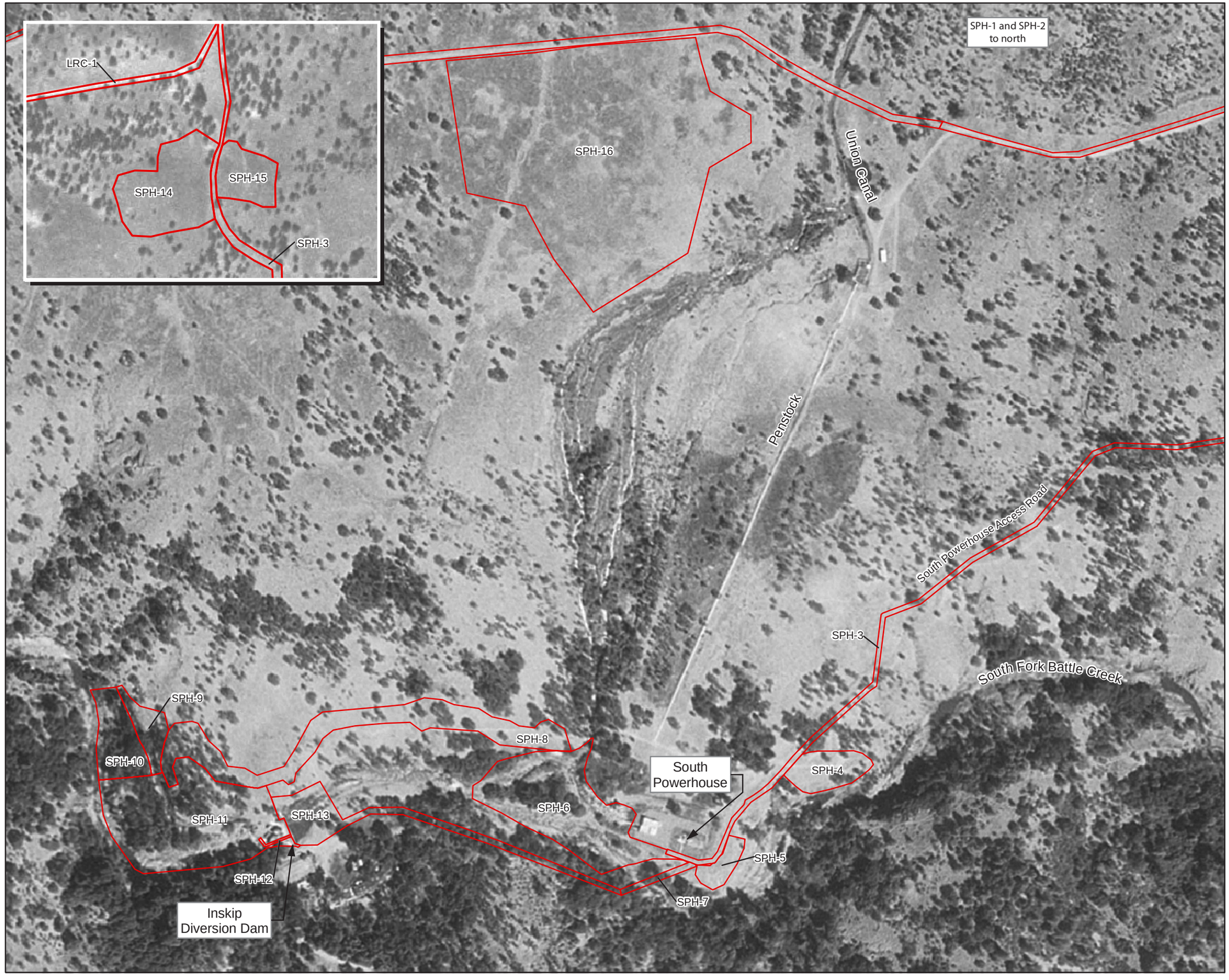


FIGURE F-7

PROPOSED CONSTRUCTION AREAS

INSKIP DIVERSION DAM / SOUTH POWERHOUSE PROJECT SITE

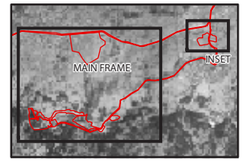
CONSTRUCTION BOUNDARY

FOR AN EXPLANATION OF THE CONSTRUCTION CODES, SEE TABLE F-7.

N

300 0 300 Feet

SOURCE: U.S. Geological Survey Digital Orthophoto Quarter Quadrangles 1998



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July 2005

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Table F-7. Construction Activities Proposed at Inskip Diversion Dam/South Powerhouse

