DOE EIS/0078F

FILE COPY

FINAL ENVIRONMENTAL IMPACT STATEMENT
JONESBORO-HERGETT 161 kV TRANSMISSION LINE

UNITED STATES DEPARTMENT OF ENERGY
SOUTHWESTERN POWER ADMINISTRATION

ERRATUM

Under section 5 of DOE EIS/0078-F, p. 61, in section A., Impact on Soils, please amend the first sentence to read:

> "Construction of a transmission line in any right-of-way will generally produce some degree of impact to the soil, either through compaction, rutting, or erosion."

SUMMARY SHEET

Responsible Agency: Department of Energy, Southwestern Power Administration (SWPA).

Title of Proposed Action: Jonesboro-Hergett 161 kV Transmission Line Final Environmental Impact Statement, DOE EIS/0078-D.

States and Countries Involved: Craighead Country, Arkansas.

Abstract: The proposal involves constructing 15.5 miles (25 kilometers) of transmission line, partially paralleling existing transmission lines, on a 100-foot right-of-way, with the line strung on wood poles. Some construction will occur on presently vacant land; the line also will traverse land in agricultural production and woodlots. Line construction will permit the transmission of electrical energy from the Arkansas Power and Light Company's (AP&L) Independence powerplant to SWPA's preference customers in the Jonesboro area, by tapping into a power line to be constructed by AP&L. Environmental impacts are expected to include soil disturbance and possible sedimentation in water courses; clearing of vegetation; minimal crop damage and loss; visual impact on residences and possible interference with residential growth; minor beneficial economic impacts on the area in which the line will be constructed; possible impact on archaeological sites; and construction impacts.

For additional information contact:

James N. McClanahan, Chief
Division of Power Facilities
Southwestern Power Administration
P.O. Box 1619
Tulsa, Oklahoma
918/581-7429

Date by which comments must be received:

ENVIRONMENTAL IMPACT STATEMENT

JONESBORO - HERGETT

161 kV TRANSMISSION LINE

DOE EIS/0078-D

DEPARTMENT OF ENERGY

SOUTHWESTERN POWER ADMINISTRATION

OCTOBER 1981

COMMONWEALTH ASSOCIATES INC.

JACKSON, MICHIGAN

R-2280

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I. SUMMARY

The Southwestern Power Administration (Southwestern), an agency of the U.S. Department of Energy (DOE), proposes to construct a 161 kV transmission line for a distance of 25 kilometers (15.5 miles) in Craighead County, Arkansas. The proposed project extends from the Jonesboro Substation, located in the northwestern corner of Jonesboro, to the Jonesboro City Water and Light Department Hergett Substation located to the southeast of Jonesboro. The proposed transmission line will form an interconnection with a planned 500 kV transmission facility being routed close to the city of Jonesboro and the Hergett Substation (Figure 1).

Several alternative routes to the proposed project were considered, including two routings which paralleled existing rights-of-way. One alternative paralleled the St. Louis and San Francisco Railroad right-of-way through Jonesboro. A cost analysis was prepared which determined that this alternative was economically unfeasible. The alternative would have encroached upon expansion plans for the Jonesboro Municipal Airport; it would have been run underground for approximately one-half mile, increasing construction costs appreciably. The second alternative would have paralleled the U.S. 63 Expressway south of Jonesboro. This alternative was rejected because the Arkansas State Highway Department plans to convert the expressway to a limited access freeway with frontage roads paralleling both sides; providing insufficient right-of-way space for the transmission line.

An exclusionary mapping process was used to delineate a network of preliminary corridors. Within each cor-

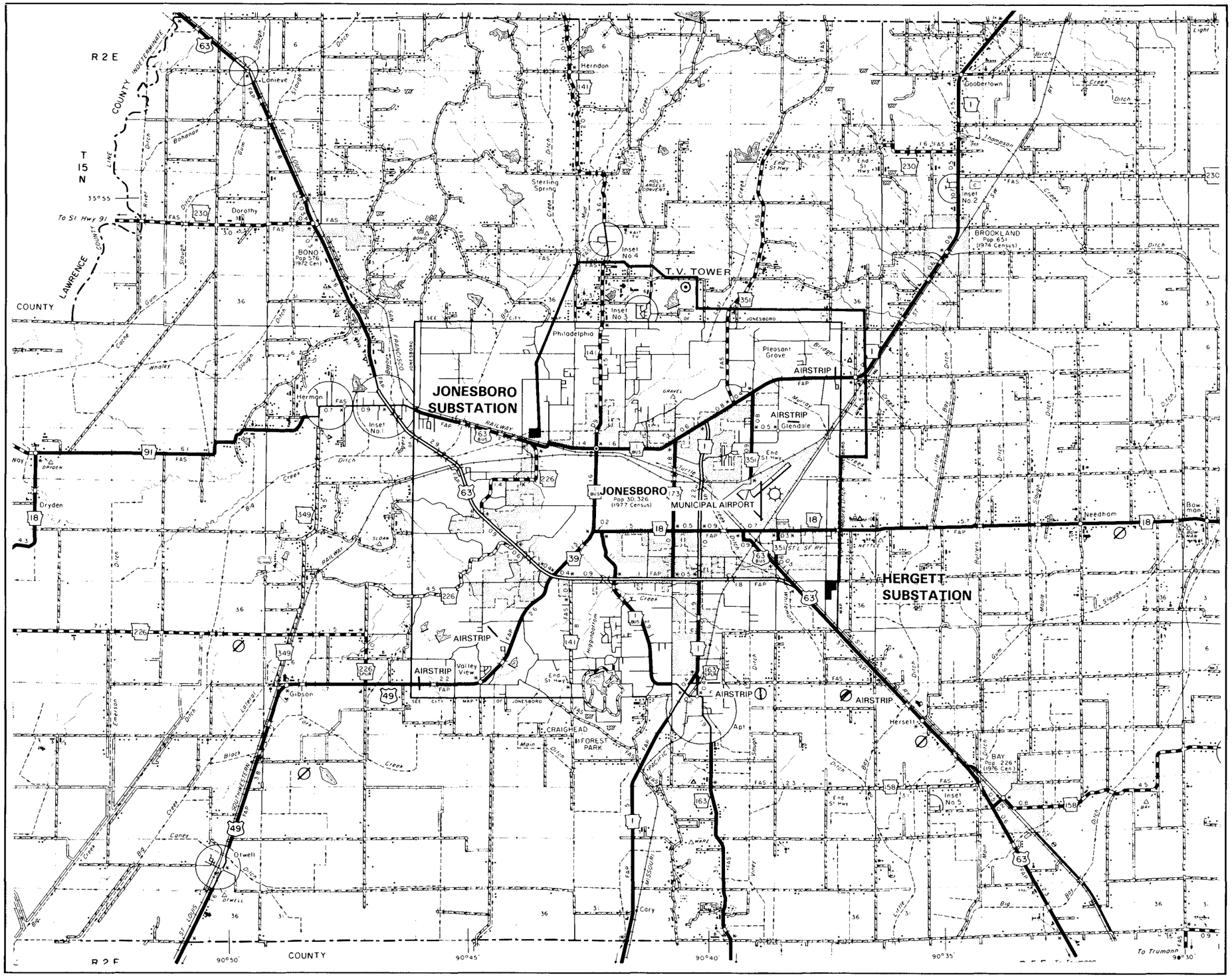


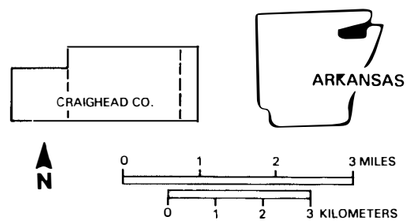
FIGURE 1

PROJECT LOCATION

JONESBORO - HERGETT
161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE



Map Source: Portion of, General Highway Map, Craighead County, Arkansas. Prepared by Arkansas State Highway and Transportation Department, in cooperation with U.S. Department of Transportation.

Gilbert/Commonwealth

ridor segment a center line was selected to represent alternative line route options. The route selection process reflected attention to environmental, engineering and economic concerns. Three alternatives and a Preferred Route were selected. Certain similarities exist between the alternatives. Land use is predominantly agricultural, with woodlots generally located on Crowley's Ridge. Residential growth is primarily concentrated on the ridge with some scattered developments in the farmland areas. All four alternatives parallel existing transmission lines for a portion of their alignment.

The Preferred Route, while not ideal in every respect, is the most feasible and environmentally compatible of all considered routes. This route represents the option with the lowest cost and minimal impact on existing residential areas. The route parallels an existing transmission line from the Jonesboro Substation to Highway 141. Overall environmental impact of the proposed transmission line route, as addressed in this report, is expected to be minimal.

The Jonesboro-Hergett 161 kV line will be constructed on wood pole H-frame structures with internal cross and vee bracing. The structures will be spaced approximately 182 meters (600 feet) apart. For small line angles, a guyed wood H-frame structure with suspended insulator assemblies will be used. For large line angles, a 3 wood pole structure with dead end insulator assemblies will be used. A 30 meter (100-foot) right-of-way will be required for the proposed line.

II. PURPOSE AND NEED

The Southwestern Power Administration is an agency of the Department of Energy with delegated authority to carry out the responsibilities of the Secretary under Section 5 of the Flood Control Act of 1944. Pursuant to this authority, Southwestern markets power and energy generated at Army Corps of Engineers' projects in the states of Arkansas, Missouri, Oklahoma, and Texas. Southwestern not only markets power and energy in these four states, but also in Kansas and Louisiana; it currently operates approximately 2720 kilometers (1,700 miles) of transmission lines in Oklahoma, Arkansas, and Missouri. The Southwestern Headquarters Office is located in Tulsa, Oklahoma, with four area Operation and Maintenance Offices located in Jonesboro, Arkansas; Springfield, Missouri; and Muskogee and Ada, Oklahoma.

The electrical transmission system in the Jonesboro area is currently becoming very heavily loaded. During peak load days in summer, transmission system voltages have dropped to dangerously low levels. Southwestern's transmission system in this area has a nominal voltage of 161,000 volts, but at times it has dropped to approximately 149,000 volts. With these conditions, a transmission line trip out in northeast Arkansas could have serious consequences.

Because of economic growth within the northeast Arkansas area (Jonesboro is the principal urban center), there is an ever increasing need for electrical energy. To meet this fast-growing demand, either new generating facilities must be built by local municipalities or power must be purchased by Southwestern from a remote source, which would require a new transmission tie-line to be constructed for interface purposes. The city of Jonesboro and the Arkansas

Cooperatives are participating with the Arkansas Power and Light Company (AP&L) in the construction of new facilities which will be routed close to Southwestern's Hergett substation. A tie into the AP&L system at this point appears to be the most feasible solution to the need for additional power at the present time.

The proposed Southwestern transmission line is part of a regional improvement program. The Arkansas Power and Light Company is planning to build a 500 kV line from near Blytheville, Arkansas to their Independence generation plant near Newark, Arkansas, now under construction. The units are expected to be on-line in 1983 and 1985. The municipal utility within Jonesboro, City Water and Light, owns 5 percent of these two units. This 500 kV line will pass just south of Jonesboro and AP&L plans to build a substation on this line that will tie to the Hergett Substation.

To increase and insure future system reliability, Southwestern is proposing a transmission line between Jonesboro Substation and the Hergett Substation which would interconnect with the new AP&L transmission line. These improvements will benefit all users of electrical energy in northeast Arkansas - the City of Jonesboro, the rural electric cooperatives, and the City of Paragould. Statements of support for the proposed project from participating utilities are presented in Appendix A.

III. ALTERNATIVES

A. No Action

This alternative ignores the need and obligation of Southwestern to provide power to its customers, and minimizes service reliability. The no action alternative would eliminate construction of the transmission line and the concurrent potential impacts and benefits.

B. Additional Generating Capacity

The alternative of additional generating capacity would cause individual municipal utility customers served by Southwestern, the City of Jonesboro for example, to resort to construction of new power plants in the area to satisfy their increased demand during the 1980's. Additional generating capacity can be supplied by construction of various types of generation units including coal-fired, oil or gas steam-electric, gas turbine, and possibly others such as cogeneration, solar, wind, municipal solid waste and geothermal. Municipal and electrical cooperative customers of Southwestern could possibly build diesel peaking units to operate during periods of drops in transmission system voltage. However, these generating units require high capital investment and are expensive to operate. Additionally, several detrimental environmental impacts would occur with the construction and operation of diesel peaking units.

C. Conservation

The cities' forecasted need for additional capacity during the 1980's recognizes potential reduction in load growth through conservation efforts and improved end-

use efficiency. Part of the cities' communication effort encourages conservation. Although this alternative is not known to have any direct adverse environmental consequences, due to the anticipated growth in the Jonesboro area, this is not a realistic alternative to maintaining system reliability.

D. Purchase Power

An economical and judicious solution to the need for additional electrical power would be the purchase of electricity generated by the proposed AP&L Independence Plant near Newark, Arkansas, now under construction and the White Bluff, Arkansas Plant which is partly owned by the City of Jonesboro. The 500 kV transmission line distributing power from these plants will pass just south of Jonesboro and AP&L plans to build a substation on this line tying it into the Hergett Substation. Implementation of this alternative would require transmission of power from the Hergett Substation to Southwestern's Jonesboro Substation.

E. Alternative Line Routes

Several alternative routes were evaluated for transmitting electricity from the Hergett to the Jonesboro Substation. They are discussed below:

1. Paralleling Existing Rights-of-Way

Two alternative routings paralleling existing rights-of-way were considered early in the study. One alternative would parallel the St. Louis and San Francisco Railroad right-of-way through Jonesboro. The second would parallel the U.S. 63 Expressway south of Jonesboro. Paralleling the railroad was initially considered more feasible.

Field investigations and preliminary designs determined space availability above ground and possible obstructions along the line route.

Essentially, the railroad alternative would begin at the Jonesboro Substation and traverse overhead on tubular steel pole structures adjacent to the railroad right-of-way to a point south and west of the Jonesboro Municipal Airport. It was determined through conversation with the Arkansas Division of Aeronautics that expansion plans for the existing runway would preempt the possibility of constructing a line on overhead steel poles, owing to encroachment of the dedicated airspace southwest of the airport. For this reason, the new transmission construction would dip underground for approximately one-half mile and then proceed overhead to the Hergett Substation.

A cost analysis of the aforesaid facility was prepared, and it was determined that the combination of steel pole structures and undergrounding made this alternative economically unfeasible; this was true even though the line length for this alternative was the shortest of those considered (11.2 kilometers or 7.0 miles). Additionally, the East Arkansas Regional Planning and Development District states that paralleling the railroad could disrupt expansion plans of the Arkansas State University Campus. They also indicated that a proposed Jonesboro railroad relocation plan might affect some of the rail line which the transmission facilities would be paralleling (Meeting with East Arkansas Regional Planning and Development District, 1980).

The expressway alternative was rejected because of plans by the State Highway Department to relocate parts of U.S. 63 and convert the expressway to a limited access

freeway with frontage roads paralleling both sides. These frontage roads would be located 30 feet from the expressway. In addition to the limited space between the proposed frontage roads and the expressway, it would be difficult to parallel U.S. 63 with a transmission line because of the possibility of residential relocation. Paralleling the expressway would also create visual problems to residences along Smoot Drive, Hillridge Cove and Mockingbird Lane (Meeting with State Highway Department and East Arkansas Planning and Development District, 1980).

2. Selection of Alternative Line Routes

The methodology described in Appendix B was used to establish alternative line routes for the proposed 161 kV transmission line. Criteria applied in the route selection process reflected environmental, engineering and economic concerns. Following an exclusionary mapping process, a network of preliminary corridors was delineated (see Figure 2). Within each corridor segment a center line was selected to represent alternative line route options. Two line routes were selected within Corridor A (see Figure 3).

The following environmental features and criteria were considered for delineation of routes: topography, hydrology, soils, prime farmlands, woodlots, wildlife habitat, threatened and endangered species, visually sensitive areas, generalized land use, urban and residential development, highways and railroads, archeological and historic sites (cultural resources), subdivision and platting activity. After a final field inspection, this information was utilized to prepare a route evaluation summary illustrating the advantages and disadvantages of each alternative route (see Table 1).

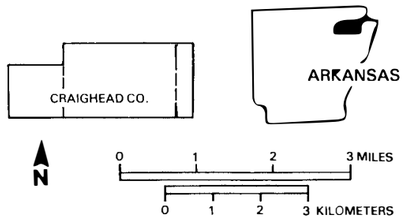
FIGURE 2

PRELIMINARY CORRIDORS

JONESBORO - HERGETT
161 kV TRANSMISSION LINE

Southwestern Power Adminstration
United States Department of Energy

PRELIMINARY CORRIDORS



Map Source: Portion of, General Highway Map, Craighead County, Arkansas. Prepared by Arkansas State Highway and Transportation Department, in cooperation with U.S. Department of Transportation.

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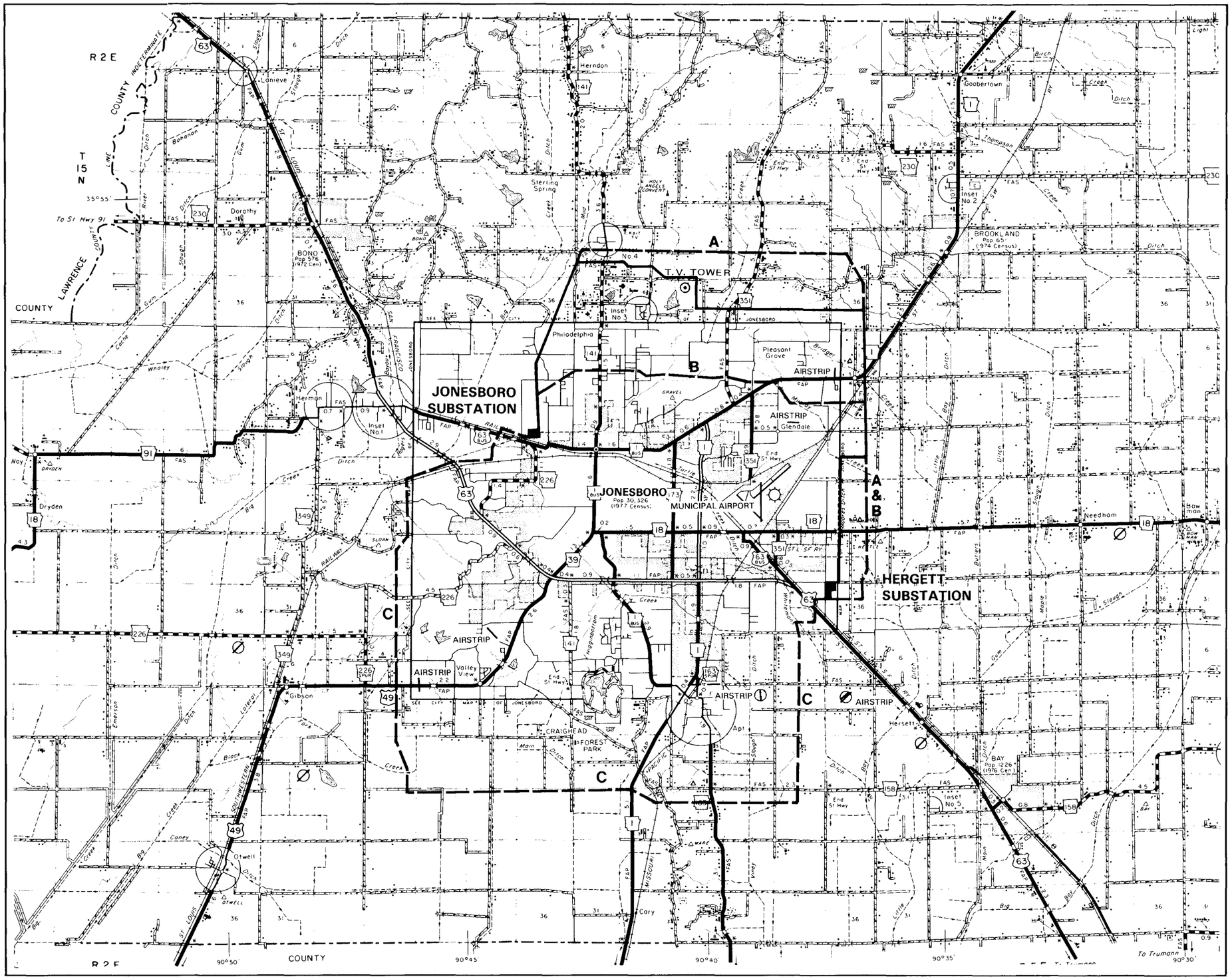
FIGURE 3

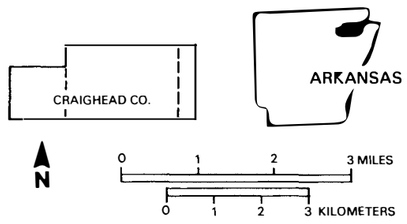
ALTERNATIVE ROUTES

JONESBORO - HERGETT
161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy



PREFERRED ROUTE
ALTERNATIVE ROUTE



Map Source: Portion of, General Highway Map, Craighead County, Arkansas. Prepared by Arkansas State Highway and Transportation Department, in cooperation with U.S. Department of Transportation.

