TVA/RG/EQS-93/1

TENNESSEE VALLEY AUTHORITY
EAGLE BEND 161-kV DELIVERY POINT
ENVIRONMENTAL ASSESSMENT

February 5, 1993

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ENVIRONMENTAL ASSESSMENT

CONTENTS

DISCLAIMER

BACKGROUND AND NEED

Eagle Bend is an area located in a bend of the Clinch River about one mile southeast of Clinton, Tennessee, in Anderson County. This area, including an industrial park, is supplied electric power by the Clinton Utilities Board (UB) through its 69-kV system, which is in turn supplied by TVA over a 69-kV transmission line from Norris Hydro Plant.

Studies of the power supply in the area indicate that there will likely be significant load growth both in the Clinton area in general and the industrial park in particular. Studies further show that if this new load is supplied at 69-kV, the TVA transformer at Norris Hydro which supplies this load will be overloaded by the summer of 1993 and no feasible alternate source which would maintain the quality and reliability of the power delivered to the Clinton system exists to accept this load. Clinton UB also needs to transfer load from its Clinton substation in the same time period to prevent overloading.

Additional studies and consultation between TVA and Clinton UB have indicated that the best solution to this problem is to supply this load at 161-kV at a new delivery point for Clinton UB. This would require the construction of a new 161/13-kV substation by Clinton UB and the construction by TVA of a new 161-kV transmission line to connect this substation to the existing TVA 161-kV transmission system.

SYSTEM ALTERNATIVES

In addition to the proposed alternative, one other course of action was considered as was the alternative of taking no action.

Proposed (Preferred) Alternative

This plan would call for the construction of a new 161-kV substation by Clinton UB in the Eagle Bend area near the existing 69-kV system to allow the future flexibility of installing 161- to 69-kV facilities. TVA's portion of the project would be to construct a 161-kV transmission line connecting its Norris Hydro-North Knoxville transmission line to this new substation. The new transmission line would be about 5 miles long. This plan would meet the needs discussed above.

Alternative Action

An alternative course of action was considered which involved the construction of a new 69-kV substation by Clinton UB at Eagle Bend which would be connected to the existing 69-kV system. This would necessitate TVA increasing capacity at the Norris Hydro Plant switchyard to prevent overstressing and damaging the station. In the future, as load growth continues both in Clinton and in the other areas served by the existing 69-kV transmission system, it is expected that it would be necessary to carry out the steps in the preferred plan to reduce system losses, maintain adequate system voltage levels, and provide the necessary capacity on the 69-kV system.

This alternative was approximately $5,000,000 more expensive than the preferred alternative. Also, it did not offer any environmental advantage since it simply delayed the impacts of the preferred alternative rather than avoiding them. Based on these facts, this alternative was rejected.

No Action Alternative

The alternative of taking no action would result in the unacceptable overloading of equipment in the Norris Hydro switchyard and would prevent Clinton UB from adequately serving the increasing electric load in the Eagle Bend area. Therefore, this alternative was rejected.

PROPOSED ACTION

TVA is proposing to construct a 161-kV transmission line approximately 5 miles in length using single steel poles on a 100-foot-wide right-of-way which will be acquired by means of an easement. The proposed route is shown in Figure 5. The scheduled date for the project to be in service is November 1, 1993.

Right-of-way clearing, transmission line construction, and right-of-way restoration will be carried out in accordance with TVA's Guide for Environmental Protection and Best Management Practices for Transmission Construction and Maintenance Activities. This guide also conforms to the State of Tennessee's Best Management Practices guidelines for agricultural, silvicultural, and wetland zones.

ROUTING PROCESS

The following describes TVA's process which was used to select the route for the proposed transmission line. It will describe first a general overview of the routing process followed by a more detailed description.

Line Location Method

TVA's line location process began with the location engineer consulting topographic maps, aerial photographs, and other information which was available in the office. A general study area was developed and then field reconnaissance began. Based on information obtained in the field, this study area was revised as necessary and three potential transmission line corridors were developed. Potential line corridors were then coordinated within TVA and with outside organizations. Those consulted had expertise in various areas including wildlife, aquatic resources, cultural resources, and land use. The corridors were the basis for contact with the affected landowners. The landowners input was then included, and a proposed route was developed.

Factors which were considered in route development include unobtrusive road crossings, current and expected future land use, reasonable avoidance of existing occupied structures, and the avoidance wherever practical of any significant features, either natural or man-made, that the transmission line would significantly impact. Final coordination with the affected landowners was carried out, and a final route was ready to be surveyed. Figure 1 shows the study area which was developed for this project, and Figures 2, 3, and 4 show the corridors that were developed; Figure 5 shows the line route which is now proposed.

Study Area Identification

At the outset of this siting study, the western boundary of the study area was established by the proposed site for Clinton UB's substation; the eastern

boundary was established by the Norris-North Knoxville transmission line, the line to which the new line will be connected. The north and south boundaries were selected to be approximately 10,000 feet north and 10,000 feet south of a straight line connecting the proposed substation site and the most likely point of connection to the Norris-North Knoxville transmission line.

Corridor Selection

Once the study area was defined, identification and analysis of alternative corridors began. For this project, three alternate corridors, each 2000 feet in width, were chosen and analyzed.

Corridor A (Figure 2) represented a base line corridor in that it was developed around a straight-line route from the existing transmission line to the substation site. No other factors besides minimization of line length were considered in the development of this corridor.

Corridor B (Figure 3) was located south of corridor A in an area which would allow for better access for line construction and maintenance. This corridor also allowed development of a route which avoided existing homes.

Corridor C (Figure 4) was an area north of corridor A. This corridor avoided homes as did corridor B but resulted in a transmission line which was less visible than one in corridor B. Construction and maintenance access to corridor C would be more difficult than that for corridor B.

A corridor north of corridor C was deemed to be impractical because of the limited area where a crossing of Melton Hill Lake was possible. Development in the Eagle Bend Industrial Park is such that transmission line access to the proposed substation site is limited to the area where corridors A and B cross the lake.

As stated previously, the only criterion in the development of corridor A was minimization of length, and it thus served as a basis of comparison for other alternatives. Although corridor A would require less clearing, it was in close proximity to a large number of homes. Because of this fact and its unacceptable effects on other land use, particularly in the industrial park, corridor A was rejected from further study.

A comparison of corridor B and corridor C showed that B would likely result in a line route which was about 1500 feet shorter and would require about 4.0 acres less of new right-of-way. A route using corridor B would also require about 20 percent less clearing and thus would have less impact on forest resources in the area. However, use of a route within corridor B would result in the line being near 20 more houses than one within C and would place the line within 300 feet of five homes as opposed to none if C were used. In addition, a line within C would cross 4 less roads and, in general, be much less visible than a route utilizing corridor B. The main attributes of all three corridors are compared in Table 1.

No substantial differences in environmental impact potential between the two corridors existed other than those discussed above. Based on an evaluation of these facts, the decision was made to select corridor C as TVA's preferred corridor.

Route Selection

After corridor C was selected as the preferred corridor, a public open house was held by TVA in Clinton, Tennessee, on June 25, 1992. By letter, TVA invited all landowners whose property was crossed by any portion of corridor C to attend the meeting. The landowners provided information about their plans for their property and had the opportunity to ask questions concerning the project. After this open house, TVA began to identify a proposed route within corridor C.

An acceptable tap point in the Norris-North Knoxville 161-kV transmission line was identified approximately 1600 feet north of East Wolf Valley Road in an open pasture. This point was chosen because it was near a paved road which would allow operational access, but the tap point's location would not require that the new transmission line cross the road.

With the establishment of both ends of the line, the tap point and the substation site, a line route was developed. That route is shown in Figure 5.

The first leg of the new line leaves the tap point going due west for about 1500 feet and then turns to the southwest for about 3.7 miles. This 3.7-mile part of the route follows the base of the steepest slope of Pine Ridge and of Chestnut Ridge. This section is about 2000 feet north of East Wolf Valley Road with most of the development associated with the road being located south of the proposed route.

Near the crossing of Dismal Road, an angle was needed to avoid a proposed house site that was identified as a result of the open house meeting. The line route turns to the north on the west side of Dismal Road and crosses the Clinch River at river mile 63.6. The line then parallels the north river bank toward the west for about 0.7 mile.

The proposed route then turns to the north and runs parallel to and 100 feet east of the existing 69-kV TVA transmission line until it reaches the Eagle Bend substation site.

AFFECTED ENVIRONMENT

TVA conducted an assessment of the area crossed by the proposed transmission line route. The area crossed by the proposed route from the tap point to the west for approximately 21,500 feet is primarily upland hardwood forest. Because of its size and relatively unfragmented condition, this large area of forest is considered an ecologically sensitive habitat within the local area. Within the eastern Tennessee Valley region, such forested ridges provide the bulk of the remaining, unfragmented forested habitat. Such areas provide important habitat for many types of forest interior and neotropical migrant birds, including species that are experiencing significant decline.

A narrow band of wetlands occurs adjacent to the proposed route within a natural drainage at Dismal Gap. These wetlands and riparian habitats are associated with Dismal Creek.

