

**HISTORIC SURVEY AND REVIEW OF THE BOARDMAN RIVER
DAMS AND POWER HOUSES,
BOARDMAN RIVER, GRAND TRAVERSE COUNTY, MICHIGAN**

Prepared for

**ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.
2200 COMMONWEALTH BLVD, SUITE 300
ANN ARBOR, MICHIGAN 48105**

Prepared by

**COMMONWEALTH CULTURAL RESOURCES GROUP, INC.
2530 SPRING ARBOR ROAD
JACKSON, MICHIGAN 49203-3602**

**Elaine H. Robinson, Architectural Historian
Donald J. Weir, Project Manager**

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ABSTRACT

Commonwealth Cultural Resources Group, Inc. (CCRG) was contracted by Environmental Consulting & Technology, Inc, (ECT) to undertake the evaluation and documentation of four dams and their associated power houses on the Boardman River as requested by the Michigan State Historic Preservation Office (SHPO). The dams include the sites at Brown Bridge (1921-22), Boardman River (1930-31), Sabin (1906-07), and Union Street (1867), all within Grand Traverse County, Michigan. As a result of archive and literature review and field survey conducted in March 2008, it is CCRG's finding that the Boardman River dams and power houses (Brown Bridge, Boardman River, Sabin, and Union Street) lack the required level of integrity, design, materials, or association required under the established National Register of Historic Places (NRHP) Criteria for Evaluation and, therefore, would not be considered eligible for inclusion on the NRHP.

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1.0 INTRODUCTION

Environmental Consulting & Technology, Inc. (ECT) has been hired by the Boardman River Dam Committee's (BRDC) to carry out an unbiased engineering and feasibility study to determine the long-term disposition of four dams on the Boardman River (Figures 1.0-1a-d and 1.0-2). The facilities under investigation are known as the Brown Bridge Dam and Power House, Boardman River Dam and Power House, Sabin Dam and Power House, and the Union Street Dam. Commonwealth Cultural Resources Group, Inc. (CCRG) has been hired to provide professional consulting services for the above-ground and archaeological cultural resources.

1.1 Previous Investigations

The Michigan State Historic Preservation Office (SHPO) has completed two different documentation efforts or reviews of the four Boardman River dams. The first major review was completed in 1999 when a study of the Boardman River Dam and Power House was submitted for a determination of eligibility in support of the Boardman River Crossing Mobility Study (ER-950527) (Robinson and Weir 1999) (Appendix A). This document concluded that, due to changes in the associated bridge, power house (including replacement of the original generating equipment), and the relatively late construction of the dam and power house on the river, it lacked sufficient integrity or significance for inclusion on the National Register of Historic Places (NRHP) (Robinson and Weir 1999:30-31). This report was reviewed and the SHPO concurred with the determination in a letter dated April 2, 1999 (Brian D. Conway to Donald J. Weir, 2 April 1999) (Appendix A).

The second project that brought the historic significance of the Boardman River dams into review began with a request from the Department of Natural Resources for the “Review of Proposed Project to Remove Three Hydroelectric Facilities on the Boardman River, Grand Traverse County, Michigan” (letter from Kyle Kruger to Martha L. MacFarlane-Faes, April 8, 2005) (Appendix B). The letter provided historic background of three hydro facilities and the Union Street Dam and indicated that the three facilities in question were no longer cost effective and each was rated as high hazard. On July 13, 2005, Brian Conway, State Historic Preservation Officer, replied that the materials provided was insufficient to make a determination and requested additional information on each of the dams, including a complete copy of *A History of Traverse City Light and Power* (Brian D. Conway to Kyle Kruger, July 13, 2005). The July letter also assigned the project an official Environmental Review number, ER05-457.

Two final letters complete the documentation of the SHPO review. The first was sent from the SHPO to the Federal Energy Regulatory Commission (FERC) and stated that no historic properties were affected by the planned undertaking (Brian D. Conway to Magalie Salas, October 13, 2005) (Appendix B). The second letter, with a similar conclusion regarding the project impact on the above-ground resources, was sent to the Detroit District Corps of Engineers (Brian D. Conway to Les Weigum, August 22, 2007) (Appendix B).

1.2 Methods

Fieldwork followed procedures established in the *Manual of Historic and Architectural Surveys in Michigan* (Christensen 2001). As recommended for intensive level investigations, each property within the study area was photographed. Streetscape photographs were also taken illustrating each property to show its relationship to the surrounding landscape. Each property evaluated as part of the intensive level survey was also assessed according to standards established for listing on the NRHP, which require the resource to exhibit integrity of location, design, setting, materials, workmanship, feeling, or association and meet one or more of four NRHP criteria:

- A. Association with events that have made a significant contribution to the broad patterns of history;
- B. Association with the lives of persons significant in the past;
- C. Embodiment of distinctive characteristics of a type, period, or method of construction; representative of the work of a master; possession of high artistic values; or representation of a significant and distinguishable entity whose components may lack individual distinction; or
- D. Ability to yield information important in prehistory or history.

In addition to the fieldwork, research was conducted at the Grand Traverse Pioneer and Historical Society, the Traverse Area District Library, and the Traverse City Light and Power Company. Additional background research was carried out at the Library of Michigan and the Michigan State Historic Preservation Office, Lansing.

Field investigations for this report were undertaken during March 2008 by Ms. Elaine Robinson. All work was completed under the direction of Donald J. Weir, project manager. Ms. Robinson authored this report and Ms. Nancy Demeter was responsible for editing. Mr. James Montney prepared the graphics, and Ms. Cynthia White was responsible for word processing. Mr. Montney and Ms. White also were responsible for report production.

This report is limited to the above-ground investigations on the dams and associated power houses. The historic background of the dams is provided in Chapter 2. Chapter 3 presents descriptions, history, and NRHP evaluation for each dam and associated power house. Chapter 4 includes conclusions and recommendations. References are presented in Chapter 5. The letters supporting the information in the previous investigations are provided in Appendices A and B.

2.0 HISTORIC CONTEXTS

2.1 THE DEVELOPMENT OF AMERICAN HYDROELECTRIC FACILITIES

The evolution of the American hydroelectric facility can best be understood by using the framework supplied by the Edison Electric Institute study, which categorizes trends in American hydroelectric development into four general periods (Hay 1987). Although there is considerable overlap between periods, and literal translation of period parameters is not always applicable, the framework is a valuable tool for making eventual determinations of uniqueness, typicality, and historical integrity. An explanation of the four periods and their respective characteristics follows.

2.1.1 The Pioneering Years

The pioneering era in hydroelectricity is regarded as roughly between the years of 1880 and 1895. The nation's first hydroelectric plant, utilizing arc lamps powered by a water driven turbine generator, was located at the Wolverine Chair Factory in Grand Rapids, Michigan, and was brought on line in July of 1880 (Bush 1973). The modest facility was used to provide storefront and theater illumination (Hay 1989). During its infancy, the typical hydroelectric facility was a basic operation usually consisting of a turbine belted to a DC generator housed in a wooden shack in a section of an existing mill. The early process involved a simple union of electricity and waterpower without any substantial integration of the two technologies (Hay 1989). By the late 1880s, the number of hydroelectric plants sprinkled over the landscape increased significantly as the electric light industry continued to bloom. The great potential of the industry was revealed at Niagara Falls in 1895, where the dream of long distance power transmission and the economic viability of the industry was realized. It was also clear, however, that the industry would require substantial changes in its general philosophy and use of equipment to effectuate the marriage of falling water and electrical dispensation.

Although there is very little physical evidence of pre-1895 hydroelectric plants on the landscape today, the influence of plants like Niagara Falls can be seen in the surviving plants of the second period, where continuous modification and elaboration of hydroelectric facilities was the norm.

2.1.2 The Innovative Years

The second period of American hydroelectric development spans the events at Niagara in 1895 to the mid- to late teens of the twentieth century. This period was characterized by almost constant experimentation and change in the hydroelectric industry. As new records in transmission distance and voltage were shattered, underdeveloped sites that previously had been too remote were being exploited. By 1899, the Kalamazoo Electric Company (a contemporary of Consumers Energy) had managed to bring high voltage, long distance transmission to the Midwest with a 24-mile/22,000-volt line from Trowbridge Dam (Hay 1987).

Hydroelectric power plant design also underwent considerable transformation during this period. Often, aspects of mechanical, electrical, and hydraulic technologies were combined to create a

unique facility. In addition, with the utilization of equipment such as the Kingsbury thrust bearing (which allowed a switch from steam engine type horizontal shaft generators to vertical configurations), the industry continued to grow in sophistication (Hay 1987). After World War I, however, a plateau was reached and the industry seemed to arrive at a standard.

2.1.3 A Decade of Standardization (1918-1928)

The years following World War I saw the arrival of a distinct genre of American hydroelectric facilities. In response to variables such as the growth of major consulting engineering firms, corporate consolidation, regional and national technical publications, and the accumulated knowledge of engineers, the industry focused on a mode of standardization that had been absent. While the number of hydroelectric plants under construction was greater than in any other period, there was a pronounced absence of variety; the great majority of plants were of structural steel frames, clad in brick, with flat roofs. Though basic and utilitarian, power houses in this era often did include modest cornice embellishments (Hay 1989).

2.1.4 The Depression Years

The stock market crash of 1929 and the Great Depression created a climate of inactivity in many areas of the economy, including hydroelectric plant construction. Driven to a virtual halt in the private sector, construction of hydroelectric facilities became the focus of the federal government. As a proponent of flood control, public works, and irrigation, the government combined various social programs with the building of several dam projects in the West and the Tennessee Valley. Due to the lack of industry, however, demand for hydroelectricity from the nation as a whole fell dramatically (Hay 1987).

2.2 DEVELOPMENT AND EARLY YEARS OF HYDROELECTRICITY ON THE BOARDMAN RIVER

Initially the Boardman River provided power to operate sawmills and gristmills. Captain Boardman's original sawmill was converted by Hannah, Lay and Company to a gristmill in 1853 following the relocation of their lumber operations to a steam powered mill (Williams 1982:28). By 1866, the gristmill was replaced by a dam constructed by Perry Hannah between what are now Cass and Union streets in Traverse City (Williams 1982:28). In 1867, Hannah, Lay and Company constructed a new gristmill at the same location. The gristmill was overhauled in 1885, and new waterwheels were installed in 1889. The mill operated at the same site until it was destroyed by fire on January 26, 1926 (Williams 1982:28).

