2.0 PROPOSED ACTION

2.1 PROPOSED FACILITIES

CEGT proposes to construct, own, operate, and maintain a new, approximately 172.1-mile-long, 42-inch-diameter interstate natural gas pipeline and associated ancillary facilities. The proposed Carthage to Perryville Project pipeline would extend from receipt points with three intrastate pipelines (see Section 1.5) near Carthage in Panola County, Texas, to a terminus at interconnects with four existing interstate pipelines located within CEGT's Perryville Hub, near Delhi in Richland Parish, Louisiana. The interstate pipelines that would receive natural gas transported by the proposed Project are operated by Texas Gas Transmission, LLC (Texas Gas), ANR Pipeline Company (ANR), Trunkline Gas Company, LLC (Trunkline), and Columbia Gulf Transmission Company (Columbia Gulf).

The general location of the proposed Project facilities is shown in Figure 2.1-1 and Appendix B of this EIS provides more detailed facility location maps. Throughout this EIS, the locations of specific features along the proposed pipeline, such as project facilities and environmental resources, are identified by milepost (MP). In addition, CEGT has identified and proposed several minor route variations since the issuance of the Draft EIS (see Section 4.4). The locations of specific features along those route variations are identified by revised milepost (RMP). Table 2.1-1 provides the location, MP, and length information for the pipeline facilities associated with the proposed Project.

TABLE 2.1-1
Pipeline Facilities for the Proposed Carthage to Perryville Project

	Milepost		
County/Parish	**Begin**	**End**	**Length[a]**
Texas			
Panola County	0.0	14.9	14.9
Louisiana			
Caddo Parish	14.9	21.6	6.7
DeSoto Parish	21.6	41.4	19.8
Red River Parish	41.4	58.0	16.7
Bienville Parish	58.0	92.5	34.4
Jackson Parish	92.5	120.7	28.2
Ouachita Parish	120.7	138.9	18.2
Richland Parish	138.9	171.9	33.2
Total			**172.1**

[a] Due to the incorporation of several minor route variations, subtraction of the reported milepost begin and end values may not equal the reported pipeline lengths.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CARTHAGE TO PERRYVILLE
PIPELINE PROJECT
Docket No. CP06-085-000

Page 2-2
Figure 2.1-1
General Location Map

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

In addition to the proposed pipeline, CEGT would also construct and operate two new compressor stations, meter/regulator stations, mainline valves, and pig[1] launcher/receiver facilities. Table 2.1-2 identifies and describes the aboveground facilities associated with the proposed Project and provides location and MP information for these facilities.

Natural gas is transported through a pipeline under pressure. The maximum allowable operating pressure (MAOP) of the proposed Project would be 1,000 pounds per square inch gauge (psig). As natural gas flows through a pipeline, friction causes a reduction in pressure. Compressor stations are used to increase the pressure and keep the flow of natural gas moving through the pipeline at an appropriate rate. As described in Section 2.4, a single 10,310-hp turbine compressor unit would be installed initially at the Panola and Vernon Compressor Stations, with a second identical compressor unit to be installed at each station at a later date. During operation of the initially installed facilities, the proposed Project would receive, transport, and deliver up to 1.06 Bcf/d of natural gas. Following the addition of the total planned compression facilities, the system capacity would expand to 1.2 Bcf/d.

The compressor units and associated equipment at each compressor station would be housed in buildings constructed on a slab foundation. Each compressor station would also include a natural gas-fired generator to provide back-up electrical power at the facility. CEGT would also construct an office building at each compressor station site. Additional aboveground facilities would include a pig launcher/receiver, mainline valve sites, control enclosures, and blowdown stacks. Most natural gas piping at the facilities would be installed below grade, and the perimeter of the compressor stations would be fenced. Portions of these sites may be paved, covered with gravel, or landscaped, depending on facility operations and maintenance requirements.

Metering and flow control for natural gas delivered to the proposed Project through the HPL, DEFS, and Enbridge Laterals would be accomplished via meter and regulation facilities provided at the HPL and the DEFS-Enbridge M/R Stations. Similarly, facilities at the proposed meter/regulator stations located at interconnects with the Texas Gas, Trunkline, ANR, and Columbia Gulf pipelines would be used to meter the flow and adjust the pressure of natural gas delivered to those systems. Each meter/regulator station would include skid-mounted meter and regulator equipment, a filter separator, and control building housed within a fenced perimeter. The HPL and Columbia Gulf M/R Stations would also include a pig launcher and receiver, respectively.

Eleven mainline valves (block valves) would be installed along proposed pipeline to enable portions of the pipeline to be shut down or isolated, if necessary. The mainline valves would be installed in areas easily accessible to operating personnel and at intervals specified in U.S. Department of Transportation (DOT) safety standards for natural gas pipelines. Each mainline valve assembly would consist of a 42-inch below ground valve with 12-inch piping with valving extending above ground for blowdowns and bypass. These sites would typically have security fencing and a lockable gate around the aboveground piping and valves.

2.2 LAND REQUIREMENTS

The land requirements of the proposed Project are summarized in Table 2.2-1. This summary identifies the construction and operational land requirements of the proposed pipeline, aboveground

[1] A pig is a mechanical tool used to clean and inspect the interior of a pipeline.

TABLE 2.1-2
Aboveground Facilities for the Proposed Carthage to Perryville Project

Facility	County/ Parish	Milepost	Description
Compressor Stations			
Panola Compressor Station	Panola, TX	8.4	Install 20,620-hp of gas-turbine-driven compression, one pig launcher/receiver, and one mainline valve
Vernon Compressor Station	Jackson, LA	101.3	Install 20,620-hp of gas-turbine-driven compression, one pig launcher/receiver, and one mainline valve
Meter/Regulator (M/R) Stations			
Houston Pipe Line M/R Station	Panola, TX	0.0	Install metering and pressure regulation facilities, pig launcher, and tie-in to Houston Pipe Line Lateral
Duke Energy Field Services-Enbridge M/R Station	Panola, LA	RMP 1.4	Install metering and pressure regulation facilities and tie-in to Duke Energy Field Services and Enbridge Energy Laterals
Texas Gas M/R Station	Ouachita, LA	135.5	Install metering and pressure regulation facilities and tie-in to Texas Gas pipeline
Trunkline M/R Station	Richland, LA	149.5	Install metering and pressure regulation facilities and tie-in to Trunkline pipeline
ANR M/R Station	Richland, LA	164.4	Install metering and pressure regulation facilities and tie-in to ANR pipeline
Columbia Gulf M/R Station	Richland, LA	171.9	Install metering and pressure regulation facilities, pig receiver, and tie-in to Columbia Gulf pipeline
Mainline Valves (MLV)			
MLV #1	Panola, LA	8.4	Install mainline valve within confines of the Panola Compressor Station
MLV #2	DeSoto, LA	RMP 27.0	Install mainline valve within the permanent pipeline right-of-way
MLV #3	DeSoto, LA	40.9	Install mainline valve within the permanent pipeline right-of-way
MLV #4	Red River, LA	51.7	Install mainline valve within the permanent pipeline right-of-way
MLV #5	Bienville, LA	69.4	Install mainline valve within the permanent pipeline right-of-way
MLV #6	Bienville, LA	86.3	Install mainline valve within the permanent pipeline right-of-way
MLV #7	Jackson, LA	96.4	Install mainline valve within the permanent pipeline right-of-way
MLV #8	Jackson, LA	101.3	Install mainline valve within confines of the Vernon Compressor Station
MLV #9	Jackson, LA	119.3	Install mainline valve within the permanent pipeline right-of-way
MLV #10	Richland, LA	134.6	Install mainline valve within the permanent pipeline right-of-way
MLV #11	Richland, LA	153.3	Install mainline valve within the permanent pipeline right-of-way

Notes:
LA = Louisiana
TX = Texas

TABLE 2.2-1
Locations and Land Requirements for the Proposed Carthage to Perryville Project

Facility	Location	Land Affected during Construction (acres)	Land Affected during Operation (acres)
Pipeline Facilities (42-inch-diameter)[a]	Panola, TX	171.6	108.4
	Caddo, LA	78.9	47.1
	DeSoto, LA	246.7	152.0
	Red River, LA	167.4	106.1
	Bienville, LA	398.0	244.1
	Jackson, LA	323.4	202.4
	Ouachita, LA	204.3	125.5
	Richland, LA	366. 5	224.1
	Subtotal Pipeline Facilities	**1,956.7**	**1,209.7**
Aboveground Facilities			
Compressor Stations			
Panola Compressor Station	Panola, TX	6.9	6.9
Vernon Compressor Station	Jackson, LA	6.1	6.1
Meter/Regulator (M/R) Stations			
Houston Pipe Line M/R Station	Panola, TX	3.1	3.1
Duke Energy Field Services-Enbridge M/R Station	Panola, LA	5.2	5.2
Texas Gas M/R Station	Ouachita, LA	2.3	2.3
Trunkline M/R Station	Richland, LA	2.1	2.1
ANR M/R Station	Richland, LA	2.1	2.1
Columbia Gulf M/R Station	Richland, LA	6.8	6.8
Mainline Valves[b]	Various	0.0	0.0
	Subtotal Aboveground Facilities	**34.6**	**34.6**
Extra Work Areas			
Extra Workspace	Various	269.5	0.0
Pipe Storage and Contractor Yards	Various	112.0	0.0
Access Roads	Various	125.1	3.7
	Subtotal Extra Work Areas	**506.6**	**3.7**
	Total	**2,497.9**	**1,248.0**

Notes:
LA = Louisiana
TX = Texas

[a] Acreages reflect a nominal 100-foot-wide construction right-of-way and a 60-foot-wide permanent easement that would be maintained along the entire pipeline following construction.

