006

4.

REVISED Dimensions & TOPSOIL LOCATION

(1)

ORIGINAL

JOE A. NELSON 9/08/08
35' TEMPERARY ADDITIONAL ROW FOR CONSTRUCTION

35' 15' 25' TEMPERARY ADDITIONAL ROW FOR CONSTRUCTION

50' PERMANENT ROW

40' 110' CONSTRUCTION ROW

(1) ALTERNATE TOPSOIL PLACEMENT LOCATIONS
Figure 2.1-2

Project Overview (South Dakota)
NOTES:
1. SITE CONTAINS A DRIVEWAY FROM GATE TO GATE.
2. FENCED AREA WILL CONTAIN A MINIMUM OF 4" THICK GRAVEL PAD.
NOTES:
1. SITE CONTAINS A DRIVEWAY FROM GATE TO GATE.
2. FENCED AREA WILL CONTAIN A MINIMUM OF 4" THICK GRAVEL PAD.
Figure 2.2.7-1

TYPICAL DIESEL FUEL TANK
ARRANGEMENT DETAIL

NOTES:
1. ALL DIMENSIONS ARE APPROXIMATE AND MAY BE MODIFIED AS
NECESSARY TO SUIT ACTUAL SITE CONDITIONS
1. TANK WILL BE APPROXIMATELY 9,500 GALLONS
2. CONTAINMENT DIMENSIONS ARE 10'x35' AND WILL PROVIDE 110% FOR VOLUMES BEING STORED
3. SHUT-OFF SWITCH WILL BE LOCATED AT EACH PUMP WITH AN EMERGENCY SWITCH OUTSIDE OF EACH BERM. A SECONDARY SHUT-OFF SWITCH WILL BE LOCATED REMOTELY IN THE WAREHOUSE OFFICE OVER 100' AWAY. SIGNS WILL INDICATE EMERGENCY SHUT-OFF INFORMATION.
4. THE PUMPS WILL BE LOCATED APPROXIMATELY 5' AWAY FROM THE TANKS AND PETROLEUM RATED HOSES WILL BE INSTALLED WITH AUTOMATIC SHUT-OFF NOZZLES.
5. THE PRODUCT TO BE DISPENSED WILL BE GASOLINE AND OR DIESEL TO BE CONSUMED BY ON-ROAD VEHICLES.
6. IT SHOULD BE NOTED THAT THESE INSTALLATIONS ARE TEMPORARY AND WILL MEET THE REQUIREMENTS AND STANDARDS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.
7. ALL DIMENSIONS ARE APPROXIMATE AND MAY BE MODIFIED AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.
Proposed Steele City Segment
Proposed Gulf Coast Segment
Proposed Houston Lateral
Keystone Cushing Extension

Data Sources: Basemap - ESRI.
CROSSINGS SHALL BE IN ACCORDANCE WITH APPLICABLE PERMIT.

2. ROAD CROSSING PIPE SHALL EXTEND AT MINIMUM TO RIGHT-OF-WAY LINE UNLESS OTHERWISE SPECIFIED.

3. THE TYPE AND MINIMUM REQUIRED LENGTH OF PIPE FOR CROSSINGS OF ROADS SHALL BE AS SPECIFIED ON ALIGNMENT SHEETS.

4. PIPE FOR BORED CROSSINGS TO INCLUDE ABRASION-RESISTANT (ARB) COATING.

5. PIPELINE MARKER AND TEST STATIONS TO BE INSTALLED ON RIGHT-OF-WAY LINE NEXT TO FENCE IF POSSIBLE.

6. THE CROSSING PIPE SHALL BE STRAIGHT WITH NO VERTICAL OR HORIZONTAL BENDS WITHIN ROAD RIGHT-OF-WAY.

B ore annulus to be no larger than 1" greater than coated line pipe.
TransCanada
Keystone XL Project

Figure 2.3.4-1
Steele City Tank Farm
Plot Plan
Geologic Units

- nT - Neogene sedimentary rocks
- pgT - Paleogene sedimentary rocks
- pgTg - Paleogene granitic rocks
- pgTm - Paleogene mafic rocks
- pgTv - Paleogene volcanic rocks
- K - Cretaceous sedimentary rocks
- IMz - Lower Mesozoic (Triassic and Jurassic) sedimentary rocks
- Mz - Mesozoic sedimentary rocks
- Pz - Paleozoic and Mesozoic sedimentary rocks
- uPz - Upper Paleozoic (Pennsylvanian and Permian) sedimentary rocks
- mPz - Middle Paleozoic (Silurian, Devonian, and Mississippian) sedimentary rocks
- lPz - Lower Paleozoic (Cambrian and Ordovician) sedimentary rocks
- Pz - Paleozoic sedimentary rocks
- Yg - Middle Proterozoic granitic rocks
- Xm - Early Proterozoic mafic rocks
- Xn - Early Proterozoic gneiss
- An - Archean gneiss
- Ag - Archean granitic rocks
- H2O - Water body