Dismal Creek at the proposed crossing point will be spanned. Other areas of forested wetland occur upstream of the proposed crossing point. However, these wetlands have been adversely impacted by past land clearing. In the general area of the crossing point, the creek and the associated riparian and

wetland habitats are of lesser quality than those located downstream toward the confluence of Dismal Creek and Melton Hill Lake.

PROJECT ENVIRONMENTAL IMPACTS

Transmission Line Clearing and Construction

The impacts associated with this project are primarily associated with the clearing of the right-of-way and the construction of the transmission line. Some soil erosion will result from the removal of vegetation and line construction activities. Erosion will be minimized by following an erosion control plan prepared prior to clearing which will be based on the clearing and construction practices as outlined in TVA's Guide for Environmental Protection and Best Management Practices for Transmission Construction and Maintenance Activities as listed in Commitment 1 in Appendix II.

In areas of especially high potential for erosion, such as steep slopes, TVA will apply special clearing, construction, and restoration practices as necessary. If any cultivated areas are disturbed, they will be returned to a tillable condition by TVA. In noncultivated areas, the ground will be contoured as appropriate, seeded, and mulched where needed to reestablish ground cover. Water breaks, silt fencing, and other methods will be used to limit erosion on slopes. A Notice of Intent will be filed with the state of Tennessee pursuant to the state's procedures for control of stormwater runoff, as discussed under "Permits" in this assessment.

Impacts to wooded areas will be within the right-of-way with the exception of removal of danger trees located outside of the right-of-way. Danger trees are trees that exist near the right-of-way which are tall enough that if they were to fall they would pass within the minimum safety distance of the conductors. Much of the route traverses wooded land. About 50 acres is expected to be cleared for the transmission line right-of-way. Because of the relatively small amount of timber to be removed, it is not expected that clearing in this area for transmission line construction will have a significant long-term impact on forest resources of the project area. Cut trees and brush from right-of-way clearing will be burned or removed from the right-of-way, and the clearing operation will utilize the appropriate best management practices (BMP) contained in the TVA guide referenced previously.

TVA's review of this project, as well as comments received from the state of Tennessee, identified forest fragmentation as an issue of concern for this project. In response to this concern, a concerted effort has been made to route this line as near as practical to existing edges of the wooded areas. It may not be possible to avoid all forest fragmentation in some areas because of terrain constraints or land use issues. For example in the area between the Dismal Road crossing and the lake crossing, a large, unfragmented woodland exists. The original route projection crossed through this forested area. Subsequent to the discovery of the concerns regarding fragmentation, a route alteration and a new river crossing point were identified which minimized the line length through this area and, in TVA's judgement, reduces the impact of the project to forest resources. This is the routing now proposed and shown in Figure 5. The line route on the north side of the river will be located so as to minimize clearing of riparian shoreline vegetation. Conversations with a representative of the State of Tennessee Department of Environment and Conservation indicated that this approach to line routing should substantially minimize the impact to forest and wildlife resources.

o Wetlands

The line route, as currently proposed, is near only one identified wetland along Dismal Creek. Because the terrain in the vicinity of this wetland results in the line crossing from bluff to bluff above the elevation of wetland, no clearing or construction activity will occur in the wetland. The use of BMP's during clearing and construction should prevent any indirect impacts to this wetland.

o Floodplains

Portions of the route cross the floodplain of Dismal Creek and the Clinch River (Melton Hill Lake). The construction and operation of the transmission line will not alter the storage capacity of the floodplain nor will the transmission line impede waterflow in any floodway.

o Cultural Resources

The proposed route has been reviewed by TVA Cultural Resource staff as well as the Tennessee Historical Commission. The Tennessee Historical Commission has recommended that a cultural resources survey be conducted before construction of the transmission line, and TVA concurs in this recommendation. TVA will contract with qualified archaeologists who will survey the area. If significant sites are identified by the survey, a mitigation plan will be developed. Mitigation could include avoidance, if possible, spanning the sensitive area or salvage. Site-specific mitigative measures would be developed in conjunction with the Tennessee State Historic Preservation Office. These measures should prevent significant impacts to cultural resources. Any artifacts encountered during clearing or construction would be protected as decribed in Commitment 4 listed in Appendix II.

o Forestry and Wildlife

Right-of-way clearing in forested areas will result in the loss of some vegetation. This vegetation loss will cause a corresponding change of wildlife habitat type. These habitat changes are not expected to result in population changes that are detrimental to the area. In addition, the removal of 50 acres of timber over the proposed 5.1 mile transmission line right-of-way will not significantly impact the approximately 124,000 acres of forest resources in Anderson County.

Upland wildlife habitats within the proposed project area generally consist of mixed hardwood forests. The major issue of concern with respect to wildlife is that of fragmentation of the forest habitat with the resultant impact on certain forest species, particularly neotropical bird species. The route has been selected so as to minimize the fragmentation of the forested areas.

The clearing associated with the project in upland areas will alter the habitat type, but over a relatively small area. Impacts to these habitats and resident and migrant wildlife resulting from vegetation clearing and line construction are expected to be minimal, regionally insignificant, and potentially reversible should the line be deenergized and removed.

o Threatened and Endangered Species

The transmission line will not affect any known populations of state or federally listed endangered or threatened plant or animal species.

o Other

No significant impacts are expected to result from the relatively short-term activities of construction such as noise, solid waste, dust, etc. The procedures which address these impacts are contained in TVA's Right-Of-Way Clearing Specifications and Environmental Quality Protection Specifications for Transmission Line Construction.

Temporary Access Roads

Construction of the proposed line may require that some temporary access roads be built. These roads could be necessary to allow construction equipment to reach tower locations which are not accessible by moving along the right-of-way. The roads would utilize existing woods roads or field roads as much as possible. The roads would be about 15 to 20 feet wide, depending on terrain.

The roads would be cleared of trees and graded sufficiently to allow free movement of equipment.

Trees removed from the access roads would be handled in the same manner as those removed in right-of-way clearing. This tree removal will be limited to the immediate access road corridors and is not expected to result in additional forest fragmentation.

Potential erosion caused by grading and other soil disturbance would be controlled by use of silt screens, seeding, mulching, or other best management practices.

The roads would be restored to original contour and seeded with materials similar to that for transmission line rights-of-way. If the involved property owners so request, some of the roads could be left in place. Seeding or other appropriate antierosion steps would be taken on these roads.

All proposed access roads not in the transmission line right-of-way would have an archaeological survey conducted prior to road construction. Any significant archaeological site would be avoided by realignment of the road.

The areas involved with the temporary access roads would be expected to be within the area reviewed for potential impact of the transmission line. No significant problems were identified during that review. Based on this fact, the measures to reduce impacts contained in TVA's BMP guide, and the relatively small amount of land which could be involved, no significant environmental impacts would be expected from the construction of the temporary access roads. When the exact location of any roads are determined, these locations will be reviewed to determine if any mitigation or relocation is necessary.

POST-CONSTRUCTION

Right-of-Way Maintenance

Once the transmission line becomes operational, some type of control of vegetation on the transmission line right-of-way will be necessary to ensure safe operation. This control will occur periodically and will be by means of mechanical cutting or mowing or by use of chemical herbicides. The method selected will be determined by factors including terrain, right-of-way accessibility, type of vegetation, underlying land use, and economics.

If chemical control is used, only EPA-registered and labeled nonrestrictive herbicides and licensed applicators would be used for vegetation control, and any use would comply with EPA label restrictions. Herbicides will be used for right-of-way maintenance in areas which cannot be mechanically maintained because of terrain or slope on the right-of-way itself, because the terrain renders the right-of-way inaccessible, or when off-right-of-way access is denied by landowners. The herbicides which would be used penetrate the vegetation or are retained in the soil and thus do not readily migrate from the original application point. TVA's procedures stipulate that no herbicides except those labeled for water use will be placed within 200 feet of water bodies by aerial application or within 50 feet when applied on the ground.

Danger trees will be selectively removed. Danger trees are trees of such a height which, should they fall, will pass within 5 feet of a 161-kV power conductor or guy wire.

Visual Resources

The first portion of the route shown in Figure 5 is located at the toe of the steepest slope of Pine Ridge and therefore is not expected to be visible from the north. Most views of the line from the vicinity of East Wolf Valley Road will be blocked by intervening trees. The crossing of Dismal Road will be high above the road because of the terrain features and will not be highly visible. The crossing of Melton Hill Lake will be adjacent to an existing transmission line crossing and should not add significantly to the visual disruption in this area.

Prime Farmland

Impacts on any prime farmland will be insignificant since agricultural use of the rights-of-way is not precluded and the amount of land occupied by structures is not significant.

Recreation Resources

TVA does not expect any potential adverse impacts that would result from the proposed transmission line.

Electric and Magnetic Fields (EMF)

TVA recognizes that there is public concern about whether there are adverse health effects caused by the electromagnetic fields (EMF) that result from the generation, transmission, and distribution of electricity. Research is continuing which is devoted to determining if there are effects and what impact any effects may have on health. TVA is aware of and ensures that it

stays aware of the published research and study results; it directly supports some of the research and study efforts. Research quality has improved drastically, but available results continue to be contradictory from study to study. Exactly opposite results are being obtained from the largest and best efforts available when the same health effect end point is examined, using the same methods. Therefore, science still does not support any cause and effect conclusions between EMF and adverse health effects. Of the several studies completed to date, a few have been interpreted by some as suggesting a weak statistical association between magnetic fields and some forms of rare cancer. The conflicting results of the studies do not support a causal relationship between such fields and human cancer, nor is there a pattern suggesting a relationship to other long-term health effects.

