North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

December 13, 2011

Clinton Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

Re: Historic Structures Survey, Proposed Water Treatment Plant, Graham County, ER 11-2162

Dear Mr. Jones:

Thank you for your letter of October 28, 2011, which we received on November 3, 2011, transmitting the above report prepared by New South Associates on behalf of the Town of Fontana Dam.

The survey report finds that the **Fontana Dam Water Treatment Plant** (GH 0068) is not eligible for listing in the National Register of Historic Places. However, the Tennessee Valley Authority (TVA) disagrees with the report and has instead determined that the site is eligible for listing under Criterion A for its association with the development of Fontana Dam.

In 2004, Fontana Village was surveyed by TRC Garrow Associates as part of the Cultural Resources Existing Conditions Report, an appendix to the Environmental Impact Statement for the North Shore Road project. At that time a formal determination of the village's eligibility for the National Register was not made, but staff believes that the village is *not* eligible due to its loss of integrity.

As stated in the report, the water treatment plant was built to serve the construction camp that became Fontana Village. We do not believe that the plant—an accessory structure to the village—would be eligible for listing in the National Register for its association with Fontana Village, when the village itself is not eligible. Additionally, except for its connection with the Village, the plant does not appear to be associated directly with the development of Fontana Dam. Thus, for the purposes of compliance with Section 106 of the National Historic Preservation Act, we believe that the plant is *not* eligible for listing under Criterion A; we concur with the report that the plant is not eligible under Criteria B, C, or D.

If the TVA still believes that the plant is eligible, the TVA could make a formal request to the Keeper of the National Register for a determination of eligibility in accordance with 36 C.F.R. §800.4(c)(2) and 36 C.F.R. §63.3.

We concur that the **Little Tennessee River Bridge** (GH 0069) remains eligible for listing in the National Register under Criterion A for its association with the Fontana Dam Project and under Criterion C for its design. The proposed National Register boundary appears appropriate.

We concur with the recommendation that the proposed water treatment plant is unlikely to affect any archaeological resources eligible for listing in the National Register.

We also concur that the proposed land sale to Graham County and subsequent development of a new water treatment plant will have no adverse effect on historic properties.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

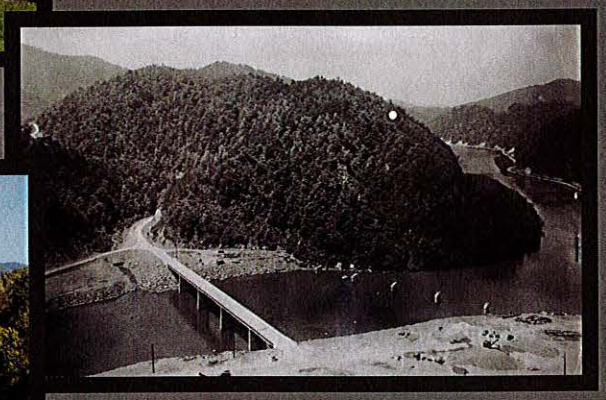
Sincerely,

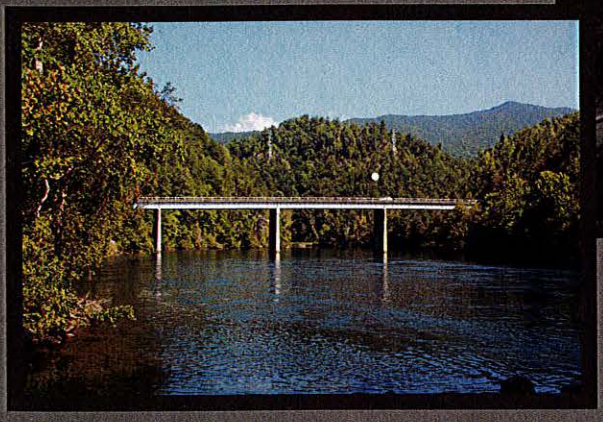
Renee Gledhill-Earley

for Ramona M. Bartos

Historic Structures Survey for the Proposed Water Treatment Plant

Fontana Dam, Graham County, North Carolina





New South Associates, Inc.

Historic Structures Survey for the Proposed Water Treatment Plant

Fontana Dam, Graham County, North Carolina

Report submitted to:

Town of Fontana Dam • 300 Woods Road • Fontana Dam, North Carolina 28733

Report prepared by:

New South Associates • 6150 East Ponce de Leon Avenue • Stone Mountain, Georgia 30083

Robbie D. Jones – Principal Investigator

David Price – Historian and Author

October 21, 2011 • Revised Draft Report
New South Associates Technical Report 2069

ABSTRACT

Graham County, North Carolina proposes to build a new Water Treatment Plant (WTP) located on the south side of the Little Tennessee River just downstream from the existing WTP and the Tennessee Valley Authority (TVA) Fontana Dam in Graham County, North Carolina. To complete this project, County government, proposes to purchase a two to four-acre tract of land from TVA to build the proposed WTP.

New South Associates, under contract with the Town of Fontana Dam, conducted background research and a historic structures survey for the proposed Fontana Dam WTP within a surrounding 0.5-mile Area of Potential Effects (APE). The survey included the documentation and evaluation for National Register of Historic Places (NRHP) eligibility of two properties located within the APE, including the existing Fontana Dam WTP (GH68) and the Little Tennessee River Bridge (GH69). No other properties within the APE were identified.

The existing WTP was built by TVA in 1942 to provide treated drinking water for the Fontana Dam worker construction camp. In 1945, TVA constructed the Little Tennessee River Bridge, a two-lane bridge with a continuous-cantilever steel deck girder and floorbeam structure. This bridge was previously surveyed in 2003 by Lichtenstein Consulting Engineers and recommended eligible for listing in the NRHP.

New South Associates recommends that the existing Fontana Dam WTP (GH68) is not eligible for listing in the NRHP. New South Associates concurs with the previous recommendation in 2003 that the Little Tennessee River Bridge (GH69) is NRHP-Eligible under Criteria A and C. It is also the recommendation of New South Associates that the proposed project will have No Adverse Effect to the NRHP-Eligible Little Tennessee River Bridge.

ACKNOWLEDGEMENTS

New South Associates wishes to thank Jeannie Stewart, General Manager for Fontana Village Resort, for orienting staff to the project area and resources, for providing background history and historic photographs of Fontana Village and the Water Treatment Plant, and for the generous hospitality that staff received while staying at the resort. Additional historic photographs were obtained from the helpful volunteer staff of the TVA's Fontana Dam Visitor Center. Helpful project management and additional information was provided by Chett Peebles, a landscape architect at TVA headquarters in Knoxville, Tennessee. The Principal Investigator was Robbie D. Jones. David Price served as Historian/Architectural Historian. Mary Beth Reed provided technical review and David Diener created the graphics, while Jennifer Wilson edited and produced the report.

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I. INTRODUCTION

Graham County, North Carolina proposes to build a new Water Treatment Plant (WTP) on the south side of the Little Tennessee River just downstream from the existing WTP and the Tennessee Valley Authority (TVA) Fontana Dam in Graham County, North Carolina. To complete this project, County government, proposes to purchase a two to four-acre tract of land from TVA to build the proposed WTP (Figures 1 and 2).

The proposed Fontana Dam WTP will be approximately 80 feet long by 45 feet wide. The building height will vary from 34 feet on the north elevation facing the river to 24 feet tall on the south elevation, which will face the driveway. The building will feature a metal exterior construction on a cast-in-place concrete foundation. It will house water treatment units and office/lab space (Figure 3).

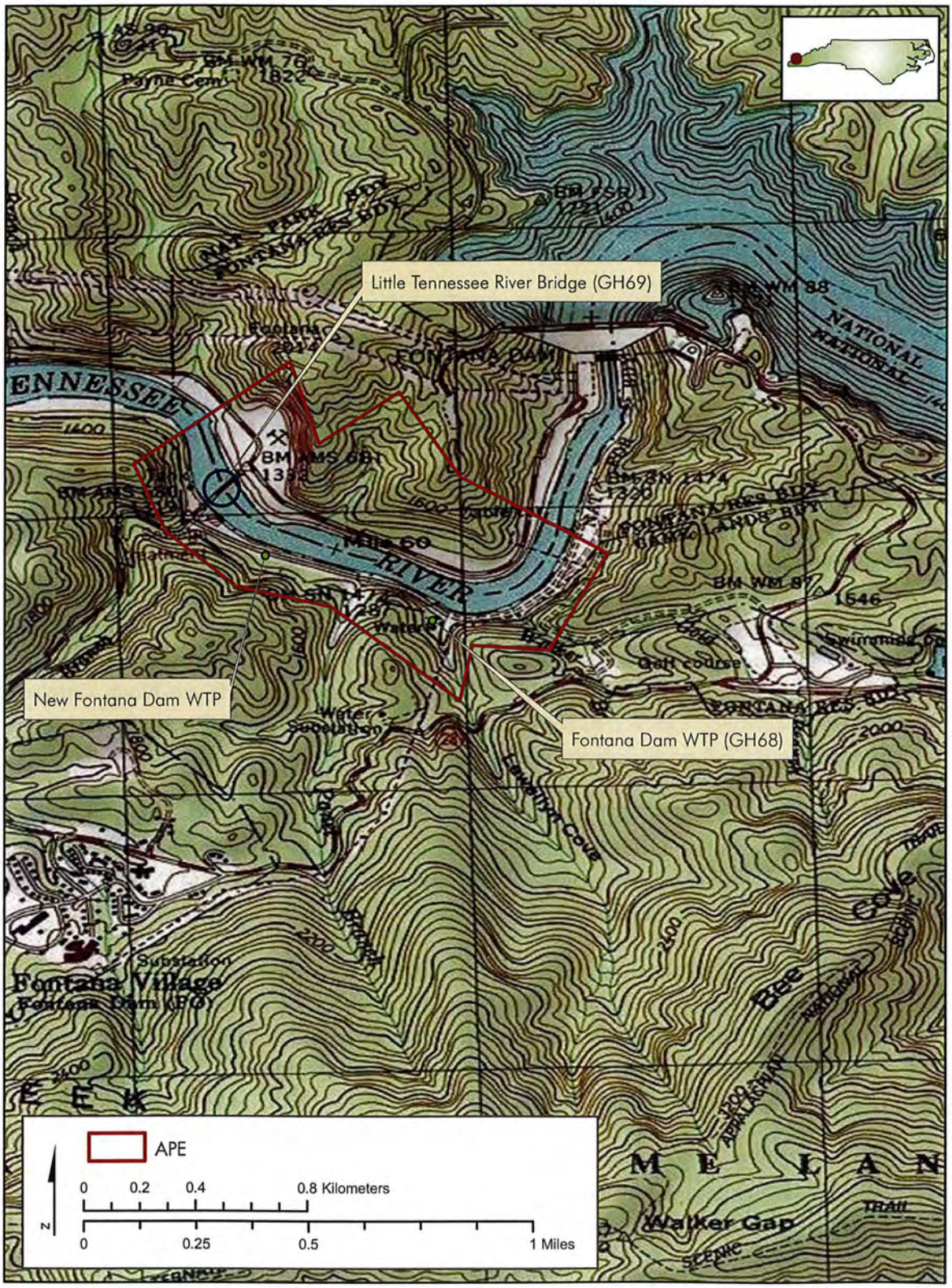
Due to the TVA's status as a federal agency, this project must comply with the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800). This legislation requires that the TVA identify any properties of historic significance within the Area of Potential Effects (APE). These properties can include above ground buildings, structures, objects, or historic sites as well as below ground archaeological sites. Once historic properties are identified, the TVA is required to determine if the properties would be affected by the proposed project. If any historic properties would be affected, the TVA is required to provide the North Carolina State Historic Preservation Office (NC-SHPO), interested parties, and the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on those effects.

For this project, the TVA defined the Area of Potential Effect (APE), as shown in Figure 1, as consisting of an area generally within a one-half mile radius of the proposed WTP. This APE includes land needed for any additional right-of-way or easements as well as areas that might be affected by changes in visual setting and land use.

Project staff identified two resources within the APE, including the existing 1942 Fontana Dam WTP (GH68) built by the TVA to provide treated drinking water for the Fontana Dam worker construction camp, and the 1945 TVA-constructed Little Tennessee River Bridge (GH69). Lichtenstein Consulting Engineers surveyed this continuous-cantilever steel girder bridge in 2003 and recommended it eligible for listing the National Register of Historic Places (NRHP) under Criteria A and C for its association with the Fontana Dam construction and its engineering significance (Appendix A).

