

TABLE A1**Recorded Prehistoric Sites**

State Site No.	Location	Type of Site	Cultural Affiliations
8Sm 14	T24S R23E S38 NW	Lithic Scatter	Unknown
8Sm 15	T24S R23E S21 NE	Lithic Scatter	Early Archaic
8Sm 16	T24S R23E S9 NW	Lithic Scatter	Unknown
8Sm 17	T24S R23E S3 NW	Aboriginal Quarry	Unknown
8Sm 18	T24S R23E S3 SW	Lithic Scatter	Unknown
8Sm 19	T24S R23E S4 SW	Lithic Scatter	Unknown

Source: (Florida Department of State 1981, Piper and Piper, 1980)

Gator Creek, Colt Creek, Cross Creek and several agricultural drains are crossed by the amended corridor. All these watercourses are tributaries to the Withlacoochee River and exhibit many of the same physical and chemical characteristics as the Withlacoochee. All receive their inflow from precipitation and have periods of no flow or complete dryness. Gator Creek and Colt Creek flow through unimproved channels in a westerly direction. Cross Creek has been improved by cleaning of its lower channel. A total of four drains are crossed by the amended corridor. These are narrow, straight channels that have seasonal flow/no flow cycles.

2.2.7.2 Wetlands

The amended corridor crosses a series of wetlands (as defined by the Florida Land Use and Cover Classification System: A Technical Report) separated by areas of raised pine or hardwood forests. Wetlands are those areas that are covered with water during some portion of the year and exhibit some form of aquatic vegetation. An inventory of wetlands for the amended corridor and the Application's original corridor from the point of divergence at the northeast corner of the Withlacoochee State Forest to the southern terminus are presented in Table A2. Both corridors cross approximately the same amount (in linear feet) of wetlands. Forested wetlands are common in and along the corridor and are classified by dominant woody vegetation: cypress swamps, bayheads (evergreen hardwood swamps) and mixed hardwood swamps (Monk, 1966 and 1968). The Withlacoochee River swamps are the only areas along the amended corridor where mixed hardwood swamps are common. Although bayheads are found in the floodplain forests of the Withlacoochee River, none are found in the amended corridor.

The most common forested wetland type found along the corridor contains cypress as the dominant overstory species. These occur along watercourses, interspersed among the pine forests and prairies, or in isolated ponds. They remain wet throughout most of the year, and are critical habitat for the local fauna during stress conditions.

Approximately 98 percent of the wetlands crossed by the amended corridor are cypress forest wetlands. The majority of these wetlands are found in several large tracks. The Bayroot Slough, Devils Creek Swamp and Cross Creek Swamp are the three most extensive. The remainder of this wetland type is found in isolated cypress domes surrounded by pine flatwoods or pastureland.

TABLE A2

Wetland Inventory of Portions of the Amended Corridor¹
(in linear feet)

Wetland Type²		Amended Corridor	Application's Proposed Corridor
Cypress forest	(611)	47,470	43,805
Hardwood forest	(621)	1,025	200
Bayhead	(631)	0	1,720
Non-forested	(641)	0	1,800
	Total	48,495	47,525

1. Portions inventoried were from the point of divergence at the northeast corner of the Withlacoochee State Forest to the proposed substation sites. Source of inventory was 1979 aerial photography.
2. Follow designations proposed in The Florida Land Use and Cover Classification System: A Technical Report, by the Bureau of Comprehensive Planning of the State of Florida.

No non-forested wetlands occur along the amended corridor, although several areas were observed in the southern portions of the study area during the field reconnaissance in January 1981. These areas remain wet throughout most of the year and are dominated by emergent vegetation types. They are found in the low areas of cleared pastureland or along altered backwaters and slough of the watercourses.

2.2.8 Vegetation and Wildlife

Wildlife habitats and species along the amended corridor are nearly identical to those described in Section 2.2.8 of the Application. No new species or habitats were noted during the field investigations or an aerial overflight. Fisheries habitat is extremely limited within the amended corridor, the majority being represented by the rivers, creeks, and sloughs of the area. The Withlacoochee River represents the most stable and diverse habitat in the project area. It was the only watercourse with flow during the August field reconnaissance. That segment within the amended corridor has a dense natural canopy and during periods of normal flow can be expected to have a diverse warmwater fishery. The more common species would be the Florida gar, pickerel, golden shiner, brown bullhead, mosquito fish, brook silversides, largemouth bass, warmouth, bluegill, and swamp darter (SWFWMD, 1980). The smaller streams and ditches would be dominated by cyprinodontids, poecilids and centrarchids (SWFWMD, 1981).

Fish are eliminated from the small ditches, streams and ponds during low water conditions. During such a period, they retreat to the deeper pools of the Withlacoochee River and larger streams. When no flow conditions exist, pools become stagnant and movement limited, creating stressful conditions for all but the more hardy species of fish.

2.2.8.1 Vegetation

Major vegetation types evident along the amended corridor are identical to those outlined in Section 2.2.8.1 of the Application. The two most prevalent types are pine flatwoods and cypress swamps.

Areas of the corridor examined during the field reconnaissance were very similar, from a vegetation perspective, to others in the vicinity. Generally, much of the land immediately east of the amended corridor was clearcut about 15 years ago because of the possibility of

the SWFWMD levee construction plans (personal communication, Roy Clarity). Apparently, timber was harvested in the area that would have been flooded.

Floristically, the habitat types described by SWFWMD (1981) are similar to those present in and along the amended corridor. Many of the species noted in the SWFWMD text were observed during the August field reconnaissance. Only one area inspected seemed somewhat different from the types which were described in SWFWMD (1981) or in Section 2.2.8.1 of the Application. SWFWMD addressed mixed hardwood forests and indicated that those which were almost never flooded developed into mesic hammocks. A hardwood hammock is present north of Cross Creek in the NW 1/4 of Section 4 (center of Cross Creek Swamp). However, characteristic species include water oak (*Quercus nigra*) and saw palmetto (*Serenoa repens*). Very few other species existed in the understory as saw palmetto was dominant. Gano (1912) indicated this species presents a "most conspicuous index" of relatively saturated subsoil. Laessle (1942) reported this species often forms "vigorous and dense masses" in hydric hammocks. He also reported on a *Quercus nigra*-*Liquidambar*-*Sabal palmetto* association. Possibly since water oak is now present in this hammock, the others will invade and become established in time.

2.2.8.2 Rare, Endangered and Important Species

The amended corridor is in the same general vicinity as the original proposed corridor, consequently the list of important species would be identical to that presented in Section 2.2.8.2 of the Application. The only new information for the area, which has been developed since the Florida Power Corporation Application, did not identify any of the important plants (SWFWMD, 1981). The SWFWMD survey was also of such a magnitude that plants on the list would have a good chance of being discovered. While this does not preclude the possibility of their existence, it does limit the potential.

Previously listed important wildlife species would also apply to the amended corridor, except that the Little Gator Creek rookery, supporting the wood stork, will be avoided by over two miles.

CHAPTER 3

ENVIRONMENTAL EFFECTS OF RIGHT-OF-WAY PREPARATION AND TRANSMISSION LINE CONSTRUCTION

3.1 LAND IMPACT

The entire proposed corridor now contains 9,090 acres (4,090 hectares), with an eventual right-of-way width estimated at 190 feet (58 meters). Preparation of the right-of-way will require clearing (See Section 3.1 of the Application). Total land area affected, with a 190-foot right-of-way, will be approximately 990 acres (401 hectares). Depending on final substation site selection, this figure could increase slightly.

A certain amount of acreage will also be disturbed during construction by required equipment access roads to the right-of-way. Until a final centerline has been defined, the number and location of access roads cannot be determined. However, some impact will likely occur, as the amended corridor is now situated two miles east of SR 471.

3.1.1 Impact on Land Use

(Refer to Section 3.1.1 of the Application.)

3.1.2 New Roads

New access and service road construction should be kept to a minimum. Although the new corridor south of the state forest is approximately two miles from public right-of-way, existing logging roads and agricultural lanes will provide much of the construction access to the eventual right-of-way. Some impacts can be expected where new access roads are required (if any), and where improvements to existing roads and bridges are necessary to support the required construction equipment. Once these improvements are made, they will benefit the landowner and the forestry management and/or agricultural operations now present. Access will be readily available within the Withlacoochee State Forest, as several forest roads cross or approach the amended corridor. Impacts should be minimal.

With the amended corridor being removed from SR 471, access will be much more limited. As a result, a construction road will likely be required in the right-of-way. Specific impacts that may occur appear in Sections 3.3 and 3.5 of the amendment.

Refer to Section 3.1.2 of the Application for additional discussion of construction impacts.

3.1.3 Erosion

(Refer to Section 3.1.3 of the Application.)

3.2 AIR IMPACTS

(Refer to Section 3.2 of the Application.)

3.3 IMPACTS ON WATER BODIES AND USES

The construction methods chosen for this project will necessitate a construction road. This will be accomplished by upgrading existing logging and agricultural roads and by new construction through previously undisturbed areas. These new roadbeds will eliminate some wetland habitat (i.e. the ground directly under the roadbeds). However, the amount lost will be small when compared to total wetlands in the area.

In areas where the road will cross wetlands, proper road placement and construction techniques will be employed to reduce loss of vegetation and wildlife habitat. Where roads run perpendicular to the flow, as in Bayroot Slough, Devils Creek Swamp, and Cross Creek Swamp, culverts will be placed in the roadbed at regular intervals. Culverts will be of large enough size to prevent ponding action of the moving waters. Where necessary, roadbed banks will be stabilized with grasses to prevent erosion and sloughing off (Stoeckeler, 1967). Culverts will be inspected at regular intervals and cleaned and repaired during right-of-way maintenance. Loss of wetland habitat can be further reduced during the final routing process.

no permanent road

Additionally, construction of the proposed transmission line along the amended corridor in the Withlacoochee State Forest will need to be designed to withstand periodic flooding, as this area has been designated as a water detention area by SWFWMD. Placement of fill may be required at structure sites.