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TABLE 1

ALTERNATIVE ROUTE EVALUATION SUMMARY

	A	Preferred	B	C
Line Length	29.4 kilometers (18.4 miles)	24.8 kilometers (15.5 miles)	19.2 kilometers (12 miles)	35.2 kilometers (22 miles)
Cost Estimate	$1,892,515	$1,724,660	$2,229,000	$2,477,000
Advantages	-Low Cost -Minimizes impact on existing residential areas -Parallels existing transmission line with minimal overall impact (Jonesboro Substation to Highway 141)	-Lowest Cost -Minimizes impact on existing residential areas -Parallels existing transmission line with minimal overall impact (Jonesboro Substation to Highway 141) -Low visual impact -Utilizes a large percentage of vacant land	-Shortest line -Consolidates existing 69 kV line with proposed 161 kV line on one set of double circuit structures (N. Culberhouse to Highway 49) -Almost no disturbance to natural communities -Traverses least amount of prime farmland	-Minimizes impact on existing residential areas -Low visual impact
Disadvantages	-Crosses major portion of oak forest in four locations on Crowley's Ridge -Possible conflict with future residential development	-Crosses major portion of oak forest in three locations on Crowley's Ridge -Possible conflict with future residential development	-Unavoidable encroachment upon existing residences (N. Culberhouse to Highway 45) -Probable need to acquire residence(s) to provide adequate right-of-way -Conflict with future urban development -High visual impact -Double circuit portion of line would require use of large single steel poles, thus increasing line visibility in developed residential areas -Close to Castleberry House historic archeological site	-Longest line length -Highest cost -Traverses oak forest in two locations on Crowley's Ridge -Crosses lowland forest -Crosses area of waterfowl concentraction -Possible conflict with future residential development -Route crosses substantial amount of prime farm land (75% of line length) -Potential adverse impact to agricultural operations, resulting from placement of proposed line in prime farmland area already affected by several existing transmission facilities (Highway 163 to Hergett Substation)

3. Alternative Routes

Three final alternatives were considered along with the Preferred Route (Figure 3). They are Alternatives A, B. and C. Certain similarities exist between the alternatives. Land use is predominantly agricultural with woodlands located on Crowley's Ridge. Residential growth is primarily concentrated on the ridge with scattered growth in the farmland areas. All four alternatives parallel existing transmission lines for a portion of their alignment. The routing alignment and a discussion of the advantages or disadvantages of each alternative route are presented below. The Preferred Route is discussed in the following section (Section III F).

All four route alternatives are presented on aerial photographs in Appendix F. Within the inventoried corridor, land use information is provided.

Alternative A

Alternative A takes the same alignment out of the Jonesboro Substation as the Preferred Route. However, it parallels the existing right-of-way an additional 365 meters (1,200 feet), leaving the right-of-way at the Culberhouse Street crossing. From here the alignment heads east for 8.3 kilometers (5.2 miles). This alignment is located entirely on Crowley's Ridge and crosses Highways 141 and 351 and an existing transmission line. Then the alignment travels southeasterly for 1036 meters (3,400 feet) and finally directly south for 9.6 kilometers (6 miles) before turning west 975 meters (3,200 feet) to pick up an existing transmission line, following it north into the Hergett Substation. The 9.6 kilometer (6 mile) southward alignment is located

along section lines and field edges to reduce impact on farmland and farming practices. Like the Preferred Route, it also traverses the Farville area.

Alternative A is also similar to the Preferred Route in environmental impacts accrued. Principal differences appear where Alternative A crosses Highway 351 in an area of adverse visual conflict.

Alternative A has a total line length greater than that of the Preferred Route; the alternative is 4.8 kilometers (3 miles) longer than the Preferred Route.

Alternative B

Alternative B follows the existing transmission right-of-way out of the Jonesboro Substation in the same manner as the Preferred Route and Alternative A. However, it parallels the existing right-of-way for only 1220 meters (4,000 feet) and then heads in an easterly direction, utilizing an existing 69 kV transmission right-of-way for 7.7 kilometers (4.8 miles) then leaving it immediately after traversing Highway 49. This is the rebuild portion of the alternative. This alignment passes through the Philadelphia area and crosses over Highways 141 and 351 as well as 49. The alignment heads southeast 915 meters (3,000 feet) after crossing Highway 49 and then directly east across the St. Louis Southwestern Railroad to join the proposed Alternative A alignment, following it into the Hergett Substation.

For the rebuild portion of the existing 69 kV line segment, the plan is to underbuild it on the new 161 kV Jonesboro-Hergett circuit. To accomplish this, steel pole structures would be installed to replace the existing wood

poles on the 69 kV facility. The average span length would be approximately 182 meters (600 feet) with an overall structure height of 26 meters (85 feet). The foundation for this construction type would be a cast in-place concrete cylinder approximately 1.5 meters (5 feet) in diameter, embedded in the ground 5 meters (17 feet), and would require 12-1/2 cubic yards of concrete. The 69 kV circuit would be installed below the 161 kV circuit on each of the poles.

Although this alternative is the shortest, it has some major disadvantages:

- more visual exposure owing to the vertical stacking of multiple circuits and phase conductors;

- heavier construction equipment required to auger holes for foundations, pour concrete, and erect heavier steel poles;

- the displacement of several residences;

- the traversing of high density residential development; and

- removal from service of the existing 69 kV circuit during new line construction.

Alternative C

Alternative C is the sole alignment south out from the Jonesboro Substation. The alignment heads first west following the St. Louis-San Francisco and St. Louis-Southwestern Railroads before turning south. It parallels the St. Louis-San Francisco right-of-way for 608 meters (2,000 feet), then

drops down to pick up the St. Louis-Southwestern right-of-way for 2.9 kilometers (1.8 miles), crossing Highway 63. From this point the alternative runs south for 10 kilometers (6.3 miles), traversing the western extremities of Crowley's Ridge, and then onto farmland before turning east. The alignment crosses Highways 49 and 226 and an area of high waterfowl concentration. From this point, it runs east 12.5 kilometers (7.8 miles), traversing more waterfowl areas as well as Highways 1 and 163, the Missouri Pacific Railroad and a small portion of Crowley's Ridge. The alignment was located to avoid the Craighead County Forest Park. It makes a northward turn to parallel a 138 kV transmission line 7.4 kilometers (4.6 miles) into the Hergett Substation, crossing Highway 63. The entire alternative was delineated along section lines and field edges to minimize impacts to farmlands. Alternative C crosses three existing transmission rights-of-way.

Alternative C has the least overall residential impact compared to the other two alternatives and the Preferred Route. However, its desirability is reduced by: (1) having the greatest total length, (2) crossing the greatest amount of prime farmland, and (3) crossing an area of high waterfowl concentration.

F. Construction of the Preferred 161 kV Transmission Line

1. Preferred Route Alignment

The Preferred Route exits the Jonesboro Substation north, paralleling the east side of an existing 161 kV transmission line for 2.4 kilometers (1.5 miles). From this point, it runs in a northeasterly direction for 3.2 kilometers (2 miles), continuing to share the existing right-of-way.

It then leaves the right-of-way and heads east for 2.2 kilometers (1.4 miles), crossing Highway 141 and then travels southeasterly for approximately 1.6 kilometers (1 mile). The route continues east for 5.3 kilometers (3.5 miles), crossing Highway 351 and comes off Crowley's Ridge onto farmland. Upon leaving the ridge, the Preferred Route travels south in farmland along section lines and field edges for 4.8 kilometers (3 miles), crossing Highway 49 and the St. Louis Western Railroad in the vicinity of Farville. Thence it turns directly west for one-half mile and continues south for 3.8 kilometers (2.4 miles), crossing High way 18 and passing just east of the Jonesboro Industrial Park. From here it turns west into the Hergett Substation.

The Preferred Route, although not without some negative aspects, is the most feasible and environmentally compatible of all considered routes. This route represents the option with the least cost; it minimizes impact on existing residential areas. Along the east/west alignment the route optimizes the presence of vacant lands. The Preferred Route also has low visual impact.

2. Facilities

Transmission Line

The Jonesboro-Hergett 161 kV line will be constructed on wood pole H-frame structures with internal cross and vee bracing (Appendix C). A typical tangent structure will consist of two 21.3 meter (70 foot) wood poles on 4.7 meter (15.5 foot) centers, supporting conductors approximately 14 meters (47 feet) above ground level at the structure. Minimum conductor-to-ground clearance at 15 degrees C (60 degrees F) will be approximately 9.5 meters (31 feet).

The structures will be spaced approximately 182 meters (600 feet) apart and will be designed to meet or exceed the requirements specified in the 1981 edition of the National Electrical Safety Code (NESC). The wood poles will be direct buried to a depth of approximately 2.7 meters, (9 feet) depending on soil conditions.

The structure will support a single circuit composed of three phases of 1590 kcmil, 45/7 strand aluminum conductor, steel reinforced (ACSR) "Lapwing" conductor per phase, and two 7/16 inch EHS galvanized steel overhead shield wires.

For small line angles, a guyed wood H-frame structure with suspension insulator assemblies will be used. For large line angles, a 3 wood pole structure with dead end insulator assemblies (Appendix C) will be used.

Substation Facilities

The Jonesboro and Hergett Substations are existing facilities. The installation of additional structural and electrical equipment will be required to terminate the proposed transmission facilities. Additional equipment will include substation facilities, circuit breakers, disconnect switches, bus conductors, steel structures and other associated equipment. Clearances and equipment placement will be in accordance with generally accepted standards and the NESC.

Right-of-Way Requirements

A 30.4 meter (100-foot) right-of-way will be required for the proposed line. The line will be constructed in the center of the right-of-way strip.

3. Construction Procedures

Surveying

The first operation is a survey of the proposed route. Surveying will establish the centerline and edges of the right-of-way for the transmission line.

For the most part, only a survey crew and small surveying equipment will be involved. Establishing the centerline may require limited cutting of trees for line of sight, staking, profiling and distance measuring. The survey crew will utilize existing roads to obtain access to the proposed route. No new access roads will be established. Surveying will be done by ground and/or aerial survey. As a result, little environmental impact is expected during the survey operation.

Clearing

Clearing will be performed as required to protect the integrity of the line. Vegetation will be removed by clear-cutting all trees and brush within an 18 meter x 30 meter (60 foot by 100 foot) area at each structure site. Trees and brush which may fall into a structure or conductor or within 3 meters (10 feet) of the conductor (both during static and at winded conditions) also will be cut. Vegetation beyond these limits will be removed only as required to achieve a tapered effect to the right-of-way limit.

Trees and brush will be cut as close to the ground as possible with stump height not exceeding three inches above surrounding ground level. Cutting will be accomplished by saws (including chainsaws) and/or bulldozers with cutting

edge blades; however, bulldozer use will be restricted to brush and tree removal only. Earthmoving and/or excessive damage or scarring of land will be prohibited. After cutting, stumps will be chemically treated with Environmental Protection Agency (EPA) permitted chemicals or methods.

Material will be disposed of in compliance with local ordinances and in accordance with the landowner's request. Construction access trails will be established where existing access roads are inadequate.

Foundations

Subsequent to clearing and prior to foundation construction, the survey crew will return to the area to locate the exact positions of the H-frame structures and the 3 pole dead end structures. The wood poles will be set in an augered hole and backfilled with dirt. Pole footing excavation and the movement of heavy equipment are the primary construction considerations during this phase. Care will be exercised in use of required equipment to minimize environmental damage. The installation of structure groundings will be performed concurrently with the foundation construction phase.

Structures

Structure assembly occurs in two phases. The first phase involves transporting the necessary structural members from a storage yard to the structure site. A flatbed tractor trailer and a small crane are used for this phase. Sections of the structures are assembled on the ground in the second phase. Assembly on the ground is planned so the weight of a lift does not exceed the capacity of the erection crane.

The same care exercised in the use and movement of vehicles during foundation installation is required in structure erection. A full range of four-wheel drive and high flotation construction trucks, trailers, cranes and tractors will be used as required by the nature and condition of the terrain to minimize damage during hauling, structure erection and stringing of conductors and shield wires.

Conductor and Shield Wire Installation

Conductor and shield wire stringing is accomplished with tensioning equipment to keep the conductor and shield wire from coming in contact with the ground or other objects which may damage them. A pilot line is installed on the poles in stringing blocks from the puller to the tensioner. The reels of conductor and shield wire are mounted on a reel stand, and then threaded through the tensioner and attached to the pilot line by use of a device called a running board. The puller operates to pull the conductor toward it while the tensioner operates to maintain the proper tension. Conductor and shield wire installation is a critical operation because many items of equipment are required to make a conductor pull. Although they do not necessarily proceed down the right-of-way, they must intermittently be positioned on it. As with vehicles and equipment associated with other construction phases, care will be exercised to minimize damage to the terrain.

Cleanup

The work area must be cleaned and bare soil reseeded upon completion of construction. Cleanup includes the following responsibilities:

- completely remove and satisfactorily dispose of refuse in all temporary work areas

- remove or grade all embankments or cofferdams made for construction purposes

- satisfactorily fill all excavations

- dispose of all debris resulting from construction operations

- remove all equipment and perform any other work necessary to restore the area as close to its original condition as possible.

G. Underground Transmission

Underground electric transmission is quite frequently offered as an alternative to constructing overhead electric transmission lines. Nearly all underground electric transmission lines in operation today utilize one of two types of oil-filled cables: 1) low-pressure, oil-filled cables, and 2) high-pressure, oil-filled, pipe-type cables known as HPOF.

The unreinforced, low-pressure, oil-filled cable is designed primarily for flat terrain. It cannot be used where the differences in elevations create too much internal oil pressure within the cable. Measures can be taken to compensate for this factor, but they are rather costly.

The pipe-type cables are filled with oil at high pressures, usually 200 psi. Pumping plants are required to maintain this internal pressure as well as compensate for

the effect of temperature fluctuations. The effects of oil leakage would be most damaging. Pipe-type cables may also require cathodic protection devices to protect against galvanic corrosion.

A major problem associated with all types of oil-filled insulated underground high voltage ac transmission lines is power loss due to capacitance. Underground ac transmission lines must be thoroughly insulated and shielded. The entire cable acts like a capacitor, storing an electrical charge. The current required to charge this capacitor represents a significant loss in transmission capability. The loss is proportional to voltage and distance.

The length for a given cable at which zero power capacity exists without reactive compensation is known as its "critical length". The critical length for 161 kV transmission voltages is 56 kilometers (35 miles). Although the proposed 24.8 kilometers (15.5 mile) electrical transmission line is below the cable critical length, reactor support switching stations would be needed along the rights-of-way for the installation to have sufficient capacity and would require additional land rights-of-way for each station, approximately 2 to 4 hectares (5 to 10 acres) each.

While it is considered technically possible to bury the Jonesboro-Hergett Line the technology for doing so has not advanced to the stage where it is considered energy efficient or economical for a line of this length. Recent studies indicate that underground transmission may cost 10 to 20 times as much as overhead lines when equal line capacity is considered.

Placing the line underground would cause environmental damage not known to overhead line construction; included are:

- A trench, averaging 1.8 meters (6 feet) in depth and 1.2 meters (4 feet) in width, would be dug along the alignment for the underground cables. This would also require complete clearing for the trenching equipment where applicable.

- A special thermal backfill material would be required around the pipe-encased cable to dissipate heat generated by electric current in the cable.

- An all weather road capable of handling 20-30 ton payloads would be required along the rights-of-way for construction and operation of this line.

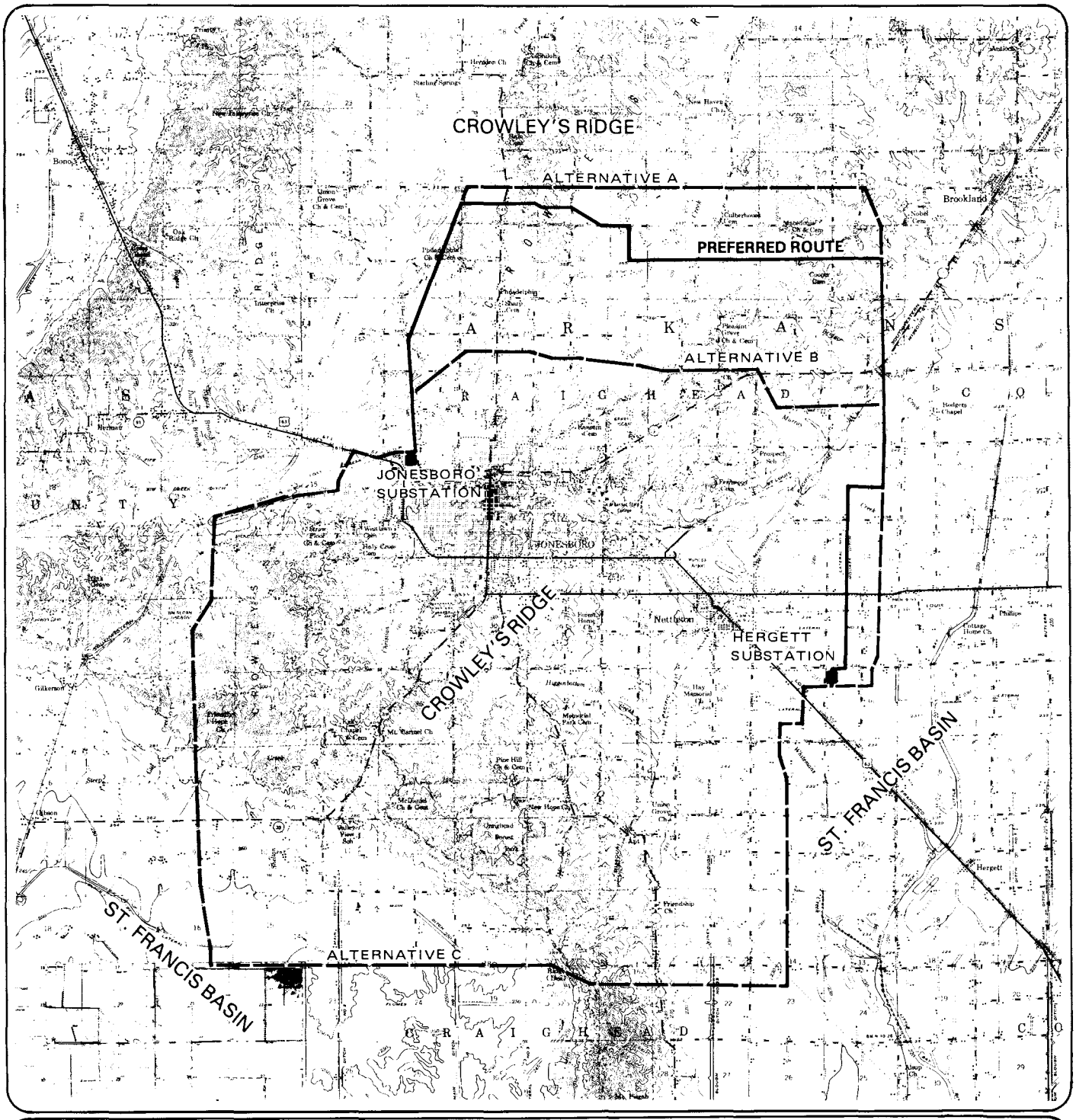
IV. AFFECTED ENVIRONMENT

A. Physiography/Geology

The proposed transmission corridor is located in the upper portion of the Mississippi Alluvial Plain Section of the Gulf Coastal Plain Province (Thornbury, 1965). All of the alternative line routes cross only two physiographic features. The dominant feature is Crowley's Ridge, a topographically high area that trends northeast-southwest and is surrounded by the lowlands of the St. Francis Basin (Raisz, 1957) (see Figure 4). In the vicinity of Jonesboro, Crowley's Ridge is 13 to 16 kilometers (8 to 10 miles) wide. However, approximately 10 kilometers (6 miles) south of Jonesboro, the ridge narrows abruptly to a width of less than 3 kilometers (2 miles) and follows a north-south orientation.

Although Crowley's Ridge serves as a drainage divide for most of the streams in the Jonesboro vicinity, it is not a continuous topographic feature in the corridor area. North of Jonesboro, the valleys of Lost Creek, Big Creek, and Mud Creek separate Crowley's Ridge into three sub-parallel ridges. The Jonesboro Substation is situated in the valley of Lost Creek. The sub-parallel ridges are characterized by rolling topography between numerous intermittent streams. The highest elevations in the corridor area, approximately 440 feet NGVD (National Geodetic Vertical Datum, formerly mean sea level), occur on the ridge between Lost Creek and Mud Creek.

