

GULF SOUTH PIPELINE COMPANY, LP  
PETAL GAS STORAGE, L.L.C.  
DOCKET NO. CP13-\_\_\_\_-000  
EXHIBIT F1

## **ENVIRONMENTAL REPORT**



**Gulf South Pipeline Company, LP**

**Resource Report 1**

**General Project Description**

**Southeast Market Expansion Project**

**March 2013**

## SUMMARY OF FILING INFORMATION

INFORMATION	Data Sources <sup>1</sup>	Found in Section	To be Filed
<b>Minimum Requirements to Avoid Rejection</b>			
1. Provide a detailed description and location map of the project facilities. (§ 380.12(c)(1)) <ul style="list-style-type: none"> <li>• Include all pipeline and aboveground facilities.</li> <li>• Include support areas for construction or operation.</li> <li>• Identify facilities to be abandoned.</li> </ul>	D	1.1.2 Appendix 1A	
2. Describe any non-jurisdictional facilities that would be built in association with the project. (§ 380.12(c)(2)) <ul style="list-style-type: none"> <li>• Include auxiliary facilities (See § 2.55(a)).</li> <li>• Describe the relationship to the jurisdictional facilities.</li> <li>• Include ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals.</li> <li>• Include the length and diameter of any interconnecting pipeline.</li> <li>• Apply the four-factor test to each facility (see § 380.12(c)(2)(ii)).</li> </ul>	D	1.8	
3. Provide current original U.S. Geological Survey (USGS) 7.5-minute-series topographic maps with mileposts showing the project facilities. (§ 380.12(c)(3)) <ul style="list-style-type: none"> <li>• Maps of equivalent detail are acceptable if legible (check with staff)</li> <li>• Show locations of all linear project elements, and label them.</li> <li>• Show locations of all significant aboveground facilities, and label them.</li> </ul>	D	1.1.2 Appendix 1A	
4. Provide aerial images or photographs or alignment sheets based on these sources with mileposts showing the project facilities. (§ 380.12(c)(3)) <ul style="list-style-type: none"> <li>• No more than 1-year old</li> <li>• Scale no smaller than 1:6,000</li> </ul>	D	1.1.2 Appendix 1A	
5. Provide plot/site plans of compressor stations showing the location of the nearest noise-sensitive areas (NSA) within 1 mile. (§ 380.12(c)(3,4)) <ul style="list-style-type: none"> <li>• Scale no smaller than 1:3,600</li> <li>• Show reference to topographic maps and aerial alignments provided above.</li> </ul>	D	Appendix 9C	
6. Describe construction and restoration methods. (§ 380.12(c)(6)) <ul style="list-style-type: none"> <li>• Include this information by milepost</li> <li>• Make sure this is provided for offshore construction as well. For the offshore this information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing.</li> </ul>	D	1.3	
7. Identify the permits required for construction across surface waters. (§ 380.12(c)(9)) <ul style="list-style-type: none"> <li>• Include the status of all permits.</li> <li>• For construction in the federal offshore area be sure to include consultation with the MMS.</li> <li>• File with the MMS for rights-of-way grants at the same time or before you file with the FERC.</li> </ul>	D	1.6	
8. Provide the names and address of all affected landowners and certify that all affected landowners will be notified as required in § 157.6(d). (§ 380.12(c)(10)) <ul style="list-style-type: none"> <li>• Affected landowners are defined in § 157.6(d)</li> <li>• Provide an electronic copy directly to the environmental staff.</li> </ul>	D	1.7 Appendix 1F	

SUMMARY OF FILING INFORMATION
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INFORMATION		Data Sources <sup>1</sup>	Found in Section	To be Filed
<b>Additional Information Often Missing and Resulting in Data Requests</b>				
Describe all authorizations required to complete the proposed action and the status of applications for such authorizations.		D	1.6	
Provide plot/site plans of all other aboveground facilities that are not completely within the right-of-way.		D	Appendix 1B	
Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way, and temporary construction right-of-way.			Appendix 1B	
Summarize the total acreage of land affected by construction and operation of the project.		BB	1.2	
If Resource Report 5, Socioeconomics is not provided, provide the start and end dates of construction, the number of pipeline spreads that would be used, and the workforce per spread.		N/A	N/A	
Send two (2) additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects (OEP).		D	Appendix 1A	

<sup>1</sup> D Applicant  
BB Resource Report 8  
N/A = Not Applicable

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- FERC Alignment Sheets

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- Soil Survey Maps

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- Construction Typical

- Horizontal Directional Drill Plans and Profiles

- Compressor Station and Other Aboveground Facility Plot Plans

- Spill Prevention, Containment, and Countermeasure Plan*

- Plan for Containment of Inadvertent Release of Drilling Mud during Horizontal Directional Drilled Wetland and Waterbody Crossings*

- Plan for Reducing Noise Impacts from Horizontal Directional Drill (HDD) Operations*

- Plan for the Unanticipated Discovery of Contaminated Environmental Media*

- Plan for the Unanticipated Discovery of Historic Properties and Human Remains During Construction*

- Stormwater Pollution Prevention Plan*

- Residential Construction Implementation Plan*

- Environmental Complaint Resolution Plan*

- Exotic and Invasive Species Control Plan*

- Dust Control Plan*

### Appendix 1C – Proposed Site-specific Exceptions to the FERC Plan and Procedures

- List of Proposed Site-specific Exceptions to the FERC Plan and Procedures

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### Appendix 1E – Agency Correspondence

### Appendix 1F – Landowner Contacts (CONTAINS PRIVILEGED INFORMATION – Provided under a separate cover – Volume III)

### List of Acronyms and Abbreviations

ATWS	Additional temporary workspace
Bhp	Brake-horsepower
CBMPP	Construction Best Management Practices Plan
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
Destin	Destin Pipeline Company, L.L.C.
Dixie	Dixie Electric Power Association
DOT	United States Department of Transportation
Dth/d	Dekatherms per day
EIA	Energy Information Administration
ECD	Erosion Control Devices
Enterprise	Enterprise Products Operating LP
FERC	Federal Energy Regulatory Commission
FGT	Florida Gas Transmission Company, LLC
Gulf South	Gulf South Pipeline Company, LP
HDDs	Horizontal directional drills
INGAA	Interstate Natural Gas Association of America
ISO	International Standards Organization
kV	Kilovolt
MDEQ	Mississippi Department of Environmental Quality
MLV	Mainline valve
mmcf/d	Million cubic feet per day
M&R	Meter and regulator
Petal	Petal Gas Storage, L.L.C
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
Plantation	Plantation Pipeline Company
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Southeast Market Expansion Project
ROW	Right-of-way
SCADA	Supervisory control and data acquisition
SESH	Southeast Supply Header, L.L.C.
SMEPA	South Mississippi Electric Power Association



SPCC	Spill Prevention Control and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan
Tcf	Trillion cubic feet
Tennessee Gas	Tennessee Gas Pipeline Company, L.L.C.
USACE	United States Army Corps of Engineers

## 1.0 GENERAL PROJECT DESCRIPTION

Gulf South Pipeline Company, LP (Gulf South) proposes to construct, own, operate, and maintain approximately 70 miles of 30-inch and 24-inch outside-diameter (OD) natural gas transmission pipeline, three compressor stations with 34,215 brake-horsepower (bhp), one new metering and regulating station and other ancillary facilities. The Southeast Market Expansion Project (Project) is located in Forrest, Perry, Jasper, Jackson, Greene, and George counties, Mississippi and Mobile County, Alabama.

As required by Title 18 Code of Federal Regulation (CFR) Section 380.12, Gulf South has prepared this Environmental Report in support of its Application to the Federal Energy Regulatory Commission (FERC) for a Certificate of Public Convenience and Necessity under Section 7(c) of the *Natural Gas Act*.

### 1.1 PROPOSED FACILITIES

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#### 1.1.1 Purpose and Need

Specifically, Gulf South proposes to construct, own, operate and maintain approximately 42 miles of 30-inch diameter and approximately 28 miles of 24-inch diameter natural gas transmission pipeline, install a total of 34,215 bhp based on International Standards Organization (ISO) standard conditions of compression at three new compressor stations, new metering and regulating facilities at an interconnection with Florida Gas Transmission Company, LLC (FGT), and other ancillary facilities.

The Energy Information Administration (EIA) forecasts domestic production, particularly production from unconventional sources, to continue to show gains in the long-term. Natural gas in tight sandstone formations is the largest source of conventional production, accounting for 29 percent of total United States production in 2030. Production from shale formations is the fastest growing source, and is expected to grow over 200 percent to 3.7 trillion cubic feet (Tcf) per year (EIA, Updated Annual Energy Outlook 2009). EIA projects continued development of domestic resources, requiring steady additions to the nation's pipeline transportation grid in the long-term. In addition, continued growth in the demand for natural gas emphasizes the need for additional infrastructure to support the projected growth.

The Project will provide new transportation options into the Florida and Southeast markets via an interconnect with FGT and a new high pressure interconnect with Gulf South's

existing Index 311 pipeline. The Project will increase Gulf South's ability to transport natural gas supplies to growing areas of demand in the southeast region of the United States, including industrial and power generation markets in Mississippi, Alabama, and Florida. The new natural gas transportation capacity is vital because of the growing level of new unconventional gas supplies that can be delivered into Texas and the Perryville, Louisiana area and the need to connect these supplies to high value markets. The Project, when constructed, will provide an outlet to these supplies and meet Gulf South's customer requests to access the Florida and Southeast markets. Gulf South's existing high pressure north-south pipeline, Index 130, has no capacity for such request and is currently sold out of capacity. These facilities provide high pressure take-away capacity from the central Mississippi region.

In response to customer demand, primarily from electric generation and industrial customers, the proposed Project will expand Gulf South's capability to serve markets in the southeastern United States by approximately 550 million cubic feet per day (mmcf/d) [510,500 dekatherms per day (Dth/d)]. Gulf South held an open season for the Project and the proposed new capacity has been fully contracted through ten-year, firm agreements.

### **1.1.2 Location and Description of Facilities**

The Project facilities will be located in Jasper, Forrest, Perry, Greene, George, and Jackson counties, Mississippi and Mobile County, Alabama, as depicted in the Project Mapping, provided as Appendix 1A. The Project facilities are described in the following sections and are summarized in Table 1.1-1 and Table 1.1-3.

#### **Pipeline Facilities**

The pipeline facilities associated with the Project will involve the construction and operation of approximately 70 miles of new 30-inch and 24-inch diameter pipeline. The new pipeline will commence near the southern terminus of Petal Gas Storage, L.L.C.'s (Petal) transmission facilities in Forrest County, Mississippi and with its terminus at Gulf South's existing Index 311 pipeline tie-in, approximately 4.5 miles west of Semmes, Alabama.

Table 1.1-1 Pipeline Facilities				
Project Component	County, State	Milepost		Length (miles)
		Begin	End	
30-inch Pipeline	Forrest, MS	0.00	2.26	2.26
	Perry, MS	2.26	25.47	23.21
	Greene, MS	25.47	40.50	15.03
	George, MS	40.50	42.32	1.82
24-inch Pipeline	George, MS	42.32	64.94	22.62
	Mobile, AL	64.94	70.10	5.16
<b>Project Total</b>				<b>70.10</b>

Approximately 79 percent of the proposed pipeline will be colocated with existing utility right-of-way (ROW), as described in Table 1.1-2.

Table 1.1-2 Location of Colocated Pipeline Facilities		
Company	Right-of-Way Type	Length (miles)
Dixie	Powerline	0.36
Destin	Pipeline	2.38
Enterprise	Pipeline	0.17
Gulf South	Pipeline	11.18
Plantation	Pipeline	17.46
SESH	Pipeline	20.39
SMEPA	Powerline	3.23
Tennessee Gas	Pipeline	0.25
<b>Total Colocation</b>		<b>55.42</b>
Dixie = Dixie Electric Power Association Destin = Destin Pipeline Company, L.L.C. Enterprise = Enterprise Products Operating LP Gulf South = Gulf South Pipeline Company, LP Plantation = Plantation Pipe Line Company SESH = Southeast Supply Header, L.L.C. SMEPA = South Mississippi Electric Power Association Tennessee Gas = Tennessee Gas Pipeline Company, L.L.C.		

### **Aboveground Facilities**

Aboveground facilities associated with the Project include three new compressor stations and ancillary facilities associated with the new pipeline. These facilities are described in the following sections and summarized in Table 1.1-3.

#### **Compressor Stations**

Gulf South proposes to construct, own, operate, and maintain three new compressor stations as a part of the Project to provide a total of 34,215 bhp (at ISO standard conditions) of

compression. As proposed, one of the stations will be on the newly constructed mainline facilities and the other two will be located regionally on the Gulf South system. The Forrest Compressor Station will be located in Forrest County, Mississippi at the beginning of the proposed pipeline and will be equipped with one Solar Mars 100-16000S unit to provide 15,900 bhp of compression. The Jasper Compressor Station will be located on Gulf South's existing Index 818 pipeline at the intersection of Index 818 and Petal transmission facilities in Jasper County, Mississippi and will be equipped with one Solar Mars 100-16000S unit to provide 15,900 bhp of compression. The Moss Point Compressor Station will be located at the intersection of Gulf South's existing Index 300 pipeline and the Pascagoula Lateral in Jackson County, Mississippi. The Moss Point Station will be equipped with two natural gas-fired reciprocating internal combustion engines (Caterpillar G3512B and G3516B) to provide a total of 2,415 bhp of compression.

All new compressor units will be equipped with technologies to reduce air pollutant emissions. The locations of the proposed compressor stations are listed in Table 1.1-3. In addition to the compression equipment, there will be ancillary equipment installed at each of the proposed compressor stations which includes emergency generators, small heaters, storage tanks, natural gas venting and fugitive emissions equipment.

### **Meter and Regulator Stations**

Gulf South proposes to construct, own, operate, and maintain one new meter and regulator (M&R) station at the intersection of FGT's existing pipeline. The location of the proposed FGT Interconnect is listed in Table 1.1-3.

### **Valves and Other Ancillary Facilities**

Gulf South proposes to construct four new mainline block valves (MLV) along the pipeline. Two 30-inch MLVs and two 24-inch MLV along with appurtenant facilities will be constructed predominantly within Gulf South's proposed permanent easement at locations listed in Table 1.1-3. A new pig receiver/launcher facility is planned within the proposed FGT Interconnect, with a pig launcher planned at the proposed Forrest Compressor Station and receiver at the proposed terminus of the pipeline. Additionally, a pressure limiting facility will be constructed at the pipeline terminus facility.

Table 1.1-3 Aboveground Facilities			
Project Component	County, State	Milepost Location	Description
<b>Compressor Stations</b>			
Forrest Station/Pig Launcher Facility	Forrest, MS	MP 0.00	Install one Solar Mars 100-16000S with 15,900 bhp of compression and one 30-inch pig launcher.
Jasper Station	Jasper, MS	Intersection of Gulf South's existing Index 818 pipeline and Petal Gas Storage's transmission facilities	Install one Solar Mars 100-16000S with 15,900 bhp of compression.
Moss Point Station	Jackson, MS	Intersection of Gulf South's existing Index 300 pipeline and Pascagoula Lateral	Install two reciprocating Caterpillar engines (G3512B, G3516B) with a total 2,415 bhp of compression.
<b>Meter and Regulator Station</b>			
Florida Gas Transmission Company, LLC Interconnect/Pig Receiver and Launcher Facility	George, MS	42.33	Install one 30-inch pig receiver and one 24-inch pig launcher connected by a 24-inch bypass line combined with one 24-inch side tap and connecting piping (inlet and customer outlet) with a filter separator, storage tank, ultrasonic metering facility and pressure/flow control facility.
<b>Valves and Other Ancillary Facilities</b>			
Mainline Valve Site	Perry, MS	12.91	Install one 30-inch main line valve combined with two 8-inch blow downs, a bypass and appurtenances.
Mainline Valve Site	Greene, MS	26.16	Install one 30-inch main line valve combined with two 8-inch blow downs, a bypass and appurtenances.
Mainline Valve Site	George, MS	53.93	Install one 24-inch main line valve combined with two 8-inch blow downs, a bypass and appurtenances.
Mainline Valve Site	George, MS	62.97	Install one 24-inch main line valve combined with two 8-inch blow downs, a bypass and appurtenances.
Pressure Limiting Facility/Pig Receiver Facility	Mobile, AL	70.10	Install one 24-inch pig receiver with 20 feet of connecting piping, and appurtenances for over pressure protection at interconnection of existing facilities.

## 1.2 LAND REQUIREMENTS

Construction of the Project will require the use of a total of approximately 1,165 acres of land, resulting in both temporary and permanent land disturbance. Following construction, approximately 710 acres of land consisting of those areas necessary to facilitate construction, including the construction right-of-way (ROW), staging areas, additional temporary workspace (ATWS), and temporary access roads will be restored to preconstruction conditions. Permanent impact areas will include the new maintained pipeline ROW, associated ancillary facilities,

compressor stations, and new permanent access roads. A summary of construction and operation land requirements for the Project are presented in Table 1.2-1 and described in the following sections. A detailed discussion of existing land uses associated with Project facilities is provided in Resource Report 8, Land Use, Recreation, and Aesthetics.

<b>Table 1.2-1 Summary of Land Requirements Associated with the Southeast Market Expansion Project</b>		
<b>Facility</b>	<b>Land Affected During Construction (acres)</b>	<b>Land Affected During Operation (acres)</b>
<b>Pipeline Facilities</b>		
Right-of-Way	789.92	423.04
Additional Temporary Workspace	122.56	0.00
Access Roads	44.42	13.38
Staging/Contractor Yards	182.07	0.00
<b>Pipeline Facilities Subtotal</b>	<b>1,138.97</b>	<b>436.42</b>
<b>Aboveground Facilities</b>		
Compressor Stations	25.13	16.09
Florida Gas Transmission Company, LLC Interconnect/Meter and Regulator Station	1.54	1.54
Mainline Valves and Pressure Limiting Facility	0.96	0.96
<b>Aboveground Facilities Subtotal</b>	<b>27.63</b>	<b>18.59</b>
<b>Project Total</b>	<b>1,166.60</b>	<b>455.01</b>
Acreage has been subtracted from the permanent ROW to account for permanent access road acreages within permanent easement.		

### 1.2.1 Pipeline Facilities

#### Pipeline Right-of-Way

In greenfield areas, construction of the new 30-inch diameter and 24-inch diameter pipelines will require a typical construction ROW width of 100 feet in uplands, 75 feet in wetlands, and 125 feet in agricultural areas. The construction ROW will be split into a 70-foot (45 feet in wetlands) working side and 30-foot spoil side, as depicted in the Construction Typical Package provided in Appendix 1B. Typical agricultural workspace includes an additional 25 feet of temporary workspace extending from the working side for topsoil storage. Following construction, a 50-foot wide permanent easement centered on the pipeline will be retained in all the above described circumstances<sup>1</sup>. The total acreage of land that will be affected by pipeline construction

<sup>1</sup> The permanent ROW segment associated with the Highway 612 HDD has been reduced to 25 feet due to colocation with Gulf South's existing Index 311 ROW and encroachment with nearby residences.

(not including ATWS and staging/contractor yards) is approximately 790 acres, of which about 423 acres are new permanent easement and 367 acres are temporary construction ROW.

In order to minimize the Project footprint, Gulf South proposes to colocate approximately 55.42 miles (79 percent) of the new pipeline along existing easements, as discussed in Section 1.1.2. The pipeline segments which parallel Gulf South's existing Index 311 pipeline total 11.18 miles. Colocated pipeline segments which do not abut the Gulf South Index 311 Pipeline include the existing Destin Pipeline (2.38 miles), Enterprise Pipeline (0.17 mile), Plantation Pipeline (17.46 miles), SESH Pipeline (20.39 miles), Tennessee Gas Pipeline (0.25 mile), and SMEPA and Dixie power line (3.59 miles) easements. The Project's new permanent ROW will abut the adjacent existing ROW. Gulf South proposes a 5-foot overlap of temporary workspace with the adjacent existing ROW. The additional 45 feet (20 feet in wetlands) of temporary construction ROW will be located on the opposite side from the existing pipeline corridor. Typical construction ROW details for each colocated area are depicted within Appendix 1B and discussed below.

The proposed permanent ROW width of 50 feet is necessary to accommodate construction ROW spacing requirements, future maintenance work and to protect the pipeline from ground-disturbing work that may occur in proximity to the pipeline in the future. The proposed pipeline will be installed in the center of permanent ROW to the extent that it is practicable.

Safety requirements dictate that a minimum space from foreign pipelines is required to protect construction personnel and the existing pipelines and electric transmission lines during construction where lines are colocated. After inspection of the terrain along the route Gulf South engineers determined that the desired minimum offset should be 50 feet. This separation is consistent with industry recommendations cited by Interstate Natural Gas Association of America (INGAA). Gulf South's policy is to maintain minimum spacing between the construction work area and foreign pipelines needed to maintain safe conditions but to not overlap with existing foreign pipeline rights-of-way unless such minimum spacing cannot be maintained. This minimum spacing is determined on a case-by-case basis and differs based on topography and other factors.

Preliminary evaluation of the colocated segments suggests that the Project needs to have an adjacent, but non-overlapping ROW with the other pipelines in order to maintain



minimum safe spacing between the pipelines. Factors considered include the poorly consolidated soils and uneven terrain existing along much of the route. Gulf South determined that a minimum spoil side width (centerline of pipe to edge of work space) of 30 feet was needed. The proposed offset and spoil side width requirements necessitated the use of an additional 5 feet of temporary ROW located on the existing colocated ROWs. Gulf South incorporated the proposed 5-foot overlap on adjacent ROWs in order to reduce clearing impacts and address a common complaint voiced by landowners which was the leaving a gap between the easements or a narrow strip of uncleared land between the ROWs.

Gulf South representatives met with each foreign line operator to ascertain the feasibility of and to seek cooperation in allowing some degree of overlay on the spoil side where the ROWs are colocated. The various foreign line operators indicated they would allow temporary work space to encroach not more than 5 feet during construction provided satisfactory precautions were observed.