3.4 SOLID WASTES

(Refer to Section 3.4 of the Application.)

3.5 PERMANENT CHANGES TO VEGETATION, WILDLIFE AND AQUATIC LIFE

3.5.1 Vegetation

Basic impacts of transmission lines on vegetation have been outlined in Sections 3.5.1 and 4.6 of Florida Power Corporation's Application.

Some positive impacts will be realized by timber-related interests. A large right-of-way constructed at the eastern edge of the state forest and along SWFWMD landholdings will provide a needed fire break (Division of Forestry, 1981).

3.5.2 Wildlife and Aquatic Life

Again, basic impacts of construction to wildlife are addressed in Sections 3.5 of the FPC Application.

The major differences between the amended corridor and the original alignment is that the amended corridor avoids the rookery and particularly the wood stork, whereas the original proposed corridor follows and is immediately adjacent to SR 471, a disturbed area, for approximately 19 miles (30.6 kilometers). The amended corridor will require creation of a new right-of-way in an otherwise undisturbed area. Portions of the original corridor have an existing right-of-way cleared alongside the highway, while no such development exists along the amended corridor alignment. Some pasture does exist east of the amended alignment.

The originally proposed corridor avoids the rookery but retains a potential for strikes by birds leaving the rookery. The amended corridor will reduce the possibility of collisions by such flights.

3.6 IMPACT ON LANDMARKS AND SENSITIVE AREAS

Construction impacts to sensitive features and areas (as described in Section 2.2.4 of the Amendment) will depend, to a great degree, on the location of the final centerline and the structures. Some possible construction impacts have already been addressed, such as those to water bodies (Section 3.3 of the Amendment) and vegetation and wildlife (Section 3.5 of the Amendment).

The Green Swamp Area of Critical State Concern and SWFWMD landholdings will not be directly affected by construction of the proposed project, though the eventual route could be immediately adjacent to these properties for several miles. The Withlacoochee State Forest will be crossed by the final line route. Vegetation removal will be required and change in species composition will occur in and along the right-of-way (see Section 3.5.1 of the Amendment and the Application).

The one state-identified area of unique vegetation (the sand ridge) is approximately one mile (1.6 kilometers) from the amended corridor and will not be adversely affected by construction, or operation, of the proposed project.

Known archeological sites are addressed in Section 3.8.

None of the four recreation areas in the Withlacoochee State Forest will be physically impacted by construction activities. The closest facility, Powder House Recreation Area, is approximately one-half mile from the amended corridor. There is a considerable amount of vegetation between the site and the amended corridor, thus direct visual impact during construction should be minimal. The dense vegetation should also help to buffer noise impacts of construction.

Secondary impact to this seasonal campground will occur to the users as they travel to and from the recreation area and encounter construction vehicles on South Grade Road. However, this impact will be temporary.

3.6.1 Extent of Impact on Sensitive Areas

Eleven miles (17.7 kilometers) of the entire corridor are now situated in the Withlacoochee State Forest, with much of the total length being forested and managed for timber production. The location of the corridor along the eastern and southern limits of the state forest almost eliminates any potential for visual impact. Only three access roads are crossed by the corridor in the forest, and they are not heavily traveled by the public.

3.7 IMPACT ON HUMAN POPULATIONS

(Refer to Section 3.7 of the Application.)

3.8 ARCHEOLOGICAL AND HISTORIC SITES

Impacts to archeological and historic sites will be similar to those addressed in Section 3.8 of the Application. The amended corridor reduces the amount of potentially sensitive areas crossed by 0.2 mile.

CHAPTER 4

ENVIRONMENTAL EFFECTS OF TRANSMISSION LINE RIGHT-OF-WAY MAINTENANCE AND POST-CONSTRUCTION IMPACTS

4.1 MAINTENANCE TECHNIQUES

(Refer to Section 4.1 of the Application.)

4.2 MULTIPLE USES

(Refer to Section 4.2 of the Application.)

4.3 SURFACE WATER

(Refer to Section 4.3 of the Application.)

4.4 AIR QUALITY IMPACTS

(Refer to Section 4.4 of the Application.)

4.5 EFFECTS OF PUBLIC ACCESS

Although the amended corridor is now two miles east of SR 471, and access roads will be required, they will be controlled by private landowners. Nevertheless, access to the amended corridor will be available from public lands, i.e. the Withlacoochee State Forest, and SWFWMD landholdings. Potential impacts resulting from this increased accessibility to these relatively remote areas in and south of the state forest will be similar to those addressed in Section 4.5 of the Application.

4.6 CHANGES IN SPECIES POPULATIONS

Primary concern of the corridor proposed in the Application was the potential for bird collisions with the proposed transmission line adjacent to the Little Gator Creek rookery.

This concern has now been alleviated by relocating the corridor (and eventual transmission line) two miles east of the rookery.

Other potential impacts to various plant and animal species resulting from maintenance and operation of the proposed facility will be similar to those addressed in Section 4.6 of the Application.

4.7 ARCHEOLOGICAL AND HISTORICAL SITES

(Refer to Section 4.7 of the Application.)

4.8 OTHER POST-CONSTRUCTION IMPACTS

(Refer to Section 4.8 of the Application.)

CHAPTER 5

ENVIRONMENTAL DATA COLLECTION

5.1 GENERAL

(Refer to Section 5.1 of the Application.)

5.2 DATA COLLECTION

Field inspection of and data collection for the amended corridor were conducted identically to those methods described in Section 5.2 in the Application. Additionally, meetings were held with technical level personnel from SWFWMD and FGFWFC as well as the Division of Forestry. These meetings were held to obtain technical information about the amended corridor. Contact was also made with the U.S. Fish and Wildlife Service.

5.2.1 Water

(Refer to Section 5.2.1 of the Application.)

5.2.2 Ecology

Methods used to derive ecological information are identical to those described in Sections 2.2.8 and 5.2.2 in the Application. Additional field studies were conducted in and around the Little Gator Creek rookery to note species presence and direction and altitude of flight of birds leaving and returning to the rookery. The results of these surveys indicated a need for examining the amended corridor.

5.2.3 Noise

(Refer to Section 5.2.3 of the Application.)

CHAPTER 6

VARIANCES, EXCEPTIONS, EXEMPTIONS

(Refer to Chapter 6 of the Application.)

APPENDIX A – A

AERIAL PHOTOGRAPHY OF THE AMENDED CORRIDOR

AERIAL
PHOTOGRAPH—A.M.

WITH LACOOCHIEE STATE FOREST

SUMMIT COUNTY
LAKE COUNTY

SEABOARD COAST LINE



1000 FEET

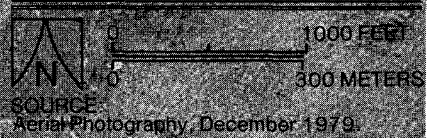
300 METERS

SOURCE:
Aerial Photography, December 1970

AERIAL
PHOTOGRAPH—A-N

WITH LAOOCHEE STATE FOREST

SUMTER COUNTY
LAKE COUNTY



AERIAL
PHOTOGRAPH—A-O

WITHLACOOCHEE STATE FOREST

SUMTER COUNTY
LAKE COUNTY

0 1000 FEET
0 300 METERS
SOURCE
Aerial Photography, December 1979

AERIAL
PHOTOGRAPH—A-P

WITH LACOOCHEE STATE FOREST

SUMTER COUNTY
LAKE COUNTY



0 1000 FEET
0 300 METERS

SOURCE
Aerial Photography, December 1979

AERIAL
PHOTOGRAPH--A-Q

WILLAGOOCHIEE STATE FOREST

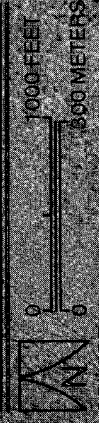
0 1000 FEET
0 300 METERS

SOURCE
Aerial Photography, December 1979

AERIAL
PHOTOGRAPH—A-R

Big Pond

WITHLACOOCHIEE STATE FOREST



SOURCE:
Aerial Photography, December, 1979.