Low relief characterizes the topography of the St. Francis Basin. Channelized streams and man-made ditches convey surface runoff out of these areas. The boundary



0 1 2 3 miles

N

PREFERRED ROUTE

ALTERNATIVE ROUTE

Contour Interval:
5 Feet Below 280'
20 Feet Above 280'

FIGURE 4

TOPOGRAPHIC FEATURES

JONESBORO - HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

Gilbert/Commonwealth

Map Source: USGS Topographic Quadrangles, 1958 and 1959.

between Crowley's Ridge and the St. Francis Basin approximately coincides with the 280-foot topographic contour. South of Jonesboro, the land surface in the St. Francis Basin generally slopes to the south or southwest. East of Crowley's Ridge, however, the land surface slopes gently to the southeast. The lowest elevations in the corridor area, approximately 230 feet NGVD, occur just east and south of the Hergett Substation.

The origin of Crowley's Ridge as a topographic feature is directly linked to the geologic history of the area. Crowley's Ridge is underlain by Tertiary-age deposits of clay, silt, sand, and gravel. These sedimentary deposits probably once covered this entire Mississippi Embayment. Prior to the glacial period (Pleistocene Series), large valleys were eroded in these deposits by the ancestral Ohio River on the east and the Mississippi River on the west. Crowley's Ridge is considered an erosional remnant from the period when the Mississippi River flowed west of the ridge (Caplan, 1954; Thornbury, 1965). The lowlands on either side of Crowley's Ridge are now drained by the Cache River on the west and the St. Francis River on the east.

Geologic formations present at or near the ground surface in the Jonesboro area are listed in Table 2. A mantle of loess (tan-colored sand, silt, and silty clay of eolian origin) covers the Tertiary sediments that form the core of Crowley's Ridge (Saucier, 1974). Haley et al. (1976) mapped these surface deposits as Pleistocene sand and silt with lenses of gravel and clay. The greatest loess thicknesses are likely to occur on the crest in the western portions of the ridge. Valley areas have little or no loess (Saucier, 1974).

TABLE 2

GEOLOGIC FORMATIONS AT OR NEAR THE GROUND SURFACE
IN THE JONESBORO AREA

SYSTEM	SERIES	GROUP	APPROXIMATE THICKNESS	DESCRIPTION
Quaternary	Holocene		0 - ? (uncertain)	Alluvial deposits of local or major streams; primarily sands, silts, and clays derived from adjacent uplands.
	Pleistocene		0-200 ft.	Alluvial and valley train deposits consisting of coarse sand and gravel at the base grading upward through finer sand to silt or clay at the top. Also loess.
Tertiary	Eocene	Claiborne	200-300 ft.	Chiefly clay, sandy clay and silt in upper part; lower part consists of equal amounts of interbedded sand and clay with a few lignite beds; may be partially consolidated into shales and sandstones.
		Wilcox	400 ft.	Interbedded clay and sand with clay predominant in upper part; thick water-bearing sands occur at the base; may be partially consolidated.

NOTES:

1. Geologic formations are listed in order of increasing age. Formations older than the Wilcox Group are not included because they are too deep to be affected by construction of the proposed transmission corridor.

2. Formation descriptions are modified from Haley et al. (1976), Ryling (1960), and Caplan (1954).

3. Formation thicknesses are based on data reported by Baker (1955), Ryling (1960), and Caplan (1954).

Poorly consolidated Tertiary sediments belonging to the Claiborne and Wilcox Groups underlie the Holocene and Pleistocene surface deposits. The formations which consist primarily of interbedded clay and sand, dip southeast at generally 30 feet/mile or less (Caplan, 1954). These formations also thicken to the southeast.

Surficial deposits in the lowlands around Crowley's Ridge consist of Quaternary-age alluvial gravels, sands, silts, and clays deposited as braided-stream terraces. Fine-grained silty and clayey sediments 4.5 meters (15 feet) or more in thickness occur in the old stream channels overlying coarser materials. Between the old channels, sandy surficial soils grade into clean sands and gravels within 6 to 7.5 meters (20 to 25 feet) of the surface. These coarse-grained deposits extend to depths of 30.5 to 55 meters (100 to 180 feet) (Saucier, 1974). Recent (Holocene) alluvial deposits in the Lost Creek, Big Creek, and Mud Creek valleys are probably finer grained than the older alluvial sediments in the St. Francis Basin.

There is no evidence for the recent development of faults in the Jonesboro area. However, the generally unconsolidated character of the sediments in the area makes faulting difficult to distinguish in the subsurface (Caplan, 1954). Nevertheless, the Mississippi Valley region of northeast Arkansas is considered to be an area of high historic seismicity. On this basis, the area has been classified as seismic Zone 3 under the Uniform Building Code. Jonesboro is located close to the boundary between Zones 3 and 2, a zone of lesser seismic risk.

B. Soils

The dominant soils associations in the study area are the silty loam Foley, Hillemann-Henry, Fountain-Calhoun-Foley and Loring-Memphis soils. Other associations present are the silty clay loam Jackport, the fine sandy loam Dundee-Dubbs-Amagon, the loamy gravelly Brandon-Saffell and the silty loam Collins-Falaya soils.

The Collins-Falaya, Brandon-Saffell and Loring-Memphis soil associations form Crowley's Ridge, which bisects the study area. The Collins-Falaya soils are on the upland drainage ways of the ridge and in level areas adjacent to it. Wetness is the main limitation to the use of these soils for farming. These soils have only a fair potential for row crops and pasture even where adequate drainage is provided. The Brandon-Saffell soils are on narrow ridges having moderately to moderately steep sloping sides and in narrow valleys between the ridges. These soils have a poor potential for cultivated crops because of very severe erosion hazards on the side slopes. The Loring-Memphis soils are nearly level to moderately steep. Erosion is also the main limitation to the use of these soils for cultivated crops. The soils have poor crop potential except in areas of nearly level topography. These three soils have good potential for pasture, although special erosion control measures are needed on the Brandon-Saffell soils.

The level Hillemann-Henry soils lie west of Crowley's Ridge. These soils have a fair potential for row crops when adequately drained and a good potential for rice. Wetness is the main limitation to the cropping and pasturing of the Hillemann-Henry soils, especially during winter and

spring. The Foley and the Fountain-Calhoun-Foley soils form the benchland east of Crowley's Ridge. Part of the Foley soils are located west of Crowley's Ridge. These soils have a seasonal high water table during late winter and early spring, making wetness the main limitation to their use for farming. Adequate drainage gives these soils only a fair potential for row crops. They are better suited for the growing of rice.

The poorly drained Jackport soils are located in the slack water areas west of Crowley's Ridge. These soils have good potential for rice, but only fair for row crops even under drainage.

The Dundee-Dubbs-Amagon soils form the natural levees and broad flats east of Crowley's Ridge. These soils have a seasonal high water table giving them only a fair potential for cultivated crops even when properly drained.

The Craighead County Agricultural Extension Service considers both sides of Crowley's Ridge prime farmland, with the eastern side having a little more potential than the western, although production is higher on the western side (personal communication, E. Maxa, Craighead County Agricultural Extension Service, 1980). Soil compaction is not a serious problem within the study area, according to the Soil Conservation Service, but rutting could be, and erosion is definitely a problem, especially on Crowley's Ridge (personal communication, B. Woodruff, SCS, 1980).

C. Water Resources

1. Surface Water

Within Craighead County the drainage is generally southwestward through a system of natural and improved drainageways and connecting artificial channels (Figure 4). All waters in the county drain into the Mississippi River through the White and St. Francis Rivers. The study area is drained by the Bayou DeView (Big Creek) and the Little Bay Ditch drains. Lakes in the Big Creek Watershed and in Craighead Forest furnish recreation, and several smaller lakes are used for fishing and duck hunting.

North of Jonesboro, Crowley's Ridge serves as a drainage divide for Big Creek Ditch and two tributaries, Mud Creek and Lost Creek. Numerous intermittent tributaries to these streams are located within the study area.

The eastern and southern portions of the Study Area are drained by an interconnecting network of improved and artificial channels which function as tributaries to Big Creek Ditch and Little Bay Ditch.

2. Groundwater

Groundwater resources are widely available in the Jonesboro area. The most important aquifers are the thick Quaternary deposits in the large alluvial valleys on both sides of Crowley's Ridge. Beneath Crowley's Ridge, the "1400-foot sand" is the major aquifer. This aquifer corresponds to the basal sands of the Tertiary Wilcox Group, which occur at a depth of approximately 198 meters (650 feet) near Jonesboro (Ryling, 1960). It is also a major aquifer east

of the ridge. (The aquifer is named for the approximate depth at which these sands occur near Memphis, Tennessee.)

Yields from properly constructed wells in the Quaternary aquifers may exceed 500 gallons per minute (gpm). The largest use of water from these deposits is for irrigation of rice and other crops. Groundwater from the Quaternary aquifers is generally hard and high in iron. The approximate depth to groundwater beneath the surface is less than 15 meters (50 feet) (Baker, 1955). Depths to the water table are commonly less than 6 meters (20 feet) in the lowlands east of Crowley's Ridge (Ryling, 1960). Shallow depths to groundwater are also expected in the alluvial deposits of Lost, Big and Mud Creeks and their tributaries.

The Tertiary deposits beneath Crowley's Ridge will yield 50 to 500 gpm to properly constructed wells (Baker, 1955). Yields from the "1400-foot sand" may exceed 500 gpm. Water from wells in the Wilcox Group is of excellent quality, being relatively low in iron content and soft (Ryling, 1960). Static water levels in the Tertiary aquifers are 15 to 30.5 meters (50 to 100 feet) beneath Crowley's Ridge below ground (Baker, 1955). Perched water table conditions in sand layers within the upper clays may result in locally higher groundwater levels.

D. Ecology

1. Flora

Natural vegetation within the study area is principally located on Crowley's Ridge. Most of the woodlots in this area consist of second growth oak and hickory, with

some juniper and short-leaf pine. On either side of the ridge, bottomland hardwoods and lowland prairie were formerly the dominant vegetation types (Arkansas Department of Planning, 1974). These areas have been cleared, ditched and drained and are now mostly under cultivation. Natural vegetation in areas off Crowley's Ridge is currently restricted to stream banks and areas not suitable for cultivation.

To evaluate potential impacts of the proposed Jonesboro-Hergett 161 kV transmission line on natural systems, several sites in the project area were selected for field studies. These sites, shown in Figure 5, were selected because they appeared to contain either vegetation typical of the region or communities which could be sensitive to transmission line construction. Most of the sites contain upland or lowland hardwood vegetation types. The woodlots along Crowley's Ridge (Sites A, D, E, F and G) contain occasional openings. Dominant tree species in these woodlots are blackjack and red oaks, black hickory and sweet gum. Draws and valleys along the ridges contain elm and sycamore. Several tulip trees were noted at Site D (Figure 5). Openings in these woodlots primarily contain little bluestem, bluegrasses, brome and some juniper. (Juniper was a minor understory component in some of the woodlot interiors.) In one area along Crowley's Ridge (Site A), the opening is on a south and southwest facing slope, is grazed and has the appearance of native prairie. Big and little bluestem were apparent along with several tame grasses (i.e., smooth brome). This was the only site investigated that has retained any substantial "prairie-like" appearance.

One other woodlot not associated with Crowley's Ridge was investigated (Site C). The site is bordered on the south by Black Fork Creek and appears to be a remnant of

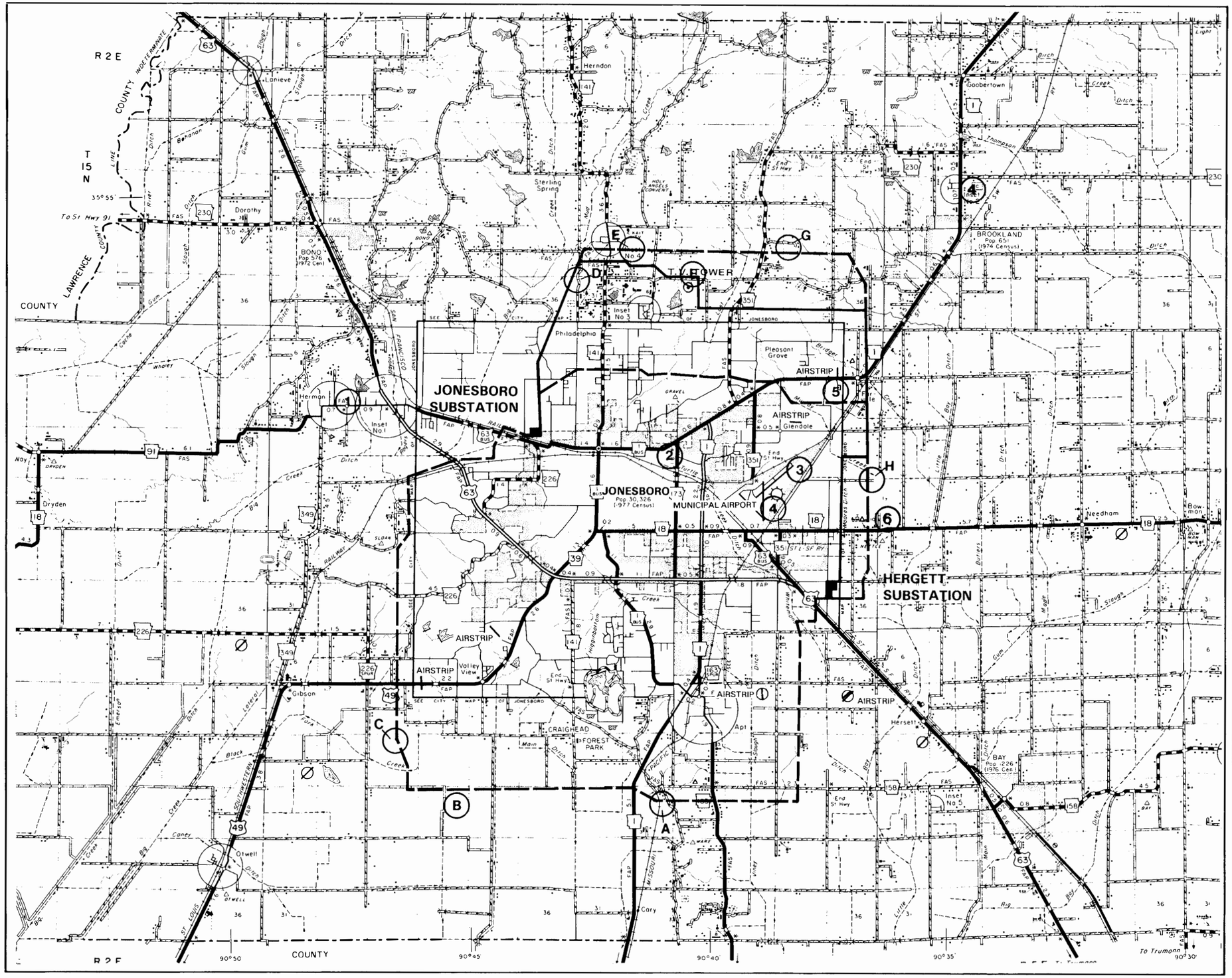


FIGURE 5

BIOLOGICAL CONSIDERATIONS

JONESBORO - HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE

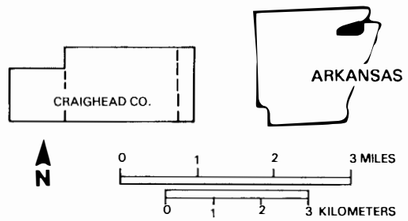
ALTERNATIVE ROUTE

(1) KNOWN LOCATION OF ANIMALS OF SPECIAL CONCERN

1. Chicken turtle
   (Deirochelys reticularia miara)
2. Barn owl
   (Tyto alba)
3. Grasshopper sparrow
   (Ammodramus savannarum)
4. Long-tailed weasel
   (Mustela frenata primula)
5. Northern crawfish frog
   (Rana areolata circulosa)
6. Eastern spadefoot toad
   (Scaphiopus holbrooki holbrooki)

Source: Arkansas Natural Heritage Commission.

(A) FIELD INSPECTED AREAS
(As referred to in text.)



Map Source: Portion of, General Highway Map, Craighead County, Arkansas. Prepared by Arkansas State Highway and Transportation Department, in cooperation with U.S. Department of Transportation.

Gilbert/Commonwealth

the bottomland hardwood forest type (Arkansas Department of Planning, 1974). Species observed in the woodlot included river birch, willow, sweet gum, persimmon, honey locust, red maple and elm. Ground cover was dense with various shrubs, creeping vines, and greenbriars.

The remainder of the study area, on either side of Crowley's Ridge and within the developed area, no longer contains sufficient native plant species to be considered a natural vegetation type. Many of the native communities have been lost due to cultivation, draining and stream channelization, and housing developments. Most of the channelized streams (ditches) have some associated trees and shrubs. Cane and bamboo along with persimmon, green ash, pecan and sweetgum are species found occasionally bordering the ditches and drains along the southern alternative, especially near Site B (Figure 5).

There are no known federal or state listed threatened or endangered species along the alternative transmission line routes. Four species of plants from the area have been noted in the Arkansas Natural Area Plan (Arkansas Department of Planning, 1974) as rare, endangered, or status undetermined. They have all been reported along Crowley's Ridge or in Craighead County. The status of three of the species has been reviewed by the U.S. Department of the Interior (1980). Ginseng (Panax quinquefolium) and the purple fringeless orchid (Habenaria peramoena) are no longer under consideration by the USDI, although the Arkansas Department of Planning (ADP) lists them as rare and status undetermined, respectively. Showy orchid (Orchis spectabilis) is considered rare by ADP but has no status with the USDI. Corkwood (Leitneria floridana) is under consideration for listing by USDI and is considered endangered by ADP. Corkwood

has been previously identified in Craighead County (ADP, 1974). The characteristic habitat described for the species is "swamps and poorly drained ditches" (ADP, 1974). Styermark (1963) states that in southeast Missouri corkwood is found in wooded or open swamps and wet thickets along roadsides. The shrub ranges from 1 to 7 meters (3 to 25 feet) tall with a basal diameter of less than 12 centimeters (5 inches). The only suitable habitat for this species that was investigated during the study period is Site C shown in Figure 5, which is located along the southern alternative (Route C).

2. Fauna

According to Robert Zachary, District Biologist with the Arkansas Game and Fish Commission (AGF), the principal game species in the area are waterfowl, rabbits, quail and doves. Some deer and turkey hunting does occur within the study area but these species do not have sufficient populations to be important game animals. Waterfowl are protected as game species and are protected through the International Migratory Bird Treaties with Canada and Mexico. The world's largest concentration of mallards winters in the rice fields and bayous southwest of Jonesboro in Craighead, Jackson, and Poinsett Counties (personal communication, R. Zachary, AGF, 1981). Some of these waterfowl utilize the rice paddies in the southwest portion of the study area. Flocks of ducks, in excess of 200 individuals, mostly mallards and pintails, have been observed at Site B (Figure 5). Rabbit and quail habitat can be found throughout the study area and at all the sites shown in Figure 5. Mourning doves can also find suitable nesting habitat in all of the sites that were field checked. Other habitat types (i.e., feeding and roosting) are present in grainfields and hedgerows

throughout the study area. The large woodlots on Crowley's Ridge (Sites D, E, F and G) and the woodlot around Site C offer marginal habitat for white-tailed deer (tracks were noted at Site D) and for wild turkeys. No evidence of the latter species was found in the study area.

No wildlife species listed as endangered or threatened by the USDI have been reported in the Jonesboro area. The state of Arkansas does not have an official list of threatened or endangered species other than those reported by the USDI. However, a list of threatened or endangered species has been prepared by the Arkansas Department of Planning (1974). Table 3 lists the animal species which might occur in the study area or have been identified in northeastern Arkansas. The table shows that no fish, amphibians, reptiles or mammals listed in the Natural Area Plan (ADP, 1974) have been found in the study area. The birds listed are reported for northeastern Arkansas by Hanebrink (1980). Additionally, the Arkansas Natural Heritage Commission (ANHC) has found six "animals of special concern" in the Jonesboro area (personal communication, J. Rettig, ANHC, 1980). The location of these species is shown in Figure 5. None of the species discussed have legal status, however, their presence or the availability of suitable habitat was considered in evaluating the various routes.

3. Aquatic

There are no streams in the project location area that have not been altered either through impoundments, dredging or channelization. There are no natural wetlands in the area of the alternative transmission line routes which have not been drained or filled. Most of the aquatic

TABLE 3

ENDANGERED OR THREATENED VERTEBRATES WHICH COULD OCCUR IN THE JONESBORO-HERGETT 161 KV TRANSMISSION LINE STUDY AREA

Species[1)]	Status	Seasonal Occurrence[2)]
FISH		
None		
AMPHIBIANS		
None		
REPTILES		
None		
BIRDS		
Pied-billed grebe	Endangered	March-December
Anhinga	Endangered	May and September-October
Great blue heron	Threatened	Permanent
Little blue heron	Threatened	April-September
Great egret	Threatened	March-August
Snowy egret	Threatened	April-August
Black-crowned night heron	Endangered	May-August
Yellow-crowned night heron	Threatened	May-July
Least bittern	Endangered	April and July
Glossy ibis	Endangered	May-September
Hooded merganser	Threatened	February-November
Red-shouldered hawk	Threatened	Permanent
King rail	Threatened	Occasional
Purple gallinule	Endangered	Occasional
Barn owl	Endangered	Permanent
Willow flycatcher	Endangered	May
Bewick's wren	Threatened	Occasional
Short-billed marsh wren	Threatened	Occasional in April
Swainson's warbler	Threatened	April-May
Blue-winged warbler	Endangered	April-May
Yellow warbler	Threatened	April-May
Grasshopper sparrow	Threatened	April-August
MAMMALS		
None		

1) Source: Arkansas Department of Planning (1974)
2) Source: Hanebrink (1980)

resources in the project area have been modified to suit local agricultural needs.

