State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #47-004015 (Klamath Hydroelectric Project)
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Historic District

P1. Other Identifier: Iron Gate Historic District

*P2. Location: ☒ Unrestricted

*a. County: Siskiyou

*b. USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
See Continuation Sheet.

c. Address _____ City _____ Zip _____

d. UTM: Zone 10 T, 546707mE/4642665mN See Continuation Sheet.

e. Other Locational Data: N/A

*P3a. Description:

The Iron Gate Historic District is part of the larger, discontiguous Klamath Hydroelectric Project (KHP) historic district. The KHP is a previously documented historic district within Southern Oregon and Northern California. It consists of seven hydroelectric developments. Discrete historic districts within the KHP include Copco No. 1 (California), Copco No. 2 (California), J.C. Boyle (Oregon), and Iron Gate (California). A detailed description of Iron Gate is provided in the DPR 523D (District Record) form.

Iron Gate was built by the Pacific Power and Light Company (Pacific Power), a Copco successor company, in 1962 and was designed by Pacific Power vice president and chief engineer John C. Boyle. The entire Iron Gate development, including the reservoir, extends between River Mile (RM) 200.0 and RM 193.1 along the Klamath River. The dam, built at RM 193.1, is about 20 miles northeast of Yreka, Siskiyou County, California. Named for the site's "rust-hued canyon walls," Iron Gate is the Klamath Hydroelectric Project's seventh and farthest-downstream development (*Herald and News* 1961a). Iron Gate reservoir is associated with the following recreation sites: Fall Creek, Jenny Creek, Wanaka Springs, Camp Creek, Juniper Point, Mirror Cove, Overlook Point, and Long Gulch.

Iron Gate is comprised of a regulating dam, water conveyance system, powerhouse, reservoir, fish hatchery, and support facilities (See **Site Map**). See separate DPR 523A and 523B forms for the dam, water conveyance system, powerhouse, dam fish facilities, support facilities, operator residences, hatchery fish facilities, hatchery administration and auxiliary facilities, and hatchery residences.

*P3b. Resource Attributes: (HP21) Dam; (HP22) Lake/river/reservoir; (HP11) Engineering structure (powerhouse, water conveyance system); (HP19) Bridge; (HP2) Single-family property (operator residences, hatchery residences); (HP4) Ancillary buildings (communication building, restroom building, hatchery administration and auxiliary facilities); (HP39) Other (hatchery fish facilities, hatchery raceways and settling ponds).

*P4. Resources Present: ☒ District ☒ Buildings ☒ Structures

P5a. Photograph:

P5b. Description of Photo: Iron Gate viewing north (June 11, 2018).

*P6. Date Constructed/Age and Source:
☒Historic, 1962 (dam site), 1966 (fish hatchery) (*Herald and News* 1962b)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

*P8. Recorded by:
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

*P9. Date Recorded: June 11, 2018

*P10. Survey Type: Intensive Level

*P11. Report Citation: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

*Attachments: ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☒District Record

P2b. Location (continued):

USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 Mount Diablo B.M.

Resource	Township	Range	Section
Dam	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Dam Fish Facilities	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Penstock (Water Conveyance System)	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Powerhouse	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Substation	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Communication Building (Support Facilities)	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Restroom Building (Support Facilities)	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Operator Residence No. 1	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Operator Residence No. 2	47N	5W	SW 1/4 of SW 1/4 of Sec. 9
Hatchery Building (Hatchery Fish Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Raceways (Hatchery Fish Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Settling Ponds (Hatchery Fish Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Fish Feed Silos (Hatchery Fish Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Office (Hatchery Administration and Auxiliary Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Shop (Hatchery Administration and Auxiliary Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Gas Shed (Hatchery Administration and Auxiliary Facilities)	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 1	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 2	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 3	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 4	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Lakeview Road Bridge	47N	5W	NE 1/4 of NE 1/4 of Sec. 17

P2d. UTM (continued):

Resource	Zone	UTM
Dam	10 T	546707mE/4642665mN
Dam Fish Facilities	10 T	546688mE/4642547mN
Penstock (Water Conveyance System)	10 T	546778mE/4642568mN
Powerhouse	10 T	546694mE/4642489mN
Substation	10 T	546704mE/4642495mN
Communication Building (Support Facilities)	10 T	546702mE/4642509mN
Restroom Building (Support Facilities)	10 T	546688mE/4642429mN
Operator Residence No. 1	10 T	546455mE/4642431mN
Operator Residence No. 2	10 T	546417mE/4642422mN
Hatchery Building (Hatchery Fish Facilities)	10 T	546255mE/4642149mN
Raceways (Hatchery Fish Facilities)	10 T	546266mE/4642094mN
Settling Ponds (Hatchery Fish Facilities)	10 T	546220mE/4642014mN
Fish Feed Silos (Hatchery Fish Facilities)	10 T	546292mE/4642187mN
Office (Hatchery Administration and Auxiliary Facilities)	10 T	546288mE/4642144mN
Shop (Hatchery Administration and Auxiliary Facilities)	10 T	546267mE/4642170mN
Gas Shed (Hatchery Administration and Auxiliary Facilities)	10 T	546284mE/4642155mN
Hatchery Residence No. 1	10 T	546324mE/4642110mN
Hatchery Residence No. 2	10 T	546338mE/4642087mN
Hatchery Residence No. 3	10 T	546351mE/4642068mN
Hatchery Residence No. 4	10 T	546343mE/4642046mN
Lakeview Road Bridge	10 T	546306,E/4642288mN

*Resource Name or #: Iron Gate Hydroelectric Development; Iron Gate Historic District
D1. Historic Name: N/A
D2. Common Name: Iron Gate

D3. Detailed Description:

Iron Gate was built by the Pacific Power and Light Company (Pacific Power), a Copco successor company, in 1962 and was designed by Pacific Power vice president and chief engineer John C. Boyle. The entire Iron Gate development, including the reservoir, extends between River Mile (RM) 200.0 and RM 193.1 along the Klamath River. The dam, built at RM 193.1, is about 20 miles northeast of Yreka, Siskiyou County, California. Named for the site's "rust-hued canyon walls," Iron Gate is the Klamath Hydroelectric Project's seventh and farthest-downstream development (*Herald and News* 1961a). See Continuation Sheets.

D4. Boundary Description: The district boundary is the Federal Energy Regulatory Commission (FERC) boundary for the Lower Klamath Project (see Klamath Hydroelectric Project location map).

D5. Boundary Justification: The boundary is consistent with the FERC boundary for the Lower Klamath Project.

D6. Significance:

Theme: Hydroelectric development; fish management

Area: Southern Oregon and Northern California

Period of Significance: Iron Gate Historic District: 1962 – 1970; Klamath Hydroelectric Project Historic District: 1903 – 1970

Applicable Criteria: National Register of Historic Places (NRHP) Criterion A and Criterion C

See Continuation Sheets.

D7. References:

AECOM. 2017. Klamath River Renewal Project. California Environmental Quality Act (CEQA) and California and Oregon 401 Water Quality Certifications Technical Support Document. AECOM Technical Services, Inc.: Oakland, CA.

Ashland Tidings [Ashland, Oregon].1918. "Klamath Fishing Is To Be Protected." February 4.

Beckham, Stephen Dow. 2006. Historical Landscape Overview of the Upper Klamath River Canyon of Oregon and California. Cultural Resource Series No. 13. Bureau of Land Management. U.S. Department of the Interior.

Bohner, Rodney. 2017. "Oregon Heritage Fish Hatcheries Historic Resources Study." https://www.oregon.gov/oprd/HCD/FINASST/docs/2017%20OHF_RodneyB_OHC_Report%20(2).pdf (accessed July 3, 2018).

Bohner, Rodney T. 2018. *Reproducing the river: Historic Context and Resource Survey of Oregon's State Fish Hatchery System*. Presented at the Society of Architectural Historians Marion Dean Ross Chapter Conference in Astoria, Oregon, May 19, 2018.

See Continuation Sheets.

D8. Evaluator: Shoshana Jones, AECOM

Date: June 11, 2018

Affiliation and Address: AECOM, 111 SW Columbia Street, Suite 1500, Portland, Oregon 97201

D3. Detailed Description (continued):

Iron Gate Dam impounds the Iron Gate Reservoir, from which water is released. The regulating function of the dam was implemented to help regulate flows. The Iron Gate Dam was also designed with on-site facilities for fish-handling and egg-taking to improve the downstream Klamath River fishery (Pacific Power circa 1962:6). The on-site dam fisheries facilities at Iron Gate include a fish ladder, spawning building, holding ponds, and aerator that operate in conjunction with the Iron Gate Fish Hatchery about 0.25 mile downstream.

As a secondary function, Iron Gate Dam generates hydroelectric power. Reservoir water flows through the penstock and into the powerhouse scroll case. Vanes in the scroll case direct the water against the blades of the water wheel, which turn the turbine in the powerhouse. The turbine blades are connected to a shaft which turns the generator. Within the generator, one set of coils create a magnetic field through which the other set of coils passes, breaking the magnetic field and generating electricity. The electricity is conducted over a power transmission line. After passing through the powerhouse, the water discharges back into the Klamath River at the dam's downstream side.

Roads and Bridge

From Copco Road, vehicles access Iron Gate via Lakeview Road, a mostly gravel road, and the Lakeview Road Bridge, which spans the Klamath River. Lakeview Road is a County gravel road approximately 24 feet wide that crosses the river as Lakeview Road Bridge, passes the Iron Gate Fish Hatchery, then extends generally northeast beyond the Iron Gate Reservoir. A fork in the road curves southwest to provide access at the dam crest and reservoir. The single-lane Lakeview Road Bridge, completed in May 1960, spans the Klamath River downstream from Iron Gate Dam, near the northern end of Iron Gate Fish Hatchery. Additionally, a 0.25-mile-long project access road extends along the river between the downstream side of Iron Gate Dam and the hatchery. On the other side of the river, a circular drive that branches off Copco Road, just north of Lakeview Road, provides access to the two Iron Gate operator residences.

The Lakeview Road Bridge (Caltrans Bridge No. 2C0255, also known as the Klamath River - Iron Gate Bridge) is a notable and contributing site feature, completed in May 1960 to provide permanent access from Copco Road to the Iron Gate site. The topographic map of the bridge site was developed in December 1959, and the construction contract was awarded to Ben C. Gerwick Company in February 1960 (Pacific Power 1962:13, Schedule No. 4, Sheet 1 of 5). Construction began on February 24, 1960 (Pacific Power 1962:4). By March 1960, the bridge approaches had been completed (Pacific Power 1962: Schedule No. 4, Sheet 1 of 5). The nine-span, simply supported rolled-steel-beam bridge is approximately 272 feet long and 14.5 feet wide. It has a reinforced-concrete deck with one 12-foot lane and lacks shoulders. The bridge rests on bents composed of timber pile extensions with timber or steel caps and timber abutments (KRRC 2017:5-42). The bridge was formally dedicated on February 3, 1962 (PacifiCorp photo and caption IG-279; Pacific Power 1962:13, Schedule No. 4, Sheet 1 of 5). The only evident change since the bridge's original construction is removal of the upper section of the wood railing. The bridge retains integrity of location, design, setting, materials, workmanship, feeling, and association.

Reservoir and Associated Recreation Sites

Iron Gate's regulating reservoir covers about 944 surface acres and contains over 58,000 acre-feet of total storage capacity and 3,790 acre-feet of active storage capacity (FERC 2007:2-14). At full capacity, the reservoir extends upstream for over 6 miles. The typical operating water surface elevation is 2,328 feet, and the typical low water surface elevation is 2,324 feet, a difference of only 4 feet (Pacific Power 1962:7). The reservoir is situated in open oak and juniper woodlands similar to those found at Copco Lake, although the Iron Gate Reservoir shorelines are less steep than those of Copco Lake. Recreational facilities around the reservoir include Camp Creek, Fall Creek, Jenny Creek, Juniper Point, Long Gulch, Mirror Cove, Overlook Point, and Wanaka Springs (each managed by PacifiCorp), and smaller shoreline recreation sites (USBR 2012:22-24). Vegetation in these areas consists primarily of Oregon oak, western juniper, willows, and chaparral/sagebrush scrub, as well as mature black cottonwood and weeping willow.

D3. Detailed Description (continued):

Camp Creek

Camp Creek Recreation SIte, 2018

Camp Creek recreation site, on Iron Gate Reservoir's northern shore, accommodates camping, day uses, and boat launching. The recreation site has three use areas.

The first use area is located on the shoreline and consists of 12 developed campsites, a 10- by 16-foot concrete block well house, and a boat launch. Each campsite has a concrete picnic table, concrete fire ring, and a parking space. Three-foot boulders separate the campsites. The boat launch has an 80-foot-long, 25-foot-wide single-lane concrete ramp, and wooden walkway leading to a 25-foot-long, 4-foot-wide boat dock with concrete abutment and piers, next to the boat ramp. There are also two 20-foot-long, 5-foot-wide floating boat docks with composite decking and aluminum frames located to the north and south of the boat launch. Each boat dock provides shoreline fishing opportunities.

The second use area is located across Copco Road from the first use area and accommodates day use, overflow camping, and parking. The area has three concrete picnic tables and two steel frame/wood plank picnic tables with concrete foundations, two timber shelters for shade, one concrete fire ring, and at least five user-defined fire rings. An RV dump station with estimated 2,000-gallon buried concrete tank, a 10- by 16-foot wood-frame double restroom building, a portable toilet, a trash receptacle, and a water faucet are located in this area and are shared facilities with the other use areas at Camp Creek. Overflow camping occurs at this site when the developed campsites in the first use area are full. Additionally, a large grassy area provides overflow parking for the first use area. There is space for approximately 60 vehicles in the overflow parking area. There is also an interpretive display about the Wilkes Expedition that stopped at the site in 1841.

The third use area is located on the shoreline northwest of the first use area and provides day use activities, including ADA access to the shoreline, and overnight camping. There are seven informational signs with concrete bases at the site. This small area has been referred to as the "Scotch Creek" or "Dutch Creek" site and has one steel pipe/wood plank picnic table and a concrete fire ring. There is a 50-foot-long, 4-foot-wide ADA-accessible concrete fishing pier with pipe railing, and a boat ramp for launching car-top boats at this use area.

D3. Detailed Description (continued):

Fall Creek

Fall Creek Recreation Site, 2018

Fall Creek recreation site, on Iron Gate Reservoir's far northeast shore, is primarily a day use area with two picnic tables, two cooking grills, several fire rings, and a graveled boat launch. An older single-vault restroom building was closed in 2002 and has been replaced with a portable toilet. User-defined trails provide access to shoreline fishing opportunities. About eight vehicles can park along the interior gravel road. The Fall Creek recreation site is located near the river channel, but a separate portion of the site is near the Fall Creek Fish Hatchery and provides access to the Fall Creek Trail, which leads to Fall Creek Falls.

Jenny Creek

Jenny Creek Recreation Site, 2018

D3. Detailed Description (continued):

Jenny Creek recreation site, on Iron Gate Reservoir's northern shore, provides six day use campsites, with four separated by boulders at the southern end of the parking area and two along the shoreline of Jenny Creek. There are four steel frame/wood plank picnic tables and four user-defined fire rings. The site has a storage building and single-vault restroom building with a 25-foot-long wooden privacy screen. Several user-defined trails provide shoreline fishing access to Jenny Creek. There are two informational signs with concrete bases at the site. The gravel parking area can accommodate approximately 20 vehicles. A large gravel parking area across from the site used for shoreline fishing access accommodates about 12 vehicles but is not considered part of the Jenny Creek recreation site.

Juniper Point

Juniper Point Recreation Site, 2018

Juniper Point, on Iron Gate Reservoir's northwestern shore, provides approximately nine semi-primitive campsites. The camping area has eight steel frame/wood plank and wooden picnic tables, one concrete picnic table, fifteen concrete fire rings and foundations, and two 4- by 4-foot concrete single-vault restrooms (across Copco Road). The I-shaped boat dock consists of a 25-foot-long concrete abutment, a 50-foot-long composite dock with poly floats and pipe railing, and a 20-foot-long composite gangplank with pipe railing. There are four informational signs with concrete bases at the site.

D3. Detailed Description (continued):

Long Gulch

Long Gulch Recreation Site, 2018

Long Gulch, on Iron Gate Reservoir's southern shore, has a picnic area used for camping and a boat launch. The picnic area has two steel frame/wood plank picnic tables and two user-defined fire rings. The boat launch has an 80-foot-long, 25-foot-wide two-lane concrete ramp. The site has one portable toilet and two trash receptacles. The undefined gravel parking area at this site can accommodate approximately 16 vehicles.

Mirror Cove

Mirror Cove Recreation Site, 2018

Mirror Cove, on Iron Gate Reservoir's western shore, has a camping area and boat launch. The camping area has ten campsites, with 12 concrete fire rings and eight picnic tables, accessible by a gravel road.

D3. Detailed Description (continued):

The 10- by 16-foot vault restroom building with concrete steps is located across Copco Road. The boat launch has an 80-foot-long, 25-foot-wide concrete ramp with two lanes. Two 30-foot-long, 5-foot-wide composite gangplanks with aluminum frames and pipe railing lead to a 30-foot-long concrete boat dock and abutment with pipe railing adjacent to the boat ramp. There are seven informational signs with concrete bases and the gravel parking area accommodates approximately 20 vehicles.

Overlook Point

Overlook Point Recreation Site, 2018

Overlook Point, on Iron Gate Reservoir's western shore, has one concrete picnic table, one steel frame/wood plank picnic table, and a portable toilet. An 800-foot-long, steep gravel road provides site access for about six vehicles.

Wanaka Spring

Wanaka Spring boat ramp, 2018

D3. Detailed Description (continued):

Wanaka Spring recreation site, located on the northern shore of Iron Gate Reservoir, is a naturally wooded day use and camping site consisting of a small upper use area and a larger lower use area. The upper use area can be accessed by vehicle via a gravel road through the lower use area and has two wood-plank picnic tables, a concrete fire ring, and parking for about two vehicles. The lower use area has a large gravel parking area for about 16 vehicles, three wood-plank picnic tables and one concrete picnic table, two concrete fire rings, and two single-vault restroom buildings. A dirt pedestrian trail connects the upper and lower use areas and provides access to the vault restrooms. The pedestrian trail also provides access to a 25-foot-long, 5-foot-wide wooden dock with concrete pier and pipe railing, 15-foot-long gangplank, and a concrete walkway on the reservoir shoreline. There are three informational signs with concrete bases.

Iron Gate Fish Hatchery

The Iron Gate Fish Hatchery is generally bounded by the Klamath River to the west, Bogus Creek to the south and east, and Lakeview Road to the north. The only hatchery feature outside these boundaries is the settling pond area on the southern side of Bogus Creek. The hatchery contains a hatchery building, raceways, settling ponds, auxiliary fish ladder and trap, office, shop, gas shed, modern shed, picnic and visitor center, and four hatchery worker residences. The auxiliary fish ladder supplements the primary fish ladder that is part of the nearby Iron Gate Dam fisheries facilities. Intake structures at Iron Gate Dam divert cold reservoir water through pipes that supply the hatchery's auxiliary fish ladder and raceways (USBR 2012:22-24). The area southeast of the main hatchery area is accessed by a small bridge over Bogus Creek and appears to be used for outdoor equipment storage.

The hatchery derives its water supply from Iron Gate Reservoir as follows:

> Two subsurface influent points are valve-regulated at a depth of 17 feet and 70 feet to adjust water temperature at the hatchery. Water is gravity-fed from the dam via a 30-inch penstock, reducing to 24 inches, and then passes through an aeration tower. Flows through the hatchery facilities range from 9.4 mgd [million gallons per day] to 34.9 mgd. Additional water is discharged at the spawning facility and the aeration overflow system. No treatment of influent water is performed except for aeration through the tower. Hatchery flow is monitored by PacifiCorp at the Iron Gate Dam control room (ICF Jones & Stokes 2010:A-33).

Features of the hatchery include fish food silos, a gas shed, and small beam bridge across Bogus Creek. The fish food silos, installed in 1966, are four roughly diamond-shaped metal tanks. They are located near the hatchery entrance, just west of the picnic and visitor center. The tanks, numbered 1 through 4, are elevated by metal posts mounted in a poured-concrete pad and stabilized by diagonal metal up-braces. A metal ladder with guard leads to a metal catwalk extending along the tanks' upper sections, and additional access steps to the tank peaks. During 2018 fieldwork, a flatbed truck with IAS Aerospreader 250 Feed Master was used to drive beneath the tank outlets to obtain feed.

The gas shed, built in 1966, is adjacent to the hatchery office's northwestern corner. The small, single-story utilitarian building has a rectangular plan and front-gable roof. Oriented facing northeast and resting on a concrete foundation, the gas shed has corrugated metal roofing and siding. A vehicle/equipment entry with rollup metal door defines the northeastern (primary) elevation. A wood sign with "GAS SHED" in yellow lettering is centered above this entry. The southeast and southwest (rear) elevations lack fenestration and architectural detail. The northwestern elevation contains a metal entry door. Immediately east of the gas shed is a ConVault combined diesel and unleaded fueling station.

The small beam bridge, constructed circa 1966, crosses Bogus Creek just southeast of the main hatchery area. The bridge's timber deck spans approximately 20 feet and has an approximately 10-foot width. The bridge displays concrete abutments and a metal railing installed on an unknown date. Across the bridge, the path west leads to the settling ponds on the creek's southern side. On the riverbank, approximately 400 feet south of the settling pond area, is water quality gauge.

DPR 523A and 523B forms have been completed for the dam, water conveyance system, powerhouse, dam fisheries facilities, support facilities, operator residences, hatchery fish facilities, hatchery administration and operations, and hatchery residences. The resources described below were built at Iron Gate Fish Hatchery after the period of significance and are not documented in DPR 523A and 523B forms.

D3. Detailed Description (continued):

Modern Shed (circa 1995)

A modern shed, built circa 1995, is adjacent to the shop and rests on a concrete foundation. The structure measures approximately 60 feet by 20 feet. Metal posts support the gable roof, which is clad in standing-seam sheet metal. The shed is enclosed on two sides by corrugated metal paneling. The two open sides are partially enclosed by metal fencing. The shed functions as a storage space.

The structure was constructed after the period of significance and is recommended as not eligible/not contributing as an induvial resource or to the Iron Gate Historic District or the Klamath Hydroelectric Project Historic District.

Picnic and Visitor Center (circa 1994)

The Picnic and Visitor Center, built circa 1994, includes a picnic shelter, visitor information building, and public restroom. The estimated construction date is derived from Durio (2003b) and appears consistent with the building design and materials. The picnic shelter, adjacent to the visitor information building, is a wood-frame structure on a poured-concrete foundation. The design consists of a low wall on three sides, and symmetrically spaced square wood posts that support the side-gable roof. The low wall and gable ends are clad in wood sheet. The roofing is standing-seam sheet metal. The shelter houses two concrete picnic benches and is connected to the visitor center by a poured-concrete path.

The visitor information building is a small, wood-frame building with an octagonal design. The building is oriented facing southeast, and rests on an octagonal-shaped poured-concrete foundation. The only fenestration is a wooden pedestrian door with a diamond-shaped pane arrangement on the upper panel, and an “X” design in the lower panel. The building is clad in shiplap wood siding and wood corner boards. The pavilion roof displays moderately overhanging eaves. Roofing consists of asphalt shingles. A metal weathervane with a salmon motif is mounted on the roof peak. The wooden “VISITOR INFORMATION” sign with yellow lettering hangs beneath the eaves to the north of the entrance, and another mounted sign beneath it provides visitor guidelines. The visitor center includes a public restroom building. This small, modern restroom is located about 100 feet east of the visitor information building. Oriented facing northwest, the single-story building has a gable roof, composite wood siding, and fixed windows.

The Picnic and Visitor center were constructed after the period of significance and are recommended as not eligible/not contributing as induvial resources or to the Iron Gate Historic District or the Klamath Hydroelectric Project Historic District.

Other, small auxiliary features of the hydroelectric development are the modular office and storage shed grouped adjacent to a portable toilet near the western side of the dam base. The modular office, which has an unknown built date, is mounted on two wheels. It has a shed roof, corrugated metal siding, two metal doors, and vinyl slider windows. The storage shed has a shed roof, T1-11 siding, and centered double doors. The modular office and storage shed appear to be modern structures and are recommended as not eligible/not contributing as individual resources or to the Iron Gate Historic District or the Klamath Hydroelectric Project Historic District.

D6. Significance (continued):

Period of Significance

As a part of its FERC relicensing application in 2003, PacifiCorp, the current owners and operators of the Klamath Hydroelectric Project,[1] recognized the KHP as an NRHP-eligible historic district for its significant association with the industrial and economic development of Southern Oregon and Northern California (Kramer 2003a, 2003b). To support this recognition, PacifiCorp completed a historic context statement for the KHP that provided background information as a prelude to conducting a review of potential historic significance under NHPA Section 106 and as well as a Request for Determination of Eligibility report for the KHP (Kramer 2003a; Kramer 2003b). PacifiCorp offered recommendations as to whether these "complexes" and their resources were eligible for the NRHP and defined the period of historic significance for the KHP as 1903–1958 and hired CH2M Hill in September 2003 to complete California and Oregon survey inventory forms that documented the overall KHP District and the seven hydroelectric developments using the numbering the numbering convention and evaluation established in the Request for Determination of Eligibility (Durio 2003a; Durio 2003b) (see attached Oregon Inventory of Historic Properties Section 106 Documentation Form and State of California Department of Parks and Recreation [DPR] 523 form). On March 16, 2004, the Oregon SHPO agreed with PacifiCorp's determinations of eligibility within the State of Oregon for resources that would be affected by the proposed FERC relicensing (OR SHPO 2004). The SHPO concurrence, therefore, solely included the Link River Complex, Keno Dam Complex, and the J.C. Boyle Complex. The CA SHPO never provided comments on the eligibility of resources in California, but the KHP historic district, as well as the four historic districts within its boundaries in California and their contributing resources, are presently identified by the KHP's DPR primary number (47-004015), which was assigned by the California SHPO in 2003. In addition, the California SHPO has assigned individual primary numbers to the Copco No. 1 Powerhouse (47-002267), Copco No. 1 guest house remains (CA-SIS-2824), and Copco No. 2 Powerhouse (47-002266).

With respect to the current Project the Copco No. 1, Copco No. 2, and J.C. Boyle complexes, along with most of their primary components, were identified as contributing to the eligible KHP historic district. In contrast, Iron Gate Complex and its constituent resources (1962) and the Iron Gate fish hatchery (1966) were recommended as non-historic and non-contributing. The Oregon SHPO concurred with the eligibility determinations related to J.C. Boyle complex (OR SHPO 2004). The California SHPO did not provide concurrence for the eligibility determinations related to Copco No. 1, Copco No. 2, and the Iron Gate complexes, or for the Fall Creek hatchery, which was included in the evaluations of Fall Creek hydroelectric development. As part of a separate project to alter the crest of the Iron Gate Dam in 2003, PacifiCorp determined that the Iron Gate Complex was not eligible for the NRHP as it had yet to attain 50 years of age and was not of exceptional importance. The California SHPO agreed with that determination on May 28, 2003 (CA SHPO 2003).

The previously proposed period of significance ends in 1958. Kramer reasoned that, based on the National Park Service's "50-year rule" for historic-era properties, the 2006 FERC license renewal for the Klamath Hydroelectric Project would typically invoke 1956 as the period's closing date. The 1956 date would encompass "all the main generation resources built prior to World War II [Copco No. 1 and Copco No. 2] and defin[e] both the J.C. Boyle and Iron Gate developments, dated from 1958 and 1962, respectively, as non-historic" (Kramer 2003a:57). Consequently, Kramer proposed extending the period of significance end date two years beyond the "50-year rule" to encompass construction of the J.C. Boyle hydroelectric development and reflect important post-war project development (Kramer 2003a:57-58). Although the 1958 end date included J.C. Boyle within the period of significance, it excluded the Iron Gate hydroelectric development, completed in 1962.

Now that 17 years have elapsed since the 2003 surveys, AECOM recommends extending the KHP's period of significance end date to 1970. This would encompass significant system evolution that occurred during the decade following Copco's 1961 acquisition by Pacific Power and Light Company. Significant projects of this period include the Iron Gate hydroelectric development (1962), which was part of the original Klamath hydroelectric project survey in the early twentieth century, and the Iron Gate fish hatchery (1966). The year 1970 also marks completion of the construction program that Pacific Power undertook after acquiring Copco to modernize its power transmission facilities and integrate them with the existing Copco system (1961-1970). This system evolution reflects how the long-term vision of the Klamath Hydroelectric Project's original engineers had finally come to fruition.

[1] The Link River Dam is owned by the USBR and is not included in the Klamath project license. However, Kramer identifies the dam as part of the Klamath hydroelectric system (Kramer 2003a:36).

D6. Significance (continued):

Additionally, PacifiCorp's 2003 studies were based on a survey of the hydroelectric development resources that had the potential to be affected by the FERC relicensing at that time and excluded non-hydroelectric resources, such as bridges and residences outside of the KHP development but within the current Project Area of Direct Impact (ADI). The study also omitted transmission lines originating within the hydroelectric developments and some of the associated power substations within this project's Area of Direct Impact (ADI).

Klamath River Renewal Corporation (KRRC) proposes to remove four hydroelectric developments: Copco No. 1, Copco No. 2, Iron Gate, and J.C. Boyle. Because more than five years has elapsed since these hydroelectric developments were recorded, this form updates the descriptions and photographs of the hydroelectric resources at the three California hydroelectric developments (Copco No.1, Copco No. 2, and Iron Gate) and evaluates each as an individual historic district, reevaluates each as a contributor to the larger KHP Historic District, as well as reevaluate the NRHP eligibility evaluation of the Iron Gate hydroelectric development since it is now over 50-years of age and falls with AECOM's expanded period of significance for the KHP Historic District (1903-1970).

Historic Context

The Klamath Hydroelectric Project

Iron Gate is part of the Klamath Hydroelectric Project (KHP). The KHP consists of seven hydroelectric generation developments and their associated resources along the Klamath River and its tributaries in Klamath County, Oregon and Siskiyou County, California: (1) J.C. Boyle (1958), (2) Copco No. 1 (1912-1918, 1922), (3) Copco No. 2 (1924-1925), (4) Iron Gate (1960-1962), (5) Link River (1921), (6) Keno (1966), and (7) Fall Creek (1903). [The Link River Dam is owned by the USBR and is not included in the Klamath project license. However, Kramer identified the dam as part of the Klamath hydroelectric system (Kramer 2003a:36)]. The KHP integrated groups of hydroelectric elements—dams, powerhouses, water conveyance systems—into a layered landscape of pre-contact occupation and historic land use. Sites of pre-contact occupation were associated with Native American customs and culture, subsistence and recreational fishing, as well as sites of early European-American industries such as ranching, mining, and logging. KHP construction geographically and temporally overlapped with these types of sites and activities, causing significant impacts to the land and its peoples.

Origins of the Klamath Hydroelectric Project

Development of hydroelectric plants in the Klamath Basin began in 1891 in Shasta River Canyon to provide electricity to the City of Yreka. In 1895, another facility was constructed along the Link River to supply power to Klamath Falls, Oregon. The authorization of the USBR's Klamath Project in 1905 triggered additional hydrologic changes to the Klamath River and led to the construction of Link River Dam by California Oregon Power Company (now PacifiCorp) in 1921, as well as several hundred miles of irrigation ditches and canals that diverted water from the Klamath River and its wetlands to convert land for agricultural use (USBR and CDFG 2012:3.6-7). As the largest water management effort in the Upper Klamath Basin, the USBR's Klamath Project features a vast system of reservoirs, dams, canals, and pumps. Development and construction of these features occurred between 1905 and 1966, with most major facilities completed by the early 1940s (USBR and CDFG 2012:1-12).

The USBR originally designed the Klamath Project to irrigate agricultural lands in the Upper Klamath Basin. Upper Klamath Lake and storage impounded by Link River Dam became the principal water sources enabling the Klamath Project to deliver water upriver of the hydroelectric developments (Kramer 2003b:21). Hydroelectric development in the Klamath Basin began in 1891 to supply electricity to Yreka, California, the Siskiyou County seat. Four years later, the Klamath Falls Light and Water Company built the East Side Power Plant No. 1. The power plant was on the Link River's eastern bank, within the city limits of Klamath Falls, Oregon. The plant supplied the city with its first electric power on November 1, 1895 (Boyle 1976:27). These ventures soon attracted competitors. The California Oregon Power Company (Copco) formed in 1912 through the merger of the Siskiyou Electric Power and Light Company (SEP&L), Klamath Falls Light and Water Company, and Rogue River Electric Company. The newly created company acquired the assets of the predecessor companies, including the hydroelectric facilities at Fall Creek which SEP&L had operated since its completion in 1903 (Kramer 2003b:12). In 1920, eight years after Copco formed, the company acquired the Keno Power Company, which operated the Keno hydroelectric development, built in 1911 (Kramer 2003b:5).

D6. Significance (continued):

Copco Through World War II (1912-1945)

Copco's first construction project was the Copco No. 1 hydroelectric development, previously surveyed by the SEP&L, and known initially as the Ward's Canyon Dam Project. As construction progressed on Copco No. 1, the company's existing facilities were powering major regional industries, including nearly all the large Northern California lumber mills and several large mining dredgers (*Sacramento Bee* 1917). Copco completed the first phase of Copco No. 1 in 1918, including the dam, water conveyance system, and powerhouse. In 1920, the company reorganized, becoming the California – Oregon Power Company (with hyphen), and moved its headquarters from San Francisco to Medford. In 1922, the company completed Copco No. 1 by raising the dam, expanding the powerhouse, and adding a new generating unit. Three years later, in 1925, the company completed the Copco No. 2 hydroelectric development, downstream from Copco No. 1.

Between 1926 and 1947, the company was owned and operated by Standard Gas and Electric Company. Ownership was acquired through purchase of Copco's outstanding common stock. In 1947, to comply with provisions of the Public Utility Act of 1935, Standard Gas and Electric sold its Copco interests to an investment banking group, which made a public offering of the acquired shares (*Mail Tribune* 1960). During the late 1920s and 1930s, after completion of Copco No. 1 and Copco No. 2, Copco continued investigating the regional power potential of the Klamath, Rogue, and Umpqua River basins (Boyle 1962). Throughout that period, Copco made progress on the Prospect hydroelectric project, located along the Rogue River in Jackson County, Oregon. Prospect's fourth and final powerhouse was completed in 1944 (Gauntt 2012).

The Post-World War II Era Through the Pacific Power Acquisition (1946-1960)

In the years following World War II, growth in population and expansion in industry spiked regional demand for electricity. In response, Copco completed its first post-war project, the North Umpqua project, between 1947 and 1957. Led by chief engineer John C. Boyle, Copco doubled the company's capacity by building eight interconnected plants along the North Umpqua River east of Roseburg, Oregon: Clearwater No. 1 and No. 2, Fish Creek, Lemolo No. 1 and No. 2, Slide Creek, Soda Springs, and Toketee (McCready 1950). Meanwhile, the number of Copco customers grew from about 40,000 to about 90,000 (*Mail Tribune* 1959). By 1950, well before completion of the project, Boyle and other Copco officials recognized that increased regional population and power demand would outpace power supply, requiring new projects for future Copco customers (McCready 1950).

Seeking to develop additional power facilities, Copco began to reassess the Klamath River's power generation potential, reigniting conflict over Klamath Basin irrigation and water rights, as well as fishing and recreational interests (Kramer 2003b:30-31). Despite strong regional opposition to additional Klamath River dams, Copco officials still regarded the Klamath as the best location for power development. In *50 Years on the Klamath*, Boyle wrote that, "Klamath Canyon was most attractive, being near the Copco load center where construction cost and transmission lines would be minimum [*sic*]" (Boyle 1976:53). During the 1950s, Copco advanced a 10-year, $70 million power development plan in the Klamath Basin. In addition to Big Bend No. 1 and No. 2 hydroelectric developments, the plan included Iron Gate, completed by Pacific Power in 1962. The other planned facilities at Salt Caves, Aspen Lake, Keno, Big Bend No. 3, Warm Springs, and Round Lake were never built (Guernsey 1957; Wynne 1957). Big Bend No. 1 and No. 2 were the first of these proposed projects (Wynne 1958).

The Big Bend development (renamed in 1962 after John C. Boyle) was part of the original Klamath hydroelectric project survey in 1911; however, plans for constructing Big Bend were not completed until the 1950s, as power demands soared (Kramer 2003b:30-31). In 1958, when Big Bend began operations, Copco's residential customers had the highest average annual usage of any private utility nationwide. The service area contained about 50,000 square miles in 72 communities and adjacent rural areas in Klamath, Jackson, Josephine, Lake, and Douglas counties in Oregon, and in Siskiyou, Modoc, Del Norte, Trinity, and Shasta counties in California. At that time, the population was approaching 250,000 and the regional economy was still based on logging, farming, ranching, and mining; industries with a long local history (*Mail Tribune* 1959).

Pacific Power Expansion Phase (1961-1970)

Pacific Power's June 1961 acquisition of Copco led to significant changes in regional hydroelectric power generation and transmission. After the acquisition, Pacific Power initiated a $500 million construction program spanning from 1961 to 1970. The program's goal was to integrate the two companies' systems, enhance power delivery to service areas, and accommodate workers involved in the expanded operations (Pacific Power 1961a:1).

D6. Significance (continued):

When Pacific Power acquired Copco, the two companies were supplying power to 415,000 customers. Pacific Power earned about 60 percent of its revenue in Oregon, and the rest in Washington, Idaho, Western Montana, and Wyoming. Copco earned about 80 percent of its revenue in Southern Oregon (71,000 customers), including Medford, Grants Pass, Roseburg, Klamath Falls, and Lakeview. Copco did the remaining 20 percent of its business in Northern California (21,000 customers), including Tulelake, Yreka, Weed, Dunsmuir, Alturas, and Crescent City (*San Mateo Times* 1960; *Bend Bulletin* 1960).

Pacific Power and Copco deemed consolidation necessary to generate sufficient funds for the expensive construction program. According to *The Bend Bulletin*, both companies spent a combined $243 million on new construction between 1955 and 1960, and "estimated they will be required to do more than $500 million between 1961 and 1970 to meet power needs" (*Bend Bulletin* 1960). Additionally, Pacific Power advised its shareholders in a pamphlet dated January 10, 1961 that the consolidated system with Copco would create an "enlarged operating and financial base" to enable future construction (Pacific Power 1961a:2). When Copco president A.S. Cummins and Pacific Power board chairman Paul B. McKee jointly announced the merger, they stated that "directors of the companies have reached the conclusion that it is in the best interest of all concerned to join together the two neighboring systems and integrate their power resources and development programs" (*Bend Bulletin* 1960).

As part of Pacific Power's 1961-1970 construction program, the company built new, or improved existing, power facilities such as transmission lines and substations, some at former Copco sites. Some work was related to construction of the Iron Gate Development, which was well under way by 1961 (Pacific Power 1961b:2). For instance, to power construction activities at Iron Gate, Pacific Power erected a temporary switchyard at the Copco No. 2 substation. Iron Gate received power transmitted from the Copco No. 2 powerhouse through the temporary switchyard and (transmission) Line No. 62.

As Pacific Power's construction program proceeded, officials monitored the existing developments and continued planning for future improvements. Progress was interrupted by historic flooding along the Klamath River in December 1964 that caused severe damage to the Copco No. 1 and Iron Gate facilities which required Rebuilding the Copco No. 1 Powerhouse and Iron Gate spillway channel. In September 1967, company officials, including the Copco division manager, met in Yreka, California to evaluate system operations, review 1967 construction progress, and plan projects for 1968. Construction work in 1967 was estimated at over $500,000 and was implemented to build new power facilities and expand services (*Sacramento Bee* 1967). Projects in 1968 included $50,000 worth of upgrades at Copco No. 2 substation, including three new 69-kV transformers and a new circuit breaker to increase the available power in anticipation of increased local growth and power demands at the Copco No. 2 development (*Sacramento Bee* 1968a). In 1970, Pacific Power budgeted around $926,000 for planned expansions and improvements in the Yreka District. One of the primary projects was a 10-mile, $297,000 transmission line between Ager and Copco No. 2. At Iron Gate, Pacific Power budgeted $45,000 to improve recreation facilities such as construction of a public boat ramp below Iron Gate Dam and installation of electric and water service at Camp Creek (*Sacramento Bee* 1970). During the 1960s, Pacific Power also built new single- and multi-family housing and a school to accommodate workers and their families based at Copco No. 2 (*Sacramento Bee* 1968b).

The reservoirs created by the Copco No. 1, J.C. Boyle, and Iron Gate hydroelectric developments are used by the public for outdoor recreation, such as fishing, camping, birdwatching, and hiking. Campgrounds and boat docks are scattered along the reservoir shorelines.

Conservation and Fish Management in the Klamath River Basin

Fish conservation along the Pacific coast has historically involved intensive efforts towards artificial propagation. Fall Creek Hatchery was built for propagation of salmon, primarily Chinook, and steelhead rainbow trout. Salmon and steelhead are anadromous, returning from the ocean to freshwater for spawning. Successful hatchery operations require extensive knowledge of fish species' life cycles and migration patterns. Knowledge of the Chinook salmon lifecycle, detailed below, was crucial to Fall Creek Hatchery operations.