REVIEW AND COORDINATION

The following state and regional agencies have been contacted concerning this project by TVA, in addition to internal reviews by a network of designated environmental specialists. This proposal was reviewed for consistency or compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), the Farmland Protection Policy Act, the National Historic Preservation Act, and the Endangered Species Act, and was reviewed in accordance with Executive Order 12372. It is consistent and in compliance with each.

Regional Planning Agencies
- East Tennessee Development District

State of Tennessee
- Department of Environment and Conservation
- Department of Transportation
- Department of Economic and Community Development
- Wildlife Resources Agency
- State Planning Office
- Historical Commission

Any correspondence received related to this coordination is attached as Appendix I. The coordination process identified the same concern regarding forest fragmentation which was identified by TVA. No other adverse effects which cannot be avoided or could not be resolved were identified.

This project was presented to affected landowners and other interested parties at a meeting on June 25, 1992, in Clinton, Tennessee, as discussed under "Line Location Method and Route Selection." The main issued raised was line location. Other questions concerned EMF, right-of-way acquisition practices, and construction practices. All issues that were raised are addressed by this assessment.

PERMITS

Based on laws and regulations currently in effect, it is expected that TVA will be required to submit a Notice of Intent for coverage under the state of Tennessee's general permit for control of stormwater runoff during construction.

It may be necessary for TVA's clearing contractor to burn some cleared material. The contractor will be required to obtain the applicable permits if burning is done.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The materials used for construction of this transmission line are obviously committed for the life of the line. Some materials, such as ceramic insulators, may be irrevocably committed; but the metal used in conductors and supporting steel structures can be recycled.

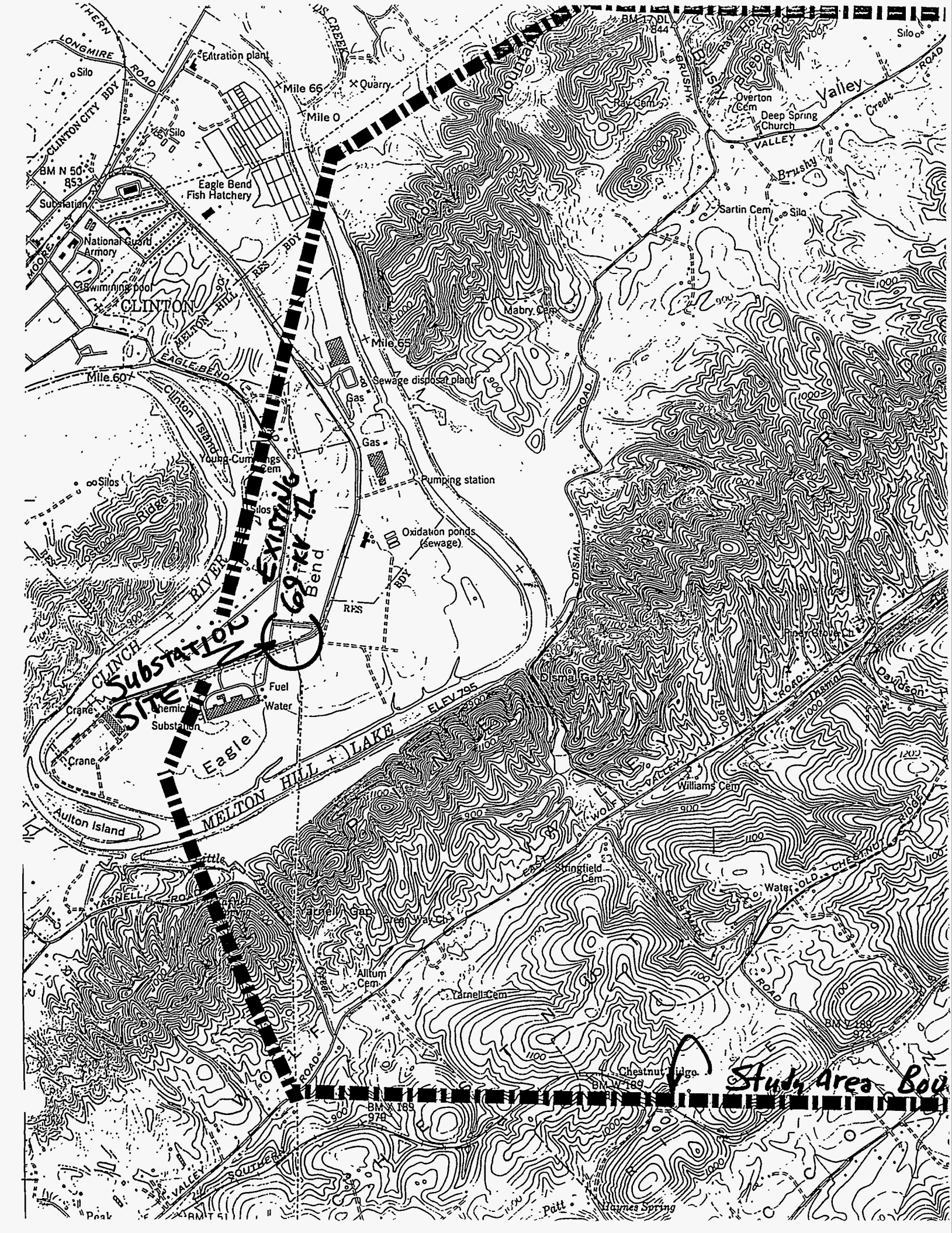
The right-of-way used for the transmission line is not irreversibly committed and could be returned to other uses upon retirement of the line. The project will allow agricultural use of the right-of-way with any result being that the only lost agricultural product is that which could have been produced on the land directly occupied by transmission line structures during project life. Forest products and related wildlife, which might have grown on the presently forested portions of the right-of-way, will be lost for the life of the project. Neither the lost forest or any agricultural production is expected to be locally or regionally significant.

