Southern Idaho Section
Historic Civil Engineering Landmark Nomination
of
Arrowrock Dam

“The Highest Dam in the World, 1915-1932”
Boise County, Idaho
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Cover Photo Credit: Idaho Historical Society, 2646
ARROWROCK DAM, FINISHING TOUCH TO GREAT
IRRIGATION PROJECT, IS FORMALLY DEDICATED

MIGHTY TREASURE WILL EACH YEAR BE STORED BEHIND THE DAM

OCT 4 1915

Top—Panorama of Boise river looking toward Arrowrock dam. Bottom—Comparison between Arrowrock dam, 348.5 feet high, and the Flatiron building, New York, 286 feet high.

Arrowrock dam, which arrests the flow of the Boise river just above this city, that gigantic vault door of a reservoir bank in which is to be stored each year a mighty treasure in liquid millions, is an accomplished fact. After deep planning and years of hard labor it is finished. There it stands today challenging the world as the highest dam yet built, a monument to the efficiency of service, the project that adds 240,000 fruitful acres to the small farm lands of this valley. The water, upon which this mighty structure is built, can irrigate more than twice the area of the State of Maine. The fields that stretch away in gleaming rows under the late sun are part of the results of the Arrowrock dam. The Boise river, for many miles above the dam, is a beautiful, rolling, and fertile stream. The dam, rising 348.5 feet above the river, is so constructed that it will stand the weight of the water in the reservoir behind it. The dam is 2 miles long and, with a spillway bridge across it, 4 miles long. The cost of the dam was over $10,000,000. The miles of irrigated land are beyond calculation.

In the reservoir back of Arrowrock dam, which is the head of 37 miles, more than twice the area of the State of Maine, waters are stored to be used for irrigation. This dam completes the great basin irrigation work that has been in progress in the Boise river valley for years. The irrigation work now in progress embraces 350,000 acres of land, which will cost more than $100,000,000. The irrigation works have been in process for many years, and the cost has been charged against the farms being worked. The water from the dam will irrigate 240,000 acres of land, and the cost of this work will be charged against the farms being worked.

The first train of the Idaho Irrigation Company, at 3:45 o'clock, filled with people from Boise, Nampa, and other communities, arrived at the dedication grounds at 4 o'clock, and the train was filled with the people present at the dedication exercises.

Dr. W. J. B. Davis, president of the College of Idaho, made a brief address in which he said:

"The Arrowrock dam is the highest dam built in the world, and it is a monument to the efficiency of service, the project that adds 240,000 fruitful acres to the small farm lands of this valley. The water, upon which this mighty structure is built, can irrigate more than twice the area of the State of Maine. The fields that stretch away in gleaming rows under the late sun are part of the results of the Arrowrock dam. The Boise river, for many miles above the dam, is a beautiful, rolling, and fertile stream. The dam, rising 348.5 feet above the river, is so constructed that it will stand the weight of the water in the reservoir behind it. The dam is 2 miles long and, with a spillway bridge across it, 4 miles long. The cost of the dam was over $10,000,000. The miles of irrigated land are beyond calculation.

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The crowd consisted of people from Boise, Nampa, and other communities, and the dedication exercises were attended by a large number of citizens from the large communities of Boise, Nampa and Caldwell who profit by the conversion of a vast tract of blistering waste into fruitful gardens, orchards and farms—this transformation of a weary stretch of sagebrush desert into an abode of thrifty and contented citizens with their homes, their villages and their schools. Few, even among those on the land, appreciate the magnitude of the undertaking.

Photo Credit: Idaho Statesman October 4, 1915 (Courtesy of the Idaho Historical Society)
Historic Civil Engineering Landmark Nomination

To: History & Heritage Committee
ATTN: Jennifer Lawrence
1801 Alexander Bell Drive
Reston, VA 20191-4400

Date: June 3, 2015
ASCE Section: Southern Idaho

This is to nominate the following for designation as a Historic Landmark: National
Previously nominated for National: No
Located at: N. Fork Boise River Rd., County: Boise County, State: Idaho
The latitude and longitude to the nearest minute: 43° 35', -115°55'

Attach detailed local and vicinity maps that show access from a major city or the interstate:
See Appendix A.