Some fisheries habitat is situated in the major streams and creeks. The most important aquatic habitats for fish are in the impoundments such as the lake at Craighead Forest Park and private ponds and lakes throughout the project area. None of these lakes and ponds will be crossed by the transmission line.

No threatened or endangered aquatic species have been reported or are expected to occur in the study area.

E. Land Use

Much of the study area is rural. Farming is the primary land use with rice, cotton, soybeans and milo the principal crops. The dominant soil management problem with nearly all the suitable bottomland cropland is seasonal wetness during late winter and early spring. Adequate drainage is needed for increased crop production on these soils. Water erosion is only a problem on the moderate to steep slopes of Crowley's Ridge. The Soil Conservation Service has indicated farms are decreasing in number and increasing in size. This has two implications for the farm composition within the study area. Smaller farms are primarily located on Crowley's Ridge where pasture and some row crops are grown. These farmers reside on their farmsteads with many holding part-time jobs to supplement their income. The large farms located in the bottomlands adjacent to the ridge are usually operated by a farmer residing off the farm

near the city. All cultivated fields not on the ridge or in drainage floodplains are considered to be prime farmland (personal communication, B. Woodruff, SCS, 1980).

Extensive woodlots are located on Crowley's Ridge. The bottomlands support a few scattered woodlots but most have been converted to cropland. The highest residential densities are primarily located in Jonesboro. While the city is attracting residential development because of its services and employment possibilities, the Crowley's Ridge area is attracting residential development because of its aesthetic attributes.

Industrial activity is primarily concentrated in Jonesboro, with future growth of this type expected in the Farville area and in the Industrial Park, and along W. Washington Street, U.S. 63 Business Route , U.S. 63 Expressway and Stadium Boulevard.

The main concentration of commercial land uses is in or near Jonesboro. The remaining commercial land uses are at the intersections or in the immediate proximity of intersections of certain rural roads. Any new commercial development is being encouraged to locate in the immediate proximity of arterial road intersections.

Virtually all recreation land use acreage is encompassed in the Craighead Forest Regional Park south of Jonesboro. The park contains 248 hectares (612.5 acres) and provides facilities for camping, hiking, fishing, swimming, boating and picnicking. The park is under city jurisdiction. Small city parks account for the remainder of the existing recreational uses. The City Parks Commission estimates an additional 91 hectares (225 acres) of park

space will be needed in the future. Many of these acres will be located within or in proximity to the city.

Most landing strips, with the exception of the Jonesboro Municipal Airport, have grass runways and are associated with farms, used for aerial applications, or small commercial concerns. The Jonesboro Municipal Airport is planning for runway expansion and the installation of a precision instrument landing system (personal communication, E. Holland, Arkansas Division of Aeronautics, 1980).

There is a heavy dependency upon rail transportation by commercial and industrial facilities in the Jonesboro area. These facilities are primarily located in the industrial park in the eastern part of the city and along the western part of the rail corridor running through the city. Three railroad companies operate facilities in the Jonesboro area. The Missouri Pacific Railroad primarily serves southeast Jonesboro, the Nettleton Station, with two trains per day. The St. Louis Southwestern Railroad serves Jonesboro with five daily local trains, six days per week. The St. Louis Southwestern Railroad also operates twenty trains daily through Jonesboro. The St. Louis-San Francisco Railroad runs four trains through Jonesboro on a daily basis and one local train a day to the city.

The existing highway network allows good accessibility into the study area. The primary highways in terms of traffic volumes are U.S. Highways 49 and 63. Highway 63 is a principal arterial, with a daily traffic volume of approximately 10,000 in the vicinity of the Jonesboro Bypass. It connects the study area with Interstate 55. Highway 49 is a minor arterial connecting the study area to Paragould to the northeast and Interstate 40 to the south.

Its daily traffic volumes to Paragould and the Interstate are approximately 6,500 and 2,600 respectively. State Highway 18 connects Blytheville to the study area with a daily volume ranging between 3,900 and 5,300, the higher volumes occurring closer to the study area. State Highway 1 joins with Interstate 40 at Forest City. It has a daily traffic volume of approximately 2,400 in the study area. Both 1 and 18 are principal arterials. State Highways 91, 141, 163, 226, 230 and 351 are major collectors serving the study area. Volumes along these roads are generally low with Highways 91 and 141 having the maximum volumes of 1,500 vehicles. Traffic volumes on rural roads are low in comparison to those mentioned.

All roads are two-lane, except the U.S. 63 Expressway around Jonesboro. Primary highways are concrete or bituminous pavement types. Some rural roads are bituminous, but the majority are gravel or stone surfaced and provide all-weather service.

There are plans to convert the U.S. 63 Expressway south of Jonesboro to a limited access freeway with frontage roads along both sides, thirty feet from the highway. This will require some residential relocation along the present highway. (personal communication, N. D. Pumphrey, Arkansas Department of Highways, 1981).

Land use constraints used in the corridor selection process are presented in Figure 6. The four alternative line routes are presented on aerial photographs in Appendix F. Within the inventoried corridors, land use information is provided.

FIGURE 6

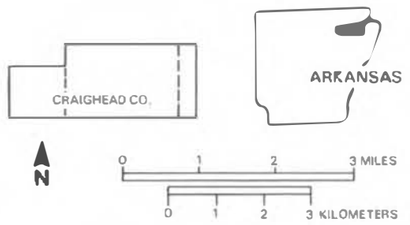
LAND USE CONSTRAINTS

JONESBORO - HERGETT
161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE
ALTERNATIVE ROUTE
RESIDENTIAL CONCENTRATION*
PARK
PRIME FARMLAND **
NON-PRIME FARMLAND**

*Outside Jonesboro city limit.
**Source: Soil Conservation Service



Map Source: Portion of: General Highway Map, Craighead County, Arkansas. Prepared by Arkansas State Highway and Transportation Department, in cooperation with U.S. Department of Transportation.

Gilbert/Commonwealth

F. Socioeconomics

Beginning with a base population of 52,068 in 1970, the population within Craighead County increased to 60,790 by July 1977 and approximately 62,100 by July 1978. This represents an increase of 8,632 or 16.6 percent and 10,032 or 19.3 percent respectively (Population Estimates, U.S. Bureau of Census, 1979). The population projections (1980) for Craighead County indicate 62,541 persons, an increase of 10,473 persons or 20 percent over 1970. In comparison, the state grew at a rate of 11.9 percent between 1970 and July 1, 1977 and 13.7 percent between 1970 and July 1, 1978. The state grew 7.7 percent between 1960 and 1970. Jonesboro's population increased from 27,050 in 1970 to an estimated 31,319 in 1979 or by 15.9 percent. Both Jonesboro and Craighead County increased at a faster rate than the state.

Approximately 53 percent of Craighead County's population growth between 1960 and 1970 occurred in the City of Jonesboro. Results of the field inspection conducted by Commonwealth Associates Inc. (1981) indicated that population growth is intensifying along Crowley's Ridge, south, southwest and northeast of Jonesboro.

The last century has seen agriculture giving way to industrial employment and income as Craighead County's primary economic base. Today employment and income are equally divided between agricultural and a diversified industrial base. Jonesboro has become the employment center for industrial and service activities for much of northeastern Arkansas. This has made jobs available in the Jonesboro area which has increased migration and, consequently, personal income (personal communications, J. Foster, East Arkansas

Planning and Development District, 1981). Adding to the changing and expanding economic base of the study area is the expansion of medical facilities, retail trade and government activities.

G. Aesthetics

Crowley's Ridge is the primary landscape feature of the study area. The landscape character of the ridge consists of moderate to moderately steep sloping ridges, narrow winding valleys between the ridges, and woodlands.

Field inspection (Commonwealth Associates, 1981) of existing transmission lines on Crowley's Ridge showed that good screening of the right-of-way was available, and in most situations, visual impact decreased after 610 meters (2000 feet). It was also observed that many roads are winding, gently rolling and closely lined with woods, preventing visual impact to the immediate right-of-way.

The bottomlands adjacent to Crowley's Ridge are much more susceptible to visual impact. Here, the character is open, nearly level, homogeneous agriculture land, with woodlots confined to a few scattered woodlots and riparian strips. These conditions afford little opportunity for screening the line. The impact is lessened by the sparse population throughout the bottomlands and low traffic volumes.

H. Cultural Resources

1. Historical Background

Jonesboro, the major community in northeast Arkansas and the seat of government for Craighead County, was founded

in 1859 as a trading center for the surrounding region. Growth was initially slow due to the Civil War and the lack of rail transportation into the region. Jonesboro was incorporated in 1883 at the beginning of a period of major exploitation of the region's lumber resources.

The architecture and urban development of the community are reflective of the late Victorian and Classic Revival periods. These styles were prominent from the 1880's to the 1930's.

A records search of previously recorded historic and architectural sites in Craighead County, Arkansas produced the following results. Principal sources for this search were the National Register of Historic Places and the Arkansas State Survey Notebook. The survey notebook is divided in two parts: state historic sites and inventory sites. Typical of most states, the survey in Arkansas is still in progress. All sites should be presumed to have some significance. All research work was accomplished in Little Rock, Arkansas in June, 1980 (See Table 4).

Three National Register Sites are situated in Craighead County, as well as two others that have been determined eligible. Three of these five sites are architectural while the remaining two are archeological. The following section covers archeological sites in more detail.

The Arkansas State Survey Notebook contains thirty different sites for Craighead County. Eleven are recognized as state sites.

In combination, the two lists (National Register and State Survey) produce thirty-three different sites. The

TABLE 4
HISTORIC SITES OF
CRAIGHEAD COUNTY

	Inventory Sites	State Historic Sites	N.R.H.P. Sites
BAY			
Bay Mount	16-39	J045-10	N.R.H.P.
GREENBORO			
Lane House Site	16-21		
JONESBORO			
Bell House			N.R.H.P.
L.N. Allen House	16-01		
Courtsquare	16-10	J045-41	
J.N. Burk House	16-07		
Pleasant Grove School	16-28		
Dixon House	16-11		
Watson House	16-33		
Judge E.L. Brown House	16-06		
Frierson House	16-14		N.R.H.P.
Old Berger House	16-04		
Hawthorne House	16-37	JO45-61	
Reid Family House	16-30		
W.W. Cate House	16-09		
First Methodist Church	16-25		
Arkansas Agricultural and Mechanical College	16-03	J045-52	
Mason Family House	16-24		
Kerfoot-Ellis House	16-20		
J.M. Johnson House	16-16		
Graham House	16-14		
Magnolia Farm	16-22		
Shiloh Church	16-31	J045-54	
Castleberry House Site	16-08		
Jonesboro Railroad Station	16-40	J045-73	
Jonesboro Normal Site	16-18	J045-52	
Jonesboro Original Survey Site	16-19	J045-23	
U.S. Post Office			Determined Eligible
NETTLETON			
Nettleton Railroad Station	16-38	J045-73	
PURYEAR			
Ben Freeman House	16-12		
MISCELLANEOUS			
Greenboro Road	16-15	J045-72	
Mount Pisgah Cemetery	16-26	D055-54	
Mangrum Site 3 CG 636			Determined Eligible

Source: Arkansas Historic Preservation Program - State Survey Notebook

majority of them (26) are located in Jonesboro while outlying communities of Bay, Greenboro, Nettleton, and Puryear contain county.

2. Archeological

Examination of the National Register of Historic Places indicated that no prehistoric or historic cultural resources within the proposed Preferred and Alternative Route corridors had been nominated to, or placed on, the Register as of March, 1981. A records check of the state archeological site files and General Land Office records was conducted by the Register's Office of the Arkansas Archeological Survey, in March, 1981, to document known archeological sites within the project area. The records check encompassed a 0.8 meter (one-half mile) wide corridor centering on the centerlines of the Preferred and Alternative routes. A total of 72 prehistoric and historic archeological sites had been recorded within the one-half mile wide project corridors as of March 1981. Exact locations of these sites have not been mapped in this report at the request of the Arkansas Archeological Survey. This information is available in an addendum to the Environmental Impact Statement, available from Southwestern.

Existing site file information on cultural resources within the proposed Preferred and Alternative corridors reflects nonsystematic survey activity by local professional and avocational archeologists. Most of the proposed corridors areas have not, in fact, even been examined for the presence of cultural resources. An intensive archeological survey of the selected corridor will be conducted

prior to construction and is expected to locate a number of previously unreported sites, and may document the continuation of known sites into the right-of-way. The general project area, centering on Crowley's Ridge, is extremely rich in archeological remains. Over 900 sites have been reported from Craighead County alone as of 1980, and the density of prehistoric sites in the general region has been estimated at upwards of seven per square mile in recent years (Schiffer and House, 1975). Any selected line route, therefore, will almost certainly intercept cultural resources.

V. ENVIRONMENTAL CONSEQUENCES

A. Impact on Soils

soil either through compaction, rutting or erosion. Serious compaction and rutting can cause a reduction in the water and oxygen-holding ability of soils and inhibit root growth. Compaction and rutting are usually caused by the movement of heavy structure construction machinery over poorly drained soils. Since compaction and rutting are becoming more of a problem in the poorly drained bottomlands due to an increased use of heavier farm machinery, it could be anticipated that heavy construction equipment would have the same effects if used during the wet season of late winter to early spring. Compaction and rutting are a more serious problem on the bottomlands west of Crowley's Ridge because much of this area is under rice production and the soils are heavier and more clayey in texture (personal communication, E. Maxa Agricultural Extension Service, 1981). Heavier soils are more susceptible to compaction and rutting.

Soil erosion is dependent upon soil type, vegetation cover and slope. Excavation for structure footings and the movement of machinery will hinder or destroy plant growth either through soil compaction or the mixing of the soil horizons. Horizontal mixing will temporarily affect the residual vegetation because it exposes the lower soil horizons, which can be less suitable for optimum plant growth than the top horizons. Such activities are not expected to permanently impact the residual plant population as it will regenerate once construction stops. However, the

soils are more susceptible to water erosion during this time. This vulnerability is of special concern on Crowley's Ridge where red clay erosion, once started, is difficult to stop (personal communication, E. Maxa, Agricultural Extension Service, 1981). Alternative C crosses the most productive soil and the greatest number of soils susceptible to compaction and rutting, approximately 20 kilometers (13 miles), as its alignment is located primarily within the St. Francis Basin bottomlands. The three northern alignments traverse comparatively equal distances of productive soils, approximately 8 kilometers (5 miles).

Surficial soils on Crowley's Ridge are locally derived from loess. Upon exposure to wind and water, these deposits are very susceptible to gullying and rapid erosion. In addition, these soils are generally unacceptable as foundation materials for heavy loads and are usually excavated. Where loess deposits are exposed by construction activities, surface runoff should be expected to contain significant quantities of suspended sediment. Containment of surface runoff will be practiced during construction to minimize the transport of sediment from construction areas. Rapid revegetation will limit erosion and sedimentation impacts to the construction period.

Alternative A and the Preferred Route are highest in terms of distances traversed along Crowley's Ridge, 17 and 16.6 kilometers (10.6 and 10.4 miles) respectively. Alternative B traverses the least distance on Crowley's Ridge, approximately 11 kilometers (6.9 miles). The southern alternative is located approximately 8.4 miles along the ridge.

B. Impact on Water Resources

1. Surface Waters

Construction and maintenance of the proposed Jonesboro-Hergett 161 kV transmission line will have minimal impact on the surface water resources of the study area. The following continuous and intermittent stream canals and ditches would be crossed (as shown on USGS topographical quadrangle maps used for Figure 4):

Preferred Route

Lost Creek Ditch
Intermittent tributary to Lost Creek Ditch (3)
Intermittent tributary to Mud Creek
Lost Creek
Little Bay Ditch System (2)
Bridger Creek (2)
Murray Creek
Moores Ditch (Paralleled for 1.5 miles)
Lateral No. 3 to Little Bay Ditch

Alternative A Crosses same water bodies as Preferred Route - does not parallel Moores Ditch

Alternative B

Lost Creek Ditch
Intermittent tributaries to Lost Creek Ditch (4)
Lost Creek
Tributary to Bridger Creek
Murray Creek (3)
Lateral No. 3

Alternative C

Lateral to Little Bay Ditch
Whitman's Ditch
Tributaries to Whitman's Ditch (4)
Wiley Slough Ditch
Main Ditch (2)
Black Fork Lateral
Tributary to Black Fork Lateral
Intermittent portion of Steep Cut Ditch
Tributaries to Lost Creek Ditch and Big Creek Ditch (6)
Parallels Lost Creek Ditch for a short distance (500')

Adverse inpacts to the water courses along the Preferred Route (or any of the alternative routes) will be temporary and result from construction and maintenance activities. By using the existing network of roads and bridges within the study area, any impacts associated with construction equipment in stream beds will be eliminated.

Where construction equipment must cross water-courses, some adverse impacts and reduction in water quality will occur. Bottom sediments will be resuspended, temporarily increasing turbidity. This increase may lead to a reduction in dissolved oxygen, resuspension of environmental contaminants and nutrients. In addition, removal of the riparian vegetation and tree canopy may cause an increase in sedimentation and water temperatures. However, these impacts will be minor and temporary. Using rubber tired construction equipment will lessen expected impacts. Accidental spillage of gasoline, diesel fuel, lubrication oils and greases, wood preservatives and herbicides is another impact which could occur during the construction and maintenance

phases. Employing well-maintained equipment and responsible handling methods should effectively avoid these adverse impacts.

2. Groundwater

Groundwater resources in the Jonesboro area will not be adversely affected by construction of the proposed transmission line. The shallow excavations along the corridor will require little or no dewatering. Due to the geologic nature of the deposits, any dewatering impacts will be restricted to the corridor and will be transient, limited to the period of construction. Groundwater quality will not be altered by construction activities.

C. Impact on Ecology

1. Flora

Along the Preferred Route, impact on vegetation will occur most heavily where upland forests on Crowley's Ridge are crossed, for example, the woodlots in Sites D, E and F. In these areas, clearing will unavoidably alter the vegetation composition within the right-of-way. These population shifts will depend on the ability of individual plant species to withstand the increased sunlight of the right-of-way. Consequently, shade intolerant species will invade the cleared right-of-way while shade tolerant species will become restricted to the woodlots. Another form of impact will result from construction damage to edge trees. If heavy machinery scars tree trunks, an opportunity has been created for insect or fungi to inflict further damage. Diseased edge trees will also eventually lead to safety or reliability problems associated with the right-of-way.

In the agricultural areas, impact on vegetation will be minimal. Much of the native vegetation has previously been removed and consequently, right-of-way clearing will have little effect. In these areas, such clearing will most likely occur in the hedgerows which line drains and ditches. Selective removal of vegetation along watercourses will minimize the potential for increased soil erosion and sedimentation in the already silt laden waters.

There are no federal or state listed threatened or endangered species known to occur along the proposed route, hence no impact is expected on these species.

2. Fauna

Removal of large woody vegetation from the proposed right-of-way to insure line reliability and human safety will result in the loss of habitat for some wildlife species. However, by windrowing slash to form brushpiles, new habitat will be created, improving cover values for many other species. Of the game species in the study area, the proposed route will most likely affect the upland game, rabbits and quail, and the mourning dove. The dove will lose some nesting habitat, but in relation to that available, the loss will be insignificant. Rabbits and quail will relocate during construction and return to the right-of-way after construction activities have ceased. Once the line has been strung and the right-of-way revegetated, these two species, along with any deer and turkeys present, will benefit.

After the line is in place, some bird collisions may occur with the conductors or shield wires. These collisions are most likely to occur with some species, during

inclement weather, and/or during spring and fall migration periods. These collisions are, with current technology, unavoidable. Spacing of conductors and shield wires is such that electrocutions are extremely unlikely, even with the largest species.

Herptiles, as a group, will undergo more impact from construction of the proposed transmission line than birds or mammals. However, the effects on regional populations are minimal, and preconstruction population levels should return within one or two reproductive seasons. Additionally, secondary impacts to reptile populations can be expected, especially from human/snake interactions. This impact can be minimized by educating construction personnel to avoid snakes, and if unable to avoid them, allow them to remain unmolested.