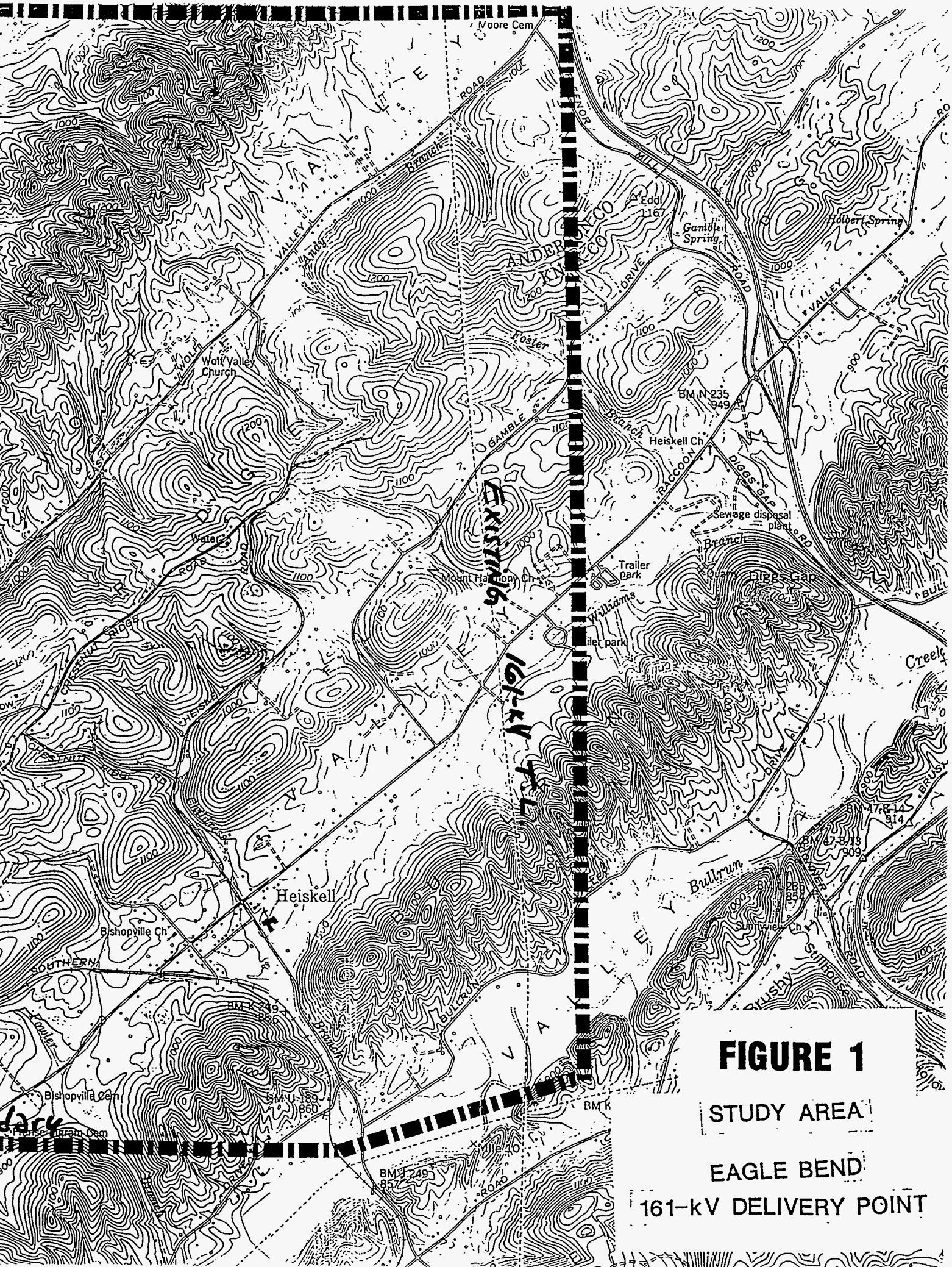
CONCLUSION

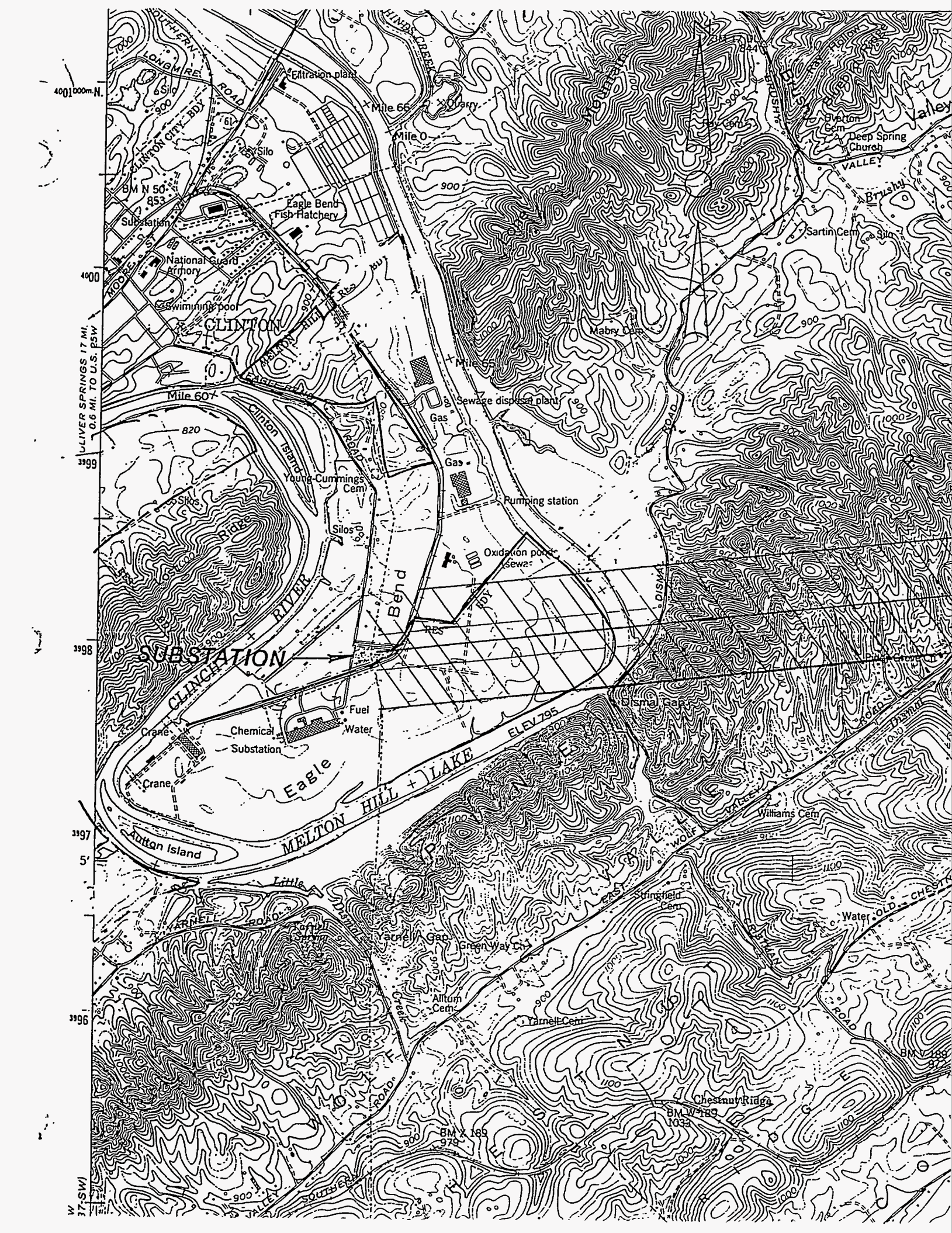
Based on this evaluation, it has been determined that this project will allow TVA to meet the need to continue to provide adequate and reliable electric power to the Eagle Bend area of Anderson County while providing the best balance of environmental, economic, and engineering considerations; any impacts to the environment are not significant in nature. Commitments associated with this proposal are listed in Appendix II.

TABLE 1
CORRIDOR COMPARISON

		Alternate A (Straight Line)	Alternate B	Alternate C
1.	Probable Line Length	4.0 miles	4.8 miles	5.1 miles
2.	Clearing Required	29.8 acres	39.5 acres	50.0 acres
3.	No. Roads Crossed	6	5	1
4.	No. Railroads Crossed	0	2	0
5.	No. Houses Within 1,000 feet of Centerline	46	24	4
6.	No. Houses within 300 feet of Centerline	18	5	0
7.	No. Churches Within 1,000 feet of Centerline	1	1	0
8.	No. Schools Within 1,000 feet of Centerline	0	0	0
9.	No. Property Tracks Crossed	31	36	40
10.	No. Angles in Route	0	6	6
11.	Right-of-way Needed	48.2 acres	58.8 acres	62.4 acres
12.	No. High Visibility Areas Crossed	5	6	1


Existing 69 kv T.L.
Substation Site
Eagle Bend
Fish Hatchery
Filtration plant
Mile 66
Quarry
Mile 0
Silo
CLINTON CITY BDY
LONGMIRE ROAD
BM N 50
853
Substation
National Guard Armory
Swimming pool
CLINTON
MELTON HILL
EAGLE BEND
Mile 60
Clinton Island
Young-Cummings Cem
Silos
Ridge
RIVER
CLINCH
Crane
Fuel
Water
Chemical
Substation
Eagle
Crane
Aulton Island
MELTON HILL LAKE
ELEV 795
Cattle
YARNELL ROAD
Yarnell Gap
Alltum Cem
Yarnell Cem
Creek
Mabry Cem
Mile 65
Sewage disposal plant
Gas
Gas
Pumping station
Oxidation ponds (Sewage)
RES
BDY
DISMAL
Mountain
BM 1701
844
BRUSHY
Ray Cem
Overton Cem
Deep Spring Church
Valley
Creek
VALLEY
Brushy
Sartin Cem
Silo
Mabry
Williams Cem
Springfield Cem
Water
OLD CHESTNUT RIDGE ROAD
Chestnut Ridge
BM W 189
BM X 189
979
Studs Area Box
Haynes Spring
Patt
SOUTHERN
Peak
BM T 51


Moore Cem
Eddl
1167
Gamble Spring
Holbert Spring
Wolf Valley Church
Foster
BM N 235
949
Heiskell Ch
Sewage disposal plant
Trailer Park
Mount Harmony Ch
Quarry
Diggs Gap
Williams
Heiskell
Bishopville Ch
Bishopville Cem
Sunnyview Ch
BM K 249
886
BM U 189
850
BM K 249
857
BM K
Mile 40
BM 47-B-14
914
BM 47-B-13
909
BM K 268
854
Existing 161-kV Line
FIGURE 1
STUDY AREA
EAGLE BEND
161-kV DELIVERY POINT


4001000m N.
SOUTHERN RR
LONG MR
ROAD
Filtration plant
Mile 66
Quarry
Mile 0
HINDS CREEK
Silo
CLINTON CITY BDY
BM N 50
853
Substation
Eagle Bend
Fish Hatchery
MOORE ST
National Guard
Armory
Swimming pool
CLINTON
MELTON HILL RD
Mile 65
Sewage disposal plant
Gas
Gas
Pumping station
Oxidation pond
Sewage
Mile 60
Eagle Bend
Clinton Island
ROAD
Young-Cummings
Cem
Silos
Silos
Ridge
RIVER
Bend
SUBSTATION
CLINCH
Fuel
Water
Crane
Chemical
Substation
Crane
Eagle
MELTON HILL LAKE
ELEV 795
Dutton Island
Little
YARNELL ROAD
Yarnell Gap
Green Way Ch
Allium
Cem
Creek
Yarnell Cem
Mabry Cem
Sartin Cem
Silo
Dutton
Cem
Deep Spring
Church
VALLEY
Brushy
Valley
Mountain
Ridge
Dismal Gap
Dismal
Ridge
Williams Cem
WOLF
VALLEY
Stringfield
Cem
Water
OLD CHESTN
CRATTIAN
ROAD
Chestnut Ridge
BM W 189
1033
BM X 189
979
SOUTHERN
VALLEY
ROAD
ULIVER SPRINGS 17 MI.
0.6 MI. TO U.S. 25W
3999
3998
3997
3996
5'
37-SW