The proposed landmark’s owner:
The United States Department of the Interior, Bureau of Reclamation

In support of this nomination the following must be provided:

1.0 Date of Construction (and other significant dates)
   ▪ August, 1910 – Final Approval of the Arrowrock Dam Project.
   ▪ Early 1912 – Construction begins on the Arrowrock Dam.
   ▪ October 4, 1915 – Dedication of the Arrowrock Dam.
   ▪ 1915 to 1932 – The Arrowrock Dam is the tallest dam in the world until 1932. In 1932, it is surpassed by the Owyhee Dam in Oregon.
   ▪ 2010 – The Arrowrock Dam is retrofitted with a 15 MW Hydroelectric Facility.
   ▪ October 4, 2015 - 100th Anniversary (pending)

2.0 Names of Key Civil Engineer and Other Professionals Associated with Project
   ▪ Frank Crowe – Design Engineer
   ▪ F.E. Weymouth – Supervising Engineer
   ▪ Chas. H. Paul – Construction Engineer
   ▪ James Munn – Superintendent Of Construction
   ▪ W.E. Borah – United States Senator

3.0 Historic (national or local) Significance of this Landmark
   ▪ From 1915 to 1932, the Arrowrock Dam was the highest dam in the world at 350 feet.
   ▪ Millions across the country read of and celebrated the Arrowrock Dam’s completion.
   ▪ The Arrowrock Dam provides about 286,000 acre feet of irrigation water storage for the Treasure Valley.
   ▪ The completion of the Arrowrock Dam changed sagebrush desert to farmable country, adding “240,000 fruitful acres to the permanent wealth of the nation” (Idaho Statesman, October 4, 1915).
   ▪ The Arrowrock Dam was a triumph for the Reclamation Service and provided a proving ground for engineers and construction techniques used during the construction of still larger dams such as the Hoover Dam. In part because of the success of the Arrowrock Dam, the Reclamation Service continued to construct large dams throughout the west, opening arid lands to irrigation and habitation.
   ▪ In order to get supplies to the construction site, the nation’s first publicly owned rail line was formed, running from Boise to the dam site located 20 miles upriver.
   ▪ The Arrowrock Dam is included on the National Register of Historic Places in Idaho.

4.0 Comparable or Similar Projects, Both in the United States and other Countries
   ▪ Aswan Low Dam (Egypt). Gravity Dam completed in 1902 with a height of 118 feet.
   ▪ Owyhee Dam (Oregon). Arch-Gravity Dam completed in 1932 with a height of 417 feet.
   ▪ Hoover Dam (Nevada/Arizona). Arch-Gravity Dam completed in 1936 with a height of 726.4 feet.
Glen Canyon Dam (Arizona). Arch Dam completed in 1966 with a height of 710 feet.
Idukki Dam (Kerala, India). Arch Dam completed in 1973 with a height of 554 feet.

5.0 Unique Features or Characteristics which set this Proposed Landmark Apart from Other Civil Engineering Projects, including those in #4 above

- When completed, the Arrowrock Dam was the highest dam in the world at 348 feet, a civil engineering marvel of its day.
- Frank Crowe developed two practices while working on the Arrowrock Dam which proved pivotal to the future of dam construction, including the Hoover Dam:
  - The first is the use of a pipe grid used to transport cement pneumatically.
  - The second is an overhead cableway system for transporting construction debris and delivering concrete rapidly to any point on the construction site.
- Experimental elements of Arrowrock Dam's gravity-arch design were later applied to larger dams such as the Hoover Dam.
- The Arrowrock Dam is one of only two United States Bureau of Reclamation dams constructed with sand cement.
- The Arrowrock Dam was the first United States Bureau of Reclamation dam to use Ensign Valves to control the flow of water through its outlets.
- During its completion, workers set several records for mixing and placing concrete. In April 1913, they placed 45,700 cubic yards of concrete which was believed to be a world record. They then broke the record two more times by pouring 51,490 cubic yards in May 1913 and then again in June by pouring 56,520 cubic yards.
- Prior to construction of the dam, the Boise River was diverted through a 470-foot-long tunnel, a notable engineering feat for its time.

6.0 Contribution which this Structure or Project Made Towards the Development of: (1) The Civil Engineering Profession; (2) The Nation or a Large Region Thereof.