[b] Minor land requirements associated with these facilities would be contained entirely within the compressor station sites and the construction and permanent pipeline rights-of-way and are thus already included in the acreage estimates for those facilities.

facilities, and extra work areas. Temporary land requirements for the proposed Project during construction would total approximately 2,497.9 acres, including the proposed pipeline construction right-of-way, construction areas for aboveground facilities, extra workspaces, pipe storage and contractor yards, and access roads. Of this total, approximately 1,248.0 acres would be retained as permanent easements associated with operation of the proposed pipeline and aboveground facilities. Following construction, the remaining 1,249.9 acres would be restored to its preconstruction condition or allowed to revert to its former use. The land requirements of the proposed Project facilities are discussed further below, and additional information is provided in Section 3.8.

2.2.1 Pipeline Facilities

CEGT has proposed a nominal construction right-of-way width of 100-feet along upland sections of the proposed pipeline that would be installed using conventional, open-cut trenching techniques (see Section 2.3.1). In wetland areas the construction right-of-way width would be reduced to 75-feet. These construction right-of-way widths would encompass a 60-foot-wide permanent right-of-way centered over the proposed pipeline and an additional 40- and 15-foot-wide temporary construction work area in upland and wetland work areas, respectively. Figure 2.2.1-1 illustrates the typical proposed pipeline construction right-of-way requirements through upland (Details Q and X) and wetland areas (Detail R).

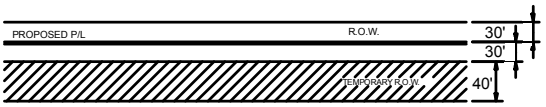
The FERC regulations (18 CFR, Section 380.15[d][1]) give primary consideration to the use, enlargement, or extension of existing rights-of-way over developing a new right-of-way in order to reduce potential impacts on potentially sensitive resources. In general, installation of new pipeline along existing, cleared rights-of-way (e.g., pipeline, powerline, road, or railroad) may be environmentally preferable to construction along new rights-of-way. Where possible, CEGT's proposed construction right-of-way would collocate with or parallel existing utility rights-of-way. As described in Figure 2.2.1-1, CEGT's construction right-of-way would typically abut, but not overlap with existing rights-of-way through upland (Details T and V) and wetland areas (Details U and W). Along one section of the proposed Project route (MP 87.3 to 93.3), the construction right-of-way would parallel an existing electric transmission right-of-way, but would be offset from that existing right-of-way by approximately 30 feet (Figure 2.2.1-1, Details Y and Z). The owner of a water main that is collocated within the electric transmission right-of-way in that area requested this offset to avoid potential damage to the water main during construction activities.

Along some sections of the proposed Project route (some major waterbody, road, and/or railway crossings), pipeline installation would be accomplished via horizontal directional drill (HDD) or bored crossings (see Section 2.3.2). In these areas, the only land requirements would consist of the permanent 60-foot-wide right-of-way, as additional temporary construction work areas would not be required in association with these subsurface installation techniques (Figure 2.2.1-1, Detail S).

Land requirements for the pipeline construction right-of-way would total approximately 1,956.7 acres (Table 2.2-1). Following construction and restoration of the construction right-of-way, the 60-foot-wide permanent right-of-way retained by CEGT along the length of the proposed pipeline would encompass approximately 1,209.7 acres.

2.2.2 Aboveground Facilities

The land requirements for the proposed aboveground facilities would total 34.6 acres during construction and operation (Table 2.2-1). The proposed aboveground facilities include two compressor stations, six meter/regulator stations, 11 mainline valves, and four pig launcher/receiver facilities.



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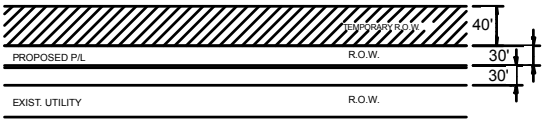

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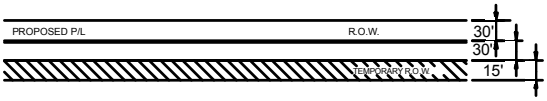

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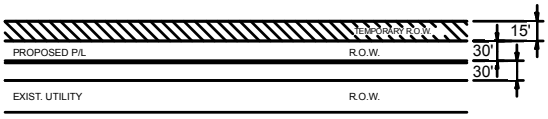

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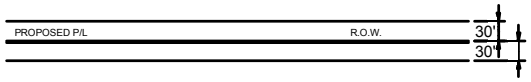

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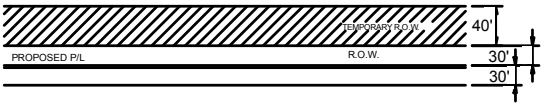


DETAIL "X"

DETAIL "T"

DETAIL "Y"

DETAIL "U"

DETAIL "Z"

Not to Scale

CARTHAGE TO PERRYVILLE PROJECT

Typical Construction Rights-of-Way

DATE: May 2006

FIGURE: 2.2.1-1

Construction and operation of the Vernon and Panola Compressor Stations would encumber 6.9 and 6.1 acres of land, respectively. The land within the fenced perimeter of the compressor station facilities would be occupied by buildings, piping, and other equipment. Portions of these sites may be paved, covered with gravel, or landscaped, depending on facility operations and maintenance requirements. A pig launcher/receiver would be located within the fenced perimeter of each compressor station site. The remaining pig launcher and receiver facilities would be located within the 3.1- and 6.8-acre footprint of the HPL and Columbia Gulf M/R Stations, respectively. Construction and operational land requirements of the ANR, Trunkline, Texas Gas, and DEFS-Enbridge M/R Stations would be 2.1, 2.1, 2.3, and 5.2 acres, respectively.

Two of the mainline valves, Mainline Valve (MLV) #1 and MLV #8, would be located within the confines of the Panola and Vernon Compressor Stations, respectively, and would not result in additional land requirements beyond that noted for those facilities. The remaining mainline valve sites would consist of a 40-foot by 40-foot fenced area installed within the confines of the permanent pipeline right-of-way. Thus, construction and operation of those facilities would not result in land requirements beyond that already noted for the permanent pipeline right-of-way.

2.2.3 Extra Work Areas

2.2.3.1 Extra Workspaces

Additional construction areas, or temporary extra workspaces, would be required for construction at road crossings, railroad crossings, crossings of existing pipelines and utilities, stringing truck turnaround areas, wetland crossings, HDD entrance and exit pits, and open-cut waterbody crossings. These extra workspaces would be located adjacent to the construction right-of-way and could be used for such things as spoil storage, staging, equipment movement, material stockpiles, and pull string assembly associated with HDD installation. The proposed Project would require 1,630 extra workspaces totaling 269.5 acres, and individual extra workspaces would range in size from less than 0.1 acre to 2.0 acres. Extra workspaces would be returned to their preconstruction condition and former usage following completion of construction activities. Additional information on extra workspace areas is provided in Section 3.8.

2.2.3.2 Pipe Storage and Contractor Yards

CEGT has proposed the use of 10 offsite pipe storage and contractor yards that would consist of warehouses or open lots located in areas of existing commercial or industrial use. The identified yards would range in size from 5.0 to 25.0 acres, and the total land requirements for these facilities would be approximately 112.0 acres. The general location of the proposed yards are identified on the facility location maps included as Appendix B of this EIS. All yards would be leased from willing landowners, and upon completion of construction activities, the proposed pipe storage and contractor yards would be returned to their preconstruction condition and former usage.

Additional pipe storage and contractor yards beyond those currently identified could be required during construction of the proposed Project. If additional pipe storage and contractor yards were required, CEGT has indicated that it would utilize previously disturbed and/or industrial lands for those facilities to the extent practicable. Prior to construction, CEGT would be required to file a complete and updated list of all temporary workspace areas, including pipe storage and contractor yards, with the Secretary of the Commission (Secretary) for review and approval prior to use.

2.2.3.3 Access Roads

CEGT would use existing roads to the extent possible to facilitate equipment and material access along the proposed Project route. CEGT has indicated that construction of the proposed pipeline and aboveground facilities would require the temporary use of 143 existing access roads of varying lengths and construction. CEGT reports that 50 of these access roads, comprising a length of approximately 25.0 miles, would require upgrades to support construction-related traffic. Upgrades that could be required include grading, placement of gravel for stability, replacing or installing culverts, and clearing of overhead vegetation. Minor widening could also be required at sharp turns to facilitate passage by pipe trucks. CEGT has not completed the detailed design plans for these access roads, but reports that improvement of existing access roads could require widening to as much as 40 feet in some locations. Assuming a standard construction width of 40 feet (worst-case scenario used in our impact assessment), access road improvements would temporarily affect 121.4 acres during construction. Following construction, all temporary access roads would revert to preconstruction uses.

