NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

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NATIONAL REGISTER

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Calderwood Hydroelectric Station
other names/site number N/A

2. Location

street & number End of Calderwood Road at Calderwood N/A ☐ not for publication
city, town Calderwood ☒ vicinity
state Tennessee code TN county Blount/Monroe code 009/123 zip code N/A

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☒ private	☐ building(s)		2 buildings
☐ public-local	☒ district		sites
☐ public-State	☐ site	5	structures
☐ public-Federal	☐ structure		objects
	☐ object	5	2 Total

Name of related multiple property listing:
Pre-TVA Hydroelectric Development in TN 1901-1933
~~Historic & Architectural Resources of Blount County, TN~~

Number of contributing resources previously listed in the National Register 1

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Herbert L. Harper — 5/22/90
Signature of certifying official — Date

Deputy State Historic Preservation Officer
Tennessee Historical Commission
State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☒ entered in the National Register. ☐ See continuation sheet. — Amy Federman — 7/3/90
☐ determined eligible for the National Register. ☐ See continuation sheet.
☐ determined not eligible for the National Register.
☐ removed from the National Register.
☐ other, (explain:) _____

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
INDUSTRY: energy facility	INDUSTRY: energy facility

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
N/A	foundation CONCRETE walls CONCRETE, BRICK roof CONCRETE other N/A

Describe present and historic physical appearance.

The Calderwood Hydroelectric Station is located in a remote section of Blount County (population 77,770), while the massive curvilinear dam extends across the Little Tennessee River into Monroe County (population 28,700), Tennessee, in the southeastern section of the state, at river mile 43.7. The dam is 1.2 miles upstream and around the horseshoe bend from the powerhouse, sixteen air miles from Alcoa and thirty-two air miles south of Knoxville, Tennessee.

The dam was listed in the National Register of Historic Places on August 21, 1989, as part of the Historic and Architectural Resources of Blount County Multiple Property Nomination. However, this nomination is adding the following components previously omitted from consideration in the aforementioned multiple property nomination: 1) intake; 2) intake gates; 3) intake to the tunnel; 4) three concrete lined tunnels approximately 2,500 feet long each; 5) surge chambers; 6) penstock header; 7) three penstocks; 8) butterfly-type valves; 9) concrete valve house and; 10) powerhouse.

The Aluminum Company of America (ALCOA) began construction in August 1928, and the project was finished with two of three generating units in operation on June 22, 1930. The third unit was added in 1938. Its purpose was to provide power for the company's reduction plant in Alcoa, near Maryville. Additionally, ALCOA, it was reported, was "preparing to build some mammoth dams across the Little Tennessee River" as it wound its way through North Carolina. (There are today a total of five dams on the Little Tennessee River, four of them in North Carolina, all operated by TAPOCO [an acronym for Tallassee Power Company], a subsidiary of ALCOA). The community of Calderwood, now largely abandoned, was created as a company town by ALCOA to house construction workers and, later, maintenance personnel. The dam is a massive engineering structure of thin-section, concrete construction boasting twenty-four flood gates in a dramatically leviathan and sensationally sweeping curvilinear design, variable radius, arch dam, with a forty-foot-high concrete gravity cushion dam and pool, 400 feet below the main dam. The dam is 916 feet long and has a maximum height of 232 feet. The main dam's twenty-four Stoney gates are twenty-four feet wide by twenty feet high (See Appendix A and B).

[X] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:
☐ nationally ☒ statewide ☐ locally

Applicable National Register Criteria ☒ A ☐ B ☒ C ☐ D

Criteria Considerations (Exceptions) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G N/A

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
ENGINEERING	1928-1933	1928, 1930
COMMERCE		

Cultural Affiliation
N/A

Significant Person
N/A

Architect/Builder
unknown

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The Calderwood Hydroelectric Station is significant under criterion C for engineering because it represents the kind of early large-scale, professionally-designed steel-reinforced concrete hydroelectric engineering projects typical of electrical power development in the State of Tennessee throughout the early years of the twentieth century. Its curvilinear spillway section is shared by only one other site in the State, at the Ocoee No. 1 site at Parksville, in Polk County. It's placement near a horseshoe river bend and its design, utilizing a tunnel through the horseshoe bend, shares consistency in construction materials, scale, genre, temporal limits, and utilitarian functions with another larger pre-TVA hydroelectric site on the Collins and Caney Fork rivers, namely the Great Falls site (1917), and is likewise analogous to a smaller site, Shoal Creek No. 1 site in Lawrence County (1905).