Construction Code	Description of Activities
SPH-1	**Intersection modifications to the Old Ranch Road at Hazen Road and Manton School Road (located just north of map area).** Selected clearing and grading would disturb approximately 5,500 square feet. An additional 2,500 square feet would be completely cleared, graded, and paved. Work would involve clearing vegetation, compacting the ground, placing and compacting aggregate road base material, placing asphalt pavement, realigning the fence, and adding a gate. Electric power may be brought to the site to operate a new automatic gate and notification system. If an electric-powered system were installed, the overhead power lines located 650 feet north of Hazen Road (east side) would be extended to the new entrance.
SPH-2	**Improvements to an existing deteriorated dirt road to accommodate construction traffic (located just north of map area).** These improvements would include the following. ■ A 4,100-foot-long, 25-foot-wide corridor would be cleared of vegetation to reduce fire hazard. The total area cleared would be approximately 205,000 square feet. ■ A 15-foot-wide traveled way would receive 3 inches of aggregate base material. The total area to be graveled would be approximately 80,000 square feet. Minor grading and compacting would be performed. ■ A small diameter culvert or a low water style crossing composed of gravel would be constructed at a low spot in the existing road approximately 2,000 feet south of Hazen Road. ■ Two gates would be widened and possibly relocated within the 25-foot-wide corridor.
SPH-3	**South Powerhouse Access Road.** This road would be maintained during project construction from its junction with the temporarily improved Old Ranch Road to the powerhouse. Maintenance activities would consist of grading and adding gravel surfacing and possibly chip seal or asphalt paving over certain portions. Vehicle travel would be restricted to this road, which would not be widened. The 3,800-foot-long section of the South Powerhouse Access Road from Hazen Road to the junction with Old Ranch Road would not be affected.
SPH-4	**Area A.** The gently sloped portion of this area would be used by the contractor or government for staging, temporary stockpiling, or other temporary uses. The total area affected would be approximately 26,000 square feet.
SPH-5	**Contractor use area.** This area would be located adjacent to the existing access road. The total area affected would be approximately 60 feet by 200 feet, or 12,000 square feet.
SPH-6	**Peninsula area.** This area, adjacent to the powerhouse, would be heavily disturbed by construction activities for the following new features: an access road, a tailrace-side retaining structure, creekside riprap armoring, temporary small cofferdams in the creek and tailrace, an access ramp into the tailrace, a permanent embankment to close off the tailrace, large-diameter culverts through the peninsula, and associated riprap downstream of the culverts and embankment. The area would extend to 20 feet south of the south bank of Battle Creek and to the uphill-side waterline (north side) of the tailrace. As much of the peninsula as possible would be protected from disturbance. The total area affected would

Construction Code	Description of Activities
	be approximately 115,000 square feet.
SPH-7	**Low-water crossing area.** This crossing area, which allows access to the left (south) side of Inskip Diversion Dam, may be widened and vegetation cleared to a 20-foot-wide corridor for a distance of approximately 250 feet. The existing crossing has a concrete apron within the flow channel and is suitable for the lower flows normally encountered. Because of the required cessation of flows in the South Canal, the flows in Battle Creek would be increased. Temporary culverts may be installed to improve safety and increase the duration of use of this crossing area. The crossing is necessary to establish access to the right side of Inskip Diversion Dam in order to construct the fish ladder exit (headworks modifications). The total area affected would be approximately 5,000 square feet.
SPH-8	**Area encompassing the terrain affected by construction of the new access road on the north slope.** This area would extend from the tailrace to the parking area adjacent to the fish passage facilities. It also would include the tunnel inlet portal area but would not include the parking area or downstream portal area. The total area affected would be approximately 99,000 square feet.
SPH-9	**Area associated with the new tunnel features.** Activities to be completed at this area include construction of the new tunnel downstream portal area, the temporary construction access ramp, and the other features associated with the new tunnel. The site encompasses the area from the Tunnel No. 2 inlet to the existing footbridge and from the left edge of the canal bank (looking downstream) upslope to the limits of the access road. The total area affected would be approximately 24,000 square feet.
SPH-10	**Area extending from the preceding 24,000-square-foot area (SPH-9) downhill to the middle of Battle Creek.** Features to be constructed in this area would include the wasteway inlet structure, its outfall pipe, and the levee bank reinforcement between the fish screen and the Tunnel No. 2 inlet. The total area affected would be approximately 37,000 square feet.
SPH-11	**Area encompassing the fish facilities downstream of Inskip Diversion Dam to the two preceding areas (24,000 square feet and 37,000 square feet) and extending 20 feet south of the south bank of the creek.** This area would include the fish ladder, fish screen, associated access roads, ramps, bridges, and parking areas and would extend to within 70 feet downstream of the dam. The contractor would use much of the area not permanently occupied by the new features for staging, stockpiling, and other temporary uses. This area would be required to allow the construction workers and equipment access to the new and existing fish ladder work sites. The total area affected would be approximately 142,000 square feet.
SPH-12	**Area where removal of existing fish facilities will occur.** The existing fish ladder, which encompasses approximately 700 square feet of this area, would be partly demolished (metalwork removed and disposed of) and plugged.
SPH-13	**Area encompassing the temporary access road on the south side of Battle Creek.** This area would encompass the diversion works that would be built to allow construction of the headworks modifications on the right abutment of Inskip Diversion Dam (for the fish ladder exit). A 20-foot-wide path would be cleared and graded from the low-water crossing described above (SPH-7), downstream of the vicinity of the dam. The diversion works would consist of an earthen cofferdam enclosing the headworks area, an access road embankment from the left side of the creek to the cofferdam, culverts under this access road

Construction Code	Description of Activities
	to pass the creek flow through, riprap armoring to protect the temporary embankments from creek erosion effects, and excavation within the creek to channel the diverted creek flow toward Inskip Diversion Dam. The diversion works activities within the creek would extend about 200 feet upstream of the dam. All of these features would be removed at the completion of the headworks modifications, and the areas around the features would be restored to their preconstruction condition. The total area affected would be approximately 46,000 square feet.
SPH-14	**Disposal area.** This area adjoins the South Powerhouse Access Road. It would be used for excess excavated materials. The total area affected would be approximately 72,000 square feet.
SPH-15	**Disposal area.** This area also adjoins the South Powerhouse Access Road would also be used for disposal of excavated materials. The total area affected would be approximately 29,000 square feet.
SPH-16	**Disposal area.** This area would also be used as a disposal area. The total area affected would be approximately 505,000 square feet.
LRC-1	**Road along the top of the plateau.** The road would be graded to reduce its roughness (ruts, potholes, etc.). Vehicle travel would be restricted to this road, which would not be widened. The distance from the South Powerhouse Access Road to Lower Ripley Creek Feeder Diversion Dam is 16,300 feet. This 15-foot-wide road continues to the west of Lower Ripley Creek Feeder Diversion Dam for 9,400 feet to the headworks for Inskip Powerhouse at the confluence of Eagle Canyon Canal and Inskip Canal.