AERIAL
PHOTOGRAPH—A-S

Devils

Creek

Swamp


0 1000 FEET
0 300 METERS
SOURCE
Aerial Photography, December 1979

AERIAL
PHOTOGRAPH - A-J



0 1000 FEET
0 300 METERS
SOURCE:
Aerial Photography 12-18-80

AERIAL
PHOTOGRAPH—A-U

Cross

Creek

Swamp



WINDBOGHT
RIVER
SUMMIT
POLY
COUNTY

ENTER COUNTY
POLK COUNTY

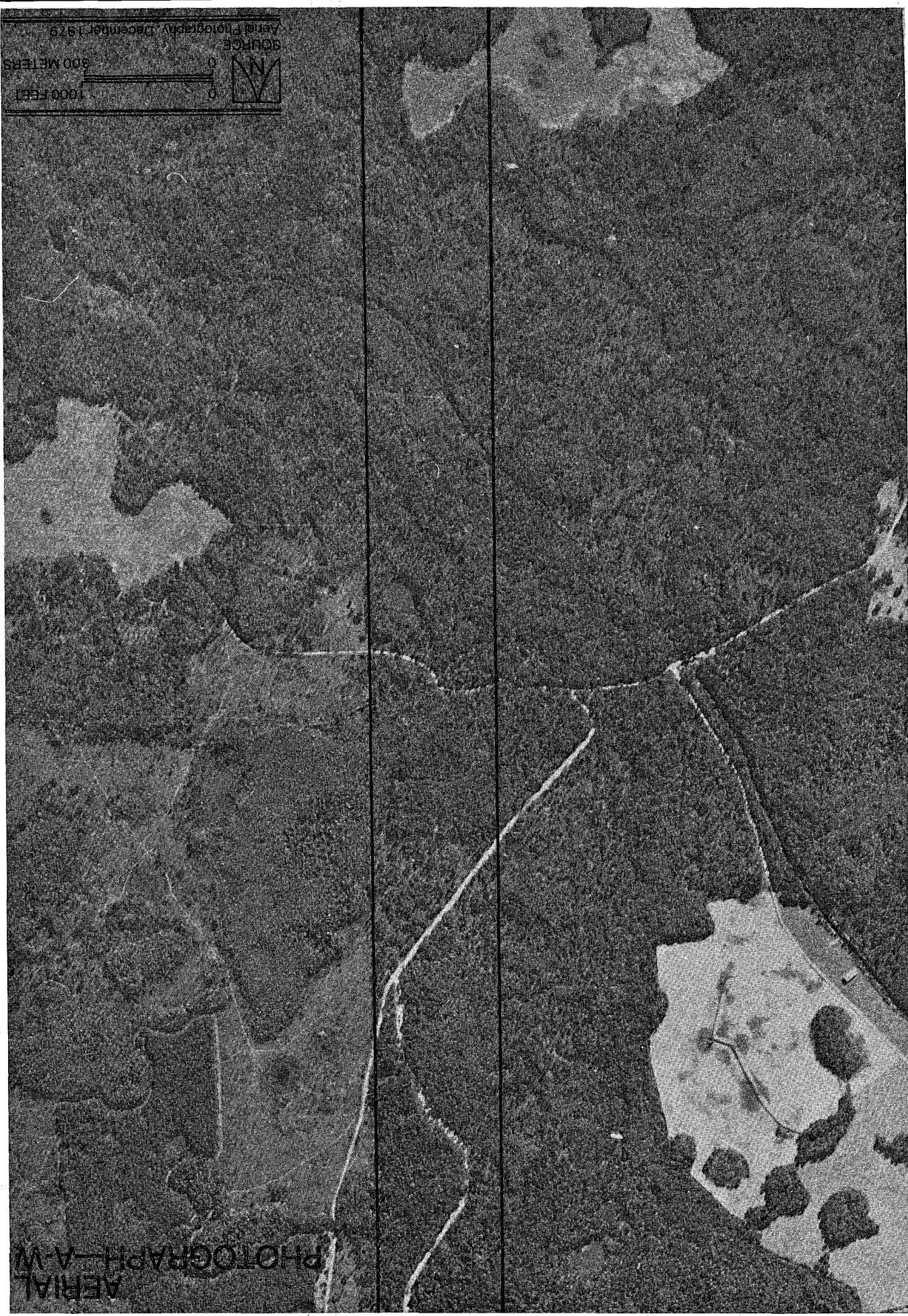
AERIAL PHOTOGRAPH—A-V



0 1000 FEET
0 300 METERS

SOURCE:
Aerial Photography, December 1979

1000 FEET
500 METERS
SOURCE
Aerial Photography December 1979



AERIAL
PHOTOGRAPH - A-W

AERIAL
PHOTOGRAPH—A-X

PROPOSED
KATHLEEN
SUBSTATION



SOURCE

Aerial Photography, December 1979

0 1000 FEET
0 300 METERS

AERIAL
PHOTOGRAPH—A-Y

PROPOSED
KATHLEEN
SUBSTATION

1000 FEET
300 METERS
SOURCE
Aerial Photography, December 1973

BIBLIOGRAPHY

Florida Department of Agriculture and Consumer Services, Division of Forestry. Correspondence with C. Alvarez of Hopping, Boyd, Green and Sams. 1981.

Florida Department of Agriculture and Consumer Services, Division of Forestry. Personal communication with Roy Clarity. 1981.

Piper, Harry M. and Jacquelyn G. Piper. An Archeological Survey of the Levee Corridors of the Proposed Green Swamp Flood Detention Area, Polk, Sumter and Lake Counties, Florida. St. Petersburg, Florida. December 1980.

Southwest Florida Water Management District.

Green Swamp Flood Detention Area Environmental Assessment. Brooksville, Florida. June 1981.

Stoeckeler, J. "Wetland Road Crossings: Drainage Problems and Timber Drainage." Research Note NC-27. U.S.D.A., North Central Forest Experiment Station, St. Paul, Minnesota. 1967.

NOTE:

See also: Bibliography, Florida Power Corporation Application, June 1981.

**APPLICATION FOR CERTIFICATION OF A PROPOSED
ELECTRICAL TRANSMISSION LINE CORRIDOR**

CENTRAL FLORIDA – KATHLEEN 500 kV TRANSMISSION PROJECT

**FLORIDA POWER CORPORATION
ST. PETERSBURG, FLORIDA**

JUNE 1981

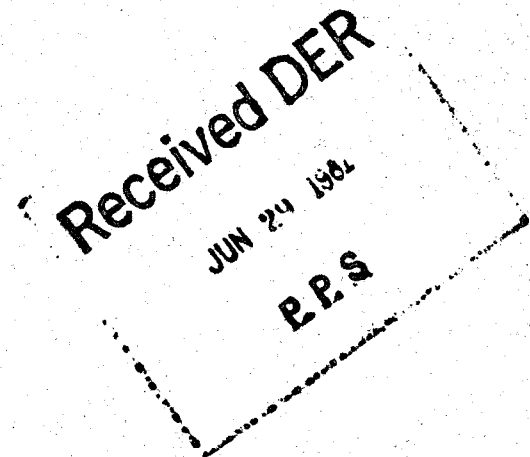


TABLE OF CONTENTS

	Page
PERTINENT APPLICATION INFORMATION	1
CHAPTER 1 Project Overview	2
1.1 Project Introduction	2
1.2 Corridor Location and Layout	2
1.2.1 Size	5
1.3 Transmission Line Design Characteristics	6
CHAPTER 2 Background Features Of The Proposed Corridor	11
2.1 Corridor Selection	11
2.1.1 Corridor Selection Methodology	11
2.1.2 Major Alternative Corridors	13
2.2 Corridor Description	16
2.2.1 Governmental Jurisdictions	16
2.2.2 Easements, Titles, Agency Works, Zoning and Land Use Plans	19
2.2.3 Land Use	24
2.2.4 Sensitive Areas	41
2.2.5 Archeological and Historic Sites	60
2.2.6 Geology/Geography	61
2.2.6.1 Topography	61
2.2.6.2 Geology	61
2.2.7 Affected Waters and Wetlands	63
2.2.7.1 Surface Waters	63
2.2.7.2 Wetlands	68
2.2.8 Vegetation and Wildlife	70
2.2.8.1 Vegetation	74
2.2.8.2 Rare, Endangered and Important Species	75
2.2.9 Other Environmental Features	88
CHAPTER 3 Environmental Effects Of Right-Of-Way Preparation And Transmission Line Construction	89
3.1 Land Impact	89
3.1.1 Impact on Land Use	90
3.1.2 New Roads	90
3.1.3 Erosion	91

TABLE OF CONTENTS (Cont'd.)

	Page
CHAPTER 3 Environmental Effects Of Right-Of-Way Preparation And Transmission Line Construction (Continued)	
3.2 Air Impacts	92
3.3 Impacts on Water Bodies and Uses	92
3.4 Solid Wastes	93
3.5 Permanent Changes to Vegetation, Wildlife and Aquatic Life	93
3.5.1 Vegetation	93
3.5.2 Wildlife and Aquatic Life	95
3.6 Impacts on Landmarks and Sensitive Areas	98
3.6.1 Extent of Impact on Sensitive Areas	99
3.7 Impact on Human Populations	99
3.8 Archeological and Historic Sites	100
CHAPTER 4 Environmental Effects Of Transmission Line Right-Of-Way Maintenance And Post-Construction Impacts	102
4.1 Maintenance Techniques	102
4.2 Multiple Uses	102
4.3 Surface Water	103
4.4 Air Quality Impacts	103
4.5 Effects of Public Access	103
4.6 Changes in Species Populations	104
4.7 Archeological and Historic Sites	106
4.8 Other Post-Construction Impacts	106
4.8.1 Ozone Production	106
4.8.2 Audible Noise	106
4.8.3 Broadcast and Citizen Band (CB) Radio Interference	106
4.8.4 Television Interference	107
4.8.5 Electric and Magnetic Field Strengths	107
4.8.6 Induced Currents	107
CHAPTER 5 Environmental Data Collection	108
5.1 General	108
5.2 Data Collection	108
5.2.1 Water	109
5.2.2 Ecology	110
5.2.3 Noise	110

TABLE OF CONTENTS (Cont'd.)

	Page
CHAPTER 6 Variances, Exceptions, Exemptions	111
BIBLIOGRAPHY	112
APPENDIX A – Aerial Photography of the Proposed Corridor	
APPENDIX B – Consultation and Coordination with Others	
APPENDIX C – Species Range Maps	

LIST OF TABLES

Table		Page
2-1	Population Five-County Study Area	40
2-2	Sensitive Areas and Features	44
2-3	Geologic Formations At or Near Ground Surface – Proposed Central Florida – Kathleen Corridor	62
2-4	Water Bodies Crossed by the Proposed Corridor	67
2-5	Threatened and Endangered Plants of Central Florida	71
2-6	Pertinent Contacts for Compilation of Important Plant Species	77
2-7	Rare, Endangered and Important Wildlife Species That May Occur in the Vicinity of the Proposed Central Florida – Kathleen 500 kV Transmission Line Corridor and Alternatives	80

LIST OF FIGURES

Figure		Page
1-1	Proposed Corridor	3
1-2	Typical Tangent Structure	7
1-3	Typical Angle Structure	8
1-4	Typical Conductor Profile	10
2-1	Alternative Corridors	14
2-2	Governmental Jurisdictions (A & B)	17, 18
2-3	Zoning	21
2-4	Land Use and Vegetation (A-M)	25-37
2-5	Sensitive Areas (A & B)	42, 43
2-6	Sensitive Areas (A-M)	47-59
2-7	Geologic Formations	64

PERTINENT APPLICANT INFORMATION

Applicant's Official Name: Florida Power Corporation

Address: 3201 Thirty-fourth Street South, P. O. Box 14042, St. Petersburg, Florida 33733

Address of Official Headquarters: Same

Business Entity: Corporation

Chief Executive Officer: A. H. Hines, Jr.

