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5.0 Cumulative Impacts

Cumulative impacts are defined in the CEQ regulations 40 CFR 1508.7 as "...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency...or person undertakes such other actions." These actions include current and projected area development (e.g., oil and gas); management activities and authorizations on public lands (e.g., range conversion and forestry programs); land use trends; and applicable industrial/infrastructure components (e.g., utility corridors).

Foreseeable construction projects were screened to determine whether they will overlap in time and space with the Project and thus could interact to cause cumulative impacts. Cumulative construction projects primarily include locations where the Project would be co-located with existing utility corridors and locations associated with new power line construction. Figure 5.0-1 depicts construction disturbance and permanent easements in locations that are adjacent to existing pipelines or utilities.

5.1 Powerlines

The construction of the electrical transmission and distribution power lines necessary for the Project would occur during the same timeframe and in the same general area as the Project. Construction activities would be of short duration in any single location. Most power lines will be co-located with other ROWs (i.e., roadways, pipeline corridors, and existing power lines) or located along field edges or section lines to reduce the overall amount of habitat fragmentation and interference with agricultural operations. The amount of land associated with the power line ROWs represents a small fraction of available native vegetation in the region. As a consequence, these power lines do not represent a substantial cumulative disturbance to the environment. Additional information about the electrical powerlines is located in Section 7.

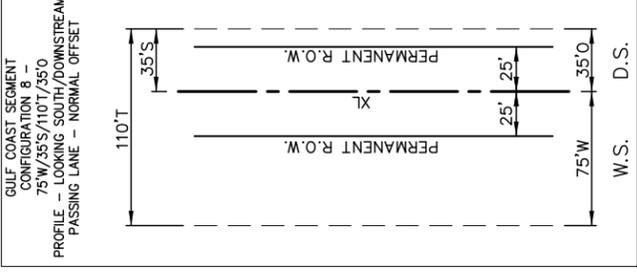
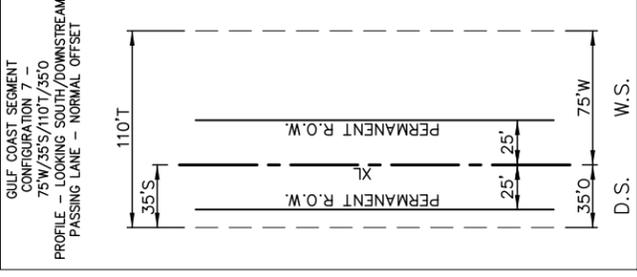
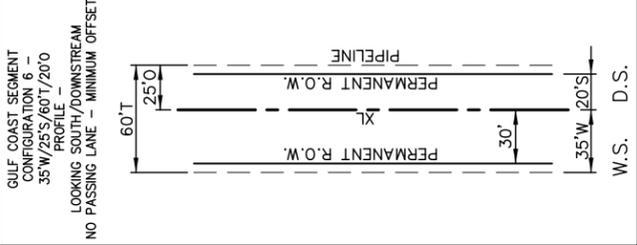
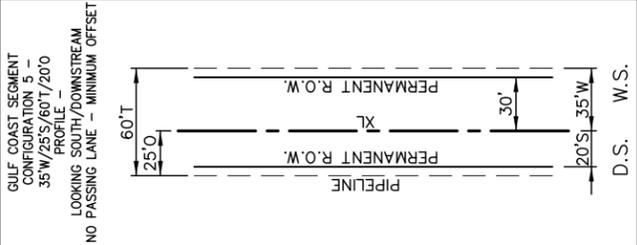
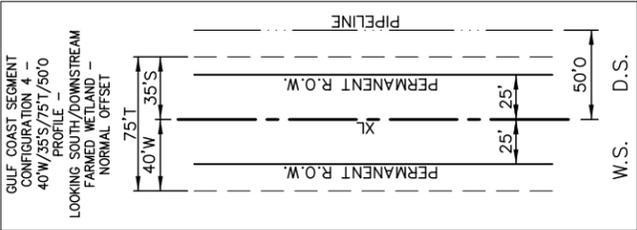
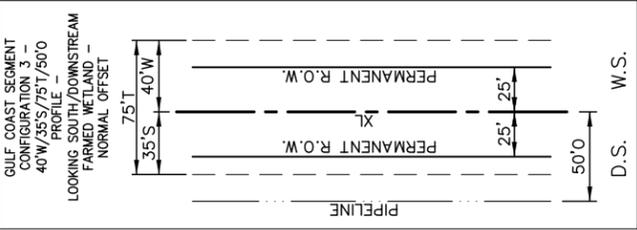
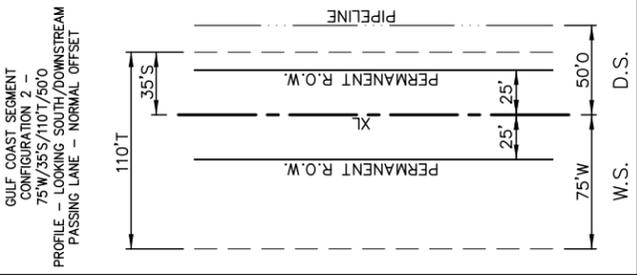
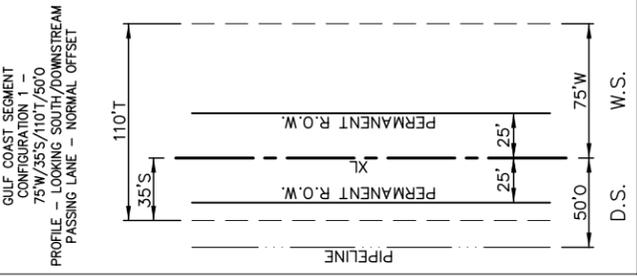
Steele City Segment