Due to the variations in the existing ROW widths (30 feet to 100 feet), as well as variations in clearance between the pipelines and existing ROW limits, it is not possible to maintain the desired 50-foot construction offset and configuration in all cases with abutting ROW. The Plantation ROW is narrow, with the existing line generally 15 feet from the edge of the proposed colocated ROW. After discussions with numerous affected landowners along the Plantation colocated segments, a common stipulation made by landowners is that the Gulf South and Plantation permanent ROWs be abutted, thus avoiding a gap between the easements. The original 50-foot offset would produce gaps of wooded and open spaces which are not acceptable to the affected landowners. The request was reviewed by Gulf South to move to a 40-foot pipe to pipe separation thus abutting the Plantation and Gulf South permanent easements.

Gulf South representatives conducted further discussions with Plantation Pipeline representatives regarding the use of a 5-foot portion of their existing Plantation Pipeline ROW. Gulf South ultimately incorporated this 5-foot addition to the non-working side of the construction footprint to facilitate the storage of ditch spoil; thereby allowing Gulf South to utilize a 40-foot offset and 70-foot ditch and working side typical construction configuration. It should be noted that this 40-foot separation is not the desired operational separation preferred by Gulf South, however will be incorporated into the Project configuration along the Plantation Pipeline corridor at the bequest of affected landowners. Special provisions will address this close

proximity construction offset methodology in the construction contract plans and specifications to ensure that the work is completed safely.

Gulf South will maintain a 10 foot wide cleared ROW through wetlands in accordance with the 2003 versions of the FERC *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures). However, several sections of ROW between HDD entry and exit locations will not be impacted by construction or operation to minimize and avoid wetland impacts. In addition trees within 15 feet of the pipeline that are greater than 15 feet in height will be selectively cut and removed from the permanent ROW. Areas disturbed by construction that are not part of the permanent ROW will be restored to preconstruction conditions following the completion of construction activities.

Gulf South considered a reduction of the proposed 100-foot wide construction ROW for the 24-inch pipeline segment in the initial planning stages of the Project and later in response to ERC Staff comments submitted to Gulf South in February, 2013. Initial discussions with several pipeline contractors with experience in the Project area indicated the necessity of a 100-foot wide ROW. Subsequent discussions with members of Gulf South and its engineering team and ground reconnaissance confirmed this recommendation.

Several significant factors cited by contractors in support of using 100-foot construction ROW width were brought forward including: the predominance of less cohesive soils in this region of the United States which require a wider ditch to reach depth thereby resulting in larger amounts of spoilage and storage space necessary to place spoil piles; and the same type and size of construction equipment is required for a 30-inch and 24-inch installation. Additionally, Gulf South has agreed to provide added depth of cover in some agricultural areas which further increases the ditch width and space required for spoil storage. The terrain along the 24-inch route is generally rolling and has numerous small stream crossings that will require grading, field bending, and extra depth of cover. These factors, coupled with soil characteristics and the high average rainfall for the area, will greatly increase the need for this additional space.

Based on additional contractor input, a reduction in the proposed width would lead to negative impacts on productivity, and prolonged duration of construction through the area due to equipment congestion, restricted travel along the ROW, and cause an increased safety risk for construction and inspection personnel. By utilizing the proposed ROW width, Gulf South and its

contractors anticipate a reduced construction timeline, and as a result, decreased negative impacts on both public and private resources along the ROW. Negative impacts from reducing the ROW width would include but may not be limited to the following: increased compaction due to the restricted footprint, an increased burden on impacted landowners; and an increased duration of exposed soils and potential for greater environmental impacts. Therefore, Gulf South intends to maintain the proposed construction corridor based on the aforementioned justifications and impacts to the environment will be off-set by the noted construction efficiencies.

### **Additional Temporary Workspace**

Where necessary, Gulf South will utilize ATWS outside of its construction ROW to facilitate specialized construction procedures, such as horizontal directional drills (HDDs); railroad, road, wetland, waterbody, and foreign utility line crossings; areas where topsoil segregation is required; tie-ins with existing pipeline facilities; areas with steep side slopes; pipeline crossovers; and safe off road parking of vehicles.

ATWS needed for the Project will total approximately 122 acres. ATWS will be allowed to revert to pre-existing conditions following construction activities, so there will be no permanent impacts on these areas. Locations of ATWS are detailed in Resource Report 8, Land Use, Recreation, and Aesthetics and depicted on the Project alignment sheets (Appendix 1A).

### **Staging/Contractor Yards**

During construction of the pipeline, the contractor will require off-ROW areas for the storage of pipe and equipment necessary for the construction of the Project facilities. These staging/contractor yards will be located at various points along the length of the Project at locations with convenient and safe access to the facilities. An effort has been made to identify and select yards that have been previously disturbed by human activity but do not have an ongoing land use that would preclude Project usage. Staging/contractor yards needed for the Project will total approximately 182 acres. All areas used for staging throughout the Project will be restored to preconstruction conditions upon Project completion unless otherwise agreed upon with the landowner and submitted to the FERC for review and approval. Table 1.2-2 summarizes the locations, existing land uses, and land requirements for the staging/contractor yards. The locations of the yards are depicted in the Project alignment sheets (Appendix 1A).

<b>Milepost</b>	<b>Name</b>	<b>Use</b>	<b>Current Land Use</b>	<b>Acres</b>
0.5	Staging Area	Staging area	Industrial/ Commercial and Open Land	3.65
2.8	Highway 42 Mat Yard	Mat yard	Industrial/ Commercial	7.05
38.6	Merritt Road Mat Yard	Mat yard	Forest	3.09
38.8	Highway 98 Mat Yard	Mat yard	Agriculture	2.37
41.1	Merrill Road Laydown Yard	Laydown yard	Agriculture	20.71
44.8	Bexley Crossroads Mat Yard	Mat yard	Open Land	3.30
53.4	GE-401 Construction Yard	Construction yard	Agriculture	15.29
61.3	GE-470 Construction Yard	Construction yard	Agriculture	1.86
61.8	GE-478 Construction Yard	Construction yard	Agriculture	1.59
Offline	McLain Pipe Yard	Pipe yard	Agriculture	11.99
Offline	Lucedale Contractor and Fab Yard	Fab yard	Agriculture	36.38
Offline	Lucedale RR Spur Pipe Yard	Pipe yard	Industrial/ Commercial	4.92
Offline	Lucedale Pipe Yard	Pipe yard	Industrial/ Commercial	22.53
Offline	McLain Mat Yard	Mat yard	Industrial/ Commercial	6.55
Offline	New Augusta Pipe Yard	Pipe yard	Agriculture	40.79
<b>Total Acreage</b>				<b>182.07</b>

### **1.2.2 Aboveground Facilities**

Land requirements for the aboveground facilities associated with the Project are summarized in Table 1.2-1 and described in the following sections.

#### **Compressor Stations**

The Forrest, Jasper and Moss Point compressor stations will be constructed using approximately 10, 10, and 5 acres respectively, totaling approximately 25 acres. Gulf South will acquire and own the parcels of land for both construction and station operations. Compressor station plot plans are provided in Appendix 1B.

#### **Meter and Regulator Stations**

Meter and regulator stations typically include a fenced control building and a permanent access road. A meter run will be installed to measure the flow of natural gas to the existing pipelines. The facilities also include a supply line and a discharge line from the associated pipeline, an emergency bypass line, flow control, gas filtration or separation equipment and a

satellite dish or radio antennas for supervisory control and data acquisition (SCADA) communications equipment.

Construction and operation of the FGT M&R station will require approximately 1.5 acres of permanent area. A plot plan of the FGT M&R station is provided in Appendix 1B.

### **Valves and Pressure Limiting Facility**

MLVs allow the associated pipeline to be segmented for safety, operations, and maintenance purposes. MLVs will be installed in accordance with the United States Department of Transportation (DOT) safety requirements based on area population classifications. They are typically sited away from populated areas to allow for safe and rapid gas evacuation if needed. Pig launchers and receivers will also be installed along the pipeline to facilitate in-line inspections and to ensure integrity. Launchers and receivers will be located within the limits of the Forrest compressor station, the FGT M&R station and the Index 311 pressure limiting facility. Valves and other ancillary facilities will be constructed within the permanent pipeline easement and enclosed by fencing. The total acreage for all valve sites and the pressure limiting facility for the Project is approximately 1 acre.

#### **1.2.3 Construction and Operation Access**

Gulf South will utilize existing public and private roads to access the pipeline ROW and aboveground facilities to the extent practicable. Existing roads utilized will include paved, gravel, or pasture roads, and other conveyances. Some roads will require modification or improvement to facilitate safe access for construction equipment and personnel. The Project will require construction of both temporary and permanent roads to provide access to the new facilities and for future pipeline maintenance. Land use associated with the proposed access roads is further discussed in Resource Report 8, Land Use, Recreation, and Aesthetics.

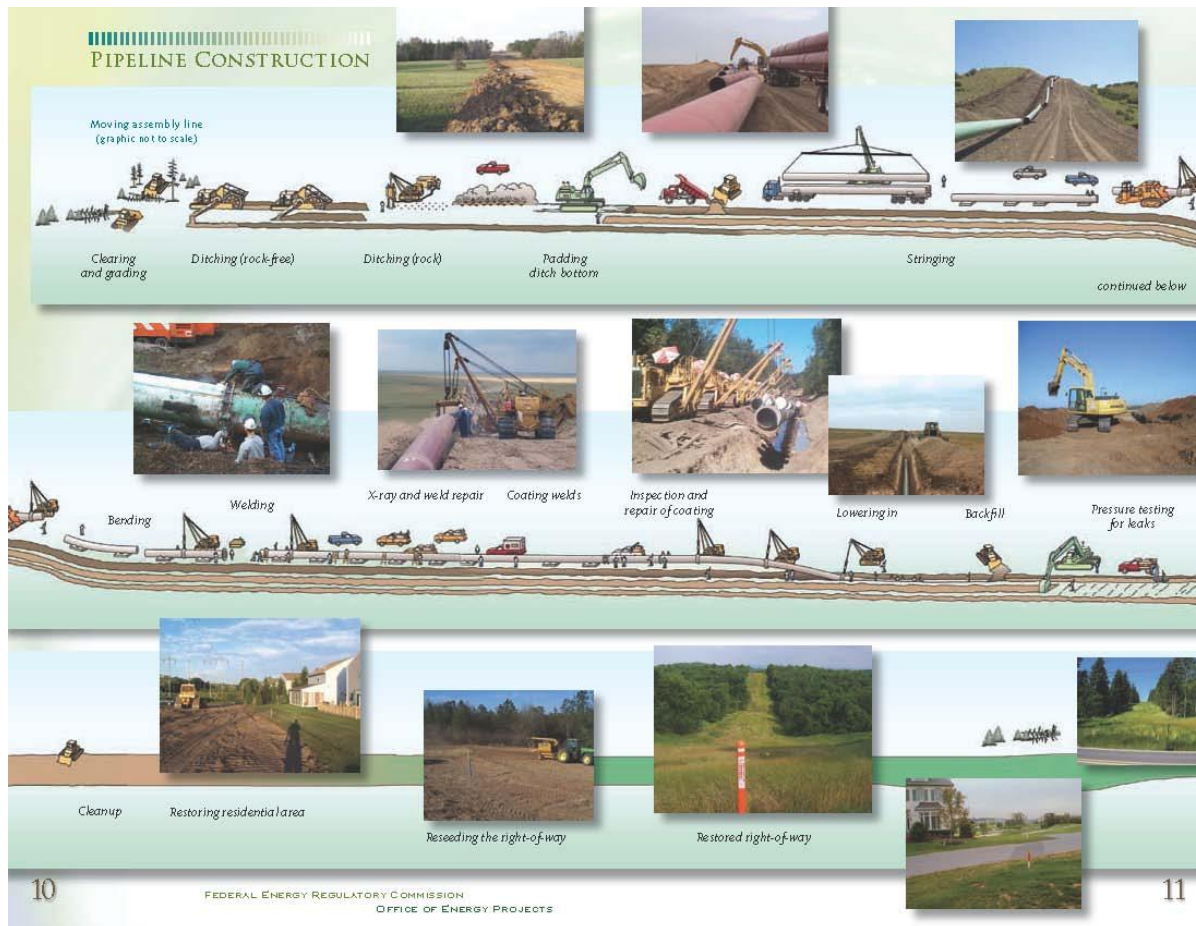
### **1.3 CONSTRUCTION PROCEDURES**

All facilities associated with the Project will be designed, constructed, tested, operated, and maintained in accordance with the DOT regulations in Title 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and other applicable federal and state regulations. Construction of the Project will be performed in accordance with the FERC Plan and Procedures, and Gulf South's Project-specific *Stormwater Pollution Prevention Plan* (SWPPP) and *Construction Best Management Practices Plan* (CBMPP). Additionally, Gulf South will implement its *Spill Prevention Control and*

*Countermeasure (SPCC) Plan and Plan of Inadvertent Release of Drilling Mud during Horizontal Directional Drilled Wetland and Waterbody Crossings* to protect sensitive resources from inadvertent releases during construction activities (all plans are included in Appendix 1B with the exception of the CBMPP which will be provided with the Implementation Plan prior to construction). The Project will be constructed via a combination of conventional and specialized construction procedures as described below. Depictions of typical pipeline construction procedures are provided in Appendix 1B.

### **1.3.1 General Construction Procedures**

Conventional open-cut pipeline construction techniques will be used for the majority of the Project. Construction of the Project will require two spreads and will consist of phased construction conducted in a sequential manner. The entire process will be coordinated in such a manner as to minimize the total time a tract of land is disturbed and therefore exposed to erosion and/or temporarily precluded from its normal use. General construction and installation procedures are described in the following sections and the typical construction sequence is reflected in Figure 1.3-1.

**Figure 1.3-1 Typical Pipeline Construction Sequence**

### **Clearing and Grading**

Prior to commencement of ground disturbing activities, a standard survey and stakeout will be conducted to identify ROW and workspace boundaries and to locate existing foreign utility lines within the construction ROW. Following the completion of the surveys, the construction ROW will be cleared of vegetation and debris. Within wetlands, stumps will be cut flush with the ground and left in place except where removal is necessary to facilitate the creation of a safe and level workspace. Cleared vegetation and debris along the ROW will be disposed of in accordance with federal, state, and local regulations either by burning, chipping and spreading (chipping and spreading would be performed in accordance with Section IV.F.e.3 of the FERC Plan), or transportation to a commercial disposal facility. Where necessary, to contain disturbed soils during clearing and grading in upland areas, and to minimize potential erosion and sedimentation of wetlands and waterbodies, temporary erosion control devices

(ECDs) will be installed prior to initial ground disturbance and will be maintained throughout construction.

### **Trenching**

Trenching involves excavation of a ditch for pipeline placement, and is accomplished through the use of a trenching machine, backhoe, or similar equipment. Trench spoil will be deposited adjacent to each trench within the construction work areas with topsoil segregation utilized where necessary per the FERC Plan and Procedures (see the specialized construction techniques section). In standard conditions, the trench will be excavated to a depth of approximately 6 feet to allow for a minimum of 3 feet of cover over the pipe as required by 49 CFR Part 192. Typically the bottom of the trench will be cut at least 12 inches greater than the width of the pipe. The width at the top of the trench will vary to allow the side slopes to be adapted to local conditions at the time of construction.

### **Pipe Stringing, Bending and Welding**

Following preparation of the trench, the new pipe will be strung and distributed along the ROW parallel to the trench. Depending on available workspace, some pipe may be fabricated off-site and transported to the ROW in differing lengths or configurations. Pipe will be bent by hydraulic bending machines, as necessary, to conform the pipe to the trench. Once in place along the ROW, pipe lengths will be aligned, bends fabricated, and joints welded together. Welding will be performed in accordance with the American Petroleum Institute Standard Number 1104, DOT pipeline safety regulations, 49 CFR Part 192, and company welding specifications. All welds will be coated for corrosion protection and visually and radiographically inspected to ensure there are no defects. Additionally, the entire pipeline will be visually inspected prior to lowering-in.

### **Pipeline Installation and Trench Backfilling**

Completed sections of pipe will be lifted off the temporary supports by side boom tractors or similar equipment, and placed into the trench. Prior to lowering-in, the trench will be visually inspected to ensure that it is free of rock and other debris that could damage the pipe or the coating. Additionally, the pipe and the trench will be inspected to ensure that the configurations are compatible. Tie-in welding and pipeline coating will occur within the trench to join the newly lowered-in section with the previously installed sections of pipe. Following this



activity, the trench will be backfilled with the previously excavated material and crowned to approximately 6 inches above its original elevation to compensate for subsequent settling.

### **Hydrostatic Testing**

Following backfilling of the trench, the pipeline will be hydrostatically tested to ensure that the system is free from leaks and is capable of safely operating at the design pressure. Hydrostatic testing will be conducted in accordance with the requirements of DOT pipeline safety regulations, 49 CFR 192, company testing specifications, and applicable state general discharge permits (MSG13 and ALG670000). Sections that are installed by directional drilling are generally hydrostatically tested to prove the pipe's integrity prior to installation. Due to the length of the Project, and variations in diameter along the route, withdrawal and discharge sites, as well as volumes, will vary. Table 1.3-1 presents the anticipated test water sources, discharge locations, approximate volumes to be used, and discharge rates. Environmental impacts from withdrawal and discharge of test water will be minimized through the application of measures outlined in the FERC Procedures and other specific construction practices including:

- Locating hydrostatic test manifolds outside of wetlands where practical;
- Withdrawing from water sources in compliance with appropriate agency requirements;
- Complying with all appropriate permit requirements;
- Screening intake from surface water sources to avoid entrainment of fish and other aquatic species;
- Maintaining adequate flow rates to protect aquatic life and provide for all waterbody uses and downstream withdrawals by existing users;
- Anchoring the discharge pipe for safety;
- Discharging test water through an energy dissipating and/or filtration device to minimize flooding and erosion, as well as reduce velocities, spread water flow, and promote ground penetration; and
- Discharging test water only in well vegetated upland areas.

Although there are no federally regulated restrictions in place for surface water withdrawals when water levels are low, agencies at the state level assume responsibility for implementing and enforcing restrictions on surface water withdrawals (Thomas, 2013).

The Mississippi Department of Environmental Quality (MDEQ) requires the locations and withdrawal volumes of all proposed water sources be disclosed to them at least 60 days prior to the commencement of any water withdrawal. Following initial notification, a letter of authorization is issued by the MDEQ which will include minimum flow rates for each source waterbody that must be met or exceeded at the time of water withdrawal. Should the source waterbody not meet or exceed MDEQ flow rate requirements, an alternate source must be utilized. Additionally, the MDEQ requires a second notification 72 hours prior to the commencement of any water withdrawal (Killebrew, 2013).

The Alabama Department of Economic and Community Affairs, Office of Water Resources does not restrict water withdrawals based on water levels. However, they do require email notification prior to the commencement of any water withdrawal. Email notification must include: the proposed withdrawal locations; anticipated withdrawal and discharge date; duration of hydrostatic testing; whether the test will utilize ground or surface water; the pumping capacity at the point of withdrawal; the anticipated withdrawal volume; and the name and contact information of a point of contact (Harper, 2013).

During testing, the water in the pipe will be pressurized above the maximum operating pressure and held for a minimum of eight hours. Any loss of pressure that cannot be attributed to other factors, such as temperature changes, will be investigated. In the event that a loss of pressure is detected, the pipeline will be repaired and the segment retested. Information regarding hydrostatic testing is provided in Tables 1.3-1, 1.3-2, and 1.3-3 below, and in Resource Report 2, Water Use and Quality and Resource Report 3, Fish, Wildlife and Vegetation.

Table 1.3-1 Proposed Hydrostatic Test Water Source and Discharge Locations for Pipeline Facilities							
Test Section	Milepost		Length (feet)	Water Source	Withdrawal Location (Milepost)	Approximate Volume (gallons)	Discharge Location (Milepost) <sup>a</sup>
	Begin	End					
1-1	0.00	2.07	10,930	Bogue Homo Creek	12.40	377,589	2.07
1-2	2.07	5.93	20,381	Bogue Homo Creek	12.40	696,382	5.93
1-3	5.93	12.56	35,006	Bogue Homo Creek	12.40	1,209,379	12.56
1-4	12.56	15.43	15,154	Bogue Homo Creek	12.40	523,517	12.56
1-5	15.43	16.27	4,435	Bogue Homo Creek	12.40	151,544	15.43
Total Water Withdrawal from Bogue Homo Creek: 2,958,411 gallons							
1-6	16.27	20.73	23,549	Thompson	20.58	813,549	16.27

Table 1.3-1 Proposed Hydrostatic Test Water Source and Discharge Locations for Pipeline Facilities							
Test Section	Milepost		Length (feet)	Water Source	Withdrawal Location (Milepost)	Approximate Volume (gallons)	Discharge Location (Milepost) <sup>a</sup>
	Begin	End					
				Creek			
1-7	20.73	24.32	18,955	Thompson Creek	20.58	647,671	20.73
1-8	24.32	42.32	95,040	Thompson Creek	20.58	3,283,382	24.32
Total Water Withdrawal from Thompson Creek: 4,744,602 gallons							
2-1	42.32	43.56	6,547	Escatawpa River	62.62	144,761	43.56
2-2	43.56	45.54	10,454	Escatawpa River	62.62	228,378	45.54
2-3	45.54	48.25	14,309	Escatawpa River	62.62	316,372	48.25
2-4	48.25	50.56	12,197	Escatawpa River	62.62	266,441	50.56
2-5	50.56	53.03	13,042	Escatawpa River	62.62	288,354	53.03
2-6	53.03	55.05	10,666	Escatawpa River	62.62	232,992	55.05
2-7	55.05	60.37	28,090	Escatawpa River	62.62	621,070	60.37
2-8	60.37	62.42	10,824	Escatawpa River	62.62	236,452	62.42
2-9	62.42	68.64	32,842	Escatawpa River	62.62	717,431	62.42
2-10	68.64	70.10	7,709	Escatawpa River	62.62	170,444	68.64
Total Water Withdrawal from Escatawpa River: 3,222,695 gallons							
<sup>a</sup> All hydrostatic test waters will be discharged at a rate of 2,000 gallons per minute.							

Table 1.3-2 Proposed Hydrostatic Test Water Source and Discharge Locations for Aboveground Facilities						
Facility	Test Section	Length (feet)	Water Source	Withdrawal Location (Milepost)	Approximate Volume (gallons)	Discharge Location (Milepost) <sup>a</sup>
Jasper Compressor Station	3-1	2,450	Commercial / Municipal	N/A	79,300	Onsite
Forrest Compressor Station	4-1	990	Commercial / Municipal	N/A	32,100	Onsite
Moss Point Compressor Station	5-1	1,700	Commercial / Municipal	N/A	13,200	Onsite
FGT Interconnect	6-1	615	Commercial / Municipal	N/A	13,600	Onsite
Pressure Limiting Facility	7-1	320	Big Creek Lake	69.89	10,400	Onsite
<sup>a</sup> All hydrostatic test waters will be discharged at a rate of 500 gallons per minute.						