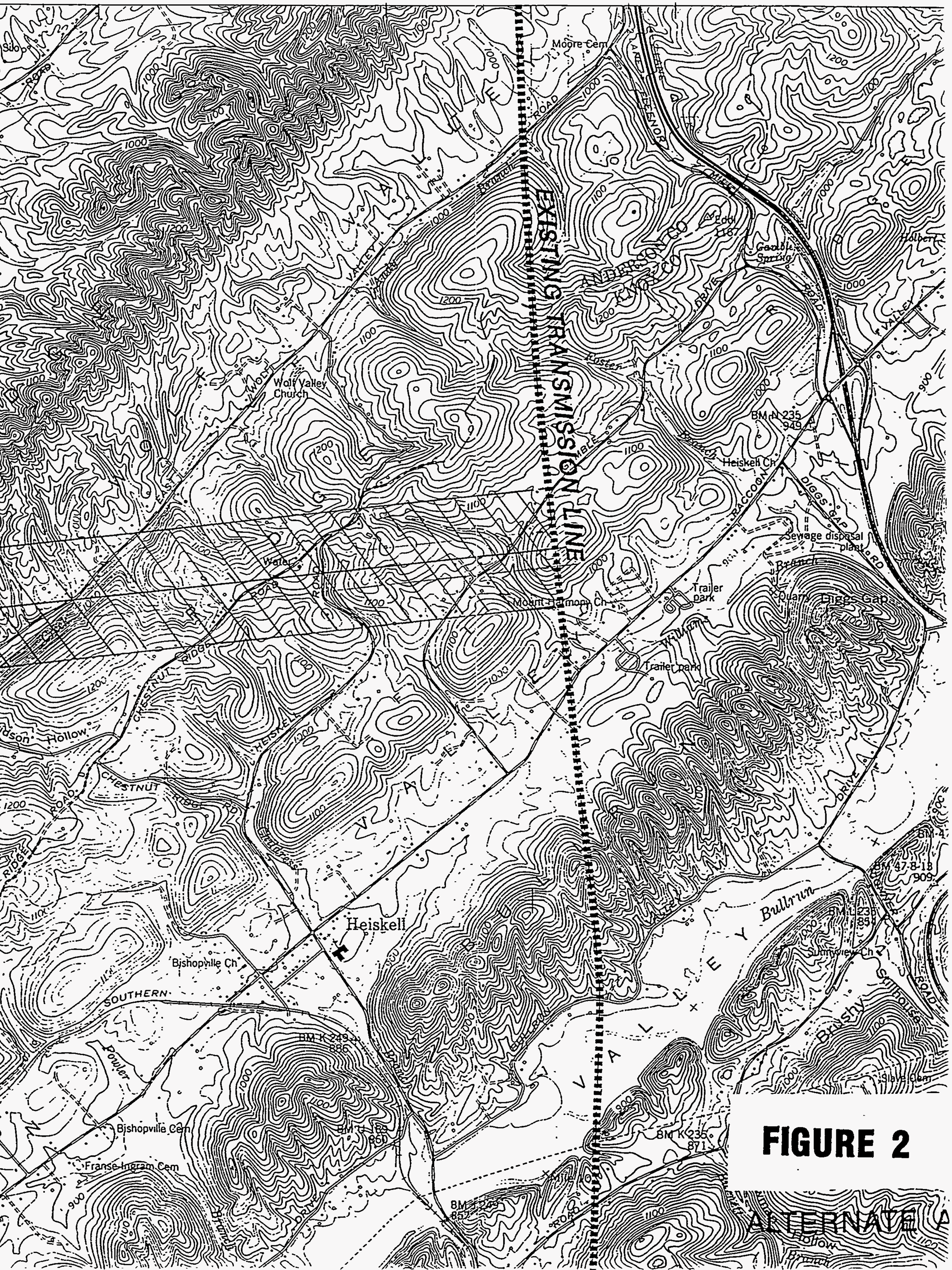
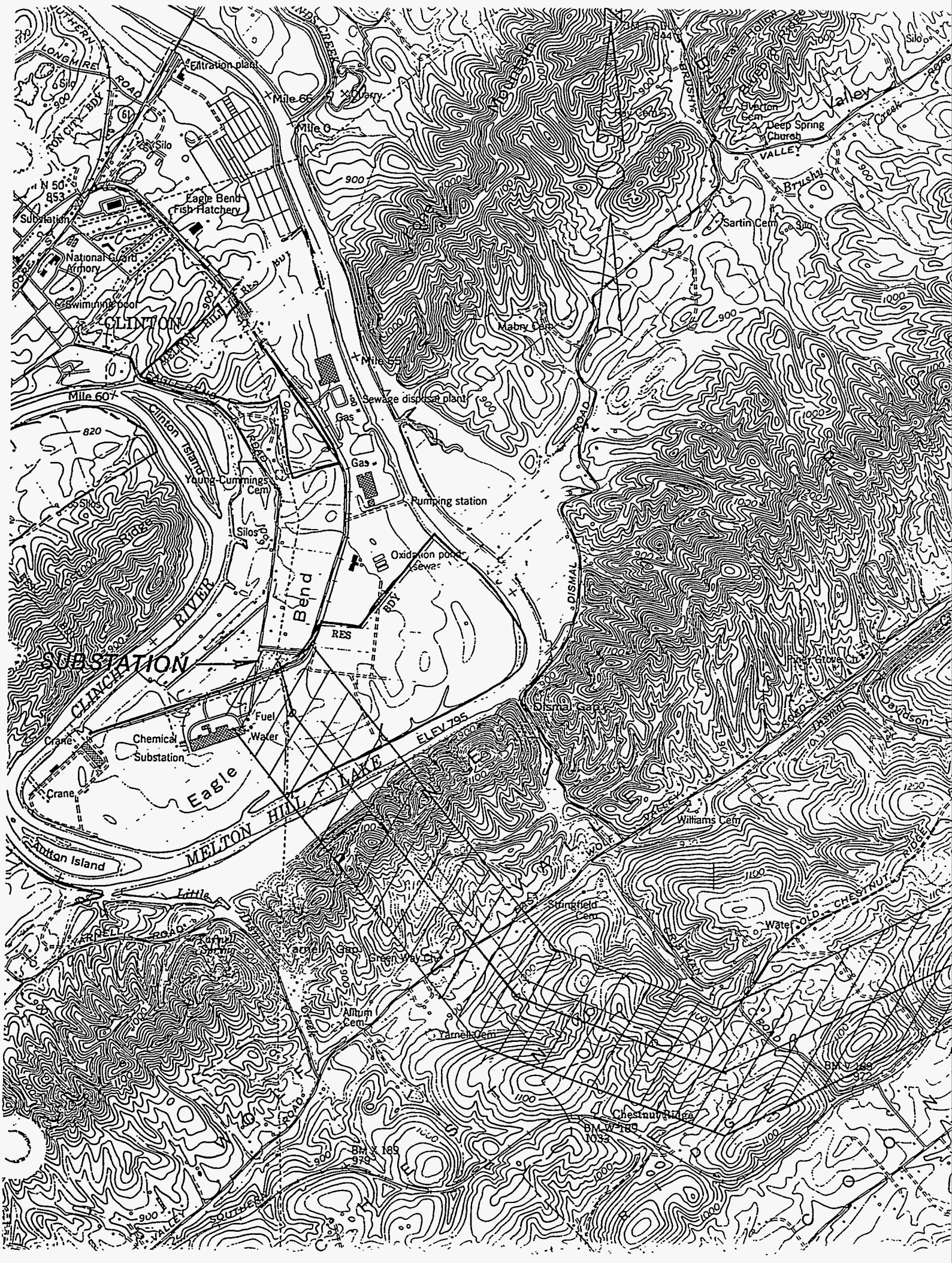
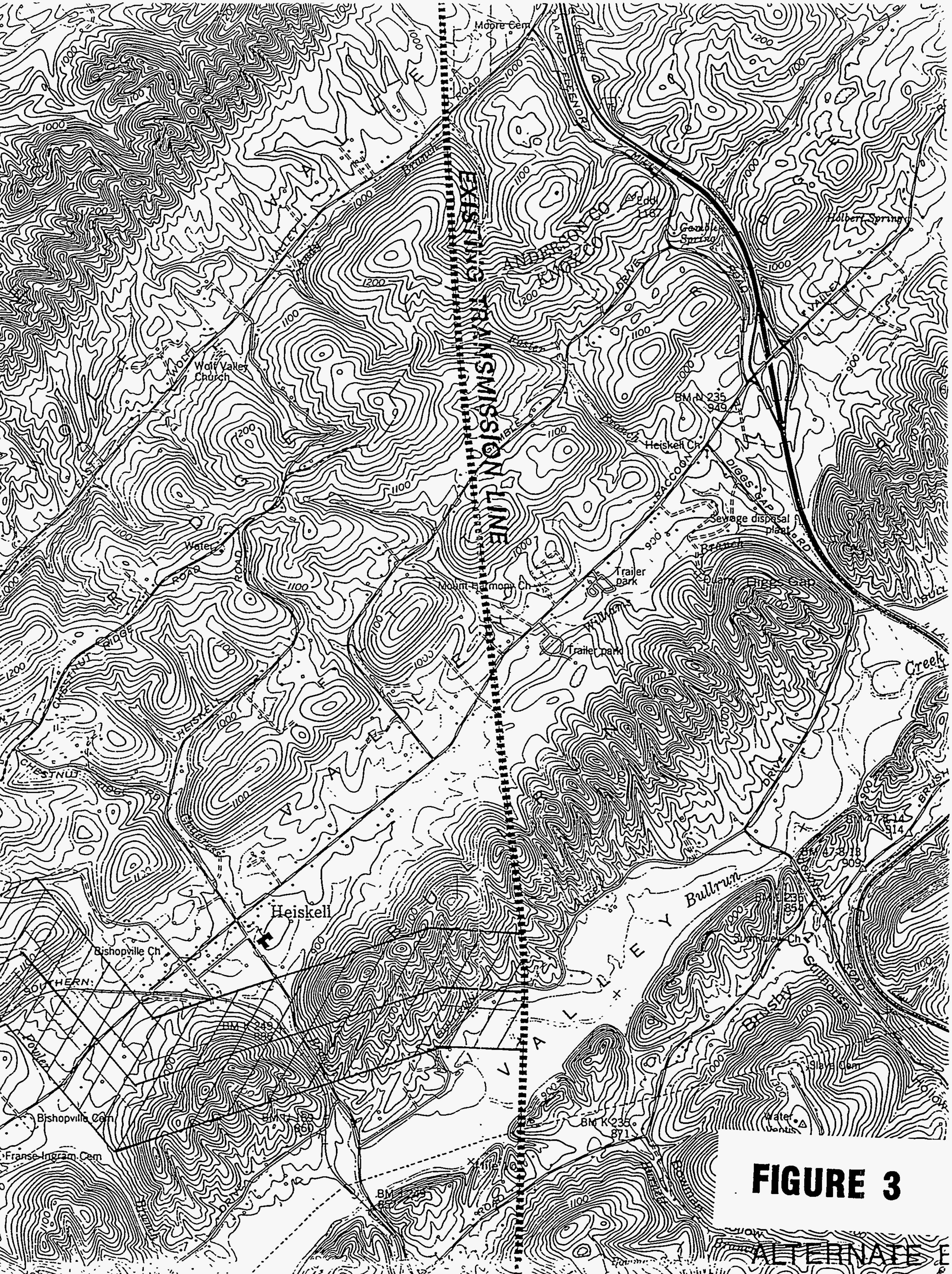

