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NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

United States Department of the Interior
National Park Service

791

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. **Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).**

1. Name of Property

historic name Owyhee Dam Historic District

other names/site number

2. Location

street & number Owyhee Lake Road; 11 miles southwest of Adrian ☐ not for publication

city or town Adrian ☒ vicinity

state Oregon code OR county Malheur code 045 zip code 97901

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

X national X statewide local

Signature of certifying official/Title — August 3, 2010 Date

Bureau of Reclamation, Federal Preservation Officer
State or Federal agency/bureau or Tribal Government

In my opinion, the property X meets ___ does not meet the National Register criteria.

Signature of commenting official — 7.7.10 Date

Deputy SHPO — Oregon SHPO
Title — State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

✓ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:)

Signature of the Keeper — 9/23/10 Date of Action

Owyhee Dam Historic District
Name of Property

Malheur Co., Oregon
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply.)

- [ ] private
- [ ] public - Local
- [ ] public - State
- [X] public - Federal

Category of Property
(Check only **one** box.)

- [ ] building(s)
- [X] district
- [ ] site
- [ ] structure
- [ ] object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
11	8	buildings
		district
		site
7	3	structure
		object
18	11	**Total**

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

N/A

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions
(Enter categories from instructions.)

DOMESTIC: single dwelling
GOVERNMENT: government office, public works
INDUSTRY/PROCESSING: manufacturing facility, waterworks
LANDSCAPE: street furniture/object
TRANSPORTATION: road-related (vehicular)

Current Functions
(Enter categories from instructions.)

DOMESTIC: single dwelling
GOVERNMENT: government office, public works
INDUSTRY/PROCESSING: waterworks, energy facility
LANDSCAPE: street furniture/object
TRANSPORTATION: road-related (vehicular)

7. Description

Architectural Classification
(Enter categories from instructions.)

LATE 19TH AND EARLY 20TH CENTURY AMERICAN MOVEMENTS
MODERN MOVEMENT: Art Deco

Materials
(Enter categories from instructions.)

foundation: CONCRETE
walls: CONCRETE; WOOD
roof: WOOD; METAL
other: EARTH

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The Owyhee Dam National Register District comprises resources that are associated with construction of Owyhee Dam.[1] The major feature is the dam itself, which qualifies for the National Register as individually eligible. It is a high-arch concrete structure that, despite some modifications and upgrades since its completion by the Bureau of Reclamation (Reclamation) in 1932, still retains its historic integrity. In addition to the dam, the district consists of buildings and structures remaining from the Reclamation residential camp, and several features within the dam's industrial zone. Almost all of the contributing features of the district date from the period spanning the dam and camp's construction (1927 to 1932). A few other contributing elements, namely a rock wall and a wooden arbor built prior to 1940, date from the early years of the government camp's occupation after completion of the dam. Collectively, the resources reflect original construction and occupation of the dam and vicinity during the period of significance between 1927 and 1939.

Owyhee Dam is located in a remote, rugged canyon cut by the Owyhee River in eastern Oregon (see Figure M-1). The dam site is situated generally on the eastern and northern edge of a dry region labeled on an 1881 map as the "Great Sandy Desert," characterized by sparse populations and a high concentration of public lands. It also lies proximate to some of the richest agricultural soil in the United States. To the east and northeast are a string of Snake River Valley agricultural communities from Homedale, Idaho, north to Ontario, Oregon. The closest town to the district is Adrian, Oregon, located about 11 miles to the northeast.

The district is contiguous, just over a half mile in length. Located on the west side of the Owyhee River, it extends south from the dam's spillway structure to the northern boundary of the residential camp area. The west bank of the river forms the district's eastern boundary; the western border begins at the dam's left abutment and follows, and includes, the original road used during construction of the dam that arches around the industrial zone. From the road, the boundary line then extends in a straight line to the northern end of the district (see Figure M-2). The district is owned by Reclamation and managed by the Owyhee Irrigation District.

The contributing resources of the district consist of: Owyhee Dam, including the spillway, sluice gate outlet works, jet-flow valve (originally needle valve) outlet works, and penstocks for power generation; concrete shell of the mixing plant; powder house; office building; five-room residence with accompanying shed; two three-room residences (north and south cottages): two garages (north and south garages); pump house and cistern; river pump house; small storage structure; arbor; fence surrounding the government camp; mortared rock wall; and dirt road leading up to the dam's crest. In total, the contributing resources number 18. Given the remoteness of the dam site and relatively few developments that have taken place there since construction of the dam, the district remarkably retains its historic appearance, feeling, and overall integrity.

The following are non-contributing resources that all post-date the period of significance: the power plant, a metal warehouse, office trailer, open metal garage and attached undated older open wooden garage, the imitation shell of a train car, a picnic pavilion, picnic shelter, a fuel shed, a metal shed, and various toilet structures. One last non-contributing feature is what may have originally been a small ice house, but has been modified. The date of construction is unknown.

Information in this nomination on the description and history of Owyhee Dam is, for the most part, excerpted verbatim from a National Register of Historic Places Registration Form nominating Owyhee Dam prepared by Fredric L. Quivik of Renewable Technologies, Inc., in 1989.

[1] Owyhee Dam was officially determined eligible for listing in the National Register by the Keeper of the National Register on June 26, 1984. Reclamation submitted a nomination form for the dam to the Oregon State Historic Preservation Office (SHPO) in 1989, which the SHPO signed on December 15, 1989. Reclamation never forwarded the nomination to the Keeper due to concerns about some proposed repairs/alterations to the dam under consideration at the time.

Narrative Description

Owyhee Dam

Owyhee Dam was built in 1928-1932 to impound Lake Owyhee as the main storage feature for Reclamation's Owyhee Irrigation Project. A concrete thick-arch dam with gravity-tangent extension, Owyhee Dam was once the highest dam in the world. The dam spans a deep rugged canyon carved by the Owyhee River and made of volcanic bedrock consisting of a rhyolitic rock known as felsite. The felsite forms the dam's abutments and foundations. The base of the dam is 2,325' above sea level; the crest is 2,675'. The massive concrete dam creates a reservoir about 12,742 acres in size with a capacity of 1,120,000 acre feet of water. A paved road running in a southerly direction along the Owyhee River on what was originally the roadbed for a railroad constructed to haul building materials to the dam site provides access to the dam.

The dam has a maximum structural height of 417 feet and a hydraulic height of 325 feet. Prior to pouring the concrete for the dam, loose material in a fault section beneath the dam was excavated down to about elevation 2,145 feet. The fault section was filled with concrete; thus the top of the dam is about 530 feet above the lowest elevation in the fault zone where concrete was poured. The dam is 30 feet wide along the crest and has a maximum width of 265 feet at the base. The crest is 833 feet long and consists of a 623-foot-long arched section and a 210-foot-long straight gravity dam section at the right abutment. The axis of the arched section has a radius of 500 feet. The upstream face of the dam is slightly battered from the base to elevation 2,579 feet, and from there is vertical to the top of the dam at elevation 2,675 feet. The downstream face of the dam slopes steeply.

Lake Owyhee supplies water to 105,249 acres of irrigated land along the west side of the Snake River in Oregon and Idaho by means of a water distribution system consisting of 172 miles of canals, 543 miles of laterals, 9 pumping plants, and 227 miles of drains[2]. Water is diverted from the reservoir through a tunnel running northeast 3.5 miles in length to Tunnel Canyon where the North and South Canals have their headings. The North Canal extends northward 61.5 miles to the Snake River near Weiser, Idaho, and distributes water to the Mitchell Butte and Dead Ox Flat Divisions. The South Canal distributes water south to the Succor Creek Division through a 5-mile tunnel and then southward 37 miles to the Snake River south of Marsing, Idaho. The outlet works of Owyhee Dam discharge additional water into the Owyhee River, which conveys the water downstream to Owyhee Ditch, a diversion directly from the river. Owyhee Ditch existed before the dam was built.

The operable features of Owyhee Dam include a spillway, sluice-gate outlet works, jet-flow valve outlet works, and penstocks for power generation. All but the spillway are located within the concrete dam itself; the spillway tunnel passes through the right abutment. The spillway consists of an intake structure, a vertical shaft, and a horizontal tunnel which leads to a concrete portal about 300 feet downstream from the base of the dam. The concrete-lined tunnel was first bored to serve as a diversion tunnel, about 1,000 feet long, to convey river water past the dam construction site. The vertical shaft connects the intake structure with the tunnel. When the tunnel was no longer needed for diversion, it was plugged with concrete from its intersection with the shaft 235 feet upstream to the diversion intake. The spillway intake was built on a promontory on the east side of the river about 300 feet from the upstream face of the dam. It is of the "morning glory" type, meaning it is a simple horizontal, circular orifice, and water may flow over all sides of the orifice directly into the vertical shaft. The intake consists of a concrete base and an operable, steel ring gate with an adjoining control gallery located in a concrete pier. A bridge links the control gallery with the nearby road. The steel ring gate is hollow, and therefore buoyant, so it can automatically regulate itself as the level of the reservoir rises above the level of the concrete base. From the control gallery, dam operators can override the automatic regulation and lower the ring gate, allowing water to spill over it and into the shaft.

The sluice-gate outlet works, jet-flow valve outlet works, and power penstocks all pass through the dam. Each consists of an inlet structure on the upstream face of the dam, conduits to convey water through the dam, and gates and valves. The concrete intake structure for each is semi-circular in plan, and supports steel trashracks. The sluice gates are located near the base of the dam at elevation 2,370 feet; their intake is located approximately where the east bank of the river was originally. Three rectangular conduits, measuring 4 feet by 5 feet, lead from this intake to the sets of gates. Each conduit has two, 4-foot by 5-foot, cast iron sliding gates operated by oil-driven hydraulic cylinders and arranged in tandem. Three 60-inch diameter conduits lead from the gates to the downstream base of the dam.

[2] A canal conveys and delivers water from the river or reservoir to ditches, conduits, and laterals. Laterals are pipes, conduits or ditches that conduct water to the water user. In other words, a canal is the main artery and laterals are the veins of an irrigation system.

The intake for the outlet works is located at elevation 2,470 feet, directly over what was once the west bank of the river. Three 4-foot square conduits convey water from the intake to the three, 4-foot square, emergency, cast-iron sliding gates. Three 57-inch diameter conduits lead from the emergency gates to the three 48-inch diameter jet-flow valves, which are located in a concrete valve house built onto the downstream face of the dam.

The intake for the power penstocks is located next to the left abutment and is 100 feet below the high water line for the reservoir. The power penstocks consist of.two, 6-foot-diameter conduits controlled by two 5-foot by 6-foot cast-iron sliding gates.

Controls for all of the gates for the outlet works are located in gate chambers, or voids, which were cast in the interior of the dam during its construction. These chambers are accessed by a series of radial and transverse inspection galleries. The galleries at the base of the dam allowed foundation drains to be drilled and installed after the initial phase of construction. These and other galleries provided access to all parts of the dam for grouting contraction joints and other cracks after the concrete had cured. They continue to allow inspection of all parts of the dam, the gate chambers, and the valve house. Vertical shafts with circular stairs, inclined galleries with stairs, and a freight elevator provide vertical connections between these galleries. Total length of all galleries and shafts in the dam is about 4,200 feet. Three openings provide access to these interior galleries from the outside: one is located at the right abutment near the top of the dam, another is located in a turret along the crest of the dam at the left abutment, and the third is located near the powerhouse site on the west bank of the river about 200 feet downstream from the base of the dam. The third consists of a concrete portal leading to a concrete-lined tunnel through the left abutment to the dam interior. Banks of electrical terminals, which were used experimentally to monitor the temperature and volumetric change of the mass concrete during construction of the dam, are still in place at various locations through the gallery system.

Several decorative features embellish the dam. The turret, which is located at the west abutment along the downstream side of the crest, has a shingled, conical roof. While the parapet along the upstream side of the crest is unadorned, the downstream side of the crest has several ornamental features representational of the Art Deco style. Heavy cast-iron lamp posts reminiscent of Doric columns with fluted sides and a spherical lamp set atop, spaced 47 feet on center, sit on cast concrete pedestals which project from the downstream face of the dam. Blind, three-centered arches, which support the railing, curb, and a very small portion of the roadway, span between the pedestals. The downstream face of the dam also has a series of small cantilevered balconies at the downstream ends of the radial inspection galleries. The Art Deco style of the dam's downstream parapet arcade and the light standards follows similar Depression-era buildings and architecture, when post-war hopefulness and a strong national economy bolstered a collective stylistic swing toward luxury, beautification and ornamentation. This style makes these decorative features of the dam a significant representation of the period.

The valve house is another prominent feature of the downstream face. The base of the valve house projects slightly from the dam. Each of the three sides is slightly recessed from its base, corner pilaster, and top edges. Three circular openings, through which the jet-flow valves discharge, are located near the base of the downstream side of the valve house. Directly above each opening is a semi-circular arched window opening, fitted with industrial steel sash. The curved concrete roof, which was cast as a continuous part of the downstream face, has simple stepped projections outward from the sides of the valve house. Within the valve house are the three jet-flow valves, a balcony on which the controls for the jet-flow valves are mounted, and an overhead crane. With the exception of the replacement of the original needle valves with jet-flow valves and some minor modifications to the controls, the valve house and its equipment have good integrity.

The most significant modification to the dam was the 1984 addition of a concrete hydroelectric power plant at the toe of the dam (see photo 37). In the early 1980s, non-Federal water interests considered the possibility of hydroelectric generating facilities on the Owyhee Irrigation Project and obtained licenses from the Federal Energy Regulatory Commission to construct and operate three power plants, including one at Owyhee Dam. When the dam was built, the two 6-foot diameter conduits extended only 16 feet past the gates into a tunnel which led down through the left abutment to the site where it had been anticipated that a power plant could be built. During construction of the power plant, the steel lining for one of the penstocks was extended from near the penstock gates through the abutment to deliver water to the power plant. The 4,340-kilowatt turbine unit generates power used by customers in Idaho and Oregon. Small in size and inconspicuous, hidden below rock outcroppings, the power plant does not adversely impact the dam's appearance or integrity.

The other important alteration to the dam was the replacement of the needle valves. Recognizing that they are dangerous to operate due to high pressure build-up, Reclamation decided to remove them and install three new jet-flow valves.

Instead of demolishing the roof of the valve house to make way for the new valves, as had been considered, Reclamation had the new valves manufactured in pieces, lowered into the dam through the freight elevator and gallery, and assembled in the valve house.

Reclamation has also made a few minor alterations to the exterior of the dam in the last two decades, and additional minor changes may be made to the structure in future years. Rock falling from the canyon walls has caused some damage to the spillway outlet portal and the crest at the left abutment, but not enough to alter the character of the dam. Reclamation has made periodic repairs to cracks in the dam, like in the area of the elevator shaft, but, again, these repairs do not threaten the structure's historic integrity. After the terrorist attacks of September 11, 2001, Reclamation installed security cameras at the dam. In 1997, the Job Corps used a sanded repoxy coating to refinish the cement finish on the crest of the dam using materials provided by the Owyhee Irrigation District. Inside the dam, the dam tender periodically replaces minor old worn parts—for instance, the end switches to the elevator.

Industrial Zone and Residential Area

Aside from the dam, the district also encompasses two clearly demarcated sections in use during the dam's construction: the industrial zone and the residential area. Closest to the dam, on the west bank of the river, was the industrial zone, site of the aggregate-screening plant, concrete-mixing plant, blacksmith and carpenter shops, and other structures. The only structures still standing there consist of remnants of the mixing plant and a powder house. Set against the hillside, the box-shaped powder house is a small concrete structure approximately 6 feet by 6 feet in dimensions (see photo 8). All that remains of the mixing plant is a massive concrete foundation and the concrete base of the cement silo (see photos 6 and 7). These features, located about one-quarter mile downstream from the dam, contribute to the district as evidence of the industrial facilities associated with construction of Owyhee Dam. Some partial footings and a large pile of gravel located between the remains of the mixing plant and powder house are other reminders of the industrial zone's past.

The second section consisted of the residential area occupied by Reclamation and contractor employees. Reclamation's small camp area consisted of a well-kept cluster of fifteen wood-frame buildings. On the main road into the camp (labeled "Highway" on early maps; see figure M-7), they included an office flanked by a guest house and dormitory to house workers, two garages, and a schoolhouse. Nine evenly-spaced homes used by Reclamation engineers and clerical staff lined the other road in the camp (labeled "Reclamation Drive") closest to the river. The residences consisted of one "permanent" five-room cottage and eight three-room cottages, some of which were "semi-permanent" and others "temporary." Reclamation planted trees along each side of Reclamation Drive, established lawns around the houses, and built stand-alone wood sheds at the southwest corner of each home. Two pump houses and a small storage structure that reportedly once housed the camp's fire hoses were situated along the east and west edges of the camp. Immediately to the north of the main residential camp, Reclamation built some additional temporary structures that were demolished shortly after the construction of the dam ceased. Today, the office building, three residences and one associated shed, two garages, two pump houses and an accompanying cistern, and the small storage structure still remain and contribute to the district.

Reclamation's camp was flanked to the north and south by camps housing workers hired by the General Construction Company of Seattle, Washington. No contributing properties remain at the contractor's camps; the buildings were dismantled not long after completion of the dam and very few features remain.

Office Building

The heart of the government camp was the office building, which was used as a construction office, post office, and supply store. Facing west toward the main road into the camp, the office is a one-story, nearly square plan, wood-frame building measuring 28 feet by 31 feet (see Photos 11-14). It sits on a partial basement. The front-gabled roof with extending eaves and exposed trusses suggests the Bungalow influence. The dominant exterior feature is a wraparound porch, supported by simple 6-inch by 6-inch posts, that extends across the west and south elevations. The low-pitched porch roof has exposed rafter ends. The exterior wood drop siding (although in disrepair), 4-pane windows (of which one basement window on the north side is missing), and exterior doors appear to be original.[3] Typical of Reclamation office buildings, this one incorporated a fire-proof vault for the storage of important records. The 9-foot by 15-foot concrete vault extends off the rear of the building and is entered through a safe door. Original plans indicate that the interior space was divided into three rooms: a clerical office, drafting room, and construction engineer's office.

[3] Owyhee Project Drawings 48-D-7, RG 115.

Despite the building's excellent integrity, some alterations and additions are evident. The most significant change has been the addition of a handicap-access ramp at the west and north entrances. Like most of the extant government camp buildings, a standing seam metal roof has replaced the original material, which in this case was heavy-weight composition asphalt. When the metal roofs were installed, the chimneys on the office building and residences were removed. The interior of the office was made into a visitor's center to showcase the dam's storied history. Two interior doors and a wall were removed to open up the space. Despite these renovations, features of the building's interior retain their historic integrity, notably the built-in wood cabinets and the door to the safe.[4]

Residences

The three remaining residences at the government camp consist of one five-room cottage and two originally identical "semi-permanent" three-room cottages. The buildings are all of simple vernacular wood-frame construction with gabled roofs, unenclosed overhanging eaves with exposed rafter ends and trusses, and exterior wood drop siding with corner boards.[5] According to Reclamation floor plans, the type of siding was the main difference between the three "semi-permanent" three-room residences and the five other "temporary" three-room residences. The latter cottages had only 3-ply asphalt roofing applied to the exterior walls. The difference in siding is clearly visible in early photographs of the camp. Each of the three extant residences also had accompanying sheds with drop siding to distinguish them from the temporary sheds covered with 3-ply roofing that had accompanied the temporary three-room residences.[6]

The five-room cottage, originally occupied by the Reclamation engineer in charge of construction of the dam, is a one-story, front-gabled rectangular plan structure with a front-gabled screened entrance porch extending off half of the east elevation (see Photos 15 and 16) Based on a 1918 standard Reclamation design for a five-room cottage reflecting the Bungalow influence, the residence is nearly identical to a Reclamation dam tender's house at American Falls Dam on the Minidoka Project in Idaho.[7] Measuring 41.5 feet by 26.5 feet, the Owyhee residence has two bedrooms, a kitchen, a bathroom, a living/dining room, and built-in cabinetry. A large basement, which was probably used for coal and food storage, extends from the rear of the house about two thirds the length of the building.

The residence is a good example of a building that has retained a great deal of integrity, despite some minor modifications. The original cedar shingle roof has been replaced or covered over with a standing-seam metal roof. All doors, and door and window openings, appear to be original. Most of the window sash also appears to be original. The two large windows on the south side may have been replaced, as well as the bathroom window on the north elevation. A portion of that wall had to be removed to make way for a new tub that was installed. The wall was subsequently patched over with new siding and a new window that appears nearly identical to the original. New egress windows were put in at the basement level on the south and north sides of the building. Aside from that, the exterior and the interior of the building generally retain their original appearance.[8]

Of the two extant three-room residential cottages, the one designated as the north cottage best retains its original appearance and is now used as a guest house (see Photos 21 and 22) The one-story residence measures 28.6 feet by 19.5 feet and contains a kitchen, bedroom, bathroom, living/dining room, small basement, and built-in cabinetry. The front entrance to the home faces northeast; a second entrance at the back of the house leads into a rear enclosed porch extension covered with a low-pitched shed roof. The main roof is side-gabled and is now covered with a standing seam metal roof rather than the original cedar shingles. All windows and doors appear to be original. The exterior walls are in poor repair and need repainting and some new wood siding in places. The interior retains, for the most part, its original features; built-in cabinets, bathtub, and hardware all appear to be original. This building has extremely good integrity.

The other extant three-room cottage, identified as the south cottage, is located directly to the rear of the office building. The cottage has sustained significant alterations with a front-gabled addition along the south side of the house (see Photos 18-20). While the date of the addition is unknown, it may have been as early as the 1940s. The addition changes the overall massing of the house, yet it is in keeping with its original scale and character. In fact, a large portion of the

[4] Cecil Wilson, interview with the preparer of this nomination, September 2, 2009.
[5] Virginia and Lee McAlester, *A Field Guide to American Houses* (New York: Knopf, 2000), 453-55.
[6] U.S. Department of the Interior, Bureau of Reclamation, "Final Report on Design and Construction of Owyhee Dam, Owyhee Project-Oregon-Idaho," Denver, Colorado, June 1941, 85.
[7] U.S. Department of the Interior, Bureau of Reclamation, *The Bureau of Reclamation's Architectural Legacy: 1902-1955*, by Christine E. Pfaff (Denver, Colorado: Bureau of Reclamation, 2007), 98.
[8] Owyhee Project Drawings 48-D-7, 48-D-13, and 48-D-17, RG 115.

original house remains intact. The most pronounced impact of alterations is on the front or east elevation. The addition extends beyond the original footprint at the south corner and resulted in the loss of one of the two windows. The other original window on the east elevation has also been removed. The front entrance is unchanged. Original window and door openings on the north and west sides of the house are also intact. Drop siding covers the original exterior walls; lap siding covers the addition. The roof is enclosed by the same type of standing-seam metal roof as found on the other residences.

Residential Shed

While each of the bungalows originally had an accompanying free-standing wood shed, only one shed still stands (see Photo 23) Associated with the five-room cottage, the shed is located to the rear of the house against the rock wall at the south end of the camp. The rectangular-plan shed sits on a concrete foundation and is covered with a side-gabled roof with wide overhanging eaves and exposed rafter ends. The drop siding, small four-pane windows on the east, north, and west elevations, and door opening on the east elevation are original. A hinged pair of wood, out-swinging garage-type doors on the south elevation are also original. The wood-shingled roof also appears to be original and is painted black. The shed has excellent integrity, but shows signs of deterioration.

In recent years two original sheds, both dilapidated, were torn down. On the foundation of one, a new metal shed of similar size and shape was built; at the other, a picnic shelter with steel supports.

Garages

The office building is flanked by two garages of similar dimension and simple rectangular-plan design. The structures follow the typical design of other buildings: they are of wood frame construction on concrete foundations and enclosed by gabled roofs with overhanging eaves and exposed trusses. Early photographs of the camp show the buildings covered with asphalt siding matching the temporary buildings. At some unknown date, both garages were re-sided with drop siding to be compatible with the other remaining camp buildings.