**Table 1.3-3  
Proposed Hydrostatic Testing for Horizontal Directional Drills**

Name	Milepost		Length (feet)	Volume of Water (gallons) <sup>a</sup>	Water Source
	Begin	End			
Corinth Church Road	3.14	3.32	950	31,982	Commercial / Municipal
Tallahala Creek	3.94	4.22	1,487	49,750	Tallahala Creek
Bogue Homo Creek	12.21	12.52	1,632	55,080	Bogue Homo Creek
Thompson Creek	20.40	20.70	1,600	53,303	Thompson Creek
Gaines Creek	24.77	25.27	2,638	88,839	Gaines Creek
Atkinson Creek	28.53	28.90	1,962	65,741	Atkinson Creek
US Highway 98	31.35	31.51	860	28,428	Commercial / Municipal
Chickasawhay River	38.84	39.30	2,434	81,732	Pond on tract GR-293
Tom's Creek	40.37	40.61	1,283	42,643	Tom's Creek
Holland Road	50.27	50.49	1,176	25,026	Commercial / Municipal
Marshall Smith Road	55.51	55.81	1,586	34,126	Lake on tract GE-429
Red Creek-Hwy 612	61.37	61.74	1,970	42,089	Commercial / Municipal
Escatawpa River	62.42	62.94	2,732	59,152	Escatawpa River
Big Creek Lake	69.48	70.05	2,983	64,839	Big Creek Lake
<sup>a</sup> All hydrostatic test waters will be discharged at a rate of 500 gallons per minute at the site of the horizontal directional drill.					

### **Restoration and Clean-up**

Following pipeline installation and backfilling, disturbed areas will be restored and graded to preconstruction contours as closely as practicable. Construction debris and organic refuse unsuitable for distribution over the ROW will be disposed of at appropriate facilities in compliance with applicable regulations. Permanent erosion and sediment control measures will be installed as appropriate, and revegetation measures outlined in the Plan and Procedures, specific landowner requests, or in Project-specific plans will be implemented.

### **1.3.2 Specialized Construction Techniques**

In addition to conventional pipeline construction techniques, specialized construction techniques will be utilized in sensitive resource areas including waterbody crossings, wetland crossings, residential areas, agricultural areas, road and railroad crossings, utility crossings, areas with side slopes, and rocky areas. Specialized construction procedures are described below.

## **Waterbody Crossings**

### **Open-Cut**

Construction methods utilized at waterbody crossings are highly dependent on the characteristics of the waterbody encountered. Waterbodies less than 100 feet wide will typically be crossed via the conventional open-cut method. This method employs the same general construction procedures that were described above for mainline construction. Equipment will operate from the banks of the waterbody to the maximum extent practical to excavate a trench. As required by the Procedures, flow will be maintained at all times. Excavated material from the trench will be placed on the bank above the ordinary high water mark for use as backfill. The pipe segment will be prefabricated and weighted, as necessary, to provide negative buoyancy and placed below scour depth. Typical backfill cover requirements will be met, contours will be restored within the waterbody, and the banks will be stabilized via seeding and/or the installation of erosion control matting or riprap. Excess excavated materials will be distributed in an upland area in accordance with applicable regulations.

Impacts to water quality will be minimized through the implementation of measures outlined in the FERC Procedures. The pipeline trench will be excavated immediately prior to pipe installation to limit the duration of construction within the waterbody to 24 hours for crossings less than 10 feet and 48 hours for crossings between 10 feet and 100 feet. Excavated materials will be stored no less than 10 feet from the edge of the waterbody and temporary ECD's will be utilized to prevent the sediment from reentering the waterbody.

### **Flume**

The flume crossing method is an alternative to the open-cut method in which water flow is temporarily directed through one or more flume pipes placed over the excavation area. The use of the flume(s) allows trenching and pipeline installation to occur primarily under dry conditions without significant disruption of water flow.

### **Dam and Pump**

The dam and pump crossing method is similar to the flume crossing method in that it is an alternative to the open-cut method that allows trenching and pipeline installation to occur under relatively dry conditions with minimal impact to water flow. This method involves the temporary installation of dams (consisting of sandbags, bladders, or other impervious materials) upstream and downstream of the proposed crossing. Pumps are then used to dewater the excavation area and to transport the water flow around the construction work area.

### Horizontal Directional Drill (HDD)

The HDD crossing method will typically be utilized at waterbody crossings greater than 100 feet wide and certain road crossings. The HDD method allows for construction across a waterbody or road crossing without the excavation of a trench, by drilling a hole significantly below conventional pipeline depth, and pulling the pipeline through the pre-drilled hole. Gulf South will utilize HDDs to avoid direct impacts to sensitive resources such as wetlands and waterbodies, and/or to avoid areas in which constructability by conventional means is not feasible.

Gulf South performed geotechnical studies for all of the proposed HDD crossing locations, which included soil bores and laboratory testing. The results of these tests contributed to the construction design and methodology to ensure HDD feasibility and maximize the likelihood that it is successful. The geotechnical reports for each HDD location is provided in Appendix 1D and plan and profile drawings for each of the HDD crossings is included in Appendix 1B. Proposed HDD locations and proposed volumes of water for use in drilling operations is reflected in Table 1.3-4.

Name of HDD	Milepost		Length (feet)	Drilling Mud Water Volume (gallons)	Water Source
	Entry	Exit			
Corinth Church Road	3.32	3.14	950	235,019	Commercial / Municipal
Tallahalla Creek	3.94	4.22	1,487	367,984	Tallahalla Creek
Bogue Homo Creek	12.21	12.52	1,632	403,873	Bogue Homo Creek
Thompson Creek	20.40	20.70	1,600	395,941	Gravel Pit Lake on tract GE-136
Gaines Creek	25.27	24.77	2,638	652,810	Gaines Creek
Atkinson Creek	28.53	28.90	1,962	485,641	Atkinson Creek
US Highway 98	31.51	31.35	860	212,859	Commercial / Municipal
Chickasawhay River	39.30	38.84	2,434	602,516	Chickasawhay River
Tom's Creek	40.37	40.61	1,283	317,551	Commercial / Municipal
Holland Road	50.49	50.27	1,176	186,298	Commercial / Municipal
Marshall Smith Road	55.51	55.81	1,586	251,297	Private Well on tract GE-425
Red Creek-Hwy 612	61.74	61.37	1,970	312,128	Commercial / Municipal
Escatawpa River	62.42	62.94	2,732	432,755	Escatawpa River
Big Creek Lake	70.05	69.48	2,983	472,591	Big Creek Lake

To facilitate proposed HDD installations, Gulf South is planning to hand clear one to two paths of sufficient width, not to exceed 5 feet wide, to allow placement and surveying of an electric guide wire coil (closed loop system) along the ground surface between each HDD entry point and exit point, where possible. This coil is used to facilitate tracking of the location of down hole drilling equipment and to determine steering inputs during advancement of the pilot bore. Wireline guidance systems typically require two guide wires for HDD crossings that parallel the centerline of an installation with a variable spacing or offset on each side of the centerline depending on the depth of the particular HDD installation. At waterbody crossings, clearing for guide wires will stop at the water's edge, with no guide wire coil placed within the waterbody.

Following the completion of the pilot hole, reaming tools will be utilized to enlarge the hole to accommodate the pipeline diameter. The reaming tools will be attached to the drill string at the exit point and will then be rotated and drawn back to incrementally enlarge the pilot hole. During this process, drilling mud consisting of bentonite clay and water will be continuously pumped into the pilot hole to remove cuttings and maintain the integrity of the hole (sources and volumes of water for drilling mud are presented above and further discussed in Resource Report 2, Water Use and Quality). When the hole has been sufficiently enlarged, a prefabricated segment of pipe will be attached behind the reaming tool on the exit side of the crossing and pulled back through the drill hole towards the drill rig. In the event that a particular drill is unsuccessful Gulf South will implement their *Plan for Containment of Inadvertent Release of Drilling Mud During Horizontal Directional Drilled Wetland and Waterbody Crossings* included in Appendix 1B.

### **Wetland Crossings**

In accordance with construction methods outlined in the FERC Procedures, the construction ROW width will be limited to 75 feet in wetlands and buffers will be clearly marked during construction activities. Operation of construction equipment through wetlands will be limited to only that necessary for each stage of pipe installation (e.g. clearing, trenching, etc.). Topsoil segregation techniques will be utilized in unsaturated wetlands to preserve the seed bank and allow for successful restoration of the disturbed area. Disturbed wetlands will be monitored post-construction to ensure successful revegetation. To further minimize impacts to wetlands, refueling will not be conducted within, and fuel will not be stored within, 100 feet of wetlands. Site-specific plans for exceptions to the FERC Plan and Procedures are provided as Appendix 1C.

Wetland crossing methods will be determined based on site-specific conditions. Wetlands with soils that can support construction equipment may be crossed using the conventional lay method. Inundated wetlands may be crossed using the push/float method. Both of these methods are discussed further below.

### **Conventional Lay**

Wetland crossings for the Project may be accomplished via the conventional lay method in accordance with all applicable permits and the FERC Procedures. Construction techniques for this method are similar to the open-cut method in upland areas, however top soil segregation techniques will be utilized to facilitate revegetation following the completion of construction activities. In some cases, site specific conditions may not support construction equipment, but the area is still proposed for the conventional lay crossing method. In these instances construction mats will be used to minimize disturbances to wetland hydrology and maintain soil structure.

### **Push/Float**

The push/float method of construction may be used in inundated lowland or saturated wetland areas where conventional pipe laying equipment cannot be supported, and in areas that have a significant amount of water that would allow for pipe to be floated through the open trench. Implementation of this method requires excavation of the trench using low-ground weight equipment, limiting the need for grubbing and grading activities over the trench line or working side of the ROW. Topsoil segregation will not be implemented in areas where there is standing water or inundation at the time of construction.

Coated and weighted pipe will be welded at a staging area where floats are attached to the pipe. The welded pipe will be pushed along the water-filled trench until it is in place. Once in place over the trench, the floats will be cut and the pipe will be allowed to sink into place. The trench will then be backfilled using previously excavated material. Utilization of this method reduces wetland impacts and soil compaction by minimizing the number of construction passes necessary to install the pipe. Any required staging will be conducted within the normal ROW corridor to the extent necessary. If temporary workspace is required, approval will be requested from the FERC prior to use.



### **Proposed Site-specific Exceptions to the FERC Plan and Procedures**

Gulf South is committed to constructing the Project in accordance with the FERC Plan and Procedures to the extent feasible. However, there are places where the topography, ROW, and natural conditions make it impractical to implement some of the measures specified in these documents. In these specific cases, Gulf South is requesting site-specific exceptions to Sections V.B.2.a and VI.B.1.a (location of extra workspaces in relation to waterbodies and wetlands, respectively) and VI.A.3 (width of construction workspace in wetlands) of the FERC Plan and Procedures. Locations where alternative measures are being proposed and associated site-specific justifications and drawings are provided in Appendix 1C.

### **Road, Railroad, and Utility Crossings**

Paved roads, railroads, and utility line crossings (including pipelines and electrical lines) along the Project may be crossed via the use of open cut or subsurface bores. Safe and accessible conditions will be maintained during construction at road crossings per the FERC Plan. Some paved and most unpaved roads with limited traffic may be trenched pending appropriate consultation with the affected county or landowner in accordance with existing regulations. Construction at road crossings will typically be conducted within one day in order to minimize the interruption of traffic. Typically, a minimum of five feet cover over the pipe will be maintained at all road crossings (paved and unpaved) with a minimum of four feet of cover below side borrow/drainage ditches. Additionally, pipeline warning signs and/or markers will be used to identify the presence of a pipeline.

### **Residential Areas**

Construction activities in residential areas will be completed as quickly as safely practicable to minimize disturbances to residents. For residences located within 25 feet of the Project area, Gulf South will implement its site specific residential crossing detail plans provided as Appendix 8E and its Residential Construction Implementation Plan (included in Appendix 1B), which is further detailed in Resource Report 8, Land Use, Recreation, and Aesthetics.

In brief, Gulf South will make all reasonable efforts to maintain access to the residences during construction; however, if access is temporarily impeded, Gulf South will coordinate with landowners to minimize the disturbance. Temporary safety fences will be erected along the construction ROW in areas where construction activities will occur within close proximity to residences. Homeowners will be notified in advance of any expected utility interruption and the

estimated duration of outages. Per measures outlined in the FERC Plan, topsoil segregation will be used in residential areas unless specifically requested otherwise by a homeowner, or if Gulf South elects to import topsoil. Following the completion of construction activities, all debris will be removed and residential areas restored to preconstruction conditions. Gulf South will coordinate with landowners in an attempt to meet any special requests concerning landscaping restoration.

### **Agricultural Areas**

Topsoil segregation will be implemented in active croplands, pastures, and hayfields per the FERC Plan. A maximum of 12 inches (in deep soils) of topsoil will be removed and separated from the subsoil during construction. Following pipeline installation, the subsoil will be backfilled followed by the topsoil.

If any permanent drainage or irrigation structures are encountered during construction, Gulf South will make all attempts practicable to maintain irrigation facilities during construction. Temporary disturbances to irrigations will be coordinated with the landowner. While not anticipated in this region, if drain tiles are encountered during the Project, Gulf South will make all reasonable attempts to maintain flow during construction in order to avoid ponding in nearby areas. If drain tiles are disturbed during construction, Gulf South will restore them to preconstruction conditions.

### **Side Slopes**

Construction in areas with side slopes and steep topography will require the use of cross ROW leveling to provide safe working conditions. During grading, the uphill side of the construction ROW will be cut down. Material removed from the uphill side will then be used to fill the downhill side to create a safe and level surface for travel and equipment operation. Trenching would then occur from the newly leveled ROW. In areas where cross ROW leveling is utilized, up to an extra 50 feet of ATWS will often be necessary. Following pipeline installation, the ROW will be restored as nearly as practical to its original contours and stabilized in accordance with the FERC Plan.

### **Rock Removal and Blasting**

Gulf South does not anticipate having to remove large quantities of rock nor to conduct blasting to install the Project. However, should shallow bedrock, rock removal or blasting be necessary for pipeline installation, Gulf South will obtain all applicable permits and approvals

and notify the FERC prior to conducting such activities. All pre-blasting investigations and implementation of blasting techniques will be performed by Gulf South's contractor in accordance with federal, state, and local regulations.

### **1.3.3 Aboveground Facilities**

Construction of the aboveground facilities associated with the Project will occur concurrently with construction of pipeline facilities. Sites associated with the three proposed compressor stations will be cleared, graded, and soils will be leveled and compacted for placement of building foundations. Any soils excavated for the placement of the foundations will be compacted in place and excess soil will be used elsewhere on site or disposed of in an approved offsite location. Fencing will be constructed around the station site. High strength concrete, reinforced as necessary, will be utilized for building foundations associated with major compressor equipment. All compressor stations, meter stations, and mainline valves will be fully automated and capable of being remotely monitored and controlled via a SCADA system.

Compressor units and associated equipment will be placed on the foundations. Proposed buildings or enclosures will be constructed around the foundations after the compressor units are in place. Noise abatement equipment and emission controls will be installed in buildings housing compressor units. Pipe and other equipment will be assembled and welded on site. Aboveground and below ground piping will be installed and hydrostatically tested prior to being placed in service. Additionally, safety and control devices will be installed and tested prior to operation. Gravel fill, asphalt, or concrete will be used to construct roads and parking areas. Upon completion of construction activities, disturbed areas that have not been paved or covered with gravel will be finish-graded and seeded.

Other aboveground facilities, such as mainline valves, meter and regulator facilities, and pig launchers/receivers, will be constructed using the same general procedures as those described above for compressor stations.

### **1.3.4 Environmental Compliance, Training, and Inspection**

To ensure that construction of the proposed facilities will comply with mitigation measures identified in these Resource Reports, FERC analysis of the Project, and the requirements of other federal and state permitting agencies, Gulf South will include, whenever possible, implementation details in its construction drawings and specifications. Gulf South's selected contractors will receive copies of the specifications and a Construction Drawing

Package containing, but not limited to, pipeline, meter station equipment and launcher/receiver valve drawings designated as being approved for construction. In order to solicit accurate bids for construction, Gulf South will provide specifications and advance versions of the Construction Drawing Package to prospective pipeline contractors.

Following the completion of construction, Gulf South will provide instructions and documentation in the form of a maintenance plan to Gulf South's operating personnel to address post-construction requirements. The maintenance plan will include copies of pertinent permits with particular reference to long-term permit conditions. Gulf South will require selected contractors to install facilities according to Gulf South's specifications, the Construction Drawing Package, the terms of the negotiated contract and all applicable permits and clearances.

To specifically support the application of proper field construction methods, Gulf South has prepared a SWPPP (included in Appendix 1B) and will prepare a CBMPP (to be provided with the Implementation Plan prior to construction) incorporating best management practices, industry standards and provisions of the FERC Plan and Procedures. To protect surface and groundwater resources in construction and support areas from inadvertent releases of fuel and other mechanical fluids, Gulf South has prepared a Project-specific SPCC Plan. The following construction related plans have been prepared to assist prospective contractors in being aware of the environmental requirements that apply to the Project: *Plan for the Unanticipated Discovery of Historic Properties or Human Remains During Construction*, *Plan for the Unanticipated Discovery of Contaminated Environmental Media*, *Plan for Containment of Inadvertent Release of Drilling Mud During Horizontal Directional Drilled Wetland and Waterbody Crossings*, and *Plan for Reducing Noise Impacts From Horizontal Directional Drill Operations* (provided in Appendix 1B).

The inspectors for the Project will be qualified contractors. Gulf South will conduct training for its field construction personnel and contractor's personnel before the Project kick-off and as necessary during construction. This training will focus on environmental compliance with all applicable environmental mitigation measures.

For purposes of quality assurance and compliance with mitigation measures, other applicable regulatory requirements, and Gulf South specifications, Gulf South will be represented by a Chief Inspector. The Chief Inspector will be assisted by one or more Craft Inspectors and at least one Environmental Inspector. The Environmental Inspector will be

present throughout construction of the Project and follow-up restoration and will have the authority to enforce permit and considerations and comments from the FERC. The Environmental Inspector reports directly to Gulf South's Environmental Project Manager and has stop work authority. The Environmental Inspector's duties are consistent with those contained in paragraph II.B ("Responsibilities of the Environmental Inspector") of the FERC Plan and shall be:

- Responsible for monitoring and documenting compliance with all mitigative measures required by the Commission's Order and any other grants, permits, certificates, or other authorizing documents;
- Responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract or any other authorizing document;
- Empowered to order correction of acts that violate the FERC Plan and Procedures or the environmental conditions of the Commission's Order, or any other authorizing document (i.e., United States Army Corps of Engineers [USACE] Section 404 permit) and, if necessary to stop work authority;
- A full-time position separate from all other activity inspectors; and
- Responsible for maintaining status reports and training records.

An adequate number of copies of the Construction Drawing Package will be distributed to Gulf South's Inspectors and to contractor's supervisory personnel. If the contractor's performance is unsatisfactory, the terms of the contract allow Gulf South to stop work in progress and cause a contractor to begin remedial work.

The Engineering and Construction Department is responsible for designing and constructing certificated facilities in compliance with all applicable requirements and agreements. Any issues of non-compliance with mitigation measures or other regulatory requirements that cannot be solved in the field will be addressed by the Project Manager. Operations will be responsible for long-term Project maintenance and regulatory compliance.

Routine reporting or specific communication with Commission staff regarding design, installation, and maintenance of the facilities described in this Resource Report is the responsibility of Gulf South's Environmental Affairs and Regulatory Groups. Commission staff

inquiries regarding these proposed facilities should be addressed to Gulf South's Project Manager accordingly.

### **1.3.5 Construction Schedule**

To meet market demand, Gulf South's planned in-service date for Project facilities is November 1, 2014. Pending all necessary authorizations and permits, Gulf South anticipates mobilization and construction of compressor stations to start March 1, 2014 with full Project construction underway by April 1, 2014. This schedule is based on Gulf South's request for final approval by the FERC no later than October 2013 as well as the anticipated receipt of permits and approvals (see Section 1.6).

## **1.4 OPERATION AND MAINTENANCE**

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Gulf South will operate and maintain all facilities associated with the Project in accordance with applicable federal and state requirements. Facilities will be operated and maintained in accordance with the DOT *Minimum Federal Safety Standards* (49 CFR 192) pursuant to the provisions of the *Natural Gas Pipeline Safety Act* of 1968 as amended.

### **Pipelines**

Maintenance of pipeline facilities will include periodic visual inspections as well as routine pedestrian surveys, as necessary, in accordance with the applicable regulatory requirements and Gulf South's Operations requirements. In accordance with, DOT requirements, leak inspections and cathodic protection maintenance will be conducted. Additionally, all pipeline markers and signs will be routinely inspected and will be replaced as necessary to ensure that pipeline locations are clearly identified.

Post-construction monitoring will be conducted to identify erosion or washout areas, damaged or non-functional permanent erosion control devices, and to evaluate restoration of impacted wetlands. Any issues identified during post-construction monitoring would be addressed in accordance with applicable federal and state regulations, and the FERC Plan and Procedures.

Maintenance of the permanent pipeline ROW will include periodic mowing as necessary, in accordance with the FERC Plan and Procedures to allow for visual inspections. Actively cultivated areas will be allowed to revert to preconstruction use for the full width of the ROW. In all other upland areas a 50-foot wide permanent pipeline ROW will be maintained in a primarily

herbaceous state in accordance with the FERC Plan. In wetlands, a 10-foot corridor centered over the pipeline will be maintained. Trees within 15 feet of the pipeline and that are greater than 15 feet in height may be cut and removed in accordance with the FERC Procedures to ensure the continued integrity of the pipeline.

### **Compressor Stations**

Approximately three to five new permanent Gulf South employees will perform operation and maintenance activities at the new compressor stations, including calibration, inspection, and other scheduled or routine maintenance. Operational testing will be performed on safety equipment to ensure proper functioning. Any problems detected will be addressed immediately.