- During his time working on Arrowrock Dam, Engineer Frank Crowe developed two practices which became invaluable to dam construction in the west: 1) using a pipe grid to pump cement pneumatically, and 2) an overhead cableway system to remove debris and deliver concrete rapidly to any point on the construction site. Frank Crowe later went on to become one of the nation’s greatest dam builders. Frank used the techniques pioneered during his time working on the Arrowrock Dam to complete the Hoover Dam, one of the most recognizable dams in the world. These techniques proved invaluable to constructing super dams in the west which helped deserts flourish and new communities begin.
- The Arrowrock Dam Project was a triumph for the Reclamation Service. After the successful completion of the Arrowrock Dam which included several experimental techniques and design elements, the Bureau of Reclamation continued to build on the success and knowledge gained during construction of the Arrowrock Dam to build many more and even taller dams throughout the west.
- The Arrowrock Dam played a major part in bringing irrigation to the Treasure Valley and allowing it to develop economically. Today, the Treasure Valley is Idaho’s most populous metropolitan area (616,561 2010 U.S. Census) home to roughly 40 percent of the state’s population.

7.0 A List or Published References Concerning this Nomination

“Arrowrock Dam, Finishing Touch to Great Boise Irrigation Project is Formally Dedicated Today,” The Idaho Statesman, October 4, 1915.
“Idaho History: Arrowrock Dam Near Boise Was a Colossal Achievement,” Idaho Statesman, April 12, 2015.
8.0 A List of Additional Documentation in Support of this Nomination
Arrowrock Dam 50th Anniversary Dinner Program, 1965
“Engineers point to Arrowrock’s Solid Anchors,” The Idaho Statesman, October 16, 1929.
Photos and Postcards from the Idaho Historical Society Archives:
- Arrowrock Dam, Crowe concrete distributing device about to discharge into hopper, May 22, 1912 (61-164.88)
- Arrowrock Dam, Steam shovel handling 8-ton boulder, November 12, 1912 (61-164.137)
- Arrowrock Dam, Diversion Tunnel, October 30, 1911 (61-164.33)
- Postcard “Arrowrock Dam, Highest in the World,” published by Wesley Andres Co. in Baker Oregon (60-72.20).
- Postcard “Arrowrock Dam, 359 feet high, length 1050 feet, Boise River, Idaho,” published by Wesley Andres Co. in Baker Oregon (60-11.19).
- Arrowrock Dam, Spillway and Dam, unknown Date (3117).
- Postcard “Great Arrowrock Dam, Boise River, Idaho,” published by Wesley Andres Co. in Baker Oregon (2543).

9.0 The Recommended Citation for HHC Consideration
“The Arrowrock Dam, located 20 miles upriver from Boise, Idaho, serves as an essential water storage facility supplying irrigation water to thousands of acres of fertile farmland in the Treasure Valley. At the time of its dedication in 1915, the Arrowrock Dam was the highest dam in the world at 350 feet, a title it would hold until 1932. Civil Engineers tested the technological limits of the time to construct this engineering marvel. The Arrowrock Dam served as a proving ground for design elements and construction methods that would later be incorporated into other large dams in the west. The dam was the first United States Bureau of Reclamation dam to use Ensign Valves to control the flow from the outlet works. While working on the Arrowrock Dam, Engineer Frank Crowe developed a grid system of delivering concrete pneumatically and an overhead cable system for rapidly delivering construction materials throughout the construction site. Crowe later went on to construct many more dams, including the Hoover Dam, where he utilized the systems he developed while working on the Arrowrock Dam.”

10.0 A Statement of the Owner’s Support for the Nomination
See Appendix C
If this nomination is approved for designation as a National Historic Civil Engineering Landmark by the Board of Direction of ASCE, we understand that the section will have the major responsibility for the public presentation ceremony of the plaque and for plaque maintenance.

Chairman, Section History & Heritage Committee:_________________________________

Section Secretary:______________________________________________________________

Section President:_____________________________________________________________

*Note: For State Historic Civil Engineering Landmark designation, the other Section presidents from the state should sign the nomination form or concur with the nomination in writing. If all Sections affected by the nomination agree on dedicating this landmark, the nominating Section should inform the HHC of their decision and send one (1) copy of the nomination package to the staff contact for the HHC.

Note: Designation by ASCE as a National Historic Civil Engineering Landmark carries no legal commitment on the part of ASCE, the owner, or the governmental jurisdiction in which it is located.
Sample of Historical Sources
Arrowrock Dam, Crowe concrete distributing device about to discharge into hopper, May 22, 1912.