The Calderwood Hydroelectric Station is also significant under criterion A for commerce in the State of Tennessee, as it represents the transition from rural and agricultural pursuits and lifestyles to that of intense industrial manufacturing, and is thus fundamentally representative of a change in the business of trading, production, commerce, communications, and commodities in the State of Tennessee. It may likewise be of significance under criterion A in that it resulted in the formation of the mountain hamlet of Calderwood and resulted in the expansion and prosperity of the company town of Alcoa, both in Blount County.

Hydroelectricity has been continually produced at Calderwood since 1930, serving as the ALCOA reduction plants in Alcoa, Tennessee, as well as domestic needs. It is the last private-sector hydroelectric site to be constructed in Tennessee before the formation of the Tennessee Valley Authority in 1933. The site retains sufficient integrity to reflect the criteria for significance as set forth in the registration requirements for Pre-TVA Hydroelectric sites in the cover form "Pre-TVA Hydroelectric Development in Tennessee, 1901-1933."

☐ See continuation sheet

9. Major Bibliographical References

[X] See continuation sheet

Previous documentation on file (NPS):
- [ ] preliminary determination of individual listing (36 CFR 67) has been requested
- [X] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [ ] recorded by Historic American Buildings Survey # _____
- [ ] recorded by Historic American Engineering Record # _____

Primary location of additional data:
- [X] State historic preservation office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Specify repository: _____

10. Geographical Data

Acreage of property Approximately 30 acres

UTM References

	Zone	Easting	Northing		Zone	Easting	Northing
A	16	229840	3931580	B	16	229780	3931380
C	16	228330	3931680	D	16	228660	3931800

[ ] See continuation sheet

TAPOCO, NC-TN 149NW

Verbal Boundary Description

The boundaries for the Calderwood Hydroelectric Station include the dam and cushion dam, the intake structures, the power tunnels running through the mountain, and the powerhouse on the opposite side of the Little Tennessee River bend. See accompanying maps.

[X] See continuation sheet

Boundary Justification

The boundaries are sufficient to protect the historic integrity of the site.

[ ] See continuation sheet

11. Form Prepared By

name/title James B. Jones, Jr. Historic Preservation Specialist
organization Tennessee Historical Commision date May 1990
street & number 701 Broadway telephone (615)742-6718
city or town Nashville state TN zip code 37243

Water is diverted through a sharp horseshoe bend in the Little Tennessee River through an intake located adjacent to the right abutment of the dam arch. The intake to the tunnel is in ledge rock of the right abutment adjacent to the dam. It has removable trash racks and Stoney-type intake gates. Two gates serve three concrete lined tunnels; No. 1 is 2,071 feet long, and Nos. 2 and 3 are 2,147 feet in length. Surge chambers are between the tunnel and penstock header. There are three penstocks, each with butterfly-type valves, in rock or riser concrete lined, having an eighteen foot diameter shaft on a fifty-one degree slope, ending in 124-thirty by forty-five-foot chamber. No. 1 penstock's length is 388 feet, while No. 2 measures 330 feet, and No. 3 stretches 347 feet. Water is directed via the three penstocks, through the horseshoe bend, where the penstocks terminate in a remote-controlled concrete valve house located against the steep rock cliff on the other side of the horseshoe bend.