The major alterations to the south garage were done to the exterior; the interior of the structure is essentially unaltered (see Photos 24 and 25). The roof is covered with composition shingles. Although the original form and massing remain, the placement of some openings has been changed. A metal door now stands in what was likely one of the original garage door openings. The only other opening is a regular door on the east elevation. From the interior of the building, the location of the original door and window openings are still visible (see photo 26). A concrete area used to play basketball has been added on the north end of the south garage.

The exterior of the north garage retains its original features better than the south garage (see Photos 27 and 28). Like the south garage, it also has a composition-shingled roof and has non-original siding. The front of the garage has two sets of double doors of different sizes. The northern-most garage doors on the west elevation appear to be original, but the other set of garage doors on that side may be more recent in origin. The windows on the south and west elevations and the regular door on the west elevation appear to be original. The interior of the north garage has been altered; it was gutted and refurbished into a joint recreation room and gas house, with a solid, fireproof wall dividing the building in two.

Pump Houses

One of the first structures to be built at the government camp was the wooden pump house abutted against the hillside on the west side of the main road into the camp (see Photos 29 and 30) Situated across from the south garage, the simple, rectangular-plan pump house features a gabled roof and drop siding. The pump house retains its original appearance except for a new standing-seam metal roof.

Part way up the hill from the pump house and associated with it sits a 5,000 gallon concrete cistern (see Photo 31). Water was likely pumped from a deep well into the cistern through a 2.5 inch pipeline and used as a domestic water supply. There is no sign of the pipeline except for the outlet where the line exits the cement block from the base of the cistern. The cistern, approximately 18 feet by 18 feet in dimension, is enclosed by cement walls and topped by a symmetrical hipped roof with a small, vented monitor. The roof's wood sheathing and shingles appear to be original, but the cistern is in poor condition and in need of repair.

A second pump house situated near the bank of the river just east of the north cottage drew water from the river using an electric pump (see Photo 32). The hoses were originally connected to spigots used to irrigate the lawn and trees; in recent

years, a sprinkler system that continues to draw water from the river has been installed. The structure is of standard rectangular-plan design and sits on a raised foundation supported, in part, by wood posts. The wood-shingled roof is front-gabled and the exterior walls have wood lap siding. The siding, windows, and shingled roof appear original. The front double doors appear to be replacements. Apparently, the original pumps are still in use, although some of the old metal pipes replaced by the new irrigation system sit discarded under the base of the pump house. The pump house is a good example of a structure that retains its historic integrity.

Other Contributing Features

Reclamation's residential camp contains several ancillary structures that contribute to the district. These consist of a small storage shed located adjacent to the river on the east side of the camp, an arbor located in the park at the north end of the government camp, a mortared-rock wall, a fence around the camp's perimeter, and a dirt road leading up to the crest of the dam.

Along Reclamation Drive close to the river is a small wooden storage shed covered with drop siding (see Photo 33). The date of construction is unknown, although it is said to have housed the camp's fire hoses, in which case it would have been original to the camp. The structure, now used as a chicken coop, has a shed roof with overhanging eaves, and hinged panels which provide access to the shed's interior.

At the north end of the government camp is a small park built in the mid-1930s on the site of the former schoolhouse. Originally named Johannesen Park, it was landscaped and irrigated and contained two stone fireplaces, an arbor, and picnic tables. Today, the only original structure remaining is the wooden arbor built before 1940. The arbor, now overgrown with climbing plants, appears to be in fair condition (see Photo 34). The park is now called McGinnis Park. Former dam tender Terry McGinnis helped refurbish the park and applied the name in honor of his parents. His father was a ditchrider, and one evening while on the job, he and his wife went out to make repairs to a ditch during a storm and both tragically drowned.

On the south end of the camp is a finely crafted, mortared-rock wall that extends for approximately 100 feet from the southwest corner of the five-room cottage residential shed to the hillside on the west end of the camp (see Photo 35). Mortar joints are tooled. A swinging metal gate across the main drive may be original to the wall. The wall does not appear in the May 1932 photograph, but, given the modifications and improvements made to the camp in the immediate post-construction period, it likely dates to the 1930s.

The residential area of the camp is bounded by an original wire-mesh fence supported by extra railroad rails used in construction of the railroad spur to the dam site (see Photo 36). Some rails are stamped with "I.S.Co. Buffalo. 450. 11. 1906"; others have other dates such as 1911; rails are topped with perforated pipe caps and all are painted.

The final contributing feature is a narrow, winding dirt road built and used during dam construction. The road begins at the south contractor's camp, winds up the hillside, and skirts in a southerly direction above the canyon cliff walls. The road, which is still used by the dam tender and other authorized personnel, generally retains its original form.

Non-Contributing Features

Several non-contributing features within the district boundaries were constructed outside the period of significance, or are original but have been altered and no longer retain historic integrity. The largest non-contributing feature is the previously described 4,340 kilowatt hydroelectric power plant at the toe of Owyhee Dam, completed in 1984 (see Photo 37). At the south contractor's camp, a large metal warehouse, likely built during or immediately after construction of the power plant, is non-contributing (see Photo 38). The same is true of a trailer used as the Owyhee Dam office, an open metal garage with attached older open wooden garage set on concrete pads[9], the imitation shell of a train car[10], and a fuel shed, all abutting the hillside in the government camp (see Photos 39-43). A metal shed and simple rectangular picnic shelter located on the concrete foundations of the original wooden sheds are non-contributing (see Photos 40 and 41). A number

[9] Kirk Cleaver told the preparer of this nomination in a phone interview on September 4, 2009, that the wood structure was probably built in the early post-construction period. Both open garages are now used to store boats.

[10] Research indicates that the "train car" shell is more likely that of a gasoline-powered local school bus that was used to transport people from the passenger train stop at the government camp up the road to the dam site for the dedication ceremony on July 17, 1932. The shell was refurbished to look like a Union Pacific passenger car for the enjoyment of the public during the 75th Anniversary celebration of Owyhee Dam in 2007.

of fairly recently added features in McGinnis Park are non-contributing: a painted "capsule" that had been originally used to haul construction materials to the dam site; and a hipped roof picnic pavilion, park benches, and bathroom (see Photo 42) A small campground with picnic tables located across the main road from McGinnis Park includes a non-contributing restroom.

An older non-contributing structure, said to have stored ice, may date to the immediate post-construction period but cannot be adequately documented (see Photo 44) Located in the south contractor's camp, the wooden structure appears to have been moved to its current location because it sits on a large slab of concrete that may have been associated with an original building at the camp. The "ice house" has a shed roof and thick walls lined with sawdust. A window in one elevation indicates the structure may have had another use originally.

In addition to these non-contributing properties, there are a few smaller features within the district boundaries that may have been associated with the original camps. At the north end of McGinnis Park, just north of where the main road intersected with Reclamation Drive, is an old footing or foundation—possibly of the septic tank noted on the map—about 15 feet by 6 feet in size. Two piping holes are visible from the foundation. Nothing remains of the structures belonging to the contractor's camps except for a water pipe protruding from the ground toward the river at the approximate location of the recreation hall, a basin-shaped concrete slab whose original use is unknown at the north camp, and several concrete pads at the south camp.

Owyhee Dam Historic District
Name of Property

Malheur Co., Oregon
County and State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [X] A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] B Property is associated with the lives of persons significant in our past.
- [X] C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- [ ] A Owned by a religious institution or used for religious purposes.
- [ ] B removed from its original location.
- [ ] C a birthplace or grave.
- [ ] D a cemetery.
- [ ] E a reconstructed building, object, or structure.
- [ ] F a commemorative property.
- [ ] G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions.)

AGRICULTURE
ENGINEERING

Period of Significance
1927-1939

Significant Dates
1932, dedication of Owyhee Dam

Significant Person
(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation
N/A

Architect/Builder
Bureau of Reclamation

Period of Significance (justification)

In early 1927 work began on fencing and landscaping the government camp and erecting permanent wood-frame buildings. Actual work on the dam began in 1928 and was completed in 1932, the year of the dam's dedication. Personnel tending the dam in the immediate post-dam period made several improvements to the government camp in the 1930s, including construction of Johannesen Park and the rock wall. By 1939 all features that are contributing features to the district had been completed.

Criteria Considerations (explanation, if necessary)

N/A

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The Owyhee Dam Historic District, located in rural Malheur County, Oregon is eligible for the National Register of Historic Places under Criterion A for statewide significance for its association with irrigated agriculture in eastern Oregon and western Idaho as part of the larger Owyhee Project. The Owyhee Dam Historic District is also eligible under Criterion C at the national level for the design and construction of Owyhee Dam, which served as a proving grounds for new dam technology and engineering that was integrated into future Bureau of Reclamation projects, including Hoover Dam. Construction within the district began in 1927, when fencing, landscaping, and permanent wood-frame buildings were built within the government and contractor residential portions of the district. Work on the Owyhee Dam began in 1928 and lasted until 1932 when the structure was officially dedicated and the reservoir behind the dam was created. The period of significance reflects the original construction and occupation of the dam, residential and industrial areas of the district between 1927 and 1939.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

The Owyhee Dam Historic District is eligible for the National Register of Historic Places under Criterion A for its statewide agricultural significance and Criterion C for its engineering significance at the national level.

Criterion A: The Owyhee Dam Historic district is eligible with statewide significance under criterion A for its association with irrigated agriculture in eastern Oregon and western Idaho. Water furnished under the Owyhee Project made possible the irrigation of over 105,000 acres of land primarily in western Oregon along the Snake River. In large part, the predominating agricultural economy in the Owyhee project service area is due to Owyhee Dam, the main project feature, and its associated delivery facilities.

Criterion C: Owyhee Dam, the key component of the Owyhee Dam Historic District, is nationally significant for its major contributions to dam design and construction. As the tallest dam in the world upon its completion in 1932, Owyhee Dam achieved widespread renown. The successful completion of the dam followed several decades of important advances in the techniques available for designing concrete arch dams, allowing for ever higher structures. The advances permitted Reclamation engineers to design Owyhee Dam with a high degree of certainty as to its safety. Furthermore, Reclamation was then engaged in designing Hoover Dam, which would rise to an astonishing height of 726 feet. Construction of Owyhee Dam provided Reclamation engineers with a laboratory to test the curing characteristics of mass concrete poured in volumes never before attempted. Results of the tests were critical to the successful design and construction of Hoover Dam. Owyhee Dam also has engineering significance for some of its ancillary features like the "morning glory" spillway, which was one of the first of its kind, and the freight elevator, which was the first freight elevator ever installed in a dam.

Clearly the dam is the most significant feature of the district, but the camp and construction features which help to tell the story of the dam also contribute to the site's historic significance. In fact, preservation of some of the dam's residential camp buildings is a nearly singular contribution to the significance of the site, since very few such Reclamation camps exist, especially of that era.

Developmental history/additional historic context information (if appropriate)

Owyhee Dam

Oregon's Malheur County has a very arid climate. Ranchers used the open, rolling hills and valley floors for livestock grazing before the advent of irrigation. While in the late nineteenth century irrigation systems began to take shape in Idaho's Snake River plain, farmers and capitalists recognized the potential for irrigated agriculture in Malheur County as well, identifying the Malheur and Owyhee rivers as sources of water supply. At the turn of the twentieth century, farmers began to organize small, private irrigation companies under the Carey Act of 1894, which provided that arid western states could select up to one million acres for reclamation that could be sold to farmers. After 1902, the newly organized U.S. Reclamation Service (whose name was changed to the Bureau of Reclamation in 1923) undertook surveys in Malheur County to identify feasible locations for expanded irrigation systems and for reservoirs. Because of irrigation development already occurring east of the upper Owyhee River in southeastern Oregon in the Jordan Valley, the surveys in 1903-1905 focused on potential storage sites along the upper Owyhee. In 1909, Arnold and Company, a Chicago engineering firm working for the Boise-Owyhee Company (a private irrigation company) was the first to identify "Hole-in-the-Ground" as a potential dam site, recommending a diversion dam there and a storage dam about 60 miles upstream at

Duncan Ferry. Subsequent surveys and investigations favored a storage dam at Duncan Ferry and a diversion dam at the lower (north) end of the Owyhee Canyon near Mitchell Butte.[11]

J. B. Bond, Reclamation's Boise Project manager, conducted yet another study of possible dam sites on the Owyhee River in 1924, and for the first time recommended the desirability of a single dam at "Hole-in-the-Ground." A single dam would allow centralized construction, and one reservoir would reduce losses due to seepage and evaporation. Another advantage of the site was closer proximity to project lands than Duncan Ferry. Moreover, the site was within reach of a railroad. The first geological assessment of "Hole-in-the-Ground," completed by geologist Kirk Bryan in 1925, indicated that the reservoir would be watertight and the site was suitable for a high dam. Rock at the site consisted primarily of rhyolite resting on a bed of volcanic tuff.

Also in 1925, Bond and Reclamation engineer R. J. Newell produced a design study upon which the present dam is based. They recommended that a main diversion tunnel—Tunnel #1—be bored several miles through the hills northeast of the reservoir to a point near the mouth of the canyon. From there, a siphon would carry a portion of the water across the Owyhee River to a 63-mile main canal system serving 40,000 acres in the Mitchell Butte Division of the project. Some of this water would be further carried across the Malheur River in a siphon to a 38-mile canal system serving 30,000 acres of Dead Ox Flats. Some water would be diverted and conveyed in a southeasterly direction from the end of Tunnel #1 to the Succor Creek and Kingman Colony Divisions. In addition to the water directed through the main canal to the various divisions of the Owyhee Irrigation Project, about 20,000 acre-feet of water would be discharged through the dam itself to supply the existing Owyhee Ditch. The plan revealed a further advantage of the "Hole-in-the-Rock" site: diversion from the river would take place at a high enough elevation that lands, which otherwise needed to be irrigated by means of costly pumps, could be irrigated with a gravity system. The Owyhee Irrigation Project's design and plan was approved by congress and authorized for construction by President Calvin Coolidge in October 1926.[12]

As ideal as the site was, Reclamation engineers worried about a fault zone in the rhyolite directly under the dam site. Bryan, who had identified the fault, recommended that the fault could be made watertight with proper grouting. Reclamation, however, was concerned that the fault might have experienced recent movement and, therefore, might shift again, causing problems of dam safety. In 1927 the Bureau asked Warren D. Smith, a professor of geology at the University of Oregon, to investigate the site and offer a second opinion. His August 1927 report was fairly discouraging, suggesting that future movement of the fault might be very possible. To get a third opinion, the Bureau retained F. L. Ransome, professor of engineering geology at the California Institute of Technology. In his preliminary assessment, submitted in September, 1927, Ransome stated that further grouting could make the dam site watertight. In the final report, he verified that the fault was indeed due to movement, rather than to some other cause, such as cooling of the rhyolite, but essentially concluded that no movement under the dam site would be likely. Reclamation decided to proceed with the dam based on Ransome's assessment.[13]

To assess the type of dam suited to the site, Reclamation established a board of engineers that included A. J. Wiley, a prominent consulting engineer from Boise, and J. L. Savage, Reclamation's Chief Designing Engineer in Denver. Savage's engineers examined five alternative designs for the dam: an arch of light section, an arch of intermediate section, an arch of heavy section, a straight gravity dam, and a curved gravity dam[14]. A debate was raging in the 1920s regarding the most appropriate dam type and design as Reclamation was interested in reducing construction costs but still concerned with maintaining security in the dam structure. Previously, massive concrete/masonry designed dams such as Arrowrock and Roosevelt held sway with engineers, but the elegance of the arch design (not to mention the reduction in cost) was gaining attention. In its February 1928 report, the board of engineers recommended the heavy arch—a combination of the design types—because it would cost less than the gravity dams, but offered greater safety than the lighter arch dams.[15, 16] The heavy section arch would achieve its cost savings, when compared to the two gravity dam

[11] "Annual Project History, Owyhee Project," Volume I, to January 1, 1928, 10-19, box 428, Entry 10, Record Group 115, Records of the Bureau of Reclamation, National Archives and Records Administration, Denver, Colorado. Hereafter cited as "Project History."
[12] "Project History," Volume I, to January 1, 1928," 19-22; Water and Power Resources Service, *Project Data* (Washington, D.C.: Government Printing Office, 1981), 735.
[13] R. F. Walter, Chief Engineer, to Prof. F. L. Ransome, September 7, 1927; R. F. Walter to Commissioner Elwood Mead, September 28, 1927; R. F. Walter to Elwood Mead, November 1, 1927; draft of "Report on Owyhee Dam – Owyhee Project," from the Board of Engineers to the Chief Engineer, February 2, 1928, box 1025, Office of the Chief Engineer, General Correspondence Files, Record Group 115, Records of the Bureau of Reclamation, National Archives and Records Center, Denver, Colorado.
[14] An arch dam is a thin, curved concrete or masonry dam structure with the concave side of the curve downstream, forcing the water against the canyon walls and squeezing the arch, thus compressing and strengthening its structure and pushing it into the ground. A gravity dam is constructed of concrete and/or masonry and relies on its weight for stability.
[15] Owyhee Dam represents a combination of the arch and gravity structural designs, with the arch structure bearing 75% of the water load and mass and gravity handling the rest. It is a "concrete thick-arch dam with gravity tangent extensions" (HAER No. OR-17:3).

designs, by requiring less excavation of earth, loose rock, and solid rock and by requiring less concrete for construction.[17] Such a design gains a considerable margin of strength and safety because of its arched plan. The board of engineers concluded that "any movement which need be anticipated appears to be important as a remote geological possibility, rather than as a historical possibility, and would probably be so small as to interfere but little with complete arch action."[18] Despite the rather small possibility of an earthquake, Bureau engineers decided to excavate the fractured rock in the fault along the full width of the dam and to the full depth of the rhyolite. The tuff below the rhyolite was believed to be watertight. Essentially, then, the work of placing concrete would begin 115 feet below the river bed.[19] Going through the work of ensuring a fail-proof dam was all the more important in the wake of the disaster at St. Francis Dam, a dam near Los Angeles, California, that had also been built over a fault line. In March 1928 the concrete, curved gravity dam failed, killing approximately 600 people. F. L. Ransome and A. J. Wiley were both members of the commission which investigated the St. Francis Dam failure.

By the time the board of engineers settled on the design for the dam at Hole-in-the-Ground, the Bureau had decided to call the dam and reservoir "Owyhee,"[20] and had issued a contract to the General Construction Company of Seattle to construct a 24-mile, standard gauge railroad to connect the dam site with Dunaway siding on the Homedale Branch of the Oregon Shortline Railroad, midway between Adrian and Nyssa. By early 1928 the rail line along with buildings at the government and contractors' camps were completed. Two months after the board of engineers submitted their report, Savage's design engineers in Denver completed construction plans and specifications. The Bureau opened bids for construction of Owyhee Dam at Nyssa on June 7, 1928, with General Construction submitting the low bid at $3,198,779. A contract was signed, and on July 14, General Construction Company began work on the diversion and spillway tunnel.[21]

Throughout the remainder of 1928, work at the dam site consisted primarily of excavation. In August, the contractor began sinking the spillway shaft through which water overflowing the ring gate would fall to the spillway tunnel. The contractor completed stripping loose material from the dam's abutments. The contractor finished boring and concreting the diversion tunnel by the end of July 1929 and began diverting water through it in early August. Soon thereafter, coffer dams were completed upstream and downstream from the dam site, and the contractor excavated the foundation in the river channel. In preparation for placing concrete in 1930, the contractor built a remote control cableway and erected a screening and mixing plant. The cableway consisted of a fixed tailtower on one side of the canyon and a moveable headtower on the other side. The headtower could travel along a 550-foot track. Cables strung between the towers supported buckets used to move materials to and from the dam site. An operator in a remote control booth, which could be moved and fixed to different locations on the canyon wall to provide a good vantage point for various operations, controlled the movement of the headtower and buckets. Although the cableway was built primarily to move concrete from the mixing plant to the dam site, it was also used in 1929 to haul excavated material from the foundation. The screening and mixing plant was located on the west bank of the river, about one quarter mile downstream of the dam. Sand and aggregate for the concrete was dug from a quarry near Dunaway siding and hauled, along with cement, to the screening and mixing plant by rail. A hopper car along a wood trestle hauled mixed concrete from the mixing plant to the dam site, where it was transferred to a cableway bucket for placement.[22]

In 1930 placing of the concrete commenced, first in the fault zone, then in the dam proper. The dam was divided into several panels between vertical, radial construction joints, spaced about fifty feet apart on the upstream face and thirty feet apart on the downstream face. Four-foot lifts placed the concrete in each panel; the concrete was cured for a minimum of 72 hours before placing the next layer of concrete. In this way, the increasing height of the dam was staggered along the various panels during the course of construction.[23] The challenge was to place the concrete without

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[16] R. F. Walter, Chief Engineer, to Commissioner Elwood Mead, March 13, 1928, box 1025, Office of the Chief Engineer, General Correspondence Files.
[17] J. L. Savage, "Design of the Owyhee Irrigation Dam," *Engineering News-Record* 100 (April 26, 1928): 664.
[18] Draft of "Report on Owyhee Dam – Owyhee Project," from the Board of Engineers to the Chief Engineer, February 2, 1928, box 1025, Office of the Chief Engineer, General Correspondence Files.
[19] Draft of "Report on Owyhee Dam – Owyhee Project," from the Board of Engineers to the Chief Engineer, February 2, 1928, box 1025, Office of the Chief Engineer, General Correspondence Files; Savage, "Design of the Owyhee Irrigation Dam," 664.
[20] Elwood Mead approved the name "Owyhee" as a substitute for "Hole-in-the-Ground." See Mead to Chief Engineer, January 5, 1927, box 1026, Office of the Chief Engineer, General Correspondence Files. In the nineteenth century, the Hudson's Bay Company brought some Hawaiians to the Pacific Northwest to work as trappers. They named the river, now called Owyhee, for their homeland. The name was passed orally to subsequent pioneers, and, when it was finally written on early maps, it was given a phonetic spelling.
[21] "Project History," Volume I, to January 1, 1928, 48-49.
[22] "Project History," Volume I, to January 1, 1928, 49, 52; Volume II, 1929, 6, 18; "Heavy-Load Cableway Installation for Owyhee Dam," *Engineering News-Record* 105 (July 10, 1930): 62; "Foundation Procedure at Owyhee Dam," *Engineering News-Record* 106 (January 29, 1931): 180-81.
[23] "Project History," 1930, 7, 30; "Foundation Procedure at Owyhee Dam," 182.

waiting the many years it would normally take to allow the concrete to cure on its own. The problem of cooling concrete would be even more severe at construction of Hoover Dam, a mammoth arch gravity dam that would be even larger and require more concrete than Owyhee. The Bureau decided to use the Owyhee Dam as a prototype to test the behavior of large mass concrete.