The first company to address the growing need for energy in Traverse City was H. D. Campbell and Sons Water and Electric Company. In 1889, Henry Campbell and his sons built the first electric light and power plant at the site of their water works. These water works were constructed in 1881 on the banks of Grand Traverse Bay, the site of the present steam generating plant (Williams 1982:28-29). The plant was equipped with two small Westinghouse alternators (1100 volts, 133 cycles) driven by two Ball and Wood high-speed engines (Williams 1982:29).

Within three years of constructing the H. D. Campbell power plant, Traverse City outgrew the capacity of the small steam-generated electric plant, and in 1892 Lorraine K. Gibbs of Mayfield began to organize the Electric Water Power Company and developed plans to erect a hydroelectric dam on the Boardman River south of Traverse City (Williams 1982:29). Gibbs, along with Frank Fredrick, William Bauld, J. I. Gibbs, and C. I. Hall of Traverse City and James Hodger of Fife Lake, under the operating name of Electric Water Power Company, secured a dam site three miles south of town (Williams 1982:29). The company incorporated on November 3, 1893, and was renamed the Boardman River Electric Light and Power Company (Williams 1982:29).

The original dam and power house (the Boardman River dam) was completed in November 1894 by the Boardman River Electric Light and Power Company (Williams 1982:29). This original hydroelectric power plant was the first three-phase generator in northern Michigan and the second in the United States (Williams 1982:30). Used initially to provide power to several commercial buildings and a few residences, the power company soon had a signed contract with Traverse City to furnish power for the city street lights (Williams 1982:30).

As the city grew, generators were added to accommodate the growing demands for energy. In January 1898, the Boardman River Electric Light and Power Company doubled their electrical output with the addition of a fifth, larger, dynamo (Williams 1982:30). In 1900, they purchased the defunct H. D. Campbell power plant, making them the sole supplier of electricity to Traverse City at that time. To meet the city's growing power demands, the Boardman River Electric Light and Power Company, in 1903, replaced all five generators with one "immense dynamo" that double the power output (Williams 1982:30). Soon after, negotiations began to construct a second dam, later to be known as Sabin Dam, to further increase the company's capabilities; however, in 1906, before the new dam could be constructed, the Boardman River Electric Light and Power Company was sold to the Heald-Stevens Company of Grand Rapids (Williams 1982:30). This was just the first of many times the company changed hands.

Around the turn of the century, another group of Traverse City area residents, recognizing the growing need for power in the area, began to purchase property for the Queen Electric Company dam site (Williams 1982:30). In 1908, Queen City Light and Power announced plans to construct a hydroelectric dam at the Keystone settlement, 6 miles south of Traverse City (Williams 1982:30-31). By October 4, 1909, the Keystone Dam was fully operational (Williams 1982:31).

Traverse City entered into hydroelectric production in September 1912, with the purchase of Queen City Light and Power (Williams 1982:31). Operating under the new name Traverse City Municipal Light and Power Department, the city now owned the Keystone Dam, along with property and flowage rights 7 miles upstream at what is now the Brown Bridge Dam and pond (Williams 1982:31) (see Figure 1.0-2).

In January 1918, Superintendent Gifford of Traverse City Municipal Light and Power recommended purchasing the Boardman River Electric Light and Power Company; however, the purchase was not supported by the voters of Traverse City (Williams 1982:31). The following

year, after the forced disabling of the Keystone Dam to repair log damage, the city recognized that additional sources of power were needed as backup in case of future problems.

In 1920, the City Commission contracted with Burd and Giffelo to study potential power production sites, including the Brown property already owned by the city. In July, following much controversy and discussion, the Brown Bridge site was approved as the site of the new dam and power house by a 3 to 1 margin on the bond issue (Williams 1982:32). In 1921, Fargo Engineering Company of Jackson, Michigan, developed plans and specifications for the new dam and power house. Construction of the Brown Bridge Dam began in August 1921 by Fargo Engineering and was completed in 1922. The facility could produce a total of 750 kilowatts (Williams 1982:34).

In 1925, Boardman River Electric Light and Power was sold to General Power and Light Company of Chicago (Williams 1982:34) but continued to operate under the original name. Before the end of the year, the power company was sold again. The new owner, Northern Michigan Public Service, supplied Traverse City with power until May 1928, when National Electric Power Company of New York purchased all the assets of Northern Michigan Public Service (Williams 1982:34). Operating under the name of Michigan Public Service Company, the company enlarged and repaired the Sabin Dam in 1930. As soon as that project was completed, a contract was awarded to construct a new dam 200 yards upstream from the original Boardman River Dam (Williams 1982:34).

2.3 THE END OF THE HYDROELECTRIC ERA ON THE BOARDMAN RIVER

On February 14, 2005, the Traverse City Light and Power Department (TCLPD) Board determined that the continued operation of the Brown Bridge facility, the Boardman River facility, and the Sabin facility (collectively known as the Boardman River Projects) was no longer economically feasible (Richard L. Smith, Traverse City Light and Power Department, Application for Surrender of License and Exemptions, October 21, 2005, typescript copy in Michigan State Historic Preservation Office files, Lansing, Michigan). The determination was based on the maintenance, operation, and regulatory costs associated with the projects, which posed a significant economic burden on the TCLPD and potentially the Department's ratepayers. In 2004, a study by of the projects revealed that the combined energy output was 10,784 megawatt hours of energy per year (Michigan Department of Natural Resources and the U.S. Army Corps of Engineers 2004:5). This amount represented 3.4 percent of the needs for the TCLPD rate payers.

The Application for Surrender of License and Exemptions further noted that the Sabin and Boardman River dams belong to Grand Traverse County, while Brown Bridge Dam is the property of Traverse City (Richard L. Smith, Traverse City Light and Power Department, Application for Surrender of License and Exemptions, 21 October 2005, typescript copy in Michigan State Historic Preservation Office files, Lansing, Michigan). The application indicated that, upon the approval of the decommissioning plan and the surrender of the project licenses and exemptions, hydroelectric generation would cease. One of the final points of the agreement was that, following decommissioning, the TCLPD would continue to maintain the dams for a transitional period under agreements between the County and City.

Between May 17 and May 31, 2005, the Boardman River Projects settlement agreement was signed by the TCLPD, the City of Traverse City, Grand Traverse County, Michigan Hydro Relicensing Coalition, the U. S. Department of the Interior-Fish and Wildlife Service, the Michigan Department of Natural Resources, and the Grand Traverse Band of Ottawa and Chippewa Indians (Boardman River Dams Settlement Agreement, May 31, 2005, typescript copy on file at the Michigan State Historic Preservation Office, Lansing, Michigan). This agreement called for the TCLPD to:

cease to operate all equipment and remove the generators, related electrical equipment, turbines, and guide vanes (only remove guide vanes if they are not needed to regulate water flow) at the Boardman River Projects. The actual structure and such equipment required to regulate flows will remain intact until disposition of the Boardman River Dams is determined.

Since the agreement has been formally accepted, the power generating equipment in each of the power houses has been disabled to demonstrate that they can no longer generate energy. In part, disabling involved disconnecting the turbines from the generators sectioning the generators into two parts. These parts, although physically separate, were retained within their appropriate power house. In some cases, such as the dam at the Boardman River, the water level reduced, resulting in a lower water level in the associated retention pond (Joseph Kaltenbach, Traverse City Light and Power, personal communication March 11, 2008).

3.0 DESCRIPTIONS AND NATIONAL REGISTER OF HISTORIC PLACES ASSESSMENTS

3.1 UNION STREET DAM

Description and History

Currently the Union Street Dam appears to be little more than an earthen embankment extending across the Boardman River between Union and Cass streets in downtown Traverse City. The dam has concrete retaining walls at the water line and a concrete-lined slough downriver from the dam on the south side of the river. Rails provide walkways across the top of the dam, and a set of wooden stairs provides access to the water on the north riverbank at a point just upstream from the dam.

No power house is extant at the dam site, although a concrete block storage building is present near the south bank of the river. This structure was erected in the 1980s and has subsequently been abandoned (Joe Kaltenbach, TCLPD, personal communication March 11, 2008).

The power of the Boardman River was harnessed as soon as there were settlers in the Grand Traverse region. Early power generation was accomplished by waterwheels placed in the river to operate sawmills. In 1853, Hannah, Lay and Company converted their original sawmill to operate a gristmill (Hesselbart 1982:28). Just over a decade later the power was no longer adequate for the needs of the mill, and plans were announced by the company to construct a dam across the Boardman River between what are today Cass and Union streets in Traverse City (Hesselbart 1982:28). A newspaper article from June 1866 indicated “Messrs. Perry Hannah, Albert T. Lay, James Morgan, and William Morgan, propose to construct a dam across the Boardman River, near the south end of Union street, Traverse City, which will give a head of 7-1/2 feet” (*Grand Traverse Herald* 1866:3). The new dam was completed in 1867 and the following year a larger gristmill was erected at the site (Figure 3.1-1).

Although never used to generate electricity for distribution to the surrounding area, like the other dams and power houses located on the Boardman River, the dam at Union Street did provide the required energy to operate the Hannah, Lay gristmill until January 25, 1926, when it was destroyed by fire (*Traverse City Record-Eagle [TCRE]* 1965:3). The dam survived the fire, but after the destruction of the gristmill, served only to maintain the level of Boardman Lake (Figure 3.1-2). While plans were made in the late 1920s and early 1930s to construct a new power plant at the gristmill site, these never reached fruition. The dam was neglected and untended for years. Finally, in 1966, Consumer’s Power declared the old dam surplus property and ownership was transferred to Traverse City (Williams 1982:35).

NRHP Assessment

The dam is much smaller than the other dams on the river, and lacks an associated power house. The power house was destroyed by fire in 1926 and was not rebuilt. After the fire, the dam was landscaped to make it more attractive to the community residents, but its capacity to generate

power was never recaptured. Due to the lack of scale demonstrated by the surviving dam and power houses associated with the Boardman River, and the fact that the dam has not had the capacity to generate power for over 80 years, it is not considered eligible for inclusion on the NRHP.