Chinook salmon begin their lives as eggs laid in a freshwater gravel nest. The eggs remain in the nests through winter and hatch in spring as alevins, tiny fish with a yolk sac attached to their bellies. After a few months, the alevins completely consume the yolk sac and emerge from the nest as fry. The fry spend about 5 months in the stream until smolting begins, meaning the fish turn silvery and begin migratation downstream towards the ocean. Chinook salmon may spend up to 8 years in the ocean before returning to their natal streams to spawn. When adult salmon reach these streams, they build nests in gravel where eggs are fertilized. During the early twentieth century, salmon eggs

D6. Significance (continued):

used for artificial propagation were harvested from fish on their way upstream to natural spawning grounds. The salmon were caught in racks built across rivers and streams, or in traps (Cobb 1930:634). For many years, standard practice was to plant the fry in natural waterways as soon as they absorbed their yolk sacs, about 30 days after hatching (Cobb 1930:635). Fish experts recognized that planting immature fry, which were weak and slow, made them susceptible to predatory birds and fish. Robert Deniston Hume, a late nineteenth-century pioneer in salmon conservation, built hatcheries along Oregon's Rogue River and became the first to rear salmon beyond the fry stage (Cobb 1930:636). The Fall Creek Fish Hatchery was built after Hume's philosophy on rearing fry became standard hatchery practice.

Fish Husbandry and Hatcheries

The Fall Creek hatchery was part of California's early statewide hatchery system, established to increase fishery populations. The hatchery implemented fish husbandry through artificial propagation and fish-rearing practices to further these goals. The ancient practice of fish husbandry was documented as early as the fifth century B.C.E. with carp farming in China. The use of earthen ponds to contain carp eventually spread throughout Europe and the Mediterranean and was later adapted for other fish species. Fish husbandry became prominent in France during the nineteenth century. Drawing from leading research on fish cultivation in France, *A Complete Treatise of Artificial Fish Breeding* was published in 1854, and the findings and practices were adopted in the United States (Bohner 2018:15).

Scientific study of aquaculture in the United States dates to the early nineteenth century's Conservation Movement. Borrowing from century-old European practices, the first North American fish hatchery was established in Mumford, New York, in 1864, and the first anadromous hatchery was built in Newcastle, Ontario, Canada, in 1866 for rearing Atlantic salmon (Wahle and Smith 1979:2). In the following decades, the development of private hatcheries and public fish commissions increased. While the growing fishing industry depleted fish populations, the technological advancements in the field of aquaculture supported the illusion of an inexhaustible fish population. To avoid restricting and regulating fishing practices, governments promoted artificial fish production to meet demand (Bohner 2018:3-6). Hatcheries along the Pacific coast were initially built to transplant Pacific salmon into East Coast waters and later evolved into a system for increasing salmon runs in Pacific streams by rearing and releasing the fish in their natural habitats (Wahle and Smith 1979:3).

In 1937, the U.S. Commissioner of Fisheries promoted an "adaptive management" approach to sustain fish populations (Bohner 2018:15). The following year Congress enacted the Mitchell Act of 1938, which authorized the development of hatcheries, fish ladders, irrigation screens, habitat restoration, and scientific studies. Later, in conjunction with passage of the 1945 Rivers and Harbors Act, a new period of dam construction began that involved building new hatcheries. New technologies advanced artificial propagation of fish populations after World War II including chemicals to treat diseases, introduction of artificial food, modern fish transportation methods, and labor-saving devices such as fish loaders, self-graders, and incubators increased the efficiency of operations. Advances in transportation facilitated movement of fish in varying developmental stages and led to expanded stocking and inter-hatchery systemization. The introduction of artificial pelleted food enhanced fish health and growth and negated the need for cold storage and on-site food processing (Bohner 2018:17).

Early Fish Management Legislation and Practices in California

Early fish management legislation in the State of California is relevant to the Fall Creek hatchery operations, because the hatchery is located in California and its eggs were sourced from collecting stations in the California section of the Klamath River. After California was admitted to the Union in 1850, the state promptly implemented legislation to protect fish habitat. In April 1852, the state criminalized instream obstructions to salmon migration in what became known as the 1852 Salmon Act; however, the Act exempted mining, milling, and agricultural dams and did not impose minimum downstream flow requirements (Bork et al. 2012:817). California remained at the vanguard of fish and wildlife conservation by establishing the nation's first wildlife conservation commission through the 1870 Law for the Preservation of Fish Act (*Marin County Journal* 1870). Appointed by the governor, the Board of Commissioners of Fisheries used appropriations to advance the restoration and preservation of California's fish (Leitritz 1970:8-9).

The Klamath Basin's first salmon hatchery operated from 1889 to 1898 at Fort Gaston, California on the Hoopa Reservation. Hatchery crew members raised Chinook salmon eggs harvested from Redwood Creek and the Sacramento River(KRBFTF 1991). Through the 1910s and 1920s, state and federal governments continued building hatcheries on the Klamath, Sacramento, Eel, Russian, and Mad rivers in Northern California. Juvenile fish reared at these hatcheries, primarily fall Chinook salmon, were planted throughout the Klamath and Sacramento River

D6. Significance (continued):

drainages and northern coastal streams. In 1914, California state and federal fish facilities instituted the system of Oregon's Robert D. Hume by rearing juvenile salmon to the fingerling stage (Wahle and Smith 1979:22).

During the 1950s, before the construction of Iron Gate Dam, the CDFG initiated a program to manage fisheries along the Klamath River. The program involved the removal of abandoned mining dams and log jams to open up 200 miles of "excellent spawning and nursery streams" (Saldana 1969). To prevent fingerlings being diverted to irrigation ditches, the department worked with local ranchers to install fish screens in irrigation diversions. Fish traps were also placed in heavily diverted streams. In 1965, the *Los Angeles Times* reported that an estimated 1.5 million salmon and steelhead were "salvaged by these ingenious devices" (Saldana 1968).

In 1976, California had 13 hatcheries rearing fall Chinook salmon, coho salmon, and winter steelhead trout. One was federal, ten were state, and two were private, with nearly half of them operating along the Sacramento River (Wahle and Smith 1979:22). One of them included the Iron Gate Fish Hatchery in Siskiyou County built by Copco successor Pacific Power in 1966 (Wahle and Smith 1979:22).

Fish Management Practices on the Klamath River: Fish Ladders, Egg Collecting Stations, and Hatcheries

This section provides historical information regarding historical fish ladders, egg collecting stations, and hatcheries.

Fish Ladders

J.C. Boyle Dam and Fish Ladder (1958)

The J.C. Boyle fish ladder was integrated into construction of the J.C. Boyle Dam. The fish ladder permits upstream fish, primarily river trout, to rise approximately 60 feet to pass through the dam, while the dam's four rotating fish screens collect fish and divert them downstream through a fish screen bypass pipe (USBR 2012:16-18). The J.C. Boyle fish ladder does not accommodate salmon, which cannot surmount the other downstream dams. The J.C. Boyle fish ladder has not been modified since its original construction.

Egg Collecting Stations

The Fall Creek Fish Hatchery operated in conjunction with several downstream Klamath River egg collecting stations. During the period of significance, Fall Creek Fish Hatchery received salmon and steelhead trout eggs harvested at the nearby Cottonwood Creek [Hornbrook], Klamathon, and Bogus Creek/Camp Creek egg collecting stations. Fall Creek Fish Hatchery obtained salmon eggs from the Klamathon station until the station closed in 1940 and received steelhead eggs from the Cottonwood Creek and Bogus Creek/Camp Creek stations (CDFW 2018; CFGC 1921:27).

Fish Hatcheries

Hatcheries were employed where other provisions for fish passage, such as fish ladders , would be inadequate. In addition to the Fall Creek hatchery, three other historic state-run hatcheries have been established along the Upper Klamath River including the Spencer Creek hatchery in Oregon and the Klamath River experimental hatchery and Iron Gate hatchery in California. Only the Iron Gate hatchery is discussed below because the other two facilities no longer remain.

There may have been other small, historic hatchery operations along the Upper Klamath that have not been documented by the California Department of Fish and Wildlife (CDFW) or its predecessors. Additionally, some egg collecting stations such as Cottonwood Creek engaged in hatchery activities as a function secondary to egg collection and/or on a temporary basis.

Fall Creek Hatchery (California) (1919-1949, 1979-2003)

From opening season in 1919 to the official closure in 1949, Fall Creek Hatchery was central to salmon and trout propagation in the Klamath Basin. Although the CDFG continued egg taking at Fall Creek after the 1949 closure, it discontinued planting Fall Creek fingerlings in the Klamath River (Fortune et al. 1966:26). In 1979, three decades after its original closure, the State of California reopened Fall Creek Hatchery. From its second opening in 1979 to the latest closure in 2003, the CDFG regularly raised Chinook salmon in the hatchery's six remaining raceways and released the fingerlings downstream at Iron Gate Hatchery (CDFW 2019). During this period, Fall Creek Hatchery was used as both a fish-rearing facility and a research venue focused on conservation.

See Fall Creek Hatchery DPR 523A and 523D forms for a more detailed hatchery history.

D6. Significance (continued):

Iron Gate Hydroelectric Development

The Iron Gate hydroelectric development was part of the original Klamath hydroelectric project plan. Copco completed initial surveys for Iron Gate in the late 1920s and early 1930s. Around 1932, Copco submitted applications to the FPC (now FERC, the Federal Energy Regulatory Commission) to develop the Iron Gate site. The applications triggered disputes related to water rights, interstate rights, and other procedural hurdles, which postponed the project (Boyle 1976:51). Copco reinitiated efforts to advance the Iron Gate development in 1956 by submitting a water use

application to the State of California. The next year, Copco applied to the FPC for a license to construct the first stage of Iron Gate—an arch dam. To satisfy state and federal regulations related to issues such as river flows, water releases, and fish facilities, the company revised its plans and decided to build the project in only one stage. This included power and fish facilities, and a rock-fill rather than arch dam. The FPC approved the license in March 1961, although construction of site access roads and other work had already begun. Several months later, after Pacific Power acquired Copco, the FPC transferred the license and extended the project completion deadline from December 31, 1961 to January 31, 1962 (Boyle 1976:55-56; Pacific Power 1962:3).

Construction and Dedication of Iron Gate

John C. Boyle, Pacific Power vice president and engineer, supervised design and construction of Iron Gate (*Mail Tribune* 1962b). The *Herald and News* characterized the completion of Iron Gate as "another personal triumph for John Boyle, PPL [Pacific Power] vice president and designer of Iron Gate, who has been the guiding force behind development of the [Klamath River] canyon. Boyle has been on hand for the planning and construction of virtually all the development in the area by Copco" (*Herald and News* 1962a).

Morrison-Knudsen, Inc. began construction on Iron Gate in April 1960 under a contract with Copco executed prior to the merger with Pacific Power. After the merger, construction proceeded as a Pacific Power project (Morrison-Knudsen 1961:10). Iron Gate was Morrison-Knudsen's sixth project for Copco within the past decade (Morrison Knudsen 1961:11). Morrison-Knudsen constructed permanent and temporary roads for access to construction areas and sites and also rebuilt county road sections expected to be inundated by the Iron Gate Reservoir (Pacific Power 1962:4,13). Nearly 9 miles of County Road 9KO2 was relocated; and on project completion, road ownership and maintenance transferred to Siskiyou County (Iron Gate circa 1962; Pacific Power 1962:2). Road relocation included a new wooden bridge with concrete footings and abutments over Jenny Creek. The company paid for the road and bridge construction, which was completed "in accordance with the specifications and standards furnished by Siskiyou County" (Pacific Power 1962:13). In December 1960, an access road to the top of the dam's left abutment was completed (Pacific Power 1962: Schedule No. 4, Sheet 2 of 5). In April 1961, the relocated county road around the reservoir was mostly completed (Pacific Power 1962: Schedule No. 4, Sheet 2 of 5).

Pacific Power finalized Iron Gate's plans and specifications, while Pioneer Service & Engineering Company of Chicago developed the structural design. Work crews contracted by Morrison-Knudsen Company of Boise, Idaho, built the diversion tunnel, dam, penstock foundations, powerhouse structure, dam fish facilities, and internal roads (Pacific Power 1962:15). Although construction camps for housing workers were used during Copco No. 1 and No. 2 construction, Pacific Power deemed such camps unnecessary due to the proximity of the Hornbrook community 10 miles to the west, and the City of Yreka 25 miles to the southwest. During November 1961, the total number of supervisors, engineers, and construction workers at the Iron Gate site reached a high of 264 (Pacific Power 1962:15). The company contracted with Southern Pacific Railroad for use of railroad right-of-way in Hornbrook to unload and store equipment. During the construction phase, Pacific Power erected three office trailers, a soils laboratory, a warehouse trailer, two small warehouse buildings, and two fuel tanks at the dam site (Pacific Power 1962:14). The trailers are visible in a February 1962 photograph, near the restroom building's current site, but were later removed (*Herald and News* 1962b). Pacific Power's plan for Iron Gate also included two operator residences, which were later built between the spillway outlet and Lakeview Road Bridge, on the Klamath River's northern bank (Pacific Power 1962:14).

The hydroelectric development's rockfill dam was built using 1.1 million cubic yards of fill materials and measured 173 feet high, with a 685-foot crest length, and a base thickness of 1,000 feet (Morrison Knudsen 1961:10). One of the dam's distinctive features was the fish facilities constructed at the embankment toe (Morrison Knudsen 1961:11). The fish facilities, consisting primarily of a fish ladder, spawning building, and holding tanks functioned in conjunction with

D6. Significance (continued):

the Iron Gate Fish Hatchery were completed in 1966.

Pacific Power began filling the reservoir in November 1961 after engineers installed part of a concrete plug into the 16-foot-diameter tunnel that diverted the river around the construction site. Dedicated on February 3, 1962, Iron Gate cost an estimated $7.5 million (Boyle 1976:55-56; *Herald and News* 1961a). On dedication day, about 2,500 visitors arrived by automobile and chartered buses to tour the facility**.**

Pacific Power guides. Dignitaries in attendance included California State Senator Randolph Collier, Klamath Falls Mayor Robert Veatch, *Herald and News* publisher William Sweetland, Pacific Power board members and employees, and Morrison-Knudsen company officers. In addition to tours, visitors enjoyed a barbeque luncheon in a large tent with photographic displays of Pacific Power's Klamath hydroelectric facilities (*Herald and News* 1962b). Pacific Power's board of directors vice chair, Glenn Jackson, was master of ceremonies; Senator Collier delivered the dedication address; and the Yreka High School band performed (*Mail Tribune* 1962a). John C. Boyle, Pacific Power vice president and Iron Gate designer, attended with his family (PacifiCorp archive image IG-317).

Within three years after Iron Gate was dedicated, historic Klamath River flooding caused severe damage to the new hydro-development and other developments in the region. In December 1964, the river's "heaviest recorded runoff in history interrupted power flow" at Iron Gate (Mail Tribune 1964). The flood waters tore away a section of the spillway and flooded the powerhouse interior and dam fish facilities (Mail Tribune 1964).

Iron Gate Dam Fish Facilities and Hatchery (1962, 1966)

Iron Gate Fish Hatchery was completed in 1966 after the FPC, FERC's predecessor, directed Pacific Power to design and construct a hatchery to operate in conjunction with existing fish facilities at the base of Iron Gate Dam (Merriman 1974). After completion, the hatchery became California's most prolific hatchery for anadromous fish (Merriman 1974).

Pacific Power fish biologist Charles Jack Hanel designed the Iron Gate Fish Hatchery to comply with CDFG and USFWS standards (Merriman 1974). Hanel (1921-2002) was born in Grants Pass, Oregon. His family later moved to Ashland, where he attended high school. He studied at Oregon State College (now Oregon State University) until enlisting in the U.S. Navy for World War II service. In 1949, he graduated with a Bachelor of Science from the Oregon State College School of Agriculture and worked for the U.S. Fish and Wildlife Service during the early 1950s (Oregon State College 1949; The Oregon Stater 1950). Hanel became an employee at Copco in 1953, making him one of the nation's first biologists to be hired by a public utility firm (Guernsey 1976). He retired from Copco's successor company, Pacific Power, in 1987. For his design of Iron Gate Fish Hatchery, Hanel was named Waltonian of the Year by the Oregon chapter of the Izaak Walton League, a national conservation organization (*Mail Tribune* 2002).

In the November 1965 issue of its monthly magazine, Morrison-Knudsen summarized construction on the fish hatchery to date: "The new fish-rearing facilities, located one mile downstream from the [Iron Gate] dam, were begun in September [1965] and are scheduled for completion in February of next year [1966]. They include four 22x400-foot concrete-lined rearing ponds and six accompanying buildings . . ." (Morrison-Knudsen 1965:10). On March 22, 1966, the hatchery was completed and Pacific Power held an on-site ceremony to mark transfer of hatchery operations to the CDFG (*Humboldt Standard* 1966). The CDFW still manages hatchery operations (the CDFW was the CDFG until 2013). PacifiCorp, the successor to Pacific Power, funds hatchery operations and maintenance.

Iron Gate Fish Hatchery has been the site of innovations related to fish science. In 1969, CDFG fish biologists working at Iron Gate developed a new technique for retrieving eggs from spawning steelhead without harming the adult female: after tranquilizing the fish in a tank, a small stream of air discharged from a syringe into the female fish causes eggs to be released that can be captured in a container (*Sacramento Bee* 1969). Following the implementation of this technique, Pacific Power, the CDFG, and the Oregon State Game Commission (OSGC) embarked on a joint venture to study the feasibility of establishing a steelhead sport fishery above Copco No. 1 Dam (*Sacramento Bee* 1970). The 3-year study plan involved rearing 100,000 steelhead annually at Iron Gate Fish Hatchery, marking and releasing them below the hatchery, and trapping returning adults at Iron Gate (*Sacramento Bee* 1967). After the adult steelhead were trapped, CDFG transported them by customized OSGC tank truck 27 miles to a section of the Klamath River at the California–Oregon border (*Sacramento Bee* 1969). In December 1970, as a result of the study, steelhead appeared above Copco No. 1(*Sacramento Bee* 1970).

Although the CDFW operates 21 hatcheries throughout the state, Iron Gate Fish Hatchery is Siskiyou County's only CDFW salmon and steelhead hatchery. It is also the state's northernmost hatchery, and the only one located along the Klamath River. The hatchery continues in its original function, operated by the CDFW since it opened. Fish

D6. Significance (continued):

management activities continue at the hatchery and hatchery workers still occupy the sub-district's four on-site residences.

Iron Gate Recreation Sites (1960s forward)

During the 1960s, the combination of factors such as population growth, rising incomes, and greater leisure time led to increasing demands for recreational areas such as parks and picnic grounds. Utility companies in the west, which had vast holdings, were under increasing pressure to open their lands to the public (Kenneth R. Anderson and Company 1960:3-7). After completion of Iron Gate, Pacific Power set aside land for recreation around the newly inundated Iron Gate Reservoir. The eight recreation sites along the shores of Iron Gate Reservoir are characterized by day-use and camping areas that provide fishing and boating opportunities.

Evaluation: Eligible Historic District/Contributes to Klamath Hydroelectric Project Historic District

Period of Significance (Iron Gate Historic District): 1962 – 1970

Iron Gate's period of significance begins when dam construction was completed in 1962 and ends in 1970, when Pacific Power completed the construction program designed to modernize its power transmission facilities and integrate them with the existing Copco system.

Criteria Analysis

NRHP Criterion A
Iron Gate, completed by Pacific Power as the final hydroelectric development on the Klamath River, contributes to the KHP Historic District. The KHP is locally (regionally) significant under NRHP Criterion A in the areas of **Commerce**, for its role in the development of electrical generation and transmission services in the Southern Oregon – Northern California region, and in the area of **Industry**, for the role that development played in the region's economic expansion (Industry) (Kramer 2003b). Iron Gate's primary significance under NRHP Criterion A is in the area of **Conservation** for its fish conservation efforts.

NRHP Criterion B
Research does not indicate that Iron Gate is associated with any historically significant individuals under NRHP Criterion B. Iron Gate was designed by master hydro-engineer John C. Boyle; however, Boyle's significant association with Iron Gate is more appropriately analyzed under NRHP Criterion C as the work of a master.

NRHP Criterion C
The Iron Gate dam, powerhouse, and water conveyance system are collectively significant under NRHP Criterion C (Engineering) for embodying the distinctive characteristics of a mid-twentieth-century hydroelectric development that implemented technological advances in its conception, design, and construction. These resources are also collectively significant as the work of master hydropower engineer John C. Boyle who significantly contributed to twentieth-century hydropower development in the Southern Oregon/Northern California region.

Iron Gate Historic District's NRHP Criterion C eligibility is derived from the dam fish facilities and hatchery. The hatchery embodies distinctive characteristics of a river-based salmon hatchery, which is functionally interconnected with the dam fish facilities. The interconnection is illustrated by (1) the pipe originating at Iron Gate Dam delivering cold, aerated reservoir water to the hatchery raceways and (2) the eggs obtained at the dam's spawning building transported a short distance to the downriver hatchery building. Iron Gate Fish Hatchery, the CDFW's only salmon hatchery in Siskiyou County, California, was designed by Pacific Power fish biologist Charles Jack Hanel, acclaimed for his hatchery design (*Mail Tribune* 2002). The hatchery design incorporated existing landscape features, such as the Klamath River and the river's Bogus Creek tributary, into its fish management functions. The Klamath River provides the egg source, while Bogus Creek serves as a natural border around the hatchery's southern and eastern sides, and as a barrier between the hatchery buildings and vegetated settling ponds.

NRHP Criterion D
The Iron Gate resources are not significant as sources (or likely sources) of important information regarding history or prehistory. They do not appear likely to yield important information about historic construction materials or technologies and are not significant under NRHP Criterion D.

D6. Significance (continued):

Integrity Analysis

Iron Gate retains integrity of location, design, setting, materials, workmanship, feeling, and association; and continues to convey its historic identity as a midcentury hydroelectric development. Iron Gate's hatchery resources also retain sufficient historic integrity to convey their overall historic character and functional relationship with the Iron Gate dam fish facilities. The hatchery contains nearly all its original buildings and structures.

Location *is the place where the historic property was constructed or the place where the historic event took place.* Iron Gate retains integrity of location, because primary district components, such as the dam, water conveyance system, powerhouse, and hatchery remain in their original locations.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* Iron Gate retains integrity of design, with nearly all historic buildings and structures in their original locations and operating in accordance with their original functions. Design alterations to historic buildings have been minimal, and accomplished to support or improve operations.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The hydroelectric development retains integrity of setting, which includes the Klamath River and Bogus Creek. Within this remote and undeveloped river canyon landscape, Iron Gate's configuration of original resources has remained largely the same since the 1960s construction.

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property.* The development retains integrity of materials, as represented by the earthen dam, steel penstock, concrete powerhouse, and the other resources with their original materials.

Workmanship *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The development retains integrity of workmanship as reflected by the designed interconnection between the dam, water conveyance system, powerhouse, and on-site fish facilities.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The regulating and hydroelectric features—the dam, water conveyance system, and powerhouse—as well as the remote setting and intensive use of natural and industrial construction materials, collectively convey the historic character of a midcentury hydroelectric facility, thereby retaining integrity of feeling.

Association *is the direct link between a property and the event or person for which the property is significant.* The presence of the intact, historic physical features at this location directly links the property with the region's midcentury power development, and fish conservation efforts, contributing to integrity of association.

Iron Gate is an eligible historic district that is locally (regionally) significant in the areas of Commerce, Industry, and Conservation, and retains integrity. The Iron Gate Historic District also contributes to the larger KHP Historic District.

Iron Gate Historic District Resources	Construction/ Major Alterations	Previous NRHP Recommendations and Criteria: A, B, C, D [by Kramer 2003a and Durio 2003b]	Current NRHP Eligibility Evaluations
Dam	1962	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A. Dam, powerhouse, and water conveyance system collectively contributing: NRHP Criterion C.
Dam fish facilities	1962	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A.

Water conveyance system	1962	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A. Dam, powerhouse, and water conveyance system collectively contributing: NRHP Criterion C.
Powerhouse	1962	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A. Dam, powerhouse, and water conveyance system collectively contributing: NRHP Criterion C.
Support facilities (communication building and restroom building)	1962	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A.
Operator Residence Nos. 1 and 2	circa 1964	Not previously documented.	Contributing: NRHP Criterion A.
Hatchery fish facilities (hatchery building, raceways and settling ponds, fish feed silos, auxiliary fish ladder/ trap)	1966	Non-historic, non-contributing to KHP HD	Contributing under NRHP Criterion A.
Hatchery administration and auxiliary facilities (office, shop, modern shed, gas shed, picnic and visitor center)	1966 (office, shop, gas shed) circa 1995 (modern shed) circa 1994 (picnic and visitor center)	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A (office, shop, gas shed). Not Eligible: Out of Period (modern shed, picnic and visitor center).
Hatchery Residence Nos. 1, 2, 3, and 4	1966	Non-historic, non-contributing to KHP HD	Contributing: NRHP Criterion A.
Lakeview Road Bridge	1960	Not previously documented.	Contributing: NRHP Criterion A.
Recreation Sites (Fall Creek, Jenny Creek, Wanaka Springs, Camp Creek, Juniper Point, Mirror Cove, Overlook Point, Long Gulch)	Post-1960	Not previously documented	Contributing features to the historic district.

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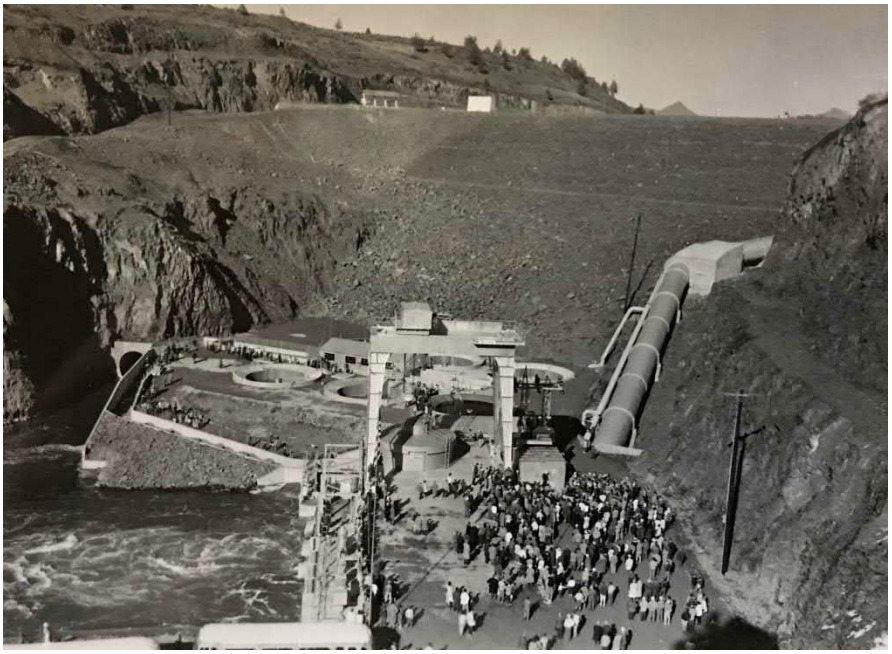
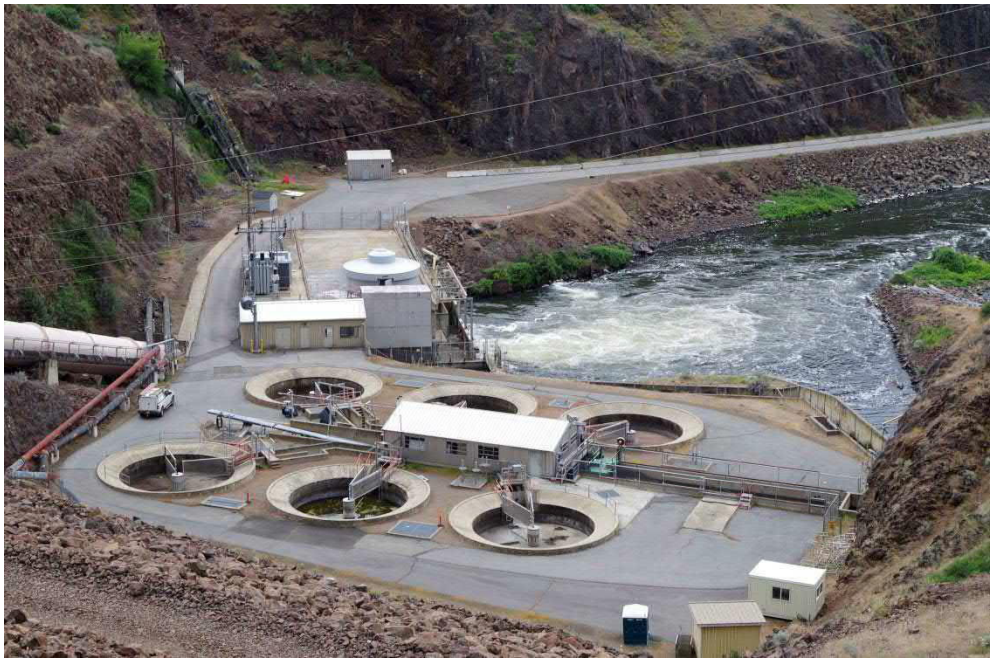
Photographs:

Photograph 1. Iron Gate hydroelectric development; view facing north, 2018.



Photograph 2. Iron Gate hydroelectric development; view facing north, February 3, 1962 (PacifiCorp archive image IG-290). The gantry crane visible in this historic photograph is currently located at PacifiCorp's J.C. Boyle powerhouse.

Photographs (continued):



Photograph 3. Iron Gate hydroelectric development; view facing south, 2018.

Photograph 4. Iron Gate hydroelectric development; view facing south, circa 1962 (PacifiCorp archive image MK-35).

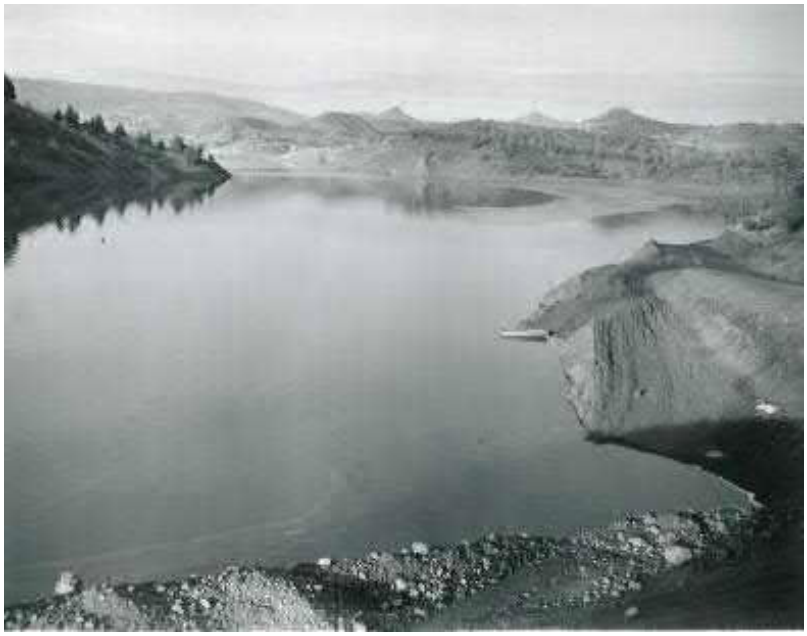
Photographs (continued):

Photograph 5. Klamath River, from left showing Iron Gate Fish Hatchery in distance, Lakeview Road Bridge, wood pole garage, Operator Residence No. 1 and No. 2, and spillway outlet; view facing southwest, 2018.

Photograph 6. Dam, spawning building, penstock, and holding tanks; view facing east, 2018.

Photographs (continued):

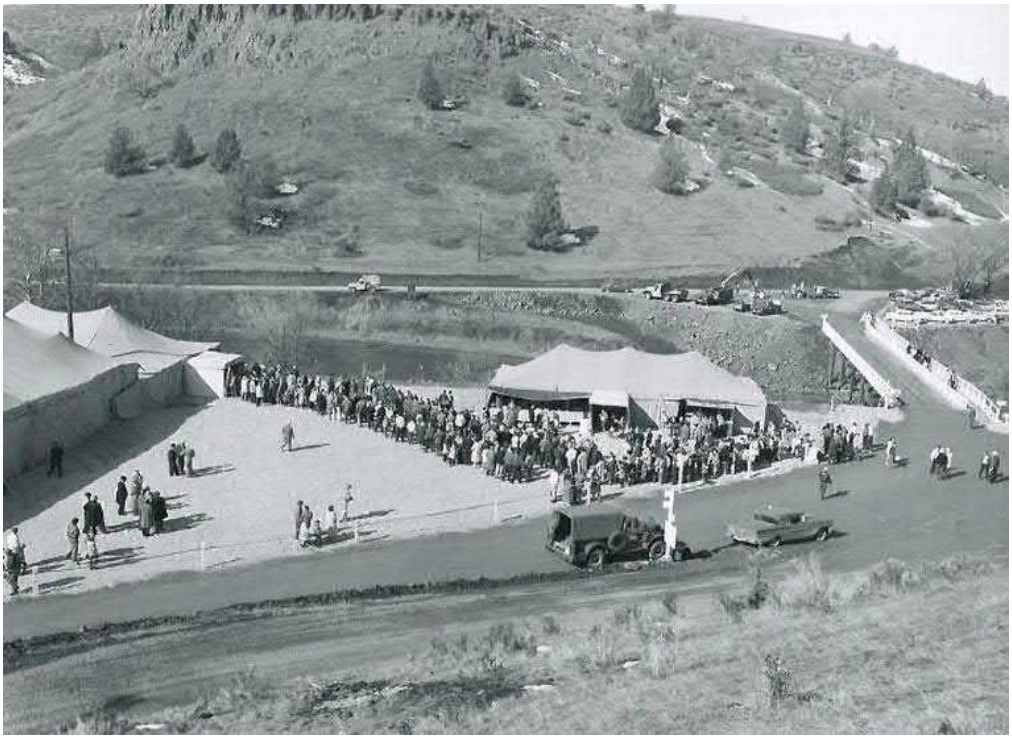
Photograph 7. Iron Gate Reservoir beginning to fill, November 11, 1961 (PacifiCorp archive image IG-223).



Photograph 8. Reservoir, January 1962 (PacifiCorp archive image IG-260).

Photographs (continued):

Photograph 9. John C. Boyle, Iron Gate designer and Pacific Power vice-president (third from left), with family at Iron Gate dedication, February 3, 1962 (PacifiCorp archive image IG-317).



Photograph 10. Iron Gate dedication, February 3, 1962 (PacifiCorp archive image IG-266). This image shows visitor tents set up in what is now the Iron Gate Fish Hatchery parking lot. The Lakeview Road Bridge is visible at right.

Photographs (continued):

Photograph 11. Iron Gate Fish Hatchery; view facing southwest, 2018. From left is Hatchery Residence No. 1, raceways, office, hatchery building, shop, and fish food silos.

Photograph 12. From left: office, gas shed, hatchery building, and shop; view facing southwest, 2018.

Photographs (continued):

Photograph 13. Modern shed; view facing south, 2018. Shop is visible at left and hatchery building is visible in right background.

Photograph 14. Fish food silos, showing visitor information center at left, picnic shelter in center background, and public restroom at right; view facing north, 2018. The Lakeview Road Bridge is visible in the right background.

Photographs (continued):

Photograph 15. Visitor information building; view facing southwest, 2018. Klamath River visible in background.

Photograph 16. Picnic shelter, showing visitor information building at left background; view facing southwest, 2018. Klamath River visible in background.

Photographs (continued):

Photograph 17. Raceways, showing hatchery building in left background and hatchery residences in right background; view facing northeast, 2018, .

Photograph 18. Hatchery residences, showing raceways in background; view facing southwest, 2018.

Photographs (continued):

Photograph 19. Small beam bridge across Bogus Creek; view facing northwest, 2018.

Photograph 20. Southernmost settling pond on the southern side of Bogus Creek, showing concrete bulkhead through which discharge drains into the Klamath River; view facing west. Transmission line wood pole visible at left, 2018.

Photographs (continued):

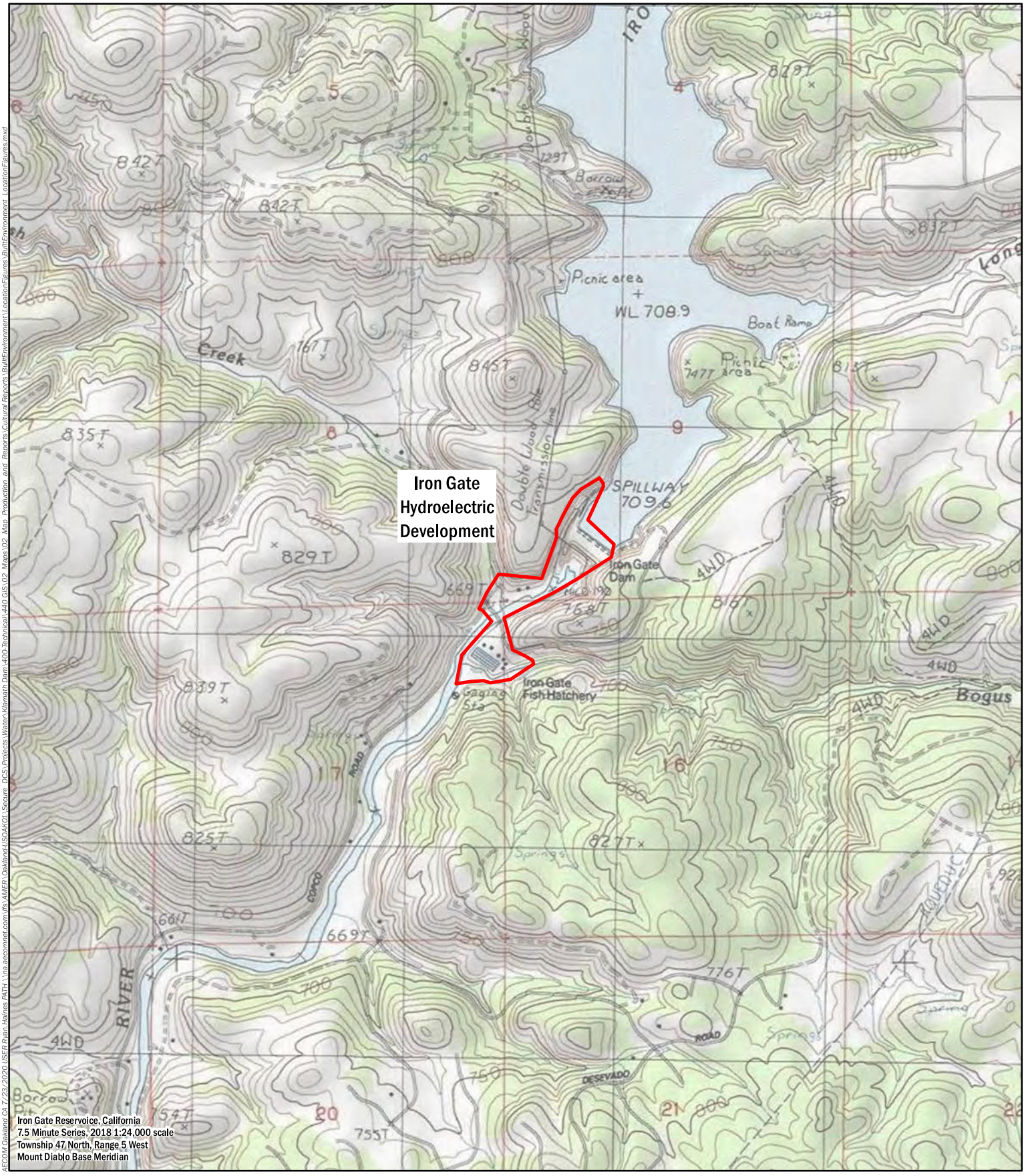
Photograph 21. Modular office (undated) and storage shed (circa 1962), with adjacent portable toilet adjacent to dam; view facing north, 2018.