5.2 Northern Border Pipeline

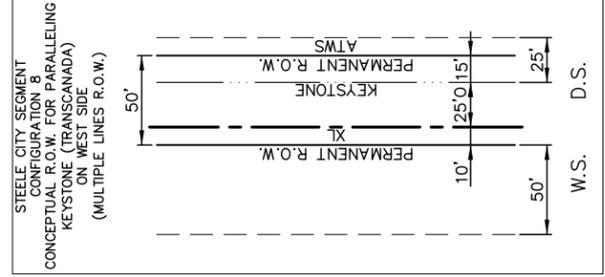
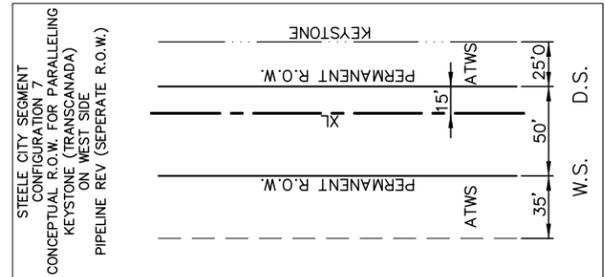
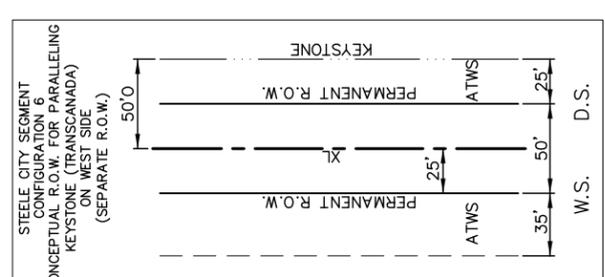
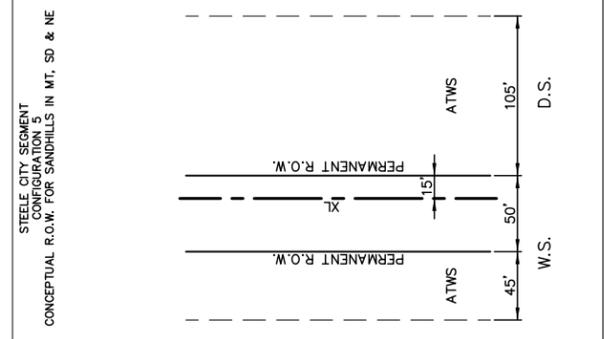
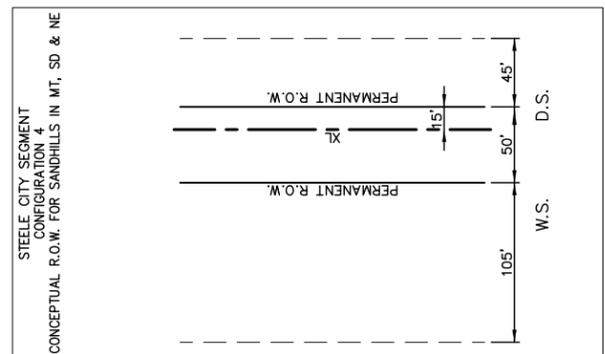
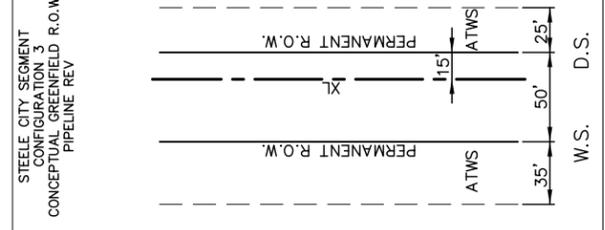
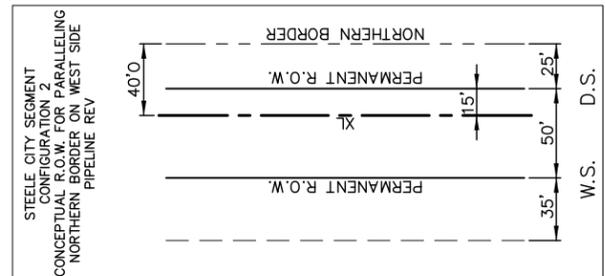
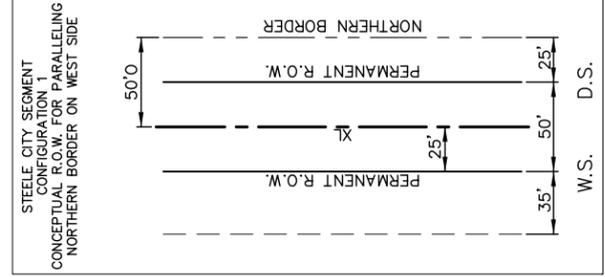
The Northern Border Pipeline is a natural gas pipeline that has been in service since 1982 and the existing ROW has been reclaimed. Routine maintenance and refurbishment activities along the existing Northern Border Pipeline ROW would have minimal cumulative impacts on resources when combined with adjacent, new pipeline construction. The Project will be adjacent to the Northern Border Pipeline for approximately 19 miles within the US, starting at MP 0. In this area, any sites required for work on the Northern Border pipeline would be relatively infrequent, isolated, located in small, discrete areas, and work would involve small crews for short-time periods. Consequently, cumulative impacts from maintenance activities along the existing Northern Border Pipeline system are considered to be negligible.