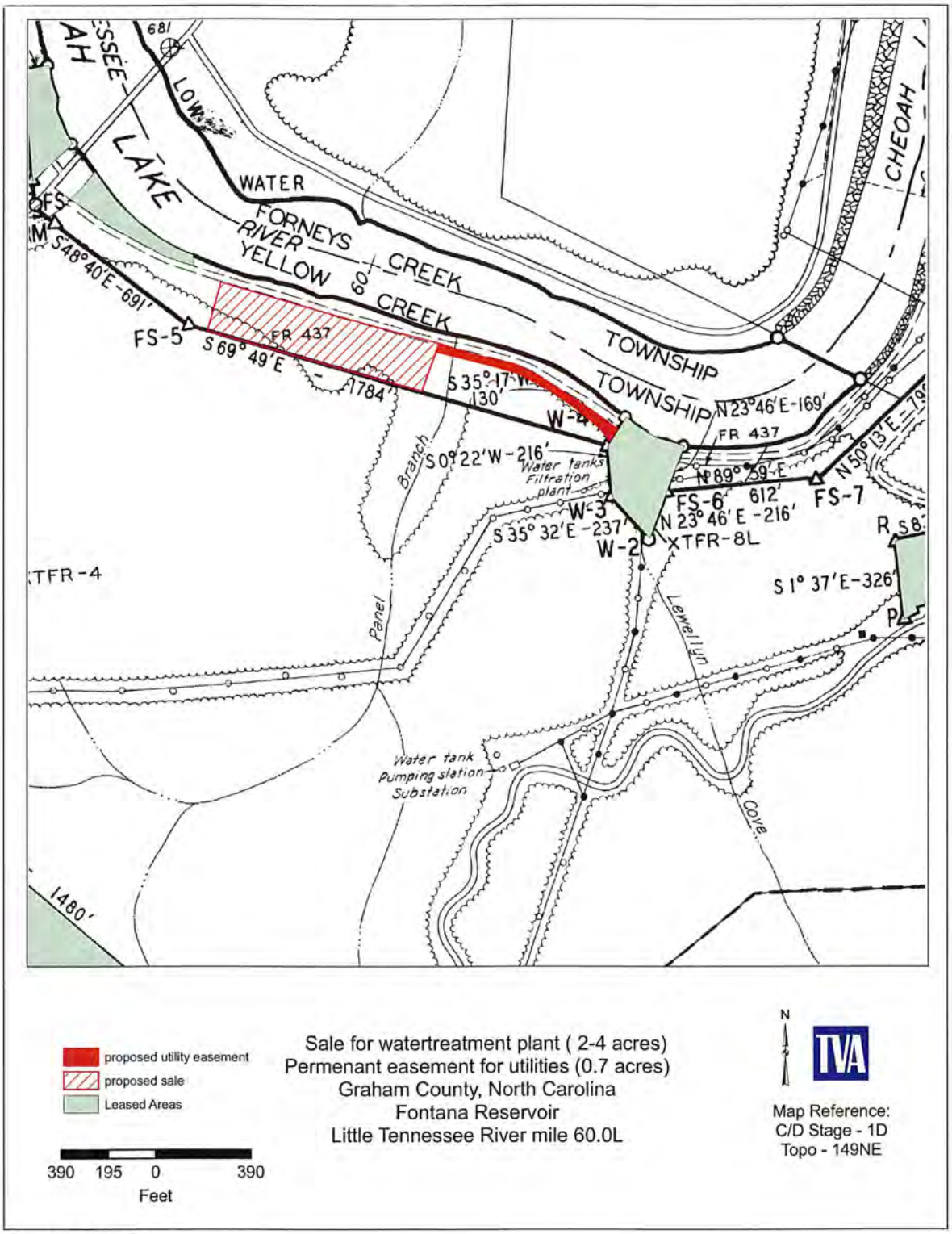
Survey fieldwork occurred on August 15-18, 2011. Project staff members include Robbie D. Jones, Principal Investigator, and David Price, Historian/Architectural Historian and author.

Figure 1.
Map Showing the Project Location and the APE



Source: USGS Fontana Dam, North Carolina Quadrangle

Figure 2.
Area for Sale by the TVA for the Water Treatment Plant

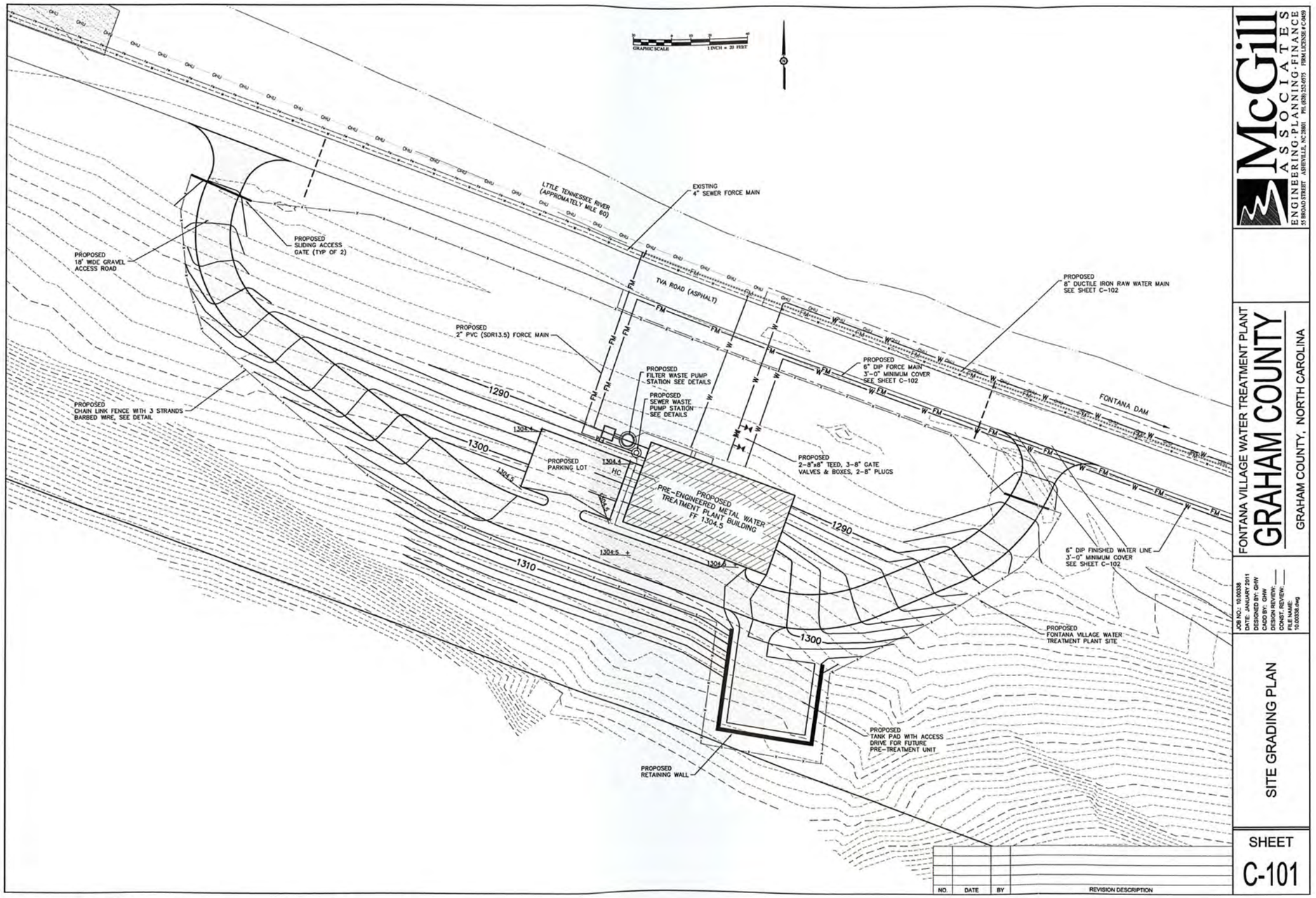


Courtesy of the TVA

DOCUMENT ORGANIZATION

Chapter I contains this introduction to the project. Chapter II discusses the environment of the area, and Chapter III provides an overview of the project area's historic context. Chapter IV provides the results of the historic structures survey of the Fontana Dam WTP, including survey photographs, historic photographs, and descriptions of the existing WTP (GH68) and Little Tennessee River Bridge (GH69). Chapter V summarizes the evaluations and NRHP recommendations for these resources. Lichtenstein Consulting Engineers' Historic Bridge Inventory Report is contained in Appendix A, while the Historic Property Field Data forms can be found in Appendix B. The author's resume can be found in Appendix C.

Figure 3.
Site Plan of the Proposed Water Treatment Plant



Source: McGill and Associates, Courtesy of Town of Fontana Dam

II. THE HISTORIC CONTEXT

The Fontana Dam WTP project area is located on the south side of the Little Tennessee River in Graham County, North Carolina, approximately one mile downstream from the Tennessee Valley Authority (TVA) Fontana Dam. Constructed from 1942-1945, the dam was located in the wilderness of western North Carolina, an area that lacked a local labor force large enough for the enormous engineering task at hand. As a result, TVA moved in a force of over 5,000 workers and their families who first lived in a series of temporary worker camps while a permanent camp was built just south of the dam in an area known as Welch Cove.

Called "Fontana Village," the camp included a series of dormitories, residences, and other community facilities, including a cafeteria, a recreation building, and a general store. In order to "make provisions for healthful and adequate living conditions" in the camp, TVA also built an infrastructure system that included a sewage treatment plant and the WTP surveyed for this study (TVA 1950:12). Built in 1942, the WTP treated the drinking water for Fontana Village workers throughout the three-year period of construction of the dam. After the dam was completed in 1945, Fontana Village evolved into the tourist resort that it is today. Since its construction, the WTP has continued to treat water for Fontana Village, which incorporated as the Town of Fontana Dam in 2011, though its age and capacity are now inadequate for the resort's current requirements.

ENVIRONMENTAL SETTING

Located in the Appalachian Mountain region of western North Carolina, the Little Tennessee River serves as the boundary between Graham County and Swain County to the north. The river drains a total watershed area of 2,627 square miles of mountainous and sparsely developed terrain, with a 1,571 square-mile watershed above the Fontana Dam. One of western North Carolina's most valuable natural resource areas, the Little Tennessee River watershed includes the southern slopes of the Great Smoky Mountains National Park and the northern slopes of the Nantahala Mountains. Many of the mountain peaks in this region are among the highest in the eastern United States with elevations of over 6,500 feet, with two that exceed 6,600 feet. According to TVA, "the Little Tennessee River drains an area experiencing the heaviest rainfall not only in the Tennessee Valley but in the United States, except for the Pacific Northwest" (TVA 1950:19, 23). The construction of the Fontana Dam was thus one the most significant projects in the TVA's effort during the early to mid-twentieth century to control flood conditions throughout the Tennessee Valley.

The Little Tennessee River watershed was originally covered with an ancient forest of hardwoods and conifer trees. There are a few isolated old-growth stands of these trees, such as the Joyce Kilmer Memorial Forest in western Graham County, but most of the area was logged in the early twentieth century and is now covered with a second-growth forest of varying density. Very little of the area is suitable for cultivation except the narrow bottomlands of its rivers and streams, many of which are quite fertile (TVA 1950:19).

THE CHEROKEE IN GRAHAM COUNTY

American Indians occupied the mountains of western North Carolina for over 10,000 years before the arrival of Euro-American explorers and settlers. By the time Hernando de Soto first reached the area in the sixteenth century, there were between 25,000-30,000 Cherokee Indians living in a broad region on both sides of the Southern Appalachians. Their range included parts of what are now North Carolina, Virginia, Tennessee, Alabama, and Georgia.

Cherokee settlements were divided into three town groupings, each of which had its own dialect: the Lower Towns on the Savannah River in South Carolina; the Middle Towns in western North Carolina along the Little Tennessee River valley; and the "Valley Towns" on the Hiwassee and Valley rivers. The Middle Towns also included a remote area known as the Out Towns on the Tuckasegee and Ocanaluftee rivers (Anderson and Wetmore 2010; Bishir et al. 1999:12).

With the tribe decimated by disease and warfare, white settlers began to encroach on the Cherokee's western North Carolina territory in the late eighteenth century. This culminated in the Treaty of Tellico in 1798, which ceded a portion of what is now East Tennessee to the United States in exchange for the promise that it would "guarantee the remainder of their country forever." White settlement continued swiftly, however, resulting in the second and third Treaties of Tellico in 1804 and 1805 that ceded more of the Cherokees' mountain territory to the U.S. (Graham County Centennial 1972:11).

