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***Historical Resource Investigation for the
U.S. Fish and Wildlife Service, Red Bluff Fish
and Wildlife Office, Lower Deer Creek Falls
Fish Passage Replacement Project,
Tehama County, California***

February 22, 2016

Prepared for:

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HISTORICAL RESOURCE INVESTIGATION FOR THE U.S. FISH AND WILDLIFE SERVICE,
RED BLUFF FISH AND WILDLIFE OFFICE, LOWER DEER CREEK FALLS FISH PASSAGE
REPLACEMENT PROJECT, TEHAMA COUNTY, CALIFORNIA

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INTRODUCTION

Project Location and Description

This report documents a cultural resource study of the proposed Lower Deer Creek Falls Fish Passage Replacement Project (Project), located on Lower Deer Creek, Tehama County, California (Figure 1). The Project is located on Deer Creek 11 miles west of Deer Creek Meadows, in T27N/R3E, S25 (MDBM) as depicted on the USGS 7.5' quadrangle "Onion Butte, Calif." The Project area centroid is located at UTM Zone 10, 620793 m E/ 4447373 m N (WGS84).

U.S. Fish and Wildlife Service, Red Bluff Fish and Wildlife Office is providing Anadromous Fish Restoration Program funding to a consortium led by the Western Rivers Conservancy and the Northern California Regional Land Trust to complete new construction and improvements to the existing Lower Deer Creek falls fishway fish ladder and exit channel. The existing fishway was constructed in 1943, and consists of a seven-tier fish ladder with a turning pool and a fishway exit composed of a 15-foot rock tunnel and a constructed channel extending an additional 90 feet, terminating 35 feet upstream from the falls. A fish passage assessment completed by the California Department of Fish and Game determine that the existing fishway does not meet National Marine Fisheries Service criteria for anadromous salmonid fish passage, and in 2012, the U.S. Fish and Wildlife Service issued a Request for Proposals for an initial assessment of existing conditions and development of design alternatives. In 2013, Northwest Hydraulic Consultants, Incorporated

completed these tasks. The investigators determined that the existing fishway fish ladder possesses design deficiencies and damages accrued in 73 years of operation including a missing lower weir structure, too small pool size, too shallow pool depths, excessive drop heights, excessive turbulence, and percentage total stream flow falling below National Marine Fisheries Service criteria and representing impediments to fish movement (Northwest Hydraulic Consultants 2013). Northwest Hydraulic Consultants developed three design alternatives now in-hand: (1) retrofit confined to the existing ladder structure and consisting of installation of short chute fishways between the existing weir steps; (2) construction to replace the existing ladder structure consisting of demolition of the lower six existing weirs and installation of a new structure composed of 15 weirs connecting 14 9-x-9 foot pools, and (3) removal of existing rock obstructions responsible for the falls and rock removal leading to re-profiling of 40 feet of the creek bed. Owing to construction, maintenance, and other cost constraints, design alternative (3) is no longer under consideration. The historical resource investigation proceeded with the assumption that design alternative (2) or (3) would be selected. Of the two, design alternative (2) represents the largest Area of Potential Effects and therefore established the minimum footprint for this investigation.

The United States Fish and Wildlife Service is the lead for this Project and the Project must proceed in compliance with Section 106 of the National Historic Preservation Act, which requires Federal agencies and other entities working under federal permits or using federal funds to take into account the effect of their undertakings on historic properties. Sub Terra's tasks included: (1) completion of an archival document review of Project area archaeological and historical resource records housed at the Northeast Information Center of the California Historical Resources Information System, California State University, Chico (NEIC); (2) completion of a Project area Native American Heritage Commission Sacred Lands Search and Native American Contacts List request; (3) completion of an archaeological survey of the Project's proposed access routes and impact areas; (4) identification, documentation, and evaluation of the integrity and National Register eligibility of any and all historical resources contained within the Project Area of Direct Effects, and; (5) completion of a report of investigation findings.

RESULTS OF NEIC DOCUMENT REVIEW AND ETHNOGRAPHIC AND ARCHAEOLOGICAL RESEARCH

Methods

On February 15, 2016, the author conducted a records search and document review at the NEIC (NEIC File #W16-29). The document review covered reports and records on-file within a 2.0 mile (3.2 kilometer) radius around the Project area. Additional resources consulted included the National Register of Historic Places files for Tehama County; California Points of Historical Interest files for Tehama County; the California Historical Landmarks registry for Tehama County; the California Register of Historical Resources listings for Tehama County; the directory of properties in the Historic Properties Data File for Tehama County; and pertinent ethnographic studies, cited below.

Previous Cultural Resource Studies within a 2.0-Mile Radius of the Project Area

The NEIC document review identified four previous cultural resource reports filed for investigations within a 2.0-mile (3.2 kilometer) radius of the Project area:

- AR#344 Skjelstad (1975) reports an archaeological study of two timber sale cutting units along Panther Creek 0.80-miles (1.29 kilometers) upstream from its confluence with Deer Creek, 0.75 miles (1.21 kilometers) northwest of the Project area. Skjelstad surveyed a total of 31 acres. No prehistoric or historical cultural resources were identified.
- AR#3632 Bennett (1994) report an archaeological survey of Highway 32 at postmiles 9.64, 10.8 and 15.56. Postmile 15.56 is situated along Highway 32 immediately adjacent Windy Cut heliport staging area to 0.5 miles (0.8 kilometers) south of the Project area. No prehistoric or historical cultural resources were identified.
- AR#5950 Moore (2003) report an archaeological survey of the Windy Cut heliport area located 0.5 miles (0.8 kilometers) south of the Project area. Moore's background research indicated that the Windy Cut heliport once served as the location of the Windy Cut Lookout. The lookout was subsequently demolished and Windy Cut flat bulldozed, covered with fill and paved-over to construct the current heliport. Moore's field inspection confirmed the presence of concrete fragments probably constituting pieces

of the lookout footings located on the west face of the point downslope from the pad. The presence of significant modern trash tossed down the slopes of the point from the pad made it difficult to discriminate additional Windy Cut Lookout traces. Moore's report did not provide historical background information or dates of use of the Windy Cut Lookout. Records on file with the Northeast Special Collections, Northeastern California Historical Photograph Collection, California State University, Chico, indicate the lookout was an elaborate structure in operation from at least the early 1930s through mid-1960s.

AR#8431 Marvier (2004) reports an archaeological survey of the 682-acre Panther Timber Harvest Plan, including three parcels in the immediate vicinity of the Project area: (1) portions of the Panther Creek drainage from 0.62 miles (1.0 kilometers) west to drainage 0.84 miles (1.34 kilometers) north-northwest of the Project area; a portion of the south wall of Deer Creek canyon immediately south of the Project area, and; (3) a portion of the south wall of Deer Creek canyon 0.13 miles (0.21 kilometers) west of the Project area. Marvier conducted a mixed-strategy reconnaissance focused on springs and wet areas, watercourses, confluences, and ridgetops. No prehistoric or historical cultural resources were identified.

AR#8431 Blaufuss (2007) reports an archaeological survey of the 2,079-acre K-Line Timber Harvest Plan, including one parcel located on the north wall of Deer Creek canyon 0.57 miles (0.91 kilometers) east of the Project area. Blaufuss conducted a mixed-strategy reconnaissance focused on springs and wet areas, watercourses, confluences, and ridgetops. No prehistoric or historical cultural resources were identified.

Previously Recorded Sites within a 2.0-Mile Radius of the Project Area

The NEIC document review identified three previously recorded prehistoric archaeological sites within a 2.0-mile (3.2 kilometer) radius of the Project area. Review of these resources provides expectations and context for the nature, density, and diversity of archaeological resources likely to occur in the Project area.

Ca-Teh-1822/H Teh-1822/H is located on a high terrace on the north side of Deer Creek just downstream from the mouth of Panther Creek, 0.64 miles (1.03 kilometers) west of the Project area. The site was identified and recorded by T. Vaughan, S. Flint,

B. Hamuseck, and K. Tyree in 1988. Prehistoric occupation was indicated by a low-density, low-diversity scatter of obsidian and basalt flakes, one basalt core and one millingstone fragment. A small scatter of amethyst glass and a solder-top can on one end of the site indicated historical camping at the location dating to the mid-to-late 19th century. The site was not re-visited or re-recorded for this investigation.

Ca-Teh-2112H Teh-2112H is located on Windy Cut flat on the south wall of Deer Creek canyon 0.5 miles (0.8 kilometers) south of the Project area. The site consists of historical structure remains recorded in 2003 by J. Moore. Moore's background research indicated that Windy Cut point once served as the location of the Windy Cut Lookout. The lookout was subsequently demolished and Windy Cut flat bulldozed, covered with fill and paved-over to construct the current heliport. Moore's field inspection confirmed the presence of concrete fragments probably constituting pieces of the lookout footings located on the west face of the point downslope from the pad. The presence of significant modern trash tossed down the slopes of the point from the pad made it difficult for Moore to discriminate additional Windy Cut Lookout traces. Moore's report did not provide historical background information or dates of use of the Windy Cut Lookout. cursory investigation for the present investigation found records on file with the Northeast Special Collections, Northeastern California Historical Photograph Collection, California State University, Chico, indicating the lookout was an elaborate structure in operation from at least the early 1930s through mid-1960s. The site was re-visited but not re-recorded for this investigation.

Ca-Teh-2351H Teh-2351H consists of the bridge located at the Highway 32 crossing over Deer Creek located 1.4 miles (2.24 kilometers) east of the Project area. The site was recorded by K. Long and B. Wood in 1999. The site is identified as a concrete and steel truss structure 125 feet long and 47 feet wide, built by the Judson Pacific Company of San Francisco in 1939. The site was re-visited but not re-recorded for this investigation.

Prehistoric Native American Lifeways in the Project Area

Resources Consulted. In order to establish a context for field investigation of the Project area, a number of primary and secondary ethnographic resources pertinent to the Project area were consulted including:

- Powers' chapters on local tribes contained in a 1975 compilation of articles published under the title "*The Northern California Indians: A Reprinting of 19 Articles on California Indians Originally Published 1872-1877*" (Powers 1975, original 1874).
- Dunn's "*Massacres of the Mountains: A History of the Indian Wars of the Far West*," which contains a discussion of Yana/Yahi settlement patterns in relation to territorial defense needs (Dunn 1980, original 1886).
- Curtin's "*Yana Myths*" contained in his publication on the "*Creation Myths of Primitive America in Relation to the Religious History; and Mental Development of Mankind*" (Curtin 1898). This document identifies Yana beliefs related to specific events, contexts, and physical features of the Tehama County canyons.
- Waterman's important article "The Yana Indians" which contains new information on settlement and land use in Deer, Mill, and Antelope Creek canyons, published after extensive new interviews with Yana/Yahi heritage consultants (Waterman 1918).
- Alfred Kroeber's chapter on the Yana/Yahi in his seminal reference "*Handbook of the Indians of California*," representing one of the most important reference works on the tribe, especially important owing to Kroeber's incorporation of information from his close association with Ishi in the years leading to publication (Kroeber 1925).
- Sapir's and Spier's "*Notes on the Culture of the Yana*," which contains new information on Yana/Yani language, culture, and geography collected from some of Kroeber's and Waterman's surviving consultants (Sapir and Spier 1943).
- Theodora Kroeber's book "*Ishi in Two Worlds: A Biography of the Last Wild Indian in North America*," which chronicles Ishi's early life in Deer Creek canyon and his return visit with Alfred Kroeber, Sam Batwi, Saxton Pope, and Thomas Waterman (Kroeber 1961).
- Johnson's chapter on the *Yana/Yahi* contained in the Smithsonian Institution's standard reference work "*Handbook of North American Indians. Volume 8, California*," which represents a solid synthesis of ethnographic and ethnogeographic information about the groups (Johnson 1978).

- Wiant's "*Southern Yana Subsistence and Settlement: An Ecological Model*," which consists of the first effort made to reconcile the archaeological and ethnographic records of land use and settlement patterns in traditional Yana/Yahi territories (Wiant 1981).

Yana/Yahi Adaptation. Yana/Yahi ethnography is based on the recollections of five consultants, Betty Brown and Kate Wilson who were Northern Yana; Malcolm Clay, whose father was Atsugewi and whose mother was Central Yana, but who lived with the Atsugewi; Sam Bat'wi, a Central Yana who was born in Southern Yana territory; and Ishi, widely regarded as "the last Yahi Indian" (Powers 1975:277; Kroeber 1925; Wiant 1981:59; Johnson 1978). All these individuals were born around 1855, about a decade after initial contact with non-Indian settlers, and most of the ethnographers cited here collected interviews in the 1910s and 1920s. The Yana/Yahi ethnographies were written at a time when at least the Southern Yana were thought to be extinct, and the Yahi as an independent group were still unknown.