John L. Savage and other engineers designed an artificial cooling system to remove the heat created by the hardening process and to reduce the cooling and contraction time. The system consisted of pipe loops embedded in the concrete with air-cooled or refrigerated water circulated through them. In 1931, two years before beginning concrete placement at Hoover Dam, Reclamation tested the effectiveness of the proposed system at Owyhee Dam. Engineers circulated water from the river through pipes embedded in the dam and installed sensors to monitor the temperature and shrinkage of concrete as it cured. The results of the innovative concrete cooling process contributed to the techniques eventually used at Hoover, Grand Coulee, and Shasta Dams.[24]

Construction activities at Owyhee Dam came to an end in 1932. At the end of May work crews completed the mass concrete placement, and in May the finish concrete work on the dam. Owyhee Dam was dedicated on July 17; approximately 3,000 people, brought to the dam site by fifteen passenger cars loaned by the Union Pacific Railroad, attended the dedicatory events. Secretary of the Interior Ray Lyman Wilbur delivered the dedication address, and the General Construction Company hosted a dinner in the mess hall of its camp. In December 1932, after completing odds-and-ends on the dam and associated features, the Bureau closed the sluice gates and began filling the reservoir.[25]

Owyhee Dam was a pivotal event for the design and construction of federal dams. The significance was not lost on contemporaries; Reclamation Commissioner Elwood Mead wrote in 1933, only a year after completion of the dam, that "during the first twenty-seven years of its activities the bureau had designed and constructed over one hundred dams, of constantly increasing importance, in addition to many other great engineering works. The Owyhee Dam might be considered as climaxing this progression in the construction of important though not extraordinary engineering works." Building on the dam design and building techniques used at Owyhee, Reclamation went on to build new high concrete dams like Hoover Dam, the engineering marvel of the world.[26]

Aside from being the highest dam in the world at the time,[27] Owyhee Dam had several notable features. The dam's freight elevator, constructed by the Montgomery Elevator Company of Moline, Illinois, had a 270-foot shaft and a 9,000 pound capacity and was the first of its kind ever installed in a dam.[28] The most visually spectacular feature is the "morning glory" spillway (sometimes also called a "glory-hole" spillway) with its ring gate control mechanism. The 60-foot diameter crest of the spillway is located on a promontory about 300 feet downstream of the base of the dam. It allows water to fall 309 feet to the diversion/spillway tunnel, which discharges water through the right abutment to a portal about 300 feet downstream of the base of the dam. Morning glory spillways had been used for earlier dams like Pathfinder Dam in Wyoming, but the spillway at Owyhee was by far the highest. Earlier morning glory spillways either had uncontrolled crests or were controlled with radial gates. The ring gate design enabled Reclamation to control the entire circumference of the crest. Reclamation submitted a patent application for the ring gate and its control mechanism.[29]

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[24] "Project History," Volume V, 1931, 17, 41-42, 46-50; C. A. Betts, "High Lights of Owyhee Dam Construction," *Reclamation Era* 25 (April 1935): 83; Clarence Rawhouser, "Temperature Control of Mass Concrete in Large Dams," Dams and Control Works (Washington, D.C.: Government Printing Office, 1938), 246-47, 249-50; Bryan W. Steel, "Mass Concrete Research for Hoover Dam," paper presented at the 29th Annual Convention of the American Concrete Institute, on file at the Bureau of Reclamation Library, Denver.

[25] "Project History," Volume VI, 1932, 11, 40, 56-58.

[26] Elwood Mead, "Research Work of the Bureau of Reclamation,' *The Scientific Monthly*, Vol. 36, No. 4 (April, 1933), 297.

[27] Until 1924, Arrowrock Dam in Idaho was the world's highest at 349 feet. That year, the 362-foot Schraeh Dam was completed in Switzerland. Other high dams were soon built, so that when Owyhee Dam was completed, it replaced the City of Seattle's 389-foot Diablo Dam on the Skagit River as the world's highest. See "Owyhee Dam Completed, Highest in the World," *Reclamation Era* 23 (August 1932): 147. However, Owyhee Dam's significance as a historic structure does not stem from its brief title of highest dam in the world, since construction of the dam to 417 feet involved no design innovation. See U.S. Department of the Interior, Bureau of Reclamation, National Park Service, and U.S. Department of the Army, Corps of Engineers, *The History of Large Federal Dams: Planning, Design and Construction*, by David P. Billington, Donald C. Jackson, and Martin V. Melosi (Denver: Bureau of Reclamation, 2005), 430.

[28] F. A. Banks, "Owyhee Dam Dedication Address," *Reclamation Era* 23 (September 1932): 155; "Project History," Volume VI, 1932, 42.

[29] Savage, "Design of the Owyhee Irrigation Dam," 666; Lewis G. Smith, "Floating-Ring Gate and Glory-Hole Spillway at Owyhee Dam," *Reclamation Era* 30 (August 1940): 226.

Government and Contractor Residential Camps

The original landowner of the dam and camp site was L. L. Derrick, a rancher and homesteader who operated a water wheel and ran several hundred head of horses at the site. Reportedly, Derrick had farmed the large river bar that later became the construction and residential camps. After Reclamation had selected and bought Derrick's land for the future site of the dam, he and his family moved several miles downstream.[30]

The first government workers at Owyhee Dam arrived in 1926 to survey the rail line, road, and transmission lines to the dam site. These surveyors lived at an encampment of tents and temporary barracks ten miles downstream from the dam site on the Snively Ranch. Surveyors at the Snively camp worked to within six miles of the dam; other surveyors working on the final six miles to the dam lived at a camp at the dam site. At first, the surveyors and workers lived in tents and temporary shelters, but in early 1927 work began on fencing and landscaping the government camp and erecting permanent wood-frame buildings.

The office building and nine residences lining Reclamation Drive were built under contract under specifications No. 419-D and No. 434-D. Reclamation awarded the contracts in late 1927 to Robert C. Brown, Gottfried Johanson, and A. G. Plant Company. These structures were all completed by January 1928. Beginning in 1927 and continuing into 1929, government forces built the remaining camp buildings: guest house, dormitory, three garages, and twelve temporary one-room cabins. The one-room cabins were probably located on the north end of the government camp where McGinnis Park and the adjacent campground now stand. Government forces also installed the water systems (an irrigation system, a deep well for domestic water, a 5,000 gallon concrete storage tank, and a sewer system) and electricity at the camp.[31]

The General Contracting Company built a main camp for its employees just south of the government camp and downstream from the dam site. Eventually the south contractor's camp featured 11 bunk houses for 32 men each, two wash houses, a mess hall, 16 cabins for married employees, a store and hospital, as well as machine shops, oil house, powder house, offices and warehouses. The contractor also built over a dozen temporary buildings to the north of the government camp. The camps came equipped with a recreation hall, a post office, and a community hall/movie theater. At the peak of construction in 1931, the contractor employed 274 men not including supervisory and administrative staff. The camps used by these men stood until July 1932, when work on the dam had reached the point where crews could be cut and some of the bunkhouses razed. Family houses were sold to the public for $50. By October 1932 nearly all buildings at the contractor's camps had been removed or razed.[32] Likewise, all but the few remaining government camp buildings were demolished shortly after construction of the dam ceased (except for two sheds associated with the extant residential buildings, which were torn down more recently).

In the immediate years after completion of the dam, remaining personnel living in the government camp and other locals in the area made some modifications to the government and contractor camp areas. The most significant alteration was the conversion of the site of the former schoolhouse into a park. Apparently, J. A. Davenport of Ontario and Allen Johannesen, reservoir superintendent at Owyhee Dam, spearheaded the park project in the mid-1930s. They installed park benches using wood donated by local businesses, built two double-unit stone fireplaces, planted trees and seeded grass, and otherwise landscaped the area. The arbor that still stands was also built at the time. The park became Johannesen Park in 1937, the year Allen Johannesen died.[33] Dam tender Glen McGinnis renovated the park in 1996 by installing several previously mentioned non-contributing features. He renamed it McGinnis Park after his father who worked on construction of the Owyhee Irrigation Project.[34] The few other features that may date to this period are the ice house and the wood and metal adjoining garages mentioned under non-contributing elements.

The transformation of the government camp from, according to a government report, "plots which had been sand and weeds" to a "beautiful garden" of well groomed lawns and laid out homes and trees reflected the larger transformative effect the Owyhee Irrigation Project would have on the surrounding project lands.[35] The white buildings and green grass contrast against the brown canyon rock. The physical contrast between the irrigated residential area and the surrounding

[30] Babe Derrick, phone interview with the preparer of this nomination, September 4, 2009; Allen J. Johannesen, *The Movie Palace at Owyhee Dam* (Portland, Oregon: Gann Publishing Company, 2006), 37.
[31] "Project History," Volume I, to January 1, 1928, 33; "Final Report on Design and Construction of Owyhee Dam," 85, 87.
[32] "Owyhee Project History," Volume II, 1928, 44-45, 52; Volume V, 1931, 57; Volume VI, 1932, 55.
[33] Hollis Sanford, "Johannesen Park at Owyhee Dam," *Reclamation Era* 29 (September 1939): 250.
[34] Hollis Sanford, "Johannesen Park at Owyhee Dam," *Reclamation Era* [?] (September 1939): 250; Terry McGinnis, interview with the preparer of this nomination, September 1, 2009; "McGinnis Family Roots Run Deep in Owyhee Project," in *Horizons: Celebrating 75 Years of a Historic Landmark – The Owyhee Dam; A Supplement to the Argus Observer*," July 8, 2007, 54, 60.
[35] C. A. Betts, "Productive Irrigation at Owyhee Dam Camp," *New Reclamation Era*, (October 1928), in box 435, Entry 10.

the government camp. The residential area continues to be maintained and appears much as it did in the 1930s; the green grass and trees area sprinkler irrigated by the original pumps, and cottonwood, birch, poplar, flowering almonds, maples, various fruit, and various ornamental trees continue to adorn the area. Save for the residences that were dismantled, construction of a few new structures, and minor modifications to existing structures, the camp strikingly retains its historic appearance, setting, and feeling.

Above all, the government camp buildings are significant for their association with the dam. Its remote location necessitated that Reclamation build homes and office space for the Reclamation officials and employees who would oversee construction of the largest arch gravity dam in the world. Even upon completion of Owyhee Dam, the camp continued to serve an important role. It provided housing for employees, as well as their families, who had responsibility for the ongoing operation and maintenance of the dam. The buildings continue to serve as headquarters for the operation of the dam.

Irrigation in Eastern Oregon

Owyhee Dam is also significant as an integral component of irrigation in the Snake River Valley. The Owyhee River is a tributary of the Snake River, which provides irrigation to millions of acres of land along the Snake River Plain in western Idaho and eastern Oregon. The result is what one historian has called an "irrigated landscape," which is really a hybrid of the natural world and human system that engineers and farmers attempted to impose on the land.[36] The people who tried to create an agricultural landscape were not always successful; like irrigation farmers throughout the West, they struggled to break new ground, to overcome problems of aridity and soil, and to rise above subsistence levels of living. Nevertheless, farmers along the Snake River were about as successful as anywhere in the West. Moreover, their work is written on the land; the acres of productive farmland remain an important agricultural region to the nation, and the Owyhee Irrigation Project is one of the major contributors to that success.

Early on, public and private irrigation interests recognized the possibility of a large dam at Owyhee providing water to an expanded agricultural region. The delay in getting the federal project started was due to the enormity of the undertaking and inaccessibility of the dam site. These were problems that could be overcome; the realization that this project would ultimately be developed led to the withdrawal of water and lands for federal irrigation development so that more than two thirds of the river's flow had been set aside without interfering appreciably with prior water rights. In fact, the dam site, while isolated in a rugged canyon, was ideally situated, only 8 miles from a railroad and within fifty miles from large agricultural markets. Water could be marketed to irrigation districts already operating in the area.[37]

Even before the water project had been completed, Reclamation urged settlers to take up tracts of land on the Vale and Owyhee Irrigation Projects that would receive project water. The private Vale-Owyhee Land Settlement Association in Malheur County initiated a vigorous campaign to sell project lands. The campaign worked, as most available unappropriated public lands had been sold by 1934. Through the rest of the decade, the government continued to make additional lands on the project available for sale, mostly in units of forty or eighty acres, and to provide project water to more lands. People taking up land on the project received instructions from agricultural county agents on how to lay out farms, rotate crops, select seeds for planting, and otherwise operate successful farms.

The fruits of the project became apparent almost immediately after completion of the canal system in the mid-1930s. The irrigation system delivered water to 8,609 of 19,621 irrigable acres in 1936; by 1939, that figure had reached 73,040 acres. By 1945, total irrigated acreage had risen to 93,397 acres, or approximately 93 percent of irrigable lands, and the value of the crop—primarily grains, alfalfa, and vegetables—spiked to almost $9.5 million. The productivity and value of the project continued to rise through the century. By 1951 over 97,000 acres received irrigation water through the project. In 1965 the project irrigated more than 111,000 acres. Meanwhile, crop values totaled more than $23 million in the 1960s, and reached $50 million in the 1970s. More than 118,000 acres are now irrigated for crops in the Owyhee Project, with yields of sugar beets, alfalfa, onions, corn, mint and specialty crops.[38] Agriculture continues to be the economic engine of eastern Oregon and western Idaho, thanks in large part to Owyhee Dam and associated facilities.[39]

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[36] Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 1999), 13.
[37] "Project History," Volume I, to January 1, 1928, 9-10.
[38] Monetary values of crops grown within the Owyhee Project are no longer tracked by Reclamation.
[39] "Project History," Volume VII, 1933, 18, 66; Volume X, 1936, 120; Volume XIII, 1939, 101; Volume XVIII, 1944, 30, 35; Ferd Schlapkohl, "Owyhee Project, Oregon-Idaho," *Reclamation Era* 25 (March 1935): 48; "Owyhee Public Land Opening," *Reclamation Era* 28 (December 1938): 248; Walter K.M. Slavik, "The Human Side of the Owyhee Development," *Reclamation Era* 29 (May 1939): 96; Bureau of Reclamation, *How Reclamation Pays* (Washington, D.C.: Government Printing Office, 1947), 208.

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Owyhee Dam Historic District
Name of Property

Malheur Co., Oregon
County and State

____recorded by Historic American Buildings Survey #_____
_X_recorded by Historic American Engineering Record # OR-17
____recorded by Historic American Landscape Survey # _____

____Other
Name of repository: _____

Historic Resources Survey Number (if assigned): N/A

10. Geographical Data

Acreage of Property approx. 62
(Do not include previously listed resource acreage.)

UTM References
(Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	11	480044	4833095	3	11	480380	4832695
2	11	480088	4833107	4	11	480328	4832007

Verbal Boundary Description (Describe the boundaries of the property.)

The Owyhee Dam Historic District is a contiguous area and includes approximately 62 acres. Located on the west side of the Owyhee River, the boundary begins at the dam's left abutment, then north along the original road used during construction of the dam that arches around the industrial and residential zones, to include the cistern on the hillside, for approximately 5,960 feet. From this point, the boundary extends in a northeasterly direction approximately 165 feet to the west bank of the Owyhee River. The boundary then continues in a southerly direction along the west bank of the river for approximately 4,214 feet before turning and continuing in a westerly direction across the river for approximately 700 feet to the west side of Owyhee Lake Road. The boundary then runs in a southeasterly direction along Owyhee Lake Road for approximately 785 feet, and then continues southwesterly across the river back to the point of origin (see boundary map).

Boundary Justification (Explain why the boundaries were selected.)

Wherever possible, natural landmarks or objects were used for boundaries. The boundary includes all buildings, structures, and features that have historically been part of the Owyhee Dam and operation of the dam and that maintain historic integrity.

11. Form Prepared By

name/title Jedediah S. Rogers and Christine Pfaff
organization Bureau of Reclamation date December 2009; rev. June 2010
street & number P.O. Box 25007 Attn: 84-53000 telephone (303) 445-3311
city or town Denver state CO zip code 80225
e-mail tlincoln@usbr.gov

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** (7.5 or 15 minute series) indicating the property's location.

  A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** (7.5 or 15 minute series) indicating the property's location.

  A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.

- **Continuation Sheets**

- **Additional items:** (Check with the SHPO or FPO for any additional items.)

Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: Owyhee Dam Historic District

City or Vicinity: Adrian vcty

County: Malheur **State:** Oregon

Photographer: Jed S. Rogers, Bureau of Reclamation

Date Photographed: September 2009, except where noted

Description of Photograph(s) and number:

1 of 44. Owyhee Dam, downstream face (Photo from Bureau of Reclamation Photo Database) (OR_MalheurCounty_OwyheeDamHistoricDistrict_0001)

2 of 44. Owyhee Dam, downstream face, looking southeast. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0002)

3 of 44. Downstream face and crest of Owyhee Dam, looking southwest. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0003)

4 of 44. Upstream face and crest of Owyhee Dam, looking west. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0004)

5 of 44. Morning glory spillway at Owyhee Dam, looking west. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0005)

6 of 44. Concrete foundation of mixing plant and base of cement silo located in industrial zone, looking west. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0006)

7 of 44. Side view of concrete foundation of mixing plant and concrete remains of cement silo located in industrial zone, looking northwest. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0007)

8 of 44. Powder house located at south contractor's camp. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0008)

9 of 44. South contractor's camp and south end of government camp, looking east. (OR_MalheurCounty_OwyheeDamHistoricDistrict_0009)

10 of 44. Government camp, view from hill, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0010)

11 of 44. Office building and other government camp features; rephotography of photo taken on day of dedication in July 1932, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0011)

12 of 44. Office Building, looking north/northeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0012)

13 of 44. Office Building; concrete vault, looking south.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0013)

14 of 44. Safe door to the vault in the Office Building.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0014)

15 of 44. Five-Room Cottage, looking northeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0015)

16 of 44. Five- Room Cottage, looking south.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0016)

17 of 44. Reclamation Drive, looking south at Five-Room Cottage on right.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0017)

18 of 44. South Cottage, front elevation, original portion of building on right, addition on left, looking southwest.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0018)

19 of 44. South Cottage, original portion of building on left, addition on right, looking northeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0019)

20 of 44. South Cottage, side elevation, original construction, looking southeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0020)

21 of 44. North Cottage, back elevation, looking northeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0021)

22 of 44. North Cottage, front and side elevations, looking south.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0022)

23 of 44. Five-Room Cottage residential shed, looking south.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0023)

24 of 44. South Garage, front facade, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0024)

25 of 44. South Garage, looking west.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0025)

26 of 44. Interior of South Garage, showing original wood frame.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0026)

27 of 44. North Garage, front facade, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0027)

28 of 44. North Garage; looking south.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0028)

29 of 44. Pump House abutting hillside, looking south.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0029)

30 of 44. Pump House abutting hillside, looking north.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0030)

31 of 44. Cistern, hipped roof and monitor, looking east/northeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0031)

32 of 44. River Pump House, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0032)

33 of 44. Small Storage Shed, now chicken coop, adjacent to river, looking north.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0033)

34 of 44. Arbor, with overgrown climbing plants, looking west.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0034)

35 of 44. Rock Wall and swinging gate, looking north.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0035)

36 of 44. Original wire mesh fence supported by extra railroad rails, looking northwest.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0036)

37 of 44. Power Plant beside west abutment of Owyhee Dam, looking southeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0037)

38 of 44. Large Metal Warehouse, located at south contractor's camp, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0038)

39 of 44. Fuel shed, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0039)

40 of 44. Metal Shed, looking east with chicken coop in rear.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0040)

41 of 44. Modern picnic shelter adjacent to North Cottage, looking east.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0041)

42 of 44. Pavilion in McGinnis Park, looking northeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0042)

43 of 44. Wood shed and adjoining metal shed, front, looking southwest.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0043)

44 of 44. Wooden shed, possibly used to store ice, looking southeast.
(OR_MalheurCounty_OwyheeDamHistoricDistrict_0044)

Property Owner: (Complete this item at the request of the SHPO or FPO.)

name Bureau of Reclamation – Snake River Area Office

street & number 230 Collins Road telephone (208) 383-2248

city or town Boise state ID zip code 83702-4520

Owyhee Dam Historic District
Name of Property

Malheur Co., Oregon
County and State

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).
Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management. U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Owyhee Dam Historic District
Name of Property
Malheur County, Oregon
County and State
N/A
Name of multiple listing (if applicable)

Section number 10 Page 1

Additional UTM References

5. 11\ 480513 E\ 4832123 N

6. 11\ 480652 E\ 4831927 N

7. 11\ 480337 E\ 4831823 N

8. 11\ 480093 E\ 4832279 N

9. 11\ 480073 E\ 4832519 N

10. 11\ 480105 E\ 4832736 N

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Owyhee Dam Historic District
Name of Property
Malheur County, Oregon
County and State
N/A
Name of multiple listing (if applicable)

Section number Documents Page 1

List of Figures

Maps

M-1. General location map of the Owyhee Dam Historic District.

M-2. Owyhee Dam and Spillway, Industrial Zone, and Camps (2 pages)
(U.S. Department of the Interior, Bureau of Reclamation, Owyhee Project, Oregon-Idaho, Owyhee Dam, Location Map, Camp and Damsite Topography, April 10, 1928; in U.S. Department of the Interior, Bureau of Reclamation, "Annual Project History, Owyhee Project," Volume I, 1927, Box 428, p. 26, Entry 10, Record Group 115, Records of the Bureau of Reclamation, National Archives and Records Administration, Denver, Colorado)

M-3. Owyhee Irrigation Project
(U.S. Department of the Interior, Water and Power Resources Service, *Project Data* [Denver, Colorado: Government Printing Office, 1981], 734)

M-4. Owyhee Dam, Plan and Sections
(*Project Data*, 7348)

M-5. Owyhee Dam, Ring Gate Spillway Layout
(microfiche, Bureau of Reclamation Library, Denver)

M-6. Industrial Zone showing location of Powder House and Mixing Plant Foundation
(U.S. Department of the Interior, Bureau of Reclamation, Owyhee Project, Oregon-Idaho, Owyhee Dam, Screening and Mix Plants, March 4, 1932, 48-P-136; in "Annual Project History, Owyhee Project," Volume V, 1931, Box 428, p. 164)

M-7. Government and Contractor's Camps Layout – Contributing Features
(U.S. Department of the Interior, Bureau of Reclamation, Owyhee Project, Oregon-Idaho, Camp Layout, October 4, 1929, 48-P-136; in U.S. Department of the Interior, Bureau of Reclamation, *Final Report on Design and Construction of Owyhee Dam, Owyhee Project, Oregon-Idaho*, Denver, June 24, 1941, p. 86)

M-8. Government and Contractors' Camps Layout – Non-Contributing Features
(U.S. Department of the Interior, Bureau of Reclamation, Owyhee Project, Oregon-Idaho, Camp Layout, October 4, 1929, 48-P-136; in U.S. Department of the Interior, Bureau of Reclamation, *Final Report on Design and Construction of Owyhee Dam, Owyhee Project, Oregon-Idaho*, Denver, June 24, 1941, p. 86)

M-9. Aerial photo of Owyhee Dam Historic District Boundaries
(Created by Joseph Jones, Bureau of Reclamation, Snake River Area Office)

M-10. Aerial photo of Owyhee Dam Historic District Boundaries (3 pages) at 1:200 scale

M-11. Site Map of Owyhee Dam Historic District (3 pages)

M-12. Photograph Map of Owyhee Dam Historic District (3 pages)

Drawings

D-1. Temporary Office Building
(U.S. Department of the Interior, Bureau of Reclamation, Specifications, Schedules and Drawings, Owyhee Dam, Owyhee Project, Oregon-Idaho – One-Five-Room Frame Cottage, Seven Three-Room Frame Cottages and One Frame Office Building – Specifications No. 419-D, on file in the Bureau of Reclamation Library, Denver)

D-2. Five-Room Cottage
(U.S. Department of the Interior, Bureau of Reclamation, Specifications, Schedules and Drawings, Owyhee Dam, Owyhee Project, Oregon-Idaho – One-Five-Room Frame Cottage, Seven Three-Room Frame Cottages and One Frame Office Building – Specifications No. 419-D, on file in the Bureau of Reclamation Library, Denver)

D-3. Three-Room Cottage
(U.S. Department of the Interior, Bureau of Reclamation, Specifications, Schedule and Drawings, Owyhee Dam, Owyhee Project, Oregon-Idaho – One Three-Room Frame Cottage – Specifications No. 434-D, on file in the Bureau of Reclamation Library, Denver)

Historic Photographs

HP-1. Government Camp, 1927
(Reclamation Photograph Database, Lower Colorado Region)

HP-2. Government Camp, 1928
(Reclamation Photograph Database, Lower Colorado Region)

HP-3. Office Building
(HAER No. OR-17-62)

HP-4. Government Camp
(HAER No. OR-17-68)

HP-5. Government Camp
(HAER No. OR-17-71)

HP-6. Government Camp
(Reclamation Photograph Database, Lower Colorado Region)