Responsible Official: W. S. O'Brien

Corridor Location: Sumter, Hernando, Pasco and Polk Counties

Incorporated Cities Within the Corridor: None

Termination Points: Central Florida Substation (existing), NE 1/4 of SE 1/4 of Section 24, T. 19 S., R. 23 E., approximately 3.0 miles (4.8 kilometers) west of Leesburg, Florida; to the Kathleen Substation (proposed), in Section 6, T. 26 S., R. 23 E., approximately 6.0 miles (9.6 kilometers) east of Zephyrhills, Florida.

Voltage: 500,000 volts (500 kV)

Line Type: Alternating Current (AC)

Line Length: 44.5 miles (71.6 kilometers)

Number of Circuits: One



CHAPTER 1

PROJECT OVERVIEW

1.1 PROJECT INTRODUCTION

Florida Power Corporation (FPC) has investigated various alternatives to expansion of the bulk power transmission system in west central Florida. This is needed to provide for adequate and reliable dispersion of the additional power generated at the Crystal River Plant when Unit 5 becomes operational in the fourth quarter of 1984. While the existing 500 kV system has the capability to carry this additional power out of the plant site, dispersion of this power at the ends of the existing 500 kV transmission lines becomes a problem of: one, further distribution and, two, reliability for contingency conditions. This project — Central Florida Substation to the proposed Kathleen Substation 500 kV transmission line — provides the best short and long-range solution to these two problems. Short-range, it disperses power through the supporting 230 kV system to rapidly growing Pasco County and to the large industrial load area from Lakeland south to Bartow, Ft. Meade, Ft. Green, and Vandolah. Long-range, it provides the most economical solution to contingency support of the large load area in the Tampa Bay area by later extension of the 500 kV system from the proposed Kathleen Substation to the Lake Tarpon Substation, which is the end of the present 500 kV system from Crystal River Plant to Pinellas County. Additionally, the proposed Kathleen Substation will provide the best location for a future west coast 500 kV transmission line to the south to connect to the Florida Power & Light Co. system at Ft. Myers.

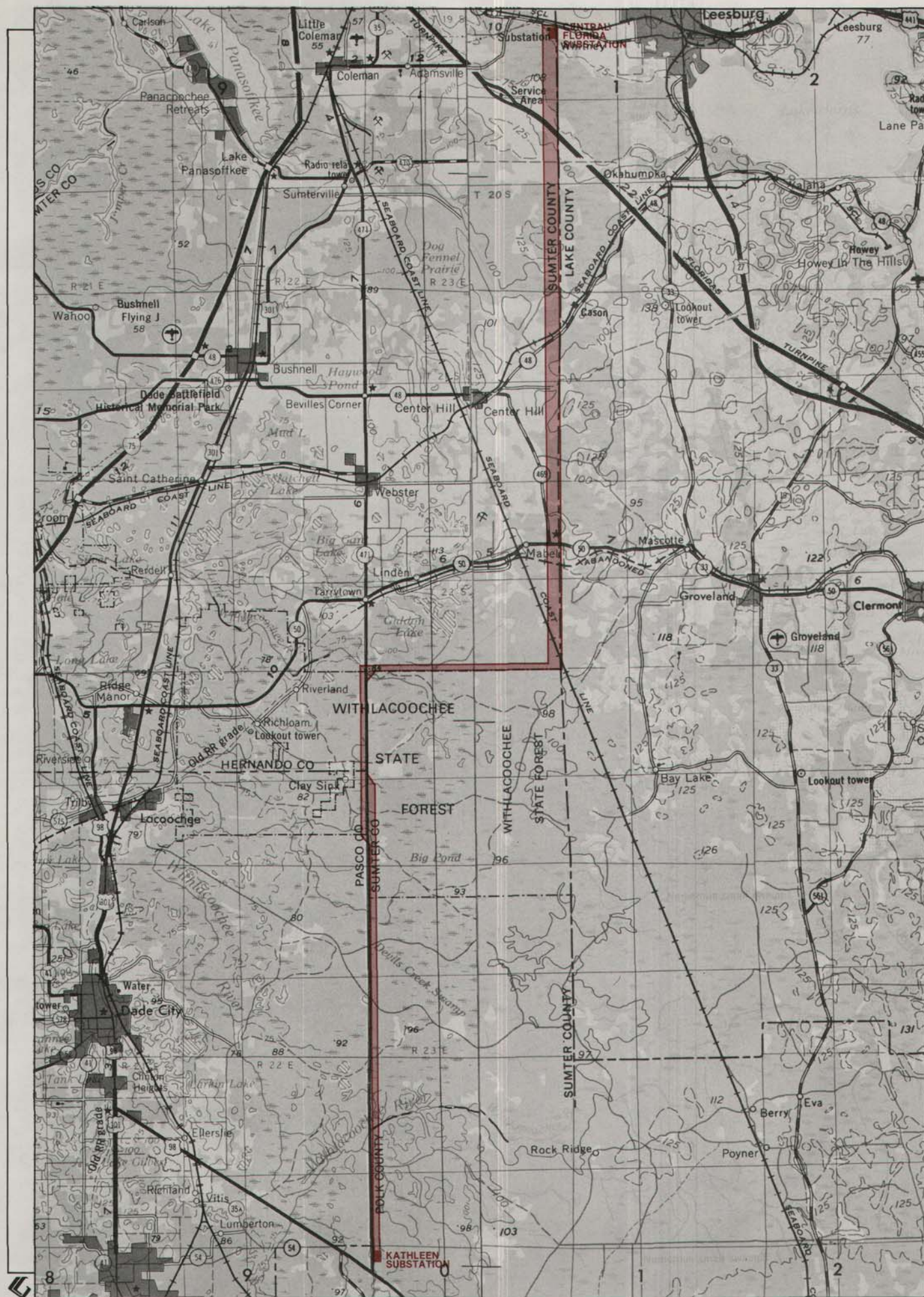
With the completion of this project, Florida Power Corporation will be able to efficiently move large blocks of power — the primary purpose of the bulk power transmission system — economically, reliably, and adequately from the generating source at Crystal River Plant to the load areas in Polk, Pasco, Hardee, and Highlands Counties.

1.2 CORRIDOR LOCATION AND LAYOUT

The proposed corridor (Figure 1-1) measures approximately 44.5 miles (71.6 kilometers) in length. By county, it crosses 35.5 miles (57.2 kilometers) of Sumter County (79 percent),

IMAGE QUALITY

AS YOU REVIEW THE NEXT GROUP OF IMAGES, PLEASE NOTE THAT THE ORIGINAL DOCUMENTS WERE OF POOR QUALITY.



4.0 miles (6.4 kilometers) of Polk County (9 percent), 3.0 miles (4.8 kilometers) of Hernando County (7 percent), and 2.0 miles (3.2 kilometers) of Pasco County (5 percent).

Beginning at the existing Central Florida Substation, located in Section 24 immediately south of State Route (SR) 44, the corridor proceeds directly south immediately west of the Sumter — Lake County line. Approximately 3.1 miles (5.0 kilometers) south of the substation, the corridor crosses the Sunshine State Parkway. The crossing is approximately 1.0 mile (1.6 kilometers) southeast of the Parkway's Okahumpka Plaza.

Continuing due south along the county line, the proposed corridor crosses SR 470, and northeast of the community of Center Hill, crosses the abandoned Seaboard Coast Line Railroad right-of-way and SR 48. The corridor passes Center Hill approximately 1.3 miles (2.1 kilometers) to the east.

It continues on its southerly routing, following SR 469 and crossing Youth Camp Road, Hanley Road, Tuscanoga Road, SR 50 and a branch of the Seaboard Coast Line Railroad between the hamlets of Mabel and Sloans Ridge.

Immediately north of the Withlacoochee State Forest, the corridor crosses a main track of the Seaboard Coast Line Railroad, and then makes a 90 degree turn to the west. This direct north-south alignment measures approximately 20 miles (32 kilometers).

Proceeding in a westerly direction, the corridor parallels the northern boundary of the Withlacoochee State Forest and crosses North Grade Road. After approximately 6 miles (10 kilometers), the corridor crosses SR 471 and the Little Withlacoochee River, enters Hernando County, and again turns due south. It is also at this point that the corridor enters the Withlacoochee State Forest.

On the west side of Route 471, the corridor proceeds in a southerly direction, crossing an unnamed dirt road in Section 1 (Hernando County), Richloam Clay Sink Road, and Center Grade Road, and enters Pasco County 3 miles (4.8 kilometers) south of the Little Withlacoochee River crossing. Two miles north of the west southern boundary of the state forest, the corridor expands to include both sides of Route 471 and crosses unnamed roads in Section 25 (Pasco County) and Section 30 (Sumter County). This alignment continues for 2

miles to the west southern boundary of the state forest. Here, the corridor reverts to the east side of the highway, again entering Sumter County and extends for another 2 miles through the state forest to the east southern boundary. It crosses an unnamed road in Section 31 (Sumter County).

The corridor then follows the highway on the east to the proposed Kathleen Substation site. Approximately 4 miles (6.4 kilometers) north of the site, the corridor crosses the Withlacoochee River and enters Polk County.

This north-south alignment measures over 18 miles (30 kilometers).

Detailed corridor alignments appear in Figure 2-4 A-M at a scale of 1:24,000, and on aerial photography in Appendix A.

1.2.1 Size

Corridor width varies from 1,000 feet (305 meters) to 2,600 feet (0.8 kilometer). Because of the variation in land uses north of the state forest resulting in the need for flexibility during final centerline delineation, the proposed corridor measures 2,600 feet in width from the Central Florida Substation to the northern limits of the Withlacoochee State Forest.

The remainder of the corridor width to the west and south has been established at 1,000 feet, except in two areas. Where the corridor crosses SR 471 and the Little Withlacoochee River, it has been widened to provide flexibility in final line route selection and structure placement because of the river, its floodplain, Route 471, and the highway bridge. The second area is 2 miles north of the east southern boundary of the state forest on either side of Route 471. Here, the corridor has been expanded to 1,000 feet on either side of the road right-of-way to accommodate routing options on state lands. Contaminated areas in this portion of the state forest will have a bearing on final route selection.