In addition to temporary use of existing access roads, permanent upgrade of existing or construction of new access roads would also be required in association with the proposed Panola Compressor Station and the Trunkline, Texas Gas, and ANR M/R Stations. Construction and operational access road requirements at these facilities would total approximately 0.8 mile and permanently affect about 3.7 acres, assuming a standard access road width of 40 feet. All new access roads would be routed through previously cleared or disturbed areas to the extent practicable. Additional information on access roads is provided in Section 3.8, and the facility location maps provided as Appendix B of this EIS depict the general locations of these roads.

2.3 CONSTRUCTION PROCEDURES

The proposed pipeline facilities would be designed, constructed, operated, and maintained in accordance with the DOT regulations under 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; and other applicable federal and state regulations. Among other design standards these regulations specify pipeline material selection; minimum design requirements; protection from internal, external, and atmospheric corrosion; and qualification procedures for welders and operations personnel. More detailed safety information is provided in Section 3.12. In addition, CEGT would comply with the siting and maintenance requirements in 18 CFR 380.15 and other applicable federal and state regulations.

To minimize construction related effects, CEGT has agreed to adopt the January 2003 versions of our *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and our *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures), with some minor exceptions or variances, as described in Section 3.4 of this EIS. The FERC Plan and Procedures are available for review on the FERC internet website at www.ferc.gov/industries/gas/enviro/guidelines. The intent of the our Plan is to identify baseline mitigation measures for minimizing erosion and enhancing revegetation in upland areas, and the major aspects of our Plan are described in Section 3.2. The intent of the Procedures is to identify baseline mitigation measures for minimizing the extent and duration of construction-related disturbance on wetlands and waterbodies. In Sections 3.3 and 3.4, we describe the major components of our Procedures and evaluate the appropriateness of CEGT's requested variances. CEGT would construct and operate the proposed Project in accordance with our Plan and Procedures, as modified in this EIS.

CEGT has also developed several Project-specific plans to avoid or minimize environmental impacts during construction. CEGT has prepared a general Spill Prevention, Containment, and Control (SPCC) Plan (Appendix C), which describes the management of hazardous materials, such as fuels, lubricants, and coolants that would be used during construction. Site-specific plans would be developed

for each construction spread once the construction contractors have been selected. CEGT has also developed a Directional Drill Contingency Plan (DDCP; Appendix D), that describes the procedures that would be implemented to monitor for, contain, and clean up any inadvertent releases of drilling fluid during HDD operations. Additionally, CEGT has developed an Unanticipated Discoveries Plan that would guide the treatment of any unanticipated discoveries of cultural resources or human remains during construction (see Section 3.10).

2.3.1 General Pipeline Construction Procedures

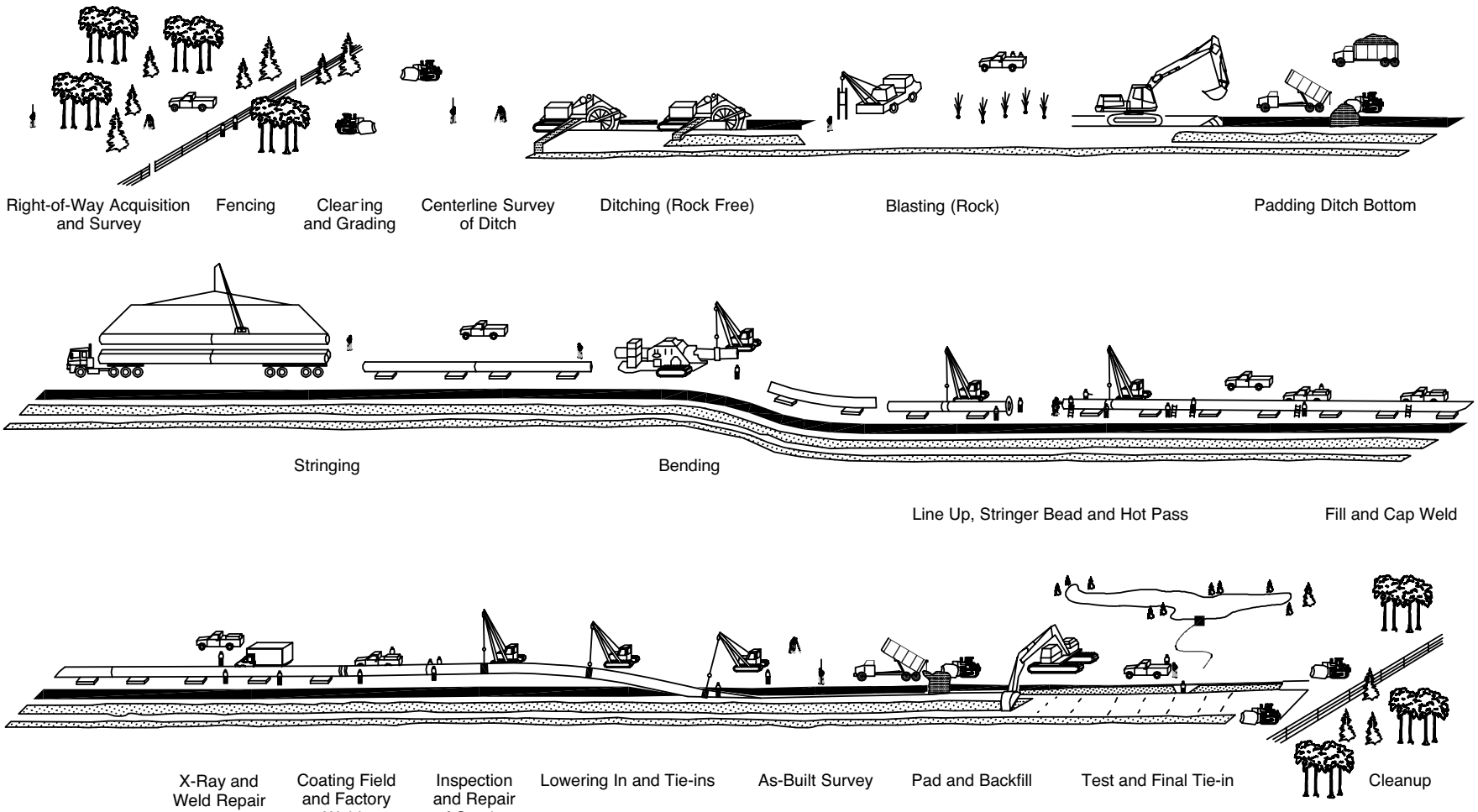
Prior to initiating construction-related activities, CEGT would secure right-of-way easements from private landowners and managers of public lands whose properties would be crossed by the pipeline route. All owners, tenants and lessees of private land, and lessees and managers of public lands along the right-of-way would be notified in advance of construction activities that could affect their property, business, or operations. If the necessary land rights or easements could not be obtained through good faith negotiations with landowners and the proposed Project has been certificated by the FERC, CEGT may use the right of eminent domain granted to it under Section 7(h) of the NGA to obtain a right-of-way. CEGT would still be required to compensate the landowners for the rights-of-way, as well as for any damages incurred during construction. However, the level of compensation would be determined by the court according to state laws that set forth the procedures for the use of eminent domain once the FERC issues a Certificate. CEGT must proceed through the appropriate state or federal court to condemn land for which it has received a Certificate from the FERC. The FERC does not take part in such proceedings.

The majority of the proposed pipeline construction process would be accomplished using conventional open-cut methods, which typically include the steps described below. The proposed methods for accomplishing pipeline installation across waterbodies and wetlands, as well as other specialized construction procedures are described in Section 2.3.2. Conventional overland installation of pipeline is best represented as a moving assembly line with a construction spread (crew and equipment) proceeding along the construction right-of-way in a continuous operation, as depicted in Figure 2.3.1-1. Construction at any single point along the pipeline, from right-of-way surveying and clearing to backfill and finish grading, would last about six to ten weeks. The entire process would be coordinated so as to limit the time of disturbance to an individual area, thereby minimizing the potential for erosion and the loss of normal use. CEGT indicates that construction of the pipeline would entail the simultaneous activity of four or five individual construction spreads over the proposed Project route.

Right-of-Way Survey and Fence Crossings

After right-of-way easements have been obtained, the pipeline centerline, construction right-of-way, and additional temporary workspaces would be surveyed and staked. CEGT would contact the appropriate state one-call system to have existing underground utilities located, identified, and flagged to prevent accidental damage during pipeline construction. Other sensitive resources such as wetland boundaries, cultural resources, and any areas of protected species habitat would also be marked.

Where fences are encountered along the construction right-of-way, a fence crew would install temporary fences to confine livestock to existing areas off the right-of-way and to prohibit or otherwise control public access across the right-of-way. This work would include installing new posts to brace the areas on either side of the proposed cut to avoid damage to the existing fence or wall. Temporary gates would be installed, as necessary.