HP-7. Panoramic View of Owyhee Dam and Camps, 1932

HP-8. Owyhee Dam on day of dedication, July 1932
(Reclamation Photograph Database, Lower Colorado Region)

HP-9. Owyhee Dam with view of dirt road leading to dam
(Reclamation Photograph Database, Lower Colorado Region)

HP-10. Owyhee Dam Glory Hole Spillway
(Reclamation Photograph Database, Lower Colorado Region)

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Owyhee Dam Historic District
Name of Property
Malheur County, Oregon
County and State
N/A
Name of multiple listing (if applicable)

Section number Documents Page 3

*Additional historic photographs can be found in the Bureau of Reclamation *Owyhee Project* annual project histories

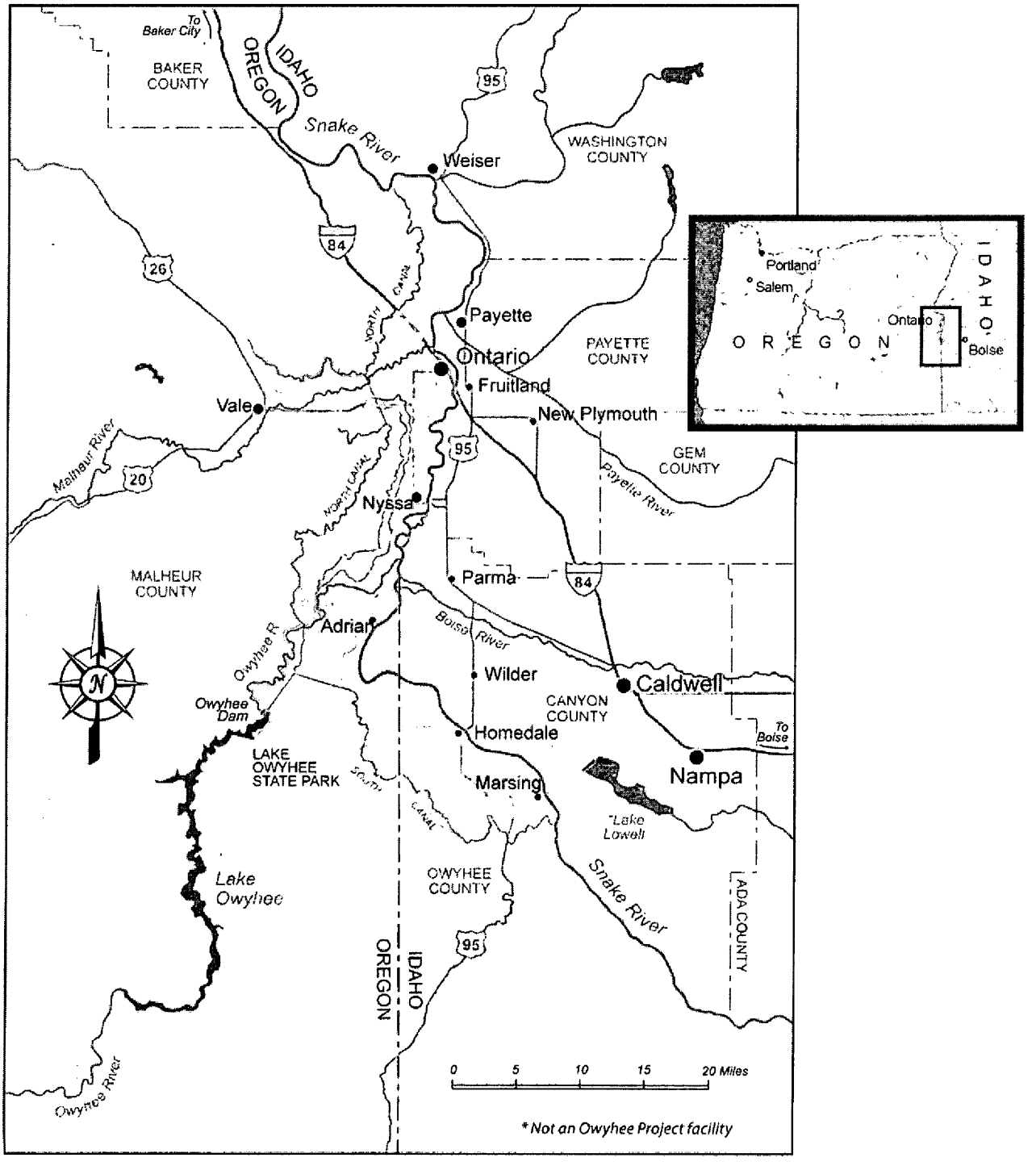

To Baker City
BAKER COUNTY
OREGON
IDAHO
Snake River
95
Weiser
WASHINGTON COUNTY
84
26
NORTH CANAL
Payette
Ontario
PAYETTE COUNTY
Fruitland
Vale
New Plymouth
Malheur River
20
95
GEM COUNTY
Payette River
Nyssa
NORTH CANAL
Parma
84
MALHEUR COUNTY
Adrian
Owyhee R
Boise River
Wilder
Caldwell
CANYON COUNTY
Owyhee Dam
Homedale
To Boise
LAKE OWYHEE STATE PARK
SOUTH CANAL
Marsing
Nampa
Lake Lowell
Lake Owyhee
OWYHEE COUNTY
Snake River
ADA COUNTY
95
IDAHO
OREGON
Owyhee River
0 5 10 15 20 Miles
* Not an Owyhee Project facility
Portland
Salem
OREGON
Ontario
IDAHO
Boise

Figure M-1

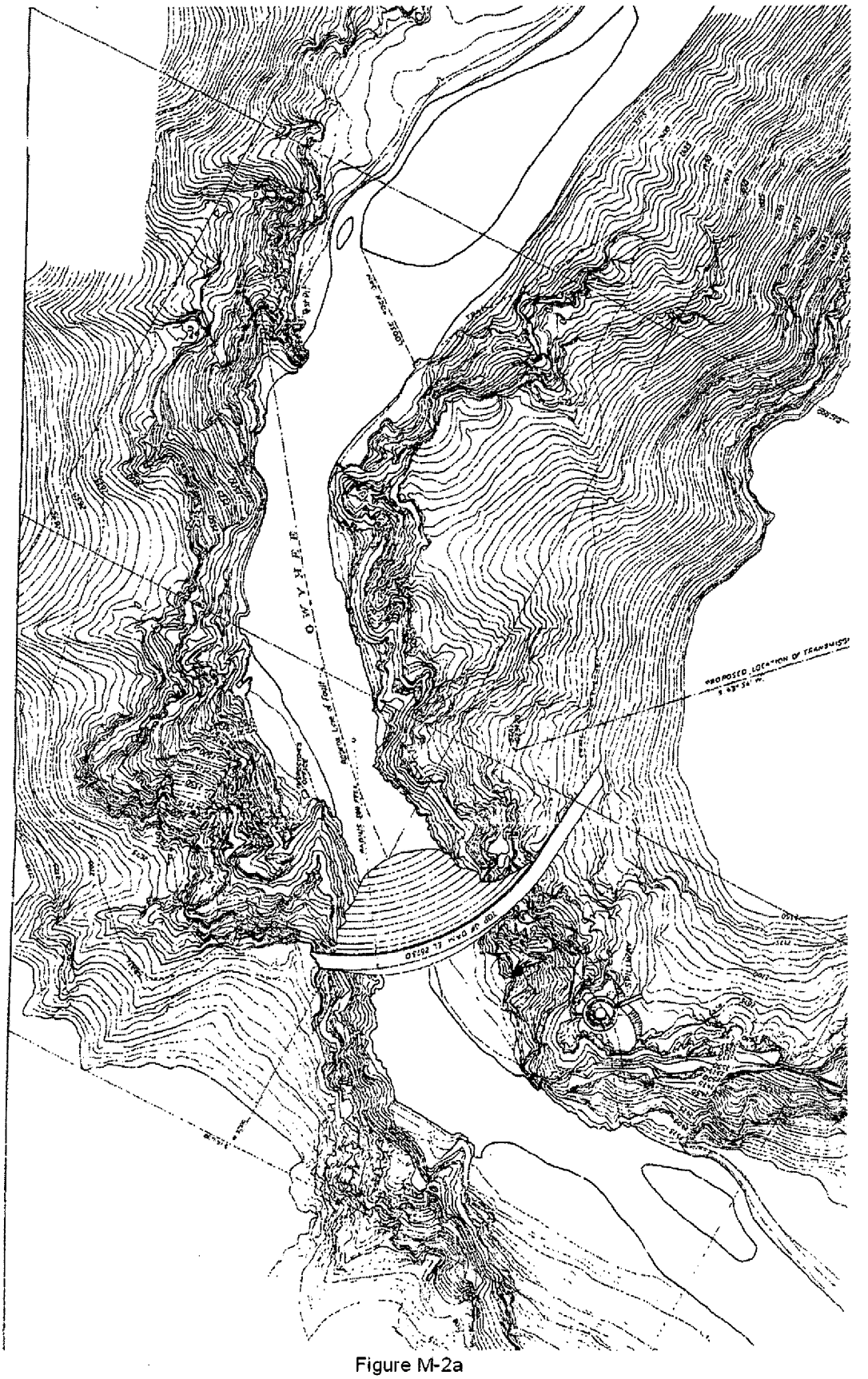


Figure M-2a

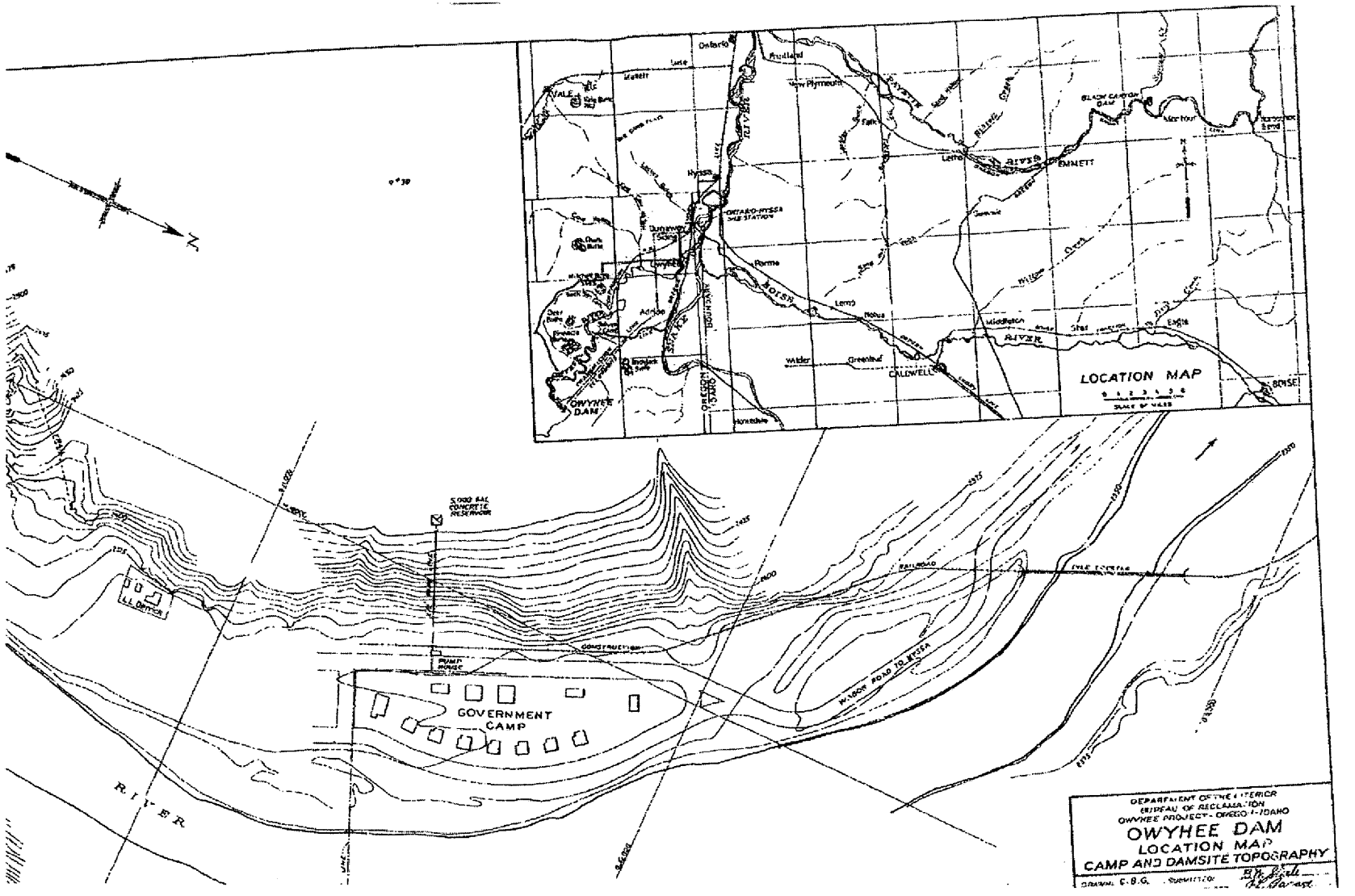
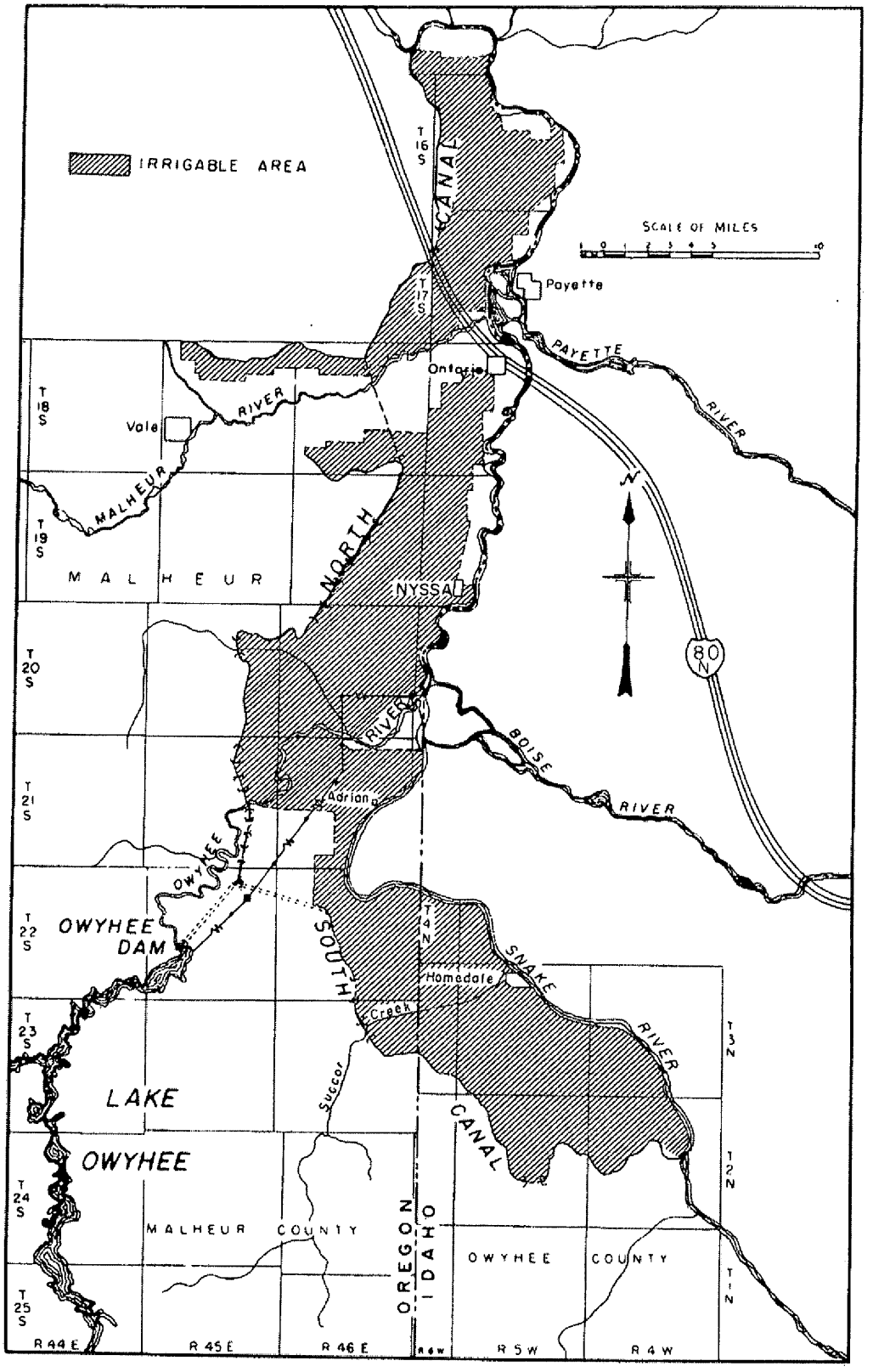
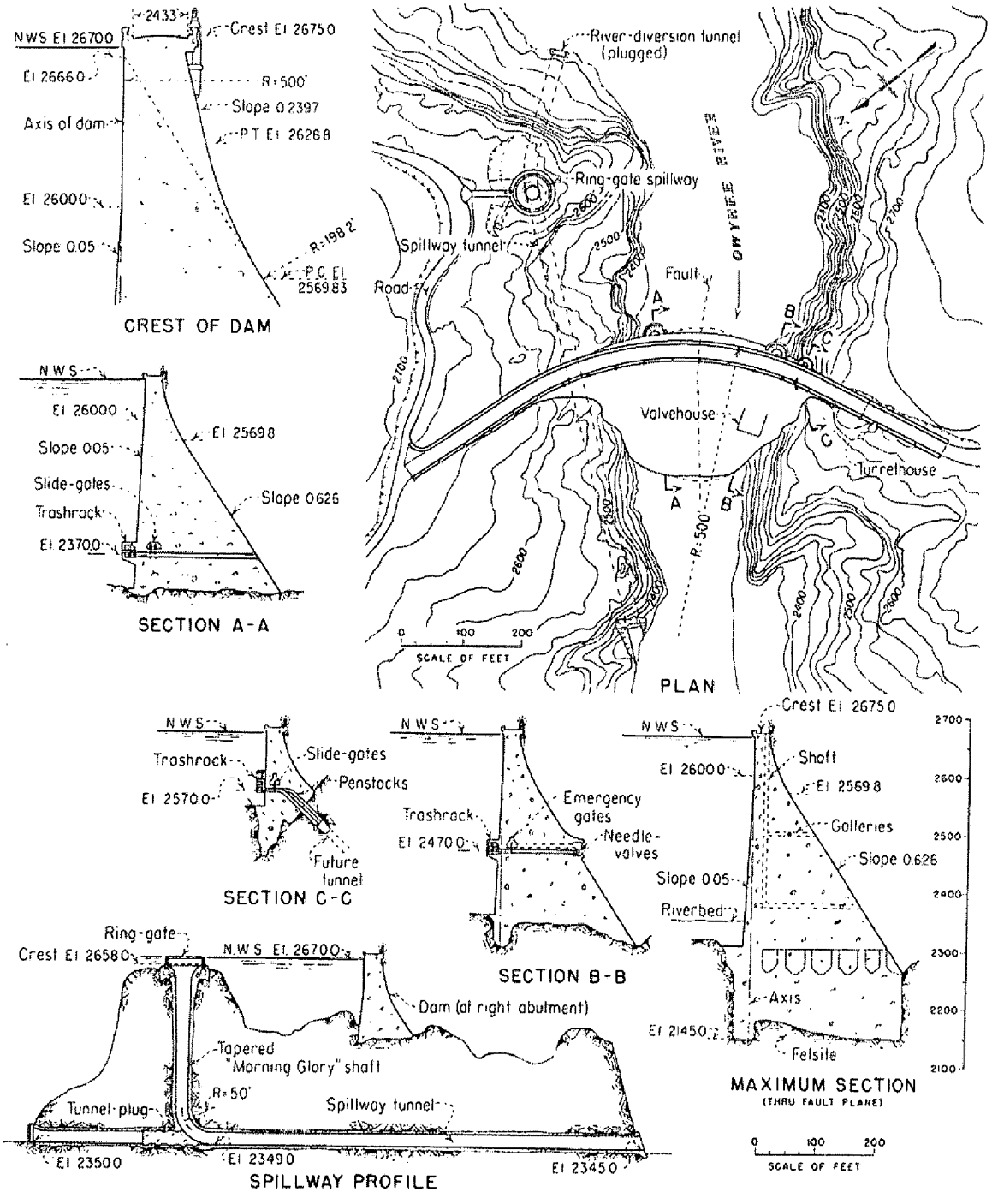

LOCATION MAP
GOVERNMENT CAMP
RIVER
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
OWYHEE PROJECT - OREGON - IDAHO
OWYHEE DAM
LOCATION MAP
CAMP AND DAMSITE TOPOGRAPHY

Figure M-2b



Owyhee Project

Figure M-3



Owyhee Dam, Plan and Sections

Figure M-4

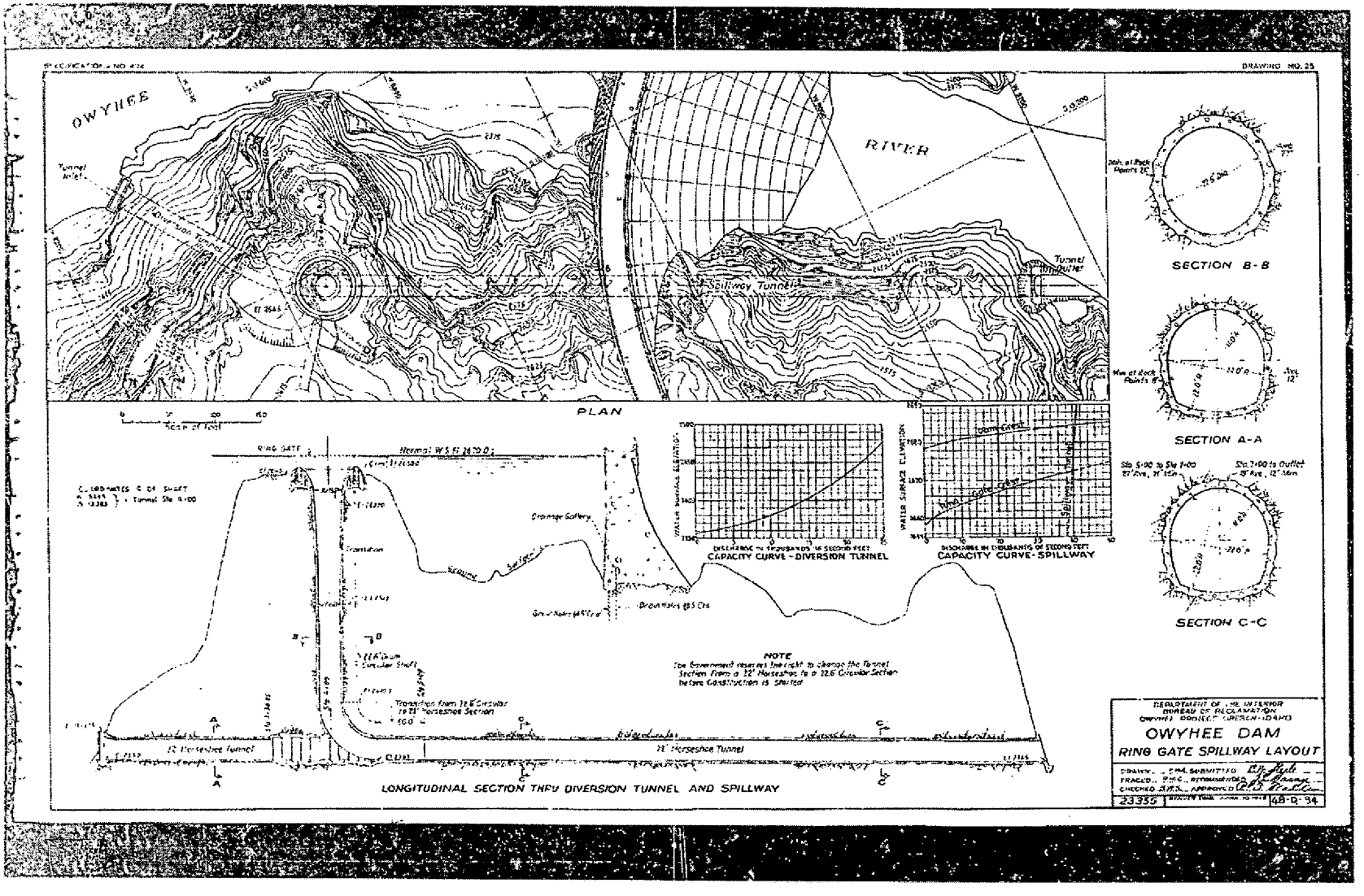

OWYHEE
RIVER
PLAN
Tunnel Inlet
Tunnel Outlet
Spillway Tunnel
Ring Gate
Normal W.S. El. 2670.0
Drainage Gallery
Transition
Grouting
Drain Holes @5 Cts
NOTE
The Government reserves the right to change the Tunnel Section From a 12' Horseshoe to a 12.6' Circular Section before Construction is Started
Transition from 12.6' Circular to 12' Horseshoe Section
12' Horseshoe Tunnel
LONGITUDINAL SECTION THRU DIVERSION TUNNEL AND SPILLWAY
CAPACITY CURVE - DIVERSION TUNNEL
CAPACITY CURVE - SPILLWAY
SECTION B-B
SECTION A-A
SECTION C-C
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
OWYHEE DAM
RING GATE SPILLWAY LAYOUT
23335
48-D-34