## **1.5 FUTURE PLANS AND ABANDONMENT**

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Gulf South currently has no plans to expand or abandon the Project facilities described herein.

## **1.6 PERMITS AND APPROVALS**

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Gulf South has identified all necessary permits and approvals that will be required for construction of the Project. The anticipated submittal and receipt of each permit application and approval is provided in Table 1.6-1. Copies of agency correspondence to date are included in Appendix 1E.

Table 1.6-1 Federal and State Permits and Approvals			
Agency or Organization	Permit/Approval	Anticipated Submittal	Anticipated Receipt
<b>Federal</b>			
United States Fish and Wildlife Service, Jackson and Daphne Ecological Services Field Office	Threatened and Endangered Species Consultation/ Biological Assessment	March 7, 2013	Threatened and Endangered Species Concurrence – June 2013 Biological Opinion – October 2013
United States Army Corps of Engineers, Mobile District	Section 404/10 Individual Permit or NWP 12	March 7, 2013	October 2013
<b>State</b>			
Mississippi Department of Environmental Quality	Section 401 Water Quality Certification (automatic with NWP 12)	March 7, 2013	October 2013
	Hydrostatic Test Water Withdrawal/Discharge Permit (MSG13)	January 2014	March 2014
	State Construction/Operating Permit (Mississippi Regulation APC-S-2)	February 18, 2013	October 2013
Mississippi Department of Wildlife and Fisheries	Threatened and Endangered Species Consultation/Warm Water and Cool Water Variance Request	March 7, 2013	June 2013
Mississippi Department of Archives and History	Archaeological and Historical Consultation	March 7, 2013	June 2013
Mississippi Department of Marine Resources	Coastal Zone Wetland Permitting	March 7, 2013	October 2013
Alabama Wildlife and Freshwater Fisheries Division	Threatened and Endangered Species Consultation/Warm Water and Cool Water Variance Request	March 7, 2013	June 2013
Alabama Department of Environmental Management	Section 401 Water Quality Certification (automatic with NWP 12)	March 7, 2013	October 2013
	NPDES Construction Best Management Practices Plan (CBMPP)	October 2013	March 2014
	Hydrostatic Test Discharge Permit (ALG670000)	January 2014	March 2014
Alabama Department of Archives and History	Archaeological and Historic Consultation	March 7, 2013	June 2013
Alabama Department of Economic and Community Affairs Office of Water Resources	Hydrostatic Test Water Withdrawal	January 2014	March 2014



Table 1.6-1 Federal and State Permits and Approvals			
Agency or Organization	Permit/Approval	Anticipated Submittal	Anticipated Receipt
<b>Tribes</b>			
Coushatta Tribe of Louisiana	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Alabama Coushatta Tribe of Texas	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Caddo Nation	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Mississippi Band of Choctaw Indians	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Jena Band of Choctaw Indians	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Tunic-Biloxi Indian Tribe	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Poarch Band of Creek Indians	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Echota Cherokee Tribe of Alabama	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Cherokee Tribe of Northeast Alabama	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Ma-Chis Lower Creek Indian Tribe	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Star Clan of Muscogee Creeks	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Cher-O-Creek Intra Tribal Indians	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Mowa Band of Choctaw Indians	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
Piqua Shawnee Tribe	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.
United Cherokee Ani-Yun-Wiya Nation	Tribal Consultation	November 9, 2012 February 1, 2013	No Response to date.

## 1.7 LANDOWNERS, GOVERNMENTS, AND AGENCIES

Prior to the commencement of Project activities Gulf South will notify all affected landowners pursuant to 18 CFR 157.6(d). The letters will also provide information regarding procedures to follow in the event that the landowner has any concerns or problems during construction. The *Environmental Complaint Resolution Plan* provided in Appendix 1B outlines these procedures and provides an example of the letter that will be distributed by Gulf South to affected landowners prior to construction. Names and addresses of landowners affected by the Project are provided as Privileged Information in Appendix 1F (Volume III).

## 1.8 NON-JURISDICTIONAL FACILITIES

Non-jurisdictional facilities associated with the Project include minor facilities necessary to provide power to the compressor stations. The Forrest Compressor Station will require the addition of a new electrical power line. This new power line will interconnect to nearby Dixie

Electric Power Association's existing overhead poles rated 7.2 kilovolts (kV) distribution line located right outside the fence of the proposed Forrest station. The incoming power will be connecting to a new pad mounted service transformer at the station.

The Jasper Compressor Station will require the addition of approximately 1.2 miles of distribution lines rated at 7.2 kV from the nearby Southern Pine EPA's distribution line. This new three phase distribution line will follow Southern Pine EPA's existing ROW and will require a ROW easement for entry to the Jasper Compressor Station. The incoming distribution line will be connecting to a new pad mounted main service transformer at the station.

The Moss Point Compressor Station will require new electrical service that will be provided by Singing River Electrical Co-op. The new service feed will connect to the existing 7.2 kV distribution lines on the east side of HWY 63, cross the road at the Gulf South ROW, and will be strung on new power poles for approximately 1,000 feet along the proposed new access road. Singing River will install a pole mounted transformer system at the compressor station to supply 480 volts.

The FERC uses the four factor test to determine whether there is sufficient federal control and responsibility over a project as a whole to warrant environmental analysis of project-related non-jurisdictional facilities. These factors are:

- Whether the regulated activity comprises "merely a link" in a corridor type project
- Whether there are aspects of a non-jurisdictional facility in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity
- The extent to which the entire project would be within jurisdiction of the FERC
- The extent of cumulative federal control and responsibility

With regard to the first factor, Gulf South's Project will serve as a new jurisdictional natural gas pipeline transportation system between producers and consumers. Although the Project will only transport natural gas and Gulf South does not sell directly to consumers, the Project's regulated facilities represent more than "merely a link" in a corridor type project.

With regard to the second factor, Gulf South has established a pipeline route and locations of other jurisdictional facilities associated with the Project. However, the locations of the non-jurisdictional facilities (power lines) have not been established at this time. Therefore, the non-jurisdictional facilities have had no effect on the location or configuration of the Project facilities.

With regard to the third factor, the FERC has no authority over the permitting, licensing, funding, construction, or operation of local electric lines. Therefore, the “entire project” would not be under jurisdiction of the FERC.

With regard to the fourth factor, the electrical facilities are part of private construction projects under state and local jurisdiction. The federal government has no financial involvement and no federal lands are involved. Therefore, no cumulative federal control and responsibility is associated with these non-jurisdictional facilities.

The four factor test indicates that there is only one factor that favors examining the non-jurisdictional facilities. Therefore, justification is insufficient to warrant environmental review of the non-jurisdictional facilities by the FERC.

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## **1.9 CUMULATIVE IMPACTS**

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Gulf South has attempted to identify other recently completed, present, and future major construction projects, in the localities surrounding this Project, to evaluate potential cumulative effects. Records of all correspondences with state and county planning departments and agencies, are provided in Appendix 1E, and Table 1.9-1 below provides a summary of the agencies and organizations that were queried for information pertaining to major projects in the vicinity of this Project. To date, no major projects have been identified through these searches and/or correspondences.

Should Gulf South identify any major projects with potential to result in cumulative impacts, accepted guidance practices (CEQ, 1997; EPA, 1999) will be utilized to evaluate each project. Commonalities of impact analysis will be employed to determine the relevance of each identified project by utilizing the guidelines below. If commonality is established, Gulf South will evaluate potential adverse cumulative impacts to environmental resources (wetlands, waterbodies, wildlife, vegetation, soils, land use, and cultural resources) from the combined construction. Evaluation will include:

- Does the identified project impact a resource area potentially affected by the Project;
- Does the identified project have impacts within all, or part of, the Project area; and
- Does the identified project cause this impact within all, or part of, the time span for potential impacts from the Project?

<b>Table 1.9-1 Results of Cumulative Impact Evaluation</b>		
<b>Agency</b>	<b>County/State</b>	<b>Major Projects Identified</b>
Mississippi DOT	All- MS	0
Alabama DOT Road Projects	All- AL	0
Mississippi Development Authority	All- MS	0
Alabama Public Service Commission	All- AL	0
Forrest County Board of Supervisors	Forrest	0
Forrest County Planning Department	Forrest	0
Mobile County Engineering Department	Mobile	0
Batson and Brown Engineering (County Engineers)	Greene and George, MS	0
The Walker Associates, PLLC	Perry	0
Mid-Mississippi Development District	Jasper	0

Through Gulf South's on-site reconnaissance, one planned residential area was identified along the pipeline route just south of milepost 65.9. In this area, the new pipeline will be colocated on the north side of Gulf South's existing 311 mainline which separates it from the proposed development. Gulf South has consulted with landowners and developers to ensure that the pipeline will not adversely impact, or be impacted by, the new development. As a result of these consultations, Gulf South has made adjustments to the route including a crossover from the south to colocate on the north side of Gulf South's existing 311 mainline separating it from the proposed development. Gulf South has also taken into consideration placement of future driveways and utilities that could cross the proposed pipeline corridor. Currently, there are no available construction plans or pending permits to indicate near-term development. Due to the minor and isolated nature of this development and absence of pending permits, no adverse cumulative impacts are anticipated.

## 1.10 REFERENCES

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Council on Environmental Quality. 1997. *Considering Cumulative Effects Under the National Environmental Policy Act*.

Harper, Michael. February 20, 2013. Alabama Department of Economic and Community Affairs, Office of Water Resources. Personal Communication with Emma Clements (Staff Biologist, Perennial Environmental Services, LLC).

Killebrew, Ronn. February 22, 2013. Mississippi Department of Environmental Quality. Personal Communication with Emma Clements (Staff Biologist, Perennial Environmental Services, LLC).

Thomas, Christopher. February 20, 2013. United States Environmental Protection Agency, Region 4 NPDES Permitting Basics. Personal Communication with Emma Clements (Staff Biologist, Perennial Environmental Services, LLC).

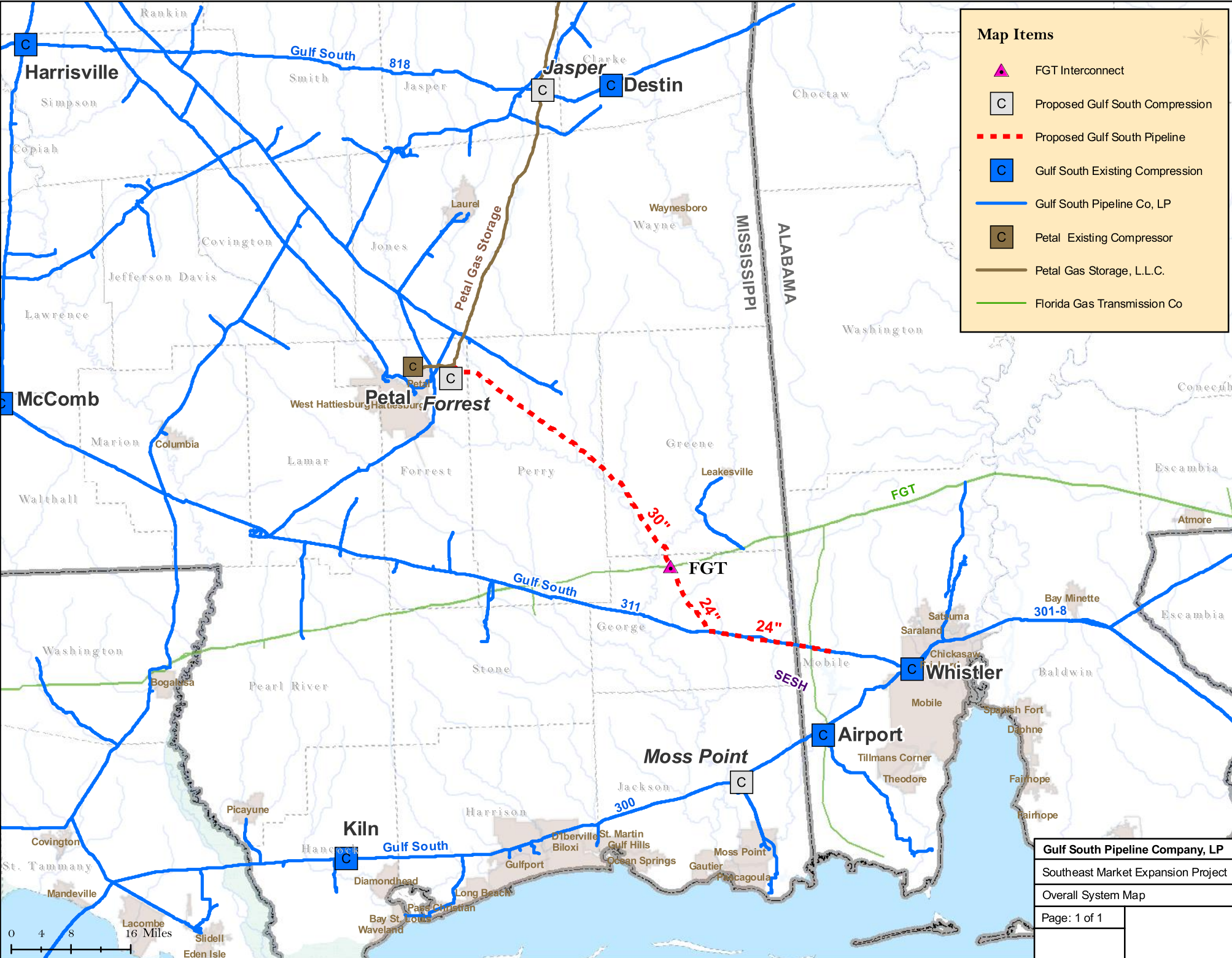
United States Energy Information Administration. 2009. An Updated Annual Energy Outlook 2009 Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook. Report #: SR-OIAF/2009-03. <http://www.eia.gov/oiaf/servicerpt/stimulus/index.html>. Accessed December 2012.

United States Environmental Protection Agency, Office of Federal Activities (2252A). 1999. *Consideration Of Cumulative Impacts In EPA Review of NEPA Documents*.

# **Appendix 1A**

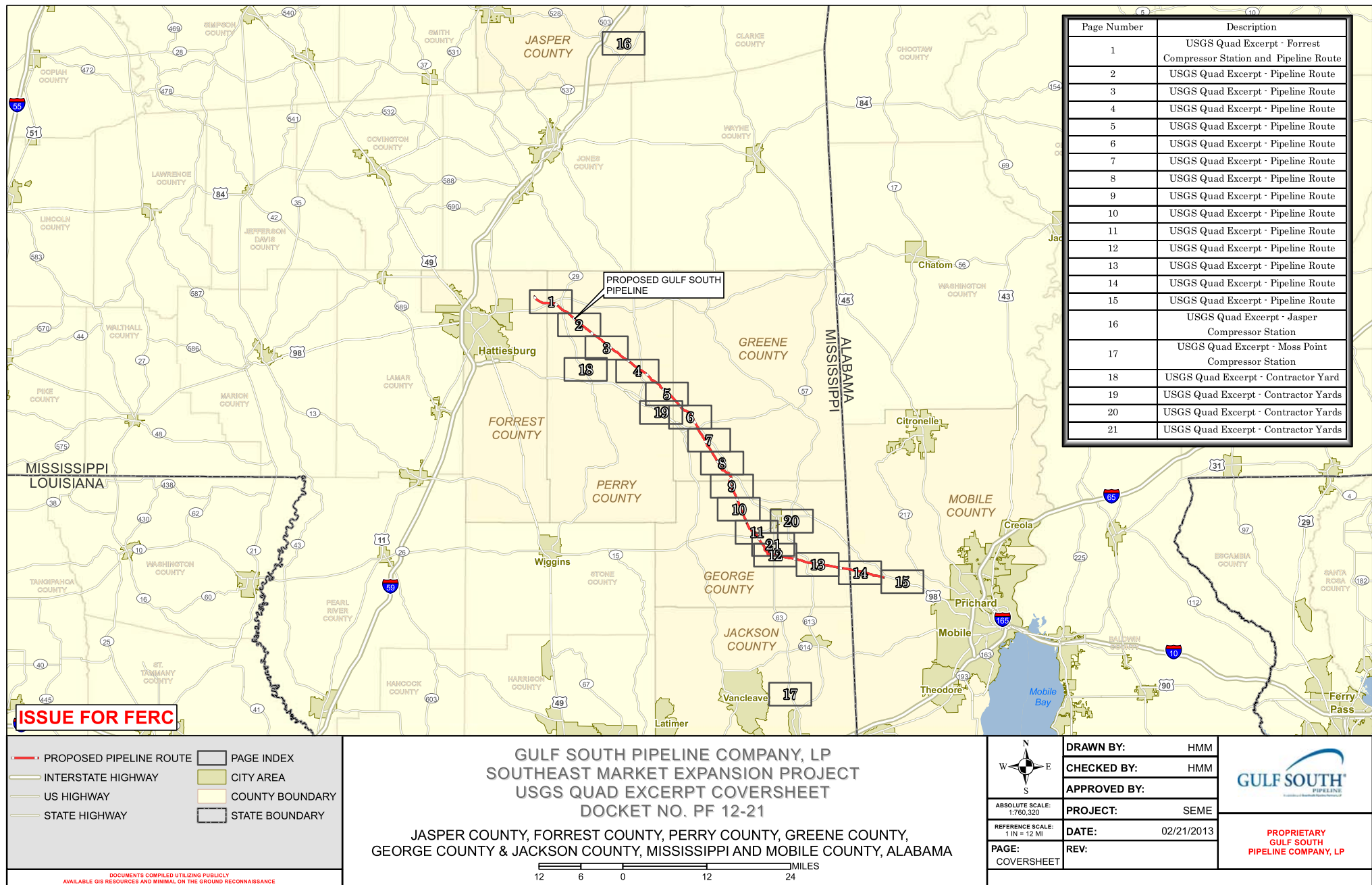
## **Project Mapping**

## **Overall System Map**

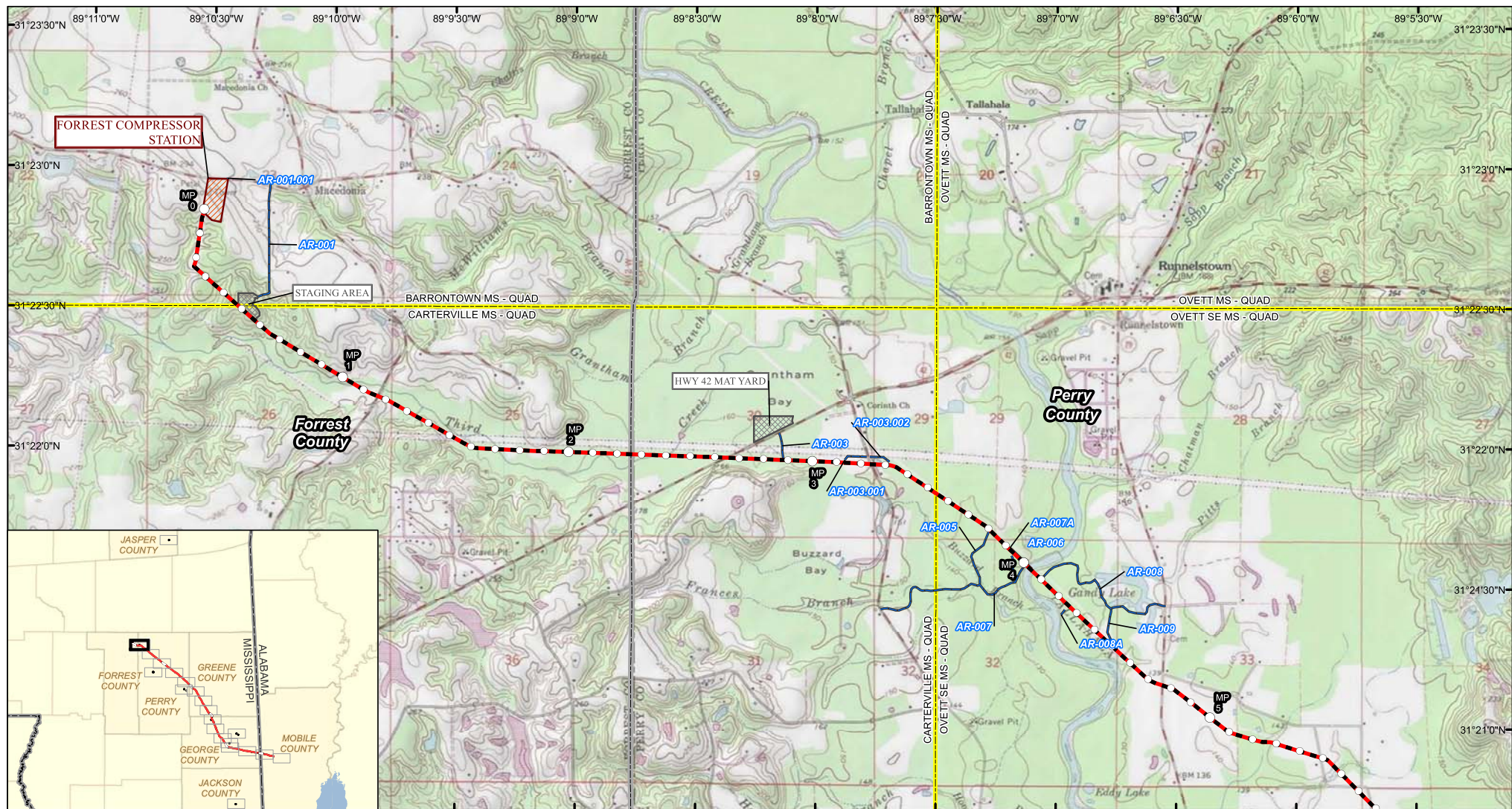




## **Topographic Quadrangle Excerpts**



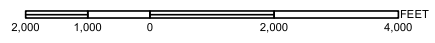




- PROPOSED PIPELINE MILE POST
- ✚ PROPOSED MLV SITE
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- PROPOSED FACILITY
- ▨ PROPOSED COMPRESSOR STATION
- ▨ PROPOSED CONSTRUCTION YARD
- ▭ COUNTY/STATE BOUNDARY
- ▭ USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
BARRONTOWN, MS  
CARTERVILLE, MS  
OVETT SE, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
FORREST COUNTY, MS AND PERRY COUNTY, MS