The Cherokee Indians in Graham County struggled to maintain control of their sovereign nation and live in harmony with their new neighbors but ultimately lost the effort with the advent of Federal Indian Removal policy in 1838. This policy arrived in Graham County with the forces of General Winfield Scott, who built a stockade in Stecoah and the larger Fort Montgomery in what is now the county seat at Robbinsville.

The Cherokee Indians were rounded up in October 1838 and forcibly removed, first to Chattanooga, Tennessee, before they continued on the long "Trail of Tears" to the Indian Territory of Oklahoma. They exited Graham County along a provisional military road known today as Tatham Gap Road. Built by General Scott's troops, it was the first wagon road in the county, and it later provided a route for incoming white settlers.

Many of the Cherokee in Graham County, however, escaped the army roundup and hid in the mountains of the Santeetlah, Buffalo, and Snowbird Creek areas. Today, several hundred heirs of these people continue to live in the county and are known locally as the Snowbird Indians of the Eastern Band of Cherokee Indians, which are headquartered in Cherokee, North Carolina, located in adjacent Swain County (Graham County Centennial 1972:11).

EARLY SETTLEMENT

In the 1840s, after removal of the Cherokee Indians, white settlers began trickling into the area that would become Graham County. As one scholar wrote, western North Carolina's "settlement followed the lay of the land" as people moved into the fertile river valleys of the region, many of

which were well suited to row crop agriculture (Bishir et al. 1999:20). Early Graham County residents included circuit Methodist minister Reverend Joseph A. Wiggins, who preached to the few farm families he found along the area's river bottoms. Largely isolated from market centers, most settlers practiced subsistence agriculture on small hillside and bottomland farms. Attracted by land grants in the 1840s, a small number of settlers continued to move in and established gristmills, trading posts, and the first post office at the site of Fort Montgomery, by then called Cheoah Valley, in 1849 (Graham County Centennial 1972:9).

By the second half of the nineteenth century, the population of western North Carolina had grown to the point where residents there demanded easier access to local seats of government, resulting in the creation of several new counties. Graham County was established in 1872 from the larger Cherokee County and named after William Alexander Graham (1804-1875), a U.S. Senator (1840-1843) and Governor of North Carolina (1845-1849). Graham was also the U.S. Secretary of the Navy (1850-1852) and a candidate for the U.S. Vice Presidency in 1852. The location of the county seat was soon selected near the old site of Fort Montgomery at Cheoah Township, now known as Robbinsville (Graham County Centennial 1972:24-25).

INDUSTRY AND TRANSPORTATION

Though settlement in the area remained sparse, Graham County's ancient forests soon attracted the attention of logging interests, helping to fuel the larger region's lumber boom in the late nineteenth century. The county's lumber industry began in the 1880s with the Belding and Heiser Lumber Companies that bought and cut timber on the Santeetlah, West Buffalo, and Snowbird Creek watersheds. These companies cut only the best white pine, yellow poplar, chestnut, and cherry trees that were within horse or ox-skidding distance to a navigable stream. Logs were typically sorted into rafts and floated down the Cheoah and Little Tennessee rivers to sawmills in Chattanooga, Tennessee (Graham County Centennial 1972:91).

River log drives were discontinued by the first decade of the twentieth century, when the county's first railroads were built. The first logging rail line was built in 1905 by the Snowbird Valley Railway with tracks laid between Andrews and Little Snowbird. Logging interests continued to develop the county's transportation network as new rail lines were built to serve the Kanawah Hardwood Lumber Company, Bemis Lumber Company, and Gennett Lumber Company (Graham County Historical Society 1992:38; Graham County Centennial 1972:94).

While the development of Graham County's logging railroads progressed in the early twentieth century, the lack of surface roads hindered transportation for the general public. In fact, the lack of good roads made Graham County and western North Carolina one of the last settled areas in the state, and many county residents continued to depend on primitive wagon roads well into the twentieth century. It was not until 1931 that Highway 129 through Deal's Gap was built, providing Graham County's first major outlet to nearby markets in Knoxville and East Tennessee. The opening of this highway, known today as the "Tail of the Dragon" due to its many twists and turns over the North Carolina/Tennessee border, later helped usher in Graham County's tourist trade in the mid- to late-twentieth century (Graham County Historical Society 1992:iv).

Better transportation encouraged the development of several industries in western North Carolina, including hydroelectric power. The region's many rivers had long provided power to gristmills, sawmills, and textile mills, and by the early twentieth century, the rivers were harnessed to generate electricity (Bishir et al. 1999:43-44). The Little Tennessee River valley was ideal for hydroelectric dam development. In 1916, the Tallassee Power Company, now known as Tapoco, Inc., a subsidiary of the Aluminum Corporation of America (ALCOA), began construction of the hydroelectric Cheoah Dam on the Little Tennessee River in northwestern Graham County. The Tallassee Power Company followed this dam in 1925-1928 with construction of the hydroelectric Santeetlah Dam on the Cheoah River, northwest of Robbinsville (Graham County Historical Society 1992:iv). By 1933, Tallassee Power Company had added a third dam to its Little Tennessee River hydroelectric system with the Calderwood Dam in Blount and Monroe counties, Tennessee (TVA 1950:1).

THE FONTANA PROJECT

With the inception of the TVA in 1933, the agency sought to include the Little Tennessee River in its overall approach to provide flood control and hydroelectric power in the Tennessee Valley. "This stream," wrote the agency, "with a drainage area of 2,627 square miles and exceptionally heavy precipitation in the headwaters, has an average flow of 5,540 cubic feet per second at the mouth, thus making it one of the major tributaries of the Tennessee" (TVA 1950:1). Recognizing this, TVA began developing plans to build a dam of over 400 feet in height at the Fontana site. Previously, there had been lumber and copper mining camps named "Fontana" in the vicinity, and the name was used again for this project (Bishir et al. 1999:397).

ALCOA had considered for several years the possibility of building a dam at this site, but the TVA now had Congressional authority over ALCOA to control dam and flood-control decisions in the Tennessee Valley. ALCOA's previous three dams on the river, however, gave the company a stake in how the TVA progressed with the project. As a result, "an agreement between TVA and ALCOA relating to the Fontana project and the coordinated operation of the power facilities of the two parties was signed August 14, 1941" (TVA 1950:17).

Under this agreement, ALCOA conveyed to the United States all lands, water rights, rights-of-way, and other interests that the company owned at the Fontana, North Carolina site. In exchange, the TVA waived the rights to compensation for any benefits accrued to the Cheoah or Calderwood power plants as a result of the Fontana dam's operations. ALCOA received other reimbursements for its property, including the right to build two more dams upstream from Fontana, one at Glenville on the west fork of the Tuckasegee River and at Nantahala on the Nantahala River. These dams were completed in 1941 and 1942, respectively (TVA 1950:17).

Congress authorized funds for the Fontana project on December 17, 1941, as a part of the World War II emergency program to power factories making aluminum aircraft for the war near Maryville, Tennessee, and processing uranium at the secret operations at Oak Ridge, Tennessee. Construction began January 1, 1942, and closure of the dam occurred on November 7, 1944. The first of the dam's two power generators began operation on January 20, 1945, "only 36 1/2 months after the start of construction, in time to be of considerable value in the closing phases of the war" (TVA 1950:1). The total cost of the project was approximately $70 million.

The completed dam was a straight, gravity-powered, concrete structure with a height of 480 feet, the highest dam east of the Rocky Mountains and the fourth highest in the world at the time of its completion (Figure 4). Crews worked in three shifts around the clock, six days a week. Fourteen people were killed during construction. Local stone was quarried nearby for aggregate in the concrete; the quarry site is visible just downstream from the dam at the north end of the Little Tennessee River Bridge (GH69), which was also built during the project (Bishir et al. 1999:396). Inundation of the Fontana Reservoir created a 1,157,300-acre lake that provided a high degree of flood control in the Tennessee Valley. The completion of the dam was a remarkable feat considering it was built in wartime conditions, in a remote and largely inaccessible location with an acute local labor shortage (TVA 1950:1).

Key to the success of the project was TVA's ability to assemble a large and stable labor force of over 5,000 construction workers and their families in a remote location. The nearest towns to the dam site were Robbinsville and Bryson City, which were over 30 miles away by road and did not have the facilities for such a large influx of people. As it had done at the Hiwassee in Cherokee County and Norris Dam in Tennessee, the TVA started construction of an extensive worker construction camp as soon as the authorizing legislation passed. The first quarters consisted of three tent colonies and prefabricated dormitories erected near the construction site on the river. These were phased out as a permanent worker village was constructed in nearby Welch Cove, just southeast of the dam site (TVA 1950:12).

Welch Cove was first settled in the nineteenth century, though how it got its name is unclear as there was no mention of Welches in any of the available county histories that discuss the area. The earliest documented resident of the cove was Cyrene Gunter, who received a visit in 1875 from his brother Jesse Gunter, a resident of the nearby village of Stecoah. Jesse reportedly loved the cove's scenic beauty so much that he moved there with his wife, Catherine, and their children. He then built a story-and-a-half double-pen log house that remains standing to this day, known at Fontana as the Jesse Gunter Cabin and formerly used by the resort as a gift shop. Two of the Gunter children died in 1884, followed by their mother Catherine in 1888 (Graham County Centennial 1972:70). Their graves are the oldest in Welch Cemetery, located on the top of a knoll just west of their cabin, roughly in the middle of the cove.

Just prior to the arrival of the TVA, Welch Cove was home to a small number of farm families. A 1935 TVA map of the area shows a road and four farm residences, as well as a school (Figure 5). According to one source, "the Welch Cove School was established in the late 1800s in a building located near what is now the Fontana Golf Course. Until the construction of the Fontana Dam began in 1941 [sic], about forty students attended here" (Graham County Historical Society 1992:41). This school was replaced with a new one built for the Fontana construction camp.

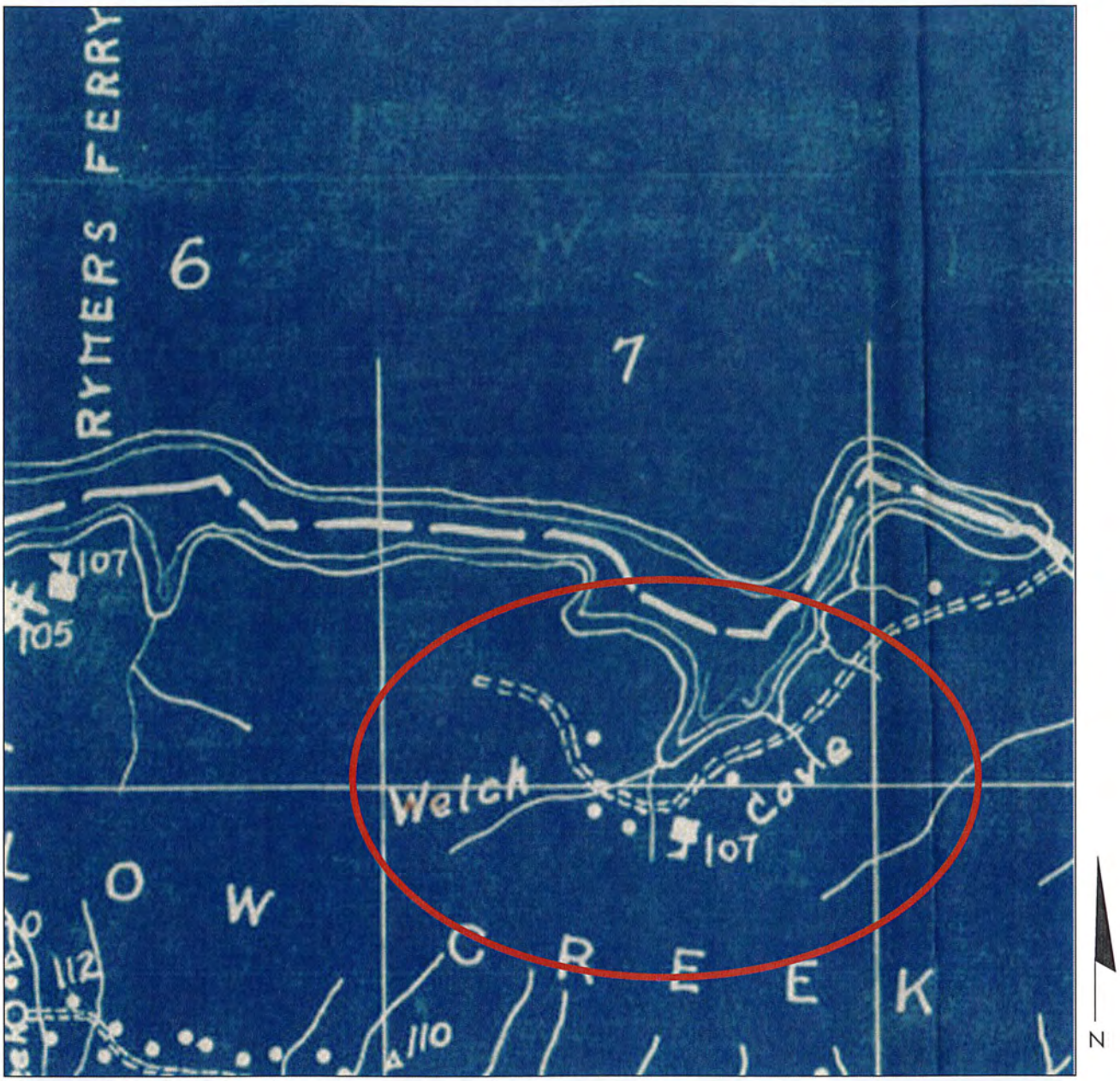
As the TVA phased out its use of tents and prefabricated dormitories, it quickly constructed the permanent worker village in Welch Cove. At the peak of dam construction, there were 180 permanent houses, an additional 204 prefabricated houses of TVA design, 217 TVA-provided trailers, and 150 privately-owned trailers (Figure 6a). The village also featured a hospital, a