Not to Scale

CARTHAGE TO PERRYVILLE PROJECT

Typical Pipeline Construction Sequence

DATE: February 2006

FIGURE: 2.3.1-1

Clearing and Grading

The construction right-of-way and temporary extra workspaces would be cleared and graded, where necessary, to provide a relatively level surface for trench-excavating equipment and the movement of other construction equipment, but natural drainage patterns would be preserved to the extent possible. Brush, trees, roots, and other obstructions such as large rocks and stumps would be cleared from all construction work areas. Non-woody vegetation, such as crops and grasses, in areas where grading is not required would be mowed to avoid damage to root systems. To protect properties located adjacent to the proposed Project corridor, brush and trees would be felled parallel to and within the construction right-of-way where feasible. Marketable timber would be cut to standard lengths and stacked at the edge of the right-of-way or removed. Tree stumps would be removed from within the permanent right-of-way. Within the temporary construction right-of-way, stumps would either be removed or ground to a suitable height to allow safe passage of equipment. Cleared woody debris would be chipped and left in place or disposed of according to local restrictions, regulatory requirements, and landowner agreements.

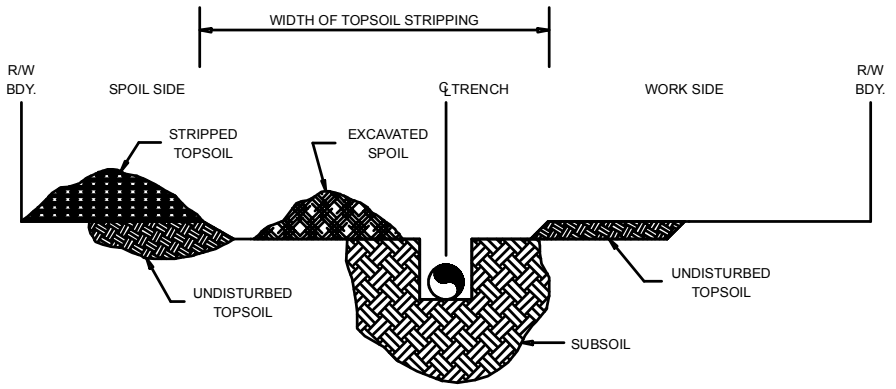
Topsoil would be stripped and segregated according to our Plan and Procedures in residential areas, actively cultivated or rotated croplands, pastures, hayfields, and other areas where requested by a land management agency or landowner. Topsoil would be removed to its actual depth, up to a maximum of 12 inches, and stockpiled separately from the subsoil excavated from the pipeline trench. Typically, topsoil would be stripped from directly over the pipeline ditch and the adjacent subsoil spoil storage area (Figure 2.3.1-2), but landowners would be provided with the option of topsoil segregation across the full construction work area. Additional information on topsoil segregation is provided in Section 3.2.

To contain disturbed soils in upland areas and minimize the potential for sediment loss to wetlands and waterbodies, temporary erosion controls would be installed immediately after initial disturbance of soils and maintained throughout construction. Erosion and sedimentation control devices would be installed in accordance with our Plan and CEGT's Stormwater Pollution Prevention Plan (SWPPP), should one be required by the permitting agencies.

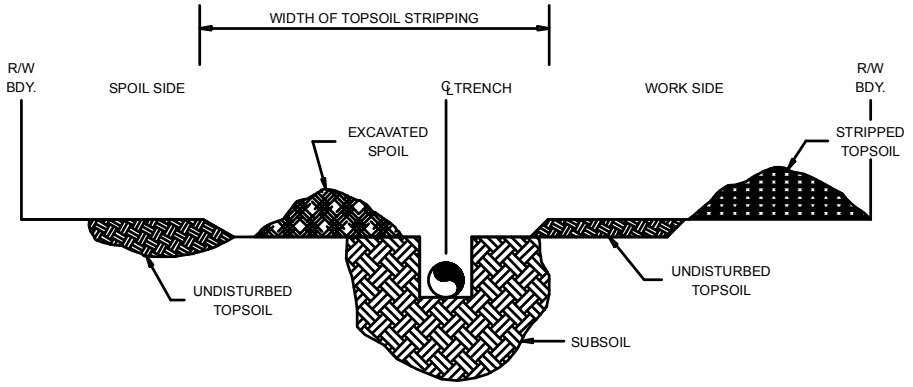
Trenching

Before beginning excavation, CEGT would contact the appropriate state one-call system to have existing underground utilities located, identified, and flagged. A trench would then be excavated using rotary wheel ditching machines, backhoes, or rippers. Excavated materials would normally be stored on the non-working side of the trench (Figure 2.3.1-2). Temporary trench plugs (or barriers) would be used to create segments within the open trench to reduce erosion and allow access across the trench. Trench plugs would typically consist of either compacted subsoil or sandbags placed across the ditch (soft plugs) or short, unexcavated portions of trench (hard plugs). Trench dewatering may also be required along portions of the route.

The trench would be excavated to a depth that would allow space for the pipeline, pipeline bedding, and the minimum amount of top cover required by DOT specifications. The trench would typically be excavated to a depth of 6.5 feet to enable the proposed pipeline to be installed at a minimum depth of 3 feet (measured from the top of the pipeline) below the ground surface. In actively cultivated agricultural areas (i.e., plowed or tilled lands), the depth of cover would be increased such that the top of the pipeline would be a minimum of 4 feet below the ground surface. The actual installation depth of the pipeline would vary and would range from these minimum depth requirements to that depth required for safe crossing of a feature such as a road, highway, railroad, or waterbody. At crossings of utilities or foreign pipelines, the proposed pipeline would also generally be installed at a greater depth, so as to provide for a minimum clearance of 12 inches, or that depth that may be required by state or local regulations, whichever provides greater protection.



TYPICAL TOPSOIL STRIPPING



ALTERNATE TOPSOIL STRIPPING

1. Remove topsoil from over the trench and under the spoil pile. Store topsoil on spoil side adjacent to stripped area. Topsoil may also be stored on working side.

2. Excavate trench subsoil and store on spoil side adjacent to the trench. Allow for a 3 foot separation between the topsoil pile and the trench spoil.

3. Return trench spoil to trench and compact. Feather out excess spoil over stripped area leaving a low roach centered over the trench. Alleviate compaction of clay rich subsoils over the stripped area.

4. Return topsoil evenly over the stripped area after trench has sufficiently settled or has been compacted.

5. Alleviate compaction of topsoil over entire right of way.

Not to Scale	**CARTHAGE TO PERRYVILLE PROJECT** Typical Trench and Spoil Area Topsoil Stripping	
	DATE: May 2006	FIGURE: 2.3.1-2

Areas of bedrock that might be encountered along the proposed Project route should be easily workable with standard construction equipment and techniques, and CEGT does not anticipate the need for blasting associated with trench excavation. However, if blasting were to be required, such work would be accomplished in accordance with our Plan and Procedures, as well as all other applicable regulations (see Section 3.1).

Pipe Stringing, Bending, and Welding

Sections of pipe would be delivered to the job site and temporarily placed or "strung" along the excavated pipeline trench, where they would be bent as necessary to follow the natural grade and direction changes of the right-of-way. Following stringing and bending, the ends of the pipeline would be carefully aligned and welded together. The welds would be visually and radiographically (i.e., x-ray) inspected to ensure structural integrity. Those welds that do not meet established specifications would be repaired or replaced.

A factory-applied, fusion-bonded epoxy external coating (or similar coating technique) would cover and protect the delivered pipeline sections. Following welding, the previously uncoated ends of the pipe at all joints would be coated with material compatible with the factory-applied coating in preparation for installation. The coating on the remainder of the completed pipe section would be inspected for defects, and repairs would be made to any damaged areas prior to lowering the pipe into the trench. At some locations, it may be necessary to provide negative buoyancy in the form of concrete weights, a concrete coating, pipe sacks, and/or soil anchors.

Lowering-in and Backfilling

Prior to lowering the pipeline, the trench would be cleaned of debris and foreign material, and dewatered as necessary. Trench dewatering, which would entail pumping accumulated groundwater or rainwater from the trench to stable upland areas, would be performed in accordance with applicable local, state, and federal permitting requirements, as well as our Procedures. In areas of rock, the bottom of the trench may be padded with sand, gravel, screened soils, sandbags, or support pillows to protect the pipe coating. However, topsoil would not be used as padding material. The pipeline would then be lowered into the trench by appropriately spaced, sideboom tractors working in unison to avoid buckling of the pipe. Trench breakers would be installed at regular intervals where appropriate to prevent subsurface erosion and flow of water between the trench and crossed waterbodies, wetlands, and near-surface groundwater.

After the pipeline is lowered into the trench and adequately protected, previously excavated materials would be used to backfill the trench. Any excess excavated materials or materials deemed unsuitable for backfill would be evenly spread over the right-of-way or disposed of in accordance with applicable regulations and landowner requirements. Backfilling would occur to existing grade or higher to accommodate future soil settlement.