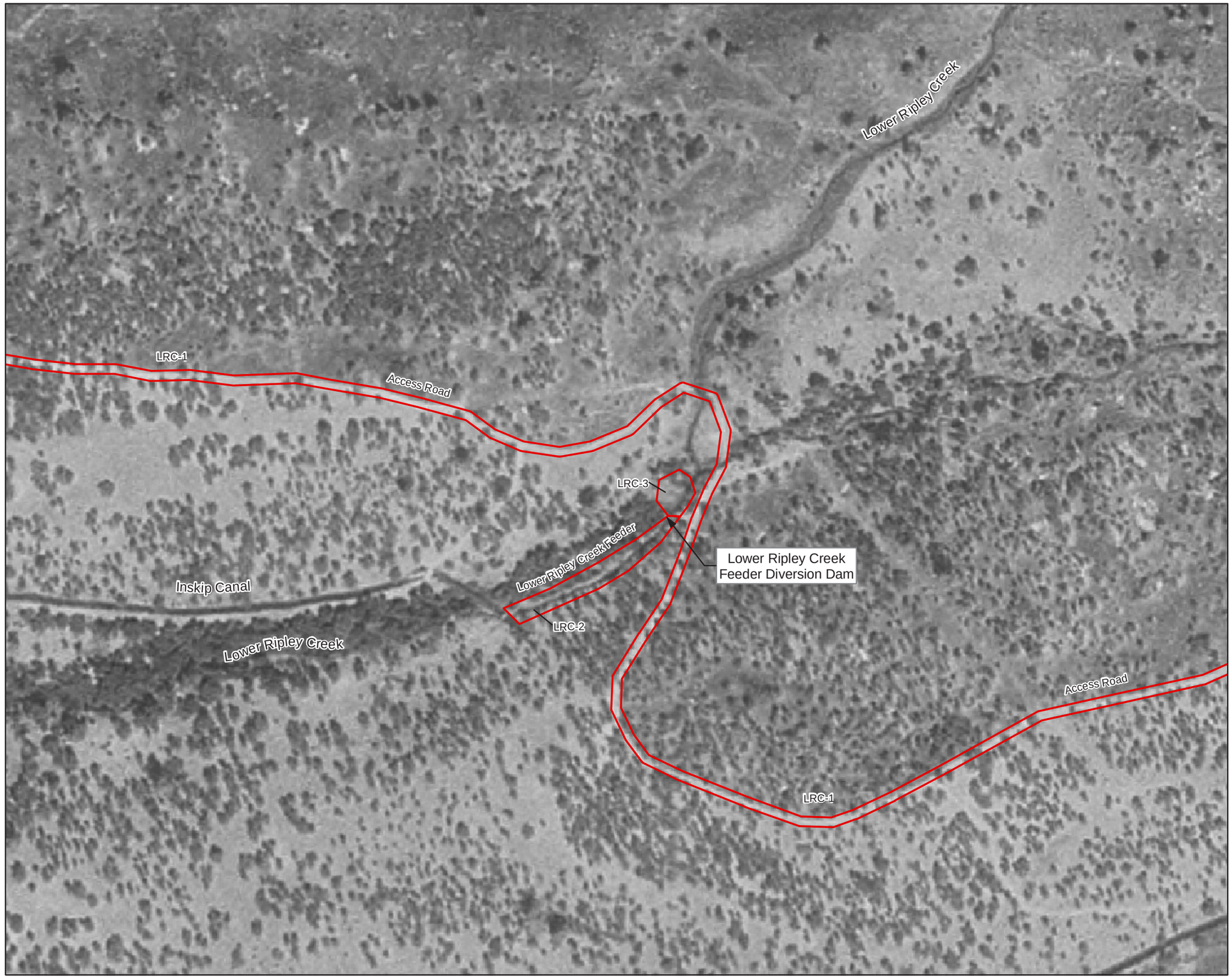

FIGURE F-8

PROPOSED CONSTRUCTION AREAS

LOWER RIPLEY CREEK FEEDER
DIVERSION DAM PROJECT SITE

CONSTRUCTION BOUNDARY

FOR AN EXPLANATION OF THE
CONSTRUCTION CODES, SEE TABLE F-8.

N

200 0 200 Feet

SOURCE: U.S. Geological Survey Digital Orthophoto Quarter Quadrangles 1998

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July 2005

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Table F-8. Construction Activities Proposed at Lower Ripley Creek Feeder Diversion Dam

Construction Code	Description of Activities
LRC-1	**Road along the top of the plateau.** The road would be graded to reduce its roughness (ruts, potholes, etc.). Vehicle travel would be restricted to this road, which would not be widened. The distance from the South Powerhouse Access Road to Lower Ripley Creek Feeder Diversion Dam is 16,300 feet. This 15-foot-wide road continues to the west of Lower Ripley Creek Feeder Diversion Dam for 9,400 feet to the headworks for the Inskip Powerhouse at the confluence of Eagle Canyon Canal and Inskip Canal.
LRC-2	**Lower Ripley Creek Feeder.** Prior to the period of diverted flows, the Feeder Canal would be widened and deepened and its banks raised, so that it could safely accommodate these higher temporary flows. The final removal of the Feeder Canal would affect a total area of approximately 16,000 square feet.
LRC-3	**Lower Ripley Creek Feeder Diversion Dam.** Removal of Lower Ripley Creek Feeder Diversion Dam would affect a 6,000-square-foot area.