LOCATION MAP

Property Name: Iron Gate Historic District

***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



AECOM Oakland CA 7/23/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland\USOAK01\Secure_DCS\Projects\Water\Klamath Dam\400-Technical\440 GIS\02 Maps\02 Map Production and Reports\Cultural Reports\BuiltEnvironment\LocationFigures\BuiltEnvironment_LocationFigures.mxd

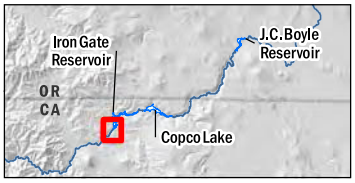
Iron Gate Hydroelectric Development

N

0 2,000 Feet

0 600 Meters

1:24,000



Iron Gate Hydroelectric Development

Klamath River Dam Removal
Brush Creek Road
Hornbrook, Siskiyou County, California

AECOM

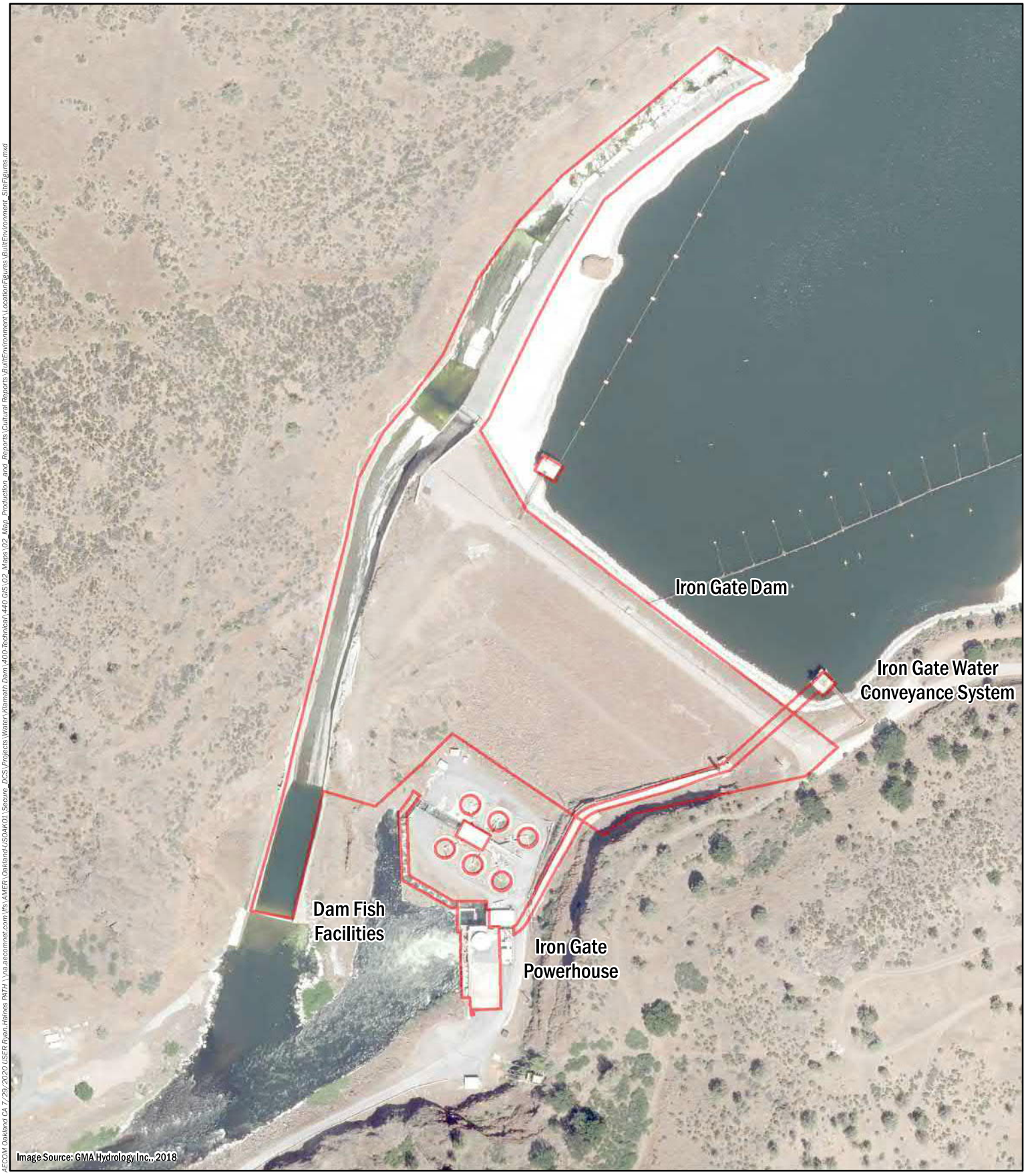
July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Maps on next pages.



Iron Gate Hydroelectric Development

N

0 200 Feet

0 50 Meters

1:2,400

Iron Gate Hydroelectric Development

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

Iron Gate Hydroelectric Development

Iron Gate Hydroelectric Development

N

0 200 Feet

0 50 Meters

1:2,400

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Dam

P1. Other Identifier: Iron Gate Dam
***P2. Location:** ☒ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546707mE/4642665mN
e. Other Locational Data: N/A

***P3a. Description:**

Iron Gate Dam was completed in 1962 as a primary component of the Iron Gate hydroelectric development. The dam is located on the Klamath River, approximately seven miles downstream from the Copco No. 2 Powerhouse. Designed primarily by John C. Boyle, Pacific Power official and senior engineer, and constructed in 1960-1962 by Morrison-Knudsen Co., Inc., the dam is the furthest downstream regulating point of the Klamath Hydroelectric System (Pacific Power 1962:15). The design of Iron Gate Dam implemented a regulating structure to manage water levels (Merriman 1974). Fish facilities incorporated into the dam are used to capture anadromous fish migrating upriver and conduct artificial spawning and hatching activities in conjunction with the nearby Iron Gate Fish Hatchery. Iron Gate Dam also functions as an integral component of hydroelectric generation at the site (FERC 2007:2-14). To build the dam, Pacific Power used about 1 million cubic yards of fill dug from what became Iron Gate Reservoir. Furthermore, as reported by local newspapers, "Most of the rock that will provide a protective cover for the upstream and downstream face of the dam is coming from the spillway channel being cut in the solid rock west bank of the Klamath" (Herald and News 1961a).

See Continuation Sheets.

***P3b. Resource Attributes:** (HP21) Dam (earth fill embankment dam)
***P4. Resources Present:** ☒ Structure ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Iron Gate dam, viewing northeast (June 11, 2018).

***P6. Date Constructed/Age and Source:** ☒ Historic, 1962 (Pacific Power 1962:15).

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P3a. Description (continued):

The earth-fill embankment dam measures 189 feet high from foundation to crest, and consists of an impervious central clay core, with filter zones and a downstream drain (USBR 2012a:22-24). The compacted clay core was engineered to prevent water seepage from the reservoir side to the downstream side (*Herald and News* 1961a). The dam has a basalt rock foundation and grout curtain beneath the clay core. A 10-foot-thick riprap layer on the upstream face and a 5-foot-thick layer on the downstream face provide slope protection. The crest measures 20 feet wide and approximately 740 feet long. In 2003, to guard against overtopping, the dam was raised 5 feet and the crest width decreased from 30 to 20 feet. Additional riprap on the upstream face of the dam was installed to protect areas exposed to higher reservoir elevations. A sheet-pile wall was also driven into the dam crest to provide approximately 5 feet of additional freeboard (USBR 2012a:22-24). Freeboard is the distance between the reservoir water surface to the dam crest, and additional freeboard helps protect the embankment dam from overtopping due to wind-generated waves and reservoir setup (USBR 2012b).

One the of notable features of Iron Gate Dam is the side-channel spillway with concrete discharging channel (or chute), which was completed in 1960 and rebuilt in 1965 after destructive flooding in December 1964. Unlike the Copco No. 1, Copco No. 2 and J.C. Boyle dams, the Iron Gate Dam has a non-gated side channel spillway. The spillway provides controlled release of flows to the downstream area and was a modification to the original dam design (Kramer 2003:14). The *Herald and News* described the spillway and channel construction process in 1961:

> Lining the deep spillway channel with concrete is now in progress at Pacific Power and Light Company's Iron Gate hydroelectric project on the Klamath River near Hornbrook, Calif. Wooden forms, left, create a pattern of lines and angles as workers anchor reinforcing steel for the south wall. Crane boom lifts concrete buckets for each pour on the surfacing job. Approximately 50 feet deep, the channel is 54 feet wide on the floor and 745 feet long. It will carry any overflow from the reservoir around the dam (*Herald and News* 1961b).

The side-channel spillway design, with the spillway crest perpendicular to the dam wall, distinguishes this earth-fill dam from concrete dams, which generally implement conventional "free overflow" spillways. Free overflow spillways are not used for earthen dams such as Iron Gate because of "settlement of the [dam] wall" (Timm 1977:1). Iron Gate dam has a traditional single-sided spillway, as opposed to a double-sided spillway. In a single-sided design, the spillway is built at one end of the dam wall, and generally extends "along a contour of the hillside where the water is shallow . . . Usually a discharging channel or chute is required to carry the water back to the riverbed" (Timm 1977:1-3). The Iron Gate Dam spillway at the right/northern abutment consists of an ungated side-channel spillway crest with a concrete-lined channel. The spillway crest is 15 feet below the dam crest. The 727-foot-long spillway crest has concrete ogee construction, and the upper part of the spillway channel has a partial concrete lining. The spillway crest's downstream end has a 10-foot by 8-foot hinged trash/sluice gate to filter sediment and debris. The spillway chute's downstream end has a flip-bucket terminal structure that extends 2,150 feet beyond the dam toe. Modifications in 2003 included application of shotcrete at the top of the spillway crest and chute (USBR 2012a:22-24).

The diversion tunnel, another dam feature, was instrumental in construction. Built by Morrison-Knudsen Company, Inc., the reinforced-concrete structure served as a sluice and diversion during dam construction (Pacific Power 1962:15). The tunnel intake is located in the reservoir, approximately 480 feet upstream from the dam axis near the upstream toe (USBR 2012a:23). Pacific Power described the process of tunnel construction: "The dam spans a deep, narrow canyon so it was necessary to drill a tunnel through the rock on the right bank of the river to divert the water during construction of the dam. The tunnel is 967.5 feet in length, 16 feet in diameter and is horseshoe shape" (Pacific Power 1962:6). The tunnel's fully concrete-lined section extends for 493.4 feet, the invert-concrete section for 120.6 feet, and the unlined section for 353.5 feet (Pacific Power 1962:1).

The diversion tunnel intake is a reinforced-concrete structure equipped with four 10-foot by 33-foot trash racks. A two-piece concrete slide gate controls flow into the tunnel. The slide gate hoist and controls are housed in a reinforced-concrete tower (USBR 2012a:22-24). Like the penstock intake structure, the diversion tunnel intake structure is located in the reservoir at the upstream side of the dam. The dam crest is linked to the diversion intake structure deck by an approximately 85-ft.-long metal footbridge. A steel-frame building with metal panel walls is mounted atop the deck and provides access to the intake structure. The tall one story structure with rectangular plan appears to be wrapped in plastic sheeting. A double metal door with inset panes is located at the west elevation. The north and south elevations have trapezoid-shaped walls that taper towards the top and each contain a pair of centered multi-pane metal windows with awning operation. The diversion tunnel terminates in a reinforced concrete outlet structure near the base of the dam, adjacent to the west wall of the fish ladder. After dam completion, the spillway was used in lieu of the original concrete-lined diversion tunnel at the right abutment.

In November 1961, after Iron Gate Dam was been completed, workers lowered a plug into place in two sections near the center porint of the diversion tunnel (Pacific Power 1962a:6). This initiated formation of the Iron Gate Reservoir, which was expected to take several weeks (*Herald and News* 1961c). The upper half of the plug, which could be raised during emergencies, interlocked with the penstock intake for synchronous operation in case of intake closure (Pacific Power 1962a:6). Within the past 10 years, PacifiCorp has installed a 9-foot-diameter hinged blind flange and concrete ring approximately 20 feet downstream of the concrete slide gate to allow underwater gate inspection (USBR 2012a:23). The diversion tunnel is now used only during emergency high-flow incidents (FERC 2007:2-14). The dam and associated features appear to be in good condition.

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Dam
*NRHP Status Code: 3D

B1. Historic Name: Iron Gate Dam
B2. Common Name: Iron Gate Dam
B3. Original Use: regulate river flows, fish management, generate hydropower
B4. Present Use: regulate river flows, fish management, generate hydropower
B5. Architectural Style: earth-fill embankment dam

B6. Construction History:

Iron Gate Dam, including concrete spillway, was constructed in 1960-1962 as a major component of the Iron Gate hydroelectric development. Several non-historic modifications have been made since that time. In 2003, to guard against overtopping, the dam was raised 5 feet and the crest width decreased from 30 to 20 feet. Additional riprap on the dam's upstream face was installed to protect areas exposed to higher reservoir elevations. A sheet-pile wall was also driven into the dam crest to provide approximately 5 feet of additional freeboard (USBR 2012a:22-24). Following destructive Klamath River flooding in December 1964, Pacific Power rebuilt the spillway by late 1965. The spillway was reinforced in 2003 with shotcrete application at the top of the crest and chute.

B7. Moved? No
B8. Related Features: The dam is a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: John C. Boyle and Pacific Power engineers
b. Builder: Morrison-Knudsen, Co. Inc. and Pacific Power

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: Dam
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing), and Criterion C (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes:

B12. References:

FERC (Federal Energy Regulatory Commission). 2007. Klamath Hydroelectric Project, FERC Project No. 2082-027, Oregon and California. Final Environmental Impact Statement For Hydropower License. Volume I. Office of Energy Projects, Division of Hydropower Licensing. November.

Herald and News [Klamath Falls, Oregon]

1961a "Iron Gate Dam, Seventh In Hydroelectric Series, Nears Completion." September 24.

1961b "PPL Builds Fish Facility At Iron Gate Dam Site." December 20.

1961c "Iron Gate Dam Fill Work Starts." November 10.

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Conservation, Commerce, and Industry. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The dam adds to the Iron Gate Historic District's significance by impounding the Iron Gate Reservoir, from which water is released to regulate the downstream flow. Iron Gate Dam was designed with on-site facilities for fish-handling and egg-taking to improve the downstream Klamath River fishery (Pacific Power circa 1962:6). As a secondary function, Iron Gate dam enables generation of hydroelectric power, which adds to the Historic District's significance in the areas of Commerce and Industry.

NRHP Criterion B
Research does not indicate that the dam is associated with any historically significant individuals under NRHP Criterion B.

NRHP Criterion C
The dam, water conveyance system, and powerhouse are also collectively significant (contributing) under NRHP Criterion C in the area of Engineering for embodying the distinctive characteristics of a mid-twentieth-century hydroelectric development that implemented technological advances in its conception, design, and construction. This includes the incorporation of the fish management facilities into the dam site and powerhouse structure.

NRHP Criterion D
Iron Gate Dam is not significant as a source (or likely source) of important information regarding history or prehistory. It does not appear likely to yield important information about historic construction materials or technologies and is not significant under NRHP Criterion D.

Integrity Analysis

The dam retains integrity of location, design, setting, materials, workmanship, feeling, and association; and continues to convey its historic identity as a mid-century re-regulation and hydropower embankment dam.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The dam retains integrity of location, because it remains at its original location.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The dam retains integrity of design. Although alterations in 2003 raised the dam by 5 feet and narrowed the crest from 30 feet to 20 feet, the USBR has indicated that "modest raises of the crests of embankment dams from 1 to 3 meters [3.28 feet to 9.84 feet] to store new and larger design floods are fairly common" (Veesaert 2003:254). Consequently, the raising of the 189-foot Iron Gate dam by 5 feet as a flood prevention measure does not substantially diminish overall integrity of design. The circa-1965 spillway rehabilitation constitutes a modification of an original dam feature; however, this work was accomplished within a few years of the dam's completion, and within the period of significance, and does not diminish integrity of design.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The dam retains integrity of setting, which is characterized by the Klamath River and canyon, the reservoir, and the largely undeveloped landscape. Except for construction of the nearby Iron Gate Fish Hatchery (1966), which occurred during the period of significance and as part of Iron Gate's overall plan, the setting of the hydroelectric development has undergone little change since the dam's completion in 1962.

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property.*
The dam retains integrity of materials, particularly its clay core and basalt rock foundation. The sheet-pile wall at the crest, installed in 2003, has a relatively low profile; is not visible from the dam's downstream side; and has not diminished overall integrity of materials.

Workmanship *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The dam retains integrity of workmanship, which in this case is the engineering skill demonstrated by the dam and spillway excavation and alignment, as well as the functional interconnection between the dam, water conveyance system, powerhouse, and dam fish facilities.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The dam's remote setting and use of natural and industrial construction materials collectively convey the historic character of a mid-century earthen dam, thereby retaining integrity of feeling.

Association *is the direct link between a property and the event or person for which the property is significant.* The presence of the intact dam and its related features at this location directly link the property with midcentury power development in the region, contributing to integrity of association.

B10. Significance (continued):

Iron Gate Dam retains integrity and is, therefore as a contributing resource to the Iron Gate Historic District.

Resource(s)	Construction/ Major Alterations	Applicable NRHP Criteria	Area(s) of Significance	Contributing/ Individually Eligible
Dam	1962	A	Commerce and Industry	Contributing
Dam, water conveyance system, and powerhouse (collectively)	1962	C	Engineering	Contributing

B12. References:

Kramer, George. 2003. Klamath Hydroelectric Project. FERC No. 2082. Request For Determination of Eligibility. Prepared for PacifiCorp, Portland, Oregon. October.

Pacific Power & Light Company (Pacific Power). 1962. Initial Statement of Pacific Power & Light Company, Copco Division, to the Federal Power Commission. Showing Actual Legitimate Original Cost of Project No. 2082 (Klamath Basin – Iron Gate Plant), Located in the State of California. As of July 31, 1962. Iron Gate Plant (Box 5/16. John C. Boyle Collection. Southern Oregon Historical Society).

Timm, T.D. 1977. Side Channel Spillways. MS Thesis in Civil Engineering. University of Capetown. June. https://core.ac.uk/download/pdf/43971390.pdf (accessed October 2, 2018).

United States Bureau of Reclamation (USBR)

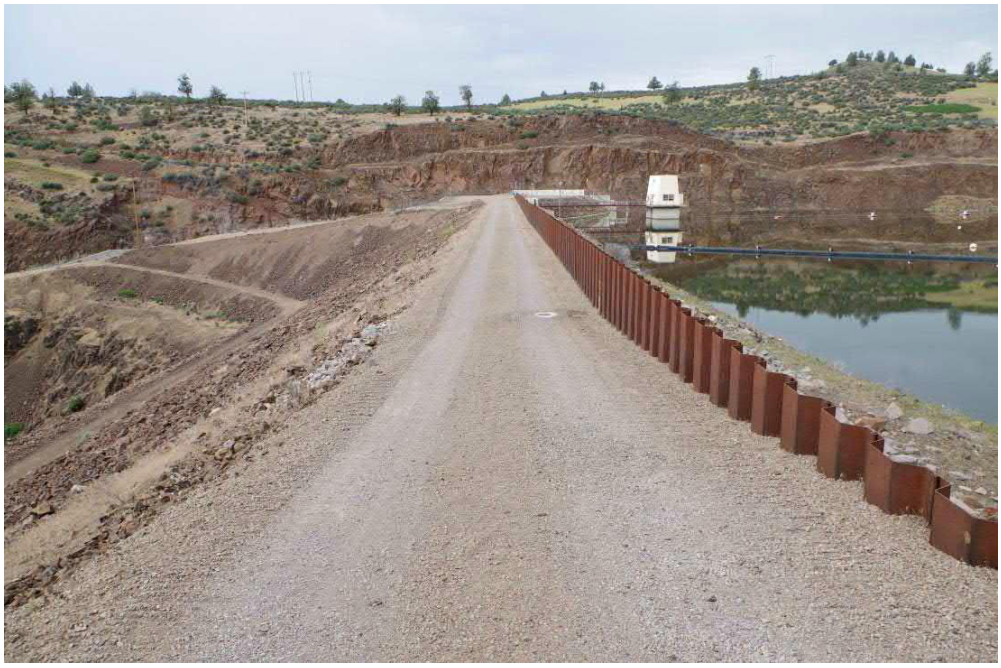
2012a Reclamation: Managing Water in the West. Detailed Plan for Dam Removal – Klamath River Dams. Klamath Hydroelectric Project. FERC License No. 2082, Oregon – California. USBR, U.S. Department of the Interior. Technical Service Center, Denver, Colorado. July.

2012b Design Standards No. 12. Embankment Dams. Chapter 6: Freeboard. Phase 4 (Final). U.S. Department of the Interior, Bureau of Reclamation. Technical Service Center. Denver, Colorado. September.

Veesaert, C.J. 2003. “Invited Lecture: Addressing Hydrologic Inadequacy.” U.S. Bureau of Reclamation, Denver, Colorado. From Dam Maintenance and Rehabilitation. J.A. Llanos, J. Yague, F. Saenz de Ormijana, M. Cabrera, and J. Penas (eds). London and New York: Taylor & Francis. Proceedings of the International Congress on Conservation and Rehabilitation of Dams, Madrid, Spain 11-13 November 2002.

Photographs:

Photograph 1. Iron Gate Dam; view facing north, 2018. Concrete spillway channel outlet at left, spawning building in center, and penstock entering powerhouse at right.



Photograph 2. Dam crest, showing diversion tunnel intake structure in background and Iron Gate Reservoir at right; view facing northwest, 2018. Sheet-pile wall extending along dam crest is also visible.

Photographs (continued):

Photograph 3. Dam's downstream face; view facing northeast, 2018.

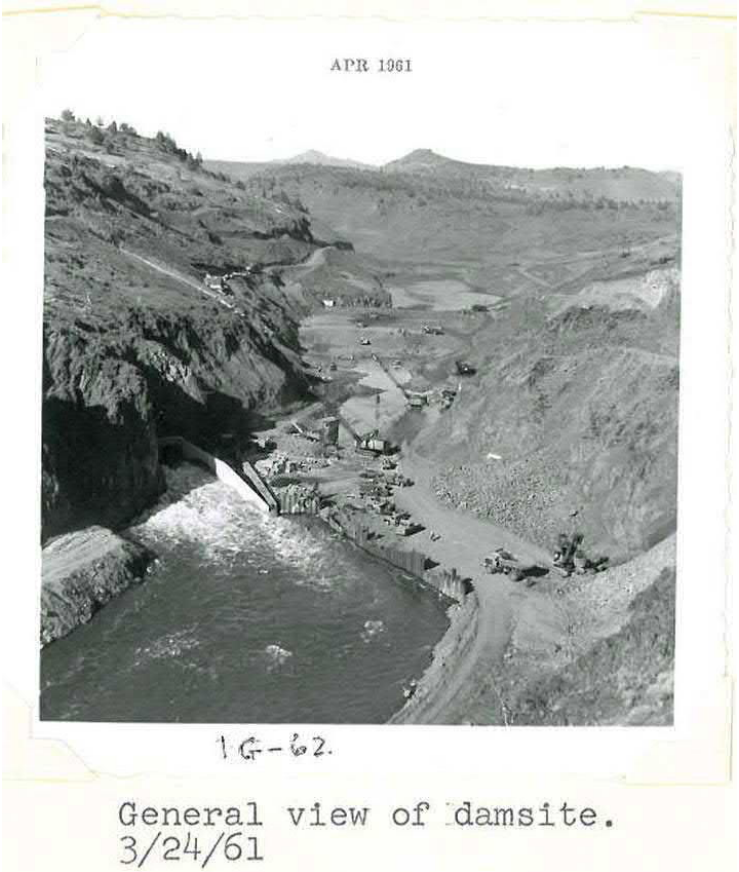
Photograph 4. Spillway at dam's upstream side; view facing northeast, 2018.

Photographs (continued):

Photograph 5. Spillway chute; view facing northeast, 2018. Diversion tunnel visible at lower right.

Photograph 6. Spillway chute outlet; view facing northwest, 2018.

Photographs (continued):



Photograph 7. Dam site during construction, March 24, 1961 (PacifiCorp archive image IG-2).

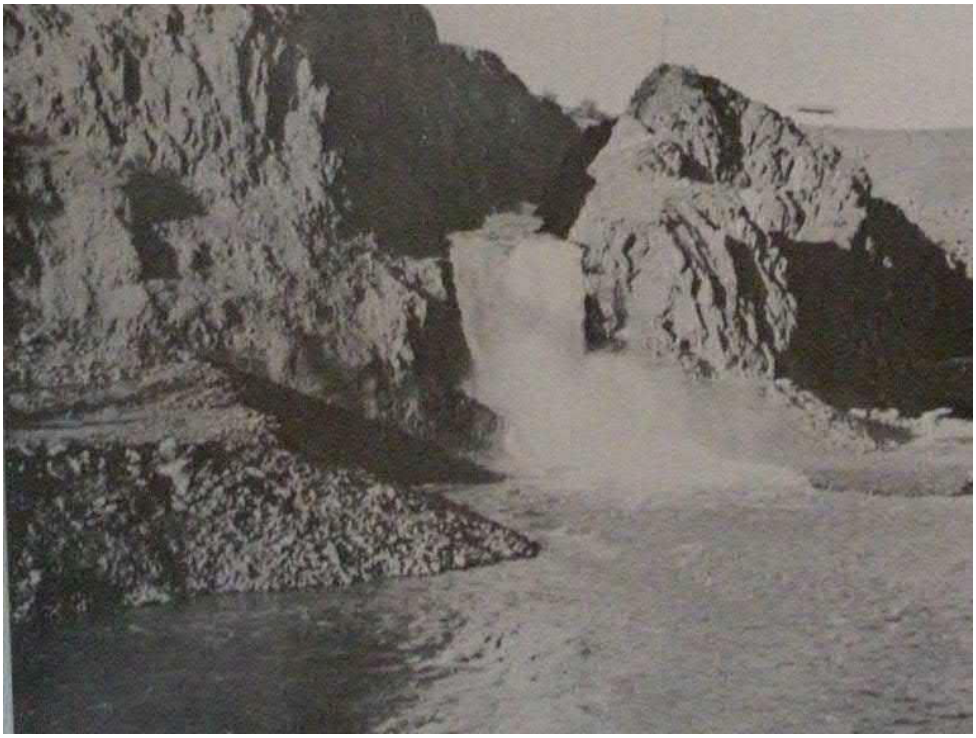
Photograph 8. Rolling clay on the dam, July 25, 1961 (PacifiCorp archive image IG-94).

Photographs (continued):

Photograph 9. Dam site, with R.N. Beyer, resident engineer, September 1961 (PacifiCorp archive image IG-174). The gantry crane atop the powerhouse generator deck is visible in the background.

Photograph 10. Spillway; view facing northeast, January 29, 1962 (PacifiCorp archive image IG-235).

Photographs (continued):



Photograph 11. Spillway chute outlet in January 1962 (Pacific Power 1962a).

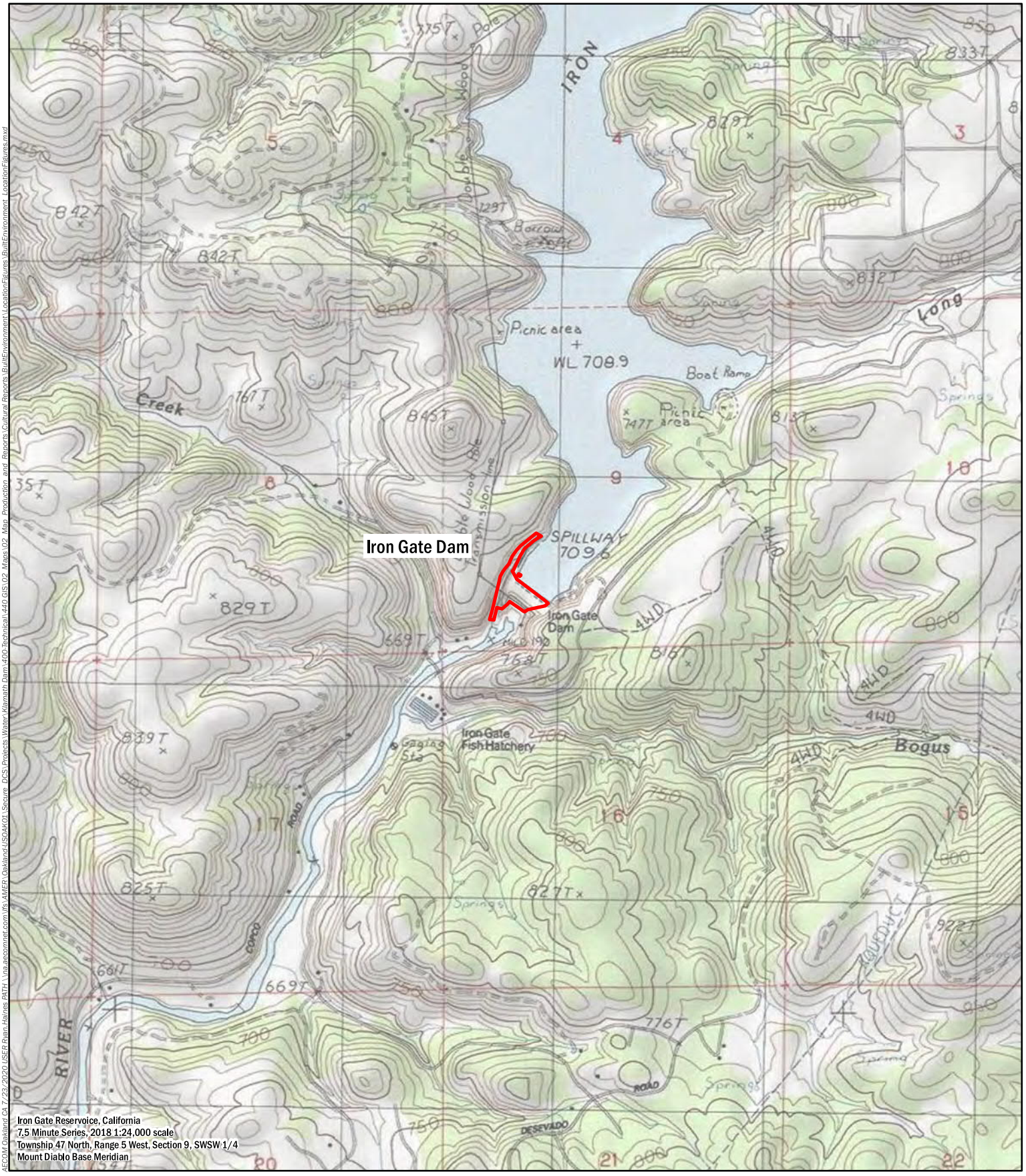
Photograph 12. Spillway chute outlet in 1965 after destructive December 1964 flooding repairs (Pacific Power 1965:5407-R19).

LOCATION MAP

Property Name: Iron Gate Historic District

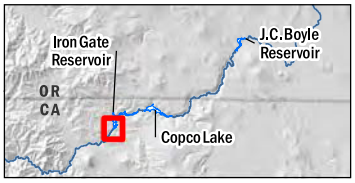
***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



Iron Gate Dam

Iron Gate Dam



N

0 2,000 Feet

0 600 Meters

1:24,000

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

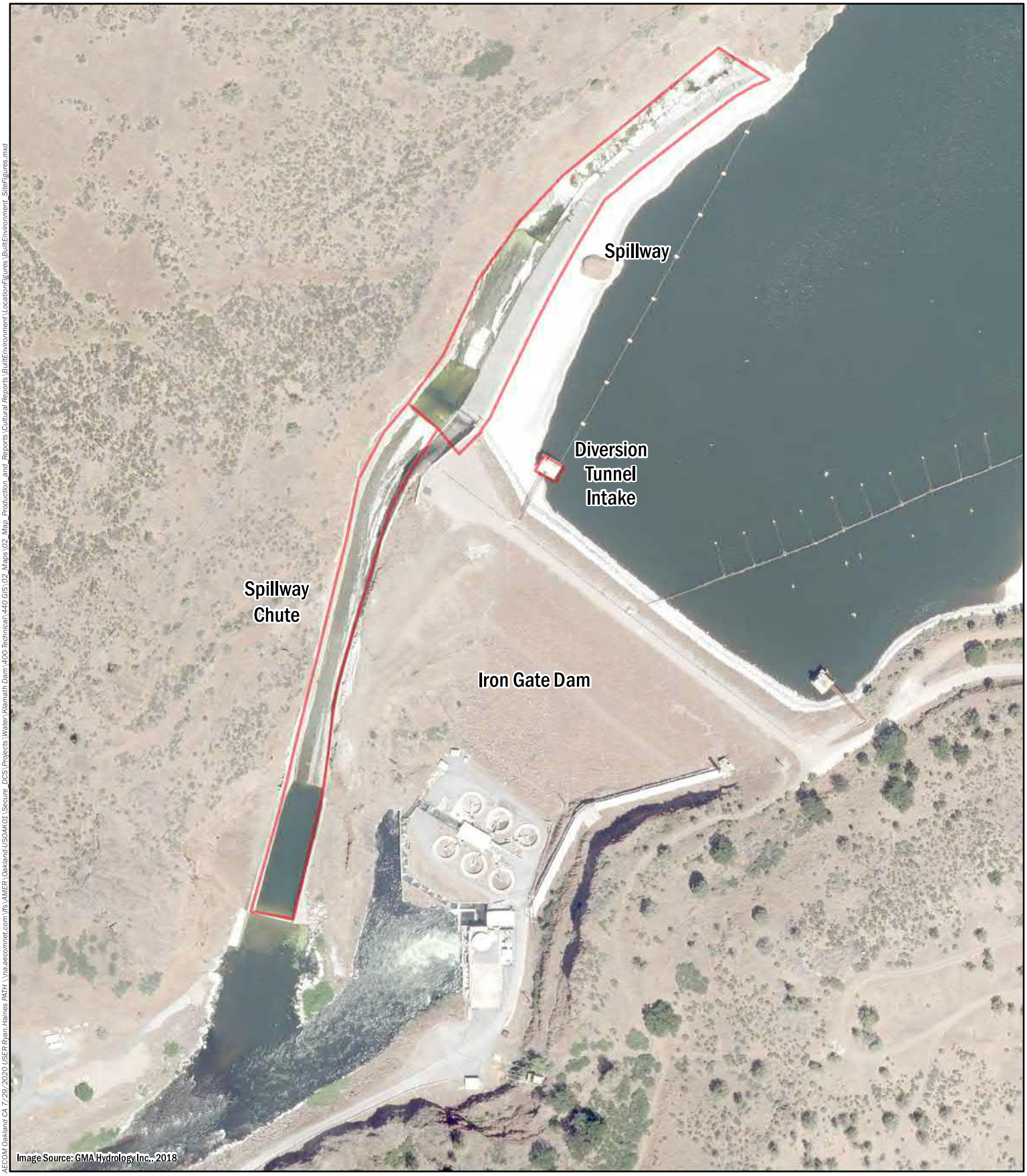
July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.



Iron Gate Dam

Iron Gate Dam

N

0 200 Feet

0 50 Meters

1:2,400

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Powerhouse

P1. Other Identifier: Iron Gate Powerhouse
***P2. Location:** ☒ **Unrestricted**
- ***a. County** Siskiyou
- ***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
- c. Address _____ City _____ Zip _____
- d. UTM: Zone 10 T, 546694mE/4642489 mN (powerhouse); 546704mE/4642495mN (substation)
- e. Other Locational Data: N/A

***P3a. Description:**

Iron Gate Powerhouse is an outdoor-type, semi-subterranean reinforced-concrete structure, built in 1962 by Morrison-Knudsen Co., Inc. for Pacific Power and Light Company (Pacific Power). The powerhouse is located at the downstream toe of Iron Gate Dam near the southern/left abutment, next to the Iron Gate communications building. Atop the powerhouse's concrete roof is an outdoor generator deck with one generator unit and a power substation. The generator deck is surrounded by metal fencing on the southern and eastern sides, and metal railing on the northern and western sides. Inside the fenced area, the generator housing displays a sign, installed after 2003, that reads "IRONGATE POWER PLANT." The previous sign, visible in a 2003 photograph, reads "PACIFIC POWER" (Durio 2003:101). The generator has a metal access ladder. Since 2003, the sign has been changed and the generator housing and ladder have been repainted. Metal rails on either side of the generator accommodate a 150-ton gantry crane that is currently located at the J.C. Boyle powerhouse area. The gantry crane was transported from the J.C. Boyle site and assembled for use during Iron Gate construction (Pacific Power 1962b:9). The gantry crane is visible in historic photographs of the 1962 Iron Gate dedication (PacifiCorp archive image IG-293). Unlike some powerhouses built in the early-twentieth century, such as the Copco No. 2 Powerhouse (1924-1925), the Iron Gate Powerhouse is a utilitarian-style structure displaying minimal architectural ornament. Only two elevations are visible due to its semi-subterranean design. Unlike some powerhouses built in the early-twentieth century, such as the Copco No. 2 Powerhouse (1924-1925), the Iron Gate Powerhouse is a utilitarian-style structure displaying minimal architectural ornament. Only two elevations are visible due to its semi-subterranean design.

See Continuation Sheets.

***P3b. Resource Attributes:** (HP11) Engineering structure.
***P4. Resources Present:** ☒ Structure ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Iron Gate Powerhouse, viewing north (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1962 (Pacific Power 1962b; PacifiCorp archive image IG-293)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P3a. Description (continued):

The western elevation, which faces the downstream Klamath River, contains a metal entry door with inset pane and two 6-pane steel windows with 4-pane awning sections. Water that has passed through the turbine flows through the three outlet gates below and into the tailrace. Four units along this elevation pump auxiliary water from the tailrace to the nearby dam fish facilities, including the holding ponds (Pacific Power 1962a:6). The northern elevation of the powerhouse, which faces the communications building, has an eight-pane steel casement window. A large, flat, multi-panel metal structure suspended from the powerhouse deck partially shields this elevation. Based on a review of historic photographs, the panel—of unknown installation date—was not part of the original powerhouse construction, and was not present during the Iron Gate dedication on February 3, 1962 (PacifiCorp archive image IG-293).

The synchronous generator, manufactured by Westinghouse Electric Corporation, is an outdoor "umbrella" type vertical generator, and sits atop the generator deck (Pacific Power 1962b:9). The generator is rated at 18,975 kilovolt-amperes (kVA) with a 0.95 power factor (18 megawatts). A single outdoor, three-phase 19-MVA, 6,600/69,000-volt step-up transformer at the powerhouse interconnects with the transmission system (Pacific Power 1962b:9; USBR 2012a:22-24).

The interior walls of the powerhouse are primarily poured concrete with some concrete masonry unit (CMU) walls and the flooring is also concrete. The turbine is housed within and was described during construction as having a "steel scroll-case, a snail shaped unit, which distributes falling water evenly against the blades of the turbine" (*Herald and News* 1961a). The Allis-Chalmers Manufacturing Company built the "vertical reaction" turbine, which the United State Bureau of Reclamation (USBR) describes as "a single vertical-shaft, Francis-type turbine with a rated discharge capacity of 1,735 ft3/s" with a rated output of 25,000 horsepower (USBR 2012:22-24). In the event of a turbine shutdown, a synchronized Howell-Bunger bypass valve upstream of the turbine "diverts water around the turbine to maintain flows downstream of the dam" (USBR 2012:22-24). On completion, the powerhouse had a capability of 20,000 kilowatts (Pacific Power 1962b:9).

Other mechanical and electrical equipment includes a battery rack, 300-gallon governor oil reservoir tank, one turbine-governor hydraulic control system with oil storage reservoir and pressure tank, one turbine runner spiral casing and head cover/operating ring, two turbine gate hydraulic servomotors, one vertical turbine shaft, one 96-inch-diameter bypass pipe from penstock around unit to tailrace, one turbine draft tube, three draft tube bulkhead gates, four vertical turbine pumps on powerhouse tailrace deck for fish ladder water supply, a vertical sump pump, bearing oil storage tanks, and other miscellaneous mechanical equipment, piping, and valves; three plant transformers, distribution equipment, unit breaker, one generator, conduit and cable, plant control equipment, and other miscellaneous electrical equipment (USBR 2012:66-67).

Associated features at the powerhouse include fish-trapping facilities, a power substation, and a transmission line.

Fish Facilities

The powerhouse structure not only generates hydropower, but functions as part of Iron Gate's fish management program. Iron Gate regulates the Klamath River's downstream flow through valves at the powerhouse end of the penstock. Certain months would require greater flows to provide additional water for salmon and steelhead spawning (*Herald and News* 1961a).

In addition to controlling the minimum discharge flow, the powerhouse contains fish-related structures, including those intended to draw fish into the dam fish facilities. During construction of the fish facilities, the *Herald and News* described how a "maze of reinforcing steel and concrete is being formed adjacent to the powerhouse to house the pumps and channels through which water will be pumped into nearby fish ladders. . . Flow of the water will then provide attraction water to guide the anadromous salmon into the ladder" (*Herald and News* 1961b). Specifically, reservoir water flowing through the powerhouse's turbine-generator is released into the tailrace. Salmon and steelhead migrating upriver are "attracted by the flow of water discharged from the powerhouse" (Pacific Power 1962a:6). Fish attracted to the powerhouse discharge enter a collecting area through three portals in the western elevation wall of the powerhouse (*Mail Tribune* 1961). From the collecting area, the fish enter the fish ladder and ascend to the trap adjacent to the spawning building. As discussed above, four units along the powerhouse's western elevation pump auxiliary water from the tailrace to dam fish facilities (Pacific Power 1962a:6; *Herald and News* 1961b).

Substation (1962)

The substation atop the generator deck houses the original Westinghouse 18,947–kilovolt (kV) transformer (Pacific Power 1962b:9). The three-phase, 60-cycle transformer was designed to step up the generator output voltage to 66 kV (Iron Gate circa 1962; Pacific Power 1962b:9). Westinghouse manufactured the substation's switchgear housing and installed certain substation equipment, while Pacific Power crews built the rest of the substation, as well as distribution circuits and other electrical facilities (Pacific Power 1962b:15). The metal panel switchgear housing has a manufacturer's label over the door that reads "Westinghouse Shelterfor-M." Switchgear housing installation was completed in October 1961 (Pacific Power 1962a: Schedule No. 4, Sheet 3 of 5). The field assembly instruction manual for the Shelterfor-M was issued in 1959 (electricmanuals.net 2018). Based on the manual date and a review of historic photographs, the substation's switchgear housing and power transformer appear to be original. The switchyard also contains a 6.6-kV power circuit breaker and a generator.