Photo Credit: Idaho Historical Society, 61-164.88.
Department of the Interior United States Reclamation Service “Arrowrock Dam and Related Features, Summary of Items of General Interest” 1912 or 1913 (Courtesy of the Idaho Historical Society).

Equal value of pulverized granite. The granite is obtained from the underground excavations, run through the rock grinder and sand rolls, then through the dryer and into the ball mill where it is pulverized to pass a 20-mesh sieve. It is then mixed with Portland cement and ground with it in the ball mill to such fineness that about 95 percent passes a 200-mesh sieve. The resulting product is as strong as the original Portland cement.

For making the grout for the dam, two sections of the groutworks are employed. One groutworks is at the top of the dam and the other at the base. The groutworks are equipped with a 3-mm. and 8-mm. screen.

The grout is made in the groutworks, with 21 cm. buckets and 50 ft. hose.

Two 10-ton “Maytag” self-leg derricks with 5-drum hoists and 50 ft. boom.

Two 20-ton lorry rock crushers.

Three 1 cm. “Smith” concrete mixers.

Two “Dove” concrete placing conveyors and equipment.

These conveyors include small derricks, shovels, engines, high pressure pipe, hose, buckets, shovels, mixers, etc.

Diverter Tunnel for Arrowrock Dam

Upper diverters: 200 ft. long and 25 ft. high, built of timber, brick, and concrete, covered with fine natural materials.


Lower tunnel: About 100 feet long and 50 feet high, construction done in dry form. Granite in the work from Idaho.

These diversion works are built for the purpose of diverting the waters from the dam during the construction period. After the dam is completed, the tunnels of the diversion tunnel that come in the dam section will be filled with concrete.

Arrowsrock Dam

Mainline Dam

Height above sea level, 800 feet. Width at top, 16 feet. Width at bottom, 60 feet. Height of grout, 64 feet. Length of dam, 340 feet. Length of spillway, 400 feet. Area of foundation, about 1 acre.

Concrete Quantities:

Concrete for dam, 260,000 cubic yards. Concrete in dam, 350,000 cubic yards. Concrete for spillway, 200,000 cubic yards. Concrete for power plant, 10,000 cubic yards. Length of diversion tunnel, 2000 feet.

Total length of reservoir, about 18 miles and includes both the Bow River and the South Fork.

This dam, when completed, will be the highest in the world. The concrete in the dam, if placed in a column 10 feet square would reach a height of 200 miles. About 2000 cubic yards of sand cement will be used in the dam. The water in the reservoir will cover a depth of 1 foot, in area of 300 square miles.

The Arrowrock reservoir, together with the Deer Flat reservoir, will furnish a base storage water supply for about 1.
Article from the October 4, 1915 edition of The Idaho Statesman describing the dedication of the Arrowrock Dam. The article also includes a scale drawing of the dam, comparing it to the Flatiron Building in New York City (Courtesy of the Idaho Historical Society).
Mighty Treasure Will Each Year Be Stored Behind the Dam

[News item about the reservoir created by the dam, discussing its size and potential benefits, including the storage of water for irrigation, generation of electricity, and recreation.]

Big Problem Is Solved.

Every gallon of the reservoir's capacity of over 100,000,000,000 gallons will be needed when the dam is completed, and the people of the area will benefit from the water stored behind the dam.

And in all these ways there will be a benefit to the people of the area, who will be able to use the water more efficiently and effectively.

Completed Ahead of Time.

When the government completed the dam, it was a great accomplishment of the people of the area, who worked hard to make it happen.

The water stored behind the dam will be used for irrigation, generation of electricity, and recreation, and will provide a great benefit to the people of the area.

...
Article from the October 5, 1915 edition of Capital News (Boise) telling how millions across the country read about the completion of the historic Arrowrock Dam (Courtesy of the Idaho Historical Society).
The Arrowrock Dam Project

A great project has been completed in Idaho after five years of work. The Arrowrock Dam, if not the highest, is certainly one of the most wonderful in the world. From the low point of the foundation to the top it measures about 200 feet. It impounds the waters of the Boise River and should serve the double purpose of flood prevention and irrigation. The most notable feature of the work was not the engineering, although that was a scientific triumph, but the fact that the United States built it for $5,500,000, or $5,000,000 less than was expected. The dam and its necessary connections cost $12,000,000.

