Federal Energy Regulatory Commission
Office of Energy Projects, Division of Gas-Environment & Engineering

ENVIRONMENTAL ASSESSMENT REPORT

Name of Applicant: Florida Gas Transmission Company, LLC

Date Filed: March 31, 2015	**Docket No: CP15-144-000**
Type: 7(c)	**Cost:**

Facilities:

- approximately 3.0 miles of 30-inch-diameter looping pipeline and associated facilities in Suwannee and Columbia Counties;
- one new compressor unit, re-wheeling of an existing turbine compressor unit, and construction and modification of piping and valves at Compressor Station 16 in Bradford County;
- approximately 5.7 miles of 20-inch-diameter looping pipeline and associated facilities in Bradford and Clay Counties; and
- a new regulation station in Bradford County.

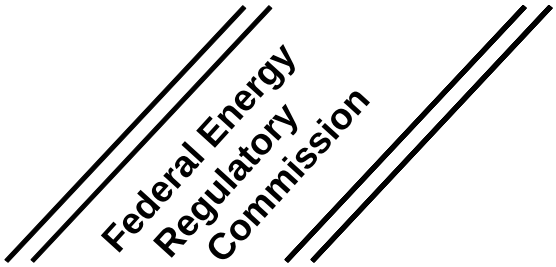
Environmental Impact -- Conclusions:

___ **Categorical Exclusion**	___ **Deficiency Letter Required**
___ **Environment Not Involved**	_X_ **EA/EIS Required**
___ **Environment Complete**	___ **No NOI Required**
	_X_ **NOI Required**

Environmental Considerations or Comments:

See Environmental Assessment

Prepared by:	**Date:**	**Approved by Branch Chief:**	**Date:**
J. Peconom	1/14/2016	J. Martin	1/14/2016



Office of
Energy Projects

January 2016

Florida Gas Transmission Company **Docket No. CP15-144-000**

Jacksonville Expansion Project

Environmental Assessment

Washington DC, 20426

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas Branch 3
Florida Gas Transmission
Company, LLC
Jacksonville Expansion Project
Docket No. CP15-144-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Jacksonville Expansion Project (Project), proposed by Florida Gas Transmission Company, LLC (FGT) in the above-referenced docket. FGT requests authorization to construct about 8.7 miles of natural gas pipeline and associated aboveground facilities in Suwannee, Columbia, Bradford, and Clay Counties, Florida. The purpose of the Project is to provide a total of approximately 75,000 MMBtu/d of natural gas capacity to be delivered at various amounts at several points throughout Florida.

The EA assesses the potential environmental effects of the construction and operation of the Jacksonville Expansion Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The proposed Jacksonville Expansion Project includes the following facilities:

- approximately 3.0 miles of 30-inch-diameter looping pipeline and associated facilities[1] in Suwannee and Columbia Counties;
- one new compressor unit, re-wheeling of an existing turbine compressor unit, and construction and modification of piping and valves at Compressor Station 16 in Bradford County;
- approximately 5.7 miles of 20-inch-diameter looping pipeline and associated facilities in Bradford and Clay Counties; and
- a new regulation station in Bradford County.

[1] Associated facilities include new or relocated pig launchers and receivers, valves, and cathodic protection equipment

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; newspapers and libraries in the project area; and parties to this proceeding. In addition, the EA is available for public viewing on the FERC's website (www.ferc.gov) using the eLibrary link. A limited number of copies of the EA are available for distribution and public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street NE, Room 2A
Washington, DC 20426
(202) 502-8371

Any person wishing to comment on the EA may do so. Your comments should focus on the potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this project, it is important that we receive your comments in Washington, DC on or before **February 15, 2016.**

For your convenience, there are three methods you can use to file your comments with the Commission. In all instances please reference the project docket number (CP15-144-000) with your submission. The Commission encourages electronic filing of comments and has expert staff available to assist you at 202-502-8258 or efiling@ferc.gov.

(1) You can file your comments electronically using the eComment feature located on the Commission's website (www.ferc.gov) under the link to Documents and Filings. This is an easy method for submitting brief, text-only comments on a project;

(2) You can also file your comments electronically using the eFiling feature on the Commission's website (www.ferc.gov) under the link to Documents and Filings. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or

(3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214).[2] Only intervenors have the right to seek rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC,** or on the FERC website (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP15-144). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/docs-filing/esubscription.asp.

[2] See the previous discussion on the methods for filing comments.

JACKSONVILLE EXPANSION PROJECT
FERC DOCKET NO. CP15-144-000

TABLE OF CONTENTS

TECHNICAL ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AERMOD	American Meteorological Society/Environmental Protection
APE	Area of Potential Effect
ATWS	Additional Temporary Workspace
AQCR	Air Quality Control Regions
CAA	Clean Air Act
CFR	Code of Federal Regulations
CH_4	Methane
CEQ	Council on Environmental Quality
CO	Carbon monoxide
CO_2	Carbon dioxide
CS 16	Compressor Station 16
Commission	Federal Energy Regulatory Commission
EA	Environmental Assessment
EI	Environmental Inspector
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAS	Floridan Aquifer System
FDEP	Florida Department of Environmental Protection
FERC	Federal Energy Regulatory Commission
FGT	Florida Gas Transmission Company, LLC
FWS	United States Fish and Wildlife Service
GHG	Greenhouse gas
HCA	High Consequence Area
HDD	Horizontal directional drill
HAP	Hazardous air pollutant
MAOP	Maximum Allowable Operating Pressure
MMBtu/d	million British thermal units per day
NO_2	Nitrous dioxide
NO_x	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NOA	Notice of Application
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
PHMSA	Pipeline and Hazardous Materials Safety Administration
PCB	Polychlorinated bi-phenyl compounds
Plan	Commission's Upland Erosion, Control, Revegetation, and Maintenance Plan
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
Procedures	Commission's Wetland and Waterbody Construction and Mitigation Procedures

Project	FGT's Jacksonville Expansion Project
PSD	Prevention of Significant Deterioration
RCIP	Residential Construction Implementation Plan
SHPO	State Historic Preservation Office
SO	Sulfur dioxide
SPR	Spill Prevention and Response Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation

A. PROPOSED ACTION

1.0 Introduction

On March 31, 2015, the Florida Gas Transmission Company, LLC (FGT) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) pursuant to Section 7 of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations requesting authorization to construct, and operate the facilities identified as the Jacksonville Expansion Project (Project). As described in its application (FERC Docket No. CP15-144-00), FGT proposes to construct and operate new interstate natural gas transmission pipeline and associated facilities, and modify existing facilities in Suwannee, Columbia, Bradford, and Clay Counties, Florida.

This environmental assessment (EA) identifies and describes the existing condition of the lands potentially affected by the Project; assesses the impacts on these lands resulting from implementation of the proposed action; assesses alternatives to the proposed action; and as necessary, includes recommendations to avoid, minimize or mitigate potential adverse impacts. We[1] have prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA) (40 *Code of Federal Regulations* [CFR] Parts 1500-1508), and the Commission's implementing regulations (18 CFR, Part 380).

2.0 Purpose and Need

According to FGT, the purpose of the proposed facilities is to support a firm delivery of 15,000 million British thermal units per day (MMBtu/d) to delivery points within the State of Florida. An additional 60,000 MMBtu/d would also be delivered to delivery points within the State of Florida, but would not require the installation of additional facilities. FGT states the proposed facilities are necessary to meet the requirements of a precedent agreement with the Peoples Gas System, a division of Tampa Electric Company.

Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

3.0 Proposed Facilities

FGT proposes to install about 3.0 miles of 30-inch-diameter looping[2] pipeline (Branford Loop in Suwannee and Columbia Counties); 5.7 miles of 20-inch-diameter looping pipeline (Jacksonville Loop in Bradford and Clay Counties); associated pig[3] launchers/receivers and mainline valves (Suwannee, Columbia, and Bradford Counties); a regulation station (Bradford and Clay Counties); one new 5,000 horsepower (hp) compressor unit at the existing Compressor Station 16 (also known as CS 16 and the Brooker Station in Bradford County); and modify (re-

[1] "We", "us" and "our" refer to the environmental staff of the Commission's Office of Energy Projects.
[2] Looping is when one pipeline is laid parallel to another and is often used as a way to increase capacity along a right-of-way beyond what is possible on one line, or an expansion of an existing pipeline.
[3] A pig is a device used to clean or inspect a pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from a pipeline.

wheel) an existing compressor unit also at CS 16. Collectively, this EA refers to the proposed facilities as the "facilities". Appendix A includes a general map of the proposed facilities.

According to FGT, following receipt of all applicable authorizations, permits, and clearances, construction activities would commence within 30 days. FGT expects pipeline installation and compressor station modifications to occur concurrently and be completed within 120 days.

4.0 Public Review and Comments

The Commission's administrative record, FERC Docket No. CP15-144-000, includes FGT filings, staff issuances, and other project-related documents. These records are accessible to the public for review through the Commission's web page using the link for eLibrary.[4]

On April 13, 2015, the Commission issued a *Notice of Application* (NOA) in response to the filing of FGT's application. On May 19, 2015, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Jacksonville Expansion Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to federal, state, and local government representatives and agencies; elected officials; Native American tribes; potentially affected landowners and other interested individuals and groups; newspapers and libraries in the project area; and other parties to this proceeding. With the issuance of the NOI, a 30-day public comment period was initiated to gather input from the public and other interested agencies about the Project. In response to the NOI, the Commission received routine consultation letters from the Florida Department of State and the Seminole Tribe of Florida. No affected landowners provided comments.

5.0 Land Requirements

Constructing the Project would affect about 184.8 acres of land. Specifically, FGT would require the temporary use of approximately 136.9 acres of land to install the proposed facilities. To operate the facilities, FGT would require the use of approximately 47.9 acres of land. Table 1 below identifies the Project's specific land requirements including pipeline construction and permanent right-of-way, overlap within existing FGT easements, aboveground facilities, access roads, and contractor yards. Appendix B includes photograph-based construction alignment sheets and typical rights-of-way configurations.

The pipeline facilities would be installed parallel and immediately adjacent to existing FGT pipelines. FGT proposes to install the pipelines using 50 to 100-foot-wide, construction rights-of-way. As necessary, FGT would also use additional temporary work spaces (ATWS) to facilitate site-specific construction needs and ensure safe working conditions. Site-specific construction needs include road, wetland, and utility crossings as well as horizontal directional drills (HDD).

[4] Using the eLibrary at www.ferc.gov, select "General Search" from the eLibrary menu and enter the docket number excluding the last three digits in the "Docket Number" field (i.e., CP15-144). Select an appropriate date range.

Table 1
Land Requirements

Facility	Temporary Impacts (acres)		Permanent Impacts (acres)		Total Acreage
	Outside existing ROW[3]	Within existing ROW	Outside existing ROW	Within existing ROW	
Pipeline Segments					
Branford Loop Extension	24.3	1.3	9.5	9.0	44.1
Jacksonville Lateral Loop Extension	32.1	0.1	14.3	9.3	55.9
Pipeline Totals	56.4	1.4	23.8	18.3	100.0
Aboveground Facilities					
CS 16[1]	0.0	6.0	0.00	4.0	10.0
Jacksonville Loop Regulation Station	0.01	0.00	0.23	0.00	0.24
Branford Loop Launcher[2]	0.00	1.7	0.00	0.5	2.2
Branford Loop Receiver	2.0	0.7	0.00	0.74	3.5
Jacksonville Receiver Relocation	0.01	0.00	0.23	0.00	0.24
Aboveground Facilities Totals	2.0	8.4	0.5	5.3	16.2
Access Roads					
Access Roads-FGT Easement	0.00	5.8	0.00	0.00	5.8
Access Roads-Existing	32.5	0.09	0.00	0.00	32.6
Access Roads Total	32.5	5.9	0.00	0.00	38.4
Contractor Yards					
Yard 1	10.7	0.00	0.00	0.00	10.7
Yard 2	8.9	0.00	0.00	0.00	8.9
Yard 3	10.6	0.00	0.00	0.00	10.6
Contractor Yard Total	30.2	0.00	0.00	0.00	30.2
Grand Total Acres	121.1	15.8	24.3	23.6	184.8

[1] The proposed modification to CS 16 would be entirely within the current CS 16 footprint
[2] The permanent footprint and all temporary workspace would be within the existing Branford Loop Launcher easement
[3] right-of-way

To operate and maintain the pipelines, FGT would acquire an additional 20 to 35 feet of easement adjacent to the existing FGT pipelines. Where feasible, construction and permanent rights-of-way would be located within with existing FGT easements.

The compressor station modifications would be completed within the fenced boundaries (existing footprint) of CS 16. Other aboveground facilities including mainline valves and pigging facilities would be located within the expanded FGT pipeline corridor.

FGT would also require the use of numerous roads to install and operate the facilities. Where available, FGT would use public roads. FGT would require the use of 13 temporary access roads, all of which are existing farm, field, or utility roads.

6.0 Construction Procedures

FGT would use a combination of conventional and specialized construction procedures to complete the proposed pipeline installations and compressor station modifications. The pipelines and aboveground facilities would be designed, constructed, tested, operated, and maintained in accordance with the U.S. Department of Transportation (USDOT) regulations in Title 49 CFR, Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Safety Standards; 18 CFR, 380.15, Siting and Maintenance Requirements; and all other applicable federal and state regulations. FGT would also install, restore, operate, and maintain the Project according to the measures described in its Spill Prevention and Response Plan (SPR Plan), and our *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures), which were developed to minimize the environmental impact of constructing and operating interstate natural gas transmission facilities.[5]

Conventional Pipeline Installation Procedures

Conventional pipeline installation, also referred to as standard open-cut construction, generally occurs in a linear sequence defined by clearing, grading, trenching, stringing, lowering in, backfilling, testing, clean-up, and restoration. Pipeline installation would begin with the clearing and grading of the construction right-of-way. ATWS would also be cleared and graded at this time. Per our Plan and Procedures, FGT would locate three ATWS in or near wetlands to accommodate site-specific conditions. We have reviewed these workspaces and find them to be acceptable. Fences, erosion control devices, and other environmental and safety measures would be installed (and maintained) as necessary, and in accordance with all applicable permits and landowner agreements. After clearing and grading, a trench would be excavated to a depth allowing for a minimum of three feet of soil cover above the top of the pipeline. If necessary, trench dewatering would be performed in accordance with our Plan and Procedures and any applicable permit requirements. Pipeline joints would then be strung alongside the trench, bent as necessary, welded together, inspected, coated, and lowered into the trench. Once the pipeline is lowered in, the trench would be backfilled using previously excavated materials and imported fill if necessary. A small crown of material would be left over the trench line to account for potential soil settling. The area would then be "rough graded" and all debris removed and properly disposed.

After backfilling the trench, the pipeline would be hydrostatically tested to ensure its integrity. Hydrostatic test water would be acquired from municipal sources and brought to the test sites via trucks. Test water discharges would be conducted in accordance with applicable permits, and appropriate energy dissipating devices, containment structures and/or other measures would be implemented, as necessary, to minimize erosion and sedimentation at the

[5] The FERC Plan can be viewed on the FERC Internet website at http://www.ferc.gov/industries/gas/enviro/plan.pdf. The FERC Procedures can be viewed on the FERC Internet website at http://www.ferc.gov/industries/gas/enviro/procedures.pdf.

discharge points. Final grading and reseeding would then take place along with the installation of permanent erosion controls and replacement fences. Affected lands would be monitored for successful revegetation, and additional activities would take place, as necessary, to return the area to preconstruction conditions, as practical.