No threatened or endangered wildlife species listed by the state or federal government are known to occur along the proposed route. The Arkansas Natural Heritage Commission has identified several species of concern in the Jonesboro area. None of the known locations of these species are crossed by the proposed line.

3. Aquatic Flora and Fauna

The few streams crossed by the proposed route generally have shrubs and small trees lining their banks. Some temporary stream bank erosion may occur at the crossing points of various watercourses. To minimize this problem, structure locations would be placed as far away from the banks and associated floodplain as possible. Only that floodplain vegetation which would affect line reliability and human safety would be removed. Unnecessary operation of construction vehicles and equipment near the banks or within

the floodplain would be avoided. Construction vehicles would not be driven across any flowing watercourses.

The proposed route will have minimal impact upon wetlands. The only wetland habitat found along the proposed transmission line is associated with intermittent streams or rice fields drained by an interconnecting network of improved and artificial channels located along the eastern portions of the Preferred Route. Construction and maintenance activities will have minimal impact upon these artifically created wetlands. (See Appendix G. Floodplain/Wetland Assessment for more information.)

D. Impact on Land Use

Since much of the alternative alignment acreage is being used agriculturally, it was necessary to provide centerline routing opportunities which would create minimal adverse impact to cropland and aerial applicators. Implementation of this objective was generally accomplished by delineating centerlines along section lines, fencerows, woodlots, edges, and in the poorer drainage areas. Structure locations selected in this manner will present the least amount of crop damage, lost cropland, lost time, disturbance to the farmer and danger to aerial application methods. Placement of the structures in the center of the field, diagonally across from the turnovers, would be the least desirable locations; best locations would be straddling fencerows (personal communications, D. Smith, Soil Conservation Service and J. Peachy, Cooperative Extension Service, 1980).

Alternative A and the Preferred Route skirt the residential growth occurring along the ridge north of Jonesboro in the vicinity of Philadelphia. Although this growth

is moderate, a spatial separation between it and an eventual transmission line would be desirable. Alternative B traverses the Philadelphia area, where there is a trend toward considerable residential buildup. Impacts with residential uses will be significant in this area even with a special rebuilt alignment; this rebuilt alignment would require additional right-of-way clearing and some residential displacement. The Preferred Route, Alternative A and Alternative B cross virtually all bottomland cropland once leaving Crowley's Ridge. The alignments were delineated along section lines, fencerows, and woodlot edges, and within poor drainage areas to eliminate crossing prime cropland on a diagonal or down the middle; this decreased the amount of farmland lost by concentrating displaced farmland under and immediately around the structures. This objective was generally followed when cropland was encountered on the ridge.

The Preferred Route and Alternatives A and B parallel an existing 161 kV line and head north as they exit the Jonesboro Substation for 5.6, 6 and 1.3 kilometers, respectively (3.5, 3.7 and .8 miles). Impacts to agricultural practices will be minimal because most of the existing line crosses woodlands and pasture; impacts will occur immediately around and under the structures. Right-of-way clearing and maintenance practices already associated with the existing right-of-way will impact woodlots and some impact will result from the removal of danger trees. Residential impact will be low; presently only a mobile home park is located adjacent to the existing right-of-way.

Alternative C exits south out of the Jonesboro Substation, crossing the western extremities of Crowley's Ridge where residential development has not extended. Scattered residential development occurs the entire length

of Alternative C, creating no significant adverse conflicts to residential development.

Since approximately 75 percent of Alternative C is situated on very productive cropland, it was necessary to provide centerline routing opportunities which would have minimal adverse impact on cropland. As mentioned, this was generally accomplished by delineating the alternative along section lines, drainage ditches, woodlot edges and fencerows. Alternative C parallels an existing line for approximately the last 7.2 kilometers (4.5 miles) of its alignment.

Impacts could occur to the subdivision development and lots for sale in the vicinity just east of the Highway 1 crossing; Alternative C could reduce the amount of land available for the residential lots and make the existing lots less desirable.

E. Socioeconomic Impact

1. Population

There will be few adverse impacts to existing population along most alternatives because alignments were sought that would generally avoid conflicts with residential development. This objective was aided by the low density and scattered arrangement of residences within the bottomland farmlands where a large percentage of each alternative was aligned.

An area of potential conflict could well be along the Preferred Route and Alternative A north of Philadelphia where an increased trend toward residential development is occurring along Highway 141. Potential impacts could include

preventing construction of future residences within the right-of-way and influencing future land uses in the vicinity of the right-of-way. The preferred line routings were made to keep impacts to a minimum in this area. An area of definite adverse impacts will be along the rebuild part of Alternative B through the Philadelphia area. Unavoidable adverse impacts will prevent construction of future residences within the right-of-way, bisecting existing residential growth and displacing residences.

2. Economy

Economic impacts associated with the proposed project are primarily related to right-of-way acquisition and construction activities. During these activities, purchase monies will flow into the areas Southwestern Power acquires in fee for the necessary right-of-way. In addition, workers will be coming to the area to undertake various phases of construction. However, it is not expected that the workers will move into the area and establish permanent residences during construction of the facilities. It is anticipated work crews will travel to the individual sites where construction activities are proceeding and then return to their present residences at the end of each day, creating minimal additional demands on local public services. Some personal goods (i.e., food, beverages, gasoline, etc.) may be purchased by individual workers during breaks and after work. Also, purchase of some miscellaneous materials and supplies needed to construct the proposed transmission line and substation facilities will occur during the construction phase. The total amount will be beneficial to the business community, but it is not expected to contribute significantly to the present business income of establishments in areas where construction activities occur.

The same evaluation is also applicable to operation and maintenance personnel. Their infrequent visits to the transmission rights-of-way to conduct maintenance activities or emergency repairs are not expected to significantly affect future business income. Also, no commercial establishments will require relocation due to the construction of the proposed transmission line. Therefore, local business activity and future expansion plans may proceed without conflict with the transmission lines. In addition, those businesses that lie within the load centers to which the transmission lines are routed may benefit from the availability of additional electrical energy. The additional energy also may encourage business and industrial expansion where desired.

One permanent economic impact will be the removal of productive cropland. However, this will be minimal because it will be limited to immediately under and around the wood pole structures.

Some alignments could prohibit utilizing aerial applications in certain fields. This could limit which crops can be grown in the fields, forcing a farmer to raise a crop of less value on the farm market. It could also reduce the effectiveness of weed control measures, especially in rice fields. Many weed controls require complete coverage for the field to be effective. If the applicator cannot fly under the conductors, drift cannot be counted on to produce the coverage needed. This could cause significant weed problems (personal communication, D. Smith, SCS, 1980).

F. Visual Impact

Topography, vegetation, the distance between the viewer and line and the presence of viewers are normally the four considerations used to determine visual impact. However, the four are not totally applicable when applied to the landscape amenities of the study area: Crowley's Ridge and the bottom farmlands. The almost flat bottomlands lack the topographic relief necessary for screening purposes. Vegetation is also limited as a screening element. This makes the presence of viewers and distance the vital considerations in determining visual impact in the farmlands.

Vegetation and topography will play a more significant role in the visual impact assessment of the alignments crossing Crowley's Ridge where large woodlands and steep topography are prevalent.

Once the transmission line is built, the most significant visual impact will be to local residents living with the facility on a daily basis. To reduce this conflict, the incorporated communities, residential clusters and individual residences were avoided whenever possible during corridor delineation.

Although all alignments cross a considerable amount of nearly flat, open farmland, visual impact will be alleviated by the existing low population densities. The most significant visual conflicts will occur with those alignments located on Crowley's Ridge, especially the three northern alignments. It was realized through field inspection that although every attempt was made to provide a spatial separation between residents on the ridge, there would be those areas where visual impacts would exist. The

visual impacts associated with the Preferred Route and Alternative A would be the crossing of Highways 141 and 351. Visual exposure of the Preferred Route and Alternative A to residences fronting Highway 141 was minimized by providing a spatial separation between them and the line as well as relying on vegetative and topographic screening. The crossing of Highway 351 by the Preferred Route was handled identically to its crossing of Highway 141. A definite visual conflict exists at the crossing of Highway 351 by Alternative A. This crossing does not have the benefits of spatial separation nor adequate screening.

Visual impact to residences along Alternative B will be adverse, especially in the Philadelphia area, where there is a significant residential development, much of which does not benefit from adequate spatial separation or vegetation. In addition, several homes would have to be removed to allow for the expanded right-of-way required by the rebuild.

Very little residential development exists where Alternative C traverses Crowley's Ridge south of Jonesboro, resulting in no adverse impacts. Field inspection showed lots for sale in the vicinity of the Wooded Acres Subdivision near the Highway 1 crossing by Alternative C. The alignment could cause visual impacts to any future residential growth in this area by making lots less desirable visually.

It is also necessary to ascertain the relative visual impact each alternative would have on those viewers observing from an automobile, since this is the most frequent mode of observation. There is one area which could potentially create some visual concern along the three

northern alternatives: the crossing at Highway 49 in Farville by the Preferred Route and Alternative A and B. This crossing has one of the highest traffic volumes in the study area. The crossing occurs at Farville in an area of some residential development, commercial development, an existing transmission line and substation, an industrial plant and the Missouri Pacific Railroad which parallels the highway. The alternative will become part of the development and should create minimal adverse visual impact.

Both crossings of U.S. 63 Expressway by Alternative C occur at locations where buildings exist, therefore, the alternative will not be introducing a new element into the environment. The crossing near the Jonesboro Substation occurs in the vicinty of a gravelling operation which will compete for motorists' attention while the crossing near the Hergett Substation parallels an existing 138 kV line and is close to the Jonesboro Industrial Park which will divert some attention from the crossing (Commonealth Associates Inc., field inspection, 1981).

G. Impact on Cultural Resources

1. Historical

Of the thirty-three different sites of historic or architectural merit in Craighead County, the majority are not located near any of the Alternative Routes.

All five sites determined eligible to the National Register are located in areas that will not be impacted. Of the eleven state sites obtained from the Arkansas State Survey Notebook (two of which are National Register sites), none will be impacted.

Three of the nineteen inventory sites identified from the Arkansas State Survey Notebook are reasonably close to Alternative B. Another site is near the Preferred Route. These three sites of historic or architectural merit are located north of Jonesboro on Greenboro Road or just off State Road 141. They are:

J. N. Burke House Old Greenboro Road. 3 mi. N.E. of Jonesboro.	16-07
Magnolia Farm 2 mi. N. of Jonesboro, 1/4 mi. W. of Ark. S.R. 141	16-22
Castleberry House Site Ark. S.R. 141 N. of Jonesboro	16-8

The site near the Preferred Route is:

Pleasant Grove School 4 mi. N on Greenboro Rd.	16-28

Construction of the proposed transmission line will have no direct physical impact and negligible visual impact on the previously recorded sites.

Because Pleasant Grove School (16-28) is no longer standing (P. Morse, personal communication, Arkansas Archeological Survey, 1981) it is now an historic archeological site; there is no visual impact to historic archeological sites, per se. This is also true of the Castleberry House site (16-8) which is extremely close to Alternative Route B.

The J.N. Burke House (16-07) and Magnolia Farm (16-22) are both standing structures, located approximately 0.4 kilometers (1/4 mile) from Alternative B. There is only a minimal visual impact to these sites because an existing transmission line already runs through this portion of the corridor. The impact of the proposed line is minimal.

A survey of architectural and historical sites not previously recorded will be conducted at the same time as the intensive arecheological survey prior to construction. A visual corridor of 460 meters (1500 feet) on either side of the Preferred Route is recommended as the limits of the surveys.

2. Archeological

Construction of the proposed transmission line will have an adverse impact on cultural resources located within the right-of-way. Clearing operations and heavy equipment movement associated with construction will damage archeological remains in the upper soil layers. Structure placement will result in further damage to any cultural resources located within the immediate construction area. Due to the high density of archeological sites in the general region, cultural resources are anticipated to occur in any right-of-way selected.

A complete, intensive on-the-ground survey will be undertaken once a final route is approved to determine the full extent of archeological resources and their significance. Transmission structures will be located to avoid any significant cultural resource sites.

H. Electrical Effects

Electrical effects typically addressed in an environmental assessment of a proposed transmission line include:

ozone generation
radio frequency noise
audible noise
electrical field strength
magnetic field strength
safety

Ozone generation, radio frequency noise, and audible noises are corona discharge related effects which are more pronounced on lines operating at 345 kV and above. Ozone generated by the proposed transmission line will be completely negligible.

Radio frequency noises from transmission lines have two possible sources: corona discharge and loose or damaged hardware. Radio noise from corona is a function of conductor selection and voltage level. For 161 kV lines, radio interference from corona is generally not significant in areas served by local radio stations where radio signal strengths are strong. Interference resulting from loose or damaged hardware may be eliminated through transmission line maintenance procedures. No television interference is anticipated.

The proposed transmission line will be virtually silent during fair weather. During rain the line may produce a noise audible to someone standing under the line. The low line noise level will be dominated by background noise sources and is not expected to be an annoyance.

Maximum electrical field strength under the line will be very low, on the order of 1 kV/m or less. This low field strength will not cause shocks and is not considered harmful.

The magnetic field strengths produced by typical transmission lines are from 10 to 100 times weaker than magnetic fields produced by household tools and appliances and are not considered harmful.

There are more than 134,774 circuit kilometers (84,234 miles) of 161 and 230 kV transmission lines in operation in the United States. Design procedures for 161 kV lines are well established and are not a new technology. The proposed line will be designed to meet or exceed requirements of the National Electrical Safety Code and will be safe. However, persons working near any transmission line should exercise due caution not to raise long metallic objects such as antenna masts or irrigation pipe into the conductors. Such action could create a lethal shock hazard.

Questions of biological effects from electric and magnetic fields associated with higher voltage transmission lines (345 kV - 765 kV) have been raised. Research is presently underway to determine whether subtle effects may be present. In over 60 years of operation of 161 kV lines, no indication of harmful biological effects has been documented as resulting from low level electric and magnetic fields of 161 kV transmission lines. No harmful biological effects are therefore anticipated from the proposed Jonesboro - Hergett transmission line.

I. Impact of Maintenance Procedures

Maintenance of the proposed transmission line will consist of two types: 1) preventive, or service to the transmission facility to prevent malfunctions, and 2) corrective, or actual line repair.

After the right-of-way has been cleared for the Jonesboro-Hergett 161 kV transmission line, and construction and stringing operations are complete, the right-of-way will be kept clear of any vegetation which will reduce reliability. This includes all trees which will attain sufficient height to cause flashovers. Maintaining the right-of-way will be accomplished using saws, mowers and/or brush-hogs. No herbicides will be used.

During mowing and brush removal, noise will exceed normal ambient levels for a short period of time. Wildlife which utilize the right-of-way will be disrupted during maintenance procedures but this will also be a short-term impact. Mowing will be done after the nesting season so ground nesting birds will not be severely impacted. Shrubs and trees in the right-of-way will undergo impact but this will be unavoidable. Some herbaceous species will benefit from right-of-way maintenance techniques described above. Several plants which could benefit from a mowed right-of-way are listed as threatened or endangered, and discussed in earlier sections.

After the wooden poles are in place, no chemical treatments will be performed. However, the poles will be wrapped with screens to prevent woodpecker damage. Such wrappings will not adversely affect vegetation or wildlife in the right-of-way.

Line inspection by aircraft will be carried out on a periodic schedule to ensure the operational efficiency of the line.

The need for corrective maintenance cannot be projected, but will most likely occur during periods of inclement weather. When emergency repairs are required, they will be completed in the shortest possible time to restore reliable service to the line and to protect the surrounding environment. All appropriate mitigative measures utilized during the construction phase will be followed during emergency repair operations.

J. Adverse Effects Which Cannot Be Avoided

Construction and operation of the proposed Jonesboro-Hergett 161 kV transmission line cannot avoid creating some adverse impact on the environment. Adverse effects which cannot be avoided are summarized below.

1. Construction Impacts

Use of heavy vehicles and equipment during construction and required maintenance operations will promote soil compaction and rutting. Movement of vehicles along severe slopes and removal of vegetation may cause erosion and possible sedimentation into nearby surface waters. Temporary noise and dust may unavoidably disturb local residents and wildlife. Agricultural production will be disrupted within the right-of-way and along access roads, if required, during line construction. Soils around the structure sites will be subject to mixing as subsoils from necessary excavations are spread around structure bases.

2. Agricultural Effects

Once the line is constructed and in operation, farm operators will experience some difficulty in maneuvering large farm equipment around transmission structures. Some land under the structures will be permanently removed from agricultural production. Additionally, the conductors and wooden poles will be an obstacle to aerial application of herbicides and insecticides.

3. Bird Collisions

The proposed line will be an obstacle to local bird movement. Although much research on bird collisions with man-made obstacles has been conducted, solutions to the problem have not been successfully developed.

4. Visual Effects

Construction of the transmission line will introduce an additional man-made intrusion, further altering the visual character of the landscape.

5. Cultural Resource Effects

Construction of the proposed transmission line could potentially impact cultural resources. A number of archeological prehistoric and historic sites have been located in the vicinity of the Preferred Route. A complete, intensive on-the-ground survey will be undertaken once a final route is approved to determine the full extent of archeological resouces and their significance. Transmission structures will be located to avoid any significant cultural resource sites.

6. Electrical Effects

During inclement weather, the transmission line may produce a noise audible to someone standing beneath it. It is possible that the line could also produce some radio interference with weak local radio station signals or through loose or damaged transmission hardware. The latter interference can be eliminated, however, through standard transmission line maintenance procedures.

K. Consequences of Alternatives to the Proposed Transmission Line

The following sections describe the environmental consequences of three alternatives to the proposed transmission line, which include no action, conservation of electricity and additional generating capacity. A fourth alternative discussed in Section III, purchase of additional power, is the purpose of constructing the proposed transmission line (See Section III D).

1. No Action

The no action alternative would eliminate construction of the transmission line and the concurrent potential impacts to agriculture, residential development, biological resources, cultural resources and any visual impacts. The no action alternative would preclude the potential efficiency increases and increased reliability.

2. Conservation of Electricity

The conservation alternative consists of reducing use of electrical power through various conservation measures.

Some of the conservation measures include installing insulation, attic ventilation, weather stripping, conservation lighting, water heater insulation, etc. The extent of potential conservation has not been determined. However, this conservation would have to be implemented in addition to existing and future conservation measures that are projected by Southwestern's customers.

The conservation alternative is not known to have any direct adverse environmental consequences, although manufacturing of many conservation devices such as insulation and weather stripping utilize petroleum products and non-renewable resources.

3. Additional Generating Capacity

Of the various types of generation units discussed in Section III available to the municipal utility customers served by Southwestern, those most likely to be constructed would include gas turbine or diesel peaking units. These would be operated during periods of drops in transmission system voltage. However, as mentioned previously, these generating units require high capital investment and are expensive to operate. The environmental consequences of constructing and operating a gas turbine facility or diesel peaking unit include generation of air polluted emissions, consumption of fuel, a non-renewable resource, and various land use impacts. The land use impacts are the 25 to 50 acres or more for the plant site, and the transmission line connecting the plant to the distribution system if the plant were remote from it.

L. Irreversible and Irretrievable Commitment of Resources

Construction and operation of the proposed transmission line will require the utilization of land, labor and materials. The major portion of these resources will be committed during structure site preparation and assembly, and conductor assembly. These resources will be committed for varying periods of time and, in some instances, can be restored after the useful life of the facility.

Land use within the right-of-way should not appreciably change, except in those areas where clearing is required or at structure sites within cultivated land, where crop loss may be evident due to limited farm equipment maneuverability. Upon retirement of the line, the land in the right-of-way can be returned to its original use. The wooden transmission structures may be recoverable after the useful life of the line, but will not be in a condition for similar use. Metal utilized in the conductors and river crossing structures can be salvaged and reused. Fuel and manpower expended during line construction and maintenance will be irretrievably committed.

M. Relationships Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Construction of the proposed Jonesboro-Hergett transmission line will result in the long-term benefit of providing reliable and more efficient electrical power to Southwestern's customers. The line will also serve to strengthen the region's electrical power supply.

A short-term economic stimulation will be evident as a result of right-of-way easement payments and increased demand for local goods and services during the construction perod.

Unavoidable short-term trade-offs which must be made to achieve these benefits (temporary construction-related impacts) include:

- soil compaction
- potential soil erosion and siltation of surface waters
- disruption of agricultural production and crop damage
- nuisance effects such as noise and dust from construction
- possible disturbance to wildlife populations

Long-term trade-offs (incurred for the life of the transmission facility) will include:

- possible removal of land under structures from crop production
- interference with normal farming practices, including aerial applications
- visual exposure of the transmission line
- clearing and control of vegetation to ensure safe and efficient line operation
- possible bird mortality resulting from collisions with the proposed transmission facilities
- possible audible noise and radio interference
- possible disturbance of archeological sites

VI. LIST OF PREPARERS

The following individuals from Commonwealth Associates, Inc., Jackson, Michigan, participated in the preparation of the Environmental Impact Statement for the proposed Jonesboro-Hergett Transmission Line Project:

G. Thomas St. Clair, Project Manager

Education: B.S., Biology, Adrian College, 1968
M.S., Environmental Sciences, University of Michigan, 1972

Societies: Ecological Society of America
American Society of Limnology and Oceanography
National Audubon Society

Experience: Commonwealth Associates Inc., 1972-Present
Background in ecology and environmental planning including management and coordination of multidisciplinary environmental studies for the utility industry.