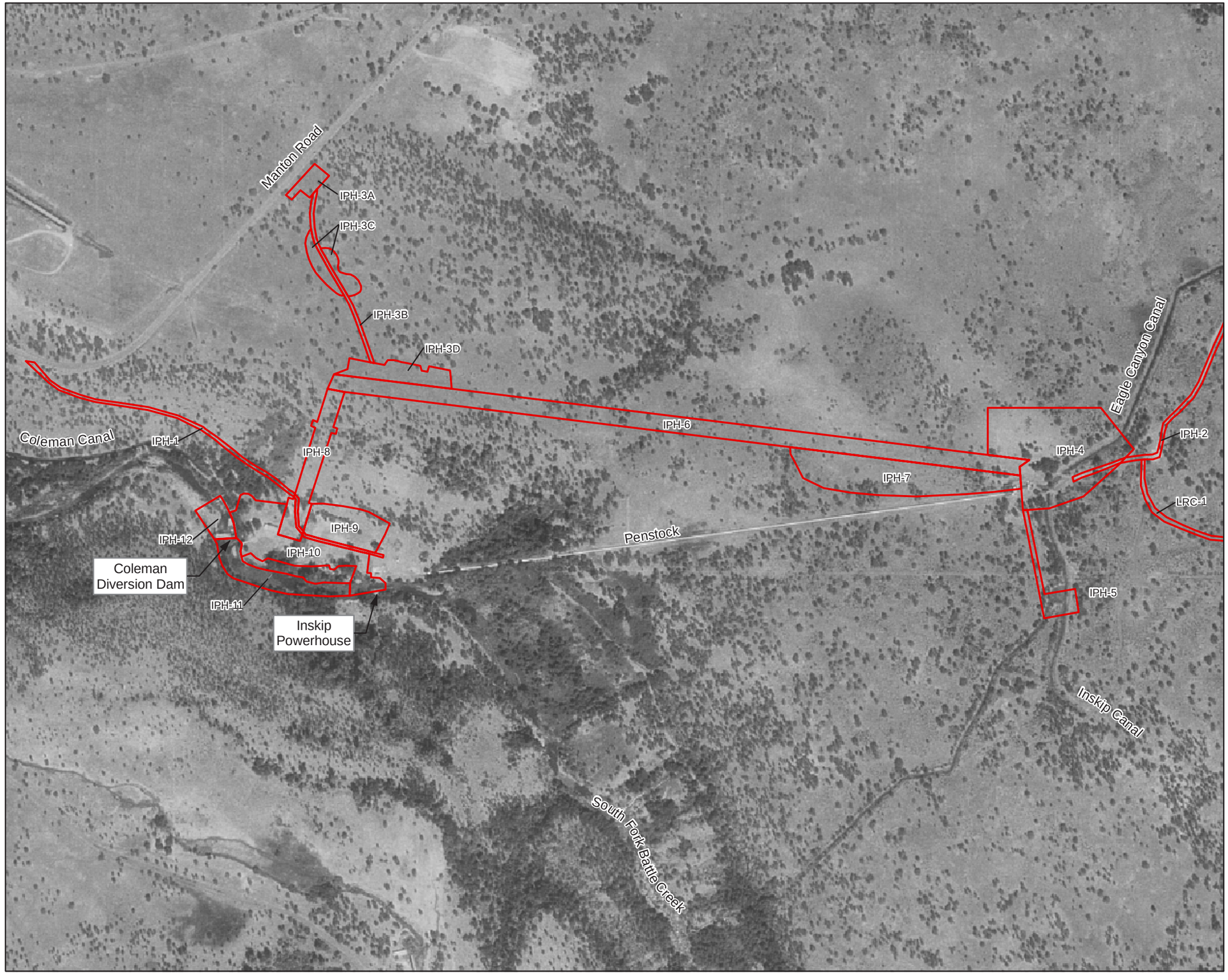

FIGURE F-9

PROPOSED CONSTRUCTION AREAS

COLEMAN DIVERSION DAM /
INSKIP POWERHOUSE PROJECT SITE

CONSTRUCTION BOUNDARY

FOR AN EXPLANATION OF THE CONSTRUCTION CODES, SEE TABLE F-9.

N

500 0 500 Feet

SOURCE: U.S. Geological Survey Digital Orthophoto Quarter Quadrangles 1998

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July 2005

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Table F-9. Construction Activities Proposed at Coleman Diversion Dam/Inskip Powerhouse