Specialized Pipeline Installation Procedures

To ensure reliable and safe working conditions through certain soils and groundwater conditions, FGT proposes to temporarily install metal sheets within the trench to accommodate workspaces that do not allow for sloped walls and to limit infiltration of shallow groundwater.

FGT would also bore under county roads and highways. A bore is completed by excavating pits on both sides of the crossed feature (road). An auger/bore machine is then placed in one of the pits; it then bores underneath the crossed feature, and the pipeline segment is pulled through the bore hole.

To install the Jacksonville Loop, FGT would implement two HDDs. A HDD allows for a trenchless installation across an area, typically a sensitive or difficult crossing, such as a highway, waterbody or wetland. A HDD involves drilling a pilot hole below the crossed feature and then enlarging the hole until it is large enough for pipe installation. Pipe sections are prefabricated along the right-of way then pulled through the hole.

Compressor Station Modifications

FGT would install new foundations and house the modified compressor station facilities in a new building. To construct the foundations, forms would be set, rebar installed, and concrete poured and cured. These pours would be randomly sampled to verify their compliance with minimum strength requirements. The compressor station building would be erected on the newly installed foundations and the building would be weatherized and acoustically insulated. Additionally, a noise abatement silencer would be installed on the motor intakes and exhausts.

7.0 Operation, Maintenance, and Safety Controls

FGT currently operates and maintains its existing natural gas pipeline transmission system in compliance with USDOT regulations provided in 49 CFR 192, and other applicable regulations and requirements. Operations and maintenance activities include vegetation management, pipeline inspections, cleaning and pipeline repairs; and compressor service and maintenance. When completed, the Project would be operated in conjunction with the existing system and subject to the same operation and maintenance procedures.

8.0 Environmental Compliance, Inspection, and Mitigation Monitoring

As described previously, pipeline installation and compressor station modifications would be conducted in accordance with our Plan and Procedures. Our Plan and Procedures outline measures addressing construction methods and techniques, potential environmental affects, and environmental inspection and compliance.

Prior to construction, FGT would provide its contractors with copies of specifications and an “approved for construction” Construction Drawing Package and all environmental permits, certificates, and/or clearances associated with the Project. Additionally, FGT would conduct environmental training for its field construction personnel and construction contractor’s personnel prior to commencing ground disturbing activities. This training would focus on

implementation of our Plan and Procedures and other Project specific permit conditions and mitigation measures, as appropriate.

FGT would also employ an Environmental Inspector (EI) during construction. The EI's duties would include, but would not be limited to, ensuring compliance with all environmental conditions. The EI would have peer status with any/all other inspectors, would be present throughout construction and restoration, and would have the authority to enforce permit and FERC environmental conditions, to issue stop-activity orders, and impose corrective actions to maintain environmental compliance.

9.0 Permits, Approvals, and Regulatory Consultations

Table 2 lists the federal, state, and local regulatory agencies that have permit or approval authority and the status of that review for the Project. FGT would be responsible for obtaining all necessary permits, licenses, and approvals required for its Project.

Table 2
Federal & State Environmental Permits, Approvals, & Consultations

Permit/Approval/Consultations	Agency	Filing Status
Federal Permits		
Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act	Federal Energy Regulatory Commission	Application filed on March 31, 2015.
Consultations under Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	U.S. Department of Interior - Fish and Wildlife Service	June 1, 2015 letter from the FWS concurring with a determination of "not likely to adversely affect".
Section 404 Clean Water Act – Nationwide Permit 12	U.S. Army Corps of Engineers – Jacksonville District	Permit issued on July 31, 2015.
State Permits		
Section 40.061 of the Florida Administrative Code and Coastal Zone Consistency Determination	Florida Department of Environmental Protection (FDEP), State Clearing House	Permit received on October 23, 2015.
Consultation for cultural resources under Section 106 of the National Historic Preservation Act or state law	Florida Division of Historical Resources	June 30, 2015 letter from the SHPO, "no comments".
Consultations under Chapter 379.2291 of Florida Statues: Endangered and Threatened Species Act	Florida Fish and Wildlife Conservation Commission	Gopher tortoise relocation permit to be filed in 2016.
Hydrostatic Test Discharge permit - National Pollutant Discharge Elimination System (NPDES)	FDEP, Wastewater Program	Request for exemption to be submitted within 60 days prior to commencing construction.
Environmental Resource Permit	FDEP	Permit received on October 23, 2015.

Table 2
Federal & State Environmental Permits, Approvals, & Consultations

Permit/Approval/Consultations	Agency	Filing Status
Air Construction Permit Application (CS 16 existing air emissions sources are authorized by FDEP Title V Air Operation Permit No. 0070012-15-AV)	FDEP-Air Program	Permit received on May 19, 2015.
Modification to existing environmental Resource permit (#01-0273) for CS 16	Suwannee River Water Management District	Permit received on July 2, 2015.

10.0 Future Plans and Abandonment

FGT has not identified any future plans to modify, expand or abandon the facilities. In the future, should FGT propose to modify, expand or abandon the facilities it would be required to seek the appropriate federal, state and local permits, approvals, and authorizations.

B. ENVIRONMENTAL ANALYSIS

This analysis describes the condition of the existing natural and human environment and the potential affects on it resulting from installation and operation of the facilities. Specifically, the pipelines would temporarily and permanently affect the environment. However, with the exception of air quality and noise, modifying CS 16 within the existing facility footprint would generally not affect the environment; therefore, these modifications are not addressed in the following analysis unless specifically noted.

This analysis generally describes temporary, short-term, long-term, and permanent impacts and effects. A temporary effect generally occurs during construction with the resource returning to pre-construction condition immediately after restoration or within a few months. A short-term effect could continue for up to 3 years following construction. Long-term effects would last more than 3 years, but the affected resource would eventually recover to pre-construction conditions. A permanent effect would result from an activity that modifies a resource to the extent that it would not return to pre-construction conditions. As appropriate, our analysis also addresses direct and indirect effects.

To avoid and minimize effects on the environment, FGT has collocated and overlapped its pipeline facilities and construction workspace with existing natural gas transmission pipeline easements. To further minimize effects on the environment, FGT would implement numerous impact avoidance, minimization, and mitigation measures as identified in our Plan and Procedures and FGT's other project-related plans. As necessary, measures identified in these plans are included in our analysis.

1.0 Geology and Soils

Geology

The facilities would be located within the Atlantic Plain Geologic Province. The generally flat Atlantic Plain slopes seaward in a series of subtle terraces. The geologic units making up the Atlantic Plain and underlying the facilities are composed primarily of limestones, dolostones, and siliclastics. The pipelines would not cross any mines or other mineral production facilities, but the Jacksonville Loop would be located within 0.25 miles of two existing mines.

The presence of soluble limestone in northern Florida results in a dynamic condition known as karst topography. Karst is generally characterized by subsidence, sinkholes, caves, and significant underground drainage. Karst features are common in northern Florida as are underground utilities. Historically, karst has not deterred the installation (and operation) of pipelines and other utilities nor has karst deterred the construction of aboveground structures including commercial and residential developments. No karst features were identified within workspace boundaries.

To avoid and minimize potential affects on geology, FGT would implement numerous measures as described in our Plan and Procedures. These measures include installing erosion control devices and regulating trench dewatering activities. Furthermore, FGT would attempt to remove any bedrock using mechanical means and, as necessary, would adhere to all applicable blasting regulations.

Based on the scope of the Project, the collocation of the pipelines, FGT's proposed construction procedures, and its implementation of impact avoidance and minimization measures, we have determined that installing and operating the facilities would not significantly affect geology.

Soils

The facilities would be located across a variety of sandy soils. Several of these soils are considered limited. Furthermore, these soils have been generally characterized as very poorly, somewhat poorly, and poorly drained.

Installing the facilities would temporarily and permanently affect soils. Specifically, the aboveground facilities would result in the permanent loss of soil use whereas the pipelines would only temporarily affect soils. Installing the pipelines could affect soil structure and other characteristics including a soil's ability to retain moisture. Installation could also increase erosion potentials and affect revegetation.

To avoid and minimize potential affects on soils, FGT would implement measures described in our Plan. These measures include installing erosion control devices, segregating topsoil, and restoring grades.

Based on the scope of the Project, the characteristics of the soils underlying the facilities, and FGT's implementation of impact minimization measures, we have determined that installing and operating the facilities would not significantly affect soils.

2.0 Water Resources

Groundwater

The proposed facilities would overlie the Floridan Aquifer System (FAS). The FAS consists primarily of limestone and dolomite and extends for more than 100,000 square miles. The FAS is one of the highest producing aquifers in the world, providing drinking water to approximately 10 million people. In 2005, about 60 percent of the 2.5 billion gallons per day of groundwater used in Florida was obtained from the FAS. Of the groundwater used, public supply accounted for 52 percent, followed by agricultural (31 percent) and commercial-industrial-mining (8.5 percent). With one exception, no known instances of groundwater contamination were identified within the immediate vicinity of the proposed facilities. A site near CS 16 was identified using publicly available information as being required to develop a petroleum clean-up plan. Installation of the facilities could encounter shallow groundwater, but would not cross or affect any wellhead protection areas or springs. Lastly, three wells were identified within 150 feet of the proposed facilities. These include an abandoned irrigation well located at MP 520.17 (Branford Loop) and a residential supply well located approximately 78 feet to the north of MP 520.79 (Branford Loop). Additionally, FGT operates a water supply well at CS 16.

Installing the pipelines and modifying CS 16 could affect groundwater quality and flow. Clearing, grading, excavation, and dewatering could increase turbidity in shallow groundwater, resulting in a temporary and localized adverse affect on water quality; and could also alter the flow of groundwater. Additionally, an inadvertent release of construction equipment fluids or HDD drilling fluids could adversely affect groundwater quality. Unmapped springs, seeps or

wells within or near proposed workspaces could also be affected by project-related activities. Blasting could also adversely affect groundwater quality and flow.

To avoid and minimize affects on groundwater, FGT would implement numerous measures as described in our Plan and Procedures, its HDD Contingency Plan, and its SPR Plan. These measures include:

- installing erosion control devices and temporary trench plugs;
- regulating fuel storage and refueling activities;
- spill response materials and procedures; and
- consulting with the Florida Department of Environmental Protection and the Suwannee River Water Management District prior to blasting.

To further minimize potential affects on groundwater, FGT would monitor with permission, the aforementioned residential water well before and after construction; and address any affects on this well.

Based on FGT's proposed construction procedures and its impact avoidance and minimization measures we conclude that potential impacts on groundwater would be temporary, minor, and localized. Therefore, we have determined that installing and operating the facilities would not significantly affect groundwater.

Surface Waters

The Jacksonville Loop would require six waterbody crossings. No other project components would require a waterbody crossing or potentially affect a waterbody. Five of the six waterbodies that would be crossed have been characterized as minor roadside ditches that run parallel to proposed construction workspace and range in length from approximately 200 feet to almost 2,000 feet. The remaining waterbody is an unnamed 10-foot-wide, warmwater stream. None of these waterbodies have been classified as special, unique or sensitive, or are known to contain contaminated sediments.

The unnamed stream would be crossed using standard open-cut methods conducted in accordance with our Procedures. The five roadside ditches may be temporarily filled and permanently relocated following installation of the loop.

Installing the Jacksonville Loop would temporarily and permanently affect surface waters. The minor, unnamed stream would be temporarily affected and could experience increase increased rates of erosion and sedimentation. The roadside ditches could be filled and permanently relocated. However, the temporary loss of use and permanent relocation of these ditches would not affect their usage following construction.

Based on the number of waterbodies crossed and the characteristics of these waterbodies, we have determined that installing and operating the Jacksonville Loop would not significantly affect surface waters.

3.0 Wetlands

The Jacksonville Loop would require 18 wetland crossings. Specifically, one palustrine scrub-shrub (PSS) wetland and 17 palustrine forested (PFO) wetlands would be crossed. No other project components would require a wetland crossing or potentially affect a wetland. PFO wetlands include mixed hardwood forest (hardwood and coniferous) and hydric coniferous plantations (pine plantation). Mixed hardwood forest wetlands include red maple (*Acer rubrum*), water oak (*Quercus nigra*), swamp tupelo (*Nyssa sylvatica* var. *biflora*); wax myrtle (*Myrica cerifera*), fetter bush (*Lyonia lucida*); soft rush (*Juncus effusus*), clustered sedge (*Carex glaucescens*), chain fern (*Woodwardia* spp.), and bog white violet (*Viola lanceolata*). Coniferous plantation wetlands include slash pine (*Pinus elliottii*), pond cypress (*Taxodium ascendens*), myrtle dahoon (*Ilex cassine* var *myrtifolia*), red maple, gallberry (*Ilex glabra*), sweet bay (*Magnolia virginiana*); club moss (*Lycopodiella* spp.), sedges (*Carex* spp), broom sedge (*Andropogon glomeratus*), chain fern, and red root (*Lachnanthes caroliana*).

Wetlands would typically be crossed using standard open-cut methods conducted in accordance with our Procedures which includes reducing typical construction workspace by 25 feet, resulting in a 75-foot-wide construction right-of-way. Two wetlands would be crossed using HDDs. Approximately 15.9 acres of PFO wetlands and 0.08 acre of PSS wetland would be affected by installation of the loop; 10.1 acres of PFO and PSS wetlands would be affected solely by installation activities and 6.6 acres of PFO and PSS wetlands would be permanently affected by operation of the loop.

As identified in table 2, on July 31, 2015, the U.S. Army Corps of Engineers (USACE) – Jacksonville District issued FGT a Nationwide Permit 12 authorizing work associated with the Jacksonville Loop. This permit acknowledged that compensatory mitigation would be accomplished through purchase of mitigation bank credits from the Loblolly Mitigation Bank.

As described previously, installing the Jacksonville Loop would require the clearing of vegetation. The long-term and permanent loss of forested wetland vegetation (and associated wildlife habitat) would result in the conversion of about 6.6 acres of PFO wetlands to non-forested palustrine emergent wetlands. Additionally, wetland soils would be disturbed and the hydrological characteristics of the affected wetlands could be altered. However, these affects should be temporary as soils and grades would be restored. Wetlands crossed by the HDDs should not be affected, but an inadvertent release of HDD drilling fluids, also known as a "frac-out" (and/or equipment fluids) could affect wetland soils, vegetation, and hydrology.

To avoid and minimize affects on wetlands, FGT has collocated the Jacksonville Loop with an existing natural gas transmission pipeline and would implement numerous measures as described in our Procedures, its HDD Contingency Plan, and its SPR Plan. These measures include:

- installing erosion control devices and temporary trench plugs;
- segregating topsoil;
- using, as necessary, low ground pressure equipment and timber mats;
- monitoring HDD activities;
- containing inadvertent drilling fluid releases; and
- regulating fuel storage, refueling and spill response activities.

Based on the amount of wetlands crossed and FGT's receipt of a permit from the U.S. Army Corps of Engineers, we have determined that installing and operating the Jacksonville Loop would not significantly affect wetlands.

4.0 Vegetation and Wildlife

The pipelines would be located across vegetation types commonly referred to as grassland and forested. Wetland vegetation was described previously and disturbed vegetation (industrial/commerical lands) is described, as appropriate, in the land use section of this EA. Grassland vegetation which includes "open" lands and pastures is characterized by bahia grass (*Paspalum notatum*), Bermuda grass (*Cynodon dactylon*), and other common grasses. Forested vegetation which includes pine plantations and other wooded areas is characterized by longleaf pine (*Pinus palustris*), slash pine (*P. elliottii*), loblolly pine (*P. taeda*), sand pine (*P. clausa*), live oak (*Quercus virginiana*), turkey oak (*Q. laevis*), Chapman's oak (*Q. chapmanii*), southern magnolia (Magnolia grandiflora), and common understory shrubs and grasses.