Figure 4.
Photographs Showing Current Views of Fontana Dam

A. View of Fontana Dam, Looking Northeast

B. View from Fontana Dam Visitor Center, Looking South

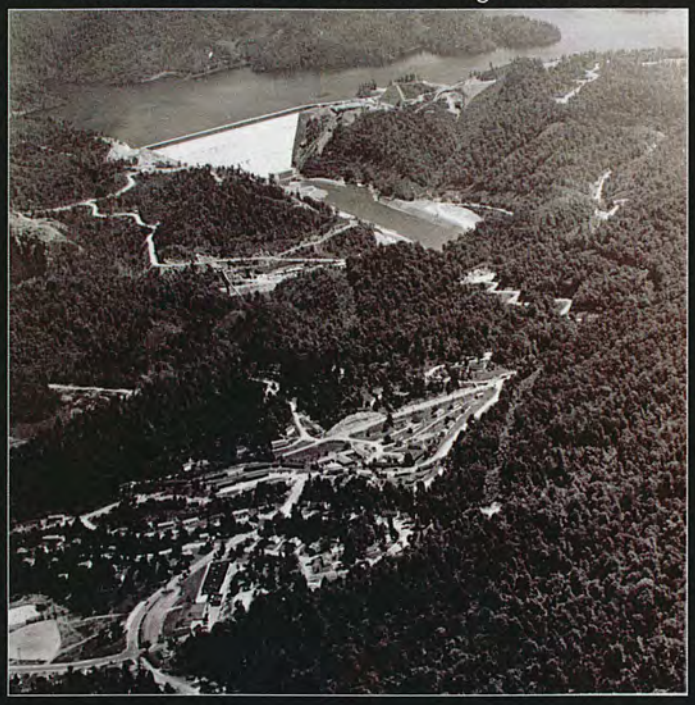
Figure 5.
1935 Map of Welch Cove Showing Road and Development



Source: North Carolina State Archives

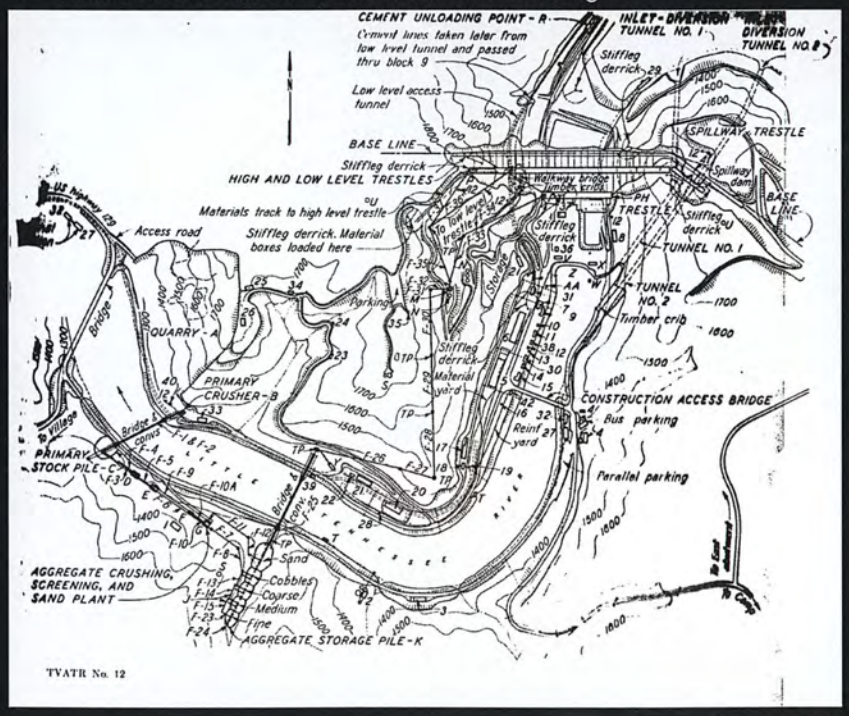
Figure 6.
Historic Views of Fontana Village and Dam

A. Historic Aerial View of Fontana Village and Dam



Courtesy of the TVA

B. Fontana Dam Plan of Construction and Buildings



Source: TVA 1950:42

recreation hall, libraries, softball fields, a movie theater, and a "business center" with a grocery store, barber and beauty shops, drug store, post office, and a bank. The Fontana project employed a number of African-American laborers who lived in a segregated area of the camp located just across present-day State Highway 28 to the north of the main camp. Facilities in the black section of camp included several prefabricated houses, a large tent area, a school, and a recreation building (TVA 1950:12-13). Today, this area is largely overgrown with trees that obscure its past.

THE FONTANA DAM WATER TREATMENT PLANT

Water and sewage infrastructure systems were key to the healthy operations of such a large construction camp. Early in 1942, the TVA built a temporary water treatment plant in the Bee Cove area while it worked on the existing permanent facility (Figure 7). The permanent treatment plant was located on the south bank of the Little Tennessee River near the mouth of Lewellyn Creek, about 4,000 feet downstream from the dam. Water was drawn to the plant through a pipeline that ran from Eagle Creek on the north bank of the river a little over a mile upstream from the dam. The plant was similar in layout and construction to the one built at the Watts Bar Dam in Meigs and Rhea counties, Tennessee (TVA 1950:227-228). A complete architectural and engineering description of this plant is provided in the following chapter.

FONTANA VILLAGE AFTER DAM COMPLETION

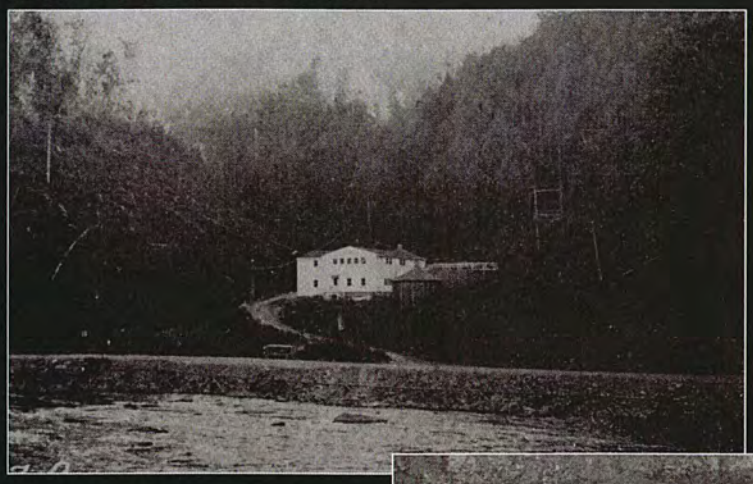
In January of 1945, the Fontana Dam was complete and its first power generator was in operation. With only a few full-time employees required to operate the dam, the TVA turned its attention to repurposing its extensive construction camp for a tourist resort. Tourism had been a well-established industry since the railroads first reached western North Carolina in the late nineteenth century. Entrepreneurs built lodges and resorts that promised weary urban residents that the mountains would provide rest and relaxation in the "Switzerland of America" (Bishir et al. 1999:36-7).

Fontana was made accessible from the outside world with the construction of the State Highway 28 connector to U.S. Highway 129, which almost immediately drew crowds of tourists who wanted to see the dam and enjoy the area's scenic beauty. Looking to capitalize on this, the TVA publicly advertised the following appeal: "TVA is desirous of obtaining an agency, public or private, to assume the operation of the townsite of Fontana Village...TVA feels that this would be an ideal vacation and recreation place" (Graham County Centennial 1972:70).

It was not until 1946 that a private company called Government Services, Inc. assumed management of the village as a vacation resort. The resort quickly grew in popularity as the original TVA buildings were used to serve vacationers. The resort repurposed over 300 of the original TVA houses, the cafeteria, laundry, and commercial buildings, among others. The resort also added a hotel lodge and other buildings (Graham County Centennial 1972:70).

Figure 7.
Historic Views of the Fontana Dam Water Treatment Plant

A. Exterior View, View Southeast



Source: TVA 1950:252

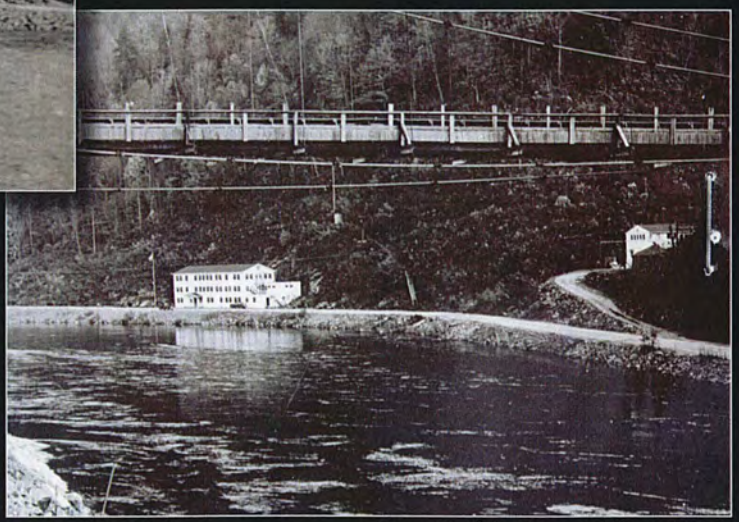
B.
Exterior View of Rear Yard,
View North

Source: TVA 1950:228

C. Exterior View,
View Southwest

Courtesy of the Fontana Village Resort

D.
Exterior View of
Water Treatment Plant
and Administration Building
(Demolished), View Southeast



Courtesy of the Fontana Village Resort

III. SURVEY RESULTS

PREVIOUS RESEARCH

A records search at the NC-SHPO determined that the Fontana Dam and Fontana Village were previously surveyed in 2004. The existing 1942 WTP was not included in this survey. The NC-SHPO determined that the dam and associated Visitor Center are eligible for listing in the NRHP. Fontana Village was determined to be eligible for listing in the NRHP as a historic district, but recent changes such as building removal and replacement of original materials have resulted in the village retaining insufficient historic integrity to be NRHP eligible.

The 1945 Little Tennessee River Bridge (GH69) was surveyed in 2003 by Lichtenstein Consulting Engineers, Inc. and was recommended eligible for listing in the NRHP under Criterion A for its association with the TVA Fontana Dam project and under Criterion C for its engineering significance as the earliest identified example of the use of continuous-cantilever design with pin-and-hanger connections in North Carolina. The bridge survey form stated, "the bridge is the longest and most impressive of the several bridges built by the TVA in association with water control projects in western North Carolina from the mid-1930s to the 1950s" (Lichtenstein 2003).

SURVEY METHODS

Project staff conducted background research and a historic structures survey for the proposed WTP within the surrounding 0.5-mile APE. The survey included the documentation and evaluation of two properties located within the APE for their NRHP eligibility, including the existing Fontana Dam WTP (GH68) and the Little Tennessee River Bridge (GH69). No other properties within the APE were identified and the TVA treated archaeological properties separately.