3.2 BOARDMAN RIVER DAM AND POWER HOUSE

Description and History

The current Boardman River Dam is the second dam located at approximately the same site, replacing an early structure located 183 meters (200 yards) downstream. The original structure was the second hydroelectric power facility on the Boardman River, the first three-phased generator in northern Michigan, and the second in the United States. The original dam was constructed in 1894 but was dismantled following completion of the new facility in 1931.

Designed by Harza Engineering of Chicago, the structure is primarily constructed of reinforced concrete. Included in the complex are an emergency spillway, 200-foot-long concrete bridge/dam structure, a 18.5-foot-wide concrete gated spillway, intakes for two 10-foot-diameter metal penstocks, and a power house placed approximately 73 feet downstream from the water intake (Figures 3.2-1 and 3.2-2). As part of the original design, the bridge is located on top of the dam and consists of a concrete encased steel beam infrastructure (Figure 3.2-3). The bridge is four spans long, each measuring approximately 20 feet, for a length of 79.25 feet. Total bridge length, including approaches, is 192.25 feet. A concrete post and metal pipe railing formed the original guard rail.

Initially the bridge was two lanes wide; however, the addition of a concrete side barrier in 1983 reduced the bridge to a single 15-foot-wide travel lane. The original bridge light fixtures have been removed. Among the most notable exterior changes made to the upstream side of the facility is the relocation the substation from its place on the west bank to a new location on the east bank, south of the bridge. This new substation is no longer associated with the power plant at the site and remains under Consumers Energy ownership. The Traverse City Light & Power Company (TCL&P) substation is located off-site.

The loss of exterior brick work on both north and south facades of the power house has resulted in either replacement brick, or cladding in new material. Inside the power house, with the exception of the replacement of the original generating equipment and the reconfiguration of one generator, there have been only minor modifications to the structure. Among the most obvious is the division of the generator into two sections, done to assure the inspectors from FERC that no power generation is possible at the site.

A 1930 newspaper account of the new dam project recorded that the dam was to be of earthen construction, 475 feet from bank to bank, and 45 feet high. The foundation was to be a steel sheet piling core wall, with a concrete core wall above. Water would be directed through the generating machinery by means of a canal. Also included in the plans were an emergency spillway and a gated spillway. Projected capacity of the new dam would raise the potential energy output to 2,200 kilowatts (*TCRE* 1930:1).

A bridge, integrated into the dam design, replaced an earlier wooden structure located downstream from the new facility (Wakefield 1994:46) (Figure 3.2-4). Early in the twentieth century, a Michigan state statute required owners of a dam to provide a bridge or public conveyance, so as to not limit the circulation of the general public by their dam (Gary Croskey, personal communication 1998). Grand Traverse County Road Commission records indicate that the Cass Road bridge on the Boardman River Dam was established as part of the county road system by the mid-1940s, and has continued to provide public access across the Boardman River continuously since it was opened in 1931 (Mike Dillenbeck, personal communication 1998). The bridge was rated to carry 6.4 metric tons on October 30, 1930.

Harza Engineering of Chicago, an independent engineering firm specializing in hydroelectricity, served as the consulting engineers, and E. E. Wattles was appointed as the resident engineer, co-operating with L. A. Schmidt, chief hydro engineer of the Michigan Public Service Company (Harza Engineering Boardman River No. 3 Project Drawings, TCL&P, Traverse City, Michigan; *TCRE* 1930:1). The new dam and power house were scheduled for completion on December 15, 1930, with installation of machinery to follow and actual operation to begin shortly after January 1, 1931 (*TCRE* 1930:1).

Construction of the new dam and power plant did not go as smoothly as planned. In a progress report prepared in August 1930, some of the delays were explained, by C. E. Wattles as he noted, “nine men are working on the power house excavation which is behind schedule. The material, a very hard clay, is being taken out with hand tools, pick and spade” (Sinkule 1987:3). By Friday, August 29, 1930, Wattles’ report continued, “11 men were at work on the day shift and six at night...clay excavation is now 50 percent complete...the intake pier forms and the embedded structural steel are complete for the first pour”(Sinkule 1987:3). The project was at that point three weeks behind schedule, due to shipping delays in the reinforcing steel for the intake piers (Sinkule 1987:3). In spite of early construction difficulties, the actual operation of the facility was delayed only slightly with full production occurring in 1931.

The Michigan Public Service Company continued to operate both the Sabin and Boardman dams until 1950, when they sold all their assets to Consumers Power Company (now Consumers Energy) (Williams 1982:35). In 1969, with the Boardman River and Sabin dams badly in need of repair, Consumers Power determined that the expense of repairing the two facilities could not be justified by the income they generated, and the generators were removed (Williams 1982:35). It was probably at this time that the substation, originally placed adjacent to the power house, was relocated to the opposite bank of the river, upstream from the dam (Jim Cooper, personal communication 1998). Consumers then transferred the Sabin and Boardman River dams to Grand Traverse County for a nominal sum, with the understanding that the associated lands would be set aside for education and quiet recreation (Williams 1982:36). This property formed the foundation of the Grand Traverse Nature Education Reserve, a 370-acre natural preserve in the Boardman River valley (Grand Traverse County n.d.).

In 1977, the cost of producing electrical energy for the TCL&P had risen to such a point that additional sources of power were sought (Williams 1982:36). Consultants hired to study the feasibility of renovating the Sabin and Boardman River dams recommended, in 1979, renovation of the five dams located along the Boardman River (Williams 1982:36). New generating

equipment was installed in the Sabin and Boardman River power houses in 1986 (Roger Strouse, personal communication 1998). A single Louis Allis generator with a capacity of 1,200 kW replaced the two original units. Although this represents a loss in total electricity generated (with two units they were producing 2,200 kW in 1931), it is a more efficient match to the lower flow of the Boardman River (Roger Strouse, personal communication 1998). A report published in 1987 stated that the restored Boardman River Dam supplied two percent of the total energy requirements of the TCL&P (Sinkule 1987:11).

Currently, most of the lands once associated with the Boardman River and Sabin dams is used for hiking and other recreational activities, while the dams continue to supply a portion of the much-needed energy to Traverse City and surrounding communities. The bridge has also undergone some changes since first opened to traffic in 1931. Originally constructed with two 9-foot travel lanes, in 1983, the installation of a concrete side barrier reduced the roadway to a single 15-foot travel lane (Karen Gallagher to Brian Conway, letter 23 July 1998). The original concrete post and metal pipe side railings remain in place. The removal of the light globes at either end is the only substantial alteration. In a 1998 evaluation of the bridge, the superstructure of the bridge, including the deck and railings, received a rating of either poor or serious (Lewis 1998).

NRHP Assessment

Although there is a long tradition of hydroelectric production on the Boardman River, the Boardman River hydroelectric facility lacks the significance of the earlier dam and power house in the development of electrical energy in the Traverse City region.

Designed by the firm of Harza Engineering, the current Boardman River Dam and power house do not exhibit any of the early innovations for which the Harza engineering firm was noted. The removal of the original generating equipment in 1969 and its subsequent replacement in the mid-1980s resulted in a lack of historic significance in the equipment used in the production of electricity at the Boardman River Dam. Similar in appearance to both the Sabin and Brown Bridge power houses, both of which pre-date the Boardman River Dam power house, the power house lacks the required distinction for inclusion on the NRHP for its architectural or engineering characteristics.

The reinforced concrete dam, also a popular form, lacks architectural distinction. Although the bridge placed on the top of the dam is interesting, this was once a practice required by law, and has resulted in over 800 extant examples of bridges atop dam structures across Michigan. Many of these dam/bridge facilities meet the NRHP minimum age guidelines of 50 years or older.

Based on these findings, CCRG does not recommend the Boardman River Dam and associated structures for listing on the NRHP as a potentially historic facility.

3.3 SABIN DAM AND POWER HOUSE

Description and History

Located in Grand Traverse County on the Boardman River, the dam and power house is situated approximately 3 miles upstream from the city of Traverse City, Michigan. The dam extends across a 200-foot-wide section of the earthen embankment, 60 feet from one side of the power house, and 52 feet from the other side. The structure includes a 32-foot-wide stoplog spillway section (Figure 3.3-1). The power house itself is 64 feet wide (Mead & Hunt 1999a:5).

The power house at the Sabin Dam rests atop the dam structure, with the turbines extending down from the power house to capture the energy of the water rushing through tainter gates below the power house. The one-story power house structure is constructed of brick, with a concrete foundation forming a water table at the base of the building and stone details on the brickwork at the corners and upper walls of the structure (Figure 3.3-2). The flat roof of the building is surrounded by a parapeted wall that is in turn topped by a small metal cap to prevent damage to the wall. Large metal sash windows pierce the wall on both the upstream and downstream sides of the structure, while a pair of side-hinged doors topped by a wooden ventilator fills most of the west elevation. The doors are large enough to facilitate the installation and removal of equipment, and they also provide some light with the twelve glazed panels above the wooden lower door. A pedestrian door is located within the larger door at the south corner of the opening.

Inside the power house, with the exception of the replacement of the original generating equipment, there have been only minor modifications to the structure. Among the most obvious is the division of the generators into two sections, done to assure the inspectors from FERC that no power generation is possible at the site.

The original dam was constructed in 1906-07, and was rebuilt and enlarged by Fargo Engineering of Jackson, Michigan, in 1914 (Sinkule 1987) (Figure 3.3-3). The cost of the work completed in 1914 was \$50,000.00. The Sabin Dam and Power House was once again enlarged and repaired in the early 1930s (Williams 1982:34). This work was completed by then owners the Michigan Public Service Company and included constructing a “new plant with modern generators, raising the kilowatts from 350 to 800” (Sinkule 1987). As an operational until, it was abandoned in 1969 when the dam was badly in need of repair and the owners could not justify the expense (Williams 1982:35).