The right-of-way required for the proposed 500 kV transmission line will measure 190 feet (58 meters) in width. It will be purchased in fee and/or easements by the Florida Power Corporation. Where the right-of-way crosses state lands, Florida Power will negotiate a lease arrangement with the State of Florida.

The project will consist of one single circuit 500 kV transmission line. The right-of-way required will be able to accommodate only the one transmission line.

1.3 TRANSMISSION LINE DESIGN CHARACTERISTICS

The basic structure type selected for the proposed transmission line is a steel lattice guyed V. This structure will be used to support the conductors on straight portions of the line. A typical tangent guyed V is shown in Figure 1-2. At angles in the transmission line, the conductors will be supported by a four legged, self-supporting, steel lattice tower (Figure 1-3). The structures will be constructed of steel angle sections and will be galvanized. The guy wires for the guyed V structure will be either aluminum coated steel cable or an aluminum cable with an approximate diameter of 1.0 to 2.0 inches. A four legged self-supporting steel lattice structure may be used on some straight portions of the transmission line where required due to soil conditions, clearances, or other engineering or environmental considerations.

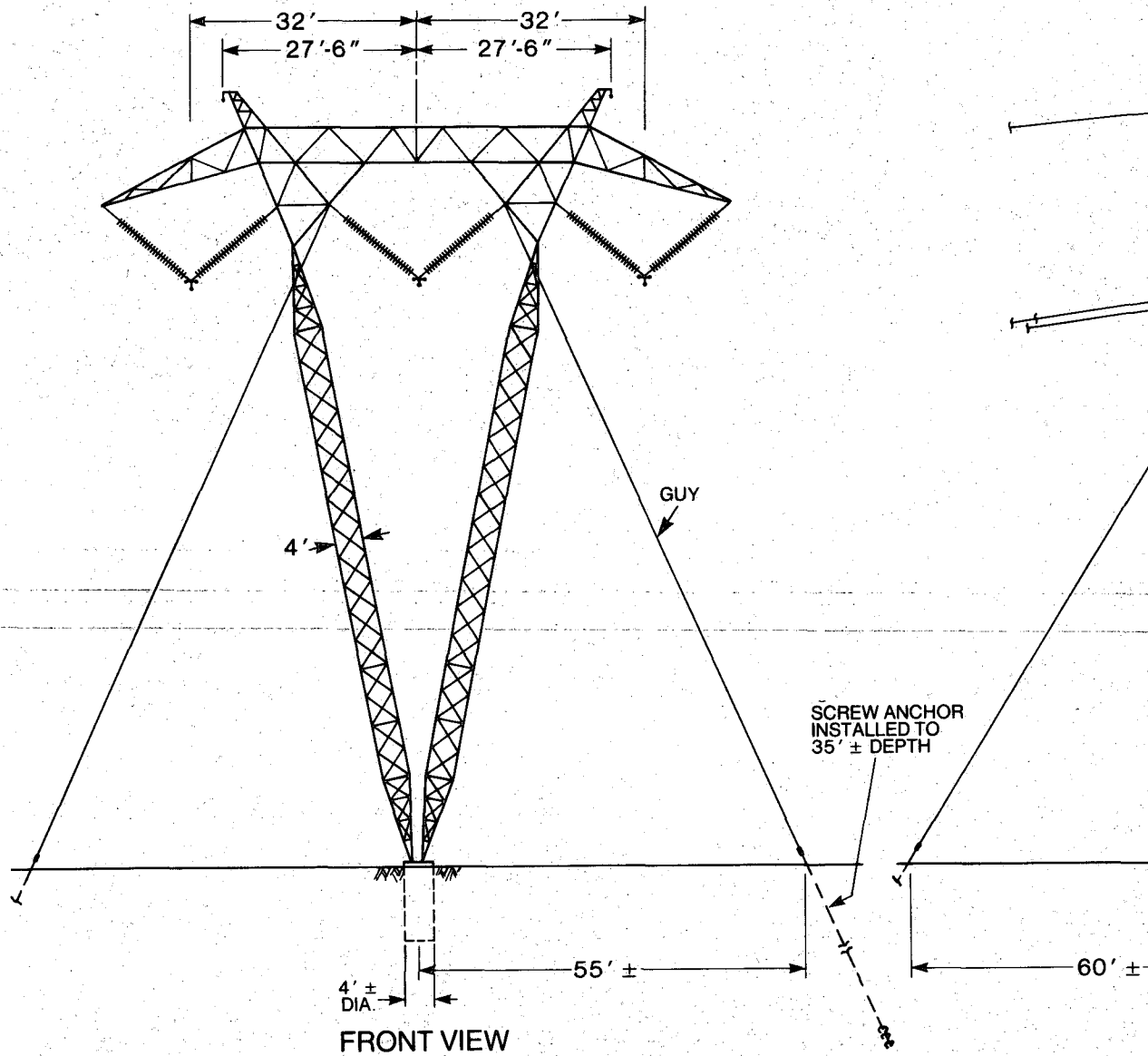
The structures will support a single three phase alternating current, 500,000 volt circuit. The conductor is a 2156 kcmil aluminum conductor steel reinforced with a stranding of 84 aluminum wires and a core of 19 steel wires. Three conductors will be included in each phase, resulting in a total of nine conductors for the circuit. Each conductor is 1.76 inches in diameter. The structure also supports two overhead ground wires which protect the circuit from lightning strikes. The overhead ground wire is 7 #8 Alumoweld with a diameter of 0.39 inches and is constructed of 7 aluminum coated steel strands.

The conductor will be supported in the structure by insulator and hardware assemblies as shown in Figures 1-2 and 1-3. The insulators will be made of porcelain or glass and colored gray, brown, green or some other dark color.

A typical foundation for the guyed V structure is shown in Figure 1-2. The structure will be supported on a cast-in-place reinforced concrete foundation. Guy wires will be attached to multi-helix screw anchors. In certain areas, where the soil will not permit the installation of screw anchors, it may be necessary to attach the guys to concrete anchors. The angle structure will be supported on cast-in-place reinforced concrete cylinder foundations, as shown in Figure 1-3. The structures will be electrically grounded by driving a 5/8 inch diameter steel rod.