EXISTING TRANSMISSION LINE
Moore Cem
Wolf Valley Church
Mount Harmony Ch
Trailer park
Trailer park
Heiskell Ch
Sewage disposal plant
Quarry
Diggs Gap
Heiskell
Bishopville Ch
Bishopville Cem
Franse-Ingram Cem
Sunnyview Ch
Bullrun
ANDERSON CO
KNOX CO
CHESTNUT RIDGE
SOUTHERN
Hollow
Branch
Spring
Water
ALTERNATE A

FIGURE 2


Filtration plant
Mile 66
Cherry
Mile 0
Eagle Bend Fish Hatchery
Substation
National Guard Armory
Swimming pool
CLINTON
Melton Hill Res
Mile 65
Mile 60
Clinton Island
Young-Cummings Cem
Sewage disposal plant
Gas
Gas
Pumping station
Oxidation ponds
Sewage
Silos
Silos
Bend
RES
SUBSTATION
CLINCH RIVER
Fuel
Water
Chemical
Substation
Crane
Crane
Eagle
MELTON HILL LAKE
Melton Island
Little
Yarnell Gap
Green Way Chr
Allum Cem
Yarnell Cem
Dismal Gap
ELEV 795
Pine Grove Chr
Williams Cem
Stringfield Cem
Water
Chestnut Ridge
BM W 180
1033
BM X 189
979
Sartin Cem
Deep Spring Church
Mabry Cem
Brushy Valley
Brushy Mtn
Dismal
Davidson
Harmon
Ridge
Chestnut
Wolf
Valley
Creek
Road
Ridge


EXISTING TRANSMISSION LINE
Moore Cem
ANDERSON CO
KNOX CO
Eddy
1167
Gamble Spring
Holbert Spring
Wolf Valley Church
Water
Mount Harmony Ch
Trailer park
Trailer park
Sewage disposal plant
Diggs Gap
Quarry
Heiskell Ch
BM N 235
949
Heiskell
Bishopville Ch
SOUTHERN
Bishopville Cem
Franse-Ingram Cem
BM K 249
BM K 235
871
BM 47-8 14
914
BM 47-8 13
909
Sunnyview Ch
Slave Cem
Bullrun
Creek
Branch
Williams
CHESTNUT RIDGE
ALTERNATE
FIGURE 3


Filtration plant
Mile 65
Quarry
Mile 6
Silo
Eagle Bend Fish Hatchery
National Guard Armory
Swimming Pool
CLINTON
Mile 65
Mile 60
Sewage disposal plant
Gas
Gas
Clinton Island
Young-Cummings Cem
Silos
Pumping station
Oxidation pond
Sewa
RES
SUBSTATION
CLINCH RIVER
Fuel
Water
Chemical
Substation
Crane
Crane
Eagle
LAKE
MELTON HILL
Clinton Island
Little
Mabry Cem
Sartin Cem
Overton Cem
Deep Spring Church
VALLEY
Brushy
Valley Creek
Dismal Gap
ELEV 795
Dismal Gap
Williams Cem
Stringfield Cem
Water
Green Valley
Allium Cem
Tarnell Cem
Chestnut Ridge
BM W 189
1033
BM X 189
979
BM W 189
972
Davidson Hollow
Grove Ch
Silos