Figure M-5

OWYHEE RIVER
OWYHEE DAM
SCREENING & MIXING PLANT
GENERAL LAYOUT
P-147

Figure M-6

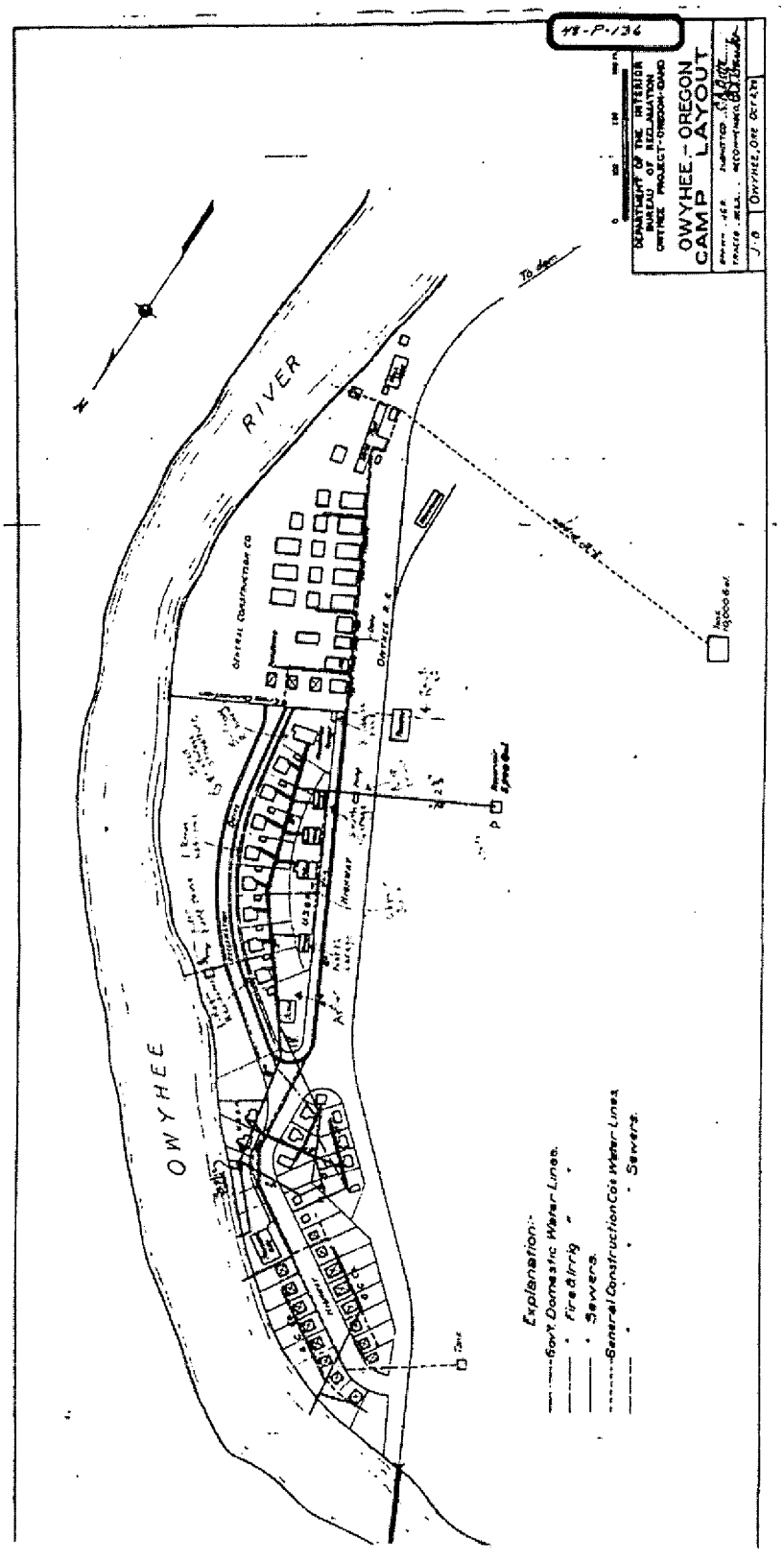

48-P-136
OWYHEE - OREGON
CAMP LAYOUT
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
OWYHEE PROJECT-OREGON-IDAHO
RIVER
OWYHEE
To dam
Explanation:
Gov't Domestic Water Lines.
" Fire & Irrig. "
" Sewers.
General Construction Co's Water Lines.
" " Sewers.

Figure M-7

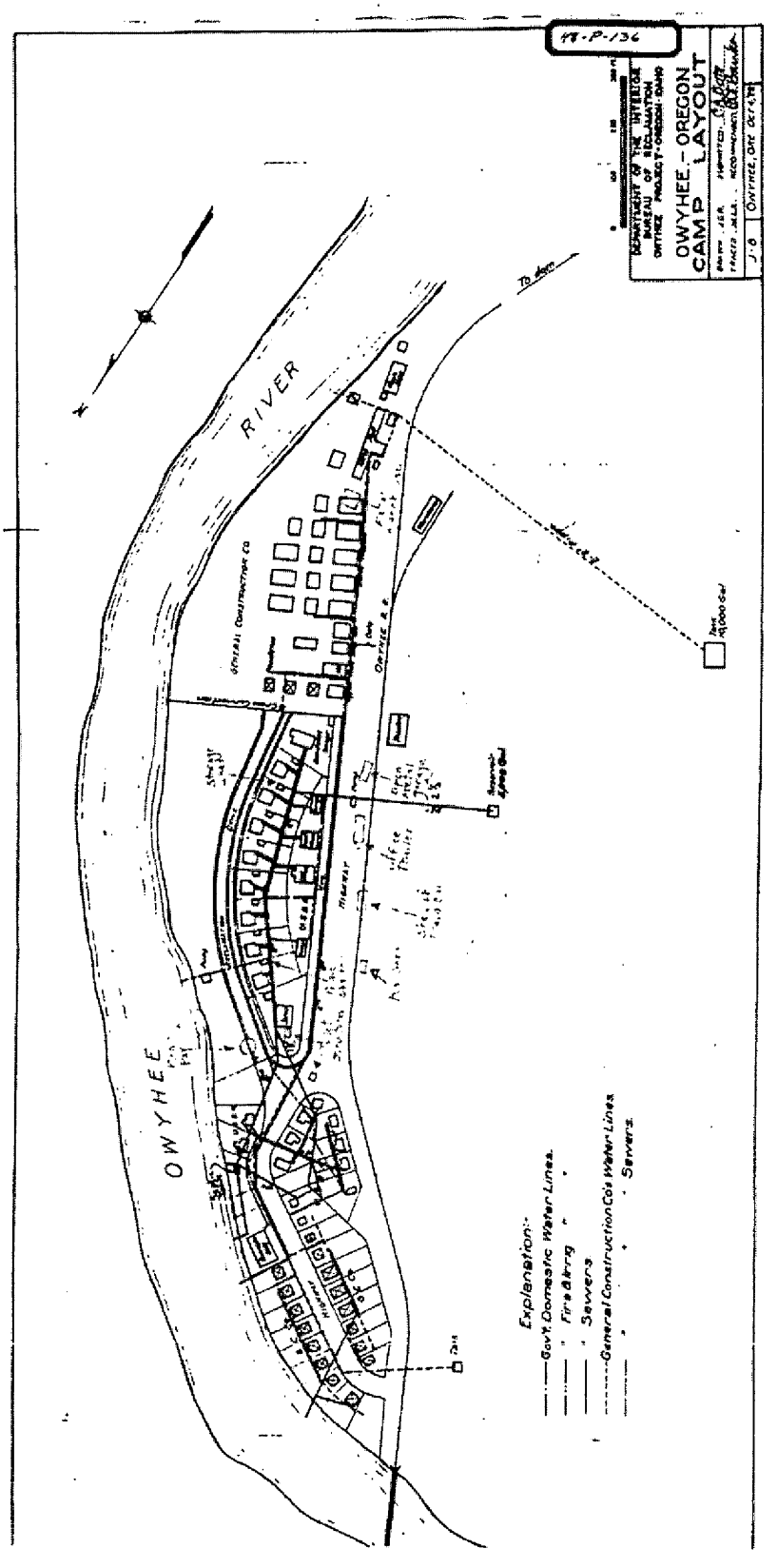

OWYHEE – OREGON
CAMP LAYOUT
RIVER
OWYHEE
To dam
Explanation:
Govt Domestic Water Lines
" Fire Hdrg "
" Sewers
General Construction Co's Water Lines
" " Sewers

Figure M-8

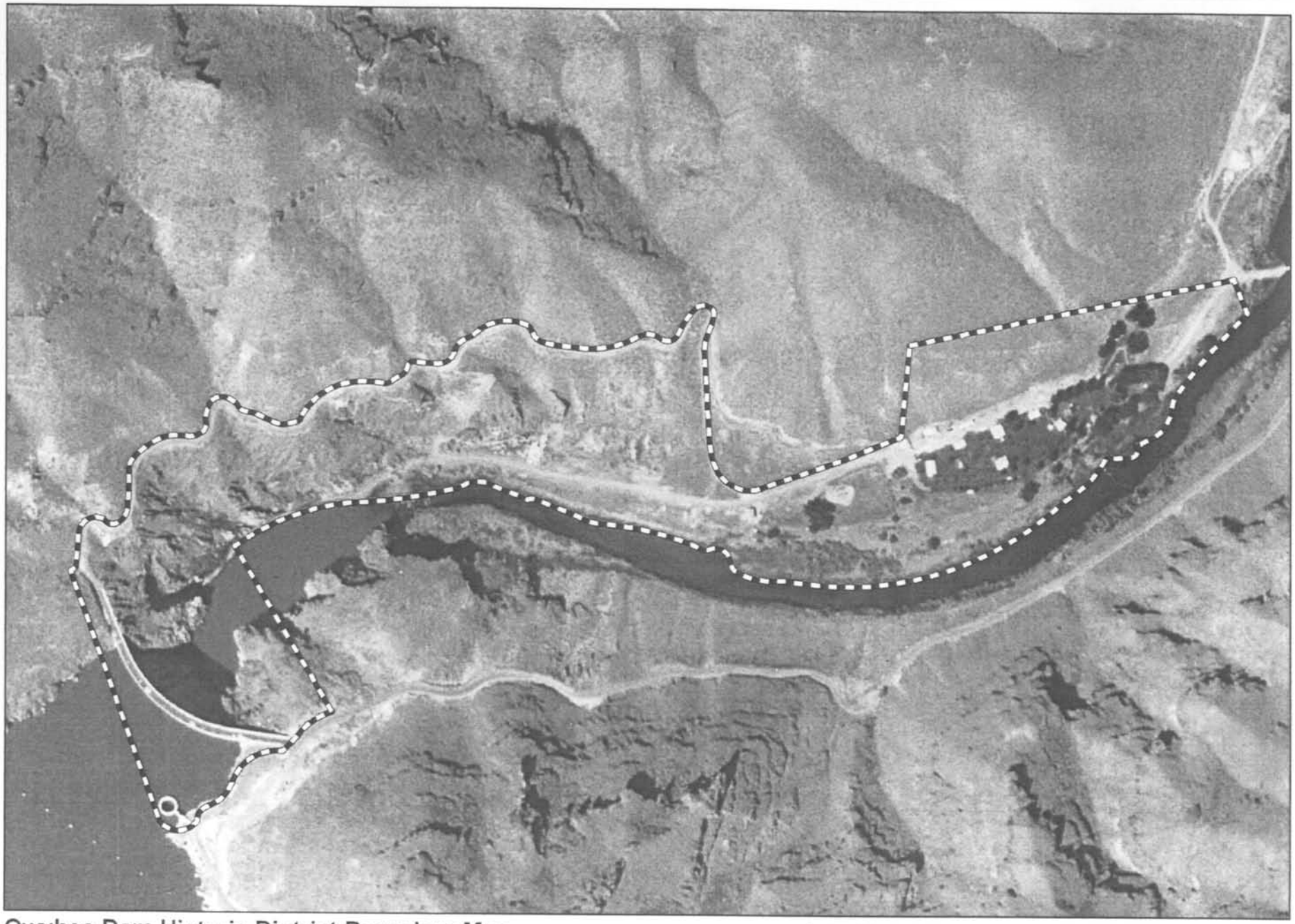


Figure M-9

Owyhee Dam Historic District Boundary Map

OW030910.mxd\Thursday, March 11, 2010 7:30 AM By: Reclamation\SRAO\MSFO\J. Jones Photo: NAIP 2005

0 100 200 300 400 500 1,000 Feet

1 inch = 450 feet

N

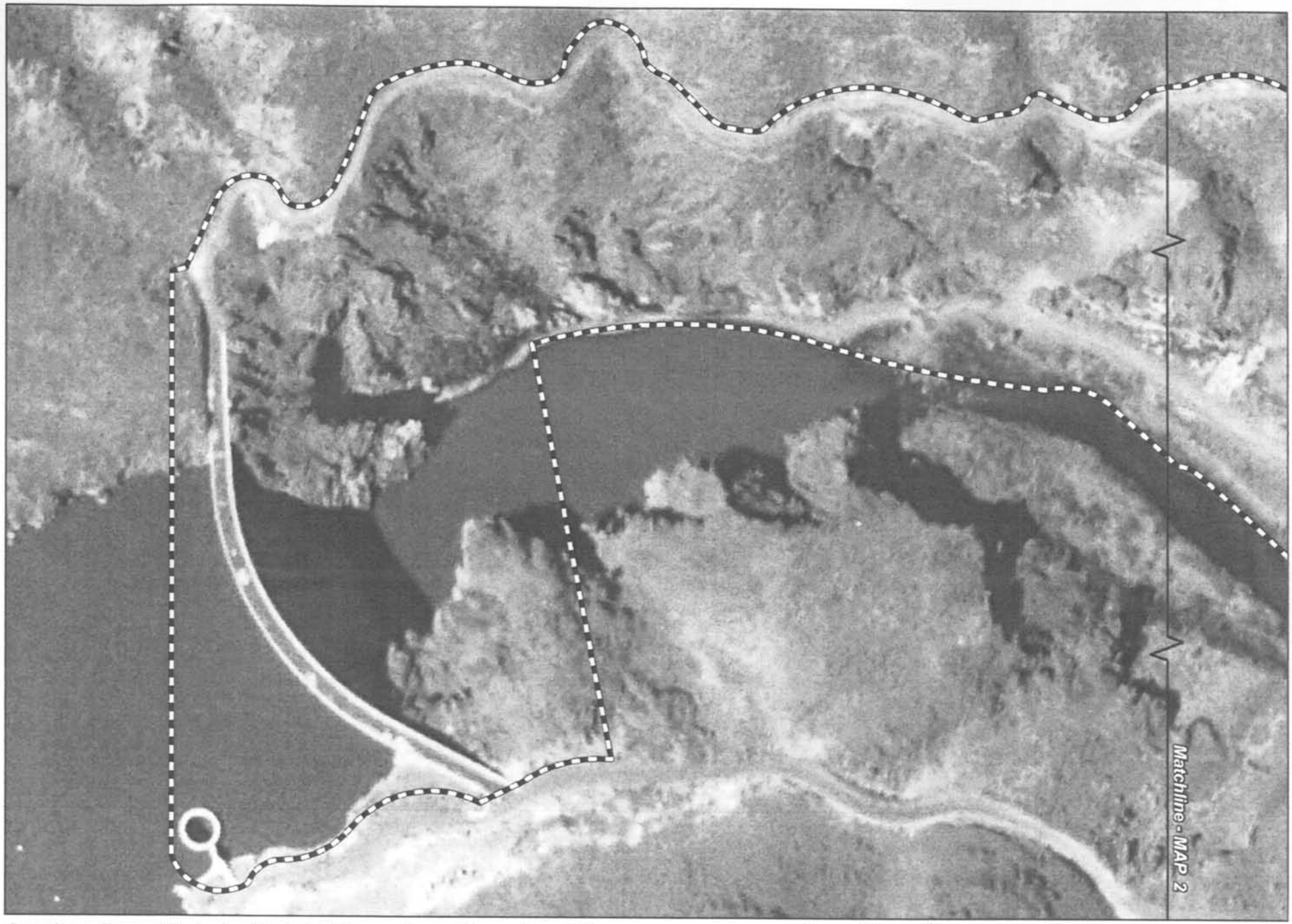


Figure M-10a

Owyhee Dam Historic District Boundary Map (1 of 3)

OW031010.mxd\Thursday, March 11, 2010 2:00 PM By: Reclamation\SRAO\MSFO\ J. Jones Photo: NAIP 2005

0 100 200 400 Feet

1 inch = 200 feet

N

Matchline - MAP 3
Matchline - MAP 1
N
0
100
200
400 Feet
1 inch = 200 feet
Owyhee Dam Historic District Boundary Map (2 of 3)
OW031010.mxd\Thursday, March 11, 2010 2:00 PM By: Reclamation\SRAO\MSFO\ J. Jones Photo: NAIP 2005

Figure M-10b

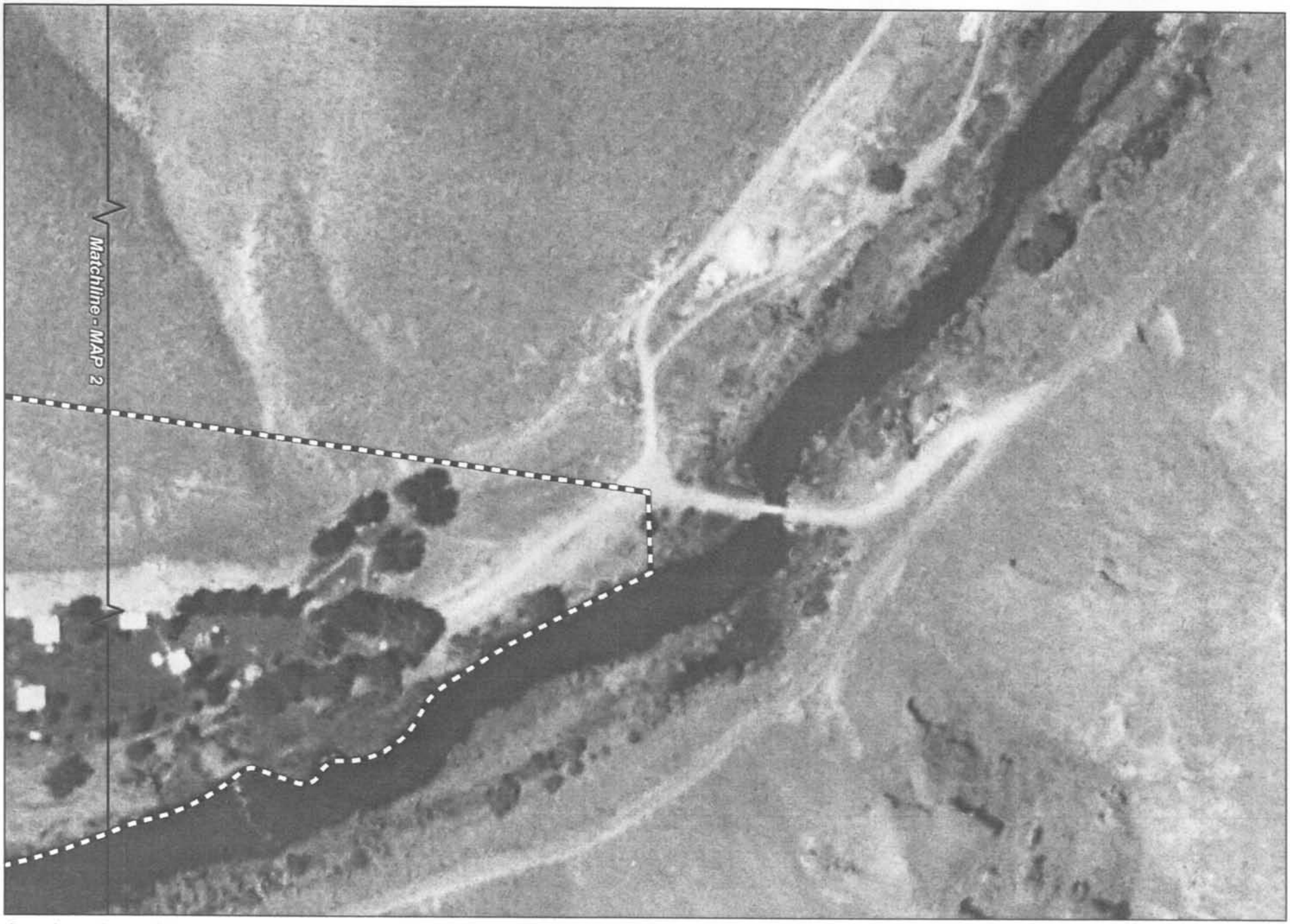


Figure M-10c

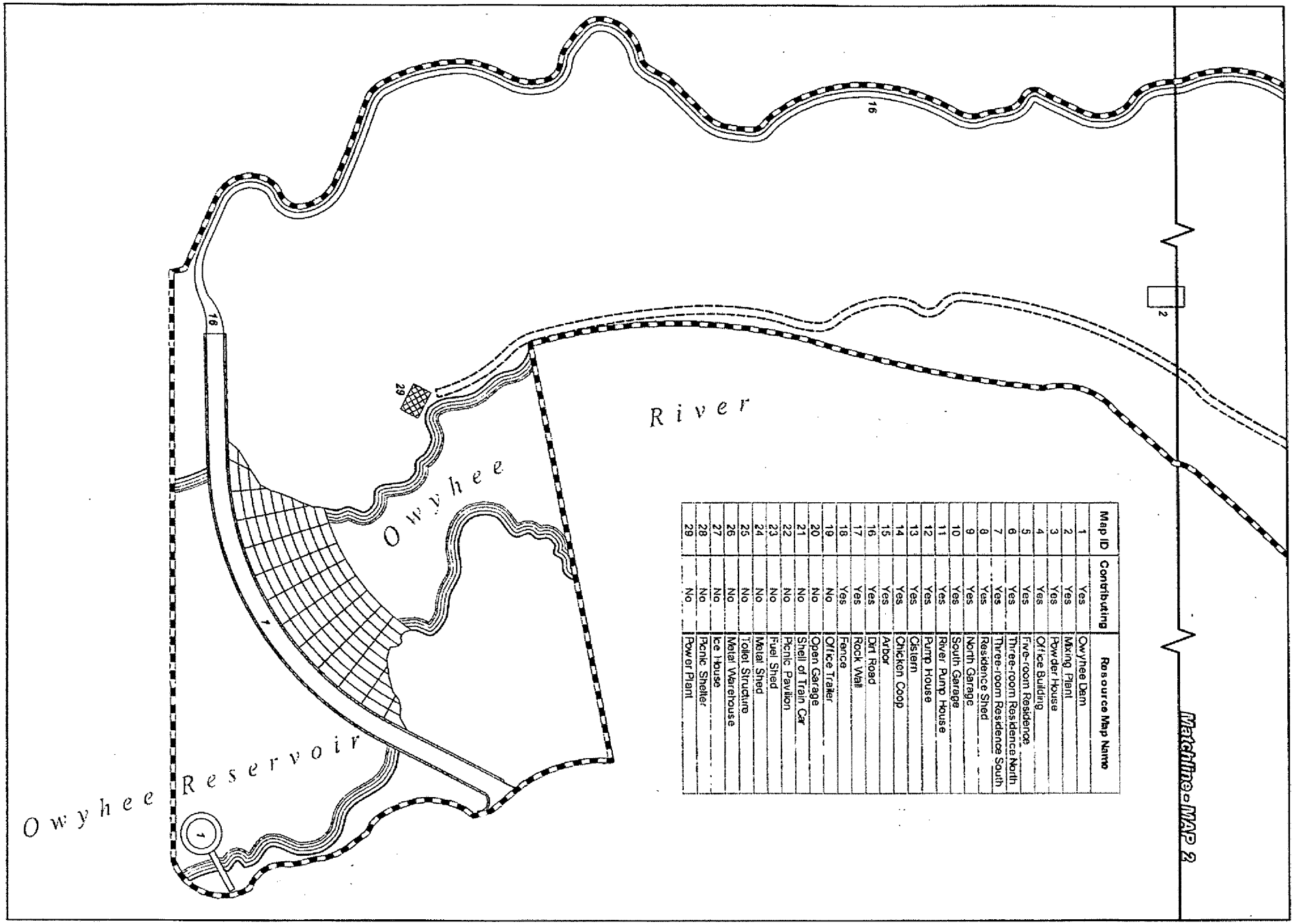
Owyhee Dam Historic District Boundary Map (3 of 3)