Architectural survey of these properties occurred on August 9 and 10, 2011. The existing Fontana Dam WTP was documented with digital photographs of all exterior elevations as well as its setting, exterior water tanks and other infrastructure, and interior rooms and equipment. Additional photographs were taken to capture views of the project area while looking to and from the Little Tennessee River Bridge to give a sense of the visual impact that the project will have on this resource (see Figure 14). A single "Historic Property Field Data Form" was completed to record the WTP's architectural features, floor plan, and a sketch map showing its orientation and setting. Per instructions from the NC-SHPO, the WTP was designated "GH68" (Appendix B).

Project staff also photographed the current condition and setting of the Little Tennessee River Bridge, which was previously documented by Lichtenstein Consulting Engineers in 2003. Per instructions from the NC-SHPO, a "Historic Property Field Data Form" was completed for the bridge and it was designated "GH69" (Appendix B).

Background research began at the NC-SHPO, which provided previous survey records of the Fontana Dam and Fontana Village area. The Town of Fontana Dam provided project plans for the proposed WTP, a copy of the official TVA history of the dam and construction camp, and several historic photographs of the WTP. Staff at the TVA Fontana Dam Visitor Center provided additional historic photographs. County history research was completed at the Public Library in Robbinsville, North Carolina, and with online sources.

The 1942 Fontana Dam WTP was evaluated for its eligibility for listing in the NRHP using the NRHP Criteria for Evaluation:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of significant persons in or past; or
>
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. That have yielded or may be likely to yield, information important in history or prehistory.

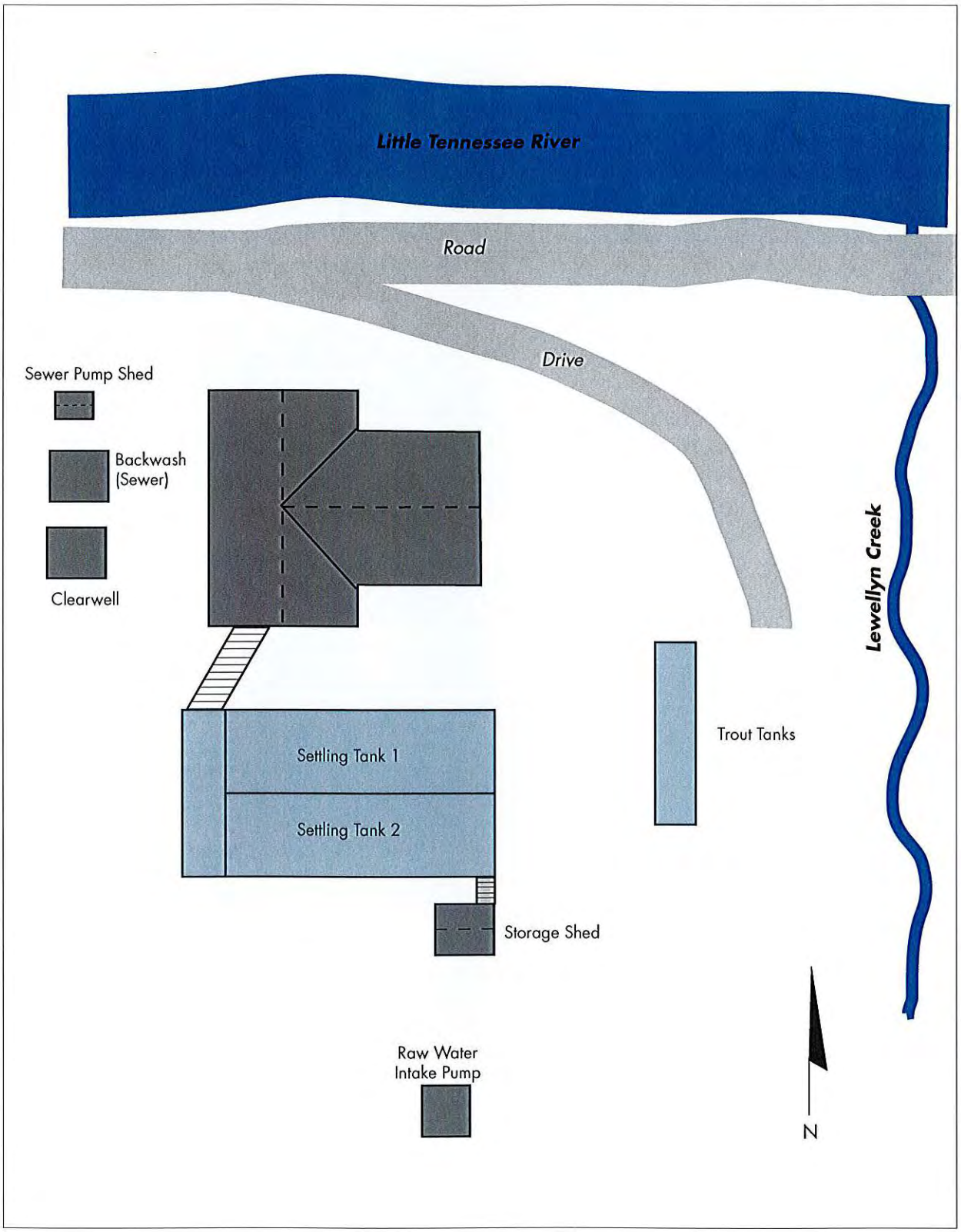
SUMMARY OF FINDINGS

FONTANA DAM WATER TREATMENT PLANT (GH68)

The Fontana Dam WTP is located on the south bank of the Little Tennessee River at the mouth of Lewellyn Creek, nearly one mile downstream from the TVA Fontana Dam. Neither the dam nor the Little Tennessee River Bridge is visible from this site. The existing WTP sits on the hillside above a river access road that leads from State Highway 28 to a TVA campground located just below the dam (Figure 8). The plant consists of one main building, three exterior concrete water-holding tanks, a raw water intake pump, a frame storage shed, and a concrete block pump house. The building site was originally cleared of trees and brush but is now obscured by vegetation. The WTP has been in continuous use by Fontana Village since its 1942 construction.

The main WTP building was constructed in two phases in 1942 and retains many original architectural features and elements. It is a utilitarian infrastructure building that does not exhibit any architectural style. The first portion built was a two-story frame building 31 feet wide by 53

Figure 8.
Fontana Dam WTP Site Plan



feet long with a front-gable, corrugated-metal roof. The ground floor is clad in weatherboard siding. The siding on the second floor is flush-mounted weatherboard siding, which is visually separated from the ground floor by molded trim. The building has a cast concrete foundation. It retains nearly all of its original one-over-one wood-sash windows, except for one replacement six-over-six window on the ground floor of the west elevation and one replacement six-over-six window on the ground floor of the south (rear) elevation.

The building's front façade faces north toward the Little Tennessee River and features an offset entrance approached by a small, non-original wooden porch that is covered by a wood awning (Figure 9a). Next to the entrance on the first floor are two one-over-one wood sash windows. Above the entrance on the second floor is a band of five original single-pane fixed windows. The rear (south) elevation of the building has an almost identical fenestration, except it has an entrance that leads from the second floor to a wooden walkway connecting the building to water settling tanks in the rear yard (Figures 9b, 9c, and 9d). The west elevation of the building has two pairs of one-over-one wood sash windows on the second floor, two single windows on the ground floor, and a boarded-up loading bay (Figure 9e). There is significant rot in the weatherboard siding at the northwest corner of the building, and around the windows on the rear elevation.

Fontana Village's size and water needs grew quickly in 1942, so the TVA added a two-story, 23-feet wide by 31-feet long addition to the east side of the original building. The addition was identical in construction to the original building, except it has a concrete block foundation. It has an awning-covered entrance on the rear elevation.

The interiors of both sections of the WTP retain many original features and elements (Figure 10). The original section has a reinforced concrete floor and wooden staircase leading from the entrance to the second floor (Figure 11a). The floor of the addition is wooden. The main features of the building's interior are its four original redwood water tanks, pumps, and other engineering features (Figures 11b, 11c, and 11d). The water tanks extend from the ground floor up through the ceiling and are accessed from the second floor (Figure 11e).

The building's interior features were described by the TVA in its 1950 publication, *The Fontana Project*:

> "The original building contained one mixing tank, one filter tank, two chlorinators, two lime feeders, one alum feeder, two service pumps, one 450-gallon-per-minute pump rated at 355-foot head, and a 3,000-gallon-per-minute backwash pump rated at 40-foot head. An 89,500-gallon-capacity settling tank and 48,650-gallon-capacity clearwell tank were built just south of the building" (TVA 1950:228).

All of these features remain intact except the original wooden exterior settling and clearwell tanks, which were all replaced with concrete tanks in the 1970s.

Figure 9.
Exterior Views of the Fontana Dam Water Treatment Plant

A. North Façade, View South

B. South Elevation, View Northwest

C. South Elevation and Rear Walkway, View North

D. Rear Yard And Concrete Water Tanks, View North

E. West Elevation, View Southeast

F. East Elevation, View West

G. Streetscape and
Water Treatment Plant Driveway, View East

Figure 10.
Fontana Dam WTP Floor Plans

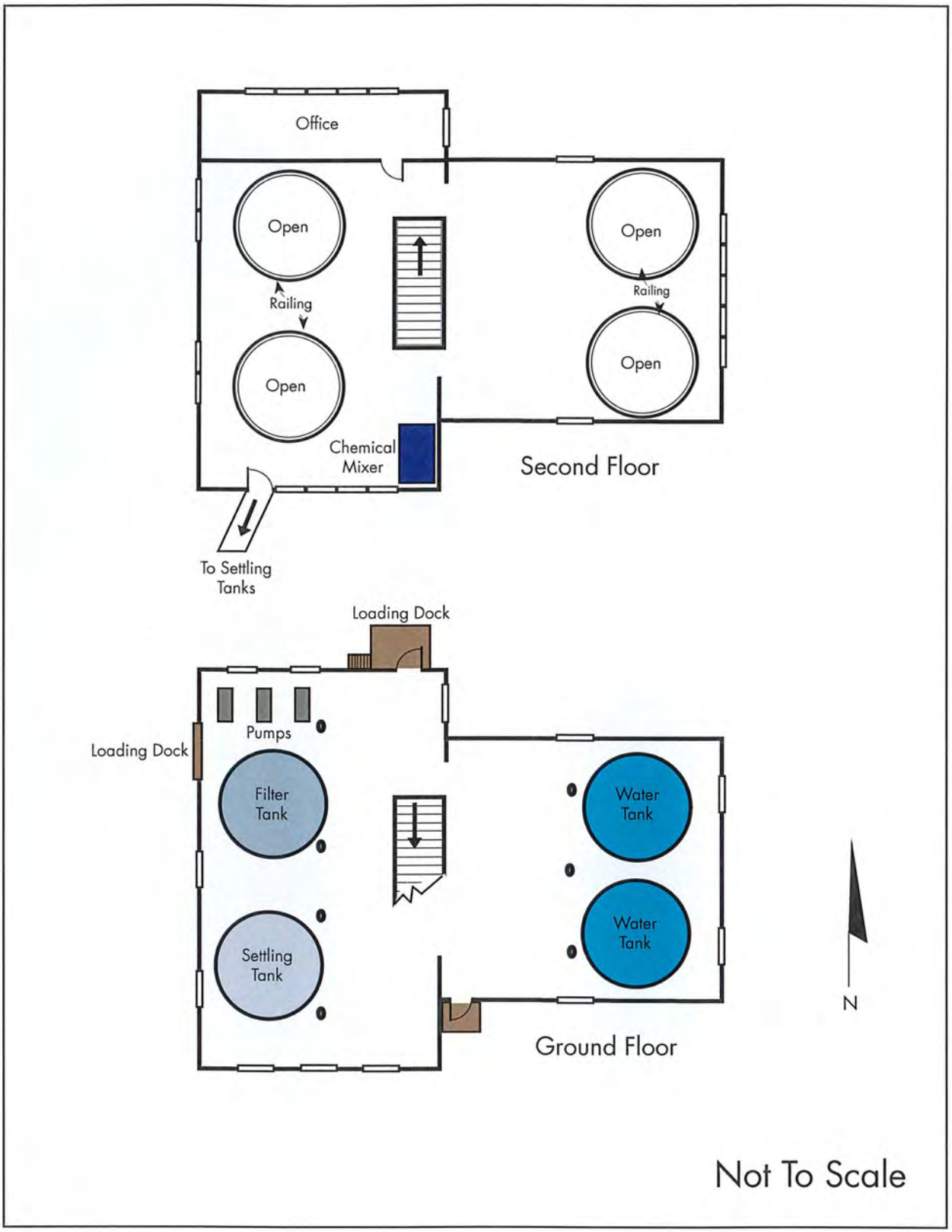


Figure 11.
Interior Views of the Fontana Dam Water Treatment Plant

A. Stairway, Pumps, and Holding Tanks, View South

B. Original Redwood Water Tanks, View East

C. Original Plant Control System

D. Top of Water Tank on Second Story, View East

E. Water Pumps, View East

Raw water for the WTP is obtained via an intake pump in the rear (south) yard of the WTP, which draws water from Fontana Lake Reservoir. The intake pump was originally covered by a housing structure that was removed at an unknown date (Figure 12).