Hydrostatic Testing

Once installation and backfilling are completed and before the Project begins operation, the pipeline would be hydrostatically pressure tested in accordance with DOT safety standard (49 CFR Part 192) to verify its integrity and to ensure its ability to withstand the MAOP. Hydrostatic testing consists of installing a hydrostatic test cap and manifold, filling the pipeline with water, pressurizing the pipeline to its MAOP, and maintaining that test pressure for a specified period of time. The entire pipeline would be tested, but typically extended segments of pipeline would be tested individually. Any leaks detected during the test would be repaired and the pipeline would be re-tested.

Water used for hydrostatic testing would be obtained from surface water sources, and no biocides or other hydrostatic test water additives would be added to the test water. After hydrostatic testing is completed, the test water would either be pumped to the next segment of pipeline to be tested or discharged in upland areas using energy dissipation devices to minimize erosion. No direct discharges to waterbodies would occur. Hydrostatic test water would be obtained from surface water sources and discharged in accordance with applicable regulations, as well as our Procedures. Additional information on hydrostatic testing is provided in Section 3.3.

Once a segment of pipe has been successfully tested, it would be cleaned and dried using mechanical tools (pigs) moved through the pipeline with pressurized, dry air. The hydrostatic test cap and manifold would then be removed, and the pipe would be connected to the remainder of the pipeline using the welding and inspection procedures describe above.

Cleanup and Restoration

Within 20 days, or as soon as possible, of completion of backfilling the trench, all remaining trash, debris, surplus materials, and temporary structures would be removed from the right-of-way and disposed in accordance with applicable federal, state, and local regulations. All disturbed areas would be finish graded and restored as closely as possible to preconstruction contours. Permanent erosion control measures would also be installed during this phase in accordance with our Plan and Procedures. Topsoil previously segregated from the trench material in all agricultural and residential areas would be spread uniformly across the construction right-of-way and the topsoil and subsoil in these areas would be tested for compaction along the disturbed corridor.

Vegetation restoration would be accomplished according to our Plan and Procedures, and would begin within six days of final grading. After the soil is readied for planting or seeding in areas where CEGT and landowners have negotiated agreements, CEGT would reseed or replant according to those agreements. To provide permanent erosion control along the right-of-way, all other upland areas disturbed by construction would be fertilized, limed, and seeded in accordance with the prescribed dates and seed mixes specified by the local soil conservation authorities or land management agencies. Wetland areas would not be fertilized, limed, or mulched unless CEGT is directed to do so by state or local regulatory agencies.

Disturbed pavement and other road surfaces along access roads would be restored to preconstruction or better conditions, unless otherwise specified by the property owner and approved by applicable regulatory agencies. Likewise, any private or public property damaged during construction, such as fences, gates, and driveways, would also be restored to original or better condition, consistent with individual landowner agreements.

Pipeline markers and/or warning signs would be installed along the pipeline centerline at specified intervals to identify the pipeline location, specify CEGT as the operator of the pipeline, and provide telephone numbers for emergencies and inquiries.

2.3.2 Specialized Pipeline Construction Procedures

2.3.2.1 Waterbody Crossings

The FERC Procedures define a waterbody as any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes. Installation of the proposed Project pipeline across rivers and streams would be accomplished in accordance with our Procedures and all applicable permits. Our Procedures identify the baseline

mitigation measures, from preconstruction planning through construction, restoration, and monitoring, for minimizing the extent and duration of project-related disturbance to waterbodies. The waterbody crossing measures specified in our Procedures are based on industry standard practices.

Installation of the pipeline across waterbodies would be accomplished using either a "wet" or "dry" construction technique. A "wet" or open-cut crossing involves trenching and installing the pipeline without isolating the construction work area from stream flow. The objective of this method is to complete the crossing as quickly as practical to minimize the duration of impacts on aquatic resources. A "dry" crossing involves isolating the construction zone from the stream flow by directing water flow through a flume pipe (flume crossing), by damming the flow and pumping the water around the construction area (dam and pump crossing), or by directionally drilling and installing the pipeline beneath the waterbody (HDD). The primary objectives of these methods are to minimize siltation of the waterbody and allow for a more extended construction period. Each of these techniques is discussed further below.

A total of 246 waterbodies would be crossed by the proposed Project. CEGT has proposed the use of either open-cut or HDD techniques for all of these crossings. However CEGT has also indicated that, except for those streams for which HDD is proposed, the actual method of waterbody crossing would be determined based on site-specific conditions and waterbody characteristics at the time of construction. Additional information on the proposed waterbody crossing procedures and potential environmental consequences is presented in Section 3.3.

Open-Cut Crossing

In general, an open-cut waterbody crossing would be conducted using methods similar to conventional open-cut trenching. The open-cut construction method would involve excavation of the pipeline trench across the waterbody, installation of a prefabricated segment of pipeline, and backfilling of the trench with native material with no effort to isolate flow from construction activities. Excavation and backfilling of the trench would generally be accomplished using backhoes or other excavation equipment operating from one or both banks of the waterbody. If required, the use of equipment operating in the waterbody would be limited to that needed for construction of the crossing. All other construction equipment would cross the waterbody using equipment bridges.

Mitigation measures would be implemented to minimize impacts to the aquatic environment during construction as described in our Procedures. Construction would be scheduled so that the trench would be excavated immediately prior to pipelaying activities. The duration of construction across minor waterbodies would be limited to 24 hours for minor waterbodies (10 feet wide or less) and 48 hours for intermediate waterbodies (greater than 10 feet wide but less than or equal to 100 feet in width). In accordance with our Procedures, excavated spoil would be stockpiled in the construction right-of-way at least 10 feet from the stream bank or in approved additional work areas, and would be surrounded by sediment control devices to prevent sediment from returning to the waterbody. The waterbody banks would be returned to as near preconstruction conditions as possible within 24 hours of completing all open-cut crossings.

Horizontal Directional Drill

HDD is a trenchless crossing method that may be used to avoid direct impacts to sensitive resources, such as waterbodies and wetlands, or infrastructure (e.g., roads, railways, etc.) by directionally drilling beneath them. HDD installation on the proposed Project would result in a pipeline that is installed beneath the ground surface by pulling the pipeline through a pre-drilled bore hole. HDD installation is typically carried out in three stages: 1) directional drilling of a small diameter pilot hole;

2) enlarging the pilot hole to a sufficient diameter to accommodate the pipeline; and 3) pulling the prefabricated pipeline, or pull string, into the enlarged bore hole. Figure 2.3.2-1 illustrates a typical HDD installation process.

The pilot hole (i.e., approximately 12-inch diameter depending on drill head and soil characteristics) would be drilled along a predetermined HDD bore. The drill head for the pilot hole would have a down-hole, hydraulic motor-powered drill bit attached to the drill string (pipe connecting the drill rig to the drill head). The hydraulic motor would convert hydraulic energy from drilling fluid, or drilling mud, pumped from the surface to mechanical energy at the drill head, allowing for bit rotation without drill string rotation. Drill string would be added as the pilot hole progressed.

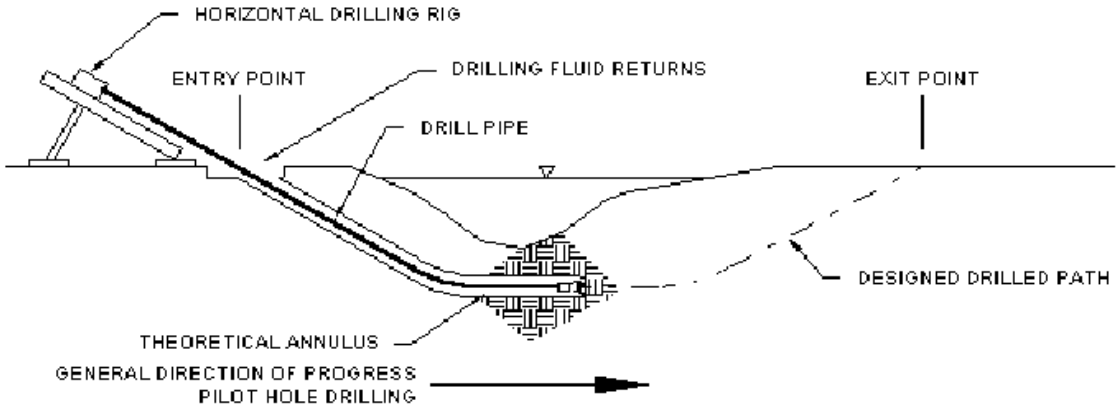
Directional control of the pilot hole drill is achieved by using a non-rotating drill string with an asymmetrical leading edge. The asymmetry of the edge creates a steering bias, while the non-rotating aspect of the drill string allows the steering bias to be held in a specific position during advancement. The path of the drill head would be controlled using a magnetic steering tool positioned behind the drill head and, if needed, an electromagnetic survey system. The magnetic steering tool would measure the position (azimuth and inclination) of the drill head and transmit that information to a console at the drill station. If magnetic interference were encountered, an electromagnetic survey system would be used to monitor the path and progress of the drill head. This system would consist of a small diameter cable (less than 0.5 inch) laid out on the ground surface to form a rectangular coil. The long axis of the coil would be oriented along the path of the pilot hole. The coil would be energized to produce an electromagnetic field of known intensity and location. The position of the magnetic steering tool would be measured relative to the induced field.