The Yana/Yahi tribe was composed of four dialect groups, the Northern, Central, and Southern Yana, and the Yahi (Waterman 1918:35; Kroeber 1925:337). The Project area is located in traditional Yahi territory. Close similarity in language as well as traits held in common between the Yana/Yahi groups — such as material culture, political organization, and physical appearance — indicate a common heritage and historical pattern of regular interaction (Waterman 1918:36-37). The Yana/Yahi held to small-scale social units, and any and all alliances were temporary (Johnson 1978:363). Speculation on Yana/Yahi population size at the time of contact varies among the different ethnographies. Jeremiah Curtin in 1864 estimated that the Yana/Yahi numbered about 3,000 (prior to an 1864 massacre). He obtained this information by "sound authority of reliable white men" (1898:517-520). Theodora Kroeber speculated that there were between 2,000 and 3,000 Yana/Yahi (1961:15), while A.L. Kroeber placed their number at 1,500 (1925:339) and Johnson suggests there were 1,900 Yana/Yahi just prior to non-Indian contact (1978:363).

The Yana/Yahi adaptation and settlement patterns were adapted to the biogeography and seasonality of canyonland natural resources. Yana/Yahi food items can be put into two categories: plant foods primarily gathered by the women, and animal foods obtained by the men (Wiant 1981:75). Acorns and deer meat represented Yana/Yahi dietary staples; Wiant, however, argues that salmon and other fish were of primary caloric importance (Wiant 1981:112, Johnson 1978:364), and ninety different types of local plants were also used as food by the Yana/Yahi (Wiant 1981:75, Sapir and Spier 1943:249). There were seven different types of acorns available: valley oak, blue oak, Oregon oak, interior live oak, black oak, canyon oak, and huckleberry oak. Both sexes participated

in the acorn harvest. Men would climb the trees and break off branches or the knock the acorns down with a stick. The women and children would then gather them up into baskets. The acorns were taken back into camp where they were shelled, laid out to dry, and stored for winter use (Wiant 1981:76). Other nut and seed crops used in the late summer and early fall were bay-laurel, buckeye, bush chinquapin, hazelnut, water hemlock; various grass seeds, tarweed, gray pine, ponderosa pine, and some sugar pine. Spring and early summer seed and nut crops consisted of Indian paintbrush, buckwheat, buttercup, varieties of blue grass, mule's ears, primrose, wild rose, and sunflower (Wiant 1981:77). Only a few methods of Yana techniques for processing and preparing nuts and seeds are documented. Grass, tree and flowering plant seeds as well as nuts were often ground or pounded with stone tools.

Generally, Yana/Yahi territories centered on canyons while ridgetop borders were used for hunting and often also claimed by neighboring tribes. Through much of the year the Yana/Yahi lived in a series of small, family-based camps often relocated near seasonal food sources. Multi-family settlements were generally occupied in the fall and winter and were located along major watercourses near oak groves. The Northern and Central Yana lived in earth covered multifamily dwellings and used assembly houses, sweat houses, menstrual huts, birth houses, smokehouses, granaries and store houses. Structures had one center post, and the entrance was through the smoke hole in the roof (Kroeber 1925:340). Conical bark houses, which were made from slabs of cedar or pine bark leaned against a pole framework, were used as multifamily dwellings among the Northern and Central Yana, while the Southern Yana and the Yahi used them for single families only. These smaller structures had a shallow oval depression ten to twelve feet in diameter on the inside, and had dirt built up on the outside to keep water out. In the southern portions of the Yana's range these conical dwellings were replaced by dome-shaped single-family dwellings made of poles which were covered by branches, brush, skins, and other conveniently available material. The Yahi also used caves for shelter (Powers 1975:279). None of the ethnographies consulted here provided specific names for geographic features or settlements in the vicinity of the Project area.

Prehistoric Archaeology of the Project Area

Resources Consulted. In order to establish a context for field investigation of the Project area, a number of primary and secondary archaeological sources pertinent to the Project area were consulted including:

- Baumhoff's published syntheses of Southern Cascades archaeology contained in his report of "*Excavation of Site Teh-1 (Kingsley Cave)*" (Baumhoff 1955), and "An Introduction to Yana

Archaeology” incorporating his report of excavations at Teh-193, Payne Cave on Antelope Creek (Baumhoff 1957). These documents still represent the standard references for the region.

- Greenway’s reports of excavation findings from Teh-290, Dead Man’s Cave, on Paynes Creek (Greenway (1982, 2004). These investigations provide significant new information on late prehistoric diet and settlement patterns.
- Johnson partial reports of his extensive excavations in Deer Creek, Mill Creek, and Antelope Creek canyons through the 1980s and early 1990s (Johnson 1984, 1992). Johnson has conducted the most extensive field studies in the region, and his general findings appear in unpublished reports by Johnson and Theodoratus (1984) and Bevill and others (Bevill et al. 1996) in which a five part system of prehistoric cultural complexes is described.
- Bevill, Nilsson, Dugas, and Johnson provide a report of “*Archaeological Investigations at CA-Teh-563 and FS 05-06-51-40, Located in the Ishi Wilderness, Lassen National Forest, Tehama County, California,*” (Bevill et al. 1996), located near Black Rock, representing one of the few reports of large-scale excavation on the general Southern Cascades canyon area.
- Dugas, Watts, Moore, Johnston, O’Brien, and Woolfenden report on “*Black Rock and Beyond: A Decade of Archaeological Test Excavations in Yahi Territory*” synthesizing test excavations at ten sites in the Lassen National Forest, five in Mill Creek Canyon (Teh-199, -562, -620, -684, and -710), and five in Deer Creek Canyon (Teh-200, -704, -293, -1767, and -1822) (Dugas et al. 2001). All five of the Mill Creek sites were middens, including three rock shelters and two open sites, one with housepits and a cupule petroglyph. Teh-710 produced a large assemblage of groundstone dominated by handstones and millings, with hammer stones, an anvil stone, and an incised slate. This site also produced distinctively thick obsidian hydration rims, and formal tools indicative of Kingsley and Deadman Complex use. The other four Mill Creek sites produced artifacts consistent with Emergent Period occupation, including two with indicators of protohistoric occupation (bottle glass flakes and tools and glass beads). The Deer Creek sites include three middens with housepits (Teh-200, -704, and -293) and two non-midden lithic scatters (Teh-1767 and -1822). Mortars and pestles predominated at all five sites, including bedrock mortars, hopper mortars, and pestles. Faunal remains were dominated by black-tailed deer bone, and dental increment analysis identified early spring and late winter deaths for two deer teeth. Chipped stone was primarily obsidian, visually sourced to the Tuscan source area. Projectile point types and obsidian hydration results are reported to support assignment of the sites to the Upper Archaic/Lower Emergent Kingsley

Complex and Dye Creek Complex, with limited Mill Creek Complex occupation at two of the midden sites (Teh-704 and -293).

- White and Wilson provide a “*Final Report of Test Excavations and Geoarchaeological Investigations at Ca-Teh-1621/H, Ishi Conservation Camp, Tehama County, California*” (White and Wilson 2008). This investigation, prepared for California Department of Forestry and Fire Protection, provided an archaeological and geoarchaeological investigation of a multi-component prehistoric ridgetop occupation site in Plum Creek watershed.

Prehistoric Archaeological Cultures. Baumhoff (1955, 1957), Johnson (Johnson 1984, 1992, Bevill et al. (1996), Dugas et al. (2001), and White (2008) generally agree on a five-part classification of prehistoric cultures evident in the west slope Southern Cascades region:

Deadman Complex. The Deadman dates from 1500 BC to 500 BC. This is the earliest identifiable sustained cultural use of the Southern Cascade foothills, marked by *Olivella* shell beads, *Haliotis* disk beads and triangular pendants, manos and metates, and large side-notched and unifacially-flaked leaf-shaped projectile points. Basalt was favored over obsidian and chert for the manufacture of chipped stone tools.

Kingsley Complex. The Kingsley Complex dates from 500 BC to AD 500). Per Baumhoff, artifacts included basalt and obsidian side-notched and stemmed dart points, small, well-shaped scrapers, cobble core tools, and a wide variety of groundstone tools including manos, metates, hopper mortars, and pestles, mostly shaped via use. The assemblage also included a limited inventory of shaped bone and shell artifacts. A preference for basalt in chipped stone industries continues from the Deadman Complex. House floor excavations indicate the use of multifamily structures.

Dye Creek Complex. The Dye Creek Complex dates from AD 500 to AD 1500. Projectile points included medium-to-large serrated forms, as well as other types morphologically similar to Columbia Plateau corner-notched and Gunther barbed series styles. In contrast to the preceding Deadman and Kingsley complexes, obsidian artifacts outnumber basalt and chert specimens. Marker shell bead types included sequin and spire-lopped *Olivella*, disc-shaped abalone ornaments, and perforated freshwater mussel ornaments. Deer ulna awls or flakers also occur. The groundstone assemblage was consistent with the preceding Kingsley Complex.

Mill Creek Complex. The Mill Creek Complex dates from AD 1500 to AD 1845. Artifacts included clam shell disk beads, *Glycymeris* sp. shell beads, magnesite cylinders, and twined basketry. Groundstone artifacts included hopper mortars, flat-ended pestles, millingslabs, and handstones. Projectile points consisted of “Southern Cascade serrated,” small triangular forms, and types morphologically similar to the Desert Side-notched type. House pit excavations revealed the use of single-family dwellings 3 to 4 m in diameter; and larger, earth-covered ceremonial or communal structures 5 to 9 m in diameter. Consistent with the Dye Creek Complex, obsidian was favored over basalt and chert.

Yana Complex. The Yana Complex dates from AD 1845 to AD 1911; consisting of archaeological traces associated with the activities of the historical Yana refugees who attempted to avoid extermination by Euro-Americans through concealment deep in the canyons. The archaeological assemblage was characterized by a mix of traditional Native American technologies and Euro-American manufactured goods. Extended to ethnographic material culture, there exist records of traditional ornaments, including pine nut beads, whole abalone shells, clamshell disk beads, spire-lopped *Olivella* beads, *Glycymeris* beads, and *Dentalia* beads. Products fashioned from plant fibers included twined basketry with overlay designs, tule skirts with pine nut beads and plaited grass on leather thongs, and woven pine needle containers. In addition, deerskin moccasins, otter skin quivers, magnesite cylinders, and wooden tubular pipes were also characteristic artifacts. Groundstone implements included hopper mortars, flat-ended pestles, millingslabs, and handstones. Projectile points included “Southern Cascade serrated,” Desert Side-notched, and small triangular specimens fashioned primarily of obsidian. Structures were either single-family, brush or bark covered dwellings measuring 3 to 4 m in diameter, or were larger communal or ceremonial frameworks generally 4 to 9 m in diameter. Pitted boulder petroglyphs were also often found associated with Yana Complex sites.

RESULTS OF NATIVE AMERICAN COORDINATION

Methods

On December 18, 2015, the author filed a *Sacred Lands File and Native American Contacts List Request* with the California Native American Heritage Commission (NAHC). On December 30 2015, the NAHC responded and supplied a list of six recommended tribal contacts representing three tribal entities, including Glenda Nelson, Chairperson, and Art Angle, Vice-Chairperson of the Enterprise Rancheria of Maidu Indians, Kyle Self, Chairperson, Lacie Miles, EPA Director, and Alisha Wilson, NAGPRA Coordinator of the Greenville Rancheria of Maidu Indians, and Ms. Beverly Ogle of Paynes Creek, an unaffiliated individual representing the Maidu, Pit River, and Atsugewi tribes. On February 12, 2016, the author mailed to the six contacts letters containing a description and map location of the Project and a request for tribal heritage information, comments, or concerns.

Results

A Project Native American coordination log and documents associated with Native American coordination for the Project can be found in **Attachment A**. The December 30, 2015 NAHC response letter indicated that a records search of the NAHC's sacred lands files failed to indicate the presence of Native American cultural resources in the vicinity of the proposed Project area. On February 20, 2016, the author received a response from Creig Marcus, Tribal Administrator for the Enterprise Rancheria Estom Yumeka Maidu Tribe representing Glenda Nelson, Chairperson, and Art Angle, Vice-Chairperson of the Enterprise Rancheria of Maidu Indians. The letter indicated that a thorough review of the map and Project description found that the Project area was not within the traditional tribal territory of the Estom Yumeka Maidu Tribe, and therefore, the Estom Yumeka offered no specific cultural resource concerns. As of this writing, no additional responses have been received. Should any responses be received after submittal of this report, they will be forwarded to the Project proponents with recommendations for additional action, should any be needed.