These grassland and forested vegetation types provide habitat for a variety of wildlife species. Migratory birds are addressed specifically below and protected species (state-listed and federally-listed threatened and endanagered species) are addressed in section 6.0 of this EA. Wildlife species commonly known to occur or potentially occuring on affected lands include white-tail deer (*Odocoileus virginianus*), raccoons (*Procyon lotor)*, southeastern pocket gophers (*Geomys pinetis*), gopher tortoises (*Gopherus polyphemus*), oak toads (*Bufo quercicus*), box turtles (*Terrapene carolina*), cotton rats (*Sigmodon hispidus*), cotton mice (*Peromyscus gossypinus*), common snakes, turtles, and amphibians. Typical bird species include the red-headed woodpecker (*Melanerpes erythrocephalus*), eastern kingbird (*Tyrannus tyrannus*), hairy woodpecker (*Picoides villosus*), eastern bluebird (*Sialia sialis*), brown-headed nuthatch (*Sitta pusilla*), pine warbler (*Dendroica pinus*), loggerhead shrike (*Lanius ludovicianus*), yellow-rumped warbler (*Dendroica coronata*), rufous-sidedtowhee (*Pipilo erythrophthalmus*), yellow-throated warbler (*Dendroica dominica*), white ibis (*Eudocimus albus*) and wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), and ground doves (*Columbina passerine*).

Installing the pipelines would require the temporary and permanent clearing of vegetation. The loss of vegetation, could temporarily affect soils, surface water flow, groundwater, and increase the potential for the introduction of exotic and invasive species. The loss of vegetation would also reduce the amount of habitat available to wildlife and result in the relocation of forested edges. Furthermore, the general use of construction equipment could alter wildlife behavior, resulting in avoidance and/or displacement. Affected wildlife could experience increased rates of mortality, injury and stress. Once installation of the pipelines is complete, FGT would revegetate affected lands in accordance with the measures identified in our Plan and periodically maintain vegetation occurring on the permanent easement. Operating the pipeline could affect vegetation and wildlife in a manner similar to that described for installation; however, because there would typically be no ground disturbance during operation, these impacts would be relatively minor, but would result in a permanent conversion of the vegetative community to herbaceous and low shrub cover.

To reduce affects on vegetation, FGT would implement erosion control and revegetation measures as described in our Plan. FGT would also clean equipment prior to construction to ensure the potential for the introduction and/or spread of exotic and invasive species is minimized.

Based on the scope of the Project, the collocation of the pipelines, the characteristics of the vegetation and wildlife affected, the presence of similar habitats nearby, and FGT's commitment to restore and revegetate affected lands, we have determined that installing and operating the pipelines would not significantly affect vegetation and wildlife.

Migratory Birds

Migratory birds are protected by the Migratory Bird Treaty Act (16 U.S. Code 703-711). This Act governs and prohibits the take and certain other impacts on migratory birds and their nests. Executive Order (EO) 13186 was issued, in part, to ensure that environmental analyses of federal actions assess the impacts on migratory birds. EO 13186 also states that emphasis should be placed on species of concern, priority habitats, and key risk factors; and prohibits the take of any migratory bird without authorization from the U.S. Fish and Wildlife Service (FWS). The Commission and the FWS have entered into a Memorandum of Understanding (MOU) that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the Commission and the FWS by identifying areas of cooperation. This voluntary MOU does not waive legal requirements under any other statutes and does not authorize the take of migratory birds.

A variety of migratory birds and birds of conservation concern use or could use the grassland and forested vegetation and habitat affected by the Project. These birds use these habitats for resting (stopover), sheltering, foraging, breeding, and/or nesting. Consistent with EO 13186 which emphasizes a focus on species of concern and priority habitats, the Project would be located within the North American Bird Conservation Initiative - Bird Conservation Region 27. Fifty-three birds of conservation concern occurring or potentially occurring in the Project area have been identified in the FWS publication *Birds of Conservation Concern 2008*.[1]

The temporary and permanent loss of wildlife habitat and the general disruption created by the use of construction equipment could result in the displacement of migratory birds and their avoidance of affected lands. Displacement and avoidance could impact bird migration, nesting, foraging, and mating behaviors. Behavior changes combined with the loss of habitat could increase the rates of mortality, injury, and stress experienced by migratory birds.

Based on the scope of the Project, the characteristics and habitat requirements of the birds of conservation concern and migratory birds occurring or potentially occurring in the Project area, the collocation of the pipelines, the presence of similar habitats adjacent to and in the vicinity of the Project, and the relatively short duration of construction activities, we have determined that installing and operating the pipelines would not result in population-level

[1] Birds of Conservation Concern 2008 is available for review at http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf

impacts or significant measureable negative impacts on birds of conservation concern or migratory birds.

5.0 Fisheries

As described previously, installing the Jacksonville Loop would require crossing six waterbodies; one unnamed, 10-foot-wide, warmwater stream, and five roadside ditches. These waterbodies may provide aquatic habitat and support common warmwater fishes including catfish, bass, and sunfish. Crossing these waterbodies would temporarily affect any fisheries habitat present and could affect the rates of stress, injury, and mortality experienced by fish. However, given that only one natural waterbody would be crossed, any impacts on fish would be minor. Additionally, should the roadside ditches be filled and relocated, any aquatic habitat and fish present in the ditches would be lost. The loss of this habitat and any fish present would be minor based on the disturbed nature of these waterbodies. Therefore, we have determined that that installing and operating the Jacksonville Loop would not significantly affect fisheries.

6.0 Protected Species

Federally-listed Species

The Commission is required by Section 7 of the Endangered Species Act (ESA) to ensure that the Project would not jeopardize the continued existence of a federally-listed threatened or endangered species, or result in the destruction or adverse modification of the designated critical habitat of a federally-listed species.

According to the FWS' North Florida Ecological Services Office, ten threatened and/or endangered species occur or potentially occur in Bradford, Columbia, Clay, and Suwannee Counties. Additionally, two candidate species occur or potentially occur in these counties. These species are as follows:

<u>Endangered</u>

- Chapman's Rhododendron (*Rhododendron chapmanii*)
- Florida scrub jay (*Aphelocoma coerulescens*)
- Oval (Sante Fe River) pigtoe (*Pleurobema pyriforme*)
- Red-cockaded woodpecker (*Picoides borealis*)
- Shortnose sturgeon (*Acipenser brevirostrum*)
- West Indian manatee (*Trichechus manatus*)
- Wood stork (*Mycteria americana*)

<u>Threatened</u>

- Eastern Indigo Snake (*Dymarchon corais couperi*)
- Frosted salamander (*Ambystoma cingulatum*)
- Gulf Sturgeon (*Acipenser oxyrhynchus desotoi)*

<u>Candidate</u>

- Gopher Tortoise (*Gopherus Polyphemus*)
- Striped Newt (*Notophthalmus perstriatus*)

In a letter dated June 1, 2015, addressed to an FGT representative, the FWS stated that based on aerial maps and information about the sites landscape, that the proposed actions are not likely to affect resources protected by the ESA provided the standard protection measures for the eastern indigo snake are implemented. The letter also stated that ESA requirements have been fulfilled.

We have reviewed the federally-listed species potentially affected by the Project and concur with the FWS. Furthermore, based on the respective species characteristics and habitat requirements, affects on the environment, and FGT's commitment to implementing the standard protection measures for the eastern indigo snake, we have determined that installing and operating the Project would result in no effect and is not likely to adversely affect threatened or endangered species. Additionally, we find that the Project is not likely to jeopardize the identified candidate species.

State-listed Species

All of the federally-listed species addressed above are also protected by the State of Florida. In addition to these species, several other state protected species occur or potentially occur in Bradford, Columbia, Clay, and Suwannee Counties. These species are: Florida sandhill crane (*Grus canadensis pratensis*); Southeastern American kestrel (*Falco sparverius paulus*); Florida pine snake (*Pituophis melanoleucus mugitus*); Sherman's fox squirrel (*Sciurus niger shermani*); limpkin (*Aramus guarauna*); little blue heron (*Egretta caerulea*); snowy egret (*Egretta thula*); white ibis (*Eudocimus albus*); and tricolored heron (*Egretta tricolor*).

These species occur or potentially occur in wetland, grassland, and forested habitats. As described previously, these types of habitats would be affected by installing and operating the pipelines. However, only limited areas containing these habitats would be affected.

Based on our review of the life and habitat requirements of the aforementioned Florida protected species, the expected affects on wildlife habitats, the presence of adjacent pipelines, the scope of the Project, and FGT's implementation of measures to avoid and minimize impacts, we have determined that installing and operating the facilities would not significantly affect these species.

7.0 Land Use

The pipelines would be located across lands used for pasture, industrial/commercial, silviculture (pine plantation), and residential purposes. The pipelines would also be located across lands that are not actively managed and can be characterized as wetland, forested, and open water. The CS 16 modifications would occur on industrial/commercial lands.

Pasture lands include actively or passively managed grasslands typically supporting cattle. Industrial/commercial lands include industrial facilities, roadways, and utility rights-of-way. Silviculture includes pine plantation. Residential lands include yards and other maintained features; no residences are located within 50 feet of proposed construction workspace. Wetlands and forested vegetation as well as open water (surface water) were described in previous sections. Additionally, the project area is located within the coastal zone management area. As identified in table 2, FGT received an environmental resource permit from the Florida Department of Environmental Protection (FDEP) on October 23, 2015. This permit confirms

coastal zone consistency. Table 3 identifies the types and amounts of land affected by the facilities.

Table 3
Land Uses Affected by the Jacksonville Expansion Project

Land Use	Acres (Percent of Total Land Affected)
Pasture	37.6 (20.4)
Industrial/Commercial	45.5 (40.48)
Silviculture (pine plantation)	37.3 (20.2)
Residential	1.7 (0.9)
Wetland	16.7 (9.1)
Forested	16.5 (8.9)
Open water	0.03 (0.02)

Installing and operating the facilities would temporarily and permanently affect land uses. The CS 16 modifications would temporarily affect six acres of industrial/commercial land and permanently affect four acres of industrial/commercial land; however, because these lands are located at an existing compressor station, there would be no affect on land use. With the exception of silviculture, forested lands, and PFO wetlands, the pipelines would temporarily affect land uses; during installation of the pipelines, existing land uses would be prevented/suspended, but would be allowed to resume once the pipelines are operating. Approximately 19.8 acres of silviculture, forested land, and PFO wetlands would be converted to industrial/commercial use (permanent easement) and 50 acres of land would experience long-term effects, but would be allowed to resume their previous uses. The temporary prevention/exclusion of existing land uses could affect agricultural/silvicultural production. Again, with the exception of forested lands, the permanent conversion of land uses would generally not affect existing land uses. Forested lands permanently affected would be restricted such that trees would no longer be planted or allowed to mature.

Based on the collocation of the pipelines, the amount of land necessary to install and operate the facilities, and the uses of these lands and the affects on them as described above, we have determined that installing and operating the facilities would not significantly affect land use.

8.0 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, as amended, is the linchpin piece of legislation in the federal government's historic preservation program. While there are other federal historic preservation laws and regulations, most of them do not apply to the FERC, although they may apply to federal land managing agencies.[2] The NHPA set-up the Advisory Council on Historic Preservation (ACHP), created the National Register of Historic Places (NRHP), and established State Historic Preservation Offices (SHPO).

Section 101 of the NHPA requires the identification of religious and cultural properties in the area of potential effect (APE) that may be important to Indian tribes that historically

[2] For example, the Archaeological Resources Protection Act of 1979 applies to federal and tribal lands, but the FERC does not own or manage any lands.

occupied or used the project area, and may be eligible for listing on the NRHP. Indian tribes are defined in Title 36 CFR Part 800.16(m) as: "an Indian tribe, band, nation, or other organized group or community, including a Native village, Regional Corporation, or Village Corporation, as those terms are defined in Section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their special status as Indians." The FERC acknowledges that it has trust responsibilities to federally recognized Indian tribes; so on July 23, 2003 the Commission issued a "Policy Statement on Consultations with Indian Tribes in Commission Proceedings" in Order 635. It is the obligation of the FERC, on behalf of all of the federal cooperating agencies, to consult on a government-to-government basis with Indian tribes that may have an interest in the Project.

Section 106 of the NHPA requires that the FERC take into account the effects of its undertakings (including authorizations under Section 7 of the NGA) on historic properties, and afford the ACHP an opportunity to comment. Historic properties include prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance that are listed or eligible for listing on the NRHP. The steps in the process to comply with Section 106, outlined in the ACHP's implementing regulations at 36 CFR 800, include consultations, identification of historic properties, assessment of effects, and resolution of adverse effects. FGT, as a non-federal applicant, assisted the FERC in meeting its obligations under Section 106 by providing data, analyses, and recommendations in accordance with Part 800.2(a)(3) and the FERC's regulations at 18 CFR 380.12(f). The FERC remains responsible for all findings and determinations under the NHPA. This section summarizes the current status of compliance with the NHPA for this Project.

Consultations

We sent copies of our NOI issued on May 19, 2015 for this Project to a wide range of stakeholders, including federal agencies, such as the ACHP, Environmental Protection Agency (EPA), USACE, National Park Service (NPS), Bureau of Indian Affairs (BIA); state agencies including the Florida SHPO; local governmental agencies; and Indian tribes which may have an interest in the project area. The NOI contained a paragraph about Section 106 of the NHPA, and stated that we use the notice to initiate consultations with the SHPO, and to solicit their views, and those of other government agencies, interested Indian tribes, and the public on the Project's potential effects on historic properties. Copies of our NOI were sent to the regional Native American organization and Indian tribes listed below on table 4. The Florida SHPO responded to our NOI in a letter dated June 17, 2015. The letter noted that no historic properties were identified in the APE in a survey report submitted for the Project.

Only the Seminal Tribe of Florida responded to our NOI. In a letter from the Tribal Historic Preservation Office (THPO), dated June 23, 2015, additional consultations were requested, together with the provision of copies of cultural resources reports.

In addition to the FERC's consultation process, FGT communicated with the Florida SHPO, local historic organizations, and potentially interested Indian tribes. On January 15, 2015, FTG's cultural resources consultant (Search) conducted a teleconference with SHPO staff. The Florida Department of State Division of Historical Resources, representing the SHPO, issued an archaeological permit to Search on January 26, 2015. On March 27, 2015, Search sent

the SHPO a copy of its first cultural resources survey report for the Project. The SHPO reviewed the report in a letter dated April 29, 2015.

Search contacted the Bradford County Historic Preservation Society, Clay County Historical Society, Suwannee Valley Genealogical Society, and the Columbia County Historical Society. However, none of these organizations produced information about local cultural resources. The project area does not contain any Certified Local Governments.

On January 27 and 28, and March 4, 2015, Search sent letters to the Indian tribes listed in table 4. The Seminole Tribe of Florida responded on April 9, 2015, requesting government-to-government consultations with the FERC. FGT has not yet documented that it submitted reports to the Seminole Tribe of Florida for review.

In a March 6, 2015 email to Search, the Muscogee (Creek) Nation of Oklahoma requested that previously recorded sites 8CO103, 104, 105, and 333 along the Branford Loop be avoided. On December 15, 2015, Search provided the Muscogee Nation with a copy of its survey report as described further below.