After completion of the pilot hole, the HDD bore would be progressively reamed to a diameter about 12 inches larger than the pipeline diameter. Drilling fluid would be pumped through the reaming tools to aid in cutting, support the bore hole, transport spoil back to the surface, and lubricate the trailing pipe. Upon completion of drilling and reaming, the drill string would extend from the entrance pit to the exit pit. Concurrent with reaming the bore, the pull string to be inserted in the HDD bore would be fabricated and laid out within the construction right-of-way or extra workspace areas extending from the HDD exit pit. The pull string would be connected to the drill string and pulled back through the bore. The pipeline would be neutrally buoyant in the drilling fluid, allowing it to be pulled through the HDD bore hole.

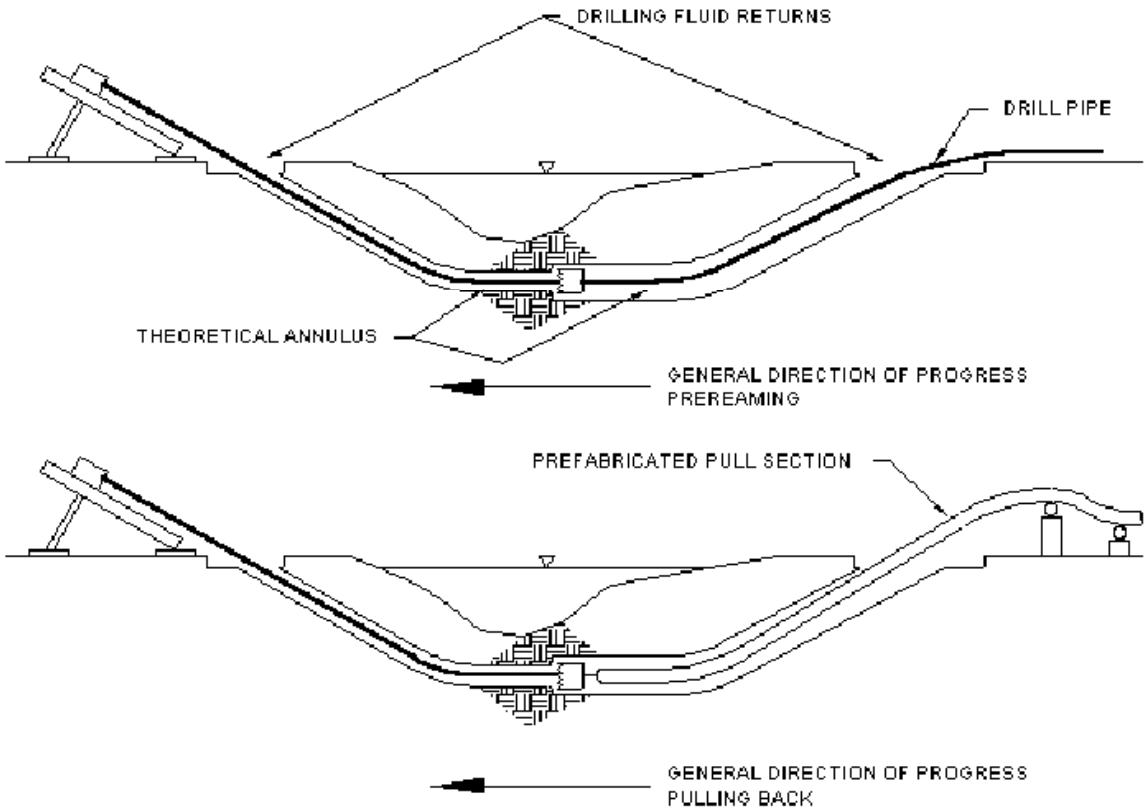
Drilling fluid circulated through the bore during pilot hole drilling and reaming process would be collected at the surface and processed to remove spoils, allowing the fluid to be reused. Excess spoils and drilling fluid would be treated for disposal and disposed of at an approved location in accordance with regulatory requirements, agreements, and permit conditions. The proposed HDD drilling fluid would consist of water and bentonite. Bentonite is a mixture of non-toxic clays and rock particles consisting of about 85 percent montmorillonite clay, 10 percent quartz and feldspars, and 5 percent accessory materials, such as calcite and gypsum. Potentially toxic additives are added to drilling fluids used in some applications, but CEGT has stated that it would not use any synthetic or potentially toxic drilling fluid additives.

A successful HDD would result in little or no impact to the waterbody being crossed. HDD is not without risk; however, as inadvertent drilling fluid releases could result if the fluid escapes containment at pits that would be excavated at the HDD entrance and exit points or if a “frac-out” occurs. A frac-out occurs when drilling fluids escape the drill bore hole and are forced through the subsurface substrate to the ground surface. Frac-outs occur most often in highly permeable soils during the entrance and exit phases of the pilot hole drill, as this is when the greatest pressures are exerted on the bore walls in shallow

STAGE 1, PILOT HOLE DIRECTIONAL DRILLING



STAGE 2, REAMING & PULLING BACK



Not to Scale

CARTHAGE TO PERRYVILLE PROJECT

Typical HDD Pipeline Installation

DATE: May 2006

FIGURE: 2.3.2-1

soils. Drilling fluid pressures in the bore hole and drilling fluid pumping and return flow rates would be monitored to detect the potential occurrence of a frac-out. If survey and monitoring procedures indicate that a frac-out may have occurred, CEGT would implement the corrective measures identified in the DDCP (Appendix D). In the event of a complete loss of drilling fluid circulation, which is potentially indicative of a frac-out, the DDCP specifies that the HDD operator would cease pumping of drilling fluids immediately, any surfaced drilling fluids would be contained, and clean-up procedures would commence. A discussion of the potential impacts of HDD on waterbodies and wetlands is provided in Sections 3.3 and 3.4.

CEGT proposes to use 18 separate HDD crossings to accomplish pipeline installation across 22 waterbodies, including nine major waterbodies (greater than 100 feet in width) and two Louisiana Natural and Scenic Rivers, Black Lake Bayou (MP 66.1) and Saline Bayou (MP 80.8). Section 3.3 identifies and describes the waterbodies that would be crossed using HDD techniques.

Flume Crossing

This procedure would consist of temporarily directing the flow of water through one or more flume pipes placed over the area to be excavated. This procedure would allow trenching across the waterbody to be completed underneath the flume pipes without disruption of water flow. Stream flow would be diverted through the flumes by constructing two bulkheads, using sand bags or plastic dams, to direct the stream flow through the flume pipes. Following completion of pipeline installation, backfill of the trench, and restoration of stream banks, the bulkheads and flume pipes would be removed. This crossing method generally minimizes downstream turbidity by allowing excavation of the pipeline trench under relatively dry conditions. CEGT has not proposed the use of a flume crossing at any waterbody location.

Dam and Pump Crossing

The dam and pump method involves installing temporary dams upstream and downstream of the proposed waterbody crossing. The temporary dams would typically be constructed using sandbags and plastic sheeting. Following dam installation, appropriately sized pumps would be used to dewater and transport the stream flow around the construction work area and trench. Intake screens would be installed at the pump inlets to prevent entrainment of aquatic life, and energy dissipating devices would be installed at the pump discharge point to minimize erosion and stream bed scour. Trench excavation and pipeline installation would then commence through the dewatered portion of the waterbody channel. Following completion of pipeline installation, backfill of the trench, and restoration of stream banks, the temporary dams would be removed, and flow through the construction work area would be restored. This method is generally only appropriate for those waterbody crossings where pumps can adequately transfer streamflow volumes around the work area and there are no concerns about sensitive species passage. CEGT has not proposed the use of a dam and pump crossing at any waterbody location.

2.3.2.2 Wetland Crossings

Construction of the proposed Project pipeline across wetlands would be conducted in accordance with applicable permits and our Procedures, as modified in this EIS (see Section 3.4). Overall, the wetland crossing methods and mitigation measures identified in our Procedures are designed to minimize the extent and duration of construction-related disturbance within wetlands. The site-specific crossing procedures used to install the pipeline across wetlands would vary dependent on the level of soil stability and saturation encountered during construction. During crossing of unsaturated wetlands (those wetlands without standing water or saturated soils), construction would primarily be similar to the upland construction procedures described in Section 2.3.1, with the pipeline segment to be installed through the

wetland assembled adjacent to the excavated trench. In unstable or saturated conditions, construction and excavation equipment would work from temporary work surfaces, and a prefabricated pipeline segment would be pulled into position from outside the wetland using the "push-pull" technique. Regardless of the installation technique used, several modifications would reduce the potential for pipeline construction to affect wetland hydrology and soil structure.

The construction right-of-way width through wetland areas would be reduced to 75 feet. Within the right-of-way, woody vegetation would be cut off at ground level and removed from the wetlands leaving the root systems intact. Pulling of tree stumps and grading activities would be limited to that area directly over the trenchline, unless it was determined that safety related construction constraints required grading or the removal of tree stumps from under the working side of the construction right-of-way. Temporary erosion control devices would be installed as necessary immediately after initial disturbance of wetlands or adjacent upland areas to prevent sediment flow into wetlands, and would be maintained until revegetation is complete. Trench plugs would be installed as necessary to maintain wetland hydrology.