FIELD METHODS AND FINDINGS

Definition of Survey Objectives and Project Area of Potential Effects

Under provisions of National Historic Preservation Act, the *Area of Potential Effects* is “the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist” (36 CFR § 800.16(d)). In December 2015, Sub Terra’s client for the Project, Tehama Environmental Solutions, provided project engineering studies, project use area maps, and a list of survey objectives consisting of proposed work areas associated with Project installation. Sub Terra also learned that, owing to physical and cost constraints, Northwest Hydraulic Consultants’ (2013) design alternative (3) is no longer under consideration for the Project. The historical resource investigation therefore proceeded with the assumption that design alternative (2) or (3) would be selected. Of the two, design alternative (2) represents the largest Area of Potential Effects and therefore established the minimum footprint for the historical resource investigation (Figure 5).

Evaluation of construction access and work plans determined that two Project use areas constitute the Project Area of Direct Effects while four other Project use areas will have uses consistent with normal operations and common daily practices (i.e., hiking, driving, camping, helicopter landing and takeoff) and will be otherwise unaltered by proposed Project activity, and therefore, can be considered to have no potential effects, as follows:

Project Area of Direct Effects

Proposed Cabling Route. A proposed cabling route stretching from U.S. Forest Service Road 27N08 downslope to the fish ladder will be used transport materials too large or heavy to move via pedestrian transport. The proposed cabling route will originate from a vehicle-mounted stanchion rig on U.S. Forest Service Road 27N08 directly upslope from the falls. Materials will be sledded downslope 270 meters (885 feet) to a staging area near the falls. The Area of Direct Effects for this Project use area consists of the sledding route and staging area near the falls (Figures 2 and 3).

Proposed Fishway Fish Ladder and Exit Channel Replacement. Northwest Hydraulic Consultants (2013) design alternatives (1) and (2) both entail modifications confined to the existing fish ladder structures, and both designs avoid modifications to the existing fishway fish passage exit structure, composed of a rock tunnel and upstream exit channel. Design

alternative (2) (Figure 5), will result in the maximum impacts to the existing fish passage weir structure and therefore represents the minimum footprint for the historical resource investigation. Design Alternative (2) will entail complete demolition of the bottom six existing weir structures and modification of the topmost, or seventh, weir structure to open a 2.5-foot wide slot. Construction of a fish ladder weir structure will entail excavation of 100 cubic yards of bedrock, 100 cubic yards of stream channel alluvium, transport and staging of 250 cubic yards of concrete and other materials and tools used for construction, and will result in installation of 15 new weirs connecting a total of 14, 9-x-9 foot concrete pools (Figure 3) The Area of Direct Effects for this Project use area consists of the construction footprint and landforms within 200 feet of the east and north sides of the footprint, where staging might occur (Figure 3).

Project Use Areas with No Effects.

U.S. Forest Service Road 27N08. U.S. Forest Service Road 27N08 will be used to transport workers and materials to and from the proposed Project area (Figure 2). Use of the road will be consistent with normal operations and common daily practices (i.e., vehicular transport) and the route will be otherwise unaltered by the proposed Project activity.

Windy Cut Helipad. The Windy Cut Helipad, located on Windy Cut Point on the south wall of Deer Creek canyon 0.5 miles (0.8 kilometers) south of the fish passage improvement Project area will be used for helicopter transport and off-loading of materials (Figure 2). Use of the helipad will be consistent with normal operations and common daily practices (i.e., helicopter landing and takeoff) and the location will be otherwise unaltered by proposed Project activity.

27N08 Deer Creek Bridge Campsite. An informal but well-maintained campsite located on a broad flat located immediately east of the U.S. Forest Service Road 27N08 Deer Creek Bridge will be used for Project-related crew camping (Figure 2). The informal campsite is situated on former Sierra Pacific Industries land now owned and managed by the Western Rivers Conservancy and the Northern California Regional Land Trust. Deer Creek Trail intersects this flat, and the camp is located just 0.7 trail miles (1.13 kilometers) from Lower Deer Creek Falls, and making the camp a useful central base. Use of the campsite will be consistent with normal operations and common daily practices (i.e., overnight camping and hiking headquarters) and the location will be otherwise unaltered by proposed Project activity.

Deer Creek Trail. Lassen National Forest Trail 4E15, the Deer Creek Trail, between U.S. Forest Service Road 27N08 and the Highway 32 Tehama County Bridge 8-68 crossing will be used for pedestrian transport of materials to and from the Project area (Figure 2). For Project purposes, use of the Deer Creek Trail will be consistent with normal operations and common daily practices (i.e., pedestrian hiking) and the trail will be otherwise unaltered by proposed Project activity.

Field Methods

Field work for the Project was conducted by the author on December 22–23, 2015. On December 22nd, the investigation commenced with inspection of the Lassen National Forest Deer Creek Trail leading from the Highway 32 Bridge west to the falls, then moved on to the inspection and documentation of the fishway fish ladder and exit channel and its immediate vicinity. On December 23rd, the helipad was visited, along with roads to be used during transport, and the proposed cabling access route was examined. Investigation concluded with inspection of the Deer Creek Trail from the falls west to the informal camp site on Sierra Pacific Industries land located east of the U.S. Forest Service Road 27N08 bridge crossing. Coverage maps are attached (Figures 2 and 3).

Intensive Archaeological Coverage. Intensive archaeological coverage was completed for the Project Areas of Direct Effects defined above. Intensive coverage consisted of closely-spaced pedestrian transects; all open dirt areas were checked for signs of cultural materials and features. Whenever possible, bare dirt exposures, modern excavations, and rodent burrows were closely examined for indications of buried cultural resources. A geopick or trowel was used to scrape to mineral soils in areas covered by forest floor duff. Photo-documentation was accomplished using a Panasonic Lumix DMC-FZ40 digital camera with 24X optical zoom and capable of high-resolution imagery. Data-logging was accomplished using a high-resolution Trimble GeoXM 3000 © series handheld GPS unit.

Cursory Archaeological Coverage. Variable, resource-focused archaeological coverage was completed for Project use areas with no effects. Specific reconnaissance methods for each of these features are discussed below.

Conditions Affecting Field Work. During the field investigation the Project area was still wet from recent rains but otherwise characterized by full exposure and a high degree of archaeological visibility. No physical impediments to observation and documentation were encountered;

however, in the canyon it was difficult to collect high-resolution GPS data owing to a lack of satellite availability. GPS data collection relied on long-term reception for specific points. Linear features and polygons were generally collected but required post-processing edits.

Findings for Project Use Areas with No Effects

Areas to be used for camping and access will include locations and roads to be used to off-load and transport materials, and a campsite and hiking paths that may be used by workers and for camping and pedestrian transport of materials. Use of these areas will be consistent with normal operations and common daily practices (i.e., hiking, driving, camping, helicopter landing and takeoff) and will be otherwise unaltered by proposed Project activity. Results of investigations for the four use areas are provided below. Two historical resources were identified, one associated with the Windy Cut Helipad (Ca-But-2112) and one associated with Lassen National Forest Trail 4E15, the Deer Creek Trail (LDC-01), and descriptions and records are provided here to insure Project avoidance (see **Attachment B**).

U.S. Forest Service Road 27N08. U.S. Forest Service Road 27N08 will be used to transport workers and materials to and from the proposed Project area (Figure 2). Use of the road will be consistent with normal operations and common daily practices (i.e., vehicular transport) and the route will be otherwise unaltered by the proposed Project activity. cursory, drive-through inspection found no specific heritage resource concerns.

Windy Cut Helipad. The Windy Cut Helipad, located on Windy Cut Point on the south wall of Deer Creek canyon 0.5 miles (0.8 kilometers) south of the fish passage improvement Project area will be used for helicopter transport and off-loading of materials (Figure 2). Previously recorded historical site Ca-Teh-2112H (see **Attachment B, Site Ca-Teh-2112**) is located on the west-facing slope of Windy Cut Point (Figure 3). The site, recorded in 2003 by Lassen National Forest archaeologist J. Moore, consists of archaeological trace materials related to the historical Lassen National Forest Windy Cut Lookout. The lookout, an elaborate structure in operation from at least the early 1930s through mid-1960s, was subsequently demolished and the point was bulldozed, covered with fill and paved-over to construct the current heliport. Moore's field inspection identified the presence of concrete fragments probably constituting pieces of the lookout footings located on the west face of the point downslope from the pad. The presence of significant modern trash tossed down the slopes of the point from the pad made it difficult for Moore to discriminate additional Windy Cut Lookout traces. Inspection of the helipad during the present investigation confirmed Moore's findings and confirmed that no historical materials or

features are visible on the helipad in areas designated for use by the Project. Use of the Windy Cut Helipad will be consistent with normal operations and common daily practices (i.e., helicopter landing and takeoff) and the location and historical resource will be otherwise unaltered by proposed Project activity.

27N08 Deer Creek Bridge Campsite. An informal but well-maintained campsite located on a broad flat located immediately east of the U.S. Forest Service Road 27N08 Deer Creek Bridge will be used for Project-related crew camping (Figure 2). The informal campsite is situated on former Sierra Pacific Industries land now owned and managed by the Western Rivers Conservancy and the Northern California Regional Land Trust. Deer Creek Trail intersects this flat, and the camp is located just 0.7 trail miles (1.13 kilometers) from Lower Deer Creek Falls, and making the camp a useful central base. cursory pedestrian inspection of the established camp area found no heritage resource concerns. Use of the campsite will be consistent with normal operations and common daily practices (i.e., overnight camping and hiking headquarters) and the location will be otherwise unaltered by proposed Project activity.

Lassen National Forest Trail 4E15, the Deer Creek Trail. Lassen National Forest Trail 4E15, the Deer Creek Trail between U.S. Forest Service Road 27N08 and the Highway 32 crossing will be used for pedestrian transport of materials to and from the Project area (Figure 2). Archaeological survey of Deer Creek Trail found one newly identified prehistoric archaeological site, assigned temporary number LDC-01

Newly identified site LDC-01 (see **Attachment B, Site LDC-01**) was located on former Sierra Pacific Industries land now owned and managed by the Western Rivers Conservancy and the Northern California Regional Land Trust, 225 meters (736 feet) southwest of the Deer Creek Falls fish ladder (Figure 4). LDC-01 is located in Township 27N/Range 3E, in the northeast ¼ of the northwest ¼ of the southeast ¼ of Section 25, and the site centroid is located at latitude 40.1662566° and longitude -121.5828423° (UTM 620676.36 m E/ 4447173.06 m N). LDC-01 is located on a high bench approximately 50 feet in elevation below Deer Creek Trail and accessed by a constructed trail spur. The bench is used as an informal but regularly maintained campsite. LDC-01 covers an area of 0.4 acres, and measures 110 meters long northwest-southeast by 30 meters wide southwest-northeast. The LDC-01 site area was defined based on the distribution of a low-to-moderate density, moderate-diversity scatter of chipped and ground stone artifacts with localized midden areas.

One possible petroglyph boulder was observed. The boulder is located on the edge of the high bench overlooking Deer Creek on the east end of the site, associated with a low-density lithic scatter. The feature consists of a large, irregular, water-rounded boulder of grainy breccia measuring approximately 3 meters (10 feet) in diameter, just its top exposed above ground. The prominent face of the boulder is tilted toward the center of the site and catches the angled sunlight, highlighting three large (3–4 cm diameter) and approximately 20 small (2–3 cm diameter) round, cup-shaped depressions 0.5–1.0 centimeter deep. The depressions lack indisputable evidence that they were deliberately manufactured, and two lines of evidence point toward their production by natural forces: (1) the boulder is part of the Pleistocene-aged sediment forming the substrate of the high bench and the pitting may have accrued when the boulder tumbled into place, and (2) the depressions are heavily weathered and lack the sharp relief and obvious pecking scars that might positively indicate that they were deliberately manufactured. However, two characteristics point toward deliberate cultural activity: (1) each depression stands to some degree alone from the others, and (2) the depressions are not random but appear to occur in clusters and alignments. In my opinion, the latter two attributes cast the weight of the evidence in favor of these being actual cultural petroglyph features; their lack of sharp relief may be considered a product of significant age and heavy weathering.