The Sabin Dam and Power House facility was once again upgraded and “engineered for reserve” in 1986 by the firm of Mead & Hunt (Sabin Dam Educational Poster, Sabin Dam, Traverse City, Michigan). This final upgrading of the facility was completed by the Lunda Construction Company at the cost of \$900,000.00. Like the Boardman River and the Brown Bridge power houses, the Sabin Dam was removed from power generation in 2005 when the operating licenses and exemptions for the three facilities were surrendered.

NRHP Assessment

Although the Sabin Dam and Power House was originally constructed in the early twentieth century, the complex was reconstructed and reconfigured several times over the following 80 years, with each change further compromising its historic integrity. The power house is similar in appearance to each of the other power houses located on the Boardman River, and although in relatively good shape, it has experienced some vandalism in recent years, partially due to its proximity to the Grand Traverse Nature Education Reserve, a 370-acre natural preserve in the Boardman River valley (Grand Traverse County n.d.). Based on its architectural and engineering similarity to other small dams in northern Michigan, the extensive alterations to the dam and the hydroelectric generation equipment in the power house, the property is not considered eligible for inclusion on the NRHP under Criterion C. Criterion C requires the property demonstrate the distinctive characteristics of a type, period, or method of construction. Furthermore, the relatively late construction in the period of hydroelectric development on the Boardman River precludes its consideration under NRHP Criterion A and its association with the broad patterns of history.

3.4 BROWN BRIDGE DAM AND POWER HOUSE

Description and History

Situated approximately 14 miles upstream from Traverse City, the Brown Bridge facility consists of a dam with earthen embankments extending approximately 1,600 feet across the width of the Boardman River (Figure 3.4-1) (Mead & Hunt 1999b:5). The dam structure includes two 12-foot-wide by 5-foot-high tainter gates for low-level outlets and two 12-foot-wide by 5-foot-high tainter gates that act as turbine bypass gates. Additionally, the dam includes a log chute and slide gate adjacent to the power house. Near the center of the dam embankments is a reinforced concrete substructure that supports the power house.

Housed within the concrete power house substructure are the two vertical shaft Francis type turbines (Mead & Hunt 1999b:5). One of these turbines is the original, installed when the complex was completed in 1921, and the second was replaced in 1941 (Mead & Hunt 1999b:7). Both generators in the power house are the original equipment installed in 1921. The power house also includes the original slate-backed control panel, although new control equipment was installed in the power house in 1984 (Mead & Hunt 1999b:7).

The power house is rectangular in form and has a flat roof hidden from most views by the parapeted walls (Figure 3.4-2). The exterior of the building is clad with red brick exterior and features a large bank of windows on the east and west elevations of the structure. A pedestrian door provides access to the interior at the southeast corner of the power house, and additional windows are situated on the same elevation. The windows are the original metal sash, with only some of the windows operational.

The original owner of the land where the dam was eventually constructed was Mr. William Brown. Brown had purchased an 80-acre parcel from the State of Michigan in 1869, for the sum of just \$50 (Williams 1982:33). As the area around Brown's property became more settled, a

bridge became necessary, but the county officials would not allocate funds for its construction. The county did, however, give permission to Brown to construct his own bridge if the structure had sufficient clearance to float logs down the Boardman River. This chain of events resulted in the property gaining the name Brown Bridge (Williams 1982:33). Between 1880 and 1912, the property changed hands numerous times. One of the final owners of the land was Mr. Harland Brown, who established a mill on the river (Williams 1982:34). The mill was powered by a large water wheel and operated saw equipment to produce wooden porch pillars.

A portion of the Brown Bridge property was purchased by a group of local citizens, including Boardman River Electric Light and Power founder L. K. Gibbs, as a potential dam site in 1905 (Hesselbart 1982:30). This land was held until 1912, when Traverse City purchased Queen City Light and Power, which was reorganized to create the Traverse City Municipal Light and Power Department. It was not until 1921 that the construction of the hydroelectric facility on the Brown Bridge property was undertaken. One of the impacts of the new construction was the removal of the original Brown Bridge and the water wheel from the property.

Located the farthest upstream of the four Boardman River dams, the Brown Bridge Dam was constructed between August 1921 and 1922 at a cost of \$250,000.00 (Figure 3.4-3) (*TCRE* 1921:1; Williams 1982:34). In early June 1922, local papers reported that the dam and power house were a success and were even expected to be able to produce a small amount of electricity prior to the official completion date later that month (*TCRE* 1922a:1). William Fargo, of Fargo Engineering, the dam and power house designer, indicated that he was pleased with the work of the construction company, which included concrete he described as “exceptionally good.” Fargo also noted that the “embankment possesses a security much in excess of that defined in the plans; that is, more material has been put into than the plans required, which is always an excellent condition in a dam of this sort” (*TCRE* 1922a:1).

Although the dam was completed in the summer of 1922, there continued to be front-page newspaper articles on the facility through the end of the year. Continued seepage at the dam, which had been reported earlier that year, became the cause of disparaging comments made by members of the City Council regarding project designers, Fargo Engineering (*TCRE* 1922b:1). In part, the concern by the City was the seemingly radical solution to correct the problem, boring holes through a concrete gate at the dam and then additional weight added to the gates. This suggestion caused Council to note that the changes would mean the hoist would not be able to move the gate. One week later, the response from Fargo noted that the gates had not been completed per their design, and if the suggested changes were carried out, the problem would no longer exist (*TCRE* 1922c:1). Before the close of 1922, the Fargo solution was implemented and the problem repaired (*TCRE* 1922d:1).

The Brown Bridge Dam and Power House operated continuously from its completion in 1922 until 2005, when the operating licenses were surrendered to the FERC. Since this event, the generators and turbines have been disconnected, and the generators themselves divided into sections to prove they are no longer capable of producing energy (Joseph Kaltenbach, personal communication March 11, 2008).

NRHP Assessment

The Brown Bridge Dam and Power House facility was the third of the extant hydroelectric facilities to be constructed on the Boardman River in the early twentieth century. Earlier facilities include the original Boardman Dam (subsequently replaced) and the Sabin Dam and Power House. The power house is similar in appearance to each of the other power houses located on the Boardman River, and it retains a high level of historic integrity; however, based on its architectural and engineering similarity to other small dams in northern Michigan, the property is not considered eligible for inclusion on the NRHP under Criterion C. Criterion C requires the property demonstrate the distinctive characteristics of a type, period, or method of construction. Furthermore, the relatively late construction in the period of hydroelectric development on the Boardman River precludes its consideration under NRHP Criterion A and its association with the broad patterns of history.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The power of the Boardman River was historically harnessed to generate energy for the settlers of the region. Sawmills, gristmills, and most recently hydroelectric dams have all been placed along the river to meet the needs of the local communities. The earliest hydroelectric dam was constructed in 1894 by the Boardman River Electric Light and Power Company. Other dams followed, including the Sabin Dam in 1906-07, the Brown Bridge Dam in 1922, and finally the Boardman River Dam was slightly relocated and replaced in 1931.

Both the Sabin and Boardman River dams have undergone numerous changes during their history, including being abandoned and returned to service almost 20 years later. The Sabin Dam was rebuilt and enlarged in 1914, less than a decade after it was completed. The Sabin Dam again underwent alterations in the 1930s and finally in the 1980s. The roof at the Boardman River Dam was changed from a flat to a hipped structure, and the two original generators were removed and replaced by a single larger unit. Only the Brown Bridge Dam escaped major alterations, with the most intrusive change being the replacement of one of its original turbines in 1941. Due to relatively late construction during the development of hydroelectric generation in northern Michigan, the changes made to each of the facilities, and the lack of either architectural or historic integrity, none of the three dams is considered eligible for inclusion on the NRHP under any Criteria of Evaluation or the Criterion Consideration.

Although the dam at Union Street has never been associated with the major hydroelectric production that the later three dams were, it too was considered in this report. The dam, which was constructed by 1867 as part of a gristmill complex, has not been associated with the mill since it was destroyed by fire in the 1920s. Since that time, the dam has been maintained, largely to control the water levels on the river and associated ponds. The current dam retains little historic integrity, due largely to the loss of its historic design, setting, materials, workmanship, feeling, and association. Due to the lack of historic integrity, the dam is not considered eligible for inclusion on the NRHP under any of the Criteria of Evaluation or Criteria Considerations.

Based on the findings in this report, CCRG recommends that the Brown Bridge, Boardman River, Sabin, and Union Street dams and associated power houses be determined not eligible for inclusion on the NRHP.

5.0 REFERENCES

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- Christensen, R. O.
2001 *Manual for Historic and Architectural Surveys in Michigan*. State Historic Preservation Office, Michigan Historical Center, Department of History, Arts and Libraries, Lansing.
- Grand Traverse County
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- Grand Traverse Herald* [Traverse City, Michigan]
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- Hay, D.
1987 *Hydroelectric Development in the United States, 1880-1940*. Edison Electric Institute, Washington, D.C.
- 1989 Hydroelectric Development in the United States, 1880-1940: A Framework for Evaluation and Preservation Planning. Paper presented at the annual meeting of the Society for Industrial Archaeology, Quebec City, Quebec, Canada.
- Hesselbart, R. J.
1982 Hydroelectric Days. In *Currents of the Boardman*. Grand Traverse County Historical Society, Traverse City.
- Lewis, M.
1998 Bridge Inspection Report. Michigan Department of Transportation, Bridge Management Unit, Lansing.
- Mead & Hunt
1999a 1999 Consultant's Safety Inspection Report Sabin Dam Hydroelectric Project. Prepared for the City of Traverse City, Traverse City, Michigan. Mead and Hunt, Inc., Madison, Wisconsin.
- 1999b 1999 Consultant's Safety Inspection Report: Brown Bridge Hydroelectric Project. Prepared for the City of Traverse City, Traverse City, Michigan. Mead and Hunt, Inc, Madison, Wisconsin.