Construction Code	Description of Activities
IPH-1	**Existing paved access road off of Manton Road to Inskip Powerhouse.** This road would be used heavily during construction. The road would not be widened or otherwise modified for construction. The traveled surface may be repaved (2,200 feet by 15 feet) at the end of construction. The total area affected would be approximately 33,000 square feet.
IPH-2	**Dirt access road off Manton Road that follows the Eagle Canyon Canal to the Inskip Powerhouse Penstock header box.** This 3,600-foot-long, 20-foot-wide road may be bladed and graveled to allow all-weather access by light vehicles only. Heavy construction equipment would not use this access route. The traveled surface would be restored at the end of construction. The total area affected would be approximately 72,000 square feet.
IPH-3A	**New intersection turn off located off Manton Road.** A new intersection area would be created to provide a paved turnoff lane and a paved apron setback off Manton Road. The total area to be affected would be 17,400 square feet.
IPH-3B	**New access road.** A new access road would be constructed off Manton Road to allow all-weather access for heavy construction equipment. The road would extend from the intersection (IPH-3A) to the point where it would join the planned 85-foot-wide corridor of the new penstock bypass. The road would be approximately 20 feet wide and would be graded and graveled. The total area affected by the new road and improvements to the existing road would be approximately 17,400 square feet.
IPH-3C	**Staging area.** This area would be a contractor use/staging area. The total area affected would be approximately 35,300 square feet.
IPH-3D	**Staging area.** This area would be established near the upper jump basin. The total area affected would be approximately 50,500 square feet.
IPH-4	**Vicinity of inlet structure for penstock bypass.** Activities would include rerouting the access road and constructing a temporary bypass on Eagle Canyon Canal, a new inlet structure, and adjacent staging areas. The total area affected would be approximately 276,200 square feet.
IPH-5	**Shotcreted overflow structure on the Inskip Canal.** This structure, which serves as the penstock bypass, would be modified to incorporate a flashboard-type structure. Construction would include a 12-foot-wide access road crossing the existing penstock headworks structure. The total area affected would be approximately 33,000 square feet.
IPH-6	**A 3,600-foot portion of the Inskip Powerhouse penstock bypass pipeline.** The portion of the pipeline crossing the plateau area between the inlet structure at the Eagle Canyon Canal and the upper jump basin would be replaced with a new pipeline and chute system. The work corridor would be 85 feet wide; the total area affected would be approximately 309,000 square feet.

Construction Code	Description of Activities
IPH-7	**Area south of the penstock bypass pipeline.** Outflows from the header box would be rerouted and channelized to cross the new pipeline. Work would include constructing deflector berms with stone armoring, filling abandoned channels, and installing culverts. The total area affected would be approximately 184,000 square feet.
IPH-8	**Chute portion of penstock bypass.** The chute portion corridor would be widened from 85 feet to 120 feet to conduct special work to cross the water supply line. The total area affected would be approximately 77,000 square feet.
IPH-9	**Area between the powerhouse and new chute area.** This area would be used as staging areas and a disposal site for excess excavated materials. The total area affected would be approximately 78,000 square feet.
IPH-10	**Closure wall.** The area that would be disturbed to construct the tailrace connector pipeline in the vicinity of the creek would be minimized to protect the riparian corridor and would also be minimized in the upland area to protect trees. Some work within the creek in the vicinity of the powerhouse tailrace outlet area would be necessary to construct the closure wall and riprap slope protection. The total area affected would be approximately 141,000 square feet.
IPH-11	**The area upstream of Coleman Diversion Dam below the high-water mark.** This area would be affected by the excavation and redistribution of the sediments that are presently impounded. A pilot channel would be excavated and portions of the materials would be placed in spoilbanks in the creek channel and left to be distributed by the natural flows. The total area affected would be approximately 69,000 square feet.
IPH-12	**The area including Coleman Diversion Dam and the vicinity downstream.** This area would be affected by the disposal of portions of the masonry dam and sediments excavated from behind the dam. The total area affected would be approximately 28,000 square feet.
LRC-1	**Road along the top of the plateau.** The road would be graded to reduce its roughness (ruts, potholes, etc.). Vehicle travel would be restricted to this road, which would not be widened. The distance from the South Powerhouse Access Road to Lower Ripley Creek Feeder Diversion Dam is 16,300 feet. This 15-foot-wide road continues to the west of Lower Ripley Creek Feeder Diversion Dam for 9,400 feet to the headworks for Inskip Powerhouse at the confluence of Eagle Canyon Canal and Inskip Canal.