P3a. Description (continued):

Line No. 62 (1962)

The Line No. 62, a 69-kV transmission line runs along the northern side of Iron Gate Reservoir for approximately 6.5 miles to the Copco No. 2 substation switchyard. The line, which initially powered construction of Iron Gate, was erected by Pacific Power crews (Pacific Power 1962b:2,15). Historic photographs depict the line as having transmission structures with standard one-, two-, and three-pole wood construction (PacifiCorp archive images IG-19, IG-20, and IG-21).

By spring 1960, 6.3 miles of Line No. 62 had been strung to supply 12 kV power for Iron Gate construction activities (Pacific Power 1962b:10). The power was delivered from a temporary substation in the Copco No. 2 switchyard (PacifiCorp archive image IG-18; Iron Gate circa 1962). Pacific Power described the power delivery arrangement: “A line to furnish construction power was built from the Company’s Copco Two plant located farther upstream [from the Iron Gate development]. This later became the transmission line over which power from Iron Gate was integrated into the Company’s system” (Pacific Power 1962b:4). As originally planned, the final 0.3-mile transmission line section was completed in December 1961 during the final construction stages of the Iron Gate powerhouse and substation, allowing eventual integration of Iron Gate-generated power into the Pacific Power system (Pacific Power 1962b:10).

On completion, Line No. 62’s materials and equipment consisted of wood-pole transmission structures (7 single-pole, 27 two-pole, 7 three-pole), 48 anchors, and 57 guy cables, a 66-kV oil circuit breaker; and at the Copco No. 2 Substation, by-pass and disconnect switches and one 40-foot steel pole. The original conductor used for the line was primarily 394 Anaconda composite conduit cable (Pacific Power 1962b:10).

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Powerhouse *NRHP Status Code: 3D

B1. Historic Name: Iron Gate Powerhouse
B2. Common Name: Iron Gate Powerhouse
B3. Original Use: generate hydropower
B4. Present Use: generate hydropower
B5. Architectural Style: Conventional outdoor-type reinforced-concrete powerhouse

B6. Construction History: Iron Gate Powerhouse was completed in 1962 as a major component of the Iron Gate hydroelectric development. The powerhouse equipment was installed by equipment manufacturers or by Morrison-Knudsen crews under manufacturer supervision. Excavation for the powerhouse began in January 1961, with crews removing the rock to build the dam. Pouring of concrete for the substructure started the following spring (Pacific Power 1962b:15). The only evident alterations are the addition of a large multi-panel metal structure suspended from the powerhouse deck (unknown installation date). Other minor changes include installation of a circa-2003 sign on the generator housing that reads "IRONGATE POWER PLANT."

B7. Moved? No
B8. Related Features: The powerhouse is a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: John C. Boyle and Pacific Power engineers **b. Builder:** Pacific Power

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (district)
Property Type: Powerhouse
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing), and Criterion C (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes: (HP11)—powerhouse

B12. References:

Durio, Lori. 2003. Klamath River Hydroelectric Project District. State of California Department of Parks and Recreation. Primary Record #47-004015. Recorded July 2003 by L. Durio, CH2M Hill, New Orleans, LA. September.

electricmanuals.net. 2018. Shelterfor-M Outdoor Metal Clad Switchgear Field Assembly Instructions (IB 32-250-3A), Listing Details. http://www.electricalmanuals.net/index.php/manuals1/manuals/medium-and-high-voltage-equipment/breakers/westinghouse/shelterfor-m/1714-ib-32-250-3a (accessed June 6, 2018).

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Conservation, Commerce, and Industry. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The powerhouse adds to the Iron Gate Historic District's significance through its function in Iron Gate's power generation and for its role in fish management activities at the dam site. The fish trapping facilities incorporated into the powerhouse structure contribute to Iron Gate's fish management efforts. Iron Gate powerhouse also generates hydroelectric power, which adds to the Historic District's significance in the areas of Commerce and Industry.

NRHP Criterion B
Research has not indicated that the powerhouse is associated with a significant individual under NRHP Criterion B.

NRHP Criterion C
The Iron Gate dam, water conveyance system, and powerhouse are collectively significant under NRHP Criterion C in the area of Engineering for embodying the distinctive characteristics of a mid-twentieth-century hydroelectric development that implemented technological advances in its conception, design, and construction. This includes the incorporation of the fish facilities into the dam site and powerhouse structure.

NRHP Criterion D
The powerhouse is not significant as a source (or likely source) of important information regarding history or prehistory. It does not appear likely to yield important information about historic construction materials or technologies and is not significant under NRHP Criterion D.

Integrity Analysis
The powerhouse retains integrity of location, design, setting, materials, workmanship, feeling, and association; and continues to convey its historic identity as a midcentury utilitarian powerhouse.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The powerhouse retains integrity of location, because it remains in its original location and maintains.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The powerhouse has no apparent alterations and retains integrity of design, including its functional connection with the dam and penstock.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The powerhouse retains integrity of setting in the remote, undeveloped area of the Klamath River basin in Siskiyou County, California. The setting is characterized by the Klamath River and canyon, the nearby Iron Gate Reservoir, and the largely undeveloped landscape. The powerhouse's immediate setting contains the dam, steel penstock, adjacent communications building, dam fish facilities, and other associated structures. Except for construction of the nearby Iron Gate Fish Hatchery (1966), which occurred during the period of significance and as part of Iron Gate's overall plan, the setting of the hydroelectric development has undergone little change since the powerhouse's completion in 1962.

Materials *are the physical elements combined in a particular pattern or configuration to form the aid during a period in the past* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The powerhouse retains integrity of materials, and workmanship, with no alterations observed during field work in 2018, except for the undated addition of the multi-panel metal shield suspended in front of the northern elevation, and the "IRON GATE POWERPLANT" sign installed on the generator housing after 2003.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The setting, modern powerhouse design, and intensive use of industrial construction materials collectively convey the historic character of a midcentury powerhouse, thereby contributing to integrity of feeling.

Association *is the direct link between a property and the event or person for which the property is significant.* The presence of the powerhouse and its related features at this location directly link the property with midcentury power development in the region, contributing to integrity of association.

Iron Gate Powerhouse retains integrity and is eligible as a contributing resource to the Iron Gate Historic District.

B10. Significance (continued):

Resource(s)	Construction/ Major Alterations	Applicable NRHP Criteria	Area(s) of Significance	Contributing/ Individually Eligible
Powerhouse	1962	A	Commerce and Industry	Contributing
Dam, water conveyance system, and powerhouse (collectively)	1962	C	Engineering	Contributing

B12. References (continued):

Herald and News [Klamath Falls, Oregon]

1961a. "Iron Gate Dam, Seventh In Hydroelectric Series, Nears Completion." September 24.

1961b. "Iron Gate Dam Fill Work Starts." November 10.

Iron Gate. Circa 1962. Iron Gate Development (Folder: Iron Gate – Data Sheet, 11.2.5.246. Box 5/16. John C. Boyle Collection. Southern Oregon Historical Society).

Mail Tribune [Medford, Oregon]. 1961. "Fish Ladder Now Being Constructed At Iron Gate Dam." December 21.

Pacific Power & Light Company (Pacific Power)

1962a Iron Gate: An Important Unit in the Klamath River Project [booklet] (J.C. Boyle Collection, Box 5/16, Southern Oregon Historical Society).

1962b Initial Statement of Pacific Power & Light Company, Copco Division, to the Federal Power Commission. Showing Actual Legitimate Original Cost of Project No. 2082 (Klamath Basin – Iron Gate Plant), Located in the State of California. As of July 31, 1962. Iron Gate Plant (J.C. Boyle Collection, Box 5/16, Southern Oregon Historical Society).

1962c Generator Deck [photograph]. PacifiCorp Archive, PDX.022568 (box), Iron Gate 210.1 General, Penstock Vibration – Miscelleneous 1961-1987 (folder).

United States Bureau of Reclamation (USBR). 2012. Reclamation: Managing Water in the West. Detailed Plan for Dam Removal – Klamath River Dams. Klamath Hydroelectric Project. FERC License No. 2082, Oregon – California. USBR, U.S. Department of the Interior. Technical Service Center, Denver, Colorado. July.

Photographs:

Photograph 1. Powerhouse, showing generator deck with substation; view facing north, 2018. Spawning building at left and earthen dam in center background.

Photograph 2. Powerhouse, showing generator deck with substation; view facing north, circa 1962 (PacifiCorp archive image).

Photographs (continued):

Photograph 3. Powerhouse, showing fish ladder in foreground, communications building at left, and generator deck; view facing southeast, 2018. The fish collection area is visible in the foreground at the entrance to the fish ladder.

Photograph 4. Original Westinghouse generator housing, with spawning building at left, penstock at right, and dam in background; view facing north, 2018.

Photographs (continued):

Photograph 5. Allis-Chalmers turbine inside the generator, 2018.

Photograph 6. Turbine data plate, 2018.

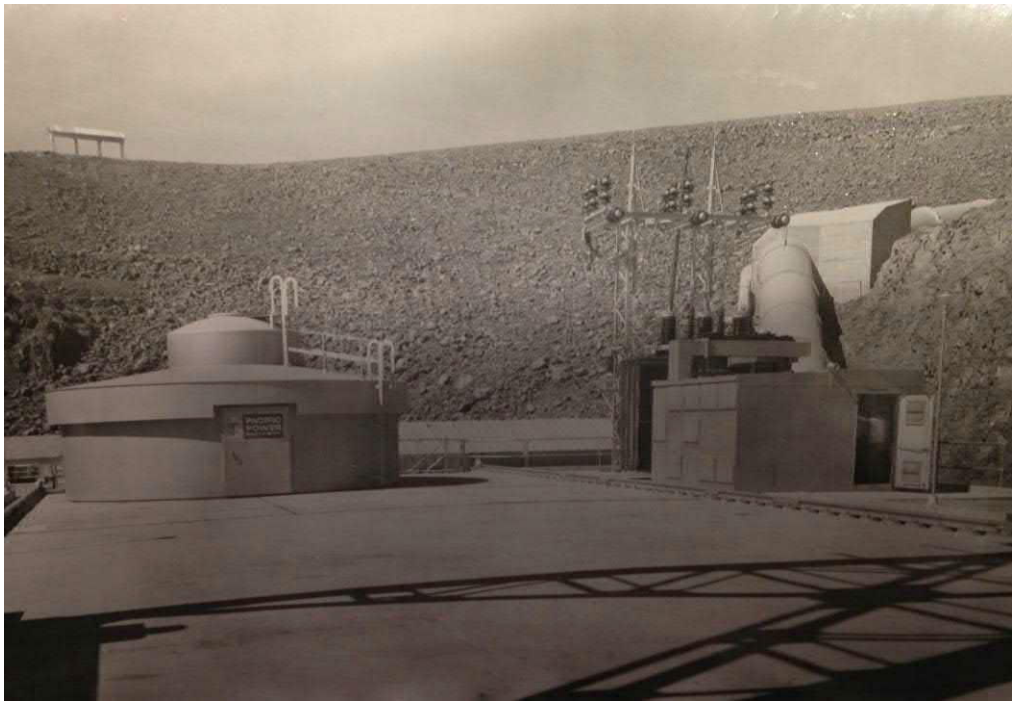
Photographs (continued):

Photograph 7. Powerhouse, showing penstock at left; view facing northeast, January 1962 (PacifiCorp archive image IG-243). The gantry crane is currently located at the J.C. Boyle Powerhouse in Southern Oregon.

Photograph 8. Powerhouse construction, September 1961 (PacifiCorp archive image IG-175).

Photographs (continued):

Photograph 9. Powerhouse scrollcase installation, August 22, 1961 (PacifiCorp archive image IG-141).



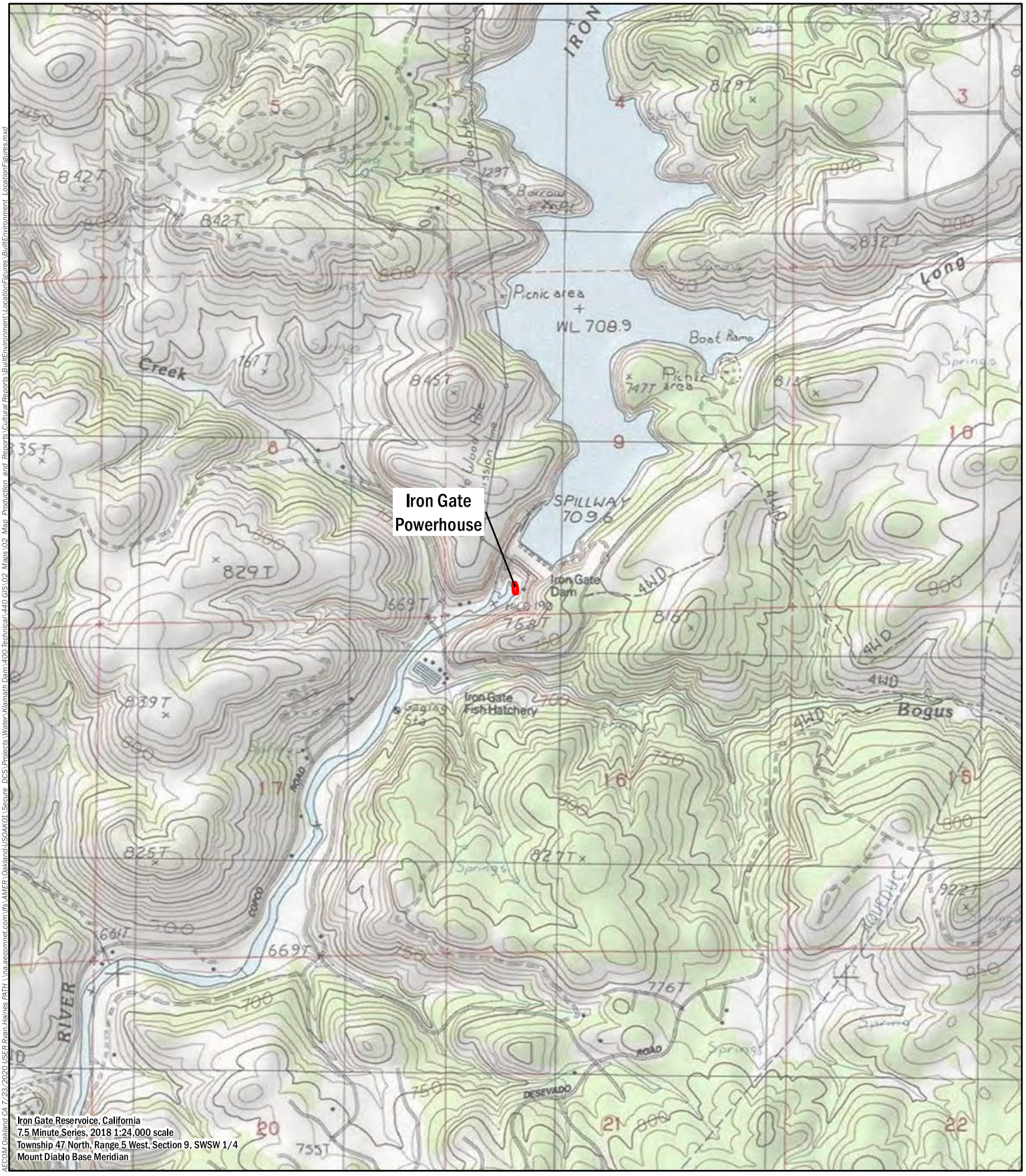
Photograph 10. Powerhouse generator deck, substation transformer (right) and dam (background), July 17, 1962 (Pacific Power 1962c).

LOCATION MAP

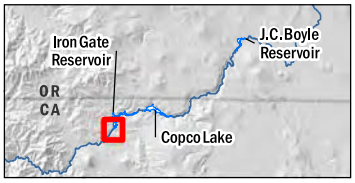
Property Name: Iron Gate Historic District

***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



Iron Gate Powerhouse



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0 600 Meters
1:24,000

Iron Gate Powerhouse

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Iron Gate Powerhouse

Iron Gate Powerhouse

N

0 100 Feet

0 20 Meters

1:600

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Water Conveyance System

P1. Other Identifier: Iron Gate Water Conveyance System
***P2. Location:** ☒ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546778mE/4642568mN
e. Other Locational Data: N/A

***P3a. Description:**

The Iron Gate water conveyance system is a primary component of the Iron Gate hydroelectric development. The system is composed of an intake structure and steel penstock. Water flows from Iron Gate Reservoir through the intake, then moves through the steel penstock and into the powerhouse, where it turns the turbines, generating hydropower (FERC 2007:2-14). The flow discharged from the powerhouse attracts fish migrating upriver, leading them to a collection area and up the fish ladder to the spawning facilities.

The intake structure, completed in 1960, is a 45-foot-high, free-standing, reinforced-concrete tower. Located in the reservoir, the intake structure deck is connected to the dam's left/southern abutment by an approximately 70-foot-long metal footbridge. The intake structure's tower houses a 12-foot by 17-foot wheel-mounted slide gate, which controls the flow into the penstock. The penstock inlet has a 17.5-foot by 45-foot trash rack with a 4-inch bar spacing (USBR 2012:22-24). A steel-frame building with metal walls is mounted atop the intake structure's deck and provides access to the intake structure. The building is a tall one story with a rectangular plan. A double metal door with inset panes is at the northern elevation. The northern and southern elevations have trapezoid-shaped walls that taper towards the top. The western and eastern elevations each have a pair of centered multi-pane metal windows with awning operation.

The penstock, completed in 1961, is a steel pipeline that conveys reservoir water from the intake structure through the dam to the powerhouse. The penstock's interior diameter measures 12 feet, and overall length measures 681 feet, including a 172-foot section encased in concrete and embedded in the dam's left/southern abutment (Pacific Power 1962a:2,8). The penstock was designed to carry up to 1,650 cubic feet of water per second at capacity (Pacific Power 1962a:8). It weighs nearly 460,000 pounds and consists of welded-steel sections. Individual sections vary from 40 to 46 feet in length, while the plate thicknesses vary from 1/4 to 7/16 inch. The penstock sections not encased in the dam rest on three concrete anchor blocks, seven ring girder supports, and extend through two expansion joints (Pacific Power 1962a:8).

***P3b. Resource Attributes:** (HP11) Engineering structure (hydropower water conveyance system structure)
***P4. Resources Present:** ☒ Structure ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Iron Gate Penstock, viewing northeast (June 11, 2018).

P6. Date Constructed/Age and Source:
☒ Historic, 1960-1961 (Pacific Power 1962a)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: KRRC. 2021. Lower Klamath Project Historic Built Environment Technical Report.

Attachments: ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Water Conveyance System *NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: Iron Gate water conveyance system
B3. Original Use: water conveyance
B4. Present Use: water conveyance
B5. Architectural Style: N/A

B6. Construction History:

The Iron Gate water conveyance system was constructed in 1960-1961 as a major component of the Iron Gate hydroelectric development. Fabricated in Portland, Oregon, the penstock was transported in sections over the Southern Pacific Railway's Siskiyou Route (Herald and News 1961). The manufacturer, American Pipe and Construction Company, installed the penstock. In October 1960, excavation for the penstock's concrete-encased section was completed, followed by excavation of the alignment for the remaining sections. Morrison-Knudsen Co., Inc. constructed the penstock foundations (Pacific Power 1962a:8). In July 1961, American Pipe installed the five sections that were to be encased in the dam. A 30-inch pipe to supply water to the dam fisheries facilities was installed mostly parallel to the penstock and through the same section of dam. As penstock construction advanced toward the powerhouse, American Pipe used X-ray technology to examine field welds and repair defects. The penstock, including exterior paint, was completed in October 1961 (Pacific Power 1962a:8,15). The system appears to have undergone no substantial alterations since its original construction.

B7. Moved? No
B8. Related Features: The water conveyance system is a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: N/A

b. Builder: American Pipe and Construction Company manufactured and installed the penstock. Morrison-Knudsen Co., Inc. constructed the penstock foundations.

B10. Significance:
Theme: Hydropower development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: Water Conveyance System
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing) and Criterion C (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes: (HP11)—hydropower water conveyance system structure

B12. References:

FERC (Federal Energy Regulatory Commission). 2007. Klamath Hydroelectric Project, FERC Project No. 2082-027, Oregon and California. Final Environmental Impact Statement For Hydropower License. Volume I. Office of Energy Projects, Division of Hydropower Licensing. November.

Herald and News [Klamath Falls, Oregon]. 1961. "Iron Gate Dam, Seventh In Hydroelectric Series, Nears Completion." September 24.

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Commerce, and Industry. The water conveyance system adds to the Iron Gate Historic District's significance by bringing water from Iron Gate Reservoir to the powerhouse to generate hydropower.

NRHP Criterion B
Research has not indicated that the water conveyance system is associated with a significant individual under NRHP Criterion B.

NRHP Criterion C
The dam, water conveyance system, and powerhouse are collectively significant under NRHP Criterion C in the area of Engineering for embodying the distinctive characteristics of a mid-twentieth-century hydroelectric development that implemented technological advances in its conception, design, and construction.

NRHP Criterion D
The water conveyance system is not significant as a source (or likely source) of important information regarding history or prehistory. It does not appear likely to yield important information about historic construction materials or technologies and is not significant under NRHP Criterion D.

Integrity Analysis

The water conveyance system retains integrity of location, design, setting, materials, workmanship, feeling, and association; and continues to convey its historic identity as a mid-twentieth-century hydroelectric water conveyance system.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The system retains integrity of location, because it has maintained its original alignment.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The system retains integrity of design through its original alignment and functional interrelationship with the Iron Gate Reservoir, dam and powerhouse.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The system retains integrity of setting in the remote, undeveloped area of the Klamath River basin.

Materials *are the physical elements combined in a particular pattern or configuration to form the aid during a period in the past.* The system retains its original primary materials, notably the intake's concrete and the penstock's welded-steel section.

Workmanship *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The system retains integrity of workmanship, as exemplified by the engineering skill required to assemble the massive system of features.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The system's remote setting and retention of original design and materials collectively convey the historic character of a mid-twentieth-century water conveyance system, thereby retaining integrity of feeling.

Association *is the direct link between a property and the event or person for which the property is significant.* The presence of the water conveyance system at this location directly links the property with midcentury power development in the region, contributing to integrity of association.

The Iron Gate water conveyance system retains integrity and is eligible as a contributing resource to the Iron Gate Historic District.

B10. Significance (continued):

Resource(s)	Construction/ Major Alterations	Applicable NRHP Criteria	Area(s) of Significance	Contributing/ Individually Eligible
Water Conveyance System	1962	A	Commerce and Industry	Contributing
Dam, water conveyance system, and powerhouse (collectively)	1962	C	Engineering	Contributing

B12. References (continued):

Pacific Power & Light Company (Pacific Power)

1962a Initial Statement of Pacific Power & Light Company Copco Division to the Federal Power Commission showing Actual Legitimate Original Cost of Project No. 2082 (Klamath Basin – Iron Gate Plant) Located in the State of California as of July 31, 1962 (Box 5/16, J.C. Boyle Collection, Southern Oregon Historical Society).

1962b Iron Gate: An Important Unit in the Klamath River Project [booklet] (Box 5/16. J.C. Boyle Collection. Southern Oregon Historical Society).

United States Bureau of Reclamation (USBR). 2012. Reclamation: Managing Water in the West. Detailed Plan for Dam Removal – Klamath River Dams. Klamath Hydroelectric Project. FERC License No. 2082, Oregon – California. USBR, U.S. Department of the Interior. Technical Service Center, Denver, Colorado. July.

Photographs:

Photograph 1. Penstock intake structure and footbridge from southern/left dam abutment; view facing east, 2018.

Photograph 2. Iron Gate Reservoir with penstock intake structure and footbridge from southern/left dam abutment; view facing west, 2018. The dam crest is shown at the left, and the diversion tunnel intake structure is visible in the right background.

Photographs (continued):

Photograph 3. Penstock; view facing southwest from the dam crest, 2018. The spawning building is surrounded by the six holding ponds, and the Klamath River is visible in the background.

Photograph 4. Penstock; view facing north from dam's downstream side, 2018.

Photographs (continued):

Photograph 5. Iron Gate Reservoir with penstock intake structure and footbridge from left abutment; view facing west, January 31, 1962 (PacifiCorp archive image IG-238).
The dam crest is shown at the left, and the diversion tunnel intake structure is visible in the right background.

Photograph 6. Penstock where it enters powerhouse, September 1961 (PacifiCorp archive image IG-167).

Photographs (continued):

Photograph 7. Penstock foundation, July 25, 1961 (PacifiCorp image IG-114).

Photograph 8. Penstock forms, July 25, 1961 (PacifiCorp archive image IG-115).

Photographs (continued):

Photograph 9. American Pipe and Construction Company assembling penstock pipe for embedded sections, July 20, 1961 (PacifiCorp archive image IG-131).

Photograph 10. Penstock and intake structure, July 25, 1961 (PacifiCorp archive image IG-117).

Plate:

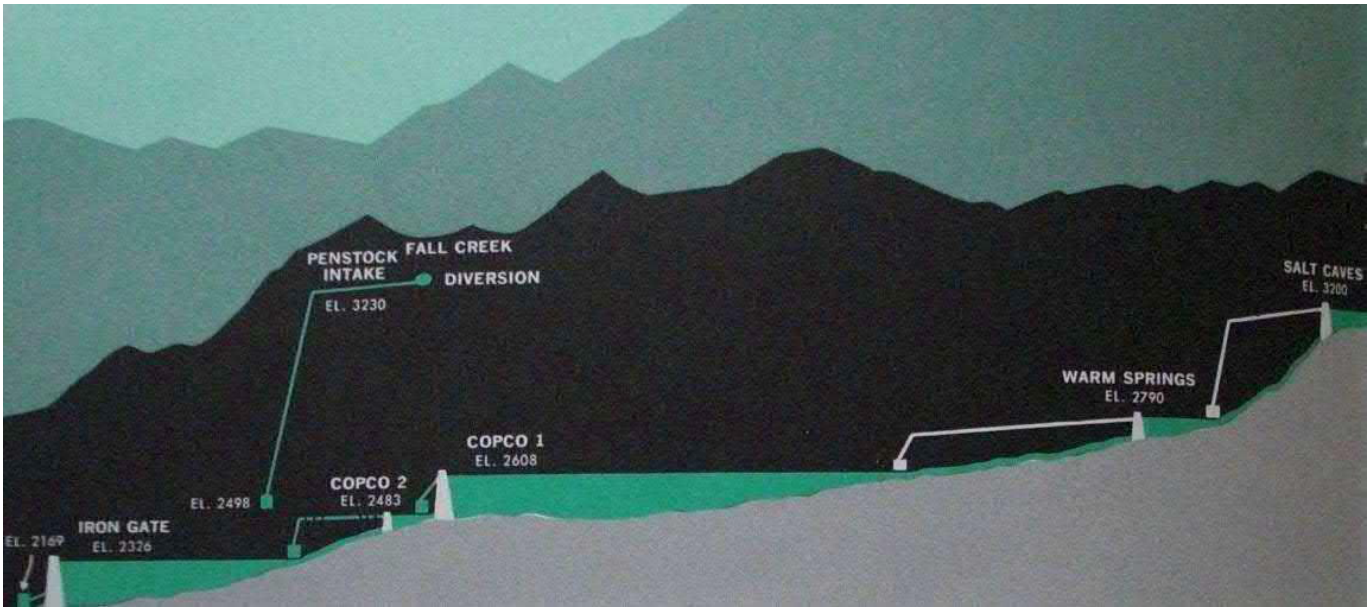


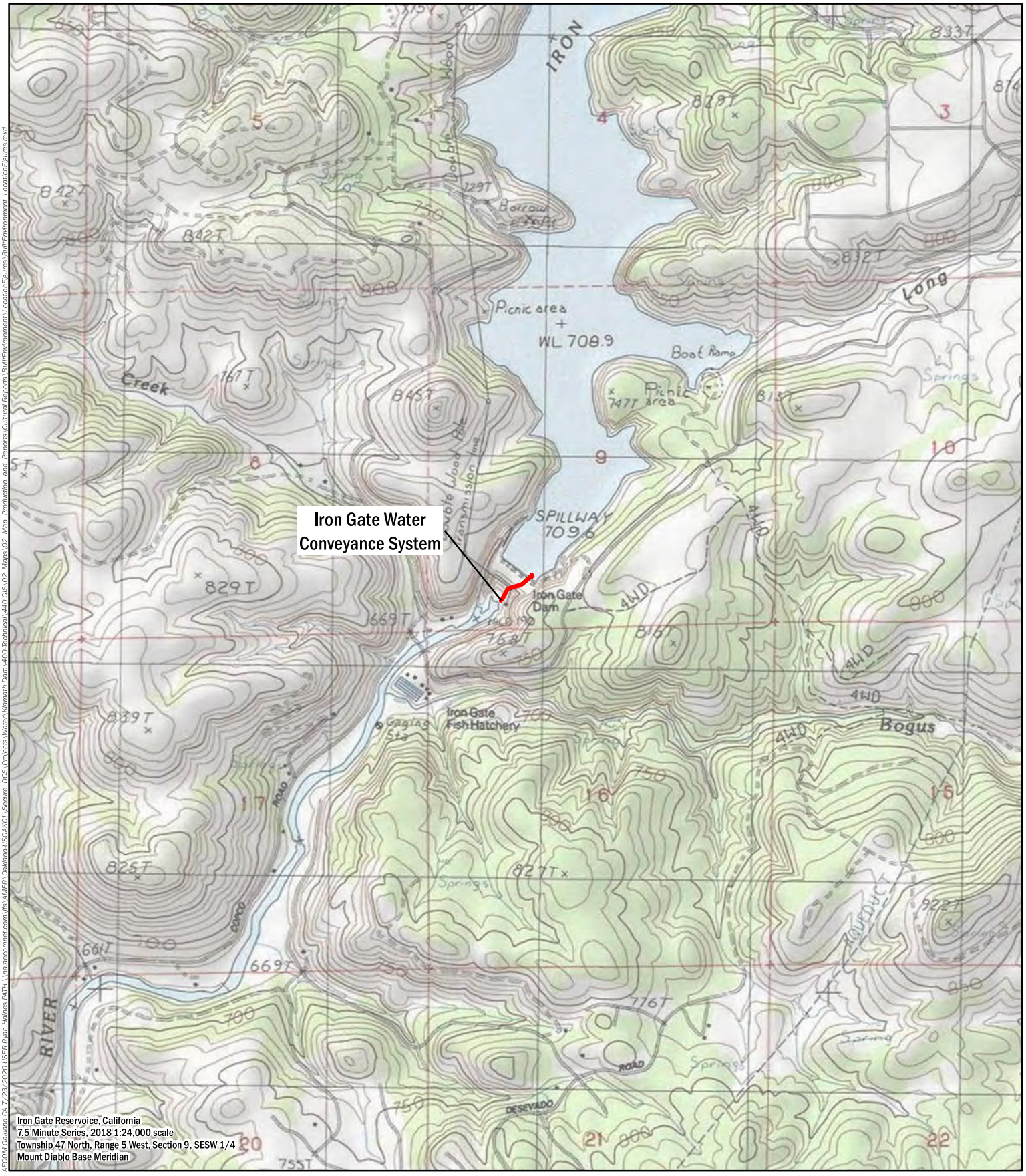
Plate 1. The approximate elevation levels of Copco Lake (2608), unnamed reservoir between Copco No. 1 and Copco No. 2 dams (2483), and Iron Gate Reservoir (2326) (Pacific Power 1962b:4). This image illustrates how gravity brings water flow from a higher-level reservoir, such as Iron Gate Reservoir, through the penstock to the powerhouse. (Salt Caves and Warm Springs were sites proposed for future development but never built.)

LOCATION MAP

Property Name: Iron Gate Historic District

***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

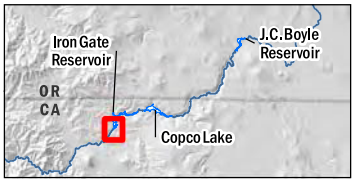
See Location Map on next page.



AECOM Oakland CA 7/23/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland\US0AK01\Secure_DCS\Projects\Water\Klamath Dam\400-Technical\440 GIS\02 Maps\02 Map Production and Reports\Cultural Reports\BuiltEnvironment\LocationFigures\BuiltEnvironment_LocationFigures.mxd

Iron Gate Water Conveyance System

Iron Gate Water Conveyance System



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0 2,000 Feet

0 600 Meters

1:24,000

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Iron Gate Water Conveyance System

Iron Gate Water Conveyance System

0 100 Feet
0 20 Meters
1:1,200

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Dam Fish Facilities

P1. Other Identifier: Iron Gate Dam Fish Facilities

***P2. Location:** ☒ **Unrestricted**

***a. County** Siskiyou

***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.

c. Address _____ City _____ Zip _____

d. UTM: Zone 10 T, 546688mE/4642547mN

e. Other Locational Data: N/A

***P3a. Description:**

The Iron Gate Dam fish facilities, as well as the Iron Gate Fish Hatchery 0.25 mile downstream (see separate DPR 523A and 523B forms), were constructed for fish conservation purposes. The California Department of Fish and Wildlife (CDFW), formerly the California Department of Fish and Game (CDFG), operates both the dam fish facilities and the Iron Gate Fish Hatchery (Fortune et al. 1966). The Iron Gate dam fish facilities consist of the following buildings and structures, which appear to be in good condition (see **Site Map**).

Fish Ladder and Trap (1962)

The fish ladder consists of 20 weir pools measuring 10 feet long and 9 feet, 3 inches wide; and terminates in a fish trap (CDFW 2014:4) (a modern auxiliary fish ladder with trap is located at the downstream Iron Gate Fish Hatchery). The ladder operates from mid-September through early June (start of adult Chinook run through release of Chinook smolts) (Logan and Hankin 2008:12). The ladder has board-form concrete walls. Fish ascend the ladder until they reach the trap adjacent to the spawning building. A remotely controlled mechanical crowder forces the trapped fish toward the spawning building and into an electro-anesthesia lift. The lift generally holds 30 to 50 fish at once. Electric shock temporarily immobilizes fish in the lift. "Ripe" fish (those nearly ready to spawn) are then moved from the lift onto the sorting table in the spawning building. Excess fish are euthanized and other fish are diverted to the holding ponds (Logan and Hankin 2008:13).

See Continuation Sheet.

***P3b. Resource Attributes:** (HP39) Other (fish management facilities).

***P4. Resources Present:** ☒ Building ☒ Structure ☒ Element of District

P5a. Photograph:

P5b. Description of Photo: Iron Gate Dam Fish Facilities, viewing southwest (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1962 (CDFW 2014:4; Pacific Power 1962a:15)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P3a. Description (continued):

Spawning Building (1962)

Inside the spawning building, a worker inspects and identifies the fish on the sorting table for species, gender, and marking. The spawning building is surrounded by, and connected to, the six circular holding ponds. Fish determined to be "unripe" are generally transferred to a flume leading to one of the six holding ponds (Logan and Hankin 2008:13). Meanwhile, workers collect eggs from ripe adult female salmon. The eggs are fertilized, rinsed, water-hardened, and transported to the hatchery building at the downstream Iron Gate Fish Hatchery (ICF Jones & Stokes 2010:A-33). The one-story, semi-subterranean spawning building has a rectangular plan, concrete foundation, and side-gable roof with minimal overhang. The gable apices contain Butler Manufacturing Company labels. Roofing and siding consist of corrugated metal. The western elevation contains two symmetrically spaced fixed multi-pane steel windows. The northern elevation, facing the dam, contains a metal pedestrian door leading to the visitor viewing area and three multi-pane steel windows with central awning operation. The northern elevation originally had four windows, but the westernmost window was replaced with the current doorway.

Fish enter the spawning building on the western elevation. Metal staircases lead to a catwalk that extends across the western elevation. Historic photographs from the February 3, 1962 Iron Gate dedication show the southern elevation, facing downriver, with four of the same multi-pane steel windows as the northern elevation (PacifiCorp archive image IG-290). The original southern elevation windows were removed and currently, the only fenestration is a vinyl frame window with a fixed central pane flanked by sliding windows. A concrete truck ramp leads to the below-grade entrance on the eastern elevation where a wood pedestrian door with inset pane is adjacent to an undated vestibule addition with a sliding top rail wood door. The wood-frame vestibule has a flat roof topped with corrugated metal, wood-board siding and a fixed window. A conveyor structure aligns with the pedestrian door. Above the doors, an orange sign with white lettering reads "NO VISITORS ALLOWED IN THIS AREA." The primary alterations include removal of the original windows at the southern elevation, and the undated vestibule addition at the eastern elevation.

A hatchery production cycle report prepared in 2008 describes the spawning building's interior as having "an anesthetization pond, killing apparatus, sorting and wash tables, spawning and fertilization area, egg-processing area, carcass conveyor belts, and water flumes for returning live fish to holding ponds. The upper level of the spawning building has viewing platforms" (Logan and Hankin 2008:9).

Holding Ponds (1962)

A total of six circular concrete holding ponds flank the northern and southern sides of the spawning building, spaced at 8.5 feet apart. "Unripe" fish remain in the ponds until they are ready to spawn. Each pond measures 30 feet in diameter and 5 feet in depth and was originally lined with redwood (*Mail Tribune* 1961). The redwood lining was removed on an unknown date. Adjacent ponds have about 8.5 feet between them. The ponds connect to the spawning building through six flumes running the length of the building (three on each side). Each pond has a separate water supply valve and center drain and can hold up to 750 adult salmon. Metal gates are raised and lowered to corral fish within the ponds. The water supply to the ponds is independent of the water used to operate the hydro-power facilities (CDFW 2014:60; Pacific Power 1962b:6).

Aerator (1964)

The aerator, constructed in 1964, was designed to increase the quality and oxygen content of water flowing to the holding ponds and an underground water supply pipe to the Iron Gate Fish Hatchery downriver (Durio 2003:109). The holding ponds at the dam site currently use a separate water supply pipe that does not pass through the aerator. The aerator at Iron Gate Dam is a concrete and wood-board structure mounted on a rock ledge, immediately east of the restroom building. The concrete base supports the wood-board aeration chamber. The water supply pipe draws water from Iron Gate Reservoir, then passes underground from the penstock area, and extends approximately 30 feet up to the aeration chamber. The pipe divides into three separate pipes before entering the aerator. An overflow line drains excess water from the aerator (ICF Jones & Stokes 2010:A-32). No alterations to the original design or materials were observed during 2018 field work.

Water Supply Pipe (1962)

The Iron Gate Dam fish facilities obtain water from Iron Gate Reservoir. Gravity-fed water flows through a 30-inch water supply pipe, which decreases to 24 inches before passing through the aerator (ICF Jones & Stokes 2010:A-33). The reservoir water flowing to the holding ponds and fish ladder is completely independent of the water used to operate the hydropower equipment (Pacific Power circa 1962b:6).

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #47-004015
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Dam Fish Facilities

*NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: Iron Gate dam fish facilities
B3. Original Use: capture and spawn anadromous fish
B4. Present Use: capture and spawn anadromous fish
B5. Architectural Style: Utilitarian
B6. Construction History:

The Iron Gate Dam fish facilities were completed in 1962 (and the aerator added in 1964) after the Iron Gate Dam's construction. Alterations to the spawning building include removal of the four original southern elevation windows, and installation circa 1990 of a single vinyl window with fixed central pane and side sliders; and an undated vestibule addition at the eastern elevation. The holding ponds were originally lined with redwood, but the lining was removed on an unknown date.

B7. Moved? No
B8. Related Features: The dam fish facilities are a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: California Department of Fish and Game

b. Builder: Morrison-Knudsen Co., Inc. (concrete fish ladder, spawning building, and holding ponds). Pacific Power fish biologists likely directed construction of the aerator.

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: Fish collection, spawning, holding, and water aeration facilities
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing) and Criterion C (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes:

B12. References:

CDFW (California Department of Fish and Wildlife). 2014. Hatchery and Genetic Management Plan For Iron Gate Hatchery Coho Salmon. Prepared for National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Arcata, California. Prepared by California Department of Fish and Wildlife, Northern Region & PacifiCorp. September.

Durio, Lori. 2003. Klamath River Hydroelectric Project District. State of California Department of Parks and Recreation. Primary Record #47-004015. Recorded July 2003 by L. Durio, CH2M Hill, New Orleans, LA. September.

Fortune, John D., Jr., Arthur R. Gerlach, and C.J. Hanel. 1966. A Study to Determine the Feasibility of Establishing Salmon and Steelhead in the Upper Klamath Basin. Oregon State Game Commission (Fortune and Gerlach) and Pacific Power & Light Company (Hanel). April. https://www.fws.gov/yreka/HydroDocs/Fortune-etal-1966.pdf (accessed September 25, 2018).

Herald and News [Klamath Falls, Oregon]. 1962. "PPL—Game Commission Incubate Steelhead Eggs." May 6.