5.3 Bison Pipeline

Northern Border Company is proposing an approximate 284 mile 24-inch natural gas pipeline from near Gillette, Wyoming to their existing compressor station no. 6 in Morton County, North Dakota. This proposed natural gas pipeline will cross through Fallon County, Montana which is also crossed by the proposed Project. The Bison Project is proposed to be constructed in 2010, pending FERC licensing and federal and state permitting. The Bison project would be built before the Project avoiding a conflict of resources at the time of construction for the Project. However, where the two projects cross in Fallon County, Montana, there will be sequential impacts to the resources at the crossing point of both projects. In the context of the regional impacts, however, the impact will be minor.



LEGEND
 W.S. WORKING SIDE
 D.S. DITCH SIDE
 R.O.W. RIGHT-OF-WAY
 ATWS ADDITIONAL TEMPORARY WORKING SPACE
 T TEMPORARY EASEMENT
 O DISTANCE FROM MAINLINE TO FOREIGN PIPELINE
 S DISTANCE FROM MAINLINE TO TEMPORARY EASEMENT (DITCH SIDE)
 W DISTANCE FROM MAINLINE TO TEMPORARY EASEMENT (WORKING SIDE)



REV No	DATE	REVISION	PROJECT CODE	DRAFT BY	DRAFT CHK	DESIGN BY	DESIGN CHK	PROJ MGR
1		REVISED CONFIGURATION 8 FROM 35' W.S. TO A 50' W.S. CHANGED FIG NUM FROM 001 TO FIG 5.0-1		J.A.N.				
2		REMOVED KALFROM DETAIL TITLE						

PROFESSIONAL ENGINEER/RPT	PERMIT/ ENG. APPROVAL
DATE	DATE
REV. NO.	DATE
PERMIT NUMBER:	

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FIGURE 5.0-1

FIA # CHAINAGE: DISCIPLINE #

KEYSTONE XL PROJECT
 TYPICAL R.O.W. DETAILS
 GULF COAST AND STEELE CITY SEGMENTS

MONTANA, SOUTH DAKOTA, NEBRASKA, KANSAS, OKLAHOMA, TEXAS

SCALE N.T.S. DRAWING No XL-ML-2003-001 REV 2

5.4 Keystone Pipeline Project

TransCanada Keystone Pipeline, LP (Keystone) proposes to construct and operate crude oil pipeline and related facilities from an oil supply hub near Hardisty, Alberta, Canada, to Wood River and Patoka, Illinois, and Cushing, Oklahoma. The project, known as the Keystone Pipeline Project (Keystone), will have the capacity to transport 591,000 barrels per day (bpd) of crude.

In 2010, Keystone will build the Keystone Cushing Extension from Steele City, Nebraska to Cushing, Oklahoma. The Gulf Coast Segment of the proposed Project will be built over the same time period from Cushing, Oklahoma to southern Texas starting in 2010. Because there is no overlap of construction footprint or even locality, cumulative impacts would be avoided. The only location where cumulative impacts may be realized would be at Cushing Oklahoma where the Keystone Cushing Extension ends and the Gulf Coast Segment begins. However, since the projects do not overlap, only construction work force personnel in that county would add cumulative impacts to the roads and service industries.

Gulf Coast Segment and Houston Lateral

5.5 Green Pipeline

Denbury Resources announced their plans to construct the Green Pipeline. This projects calls for building a 24-inch in diameter pipeline from Donaldsville, Louisiana to the Hastings Field, south of Houston, Texas. The pipe would be 314 miles long and is designed to carry carbon dioxide to be used at oil reservoirs to allow additional recovery. The line is designed to transport up to 800 million standard cubic feet of carbon dioxide per day. The pipeline would be designed and operated under the rules and regulations of the US Department of Transportation (USDOT).

If constructed, Green Pipeline and the proposed Project would parallel from the Beaumont area to the Houston area. Construction of the Green Pipeline is scheduled for late 2008, while the Gulf Coast Segment of the Project is scheduled for 2010 and 2011. As a result, many cumulative impacts due to construction in the same year would be avoided (e.g., construction traffic and work forces). For most resources (e.g., soils, vegetation, water, cultural resources), successive construction would result in additive impacts.

5.6 Golden Pass Pipeline

Golden Pass LNG Terminal LP and Golden Pass Pipeline LP, affiliates of ExxonMobil Corporation, are planning the development of a liquefied natural gas (LNG) receiving terminal approximately two miles northwest of Sabine Pass, Texas, and an associated natural gas pipeline system. The projects were approved by FERC in 2005. The pipeline would be operational in 2008-2009. The 42-inch natural gas pipeline with a capacity of 2.5 billion cubic feet per day would be constructed to transport natural gas approximately 75 miles from the outlet of the LNG receiving terminal to existing natural gas pipelines and related infrastructure. The pipeline would be connected to 11 interstate and intrastate pipelines. In addition, a short pipeline would tie into the Beaumont industrial area.