John M. Bridges, Wildlife Biologist

Education: A.S., Biology, Lincolnhead Community College, 1971
B.S., Zoology, Eastern Illinois University, 1973
M.S., Zoology, Eastern Illinois University, 1976

Certification: Certified Wildlife Biologist (The Wildlife Society)

Societies: American Society of Mammologists
The Wildlife Society
Illinois Academy of Science
Raptor Research Foundation

Experience: Commonwealth Associates Inc., 1974-Present
Background in Terrestrial Biology and Wildlife Ecology with special emphasis on environmental effects of surface mines, power plants and transmission lines.

Robert J. Broad, Transmission Line Engineer
Education: B.S.C.E., Michigan State University, 1961
Registration: Professional Engineer in Michigan (1976), Louisiana (1970), Minnesota (1970), Texas (1970), Illinois (1971), Wisconsin (1972), New York (1973), Ohio (1974), and New Mexico (1980) Registered Land Surveyor In Louisiana (1970)
Societies: National Society of Professional Engineers
Michigan Society of Professional Engineers
American Society of Civil Engineers
Experience: Commonwealth Associates Inc., 1964-Present
Over eighteen years professional experience in civil/ structural studies, design, and construction management of HV, EHV and VHV transmission lines and river crossings.

James W. Bartel, Landscape Architect
Education: B.S., Landscape Architecture, University of Wisconsin, 1971
Experience: Commonwealth Associates Inc., 1974-Present
Background in landscape architecture with particular emphasis on assessment of environmental impact, visual impact analysis and related aspects of transmission line routing and power plant siting.
Landscapes Limited, Madison, Wisconsin
1971-1974 Associate Landscape Architect responsible for environmental resource studies, linear system delineations for highways and transmission lines.

Annette Brewster, Senior Hydrogeologist

Education: B.S. Geology, Michigan State University, 1972

M.S. Geology, University of Illinois, 1974

Societies: Association of Engineering Geologists

National Waterwell Association.

Experience: Commonwealth Associates Inc., 1980-Present Background in hydrogeology with special emphasis on groundwater flow and contamination potential from waste disposal sites.

Sargent and Lundy, 1974-1980 Senior Geologist Responsible for directing and participating in geotechnical investigations for nuclear and fossil-fueled power plants with emphasis on regional and local hydrogeology.

David G. Anderson, Archeologist

Education: B.A., Archeology, Case Western Reserve University, 1972

M.A., Archeology, University of Arkansas, 1979

Societies: Society for American Archeology

Southwestern Archeological Conference

Experience: Commonwealth Associates Inc., 1977-Present Archeologist managing and directing large scale survey and excavation projects for private and public clients

Arkansas Archeological Survey, 1975-1977 Survey Assistant

Institute of Archeology and Anthropology, University of South Carolina 1974-1975, Research Assistant

John G. Albers, Preservation Planner
Education: B. of Arch., Univ. of Florida, 1973
Registration: Architect, Michigan 1980
Experience: Commonwealth Associates Inc., 1978-Present
Background in architecture, preservation planning and architectural history specializing in significance and impact analysis.

APPENDIX A
PARTICIPATING UTILITY STATEMENTS

HELPING BUILD ARKANSAS

ARKANSAS POWER & LIGHT COMPANY

6TH AVENUE AND PINE STREET • PINE BLUFF, ARKANSAS 71601 • (501) 534-1330

November 12, 1980

Mr. James N. McClanahan
Chief, Power Facilities
Southwestern Power Administration
P. O. Drawer 1619
Tulsa, OK 74101

Dear Mr. McClanahan:

Attached is a draft of an AP&L statement concerning a proposed 161 KV transmission line to be constructed by the Southwestern Power Administration in the Jonesboro area. We understand the statement would be used in conjunction with the preparation of the Environmental Impact Statement for subject line.

Yours very truly,

M. M. Riggs, Director
System Planning Department

MMR/EET:bh
Attachment

CITY WATER AND LIGHT

MARION R. ULMER
MANAGER

PHONE 501-935-5581 400 EAST MONROE JONESBORO, ARKANSAS 72401

December 1, 1980

Mr. James B. Hammett
Administrator
Southwestern Power Administration
P. O. Drawer 1619
Tulsa, Oklahoma 74101

Re: Proposed 161 KV Transmission Line
Between SPA Northwest Substation & Hergett Substation

Dear Mr. Hammett:

During the past several years CWL has been advised by Southwestern Power Administration, officials of the Southwest Power Pool and our consulting engineers, R. W. Beck and Associates, that transmission facilities in Northeast Arkansas are totally inadequate to meet power transmission requirements.

Because of inadequate transmission facilities voltages have dropped to a dangerously low level during periods of normal to heavy power use. CWL has also been advised by the Southwestern Power Administration (SWPA) that it does not have capacity to transmit power loads in the Northeast Arkansas area.

The proposed 161 KV line construction will improve the power systems reliability and materially add capacity for increased loads in Northeast Arkansas.

I support Southwestern Power Administration (SWPA) in the proposed power line construction and urge that approvals for construction be granted at the earliest possible date.

Sincerely,

Marion R. Ulmer

jh

RESOLUTION

WHEREAS, City Water and Light Plant of the City of Jonesboro, Arkansas, has experienced inadequate transmission facilities in Northeast Arkansas to meet existing requirements for power wheeled from other sources; and

WHEREAS, Southwestern Power Administration (SWPA) has plans for the construction of a 161 KV line from the Jonesboro - Idalia 161 KV line to the CWL Hergett Substation that will ultimately tie to an AP&L EHV transmission line adjacent to Jonesboro; and

WHEREAS, said proposed SWPA construction of the 161 KV line will improve transmission capabilities for the system and provide an alternate source for an interconnection as well as strengthen the transmission grid.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of City Water and Light support the Southwestern Power Administration (SWPA) construction of the 161 KV line to connect to the Jonesboro Hergett Substation and urge that construction be scheduled at the earliest possible date.

PASSED AND ADOPTED This 25th day of November, 1980.

A. M. Heringer
CHAIRMAN

ATTEST:

Frank T. Sloan
SECRETARY

RESOLUTION

WHEREAS, The Southeast Missouri - Northeast Arkansas Municipal Utilities Association recognizes the need for improving transmission facilities in Southeast Missouri - Northeast Arkansas; and

WHEREAS, The Southwestern Power Administration (SWPA) has plans for the construction of a 161 KV line from its Jonesboro Idalia 161 KV line to the CWL Hergett Substation that will ultimately tie to an AP&L EHV transmission line adjacent to Jonesboro; and

WHEREAS, Said proposed Southwestern Power Administration (SWPA) construction of the 161 KV line will substantially improve transmission capabilities in the area and provide an alternate source for an interconnection with the existing transmission grid.

NOW, THEREFORE, BE IT RESOLVED, That the Southeast Missouri - Northeast Arkansas Municipal Utilities Association support the Southwestern Power Administration (SWPA) in its plans to construct the 161 KV line to connect to the Jonesboro Hergett Substation and further urge that construction be scheduled at the earliest possible date.

PASSED AND ADOPTED This 19th day of November, 1980.

Larry V. Jones
PRESIDENT

ATTEST:

Freddy H Bellers
SECRETARY

APPENDIX B
ROUTE SELECTION METHODOLOGY

APPENDIX B

ROUTE SELECTION METHODOLOGY

In establishing alternative line routes for the proposed Jonesboro-Hergett 161 kV transmission line, a methodology was developed which reflected environmental, engineering and economic concerns. The following discussion presents the methodology and sequence of events involved in the selection of a Preferred Route.

1. Evaluate Feasibility of Routing Parallel to Existing Rights-Of-Way

One of the possible alternatives considered early in the project was an alignment paralleling the St. Louis and San Francisco railroad right-of-way through the city of Jonesboro. Contacts were made with the City of Jonesboro to determine property ownership and proposed plans for the property adjacent to the railroad. The St. Louis and San Francisco Railroad was contacted to determine the extent of right-of-way ownership, facility location and proposed plans. To further evaluate the feasibility of the railroad alignment, field investigations and preliminary designs were made to determine space availability above ground and possible obstructions along the line route. A cost analysis was prepared.

Another existing right-of-way that was investigated as a possible route to parallel was the U.S. Highway 63 Expressway traveling to the south of Jonesboro. Contact was made with several agencies before it was decided that insufficient right-of-way space was available to construct the line.

2. Data Collection

Information for the Jonesboro-Hergett Transmission Line project was collected through contacts with local, regional state and federal agencies, as well as available publications. Agency contacts provided information unique to the study area and pertinent to the problems that would be encountered in the routing process. (See Appendix E for a complete list of agency contacts).

Information obtained from each agency or published source was screened for accuracy and appropriate information was incorporated into the final route selection. Current housing, land use and vegetation information was based upon available aerial photography coverage. Data collection was an ongoing process up to the time of final route selection.

3. Establishing Exclusion Areas

The first step in establishing transmission corridors for the proposed Jonesboro-Hergett Transmission Line was to identify the geographic location of areas sensitive to transmission lines within this region of Arkansas. Therefore, an exclusionary mapping process was undertaken to identify the geographic location of these and other avoidance areas. All data were plotted on a composite aerial photo base map. This process further narrowed the focus for areas suitable for transmission corridor locations. For example, avoidance of new residential growth areas along Crowley's Ridge north of Jonesboro, and not diagonally crossing farmland, thereby minimally impacting agricultural production, were considered exclusionary factors in the location of transmission corridors.

4. Selecting Preliminary Corridors

Following the mapping of the primary exclusion areas, a network of preliminary corridors was delineated utilizing the aerial photo base map along with pertinent data received during agency contacts. This network was delineated so as to circumvent the constraints identified in the exclusion area mapping phase. The extension of the network to the east and west was dictated by 1) fixed terminal points which could not be relocated to accomodate corridor routing, 2) engineering and economic feasibility, 3) added environmental impacts, and 4) a desire to minimize the length of the proposed facility.

5. Field Investigation of Preliminary Corridors

Field investigations were undertaken once the preliminary corridors were established. The purpose of the investigations was to assure that the exclusionary factors mentioned in the constraint identification section were avoided; to familiarize the project team with the study area; to simplify the corridor network by reducing corridor widths; and to reduce impacts, wherever possible, to the local concerns discussed in the constraint identification section.

6. Public Meeting

A public meeting was held on December 9, 1980 in Jonesboro to seek input from local residents into the selection of transmission corridors.

7. Delineating Centerlines Within the Corridors

Centerline delineation was accomplished through an analysis of aerial photographs and was conducted prior to actual field investigations evaluating line routes. Certain routing criteria were used to facilitate the delineation of centerlines:

- Parallel existing utilities where possible, in order to minimize right-of-way acquisition and development, and physical and visual disruption.

- Parallel wood edges, crop division, fencerows, etc., wherever possible, in order to avoid the division of land uses.

- Avoid steep slopes wherever possible to decrease soil erosion potential.

- Avoid wetlands wherever possible because of their biological sensitivity.

- Minimize effects of crossing water bodies.

- Consider use of topography and vegetation as natural screening or background elements.

- Avoid privately owned aircraft landing strips.

- Avoid crossing farmland on a diagonal to eliminate dangers to aerial applicators of herbicides and insecticides.

8. Field Investigations of Alternative Routes

Each route was analyzed in the field for its viability. Potential problems or conflicts were noted which could not be determined from aerial photographs. The field notes were then used to readjust those segments within the network in which problems had been observed during field investigations. These changes were incorporated into the final network before the final route evaluation was initiated.

9. Route Inventory

The following environmental information was inventoried for each segment as required by Council of Environment Quality EIS guidelines: scenic areas, archeological and historic areas, land use, soil and sedimentation, plant and wildlife habitats, terrain, hydrology, landscape, geologic areas, wilderness areas and airports.

Additional information inventoried included prime farmland and natural areas. The inventory process was accomplished by extracting the environmental data listed above from aerial photographs, soil maps, USGS topographic maps, planning documents, and other data sources. The accumulated data were then used to identify the route with the least environmental impact.

10. Selection of Preferred Route

On February 5, 1981 a meeting was held at Southwestern headquarters in Tulsa, Oklahoma to discuss the Alternative routes and select a Preferred Route. Factors used in selection of the Preferred route included a combi-

nation of environmental, engineering and economic concerns. A comparative matrix was prepared illustrating the advantages and disadvantages of each alternative route (See Table 1).

APPENDIX C
TYPICAL STRUCTURE DESIGN

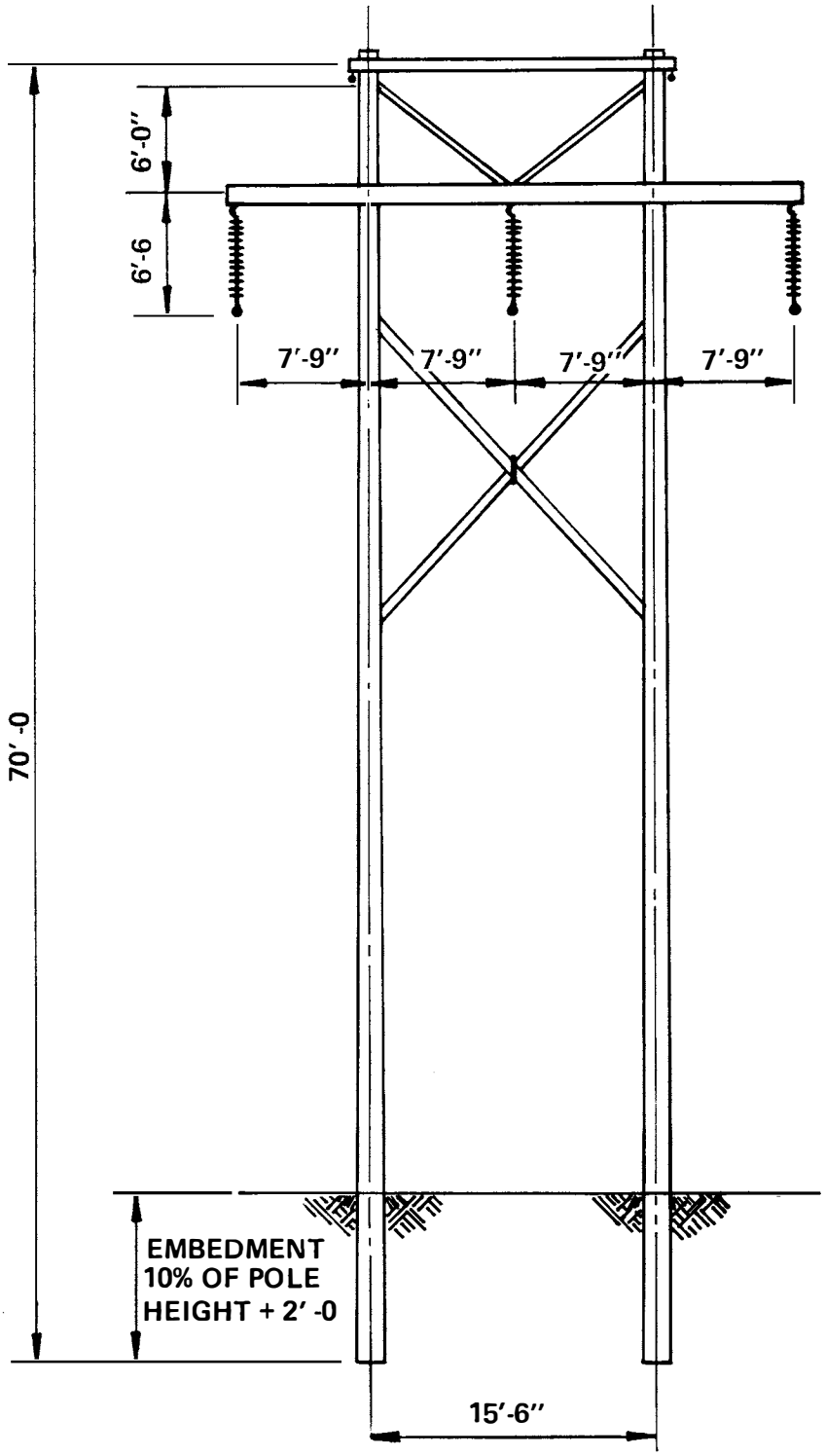


PLATE C-1

TYPICAL ANGLE STRUCTURE

JONESBORO-HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration — United States Department of Energy

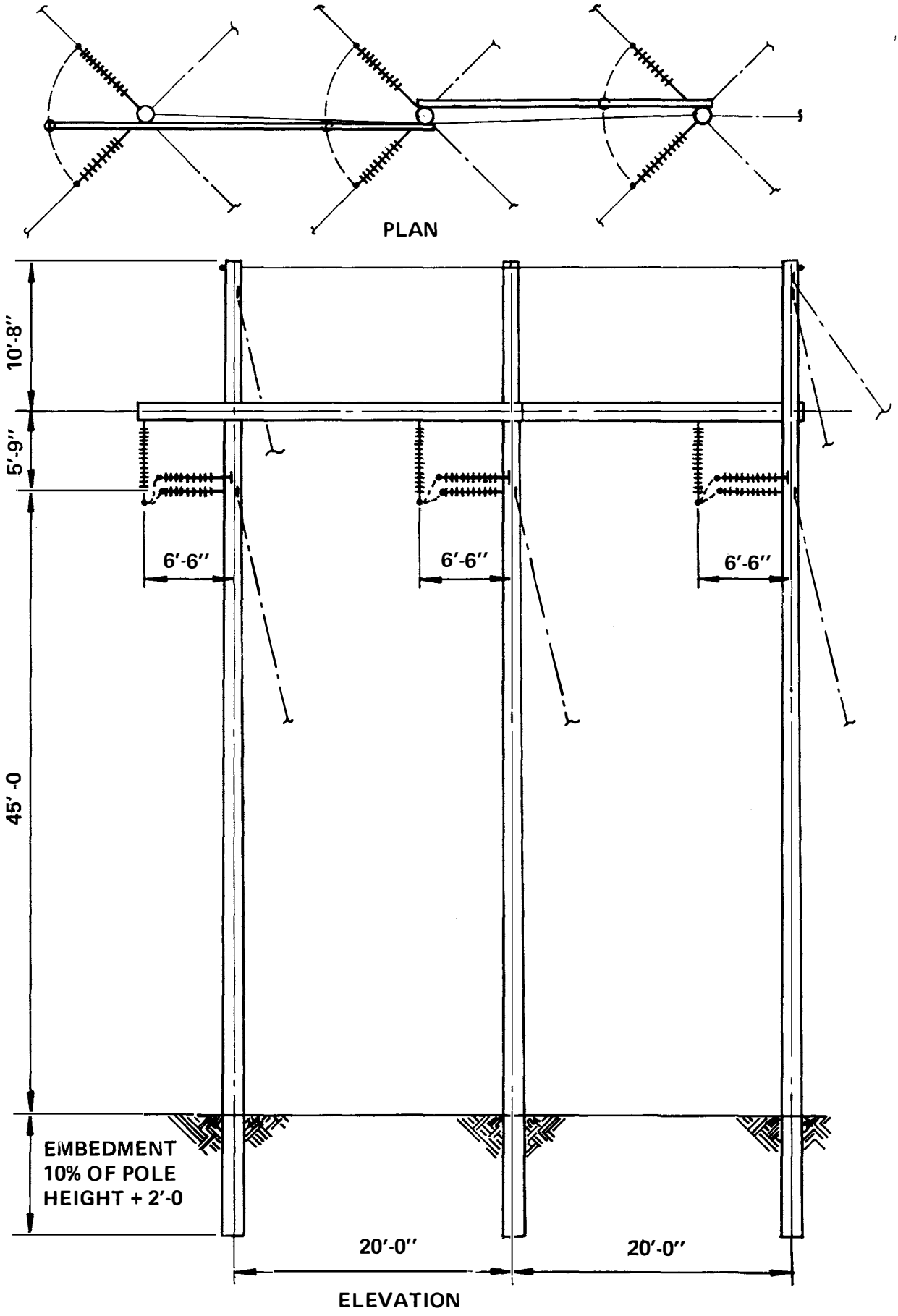


PLATE C-2

TYPICAL ANGLE STRUCTURE

JONESBORO-HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration — United States Department of Energy

APPENDIX D
PERMITS AND AUTHORIZATIONS

APPENDIX D

PERMITS AND AUTHORIZATIONS

Various federal state and local agencies were contacted about those aspects of the Jonesboro-Hergett Transmission Line which concerned their particular areas of interest. Local and regional planning agencies were contacted to determine if the proposed project was in conflict with existing plans. Responses of these agencies to the Draft EIS will be presented in the Final EIS. A U.S Army Corps of Engineers Construction Permit may be required to cross streams along the Preferred Route.