- Michigan Department of Natural Resources and U.S. Army Corps of Engineers
 2004 *Continuing Authorities Program Section 206 Process Preliminary Restoration Plan for the Potential Removal of Union Street, Sabin, Boardman, and Brown Bridge Dams on the Boardman River, Grand Traverse County, Michigan.*
 Lansing, Michigan.
- Robinson, E. H. and D. J. Weir
 1999 *Historical Survey and National Register of Historic Places Assessment of the Boardman River Dam and Power House and the Cass Road Bridge Over the Boardman River, Garfield Charter Township, Grand Traverse County, Michigan.*
 Commonwealth Cultural Resources Group, Inc., Jackson, Michigan.
- Sinkule, O.
 1987 *A History of Traverse City Light and Power: Seventy-Five Years of Service.*
 Traverse City Light and Power, Traverse City, Michigan.
- Traverse City Record-Eagle (TCRE)* [Traverse City, Michigan]
 1921 Work Launched at the Brown Bridge Project. 8 August:1.
 1922a Boardman Dam Excellent Job, Engineer Says. 9 June:1.
 1922b Fargo Company Criticized for Hydro Project. 12 December:1.
 1922c Fargo Replies to Critics of Brown Bridge. 19 December:1.
 1922d City Will Cut Holes in Wall. 27 December:1.
 1930 Awards Contract for Construction of Dam. 9 June:1.
 1965 Say...Do You Remember. 4 December:3.
- Wakefield, L.
 1994 *Garfield Township: An Illustrated History.* Garfield Township Board of Trustees,
 Chelsea, Michigan.
- Williams, A. V. (editor)
 1982 *Currents of the Boardman.* Grand Traverse County Historical Society, Traverse
 City, Michigan.

APPENDIX A

SHPO CORRESPONDENCE

BOARDMAN RIVER CROSSING MOBILITY STUDY (ER-950527)



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State

Lansing, Michigan 48918-0001

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

FILE COPY

April 2, 1999

DONALD J WEIR
COMMONWEALTH CULTURAL RESOURCES GROUP INC
2530 SPRING ARBOR ROAD
JACKSON MI 49203-3602

RE: ER-950527 *Historical Survey and National Register of Historic Places Assessment of the Boardman River Dam and Power House and the Cass Road Bridge over the Boardman River, Garfield Charter Township, Grand Traverse County and Survey and National Register of Historic Places Assessment of Above-Ground Resources along South Airport Road from US-31 to Three Mile Road, Grand Traverse County (FHWA)*

Dear Mr. Weir:

Under the authority of the National Historic Preservation Act of 1966, as amended, we have reviewed and accept the final above-cited reports at the locations noted above.

Please maintain a copy of this letter with your environmental review record for this project. If you have any questions, please contact Martha MacFarlane, Environmental Review Coordinator, at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:ROC:jrc



2530 Spring Arbor Road
Jackson, Michigan 49203-3602
(517) 788-3550
Fax (517) 788-6594

MAR 19 1999

March 16, 1999
J-0197 PH5/PH6

Mr. Brian D. Conway
State Historic Preservation Officer
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

RE: ER-950527 Final Reports -
Boardman River Crossing Mobility Study

Dear Mr. Conway:

Please find enclosed two copies each of the final reports titled, *Historical Survey and National Register of Historic Places Assessment of the Boardman River Dam and Power House and the Cass Road Bridge Over the Boardman River, Garfield Charter Township, Grand Traverse County, Michigan*, and *Survey and National Register of Historic Places Assessment of Above-Ground Resources Along South Airport Road From US-31 to Three Mile Road, Grand Traverse County, Michigan*. We have also enclosed original Building Structure Inventory Cards for the Three Mile Road Alternative project.

If you have any questions or need additional information, please contact me at 517-788-3550.

Sincerely,



Donald J. Weir
President

Enclosures (5)

cc: Jere Hinkle (DeLeuw, Cather & Company, w/enclosures [2])
Karen Gallagher (JJR, Inc., w/enclosures [2])

APPENDIX B

SHPO CORRESPONDENCE

**DRAFT APPLICATION FOR SURRENDER OF
BROWN BRIDGE FERC LICENSE AND
SABIN AND BOARDMAN FERC EXEMPTIONS (ER05-457)**



STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES

LANSING

JENNIFER M. GRANHOLM
GOVERNOR

REBECCA A. HUMPHRIES
DIRECTOR

April 8, 2005

Martha L. MacFarlane-Faes
Environmental Review Coordinator
State Historic Preservation Office
Michigan Historical Center
702 W. Kalamazoo
P.O. Box 30740
Lansing, MI 48909-8240

APR 13 2005

RE: REIVEW OF PROPOSED PROJECT TO REMOVE THREE HYDROELECTRIC FACILITIES ON THE BOARDMAN RIVER, GRAND TRAVERSE COUNTY, MICHIGAN

Dear Ms. MacFarlane-Faes,

This is a follow up to our recent telephone conversation. As I mentioned, the Michigan Department of Natural Resources is cooperating with several agencies, governmental groups and NGOs to facilitate the evaluation of potential removal of four dams (three hydropower projects and one non-hydro) on the Boardman River in Grand Traverse County. These facilities, although functioning, are no longer cost effective and are rated as high hazard. As a permanent solution a group has formed to investigate the potential impacts of removing the structures and rehabilitating the portions of the Boardman River that are currently negatively impacted by the presence of the these dams.

Background

The four dams in question are owned by local governmental units in Grand Traverse County. The most upstream dam, Brown Bridge, is owned by the City of Traverse City (City). The middle two facilities, Boardman and Sabin are owned by Grand Traverse County (County), and the lowermost dam, Union Street, is owned by the City. The hydroelectric facilities at the three generating facilities are operated by the Traverse City Light and Power Board (TCLP). As I mentioned earlier, the projects in their current configuration are marginally profitable for TCLP.

The Brown Bridge Project is under order from the Federal Energy Regulatory Commission to install an emergency spillway which is estimated to cost \$2,000,000 and faces relicensing in about 5 years which will cost approximately \$500,000. Given the current income of approximately \$30,000 per year, these options are not viable.

4278
4280
4281
4282

Boardman and Sabin Dams, while not facing relicensing, are also minimally profitable under the current configuration. The Boardman Dam currently has a leak which is estimated to cost \$1,000,000 to repair.

Union Street Dam, which acts as the lake control structure for Boardman Lake in Traverse City, is being included in the overall review, however due to the existence of contaminated sediments in the impoundment is not as good a candidate for removal as the three upstream dams.

Given these issues, the MDNR offered to assist the City, County and TCLP to decommission the three hydropower projects and evaluate the implications of dam removal and restoring free flowing conditions to the Boardman River between Brown Bridge Pond and Boardman Lake.

Once the City, County and TCLP agreed to this move forward with this evaluation, a coalition has begun to develop a settlement agreement which defines the intent, responsibilities and goals of the group. This coalition includes representatives from:

- Traverse City Light and Power Department
- City of Traverse City
- Grand Traverse County
- Michigan Hydro Relicensing Coalition
- United States Department of the Interior
- Fish and Wildlife Service
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- Grand Traverse Band of Ottawa and Chippewa Indians

Several other partners are participating as ex-officio members to the settlement (i.e., Grand Traverse Soil Conservation Service, Natural Resources Conservation Service, Land Use Institute, etc.).

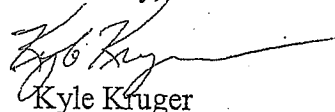
As mentioned earlier, the dams under consideration for removal are Sabin, Boardman and Brown Bridge. Sabin Dam was constructed in 1906 and has 20 feet of head with a 40 acre impoundment. Boardman Dam was constructed in 1897 and has 41 feet of head with a 103 acre impoundment. And Brown Bridge Dam was constructed in 1921 and has 31 feet of head with a 191 acre impoundment. Union Street Dam was constructed in 1867 and controls the level of Boardman Lake adding 80 acres to the area of the lake (from 259 to 339 acres). Union Street has 9 feet of head.

All three of the hydropower dams combined produce approximately 10,000 megawatt hours of energy per year, which accounts for only 0.05% of the electricity needs for Traverse City Light and Power Boards rate payers.

I would like to request review by The State Historic Preservation Office to determine if any cultural resources would be impacted by the proposed action. To better detail the scope of the work to be done and more specific details on the rationale for the proposed removals I have included several attachments. The first is the current draft of the Settlement Agreement between the parties defining the participation of the group members (Attachment 1). Next is a copy of the draft Preliminary Restoration Proposal the MDNR Fisheries Division prepared for the Army Corps of Engineers (Attachment 2). This document provides details on the benefits to be derived from the proposed action. I've enclosed a CD with numerous photos of the projects and the project vicinity to help you visualize the structures under their current configuration (Attachment 3). I have also enclosed maps which are marked to show the anticipated changes in the water locations at the three projects impoundments. As I mentioned in our telephone conversation, the only changes to the water locations will be within the confines of the impoundments. As the water levels drop, the river will return to the historic channel (Attachment 4). There will be no anticipated changes to the river corridor outside of the pond locations. Attachment 5 is an excerpt from a historical report that TCLP produced a while back including some information when Brown Bridge was closed and they began to fill the impoundment.

I hope you find this information useful in initiating your review. If you have any questions or need clarification, please feel free to contact either Todd Kalish, Fisheries Biologist, at the Traverse City Field Office (231-922-5280 x 6870) or myself at: Mio Field Office, Michigan Department of Natural Resources, 191 S. Mt. Tom Rd., Mio, MI 48647.

Sincerely,



Kyle Kruger
Senior Fisheries Biologist
Habitat Management Unit
FISHERIES DIVISION

cc James Schramm, MHRC, Pentwater w/o attachments
Joseph Kaltenbach, TCLP, Traverse City w/o attachments
Thomas Rozich, Fisheries, Cadillac w/o attachments
Todd Kalish, Fisheries, Traverse City FO w/o attachments



STATE OF MICHIGAN

JENNIFER GRANHOLM
GOVERNOR

DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

DR. WILLIAM ANDERSON
DIRECTOR

July 13, 2005

KYLE KRUGER
MDNR FISHERIES DIVISION
MIO FIELD OFFICE
191 S. MT TOM ROAD
MIO MI 48647

RE: ER05-457 Boardman River Dam Removals, Grand Traverse County (FERC)

Dear Mr. Kruger:

We have received your request for review of the above-cited undertaking at the location noted above. The information that you have sent has prompted us to ask for additional details. Please send the following information so that we may complete our review:

- The information provided on the Brown Bridge, Boardman, Sabin, and Union Street dams and hydroelectric plants is insufficient for us to complete a review of their potential eligibility for the National Register of Historic Places. We request a complete copy of *A History of Traverse City Light and Power*, only a portion of which was provided with your April 8 letter, plus copies of any available site plans and elevation drawings for each entire dam and hydroelectric plant.