Water is sent from the intake pump to the interior mixing tanks, where it is treated with chemicals and then pumped outside to a pair of rectangular concrete settling tanks. The settling tanks are accessed via a second floor wooden walkway. After the chemicals have bonded to bacteria and settled to the bottom of the tank, the treated water is pumped back inside to the filter tanks that separate any leaves or other debris that might have fallen into the tank. From the filter tank, the water is pumped a third time into the exterior covered clearwell tank on the west side of the building. From there, the finished product is pumped up to an intermediate holding tank on the hill above the WTP, which is accessed from State Highway 28. Pumps at the intermediate tank then send the water up to gravity-powered holding tanks on the mountainside above Fontana Village Resort.

There is a non-original frame storage shed on the southeast corner of the concrete settling tanks. This one-room, gable-roof shed is elevated on wood piers and connected to the settling tanks via a frame walkway. Many of the original outbuildings and infrastructure elements on the exterior of the WTP have been razed or replaced.

Immediately east of the concrete settling tanks are a set of three non-original metal trout incubator tanks. The tanks have not been used in years and are mostly overgrown with vegetation.

NRHP EVALUATION

For this evaluation, the Fontana Dam WTP was evaluated for the NRHP under Criteria A, B, and C. Built in 1942, the property is primarily associated with the construction of Fontana Village, which is located approximately one mile to the south. The WTP is an example of a utilitarian infrastructure building with no particular significance in the history of water filtration and treatment and does not by itself communicate the larger historic significance of Fontana Village. Therefore, the Fontana Dam WTP is not recommended eligible for listing in the NRHP under Criterion A.

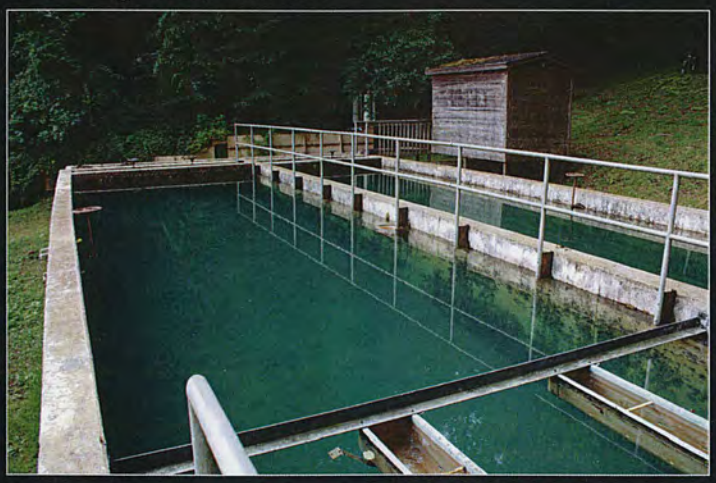
Background research did not indicate any associations with a historically significant person or people, so the Fontana Dam WTP is not recommended eligible for listing in the NRHP under Criterion B.

The Fontana Dam WTP is a utilitarian infrastructure building that does not embody the distinctive characteristics of a type, period, or method of construction. It does not represent the work of a master architect. It does not possess high artistic value. Lastly, it does not represent a significant and distinguishable entity whose components lack individual distinction. Therefore, the Fontana Dam WTP is not recommended eligible for listing in the NRHP under Criterion C. Given this assessment, the WTP does not meet the applicable NRHP criteria and is not recommended NRHP eligible.

Figure 12.
Exterior Concrete Water Tanks

A. Clearwell Tank, View Northwest

B. Settling Tanks, View East



C. Intake Pump, View Southwest

LITTLE TENNESSEE RIVER BRIDGE (GH69)

This bridge carries a two-lane road over the Little Tennessee River approximately one mile downstream from the TVA Fontana Dam (Figures 13 and 14). To prepare for the dam project, the TVA had to relocate several roads, bridges, and railroads in the reservoir area, including the main highway between Graham and Swain counties that previously followed the river valley. The TVA first built a temporary timber bridge in this location in 1942 to provide a river crossing and access road below the dam. As stated in a 2003 Historic Bridge Inventory Report by Lichtenstein Consulting Engineers, Inc., "this timber bridge was later replaced in 1945 with the present steel girder-floorbeam bridge, which made use of steel beams salvaged from the construction trestles that had been used to carry the materials and concrete during the pouring of the dame. The many extraneous holes observed in the beams of the bridge attest to their prior usage in the construction of the dam" (Lichtenstein 2003) (Appendix A).

The bridge has five spans and is 529 feet long and 26.7 feet wide. It has a continuous-cantilever steel deck girder and floorbeam structure with low concrete parapets with pipe handrails. The spans from east to west are 88 feet, 121 feet, 121 feet, 121 feet, and 87 feet. The bridge is composed of riveted, built-up girders that are continuous over the concrete piers. The girders are made continuous with riveted splice plates. The end span girders have cantilevered sections with pin-and-hanger connections. Rolled floorbeams and stringers support a concrete deck. The deck panels have angle crossbracing. The bridge is supported on approximately 45 feet high, solid-stem reinforced concrete piers and abutments. Solid plain concrete parapets extend over the slightly flared wingwalls (Lichtenstein 2003).

Plaques at both ends of the bridge read, "American Institute of Steel Construction, Annual Award of Merit, Most Beautiful Steel Bridge, Class III, 1945."

NRHP EVALUATION

In 2003, the Little Tennessee River Bridge was recommended eligible for listing in the NRHP by Lichtenstein Consulting Engineers, Inc., under Criteria A and C. The current conditions of the bridge show that it is unchanged and retains all seven aspects of integrity, including its location, design, setting, materials, workmanship, feeling, and association. Therefore, the Little Tennessee River Bridge remains eligible for listing on the NRHP under Criteria A and C.

The proposed project would build a new Fontana Dam WTP at a site just west of the existing 1942 WTP (GH68), on the south bank of the Little Tennessee River (Figure 3). The proposed project will occur outside the NRHP boundary of the bridge and will therefore not diminish the integrity of its location, design, materials, workmanship, feeling, or association. The project will be visible from the viewshed of the historic bridge and will therefore somewhat alter its setting. This change to the bridge's setting will be minimal, however, and will not interfere with its eligibility for listing in the NRHP under Criteria A and C.

Courtesy of the TVA

Figure 13.
Historic View of Little Tennessee River Bridge, Looking Northeast, 1946

Figure 14.
Current Views of the 1945 Little Tennessee River Bridge

A. Bridge, View West
Elevation from Project Site

B.
Bridge, View North

C. American Institute of
Steel Construction Award Plaque

B. Bridge Viewshed, Loking East from Bridge
Towards Project Site

IV. CONCLUSION

New South Associates conducted background research and a historic structures survey for the proposed WTP within a surrounding 0.5-mile Area of Potential Effects (APE). The survey documented and evaluated the NRHP-eligibility of the Fontana Dam WTP (GH68) and the Little Tennessee River Bridge (GH69).

The Fontana Dam WTP, built by the TVA in 1942 to provide treated drinking water for the Fontana Dam worker construction camp, is recommended not eligible for listing in the NRHP.

The Little Tennessee River Bridge was also built by the TVA in 1945. New South Associates concurs with the previous recommendation that the Little Tennessee River Bridge is NRHP eligible.

Finally, New South Associates recommends that the proposed project will have No Adverse Effect under Section 106 of the NHPA to the NRHP-eligible Little Tennessee River Bridge.

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APPENDIX A.

LICHTENSTEIN CONSULTING ENGINEERS' HISTORIC BRIDGE INVENTORY REPORT

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

HISTORIC BRIDGE INVENTORY REPORT — LICHTENSTEIN CONSULTING ENGINEERS, INC.

Bridge ID No: 370009 **County:** GRAHAM **Div:** 14 **City:**

Location: 1 MI.N.JCT.SR1246 **UTM:** 17 244330 392629 **Owner:** STATE

Bridge Name: LITTLE TENNESSEE RIVER BRIDGE

Facility Carried: NC 28

Carried/Feature Intersected: NC 28 OVER LITTLE TENNESSEE RIVER

Type: GIRDER AND FLOORBEAM **Design:** CONTINUOUS/CANTILEVER

Material: STEEL **# Spans:** 5 **Length:** 529 **Width:** 26.7 **# Lanes:** 2

Railing Type: CONCRETE PARAPETS WITH 1 BAR PIPE HAND RAIL

Date of Construction: 1945 **Alteration:** **Source:** NCDOT BRIDGE MAINT. UNIT FILE

Designer/Builder: TENNESSEE VALLEY AUTHORITY

Current National Register Status of Bridge: Not Previously Evaluated.

Local, Determined Eligible, or NR Historic District/Status:

Name/Date:

Located in Potential Historic District/Historic Context? No

Adjacent to Identified or Potential Historic Properties?

No National Register, Study List, D.O.E., locally designated, or previously surveyed properties are located adjacent or close to the bridge.

Inventory NR Recommendation: Eligible

Setting/Context:

The bridge carries a 2 lane road over the Little Tennessee River in a sparsely developed, forested mountain setting. The river is the Swain-Graham county boundary. The bridge is approximately one mile south of Fontana Dam. At the NE quadrant is the access road entrance off of NC 28 to reach the powerhouse at the base of the dam. At the SE quadrant is the access road to a boat ramp.

Physical Description:

The 5 span, 529' long and 26.7' wide, continuous-cantilever steel deck girder and floorbeam bridge has low concrete parapets with pipe hand rails. The spans from east to west are 88'-121'-121'-121'-87'. The bridge is composed of riveted, built-up girders that are continuous over the piers. The girders are made continuous with riveted splice plates. The end span girders have cantilevered sections with pin-and-hanger connections. Rolled floorbeams and stringers support a concrete deck. The deck panels have angle crossbracing. The bridge is supported on approximately 45' high, solid-stem reinforced concrete piers and abutments. Solid, plain concrete parapets extend over the slightly flared wingwalls.

A plaque at the northwest end post reads, "American Institute of Steel Construction, Annual Award of Merit, Most Beautiful Steel Bridge, Class III, 1945."

Summary of Significance:

The steel girder-floorbeam bridge built in 1945 is historically significant for its association with the Fontana Dam Project of the Tennessee Valley Authority (TVA) (Criterion A) and technologically significant as the earliest identified example of the use of continuous-cantilever design with pin-and-hanger connections in North Carolina (Criterion C). The bridge is the longest and most impressive of the several bridges built by the TVA in association with water control projects in western North Carolina from the mid 1930s to 1950s.

The TVA has long been recognized as one of the most innovative and historically significant of the New Deal programs. Established by President Franklin D. Roosevelt in 1933, the TVA is an independent authority responsible directly to the President with a broad ranging mandate to promote water control and economic development in a 41,000

Bridge ID No: 370009 **County:** GRAHAM **Div:** 14 **City:**

square mile area of the Tennessee River drainage basin in AL, GA, KY, MI, NC, TN, and VA. Through its dams, pow stations, reforestation programs, navigation projects, role in the development of nuclear weapons and power, and a host of other activities, including development of recreational and tourism destinations, it has had a profound impact o the region's human and natural ecology.

In North Carolina, the TVA's activities in the late 1930s and 1940s centered around two massive dams - the Hiwassee Dam (completed in 1940) and the Fontana Dam (completed in 1945). The Fontana Dam site, in the narrows of the upper Little Tennessee River, had originally been acquired by ALCOA in the late 1920s and 1930s as the next step in series of dams to provide power for its aluminum refining operations (The first ALCOA dam and powerhouse was Cheoah Dam, 1919). ALCOA's stalled Fontana project was taken over in 1940 by TVA and design and construction o the massive dam, nearly twice as large as originally planned by ALCOA, was rushed through to completion during World War II with power first produced in Jan. 1945. Although publicly it was stated the power was needed for aluminum production (necessary material for warplanes), Fontana was later revealed to have been necessary to produce sufficient power to refine the uranium for the first atomic bombs at Oak Ridge, TN.

The 480' tall, 2,385'-long, Fontana Dam is the largest in the TVA system and one of the tallest in the Eastern U.S. It is not considered in the history of dam engineering among the most innovative dams of its time, as it is a simple straight crested, concrete gravity dam, but it is massive, yet graceful, and took herculean efforts to construct in what was then an isolated setting. It and Fontana Village, originally created as a workers' community and complete with many of its prefabricated housing units, are now important recreational and tourist destinations.