OW031010.mxd\Thursday, March 11, 2010 2:00 PM By: Reclamation\SRAO\MSFO\ J. Jones Photo: NAIP 2005

0 100 200 400 Feet

1 inch = 200 feet

N



Map ID	Contributing	Resource Map Name
1	Yes	Owyhee Dam
2	Yes	Mixing Plant
3	Yes	Powder House
4	Yes	Office Building
5	Yes	Five-room Residence
6	Yes	Three-room Residence North
7	Yes	Three-room Residence South
8	Yes	Residence Shed
9	Yes	North Garage
10	Yes	South Garage
11	Yes	River Pump House
12	Yes	Pump House
13	Yes	Cistern
14	Yes	Chicken Coop
15	Yes	Arbor
16	Yes	Dirt Road
17	Yes	Rock Wall
18	Yes	Fence
19	No	Office Trailer
20	No	Open Garage
21	No	Shell of Train Car
22	No	Picnic Pavilion
23	No	Fuel Shed
24	No	Metal Shed
25	No	Toilet Structure
26	No	Metal Warehouse
27	No	Ice House
28	No	Picnic Shelter
29	No	Power Plant

Figure M-11a

Owyhee Dam Historic District Site Map (1 of 3)

OW031010.mxd\Thursday, March 30, 2010 4:00 PM By: Reclamation\SRAO\MSFO\ J. Jones

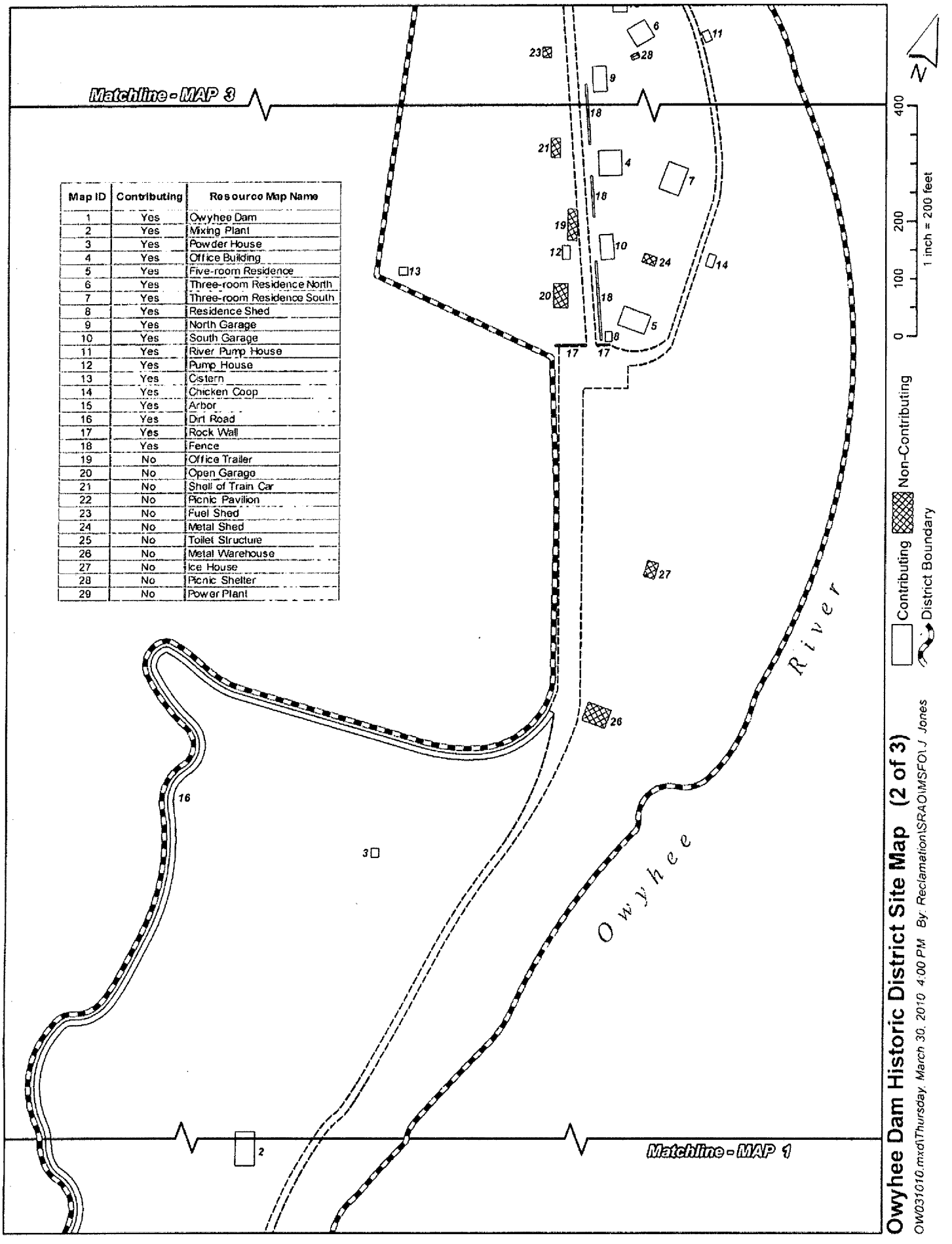
Contributing Non-Contributing

District Boundary

0 100 200 400

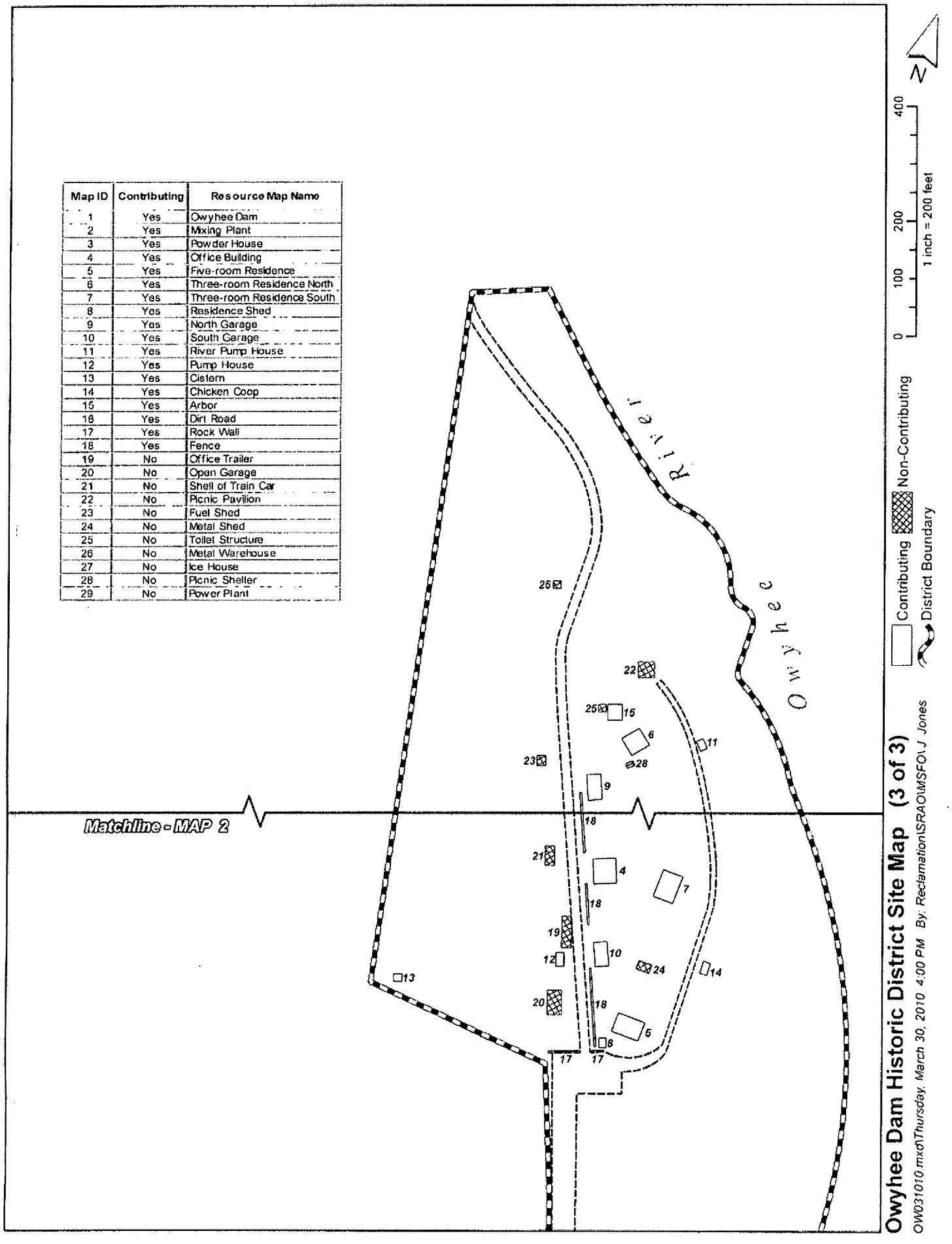
1 inch = 200 feet

N



Map ID	Contributing	Resource Map Name
1	Yes	Owyhee Dam
2	Yes	Mixing Plant
3	Yes	Powder House
4	Yes	Office Building
5	Yes	Five-room Residence
6	Yes	Three-room Residence North
7	Yes	Three-room Residence South
8	Yes	Residence Shed
9	Yes	North Garage
10	Yes	South Garage
11	Yes	River Pump House
12	Yes	Pump House
13	Yes	Cistern
14	Yes	Chicken Coop
15	Yes	Arbor
16	Yes	Dirt Road
17	Yes	Rock Wall
18	Yes	Fence
19	No	Office Trailer
20	No	Open Garage
21	No	Shell of Train Car
22	No	Picnic Pavilion
23	No	Fuel Shed
24	No	Metal Shed
25	No	Toilet Structure
26	No	Metal Warehouse
27	No	Ice House
28	No	Picnic Shelter
29	No	Power Plant

Figure M-11b



Map ID	Contributing	Resource Map Name
1	Yes	Owyhee Dam
2	Yes	Mixing Plant
3	Yes	Powder House
4	Yes	Office Building
5	Yes	Five-room Residence
6	Yes	Three-room Residence North
7	Yes	Three-room Residence South
8	Yes	Residence Shed
9	Yes	North Garage
10	Yes	South Garage
11	Yes	River Pump House
12	Yes	Pump House
13	Yes	Cistern
14	Yes	Chicken Coop
15	Yes	Arbor
16	Yes	Dirt Road
17	Yes	Rock Wall
18	Yes	Fence
19	No	Office Trailer
20	No	Open Garage
21	No	Shell of Train Car
22	No	Picnic Pavilion
23	No	Fuel Shed
24	No	Metal Shed
25	No	Toilet Structure
26	No	Metal Warehouse
27	No	Ice House
28	No	Picnic Shelter
29	No	Power Plant

Figure M-11c

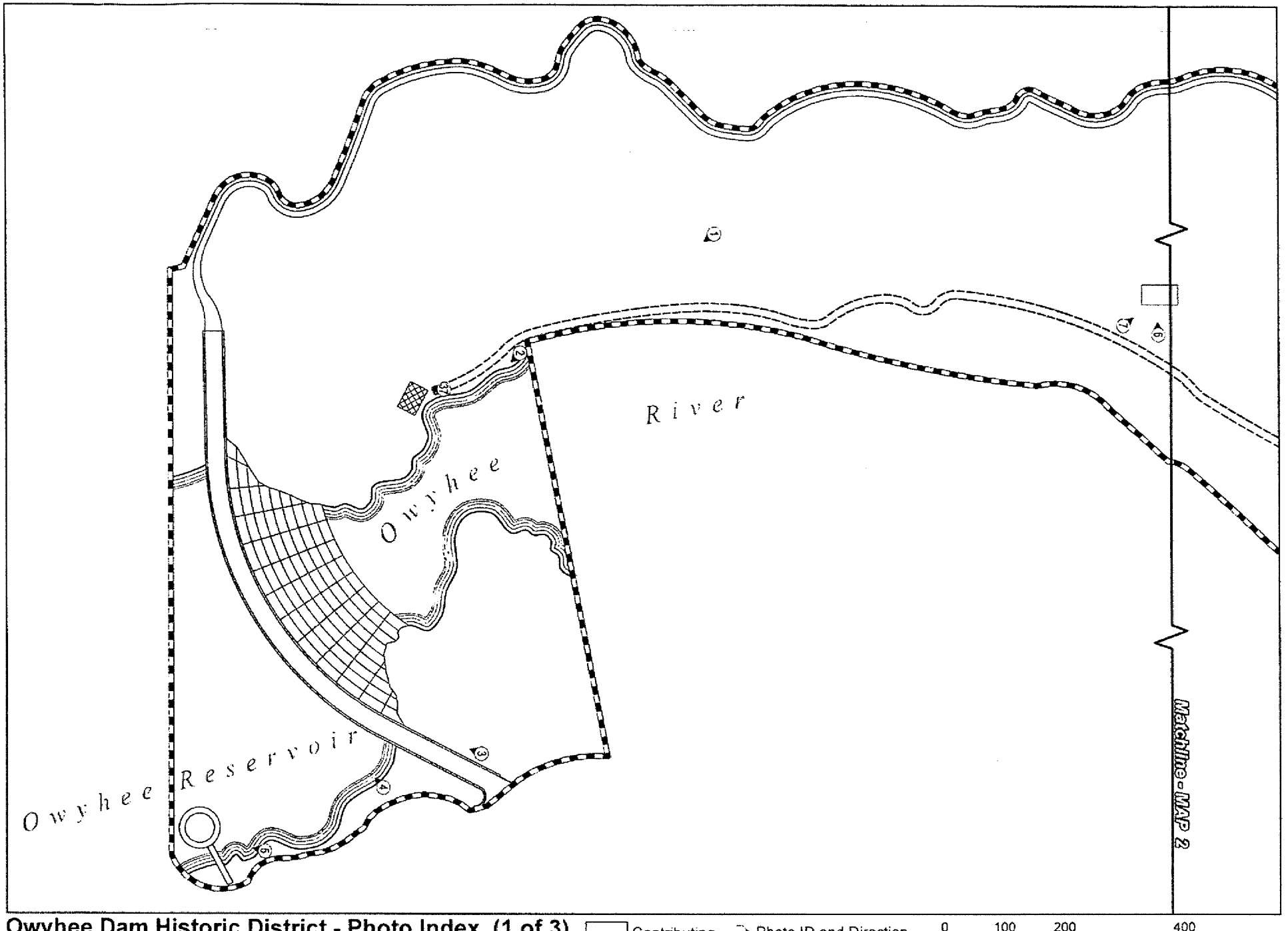


Figure M-12a

Owyhee Dam Historic District - Photo Index (1 of 3)

OW033010.mxd\Thursday, April 8, 2010 11:20 AM By: Reclamation\SRAO\MSFO\ J. Jones

Contributing
Non-Contributing
Photo ID and Direction
District Boundary

0 100 200 400
1 inch = 200 feet

N

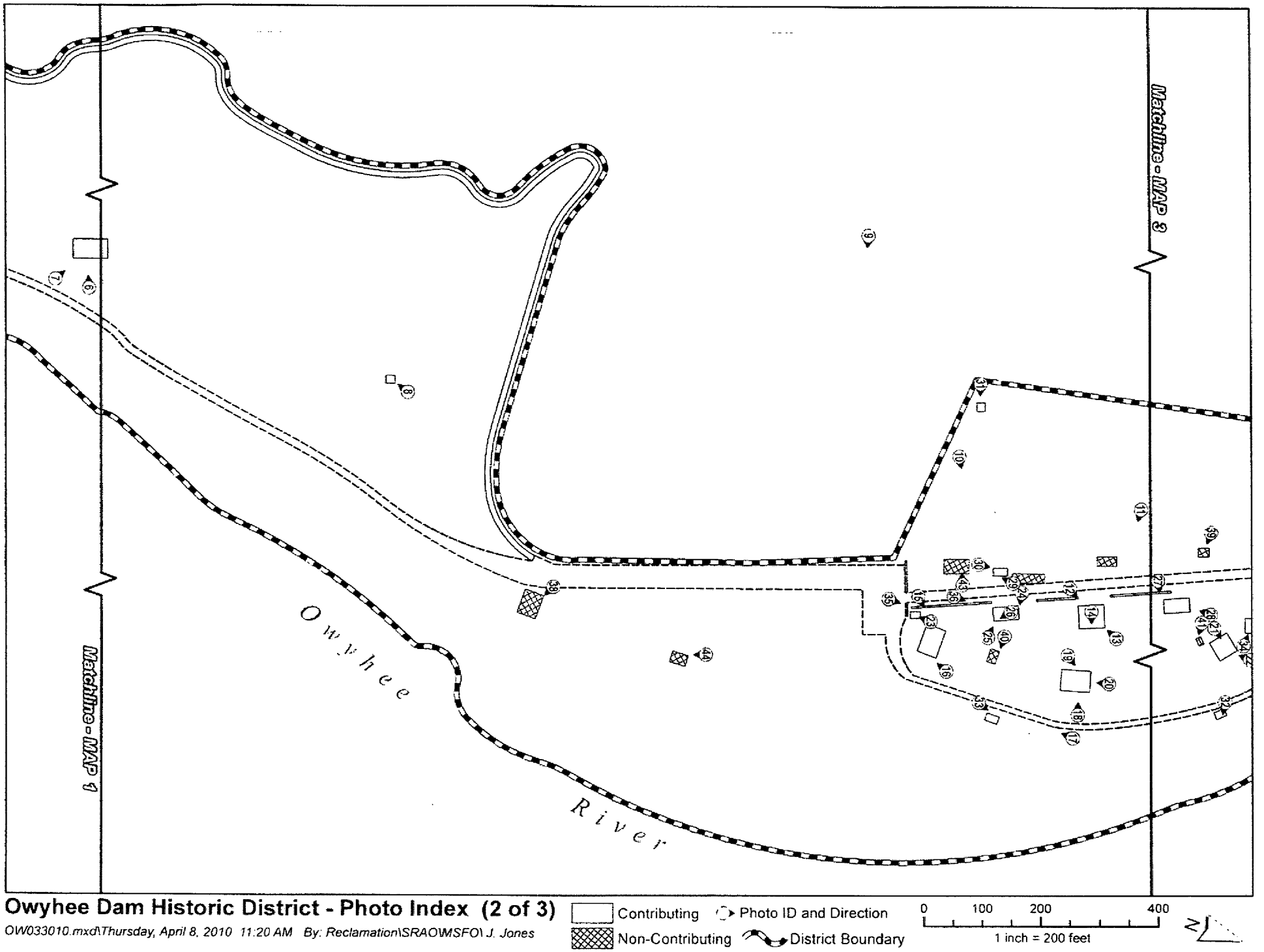


Figure M-12b

Owyhee Dam Historic District - Photo Index (2 of 3)

OW033010.mxd\Thursday, April 8, 2010 11:20 AM By: Reclamation\SRAO\MSFO\ J. Jones

Figure M-12c

Owyhee Dam Historic District - Photo Index (3 of 3)

OW033010.mxd\Thursday, April 8, 2010 11:20 AM By: Reclamation\SRAO\MSFO\ J. Jones

Contributing
Non-Contributing
Photo ID and Direction
District Boundary

0 100 200 400
1 inch = 200 feet

N

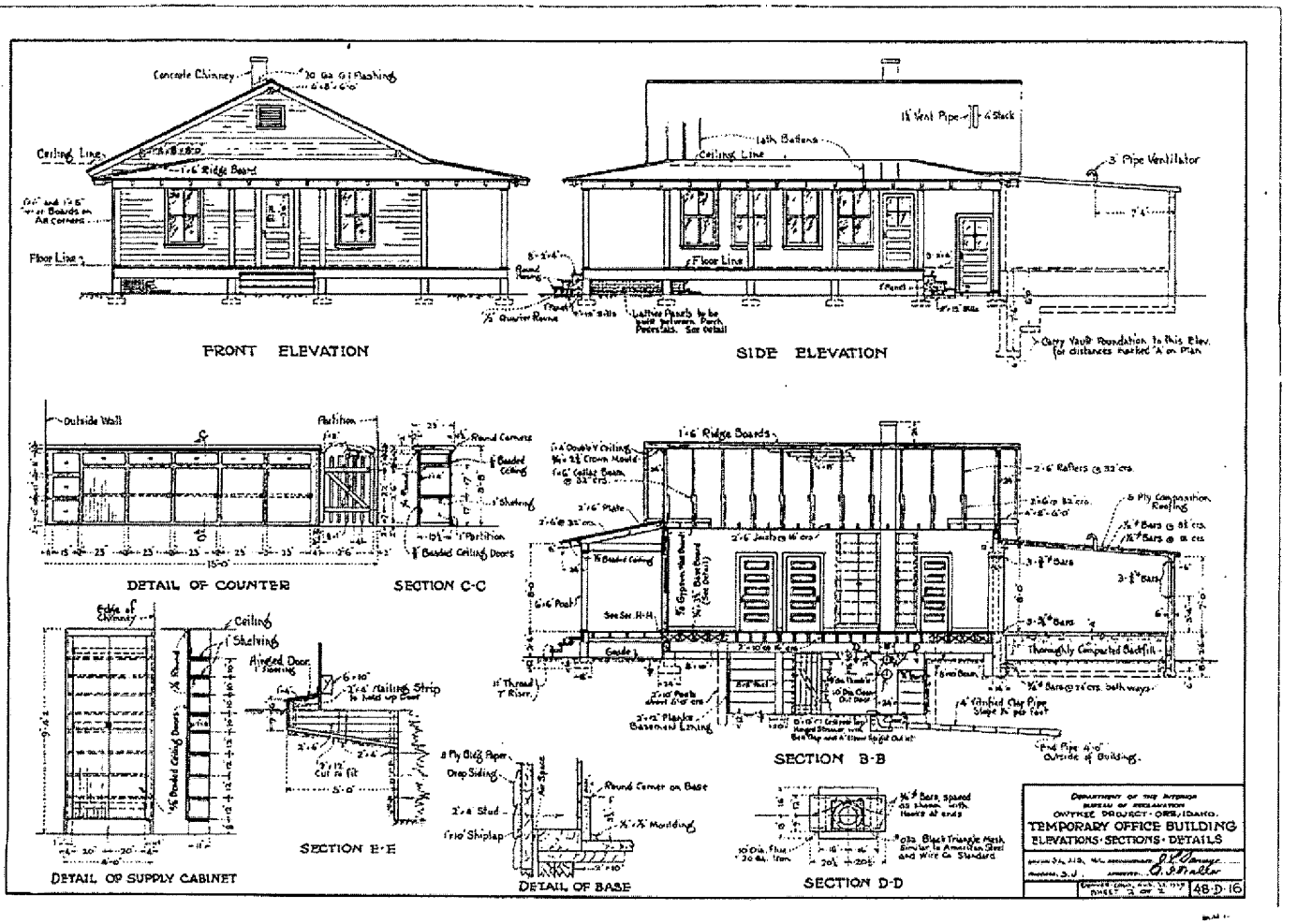

FRONT ELEVATION
SIDE ELEVATION
DETAIL OF COUNTER
SECTION C-C
SECTION B-B
DETAIL OF SUPPLY CABINET
SECTION E-E
DETAIL OF BASE
SECTION D-D
TEMPORARY OFFICE BUILDING
ELEVATIONS · SECTIONS · DETAILS
48-D-16