TYPICAL

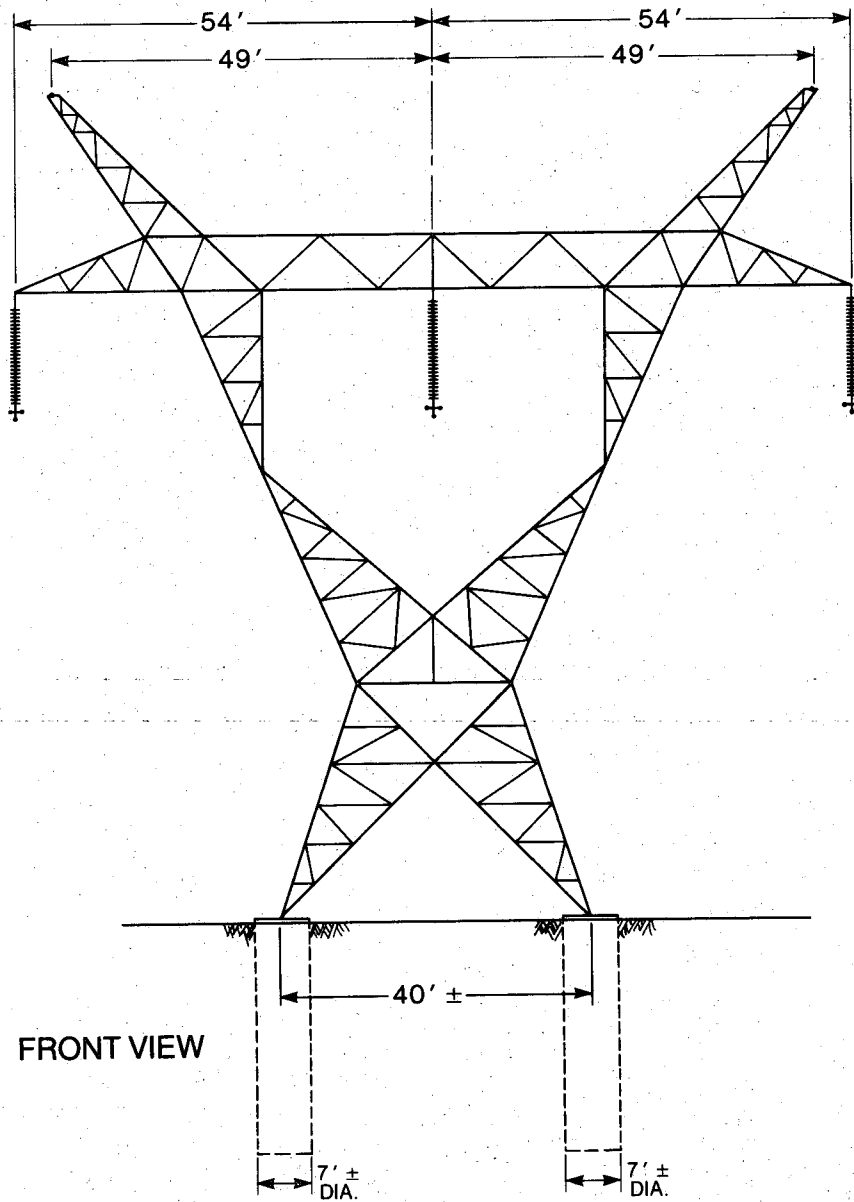
S
C
FLO



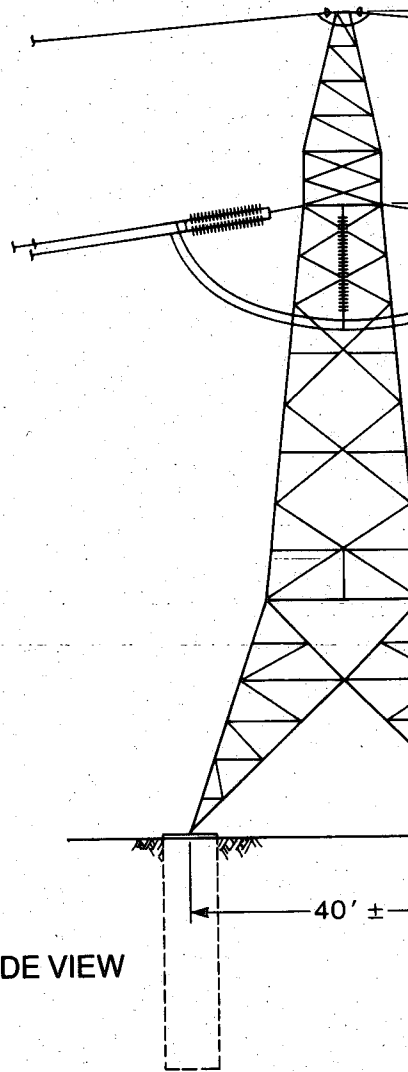
TYP

C

FLO

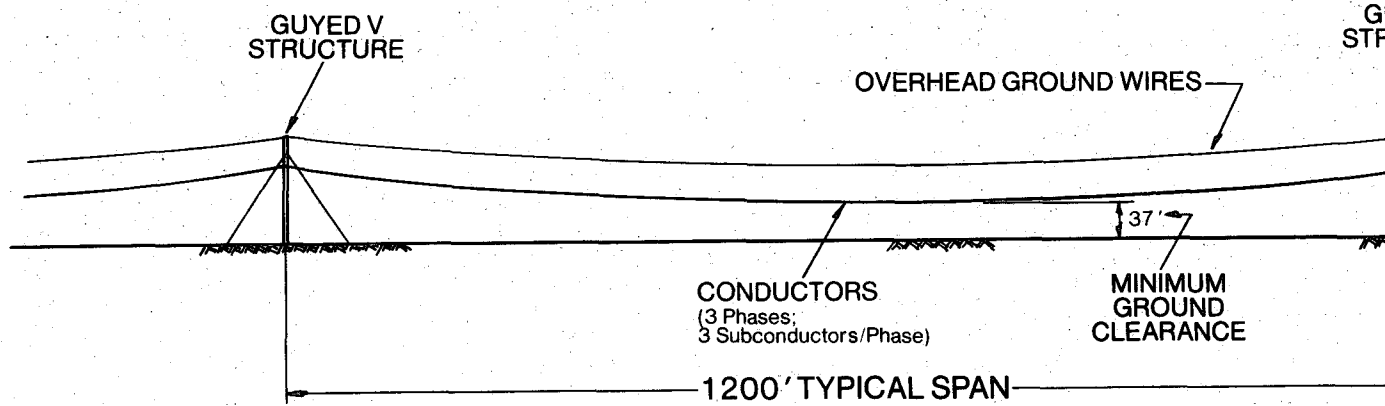


FRONT VIEW



SIDE VIEW

The minimum conductor to ground clearance will be 37 feet at 120°F. A typical span between structures is 1200 feet, as shown in Figure 1-4. The transmission line will be designed to meet or exceed the requirements of the National Electric Safety Code, 1973 and 1981 Editions.





CHAPTER 2

BACKGROUND FEATURES OF THE PROPOSED CORRIDOR

2.1 CORRIDOR SELECTION

2.1.1 Corridor Selection Methodology

Florida Power Corporation maintains a standing "Route Selection" Committee that is charged with the responsibility of determining and evaluating viable options, then selecting a proposed transmission line route or corridor and substation site(s). This committee is activated subsequent to determination of need for a line and/or substation. Representatives from Transmission Engineering (Chairman), Substation Engineering, System Planning, Real Estate, Local Customer Operations personnel and Transmission Construction are permanent members of this committee.

The Chairman may, at his option, or on advice of the standing committee, elect to call on other departments to act as members protem and may also employ outside consultants where additional resources and/or expertise is required.

In the case of the proposed Central Florida — Kathleen transmission line, Florida Power's EHV Project Manager and representatives from Environmental and Licensing Affairs acted as members protem. Also, a project team from the Environmental Systems Division of Commonwealth Associates, Incorporated, Jackson, Michigan, was employed as advisors and to complete any research necessary in selection of the corridor and preparation of this Application.

The line voltage and approximate location of the proposed Kathleen Substation were determined as discussed in Section 1.1. The north and south boundaries of the study area were fixed by the existing Central Florida Substation and the desired location of the proposed substation. The east and west limits were determined because of, and were bound by, the Green Swamp Area of Critical State Concern and communities along State Road 471, respectfully.

A general chronology of events, after establishing study area boundaries, was as follows:

1. Known environmentally sensitive locations within the study area were identified by Florida Power Corporation's environmental personnel.
2. The environmental overlay prepared in Step 1, United States Geological Survey maps, aerial charts and photographs were utilized to define sensitive areas, common corridors and to develop potential corridors for line routes. Three corridors were identified for further evaluation by air surveys and during those surveys, three additional options were identified. Committee members representing Engineering, Construction and Environmental Departments played primary roles during this phase of the evaluation.
3. The proposed corridor was selected from the six options after the Committee combined input from the following Florida Power Departments:

Environmental and Licensing — identified environmentally sensitive areas in the corridors, evaluated effect of construction activities and determined whether mitigative steps were feasible.

Real Estate — made preliminary contact and secured input from the Forest Supervisor of the Withlacoochee State Forest concerning routing through the forest. They also provided the number of real estate parcels involved, their approximate relative cost and land use.

Substation Engineering — determined property requirements for Kathleen Substation and that no additional property is required at Central Florida Substation.

Transmission Construction — determined the relative effect options would have on construction and defined various construction techniques for environmental personnel. They also determined necessary clearing, roadways, fences, culverts and tower pad requirements for all corridors.

Transmission Engineering — provided design, foundation and material requirements for all routes based on present information available.

4. Commonwealth Associates, Incorporated, was employed to review input from the Route Selection Committee, make Federal, State and local governmental agency contacts, complete the research and studies, and, if necessary, make recommendations for additions to the six options considered by Florida Power Corporation.

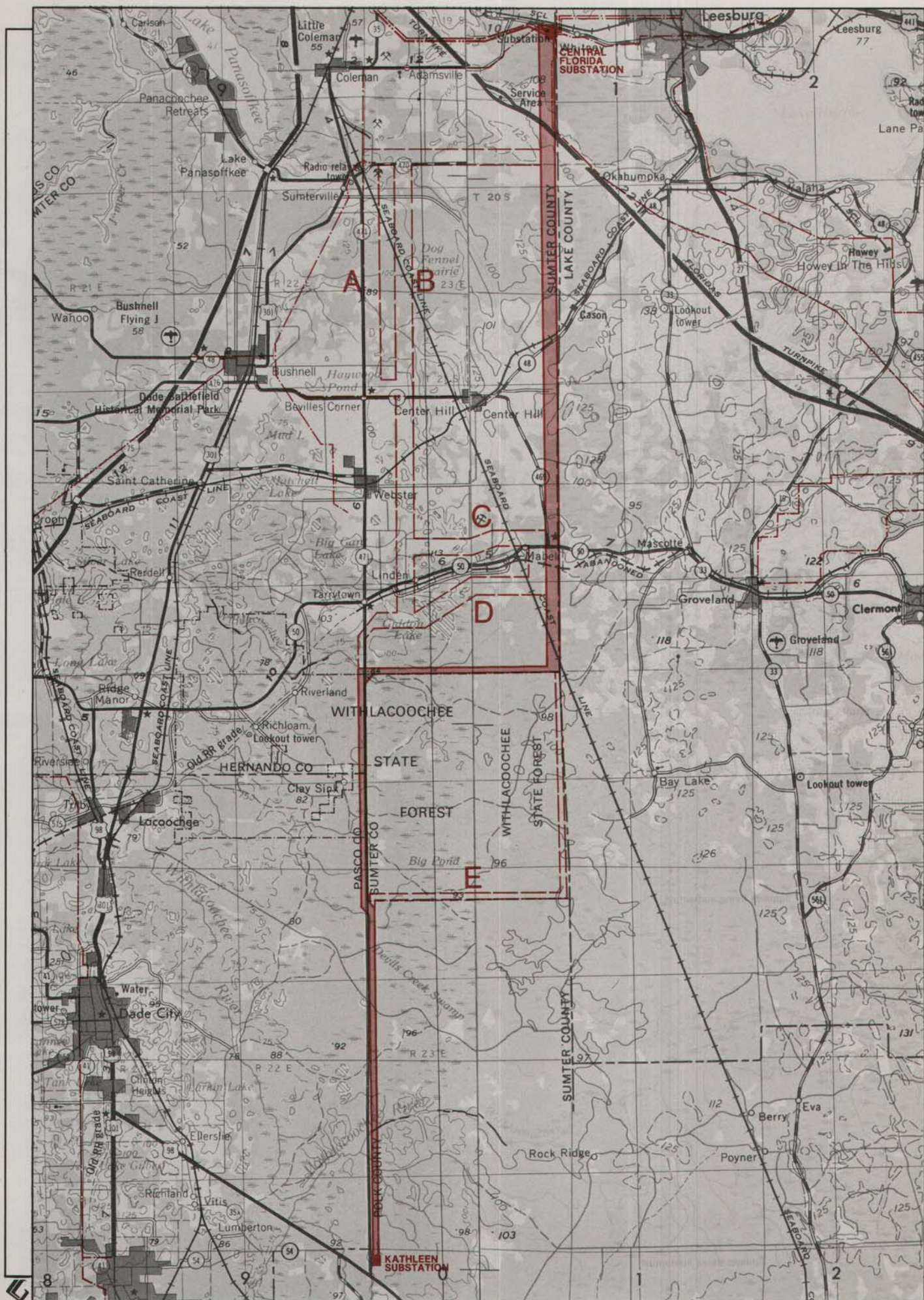
2.1.2 Major Alternative Corridors

In total, six corridor options were developed (Figure 2-1). Five have been designated as alternative corridors along with the proposed corridor. They can be identified as the two northern alternatives, A and B; two central alternatives, C and D; and one southern alternative, E. Each uses portions of other corridor alignments, and all retain segments of the proposed corridor.