LDC-01 has one primary, well-maintained, modern campsite served by a large, actively used rock fire ring and rocks and logs used for seats. There are also several secondary modern campsites each with cleared spaces used for tents and other activities. Use of the site for camping has resulted in negative effects to the cultural resource, but the extent of these effects cannot be determined based on the surface examination reported here. These effects probably include but are not limited to casual artifact transport and collection, movement of stones that may have been associated with prehistoric features now incorporated into modern camp features such as fire rings, fire effects on artifacts and soils, and introduction of modern charcoal into prehistoric deposits.

LDC-01 is situated on a high terrace on the north side of Deer Creek overlooking a sharp bend in the creek characterized by well-developed pools divided by high-turbidity rapids, making the site optimal for access to salmon and steelhead harvest. The canyon walls around the site are characterized by stands of interior live oak (*Quercus wislizeni*), canyon live oak (*Quercus chrysolepis*), and scattered black oak (*Quercus kelloggii*), indicating the location was optimal for harvest of a variety of acorn crops. The artifact inventory and midden soil observed by the current investigation is consistent with the possibility that the site represents a Yana/Yahi fall-winter settlement focused on acorn and fish harvest.

For Project purposes, use of the Deer Creek Trail will be consistent with normal operations and common daily practices (i.e., pedestrian hiking) and the trail will be otherwise unaltered by proposed Project activity. It is recommended that trail spur leading to the site be avoided during the Project and the prehistoric archaeological site be avoided and not used for camping.

Findings for Project Area of Direct Impacts

The Project Area of Direct Impacts is here defined as the combined footprint of the proposed cabling route stretching from U.S. Forest Service Road 27N08 downslope to the fish ladder, the footprint for potential staging areas and new construction (Figure 2).

Proposed Cabling Route. The proposed cabling route stretching from U.S. Forest Service Road 27N08 downslope to the fish ladder will be used transport materials too large or heavy to move via pedestrian transport (Figure 3). The proposed cabling route will originate from a vehicle-mounted stanchion rig on U.S. Forest Service Road 27N08 upslope from the falls. Materials will then be sledged downslope 270 meters (885 feet) to a staging area near the falls. The proposed route was surveyed for the current investigation. The survey found the cabling route to consist of a plus-60.0 percent, scree-covered slope, and no evidence of historical resources was identified.

Proposed Lower Deer Creek Falls Fish Passage Replacement Project Footprint. This investigation determined that the existing Lower Deer Creek Falls fish passage structure, constructed in 1943, constitutes an historical resource assigned temporary number LDC-02.

Lower Deer Creek Falls is located in a narrow notch-shaped, rocky gorge formed by the impingement of breccia and basaltic bedrock and massive, loose boulders. The falls is marked by a vertical drop of 15 feet across a section of channel measuring approximately 35 feet, terminating in a large, 125 foot (38 meter) long pool. This section of Deer Creek flows roughly north-to-south, and the existing fish passage structure redirects to the west, routed through boulders and bedrock around the falls.

Newly identified historical site LDC-02, the Lower Deer Creek Falls Historical Fish Ladder (see **Attachment B, Site LDC-02**) consists of two main components, a vertical slot pool-weir fish ladder spanning 75 feet (22.8 meters) and composed of seven weirs, and an exit channel spanning 90 feet (27.4 meters). The fishway entrance structure, the lowest tier of the ladder, deposits flow perpendicular to streamflow 70 feet (21.3 meters) downstream from the falls. The weir wings are constructed of 12-inch (30.5 centimeter) thick, square-finished concrete walls formed to 3.9 foot (1.2 meter) wide vertical slots bracketed by angle iron secured by cast bolts for flashboard slots.

The bottom of each slot is finished with a molded concrete flow-invert sill. A carved-out bedrock face forms the east-facing perimeter wall of the bottom six weir pools, while the west-facing perimeter wall in this section is constructed of 12-inch (30.5 centimeter) thick crown-finished concrete with an exterior informal mosaic finish of cast field stone. The seventh, topmost, weir pool is carved from bedrock and is the largest pool, considered a turning pool, where streamflow turns 90 degrees to a final exit slot forming the entrance to exit channel tunnel. Weir pools vary from 4.0–7.0 feet (1.2–2.1 meters) wide and 6.5–8.25 feet (2.0–2.5 meters) long.

From the turning pool, the fishway exit passage is 90.0 feet (27.4 meters) long, exiting into Deer Creek 35 feet (10.7 meters) upstream from the crest of the falls. From the turning pool, the fishway exit passage enters a tunnel measuring 5.5 feet (1.7 meters) in diameter and 15 feet 4.6 meters) long, carved from breccia bedrock. The vertical slot weir at the tunnel entrance is also set with angle iron for flashboard mounts, enabling closure of the fishway exit passage. Upstream from the tunnel, the fishway exit channel emerges into a constructed channel measuring 4.0 feet (1.2 meters) wide and 71.0 feet (21.6 meters) long framed on its west wall by a carved bedrock face and on the first 30.0 feet (9.1 meters) of its east wall by a vertical concrete retaining wall consisting of a 12-inch (30.5 centimeter) thick, square-finished concrete wall, and the final 41.0 feet (12.5 meters) constructed from carved bedrock.

Weathering of concrete and steel features of the structure was observed consistent with the age of the structure and the pounding it receives from water and water-borne sediment, evident during the December 22nd – 23rd field visit. Concrete walls were generally characterized by loss of surface finish and differential weathering along batch lines, resulting in notable crimped joints on the wings of lower tier weir structures and on the stream-side face of the fish passage exit channel high concrete retaining wall. The first, lowermost weir step was significantly altered, with one wing entirely missing and the other heavily sculpted and partially undermined by stream scouring. Absence of this first weir meant that the lowermost step of the ladder was missing and resulting in a double-high step to the second tier. The California Department of Fish and Wildlife monitors and maintains the structure two to three times annually, and in recent years addressed the first tier blowout by building a temporary rock wall dam to retain an approximation of the first pool.

Archaeological surface inspection of the Area of Direct Effects extended 200 feet south (downstream) and west (uphill) from the fish ladder footprint. The modern Lassen National Forest Trail 4E15, the Deer Creek Trail, and a modern, constructed trail spur leading to the fish passage structure, were observed. Bedrock notches in the immediate vicinity of the fish ladder contained in several instances of modern stashed scrap and materials associated with fish ladder

maintenance including milled lumber fragments, steel chain, and cable and wire fragments. No historical or prehistoric cultural features and no additional features related to the 1943 construction were observed. The absence of additional features is likely attributable to the propensity of Deer Creek to flood and scour bare rock and alluvium in the immediate vicinity of the channel.

LOWER DEER CREEK FALLS FISH PASSAGE REPLACEMENT PROJECT HISTORICAL RESOURCE INTEGRITY AND NATIONAL REGISTER ELIGIBILITY

This investigation was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966 (*16 USC 470*) and implementing regulations (*36 CFR 60* and *36 CFR 800*). These regulations require the lead agency to take into account the effects of their undertakings on historic properties. The United States Fish and Wildlife Service is the lead for the proposed Project, and will be responsible for complying with Section 106 by submitting required documentation to appropriate consulting parties.

This investigation resulted in the identification of three historical resources, including previously recorded historical site Ca-Teh-2112 (the Windy Cut Lookout), one newly identified prehistoric habitation site, LDC-01 (on Deer Creek Trail), and one newly identified fisheries management structure, LDC-02 (Lower Deer Creek Falls Fish Ladder). Two of these resources, Ca-Teh-2112 and LDC-01, were determined to occur outside the Area of Potential Effects for the project, and use of lands in the vicinity of these sites will be consistent with normal operations and common daily practices and will result in no adverse effects to these resources. However, the investigation determined that construction and improvements to the existing Lower Deer Creek falls fishway fish ladder and exit channel may cause changes in the character and use of the original structure, constructed in 1943. Provisions of Section 106 now present us with two concerns regarding this resource, evaluation of integrity, and determination of National Register eligibility.

Evaluation of Integrity

Under Section 106 of the National Historic Preservation Act, an historic resource may be determined eligible for the National Register of Historic Places if it possesses “integrity of location, design, setting, materials, workmanship, feeling, and association.” Guidance on definition and application may be found in *“How to Apply the National Register Criteria for Evaluation, by the staff of the National Register of Historic Places”* (National Park Service 1995). For present purposes, we can consider the issue of integrity as it relates to: (1) the status and preservation of the fish passage structure, and its potential to provide information on location, design, setting, materials, and workmanship, and; (2) the strength and quality of associations that may pertain between the fish passage structure and its potential interpretive context.

Preservation and Information Potential. As of this writing, the fish ladder and fish exit structure is 73 years old. The concrete, stone, and steel features of the structure are generally well-preserved,

albeit weathered. As noted above, the concrete walls of the structure were characterized by loss of surface finish and differential weathering along batch lines, resulting in notable crimped joints on the wings of lower tier weir structures and on the stream-side face of the fish passage exit channel high concrete retaining wall. Bi-annual maintenance visits by California Department of Fish and Wildlife personnel regularly involve clearing of alluvium and woody debris from the structure, and generally, the weir pools are filled with alluvial sediment. Currently, the fishway exit channel is jammed by two large logs. Further, the first, lowermost weir step which is the feature most vulnerable to main channel erosion has been heavily impacted by ongoing hydrological weathering; one wing is entirely missing and the other heavily sculpted and partially undermined by stream scouring. Nevertheless, overall few features of the original structure have been significantly adapted, restored, or rehabilitated in the years since construction. A recent geotechnical engineering review of the integrity of the structure is pertinent here:

Overall, the existing fish passage features appeared to be performing well and did not exhibit obvious signs of distress or stability concerns. The concrete appeared to be well adhered to the surrounding rock. However, we did observe that sections of the wall that formed the lowest pool in the downstream section were missing and had been replaced with loosely stacked cobbles and boulders. It is possible that the original walls were founded on recent alluvial deposits, and became undermined and washed out during high flows. These recent alluvial deposits are prone to the effects of scour during high creek flows (Sage Engineers, Incorporated 2013:5).

Therefore, with respect to its possession of a unique, purpose-built, and relatively unaltered reinforced concrete and stone construction, the historical Lower Deer Creek Falls fish passage structure does possess integrity of location, design, setting, materials, and workmanship.

Strength and Quality of Associations. The structure was built at this location in 1943 for the purpose of enabling anadromous fish passage around Lower Deer Creek Falls to spawning habitat upstream, a purpose it still continues to serve. The structure was installed on the basis of specific expectations for measureable improvements in spring-run chinook salmon populations, and the state and federal agencies engaged in the management of the facility have maintained the operational status of the structure and monitored affected salmon populations for more than 70 years (e.g., Harvey 1997). On this basis the structure can be judged to possess a strong quality of association with its interpretive context, as defined below.

Determination of National Register Eligibility

Under Section 106 of the National Historic Preservation Act, an historic resource may be determined eligible for the National Register of Historic Places if it possesses “the quality of

significance in American history, architecture, archeology, engineering, and culture.” A resource may be determined significant if it:

- (a) is associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) is associated with the lives of persons significant in our past; or
- (c) embodies distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) has yielded, or may be likely to yield, information important in prehistory or history.

The following considers the potential National Register eligibility of the historical Lower Deer Creek Falls Fish Ladder structure in light of these criteria.

Criterion (a); Anadromous Fisheries Management Theme. To address the question of significance, it is important here to consider the original and ongoing purpose of the Lower Deer Creek Falls fish passage structure as it relates to the fish and wildlife management ideals and aspirations of the American public as expressed in governmental action.

A number of circumstances favor use of Deer Creek for anadromous fisheries management. The Deer Creek watershed is 60 miles long and occupies 229 square miles of the well-watered western slope of the southern Cascades, making it one of the largest perennial streams in the Sacramento River watershed. The Deer Creek watershed emerges from gentle, spring-fed meadows at its head then plummets through a steep-walled canyon to its debouche on the eastern skirt of the Sacramento Valley, delivering sustained annual flows to valley floor near its Sacramento River confluence. Much of upper and mid-elevation watershed is situated on public land, enabling action on common watershed management principles. Further, the watershed has never been blocked by a major dam impoundment, enabling unimpeded fish passage for much of its length (Harvey 1997; USFWS 2012).