In addition, the State Archaeologist, Dr. John Halsey, notes that archaeological resources may be affected at the project sites; therefore, an archaeological survey should be conducted for the emergent (former) shorelines after the draw-down has been completed. Enclosed, for your convenience, is a list of archaeologists who have been found to meet or exceed the professional requirements for archaeologists.

Please note that the Section 106 review process cannot proceed until we are able to consider the information requested above. This letter does not clear the project. If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or Dr. John Halsey, State Archaeologist at (517) 373-6358. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:JRH:ROC:bgg

Enclosure(s)

Copy: Magalie Salas, FERC



FILE COPY

JENNIFER GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

DR. WILLIAM ANDERSON
DIRECTOR

October 13, 2005

MAGALIE SALAS
FEDERAL ENERGY REGULATORY COMMISSION
888 FIRST STREET NE
MAIL CODE PJ12.1
WASHINGTON DC 20426

RE: ER05-457 Boardman River Dam Removals, Grand Traverse County (FERC)

Dear Ms. Salas:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that no historic properties are affected within the area of potential effects of this undertaking.

Please note that, as indicated in our letter dated July 13, 2005 (enclosed), archaeological resources may be any affected at the project sites. If and when removal of the dams is necessary, an archaeological survey must be conducted for the emergent (former) shorelines after the draw-down has been completed and submitted to our office for review and comment. Therefore, consultation with our office will be required prior to the removals.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. In all cases, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences the Federal Energy Regulatory Commission's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of the Federal Energy Regulatory Commission's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected".

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or by email at ER@michigan.gov. Please reference our project number in all

STATE HISTORIC PRESERVATION OFFICE, MICHIGAN HISTORICAL CENTER
702 WEST KALAMAZOO STREET • P.O. BOX 30740 • LANSING, MICHIGAN 48909-8240
(517) 373-1630
www.michigan.gov/hal

communication with this office regarding this undertaking. Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Conway". The signature is written in a cursive style with a long, sweeping underline that extends downwards and to the right.

Brian D. Conway
State Historic Preservation Officer

BDC:ROC:bgg

Copy: Joe Kaltenbach, Traverse City Light & Power
Kyle Kruger, MDNR



JENNIFER GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

FILE COPY

DR. WILLIAM ANDERSON
DIRECTOR

August 22, 2007

LES WEIGUM
DETROIT DISTRICT CORPS OF ENGINEERS
PO BOX 1027
DETROIT MI 48231-1027

RE: ER05-457 Boardman River Dam Removals, Grand Traverse County (FERC)

Dear Mr. Weigum:

We have received the information you submitted regarding the initiation of a feasibility phase study for the above-cited undertaking at the location noted above. As mentioned in your letter, we originally commented on this undertaking in our letters dated July 13, 2005 and October 13, 2005 (enclosed). At that time, we determined that that for this project there will be no historic properties affected in regard to above-ground resources, however, the State Archaeologist, Dr. John Halsey, noted that archaeological resources may be affected at the project sites. He requested that archaeological survey should be conducted for the emergent (former) shorelines after the draw-down has been completed, prior to the actual removal of the dams. Therefore, we reiterate our survey request. We have no additional concerns at this time, and we look forward to continued consultation.

If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:JRH:ROC:bgg

Enclosure(s)

Copy: Karen Krepps, COE

Source: Delorme 1999 U.S.G.S. 7.5' Grown and Mayfield Quadrangles, Michigan

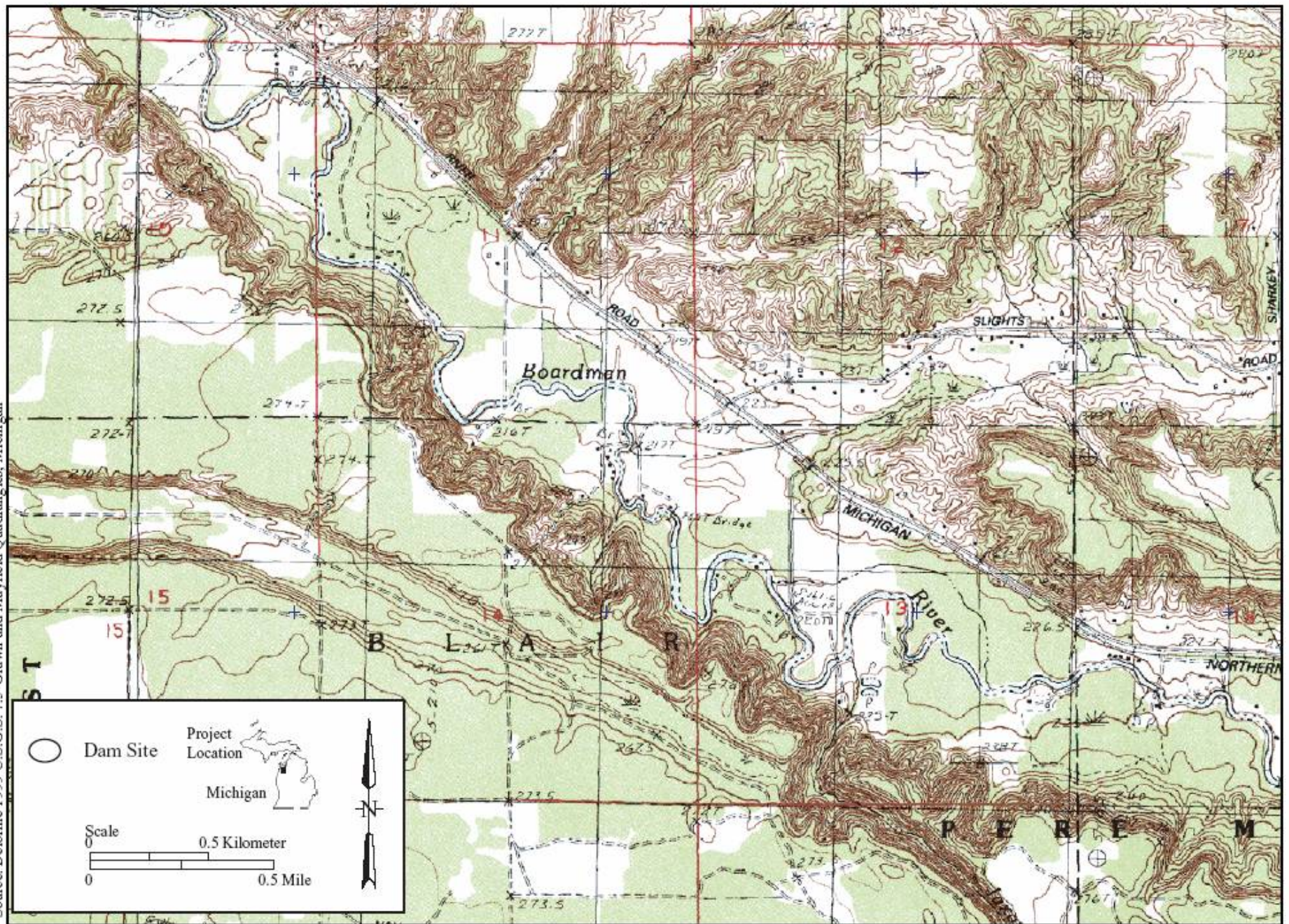
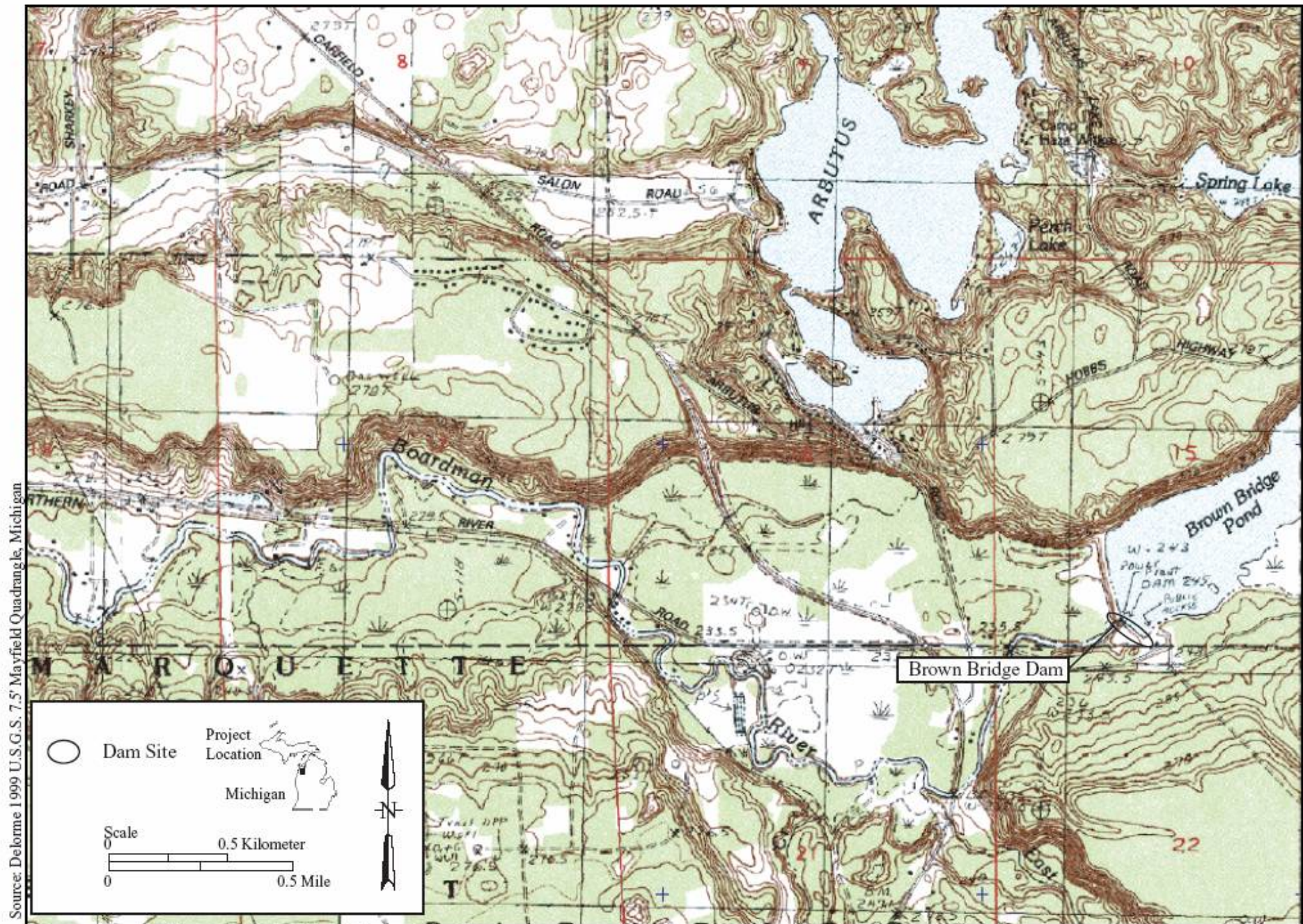
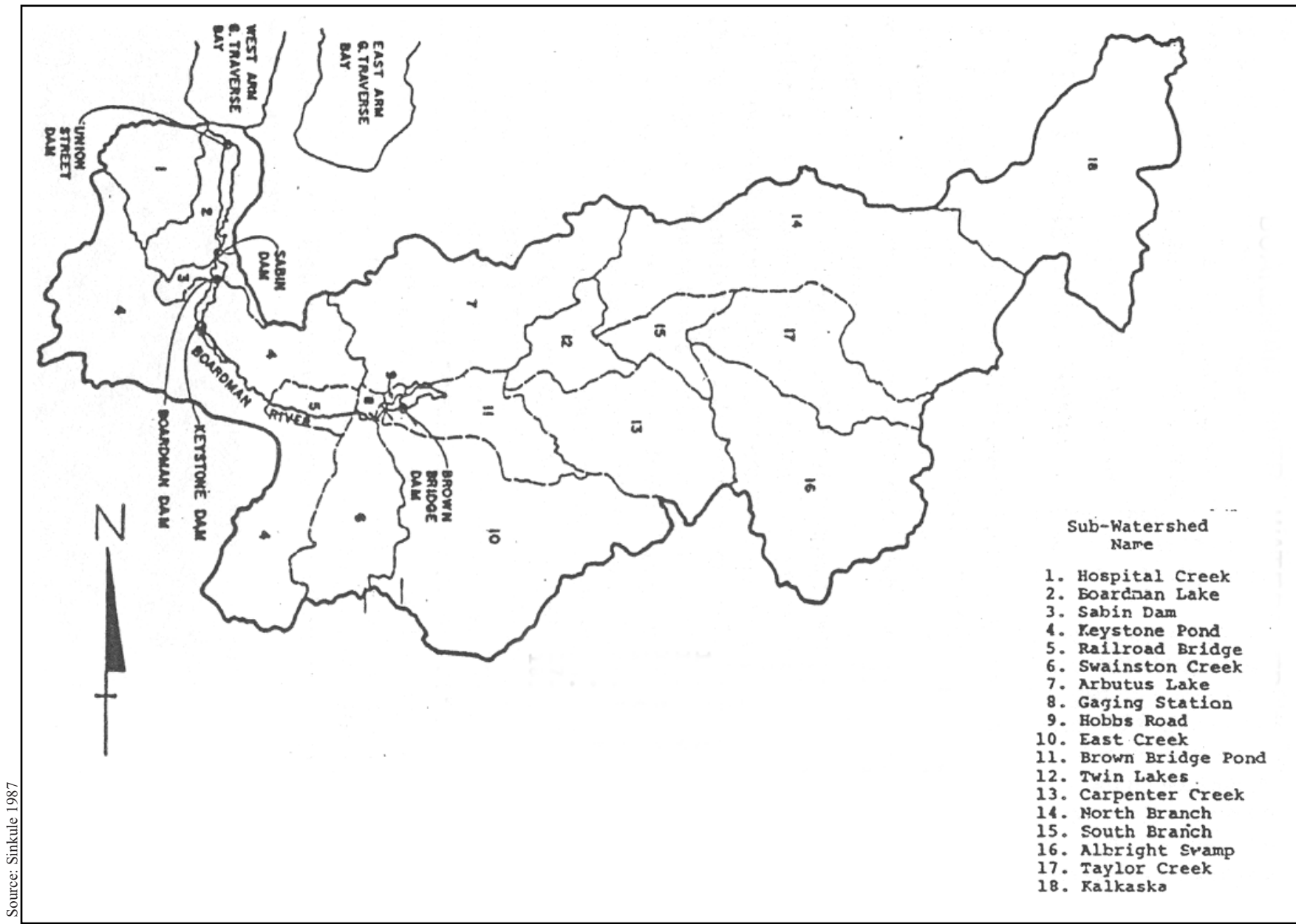