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Historic Context

[See the District Record for the Iron Gate Historic District for a complete history of conservation and fish management in the Klamath River Basin; early fish management legislation and practices in California; and modern fish management practices on the Klamath River. Also see Fall Creek Hatchery DPR 523 forms for a more detailed history of hatcheries]

The Iron Gate Dam fish facilities, as well as the Iron Gate Fish Hatchery 0.25 mile downstream, were constructed for fish conservation purposes. The California Department of Fish and Wildlife (CDFW), formerly the California Department of Fish and Game (CDFG), operates both the dam fish facilities and the Iron Gate Fish Hatchery (Fortune et al. 1966).

The dam fish facilities, designed by the CDFG, occupy about 2 acres at the base of Iron Gate Dam (Herald and News 1962). The facilities consist of a fish ladder and trap, spawning building, holding ponds, water supply pipe, and aerator. Morrison-Knudsen Co. Inc. built the concrete fish ladder, the spawning building, and the holdings ponds (CDFW 2014:4; Pacific Power 1962a:15). At the dam's left abutment, two intakes deliver cold reservoir water into the water supply pipe. Before completion of the facilities, temporary fish traps were used at Klamathon, downstream from Iron Gate, during the fall fish run. The eggs caught in the Klamathon traps filled the Mt. Shasta Hatchery to capacity (Pacific Power 1962a:12).

The dam fish facilities were placed into operation in 1962, in conjunction with completion of the Iron Gate hydroelectric development (CDFW 2014:4; Pacific Power 1962a:15). In spring 1962, approximately a half million eggs were obtained from about 1,000 adult steelhead trapped at the Iron Gate dam fish facilities. By early May, the first 37,000 steelhead fry hatched at the Iron Gate dam fish facilities were released in gravel beds of Bogus Creek tributary, which flows into the Klamath River downstream of the dam (Herald and News 1962). In 1964, Pacific Power installed an aerator at the dam site's southern side to improve water quality for fish-related operations (Durio 2003:109).

A 1962 Pacific Power booklet described the workings of the dam fish facilities:

> Salmon and steelhead traveling up the river are attracted by the flow of water discharged from the [Iron Gate] powerhouse, which leads them into a fish ladder. A series of 20 pools leads them up in a sweeping curve to a series of six 'holding ponds.' Each of these ponds is 30 feet in diameter and approximately four feet deep. They are lined with redwood. Here the fish are held to 'ripen' until they are ready to spawn. Water to operate these holding ponds and the fish ladder is completely independent of the water used to operate the power-producing equipment. It flows through the dam in a 30-inch tube [water supply pipe] which parallels the large power penstock. Two separate intakes permit water to be drawn from different levels of the reservoir as proper temperature indicates. If necessary, auxiliary water for these fish facilities also can be pumped from the tailrace. This fish water flows first into the series of holding ponds, each of which is connected to the fish ladder, and thence down the ladder to provide the current which attracts the migrant fish. The ladder is a series of 10-foot pools which form a stair-step arrangement to lead the salmon and steelhead up to the holding ponds (Pacific Power 1962b:6).

In 1964, before completion of the Iron Gate Fish Hatchery, Pacific Power and the CDFG collaborated on an aerator to address water quality issues at the dam fish facilities. Prior to installation of the aerator, decomposing algae had been causing serious oxygen deficiencies in Iron Gate Reservoir, and compromising the quality of water supplied to the fish facilities (Merriman 1974). In 1963, about a year before the aerator was constructed, the *Mail Tribune* published an article about a proposed aerator to supply treated water to either the Iron Gate dam fish facilities or a future hatchery. The aerator project was a collaboration of Pacific Power and the CDFG. Charles Jack Hanel, the Pacific Power staff biologist at the company's district office in Medford (and designer of the Iron Gate Fish Hatchery), explained the benefits of aeration, as paraphrased by the *Mail Tribune*:

> Hanel said an experimental water aeration tower will be erected at the toe of the dam where water is drawn from the Iron Gate reservoir. The site will permit the water to be diverted to the fish holding ponds or to a possible future hatchery for the area. The PP&L biologist [Hanel] said the California department [CDFG] personnel working on the aeration program includes Jim Diley, Klamath river fisheries manager; Elton Bailey and Harold Hewitt of the Redding regional office; and Carl Hill, manager of the Mt. Shasta fish hatchery. Directing the investigation for Pacific Power is Dr. Roy Hamilton, head biologist of the power company's research department staff in Portland. The research program will involve flowing water down the tower structure to increase its oxygen content and improve water quality in other aspects. A series of tests are expected to be conducted before the most effective aerator system is proven. Water will be drawn from the reservoir through the fish-water outlets that were built into the earthfill structure [dam] when it was constructed three years ago (*Mail Tribune* 1963).

B10. Significance (continued):

In a report about Iron Gate Fish Hatchery's first year of operation, the aeration process at Iron Gate Dam was described as follows:

> Water enters the aerator through three pipes. Each pipe has three 12-inch jet-type openings which drive the water upward into cone energy dissipaters. After striking these cones, the water splashes down through three sets of baffles and into a sump from which it flows into the supply line or spills through the overflow pipe back to the river. Through a series of valves, water may be passed into the hatchery supply with or without aeration or with partial aeration (Riley 1967:3).

The aerator was so successful that the CDFG and the Canadian and Oregon fish commissions implemented the design at other fish management facilities (Merriman 1974). The nearby Iron Gate Fish Hatchery was completed in 1966 to operate in conjunction with the upriver dam fish facilities. Eggs obtained at the spawning building (dam fish facilities) are transported to the downstream hatchery building.

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the area of Conservation. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The dam fish facilities, built in 1962, add to the Iron Gate Historic District's significance by representing fish conservation efforts during the time period. The fish facilities, operated by CDFW personnel, illustrate the coordination of hydropower operations with fish management and integration of dam fish facilities with hatchery operations.

NRHP Criterion B
Research does not indicate that the dam fish facilities are associated with any historically significant individuals under NRHP Criterion B.

NRHP Criterion C
The dam fish facilities contribute to the Iron Gate Historic District for their significance under NRHP Criterion C in the area of Engineering. They are distinctive as the only such facilities for capturing and spawning anadromous fish that have been incorporated into the design and operations at any Klamath River dam site or other regional dam site. Other comparable Klamath River hydroelectric developments have had fish ladders built onto dams, specifically Link River (1920-1921), J.C. Boyle (1958), and Keno (1966) (Durio 2003). However, unlike the Iron Gate dam fish facilities, J.C. Boyle and Link River do not capture or hold fish for spawning or other processes related to artificial propagation.

NRHP Criterion D
The dam fish facilities are not significant as sources (or likely sources) of important information regarding history or prehistory. They do not appear likely to yield important information about historic construction materials or technologies and are not significant under NRHP Criterion D.

Integrity Analysis

The dam fish facilities retain integrity of location, design, setting, materials, workmanship, feeling, and association; and continue to convey their historic role in regional fish management efforts.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The facilities retain integrity of location, because they remain in their original location and maintain their functional interrelationships with the dam, the nearby Iron Gate Fish Hatchery, and other components of the hydroelectric development.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The facility features retain integrity of design, which was informed by the CDFG's experience with and understanding of effective anadromous fish management. Although the original redwood lining in the holding ponds has been removed, this alteration does not substantially diminish integrity of the ponds' design. Furthermore, fenestration changes to the spawning building do not substantially diminish the facilities' overall integrity of design. The 1964 aerator addition significantly improved fish management practices at the dam site within the period of significance and provided a model design for other fish facilities. The aerator is, therefore, a historically significant addition to the dam fish facilities.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The facilities retain integrity of setting, which is characterized by the Klamath River, the dam, and the largely undeveloped landscape. Except for construction of the nearby Iron Gate Fish Hatchery (1966), which occurred during the period of significance and as part of Iron Gate's overall plan, the setting of the hydroelectric development has undergone little change since completion in 1962.

B10. Significance (continued):

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property.* The dam fish facilities retain integrity of materials, particularly the concrete fish ladder and holding ponds. Changes to the facilities include removal of the redwood lining in the holding ponds and alterations to fenestration in the spawning building. These alterations minimally detract from integrity of overall materials.

Workmanship *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The fish facilities retain integrity of workmanship, as demonstrated by the engineering skill required to functionally interconnect the fish facility structures and incorporate them into the dam site.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The setting within the Iron Gate hydroelectric development and use of industrial construction materials collectively convey the historic character, thereby retaining integrity of feeling.

Association *is the direct link between a property and the event or person for which the property is significant.* The intact dam fish facilities and location at the Iron Gate dam site directly link the facilities with fish management and conservation in the Klamath River basin, contributing to integrity of association.

The Iron Gate Dam Fish Facilities retain integrity and are eligible as a contributing resource to the Iron Gate Historic District.

B12. References (continued):

ICF Jones & Stokes. 2010. Hatchery and Stocking Program, Environmental Impact Report/Environmental Impact Statement. State Clearinghouse #2008082025. Prepared for California Department of Fish and Game and U.S. Fish and Wildlife Service. Appendix A (Hatchery Operations). January.

Logan and Hankin (Logan, Eric and David Hankin). 2008. A Detailed Review of the Annual Hatchery Production Cycle at Iron Gate Hatchery: With Recommendations for Small Changes in Hatchery Practices that Would Reduce Rearing Mortalities and Improve Accuracy of Inventories and Estimated Number of Fish Released. Produced under contract agreement ("Code-Wire Tagging of Chinook Salmon at Iron Gate Hatchery") between the Hoopa Valley Tribal Council and the Humboldt State University Sponsored Programs Foundation. Financial support provided by U.S. Bureau of Reclamation, Klamath Basin Area Office. January.

Mail Tribune [Medford, Oregon]
1961 "Fish Ladder Now Being Constructed At Iron Gate Dam." December 21.
1963 "Experiments To Improve Oxygen Content Start." August 29.

Merriman, George. 1974. "Better Fishing Goal of Iron Gate Dam Hatchery." Del Norte Triplicate [Crescent City, California]. February 6 (Southern Oregon Historical Society, John C. Boyle Collection, box 15/16, folder 11.2.5.199).

Pacific Power (Pacific Power & Light Company)
1962a Initial Statement of Pacific Power & Light Company, Copco Division, to the Federal Power Commission. Showing Actual Legitimate Original Cost of Project No. 2082 (Klamath Basin – Iron Gate Plant), Located in the State of California. As of July 31, 1962. Iron Gate Plant (Box 5/16. John C. Boyle Collection. Southern Oregon Historical Society).
1962b Iron Gate: An Important Unit in the Klamath River Project [booklet] (Box 5/16. John C. Boyle Collection. Southern Oregon Historical Society).

Riley, James O., Jr. 1967. Annual Report, Iron Gate Salmon and Steelhead Hatchery: First Year Of Operation 1965-1966. The Resources Agency of California, Department of Fish and Game. Inland Fisheries Administrative Report No. 67-8.

Photographs:

Photograph 1. Dam fish facilities, from left showing water supply pipe adjacent to penstock and spawning building surrounded by six holding ponds; view facing south, 2018. The aerator is visible in the left background along the hillside. Pond #1 is in the right foreground. Pond #6 is in the left background (Logan and Hankin 2008:9).

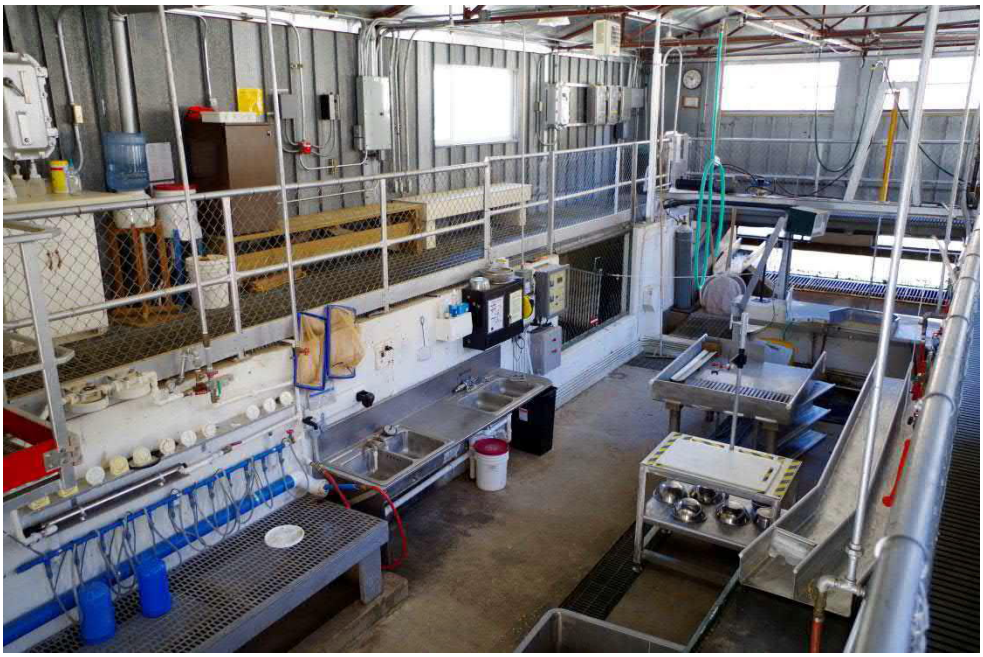
Photograph 2. Fish ladder, showing communications building and powerhouse in background; view facing east, 2018.

Photographs (continued):

Photograph 3. Fish ladder; view facing northwest, 2018.

Photograph 4. Fish trap, where fish arrive after ascending the fish ladder and remain before they are moved into the spawning building; view facing southeast, 2018.

Photographs (continued):



Photograph 5. Interior of spawning building, where fish arrive after passing through fish trap; view facing northwest, 2018.

Photograph 6. Spawning building, dam's downstream face in left background; view facing northeast, 2018.

Photographs (continued):

Photograph 7. Spawning building; view facing south, 2018.

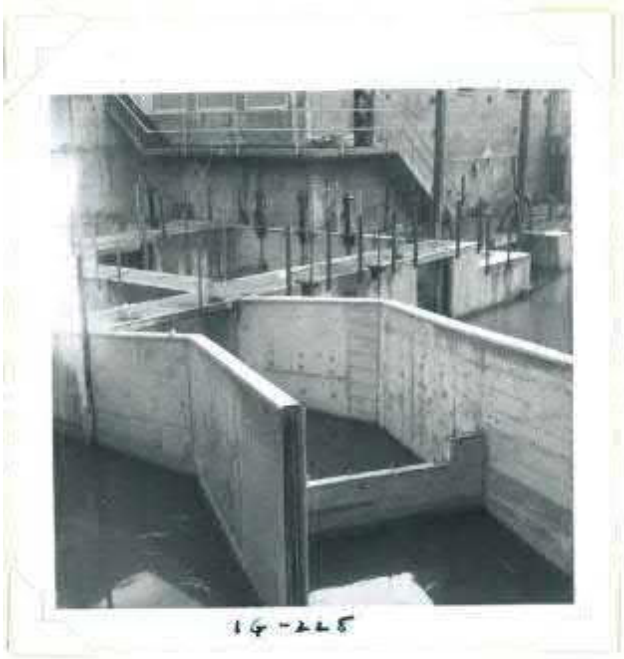
Photograph 8. Holding pond #3, showing spawning building in background; view facing west, 2018.

Photographs (continued):

Photograph 9. Aerator; view facing southeast from below, 2018.

Photograph 10. Aerator; view facing south from above, 2018.

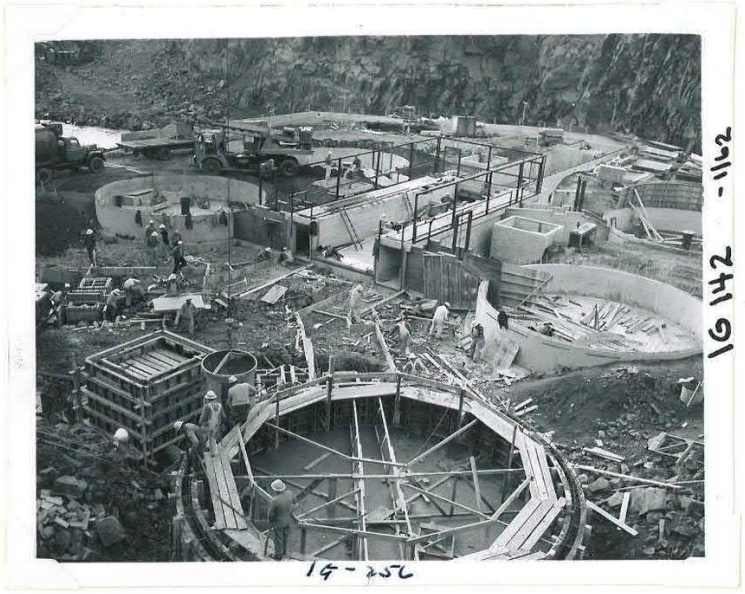
Photographs (continued):



Photograph 11. Fish ladder construction, November 30, 1961 (PacifiCorp archive image IG-225).

Photograph 12. Fish ladder construction, December 27, 1961 (PacifiCorp archive image IG-231).

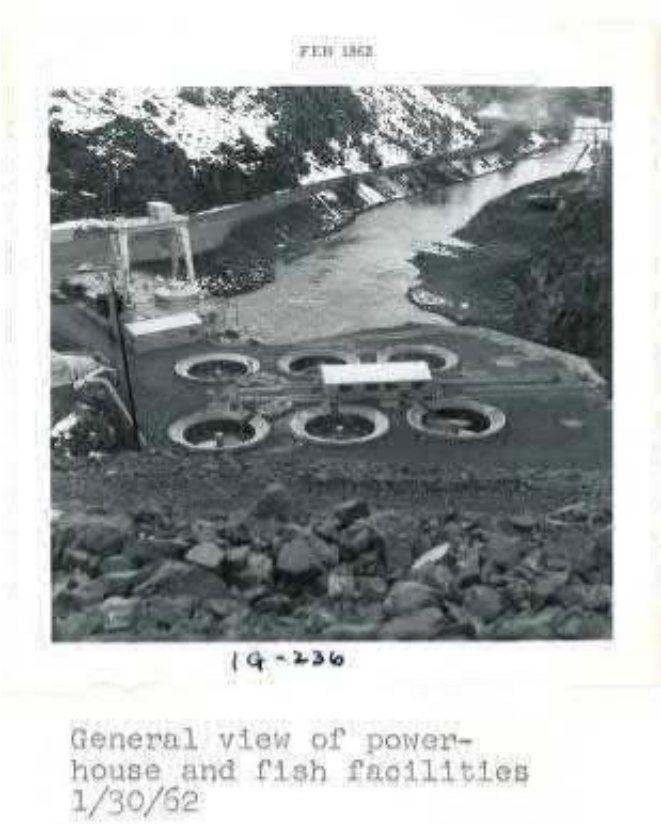
Photographs (continued):



Photograph 13. Fish facilities construction, January 1962 (PacifiCorp archive image IG-256).

Photograph 14. Assembling frame of spawning building, January 1962 (PacifiCorp archive image IG-257).

Photographs (continued):



Photograph 15. Iron Gate Dam, showing spawning building surrounded by holding ponds, January 30, 1962 (PacifiCorp archive image IG-236).

Photograph 16. Penstock and fish water pipe, January 1962 (PacifiCorp archive image IG-259).

Photographs (continued):

Photograph 17. Spawning building and holding ponds, with dam in background. Note the holding ponds' original redwood lining (PacifiCorp image archives MK-36-1). The spawning building's east elevation does not have the vestibule addition yet. The open structure visible atop the dam crest was erected to shelter visitors during the Iron Gate dedication but is no longer extant.

Plates:

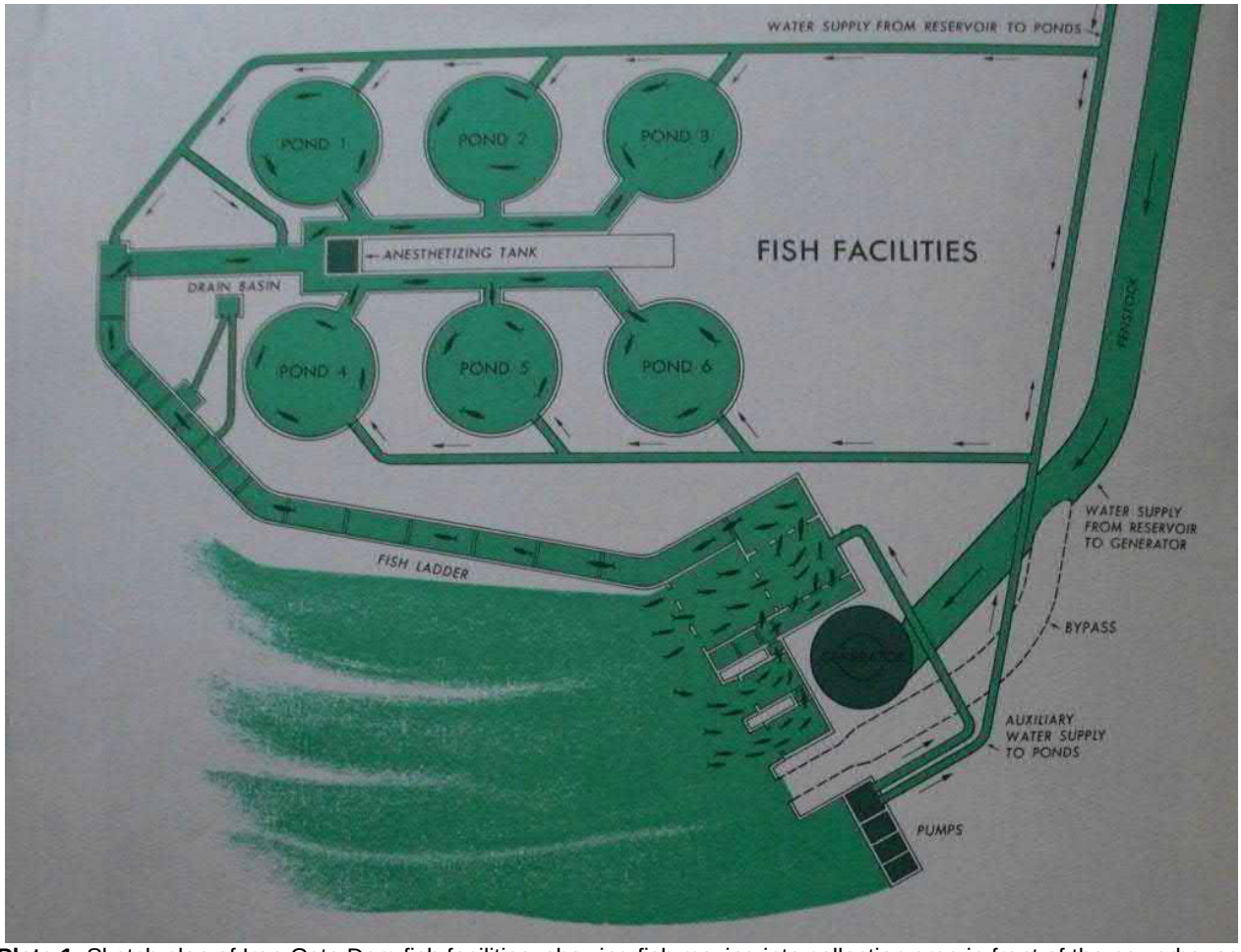


Plate 1. Sketch plan of Iron Gate Dam fish facilities, showing fish moving into collection area in front of the powerhouse, ascending fish ladder towards spawning building and occupying holding ponds (Pacific Power 1962b:6).

LOCATION MAP

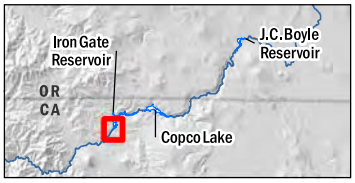
Property Name: Iron Gate Historic District

***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.

Iron Gate Reservoice, California
7.5 Minute Series, 2018 1:24,000 scale
Township 47 North, Range 5 West, Section 9, SWSW 1/4
Mount Diablo Base Meridian

Iron Gate Dam Fish Facilities



N
0 2,000 Feet
0 600 Meters
1:24,000

Iron Gate Dam Fish Facilities

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Iron Gate Dam Fish Facilities

Iron Gate Dam Fish Facilities

N

0 100 Feet

0 20 Meters

1:600

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Communication Building

P1. Other Identifier: Iron Gate Communication Building
***P2. Location:** ☐ **Not for Publication** ☐ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546702mE/4642509mN
e. Other Locational Data: N/A

***P3a. Description:**

Iron Gate support facilities include the communication and restroom buildings, as well as a modular office and storage shed. The Communication Building, constructed in 1962, is immediately northeast of the powerhouse and enables workers to monitor activity at Iron Gate. This includes monitoring water flow at the Iron Gate Fish Hatchery downstream (ICF Jones & Stokes 2010:A-33). The Communication Building was originally constructed in 1962 and was repaired in early 1965 after historic Klamath River flooding wrecked the east side of the building (PacifiCorp Archive image IG-293). The one-story utilitarian building has a rectangular plan and medium-pitched side-gable roof. Oriented facing north and resting on a concrete slab foundation, the building has standing-seam sheet-metal roofing, corrugated metal siding, and metal frame sliding windows. The northern (primary) elevation contains a row of three metal doors and one metal replacement sliding window. Based on historic photographs, this window's original operation appears to have been a fixed multi-pane with center pivot (PacifiCorp Archive image MK-35). The entrance adjacent to the window is a single replacement metal door with a tall, narrow inset pane that provides access to the office. Two other doorways were added to the northern elevation on an unknown date. The added single door leads to a secondary room, and the added double door likely leads to a storage area. Two metal replacement sliding windows of varying sizes are on the western elevation, facing the river and fish ladder. The southern elevation, which has one metal sliding window and one metal entry door at the western end, backs up to the powerhouse's elevated concrete deck. The southern elevation door accesses an exterior walkway that leads to the powerhouse entrance. The eastern elevation lacks fenestration or architectural detail. A microwave communication tower is mounted on a concrete pad at the building's northeastern corner. The office contains a desk, chair, cabinets, and a drop ceiling.

***P3b. Resource Attributes:** (HP4) Ancillary building (communication and restroom buildings)
***P4. Resources Present:** ☒ Building ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Communication Building, viewing south (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1962 (PacifiCorp Archive image IG-293)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Communication Building
*NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: communication building
B3. Original Use: communications and operations
B4. Present Use: communications and operations
B5. Architectural Style: Utilitarian

B6. Construction History: The communication building was completed in 1962 as a support facility at the Iron Gate hydroelectric development. Alterations include replacement roofing, siding, windows, and door, as well as complete reconstruction of the east side after historic December 1964 flooding.

B7. Moved? No
B8. Related Features: The communication building is a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The RHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: unknown **b. Builder:** unknown

B10. Significance:
Theme: Hydroelectric development, fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: operations facility
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes:

B12. References:

Herald and News [Klamath Falls, Oregon]. 1962. "Iron Gate Dam Dedicated." February 11.

ICF Jones & Stokes. 2010. Hatchery and Stocking Program, Environmental Impact Report/Environmental Impact Statement. State Clearinghouse #2008082025. Prepared for California Department of Fish and Game and U.S. Fish and Wildlife Service. Appendix A (Hatchery Operations). January.

Pacific Power
1962 Iron Gate Communication Building [photograph]. PacifiCorp Archive, PDX.022512 (box).
1964 Iron Gate Dam Site [photograph]. PacifiCorp Archive, PDX.000526 (box), Plant & Prop: Generating Plants, Klamath River Basin – Iron Gate Hydro Proj., 1964 Flood Photos (folder).

B13. Remarks: None

B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Commerce, Industry, and Conservation. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The Iron Gate communication building adds to the Iron Gate Historic District's significance as a support facility related to dam operations.

NRHP Criterion B
Research has not indicated that the communication building is associated with any significant individuals under NRHP Criterion B.

NRHP Criterion C
The communication building does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, and is therefore not significant under NRHP Criterion C.

NRHP Criterion D
The communication building is not significant as a source (or likely source) of important information regarding history or prehistory. It does not appear likely to yield important information about historic construction materials or technologies, and is therefore not significant under Criterion D.

Integrity Analysis

The communication building retains integrity of location, setting, design, workmanship, feeling, and association; and continues to convey its historic identity as a mid-century, utilitarian communication and support facility.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The building retains integrity of location, because it remains in its original location adjacent to the powerhouse's north side.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The building is a one-story utilitarian building that retains integrity of design, reflected primarily by its rectangular plan and low pitch side gable roof. Although the building's eastern section was wrecked during the December 1964 Klamath River flooding, that section was reconstructed with the same design on the same footprint.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The building retains integrity of setting in the remote, undeveloped area of the Klamath River basin in Siskiyou County, California. The setting is characterized by the Klamath River, the nearby Iron Gate Reservoir, and the largely undeveloped landscape. The communication building's immediate setting includes the dam, powerhouse, and fish holding tanks.

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The building retains overall integrity of materials and workmanship.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The building's historic setting and utilitarian construction design and materials contribute to the integrity of feeling.

Association *is the direct link between a property and the event or person for which the property is significant.* The presence of the building's intact, historic physical features at this location directly links the property with mid-century power development in the region, contributing to integrity of association.

The primary alterations to the communication building resulted from necessary reconstruction and repairs following the December 1964 Klamath River flooding. Those alterations were accomplished only two years after Iron Gate opened and represent Pacific Power's response to a significant natural disaster that impacted facilities and operations at Iron Gate, as well as other Pacific Power developments in the region. As a result, the alterations to the communication building following its original construction are historic in their own right and do not diminish the building's overall integrity. Furthermore, as a contributing resource to the Iron Gate hydroelectric development, the building's key aspects of integrity are its location, design, setting, and association. These aspects have not been substantially diminished by its replacement materials.

The communication building retains integrity and is eligible as a contributing resource to the Iron Gate Historic District.

Photographs:

Photograph 1. Communication Building; showing microwave communication tower at left; view facing southeast, 2018.

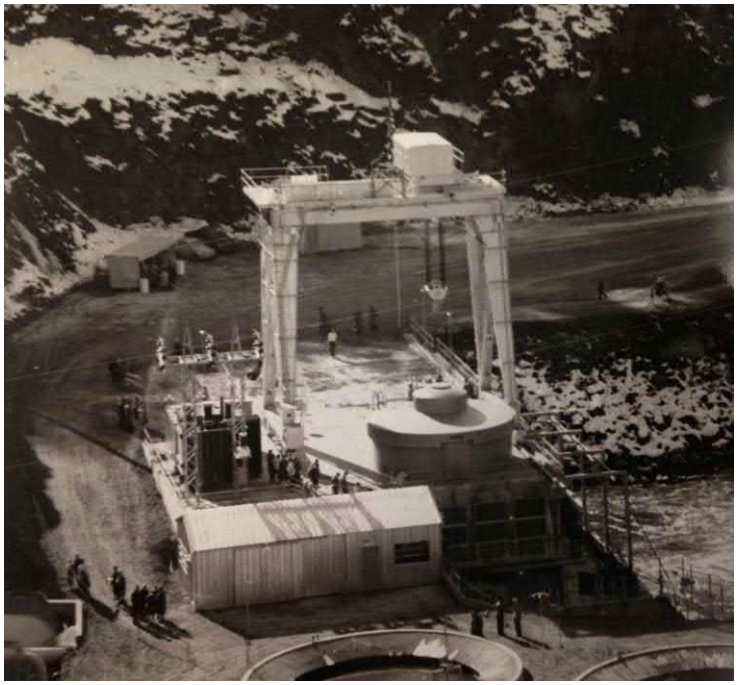
Photograph 2. Communication Building; showing substation transformer in left background; view facing southwest, 2018.

Photographs (continued):

Photograph 3. Interior; view facing west, 2018.

Photograph 4. Communication Building; view facing southeast, February 3, 1962 (PacifiCorp Archive image IG-293). Red arrow added by AECOM.

Photographs (continued):



Photograph 5. Communication Building before the historic December 1964 flooding, February 3, 1962; view facing east (Pacific Power 1962).

Photograph 6. Communication Building during the historic December 1964 flooding; view facing east (red arrow added by AECOM) (Pacific Power 1964).
Pacific power operator Len Ballard was photographed after escaping the flooded powerhouse.

Photographs (continued):

Photograph 7. Communication Building, January 22, 1965, about one month after the floods began; view facing east (red arrow added by AECOM).
Flooding in December 1964 had destroyed the building's eastern section (Pacific Power 1964).

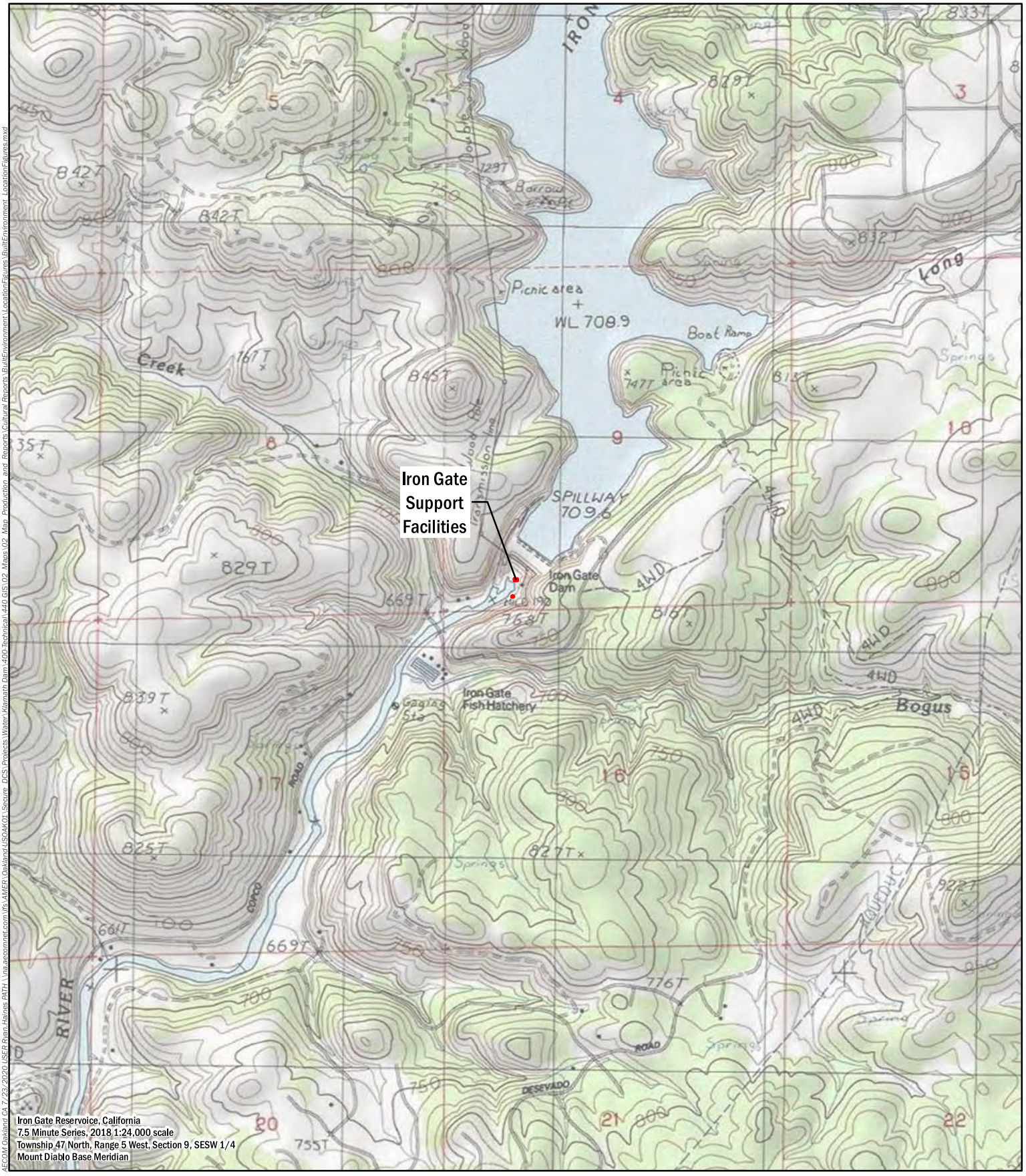
Photograph 8. Communication Building, January 22, 1965; view facing south (red arrow added by AECOM).
Flooding in December 1964 had destroyed the building's eastern section (Pacific Power 1964).

LOCATION MAP

Property Name: Iron Gate Historic District

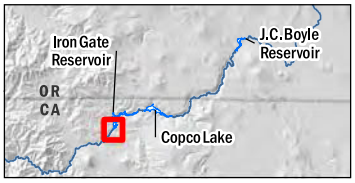
***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



AECOM Oakland CA 7/23/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland\USOAK01\Secure_DCS\Projects\Water\Klamath Dam\400-Technical\440 GIS\02 Maps\02 Map Production and Reports\Cultural Reports\BuiltEnvironment\LocationFigures\BuiltEnvironment_LocationFigures.mxd

Iron Gate Support Facilities



Iron Gate Support Facilities

N

0 2,000 Feet

0 600 Meters

1:24,000

Iron Gate Support Facilities

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Iron Gate Support Facilities

N

0 100 Feet

0 20 Meters

1:1,200

Iron Gate Support Facilities

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 1 **Resource Name or #:** Iron Gate Restroom

P1. Other Identifier: Iron Gate Restroom
***P2. Location:** ☐ **Not for Publication** ☐ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546688mE/4642429mN
e. Other Locational Data: N/A

***P3a. Description:**

The Iron Gate support facilities include the communication and restroom buildings, as well as a modular office and storage shed. The restroom building, constructed circa 1962, is 100 feet south of the powerhouse. The one-story, prefabricated, utilitarian-style building has a rectangular plan and side-gable roof. Labels centered in the gable flashing identify "Butler" (Butler Manufacturing Company) as the building manufacturer. Butler also manufactured the nearby spawning building, part of the dam fish facilities. Oriented facing north and resting on a concrete foundation, the restroom building has corrugated metal roofing and siding. A metal door with a black "Rest Room" sign is off-center along the northern (primary) elevation. The western and eastern elevations have metal doors, modern light fixtures, and metal awning windows. The western elevation door is labeled "Storage," and the eastern elevation door has a sign indicating the restroom. The southern (rear) elevation, facing the canyon wall, contains two symmetrically spaced metal awning windows. The construction date was determined to be 1962, based on the Butler manufacturer label and construction features such as the metal awning windows. The restroom building is visible in a February 1962 newspaper photograph (*Herald and News* 1962).

***P3b. Resource Attributes:** (HP4) Ancillary building
***P4. Resources Present:** ☒ Building ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Communication Building, viewing south (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1962 (*Herald and News* 1962)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Restroom
*NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: restroom
B3. Original Use: restroom
B4. Present Use: restroom
B5. Architectural Style: Utilitarian/prefabricated

B6. Construction History:

The restroom building was completed by 1962, and has no evident alterations, except for undated signage on the restroom doors.

B7. Moved? No
B8. Related Features: The restroom building is a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: unknown **b. Builder:** Butler Manufacturing Company

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: utilitarian support facilities
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes:

B12. References:

Durio, Lori. 2003. Klamath River Hydroelectric Project District. State of California Department of Parks and Recreation. Primary Record #47-004015. Recorded July 2003 by L. Durio, CH2M Hill, New Orleans, LA. September.

Herald and News [Klamath Falls, Oregon]. 1962. "Iron Gate Dam Dedicated." February 11.

ICF Jones & Stokes. 2010. Hatchery and Stocking Program, Environmental Impact Report/Environmental Impact Statement. State Clearinghouse #2008082025. Prepared for California Department of Fish and Game and U.S. Fish and Wildlife Service. Appendix A (Hatchery Operations). January.

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Commerce, Industry, and Conservation. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The Iron Gate restroom building represents support facilities within the Historic District, providing a necessary convenience to visitors and personnel, including California Department of Fish and Game employees who worked at the dam fish facilities during the period of significance.

NRHP Criterion B
Research has not indicated that the restroom building is not associated with any significant individuals under NRHP Criterion B.

NRHP Criterion C
The restroom building does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, and is therefore not significant under NRHP Criterion C.

NRHP Criterion D
The restroom building is not significant as a source (or likely source) of important information regarding history or prehistory. It does not appear likely to yield important information about historic construction materials or technologies, and is therefore not significant under NRHP Criterion D.

Integrity Analysis

The restroom building retains integrity of location, design, setting, materials, workmanship, feeling, and association.

The restroom building retains integrity and is eligible as contributing resources to the Iron Gate Historic District.

B12. References (continued):

Kramer, George. 2003. Klamath Hydroelectric Project. FERC No. 2082. Request For Determination of Eligibility. Prepared for PacifiCorp, Portland, Oregon. October.

Pacific Power
1962 Iron Gate Communication Building [photograph]. PacifiCorp Archive, PDX.022512 (box).
1964 Iron Gate Dam Site [photograph]. PacifiCorp Archive, PDX.000526 (box), Plant & Prop: Generating Plants, Klamath River Basin – Iron Gate Hydro Proj., 1964 Flood Photos (folder).