Deer Creek’s spring-run chinook salmon spawning habitat potential first drew wildlife management attention during construction of Shasta Dam, begun in 1938. Under the aegis of funding secured by fish and wildlife protection provisions embedded in Central Valley Project legislation of 1940 (*54 Stat.1198,1199*), the U.S. Bureau of Reclamation initiated the *Shasta Salmon Maintenance Program* which sought to supplant the loss of extensive salmon spawning habitat resulting from the construction of Shasta Dam. Salvage plans were developed by the U.S.

Fish and Wildlife Service to redistribute spawning salmon to alternative watersheds, and Battle Creek and Deer Creek were identified, based on watershed characteristics described above, as optimal targets. Initial spawning-bed surveys conducted in 1939 and 1940 determined that Deer Creek spawning habitat was under-utilized and could support double the adult salmon then using the. In 1940, the U.S. Fish and Wildlife Service established the Deer Creek Fisheries Station and fish counting weir located near Leninger Road Bridge at the footslopes of Deer Creek canyon. The station served to monitor spring-run chinook counts before and after transfer experiments, which began in 1941. The initial transfer experiments moved adult spawning salmon in tank trucks from the Sacramento River to Deer Creek above the weir. Initial losses of >30 percent of the adult spawning stock in 1941 eventually diminished to losses of 20 percent or less in the years 1943–1945. Based on the perception of initial success, in 1943, U.S. Fish and Wildlife Service sought to expand the Deer Creek program by increasing the available spawning habitat. The initial spawning-bed surveys of 1940 identified two significant fish passage barriers, identified as Upper and Lower Deer Creek Falls. Work began immediately on fish ladders at both sites. Lower Deer Creek Falls fish ladder was completed in 1943, enabling access to an additional six miles of high-value spawning habitat above the ladder (Cramer and Hammack 1952; Harvey 1997). Upper Deer Creek Falls fish ladder, also constructed around this time, is no longer operational.

In recent decades, the combined effects of weathering have diminished the utility and maintainability of the Lower Deer Creek Falls fish ladder structure; shifting fishway passage standards have redefined the structure out of conformance with National Marine Fisheries Service criteria for adult anadromous salmonids. For example, destruction of the first tier weir structure means that the second tier structure now represents the permanent first tier, and the 3.5 foot (1.0 meter) vertical step height is far in excess of the National Marine Fisheries Service maximum step height of 1.0 foot (30 centimeters). Engineering and geotechnical analysis has determined that, overall, the existing fishway fails to meet a number of National Marine Fisheries Service fishway criteria, including minimum pool dimensions; minimum pool depth; maximum step height; maximum turbulence; flow regime, and; percent total streamflow (Northwest Hydraulic Consultants 2013:18). Project proponents seek to address these concerns and optimize fish passage by installing improvements within the footprint of the existing fish ladder and exit channel.

While the Lower Deer Creek Falls fish ladder structure was an important feature of the *Shasta Salmon Maintenance Program* and a central feature of the Deer Creek salmon studies program, its importance was and is derived from its capacity to enable spawning salmon runs in the six mile stretch of spawning habitat above the falls. Therefore, while the resource does not qualify for the

National Register under criterion (a), it does derive its public significance from its historical and ongoing functionality. Therefore, the resource does not qualify for the National Register under criterion (a).

Criterion (b): Significant Persons. Research reported here determined that no one individual involved in the planning, design, and construction of the historical Lower Deer Creek Falls Fish Ladder structure is recognized as a historically important person to a broad segment of the public. Therefore, the resource does not qualify for the National Register under criterion (b).

Criteria (c): Embodies Unique and Distinctive Characteristics. As noted above, the Lower Deer Creek Falls Fish Ladder structure is a unique, purpose-built, and relatively unaltered reinforced concrete and stone construction, and the quality of workmanship is evident in the sustained utility of the structure through 73 years of harsh, high-energy conditions. Engineering analysis of the structure identified several characteristics indicative of thoughtful design. For example, the low rock bank forming the east (streamside) wall of the fishway exit channel mouth maintains relatively constant fishway flow even in high water conditions. High water simply results in over-topping and return of excess water to the main channel. This produces a relatively constant fishway flow of 35 cubic feet per second (Northwest Hydraulic Consultants 2013:15). In another example, by incorporating irregular bedrock walls to form weir pools and the fishway exit channel, the structure embodies irregular shapes that produce flow diversity such as small eddies that represent potential resting areas for fish (Northwest Hydraulic Consultants 2013:16). Further, a flow invert designed into the exit channel creates a deep resting pool 15 feet long located just short of the fishway exit, enabling fish to regain energy necessary to take on the main channel. In the author's opinion, these features are thoughtful and verify the builder's professionalism, but they are not unique or representative of high artistic value. Instead, these practices are measures of trade know-how possessed and employed by skilled professional builders guided by skilled professional biologists, and they reflect practices that may be hidden to most people but are simply the signatures of solid work. Therefore, the resource does not qualify for the National Register under criterion (c).

Criterion (d): Contains Information Important in History. The state and federal agencies engaged in construction and management of the Lower Deer Creek Falls Fish Ladder have maintained the operational status of the structure and monitored affected salmon populations for more than 70 years. The information derived from this effort may be judged important to the public; nevertheless, this dimension of importance is strictly associated with the functionality of the structure and may only be realized with new modifications necessary to maintain the utility of the

structure for the purpose of enhancing spawning salmon runs and continued production of new salmon population statistics that enable ongoing analysis of the long-term consequences of wildlife management actions. Therefore, while the resource does not qualify for the National Register under criterion (d), it does derive its public significance from its ongoing functionality.

Conclusion. Site LDC-02, the historical Lower Deer Creek Falls Fish Ladder, possesses considerable structural integrity and a high quality of association and context. Nevertheless, the structure does not qualify for the National Register of Historic Places on the basis of the interpretive context of its constructed attributes and features, but rather, it derives its historical and current public meaning from its functionality and capacity to serve the purposes of anadromous fish spawning habitat restoration.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Native American Coordination

A Project Native American coordination log and documents associated with Native American coordination for the Project can be found in **Attachment A**. On December 18, 2015, the author filed a *Sacred Lands File and Native American Contacts List Request* with the California Native American Heritage Commission (NAHC). On December 30 2015, the NAHC responded and indicated that a records search of the NAHC's sacred lands files failed to indicate the presence of Native American cultural resources in the vicinity of the proposed Project area. The letter also supplied a list of six recommended tribal contacts representing three tribal entities, including Glenda Nelson, Chairperson, and Art Angle, Vice-Chairperson of the Enterprise Rancheria of Maidu Indians, Kyle Self, Chairperson, Lacie Miles, EPA Director, and Alisha Wilson, NAGPRA Coordinator of the Greenville Rancheria of Maidu Indians, and Ms. Beverly Ogle of Paynes Creek, an unaffiliated individual representing the Maidu, Pit River, and Atsugewi tribes. On February 12, 2016, the author mailed to the six contacts letters containing a description and map location of the Project and a request for tribal heritage information, comments, or concerns. On February 20, 2016, the author received a response from Creig Marcus, Tribal Administrator for the Enterprise Rancheria Estom Yumeka Maidu Tribe representing Glenda Nelson, Chairperson, and Art Angle, Vice-Chairperson of the Enterprise Rancheria of Maidu Indians. The letter indicated that a thorough review of the map and Project description found that the Project area was not within the traditional tribal territory of the Estom Yumeka Maidu Tribe, and therefore, the Estom Yumeka offered no specific cultural resource concerns. As of this writing, no additional responses have been received. Should any responses be received after submittal of this report, they will be forwarded to the Project proponents with recommendations for additional action, should any be needed.

Historical Resource Recommendations

Ca-Teh-2112, the Historical Windy Cut Lookout. The investigation verified existing documentation for the resource, recorded in 2003 by Lassen National Forest archaeologist J. Moore. Use of the Windy Cut Helipad will be consistent with normal operations and common daily practices (i.e., helicopter landing and takeoff) and the location and historical

resource will be otherwise unaltered by proposed Project activity. Documentation is included here to insure Project avoidance.

LDC-01, Prehistoric Occupation Site. The investigation identified and documented this resource located on a high bench overlooking Deer Creek alongside Lassen National Forest Trail 4E15, on former Sierra Pacific Industries land now owned and managed by the Western Rivers Conservancy and the Northern California Regional Land Trust. For Project purposes, Deer Creek Trail use will be consistent with normal operations and common daily practices (i.e., pedestrian hiking) and the trail will be otherwise unaltered by proposed Project activity. It is recommended that trail spur leading to the site be avoided during the Project and the prehistoric archaeological site be avoided and not used for camping.

LDC-02 the Historical Lower Deer Creek Falls Fish Ladder. The investigation identified, documented, and evaluated the integrity and National Register eligibility of the resource. The investigation determined that the resource retains substantial structural integrity and a high quality of association and context. Nevertheless it is not eligible for the National Register of Historic Places. The Lower Deer Creek Falls Fish Passage Replacement Project may proceed as planned.

Unanticipated Resource Recommendations

Based on the project description and geomorphic setting the author expects no buried, unanticipated finds will be uncovered during the proposed undertaking. Thus, no MOA for unanticipated finds is recommended at this time, and no provisions for project cultural resource monitoring are judged necessary. However, in keeping with 36cfr800.14 *Post-Review Discoveries*, if archaeological resources are discovered during project-related activities all work should cease in the vicinity of the finds and provisions should be made for evaluation by a professional archaeologist. The archaeologist may determine the unanticipated finds merit reasonable efforts to avoid, minimize, or mitigate adverse effects and may merit resolution of adverse effects pursuant to 36cfr800.6.

References Cited

Baumhoff, M.

1955 Excavation of Site Teh-1 (Kingsley Cave). *University of California Archaeological Survey Reports* 30: 40-73. Berkeley.

1957 An Introduction to Yana Archaeology. *University of California Archaeological Survey Reports* 40:64. Berkeley.

Bennett, E. A.

1994 Negative Archaeological Survey Report, Tehama Highway 32, Postmiles 9.64, 10.8, and 15.56. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

Bevill, R., Nilsson, E., M. Dugas, and J.J. Johnson

1996 Archaeological Investigations at CA-Teh-563 and FS 05-06-51-40, Located in the Ishi Wilderness, Lassen National Forest, Tehama County, California. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

Blaufuss, J. D.

2007 An Archaeological Survey Report for the K-Line Timber Harvesting Plan, Tehama County, California. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

Cramer, F. K. and D. F. Hammack

1952 Salmon Research at Deer Creek, Calif. United States Department of the Interior, Fish and Wildlife Service Special Scientific Report: Fisheries No. 67. Washington, D.C.

Curtin, J.

1898 Creation Myths of Primitive America in Relation to the Religious History; and Mental Development of Mankind. *Yana Myths*, p. 281-484. Little, Brown. Boston.

Dugas, M., D. Watts, J. Moore, J. Johnston, C. O'Brien, and W. Woolfenden

2001 *Black Rock and Beyond: A Decade of Archaeological Test Excavations in Yahi Territory. Prepared for the Lassen National Forest.* Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

Dunn, J.P.

1980 *Massacres of the Mountains: A History of the Indian Wars of the Far West.* Archer House, New York (original Harper and Brothers, New York, 1886).

Greenway, G.B.

1982 Projectile Point Variability at Dead Man's Cave (CA-Teh-290), in the Southern Cascade Mountains of Northeastern California. Unpublished M.A. Thesis, Department of Anthropology, California State University, Sacramento.

2004 Seasonality and Site Function at Dead Man's Cave (CA-TEH-290). *Proceedings of the Society for California Archaeology* 17:123-132.

Harvey, C. D.

- 1997 Historical Review of Anadromous Fisheries in Deer Creek. State of California Department of Fish and Game. Inland Fisheries Division, Sacramento River Salmon and Steelhead Assessment Program. Sacramento.

Johnson, J.J.

- 1978 Yana. In *Handbook of North American Indians*. Volume 8, California. Robert F. Heizer, volume editor, W.C. Sturtevant, general editor. Smithsonian Institution. Washington, D.C. pp. 361-369.

- 1984 Ground Stone Assemblages in Northeastern California. Unpublished P.D. dissertation, Department of Anthropology, University of California, Davis.

- 1992 *Prehistoric Human Remains, Petroglyphs, Structures, and Miscellaneous Features from Northeastern California*. Institute of Archaeology and Cultural Studies, Department of Anthropology, California State University, Sacramento. Number 6. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

Johnson, J.J. and D.J. Theodoratus

- 1984 Cottonwood Creek Project, Shasta and Tehama Counties, California 2 Volumes: Tehama Lake and Dutch Gulch Lake Intensive Cultural Resources Survey. Prepared for the US Army Corps of Engineers, Sacramento District. Ms. on file, Northeast Information Center of the California Historical Resources Information System, California State University, Chico.