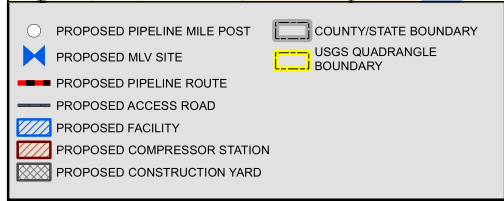
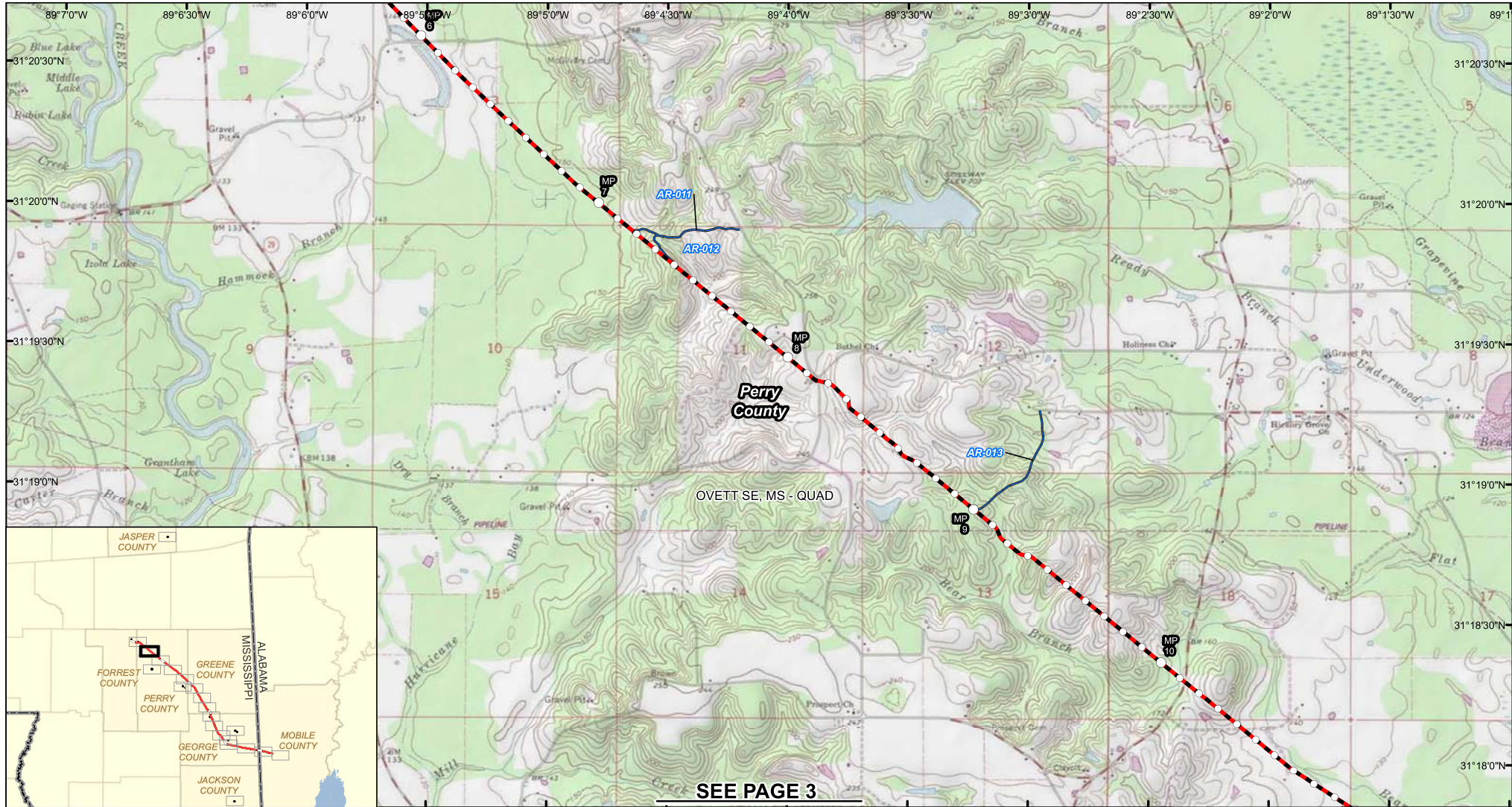


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GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
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PERRY COUNTY, MS



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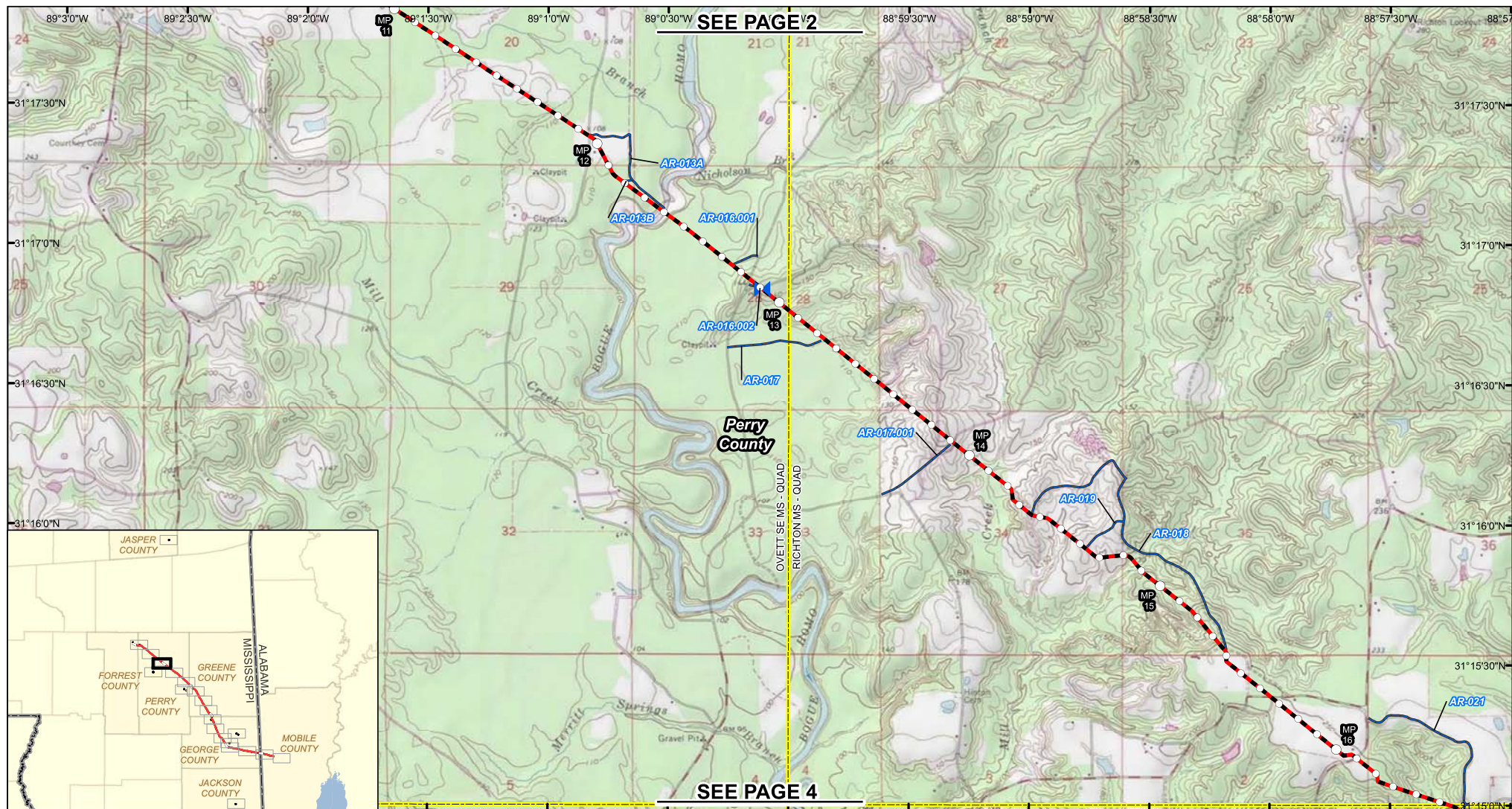
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GULF SOUTH  
PIPELINE COMPANY, LP





SEE PAGE 2

SEE PAGE 4

- PROPOSED PIPELINE MILE POST
- PROPOSED MLV SITE
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- ▨ PROPOSED FACILITY
- ▨ PROPOSED COMPRESSOR STATION
- ▨ PROPOSED CONSTRUCTION YARD
- ▭ COUNTY/STATE BOUNDARY
- ▭ USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
OVETT SE, MS  
RICHTON, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
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PERRY COUNTY, MS



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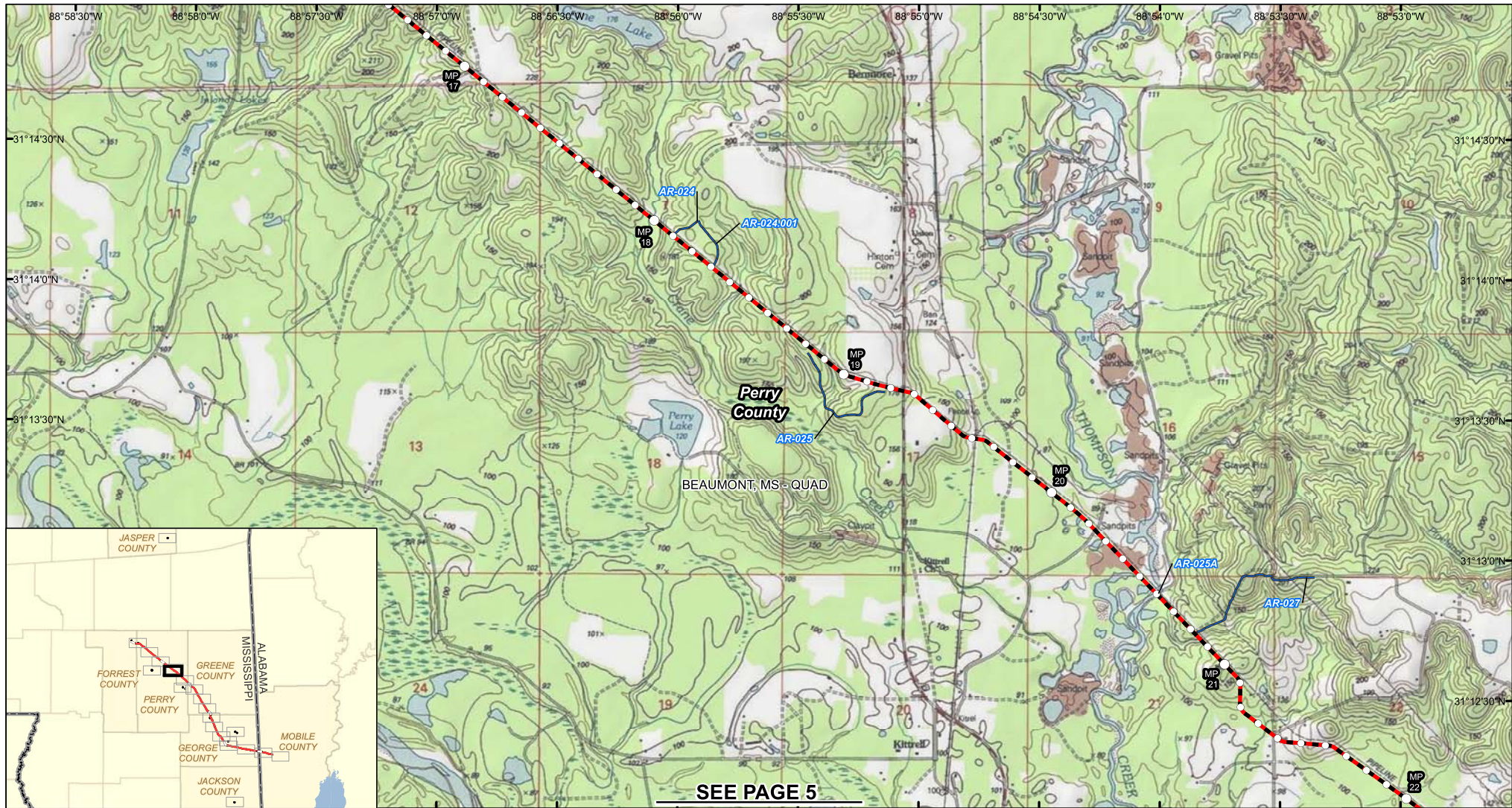
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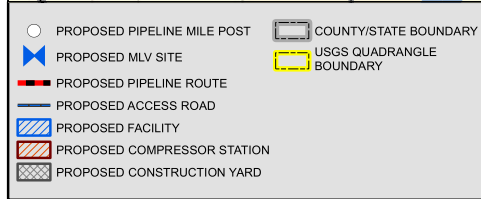


PROPRIETARY  
GULF SOUTH  
PIPELINE COMPANY, LP





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USGS QUAD NAMES:  
BEAUMONT, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
PERRY COUNTY, MS

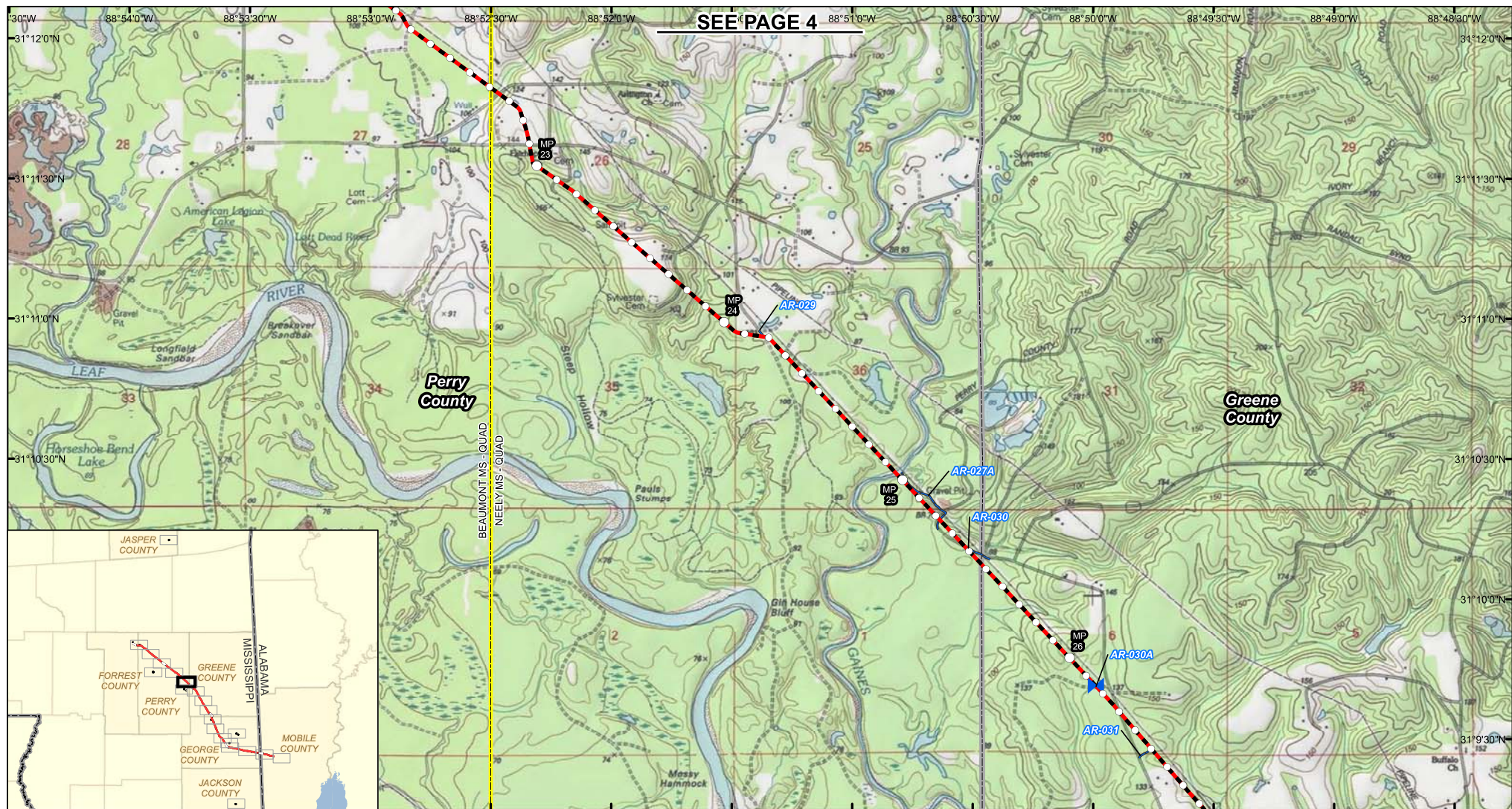


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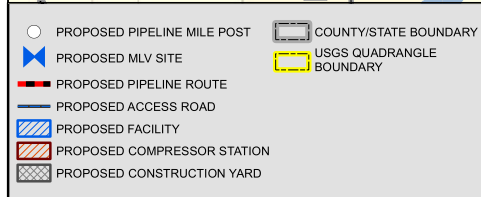


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GULF SOUTH  
PIPELINE COMPANY, LP





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USGS QUAD NAMES:  
BEAUMONT, MS  
NEELY, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
PERRY COUNTY, MS AND GREENE COUNTY, MS



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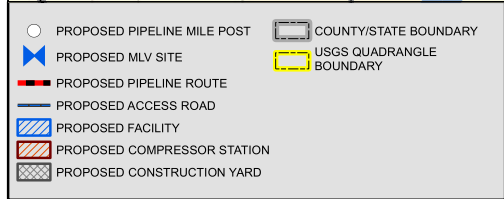
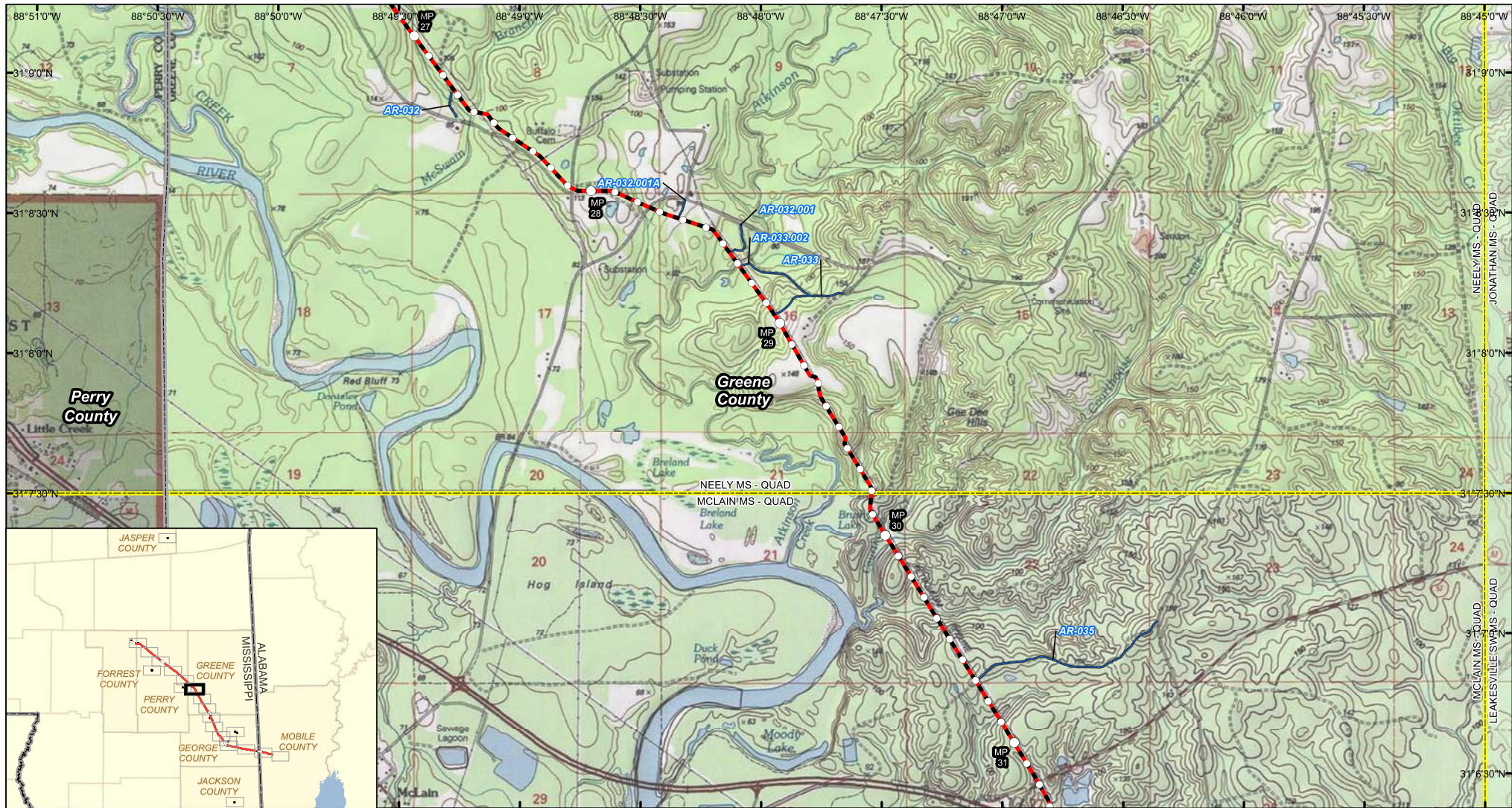
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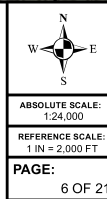
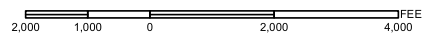
PROPRIETARY  
GULF SOUTH  
PIPELINE COMPANY, LP





USGS QUAD NAMES:  
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MCLAIN, MS