The two northern alternatives (A and B) leave the proposed corridor alignment approximately one mile (1.6 kilometers) south of the Sunshine State Parkway. At this point, they turn due west for approximately 5 miles (8 kilometers). Turning south, they again join the proposed corridor approximately 16 miles (26 kilometers) later at the Withlacoochee State Forest, following its alignment to the proposed Kathleen Substation.

The primary difference between the two alternate alignments is that portion along State Route 471 north of Bevilles Corner. While Alternative Corridor A is immediately adjacent and parallel to the highway, Alternative Corridor B is one mile to the east. The two alternatives measure approximately 45.0 miles (72.4 kilometers) and 43.9 miles (70.6 kilometers) in length, respectively.

These corridors were designated as alternatives primarily because of the potential impacts to land use activities if the proposed transmission line were constructed in one of these corridors. The northern portions of both alternatives cross a considerable amount of intensively cultivated agricultural lands. Much of the agricultural area is dominated by row crops. East



of Sumterville, mining activities would be a major hindrance to acceptable centerline delineation. The municipality of Webster, along with its growing environs, and associated development along SR 471, would also pose a problem to final line routing. Field investigations have indicated that residential activity may be impacted by a potential routing through this area.

Another noteworthy point relative to Alternative Corridors A and B is the research being conducted by individuals regarding the Seminole Indians in Sumter County. To date, two Seminole villages have been identified, one in and the other near the corridors' alignment (Figure 2-5). Through a search of original land grant plats and survey notes for Sumter County, information has tentatively verified these sites.

The first village site is known as "Jumper's Town", located in the SE 1/4 of Section 32, T. 21 S., R. 23 E. It has been described as "the home of Chief Jumper after the Moultrie Creek Treaty of 1823" (personal communication, Mr. Vernon Berry, 1981). The second site, "Pelacklakaha", is located in the SW 1/4 of Section 17, T. 21 S., R. 23 E. It is described as "Old Abraham's Town, for the Negro slave interpreter and later Sub-Chief Micanopy, after the Moultrie Creek Treaty of 1823. This was also the home of Micanopy after he left his village, Okahumpka, at the time of the Dade Massacre" (personal communication, Vernon Berry, 1981).

While these sites are not currently in the site files of the State of Florida nor on the National Register of Historic Places, it appears that the site information has been comprehensively researched and thus has been considered in corridor delineation. It is likely that, as additional archeological research is conducted in the area, more cultural resource sites related to the Seminole Period will be discovered.

Therefore, because of existing land use patterns (particularly agriculture and surface mining), developing areas such as the community of Webster, and known cultural resource sites, Alternative Corridors A and B were discarded in favor of the proposed corridor.

The central alternatives, C and D, utilize a majority of the north-south alignment of the proposed corridor. Only the east-west portions are new delineations, located on either side of State Route 50. The two alternative corridors measure 44.6 miles (71.8 kilometers) for C and 44.2 miles (71.1 kilometers) for D.

The proposed corridor was selected over these alignments because of the more intensive agricultural activity occurring along both east-west alignments, the development along SR 50, and the many angles which eventually would be required to route a transmission line through this area.

In addition, although no known historic or archeological sites have been specifically identified in or near each of these corridors, they are in proximity (approximately two miles) to the cultural resources found relative to the Seminole Period.

Alternative Corridor D also passes through a biologically sensitive area. The National Audubon Society (NAS) has identified a wading bird colony on Merritt Pond. Although empty at the time of the Audubon survey (1980), the potential does exist for its future use.

The fifth corridor option, Alternative E, follows the proposed corridor and the eastern and southern boundaries of the Withlacoochee State Forest. It measures 43.6 miles (70.2 kilometers) in length.