Kroeber, A.L.

- 1925 *Handbook of the Indians of California*. Bulletin 78 of the Bureau of American Ethnology of the Smithsonian Institute. Government Printing Office Washington, D.C.

Kroeber, T.

- 1961 *Ishi in Two Worlds: A Biography of the Last Wild Indian in North America*. Berkeley: University of California Press.

Marvier, M. A.

- 2004 An Archaeological Survey Report for the Panther Timber Harvesting Plan, Tehama County, California. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

Moffett, James W.

- 1949 The First Four Years of Salmon Maintenance below Shasta Dam, California. California Fish and Game 35(2):77-102.

Moore, J.

- 2003 Lassen National Forest Archaeological Reconnaissance Report: Windy Cut Survey. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

National Park Service

- 1995 *How to Apply the National Register Criteria for Evaluation, by the staff of the National Register of Historic Places.* National Park Service, National Register, History, and Education. Washington, D.C.

Northwest Hydraulic Consultants, Incorporated

- 2013 Lower Deer Creek Fall Fish Passage Improvement, Phase I Alternatives Analysis Report. Submitted to U.S. Fish and Wildlife Service Red Bluff Fish and Wildlife Office.

Powers, S.

- 1975 The Northern California Indians: A Reprinting of 19 Articles on California Indians Originally Published 1872-1877. *Contributions to the University of California Archaeological Research Facility*, No. 25. University of California Berkeley Archaeological Research Facility. Berkeley, California. Original 1874.

Sage Engineers, Incorporated

- 2013 Limited Geologic/Geotechnical Review, Lower Deer Creek Falls Fish Passage Improvements, Tehama County, California. In Northwest Hydraulic Consultants, Incorporated, "*Lower Deer Creek Fall Fish Passage Improvement, Phase I Alternatives Analysis Report.*" Submitted to U.S. Fish and Wildlife Service Red Bluff Fish and Wildlife Office.

Sapir, E., and L. Spier

- 1943 *Notes on the Culture of the Yana.* University of California Anthropological Records 3(3):239-298. Berkeley.

Skjelstad, L. S.

- 1975 Archaeological Reconnaissance of Selected Lands on Panther Creek, Tehama County, California. Ms. on file, Northeast California Information Center, California Historical Resources Information System, Department of Anthropology, Chico State University.

USFWS

- 2012 U.S. Fish and Wildlife Service Anadromous Fish Restoration Program Notice of Availability of Federal Assistance 2012; Request for Proposals, issued March 7, 2012. Red Bluff Fish and Wildlife Office.

Waterman, T.T.

- 1918 The Yana Indians. *University of California Publications in American Archaeology and Ethnology* 13(2):35-102. Berkeley.

Wiant, W.C.

- 1981 *Southern Yana Subsistence and Settlement: An Ecological Model.* Unpublished M.A. thesis, Department of Anthropology, Sacramento State University.

White, G. G. and W. Wilson

- 2008 *Final Report of Test Excavations and Geoarchaeological Investigations at Ca-Teh-1621/H, Ishi Conservation Camp, Tehama County, California.* Archaeological Research Program, California State University, Chico, Chico. Report prepared for California Department of Forestry and Fire Protection. Ms. on file, Northeast California Information Center,

California Historical Resources Information System, Department of Anthropology, Chico State University.

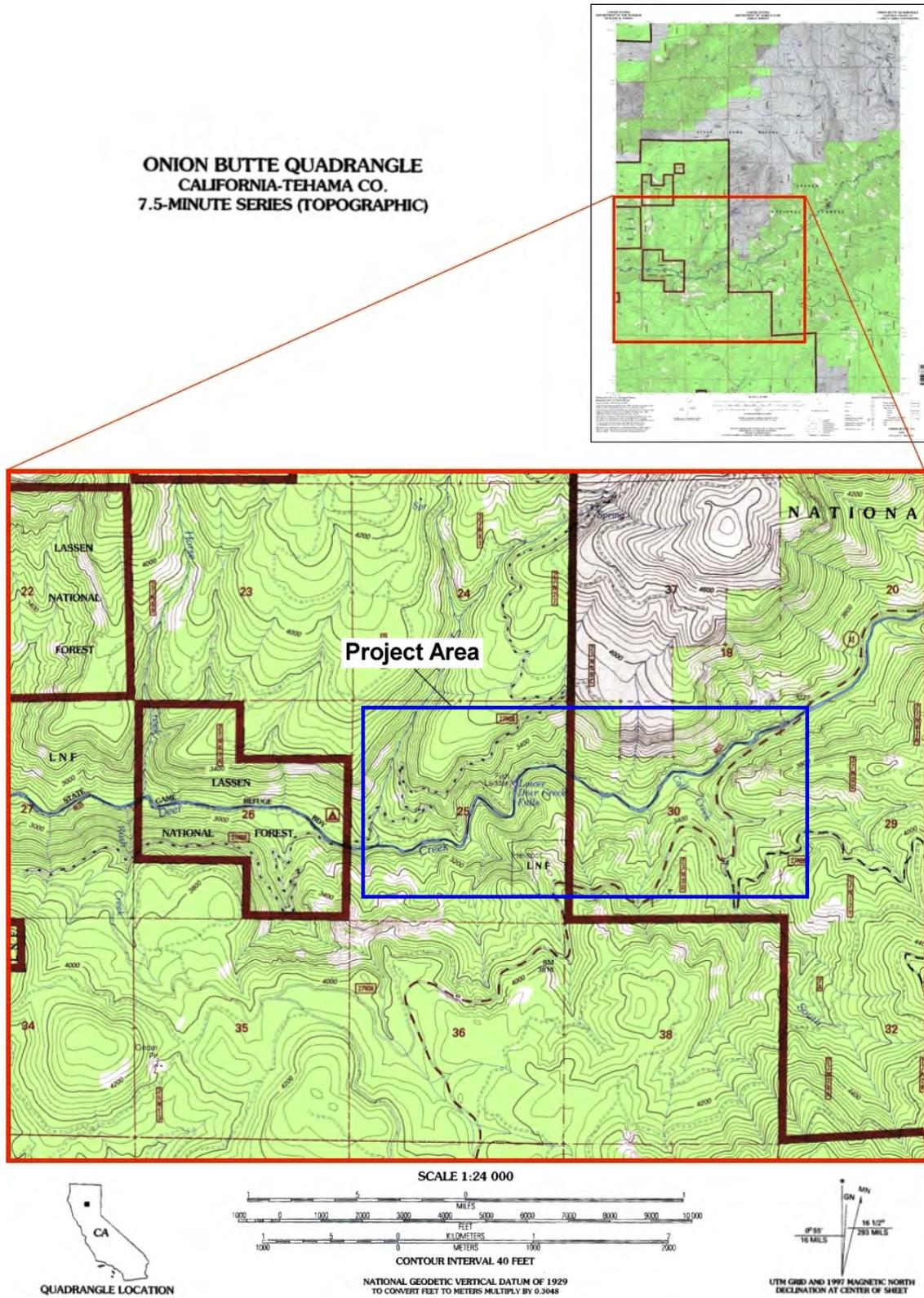


Figure 1: General Project Area (adapted from USGS 1:24,000 "Onion Butte, CALIF," 1995).

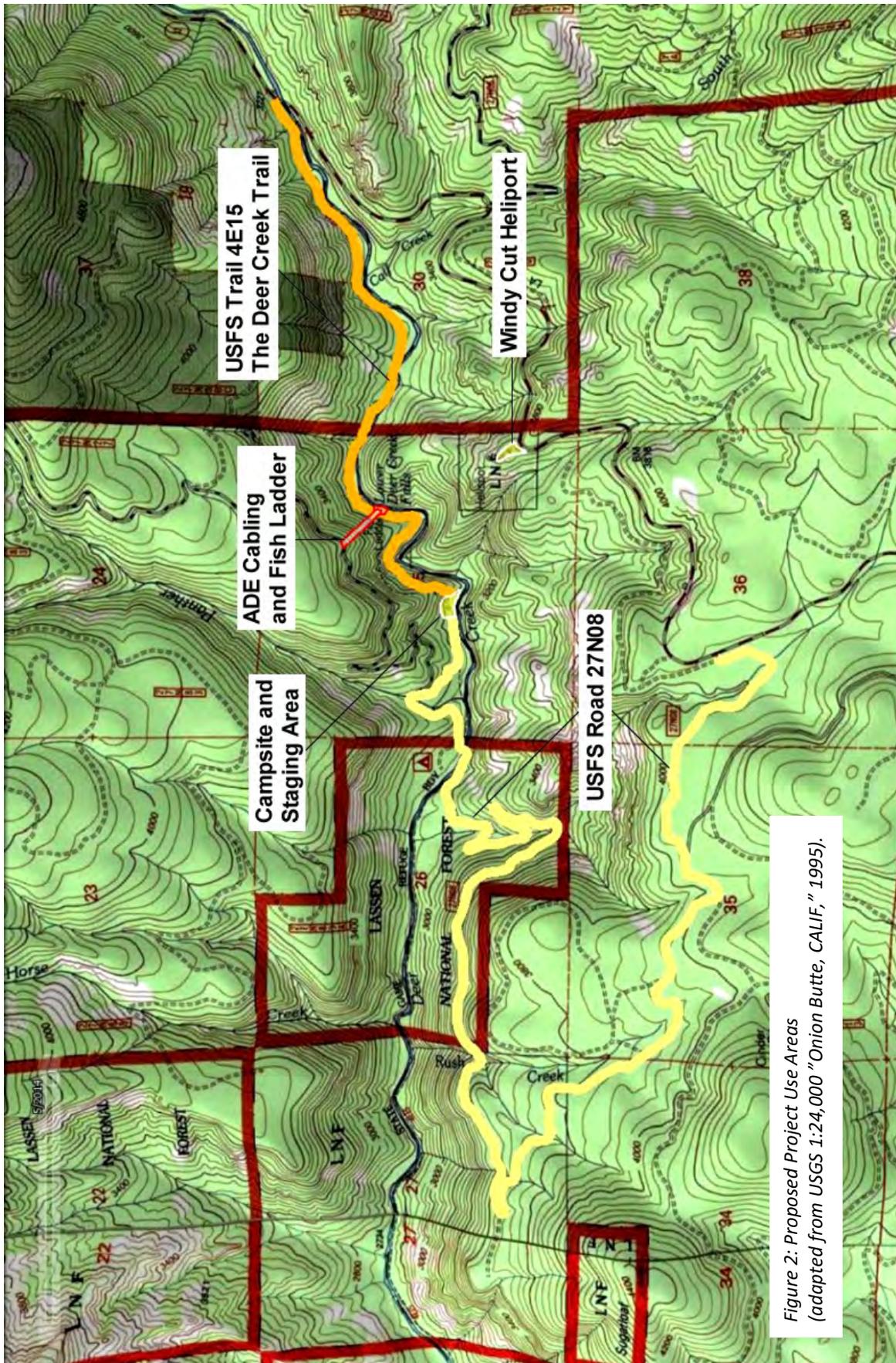


Figure 2: Proposed Project Use Areas (adapted from USGS 1:24,000 "Onion Butte, CALIF," 1995).



Figure 3: Project Area of Direct Effects (adapted from USGS 1:24,000 "Onion Butte, CALIF," 1995).