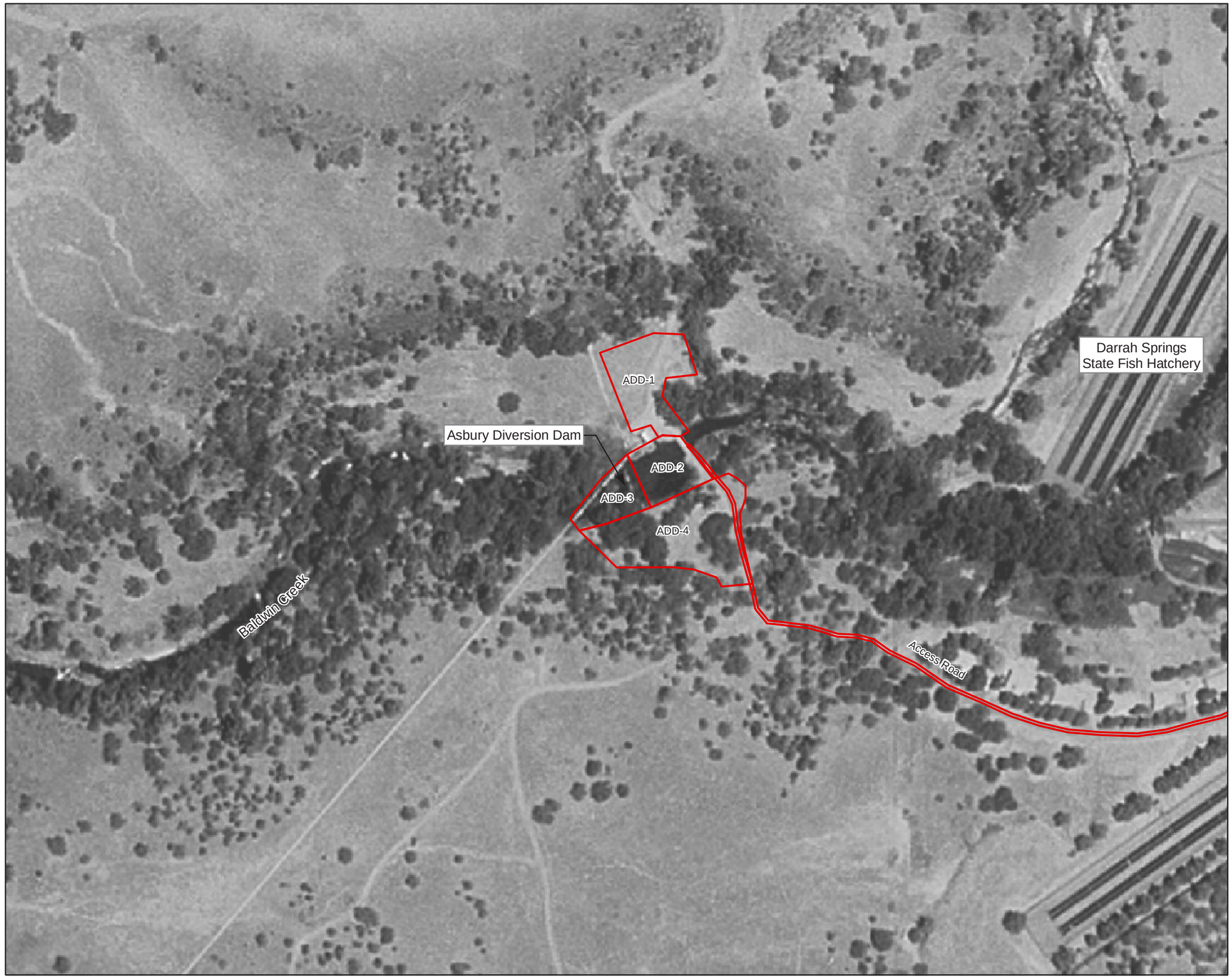

FIGURE F-10

PROPOSED CONSTRUCTION AREA

ASBURY PUMP STATION AND
DIVERSION DAM PROJECT SITE

CONSTRUCTION BOUNDARY

FOR AN EXPLANATION OF THE
CONSTRUCTION CODES, SEE TABLE F-10.

N

200 0 200 Feet

SOURCE: U.S. Geological Survey Digital Orthophoto Quarter Quadrangles 1998

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July 2005

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Table F-10. Construction Activities Proposed at Asbury Pump House and Diversion Dam

Construction Code	Description of Activities
ADD-1	**Staging area.** The contractor would use this area for staging and stockpiling. The total affected area would be 26,100 square feet.
ADD-2	**Construction of a temporary cofferdam and modifications at Asbury Diversion Dam.** A cofferdam consisting of gravel and plastic sheeting may be constructed upstream of the present masonry and concrete dam to isolate the work area from creek flows. The total area that would be temporarily affected by construction of the cofferdam would be 15,200 square feet of the reservoir area formed by the diversion dam. To accomplish the required 5-cubic-foot-per-second release, the existing flashboards in at least three bays would be replaced with flow measurement weirs. The crest of the dam would be fitted with an overhanging "cap," which would extend approximately 8 feet downstream of the dam. The existing steel pipe would be extended up to 100 feet downstream of the dam*.
ADD-3	**Construction access ramps.** This area would be heavily disturbed by construction equipment accessing the creek channel. One or two access ramps would be excavated into the south creek bank to provide access for construction equipment, personnel constructing the pipe extension and related materials, apron extension, the fish barrier cap on the dam crest, and the new footbridge. The total area to be affected would be 13,000 square feet.
ADD-4	**Staging area.** This area would be the primary point of access into the downstream creek channel and upstream reservoir work area for construction operations. The total area to be affected would be 46,200 square feet.

* Note: Activities proposed at this site with respect to preventing fish passage above the dam are proposed to address Impacts 4.1-8, 4.4-3, and 4.4-4 (in Volume I) and are not part of the Proposed Action.