It will be employed in the Boise irrigation project, which includes several hundred thousand acres of rich land. In 10 years it is believed that settlers will have returned to the government the original cost of the dam.

This project demonstrates the value and efficiency of the United States reclamation service. But it also opens up two most interesting subjects—the drainage of swamp lands and the extent of federal authority in making such natural improvements. If Senator Newland of Nevada asks, the United States government has the authority and the money to build a dam, thereby making a desert to bear fruit, why has it not also the authority and the money to drain the millions of acres of rich swamp land and so restore to their natural fertility vast areas of soil now valueless? The question is one for congress to answer. Before the reclamation service was organized congress wasted vast sums of money and made little progress. The success of the work would seem to indicate that other public works might be taken out of the control of congress—in other words, out of the pork barrel.

But then there is the question of states' rights. The water power conference, which was held recently in Portland, promises to renew with vigor an old controversy. Idaho sent seven delegates to this meeting. One of these was absent when the vote was taken, but the other six declared for state initiative. If the states are willing that the national government should risk millions of dollars on dam projects why are they opposed to the federal control of water power sites? The answer is obvious. Water power site development offers the chance of income. Idaho might not have been so keen for states' rights had the Portland conference been voting on the Arrowrock Dam project.
The Arrowrock Dam

A Times man, with several others from Boise, made a trip to the great Arrowrock dam last Saturday. This mammoth work should be seen to be appreciated, and after four years of work by an army of men, it is practically finished, and this season is holding back several thousand acre feet of water, to be gradually let out for use of the farmers of this and neighboring localities. All Boise valley after the river passes Arrowrock is under the big storage reservoir formed by the dam, and 240,000 acres of land will be given the late season water supply.

Starting from Boise on the Short Line, one is immediately impressed with the power of the Barber Lumber Company, with big mills located about five miles above the city. Instead of the primitive sawmill usually found here is a big group of buildings, with a huge power plant, and with an arrangement for burning the sawdust and slash wood. A model little village with a group of neat houses for workmen, set back in attractive lawns, is noted at Bartlemat.

On a Governor Railroad.

Here one changes to the governor railroad, one of few in the United States. A ride of five miles more brings one to the big diversion dam. Here a good portion of the water of the Boise river is diverted to the New York canal, and, coming down to the Boise Fork, which is the main stem of the Snake river which is the boundary line between Idaho and Oregon.

The dam is now practically completed, and the diversion channel, which carried the waters of the river along the alluvia while the construction work was going on, is now filled up. D. W. McPadden, pioneer miner, who was the force of men at work in this tunnel, and much of the work was by blasting through granite rock.

Arrowrock is rapidly dwindling from a city to a thousand working men to a fraction of that number. As the work is done, the employees are leaving on every train. Mrs. D. W. McPadden, the postmistress, who went here four years ago, says there are about a hundred people in camp. While the office is a third class one, with a good salary, a few months will dwindle the receipts to a nominal figure.

The big dam was built at a cost of $4,509,600, a million less than was estimated. Good wages were paid to all workers, and the government, through the reclamation service, had charge of all work and there were no sub-contracts. The payroll for July at a year ago was $55,900 and 1,800 men were engaged.

A Good Moral Influence.

One of the interesting and obliging men of the town is Secretary Flett, who is the editor of "The Arrowrock".

The gates, regulating the outlet of the water, are all worked from the inside of the dam, and an elaborate system of washing and trash extend through the big wall. A visitor can, by climbing a hundred or more steps, secure a good idea of the interior of the structure.

EIGHTY FEET UNDER GROUND.

White the dam is 18 feet wide at the top and 24 feet wide at the bottom, and the bottom of this concrete wall is 80 feet below the river bed. Those who have not been down in the cavern between the hills on both sides of the Boise river extending back about twenty-five miles.

It Can't Move the Hills.

Eugene Thrall, one of the time-keepers, says the rock will harden with age, and at every hit has been tested, there is a very small chance for any defective concrete or cement getting into the work. Besides, the dam was built in sections, at different times, the action of the temperature would only affect one part and this could be repaired without affecting an adjacent section. He said the curvature of the dam, up stream means that to push the big dam out entirely would mean that the mountains of granite on which the hills are composed on both sides of the river would have to be moved back. This is of course an impossibility but is an element of strength, and was not figured in the estimate made by the government engineers.

Work Practically Finished.