Figure 1.0-1c. Topographic Map Illustrating the Project Area



Source: Delorme 1999 U.S.G.S. 7.5' Mayfield Quadrangle, Michigan

Figure 1.0-1d. Topographic Map Illustrating the Project Area



Source: Sinkule 1987

Figure 1.0-2. Detail of the Boardman River and the Location of the Four Dams

Source: Traverse City Record-Eagle 1965

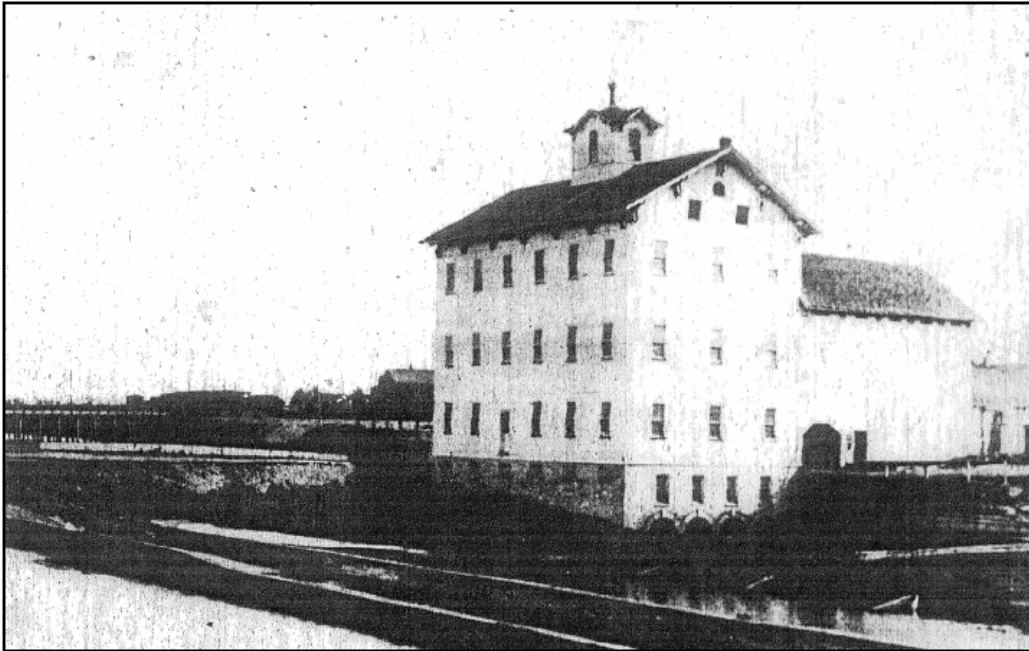


Figure 3.1-1. Union Street Dam and Gristmill, ca. 1867



Figure 3.1-2. Union Street Dam from Union Street with Cass Avenue in Distance