From this point, water is conveyed to the 210 X 47 X 98 foot powerhouse on the Blount County or right (east) bank of the Little Tennessee River (See Appendix C). The powerhouse has a substructure of steel-reinforced concrete and a superstructure of brick with design elements reminiscent of art nouveau style. It houses three Allis-Chalmers vertical Francis type turbines and three Westinghouse generators with capacities of 45,000 and 40,500 kW. Because the powerhouse is located near a 1,000 foot cliff, it is often threatened by falling objects, and so as to protect it and the transformer yard from falling rocks, a V-shaped reinforced concrete wall was built. The dam alone has been judged to be "one of the tallest arch dams in the eastern United States," by David C. Jackson.[1]

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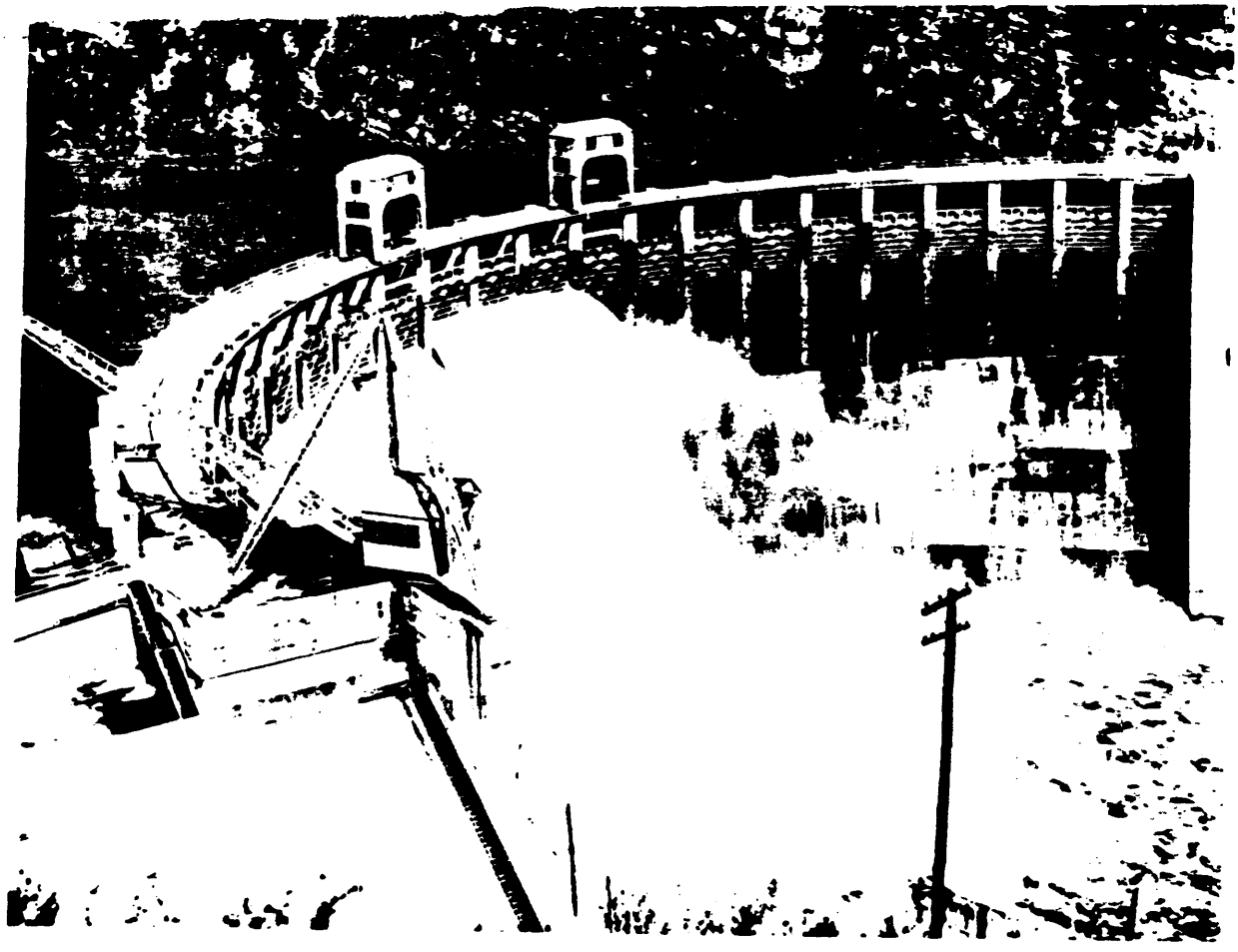
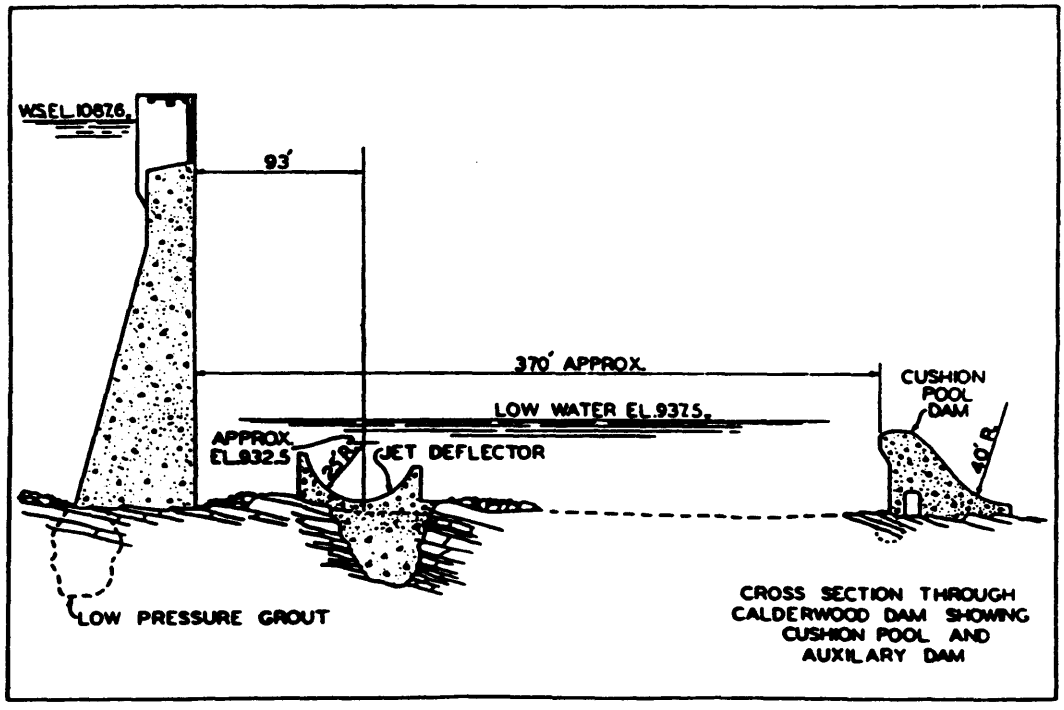
[1] Inez E. Burns, History of Blount County, Tennessee: From War Trail to Landing Strip, 1795-1955, (Nashville, Tenn.: Tennessee Historical Commission, 1957), pp. 284-285, and; Aluminum Company of America, "CALDERWOOD PROJECT: Summary of Principal Features," March 1970, and; "Blount County Architectural Survey, 1983-84," Tennessee Historical Commission, Folders 4358 and 4359. See also: Donald C. Jackson, Great American Bridges and Dams, the Great American Places Series, (Washington, D.C.: Preservation Press, 1988), p. 185. See also: J. Elmer Housley, comp., TAPOCO's Hydroelectric Developments in the Smoky Mountains, (np: TAPOCO, 1957), pp. 5, 13-15.