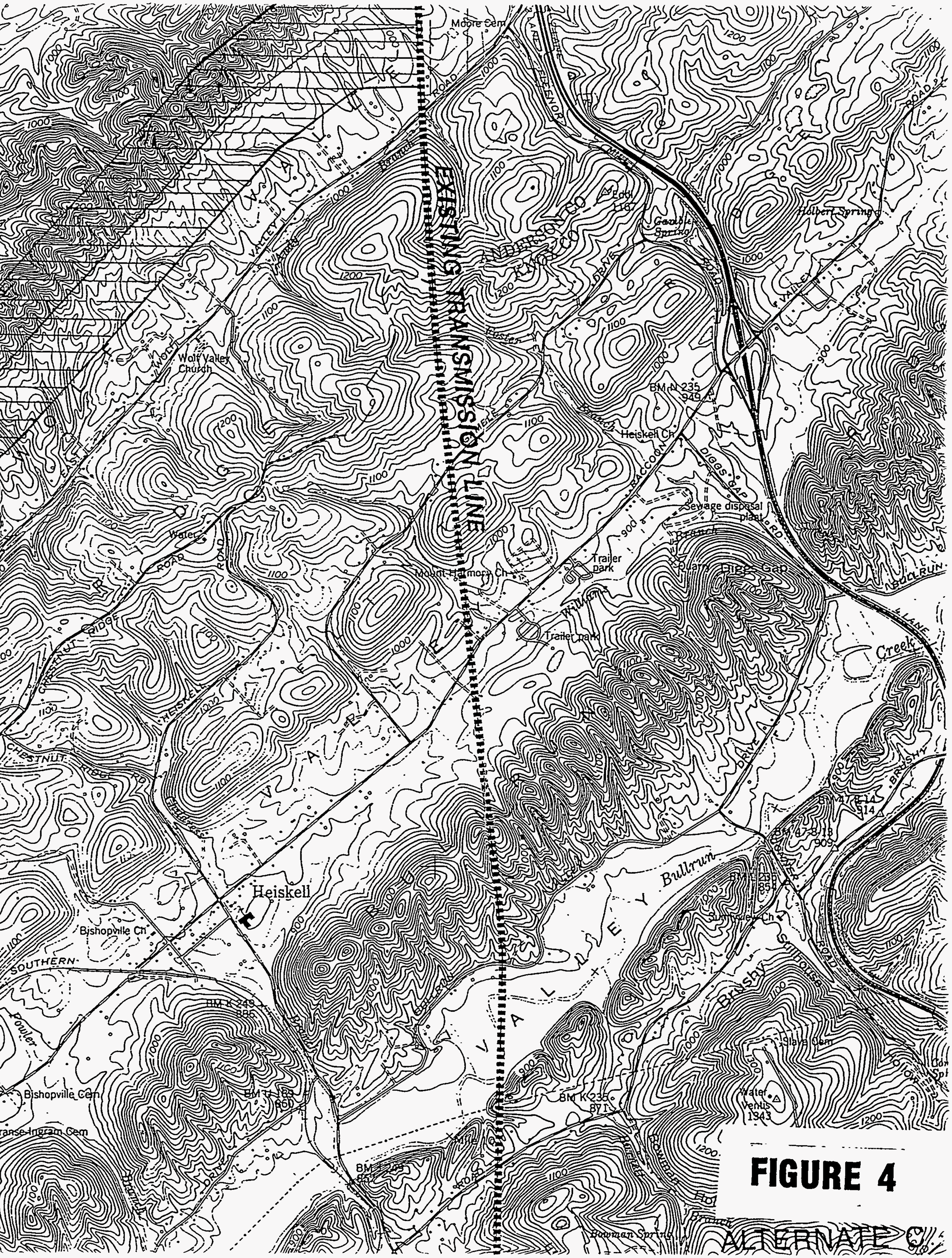
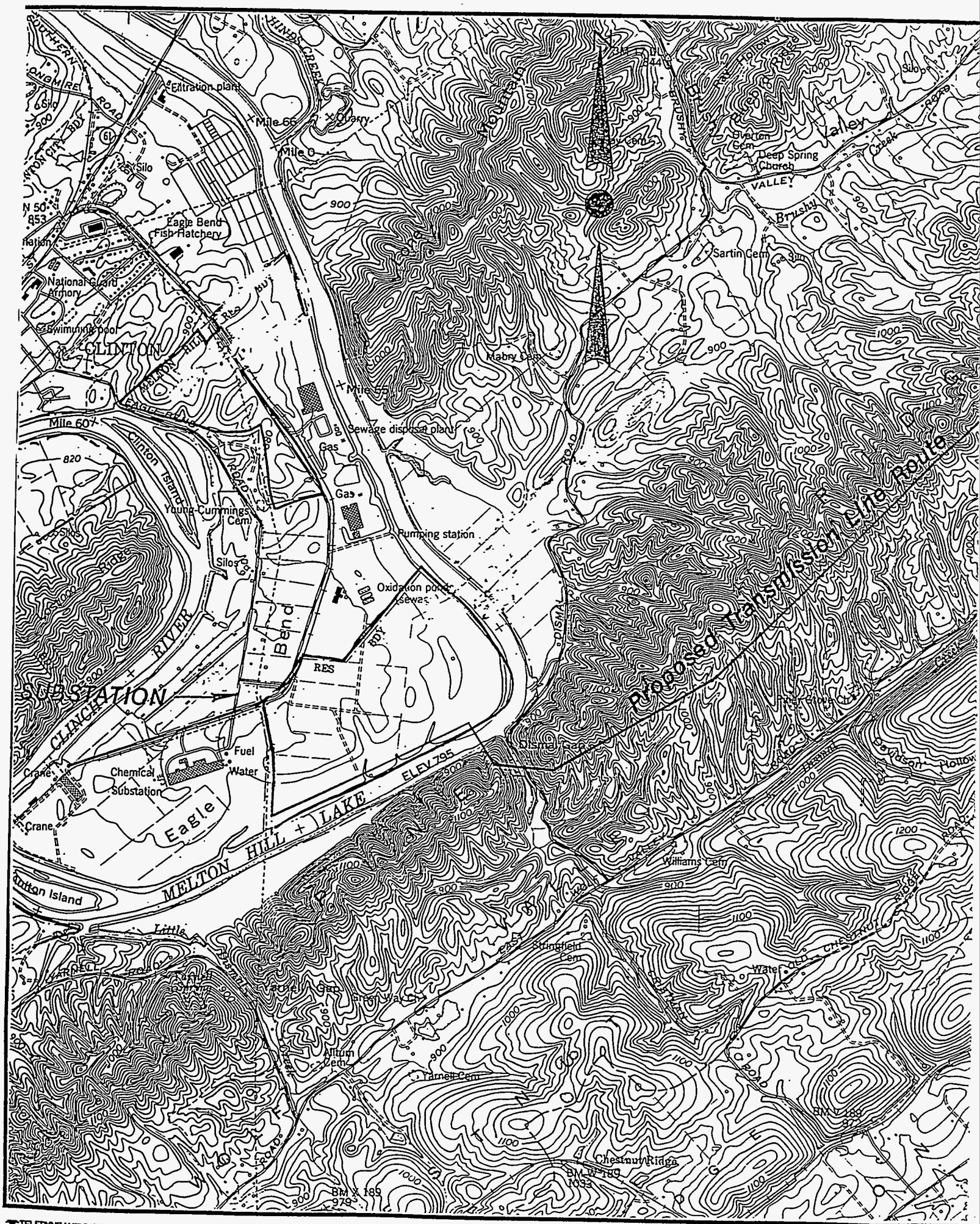
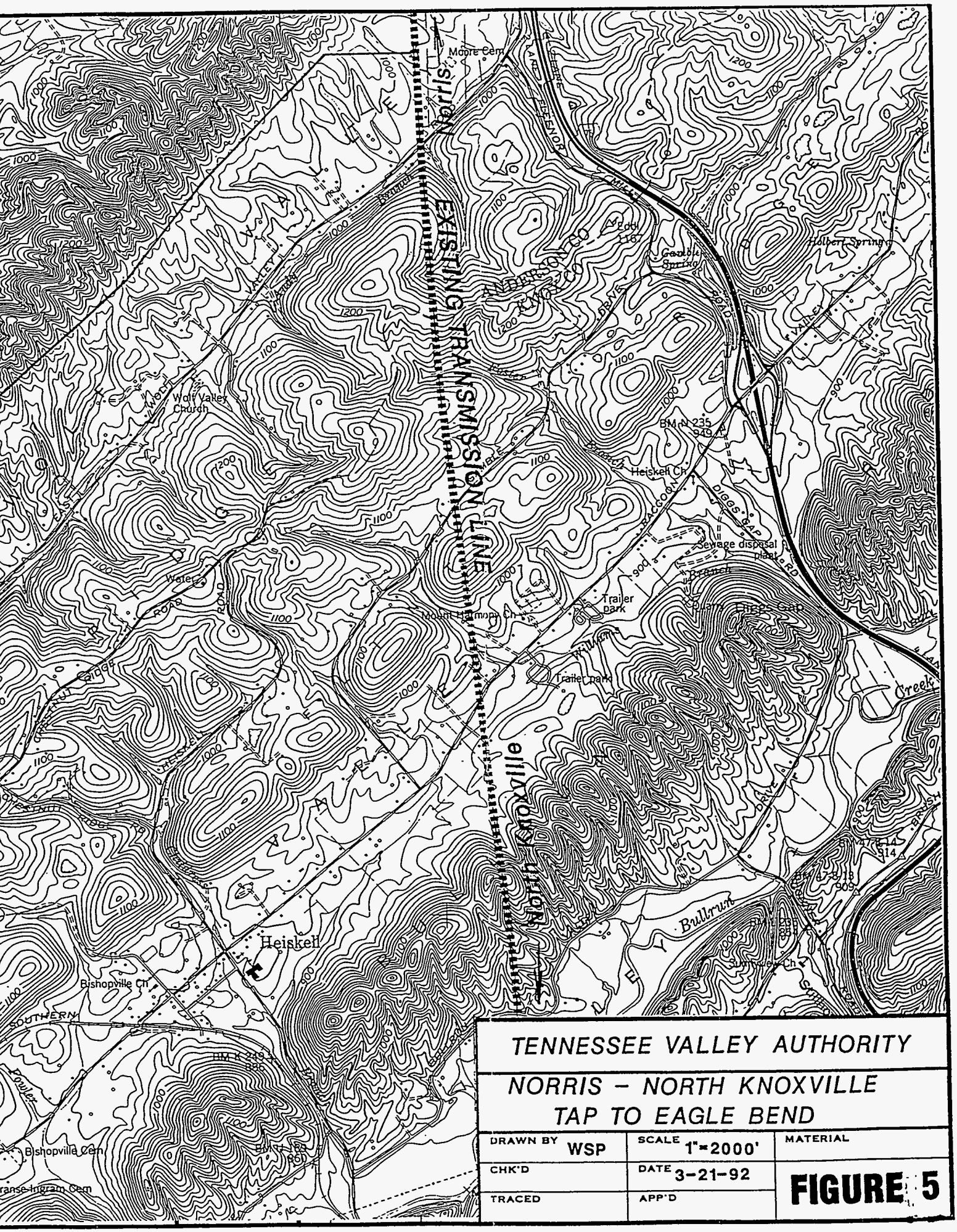


FIGURE 4

ALTERNATE C





TENNESSEE VALLEY AUTHORITY		
NORRIS – NORTH KNOXVILLE TAP TO EAGLE BEND		
DRAWN BY WSP	SCALE 1"=2000'	MATERIAL
CHK'D	DATE 3-21-92	FIGURE 5
TRACED	APP'D	

Appendix I

AGENCY CORRESPONDENCE

Hugh S. Barger
Siting and Environmental Design
Transmission Engineering and Construction
Tennessee Valley Authority
2D Signal Place
1101 Market Street
Chattanooga, Tennessee 37402-2801
Telephone (615)-751-3131

Dear Mr. Barger:

EAGLE BEND, TENNESSEE, 161-kV DELIVERY POINT

This is in reference to TVA's project that was mailed to me on May 15, 1992.

The project as described by the project summary ~~creates~~ may no incompatibility in our area of planning at this time.

This office has some concern that rare species or an unusual forest community type may be present along the proposed route. Would you please forward any plant or animal survey information.

Elizabeth Bunting
Signature

Environmental Review Coord
Title
Water

TN Dept. Env. & Conservation
Agency

701 Broadway, Nashville
Address
37243-0443

7/22/92
Date

Anderson County
Office of Planning and Zoning
Frank M. Sewell, Director
Room 114 , Courthouse ● 100 North Main Street ● Clinton, TN 37716 ● (615) 457-5400, ext. 244

May 13, 1992

Ms. Trudy Garrett
Project Review Coordinator
East Tennessee Development District
P.O. Box 19806
Knoxville, TN 37933-2806

Dear Ms. Garrett:

The Anderson County Regional Planning Commission reviewed the Norris-North Knoxville 161-kv Transmission Line Tap to Eagle Bend Project Summary on May 12, 1992. I have been directed to inform you that the project will not conflict with any plans of which the ACRPC is aware.