The Golden Pass Pipeline and the proposed Project would parallel each other in the Beaumont area. Construction of the Golden Pass Pipeline is currently ongoing. As a result, many cumulative impacts due to construction of the Golden Pass Pipeline and the Project in the same year would be avoided (e.g., construction traffic and work forces). For most resources (e.g., soils, vegetation, water, cultural resources), successive construction would result in additive impacts.

5.7 Air Liquide Specialty Gas

Air Liquide operates specialty gas facilities along the Texas Gulf Coast. Their facilities in Galveston, Chambers, and Jefferson counties are near the Project. Their facilities in the vicinity include O₂/N₂ plants near Westlake, Beaumont, Channelview and Bayport, cogeneration plants near Bayport, Port Neches, and Lake

Charles, and O₂ and N₂ transmission lines extending from Channelview to Lake Charles. Additionally, Air Liquide has O₂, N₂, and H₂ transmission plants throughout the Texas/Louisiana Gulf Coast Region.

5.8 Gulf Crossing - Boardwalk

Boardwalk is constructing a new interstate natural gas pipeline that would begin near Sherman, Texas, and proceed to the Perryville Louisiana, area. The project would be owned by Gulf Crossing Pipeline Company LLC (Gulf Crossing) and would consist of approximately 357 miles of 42-inch pipeline with approximately 1.7 billion cubic feet of transmission capacity each day with the addition of compression facilities. The pipeline would join the Project corridor in Lamar County, Texas and follow it to Bryan County, Oklahoma at which point it would turn southwest to Sherman, Texas.

The Boardwalk project and the proposed Project would cross in the Fannin/Lamar County area. If constructed on schedule (late 2009), the Boardwalk and the proposed Project would be constructed in sequential years. As a result, many cumulative impacts due to construction in the same year would be avoided (e.g., construction traffic and work forces). For most resources (e.g., soils, vegetation, water, cultural resources), successive construction would result in additive impacts prior to ROW restoration of the first project built in the area of overlap.

5.9 Regency Natural Gas Project

Regency Energy is proposing a natural gas project that the proposed Keystone project would cross in the Lamar County, Texas area. If constructed on schedule (late 2009), the Regency and the proposed Project would be constructed in sequential years. As a result, many cumulative impacts due to construction in the same year would be avoided (e.g., construction traffic and work forces). For most resources (e.g., soils, vegetation, water, cultural resources), successive construction would result in additive impacts prior to ROW restoration of the first project built in the area of overlap.

5.10 Mid-Continent Express Pipeline

The Midcontinent Express natural gas pipeline project is a joint venture between Kinder Morgan and Energy Transfer that will extend from Oklahoma to Alabama. The pipeline would have an initial capacity of 1.4 billion cubic feet per day and is slated to be 500 miles long with 265 miles of 42 inch pipe, 196 miles of 36-inch pipe and 41 miles of 30-inch pipe. The pipeline would also have up to 13 receipt / delivery interconnections. Construction is set to begin in August 2008 and the system is expected to be in service by early 2009.

The Mid-Continent Express project and the proposed Project would cross in the Lamar County, Texas area. If constructed on schedule (2008), the Mid-Continent Express and the proposed Project would not be constructed in sequential years. As a result, many cumulative impacts due to construction in the same year would be avoided (e.g., construction traffic and work forces). For most resources (e.g., soils, vegetation, water, cultural resources), successive construction would result in additive impacts.