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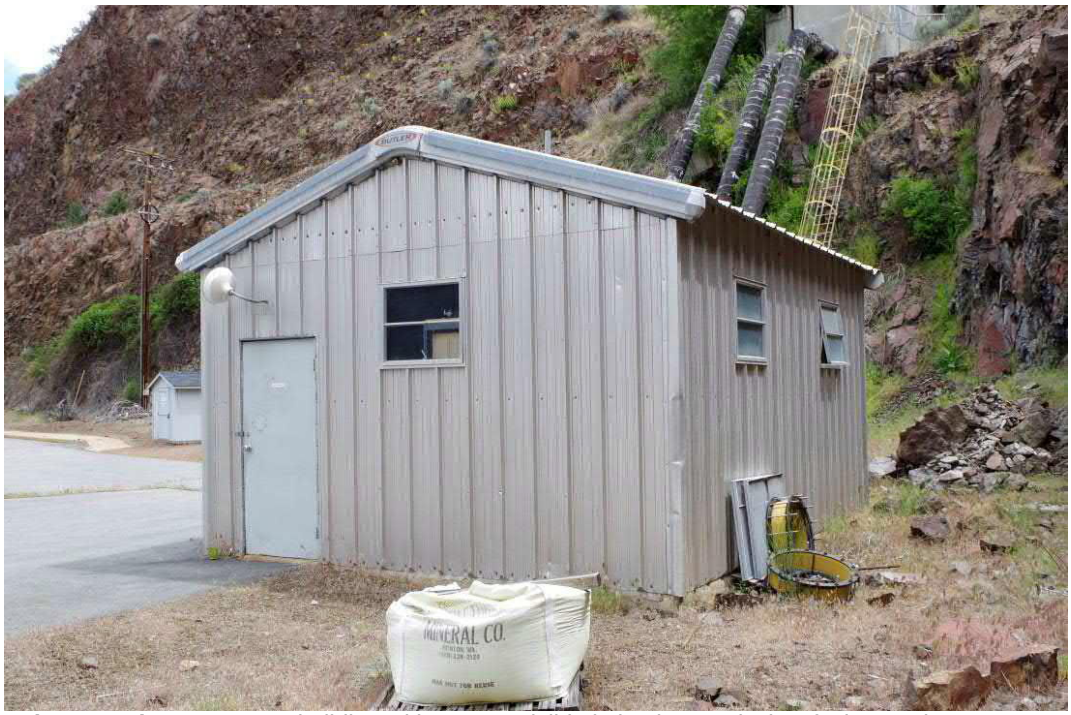
Photographs:

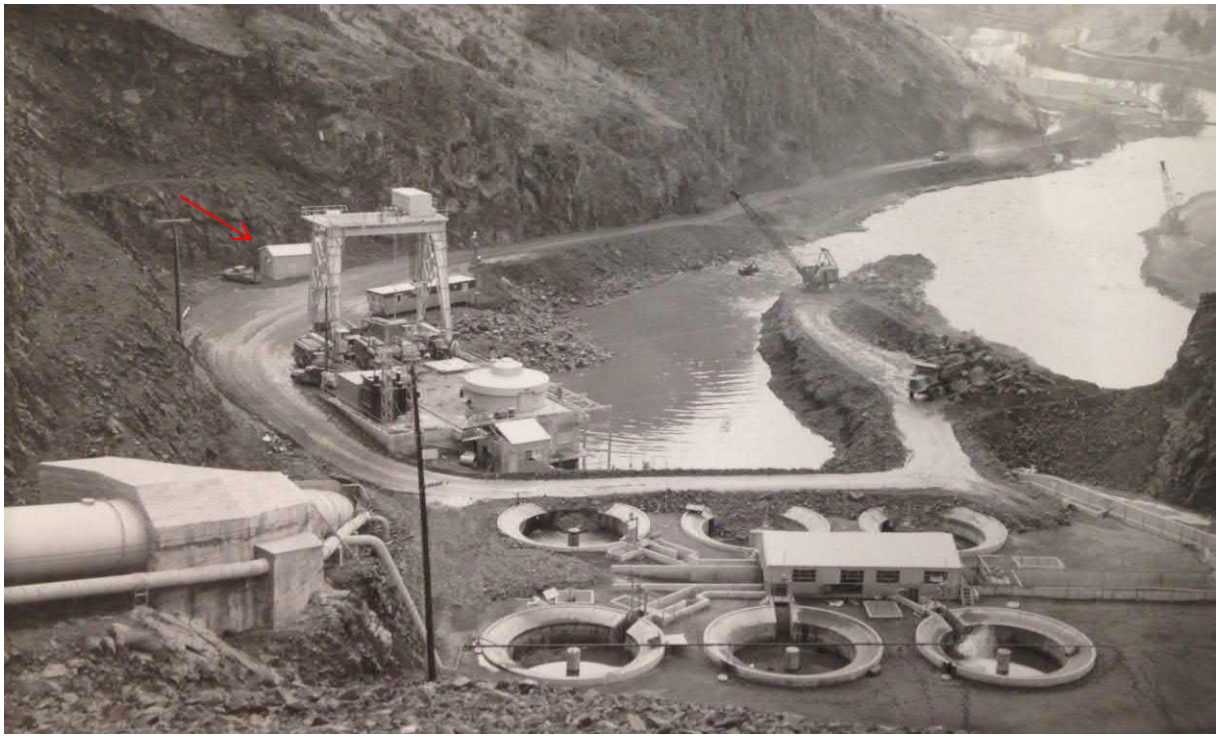


Photograph 1. Restroom building with aerator visible in background; view facing northeast, 2018.

Photograph 2. Restroom building; view facing south, 2018.

Photographs (continued):

Photograph 3. Restroom building, December 1964; view facing east (red arrow added by AECOM) (Pacific Power 1964). Pacific power operator Len Ballard was photographed after escaping the flooded powerhouse



Photograph 4. Restroom Building, January 22, 1965; view facing east (red arrow added by AECOM) (Pacific Power 1965).

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Operator Residences

P1. Other Identifier: Iron Gate Operator Residences
***P2. Location:** ☒ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; SW 1/4 of SW 1/4 of Sec 9; Mount Diablo B.M.
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546455mE/4642431mN (Residence No. 1) and 546417mE/4642422mN (Residence No. 2)
e. Other Locational Data: N/A

***P3a. Description:**

The two adjacent Iron Gate operator residences within the hydroelectric development were likely constructed circa 1965, soon after Iron Gate's completion. The estimated construction date is based on the Ranch-style design and a 1962 Pacific Power reference to upcoming "attendant" housing. That year, Pacific Power reported to the Federal Energy Regulatory Commission (FERC) that the proximity of the Hornbrook and Yreka communities rendered Iron Gate construction camps unnecessary; however, Pacific Power added that, "Housing for two plant attendants [at the Iron Gate site] will be constructed later" (Pacific Power 1962:14). The residences are sited near the northern bank of the Klamath River and are oriented facing north, toward a nearby hillside. Iron Gate Dam concrete spillway outlet is less than 500 feet to the east. The houses are encircled by an unpaved road. Entry to this small residential area is accessed through an automated metal gate off Copco Road, installed during or after 2012 (Google Maps 2012). Before the gate was installed, a section of wooden corral fencing at the entrance displayed an "Iron Gate Village" sign. This "village" appears to encompass these two residences and a wood-pole garage structure. The two similarly constructed houses are characterized by their broad, one-story form, rectangular plan, and attached one-car garage; reflecting elements of the Ranch style, popular from circa 1935 to 1975. Although many modern ranch-style buildings have hipped roofs, the side-gable roof, as found on the hatchery residences, is prevalent on ranch houses in rural areas (McAlester 2014:597). The medium-pitched roofs display narrow overhanging eaves and standing-seam sheet-metal roofing. Siding consists of vertical grooved plywood sheets and horizontal wood board. Windows include replacement vinyl frame sliding in several sizes and a vinyl picture window at the southern (rear) elevation. The building foundations are concrete. During 2018 field work, the beige exterior of Residence No. 1 distinguished it from Residence No. 2, which has a blue exterior.

See Continuation Sheet.

***P3b. Resource Attributes:** (HP2) Single-family property (worker housing); (HP4) Ancillary building (garage)
***P4. Resources Present:** ☒ Buildings ☒ Elements of District
P5a. Photograph:

P5b. Description of Photo: Operator Residence Nos. 1 and 2, viewing northwest (numbers added by AECOM) (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, circa 1965 (Pacific Power 1962)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: KRRC. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P3a. Description (continued):

The northern (primary) elevation of each house has a roof overhang that shelters the front entrance. A replacement garage door is metal panel overhead and adjacent to the entrance. The garage block is flush with the building's main block along the northern (primary) elevation, but slightly recessed from the main block along the rear (southern) elevation. Although the garage is attached, its roof has a slightly lower profile than the main roof. The southern (rear) elevation of Residence No. 1 contains a west-facing entrance sheltered by the main roof section, as well as a slightly recessed entrance with an engaged porch and wooden railing. Residence No. 2 has a similar rear entrance, but without the engaged porch and wooden railing. Both houses have a red-brick chimney along the roof's southern slope, near the center roofline. Metal fencing encloses part of the front, side, and rear yards of Residence No.1. Metal fencing encloses part of the eastern side and rear yards of Residence No. 2. Metal numbers on the façade of Residence No. 2 indicate an address of "8632," associated with either Brush Creek Road or Copco Road. Residence No. 1 does not appear to have a posted address. Landscaping is simple and consists of a few planted trees and enclosed yard lawns.

The wood-pole garage is site less than 200 feet southwest of Residence No. 2, and shelters worker vehicles. The post-and-beam structure has a shed roof with corrugated metal cladding, board-and-batten siding, and a concrete foundation. The interior is a large volume divided into three sections, each with its own metal access gate, for storage of vehicles. The built date is unknown, but the structure has been at its current location since at least 1993, based on a review of online aerial photographs. During 2018 fieldwork, the garage was in use.

The residences and wood-pole garage are in good condition.

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Operator Residences *NRHP Status Code: 3D

B1. Historic Name: Buildings 1184 and 1185 (Pacific Power 1971)
B2. Common Name: Iron Gate Operator Residences
B3. Original Use: worker housing
B4. Present Use: worker housing
B5. Architectural Style: Modern Ranch

B6. Construction History:
Residence Nos. 1 and 2 were likely constructed in 1963, shortly after completion of the Iron Gate development. Non-historic building alterations, likely completed during the 1990s, include replacement vinyl frame windows, standing-seam sheet-metal roofing, and modern metal overhead garage doors. According to prior documentation, an "[A]ddition to the operator's house [was] completed" in 1995 (FERC 2004:8-4). The documentation does not specify which residence received the addition.

B7. Moved? No
B8. Related Features: The operator residences are contributing resources to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: Unknown **b. Builder:** Unknown

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: worker housing
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes:

B12. References:

FERC (Federal Energy Regulatory Commission). 2004. Klamath Hydroelectric Project (FERC Project No. 2082). Final License Application. Volume I. Exhibit C. PacifiCorp, Portland, Oregon. February.

Google Maps. 2018. Streetview of Iron Gate Site taken in June 2012. https://www.google.com/maps/@41.9328352,-122.441237,3a,15y,128.32h,85.27t/data=!3m6!1e1!3m4!1sxDiWnOG_VXt9Ym2Xx_3qog!2e0!7i13312!8i6656 (accessed December 6, 2018).

See Continuation Sheet.

.
B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

During construction of Iron Gate dam, the operator residence site was used as an administrative, staging, and construction area (PacifiCorp archive images IG-30 and IG-31, dated August 26, 1960). In 1962, Pacific Power reported plans for two operator residences at Iron Gate (Pacific Power 1962:14). Based on Pacific Power's reference to upcoming operator housing and on historic photographs, Residences No. 1 and 2 were likely constructed in 1963, shortly after completion of the Iron Gate development. The residences survived the historic December 1964 Klamath River flooding without damage.

Evaluation (Contribute to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Conservation, Commerce, and Industry. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The operator residences, built around 1963, add to the Iron Gate Historic District's significance by representing housing for facility personnel. In the remote setting of Iron Gate, on-site residences provide a convenience to workers and facilitate dam operations by enabling workers to quickly respond to operational issues.

NRHP Criterion B
Research has not indicated that the residences are associated with any significant individuals under NRHP Criterion B.

NRHP Criterion C
The residences are basic dwellings that do not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, and are therefore not significant under NRHP Criterion C.

NRHP Criterion D
The residences are not significant as sources (or likely sources) of important information regarding history or prehistory. They do not appear likely to yield important information about historic construction materials or technologies and are not significant under NRHP Criterion D.

Integrity Analysis

The operator residences retain sufficient historic integrity to convey their role in Iron Gate operations. The buildings have lost integrity of materials and workmanship due to extensive materials replacements, but retain key aspects of integrity—location, design, setting, feeling, and association—related to their function in the hydroelectric development.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The two modern, ranch-style residences are still situated at their original building sites, and thereby retain integrity of location. They remain next to each other and in close proximity to other Iron Gate power resources; particularly the concrete spillway outlet.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The residences retain integrity of design as simple ranch-style buildings, particularly with respect to the long, rectangular plan, low-pitched gable roof, and attached one-car garage.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The residences retain integrity of setting in the Iron Gate development. The overall setting, which is characterized by the Klamath River, Iron Gate dam, and mostly undeveloped landscape, has changed little since the residences were built.

Materials *are the physical elements combined in a particular pattern or configuration to form the aid during a period in the past* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The residences have lost integrity of materials and workmanship due to non-historic alterations such as replacement vinyl windows, standing-seam sheet-metal roofing, and modern metal overhead garage doors.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* Integrity of feeling is supported by the remote setting, and proximity to the spillway outlet and Klamath River.

Association *is the direct link between a property and the event or person for which the property is significant.* The intact physical features and proximity to the Iron Gate dam directly link the residences with Iron Gate operations, contributing to integrity of association.

The operator residences retain integrity and are eligible as contributing resources to the Iron Gate Historic District.

B12. References (continued):

McAlester, Virginia Savage. 2014. *A Field Guide to American Houses*. New York: Alfred A. Knopf.

Pacific Power & Light Company (Pacific Power)

1962 Initial Statement of Pacific Power & Light Company, Copco Division, to the Federal Power Commission. Showing Actual Legitimate Original Cost of Project No. 2082 (Klamath Basin – Iron Gate Plant), Located in the State of California. As of July 31, 1962. Iron Gate Plant (Box 5/16. John C. Boyle Collection. Southern Oregon Historical Society).

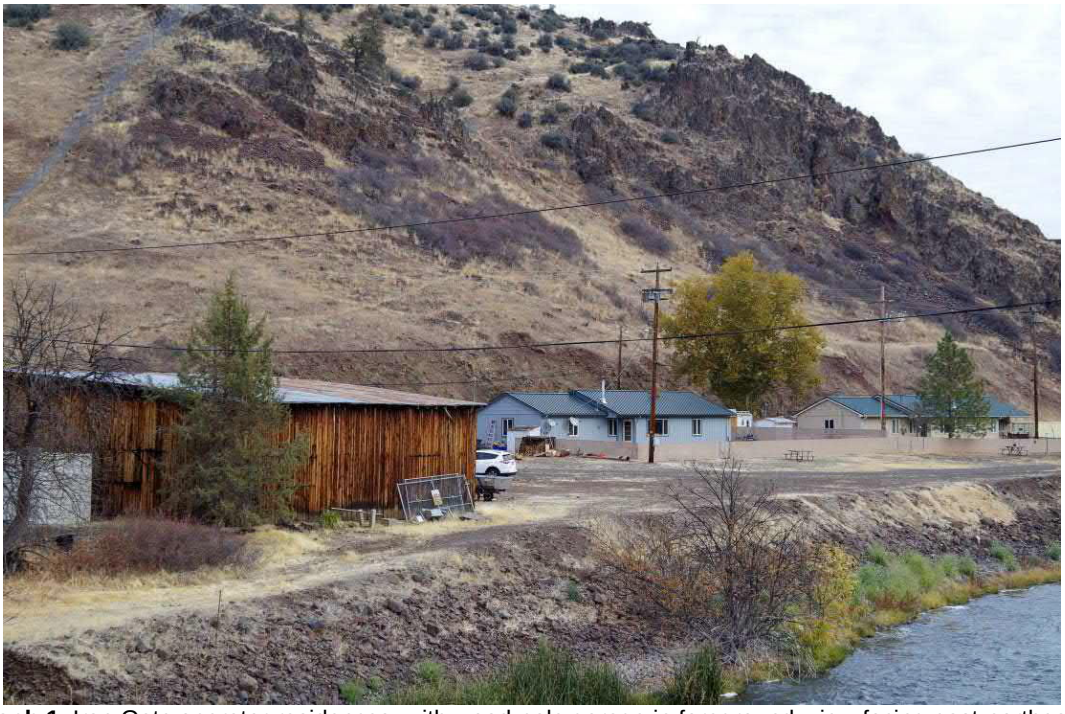
1964a Iron Gate Aerial [photograph]. PacifiCorp Archive, PDX.022568 (box), Iron Gate Diversion Tunnel Inspection, 1964-1990 (folder).

1964b Iron Gate Residence No. 2 [photograph]. PacifiCorp Archive, PDX.022568 (box), Iron Gate General 210.1, Penstock Vibration, Miscellaneous 1961-1987 (folder).

1965 Iron Gate Dam Site [photograph]. PacifiCorp Archive, PDX.000526 (box), Plant & Prop: Generating Plants, Klamath River Basin – Iron Gate Hydro Proj., 1964 Flood Photos (folder).

1971 Expenditure Requisition dated May 19, 1971. PacifiCorp Archive, PDX.026971 (box), CA – Power, Klamath River Projects – Iron Gate Plant (folder).

Photographs:



Photograph 1. Iron Gate operator residences, with wood-pole garage in foreground; view facing east-northeast, 2018. Residence No. 1 is in the background, and Residence No. 2 is in the middle ground.

Photograph 2. Residence No. 2 with Iron Gate Dam and portion of steel penstock visible in background; view facing east, 2018. Penstock identified by red arrow (added by AECOM).

Photographs (continued):

Photograph 3. Residence No. 1; view facing east, 2018.

Photograph 4. Residence No. 1, with Residence No. 2 in the left background; view facing west, 2018.

Photographs (continued):

Photograph 5. Residence No. 2, showing Residence No. 1 at left; view facing southeast, 2018.

Photograph 6. Residence No. 2; view facing northwest, 2018.

Photographs (continued):

Photograph 7. Wood-pole garage; view facing southwest, 2018.

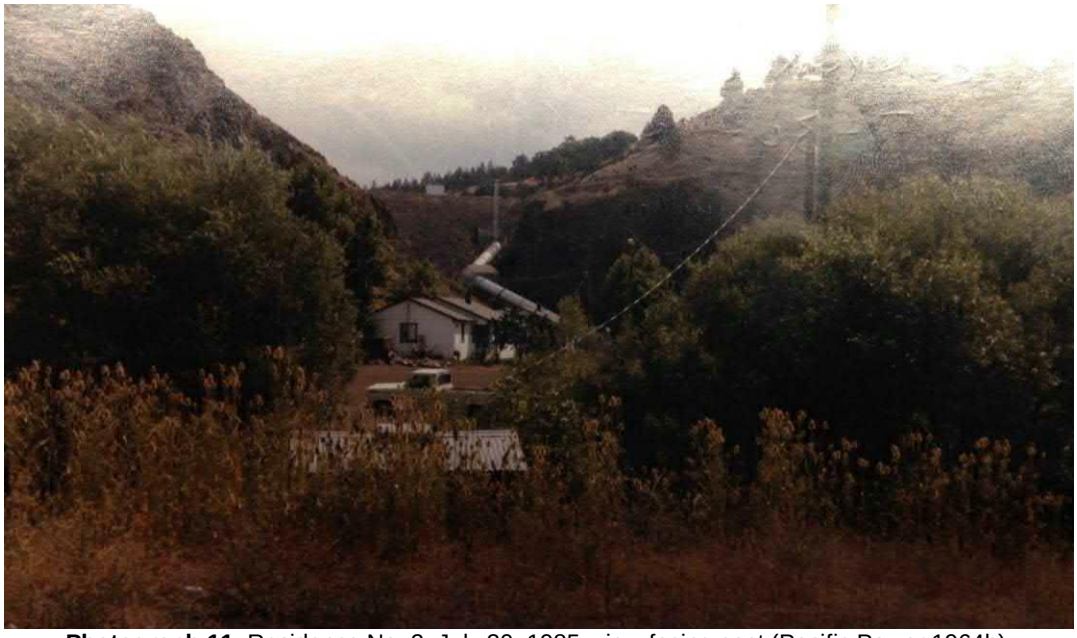
Photograph 8. Iron Gate, January 22, 1965; view facing northeast/upstream. Operator residences are visible at left.

Photographs (continued):

Photograph 9. Iron Gate aerial view, circa 1964. Operator residences are visible at lower right (Pacific Power 1964a).

Photograph 10. Iron Gate, December 1964 flooding. Operator residences are visible at upper right (Pacific Power 1964a).

Photographs (continued):



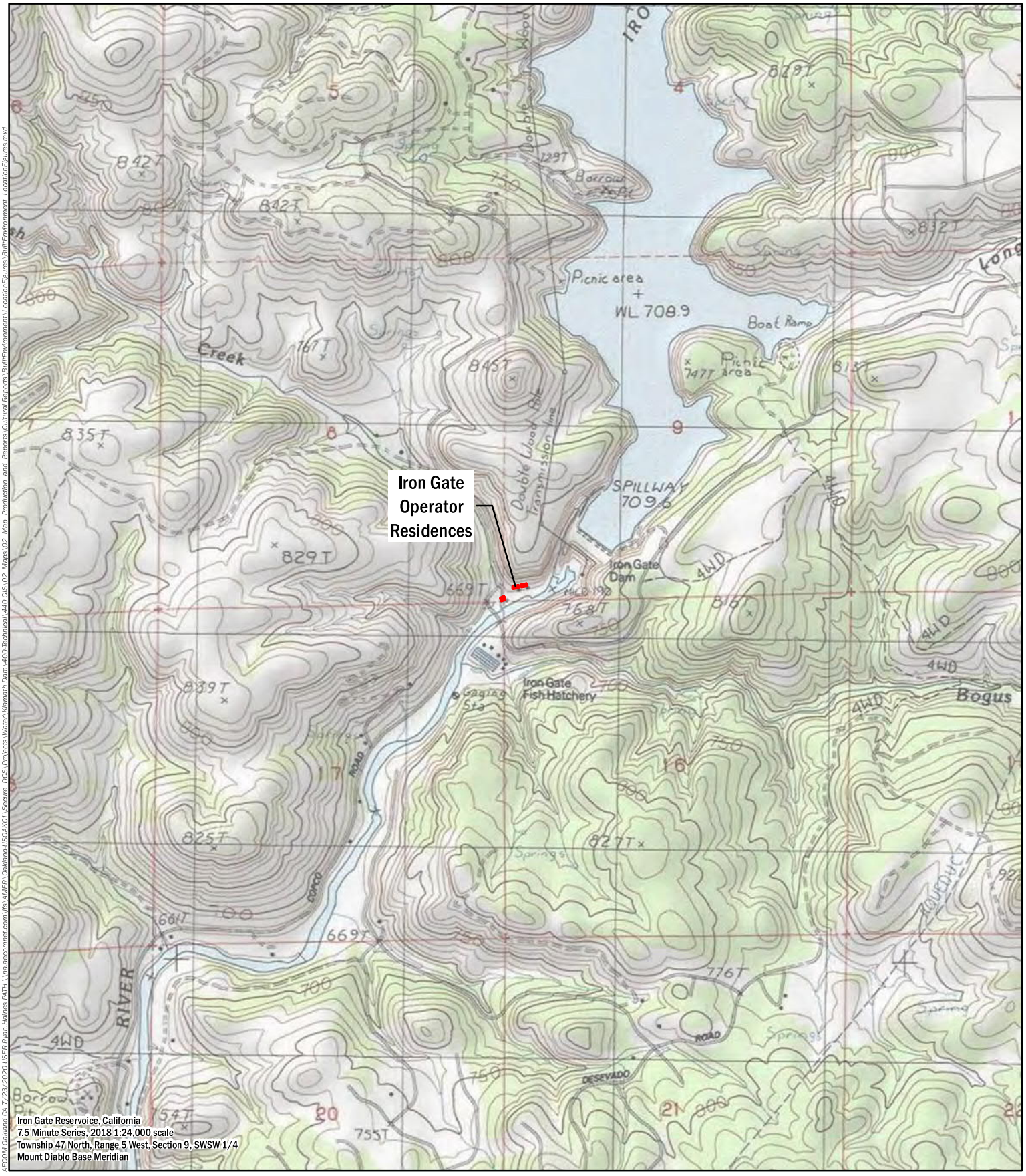
Photograph 11. Residence No. 2, July 30, 1985; view facing east (Pacific Power 1964b).

LOCATION MAP

Property Name: Iron Gate Historic District

***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

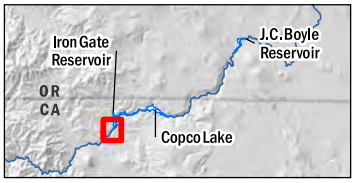
See Location Map on next page.



AECOM Oakland CA 7/23/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland\USOAK01\Secure_DCS\Projects\Water\Klamath Dam\400-Technical\440 GIS\02 Maps\02 Map Production and Reports\Cultural Reports\Built Environment\LocationFigures\BuiltEnvironment_LocationFigures.mxd

Iron Gate Operator Residences

Iron Gate Operator Residences



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0 2,000 Feet

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1:24,000

Klamath River Dam Removal
Brush Creek Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Iron Gate Operator Residences

N

0 100 Feet

0 20 Meters

1:1,200

Iron Gate Operator Residences

Klamath River Dam Removal
Brush Creek Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Fish Hatchery Administration and Auxiliary Facilities

P1. Other Identifier: Iron Gate Fish Hatchery Administration and Auxiliary Facilities
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; NE 1/4 of NE 1/4 of Sec 17; Mount Diablo B.M.
See Continuation Sheet.
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546288mE/4642144mN See Continuation Sheet.
e. Other Locational Data: N/A

***P3a. Description:**

Iron Gate Fish Hatchery has three administrative and auxiliary facilities to support hatchery operations: the office, shop, and gas shed. They are original hatchery resources, completed by 1966 for the hatchery's official opening. At the office, built in 1966, hatchery workers perform administrative functions and welcome visitors. When the hatchery first opened, the office was known as the "shop-office," and housed "the dry and frozen feed storage room, workshop, office, truck storage room, and rest rooms" (Riley 1967:3). The rectangular, single-story office building is adjacent to the hatchery building and oriented southwest, facing the raceways. Fabricated by the Butler Manufacturing Company, it displays a utilitarian style with a side-gable roof clad in standing-seam sheet metal. The siding is corrugated metal and the building rests on a slab concrete foundation. A metal awning extends across the entire southwestern (primary) elevation. Fenestration consists of two single doors, a projecting bay, and a three-light metal frame sliding window. The pedestrian doors are metal, and the door near the southern end includes a single light. This southern entrance is centered beneath a wooden "Office" sign with yellow lettering. It leads into the administrative area with a reception desk and work stations. The second entrance leads to a connected break room. The bay provides access to the frozen feed storage room, which houses a large, walk-in freezer. The southeastern elevation contains an off-center, two-light metal awning window. The window is flanked by single metal doors that lead to the separate exterior men's and women's restroom entrances, as indicated by wooden signs with yellow lettering mounted above. The Butler label is centered in the gable apex.

See Continuation Sheet.

***P3b. Resource Attributes:** (HP4) Ancillary building (office, shop); (HP39) Other (gas shed).
***P4. Resources Present:** ☒ Building ☒ Structure ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Iron Gate Fish Hatchery (from left: hatchery office, gas shed, hatchery building, shop, and fish feed silos), viewing southwest (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1966 (Riley 1967)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P2b. Location/Township, Range, and Section (continued):

USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 Mount Diablo B.M.

Contributing Resource or Feature	Township	Range	Section
Office	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Shop	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Gas Shed	47N	5W	NE 1/4 of NE 1/4 of Sec. 17

P2d. Location/UTM (continued):

Contributing Resource or Feature	Zone	UTM
Office	10 T	546288mE/4642144mN
Shop	10 T	546267mE/4642170mN
Gas Shed	10 T	546284mE/4642155mN

P3a. Description (continued):

The northeastern (rear) elevation of the office is characterized by a multi-pane metal awning window and two fixed aluminum windows with side sliders, both sheltered by curved metal canopies. This elevation faces the parking lot and is adjacent to a ConVault filling station mounted on a concrete pad. The northwestern elevation has an undated shed addition and lacks fenestration. The hatchery office is in good condition.

The shop, built in 1966, is a large, single-story, prefabricated building sited immediately northeast of the hatchery building and northwest of the office. Oriented facing southeast, the Utilitarian-style shop rests on a concrete slab foundation. It has steel post and beam construction and corrugated metal siding. The building's low-pitched, side-gable roof is clad in standing-seam sheet metal. Wedgcor labels at the gable apices indicate the manufacturer. The four symmetrically spaced garage bays, with original rollup metal doors, characterize the southeastern façade. Another large garage bay with metal overhead door and adjacent metal pedestrian door is located along the northwestern (rear) elevation. Wooden "SHOP" signs with yellow lettering are mounted at the center of the façade and above the metal entry doors at the southwestern and northwestern elevations. The narrow southwestern elevation contains a louvered window. The northeastern elevation lacks fenestration or architectural detail. The hatchery shop is in good condition.

The gas shed, built in 1966, is adjacent to the office's northwestern corner. The small, utilitarian structure has a rectangular plan and front-gable roof. Oriented facing northeast, and resting on a concrete slab foundation, the gas shed has corrugated metal roofing and siding. A vehicle/equipment entry with overhead metal door defines the northeastern (primary) elevation. A wooden "GAS SHED" sign with yellow lettering is centered above this entry. A fire extinguisher is mounted along this elevation's exterior wall, adjacent to the entry. The southeastern and southwestern (rear) elevations lack fenestration and architectural detail. The northwestern elevation contains a metal entry door. Immediately east of the gas shed is a ConVault combined diesel and unleaded fueling station. The gas shed is in good condition.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #47-004015
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Fish Hatchery Administration and Auxiliary Facilities *NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: Iron Gate Hatchery Administration and Operations
B3. Original Use: administration and operations facilities
B4. Present Use: administration and operations facilities
B5. Architectural Style: Utilitarian

B6. Construction History:

The hatchery's administrative and auxiliary facilities buildings were completed in 1966 to support hatchery operations at Iron Gate. The office has an undated shed addition at the western elevation. The shop and gas shed appear to be unaltered.

B7. Moved? No
B8. Related Features: The hatchery's administrative and auxiliary facilities are contributing resources to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: Charles "Jack" Hanel, Pacific Power fish biologist, designed the hatchery to comply with California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) standards.

b. Builder: Pacific Power and Morrison-Knudsen Co., Inc.

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: administration and operations facilities
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes:

B12. References:

Riley, James O., Jr. 1967. Annual Report, Iron Gate Salmon and Steelhead Hatchery: First Year Of Operation 1965-1966. The Resources Agency of California, Department of Fish and Game. Inland Fisheries Administrative Report No. 67-8.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10.Significance (continued):

Evaluation (Contributes to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the area of Conservation, which includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The hatchery's administrative and auxiliary facilities add to the Iron Gate Historic District's significance by providing a hatchery office that houses administrative functions, employee facilities, and visitor reception; and a shop and gas shed that provide auxiliary support for hatchery-related equipment and fish propagation activities. The facilities play supporting roles in hatchery fish management activities, and thereby contribute to Iron Gate's significance in the area of Conservation.

NRHP Criterion B
Research does not indicate that the facilities are associated with any historically significant individuals under NRHP Criterion B.

NRHP Criterion C
The hatchery facilities do not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, and are therefore not significant under NRHP Criterion C.

NRHP Criterion D
The hatchery facilities are not significant as sources (or likely sources) of important information regarding history or prehistory. They do not appear likely to yield important information about historic construction materials or technologies and are not significant under NRHP Criterion D.

Integrity Analysis

The hatchery's administrative and auxiliary facilities retain integrity of location, setting, design, materials, workmanship, feeling, and association, and convey their supporting roles in artificial fish propagation at Iron Gate Fish Hatchery.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The facilities are clustered at their original building sites, and thereby retain integrity of location.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The facilities retain integrity of design as simply constructed utilitarian buildings and structures. Although the office has an open shed addition along the western elevation, views of the addition from the picnic and visitor center are mostly obscured by the adjacent gas shed.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The facilities retain integrity of overall setting, characterized by the Klamath River, the nearby Iron Gate dam, and the remote, undeveloped river canyon landscape. The surrounding buildings and structures, including the hatchery building, raceways, and hatchery residences, are original to the 1966 hatchery construction, have undergone little change since completion, and advance the hatchery's fish propagation activities.

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The facilities retain integrity of materials and workmanship due to their minimal alterations since original construction.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The integrity of feeling is supported by the remote setting and proximity to the Iron Gate dam, the Klamath River, and other associated hatchery resources.

Association *is the direct link between a property and the event or person for which the property is significant.* The facilities' intact physical features, location within the hatchery, and proximity to Iron Gate dam directly link them with fish management and conservation in the Klamath River basin, contributing to integrity of association.

The hatchery's administrative and auxiliary facilities retain integrity and are eligible as contributing resources to the Iron Gate Historic District.

Resource(s)	Date	Applicable NRHP Criteria	Area(s) of Significance	Contributing/ Individually Eligible
Office	1966	A	Conservation	Contributing
Shop	1966	A	Conservation	Contributing
Gas shed	1966	A	Conservation	Contributing

Photographs:

Photograph 1. Office, showing southern (primary) and eastern elevations; view facing north, 2018.

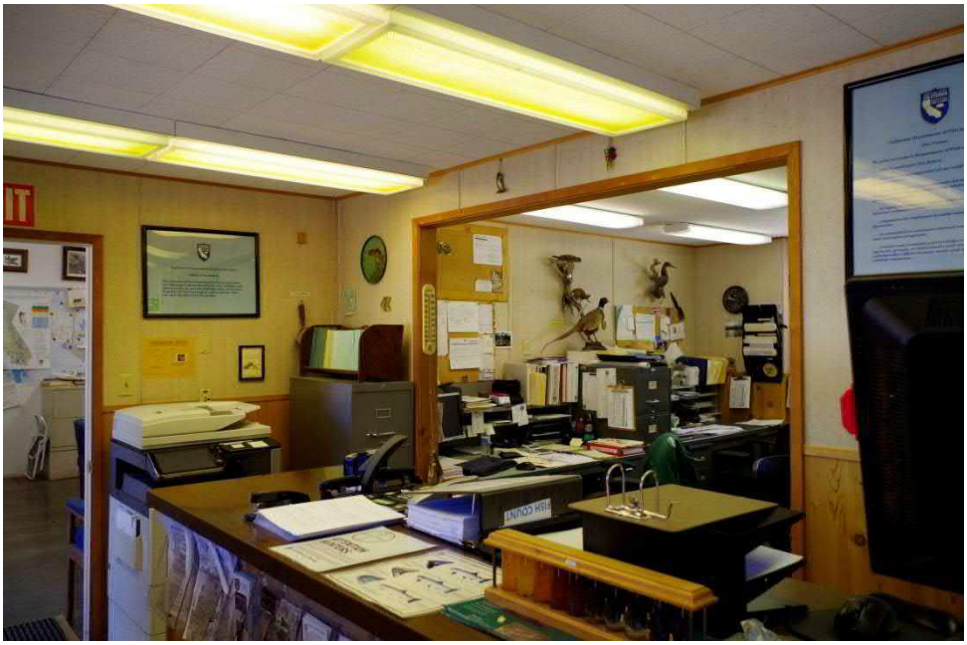
Photograph 2. Office, showing northern (rear) elevation; view facing southwest, 2018. The gas shed is visible at right.

Photographs (continued):

Photograph 3. Office, showing western elevation with open shed addition; view facing east, 2018. Hatchery Residence No. 1 visible in right background.

Photograph 4. Office interior, showing front door and reception counter; view facing southwest towards the raceways, 2018.

Photographs (continued):



Photograph 5. Office interior, showing reception counter in foreground and work stations in background; view facing northwest, 2018.

Photograph 6. Office interior, showing breakroom; view facing north, 2018.

Photographs (continued):

Photograph 7. Entrance to frozen feed storage area, showing walk-in freezer; view facing northeast, 2018.

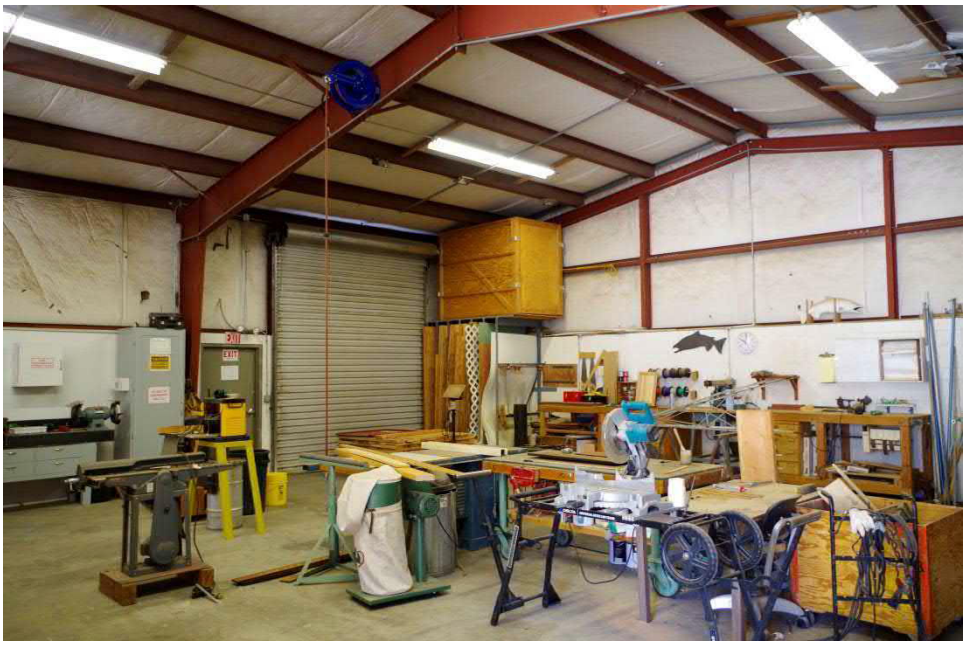
Photograph 8. Shop; view facing north, 2018.

Photographs (continued):

Photograph 9. Shop; view facing west, 2018.

Photograph 10. Shop, rear elevation; view facing south, 2018.

Photographs (continued):



Photograph 11. Shop interior; view facing north, 2018.

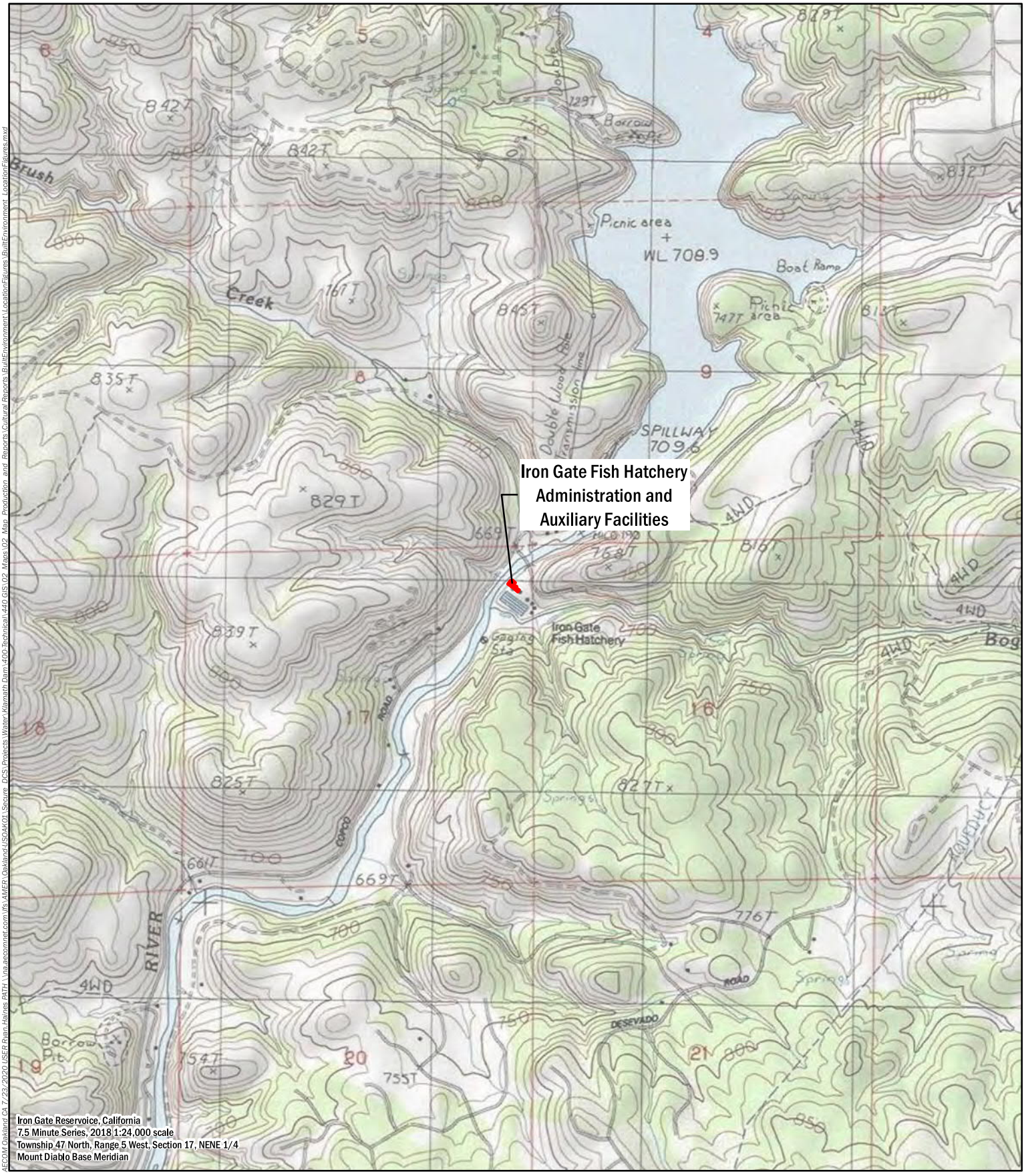
Photograph 12. Gas shed; view facing south. Hatchery office visible in right background, 2018.