Table 4
Indian Tribes and Native Americans Contacted

Tribes Contacted by the FERC via May 19, 2015 NOI	Tribes Contacted by FGT via January 27 & 28 and March 4, 2015 Letters	Tribal Responses
	Eastern Shawnee Tribe of Oklahoma, c/o Robin Dushane, THPO a/	No response filed to date.
Miccosukee Tribe of Indians in Florida, c/o Colley Billie, Chair	Miccosukee Business Committee of Florida, c/o Billy Cypress, Chair	No response filed to date.
Muscogee (Creek) Nation in Oklahoma, c/o George Tiger, Chief, & Emma Spain, THPO	Muscogee (Creek) Nation in Oklahoma, c/o Emma Spain, THPO	March 6, 2015 email to FGT requested that sites along the Branford Loop be avoided.
Poarch Band of Creek Indians in Alabama, c/o Stephanie Bryan, Chair, & Robert Thrower, THPO		No response filed to date.
Seminole Tribe of Florida c/o James Billie, Chair, & Paul Backhouse, THPO	Seminole Tribe of Florida c/o Paul Backhouse, THPO	April 9, 2015 letter to FGT requested FERC consultation. June 23, 2015 letter to the FERC requested continuing consultations and copies of survey reports.
Seminole Nation of Oklahoma c/o Leonard Harjo, Chief, & Alan Emarthle, THPO	Seminole Nation of Oklahoma c/o Alan Emarthle, THPO	No response filed to date.
United South and Eastern Tribes c/o Kitchki Carroll, Executive Director		No response filed to date.

a/ THPO – Tribal Historic Preservation Officer

Overview and Survey Results

In accordance with the FERC's Office of Energy Project's *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects* (December 2002 version), and as required under the Commission's regulations at 18 CFR 380.12(f), FGT filed with its application to the FERC, in Appendix M to Resource Report 4, the following overview/survey report:

- Arbuthnot, M. March 2015. *FGT, Jacksonville Expansion Project, Bradford, Clay, Columbia, and Suwannee Counties, Florida*. Search, Jacksonville.

Area of Potential Effect

Search defined the direct APE for archaeological resources as a 300-foot-wide corridor (150 feet on each side of the pipeline centerline) for the Branford and Jacksonville Loops. In some cases, where additional extra workspace would be needed, the survey corridor was expanded to 250 feet on one side. It was also narrowed to 60 feet for a portion of the Jacksonville Loop that was previously inventoried. The indirect APE for historic standing architectural structures was defined as a 0.5-mile radius around CS 16. The Florida SHPO accepted this APE in a letter dated April 29, 2015, when it approved Search's survey report where the APE was defined (Arbuthnot, March 2015). We concur with FGT's definition of the APE.

Previous Investigations and Recorded Sites

Search examined U.S. General Land Office (GLO) survey plats dating to 1826 and 1827 covering the area where the proposed Branford Loop and regulator station would be located; an 1834 GLO map covering the area of CS 16; and an 1834 GLO map covering the Jacksonville Loop. No historic sites were identified on the GLO maps.

Nine previous cultural resources surveys have been conducted within one mile of the Branford Loop, ten previous surveys within one mile of the regulator station, nine previous surveys within one mile of the Jacksonville Loop, and eight previous surveys within one mile of CS 16. Six previous surveys overlapped with the Branford Loop. Five of the previous surveys overlapped portions of the Jacksonville Loop. Nine previous surveys overlapped with the APE for the regulator station. Two previous surveys overlapped the APE for CS 16.

In 1980, Espey, Huston and Associates surveyed the original FGT pipeline and recorded archaeological sites 8CO103, 104, and 105 along the currently proposed Branford Loop (Voeillinger et al. 1980). All three are pre-contact sites. Site 8CO105 was previously determined by the SHPO to be not eligible for the NRHP; while sites 8CO103 and 104 were not evaluated.

No archaeological sites were previously recorded within one mile of the Jacksonville Loop Regulation Station. Three archaeological sites (8BF71, 141, and 144) were previously recorded within 0.5 mile of CS 16. Site 8BF71 was originally recorded by the Florida State Museum in 1987, as a pre-contact lithic scatter, not evaluated for the NRHP (Johnson 1987). Site 8BF141, an unevaluated multi-component resource, was originally recorded by Search in 1999 for the FGT Phase IV Project. Goodwin and Associates originally recorded 8BF144, a pre-contact site that is not eligible for the NRHP, during its 2000 survey for the FGT Phase V Project (Labadia et al. 2000).

Just east of the Jacksonville Loop, Search originally recorded archaeological sites 8BF161 and 165 in 2006. The sites are related to the Florida Railroad Corridor Resource Group, dating back to 1855. They have been evaluated as eligible for the NRHP.

Results of 2015 Search Cultural Resources Inventories

Search conducted cultural resources inventories of proposed facilities for the Project in January and February 2015. The surveys covered the Branford Loop, Branford Loop Launcher,

Branford Loop Receiver, Jacksonville Loop, Jacksonville Loop Relocated Receiver, Jacksonville Loop Regulation Station, CS 16, and three laydown areas associated with the compressor station. A total of about 318 acres were inspected, with 256 shovel probes excavated (Arbuthnot, March 2015).

Two previously recorded archaeological sites (8CO103 and 105) were identified along the Branford Loop. Previously recorded site 8CO104 was not relocated. Search reevaluated sites 8CO103 and 105 as being not eligible for the NRHP, requiring no further work. The SHPO concurred in its letter of April 29, 2015; and we agree.

Previously recorded historic railroad site 8BF165 was relocated along the Jacksonville Loop. This is an active double track railroad. Search agreed that the railroad site remains eligible for the NRHP. However, the pipeline would not actually cross this railroad. The site is located about 25 feet from the eastern end of the proposed loop. The pipeline would be buried underground, and the right-of-way restored after installation, so that there would be no significant visual impacts. Search indicated that the Project would have no effects on site 8BF165. The SHPO concurred in its letter of April 29, 2015; and we agree.

No cultural resources were identified during the 2015 surveys at the Jacksonville Loop Regulation Station, CS 16, and the three laydown areas. Previously recorded archaeological sites 8BF71, 141, and 144 are located outside the boundaries for CS 16, were not relocated by Search, and should not be affected by the current Project. Site 8BF141 is about 140 feet east of the proposed CS 16; site 8BF144 is about 740 feet southeast; and site 8BF71 is about 1,200 feet northeast.

Areas Not Surveyed

According to FGT's application (Resource Report 8) eight existing access roads would be temporarily used; of which one would be improved (AR004-001). The Search survey report did not mention if any access roads were inspected.

Unanticipated Discoveries Plan

It is possible that during construction, there could be unanticipated discoveries of previously unknown and unidentified cultural resources, unmarked cemeteries or human remains. To account for that possibility, and provide for measures that could be implemented to reduce impacts and mitigate effects for those situations, FGT developed its project-specific *Plan for the Unexpected Discovery of Cultural Resources and Human Remains* (Discovery Plan), attached as Appendix N of the Environmental Resource Report included with its application with the FERC. FGT has not documented that the Florida SHPO and interested Indian tribes reviewed and commented on its Discovery Plan. Therefore, **we recommend that:**

- **Prior to construction, FGT should file with the Secretary of the Commission (Secretary) confirmation that the Florida SHPO and interested Indian tribes were provided an opportunity to review and comment on the project-specific Discovery Plan. If comments were provided, FGT should file a revised Discovery Plan that responds to their concerns, for the review and approval of the Director of the Office of Energy Projects.**

Compliance with the NHPA

No traditional cultural properties, sacred or religious sites, aboriginal burials, or objects of cultural patrimony were identified in the APE by the NPS, BIA, SHPO, FGT, Search, or any Indian tribes. After consultations, we conclude that the Project would have no effect on sites of traditional, cultural, or religious importance to Indian tribes. Therefore, we have completed compliance with Section 101(d)(6) of the NHPA.

We have not yet completed the process of complying with Section 106 of the NHPA, because the entire APE was not inspected for cultural sources. FGT has not yet documented surveys of temporary access roads that would be improved. Nor has FGT documented that it provided copies of its cultural resources survey reports to the Seminole Tribe of Florida, and filed the comments of interested tribes on the reports. Therefore, **we recommend that:**

- **FGT <u>should not begin construction</u> of facilities or use any staging, storage, or temporary work areas and new or to-be-improved access roads <u>until:</u>**

  a. FGT files with the Secretary:
  (1) cultural resources survey reports covering access roads;
  (2) evaluation reports, and avoidance or treatment plans for any sites identified along the access roads, as necessary; and
  (3) comments on the cultural resources reports and plans from the Florida SHPO and interested Indian tribes.

  b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if any historic properties would be adversely affected; and

  c. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies FGT in writing that treatment plans (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: <u>"CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."</u>

9.0 Air Quality and Noise

Air quality would be affected by construction and operation of the Project. Though air emissions would be generated by operation of equipment during construction of the Project, the primary source of long-term air quality impacts associated with the Project would be the proposed single reciprocating engine/compressor package (new compressor) driven by a Caterpillar G3616 engine rated at 5,000 hp at the existing CS 16. The existing CS 16 consists of six reciprocating

engine-driven compressor enclosed in one building and a single turbine driven centrifugal compressor located in a second building.

Federal and state air quality standards have been designed to protect human health and the environment from airborne pollutants. The EPA has developed National Ambient Air Quality Standards (NAAQS) for criteria air pollutants such as nitrogen oxides (NO_x), and carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), and inhalable particulate matter (PM), including PM less than 10 microns in aerodynamic diameter (PM_{10}) and PM less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$). The NAAQS were set at levels the EPA determined are necessary to protect human health and welfare for the general public as well as sensitive populations.

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. The primary GHGs produced by fossil fuel combustion are carbon dioxide (CO_2), methane (CH_4), and nitrous dioxide (NO_2). Emissions of GHGs are typically expressed in terms of carbon dioxide equivalents (CO_{2e}) were the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO_2, or its global warming potential.

The following section outlines the existing environment; the federal regulations applicable under the Clean Air Act; the need for air quality permits; the magnitude and impact of construction emissions, and the magnitude and impact of operational emissions from the Project.

Existing Environment

The climate of north-central Florida is characterized as subtropical. CS 16 and 5.7 miles of pipeline are located in Bradford County which is largely rural. Summers are humid, hot, and long. Winters are typically mild with cold fronts occurring, which in some instances produce brief freezing conditions. Relative humidity is fairly constant year-round due to the inland conditions, surrounding lakes, and relative proximity to the Gulf of Mexico.

Air Quality Control Regions (AQCRs) are areas for which implementation plans describe how ambient air quality standards would be achieved and maintained. AQCRs are defined by the EPA and state agencies in accordance with the Clean Air Act of 1970 (CAA). The 1977 CAA Amendments in Section 107 require EPA and states to identify by category those AQCRs meeting and not meeting the NAAQS. Areas meeting the NAAQS are designated “attainment areas,” and areas not meeting the NAAQS are designated “nonattainment areas”. The designation of an area is made on a pollutant-by-pollutant basis. All Project facility construction would occur in areas that are designated attainment areas for all pollutants.

Federal Air Quality Requirements

The CAA (42 U.S.C 7401 et seq., as amended in 1977 and 1990), and 40 CFR Parts 50 through 99 provide the federal statutes and regulations governing air pollution in the United States. The following federal requirements have been reviewed for applicability to the Project.

The EPA promulgated the General Conformity Rule on November 30, 1993, to implement the conformity provision of the Title I, Section 176 (c)(1) of the CAA. On March 24, 2010, the EPA amended the General Conformity Rule. Section 176 (c)(1) requires that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approved any activity not conforming to an approved state implementation plan.

None of the facilities within the Project area are located within an EPA designated nonattainment areas. Accordingly, a general conformity analysis is not necessary.

The Prevention of Significant Deterioration (PSD) program is designed to ensure that emission increase at major sources does not cause or contribute to a violation of any NAAQS. The FDEP has been delegated by the EPA as the authority to administer and enforce PSD regulations in the state of Florida.

A major stationary source is defined as either one of the sources listed in 40 CFR 52.21 that has a potential to emit 100 tons per year (tpy) or more of any regulated pollutant, or any other stationary source that has the potential to emit 250 tpy or more of a regulated pollutant. Natural gas compressor stations are not one of the sources identified in 40 CFR 52.21 and therefore the major source definition for compressor stations is based on 250 tpy. Potential to emit (PTE) is determined on an annual basis after the application of air pollution control equipment and any federally enforceable limitations such as a permit condition limiting hours of operation. Since CS 16 is an existing PSD facility, the installation of any new emissions unit must be compared with the PSD significant emission rates to determine if this emissions unit constitutes a major modification.

Table 5 provides the PTE emissions from the new compressor and compares these emissions with the PSD significant emission threshold rates. Potential annual emission rates were based on the unit operating 8,760 hours per year.

Table 5
Operational Emissions from New Compressor Engine

Pollutant	PTE (tpy)	PSD Significant Emission Rate Threshold (tpy)
CO	74.5	100
NO_x	24.1	40
VOC	33.7	40
SO_2	2.3	40
PM	0.01	25
PM_{10}	1.6	15
$PM_{2.5}$	1.6	10

Based on the potential air emissions listed in Table 5, the installation of the new compressor would not constitute a major modification under PSD regulations and would not be subject to PSD review. Therefore, the Project did not require a best available control technology analysis. FDEP determined that the potential emissions increase from the Project did not adversely impact any ambient air quality standards and issued a final air construction permit on May 19, 2015.

New Source Performance Standards (NSPSs) apply to all new sources within designated categories, regardless of their geographic location or the ambient air quality at that location. Each NSPS defines emission limitations, work practices, and/or monitoring requirements that are applicable to a particular source group. In terms of the Project, the operation of a new compressor would be subject to the requirements of 40 CFR Part 60 Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The new natural gas-

fired SI RICE is subject to the requirements of the NSPS Subpart JJJJ. The existing combustion turbine is subject to the requirements of NSPS Subpart GG, Standards of Performance for Stationary Combustion Turbines.

Section 112 of the CAA requires the EPA to list categories and subcategories of major sources and area sources of hazardous air pollutants (HAP) and to establish National Emission Standards for Hazardous Air Pollutants (NESHAPS) for the listed source categories and subcategories. NESHAPS require all major sources and in some cases area sources to meet HAP emission standards reflecting the application of the maximum achievable control technology (MACT). NESHAPs or MACT standards are listed in 40 CFR Parts 61 and 63.

The new natural gas-fired engine and the existing emergency generator are subject to 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines.

Construction Emissions

Construction of the Project would result in temporary and minor emissions of pollutants from the following sources:

- tailpipe emissions from off-road construction equipment;
- tailpipe emissions from on-road vehicles used by workers commuting to the site as well as for vehicles used to deliver equipment and materials to the site;
- fugitive dust generated from travel on paved and unpaved roadways;
- fugitive dust resulting from clearing, grading and material handling operations as well as from wind erosion of soil stockpiles; and
- open burning of vegetation.

Potential construction emissions from the Project would be about 73 tons of CO; 23 tons of nitrogen oxides (NO_x), 0.1 ton of sulfur dioxide (SO_2), 28 tons of PM_{10}, 6.4 tons of $PM_{2.5}$ and 5,358 tons of carbon dioxide equivalents (CO_2e).

To ensure that fugitive dust from construction activities would be minimized, the following measures would be implemented to control emissions from construction activities:

- construction equipment would be properly maintained and only operated when needed;
- water, or other non-hazardous dust suppression products would be applied as need to unpaved roads and the construction right-of-way to minimize fugitive dust emissions; and
- disturbed areas would be stabilized in accordance with our Plan and Procedures to limit the amount of fugitive dust generated from disturbed soils along the construction right-of-way.

The primary operational air emission source for the Project would result from the new CS 16 unit. The emissions from this unit are identified in table 5.