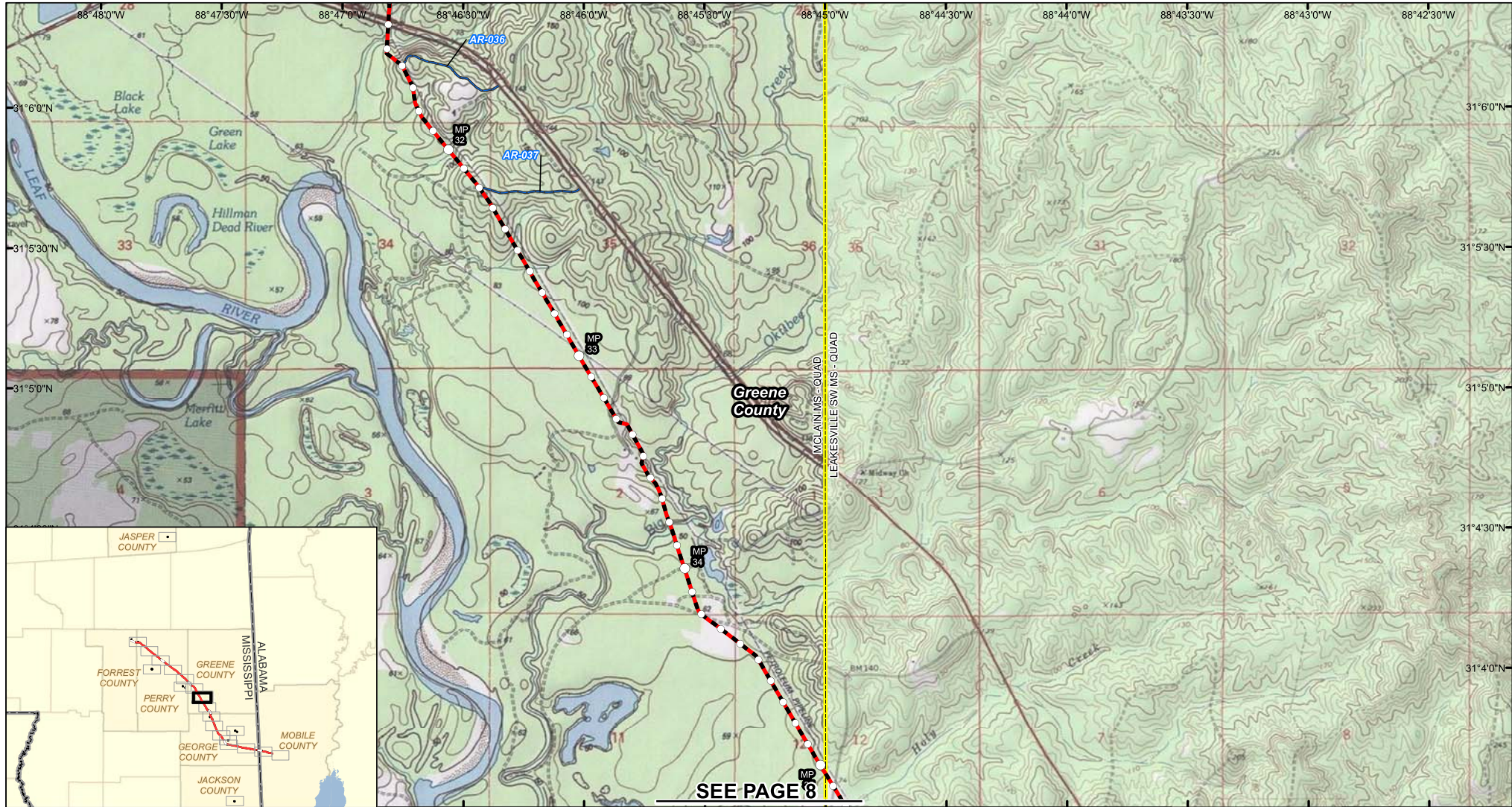
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— PROPOSED PIPELINE ROUTE	
— PROPOSED ACCESS ROAD	
▨ PROPOSED FACILITY	
▨ PROPOSED COMPRESSOR STATION	
▨ PROPOSED CONSTRUCTION YARD	

USGS QUAD NAMES:  
MCLAIN, MS  
LEAKESVILLE SW, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GREENE COUNTY, MS



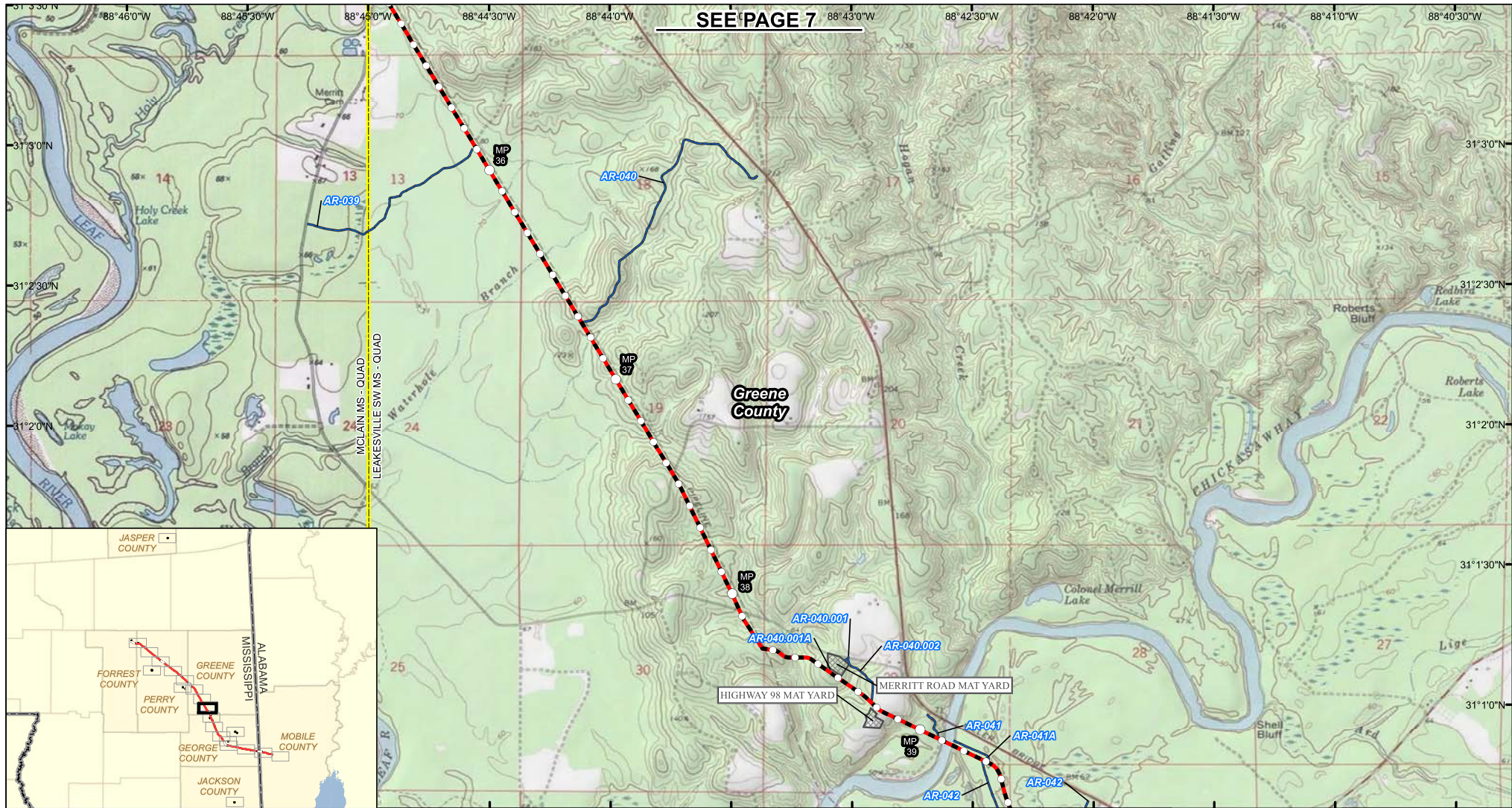
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**GULF SOUTH**  
PIPELINE

PROPRIETARY  
GULF SOUTH  
PIPELINE COMPANY, LP





SEE PAGE 7

- PROPOSED PIPELINE MILE POST
- ✚ PROPOSED MLV SITE
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- PROPOSED FACILITY
- PROPOSED COMPRESSOR STATION
- PROPOSED CONSTRUCTION YARD
- COUNTY/STATE BOUNDARY
- USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
LEAKESVILLE SW, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GREENE COUNTY, MS

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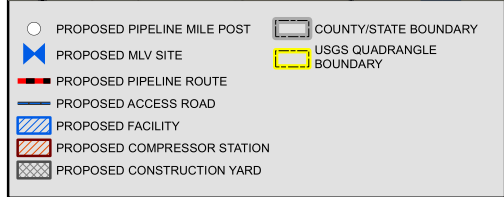
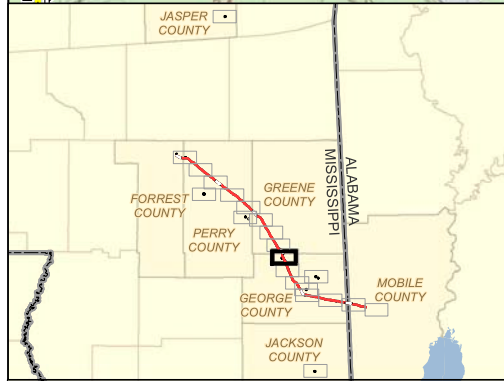
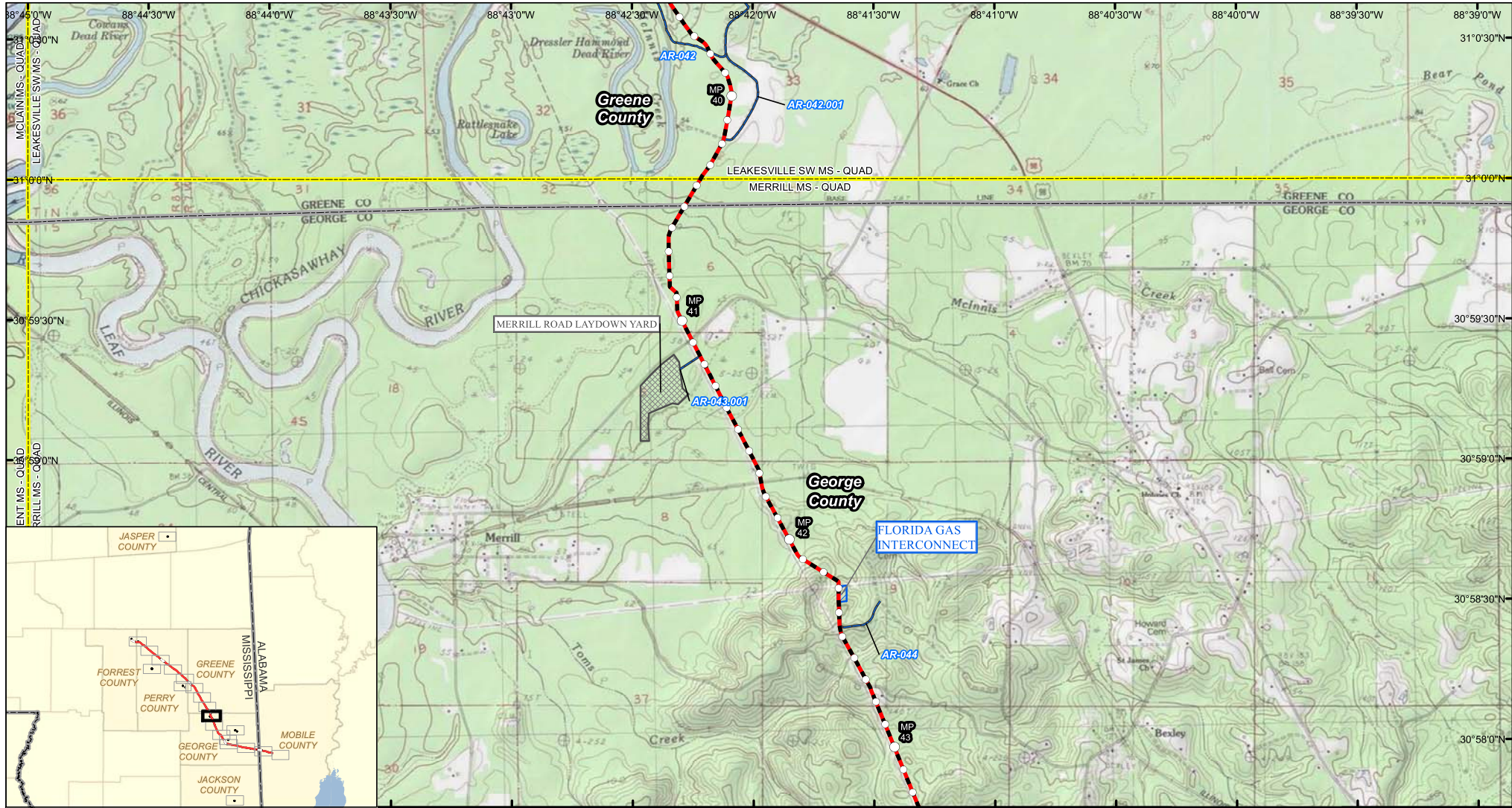
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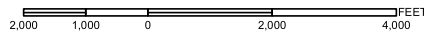
PROPRIETARY  
GULF SOUTH  
PIPELINE COMPANY, LP





USGS QUAD NAMES:  
LEAKESVILLE SW, MS  
MERRILL, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GREENE COUNTY, MS & GEORGE COUNTY, MS

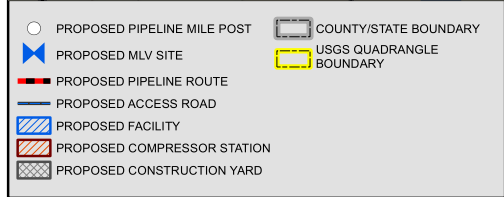
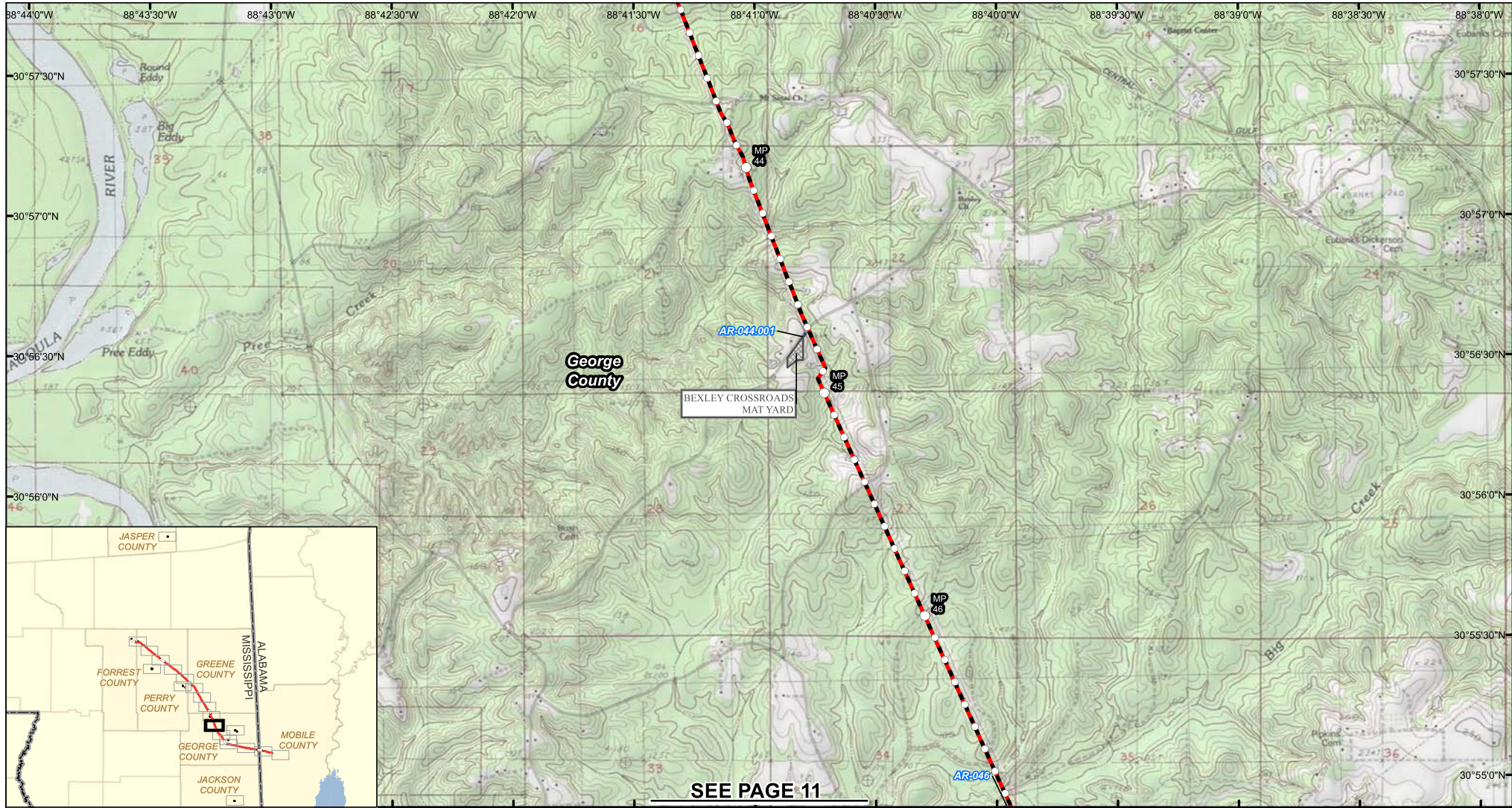


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**GULF SOUTH**  
PIPELINE

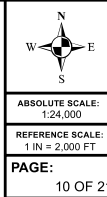
PROPRIETARY  
GULF SOUTH  
PIPELINE COMPANY, LP





USGS QUAD NAMES:  
MERRILL, MS

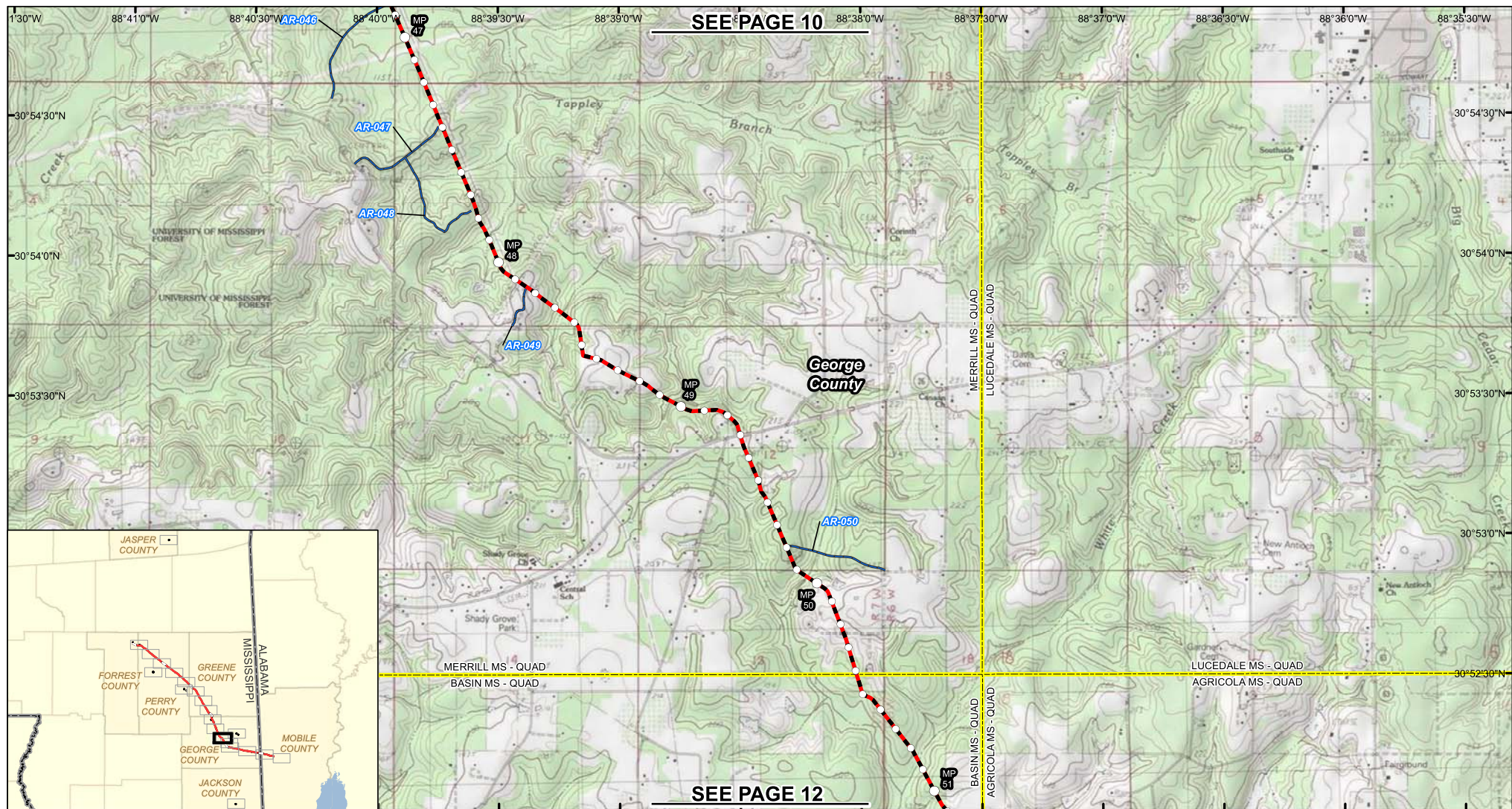
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**SOUTHEAST MARKET EXPANSION PROJECT**  
**USGS QUAD EXCERPT**  
**PROPOSED PIPELINE ROUTE**  
**GEORGE COUNTY, MS**



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USGS QUAD NAMES:  
MERRILL, MS  
BASIN, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GEORGE COUNTY, MS



- PROPOSED PIPELINE MILE POST
- ✚ PROPOSED MLV SITE
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- PROPOSED FACILITY
- PROPOSED COMPRESSOR STATION
- PROPOSED CONSTRUCTION YARD
- COUNTY/STATE BOUNDARY
- USGS QUADRANGLE BOUNDARY