Figure D-1

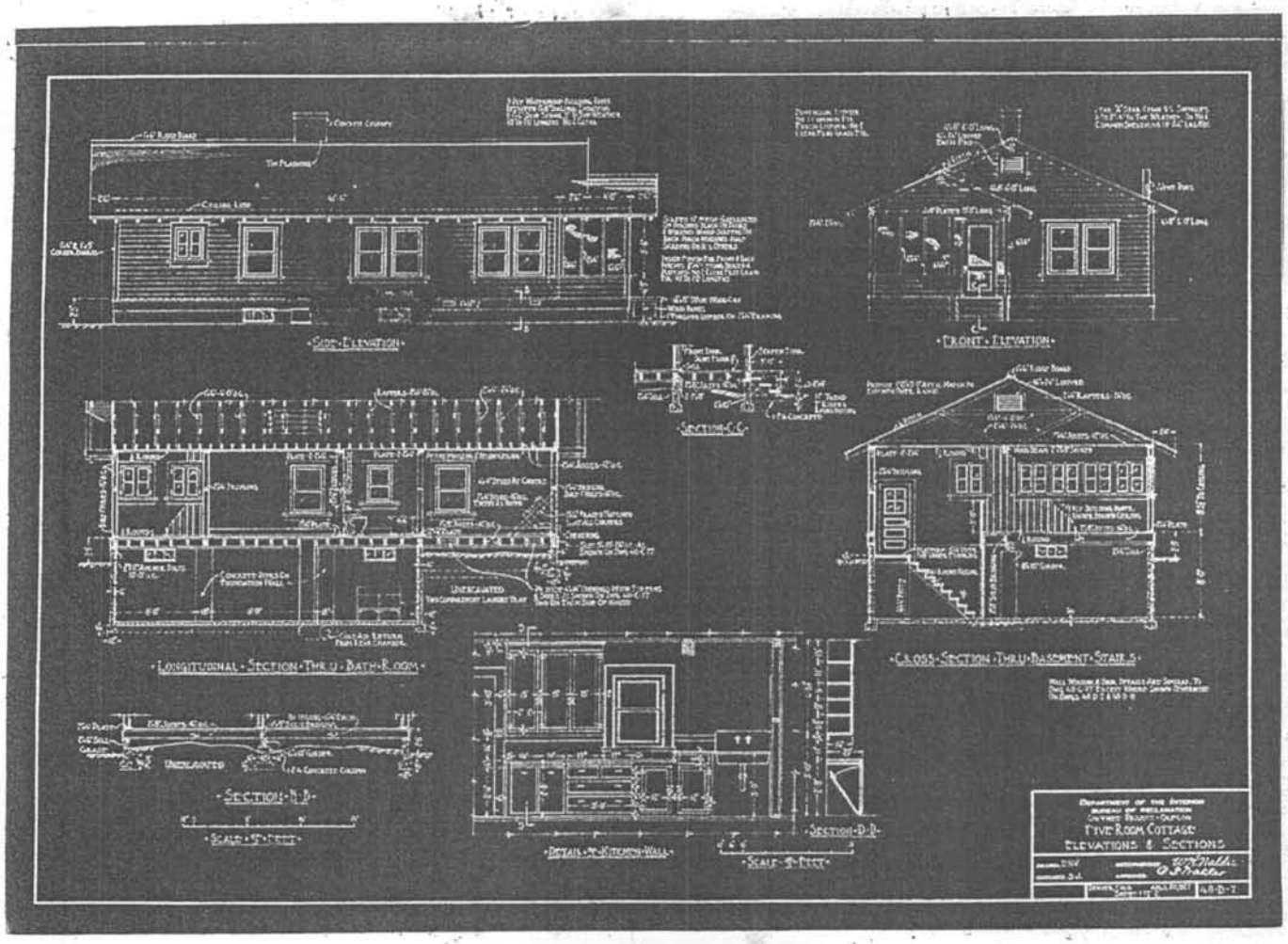

SIDE ELEVATION
FRONT ELEVATION
SECTION C-C
LONGITUDINAL SECTION THRU BATH ROOM
CROSS SECTION THRU BASEMENT STAIRS
SECTION B-B
SCALE 1/4 INCH
DETAIL OF KITCHEN WALL
SECTION D-D
SCALE 1/4 INCH
FIVE ROOM COTTAGE
ELEVATIONS & SECTIONS

Figure D-2

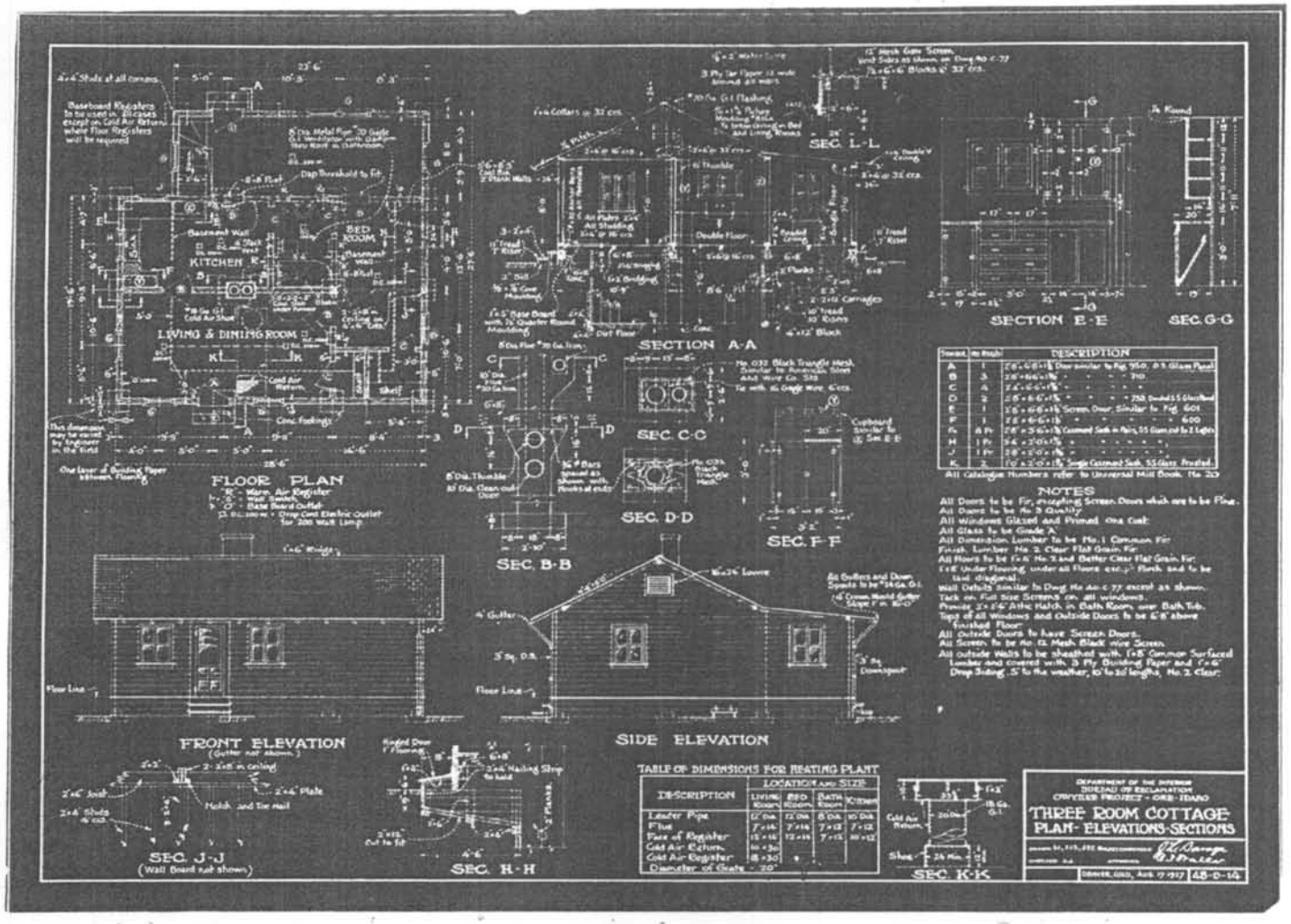
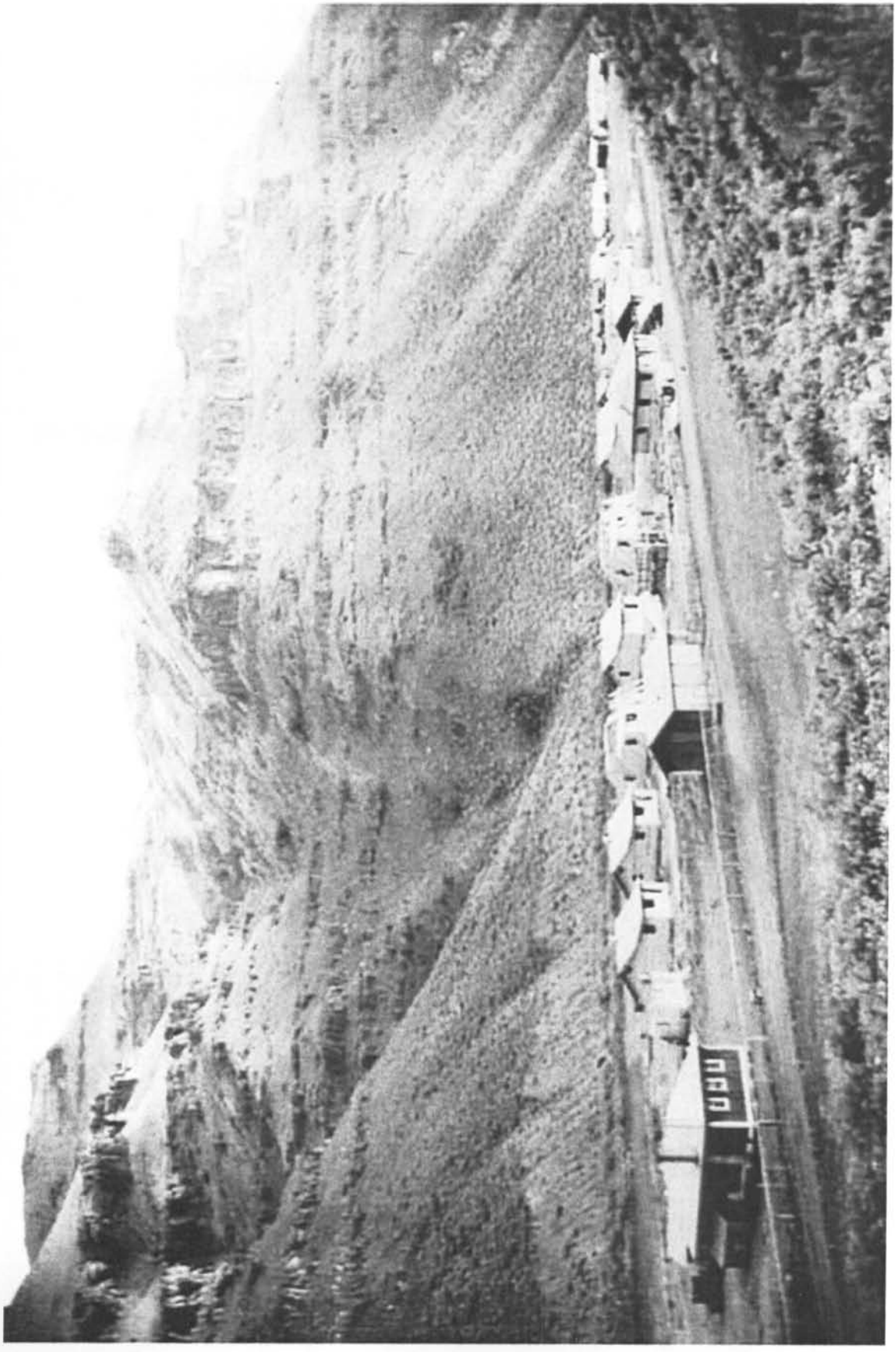
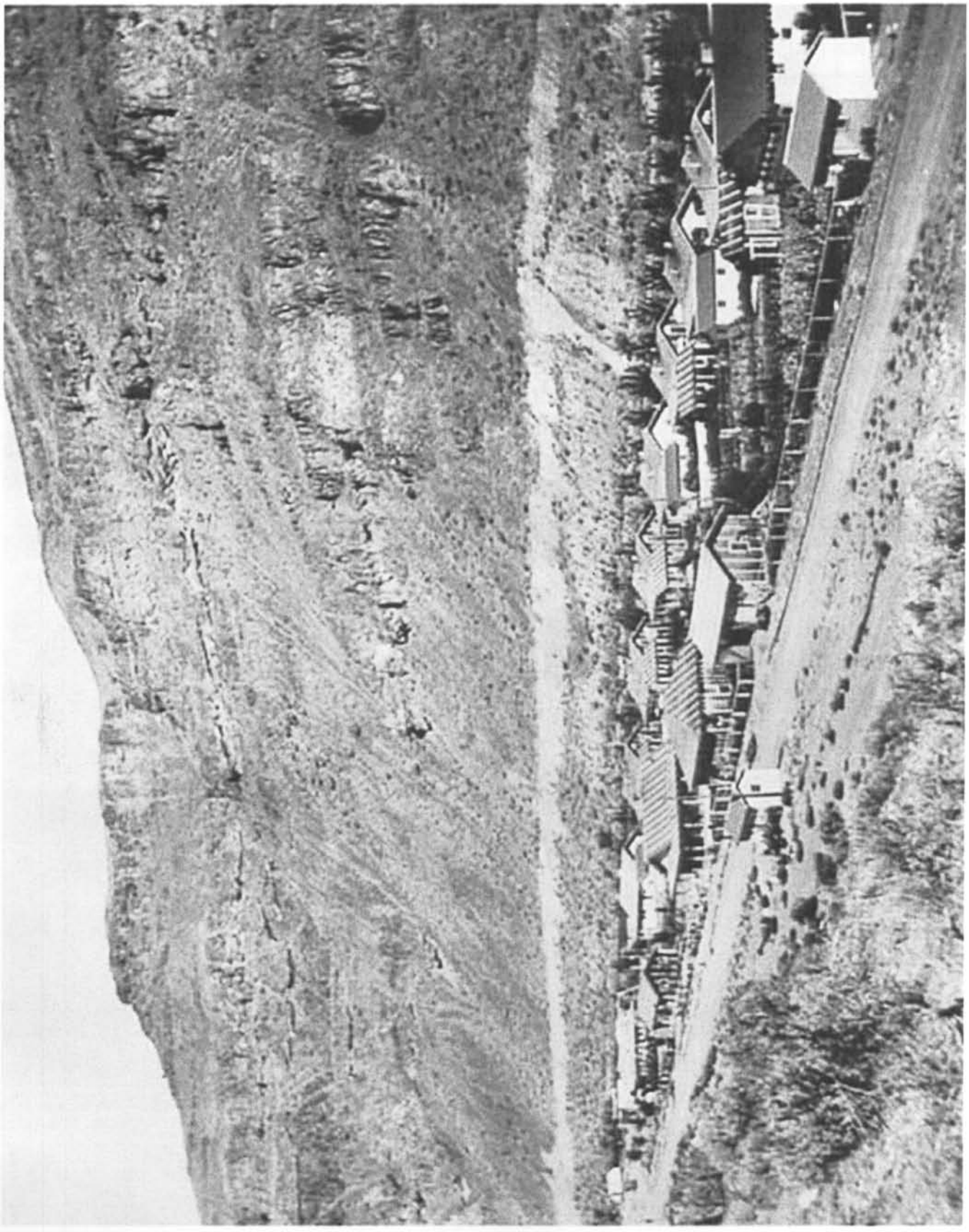

FLOOR PLAN
SECTION A-A
SEC. L-L
SECTION E-E
SEC. G-G
SEC. C-C
SEC. D-D
SEC. F-F
SEC. B-B
FRONT ELEVATION
SIDE ELEVATION
SEC. J-J
(Wall Board not shown)
SEC. H-H
SEC. K-K
NOTES
All Doors to be Fir, excepting Screen Doors which are to be Pine.
All Doors to be No. 3 Quality.
All Windows Glazed and Primed One Coat.
All Glass to be Grade A.
All Dimension Lumber to be No. 1 Common Fir.
Finish Lumber No. 2 Clear Flat Grain Fir.
All Floors to be 1"x6" No. 2 and Better Clear Flat Grain Fir.
1"x8" Under Flooring under all Floors exc. p't Flork and to be laid diagonal.
Wall Details Similar to Dwg. No. A-C 77 except as shown.
Tack on Full Size Screens on all windows.
Provide 2'-0"x2'-6" Attic Hatch in Bath Room over Bath Tub.
Tops of all Windows and Outside Doors to be 6'-8" above finished Floor.
All outside Doors to have Screen Doors.
All Screen to be No. 12 Mesh Black wire Screen.
All outside walls to be sheathed with 1"x8" Common Surfaced Lumber and covered with 3 Ply Building Paper and 1'-6" Drop Siding, 5" to the weather, 10' to 20' lengths, No. 2 Clear.
TABLE OF DIMENSIONS FOR HEATING PLANT
DESCRIPTION
LOCATION AND SIZE
LIVING Room
BED Room
BATH Room
KITCHEN
Leader Pipe
Flue
Face of Register
Cold Air Return
Cold Air Register
Diameter of Grate - 20"
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
CONVERSE PROJECT - ORE. IDAHO
THREE ROOM COTTAGE
PLAN - ELEVATIONS - SECTIONS
DENVER, COLO. Aug. 17 1917
45-D-14

Figure D-3



P48-100-756 Camp at Owyhee Damsite. Owyhee Project.
USBR photo. Nov 22, 1927.

Figure HP-1



P48-100-757 Looking north over Government Camp at Owyhee Damsite Owyhee Project
10-20-28