APPENDIX A



CALDERWOOD DAM

APPENDIX B



CROSS SECTION THROUGH CALDERWOOD DAM SHOWING CUSHION POOL AND AUXILARY DAM

NPS Form 10-900-a
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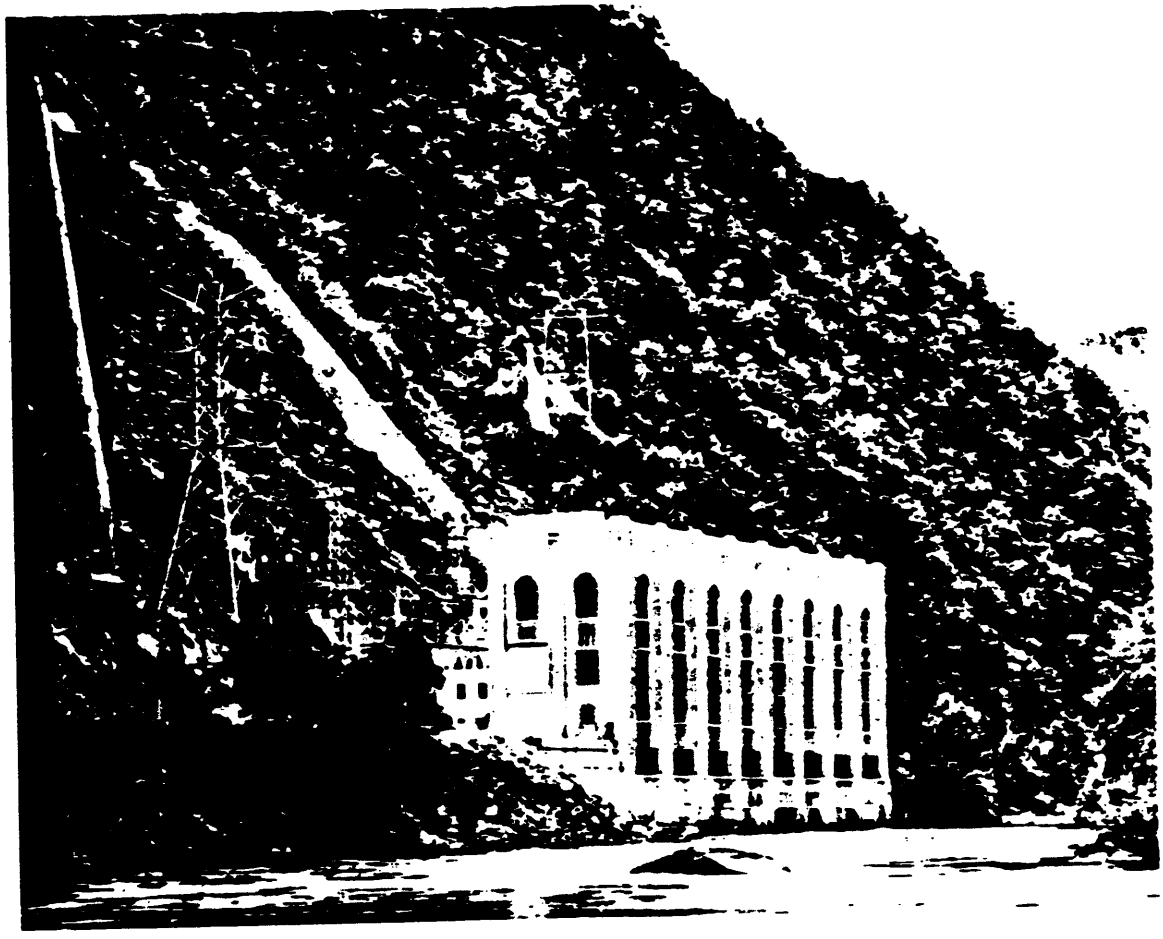
National Park Service

National Register of Historic Places Continuation Sheet

APPENDIX C



CALDERWOOD POWER HOUSE
with rock deflectors

MAJOR BIBLIOGRAPHICAL REFERENCES

Aluminum Company of America. "CALDERWOOD PROJECT: Summary of Principal Features." August 1953 and March 1970.

Burns, Inez E. History of Blount County, Tennessee: From War Trail to Landing Strip, 1795-1955. Nashville, Tenn.: Tennessee Historical Commission, 1957.

"Blount County Architectural Survey, 1983-84." Folders 4358 and 4359 on file at the Tennessee Historical Commission/State Historic Preservation Office.

Housley, J. Elmer, comp. TAPOCO's Hydroelectric Developments in the Smoky Mountains. np: TAPOCO, 1957.

Jackson, Donald C. Great American Bridges and Dams, the Great American Places Series. Washington, D.C.: Preservation Press, 1988.