DOCUMENTS COMPILED UTILIZING PUBLICLY  
AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE



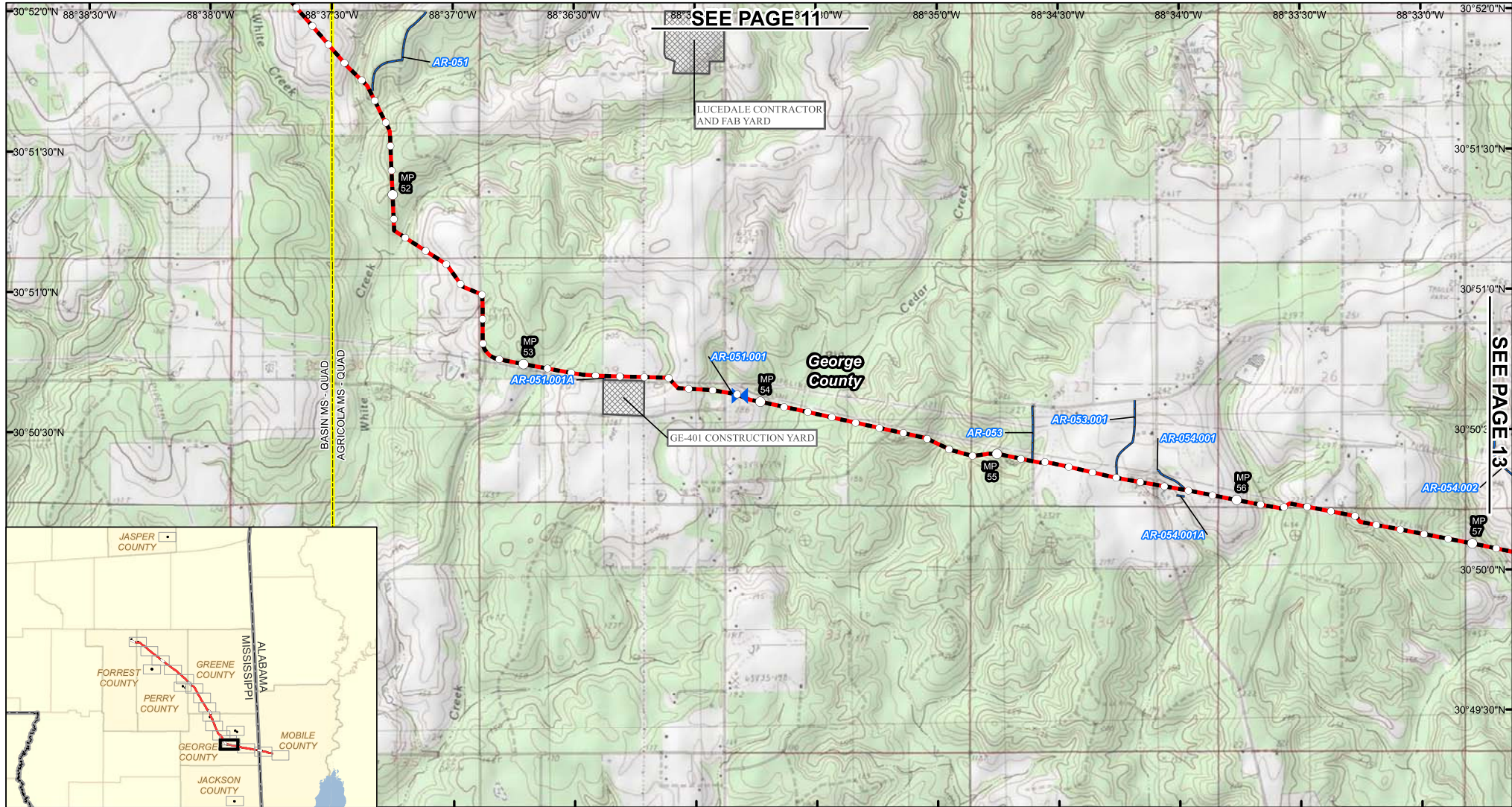
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**PROPRIETARY**  
GULF SOUTH  
PIPELINE COMPANY, LP





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SEE PAGE 13

- PROPOSED PIPELINE MILE POST
- ✕ PROPOSED MLV SITE
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- PROPOSED FACILITY
- PROPOSED COMPRESSOR STATION
- PROPOSED CONSTRUCTION YARD
- COUNTY/STATE BOUNDARY
- USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
BASIN, MS  
AGRICOLA, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GEORGE COUNTY, MS

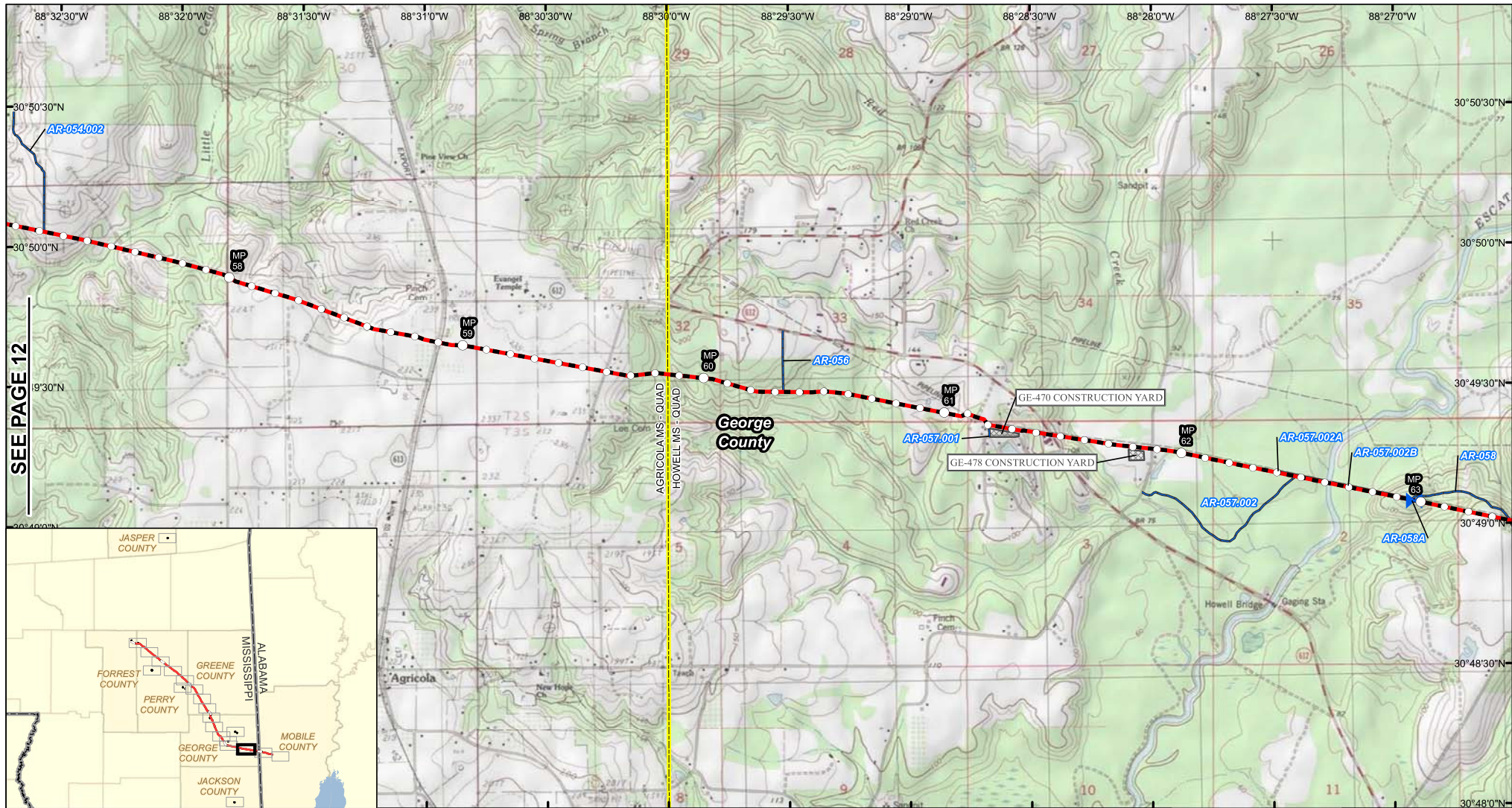


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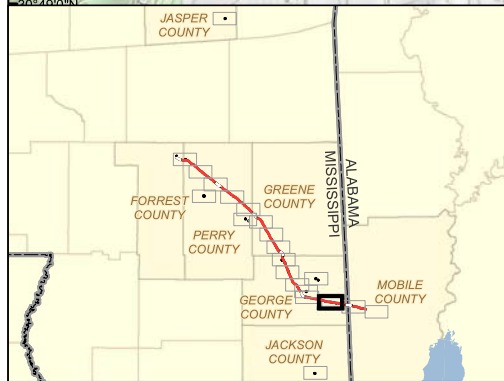
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- PROPOSED PIPELINE MILE POST
- ✕ PROPOSED MLV SITE
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- PROPOSED FACILITY
- PROPOSED COMPRESSOR STATION
- PROPOSED CONSTRUCTION YARD
- COUNTY/STATE BOUNDARY
- USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
 AGRICOLA, MS  
 HOWELL, MS

GULF SOUTH PIPELINE COMPANY, LP  
 SOUTHEAST MARKET EXPANSION PROJECT  
 USGS QUAD EXCERPT  
 PROPOSED PIPELINE ROUTE  
 GEORGE COUNTY, MS

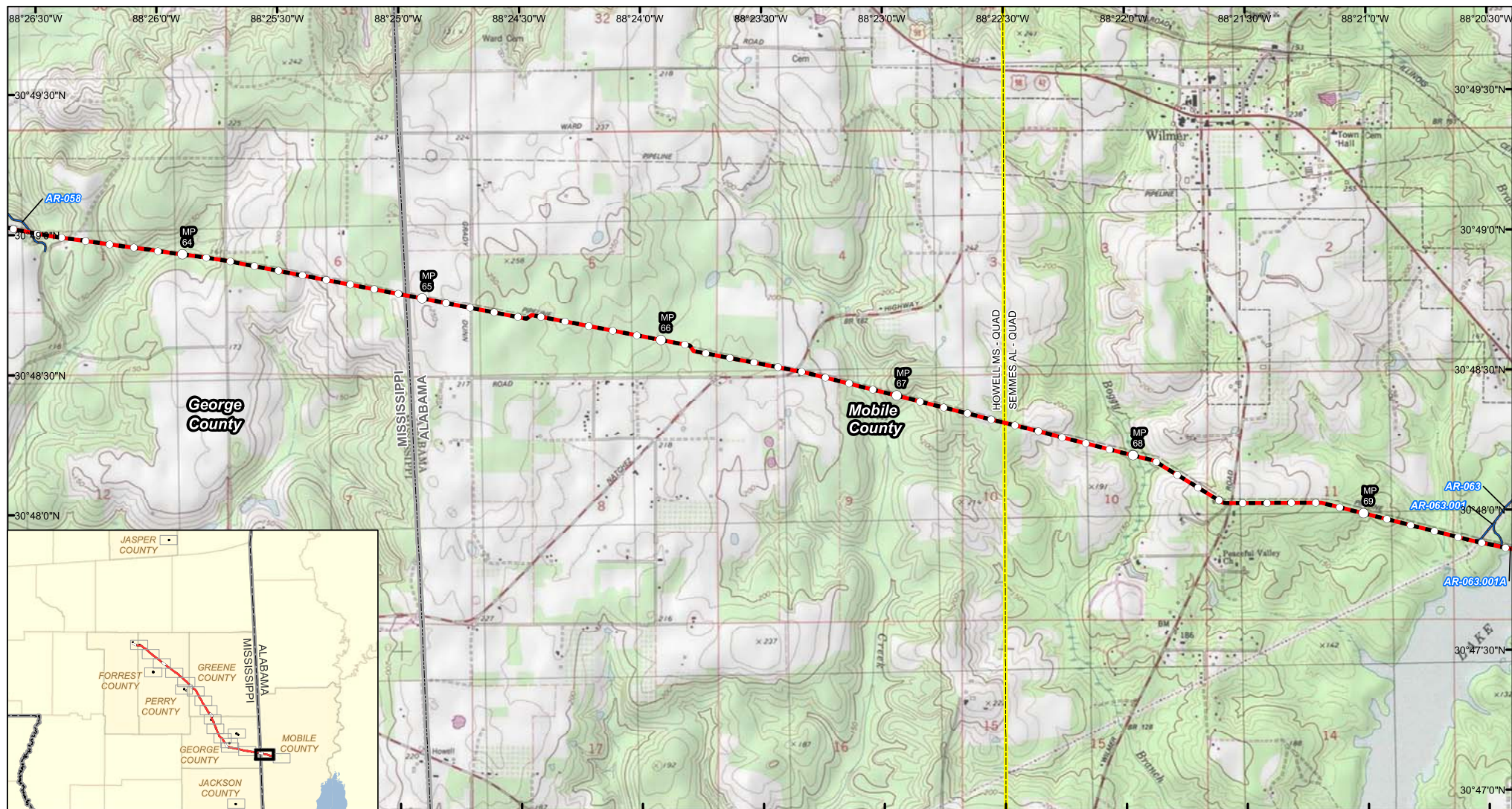


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○ PROPOSED PIPELINE MILE POST	▬ COUNTY/STATE BOUNDARY
✕ PROPOSED MLV SITE	▬ USGS QUADRANGLE BOUNDARY
— PROPOSED PIPELINE ROUTE	
— PROPOSED ACCESS ROAD	
▬ PROPOSED FACILITY	
▬ PROPOSED COMPRESSOR STATION	
▬ PROPOSED CONSTRUCTION YARD	

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

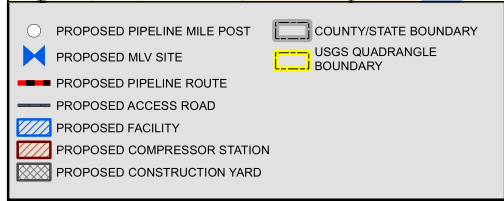
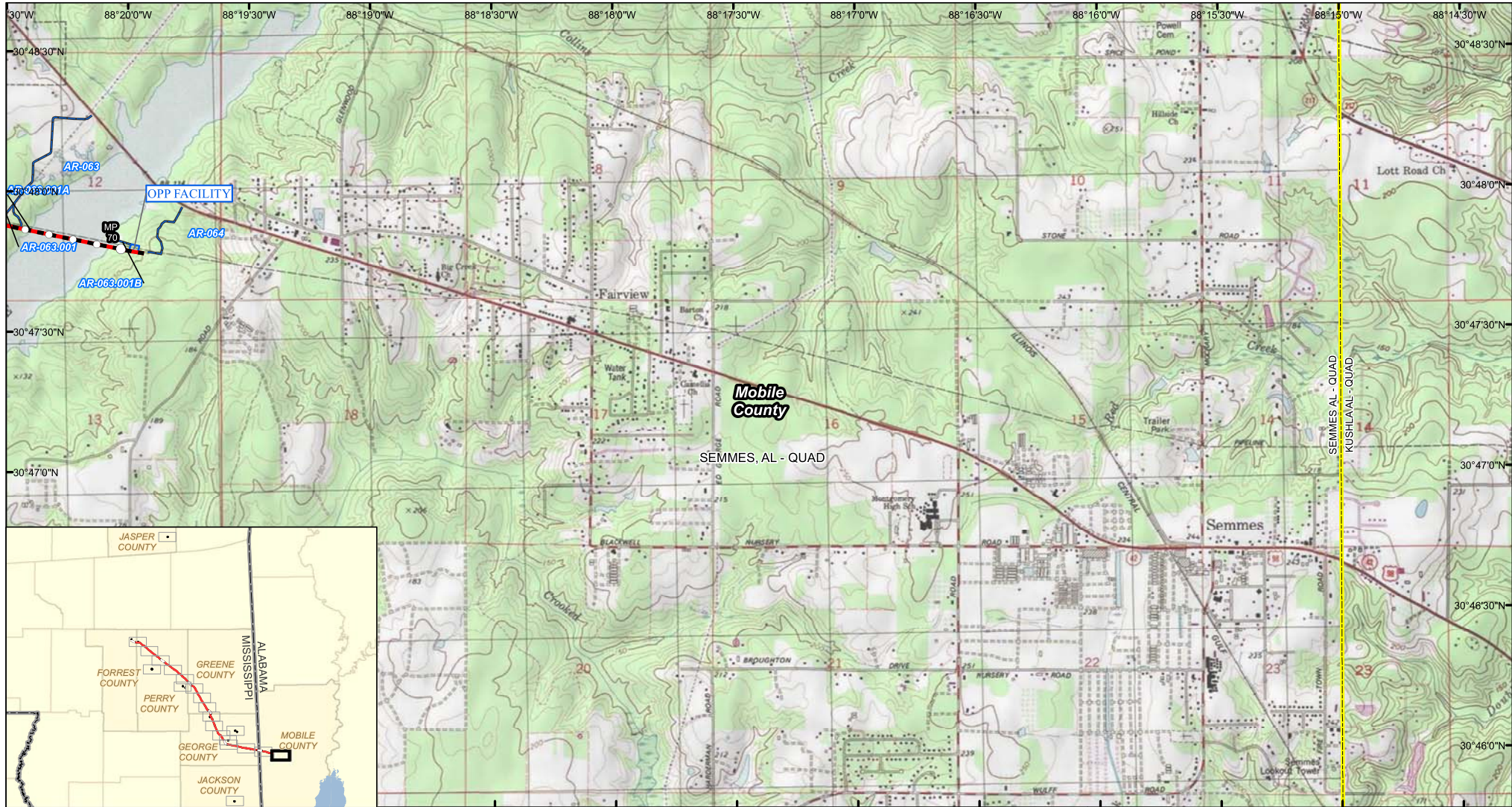
USGS QUAD NAMES:  
HOWELL, MS  
SEMME, AL

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GEORGE COUNTY, MS & MOBILE COUNTY, AL

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DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

USGS QUAD NAMES:  
SEMMES, AL

GULF SOUTH PIPELINE COMPANY, LP  
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USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
MOBILE COUNTY, AL

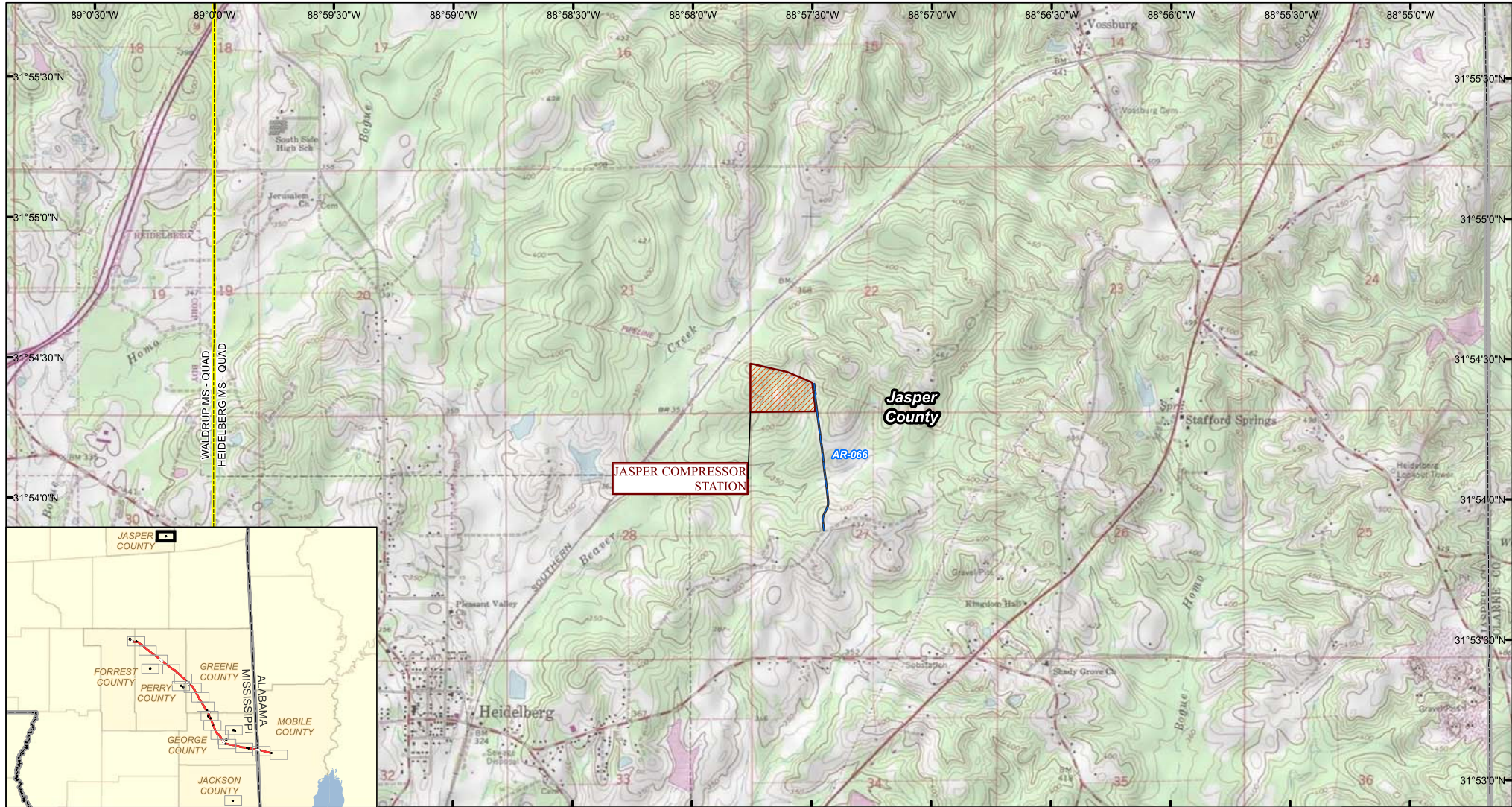


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○ MILE POST	▬ COUNTY/STATE BOUNDARY
— PROPOSED PIPELINE ROUTE	▬ USGS QUADRANGLE BOUNDARY
— PROPOSED ACCESS ROAD	
▨ PROPOSED FACILITY	
▨ PROPOSED COMPRESSOR STATION	
▨ PROPOSED YARD	

DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

USGS QUAD NAMES:  
HEIDELBERG, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
JASPER COUNTY, MS



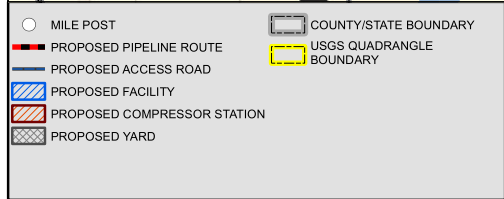
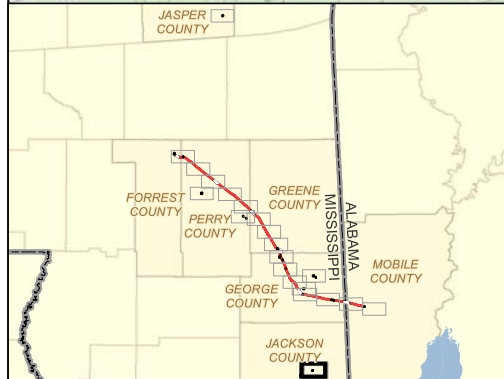
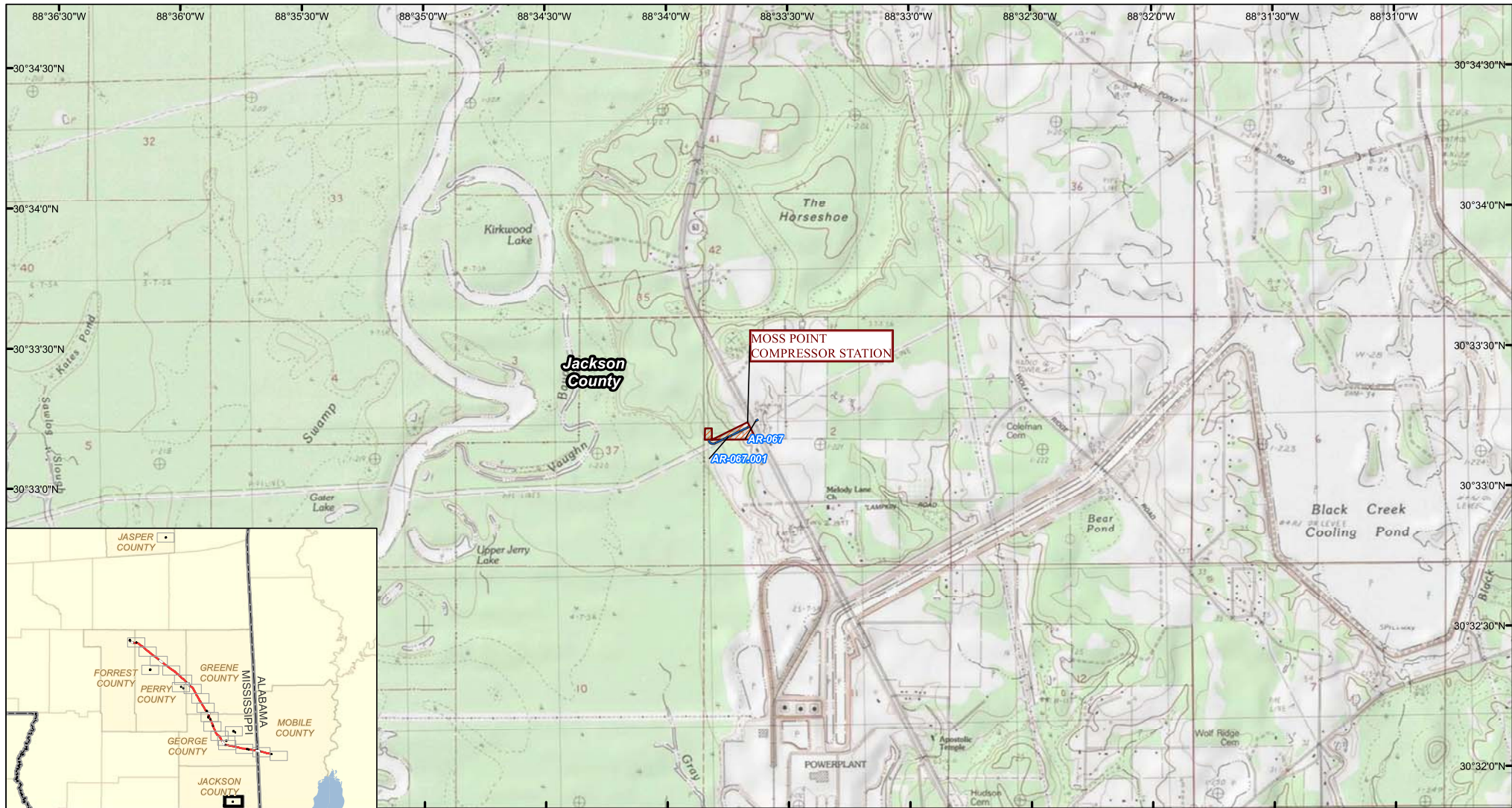
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**GULF SOUTH**  
PIPELINE

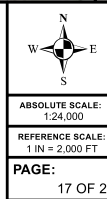
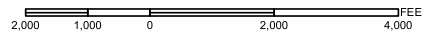
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GULF SOUTH  
PIPELINE COMPANY, LP





USGS QUAD NAMES:  
THREE RIVERS, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
JACKSON COUNTY, MS

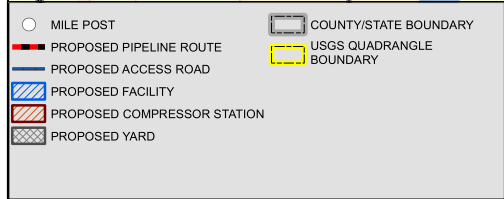
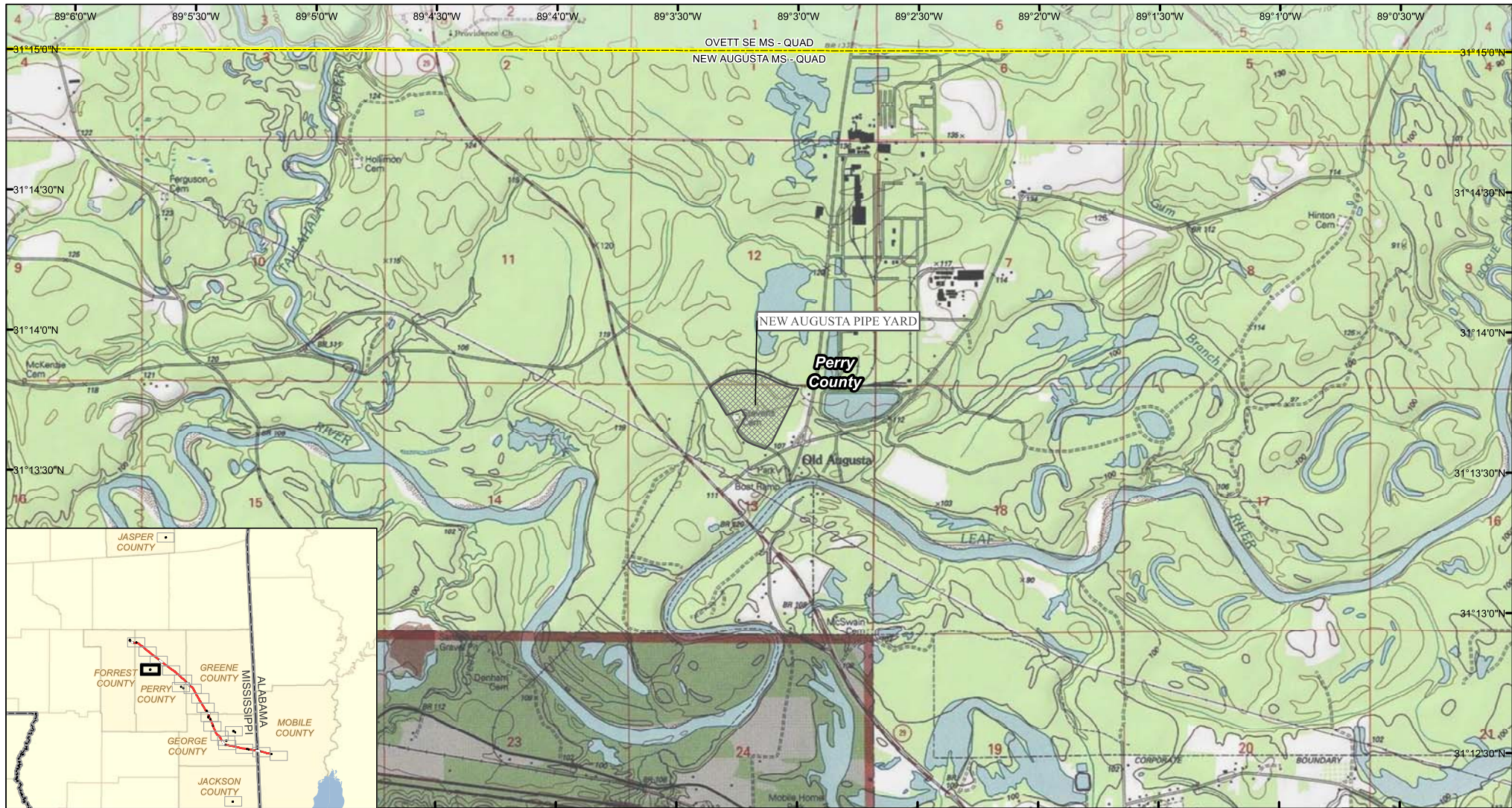


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GULF SOUTH  
PIPELINE COMPANY, LP





DOCUMENTS COMPILED UTILIZING PUBLICLY AVAILABLE GIS RESOURCES AND MINIMAL ON THE GROUND RECONNAISSANCE

USGS QUAD NAMES:  
NEW AUGUSTA, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
PERRY COUNTY, MS



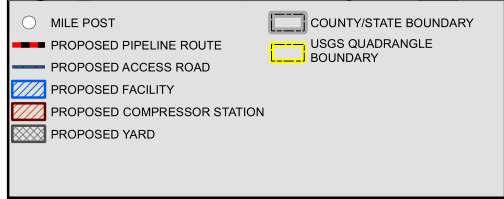
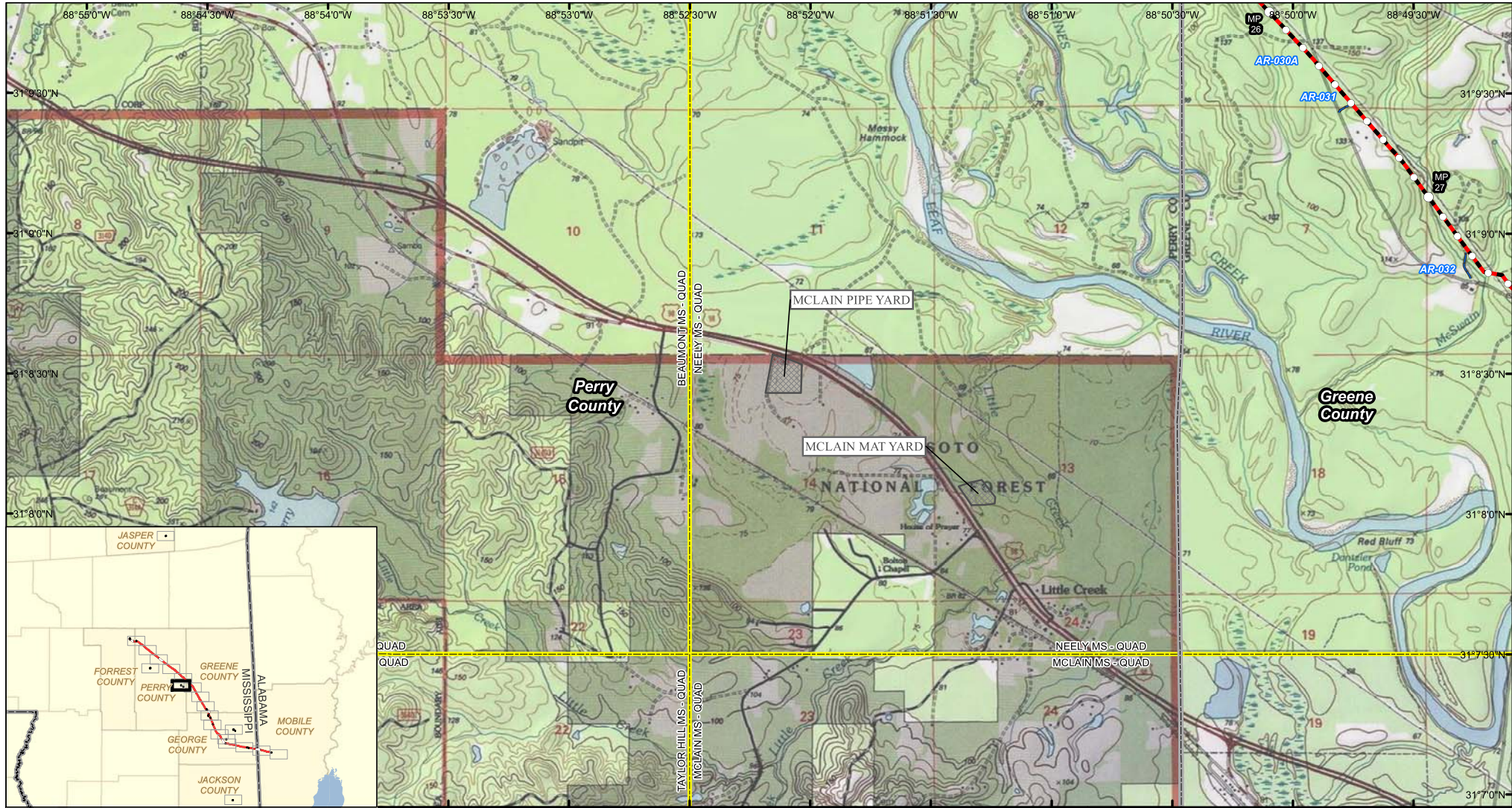
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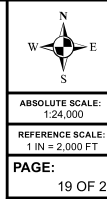
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GULF SOUTH  
PIPELINE COMPANY, LP





USGS QUAD NAMES:  
NEELY, MS  
BEAUMONT, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
PERRY COUNTY, MS

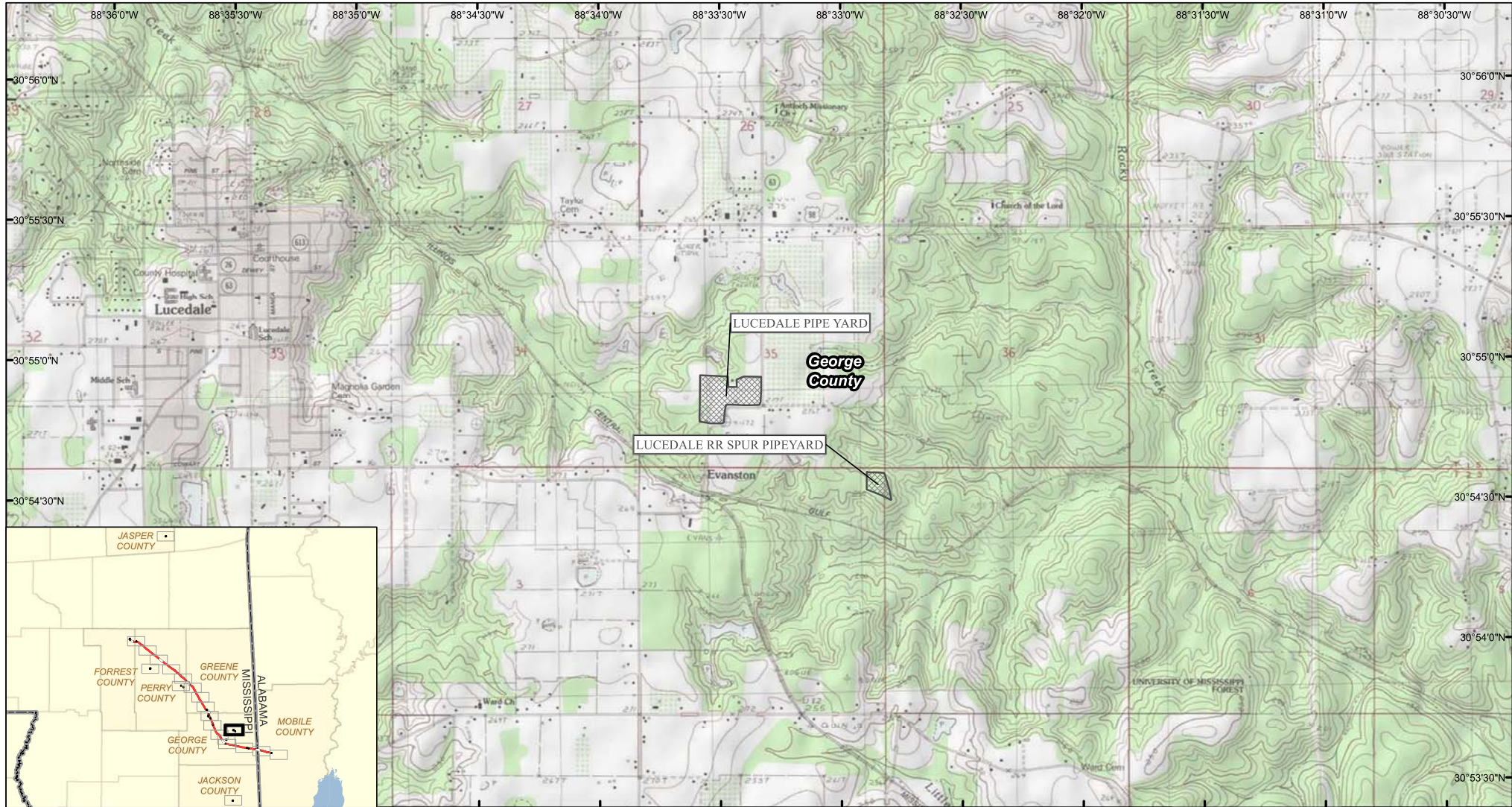


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PROPRIETARY  
GULF SOUTH  
PIPELINE COMPANY, LP





	MILE POST
	PROPOSED PIPELINE ROUTE
	PROPOSED ACCESS ROAD
	PROPOSED FACILITY
	PROPOSED COMPRESSOR STATION
	PROPOSED YARD
	COUNTY/STATE BOUNDARY
	USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
LUCEDALE, MS

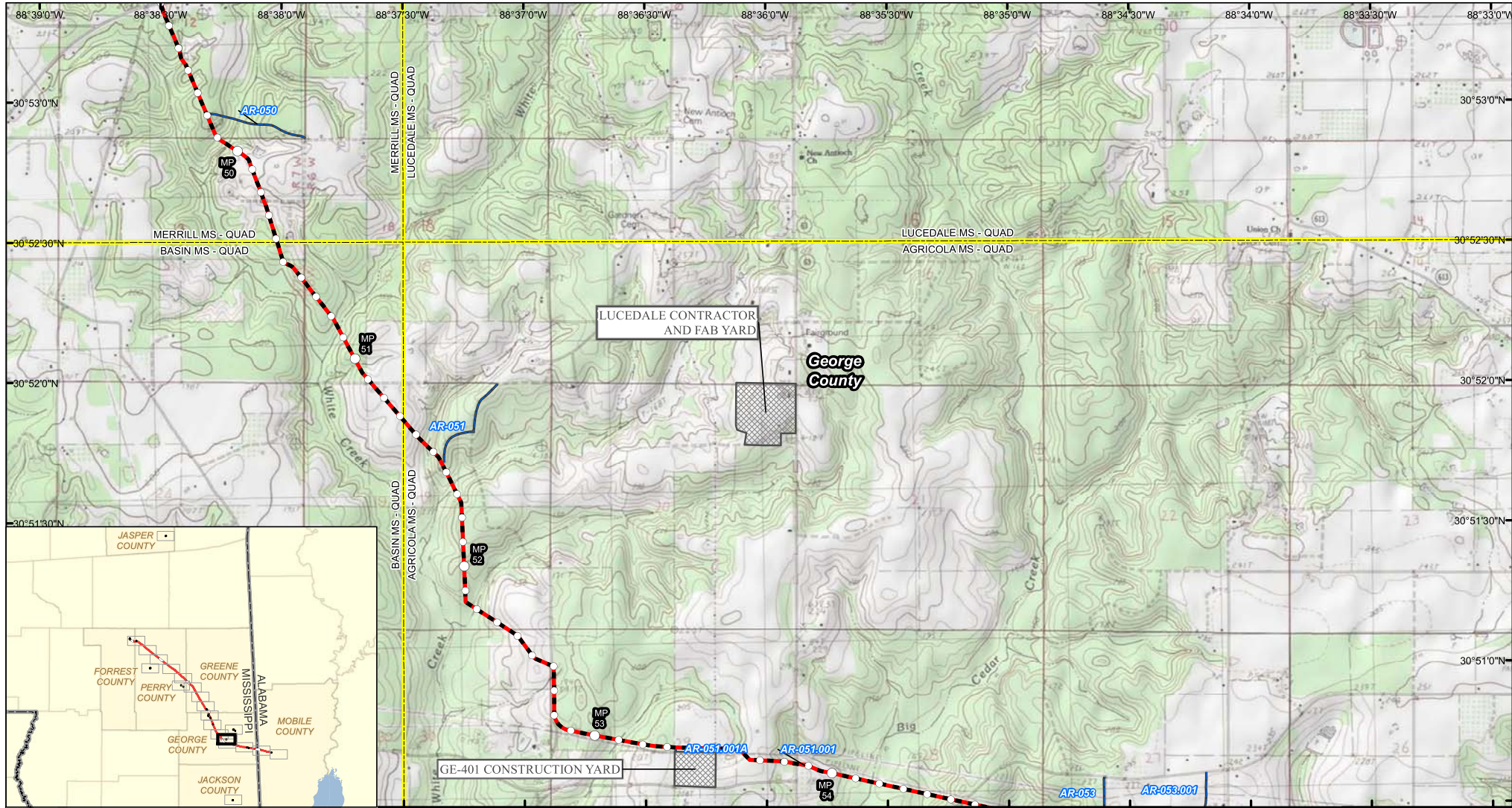
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SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GEORGE COUNTY, MS



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**PROPRIETARY**  
GULF SOUTH  
PIPELINE COMPANY, LP

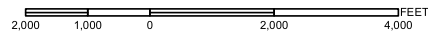




- MILE POST
- PROPOSED PIPELINE ROUTE
- PROPOSED ACCESS ROAD
- PROPOSED FACILITY
- PROPOSED COMPRESSOR STATION
- PROPOSED YARD
- COUNTY/STATE BOUNDARY
- USGS QUADRANGLE BOUNDARY

USGS QUAD NAMES:  
LUCEDALE, MS

GULF SOUTH PIPELINE COMPANY, LP  
SOUTHEAST MARKET EXPANSION PROJECT  
USGS QUAD EXCERPT  
PROPOSED PIPELINE ROUTE  
GEORGE COUNTY, MS



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PIPELINE COMPANY, LP