5.11 TOPS Crude Unloading Station / Pipeline

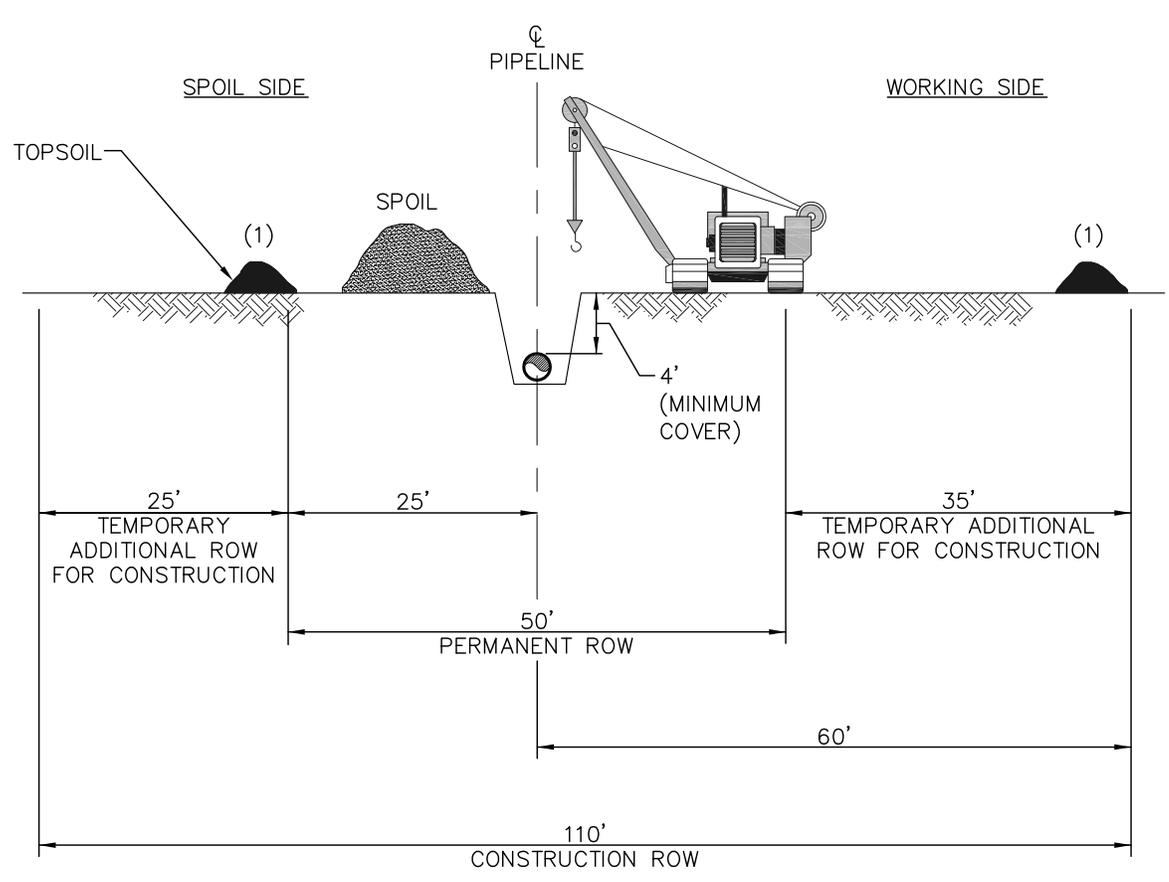
Enterprise Products Partners L.P., TEPPCO Partners, L.P. and Oiltanking Holding Americas, Inc. have formed a joint venture to design, construct, own and operate a new Texas offshore crude oil port and pipeline system to facilitate delivery of waterborne crude oil to refining centers along the upper Texas Gulf Coast. The Texas Offshore Port System ("TOPS") project would include an offshore port, two onshore storage facilities with approximately 5.1 million barrels of total crude oil storage capacity, and an associated 160-mile pipeline system with the capacity to deliver up to 1.8 million bpd of crude oil. System capacity could be expanded with construction of additional offshore facilities. Development of the offshore port system and onshore infrastructure is supported by long-term contracts with Motiva Enterprises LLC and an affiliate of Exxon Mobil Corporation, which together have committed a total volume of approximately 725,000 bpd.

The TOPS project involves construction of a deepwater port located approximately 36 miles offshore from Freeport, Texas, and an onshore distribution and storage system. As designed, the deepwater port will feature two single-point mooring buoys that will essentially serve as floating docks for the vessels. Located in about 115 feet of water, the buoys will be able to offload crude oil at rates up to 100,000 barrels per hour. A subsea pipeline will connect the buoys to