FGT performed air dispersion modeling to assess the impacts from the potential incremental emissions increase from the single engine that would be installed for the Project for all criteria pollutants and averaging periods. The modeling analysis was performed using the screening mode of the AERMOD model. The purpose of the AERMOD model was to evaluate the air impacts of the Caterpillar G3616 engine. The model calculated impacts in combination

with ambient monitoring data, which was used to account for other nearby sources, and compared to EPA's NAAQS. Table 6 identifies the modeling results of criteria pollutants in comparison with NAAQS.

Table 6
AERMOD results and NAAQS Compliance Summary

Pollutant	Averaging Period	Modeled Impact ($\mu g/m^3$)	Ambient Background ($\mu g/m^3$)	Total Modeled Plus Ambient Background ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
SO_2	24-hour	3.0	N/A	N/A	365
	3-hour	5.1	N/A	N/A	1,310
	1-hour	5.5	N/A	N/A	196
NO_2	Annual	1.7	15.8	17.5	100
	1-hour	47.0	71.5	118.5	188
CO	8-hour	183	N/A	N/A	10,000
	1-hour	184	N/A	N/A	40,000

The screening analysis shows concentrations for each the additional added unit at Compressor Station 16 are below the applicable NAAQS. However, the modeling only accounts for Project emissions and does not include existing sources at Compressor Stations 16. As such, we recommended that FGT provide dispersion modeling demonstrating that the modeled existing emissions plus modeled incremental increase from the modifications would comply with the NAAQS. The intent is for FGT demonstrate that emissions would not cause or contribute to a violation of the NAAQS and, therefore, impacts would not be significant. The modeling analysis identified in the recommendation will provide a conservative assessment of the ambient air quality prior to FGT's planned construction, ensuring that any incremental increases in emissions would not cause or contribute to any NAAQS exceedances. As such, **we recommend that:**

- **Prior to construction, FGT should file the results of an air quality screening (AERSCREEN), or refined modeling analysis (AERMOD or EPA-approved alternative) for all of the emission generating equipment (including existing equipment) at Compressor Station 16. The results should demonstrate that the modeled existing emissions, plus the modeled incremental increase in emissions of criteria pollutants from the modifications either:**

  a. results in local concentrations below the National Ambient Air Quality Standards (NAAQS) where current modeled concentrations from the existing compressor station (existing and ambient background) are below the NAAQS; or

  b. does not cause or contribute to significantly increased local area concentrations above the NAAQS where the current ambient background concentrations are currently above the NAAQS.

Thus, through implementation of construction work practices, the short duration of the construction activities, a review of the estimated emissions from construction and operation, and compliance with our recommended condition, an analysis of the modeled air quality impacts from operation, we find that there would be no local or regionally significant impacts on air quality.

Noise and Vibration

Noise quality can be affected both during construction and operation of the Project. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{dn} is an energy average of the daytime and nighttime L_{eq} plus 10 decibel (dB). The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 A-weighted decibel (dBA); 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise.

In 1974, the EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has determined that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity noise interference. The Commission's regulations require that the noise attributable to any compressor station, compression added to an existing station, or any modification, upgrade, or update of an existing station, must not exceed an L_{dn} of 55 dBA at noise sensitive areas (NSAs). NSAs include residences, schools and daycare facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas specially known for their solitude and tranquility such as wilderness areas. An L_{dn} of 55 dBA is equivalent to a continuous noise level of 48.6 dBA. For comparison, normal speech at a distance of 3 feet averages 60-70 dBA L_{eq}.

In addition to noise requirements, the Commission, under 18 CFR 380.12(k)(v)(B) requires that operation of compressor stations not result in any perceptible increase in vibration. There are no state or county noise ordinances applicable to the Project components. If operation of the existing CS 16 results in perceptible vibration, the Commission would require FGT to investigate the cause and could require mitigation to reduce the vibration.

Operational Noise Impacts and Mitigation

A baseline ambient environmental sound level survey near CS 16 was conducted, with the existing seven-units in full load operation during daytime and nighttime hours. Five NSAs were identified during this survey, all were residences. Noise due to traffic on local roads was identified as the greatest contributor to the existing baseline sound levels. Table 7 indicates the baseline measurement results together with the distances and directions to NSAs from the proposed new compressor building.

Table 7
Noise Quality Analysis for CS 16

NSAs	Distance to Nearest NSA (feet)	Direction	Measured Existing Ambient Sound Level L_{dn} (dBA)	Predicted Sound Level Contribution of Proposed Added Equipment L_{dn} (dBA)	Combined Existing Ambient and New Equipment Sound Level L_{dn} (dBA)	Predicted Change in Sound Level from Existing L_{dn} (dBA)
NSA # 1	2,750	South	65.0	44.0	65.0	0.0
NSA # 2	2,550	SSE	65.0	44.6	65.0	0.0
NSA # 3	2,430	SSE	65.0	45.7	65.0	0.0
NSA # 4	4,580	East	63.4	39.4	63.4	0.0
NSA # 5	4,250	North	59.3	36.2	59.3	0.0

The results of the measurements, observations, and analysis indicate that the predicted sound level contribution of the proposed added equipment's sound contribution at the nearby NSAs would be below the FERC criterion of 55 dBA. There is predicted to be no increase in ambient sound levels due to the addition of the new compressor. The new compressor would be installed in its own compressor building. In addition, the inside of the compressor building would be highly acoustically absorptive and sound treatment would be installed on the building walls, roof, equipment doors, and personnel doors. All building ventilation openings including the roof gravity relief exhausts would include standard acoustical silencers such that the total sound pressure level contribution of each opening does not exceed 60 dBA at 12 feet from the opening.

However, to ensure that CS 16 operates in compliance with our requirements, **we recommend that:**

- **FGT should conduct a noise survey at CS 16 to verify that the noise from all the equipment operated at full capacity does not exceed the previously existing noise levels that are at or above an L_{dn} of 55 dBA at the nearby NSAs. The results of this noise survey should be filed with the Secretary no later than 60 days after placing the modified units in service. If any of these noise levels are exceeded, FGT should, within 1 year of the in-service date, implement additional noise control measures to reduce the operating noise level at the NSAs to or below the previously existing noise level. FGT should confirm compliance with this requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Compressor unit blowdowns (gas venting) can occur during initial construction/testing, operational startup and shutdown of the compressor or maintenance activities, and for emergency purposes. During construction and testing of the new compressor, there is an increased frequency of blowdowns to ensure the facility would be operated reliably and safely. Blowdowns during compressor startup/shutdown would be infrequent as normal operation does not require venting and units are in pressurized state to facilitate operation. Occasional

maintenance and startup/shutdown blowdowns can occur. To minimize the impact of blowdown noise from the maintenance activity, FGT would control the blowdown rate to minimize the noise contribution and would conduct blowdowns during daylight hours. Full compressor station blowdowns would only occur during an emergency event, are very infrequent, and would last no longer than 5 minutes. FGT would install unit blowdown silencer to minimize noise during the unit blowdown event.

Construction Noise Impacts and Mitigation

Noise would be generated during construction of the Project facilities. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and localized. Only standard construction equipment would be used in the construction of the Project, and most construction would take place during daytime working hours of 7:00 a.m. until 7:00 p.m.

The highest sound levels during construction are expected during the early earthmoving phase. Equipment that may be operating during this phase includes bulldozers, graders, backhoes, dump trucks, generators, etc.

As described previously, FGT would install segments of the Jacksonville Loop using two HDDs. HDD equipment consists of an HDD drilling rig and auxiliary support equipment including mud pumps, portable generators, cranes, mud mixing and cleaning equipment, forklifts, loaders, trucks, and portable light sets. The sound level impacts at NSAs associated with the HDD entry and exit sites from construction operations would depend on the type of equipment used, the mode of operation of the equipment, and the length of time the equipment is in use.

For a given crossing, the entry and exit may be opposite depending on the Project requirements and the drilling contractors selected. However, the noise impact analysis assumes that the entry and exit site are positioned at worst-case locations for noise impact, with the entry located nearest the NSAs. Table 8 identifies the calculated HDD sound level contributions at nearest NSAs.

Table 8
Calculated HDD Sound Level Contributions at Nearest NSAs

HDD Crossing	NSA Description	NSA Information	24-hour Operations		
		Distance and Direction to NSA	Existing[1] Ambient Sound Level L_{dn} dBA	Calculated HDD Activity Contribution L_{dn} dBA	Predicted Temporary Increase due to HDD Activities L_{dn} dBA
C-1	Lake Butler WMA Raiford Tract Wetland 1 Entry NSAs	NSA # 1 – 1,630 feet South West	45	54.2	9.2
		NSA # 2 – 2,180 feet South	59	51.1	0
		NSA # 3 – 2,780 feet	59	37.6	0

Table 8
Calculated HDD Sound Level Contributions at Nearest NSAs

		South East			
	Lake Butler WMA Raiford Tract Wetland 1 Exit (no NSAs)	No NSAs within ½ mile of the Exit Site			
C-2	Lake Butler WMA Raiford Tract Wetland 2 Entry NSA	NSA # 1 – 2,640 feet East	44	38.2	0
	Lake Butler WMA Raiford Tract Wetland 2 Exit NSA	NSA # 2 – 1,580 South East	44	38.8	0

[1] Existing Ambient Sound Levels were estimated based on area traffic.

HDD noise impacts would be mitigated as necessary through one or more of the following:

- installing noise barriers;
- enclosing the drill rig fully or partially;
- restricting the time of day for HDD operations; and
- offering to temporarily relocate affected NSAs during short periods of elevated noise.

The calculated HDD activity contribution is below the FERC's 55 dBA limit at all NSAs. At NSA # 1 for C-1 HDD crossing there would be an increase of 9.2 dBA above the existing ambient sound level which would be perceptible. At all the other HDD crossings, there is predicted to be no increase at the NSAs due to HDD activities in comparison to the existing ambient sound levels.

Based on the temporary nature of the Project, and the mitigation required to reduce noise during HDD operations, we have determined that the noise impacts for the HDD operations would not be significant.

With FGT's commitments mitigate HDD noise impacts and to install the noise mitigation measures on modified compressor station, and our recommended condition to ensure that noise for modified station remains below the previously existing noise level, we conclude that noise impacts resulting from the Project's construction and operation would not be significant.

10.0 Reliability and Safety

The pressurization of natural gas at a compressor station involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a leak, or rupture at the facility. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The proposed Project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent facility accidents and failures.

Part 192.163 – 192.173 of 49 CFR specifically addresses design criteria for compressor stations, including emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in an emergency. The transportation of natural gas by pipeline involves some incremental risk to the public due to the potential for an accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane has an auto-ignition temperature of 1,000 degrees Fahrenheit and is flammable at concentrations between 5.0 percent and 15.0 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite if there is an ignition source. A flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

Safety Standards

The USDOT is mandated to provide pipeline safety under Title 49 USC Chapter 601. The USDOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level.

The USDOT provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. A state may also act as USDOT's agent to inspect interstate facilities within its boundaries; however, the USDOT is responsible for enforcement actions. The USDOT pipeline standards are published in Title 49 CFR Parts 190-199. Part 192 specifically addresses natural gas pipeline safety issues.

Under a *Memorandum of Understanding on Natural Gas Transportation Facilities* (Memorandum) dated January 15, 1993, between the USDOT and the FERC, the USDOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for

which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by the USDOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards other than the USDOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert the USDOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under the Commission's jurisdiction.

The FERC also participates as a member of the USDOT's Technical Pipeline Safety Standards Committee which determines if proposed safety regulations are reasonable, feasible, and practicable.

The aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the USDOT *Minimum Federal Safety Standards* in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The USDOT specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

FGT's construction and operation of the Project would represent a minimum increase in risk to the nearby public and we are confident that with implementation of the standard safety design criteria, that the Project would be constructed and operated safely.

11.0 Cumulative Impacts

In accordance with NEPA and FERC policy, we evaluated the potential for cumulative effects of the project in the context of the proposed action when added to other past, present, and reasonably foreseeable future activities. Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time.

This cumulative effects analysis generally follows a method set forth in relevant guidance (CEQ, 1997), (CEQ, 2005); (EPA, 1999) and focuses on potential impacts from the proposed Project on resource areas or issues where their incremental contribution would be potentially significant when added to the potential impacts of other actions.

To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, we consider several factors, including:

1. the geographic area affected by the project;
2. the resources affected by the project;
3. the other past, present, and reasonably foreseeable actions that have affected these resources; and
4. the overall impact on these various resources from the accumulation of the actions.

CEQ advises that the scope of the cumulative impact analysis is related to the magnitude of the environmental impacts of the proposed action and that proposed actions that have no significant impact usually involve only a limited cumulative impact.

For the purposes of this EA, the region of influence for cumulative impacts includes the Project's area of direct effect plus the area where impacts on a resource, such as air quality, may extend beyond the disturbance area. Because the Project's components would be relatively minor in scope, we limited the cumulative impact region of influence for all resources (excluding air quality) to the visual range from the Project sites to a maximum of a one-mile radius. For the resources affected by the Project, effects of more distant projects were not assessed because their impacts would not be additive with those of the Project. Because of the limited scope of the Project, the Project would not have a meaningful contribution to cumulative impacts at a larger geographic scale. For resources that may extend beyond the disturbance area, such as air quality, we looked at a larger region of influence generally at the airshed scale extending to a distance of 50 kilometers.

Based on our review, there are no known past, present, or reasonably foreseeable projects within the identified cumulative impact assessment areas for each resource. However, commercial and residential development is common in Florida and many such projects have been proposed. Because the facilities would be collocated with an existing pipeline and the impacts of the facilities would not be significant, we have determined that adding the impacts of the facilities to those of any future commercial or residential development would not be likely to result in a significant cumulative impact on the environment.

C. ALTERNATIVES

In accordance with the NEPA and Commission policy, we identified and evaluated alternatives to the Project. The evaluation criteria for consideration of alternatives include:

- meets the objective of the proposed Project;
- technical feasibility and practicality; and
- significant environmental advantage over the Project.

1.0 No-Action Alternative

Although a decision by the Commission to deny the proposed action would avoid environmental impacts addressed in this EA, the need for firm delivery of 15,000 MMBtu/d to delivery points within the State of Florida would not be met. Consequently, the No-Action Alternative would not meet the Project objectives. In the absence of the Project, FGT would need to increase throughput by other infrastructure.

Because the footprint and impacts of the Project are so minimal, we conclude that any other means of meeting the need for the Project would not provide a significant environmental advantage.

2.0 System Alternatives

System alternatives to the proposed action would make use of existing or other proposed natural gas transmission systems/facilities to meet the stated purpose of the Project. Implementing a system alternative would make it unnecessary to construct all or part of the Project, although some modifications or additions to an existing transmission system/facility or other proposed transmission system/facility may be necessary.

FGT's existing natural gas system currently services the Project's delivery points. No other existing or proposed natural gas systems service or would service the Project's delivery points. Accessing the delivery points using another system would require additional miles of pipeline construction and would not provide a significant environmental advantage over the Project.

3.0 Pipeline and Compression Alternatives

As described in its application, when developing the Project, FGT considered compression alternatives. These alternatives were a 7,700 hp turbine; two 3,550 hp compressor units; and one 5,000 hp compressor unit. After determining the proposed 5,000 hp compressor unit best met its needs, FGT then calculated the resulting Project pipeline lengths relative to CS 16. Based on our review of the information provided by FGT, the scope of the Project, and the potential impacts on the environment resulting from installation and operation of the proposed facilities, we determined no pipeline and compression alternatives would provide a significant environmental advantage over the Project.