Sincerely,

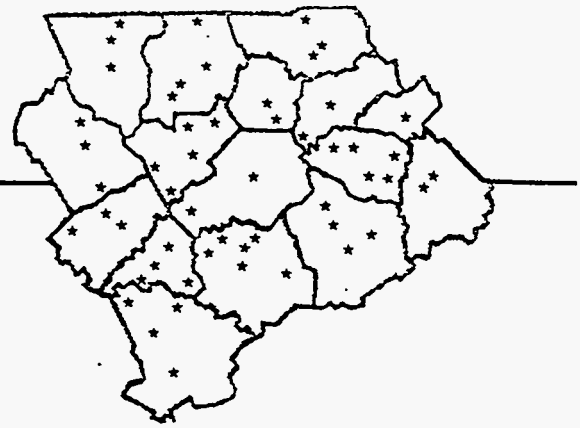
Frank Sewell

Frank M. Sewell
Director of Planning & Zoning

FMS:stk

East Tennessee Development District

5616 Kingston Pike P.O. Box 19806 Knoxville, TN 37939-2806
(615) 584-8553 FAX 584-5159



June 1, 1992

Mr. Hugh S. Barger
Tennessee Valley Authority
Siting and Environmental Design
1101 Market Street
2D Signal Place
Chattanooga, TN 37402-2801

Dear Mr. Barger:

SUBJECT: Result of Regional Review
Tennessee Valley Authority - Construction of a New 161-kV Transmission Line
Between the Existing Norris-North Knox Line to Eagle Bend

The East Tennessee Development District has completed its review of the above mentioned proposal, in its role as a regional clearinghouse to review federally-assisted projects.

Frank S. Sewell, Anderson County Director of Planning and Zoning, has written a letter to the East Tennessee Development District concerning this proposal. His letter is attached as part of ETDD's review.

ETDD review of this proposal has found no conflicts with the plans or programs of the District or other agencies in the region. However, ETDD or other reviewing agencies may wish to comment further at a later time.

We appreciate the opportunity to work with you in coordinating projects in the region.

Sincerely,

Robert E. Freeman
Executive Director

REF/tg

cc Mr. Frank M. Sewell, Director of Planning and Zoning, Anderson County

TENNESSEE HISTORICAL COMMISSION
701 BROADWAY
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0442
615/742-6716

April 27, 1992

Mr. Hugh Barger
Tennessee Valley Authority
Siting and Environmental Design
1101 Market Street
2D Signal Place
Chattanooga TN 37402-2801

Re: TVA; PROPOSED NORRIS-NORTH KNOXVILLE 161 kV TRANSMISSION LINE TAP TO EAGLE BEND; ANDERSON COUNTY. CH#92-1021.

Dear Mr. Barger:

The above-proposed undertaking has been reviewed with regard to compliance with the National Historic Preservation Act. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (51 FR 31115, September 2, 1986).

Previous archaeological surveys have recorded prehistoric sites in settings similar to that of the proposed project (i.e. rockshelters and cave sites exhibiting aboriginal materials). The crossing at Dismal Gap has the potential to contain early historic and prehistoric sites. And, finally, the pole locations along the floodplain have the potential to impact deeply buried archaeological resources. Due to the potential for archaeological resources eligible for the National Register of Historic Places under criterion d, an archaeological survey of the proposed transmission line will be necessary. Manual shovel tests, if appropriate, should be conducted in conjunction with the survey to determine if buried cultural deposits are present.

Before implementing any portion of this project, you should consult with Bennett Graham of your cultural resources staff concerning the archaeological survey. If you have any questions, please contact Kevin Smith of the Tennessee Division of Archaeology at (615) 741-1588. Your cooperation in this matter is appreciated.

Sincerely,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH:kes
enc.

xc: Bennett Graham, TVA

file:\KES\SURVEY\TVA1.SVY

TENNESSEE STATE PLANNING OFFICE
307 JOHN SEVIER STATE OFFICE BUILDING
500 CHARLOTTE AVENUE
NASHVILLE, TENNESSEE 37243-0001
(615) 741-1676

NED McWHERTER
Governor

JIM HALL
Executive Director

May 11, 1992

92-1021

Mr. Hugh S. Barger
Tennessee Valley Authority
1101 Market St., 2D Signal Place
Chattanooga, Tennessee 37402-2801

SUBJECT: CHTN051192-018 Norris-North Knoxville 161-kV Transmission Line TAP to Eagle Bend

Dear Mr. Barger:

In accordance with Presidential Executive Orders 12372 and 12416 and with Gubernatorial Executive Order 58, this office serves as the designated State Clearinghouse for federal activities and grants review.

State and local government evaluation of submitted materials has indicated no conflicts with existing or planned activities. Therefore, we are recommending that this proposal be approved based on the descriptive information made available to us. However, should additional information come to the attention of this office, we may wish to comment further.

This letter should be attached to the application and become a permanent part of the project file. Any involved federal agency should respond in writing to this office if there are problems in complying with this approval. The above State Clearinghouse Identification Number should be placed in the appropriate block on the federal application form.

The appropriate funding agency will now be reviewing our recommendation. If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

Charles W. Brown

Charles W. Brown
Director, State Clearinghouse

CWB:mcp

cc: East TN Development District
Congresswoman Marilyn Lloyd

Hugh S. Barger
Siting and Environmental Design
Transmission Engineering and Construction
Tennessee Valley Authority
2D Signal Place
1101 Market Street
Chattanooga, Tennessee 37402-2801
Telephone (615)-751-3131

Dear Mr. Barger:

EAGLE BEND, TENNESSEE, 161-kV DELIVERY POINT

This is in reference to TVA's project that was mailed to me on May 15, 1992.

The project as described by the project summary creates no incompatibility in our area of planning at this time.

Wilton Burnett, Jr.
Signature

DIRECTOR OF SPECIAL PROJECTS
Title

TN DEPT. OF ECON. & COMM. DEV.
Agency

7TH FLOOR, RACHEL JACKSON BLDG
320 6TH AVE. N.
Address
NASHVILLE, TN 37243-0405

4/9/92
Date

Hugh S. Barger
Siting and Environmental Design
Transmission Engineering and Construction
Tennessee Valley Authority
2D Signal Place
1101 Market Street
Chattanooga, Tennessee 37402-2801
Telephone (615)-751-3131

Dear Mr. Barger:

EAGLE BEND, TENNESSEE, 161-kV DELIVERY POINT

This is in reference to TVA's project that was mailed to me on May 15, 1992.

The project as described by the project summary creates no incompatibility in our area of planning at this time.

Glenn A. Beckwith
Signature

Director, Planning Div.
Title

Tennessee Dept. of Transp.
Agency

Suite 900, Polk Bldg
Address
Nashville, Tn 37219

4-8-92
Date

Hugh S. Barger
Siting and Environmental Design
Transmission Engineering and Construction
Tennessee Valley Authority
2D Signal Place
1101 Market Street
Chattanooga, Tennessee 37402-2801
Telephone (615)-751-3131

Dear Mr. Barger:

EAGLE BEND, TENNESSEE, 161-kV DELIVERY POINT

This is in reference to TVA's project that was mailed to me on May 15, 1992.

The project as described by the project summary creates no incompatibility in our area of planning at this time.

Dan Sherry
Signature

Title

Dan Sherry
Fish and Wildlife Environmentalist
Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P.O. Box 40747
Nashville, TN 37204
Agency

4/3/92
Address

4/5/92
Date

Appendix II

Commitment List

	Commitment	Responsible Organization	Performing Organization	Date or Key Activity
1.	The procedures outlined in TVA's Guide for Environmental Protection and Best Management Practices for Transmission Construction and Maintenance will be serve as the basis for an erosion control plan which will be followed during right-of-way clearing and transmission line construction and submitted to the state of Tennessee.	TVA Customer Group	TVA Customer Group	Prior to and during clearing and construction
2.	Any TVA access roads to be built outside the area reviewed for the transmission line will be brought to the attention of the Siting and and Environmental Design Department.	TVA Customer Group	TVA Customer Group	Before construction
3.	A cultural resource survey will be carried out and any significant resources in the right-of-way or access roads will be protected or impacts mitigated.	TVA Customer Group	TVA Resource Group	Prior to clearing and construction
4.	Any historic or prehistoric artifacts encountered during clearing or construction will be protected pursuant to TVA's Right-Of-Way Clearing Specifications and Environmental Quality Protection Specifications for Transmission Line Construction.	TVA Customer Group	TVA Customer Group & Resource Group	During clearing and construction
5.	The line will be routed so as to minimize removal of riparian trees along the Clinch River.	TVA Customer Group	TVA Customer Group	Prior to clearing and construction
6.	Smoke, dust, noise, and other transient impacts due to construction will be controlled pursuant to TVA's Right-Of-Way Clearing Specifications and Environmental Quality Protection Specifications for Transmission Line Construction.	TVA Customer Group	TVA Customer Group	During clearing and construction

Commitment	Responsible Organization	Performing Organization	Date or Key Activity
7. Any access roads which are needed will reviewed to determine their potential for environmental impact.	TVA Customer Group	TVA Resource Group	Prior to road construction

HSB:MDS
TE&C
05/20/92

6584S
01931
1111r