APPENDIX E
CONSULTATION AND COORDINATION WITH OTHERS

APPENDIX E

CONSULTATION AND COORDINATION WITH OTHERS

Southwestern determined the relative scope of the proposal to build the Jonesboro-Hergett Transmission Line through numerous meetings with the city of Jonesboro, participating utilities and the state of Arkansas. Southwestern felt it appropriate and consistent with the Council of Environmental Quality Regulations to inform the public of its activities early in the decision making process. Therefore, a news bulletin was distributed for immediate release on December, 1980, requesting the public's and/or organization's comments to assist in the planning process and identification of other concerns and other alternatives. Although no comments have been received, any forthcoming comments will be reviewed prior to final decision's being made.

In addition to the above, the following agencies and individuals were contacted and/or provided input during the preparation of the Environmental Impact Statement.

FEDERAL

Southwestern Power Administration	Ken Blevins
U.S. Fish and Wildlife Service	Thurman Booth
	Dennis Jordan
	Charles Baxter
U.S. Department of Agriculture, Soil Conservation Service	Bill Woodruff
	Don Smith

STATE

Arkansas Highway Department	Norman Pumphrey
	Elton Beck
	Randy Crossland

Arkansas Division of Aeronautics	Eddie Holland
Arkansas Natural Heritage Commission	Jeff Rettig
Arkansas Game and Fish Commission	Richard Broach
	Robert Zachary
	Craig Uyeda
Arkansas Historic Preservation Program	Sarah Brown

REGIONAL

*East Arkansas Planning and Development District	Joe Foster

COUNTY

Cooperative Extension Service	James Peachy
Agricultural Extension Service	Ed Maxa

CITY

Jonesboro City Water and Light Department	Marion R. Ulmer
	Jim A. Reed
Metropolitan Area Planning Commission	John Broadaway
Jonesboro Chamber of Commerce	Harry Jones, III

PRIVATE

University of Arkansas Industrial Research and Extension Center	Dr. Forrest Pollard
University of Arkansas, Biology Dept.	Dr. Earl Hanebrink
	Dr. Ken Beadles
University of Arkansas, Arkansas Archeological Survey	Dr. Charles McGimsey III
	Phyllis A. Morse

* OMB circular A-95 Clearing House

APPENDIX F
AERIAL SURVEY

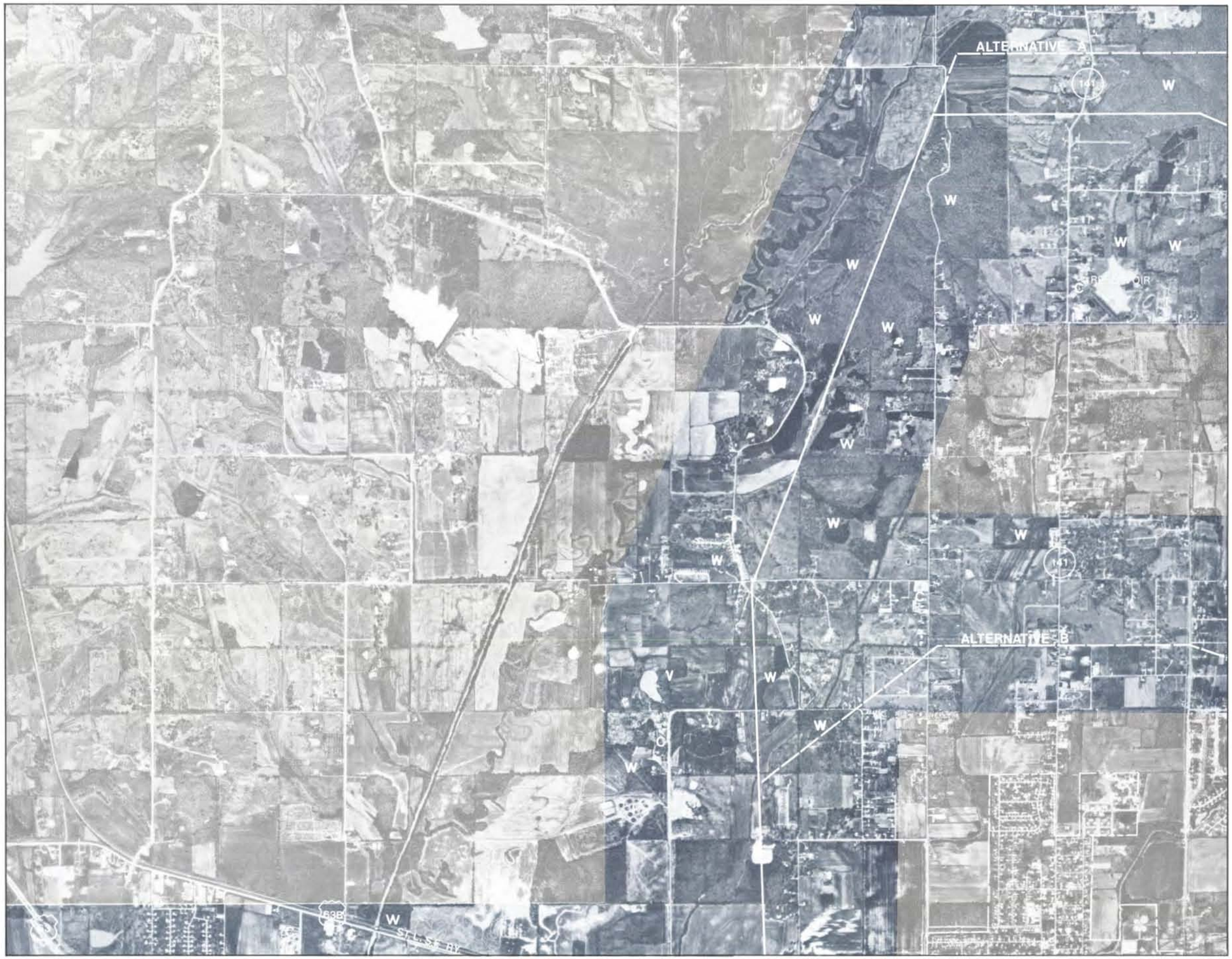


PLATE F-1

AERIAL SURVEY

JONESBORO - HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE
ALTERNATIVE ROUTE
PRELIMINARY CORRIDOR
JONESBORO CITY LIMIT
C - COMMERCIAL
I - INDUSTRIAL
P - PUBLIC AND INSTITUTIONAL
W - WOODLOT

Unidentified areas within the corridor are generally residential or farmland.

1	2
3	4
5	6

N

0 2000 4000 FEET

Photogrammetry: Arkansas State Highway and Transportation Department, 4/15/80.

Gilbert/Commonwealth

PLATE F-2

AERIAL SURVEY

JONESBORO - HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE
ALTERNATIVE ROUTE
PRELIMINARY CORRIDOR
JONESBORO CITY LIMIT
C – COMMERCIAL
I – INDUSTRIAL
P – PUBLIC AND INSTITUTIONAL
W – WOODLOT

Unidentified areas within the corridor are generally residential or farmland.

1	2
3	4
5	6

N

0 2000 4000FEET

Photogrammetry: Arkansas State Highway and Transportation Department, 4/15/80.

Gilbert/Commonwealth

PLATE F-3

AERIAL SURVEY

JONESBORO - HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE
ALTERNATIVE ROUTE
PRELIMINARY CORRIDOR
JONESBORO CITY LIMIT
C – COMMERCIAL
I – INDUSTRIAL
P – PUBLIC AND INSTITUTIONAL
W – WOODLOT

Unidentified areas within the corridor are generally residential or farmland.

1	2
3	4
5	6

ARKANSAS

N

0 2000 4000 FEET

Photogrammetry: Arkansas State Highway and Transportation Department, 4/15/80.

Gilbert/Commonwealth

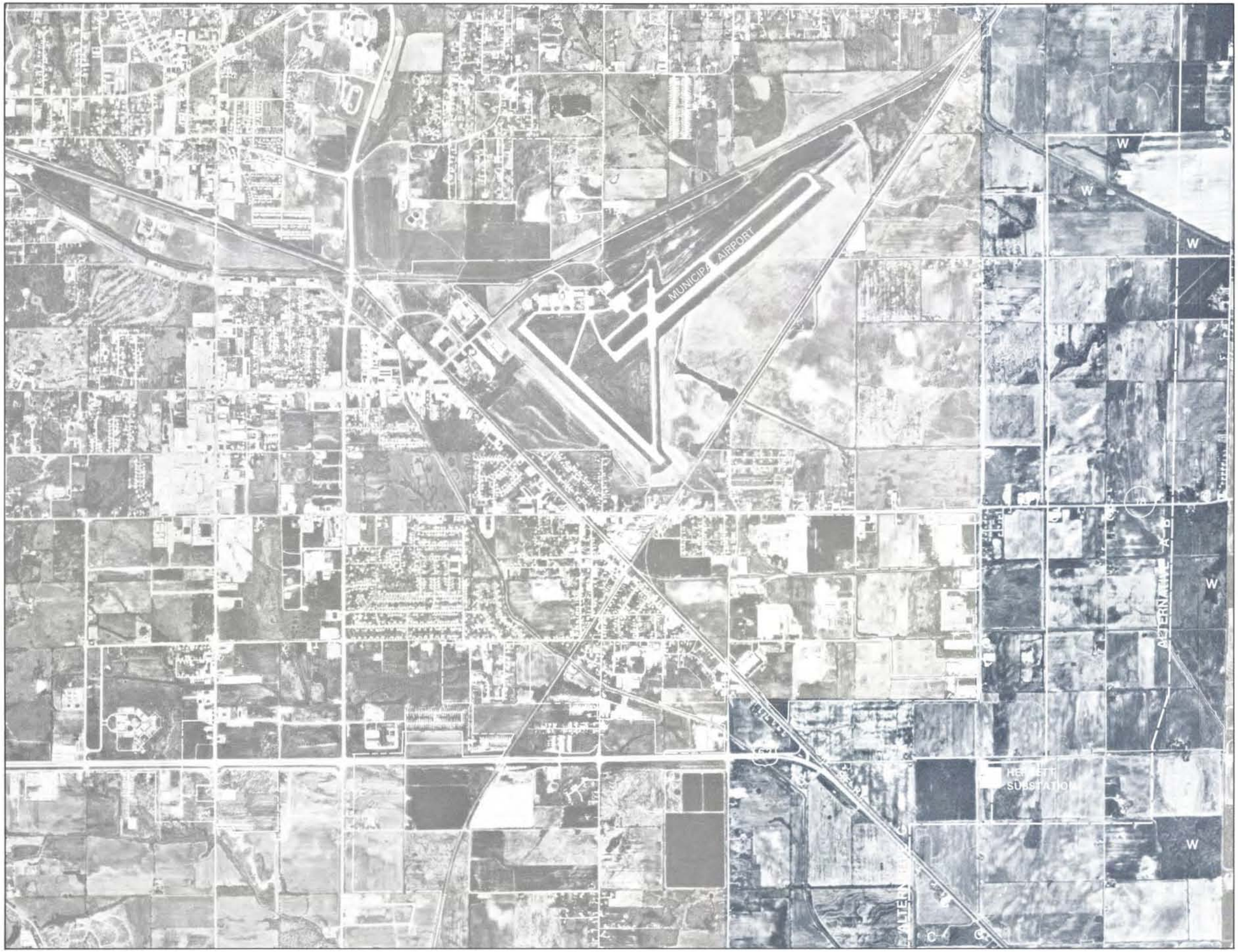


PLATE F-4

AERIAL SURVEY

JONESBORO - HERGETT
161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE
ALTERNATIVE ROUTE
PRELIMINARY CORRIDORE
JONESBORO CITY LIMIT
C — COMMERCIAL
I — INDUSTRIAL
P — PUBLIC AND INSTITUTIONAL
W — WOODLOT

Unidentified areas within the corridor are generally residential or farmland.

1	2
3	4
5	6

N

0 2000 4000 FEET

Photogrammetry: Arkansas State Highway and Transportation Department, 4/15/80

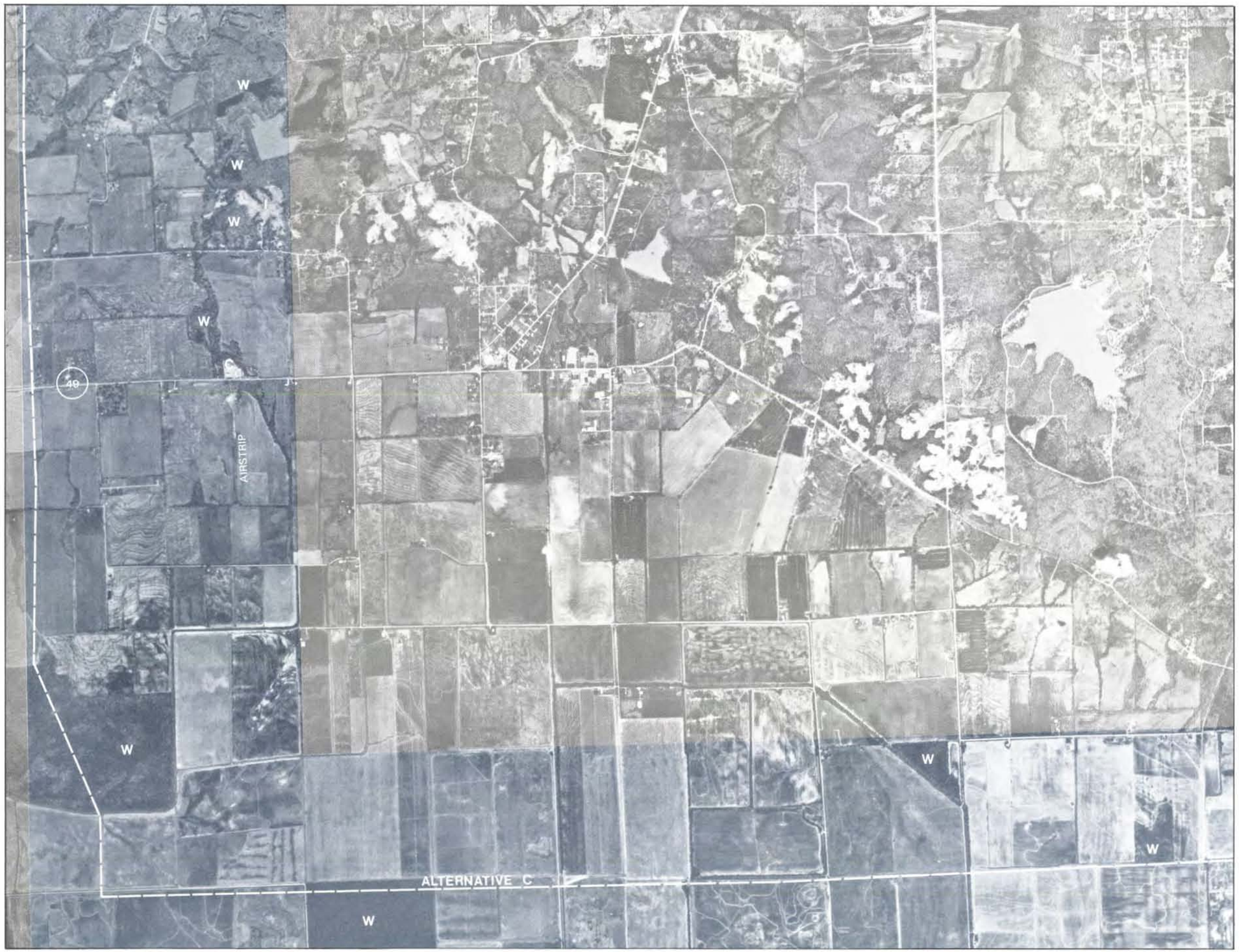
Gilbert/Commonwealth

PLATE F-5

AERIAL SURVEY

JONESBORO - HERGETT
161 kV TRANSMISSION

Southwestern Power Administration
United States Department of Energy



PREFERRED ROUTE
ALTERNATIVE ROUTE
PRELIMINARY CORRIDOR
JONESBORO CITY LIMIT
C – COMMERCIAL
I – INDUSTRIAL
P – PUBLIC AND INSTITUTIONAL
W – WOODLOT

Unidentified areas within the corridor are generally residential or farmland.

1	2
3	4
5	6

N

0 2000 4000 FEET

Photogrammetry: Arkansas State Highway and Transportation Department, 4/15/80.

Gilbert/Commonwealth

PLATE F-6

AERIAL SURVEY

JONESBORO - HERGETT 161 kV TRANSMISSION LINE

Southwestern Power Administration
United States Department of Energy

PREFERRED ROUTE
ALTERNATIVE ROUTE
PRELIMINARY CORRIDOR
JONESBORO CITY LIMIT
C – COMMERCIAL
I – INDUSTRIAL
P – PUBLIC AND INSTITUTIONAL
W – WOODLOT

Unidentified areas within the corridor are generally residential or farmland.

1	2
3	4
5	6

ARKANSAS

N 0 2000 4000FEET

Photogrammetry: Arkansas State Highway and Transportation Department, 4/15/80.

Gilbert/Commonwealth

APPENDIX G
FLOODPLAIN/WETLAND ASSESSMENT

APPENDIX G

FLOODPLAIN/WETLAND ASSESSMENT

I. Project Purpose and Description

The Southwestern Power Administration (Southwestern), an agency of the U.S. Department of Energy (DOE), proposes to construct a 161 kV overhead transmission line for a distance of 25 kilometers (15.5 miles) in Craighead County, Arkansas. The proposed project extends from the Jonesboro Substation, located in the northwestern corner of Jonesboro, to the Jonesboro City Water and Light Department to Hergett Substation located to the southeast of Jonesboro. The proposed transmission line will form an interconnection with a planned 500 kV transmission facility being routed close to the city of Jonesboro and the Hergett Substation (Figure 1). Southwestern's main purpose in improving the regional transmission network by constructing the proposed transmission line is to increase and insure future system reliability. For additional discussion see Section II.

II. Floodplain/Wetland Effects

As discussed in Chapter 4 of the Environmental Report, there are no streams in the project area that have not been altered either through impoundments, dredging or channelization. The streams crossed are listed in Table G-1 with their location by Township and Range. Figure G-1 shows the extent of 100 year floodplains in the project area as delineated by the U.S. Department of Housing and Urban Development Flood Hazard Boundary Maps for Craighead County, Arkansas. As shown in Figure G-1, only the 100 year flood-

plain of Lost Creek and Lateral No. 3 off of Moore's Ditch will be crossed. The latter will be spanned and no towers will be placed in the floodplain. The 100 year floodplain of Lost Creek is approximately 370 meters (1200 feet) wide. Because normal tower span is 182 meters (600 feet) at least two towers will be placed in the 100 year floodplain. Because of the channelization of streams in the Jonesboro area, the Lost Creek Floodplain is not considered a "high hazard area" and there is little impact expected on natural systems from placing two towers in the floodplain. The eastern boundary of the floodplain along Moore's Ditch will be paralleled for approximately 2400 meters (8000 feet), however, no structures are anticipated to be located within the actual floodplain.

There are no natural wetlands remaining in the area of the proposed transmission line. All previous wetlands have been drained or filled or have become part of the rice production in the area. The U.S. Fish and Wildlife Service's National Wetlands Inventory has not done any mapping in Arkansas nor are there plans to do so in the near future (personal communication, D. Hall, U.S. Fish and Wildlife Service, 1981).

Standard construction practices will reduce the potential for soil erosion and sedimentation. Areas denuded of vegetation will be reseeded as soon as possible. Construction equipment will not be refueled in the floodplain/wetlands to prevent chemical contamination of the waters. Other mitigative measures which apply are discussed in the Environmental Impact Statement.