the onshore distribution system near Freeport. Utilizing directional drilling techniques to minimize beach impact, the TOPS pipeline system would run from the offshore port shore crossing to Freeport and extend along the Texas Gulf Coast to Texas City, Texas, connecting to a 3.9 million barrel crude oil storage facility. From there, the pipeline would connect to existing crude oil pipeline systems currently serving the Texas City and Houston Ship Channel refineries. A separate but complementary component of TOPS would involve construction of a 75-mile pipeline extending from Texas City to its terminus at a planned storage facility with 1.2 million barrels of crude oil capacity near Port Arthur, Texas.

The TOPS project and the proposed Project would cross in the Lamar County, Texas area. If constructed on schedule (2009), this project would not cumulatively impact the same resources at the same time.

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REVISIONS
1 11.05.08 REMOVED TOPSOIL NEAR TRENCH



(1) ALTERNATE TOPSOIL PLACEMENT LOCATIONS

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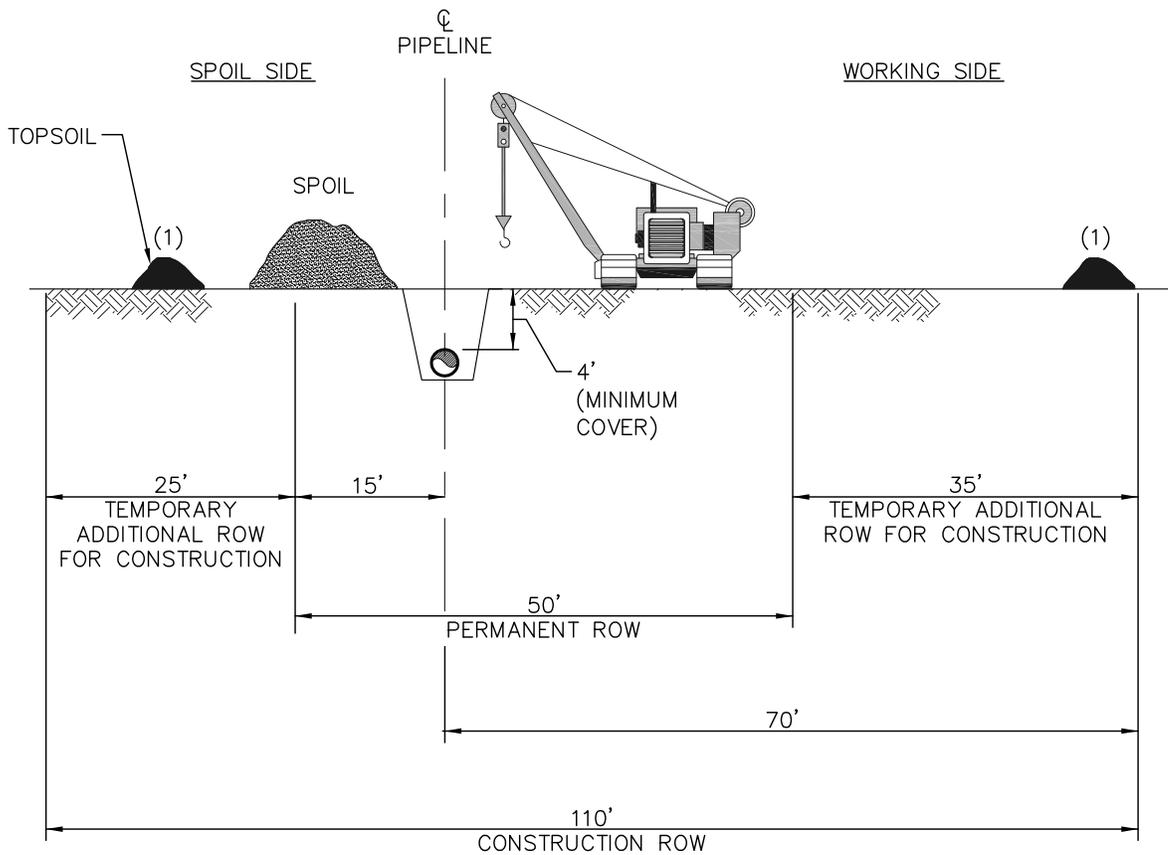
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JOE A. NELSON	9/08/08
NAME	DATE
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FIGURE 5.1-1			
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TITLE TYPICAL 110' CONSTRUCTION RIGHT-OF-WAY (36" PIPELINE) WITH TOPSOIL REMOVAL ONLY OVER TRENCH LINE			
SCALE N.T.S.	DWG No XL-00-ML-7000-548	REV 1	