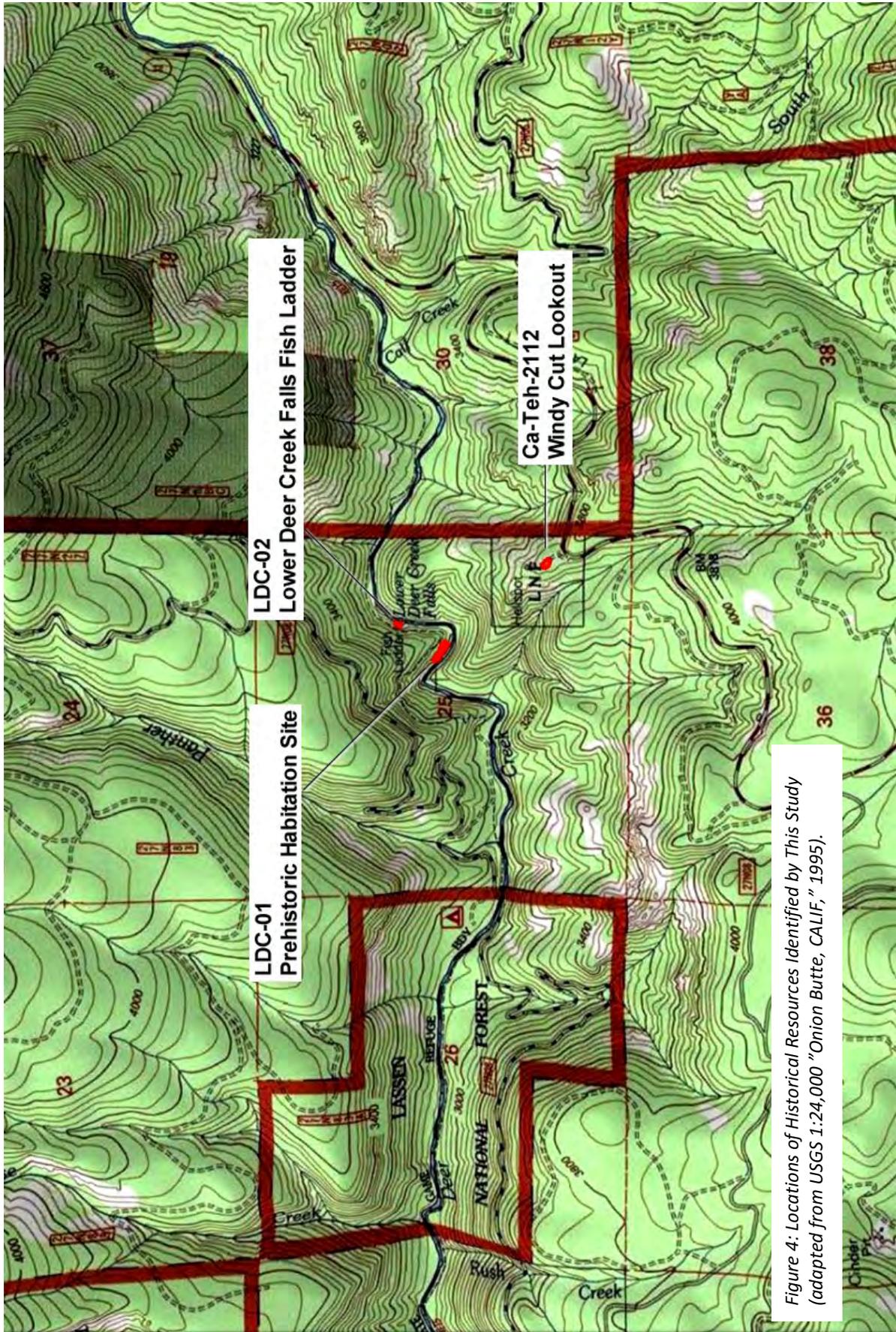


Figure 4: Locations of Historical Resources Identified by This Study (adapted from USGS 1:24,000 "Onion Butte, CALIF," 1995).

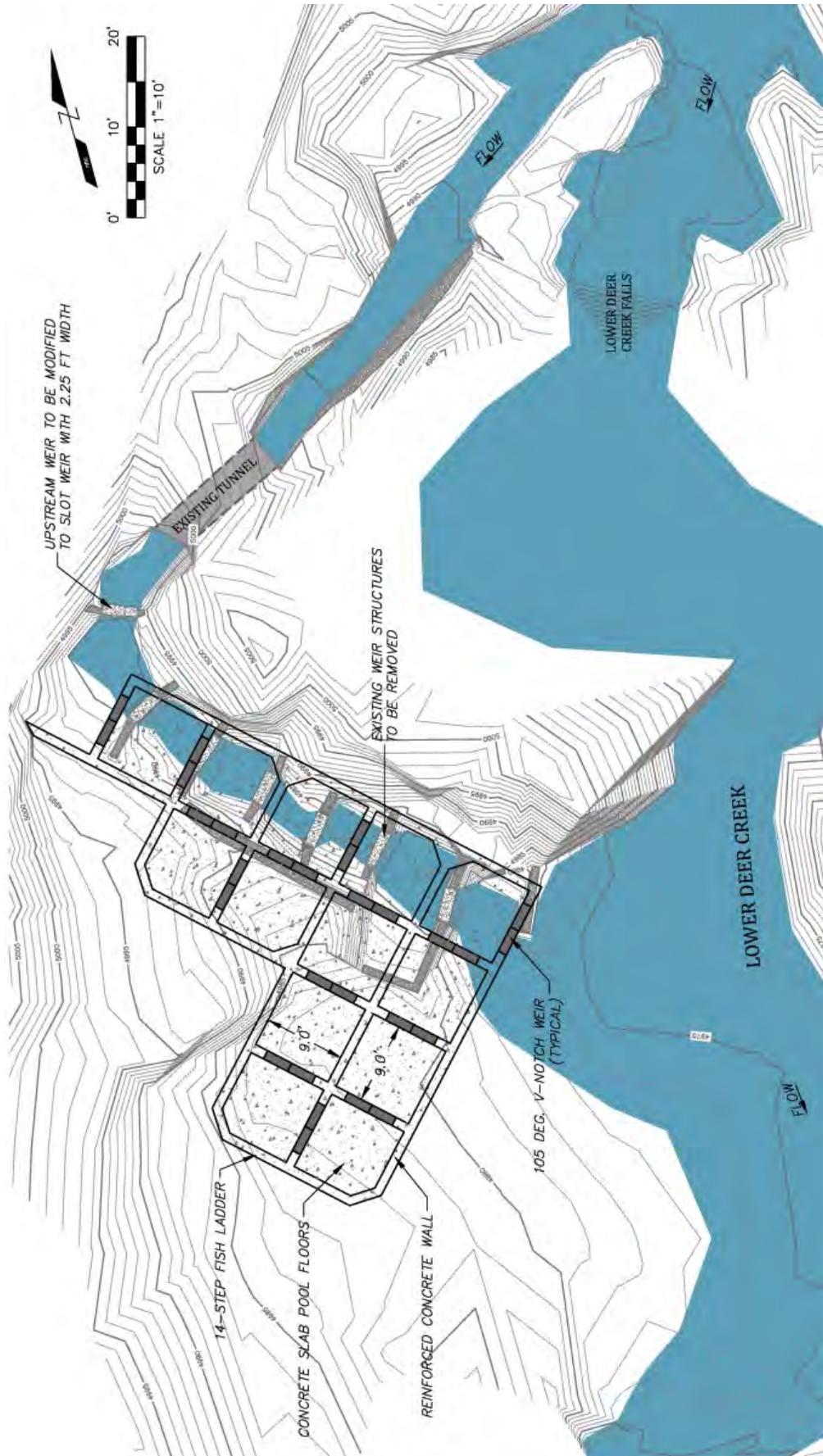


Figure 5: Northwest Hydraulic Consultants Alternatives 2
(adapted from Northwest Hydraulic Consultants 2013: Figure 6.4).

*HISTORICAL RESOURCE INVESTIGATION FOR THE
U.S. FISH AND WILDLIFE SERVICE, RED BLUFF FISH AND WILDLIFE OFFICE,
LOWER DEER CREEK FALLS FISH PASSAGE REPLACEMENT PROJECT,
TEHAMA COUNTY, CALIFORNIA*

ATTACHMENT A: NATIVE AMERICAN COORDINATION LOG

Native American Contact Log: U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage Replacement Project, Tehama County, California

Name and Address	Affiliation	Date Contacted	Remarks or Concerns
Glenda Nelson, Chairperson Enterprise Rancheria of Maidu Indians 1940 Feather River Blvd., Suite B Oroville, California 95965 info@enterpriserancheria.com (530)532-9214; (530)532-1768 fax	Maidu	February 15, 2016 Letter	Response dated February 19, 2016, received February 20, 2016, from Creig Tribal Administrator, Enterprise Rancheria of Maidu Indians: Cultural representatives have determined that the project is not within the traditional territory of the Enterprise Rancheria Estom Yumeka tribe.
Enterprise Rancheria of Maidu Indians Art Angle, Vice-Chairperson 2133 Monte Vista Avenue Oroville, CA 95966 info@enterpriserancheria.com (530)532-9214; (530)532-1768 fax	Maidu	February 15, 2016 Letter	Response dated February 19, 2016, received February 20, 2016, from Creig Tribal Administrator, Enterprise Rancheria of Maidu Indians: Cultural representatives have determined that the project is not within the traditional territory of the Enterprise Rancheria Estom Yumeka tribe.
Greenville Rancheria of Maidu Indians Kyle Self, Chairperson P.O. Box 279 Greenville, CA 95947 kself@greenvillerancheria.com (530)284-7990; (530)284-6612 FAX	Maidu	February 15, 2016 Letter	
Greenville Rancheria of Maidu Indians Lacie Miles, EPA Director P.O. Box 279 Greenville, CA 95947 lmiles@greenvillerancheria.com (530)284-1690; (530)284-6612 FAX	Maidu	February 15, 2016 Letter	
Greenville Rancheria of Maidu Indians Alisha Wilson, NAGPRA Coordinator P.O. Box 279 Greenville, CA 95947 awilson@greenvillerancheria.com (530)284-3535; (530)284-6612 fax	Maidu	February 15, 2016 Letter	
Tasmom Koyom Beverly Ogle 29855 Plum Creek Road Paynes Creek, CA 96075 (530)597-2070	Maidu Pit River- Atsugewi	February 15, 2016 Letter	

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd, Suite 100

West Sacramento, CA 95691

(916) 373-3710

(916) 373-5471 – Fax

nahc@nahc.ca.gov

Information below is required for a Sacred Lands File Search

Project: *Cultural Resource Investigation of the Lower Deer Creek Fish Access Improvement Project, Tehama County, CA*

County: *Tehama*

USGS Quadrangle: *Onion Butte, CALIF.*

Township 27N Range 3E Section(s) 25 (MDBM)

Company: *Sub Terra Consulting, Archaeology and Paleontology*

Contact Person: *Gregory G. White, Ph.D.*

Street Address: *3153 Chico Ave.*

City: *Chico, CA Zip: 95928*

Phone: *530-513-1943 (cell)*

Fax: *530-894-2498*

Email: *gwhite@subterraconsulting.com*

Project Description: *My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed Lower Deer Creek Fish Ladder Replacement Project.*

Native American Heritage Commission
915 Capital Mall, Room 364
Sacramento, CA 95814
ATTN: Northern California coordinator

December 18, 2015

RE: *Deer Creek Fish Ladder Replacement Project*

To Whom It May Concern,

My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed Lower Deer Creek Fish Ladder Replacement Project. The project involves an intensive archaeological survey of potential impact areas, as depicted on the USGS 7.5' quadrangle Onion Butte, Calif. A project area map is attached. The project area is located in T27N/R3E, S25 (MDBM).

This letter is to request your assistance with a Sacred Lands and Native American Contacts List request for the proposed project area.

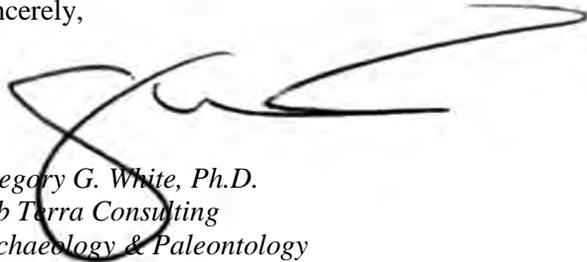
Please send your response via pdf attachment or respond by return e-mail to:

gwhite@subterraconsulting.com

or FAX to: 530-894-2498 (call first).