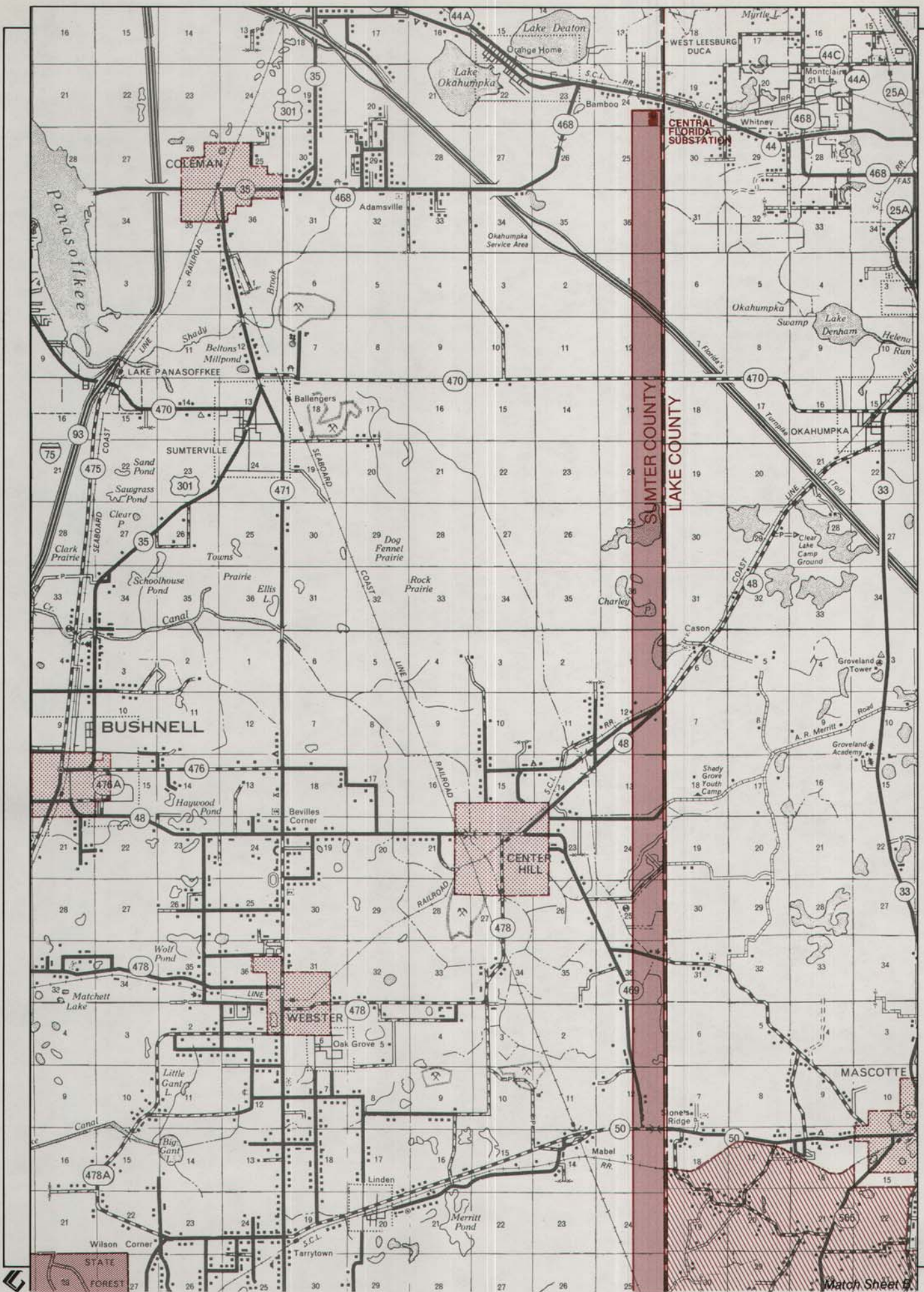
past side of forest

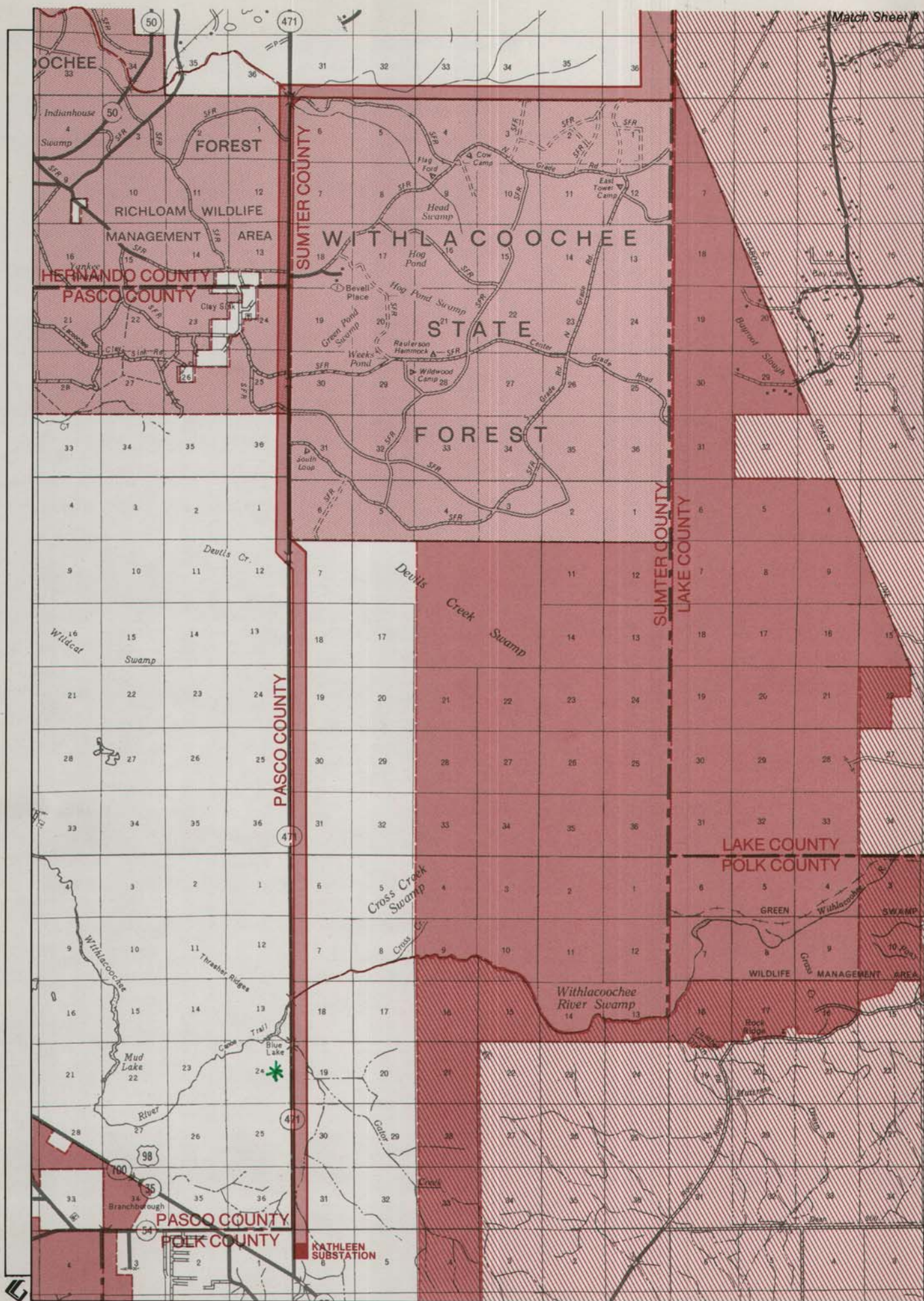
Alternative E was rejected in favor of the proposed corridor because of its potential impact to more state lands: 13 miles (21 kilometers) versus 7 miles (11 kilometers). Although timber production activities (clearing and planting) are apparent, construction of access roads, right-of-way clearing, and structure erection and stringing have the potential to disrupt natural systems throughout this relatively inaccessible area of the forest. This alternate was also rejected because of its proximity to the Green Swamp Area of Critical State Concern and the Southwest Florida Water Management District (SWFWMD) landholdings (Figure 2-2).

2.2 CORRIDOR DESCRIPTION

2.2.1 Governmental Jurisdictions

Governmental jurisdictions encompassed by the study area are shown in Figure 2-2. These include portions of five Florida counties: Hernando, Lake, Pasco, Polk and Sumter. Four incorporated municipalities are located within the study area: the cities of Bushnell, Center Hill, Coleman and Webster, all in Sumter County.





Major public landholdings include parts of the Richloam Unit of the Withlacoochee State Forest and the Richloam Wildlife Management Area, and lands owned and managed by the Southwest Florida Water Management District. Part of the State of Florida designated Green Swamp Area of Critical State Concern is also included within the study area.

The proposed corridor will extend through four of the five counties in the study area. It will parallel the boundary of Lake County for approximately 20 miles (32 kilometers), while remaining in Sumter County. None of the four cities will be affected; Center Hill, nearest the proposed corridor, is still approximately 1.3 miles (2.1 kilometers) distant.

Of the public landholdings, the Withlacoochee State Forest will be most affected. The proposed corridor passes through approximately 7 miles (11 kilometers) of forest land, and directly borders the Forest Boundary for 6 miles (9.6 kilometers). The Green Swamp Area of Critical State Concern is not entered by the corridor, however, the corridor does parallel its boundary for approximately 3 miles (4.8 kilometers). Landholdings of the Southwest Florida Water Management District are not crossed by the proposed corridor.

2.2.2 Easements, Titles, Agency Works, Zoning and Land Use Plans

The proposed corridor crosses state and county roads as described in 1.2. Florida Power Corporation will construct the line to adhere to the requirements of the Department of Transportation Utility Accommodation Guide, July 1979, and furnish "as-built" drawings on completion of the project where the line crosses state roads. In addition, all applicable county ordinances have been reviewed and the line will be constructed to meet the applicable requirements for overhead transmission lines where the line crosses county roads.

Where applicable, joint DER/U.S. Army Corps of Engineers' applications will be filed for the list of "Water Bodies Crossed by this Corridor", Table 4-2, Section 2.2.7, and for other waters of the State, (SAJ Form 983, July 21, 1977, or as subsequently amended). Filing(s) will be concurrent with final line design (i.e., subsequent to establishing structure locations, conductor heights, crossing angles, etc.).

Comprehensive planning activities are being conducted throughout the study area at all levels of government. The Florida Division of Forestry is currently updating their second

10-year property management plan for the Withlacoochee State Forest, while the Southwest Florida Water Management District has recently completed a water management plan for the Green Swamp area.

Regional Planning Councils are also active in the area, providing general planning and advisory services on a broad multi-county level. They include the Central Florida Regional Planning Council (Polk County), Tampa Bay Regional Planning Council (Pasco County), and the Withlacoochee Regional Planning Council (Hernando and Sumter Counties).

Four of the five counties in the study area have completed comprehensive plans pursuant to the Florida Local Government Comprehensive Planning Act of 1975 (LGCPA), while the fifth county, Pasco, is in the process of completing its plan. In the immediate vicinity of the proposed corridor, minimal development is projected. Future land uses proposed reflect the present situation; i.e., forest, wetland, improved pasture and agriculture. Therefore, because the intent of this planning is to retain the present character of the area, mapping of such future land use categories was determined unnecessary. FPC has reviewed the approved plans and believes that the proposed project is compatible.

Zoning activity in and along the proposed corridor is predominantly in the agricultural category. Occasionally, a small area is rezoned to residential, usually for a single family dwelling or mobile home classification.

Zoning in the proposed corridor consists of ten districts (Figure 2-3):

Hernando County

AG Agriculture

Pasco County

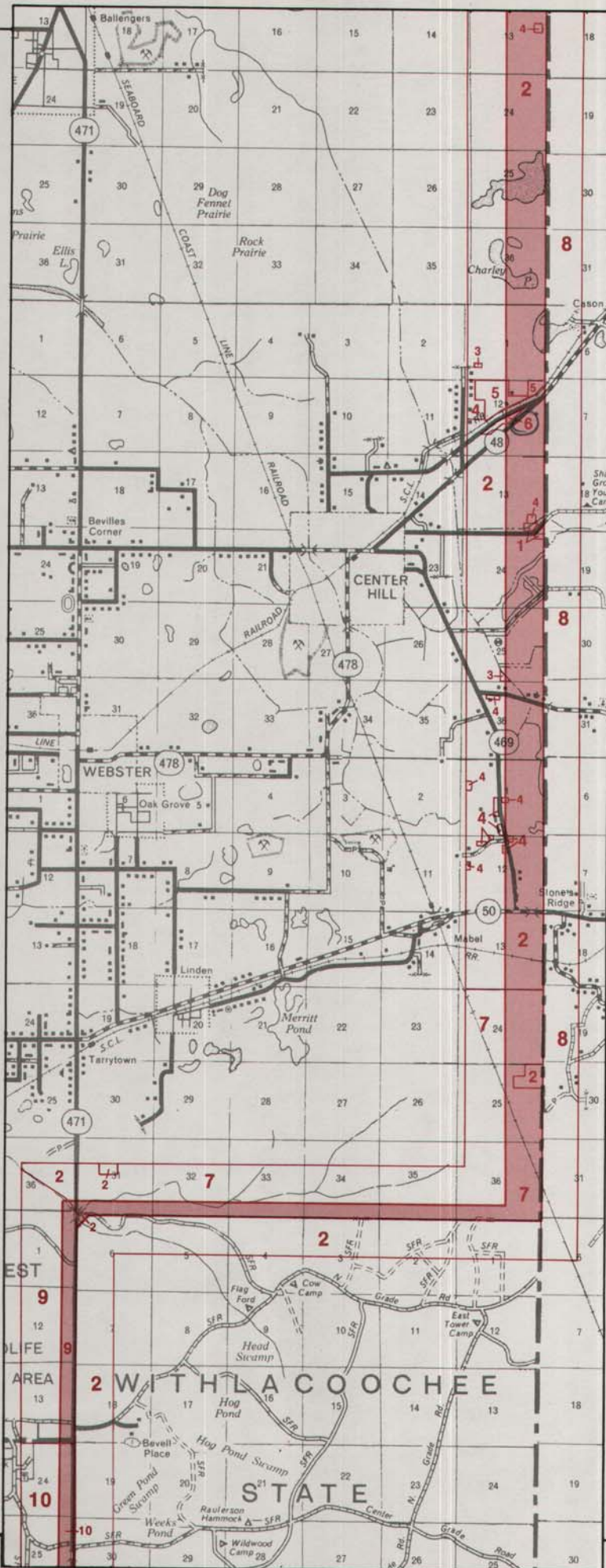
AC Agricultural Conservation

FIGURE 2-3 ZONING

CENTRAL FLORIDA-KATHLEEN
500KV TRANSMISSION LINE
FLORIDA POWER CORPORATION

REVISED - AUGUST 1981

*needs
variance*



 Proposed Corridor

SUMTER COUNTY

- 1. A-1 Agricultural/Residential
- 2. A-5 Agricultural
- 3. RR-5 Rural Residential
- 4. RR-1 Rural Residential
- 5. R-1-M Mobile Home Residential
- 6. C-1 Neighborhood Commercial
- 7. M-1 Industrial

LAKE COUNTY

- 8. A Agricultural

HERNANDO COUNTY

- 9. AG Agricultural

PASCO COUNTY

- 10. A-C Agricultural Conservation

POLK COUNTY

- 11. R-C Rural Conservation

 0 2 MILES
0 2 KILOMETERS

SOURCE:
Current County Zoning Ordinances.

BASE MAP SOURCE:
Florida Department of Transportation,
Current County Highway Maps.