The construction equipment operating in wetland areas would be limited to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way. If standing water or saturated soil conditions were present, or if construction equipment caused ruts or mixing of the topsoil and subsoil, construction equipment operating in wetland areas would be further limited to the use of low-ground-pressure equipment or normal equipment operating from timber riprap or prefabricated equipment mats.

Topsoil would be stripped from the area directly over the trench line to a maximum depth of 12 inches in unsaturated soils and stockpiled separately from the subsoil. The segregated topsoil would be restored to its original location immediately following installation of the pipe and backfill of the trench. Materials such as timber mats placed in wetlands during construction would be removed during final cleanup, and the preconstruction contours of the wetland would be restored. Any required permanent erosion control measures would then be installed, and disturbed areas within the wetland would be temporarily stabilized with appropriate vegetation to protect the wetland soils from erosion.

The wetlands that would be affected by construction of the proposed Project are described in Section 3.4. That section also provides further discussion of the wetland restoration and mitigation procedures that would be implemented by CEGT.

2.3.2.3 Road, Highway, and Railroad Crossings

The proposed pipeline route would cross numerous paved and unpaved roads, highways, and railroads along the proposed Project route. Construction across these features would be accomplished in accordance with our Plan and the requirements of all applicable crossing permits and approvals. During roadway construction, CEGT would incorporate any safety precautions required by state and local transportation agencies.

All railroads and approximately 31 major state and interstate highways, including Interstate 49, would be crossed using subsurface boring techniques. Bores beneath these roads and railways would entail excavating pits on both sides of the feature and boring a horizontal hole equal to the diameter of the pipe (or casing, if required) at the depth of the pipeline installation. The pipeline section and/or casing would then be pushed through the bore. If additional pipeline sections were required, they would be welded to the first section of the pipeline in the bore pit before being pushed through the bore. There would likely be little disruption of traffic on roads and railways that are bored. Section 3.8 provides additional information on the proposed major road crossing locations.

Pipeline crossings of lightly traveled paved and unimproved rural dirt roads would typically be crossed via open-cut installation. Such crossings would require the temporary closure of these roads and implementation of detours, where feasible. In the absence of a reasonable detour, construction across the roadway would be staged to allow at least one lane of traffic to remain open except for the limited periods required for installing the pipeline. Efforts would also be made to schedule lane closures outside of peak traffic periods. Attempts will also be made to avoid peak-traffic periods on all road construction. All construction operations at these crossings, including repair and surface restoration, would normally be completed within one day.

Three minor road crossings, Yearwood Road (MP 45.4), McClanahan Road (MP 145.5), and River Road (MP 133.9), would be accomplished via HDDs associated with the crossing of adjacent waterbody features. The HDD crossing method is described in detail in Section 2.3.2.1.

2.3.2.4 Agricultural Areas

Agricultural areas along the proposed Project route include pasture areas used for livestock grazing, hayfields, fallow fields, and rotated croplands, such as cotton and corn. In these areas CEGT would implement special procedures to minimize impacts on current agricultural uses, in accordance with our Plan. Topsoil would be removed to its actual depth, up to a maximum of 12 inches, and stockpiled separately from the subsoil excavated from the pipeline trench. Typically, topsoil would be stripped from directly over the pipeline ditch and the adjacent subsoil spoil storage area (Figure 2.3.1-2), but landowners would be provided with the option of topsoil segregation across the full construction work area. During construction, the natural flow patterns of all fields would be maintained by providing breaks in topsoil and subsoil stockpiles.

During cleanup and restoration, all disturbed areas would be finish-graded and restored as closely as possible to preconstruction contours. Topsoil previously segregated from the trench material in all agricultural and residential areas would be spread uniformly across the construction right-of-way, and any stones or excess rock would be removed from at least the top 12 inches of soil. The topsoil and subsoil in all agricultural areas would also be tested for compaction at regular intervals using penetrometers or other appropriate devices to conduct tests. Any severely compacted areas would be plowed with a paraplow or other deep tillage device. In areas where the topsoil was segregated, the subsoil would also be plowed before replacing the segregated topsoil.

CEGT indicates that no known drainage structures or irrigation facilities would be crossed by the proposed Project. However, CEGT would work with property owners to identify locations of existing drainage structures and irrigation facilities that could be damaged during construction. Should any damage occur to these facilities, CEGT would repair these systems with the input of the property owners. Additionally, the pipeline burial depth would be increased in all actively cultivated agricultural areas (i.e., plowed or tilled lands), such that the top of the pipeline would be a minimum of 4 feet below the ground surface, to minimize the potential for conflicts with any future drainage and irrigation system installations or routine agricultural activities. CEGT would also work with landowners prior to construction to establish compensation agreements for crop damages and for loss of growing time, as applicable. Additional information on special procedures used in agricultural areas is presented in Sections 3.2 and 3.8.

2.3.2.5 Rugged Topography

The proposed Project would not involve construction in areas of excessively rugged topography, such as mountains or canyons. However, some portions of the proposed Project route would traverse areas of side slopes and rolling terrain that could require specialized “two-tone” construction techniques

to provide for safe working conditions. Under the two-tone construction technique, the uphill side of the construction right-of-way would be cut during grading. The material removed from the cut would be used to fill the downhill side of the construction right-of-way to provide a safe and level surface from which to operate heavy equipment. The pipeline trench would then be excavated along the newly graded right-of-way. Figure 2.3.2-2 provides a typical cross section of the two-tone construction technique.

The two-tone construction technique would likely require extra workspace areas to accommodate the additional volumes of fill material generated by this technique (see Section 3.8). Following pipeline installation and backfill of the trench, excavated material would be placed back in the cut and compacted to restore the approximate original contours. All disturbed areas would then be stabilized in accordance with our Plan.

2.3.3 Aboveground Facilities Construction Procedures

The aboveground facilities would be constructed concurrent with pipeline installation, but construction would be conducted by special fabrication crews generally working separately from the pipeline construction spreads.

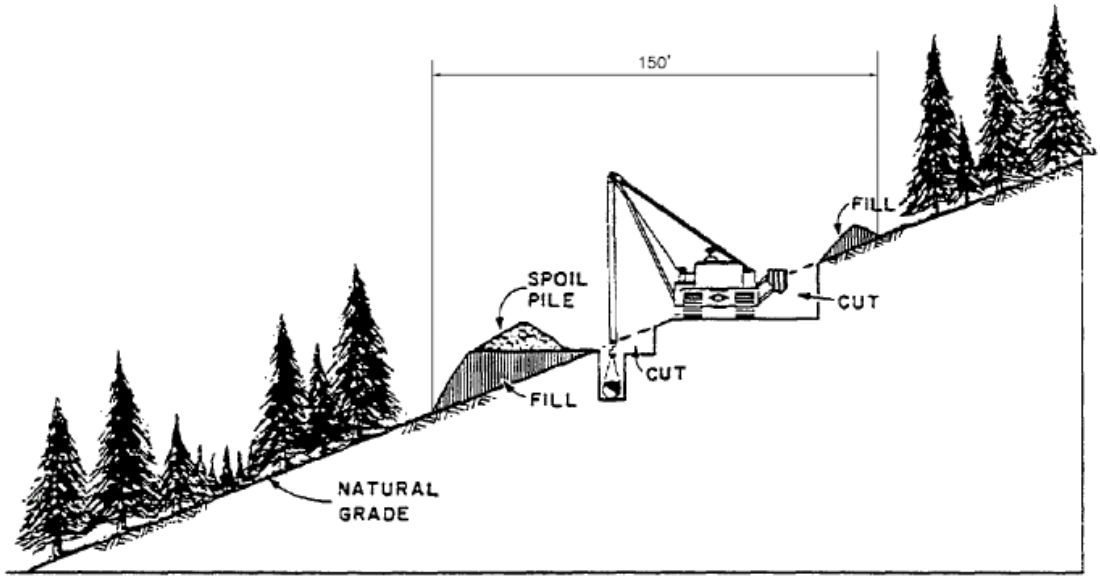
Construction of the compressor stations would involve clearing, grading, and compacting the sites to the surveyed elevations, where necessary, for placement of concrete foundations for buildings and to support skid-mounted equipment. Prefabricated segments of pipe, valves, fittings, and flanges would be shop- or site-welded and assembled at the compressor station site. The compressor units and other large equipment would be mounted on their respective foundations, and the compressor enclosures would be erected around them. Noise abatement equipment (including sound-attenuating enclosures around the turbines, exhaust stack silencers, and air inlet silencers) and emission control technology would be installed as needed to meet applicable federal, state, and/or local standards. Section 3.11 provides additional information on noise abatement and emission control technology. As necessary, electrical, domestic water and septic, and communications utilities would be installed.