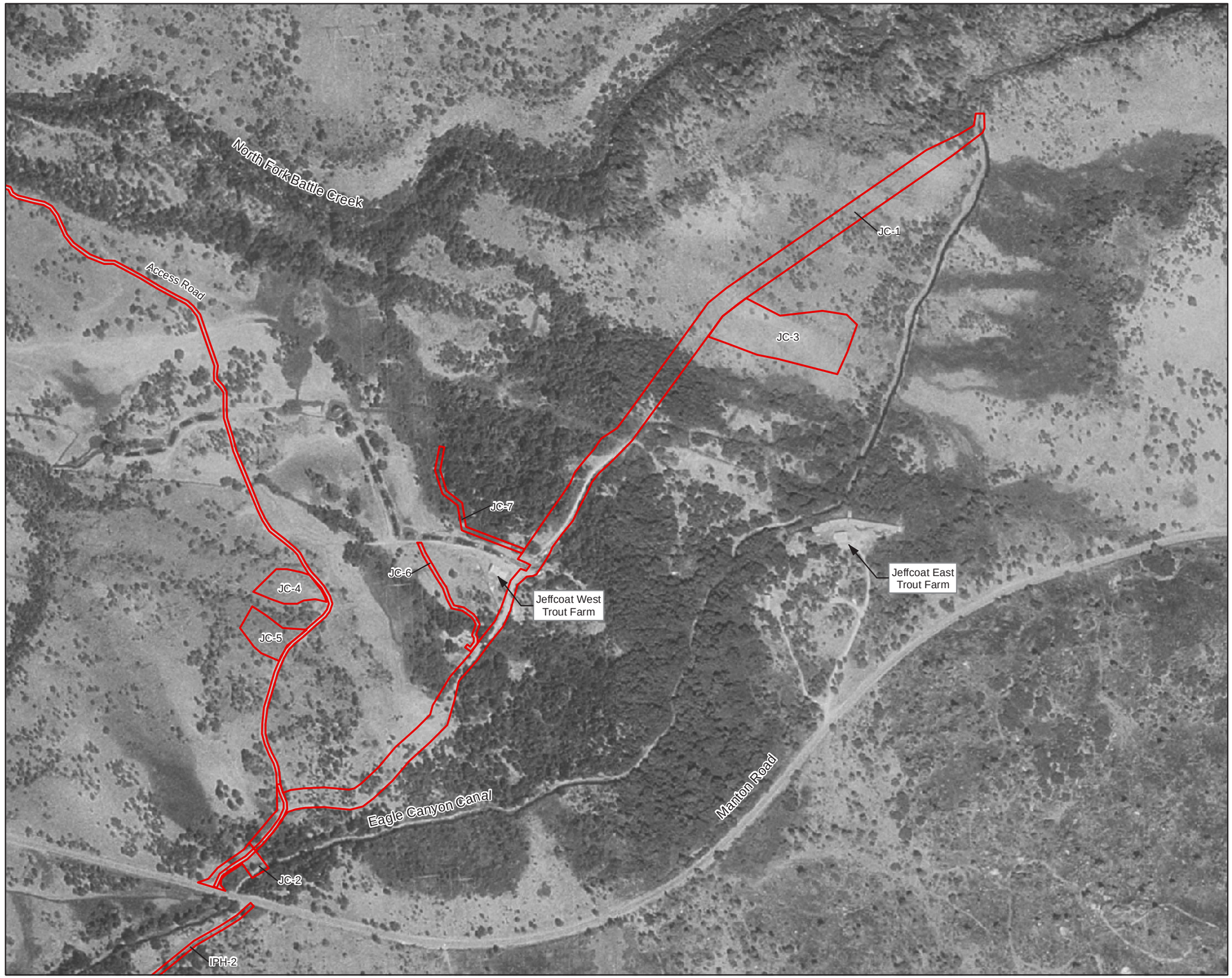

FIGURE F-11

PROPOSED CONSTRUCTION AREAS

JEFFCOAT MITIGATION SITE

CONSTRUCTION BOUNDARY

FOR AN EXPLANATION OF THE CONSTRUCTION CODES, SEE TABLE F-11.

N

400 0 400 Feet

SOURCE: U.S. Geological Survey Digital Orthophoto Quarter Quadrangles 1998

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Table F-11. Construction Activities Proposed at the Jeffcoat Mitigation Site

Construction Code	Description of Activities
JC-1	**Diversion of Eagle Canyon Canal in a watertight pipeline.** This alignment is approximately 4,500 feet long, and the construction corridor will be approximately 80 feet wide along most of this alignment. The first leg of the pipeline alignment extends from the Eagle Canyon Canal flume across open rangeland that crosses an existing drainage. As the route continues southwest, it parallels an access road through the Jeffcoat West facility and narrows to a 40-foot-wide corridor for a portion of this segment. This route would avoid all spring sources associated with the Jeffcoat East facility (located east and uphill of Eagle Canyon Canal) and most of the spring sources for the Jeffcoat West facility (located west and downhill of Eagle Canyon Canal). The pipe alignment continues on a route close to the access road through the Jeffcoat West facility and discharges back into Eagle Canyon Canal at a point downstream of the spring area. This final segment of the pipeline from the Jeffcoat West facility to its terminus approximately 150 feet upstream of Manton Road is anticipated to follow the proposed alignment.
JC-2	**Intersection of private access road and Manton Road.** This intersection will be improved, and the public access road will be widened to allow safe passage of construction equipment and trucks. The road would be widened to a point approximately 120 feet from Manton Road.
JC-3	**Contractor staging area.** The contractor will use this area for staging, temporary stockpiling, or other temporary uses. The total area affected will be approximately 11,000 square feet.
JC-4	**Contractor staging area.** The contractor will use this area for staging, temporary stockpiling, or other temporary uses. The total area affected will be approximately 28,000 square feet.
JC-5	**Contractor staging area.** The contractor will use this area for staging, temporary stockpiling, or other temporary uses. The total area affected will be approximately 28,000 square feet.
JC-6	**New access road.** A new private access road will be constructed to the residence located on the west side of the pipeline alignment near the Jeffcoat West facility. This private access road would provide access to the residence from the west during construction of the pipeline alignment. The driveway will include a small parking area and the surfaces would be graveled. The total affected area will be approximately 6,700 square feet.
JC-7	**Drain way.** A blowoff structure will be positioned at the low point in the pipeline. This structure incorporates a valve, which allows the pipeline to be unwatered for inspection and maintenance. A small diameter drain pipeline will extend from the valve and will be buried in a trench along the alignment shown. This drain pipeline will discharge the canal water at a point beyond the fish rearing ponds. The terminus of the drain pipeline will include a rock-lined basin to control energy dissipation and soil erosion. The total area affected will be approximately 13,000 square feet.
IHP-2	**Dirt access road off Manton Road that follows the Eagle Canyon Canal to the Inskip Powerhouse Penstock header box.** This 3,600-foot-long, 20-foot-wide road may be bladed and graveled to allow all-weather access by light vehicles only. Heavy construction equipment would not use this access route. The traveled surface would be restored at the end of construction. The total area affected will be approximately 72,000 square feet.

Note: Activities at this site are proposed to address Impacts 4.1-8, 4.4-3, and 4.4-4 (in Volume 1) and are not part of the Proposed Action.