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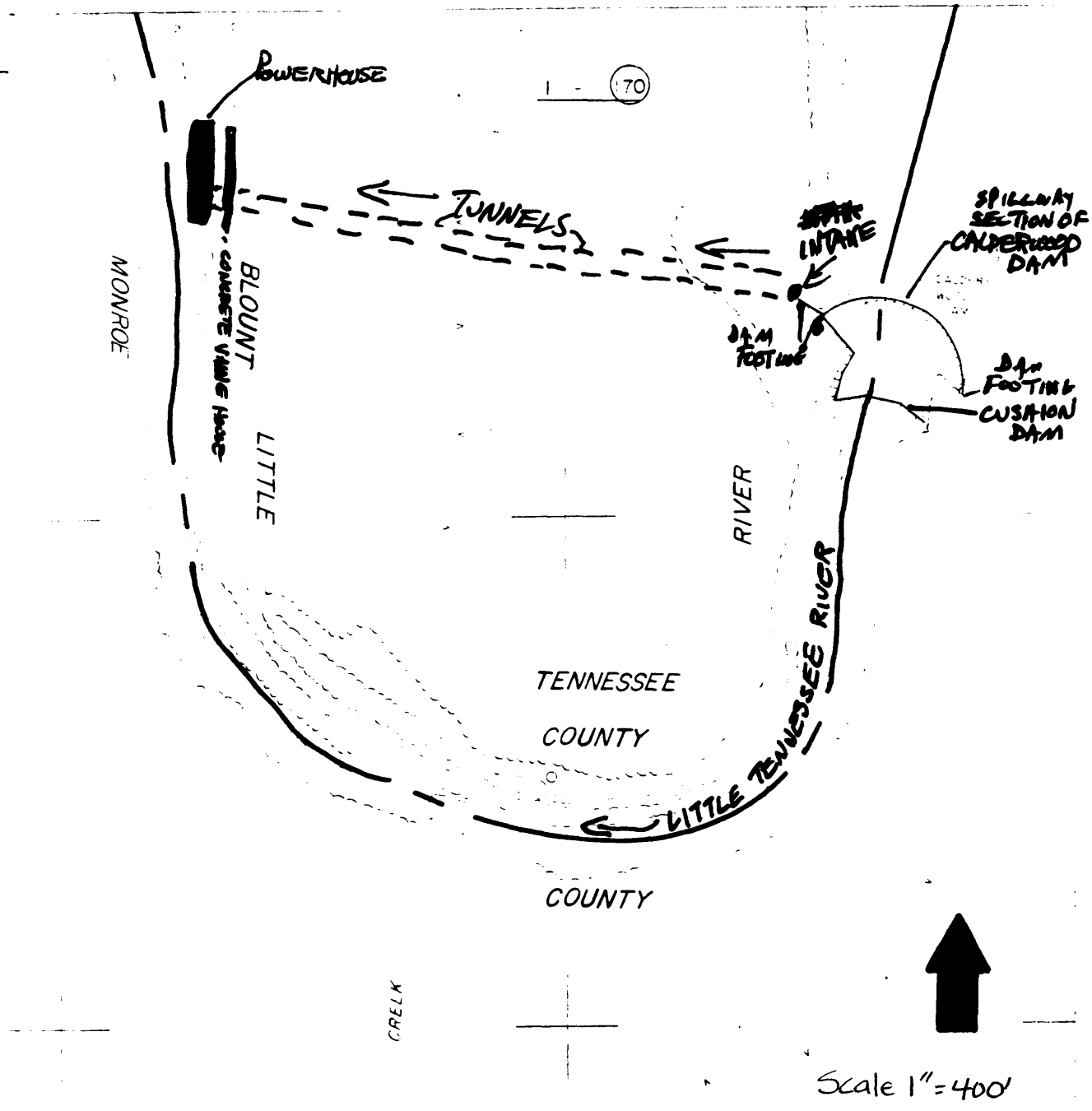
National Register of Historic Places Continuation Sheet