4.0 Site Alternatives

Our review did not identify any conflicts with the use of FGT's proposed routing and siting. As discussed throughout its EA, collocation with existing facilities minimizes impacts on resources. Further, no alternatives were suggested by stakeholders. Consequently, we did not identify any alternative site locations that would satisfy the evaluation criteria.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on our analysis as described in this EA and FGT's implementation of our recommendations, we conclude that approval of this Project would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions to any Certificate the Commission may issue.

1. FGT shall follow the construction procedures and mitigation measures described in its application and supplements, including responses to staff data requests, as identified in the EA, unless modified by the Order. FGT must:

   a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
   b. justify each modification relative to site-specific conditions;
   c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
   d. receive approval in writing from the Director of the Office of Energy Projects (OEP) **before using that modification**.

2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during activities associated with the construction and operation of the project. This authority shall allow:

   a. the modification of conditions of the Order; and
   b. the design and implementation of any additional measures deemed necessary (including stop work authority) to ensure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.

3. **Prior to any construction**, FGT shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, FGT shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

   FGT's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. FGT's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. FGT shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

   This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan*, minor field realignments per landowner needs, and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;
   b. implementation of endangered, threatened, or special concern species mitigation measures;
   c. recommendations by state regulatory authorities; and
   d. agreements with individual landowners that affect other landowners or could adversely affect sensitive environmental areas.

6. **At least 60 days before construction begins,** FGT shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. FGT must file revisions to the plan as schedules change. The plan shall identify:

   a. how FGT will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff environmental information requests), identified in the EA, and required by the Order;
   b. how FGT will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
   c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
   d. the location and dates of the environmental compliance training and instructions FGT will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change),
   e. the company personnel (if known) and specific portion of FGT's organization having responsibility for compliance;
   f. the procedures (including use of contract penalties) FGT will follow if noncompliance occurs; and
   g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

(1) the completion of all required surveys and reports;
(2) the environmental compliance training of onsite personnel;
(3) the start of construction; and
(4) the start and completion of restoration.

7. Beginning with the filing of its Implementation Plan, FGT shall file updated status reports with the Secretary on a biweekly basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

   a. an update on FGT's efforts to obtain the necessary federal authorizations;
   b. the construction status of the project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
   c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
   d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost.
   e. the effectiveness of all corrective actions implemented;
   f. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
   g. copies of any correspondence received by FGT from other federal, state, or local permitting agencies concerning instances of noncompliance, and FGT's response.

8. **Prior to receiving written authorization from the Director of OEP to commence construction of any project facilities,** FGT shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of wavier thereof).

9. FGT must receive written authorization from the Director of OEP **before placing the project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the project are proceeding satisfactorily.

10. **Within 30 days of placing the authorized facilities in service**, FGT shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed and installed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
    b. identifying which of the Certificate conditions FGT has complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

11. **Prior to construction,** FGT shall file with the Secretary confirmation that the Florida SHPO and interested Indian tribes were provided an opportunity to review and comment

on the project-specific Discovery Plan. If comments were provided, FGT shall file a revised Discovery Plan that responds to their concerns, for the review and approval of the Director of OEP.

12. FGT **shall not begin construction** of facilities or use any staging, storage, or temporary work areas and new or to-be-improved access roads **until:**

    a. FGT files with the Secretary:
       (1) cultural resources survey reports covering access roads;
       (2) evaluation reports, and avoidance or treatment plans for any sites identified along the access roads, as necessary; and
       (3) comments on the cultural resources reports and plans from the Florida SHPO and interested Indian tribes.

    b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if any historic properties would be adversely affected; and

    c. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies FGT in writing that treatment plans (including archaeological data recovery) may be implemented and/or construction may proceed.

    All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: **"CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."**

13. **Prior to construction**, FGT shall file the results of an air quality screening (AERSCREEN), or refined modeling analysis (AERMOD or EPA-approved alternative) for all of the emission generating equipment (including existing equipment) at CS 16. The results shall demonstrate that the modeled existing emissions, plus the modeled incremental increase in emissions of criteria pollutants from the modifications either:

    a. results in local concentrations below the National Ambient Air Quality Standards (NAAQS) where current modeled concentrations from the existing compressor station (existing and ambient background) are below the NAAQS; or

    b. does not cause or contribute to significantly increased local area concentrations above the NAAQS where the current ambient background concentrations are currently above the NAAQS.

14. FGT shall conduct a noise survey at CS 16 to verify that the noise from all the equipment operated at full capacity does not exceed the previously existing noise levels that are at or above an L_{dn} of 55 dBA at the nearby NSAs. The results of this noise survey shall be filed with the Secretary **no later than 60 days** after placing the modified units in service. If any of these noise levels are exceeded, FGT shall, **within 1 year** of the in-service date, implement additional noise control measures to reduce the operating noise level at the NSAs to or below the previously existing noise level. FGT shall confirm compliance with this requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

E. WORKS CITED

Arbuthnot, M. March 2015. *Florida Gas Transmission Company (FGT) Jacksonville Expansion Project, Bradford, Clay, Columbia, and Suwannee Counties, Florida*. Search, Jacksonville.

Council on Environmental Quality (CEQ). (2005). *Memorandum from James L. Connaughton to Heads of Federal Agencies regarding Guidance on the Consideration of Past Actions in Cumulative Effects Analysis.*

Council on Environmental Quality. (1997). *Considering Cumulative Effects.* Washington, DC.

Johnson, K. 1987. *The Search for Aguacleyquen and Cali, Archaeological Survey of Alachua, Bradford, Citrus, Clay, Columbia, Marion, Sumter, and Union Counties, Florida.* Florida State Museum, Tallahassee.

Labadia, C., et al. 2000. *Cultural Resources Survey and Inventory, Florida Gas Transmission Phase V Expansion Project, Gulf Power Lateral, Palmetto Power Lateral, Loop C, Loop D, Loop E, Loop G, Loop H, Loop I, St. Petersburg Lateral, Jacksonville Loop, and FP&L Lateral.* Goodwin & Associates, New Orleans.

Search. 1999. *Cultural Resources Survey and Evaluation Report of the Florida Gas Transmission Phase IV Expansion.* Search, Jacksonville.

Search. 2006. *Historic Structure Documentation of the Florida Railroad from Fernadina Beach in Nassau County to Cedar Key in Levy County, Florida.* Search, Jacksonville.

U.S. Environmental Protection Agency. (1999). *Consideration of Cumulative Impacts in EPA Review of NEPA Documents.*

U.S. Fish and Wildlife Service. (2008). *Birds of Conservation Concern 2008*. Arlington, VA: United States Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management.

Voellinger, L., et al. 1980. A Cultural Resource Survey of the Zachary-Fort Lauderdale Pipeline Construction and Conversion Project: Alternative II/Florida. Espey, Huston and Associates, Austin.

F. LIST OF PREPARERS

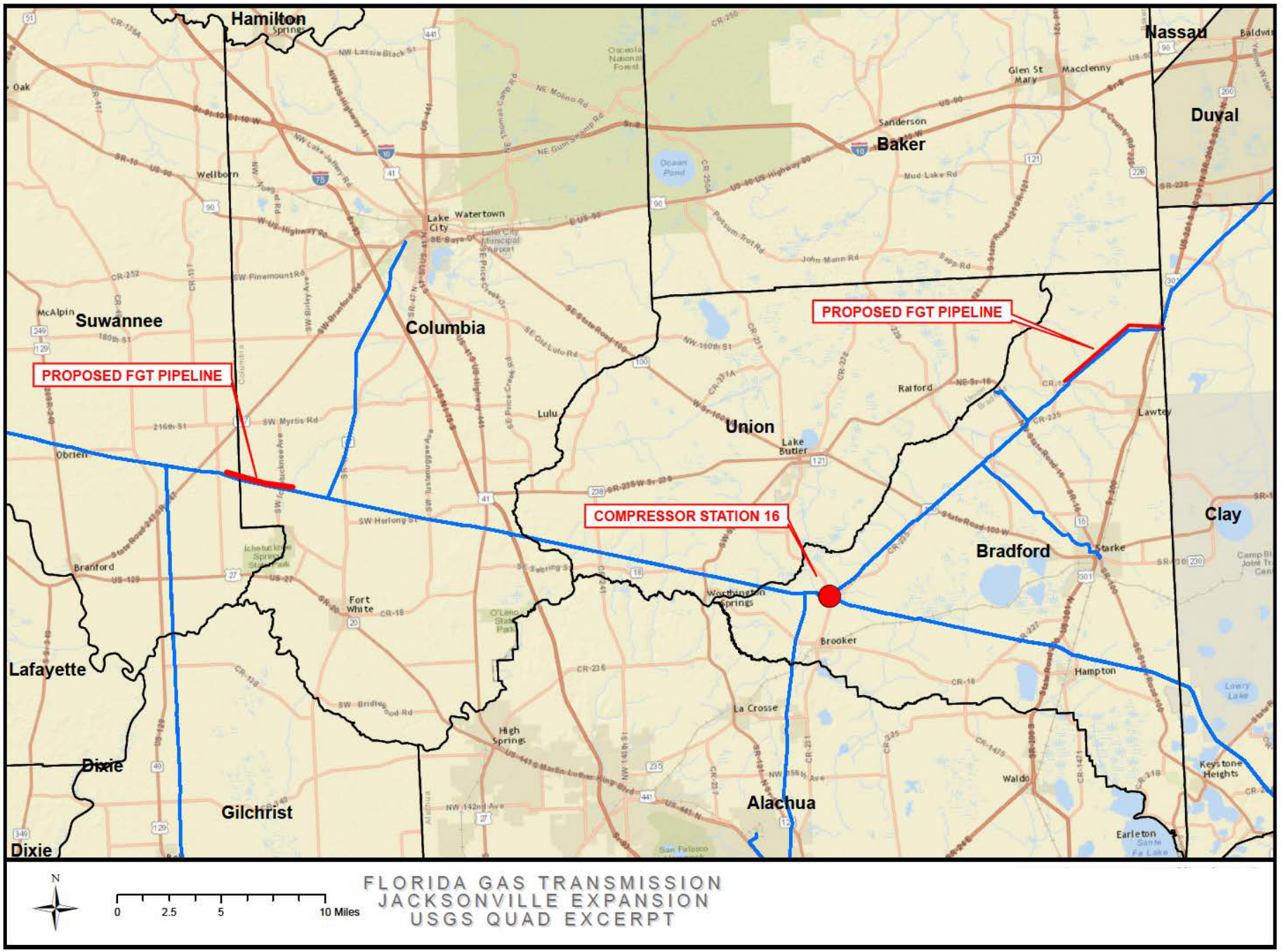
Anis, Shahid – Air and Noise Analyst; Air and Noise Quality, Reliability and Safety
B.S. Mechanical Engineering, University of Maryland, 1974; M.S., Energy, Resources & Environment, George Washington University, 1977

Friedman, Paul – Cultural Resources
B.A. Anthropology and History, University of California at Santa Barbara, 1976; M.A. History, University of California at Santa Barbara, 1980

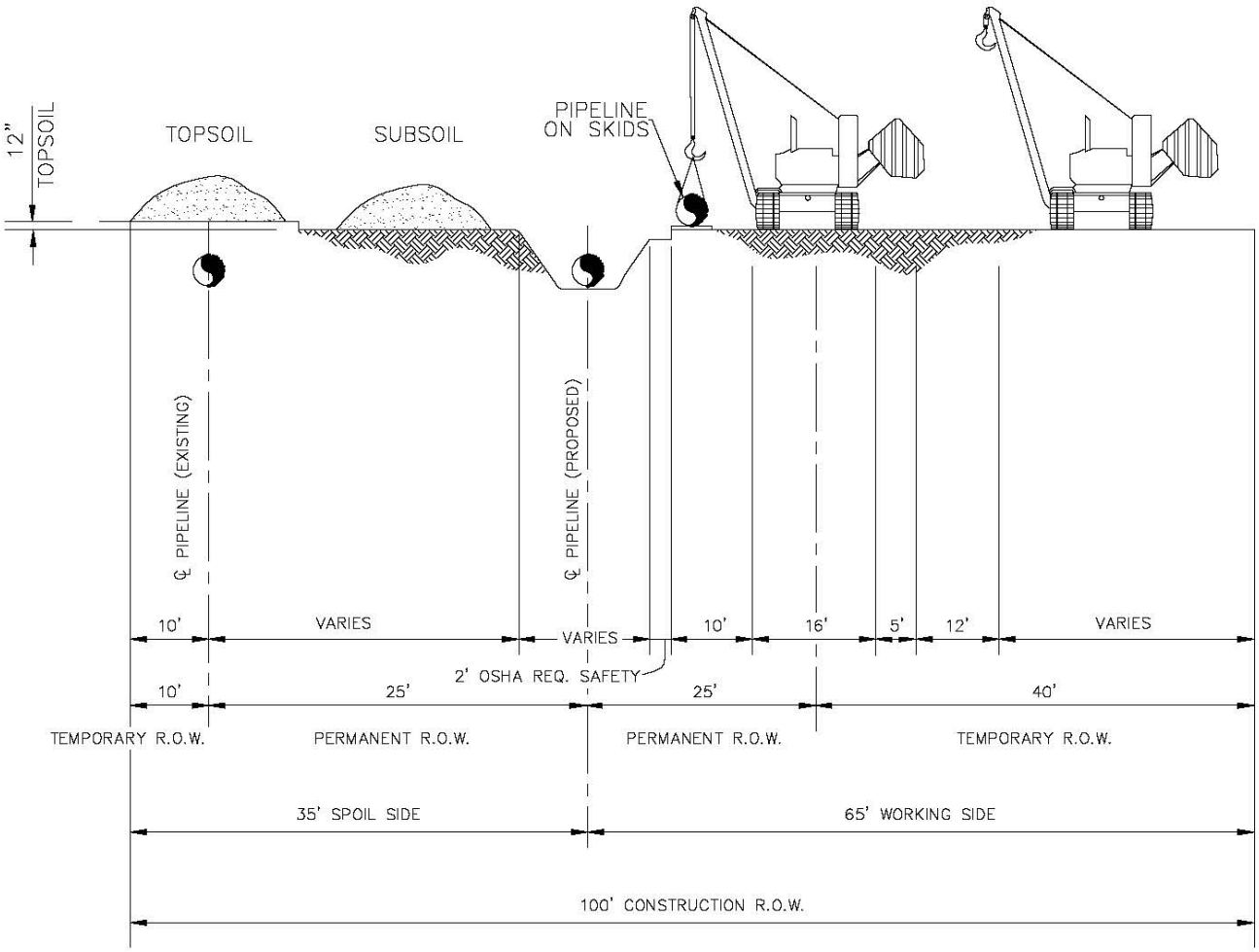
Peconom, John – Project Manager; Proposed Action, Environmental Analysis; and Alternatives
B.S. Environmental Biology & Management, University of California at Davis, 2000

Zielinski, Jennifer – Deputy Project Manager; Environmental Analysis
B.S. Environmental Science, University of Delaware, 2010; M.A. Environmental Resource Policy, George Washington University, 2015