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FIGURE 5.1-1a

FIA # CHAINAGE: DISCIPLINE #

TITLE
 TYPICAL 110' CONSTRUCTION RIGHT-OF-WAY
 (36" PIPELINE ϕ OFFSET)
 WITH TOPSOIL REMOVAL ONLY OVER TRENCH LINE

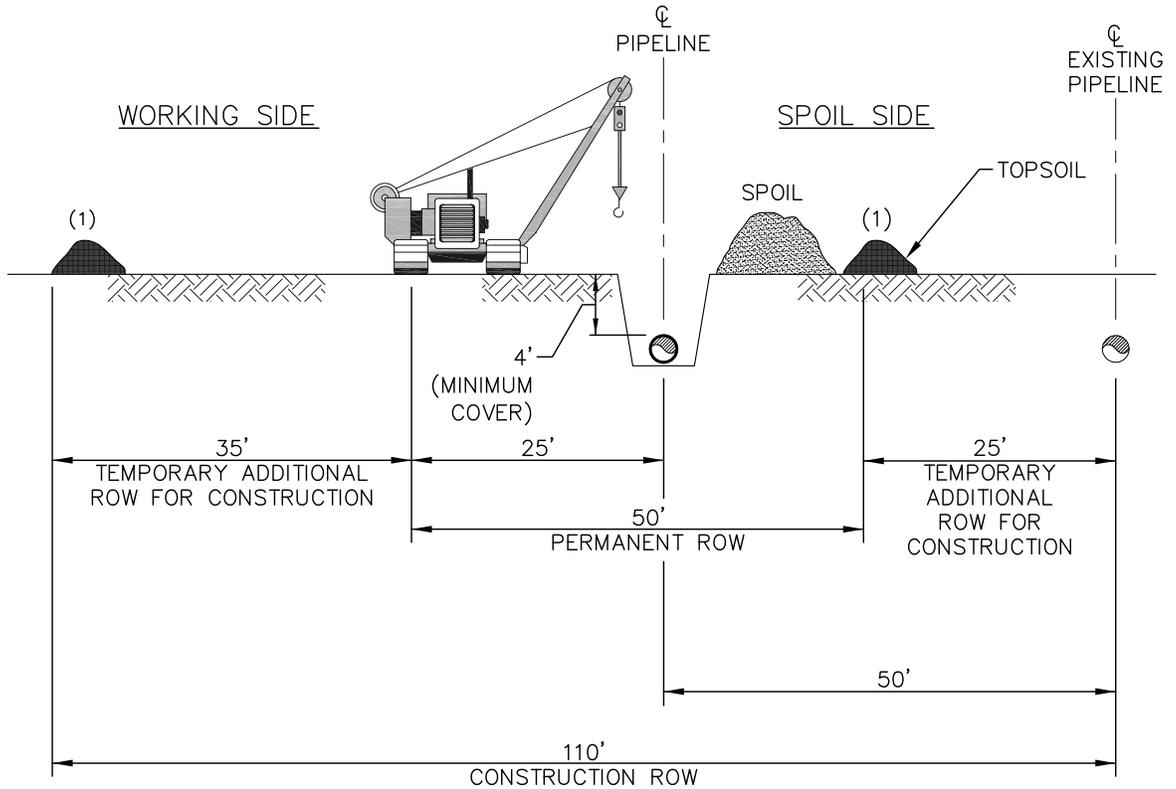
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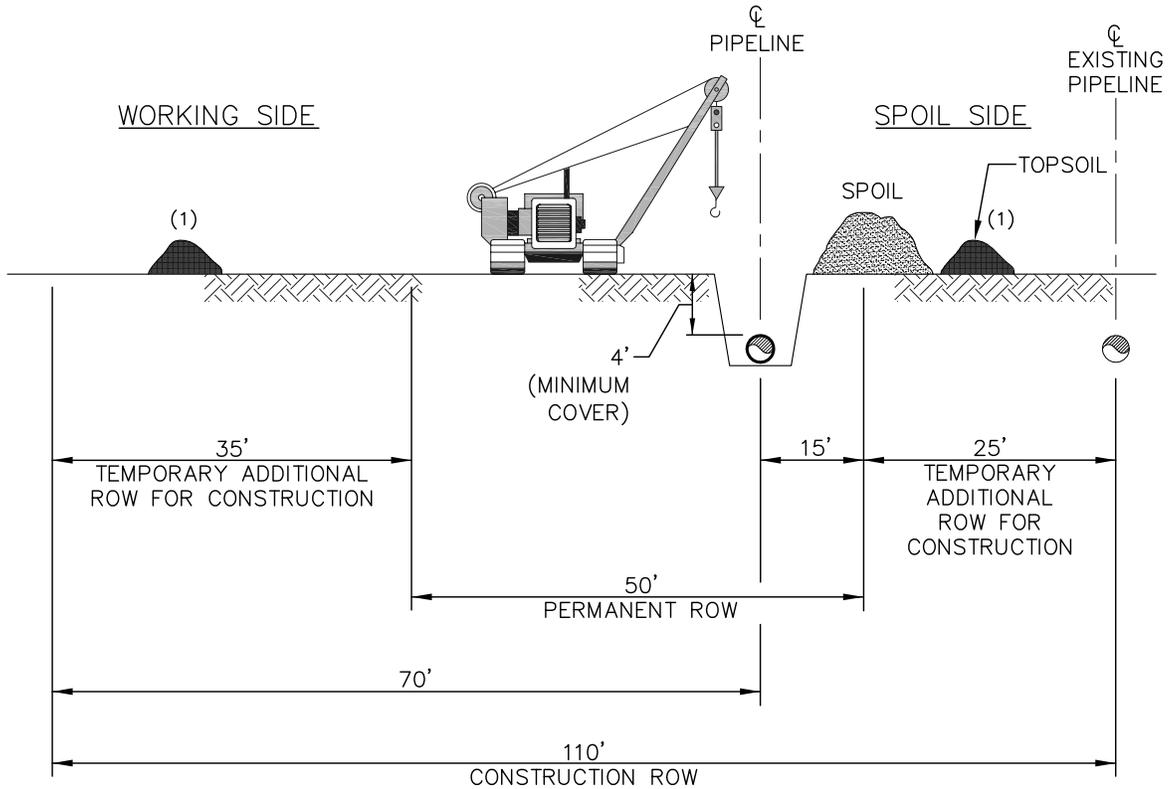
FIGURE 5.1-2