Legend

- Proposed Steele City Segment
- Keystone Cushing Extension
- ANTICLINE
- FAULT

Figure 3.1.1-1
TransCanada
Keystone XL Project
WILLISTON BASIN
SALINA BASIN
General Geology
Steele City Segment
TransCanada
Keystone XL Project
Figure 3.1.1-2
General Geology
Gulf Coast Segment

Legend

- Proposed Gulf Coast Segment
- Keystone Cushing Extension
- Fault

Geologic Units:
- Q - Quaternary deposits
- nT - Neogene sedimentary rocks
- pgT - Paleogene sedimentary rocks
- K - Cretaceous sedimentary rocks
- uPz - Upper Paleozoic (Pennsylvanian and Permian) sedimentary rocks
- mPz - Middle Paleozoic (Silurian, Devonian, and Mississippian) sedimentary rocks
- lPz - Lower Paleozoic (Cambrian and Ordovician) sedimentary rocks
- Zg - Late Proterozoic granitic rocks
- H2O - Water body

Map showing geologic units and the TransCanada Keystone XL Project.
KEYSTONE XL PIPELINE PROJECT

Figure 3.1.4-1
Earthquake Hazard Zone
Proposed Keystone XL Project

Interstate
U.S. Highway
State Road

Data Sources: Basemap - ESRI.

KEYSTONE XL PIPELINE PROJECT

Figure 3.10.1-3
Major Roads
Houston Lateral
Oil Pipeline
Oil Pipeline (Planned/Under Construction)
Gas Pipeline
Gas Pipeline (Planned/Under Construction)
Products Pipeline
Products Pipeline (Planned/Under Construction)
Inter-Country Oil Pipeline Label
Inter-Country Gas Pipeline Label
Cross-Border Oil Pipeline Label
Cross-Border Gas Pipeline Label
Inter-Country Products Pipeline Label
Cross-Border Products Pipeline Label

Figure 3.14.2-1
Existing Oil and Gas Pipeline Systems of the U.S.

Data Source: Various. Obtained at http://www.theodora.com/pipelines/united_states_pipelines.html
Figure 3.14.2-2

Data Source: http://www.wbip.com/wbip/contributed_images/WBI-Map.gif

KEYSTONE XL PIPELINE PROJECT

Williston Basin Pipeline

KEYSTONE XL PIPELINE PROJECT

Williston Basin Pipeline
Figure 3.14.2-3
The U.S. Electrical Power Transmission Grid

Figure 3.14.2-4

Annual onshore wind energy potential on a state-by-state basis for the contiguous U.S. expressed in TWh and as a ratio with respect to retail sales in the states (2006)

KEYSTONE XL PIPELINE PROJECT

Figure 4.2.2-1

**KEYSTONE XL PIPELINE PROJECT**

Proposed and Under Construction Crude Oil and Natural Gas Pipeline Expansions

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Energy Infrastructure Investment Forecast

- $20 trillion US – Global energy sector, next 25 years (IEA, 2006)
- $140 billion US – US, pipelines only, next 20 years, (NPC, 2003)
- $15 Billion US - Canada, pipelines only, next 20 years, (NPC, 2003)

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Figure 4.2.2-2

KEYSTONE XL PIPELINE PROJECT

BP No. 1 pipeline (reversed)

Proposed Cushing-U.S. Gulf Coast pipeline (Using some existing pipeline and right-of-way)

Proposed Pump Stations
- Dinosaur
- Montrose
- Sweetwater
- Carbon
- Hot Springs
- Rocky Mountain National Park
- Bighorn Canyon National Forest
- Medicine Bow National Forest
- Wind River Indian Reservation
- Shoshone National Forest
- Grand Teton National Park
- Yellowstone National Park
- Missouri Headwaters National Forest
- Bighorn National Forest
- National Park Service
- Bureau of Land Management
- Forest Service
- Bureau of Indian Affairs

Figure 4.3.3-1

Data Sources: Federal Lands, Basemap - ESRI.
Figure 4.3.6-1
Houston Lateral Alternatives

Proposed Pump Stations
Proposed Keystone XL Project (HL-A)
Keystone Cushing Extension
HL-B
Forest Service
Bureau of Land Management
Fish and Wildlife Service
National Park Service
Bureau of Indian Affairs
Coastal Management Zone Boundary

Data Sources: Federal Lands, Basemap - ESRI; CMZB - TX GLO.