Facility piping, both above and below ground, would be installed and hydrostatically tested before being placed in service. Controls and safety devices such as the emergency shutdown system, relief valves, gas and fire detection facilities, and other protection and safety devices would also be checked and tested. Upon completion of construction, all disturbed areas associated with the aboveground facilities would be finish-graded and seeded or covered with gravel, as appropriate. All roads and parking areas would be graveled. Additionally, the compressor station sites would be fenced for security and protection.

Construction of meter and regulator stations, mainline valves, and pig launcher/receiver facilities not collocated with the compressor stations would generally be similar to that described above for compressor station sites, and would entail site clearing and grading, installation and erection of facilities, hydrostatic pressure testing, cleanup and stabilization, and installation of security fencing around the facilities.

2.4 CONSTRUCTION SCHEDULE

CEGT proposes to construct the Carthage to Perryville Project in two phases. The Phase I facilities would include installation of the proposed pipeline, compressor stations, and associated ancillary facilities, but a single turbine compressor unit (10,310 hp) would be installed initially at both the Panola and Vernon Compressor Stations. As currently proposed, construction of Phase I facilities would be initiated in October 2006 and completed by February 2007, at which point CEGT would place the proposed Project in-service.



1. TWO-TONE THE RIGHT-OF-WAY TO LIMIT THE NEED FOR DEEP CUTS AND ADDITIONAL RIGHT-OF-WAY ON STEEP SLOPES
2. CLEAR AND STAKE ADDITIONAL RIGHT-OF-WAY TO ALLOW FOR EXTRA SPOIL
3. ENSURE SIDE BOOM TRACTORS ARE EQUIPPED WITH BOOM EXTENDERS AND COUNTERWEIGHTS IF REQUIRED.
4. USE BACKHOE TO ASSIST BULLDOZERS WITH REPLACING CUTS.
5. EMPLOY EROSION CONTROL MEASURES SUCH AS BREAKERS, CROSS DITCHES AND BERMS, AND REVEGETATION.

Not to Scale

CARTHAGE TO PERRYVILLE PROJECT

Typical Two-Tone Construction Right-of-Way

DATE: May 2006

FIGURE: 2.3.2-2

Under Phase II, a second turbine compressor would be installed at each compressor station, bringing the total installed compression at each facility to 20,620 hp. CEGT indicates that Phase II facilities would be installed and operational by October 2008.

2.5 ENVIRONMENTAL TRAINING AND MONITORING

CEGT has indicated that it would conduct environmental training for all company and construction contractor personnel prior to and during construction activities. Such training would focus on implementation of our Plan and Procedures, but would also address Project-specific permit requirements, company policy and commitments, any protection procedures and restrictions associated with cultural resources or sensitive species/habitats, and any other pertinent job-related information. However, CEGT has not yet provided detailed, information on its environmental training and monitoring program. Therefore, **we recommend that:**

- **Prior to construction, CEGT should file with the Secretary, for review and written approval by the Director or OEP, a complete environmental training and monitoring plan that is developed and finalized in consultation with appropriate resource agencies.**

During Project construction, environmental inspectors (EIs) would be responsible for monitoring and ensuring compliance with all environmental mitigation measures required by the FERC Certificate, if granted, and our Plan and Procedures as modified in this EIS (see Section 3.4). The EIs would have the authority to stop activities that violate the environmental conditions of these authorizations, state and federal environmental permit conditions, or landowner requirements and order appropriate corrective actions if needed. CEGT has indicated that it would be represented by at least one EI per construction spread, consistent with our Plan. However, our Plan also indicates that the number and experience of EIs assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected. If the Project were authorized, CEGT would be required to develop and submit an Implementation Plan for our approval prior to construction. During our review of the Implementation Plan, we would consider the absolute number and qualifications of the EI personnel proposed by CEGT.

In addition to the personnel requirements specified above, we believe that a third-party independent Environmental Compliance Monitoring and Reporting Program (ECMR Program) for the proposed Project would provide a number of benefits, both to us and to CEGT. As recommended in the Draft EIS, CEGT has agreed to support the ECMR Program. The overall objective of an ECMR Program would be twofold: to assess environmental compliance during construction in order to achieve a high level of environmental compliance throughout the Project and to assist the FERC staff in screening and processing variance requests during construction.

The ECMR Program would involve the use of full-time third-party compliance monitors representing the Commission at each construction spread to monitor compliance with Project mitigation measures and requirements throughout construction. These monitors would provide continuous feedback on compliance issues to us, as well as to CEGT's personnel. These monitors also would track and document progress of construction by the preparation and submittal of reports to our staff on a regular and timely basis.

CEGT established an Internet website (http://www.centerpointenergy.com/carthagetoperryville/), toll-free telephone number (1-888-641-8326), and e-mail address (carthagetoperryville@CenterPoint Energy.com) to provide potentially affected landowners and stakeholders with a venue for providing comments or requesting additional information about the proposed Project. The FERC staff is interested in ensuring that landowner issues are resolved in an effective and timely manner. Therefore, we

encourage CEGT to continue its commitment to maintain open communications with affected landowners during construction through similar methods, should the Project ultimately be certificated.

2.6 OPERATION, MAINTENANCE, AND SAFETY CONTROLS

The proposed Project pipeline and aboveground facilities would be designed, constructed, operated, and maintained to meet or exceed all safety standards as set forth in the DOT's *Transportation of Natural and Other Gas By Pipeline: Minimum Federal Safety Standards* (49 CFR Part 192). These safety standards are discussed further in Section 3.12.

The pipeline would be constructed of welded carbon steel that meets or exceeds industry standards, and would be covered with a protective epoxy coating to minimize rust and corrosion. To protect against damage from external forces, the proposed pipeline would be buried at a minimum depth of 3 feet below ground. All welds joining each section of pipe would be visually inspected and x-rayed to ensure the integrity of the welds. Prior to being placed in service, the pipeline would be hydrostatically pressure tested to verify its integrity and to ensure its ability to withstand the maximum designed operating pressure. A cathodic protection system would be installed to protect all underground and submerged pipeline facilities constructed of metallic materials from external, internal, and atmospheric corrosion.

During operations, CEGT would conduct regular patrols of the pipeline right-of-way in accordance with the requirements of 49 CFR Part 192. The patrol program would include periodic aerial and vehicle patrols of the pipeline facilities. These patrols would be conducted to survey surface conditions on and adjacent to the pipeline right-of-way for evidence of leaks, unauthorized excavation activities, erosion and wash-out areas, areas of sparse vegetation, damage to permanent erosion control devices, exposed pipe, and other conditions that might affect the safety or operation of the pipeline. The cathodic protection system would also be inspected periodically to ensure that it is functioning properly. In addition, intelligent pigs would regularly be sent through the pipeline to check for corrosion and irregularities in the pipe. CEGT would keep detailed records of all inspections and supplement the corrosion protection system as necessary to meet the requirements of 49 CFR Part 192.

Routine operation and maintenance would also be performed at all aboveground facilities by qualified personnel. Safety equipment, such as pressure relief devices, fire detection and suppression systems, and gas detection systems would be maintained throughout the life of each facility. Mainline valves would also be inspected, serviced, and tested to ensure proper functioning.

CEGT would establish and maintain a liaison with the appropriate fire, police, and public officials. This program would identify the available resources and responsibilities of each organization that may respond to a natural gas pipeline emergency and assist in developing coordination responsibilities.

Pipeline markers would be placed and maintained along the right-of-way at roadway crossings, railroad crossings, and other highly visible places to alert those contemplating working in the vicinity of the location of the buried pipeline. The markers would identify CEGT as the operator and display telephone numbers to call if any abnormal conditions are detected.

CEGT would also participate in the "One Call" program. This program provides telephone numbers for excavation contractors to call prior to commencing any excavation activities. The One Call operator would notify CEGT of any planned excavation in the vicinity of the pipeline so that CEGT could flag the location of the pipeline and assign staff to monitor activities if required.

Vegetation management procedures during operation would be performed in accordance with our Plan and Procedures and would include regular mowing, cutting, and trimming along most of the 60-foot-wide permanent pipeline right-of-way. Routine vegetative maintenance clearing would not be performed more frequently than every 3 years, unless requested and or approved by appropriate state and local agencies. However, a corridor not exceeding 10 feet in width centered on the pipeline could be maintained annually in an herbaceous state, as required to facilitate periodic corrosion and leak detection surveys. In addition, CEGT has also indicated that routine vegetation maintenance would not occur between April 15 and August 1 of any year to minimize the potential for impacts on migratory bird species that may use the permanent right-of-way for nesting. Vegetation management is discussed further in Section 3.5.

2.7 FUTURE PLANS AND ABANDONMENT

CEGT currently has no plans for future expansion of the facilities proposed. If additional demand for natural gas supplies requires future expansion, CEGT would seek the appropriate authorizations from the FERC. When and if an application is filed, the environmental impact of the new proposal would be examined at that time.

Abandonment of the pipeline facilities would be subject to the approval of the FERC under Section 7(b) of the NGA and would comply with DOT regulations and specific agreements or stipulations made for the pipeline rights-of-way. An environmental review of any proposed abandonment would be conducted when the application is filed with the FERC.