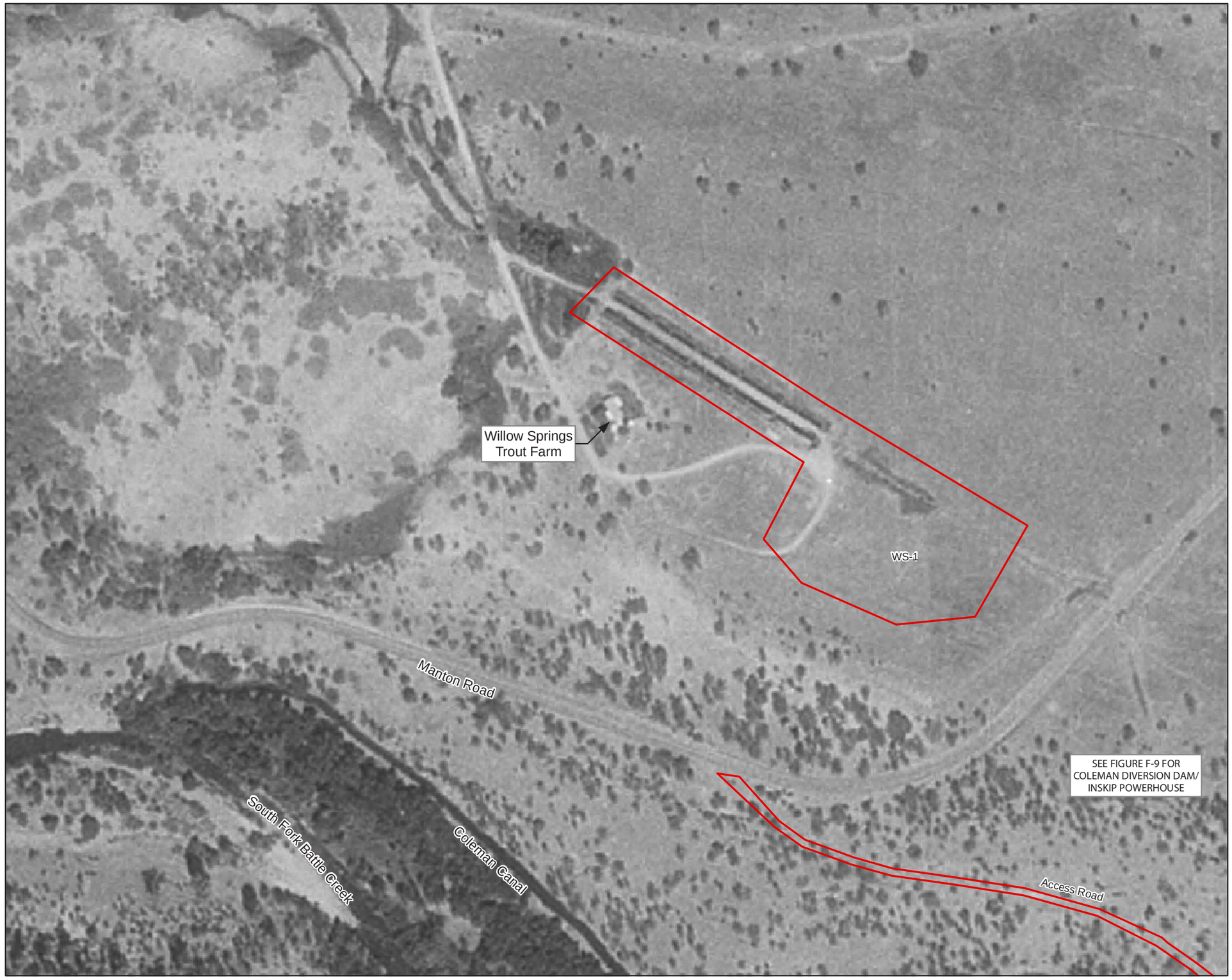

FIGURE F-12

PROPOSED CONSTRUCTION AREA

WILLOW SPRINGS MITIGATION SITE

OPTION A—DISINFECTION FACILITY

CONSTRUCTION BOUNDARY

FOR AN EXPLANATION OF THE CONSTRUCTION CODE, SEE TABLE F-12.

NOTE: THE PREFERRED MITIGATION OPTION IS TO ACQUIRE THE WILLOW SPRINGS TROUT FARM, WHICH WOULD NOT RESULT IN ANY CONSTRUCTION ACTIVITIES AT THIS MITIGATION SITE.

N

200 0 200 Feet

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Table F-12. Construction Activities Proposed at the Willow Springs Mitigation Site (Option A)

Construction Code	Description of Activities
WS-1	**Disinfection facilities.** The new disinfection facility would be located east (upstream) of the catch basin. A new pipeline would divert water from the existing Willow Springs pipeline to a new settling basin. From this basin, the water would be piped to the disinfection facility. The disinfection equipment would be housed in new buildings (up to six buildings approximately 30 by 60 feet). These buildings would be located immediately east (upstream) of the catch basin and trout-rearing ponds in the northern section of the Willow Springs property. For the new equipment buildings, site grading will be required to allow construction of the concrete slab foundation pads. Trenches will be excavated for installing the new buried pipelines. The construction area would cover an area approximately 400 feet by 260 feet at the new building site and would include the permanent features for the disinfection facility and the temporary staging area for construction. An additional area approximately 30 feet wide would be required to install the 500-foot-long wastewater line parallel to the trout-rearing ponds.

Note: Activities at this site are proposed to address Impacts 4.1-8, 4.4-3, and 4.4-4 (Volume 1) and are not part of the Proposed Action. The preferred mitigation option is to acquire the Willow Springs Trout Farm, which would result in no construction activities.