Figure HP-2

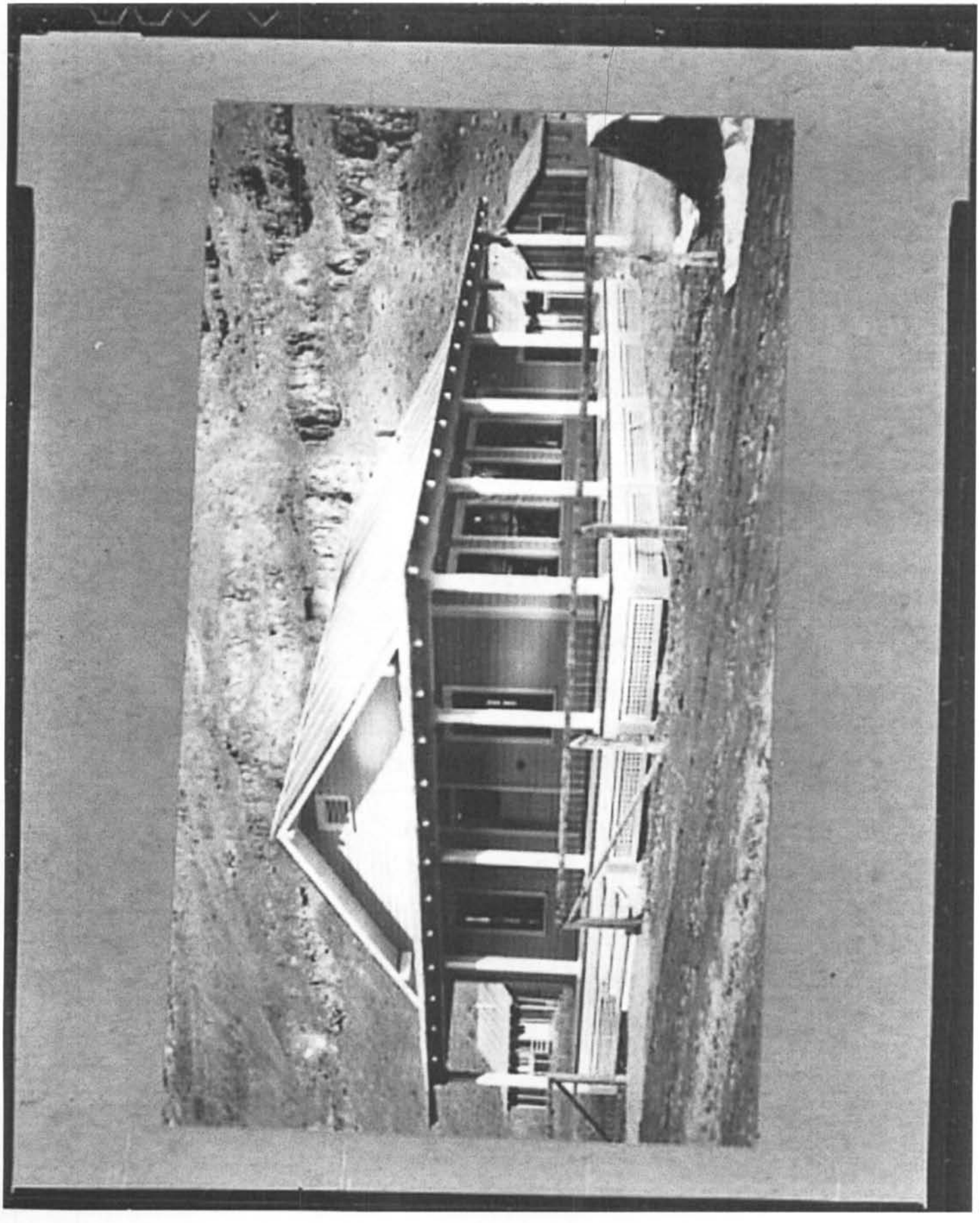


Figure HP-3

Figure HP-4

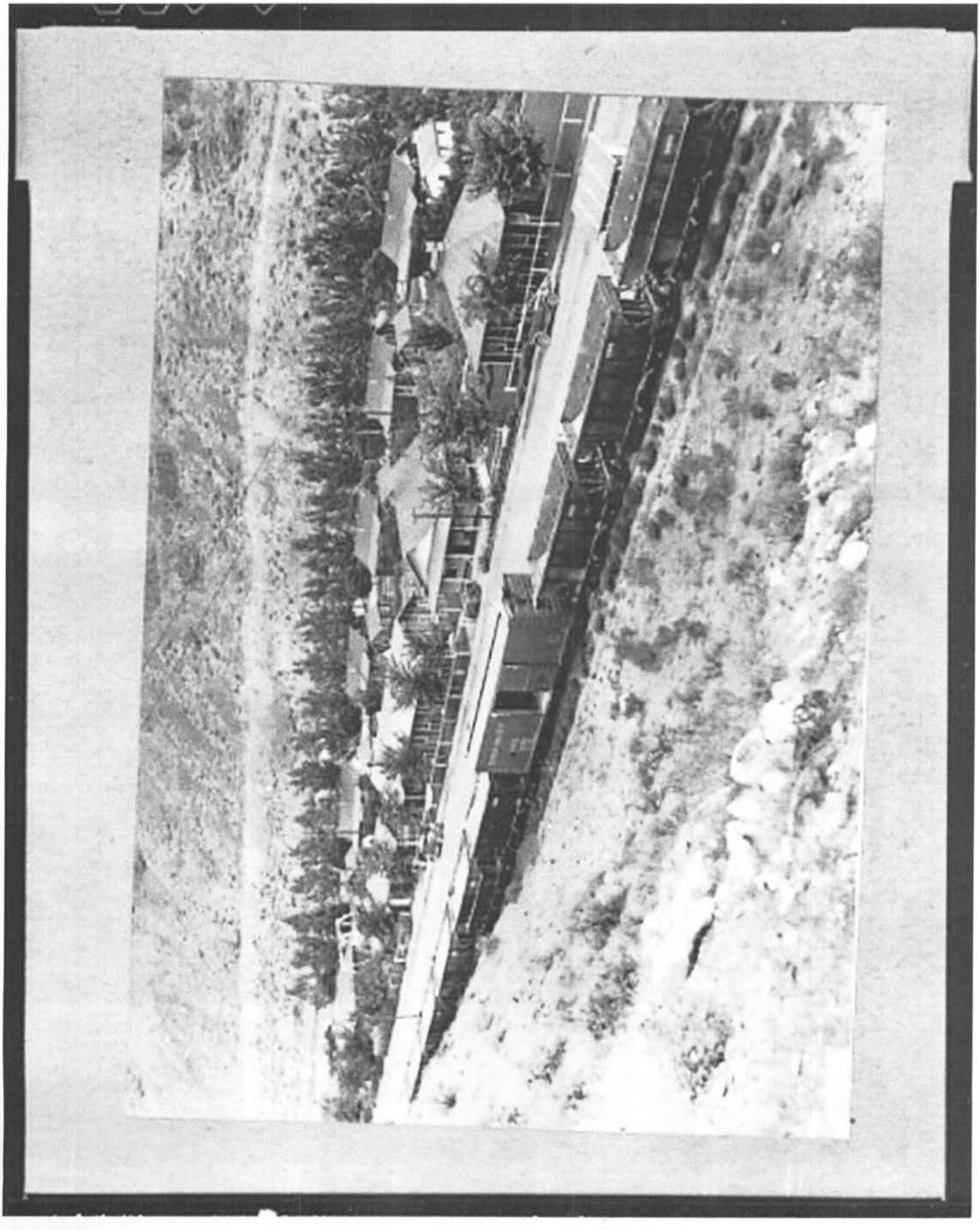
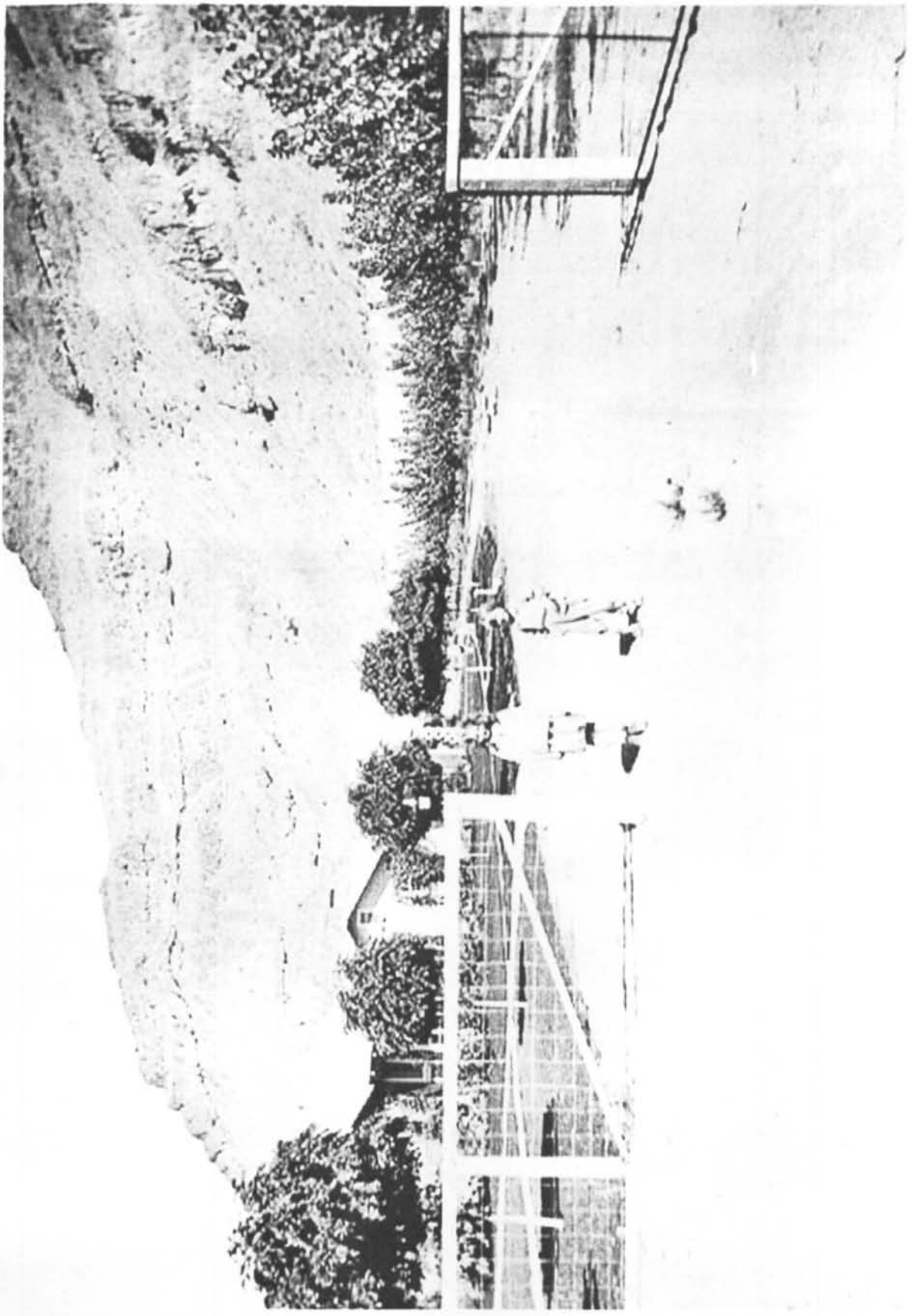


Figure HP-5



P48-100-728 Reclamation Avenue at Owyhee Damsite, showing development of trees and lawns during 1928. Owyhee Project, OR. USBR Photo. Sep 22, 1928.

Figure HP-6

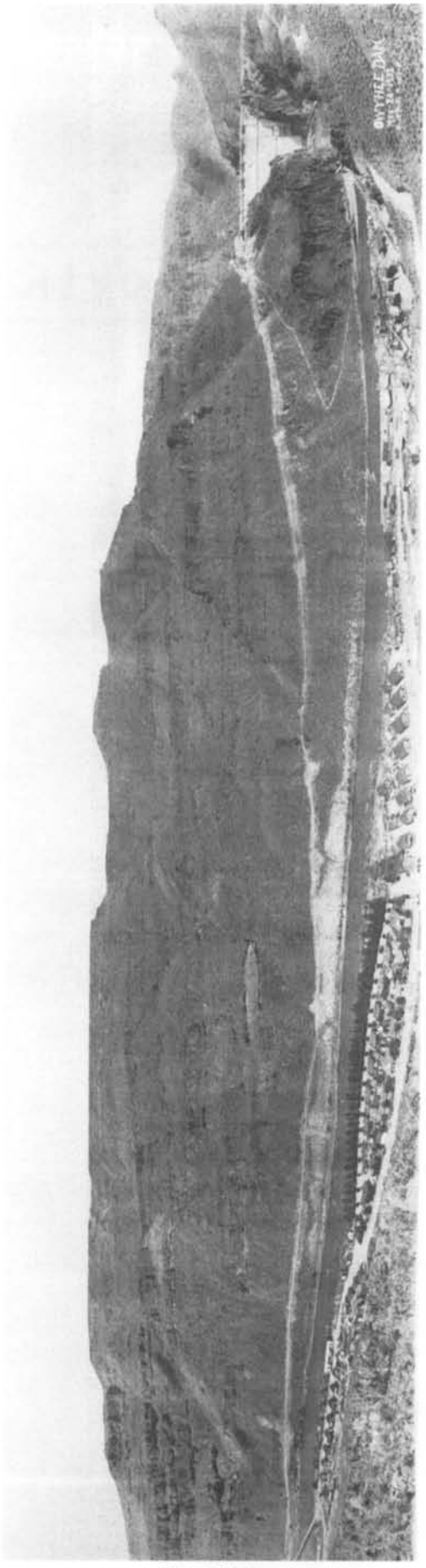
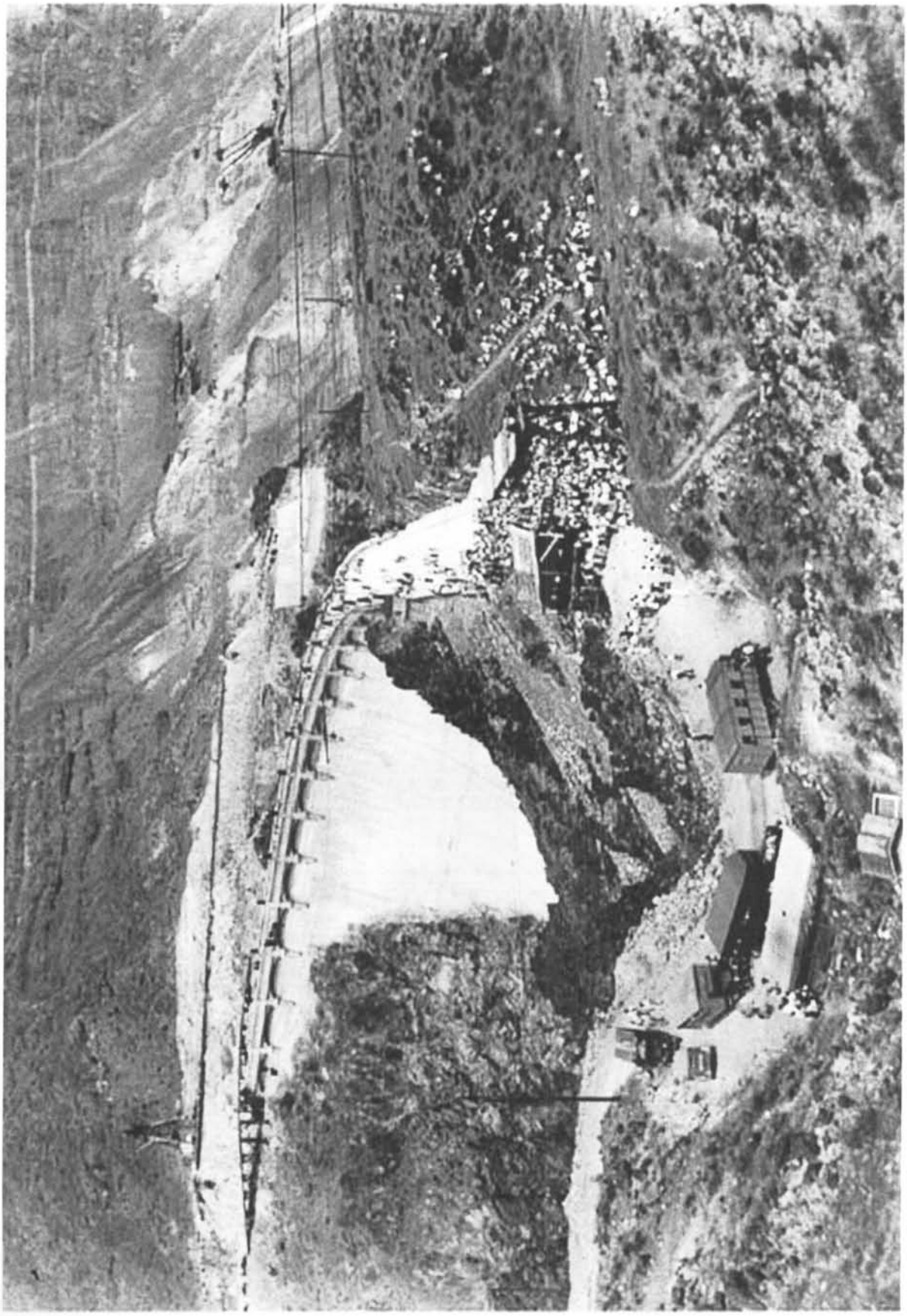


Figure HP-7

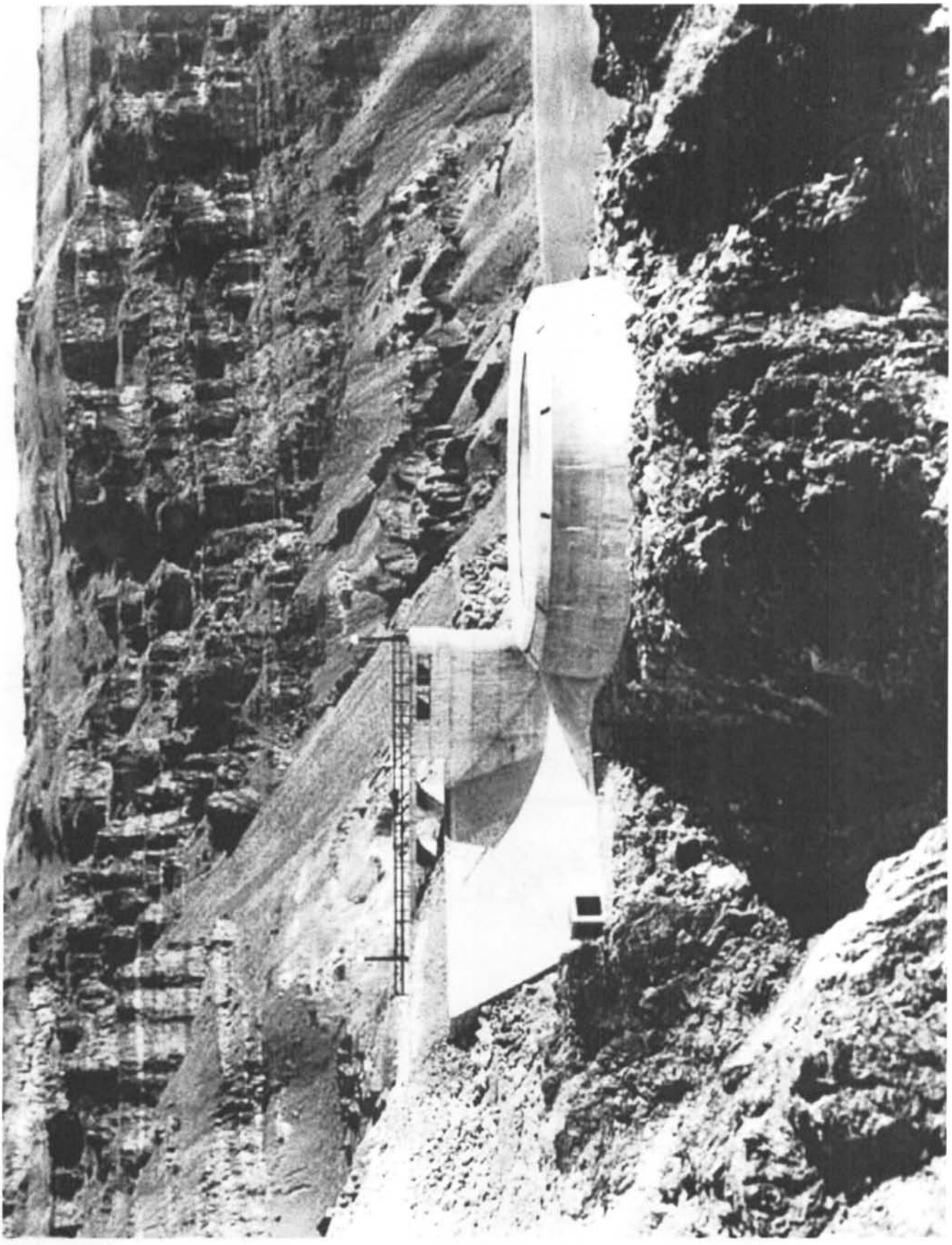


P48-100-744 Crowd assembling at Owyhee Dam for dedicatory services. USBR Photo by F. C. B. 7-17-32

Figure HP-8

P48-100-903 Owyhee Dam. Owyhee Project, OR.
USBR photo.

Figure HP-9



P48-100-806 Owyhee Dam, Glory Hole Spillway. Owyhee Project, Oregon. 1932

Figure HP-10

Architectural Survey Data for Owyhee Dam Historic District

Oregon State Historic Preservation Office

Address/ Property Name	Ht	Eval/ NR	Yr(s) Built	Materials	Arch Classifs/Styles	Orig. Use/ Plan (Type)	RLS / ILS Dates	Listed Date	
1/4-mile south of Owyhee Dam Rd Rock Wall		EC	c.1933	Stone Other/Undefined	Not Applicable	LANDSCAPE: General			
1/4-mile downstream from Owyhee Dam Mixing Plant	2	EC	c.1927	Poured Concrete	Not Applicable	INDUSTRIAL: General			
1/4-mile downstream from Owyhee Dam Powder House	0.5	EC	c.1927	Poured Concrete	Not Applicable	INDUSTRIAL: General			
1/4-mile south of Owyhee Dam Rd Office	1	EC	c.1927	Horizontal Board	Bungalow (Type)	Government Office Bungalow			
1/4-mile south of Owyhee Dam Rd Five-Room Cottage	1	EC	c.1927	Horizontal Board	Bungalow (Type)	Government Housing Bungalow			
1/4-mile south of Owyhee Dam Rd Three-Room Residence North	1	EC	c.1927	Horizontal Board	Bungalow (Type)	Government Housing Bungalow			
1/4-mile south of Owyhee Dam Rd Three-Room Residence South	1	EC	c.1927	Horizontal Board	Bungalow (Type)	Government Housing Bungalow			
			Comments: Addition off front elevation						
1/4-mile south of Owyhee Dam Rd Garage North	1	EC	c.1927	Horizontal Board	Not Applicable	Residential Auxillary			
1/4-mile south of Owyhee Dam Rd Garage South	1	EC	c.1927	Horizontal Board	Not Applicable	Residential Auxillary			
1/4-mile south of Owyhee Dam Rd Pump House	1	EC	c.1927	Horizontal Board	Not Applicable	Water Related			
1/4-mile south of Owyhee Dam Rd River Pump House	1	EC	c.1927	Horizontal Board	Not Applicable	Water Related			

Evaluation Codes: ES=eligible/significant EC=eligible/contributing NC=not eligible/non-contributing NP=not eligible/out of period UN=undetermined/lack of info XD=demolished
NR Status Codes: NRI=individually listed NHD=listed in Hist Dist NRB=listed individually and w/i Hist Dist NHL=listed as National Hist Landmark NS=listed as part of an NRI

Architectural Survey Data for Owyhee Dam Historic District

Oregon State Historic Preservation Office

Address/ Property Name	Ht	Eval/ NR	Yr(s) Built	Materials	Arch Classifs/Styles	Orig. Use/ Plan (Type)	RLS / ILS Dates	Listed Date
1/4-mile south of Owyhee Dam Rd Small Storage Shed		EC	c 1927	Horizontal Board	Not Applicable	Industrial Storage		
Chicken Coop								
1/4-mile south of Owyhee Dam Rd Residential Shed	1	EC	c 1927	Horizontal Board	Not Applicable	Residential Auxillary		
1/4-mile south of Owyhee Dam Rd Fence	0.5	EC	c 1927	Metal: Other/Undefined	Not Applicable	LANDSCAPE: General		
Comments: Wire mesh fence								
1/4-mile south of Owyhee Dam Rd Picnic Shelter	1	NP	c 1995	Wood: Sheet	Not Applicable	Outdoor Recreation		
1/4-mile south of Owyhee Dam Rd to Owy Road		EC	c 1927	Other Stone: Other/Undefined	Not Applicable	Road Related (vehicular)		
Reclamation Drive								
1/4-mile south of Owyhee Dam Rd Cistern	1	EC	c 1927	Poured Concrete Wood: Other/Undefined	Not Applicable	Water Related		
1/4-mile south of Owyhee Dam Rd Metal Warehouse	1	NP	c 1984	Corrugated metal	Not Applicable	INDUSTRIAL: General		
1/4-mile south of Owyhee Dam Rd Office Trailer	1	NP	c 1984	Corrugated metal	Mobile/Manufactured Home (Typ	Government Office Mobile Home		
1/4-mile south of Owyhee Dam Rd Fuel Shed	1	NP	c 1984	Corrugated metal	Not Applicable	INDUSTRIAL: General		
1/4-mile south of Owyhee Dam Rd Metal Shed	1	NP	c 1984	Corrugated metal	Not Applicable	INDUSTRIAL: General		
Comments: On c. 1927 concrete foundation								
1/4-mile south of Owyhee Dam Rd Toilet Structure		NP	c 1984	Unknown	Not Applicable	Pedestrian Related		

No image available

Evaluation Codes: ES=eligible/significant EC=eligible/contributing NC=not eligible/non-contributing NP=not eligible/out of period UN=undetermined/lack of info XD=demolished
NR Status Codes: NRI=individually listed NHD=listed in Hist Dist NRB=listed individually and w/i Hist Dist NHL=listed as National Hist Landmark NS=listed as part of an NRI

Architectural Survey Data for Owyhee Dam Historic District

Oregon State Historic Preservation Office

Address/ Property Name	Ht	Eval/ NR	Yr(s) Built	Materials	Arch Classifs/Styles	Orig. Use/ Plan (Type)	RLS / ILS Dates	Listed Date	
1/4-mile south of Owyhee Dam Rd Ice House	1	NC	c 1930	Horizontal Board	Not Applicable	Residential Auxillary			
			Comments: Altered						
1/2-mile south of Owyhee Dam Rd Power Plant		NP	1984	Poured Concrete	Not Applicable	Energy Facility			
1/4-mile south of Owyhee Dam Rd Metal and Wood Garage	1	NP	c 1960	Metal Sheet Wood Sheet	Not Applicable	Residential Auxillary			
1/4-mile south of Owyhee Dam Rd Imitation Train Car Shell	1	NC	c 1932 c 2007	Metal: Other/Undefined	Not Applicable	Rail Related			
			Comments: Altered						
1/4-mile south of Owyhee Dam Rd Picnic Pavilion	1	NP	c 1995	Metal: Other/Undefined	Not Applicable	Outdoor Recreation			
1/4-mile south of Owyhee Dam Rd Arbor	1	EC	1939	Wood:Other/Undefined	Not Applicable	Outdoor Recreation			
Owyhee Lake Rd Owyhee Dam		ES	1928 1932	Poured Concrete	Not Applicable	Water Related Dam	1/1/2010		
			Comments: HAER No. OR-17 (1991) *NR nom (1989)* *Dam completed in 1932*						

Total Resources Identified: 29

Evaluation Codes: ES=eligible/significant EC=eligible/contributing NC=not eligible/non-contributing NP=not eligible/out of period UN=undetermined/lack of info XD=demolished
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OFFICE

ROMA
WINES
121

PUMP
HOUSE
DANGER
DANGER

YAMAHA

PUMP
HOUSE

CHICKEN
COUP

BOAT
HOUSE