APPENDIX A
PROJECT MAP



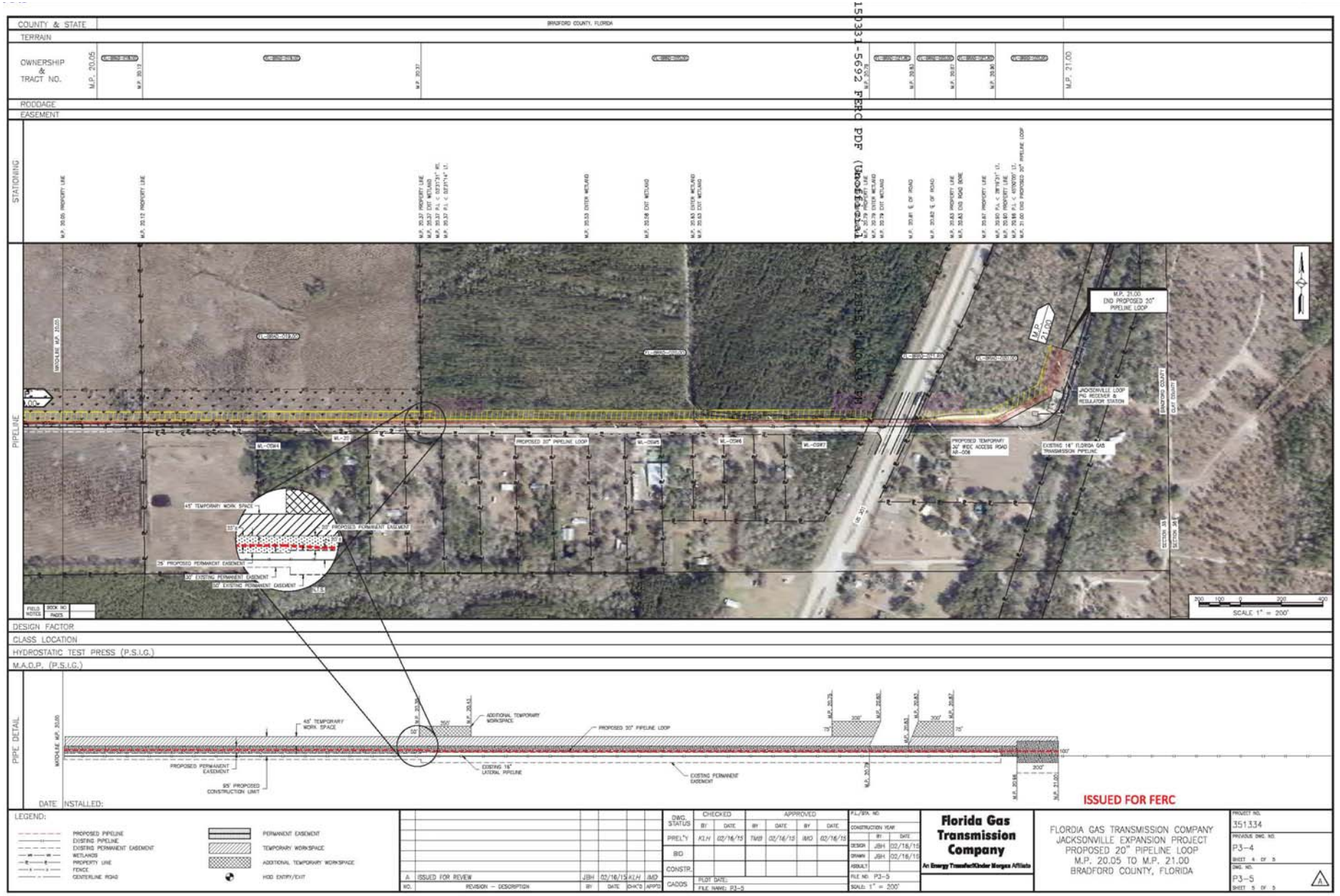
APPENDIX B
PHOTO ALIGNMENT SHEETS
AND
TYPICAL RIGHT-OF-WAY CONFIGURATIONS

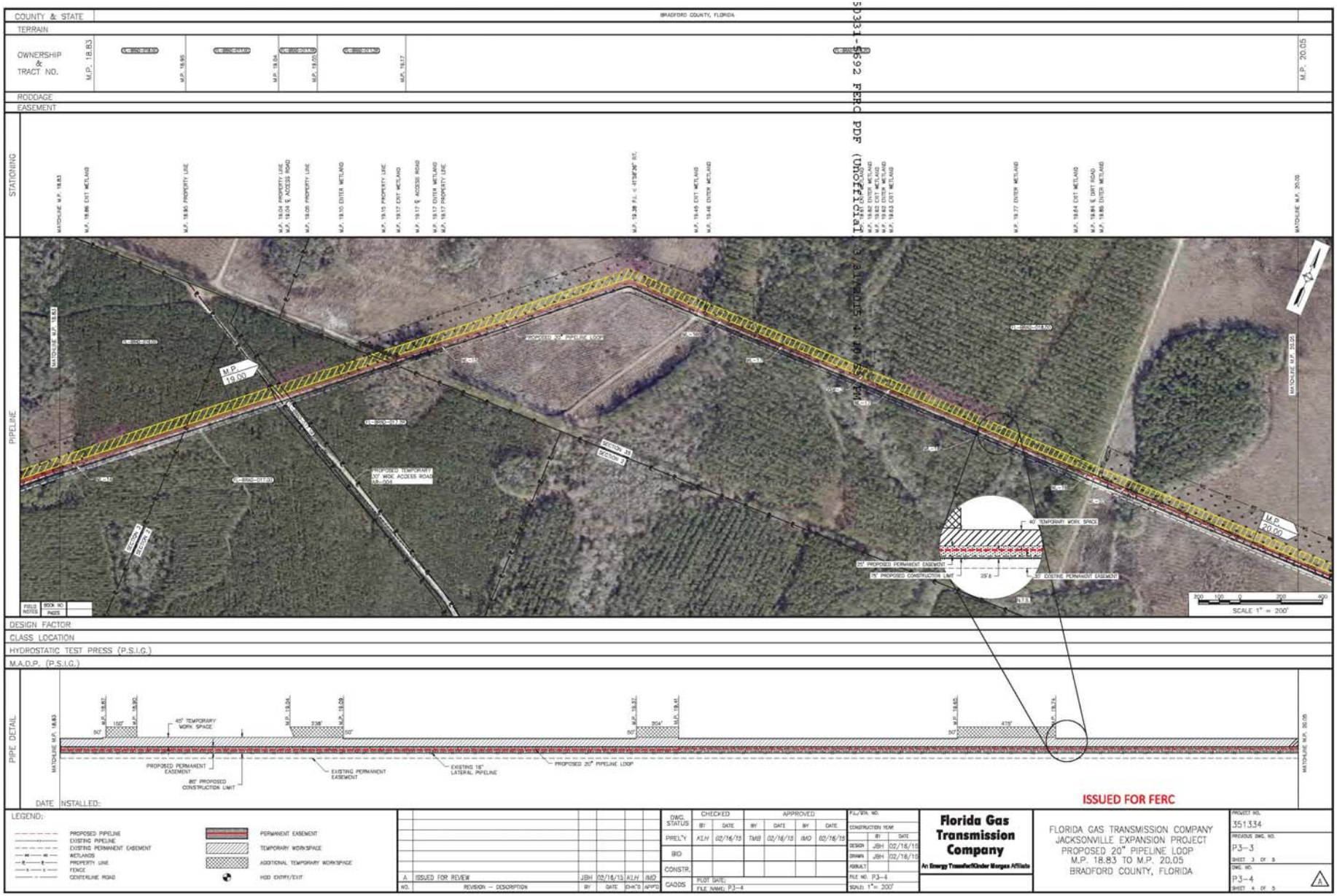


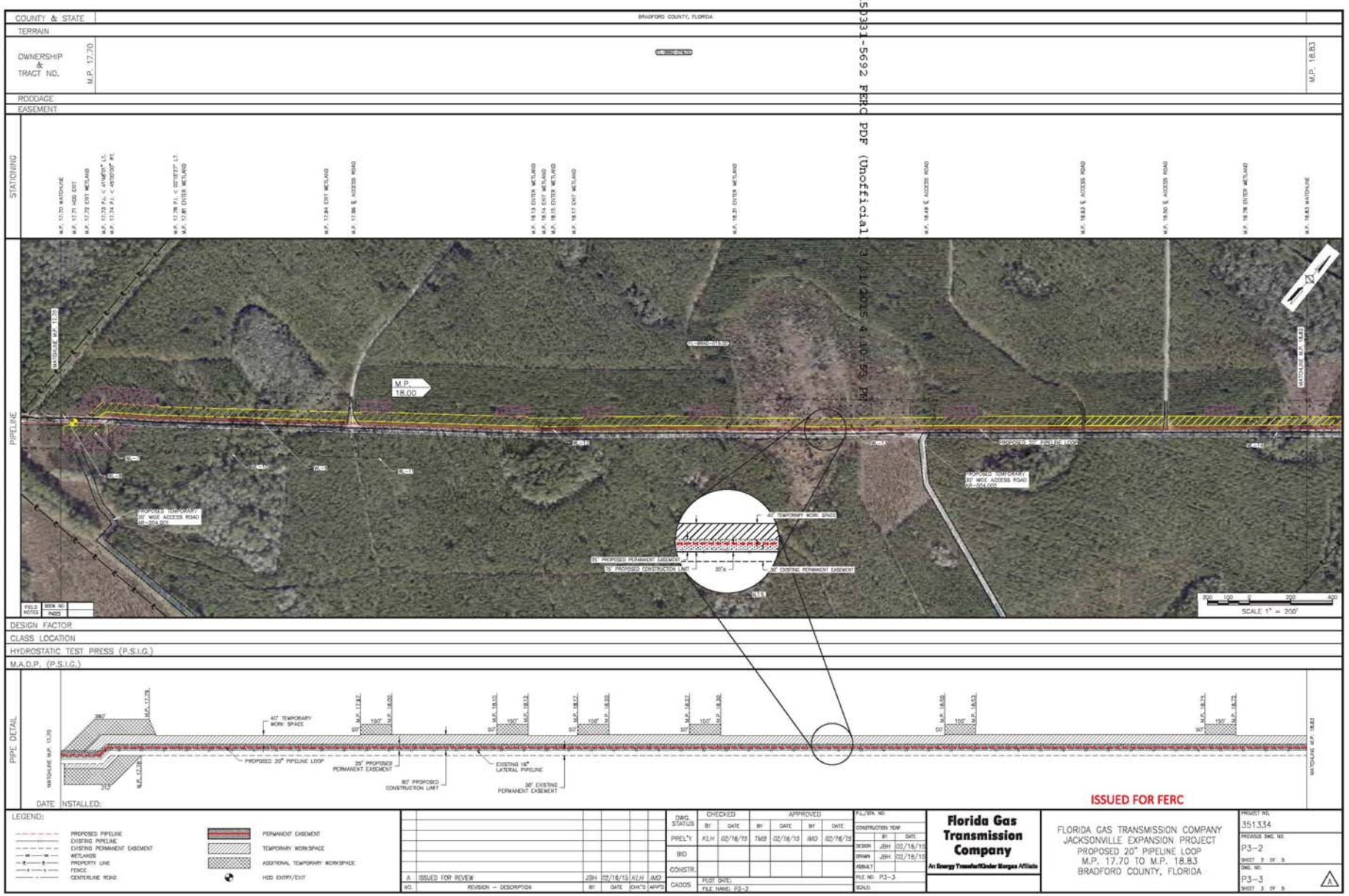
LAND USED	SPOIL SIDE (FT.)	WORKING SIDE (FT.)	CONSTRUCTION R.O.W. (FT.)
AGRICULTURAL, PASTURES, HAY-FIELDS AND RESIDENTIAL AREAS	35	65	100
WETLANDS	35	40	75

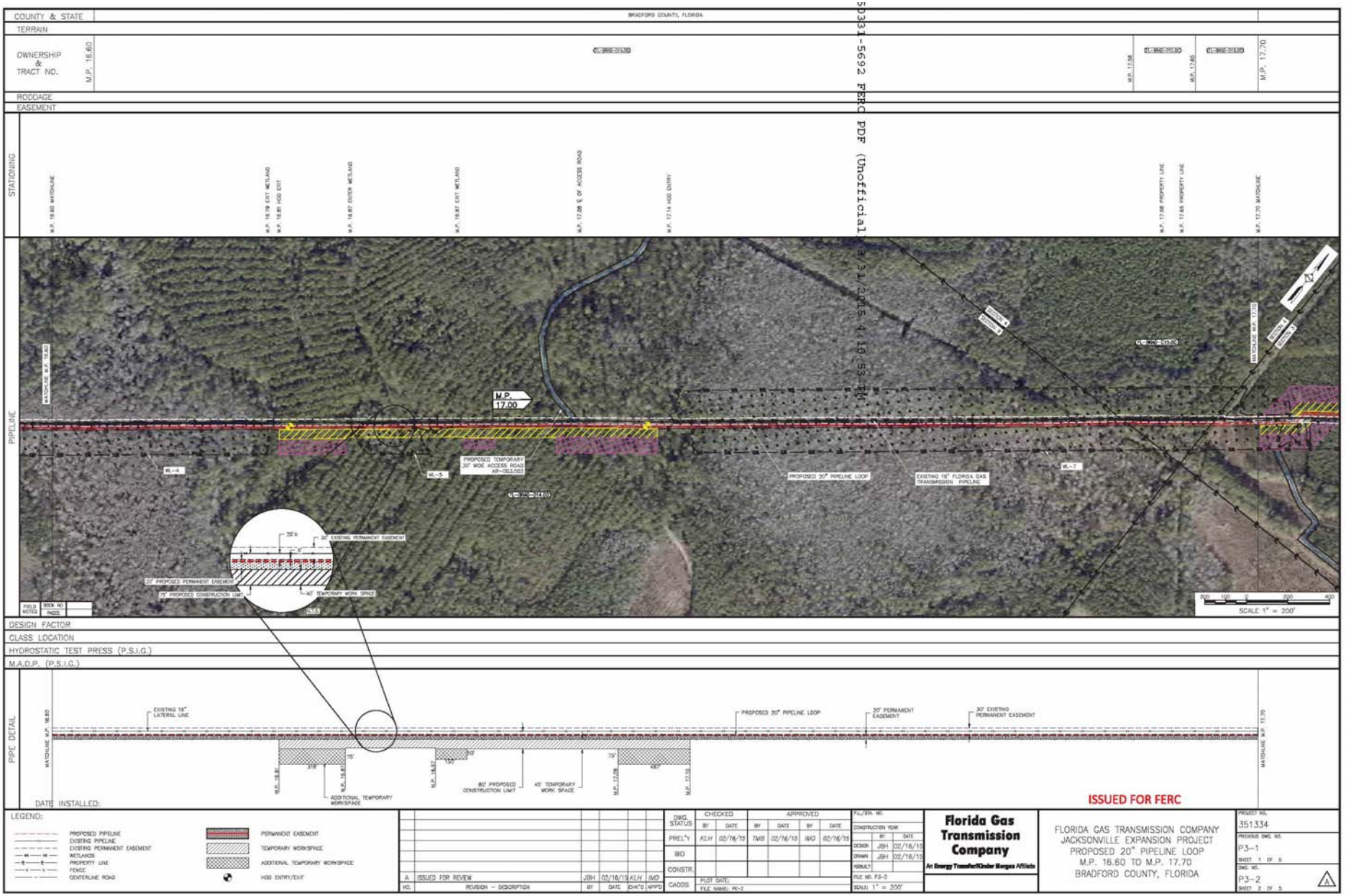
NOTES:

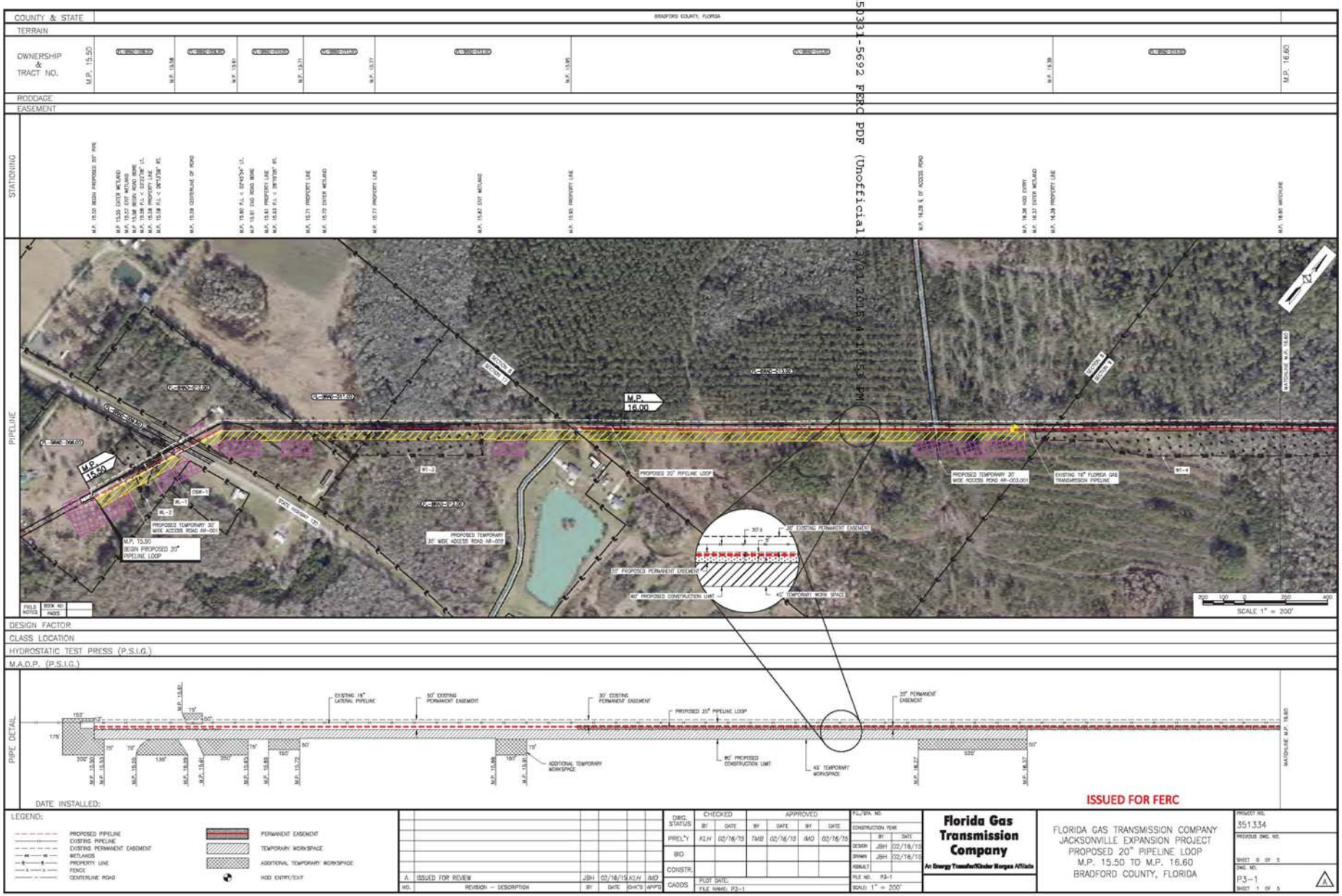
1. ALTHOUGH THE DIMENSIONS SHOWN ARE TYPICAL, SOME VARIATIONS MAY EXIST DUE TO SITE SPECIFIC CONDITIONS.
2. TOPSOIL AND SUBSOIL SHALL BE SEGREGATED WITHIN WETLAND, RESIDENTIAL, AGRICULTURAL, PASTURES, HAYFIELDS AND OTHER AREAS AT LANDOWNER'S OR LAND MANAGING AGENCY'S REQUEST.











PROPOSED COMPRESSOR
WORKSPACE
SURFACE SITE

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

FLORIDA GAS TRANSMISSION
PROPOSED COMPRESSOR STATION 16 SITE
AERIAL EXHIBIT
BRADFORD COUNTY, FLORIDA
FEET
300 150 0 300 600

DRAWN BY:	HMM
CHECKED BY:	HMM
APPROVED BY:	HMM
PROJECT:	351004
DATE:	2/20/2015
REV:	20150220-1117-EXH-005

Florida Gas Transmission Company
Hatch Mott MacDonald
PROPRIETARY
FLORIDA GAS TRANSMISSION

COUNTY & STATE: COLUMBIA COUNTY, FLORIDA

TERRAIN

OWNERSHIP & TRACT NO.

M.P. 520.53 | M.P. 520.78 | M.P. 520.87 | M.P. 521.01 | M.P. 521.33 | M.P. 521.35

RODDAGE

EASEMENT

STATIONING

M.P. 520.53 MATCHLINE | M.P. 520.78 PROPERTY LINE | M.P. 520.81 P.I. < 49°00'00" RT. | M.P. 520.82 PROPERTY LINE | M.P. 520.83 P.I. < 49°00'00" LT. | M.P. 520.87 PROPERTY LINE | M.P. 520.93 PROPERTY LINE, M.P. 521.00 MSW ROAD WORK | M.P. 521.00 ℄ ICHETUCKNEE AVENUE | M.P. 521.01 PROPERTY LINE, M.P. 521.01 END ROAD BORE | M.P. 521.33 PROPERTY LINE | M.P. 521.35 END PROPOSED 30" PIPE LOOP

PIPELINE

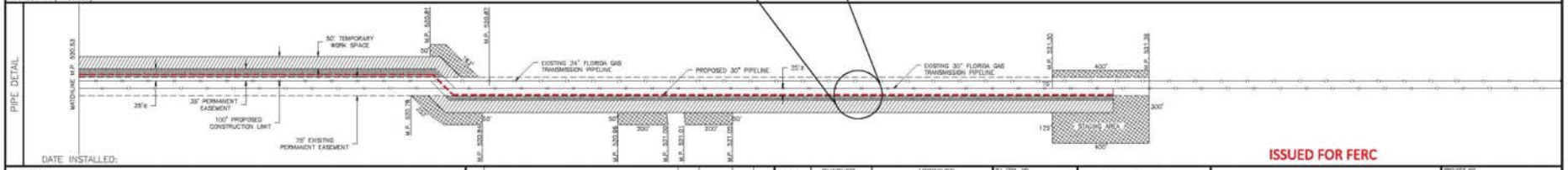
DESIGN FACTOR

CLASS LOCATION

HYDROSTATIC TEST PRESS (P.S.I.G.)

M.A.O.P. (P.S.I.G.)

PIPE DETAIL



DATE INSTALLED:

ISSUED FOR FERC

LEGEND:

- PROPOSED PIPELINE
- EXISTING PIPELINE
- EXISTING PERMANENT EASEMENT
- WETLANDS
- PROPERTY LINE
- FENCE
- CENTERLINE ROAD
- PERMANENT EASEMENT
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE
- HDD/ROAD BORE

NO.	REVISION – DESCRIPTION	BY	DATE	CHK'D	APP'D
A	ISSUED FOR REVIEW	JBH	02/16/15		

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PRELY	KLH	02/16/15	TWB	02/16/15	IMO	02/16/15
BID						
CONSTR.						

CADDS: PLOT DATE: 02/16/15; FILE NAME: P3-3

P.I.L/SPA. NO.

CONSTRUCTION YEAR 2015	BY	DATE
DESIGN	JBH	02/16/15
DRAWN	JBH	02/16/15
ASBUILT		

FILE NO. P3-3

SCALE: 1" = 200'

Florida Gas Transmission Company

An Energy Transfer/Kinder Morgan Affiliate

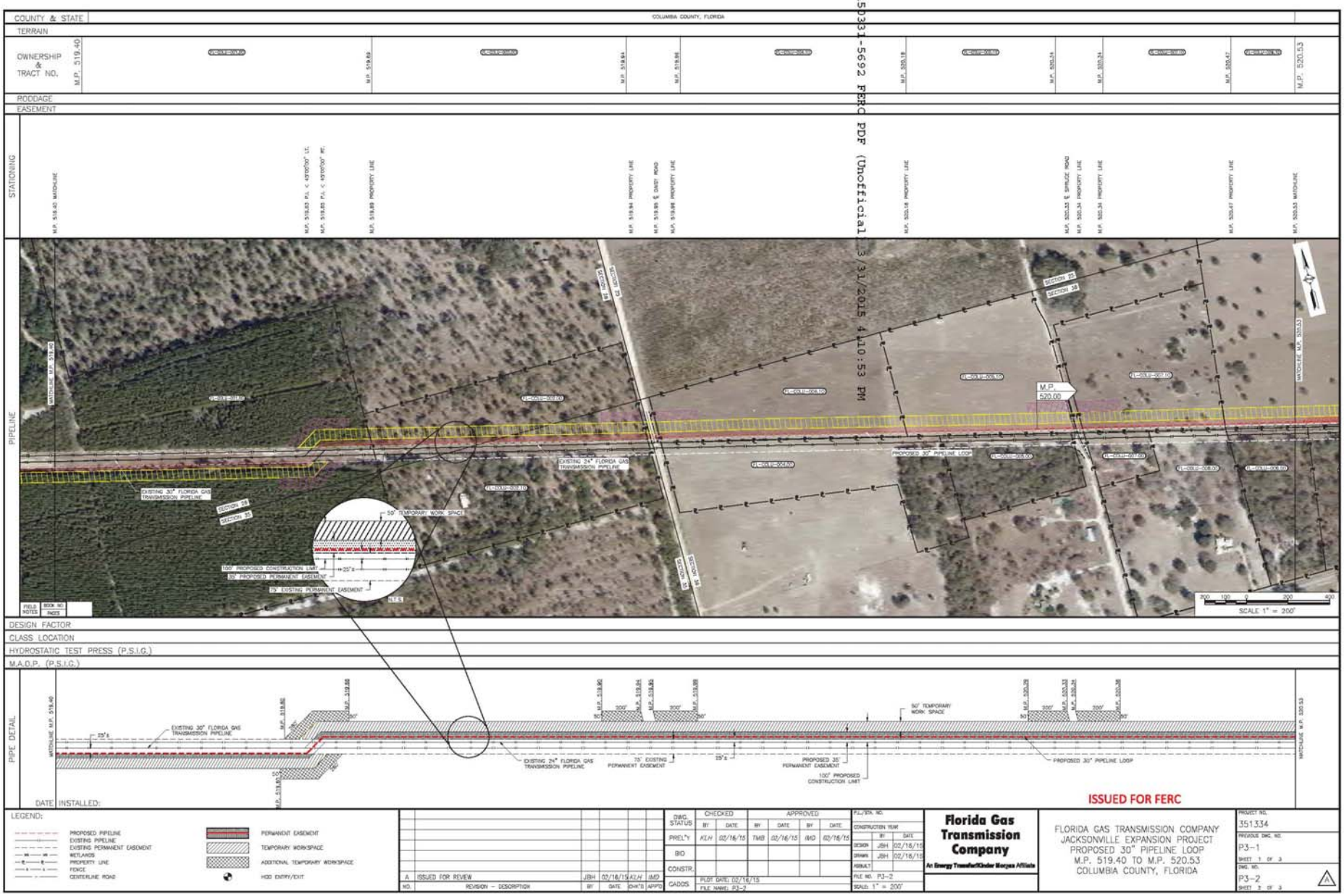
FLORIDA GAS TRANSMISSION COMPANY
JACKSONVILLE EXPANSION PROJECT
PROPOSED 30" PIPELINE LOOP
M.P. 520.53 TO M.P. 521.35
COLUMBIA COUNTY, FLORIDA

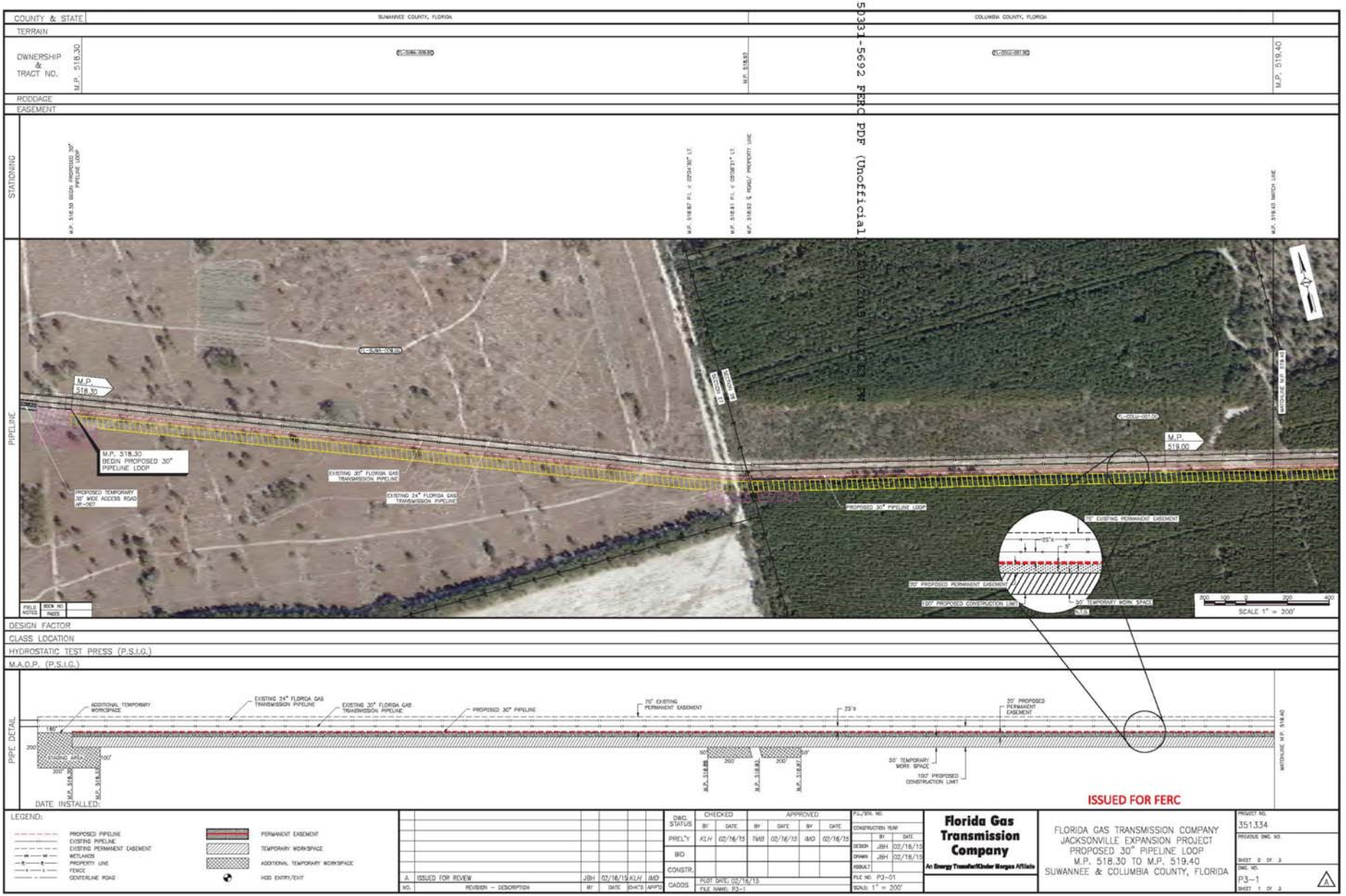
PROJECT NO. 351334

PREVIOUS DWG. NO. P3-2 SHEET 2 OF 3

DWG. NO. P3-3 SHEET 3 OF 3

A





Document Content(s)