Source: Traverse City Light and Power

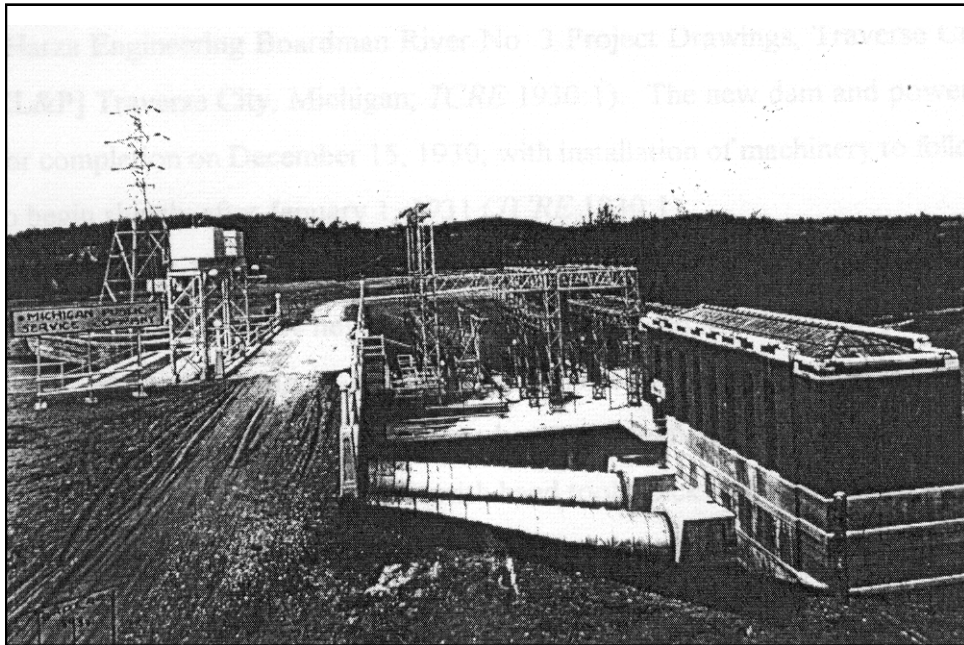
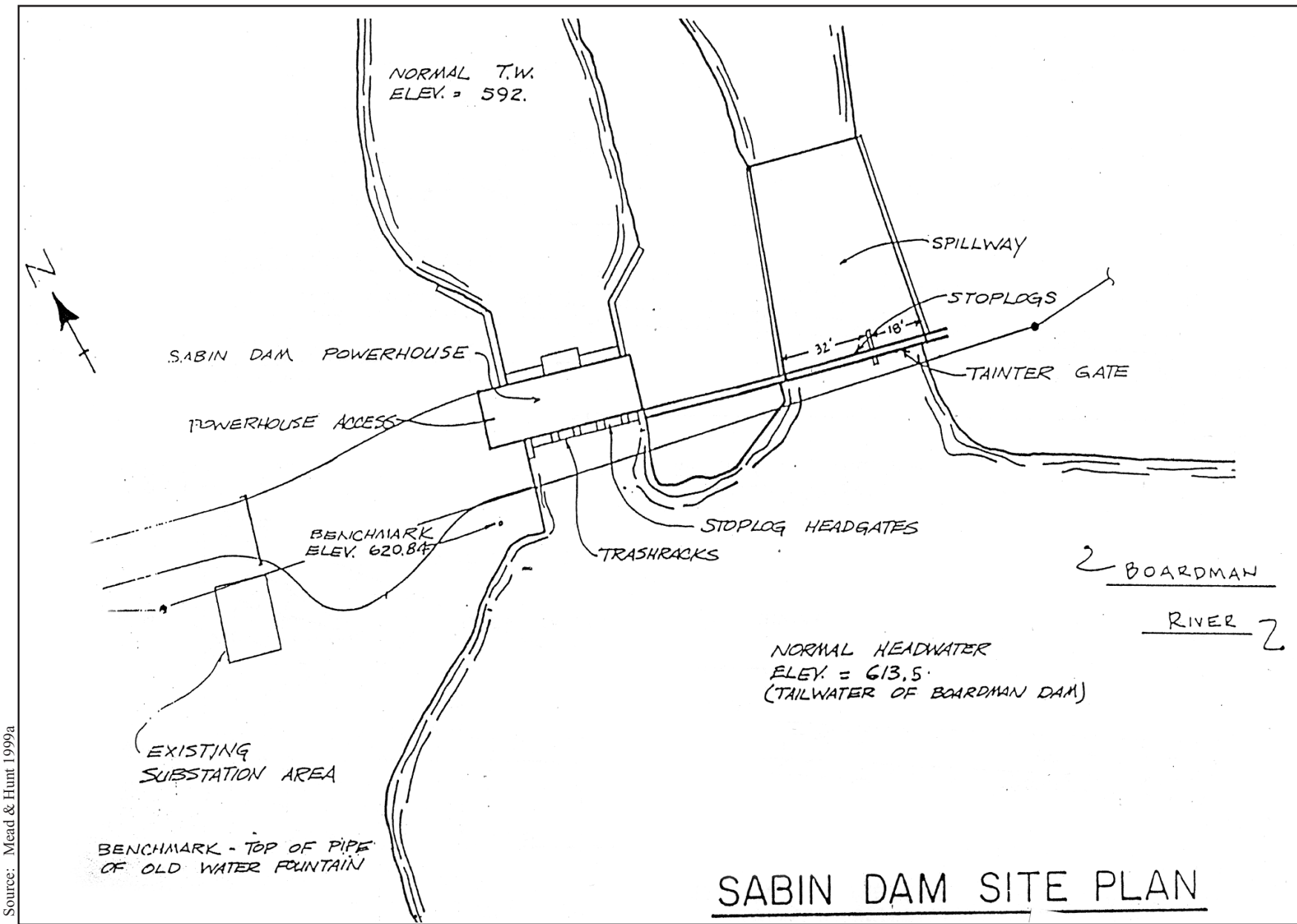


Figure 3.2-4. Early Photograph of the Completed Boardman River Dam/Bridge Project

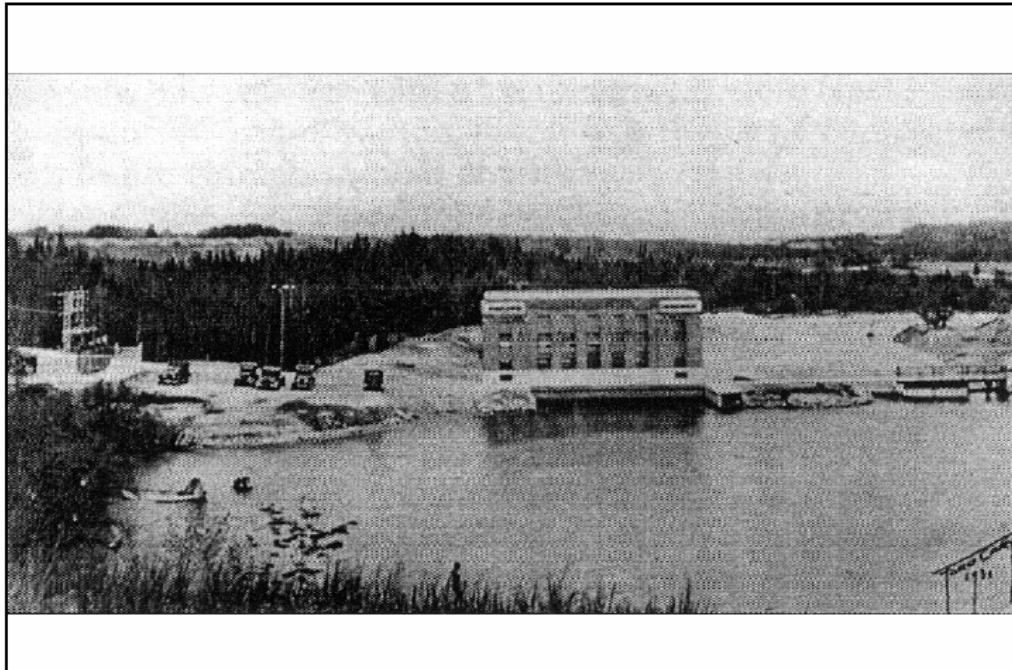


Source: Mead & Hunt 1999a

Figure 3.3-1. Sabin Dam Site Plan



Figure 3.3.-2. Sabin Dam Power House



Source: Wakefield 1992

Figure 3.3-3. Sabin Dam, ca. 1920

Source: Mead & Hunt 1999b

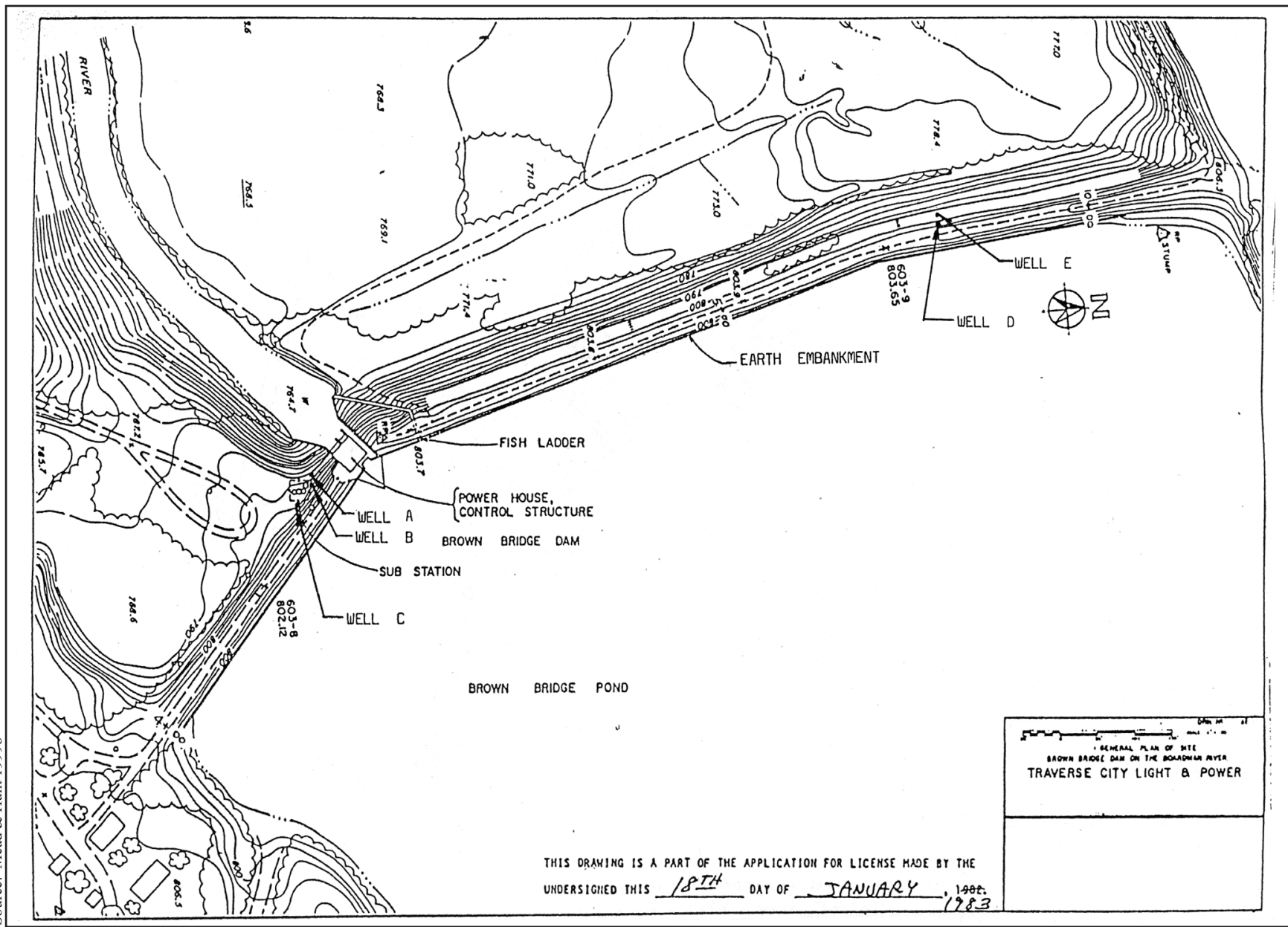


Figure 3.4-1. Brown Bridge Dam Site Plan