Bridge and road construction were necessary but ancillary components of most large dam and reservoir projects of the TVA, US Army Corps of Engineers, and private industry in the 20th century. Some road and bridge construction was usually necessary to access the construction sites, and the condemnation of land and the filling of the reservoir, especially behind massive dams, required the relocation of many existing roads and bridges. Fontana Dam project wa no exception and one of the main roads through Graham and Swain counties, which had followed the valley of the Litt Tennessee, had to be relocated to higher ground and is now NC 28.

To provide a crossing of the Little Tennessee and access road below the Fontana Dam site, the TVA constructed a temporary timber bridge in 1942. This timber bridge was replaced in 1945 by the present steel girder-floorbeam bridge which made use of steel beams salvaged from the construction trestles that had been used to carry the materials and concrete during the pouring of the dam. The many extraneous holes observed in the beams of the bridge attest to the prior usage in the construction of the dam.

The bridge is a continuous-cantilever design with pin-and-hanger connections. In this case, the connections were introduced in the end spans primarily as a detail to take care of any settlement in the abutments, which at the north en was founded on spoils from a quarry established to crush rock for the dam construction. The pin-and-hanger connections are a detail that were originally used in the late 19th century with large cantilever truss bridges and found their way into steel stringer and girder-floorbeam bridge types/designs in the 1920s and 1930s. The design allows for longer clear span with a shallower beam, achieving economy not only in the depth of the beam, but also in reducing th number of piers necessary to span a given length of crossing with a simply supported span of the same beam depth. By the 1930s, continuous-cantilever girder-floorbeam and stringer bridges regularly had spans of upwards of 100'. Previously that length was usually spanned with truss structures. This bridge, although not early by national standards is the earliest known example of continuous-cantilever with pin-and-hanger connections in North Carolina.

The bridge won the American Institute of Steel Construction's award for "most beautiful bridge in its class" in 1945. This award was established in 1928 and awarded to bridges in four classes based on length and cost with Class I the longer and more costly bridges. The NC 28 over Little Tennessee River bridge won the award for a Class III bridge in 1945 based on its "simplicity of details that gives the bridge a striking appearance." Although it has no aesthetic or architectonic details, engineers in the 1930s to 1950s often stressed the beauty of clearly expressed function and clea geometric lines, which this bridge certainly has. It is noted also that competition was limited in 1945 as so few bridges were built due to WW II and steel shortages for anything but critical defense projects.

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Bridge ID No: 370009 **County:** GRAHAM **Div:** 14 **City:**

1950.
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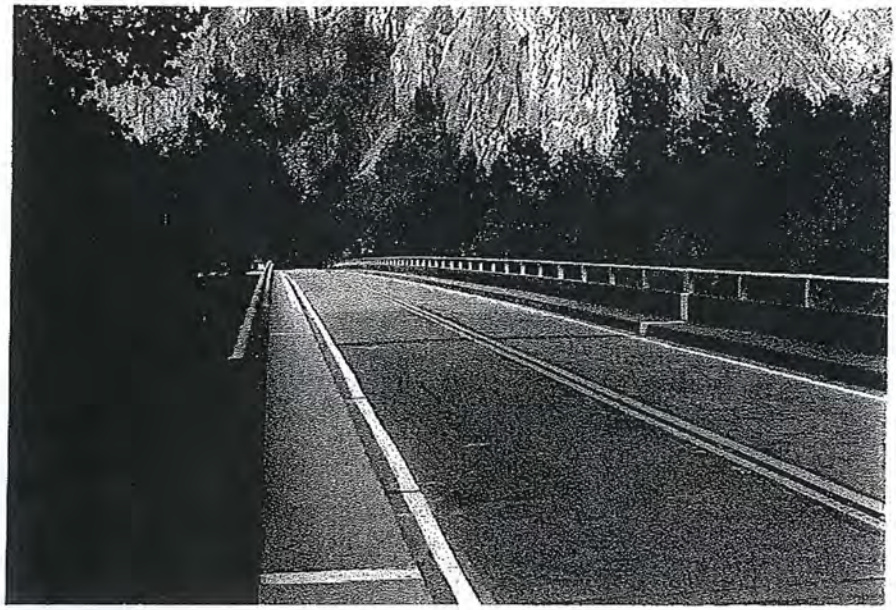
Boundary Description and Justification for Eligible Bridges:

The bridge has been evaluated individually significant. The boundary is limited to the superstructure and substructure of the bridge.

Reviewed By/ Date: JPH (1/03)

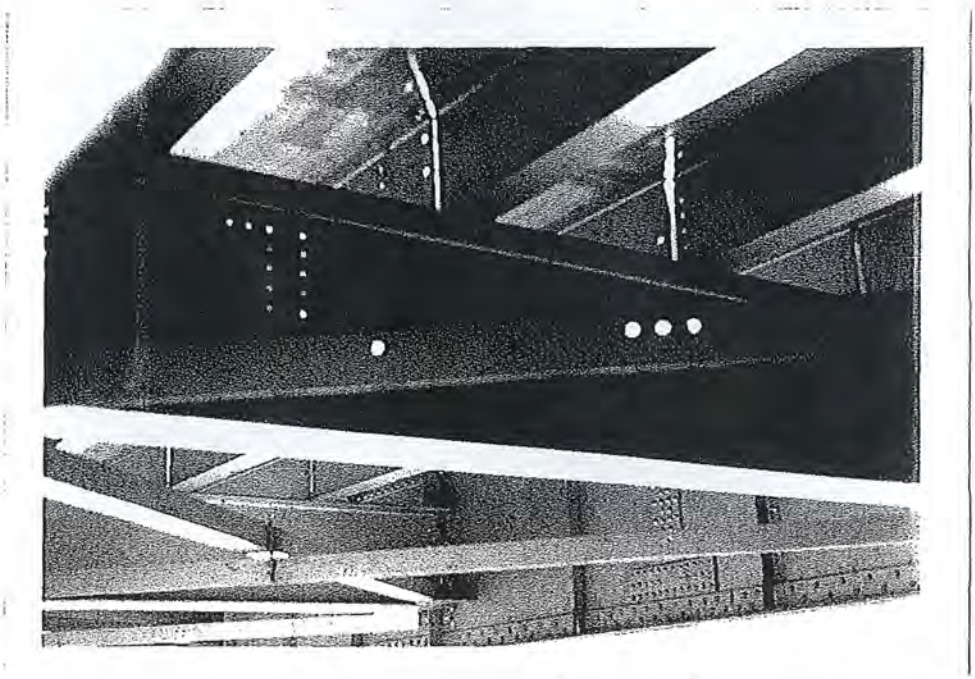
Notes: Additional photos in file.



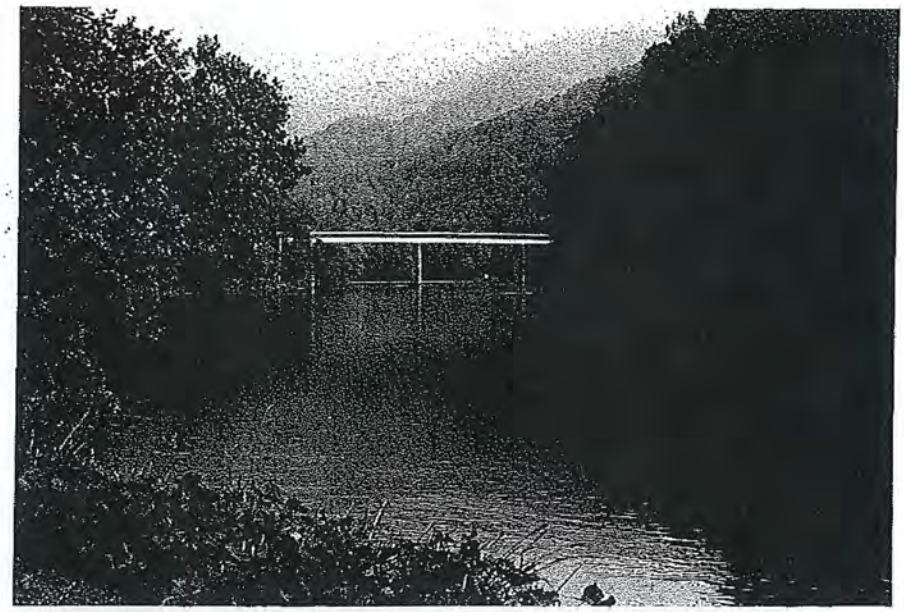
207:14. Through view looking north.

207:15. Upstream (east) elevation.

207:10. Detail of northern span (upstream elevation) showing pin-and-hanger connection.



207:11. Underneath view of northern approach span. Note holes in the beams as evidence of their original use as part of a construction trestle for the Fontana Dam.



207:8. Downstream elevation from NC 28 to the northwest of the bridge.

207:9. Through view looking south.

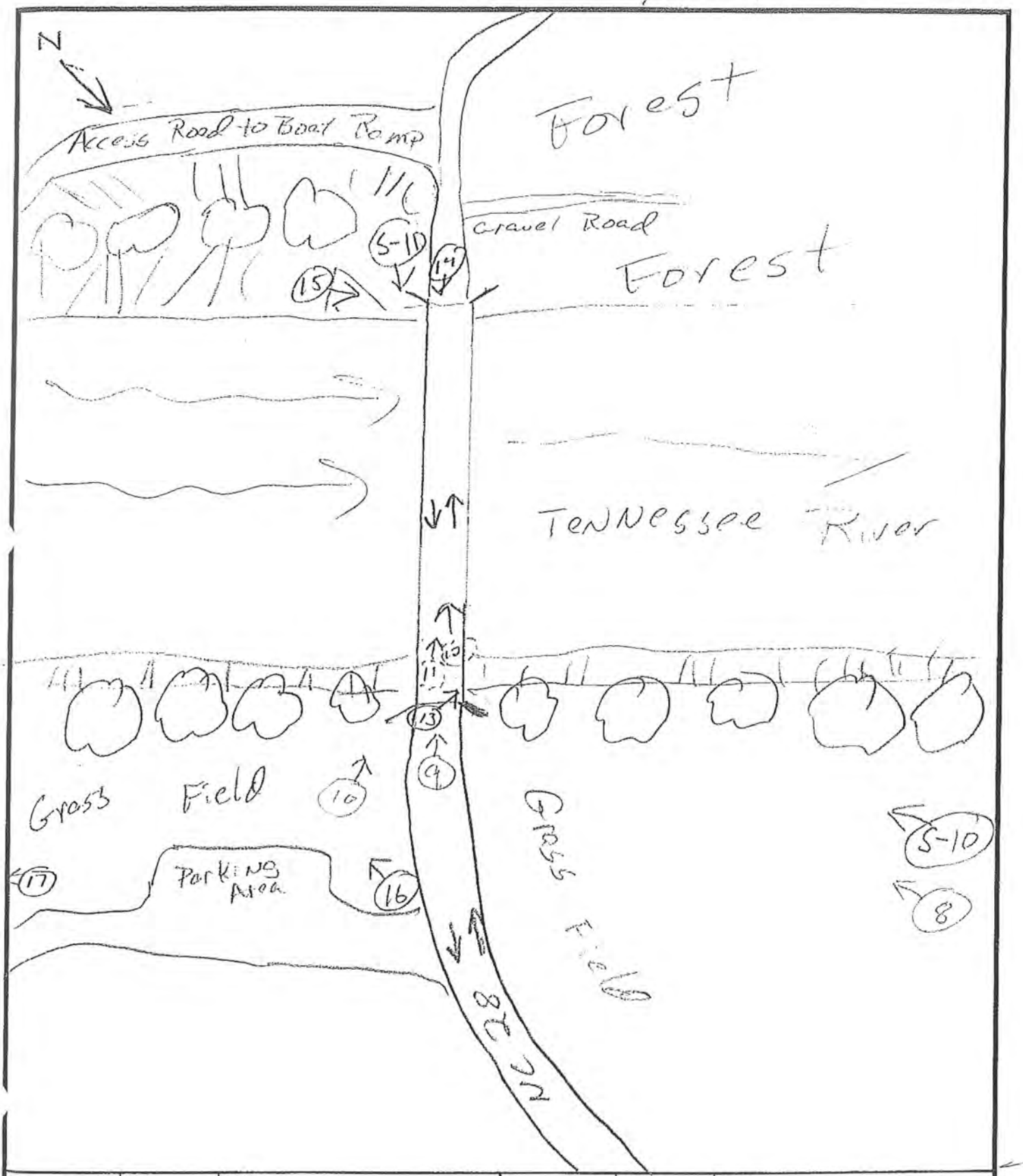
Lichtenstein
Consulting Engineers

Field Notes

PROJECT NO _____ BRIDGE NO 970009

DATE _____ SHEET _____

CREW NC 28/Little Tennessee River



REVISION 1	DATE	CREW	REVISION 2	DATE	CREW
REVISION 3	DATE	CREW	REVISION 4	DATE	CREW

APPENDIX B.