LOCATION MAP

Property Name: Iron Gate Historic District

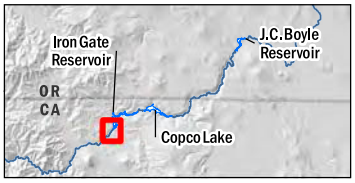
***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



AECOM Oakland CA 7/23/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland\US0AK01\Secure DCS\Projects\Water\Klamath Dam\400-Technical\440 GIS\02 Maps\02 Map Production and Reports\Cultural Reports\BuiltEnvironment\LocationFigures\BuiltEnvironment_LocationFigures.mxd

Iron Gate Fish Hatchery Administration and Auxiliary Facilities



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Iron Gate Fish Hatchery Administration and Auxiliary Facilities

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

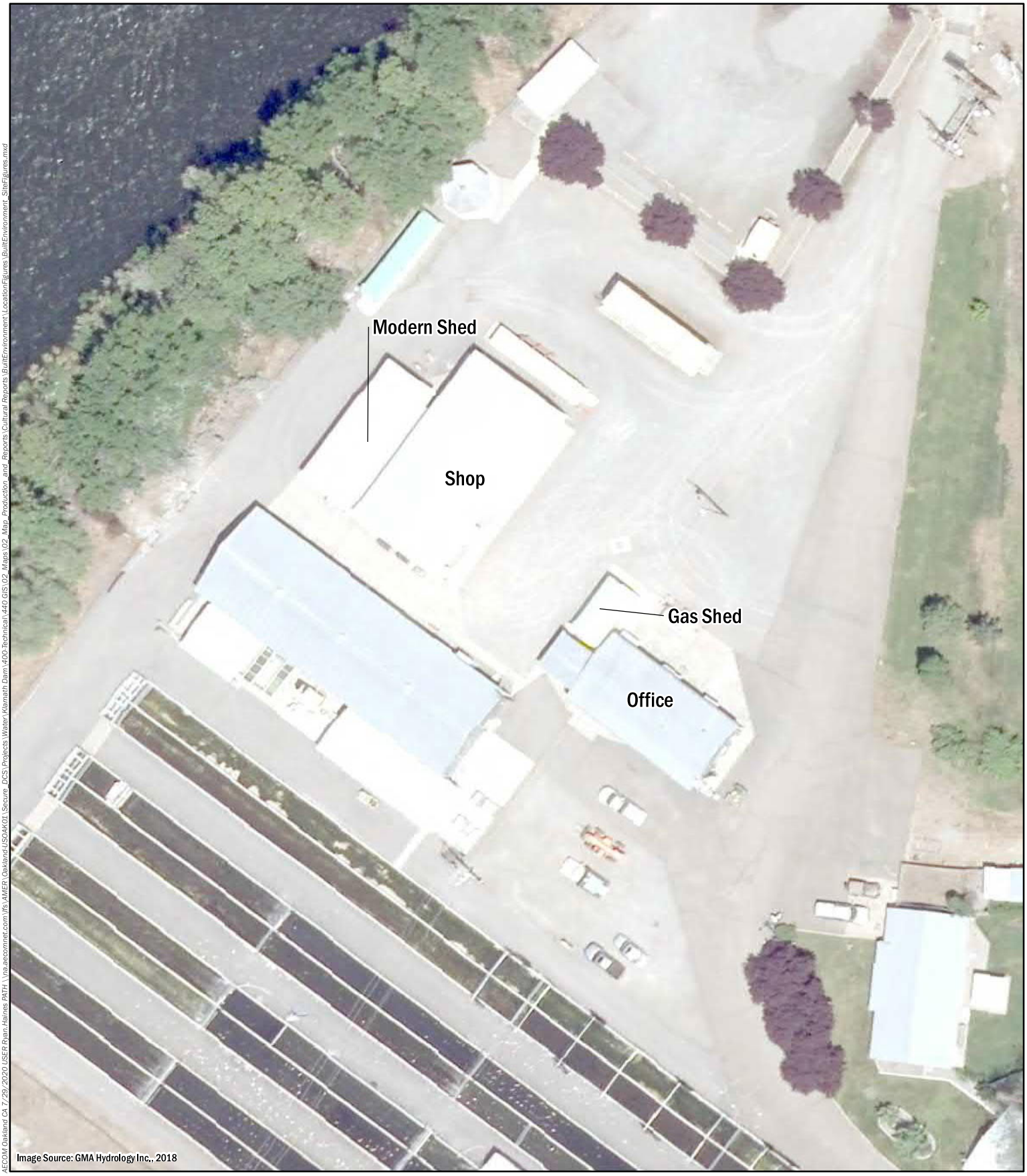
AECOM
July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.



Iron Gate Fish Hatchery Administration and Auxiliary Facilities

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Iron Gate Fish Hatchery Administration and Auxiliary Facilities

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Hatchery Fish Facilities

P1. Other Identifier: Iron Gate Hatchery Fish Facilities
***P2. Location:** ☒ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; NE 1/4 of NE 1/4 of Sec 17; Mount Diablo B.M.
See Continuation Sheet**.**
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546255mE/4642149mN See Continuation Sheet.
e. Other Locational Data: N/A

***P3a. Description:**

The Iron Gate Hatchery Fish Facilities consist of a hatchery building, raceways and settling ponds, fish feed silos, and an auxiliary fish ladder and trap (see Site Map). The hatchery building, completed in 1966, contains most of the equipment used in raising fish from the egg stage to the fry stage. Fry are juvenile fish no longer dependent on a yolk-sac and able to feed themselves. Fry develop into fingerlings, which have scales and functional fins. Salmon have their own developmental stages, including egg, sac fry, parr, smolt, post-smolt, and adult.] (Logan and Hankin 2008:10). The building is centrally located on the grounds of the Iron Gate Fish Hatchery, adjacent to the raceways. The hatchery building obtains water-hardened eggs transported a short distance from the spawning building at the base of Iron Gate dam. The spawning building is part of the Iron Gate dam fish facilities. Hatchery workers measure the eggs and store them in incubator trays until they hatch, and "eyed" eggs can be identified. Eyed eggs are fish eggs containing embryos that have sufficiently developed so that the black spot of the eyes are visible through the egg membrane. This indicates that the egg is less sensitive to movement and can be safely handled or transported (Fishbase.org 2018). Eyed eggs at Iron Gate Fish Hatchery are placed into a bounce picker, which sorts out the live eggs. After sorting is completed, the live eggs are returned to incubators (ICF Jones & Stokes 2010:A-33).

See Continuation Sheets.

***P3b. Resource Attributes:** (HP39) Other (hatchery building)
***P4. Resources Present:** ☒ Building ☒ Structure ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Hatchery Building, viewing west (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1966 (Riley 1967)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P2b. Location/Township, Range, and Section (continued):

USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 Mount Diablo B.M.

Contributing Resource or Feature	Township	Range	Section
Hatchery Building	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Raceways	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Settling Ponds	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Fish Feed Silos	47N	5W	NE 1/4 of NE 1/4 of Sec. 17

P2d. Location/UTM (continued):

Contributing Resource or Feature	Zone	UTM
Hatchery Building	10	546255mE/4642149mN
Raceways	10	546266mE/4642094mN
Settling Ponds	10	546220mE/4642014mN
Fish Feed Silos	10	546292mE/4642187mN

P3a. Description (continued):

Water from Iron Gate Reservoir is delivered to the hatchery building through a 30-inch pipeline that passes through the aeration tower at the dam site, then through 24-inch pipes to the spawning building and to the fish hatchery complex. A 10-inch pipeline supplies the hatchery building (Logan and Hankin 2008:10).

The large, one-story utilitarian hatchery building measures 40 feet by 120 feet, and rests on a concrete foundation. It has a rectangular plan, steel-frame construction, and side-gable roof. Roofing and siding consist of corrugated metal and a metal vent is located along the roof ridgeline. A vehicle/equipment entrance, centered along the narrow northern elevation and facing the Klamath River, has a rollup metal garage door and flush metal panel entry door. A wooden “HATCHERY” sign with yellow lettering is mounted at the building corner. An “EMPLOYEES ONLY” sign is mounted adjacent to the vehicle/equipment entrance. The eastern elevation contains a flush metal panel entry door with the same wood “HATCHERY” sign centered above it, and the same “EMPLOYEES ONLY” sign adjacent to it. The narrow southern elevation contains a metal entry door with the same signage placement as the eastern elevation. The western elevation, which parallels and faces the raceways, lacks fenestration. A propane tank and separate garage/storage building are adjacent to this elevation.

At the western elevation, a 2015 addition was built to house two Aquafine ultraviolet water treatment systems. The new systems were installed to increase survival rates for eggs and fry (Aquafine 2017). The addition sits atop a slab-on-grade concrete foundation and has two metal pedestrian doors and a metal overhead garage door. Siding is corrugated metal. Along the same elevation, an open shed with steel-frame construction sits atop a concrete foundation, and contains a closed water filtration system.

The interior materials are characterized by concrete flooring, and hardboard walls and ceiling. Logan and Hankin (2008) provide an inventory of hatchery building equipment prior to the 2015 addition:

> One end of the hatchery building is occupied by 123 ‘Mari Source’ (a division of Flex-i-lite Consolidated.) vertical flow incubators. Incubators are grouped in vertical “stacks” consisting of 12 screen-covered 8” x 14” incubator trays supported on a vertical rack system. Water is supplied continually to each stack and flows through the trays from top to bottom. The top tray is used for settling of solid debris. The eleven trays below hold eggs or fry in 8” x 14” screened baskets. Each tray can be pulled out like a drawer to access its contents at various stages of incubation and early rearing process.
>
> The hatchery building also contains three fiberglass troughs (16’L x 22”W x 12”D) and four fiberglass tanks (16’L x 32” W’ x 30”D), each with water supply and drain. The troughs are used during tasks such as sizing and counting eggs, elimination of infertile eggs, and weighing and counting of fry. The tanks are sometimes used to raise or hold coho or steelhead fry prior to transfer to outside ponds. Excess eggs may also be held in the tanks. Three additional fiberglass tanks (16’L x 32” W’ x 30”D) outside the hatchery building are available for rearing of fry or for use [by] the marking crews during tagging. The hatchery building has an internal office/lab room for data and computer tasks (Logan and Hankin 2008:10).

P3a. Description (continued):

Once hatched, the fry are placed into the adjacent raceways until they are mature enough to release into the Klamath River (Miller 2007). Juvenile Chinook and trout remain in the raceways for several months, while the coho remain for up to a year due to their longer freshwater rearing phase (Bowman 2010).

During the hatchery's first operating season in 1965-1966, the hatchery building was equipped with 136 stacks of Heath incubators (2,176 trays), running on a continuous flow water system. The annual report for the season, by CDFG's James O. Riley, Jr., described the process: "The electric pump, which circulates water in the closed system, is backed up by a separate pump driven by a 19 HP air-cooled diesel engine. This diesel engine starts automatically when the water flow through the supply line stops. Water temperature in the closed system is controlled by space heaters" (Riley 1967:3). The hatchery building also had 12 fiberglass Heath troughs that were not connected to the closed recirculating water system, while the hatchery building's laboratory provided room for "study of diseased fish, water analysis, and chemical storage" (Riley 1967:3).

Raceways and Settling Ponds (1966)

The Iron Gate Fish Hatchery contains eight paired raceways, built in 1966, that are situated between the auxiliary fish ladder and the hatchery building. Raceways are artificial channels used in aquaculture for freshwater species, and for marine species that need constant water flow. At Iron Gate, the raceways are used to rear juvenile fish from early fry to release stage (Logan and Hankin 2008:12). Fry are transferred from the hatchery building's incubator trays or hatchery troughs to the raceways in an aerated ponding tank mounted on a forklift, in a process called "ponding" (Logan and Hankin 2008:23). Steelhead fry are ponded into raceway A, Coho fry into raceway B, and Chinook fry into raceways C through H. Up to a million fry may be ponded in each of the six C through H raceways (Logan and Hankin 2008:25-26).

The raceways are collectively the largest built resource in the hatchery setting. Constructed primarily of concrete, each raceway measures 10 feet wide and 400 feet long and holds four 100-foot sections or ponds. Slots in the pond walls, set at 100-foot intervals, accommodate screens and eight checkboards, which maintain a 24-inch water level depth. The first pond in each raceway can be subdivided into two 50-foot ponds in which to confine fry. Water enters each raceway through three rectangular openings in the head flume. A tailrace at the end of each raceway collects effluent, which is discharged into the Klamath River or diverted to the settling ponds (ICF Jones & Stokes 2010:A-33; CDFW 2014:60). A paved path with metal railing leads from the raceway area to the auxiliary fish ladder.

Two settling ponds treat the water that is continuously discharged from the raceways (ICF Jones & Stokes 2010:A-32-33). Surrounded by vegetation, the ponds are on the southern side of Bogus Creek near its confluence with the Klamath River. Bogus Creek forms a physical divide between the settling pond site and the rest of the hatchery area. The two flow-through ponds measure approximately 300 feet long. They are arranged in a parallel configuration with about 25 feet between them. The southern pond measures about 100 feet at its widest point, while the northern pond measures about 50 feet at its widest point. They converge to a single discharge point, and as sediment settles, discharge drains into the river through concrete headgates. The settling ponds have not been dredged; however, routine maintenance includes weed removal from the pond banks (ICF Jones & Stokes 2010:A-32-34). Manually operated metal wheels control the headgates. Based on aerial photographs, it appears that the ponds have had the same general boundaries and configuration since at least 1998. Before 1998, it appears that there was only one small pond; however, that appearance may be due to the quality of the poor aerial photograph and the presence of overgrown vegetation (HistoricAerials.com).

Fish Feed Silos (1966)

The Fish Feed Silos, installed around 1966, are sited near the hatchery entrance, just east of the Picnic and Visitor Center. The four roughly diamond-shaped metal tanks are numbered 1 through 4. They are elevated by metal posts installed in a poured-concrete pad, and stabilized by diagonal metal up-braces. A metal ladder with guard leads to a metal catwalk extending along the tanks' upper sections and additional access steps to the tank peaks. The ladder guard appears to be a modern safety-related addition to the structure. Currently, a flatbed truck with IAS Aerospreader 250 Feed Master drives beneath the tanks to obtain feed. The fish feed silos are in good condition.

Auxiliary Fish Ladder and Trap (1984)

The primary fish ladder is at Iron Gate Dam; the auxiliary fish ladder, built in 1984, is adjacent to the hatchery raceways. Raceway outflow supplies the water for the auxiliary fish ladder and trap. Fish that ascend the auxiliary ladder are trapped and transported to the main fish trap adjacent to the spawning building at Iron Gate Dam (Logan and Hankin 2008:12-13). The auxiliary ladder is an eight-step weir-pool fish ladder with concrete construction. The ladder leads fish swimming upstream in the Klamath River to a trap adjacent to the raceways. A metal chain-link fence extends along both sides of the ladder. The ladder and trap were placed into initial operation in fall 1984 to substantially increase the number of trapped adult Chinook and coho. Before implementation of the new ladder and trap, salmon entered a short wooden ladder and trap at the hatchery outfall, which operated only during daylight hours (remains of the original wooden ladder were not observed during 2018 fieldwork). Alternatively, salmon could bypass the hatchery and continue upstream to the primary ladder and trap at Iron Gate Dam. The newer hatchery trap was designed to operate 24 hours a day (Hashagen 1991:232).

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Hatchery Fish Facilities *NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: Iron Gate Hatchery Fish Facilities
B3. Original Use: artificial fish propagation
B4. Present Use: artificial fish propagation
B5. Architectural Style: Utilitarian

B6. Construction History:

The hatchery building was completed in 1966, and is where vital hatchery activities occur at Iron Gate. Alterations to the building include a 2015 addition at the western elevation that was built to house new water treatment systems and an open shed of unknown date, built to shelter a closed water filtration system. The raceways and settling ponds were completed in 1966. No evident alterations to the raceways were observed during fieldwork in 2018. Based on historic aerial photographs, the settling ponds may have been enlarged since the early 1990s (Historic Aerials 2018).

B7. Moved? No
B8. Related Features: The hatchery fish facilities are contributing resources to the Iron Gate Historic District, which is within the larger Klamath River Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: Charles Jack Hanel, Pacific Power fish biologist, designed the hatchery to comply with California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) standards.

b. Builder: Pacific Power

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: hatchery facilities
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

See Continuation Sheet.

B11. Additional Resource Attributes: (HP39)—hatchery building

B12. References:

Aquafine. 2017. Improving Water Quality at Fish Hatcheries with UV Disinfection – A Case Study. September 19. Electronic document, https://blog.aquafineuv.com/improving-water-quality-at-fish-hatcheries-with-uv-disinfection-a-case-study/, accessed December 13, 2018.

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contribute to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the area of Conservation, which includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The hatchery fish facilities, except for the non-historic auxiliary fish ladder and trap, add to the Iron Gate Historic District's significance by enabling key artificial propagation activities. The hatchery building houses the laboratory and contains most of the equipment used in raising fish from the egg stage to the fry stage. The raceways are used to rear juvenile fish from early fry to release stage, while the settling ponds treat water discharged from the raceways before it is discharged into the river. The fish feed silos store fish feed. Except for the spawning phase, these facilities address every stage of artificial fish propagation.

NRHP Criterion B
Research does not indicate that the fish facilities are associated with any historically significant individuals under NRHP Criterion B.

NRHP Criterion C
Iron Gate Fish Hatchery is significant under NRHP Criterion C for embodying the distinctive characteristics of a midcentury fish hatchery. The hatchery fish facilities, primarily the large utilitarian hatchery building and modern concrete raceways, are contributing resources to Iron Gate under NRHP Criterion C.

NRHP Criterion D
The hatchery fish facilities are not significant as sources (or likely sources) of important information regarding history or prehistory. They do not appear likely to yield important information about historic construction materials or technologies and is not significant under NRHP Criterion D.

Integrity Analysis

The hatchery fish facilities retain integrity of location, setting, design, materials, workmanship, feeling, and association, and convey their key roles in artificial fish propagation at Iron Gate Fish Hatchery.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The facilities are clustered at their original building sites, and thereby retain integrity of location.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The facilities retain integrity of design as simply constructed utilitarian buildings and structures. The hatchery building has expanded to accommodate advances in fish management, but its original design is still apparent.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The facilities retain integrity of overall setting, characterized by the Klamath River, the nearby Iron Gate dam, and the remote, undeveloped river canyon landscape.

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The hatchery building, raceways, and fish feed silos are original to the 1966 hatchery construction. The hatchery building has expanded to accommodate advances in fish management, but its original materials and workmanship are still apparent. Overall, the facilities retain integrity of materials and workmanship due to minimal or moderate alterations since original construction.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* The integrity of feeling is supported by the remote setting and proximity to the Iron Gate dam, the Klamath River, and other associated hatchery resources.

Association *is the direct link between a property and the event or person for which the property is significant.* The facilities' intact physical features and location near Iron Gate dam directly link them with fish management and conservation in the Klamath River basin, contributing to integrity of association.

The hatchery fish facilities retain integrity and are eligible as contributing resources to the Iron Gate Historic District.

B10. Significance (continued):

Resource(s)	Date	Applicable NRHP Criteria	Area(s) of Significance	Contributing/ Individually Eligible
Hatchery Building	1966	A	Conservation	Contributing
Raceways and Settling Ponds	1966	A	Conservation	Contributing
Fish Feed Silos	1966	A	Conservation	Contributing
Auxiliary Fish Ladder and Trap	1984	N/A	N/A	Not contributing (out of period)

B12. References (continued):

Bowman, John. 2011. "Board of Supervisors Tours Hatchery" (updated July 1, 2012). Siskiyou Daily News. October 20. http://www.siskiyoudaily.com/article/20111020/news/310209964 (accessed September 25, 2018).

California Department of Fish and Wildlife (CDFW). 2014. Hatchery and Genetic Management Plan For Iron Gate Hatchery Coho Salmon. Prepared for National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Arcata, California. Prepared by California Department of Fish and Wildlife, Northern Region & PacifiCorp. September.

Fishbase.org. 2018. System Glossary. "Eyed Egg." http://www.fishbase.org/glossary/Glossary.php?q=eyed+egg&language=english&sc=is (accessed May 4, 2018).

Hashagen, Ken. "The Salmon Stamp Program" (Chapter 24). In Alan Lufkin (ed.), *California's Salmon and Steelhead: The Struggle to Restore an Imperiled Resource*. 1990. Berkeley, Los Angeles, Oxford: University of California Press.

Historic Aerials. 2018. Iron Gate Fish Hatchery area. https://www.historicaerials.com/viewer, accessed December 11, 2018.

ICF Jones & Stokes. 2010. Hatchery and Stocking Program, Environmental Impact Report/Environmental Impact Statement. State Clearinghouse #2008082025. Prepared for California Department of Fish and Game and U.S. Fish and Wildlife Service. Appendix A (Hatchery Operations). January.

Logan, Eric, and David Hankin. 2008. A Detailed Review of the Annual Hatchery Production Cycle at Iron Gate Hatchery: With Recommendations for Small Changes in Hatchery Practices that Would Reduce Rearing Mortalities and Improve Accuracy of Inventories and Estimated Number of Fish Released. Produced under contract agreement ("Code-Wire Tagging of Chinook Salmon at Iron Gate Hatchery") between the Hoopa Valley Tribal Council and the Humboldt State University Sponsored Programs Foundation. Financial support provided by U.S. Bureau of Reclamation, Klamath Basin Area Office. January.

Miller, Bill. 2007. "Iron Gate Fish Hatchery." *Mail Tribune* [Medford, Oregon]. September 2. http://mailtribune.com/news/environment/iron-gate-fish-hatchery (accessed September 25, 2018).

NELPA News. 1971. "PP&L Efforts Improve Klamath River Hunting and Fishing." Northwest Electric Light & Power Association. March. PacifiCorp Archive, PDX.024890 (box).

Pacific Power & Light Company (Pacific Power). 1968. Iron Gate Fish Hatchery [photographs]. PacifiCorp Archive, PDX.024890 (box).

Riley, James O., Jr. 1967. Annual Report, Iron Gate Salmon and Steelhead Hatchery: First Year Of Operation 1965-1966. The Resources Agency of California, Department of Fish and Game. Inland Fisheries Administrative Report No. 67-8.

Spicer, Glen W. 1968. Letter to Jack Lansing. February 12. PacifiCorp Archive, PDX.024890 (box).

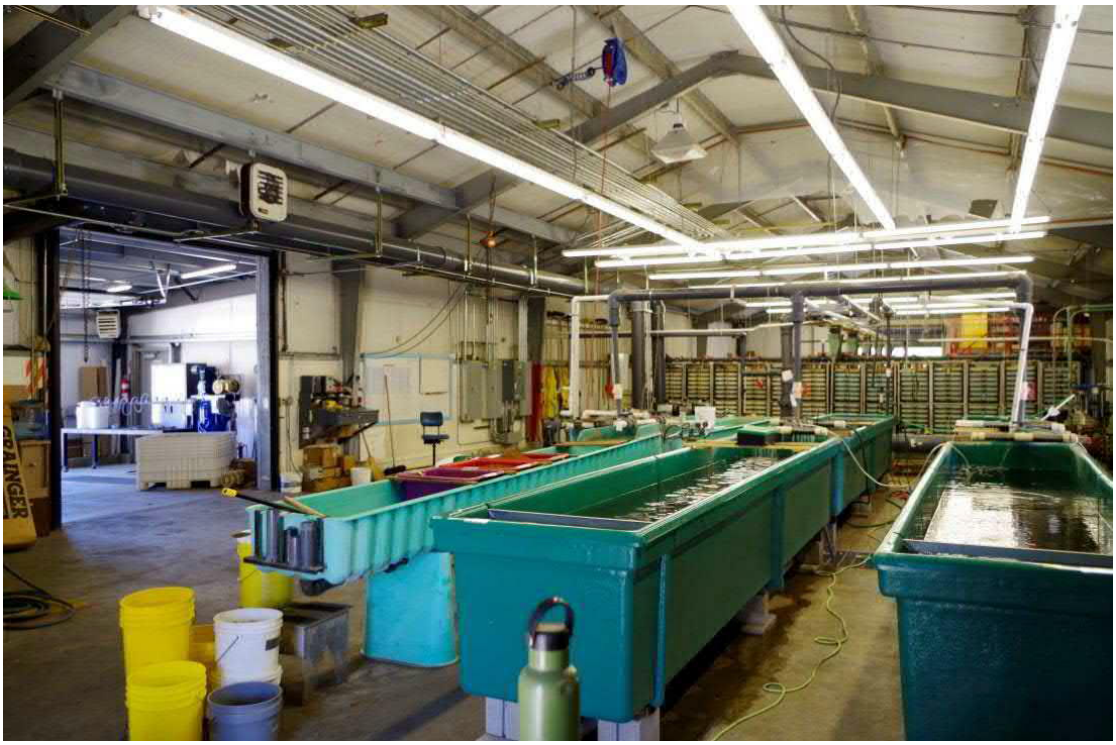
Photographs:

Photograph 1. Hatchery building; view facing south, 2018.

Photograph 2. Hatchery building, showing open shed in foreground and 2015 addition in background; view facing west, 2018.

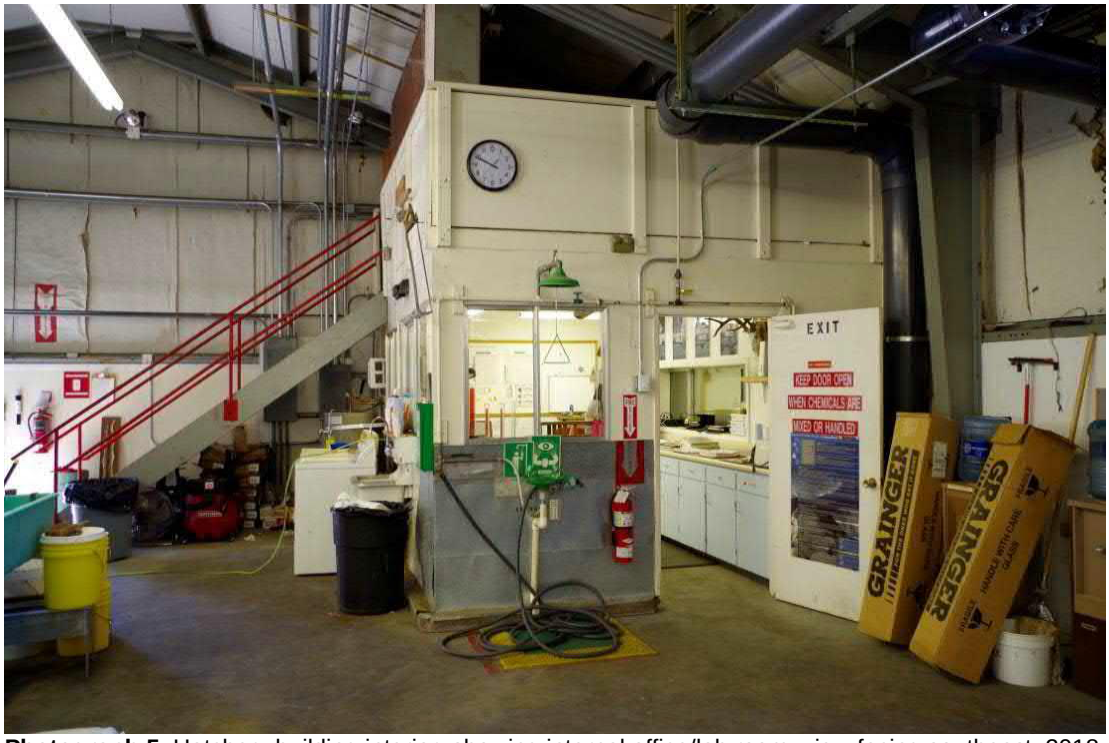
Photographs (continued):

Photograph 3. Hatchery building, showing 2015 addition; view facing north, 2018.



Photograph 4. Hatchery building interior, showing troughs; view facing northwest, 2018. The 2015 addition housing the water treatment equipment is visible to the left, and the incubator stacks are visible in the background.

Photographs (continued):



Photograph 5. Hatchery building interior, showing internal office/lab room; view facing southeast, 2018.

Photograph 6. Hatchery building 2015 addition interior, showing water filtration system; view facing south, 2018.

Photographs (continued):

Photograph 7. Raceways; view facing southeast, 2018.

Photograph 8. Raceways; view facing southwest, 2018.

Photographs (continued):

Photograph 9. Raceways; view facing northeast. Hatchery building is visible in background, 2018.

Photograph 10. Auxiliary fish ladder and trap; view facing west, 2018.

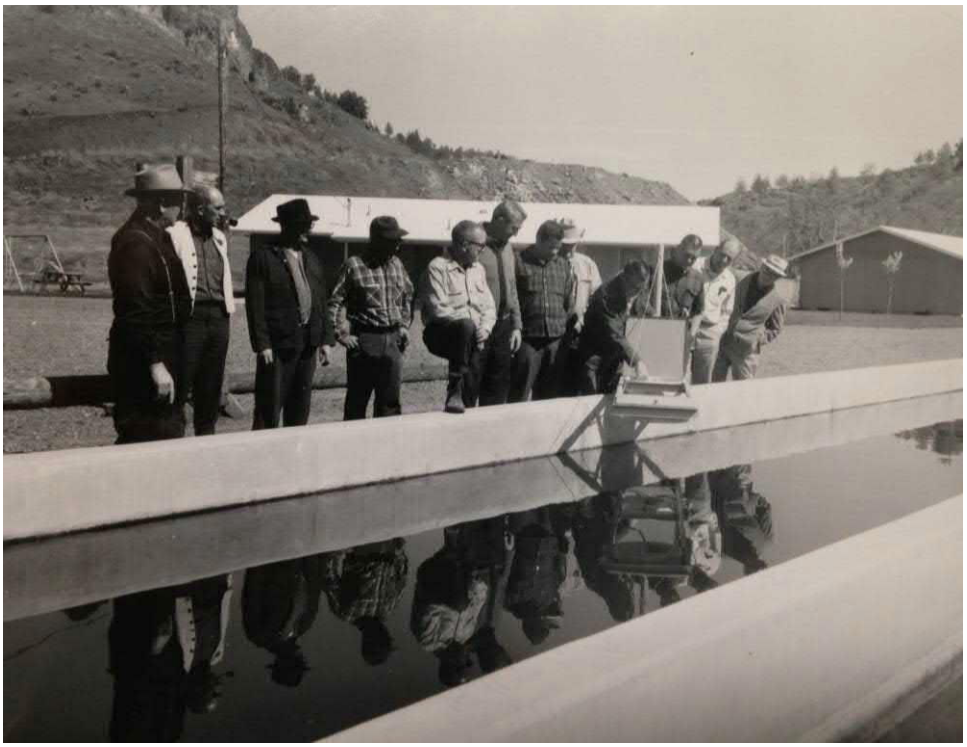
Photographs (continued):

Photograph 11. North settling pond; view facing northwest, 2018.

Photograph 12. South settling pond; view facing southwest, 2018.

Photographs (continued):

Photograph 13. Fish feed silos; view facing south. Office and gas shed in right background, 2018.



Photograph 14. Iron Gate raceways, February 1968 (Pacific Power 1968). Members of a committee, "Klamath River Fishery, Inc.," formed in 1964 to study the feasibility of reestablishing steelhead and salmon runs in the Upper Klamath River (Spicer 1968).

Photographs (continued):

Photograph 15. Spawning process at Iron Gate, February 1968 (Pacific Power 1968).

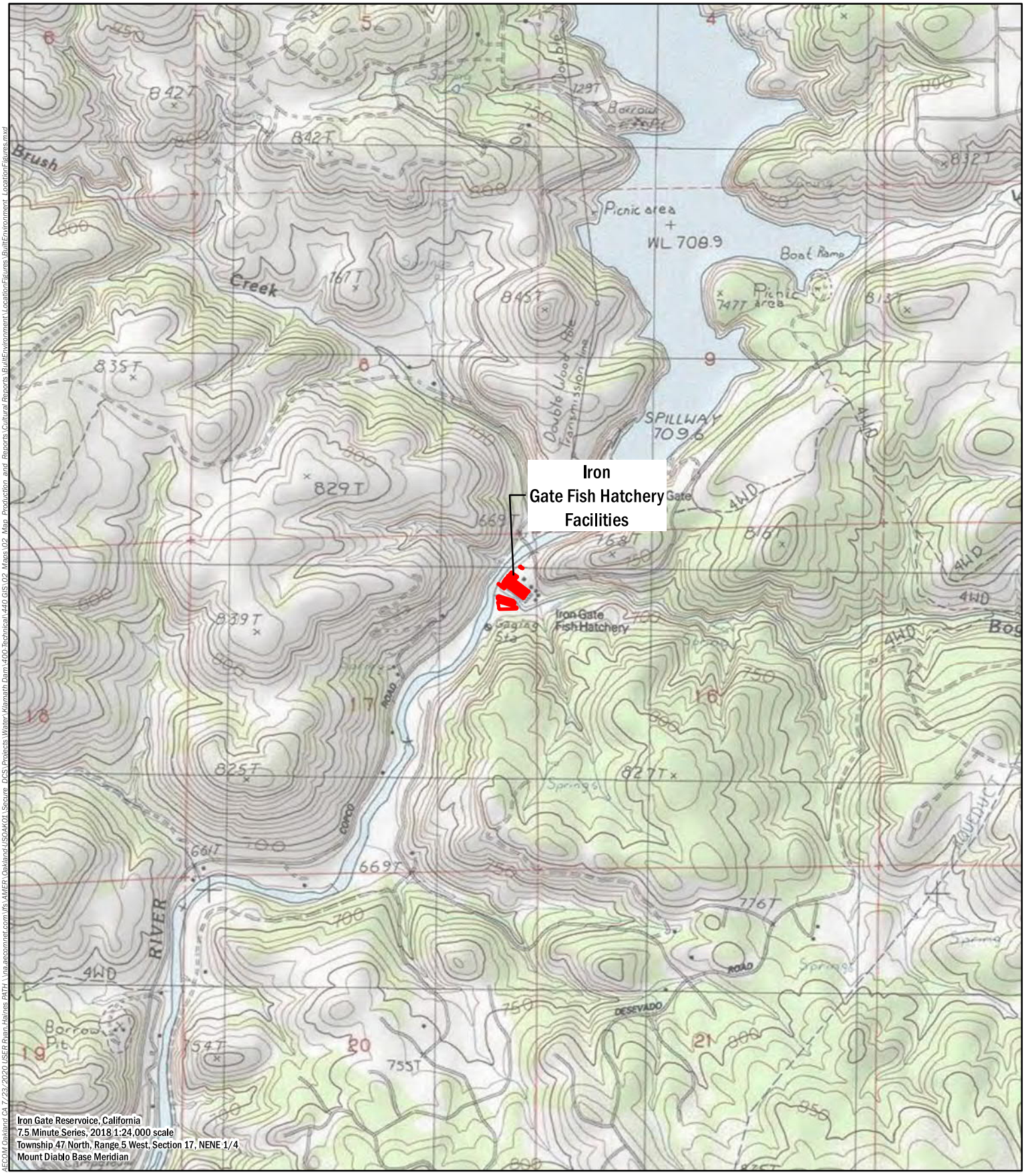
Photograph 16. Pacific Power biologist Jack Hanel, left, examining a steelhead trout with Jim Townsend of Fort Klamath Hatchery in 1971. Hanel designed the Iron Gate Fish Hatchery with input from the CDFG (NELPA News 1971:4).

LOCATION MAP

Property Name: Iron Gate Historic District

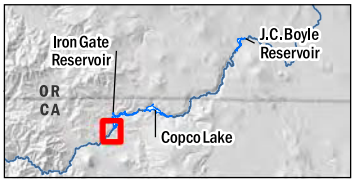
***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



Iron Gate Fish Hatchery Facilities

Iron Gate Fish Hatchery Facilities



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Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

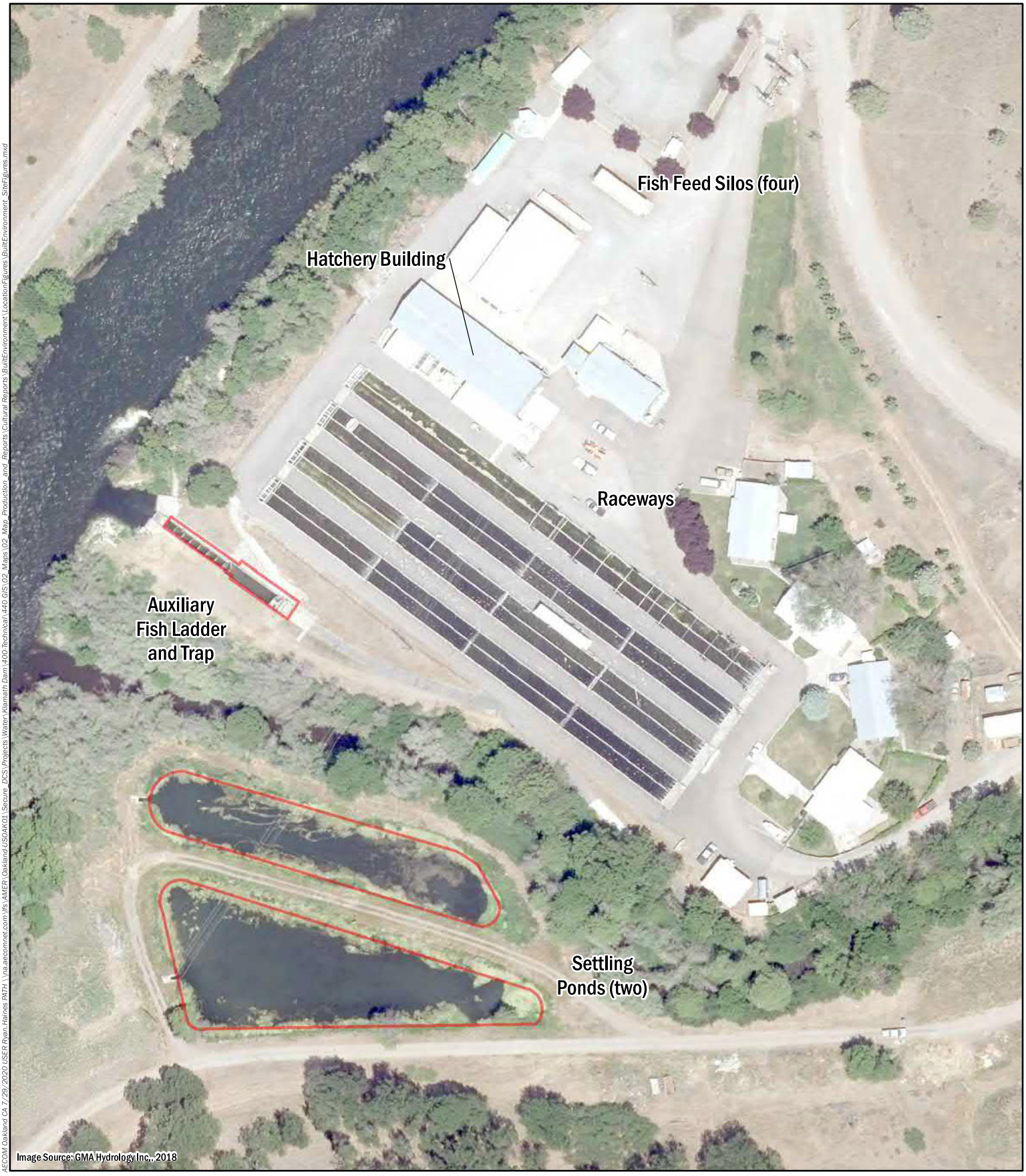
July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.