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SCALE N.T.S.	DWG No XL-00-ML-7000-550	REV 1

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FIGURE 5.1-2a

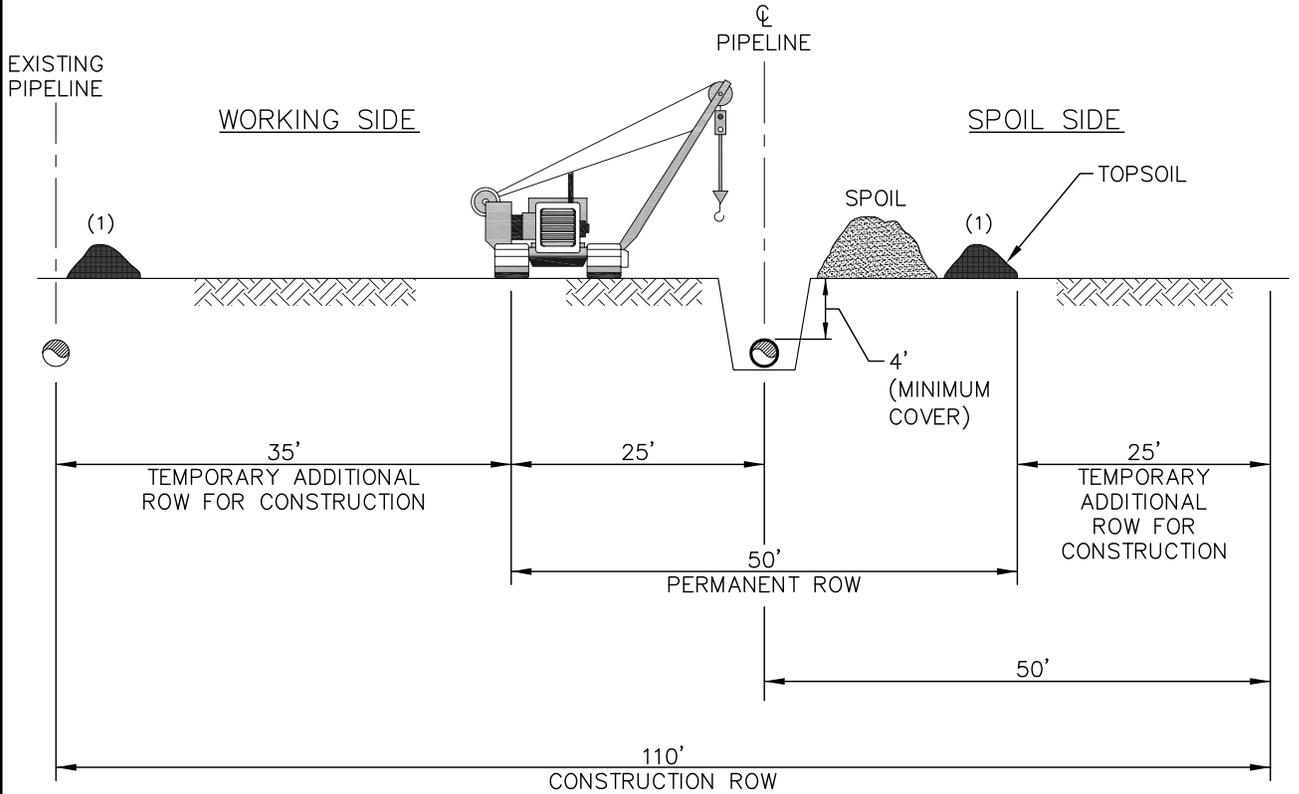
FIA # CHAINAGE: DISCIPLINE #

TITLE
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 (36" PIPELINE ϕ OFFSET) SPOIL SIDE ADJACENT AND
 CO-LOCATION TO EXISTING PIPELINE

SCALE N.T.S. DWG No XL-00-ML-7000-550 REV 1

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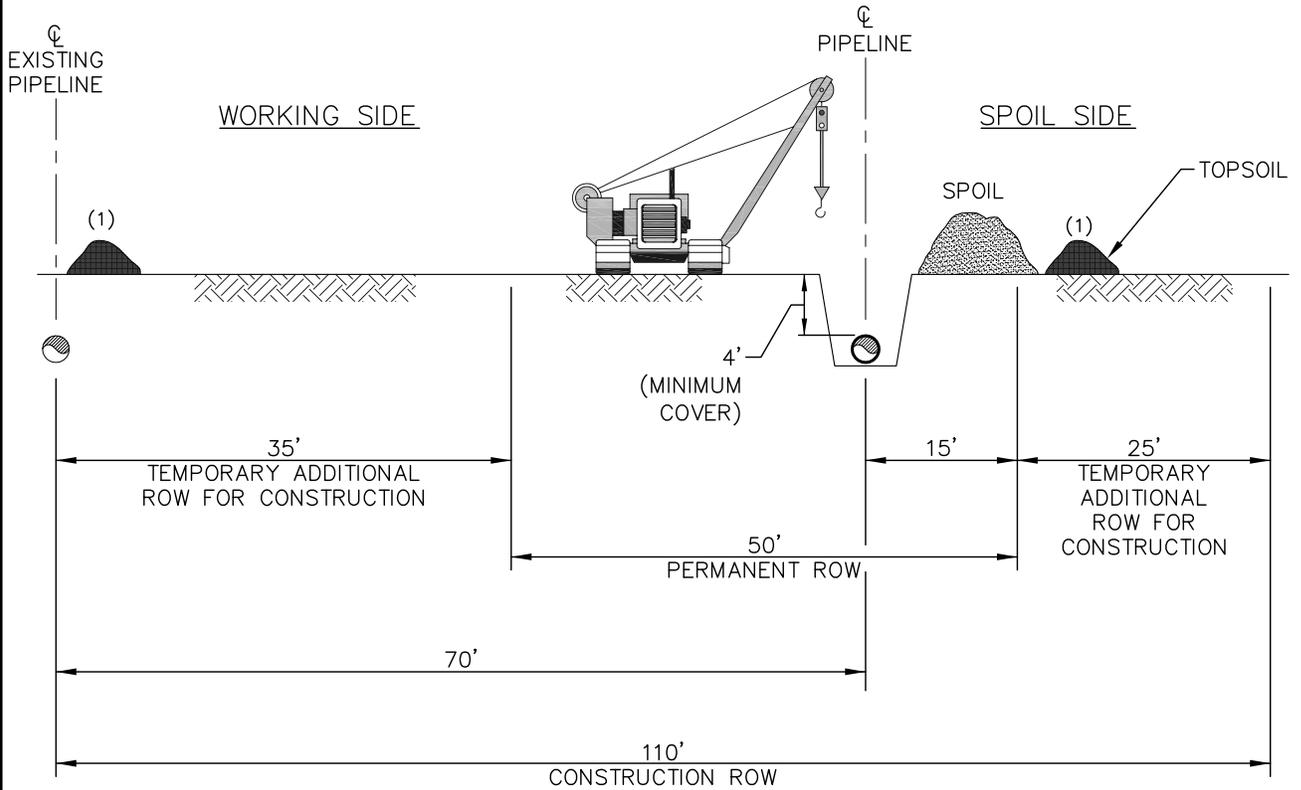
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FIGURE 5.1-3

FIA #	CHAINAGE:	DISCIPLINE #
TITLE TYPICAL 110' CONSTRUCTION RIGHT-OF-WAY (36" PIPELINE) WORKING SIDE ADJACENT AND CO-LOCATION TO EXISTING PIPELINE		
SCALE N.T.S.	DWG No XL-00-ML-7000-551	REV 1

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FIGURE 5.1-3a

FIA #	CHAINAGE:	DISCIPLINE #
TITLE TYPICAL 110' CONSTRUCTION RIGHT-OF-WAY (36" PIPELINE ϕ OFFSET) WORKING SIDE ADJACENT AND CO-LOCATION TO EXISTING PIPELINE		
SCALE N.T.S.	DWG No XL-00-ML-7000-551	REV 1

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