NC-SHPO HISTORIC PROPERTY FIELD DATA FORMS

North Carolina State Historic Preservation Office

HISTORIC PROPERTY FIELD DATA FORM

Circle your responses or write custom responses.

County GH **Survey Site Number:** GH 68 **ER:** _____ **GIS:** _____

Property Name: Fontana Village Water Treatment Plant

Street Address / location description: S. side access road, 0.5 mi. E of NC 28

Town: Fontana Village *vicinity* **Ownership:** *fed state local* (private) *non-profit unknown*

District / Neighborhood Association: _____ *contrib non-contrib*

Surveyor: David Price - New South Associates **Date:** August 15, 2011

For Survey Update: *No substantial change | change by alteration | change by deterioration | outbuilding loss | rehabilitated | removed or destroyed | not found | no access | file missing | newly identified | needs research*

Study List / DOE recommendation: *eligible |* (*not eligible*) **Criteria:** *A B C D*

Material Integrity: (*High*) *Medium | Low | N/A Gone*

Condition: *Good |* (*Fair*) *| Deteriorated | Ruinous | N/A Gone* **Location:** (*Original*) *Moved (year if known_____) Uncertain*

Const. Date: *ca.* 1942 **Major Style Group:** *Georgian | Geo/Fed | Federal | Fed/GkRev Greek Revival | Italianate | Gothic Revival | Queen Anne | Victorian – Other | 19th-20th c. traditional-vernacular | Neoclassical Revival | Colonial Revival | Southern Colonial | Beaux Arts | Spanish Mission | Tudor Revival | Rustic Revival | Craftsman/Bungalow | Period Cottage | Minimal Traditional | International | Moderne | Art Deco | Misc. Modernist Standard Commercial/Industrial | Ranch | Split Level |* (*Other*) No style

Construction: *Timber frame |* (*Balloon frame*) *| Load bearing masonry | Masonry veneer | Log | Steel frame | Concrete | Unknown | Other*_____

Primary Original Ext. Material: (*Weatherboard*) (*plain beaded molded novelty type unk.*) *| Batten | Wood shingles | Exposed logs | Brick | Stone | Stucco | Pebbledash | Other*_____

Covering: (*None*) *| Aluminum | Vinyl | Asbestos Shingle | Later brick veneer | Metal | Paper | Undetermined*

Height (stories): *1 | 1 ½ |* (*2*) *| 2 ½ | 3 | more than 3 (enter)* ____

Roof: *Side gable | Front gable | Triple A |* (*Cross gable*) *| Hip | Gambrel | Pyramidal | Mansard | Parapet | Flat Other*_____

Plan: *Not Known | 1-room | Hall-parlor | 3 room | Side passage | Center passage | Saddlebag | Dogtrot | Irregular Shotgun | Other*_____

Core Form (domestic): *I-house | Single pile | Double pile | Foursquare | other* _____

Design Source: Tennessee Valley Authority (TVA) *attributed | documented*

Special Associations / Themes: Built to serve TVA's Fontana Village worker construction camp.

Outbuildings and landscape features *(continue on back if necessary)*

The property contains two concrete water settling tanks, a frame storage shed, a concrete raw water intake pump, a concrete clear water tank, a concrete backwash (sewer) tank, and a concrete block sewer pump shed

Use back of sheet for narrative description and field notes and sketches

North Carolina Historic Property Field Data Form

Fontana Water Treatment Plant – GH 68

Continuation Sheets

The Fontana WTP is located on the south bank of the Little Tennessee River at the mouth of Lewellyn Creek, nearly one mile downstream from the historic Fontana Dam. Neither the dam nor the Little Tennessee River Bridge is visible from this site. It sits on the hillside above a river access road that leads from State Highway 28 to a TVA campground located just below the dam. The building site was originally cleared of trees and brush but is now obscured by vegetation.

The building was constructed in two phases in 1942, and it retains a high degree of integrity. It is a utilitarian infrastructure building that does not exhibit any architectural style. The first portion built was a two-story frame building 31-feet wide by 53-feet long with a front-gable, corrugated-metal roof. The ground floor is clad in weatherboard siding. The siding on the second floor is flush-mounted weatherboard siding, which is visually separated from the ground floor by molded trim. The building has a cast concrete foundation. It retains nearly all of its original one-over-one wood-sash windows, except for one replacement six-over-six window on the ground floor of the west elevation and one replacement six-over-six window on the ground floor of the south (rear) elevation.

The building's façade faces north toward the Little Tennessee River and features an offset entrance approached by a small, non-original wooden porch that is covered by a wood awning. Next to the entrance on the first floor are two one-over-one wood sash windows. Above the entrance on the second floor is a band of five original single-pane fixed windows. The rear (south) elevation of the building has an almost identical fenestration, except it has an entrance that leads from the second floor to a wooden walkway connecting the building to water settling tanks in the rear yard. The west elevation of the building has two pairs of one-over-one wood sash windows on the second floor, two single windows on the ground floor, and a boarded-up loading bay. There is significant rot in the weatherboard siding at the northwest corner of the building, and around the windows on the rear elevation.

Fontana Village's size and water needs grew quickly in 1942, so the TVA added a two-story, 23-feet wide by 31-feet long addition to the east side of the original building. The addition was identical in construction to the original building, except it has a concrete block foundation. It has an awning-covered entrance on the rear elevation.

The interiors of both sections of the WTP retain a high degree of integrity. The original building has a reinforced concrete floor and wooden staircase leading from the entrance to the second floor. The floor of the addition is wooden. The main features of the building's interior are its four original redwood water tanks, pumps, and other engineering features. The water tanks extend from the ground floor up through the ceiling and are accessed from the second floor. The building's interior features were described by the TVA in its 1950 publication, *The Fontana Project*: "The original building contained one mixing tank, one filter tank, two chlorinators, two lime feeders, one alum feeder, two service pumps, one 450-gallon-per-minute pump rated at 355-foot head, and a 3,000-gallon-per-minute backwash pump rated at 40-foot head. An 89,500-gallon-capacity settling tank and 48,650-gallon-capacity clearwell tank were built just south of the building" (TVA 1950:228). All of these features remain intact except the original wooden exterior settling and clearwell tanks, which were all replaced with concrete tanks in the 1970s.

Raw water for the WTP is obtained via an intake pump in the rear (south) yard of the WTP, which draws water from Fontana Lake Reservoir. The intake pump was originally covered by a housing structure that was removed at an unknown date.

Water is sent from the intake pump to the interior mixing tanks, where it is treated with chemicals and then pumped outside to a pair of rectangular concrete settling tanks. The settling tanks are accessed via a second floor wooden walkway. After the chemicals have bonded to bacteria and settled to the bottom of the tank, the treated water is pumped back inside to the filter tanks that separate any leaves or other debris that might have fallen into the tank. From the filter tank the water is pumped a third time into the exterior covered clearwell tank on the west side of the building. From there the finished product is pumped up to an intermediate holding tank on the hill above the WTP, which is accessed from State Highway 28. Pumps at the intermediate tank then send the water up to gravity-powered holding tanks on the mountainside above Fontana Village Resort.

There is a non-original storage shed on the southeast corner of the concrete settling tanks. This one-room, gable-roof, frame shed is elevated on wood piers and connected to the settling tanks via a frame walkway.

Immediately east of the concrete settling tanks are a set of three non-original metal trout incubator tanks. The tanks have not been used in years and are mostly overgrown with vegetation.

North Carolina State Historic Preservation Office

HISTORIC PROPERTY FIELD DATA FORM

Circle your responses or write custom responses.

County GH **Survey Site Number:** GH 69 **ER:** _____ **GIS:** _____

Property Name: Little Tennessee River Bridge

Street Address / location description: NC 28 across the Little Tennessee River

Town: Fontana Village (vicinity) **Ownership:** *fed* (state) *local private non-profit unknown*

District / Neighborhood Association: _____ *contrib non-contrib*

Surveyor: David Price - New South Associates **Date:** Aug. 15, 2011

For Survey Update: *No substantial change | change by alteration |change by deterioration | outbuilding loss | rehabilitated | removed or destroyed | not found | no access | file missing | newly identified | needs research*

Study List / DOE recommendation: (eligible) | *not eligible* **Criteria:** (A) *B* (C) *D*

Material Integrity: (High) | *Medium | Low | N/A Gone*

Condition: (Good) | *Fair | Deteriorated | Ruinous | N/A Gone* **Location:** *Original Moved (year if known_____) Uncertain*

Const. Date: *ca.* 1945 **Major Style Group:** *Georgian | Geo/Fed | Federal | Fed/GkRev Greek Revival | Italianate | Gothic Revival | Queen Anne | Victorian – Other | 19th-20th c. traditional-vernacular | Neoclassical Revival | Colonial Revival | Southern Colonial | Beaux Arts | Spanish Mission | Tudor Revival | Rustic Revival | Craftsman/Bungalow | Period Cottage | Minimal Traditional | International | Moderne | Art Deco | Misc. Modernist Standard Commercial/Industrial | Ranch | Split Level | Other* _____

Construction: *Timber frame | Balloon frame | Load bearing masonry | Masonry veneer | Log | Steel frame | Concrete | Unknown | Other*_____

Primary Original Ext. Material: *Weatherboard (plain beaded molded novelty type unk.) | Batten | Wood shingles | Exposed logs | Brick | Stone | Stucco | Pebbledash | Other*_____

Covering: *None | Aluminum | Vinyl | Asbestos Shingle | Later brick veneer | Metal | Paper | Undetermined*

Height (stories): *1 | 1 ½ | 2 | 2 ½ | 3 | more than 3 (enter)* ____

Roof: *Side gable | Front gable | Triple A | Cross gable | Hip | Gambrel | Pyramidal | Mansard | Parapet | Flat Other*_____

Plan: *Not Known | 1-room| Hall-parlor| 3 room| Side passage| Center passage | Saddlebag | Dogtrot | Irregular Shotgun | Other*_____

Core Form (domestic): *I-house | Single pile | Double pile | Foursquare | other* _____

Design Source: Tennessee Valley Authority (TVA) *attributed | documented*

Special Associations / Themes: Associated with the construction of Fontana Dam (1942-44)

Outbuildings and landscape features *(continue on back if necessary)*

Use back of sheet for narrative description and field notes and sketches

North Carolina Historic Property Field Data Form

Little Tennessee River Bridge – GH 69

Continuation Sheet

This bridge carries a two-lane road over the Little Tennessee River approximately one mile downstream from the Fontana Dam. To prepare for the dam project, the TVA had to relocate several roads, bridges, and railroads in the reservoir area, including the main highway between Graham and Swain Counties that previously followed the river valley. The TVA first built a temporary timber bridge in this location in 1942 to provide a river crossing and access road below the dam. As state in a 2003 Historic Bridge Inventory Report by Lichetenstein Consulting Engineers, Inc., "this timber bridge was later replaced in 1945 with the present steel girder-floorbeam bridge, which made use of steel beams salvaged from the construction trestles that had been used to carry the materials and concrete during the pouring of the dame. The many extraneous holes observed in the beams of the bridge attest to their prior usage in the construction of the dam" (Lichetenstein 2003).

As described by Lichtenstein, the bridge as five spans and is 529-feet long and 26.7-feet wide. It has a continuous-cantilever steel deck girder and floorbeam structure with low concrete parapets with pipe hand rails. The spans from east to west are 88-feet, 121-feet, 121-feet, 121-feet, 87-feet. The bridge is composed of riveted, built-up girders that are continuous over the concrete piers. The girders are made continuous with riveted splice plates. The end span girders have cantilevered sections with pin-and-hanger connections. Rolled floorbeams and stringers support a concrete deck. The deck panels have angle crossbracing. The bridge is supported on approximately 45-feet high, solid-stem reinforced concrete piers and abutments. Solid plain concrete parapets extend over the slightly flared wingwalls (Lichtenstein 2003).

Plaques at both ends of the bridge read, "American Institute of Steel Construction, Annual Award of Merit, Most Beautiful Steel Bridge, Class III, 1945."