AECOM Oakland CA 7/29/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland-USOAK01\Secure_DCS\Projects Water\Klamath Dam\400-Technical\440 GIS\02_Maps\02_Map_Production_and_Reports\Cultural Reports\BuiltEnvironment\LocationFigures\BuiltEnvironment_SiteFigures.mxd

Iron Gate Fish Hatchery Facilities

Iron Gate Fish Hatchery Facilities

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1:1,200

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

 Resource Name or #: Iron Gate Hatchery Residences

P1. Other Identifier: Iron Gate Hatchery Residences
***P2. Location:** ☒ **Unrestricted**
***a. County** Siskiyou
***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; NE 1/4 of NE 1/4 of Sec 17; Mount Diablo B.M.
See Continuation Sheet**.**
c. Address _____ City _____ Zip _____
d. UTM: Zone 10 T, 546324mE/4642110mN See Continuation Sheet.
e. Other Locational Data: N/A

***P3a. Description:**

Pacific Power built four modern Ranch-style residences in 1966 to house permanent personnel at the newly established Iron Gate Fish Hatchery (*Independent Star-News* 1966). The hatchery residences are numbered from 1 to 4 and clustered at the eastern side of the hatchery (see Sketch Map). These similarly constructed buildings are characterized by their broad, one-story form, rectangular plan, and attached one-car garage, reflecting elements of the Ranch style, popular from circa 1935 to 1975. Although many Ranch-style buildings have hipped roofs, the side-gable roof, as found on the hatchery residences, is prevalent on ranch houses in rural areas (McAlester 2014:597). Each house measures approximately 30 by 60 feet, and has a medium-pitch, side-gable roof; moderate overhanging eaves; and standing-seam sheet-metal roofing. Siding consists of vertical grooved plywood sheets and horizontal wood board. Windows consist of replacement vinyl frame sliding windows in several sizes. The primary entrance is off-center along the facade, recessed beneath the main roof, and accessed by one concrete step. The front door is a modern wood panel with a screen door. A roof extension near the center of the façade is supported by three square wooden posts that creates a covered walk from the garage driveway to the front door. The replacement garage door is metal panel overhead. Building alterations include replacement windows, roofing, and garage door.

See Continuation Sheet.

***P3b. Resource Attributes:** (HP2) Single family property (worker housing)
***P4. Resources Present:** ☒ Building ☒ Element of District
P5a. Photograph:

P5b. Description of Photo: Hatchery Residence No. 4, viewing southeast (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1966

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

P2b. Location/Township, Range, and Section (continued):

USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 Mount Diablo B.M.

Contributing Resource or Feature	Township	Range	Section
Hatchery Residence No. 1	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 2	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 3	47N	5W	NE 1/4 of NE 1/4 of Sec. 17
Hatchery Residence No. 4	47N	5W	NE 1/4 of NE 1/4 of Sec. 17

P2d. Location/UTM (continued):

Contributing Resource or Feature	Zone	UTM
Hatchery Residence No. 1	10 T	546324mE/4642110mN
Hatchery Residence No. 2	10 T	546338mE/4642087mN
Hatchery Residence No. 3	10 T	546351mE/4642068mN
Hatchery Residence No. 4	10 T	546343mE/4642046mN

P3a. Description (continued):

Hatchery Residence No. 1 is sited southeast from the hatchery office and is oriented west towards the hatchery raceways. A black metal “1” is mounted to one of the front-porch posts.

Hatchery Residence No. 2 is located just southeast from Residence No. 1 and is a mirror image of Hatchery Residence No. 1. Hatchery Residence No. 2 is oriented facing southwest towards the eastern end of the hatchery raceways. A white metal “2” is mounted to one of the front-porch posts. The front door is approximately 35 feet from the edge of the raceway structure.

Hatchery Residence No. 3 is located just southeast of Hatchery Residence No. 2. A black metal “3” is mounted to one of the front-porch posts. The façade is identical to that of Hatchery Residence No. 1, except for latticework mounted on the front porch. Hatchery Residence No. 3 is oriented facing west towards the east end of the hatchery raceways.

Hatchery Residence No. 4 is just southwest of Hatchery Residence No. 3. A black metal “4” is mounted to one of the front-porch posts. The façade is identical to that of Hatchery Residence No. 2, except for latticework mounted on the front porch. Hatchery Residence No. 4 is oriented facing northwest towards the east end of the hatchery raceways. A canopy is mounted to the rear roof eaves and is supported by square wooden posts to create a covered patio.

Landscaping at each residence consists of a front lawn, trees, and shrub plantings in a small graveled strip along the façade. The backyard lawns are enclosed by metal fencing. The residential area contains a number of small outbuildings and sheds. A small vegetable garden with an adjacent storage shed has been maintained behind Hatchery Residence No. 3. Approximately 50 feet to the southwest of Hatchery Residence No. 4, a modern carport for recreational vehicles appears to be shared by the residents. The carport has a concrete slab foundation, shed roof, and metal posts. Two small outbuildings with shed roofs are situated adjacent to the carport, and there are other smaller sheds adjacent to the residences. A well for domestic water use was drilled behind the houses during the original construction phase (Riley 1967:3).

The residences are in good condition.

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Iron Gate Hatchery Residences *NRHP Status Code: 3D

B1. Historic Name: N/A
B2. Common Name: Iron Gate Hatchery Residences
B3. Original Use: worker housing
B4. Present Use: worker housing
B5. Architectural Style: Modern Ranch

B6. Construction History:

Pacific Power built the four Ranch-style residences at the Iron Gate Fish Hatchery in 1966 to house permanent hatchery personnel. That year, the California Department of Fish and Game created seven hatchery operator positions, to be funded by Pacific Power (*Healdsburg Tribune* 1966). Non-historic building alterations, likely completed during the 1990s, include replacement vinyl frame windows, standing-seam sheet-metal roofing, modern metal overhead garage doors, and the covered rear patio at Hatchery Residence No. 4. The four hatchery residences were built around the same time as the two Iron Gate operator residences (circa 1965), located about 0.25 mile upriver, which have similar design, construction, and replacement materials.

B7. Moved? No
B8. Related Features: The hatchery residences are contributing resources to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: unknown **b. Builder:** unknown contractor for Pacific Power

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: hatchery facilities
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

See Continuation Sheets.

B11. Additional Resource Attributes:

B12. References:

Healdsburg Tribune [Healdsburg, California]. 1966. "Fish and Game Budget for Year Proposed." February 17 [California Digital Newspaper Collection].

Independent Star-News [Pasadena, California]. 1966. "Iron Gate Hatchery Completed." April 3.

McAlester, Virginia Savage. 2014. *A Field Guide to American Houses*. New York: Alfred A. Knopf.

Riley, James O., Jr. 1967. Annual Report, Iron Gate Salmon and Steelhead Hatchery: First Year Of Operation 1965-1966. The Resources Agency of California, Department of Fish and Game. Inland Fisheries Administrative Report No. 67-8.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Evaluation (Contribute to Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the area of Conservation, which includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The hatchery residences add to the Iron Gate Historic District's significance by representing worker housing for hatchery personnel. On-site worker housing enables consistent monitoring of juvenile fish, hatchery processes, supplies, and equipment, which is critical to hatchery fish survival. In the remote setting of Iron Gate, on-site housing provides a convenience to workers and facilitates prompt worker response to operational issues.

NRHP Criterion B
Research has not indicated that the residences are associated with any significant individuals under NRHP Criterion B.

NRHP Criterion C
The residences are basic dwellings that do not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, and are therefore not significant under NRHP Criterion C.

NRHP Criterion D
The residences are not significant as sources (or likely sources) of important information regarding history or prehistory. They do not appear likely to yield important information about historic construction materials or technologies and are not significant under NRHP Criterion D.

Integrity Analysis

The hatchery residences retain sufficient historic integrity to convey their role in hatchery operations as worker housing. The buildings have lost integrity of materials and workmanship due to extensive replacement of materials, but retain key aspects of integrity — location, design, setting, feeling, and association — related to their function within the hatchery.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The four modern ranch-style residences remain at their original building sites, and thereby retain integrity of location in the hatchery; individually, and as a cohesive residence grouping. They also remain in close proximity to other hatchery resources, which were built around the same time (1964-1966) as the residences.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The residences generally retain integrity of design as simple, modern ranch-style buildings, particularly with respect to the long rectangular plan, low-pitched gable roof, and attached one-car garage.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The residences retain integrity of setting within the hatchery complex, and larger Iron Gate site. The overall setting, which is characterized by the Klamath River, Iron Gate dam, and mostly undeveloped landscape, has changed little since the residences were built.

Materials *are the physical elements combined in a particular pattern or configuration to form the aid during a period in the past* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* The residences have lost some integrity of materials and workmanship due to non-historic alterations such as replacement vinyl windows, standing-seam sheet-metal roofing, and modern metal overhead garage doors.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* Integrity of feeling is supported by the remote setting, location in the hatchery complex, and proximity to the Iron Gate hydroelectric development and Klamath River.

Association *is the direct link between a property and the event or person for which the property is significant.* The intact physical features and location within the hatchery adjacent to the raceways directly link the buildings with fish management and conservation in the Klamath River basin, contributing to integrity of association.

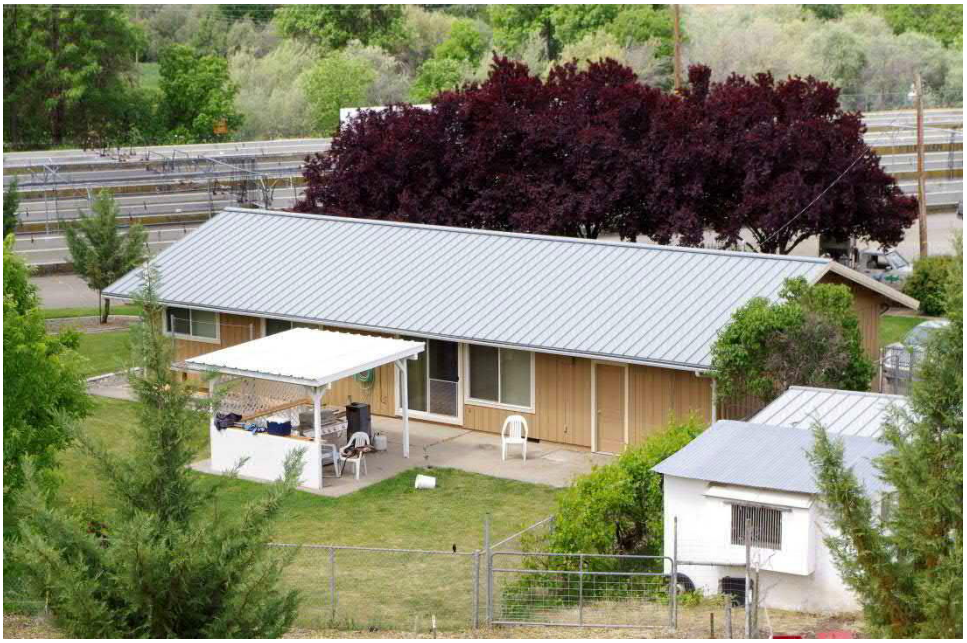
The hatchery residences retain integrity and are eligible as contributing resources to the Iron Gate Historic District.

Photographs:

Photograph 1. Overview of Iron Gate Fish Hatchery; view facing west, 2018. From left to right: Hatchery Residence No. 2, Hatchery Residence No. 1, hatchery building, hatchery office, gas shed, and shop (yellow). The raceways are in the left background.

Photograph 2. Hatchery Residence No. 1; view facing northeast, 2018.

Photographs (continued):



Photograph 3. Hatchery Residence No. 1, rear elevation; view facing southwest, 2018. Hatchery raceways visible in background and accessory sheds visible at right.

Photograph 4. Hatchery Residence No. 2; view facing northeast, 2018. Corner of hatchery raceways visible in left foreground.

Photographs (continued):

Photograph 5. Hatchery Residence No. 2, rear elevation; view facing southwest, 2018. Hatchery raceways visible in right background.

Photograph 6. Hatchery Residence No. 3; view facing southeast, 2018.

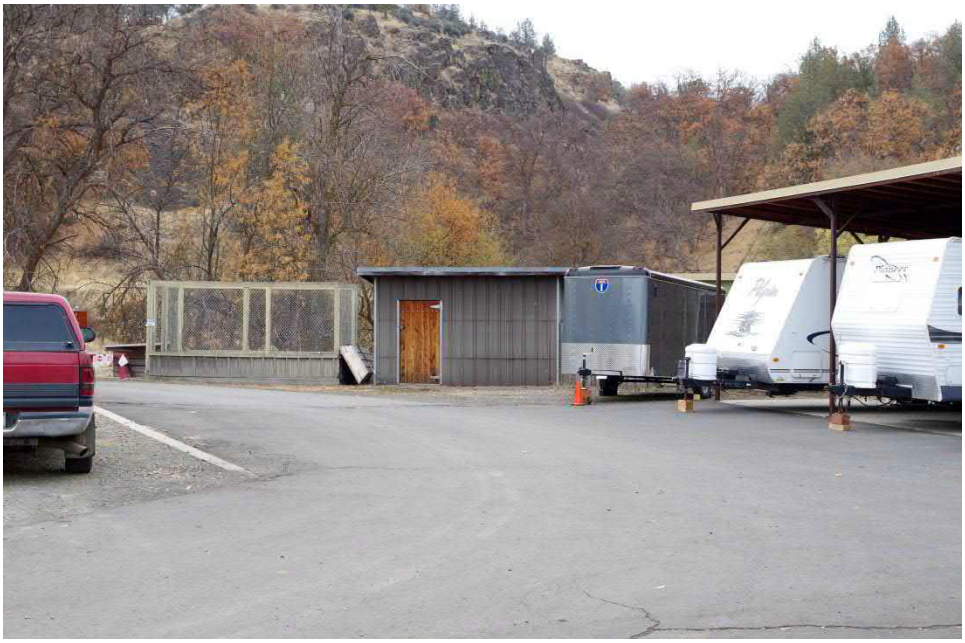
Photographs (continued):

Photograph 7. Hatchery Residence No. 3, rear elevation; view facing southwest, 2018. Hatchery Residence No. 4 visible at left, and carport with recreational vehicles in left background.

Photograph 8. Hatchery Residence No. 4; view facing northeast, 2018. Hatchery Residence No. 3 visible at left.

Photographs (continued):

Photograph 9. Hatchery Residence No. 4, rear elevation; view facing northwest, 2018.



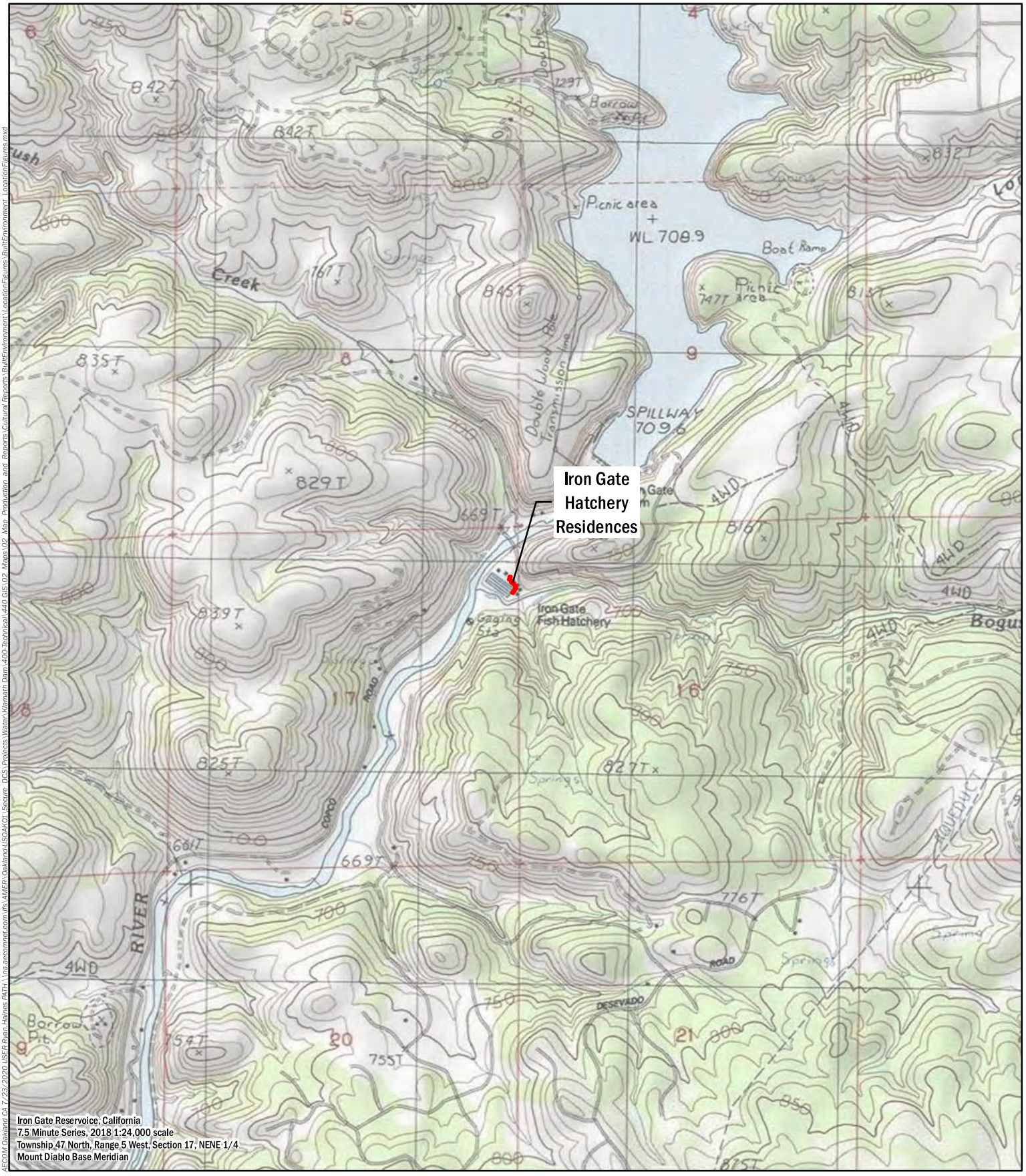
Photograph 10. Carport, accessory buildings and structures immediately southwest of Hatchery Residence No. 4; view facing south, 2018.

LOCATION MAP

Property Name: Iron Gate Historic District

***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



AECOM Oakland CA 7/23/2020 USER Ryan.Haines PATH \\na.aecomnet.com\fs\AMER\Oakland\USOAK01\Secure DCS\Projects\Water\Klamath Dam\400-Technical\440 GIS\02 Maps\02 Map Production and Reports\Cultural Reports\BuiltEnvironment\LocationFigures\BuiltEnvironment LocationFigures.mxd

Iron Gate Hatchery Residences

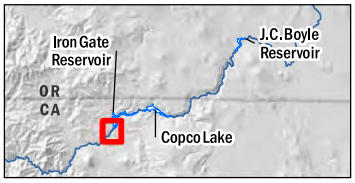
Iron Gate Hatchery Residences

N

0 2,000 Feet

0 600 Meters

1:24,000



Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Iron Gate Hatchery Residences

N

0 100 Feet

0 20 Meters

1:600

Iron Gate Hatchery Residences

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #47-004015
HRI #
Trinomial
NRHP Status Code 3D

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 1 **Resource Name or #:** Lakeview Road Bridge

P1. Other Identifier: Lakeview Road Bridge

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Siskiyou

***b.** USGS 7.5' Quad Iron Gate Reservoir, CA Date 2018 T 47N; R 5W; NE 1/4 of NE 1/4 of Sec 17; Mount Diablo B.M.

c. Address Lakeview Road City Hornbrook Zip

d. UTM: Zone 10 T, 546306mE/4642288mN

e. Other Locational Data: N/A

***P3a. Description:**

The Lakeview Road Bridge was completed in May 1960 to provide permanent access from Copco Road to the Iron Gate site. The bridge is also known as Caltrans Bridge No. 2C0255 and the Klamath River - Iron Gate Bridge. The nine-span, simply supported rolled-steel-beam bridge is approximately 272 feet long and 14.5 feet wide. It has a reinforced-concrete deck with one 12-foot lane and no shoulders. The bridge rests on bents composed of timber pile extensions with timber or steel caps and timber abutments (KRRC 2017:5-42).

The Lakeview Road Bridge spans the Klamath River between Copco Road and the Iron Gate dam and hatchery sites. From Copco Road, Lakeview Road crosses the river as Lakeview Road Bridge; passes the Iron Gate fish hatchery; then extends generally northeast beyond the Iron Gate Reservoir. A fork in the road curves southwest to provide access at the dam crest and reservoir. The single-lane Lakeview Road Bridge, completed in May 1960, spans the Klamath River downstream from Iron Gate dam, near the northern end of Iron Gate fish hatchery. In addition, a 0.25-mile-long project access road extends along the river between Iron Gate dam's downstream side and the hatchery. On the other side of the river, a circular drive that branches off Copco Road, just north of Lakeview Road, provides access to the two Iron Gate operator residences.

***P3b. Resource Attributes:** (HP19) Bridge

***P4. Resources Present:** ☒ Structure ☒ Element of District

P5a. Photograph:

P5b. Description of Photo: Lakeview Road Bridge, viewing north (June 11, 2018).

***P6. Date Constructed/Age and Source:**
☒ Historic, 1960 (Pacific Power 1962)

***P7. Owner and Address:**
PacifiCorp
825 NE Multnomah, Suite 1500
Portland, OR 97232

***P8. Recorded by:**
Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201

***P9. Date Recorded:** June 11, 2018

***P10. Survey Type:** Intensive Level

***P11. Report Citation**: Klamath River Renewal Corporation. 2021. Lower Klamath Project Historic Built Environment Technical Report.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #47-004015
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

*Resource Name or #: Lakeview Road Bridge

*NRHP Status Code: 3D

B1. Historic Name:
B2. Common Name: Lakeview Road Bridge
B3. Original Use: Vehicle bridge
B4. Present Use: Vehicle bridge
B5. Architectural Style: Four-span continuous steel bridge
B6. Construction History:
The Lakeview Road Bridge was completed in May 1960 to provide access from Copco Road to the new Iron Gate hydroelectric development. Historic photographs indicate that changes since the original construction are removal of the wood railing's upper section and reconstruction of the north approach, which was washed out during the historic Klamath River flooding of December 1964. An adjacent pedestrian walkway has also been removed (**Photograph 7**).

B7. Moved? No
B8. Related Features: The Lakeview Road bridge is a contributing resource to the Iron Gate Historic District, which is within the larger Klamath Hydroelectric Project (KHP) Historic District. The KHP Historic District consists of seven hydroelectric developments, including Iron Gate, in Southern Oregon and Northern California.

B9a. Architect: N/A

b. Builder: Ben G. Gerwick Company

B10. Significance:
Theme: Hydroelectric development; fish management
Area: Southern Oregon and Northern California
Period of Significance: 1962-1970 (Iron Gate Historic District)
Property Type: bridge
Applicable Criteria: National Register of Historic Places (NRHP) Criterion A (contributing)

B11. Additional Resource Attributes:

B12. References:

Klamath River Renewal Corporation (KRRC). 2017. Klamath River Renewal Project: California Environmental Quality Act (CEQA) and California and Oregon 401 Water Quality Certifications Technical Support Document. Submitted to: California State Water Resource Control Board and Oregon Department of Environmental Quality. September.

See Continuation Sheet.

B13. Remarks: None
B14. Evaluator: Shoshana Jones, AECOM
111 SW Columbia Street, Suite 1500
Portland, OR 97201
Date of Evaluation: June 11, 2018

(This space reserved for official comments.)

B10. Significance (continued):

Lakeview Road Bridge was constructed to provide permanent access from Copco Road to the Iron Gate site for construction and operations (Pacific Power 1962:4). The topographic map of the bridge site was developed in December 1959, and the construction contract was awarded to Ben C. Gerwick Company in February 1960 for $40,970 (Pacific Power 1962:13, Schedule No. 4, Sheet 1 of 5). Gerwick prevailed in the bidding process by offering the "best construction time and lowest cost per foot of bridge" (Pacific Power 1962:Schedule 20, Sheet 1 of 11). Construction began on February 24, 1960 (Pacific Power 1962:4) and by March 1960, the bridge approaches had been completed (Pacific Power 1962: Schedule No. 4, Sheet 1 of 5). The bridge was completed in May 1960 (PacifiCorp photo and caption IG-279; Pacific Power 1962:13, Schedule No. 4, Sheet 1 of 5), but was not formally dedicated until February 3, 1962 (PacifiCorp photo and caption IG-279; Pacific Power 1962:13, Schedule No. 4, Sheet 1 of 5). During the historic December 1964 Klamath River flooding, the bridge sustained severe damage: the right approach washed out creating a 50-foot gap and two pilings washed away (Pacific Power 1964a and 1964b).

Based on a December 1964 photograph, it appears that the bridge had a pedestrian walkway separated by wood railing from the vehicle section (**Photograph 6**). In December 1964, historic Klamath River flooding tore out the north bridge approach, rendering the bridge non-functional. Repairs were completed by early 1965 (Pacific Power 1964a).

Evaluation (Contributes to the Iron Gate Historic District)

Criteria Analysis

NRHP Criterion A
The Iron Gate Historic District contributes to the larger KHP Historic District and is significant under NRHP Criterion A in the areas of Conservation, Commerce, and Industry. Conservation includes the preservation, maintenance, and management of natural resources, such as fish and fish habitat. The bridge, completed across the Klamath River in 1960, adds to the Iron Gate Historic District's significance by representing infrastructure developed for Iron Gate's 1960-1962 construction phase and subsequent hydropower operations (Commerce and Industry). The bridge also provided infrastructure for construction of, and ongoing access to, the Iron Gate fish hatchery, completed in 1966 (Conservation). The bridge provides the only way to reach the Iron Gate site from Copco Road and is vital to hydropower operations and fish management activities.

NRHP Criterion B
Research does not indicate that the bridge is associated with any historically significant individuals under NRHP Criterion B.

NRHP Criterion C
The bridge does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, and is therefore not significant under NRHP Criterion C.

NRHP Criterion D
The bridge is not significant as a source (or likely source) of important information regarding history or prehistory. It does not appear likely to yield important information about historic construction materials or technologies and is not significant under NRHP Criterion D.

Integrity Analysis

The bridge retains integrity of location, design, setting, materials, workmanship, feeling, and association.

Location *is the place where the historic property was constructed or the place where the historic event took place.* The bridge remains at its original building site over the Klamath River, and thereby retains integrity of location.

Design *is the composition of elements that constitute the form, plan, space, structure, and style of a property.* The bridge design has remained generally intact since its original construction, except for elimination of a pedestrian section and repairs following the destructive Klamath River flooding in December 1964. The bridge retains integrity of design.

Setting *is the physical environment of a historic property that illustrates the character of the place.* The bridge retains integrity of overall setting in the remote, undeveloped area of the Klamath River basin. The bridge's immediate setting retains its primary natural and built characteristics including the Klamath River and Iron Gate site facilities.

Materials *are the physical elements combined in a particular pattern or configuration to form the historic property* and ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period of history.* No major alterations to the bridge have occurred since its original construction and the bridge retains integrity of materials and workmanship.

Feeling *is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.* Integrity of feeling is supported by the remote setting, and proximity to the Iron Gate hydroelectric development and Klamath River.

B10. Significance (continued):

Association *is the direct link between a property and the event or person for which the property is significant.* The bridge's proximity to the Iron Gate dam and hatchery areas and retention of character-defining features supports integrity of association with the historic construction and operations at Iron Gate.

The bridge retains integrity and is eligible as a contributing resource to the Iron Gate Historic District.

B12. References (continued):

Pacific Power & Light Company (Pacific Power)

1962 Initial Statement of Pacific Power & Light Company Copco Division to the Federal Power Commission showing Actual Legitimate Original Cost of Project No. 2082 (Klamath Basin – Iron Gate Plant) Located in the State of California as of July 31, 1962. PacifiCorp Archive, PDX.014908 (box).

1964a Summary of the Damage Viewed By Pacific's Flood Damage Inspection Party. PacifiCorp Archive, PDX.012073 (box), 1964 Flood – General (folder).

1964b Lakeview Road Bridge [photograph]. PacifiCorp Archive, PDX.000526 (box), Plant & Prop: Generating Plants, Klamath River Basin – Iron Gate Hydro Proj., 1964 Flood Photos (folder).

Photographs:

Photograph 1. Lakeview Road bridge; view facing south, 2018.

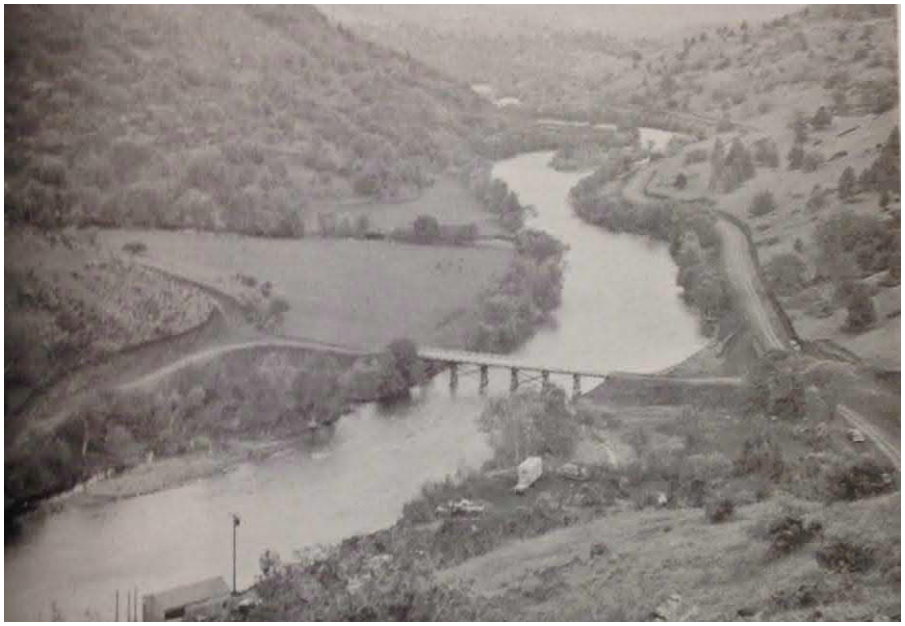
Photograph 2. Lakeview Road bridge; view facing northeast/upstream, 2018.

Photographs (continued):

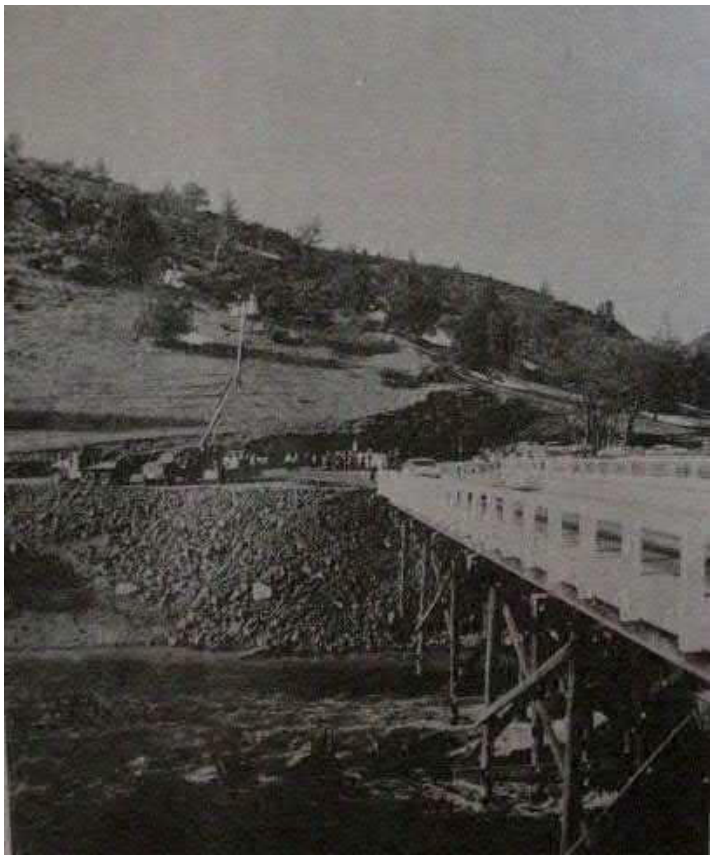
Photograph 3. Lakeview Road bridge; view facing north towards Copco Road, 2018.

Photograph 4. Lakeview Road bridge; view facing southeast towards the Iron Gate site, 2018.

Photographs (continued):

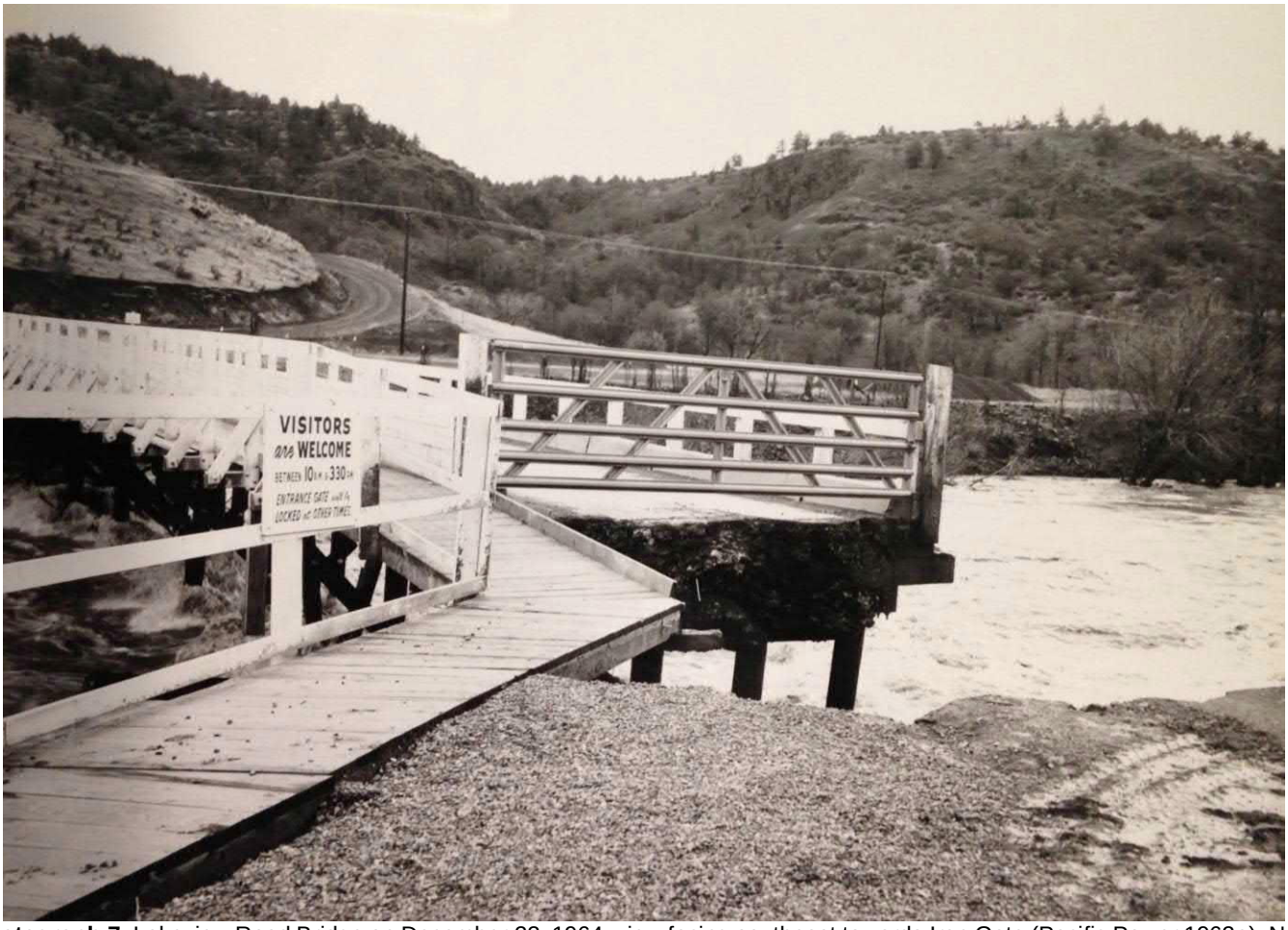


Photograph 5. Lakeview Road bridge completion, May 1960; view facing northeast/upstream (Pacific Power 1962b).



Photograph 6. Lakeview Road Bridge on February 3, 1962 at Iron Gate dedication; view facing north towards Copco Road (Pacific Power 1962a).

Photographs (continued):



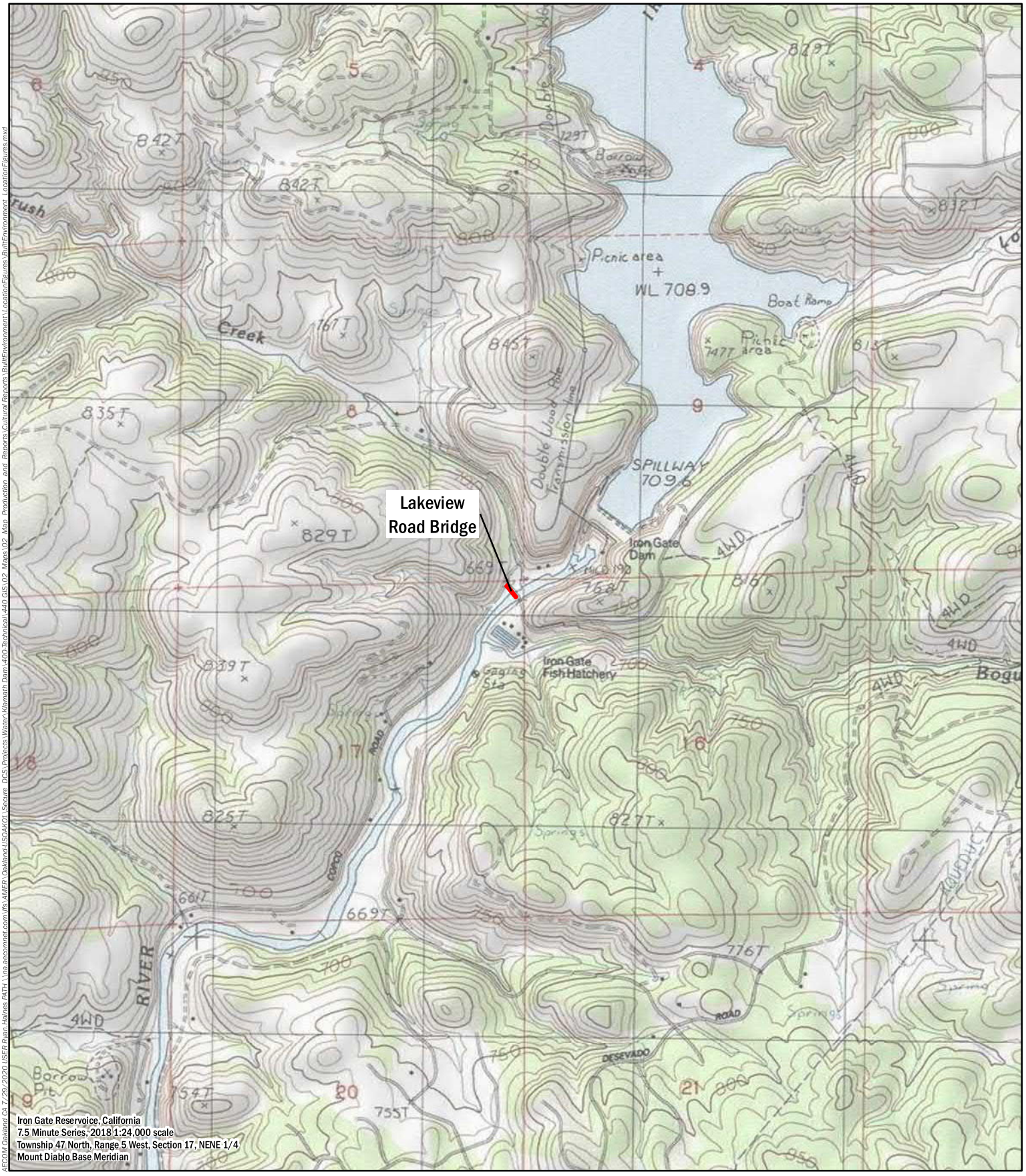
Photograph 7. Lakeview Road Bridge on December 23, 1964; view facing southeast towards Iron Gate (Pacific Power 1962a). Note the flood damage and the separate pedestrian walkway (Pacific Power 1964b).

LOCATION MAP

Property Name: Iron Gate Historic District

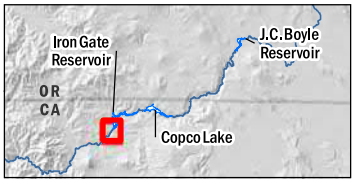
***Map Name:** _____ ***Scale:** _____ ***Date of map:** _____

See Location Map on next page.



Lakeview Road Bridge

Lakeview Road Bridge



N

0 2,000 Feet

0 600 Meters

1:24,000

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM

July 2020

SKETCH MAP

Property Name: Iron Gate Historic District

***Drawn by:** _____ ***Date of map:** _____

See Sketch/Site Map on next page.

Lakeview Road Bridge

Lakeview Road Bridge

N

0 100 Feet

0 20 Meters

1:1,200

Klamath River Dam Removal
Lakeview Road
Hornbrook, Siskiyou County, California

AECOM
July 2020