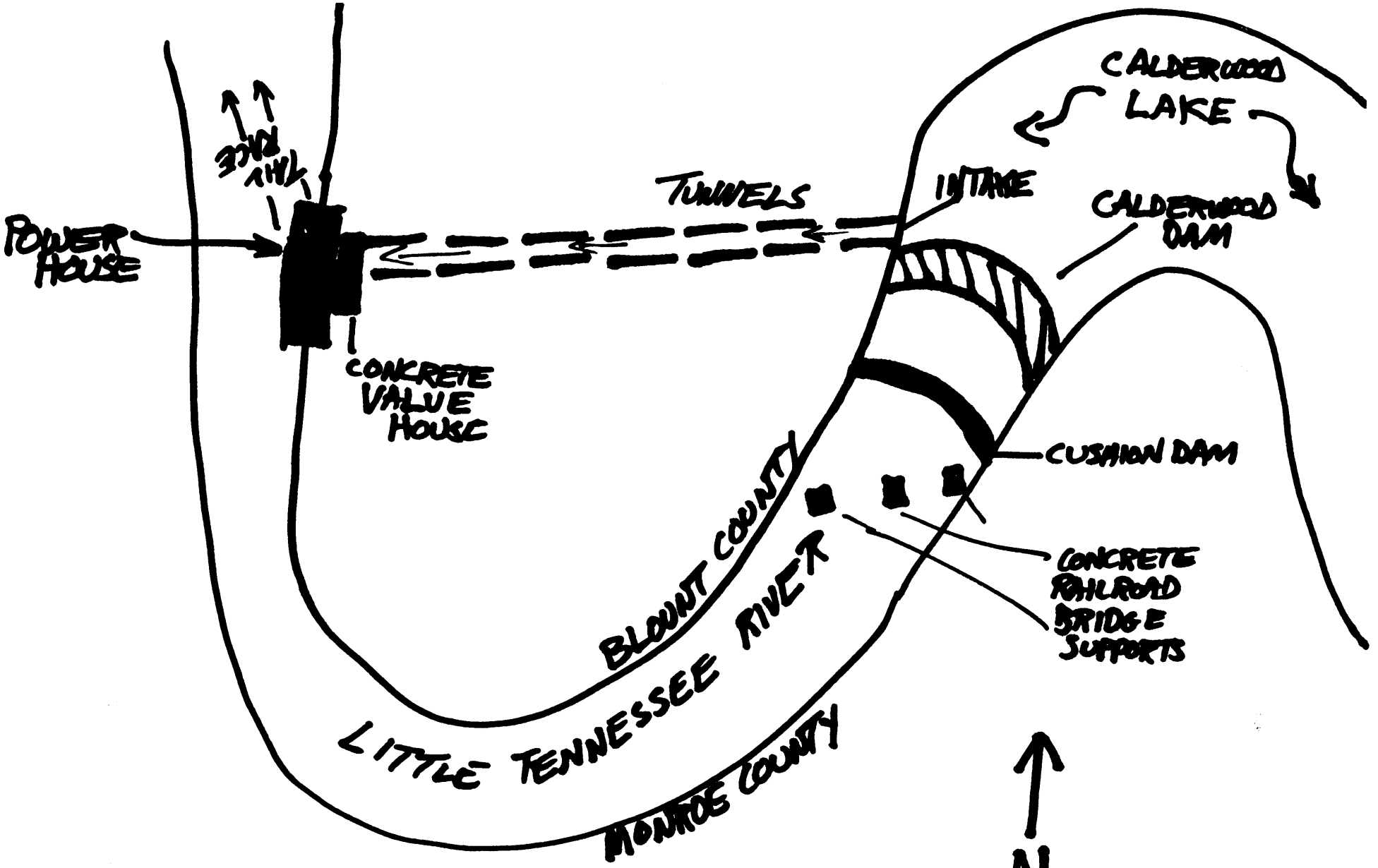
Section number 10 **Page** 2 Calderwood Hydroelectric Station

Map 1 of 2



Scale 1" = 400'

Blount County Tax Map No. 174



Calderwood Hydroelectric Station
Map 2 of 2

Not to Scale

JUN 1 1981

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National Park Service

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Calderwood Hydroelectric Station
Calderwood Road
Calderwood, Blount County, Tennessee
Photos by: James B. Jones, Jr.
Date: April 1989
Negs: Tennessee Historical Commission
Nashville, Tennessee 37243-0442

#1 of 9 - Calderwood Powerhouse, looking southwest.

#2 of 9 - Concrete Valve house next to Powerhouse, looking north.

#3 of 9 - Calderwood Dam and cushion dam in foreground, looking northeast.

#4 of 9 - Cranes on Calderwood Dam, looking west.

#5 of 9 - Calderwood Dam, looking south.

#6 of 9 - Calderwood Dam, upstream, looking south.

#7 of 9 - Floodgate control crane, looking south.

#8 of 9 - View of intake area, tunnel openings to right, submerged, looking south.

#9 of 9 - View of Calderwood Dam's 24 floodgates, looking east.