The dam is now practically completed, and the diversion channel, which carried the waters of the river along the alluvia while the construction work was going on, is now filled up. D. W. McPadden, pioneer miner, who was the force of men at work in this tunnel, and much of the work was by blasting through granite rock.

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ENGINEERS POINT TO ARROWROCK’S SOLID ANCHORS

Construction of Idaho Masterpiece Characterized by Elaborate Precautions to Prevent St. Francis Misfortune.

Construction of Arrowrock dam was characterized by elaborate precautions to prevent just such a misfortune as has befallen the St. Francis dam in California, engineers said Wednesday.

When the dam was being built the foundation was sunk 90 feet below stream level to place the structure on bedrock. To make sure that this was actually bedrock, hence not likely to give way under the weight of the dam and impounded waters, diamond drill holes were sunk deeper yet.

On this foundation, 238 feet wide at its widest point, a mass of concrete masonry was erected. Each wing was securely anchored in living granite and the upstream face curved to resist the pressure of the water.

Technical Description.

The dam, says a technical description in “The Design and Construction of Dams,” a standard work on the subject, has radial contraction joints at intervals of 100 feet, where adhesion is prevented by oiling and forming.

“To prevent leakage from the foundation of the dam,” says the book, “a line of holes was drilled in the foundation, just below the upstream face, to depths of 30 to 40 feet. About 20 feet downstream from the line of holes, a line of drainage holes was drilled, to relieve the dam from upward pressure.

“These holes were continued upward in the masonry and terminated in a large drainage tunnel, extending the whole length of the dam. This tunnel is 25 feet inside of the water face of the dam. Drainage wells, 10 feet apart, extend upward from the tunnel nearly to the top of the dam to intercept and discharge water percolating through the masonry. The water collected by this tunnel is discharged by a branch tunnel leading to the down-stream toe of the dam.”

The damage to the St. Francis dam, testimony said, was partly caused by leakage which these precautions are designed to prevent.

Statesman
Oct. 16, 1929.
Arrowrock Dam, Steam shovel on spillway handling 8-ton boulder, November 12, 1912.

Photo Credit: Idaho Historical Society, 61-164.137.
Arrowrock Dam, Diversion Tunnel, October 30, 1911.

Photo Credit: Idaho Historical Society, 61-164.33.
Postcard “Arrowrock Dam, 359 feet high, 1050 feet, Boise River, Idaho,” published by Wesley Andres Co. in Baker Oregon (Courtesy of the Idaho Historical Society, 60-111.19).
Arrowrock Dam, Spillway and Dam, date unknown.

Photo Credit: Idaho Historical Society, 3117
Postcard “Great Arrowrock Dam, Boise River, Idaho,” published by Wesley Andres Co. in Baker Oregon (Courtesy of the Idaho Historical Society, 2543).
Statement of Owner’s Support
Mr. Ryan Van Leuven, PE
Geotechnical Engineer
American Geotechnics
5260 W. Chinden Blvd.
Boise, ID 83714

Subject: Support of the Nomination of Arrowrock Dam to the Historic Civil Engineering Landmark Program, Boise Project, Idaho

Dear Mr. Van Leuven,

The Bureau of Reclamation has learned of the wish of the Southern Idaho Section of the American Society of Civil Engineers to nominate Arrowrock Dam to the Historic Civil Engineering Landmark Program. As you know, Arrowrock Dam, completed in 1915, was the highest dam in the world at the time. Experimental elements of its gravity-arch design would be applied to later dams that were built even higher. In addition, it was only one of two Reclamation dams built with sand cement for the concrete, and it was the first United States Reclamation Service (USRS) dam design that required Ensign valves for the release of water through its outlets.

Arrowrock Dam represented a civil engineering marvel of its day, and served as a key component of the Boise Project, an irrigation project designed by the USRS to provide irrigation water throughout Boise and Payette Valleys, making them the most agriculturally productive region in Idaho. Arrowrock Dam will be celebrating the 100th anniversary of its construction this year, and continues to serve the Boise Project well. An honor such as being included in the Historic Civil Engineering Landmark Program would be entirely apropos.

Reclamation adamantly supports this nomination.

Please direct any questions to Jenny Huang, SRAO archeologist, at 208-383-2257 or JHuang@usbr.gov.

Sincerely,

[Signature]

Jerrold D. Gregg
Area Manager