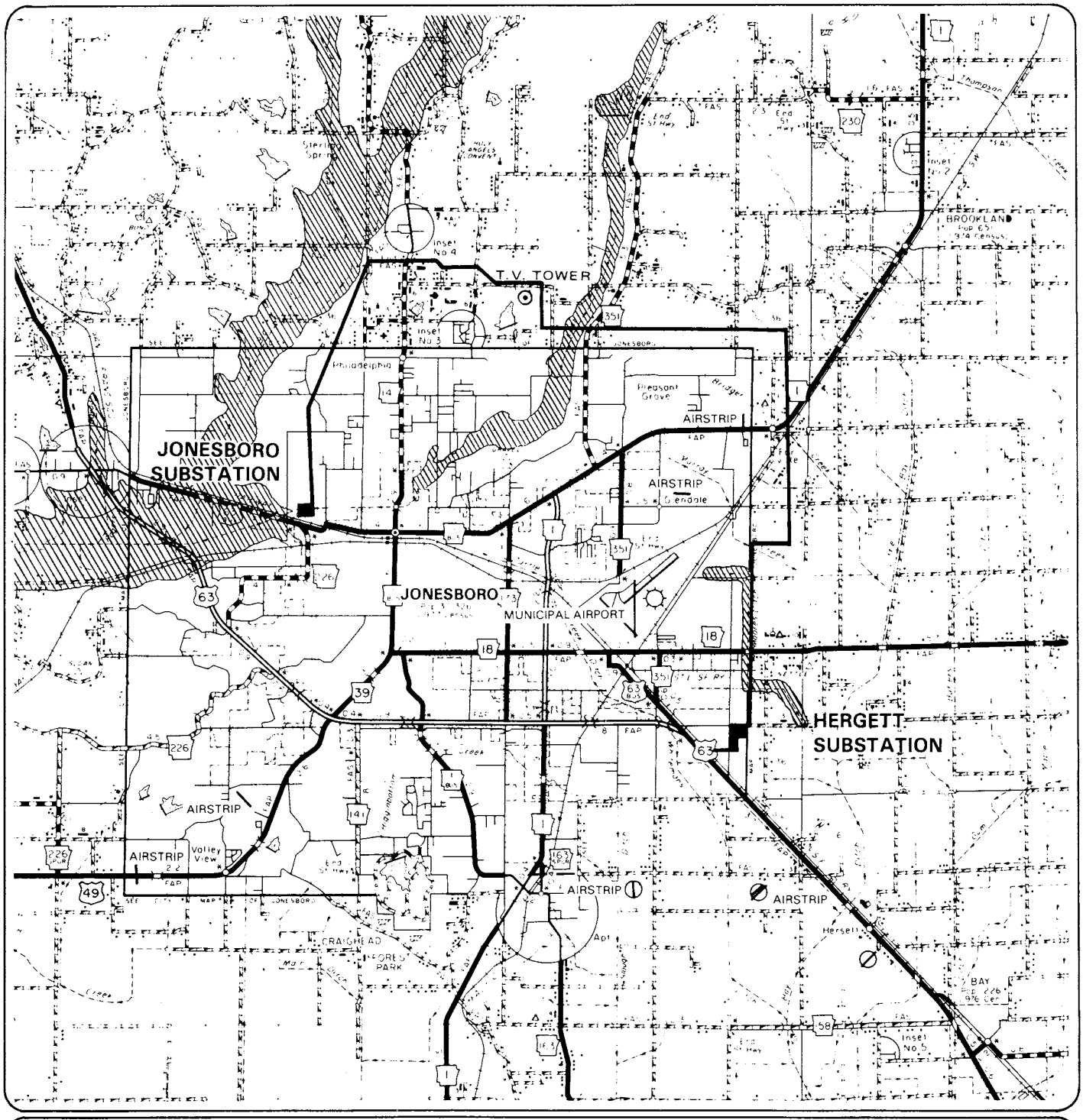


FIGURE G-1

FLOOD PLAINS LOCATED ALONG THE PREFERRED ROUTE

JONESBORO – HERGETT
161 kV TRANSMISSION LINE
Southwestern Power Administration
United States Department of Energy

SOURCE: U.S. Department of Housing and Urban Development Flood Hazard Boundary Maps for Craighead County, Arkansas, Community-Panel No. 050427 0003 A

Gilbert Commonwealth

TABLE G-1

THE LOCATION AND LIST OF WATERCOURSES CROSSED BY THE PROPOSED JONESBORO-HERGETT 161 KV TRANSMISSION LINE IN CRAIGHEAD COUNTY, ARKANSAS [1]

Watercourse	Location
Lost Creek Ditch	NW 1/4 Section 13,T.14N.,R3E
Unnamed tributary to Lost Creek	SE 1/4 Section 29,T.15N.,R4E
Unnamed tributary to Little Bay Ditch	SE 1/4 Section 36,T.15N.,R.4E
Bridger Creek	SE 1/4 Section 1,T.14N.,R.4E
Unnamed tributary to Bridger Creek	SE 1/4 Section 12,T.14N.,R.4E
Murray Creek	SW 1/4 Section 13,T.14N.,R.4E
Moore's Ditch (paralleled)	W 1/2 Section 24,T.14N.,R.4E
Lateral No. 3 tributary to Moore's Ditch	NE 1/4 Section 25,T.14N.,R.4E

1) Several unnamed intermittent streams are crossed, which are tributaries to the larger streams mentioned. Sequence of presentation follows preferred alignment from Jonesboro Substation to Hergett Substation.

Personal Communication

Hall, D. U.S. Fish and Wildlife Service, Office of Ecological Services, Vicksburg, Mississippi, personal communication with John M. Bridges, CAI, 1981.

APPENDIX H
COMMENTS RECEIVED CONCERNING DRAFT ENVIRONMENTAL IMPACT STATEMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

8-27-81
8-28-81
8-28-81

August 25, 1981

Mr. James B. Hammett
Administrator, DOE
Southwestern Power Administration
P.O. Box 1619
Tulsa, Oklahoma 74101

Dear Mr. Hammett:

We have completed our review of your Draft Environmental Impact Statement (EIS) for the proposed construction of a 161 kV transmission line from the Hergett to the Jonesboro substation in Craighead County, Arkansas. The purpose of the proposed action is to relieve the very heavily loaded electrical transmission system in the Jonesboro area by providing power from the Arkansas Power and Light Company to the Hergett and Jonesboro substations.

The EIS considered four alternate routes for the transmission line. We have no objection to the preferred route since it has the least environmental impact of all the routes presented.

We classify your Draft EIS as LO-1. Specifically, we have no objections to the project as it relates to Environmental Protection Agency's legislative mandates. The EIS contained sufficient information to evaluate adequately the possible environmental impacts which could result from project implementation. Our classification will be published in the Federal Register according to our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act.

Definitions of the categories are provided on the enclosure. Our procedure is to categorize the EIS on both the environmental consequences of the proposed action and on the adequacy of the EIS at the draft stage, whenever possible.

We appreciated the opportunity to review the Draft EIS. Please send our office five (5) copies of the Final EIS at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, Washington, D.C.

Sincerely,

Frances E. Phillips
Acting Regional Administrator

Enclosure

ENVIRONMENTAL IMPACT OF THE ACTION

LO - Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER - Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to re-assess these aspects.

EU - Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

ADEQUACY OF THE IMPACT STATEMENT

Category 1 - Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2 - Insufficient Information

EPA believes the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3 - Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement. If a draft statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make a determination.

Encl 1

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East Arkansas Planning & Development District

P.O. BOX 1403
1801 STADIUM BLVD.
JONESBORO, ARKANSAS 72401
AC 501/932-3957
DOLORES P. HARRELSON, EXECUTIVE DIRECTOR

10-6-81
10-7-81
10-8-81
10-8-81

October 2, 1981

Mr. James B. Hammett
Department of Energy
P. O. Box 1619
Tulsa, Oklahoma 74101

Re: Draft EIS - Jonesboro-Hergett 161 kV Transmission Line

Dear Mr. Hammett:

Utilizing policies established by the District and the State Planning and Development Clearinghouse concerning Regional Clearinghouse Notification, Review and Comment procedures, the East Arkansas Planning and Development District has reviewed the above referenced application.

The Board of Directors of the East Arkansas Planning and Development District considered the recommendations of the Staff and Technical Review Committee. The Board voted to recommend approval of the application. Comments where appropriate are attached.

PLEASE FORWARD THIS LETTER WITH ATTACHMENTS TO THE FUNDING AGENCY.

Cordially,

Susan Mattis
for: Dolores Harrelson
Executive Director

DH/sbr

cc: State Clearinghouse

RECEIVED
DISPATCHED
1981 OCT -7 AM 11:16
SOUTHWESTERN POWER ADMINISTRATION
TULSA, OKLAHOMA

Department of Energy
Draft Environmental Impact Statement
Jonesboro-Hergett 161 kV Transmission Linte

STAFF RECOMMENDATION
September 14, 1981

The East Arkansas Planning and Development District staff offers the following comments on this proposal:

Projects of this type generally have at least some adverse effects on the area immediately surrounding the right-of-way location. We consider the effects tolerable for the most part in view of the long-term benefits of adequate electric energy supply.

Area communications equipment could experience interference from the proposed high voltage transmission line; however, we trust that the U. S. Department of Energy, Southwestern Power Administration will exercise due care in design and location criteria to minimize any adverse effects.

In the interest of insuring an adequate supply of electric energy to the Jonesboro area, we recommend EAPDD Board of Directors concurrence in the Draft E.I.S. of the proposed project.

TECHNICAL REVIEW COMMITTEE
September 16, 1981

The East Arkansas Planning and Development District Technical Review Committee concurred with the staff comments and recommendation.

BOARD OF DIRECTORS
October 2, 1981

The East Arkansas Planning and Development District Board of Directors voted to concur with the staff comments.

APPENDIX I
SUMMARY OF THE PUBLIC HEARING CONCERNING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

MINUTES OF PUBLIC HEARING

CONDUCTED BY

SOUTHWESTERN POWER ADMINISTRATION

It is agreed that the minutes of the Public Hearing conducted by the Southwestern Power Administration, U. S. Department of Energy, was conducted at 9:30 A.M., on the 3rd day of September 1981, in the Round Room of the Public Library, 315 West Oak Street, Jonesboro, Craighead County, Arkansas.

* * * * * * * * * * * * * * * * * * *

Reported by Francis Ward, Jr.
Court Reporter
1010 Nesbitt Street
Jonesboro, Arkansas 72401
Telephone No. 932-2819

IN ATTENDANCE:

Charles A. Borchardt
Attorney-At-Law
Southwestern Power Administration

Anna White
Realty Officer
Southwestern Power Administration

Paul A. Dols
General Engineer
Southwestern Power Administration

G. Thomas St. Clair
Supervisor of Biology
Commonwealth Associates, Inc.

Robert J. Broad
Project Manager
Commonwealth Associates, Inc.

James N. McClanahan
Chief, Division of Power Facilities
Southwestern Power Administration

Jim Reed
City Water and Light
Jonesboro, Arkansas

Marion Ulmer
City Water and Light
Jonesboro, Arkansas

A. L. Salmons
Property Owner
Jonesboro, Arkansas

SPEAKER: CHARLES A. BORCHARDT
ATTORNEY AT LAW

Let the record reflect that this public hearing was convened at 9:30 A.M. local time, in the Round Room of the Public Library, located at 315 West Oak Street, in the City of Jonesboro, Craighead County, Arkansas.

The basic purpose of this hearing is to obtain public comments and information, in response to a draft environmental impact statement prepared by the Southwestern Power Administration, in accordance with the National Environmental Policy Act of 1969. This preliminar environmental impact statement was drafted for a proposed construction project by Southwestern Power Administration, here in Craighead County and the details of this construction project will be discussed in a moment. First, I would like to introduce personnel from Southwestern Power Administration; first of all, in attendance is James McClanahan who is the Chief of the Division of Power Facilities. Mr. McClanahan's personnel will be in charge of supervising the surveying and the construction. Next, is Mrs. Anna White, who is Realty Officer with the Southwestern Power Administration; she and her people will be in charge of appraising the right of way, as well as purchasing the easements. Also, Mr. Dols is here; Mr. Dols is the Envir-

onmental Coordinator and General Engineer, with Southwestern Power Administration. I am Charles Borchardt; I am acting Chief Counsel for Southwestern Power, and will be moderating this meeting. Also present today, are representatives from Commonwealth Associates, Incorporated, who are consultants for Southwestern Power; these are the people who did the basic groundwork and did draft the preliminary...or the draft environmental impact statement.

First of all, Mr. Thomas St. Clair, who is the Project Manager for Commonwealth and secondly, Mr. Robert Broad, who is a transmission line Engineer; these two people, along with several other Commonwealth employees helped prepare the draft environmental impact statement and this will be discussed in a little bit more detail.

Last December, we had a public meeting here, in Jonesboro and at that time, we had discussed, primarily, that there were three possible corridors we might use in building a transmission line of...for Southwestern Power Administration, that would connect the Jonesboro substation with Hergett substation; this will be...the purpose for this construction was to tie into a proposed five hundred thousand volt line that Arkansas Power and Light Company, here in Arkansas, will construct. At that time, as I said,

we only had three basic corridors; since that time, we have developed a preferred route and also three alternates and the purpose of this meeting is to get public comment, as to any information relating to the preferred route, as well as these three corridors. Could we go off the record for just a minute?

We are back on the record now, after a short recess; we have asked for comments from members of the public in attendance and Mr. A. L. Salmons, a citizen here, of Jonesboro, would like to make a comment for the record... Mr. Salmons...

MR. A. L. SALMONS:

My interest is in the reasons for not putting metal structures and putting two power lines on the same structure, to keep from occupying more land, and to, preferrably, take the power through the downtown Jonesboro area if they are the ones that wants it. The shortest route would be paralleling the Frisco railroad, but the Southwest Power already has one line and the City constructed the line and Arkansas Power and Light has a line on my property and I don't see the necessity of another line. With that being the case, my objection is to taking more property, more of my property, to construct another line paralleling the

one that's there. It is...was my understanding, in 1967, I believe it was, that they wouldn't need any more power and since then, Arkansas Power and Light has condemned right of way on my farm, hooked into the City Water and Light substation and the SPA substation, too, I suppose. Now, you've just...this proposed line, going north, from the substation...well, I don't know how far that is, but approximately three miles...turning east, and paralleling but that's not important to me. My suggestion is that you go on your original route of...of C, that goes south of Jonesboro, to be modified to go...cut off some of the distance and cut your cost, if that's the only thing you are concerned about...we have paid taxes on this property that's been taken away from us for a number of years and all we're allowed to do is to farm under it and the engineer promised me, when they put the first line in, they would put the angle point at the property line, at the field line; instead, they put it fifty feet inside of the field line, which took approximately an acre and a half of ground with the structures and guidewires, and I contend that that'll happen on this new line, however, Arkansas Power and Light did find a way to do it...when you object strong enough, they find a way to not put guidewires at angle points, and I have one of those in my fields, but if this...if there's no other objections, if

the rest of the property owners up and down that right of way don't have any objections, then I feel there's no point in me objecting to it, in their behalf. I would like to be notified, in the very near future, as to what property to be taken in this additional right of way, if there is an additional right of way. My understanding was that there wouldn't be any more property taken and the part that's been unused since 1967, reverted back to me after five years, if it wasn't used. That line, at that time, was to go to Mississippi County, I believe... Osceola or Blytheville or someplace, but the farmers over there won out; I have no earthly idea how...but the line was never constructed, but there's approximately... I also would like to point out that not any pieces of property, between right of ways, be left in this construction, because you've done that in the past and you got hemmed-in property; I've got 4.3 acres in between two right of ways, and it's nothing on one end and whatever on the north end, and I don't feel that that's proper and you...the people taking these right of ways don't seem to consider that there's nothing you can do with it, except pay taxes on it the rest of your life. We have been paying taxes on that land since 1879, I believe and we've just...we'll never...and we own less land now, than we did then, because of right of ways. That's all I have to say. I

thank you sir.

MR. BORCHARDT:

Thank you very much, Mr. Salmons; your comments have been recorded and a copy of them will be sent to Southwestern Power Administration and to Commonwealth, who will be preparing a final environmental impact statement; if you have any additional comments, if you can think of any additional comments you'd like to make, you can submit those, in writing, directly to Southwestern Power Administration; the address is: Post Office Box 1619, Tulsa, Oklahoma, Zip Code 74101, and just make them to the attention of Mr. Paul Dols, D-o-l-s, and we must receive those comments, though, by the close of business on Monday, September 28th of this year...and I do want to emphasize to you, Mr. Salmons, we appreciate you coming out and that your comments will be given full consideration in preparing the final environmental impact statement.

If there are no further comments at this time, this hearing will be closed, as of 10:05 A.M., local time.

* * * * * * * * * * * * * * * * * * *

REPORTER'S CERTIFICATE

STATE OF ARKANSAS)
: SS.
COUNTY OF CRAIGHEAD)

I, Francis Ward, Jr., Court Reporter and a Notary Public within and for the County and State aforesaid, hereby certify that I reported the foregoing minutes of said public hearing, and that minutes were taken and correctly transcribed and reduced to writing and that said minutes are a true record of statements made at said public hearing.

Given under my hand and official seal this the 3rd day of Sept., 1981.

Francis Ward
Court Reporter

My Commission Expires:
February 2, 1985.

October 9, 1981

Mr. A. L. Salmons
1616 Culberhouse
Jonesboro, Arkansas 72401

Dear Mr. Salmons:

Thank you for taking the time to present your comments at the September 3, 1981 public hearing relative to Southwestern Power Administration's (Southwestern's) preferred Jonesboro-Hergett transmission line (line No. 3027). In regard to your objection of Southwestern taking more of your property, please be assured this will not happen. We intend to use the 150-foot wide (45.72 meters) right-of-way we purchased under the perpetual easement noted as Tract No. 3010-1 in 1968 and collocate the preferred Jonesboro-Hergett line (line No. 3027) as it traverses your property. As shown in the attached sketch, this easement was originally intended for construction of two transmission lines.

We appreciate your interest in this matter, and should you have any further questions or desire further information, please contact me on (918) 581-7527 or direct your correspondence to me at the above address.

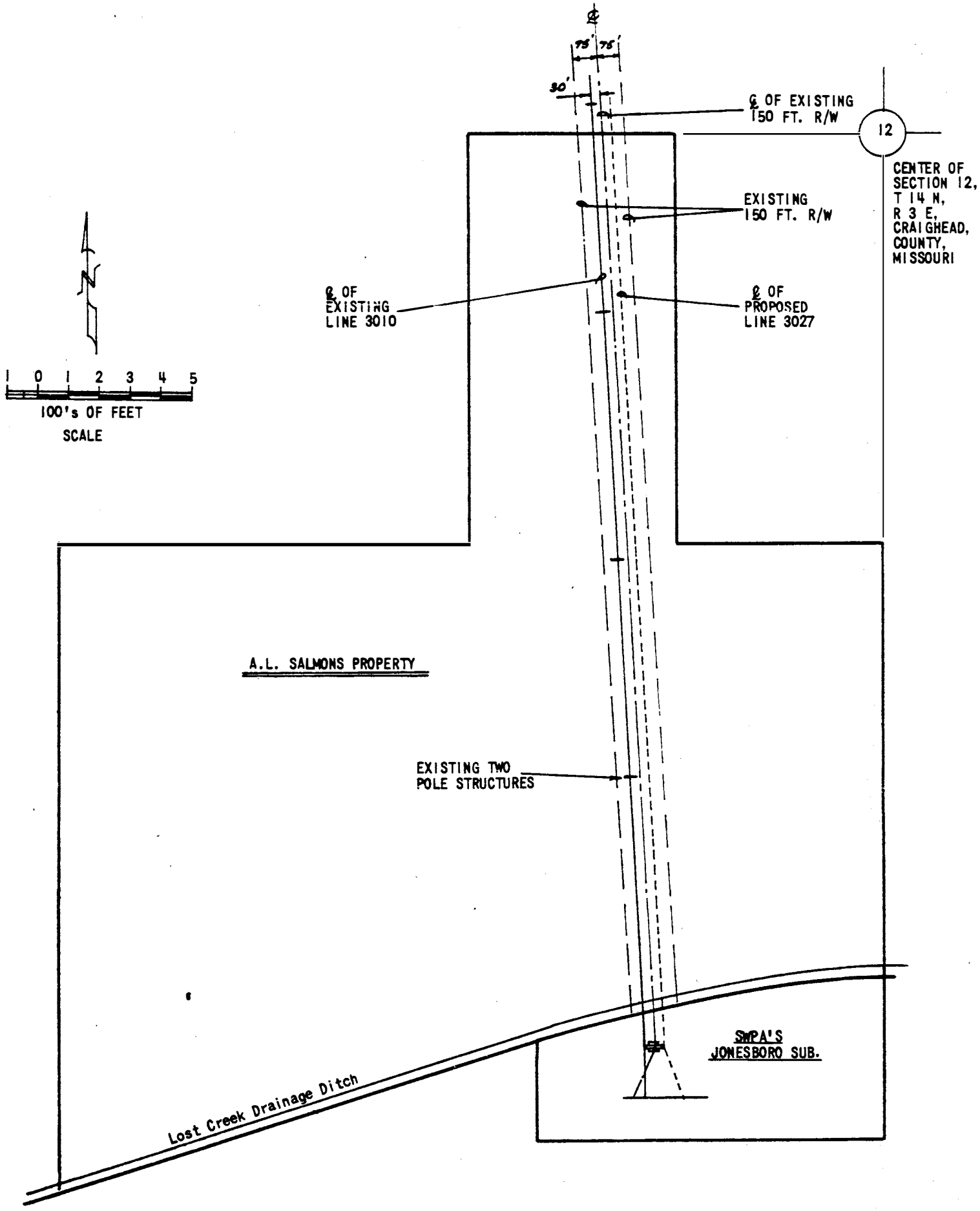
Sincerely,

PAUL A. DOLS

Paul A. Dols
General Engineer

Enclosure

LOCATION OF PROPOSED LINE 3027



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