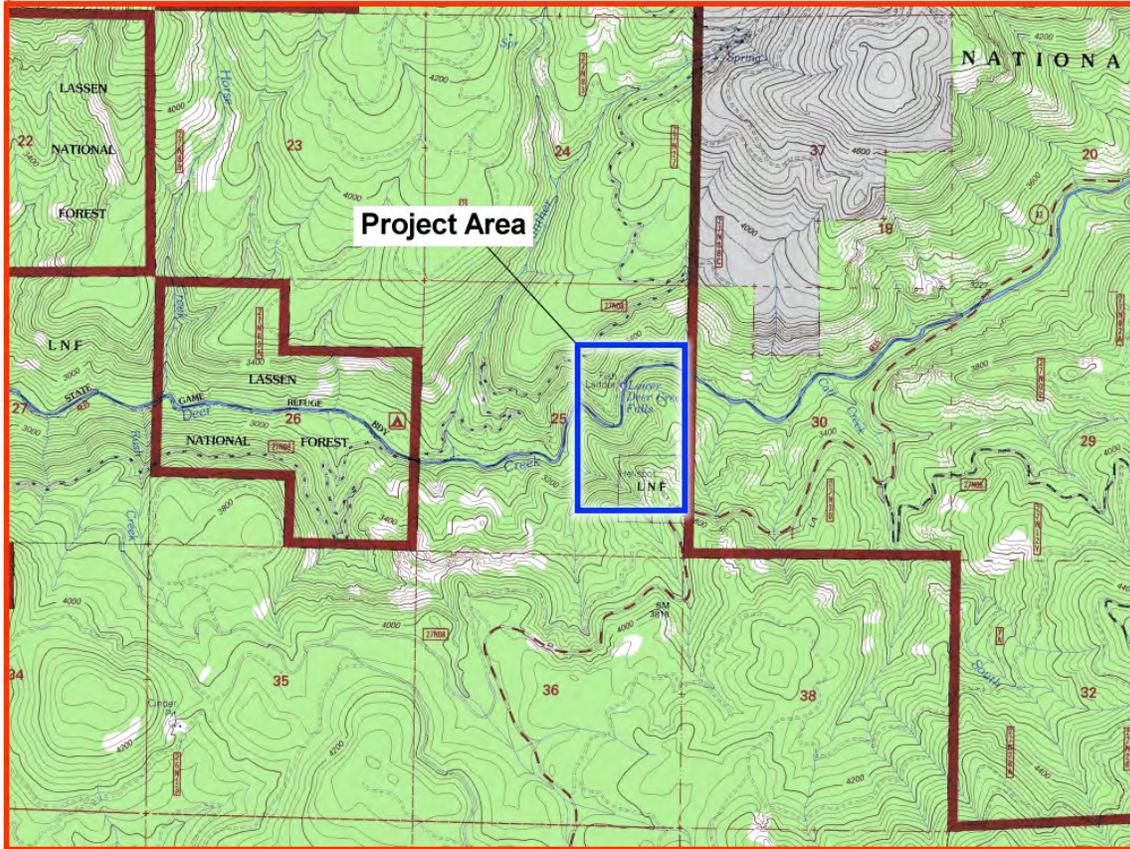
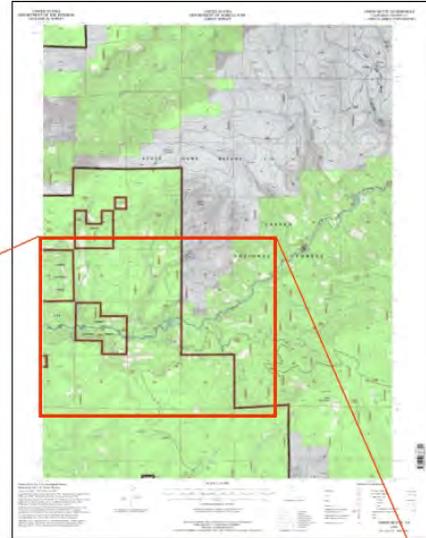
If you have any comments or questions, please feel free to contact me at the numbers listed below.

Sincerely,

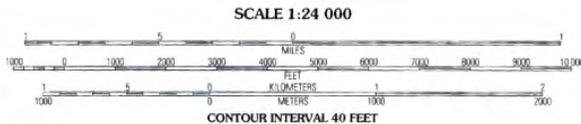


Gregory G. White, Ph.D.
Sub Terra Consulting
Archaeology & Paleontology
3153 Chico Ave.
Chico, CA 95928
www.subterraconsulting.com
gwhite@subterraconsulting.com
530-513-1943 (cell)
530-894-2498 (FAX call ahead)

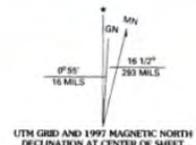
**ONION BUTTE QUADRANGLE
 CALIFORNIA-TEHAMA CO.
 7.5-MINUTE SERIES (TOPOGRAPHIC)**



QUADRANGLE LOCATION



NATIONAL GEODETIC VERTICAL DATUM OF 1929
 TO CONVERT FEET TO METERS MULTIPLY BY 0.3048



UTM GRID AND 1997 MAGNETIC NORTH
 DECLINATION AT CENTER OF SHEET

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471



December 30, 2015

Gregory G. White, Ph.D.
Sub Terra Consulting

Via E-mail: gwhite@subterraconsulting.com

Number of Pages: 2

RE: Lower Deer Creek Fish Access Improvement Project, Tehama County

Dear Mr. White,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

A handwritten signature in cursive script, appearing to read "Katy Sanchez".

Katy Sanchez

Associate Environmental Planner

**Native American Contact List
Tehama County
December 30, 2015**

Enterprise Rancheria of Maidu Indians
Art Angle, Vice Chairperson
2133 Monte Vista Avenue Maidu
Oroville , CA 95966
info@enterpriserancheria.
(530) 532-9214

(530) 532-1768 Fax

Enterprise Rancheria of Maidu Indians
Glenda Nelson, Chairperson
2133 Monte Vista Avenue Maidu
Oroville , CA 95966
info@enterpriserancheria.
(530) 532-9214

(530) 532-1768 Fax

Greenville Rancheria of Maidu Indians
Kyle Self, Chairperson
P.O. Box 279 Maidu
Greenville , CA 95947
kself@greenvillerrancheria.
(530) 284-7990

(530) 284-6612 Fax

Greenville Rancheria of Maidu Indians
Lacie Miles, EPA Director
P.O. Box 279 Maidu
Greenville , CA 95947
lmiles@greenvillerrancheria.com
(530) 284-1690
(530) 284-6612 Fax

Greenville Rancheria of Maidu Indians
Alisha Wilson, NAGPRA Coordinator
P.O. Box 279 Maidu
Greenville , CA 95947
awilson@greenvillerrancheria.com
(530) 284-3535
(530) 284-1692 Fax

Tasmom Koyom
Beverly Ogle
29855 Plum Creek Road Maidu
Paynes Creek CA 96075 Pit River - Atsugewi
(530) 597-2070

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Lower Deer Creek Fish Access Improvement Project, Tehama County.

Greenville Rancheria of Maidu Indians
Kyle Self, Chairperson
P.O. Box 279
Greenville, CA 95947

February 12, 2016

RE: *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage
Replacement Project, Tehama County, California*

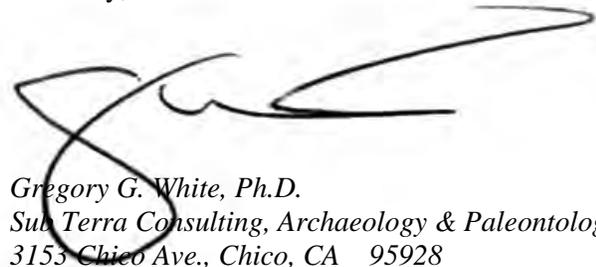
Dear Chairperson Self,

My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage Replacement Project*. The project is located on Deer Creek 11 miles west of Deer Creek Meadows, in T27N/R3E, S25 (MDBM) as depicted on the USGS 7.5' quadrangle "Onion Butte, Calif." The Project Area centroid is located at UTM Zone 10, 620793 m E/ 4447373 m N (WGS84). A project area map is attached.

The project advocate, U.S. Fish and Wildlife Service, plans new construction and improvements to the existing Lower Deer Creek falls fishway fish ladder and exit channel. The existing fishway was constructed in 1943, and consists of a seven-tier fish ladder with a turning pool and a fishway exit composed of a 15-foot rock tunnel and a constructed channel extending an additional 35 feet upstream from the falls. The existing fishway possesses design deficiencies including excessive drop heights and excessive turbulence, which present impediments to fish movement. The U.S. Fish and Wildlife Service proposes to solve these concerns and optimize fish passage by installing improvements within the footprint of the existing fish ladder and exit channel.

The California Native American Heritage Commission has provided your contact information in a list of Native American individuals and organizations that may have cultural resource heritage interests in the project area. I am contacting you in the hope that you may be able to provide information or express questions or concerns pertinent to heritage interests or sacred lands in the project area. If you have any information you would like to share with me, or if you have comments, questions, or concerns related to project area, please feel free to reach me at one of the contacts listed below.

Sincerely,



Gregory G. White, Ph.D.
Sub Terra Consulting, Archaeology & Paleontology
3153 Chico Ave., Chico, CA 95928
gwhite@subterraconsulting.com
530-513-1943 (cell)

Greenville Rancheria of Maidu Indians
Lacie Miles, EPA Director
P.O. Box 279
Greenville, CA 95947

February 12, 2016

RE: *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage
Replacement Project, Tehama County, California*

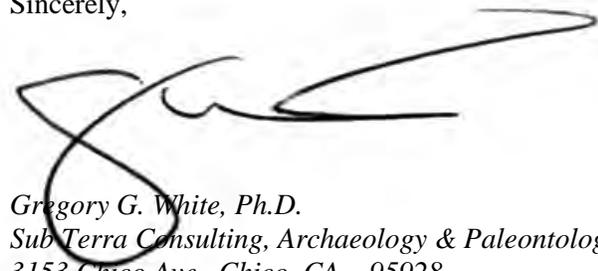
Dear Director Miles,

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Sub Terra Consulting, Archaeology & Paleontology
3153 Chico Ave., Chico, CA 95928
gwhite@subterraconsulting.com
530-513-1943 (cell)

Greenville Rancheria of Maidu Indians
Alisha Wilson, NAGPRA Coordinator
P.O. Box 279
Greenville, CA 95947

February 12, 2016

RE: *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage
Replacement Project, Tehama County, California*

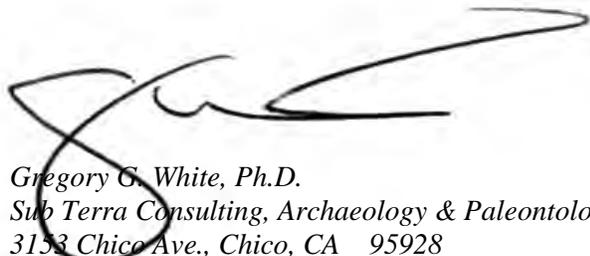
Dear Coordinator Wilson,

My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage Replacement Project*. The project is located on Deer Creek 11 miles west of Deer Creek Meadows, in T27N/R3E, S25 (MDBM) as depicted on the USGS 7.5' quadrangle "Onion Butte, Calif." The Project Area centroid is located at UTM Zone 10, 620793 m E/ 4447373 m N (WGS84). A project area map is attached.

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Sub Terra Consulting, Archaeology & Paleontology
3153 Chico Ave., Chico, CA 95928
gwhite@subterraconsulting.com
530-513-1943 (cell)

Enterprise Rancheria of Maidu Indians
Art Angle, Vice-Chairperson
2133 Monte Vista Avenue
Oroville, CA 95966

February 12, 2016

RE: *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage
Replacement Project, Tehama County, California*

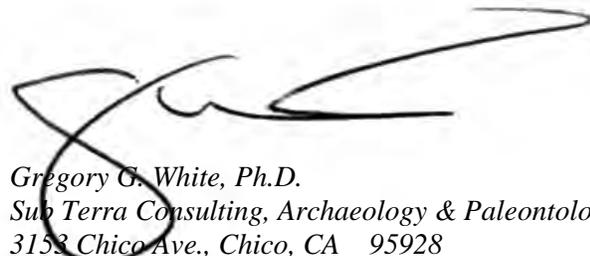
Dear Vice-Chairperson Angle,

My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage Replacement Project*. The project is located on Deer Creek 11 miles west of Deer Creek Meadows, in T27N/R3E, S25 (MDBM) as depicted on the USGS 7.5' quadrangle "Onion Butte, Calif." The Project Area centroid is located at UTM Zone 10, 620793 m E/ 4447373 m N (WGS84). A project area map is attached.

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Sincerely,



Gregory G. White, Ph.D.
Sub Terra Consulting, Archaeology & Paleontology
3153 Chico Ave., Chico, CA 95928
gwhite@subterraconsulting.com
530-513-1943 (cell)

Enterprise Rancheria of Maidu Indians
Glenda Nelson, Chairperson
2133 Monte Vista Avenue
Oroville, CA 95966

February 12, 2016

RE: *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage
Replacement Project, Tehama County, California*

Dear Chairperson Nelson,

My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage Replacement Project*. The project is located on Deer Creek 11 miles west of Deer Creek Meadows, in T27N/R3E, S25 (MDBM) as depicted on the USGS 7.5' quadrangle "Onion Butte, Calif." The Project Area centroid is located at UTM Zone 10, 620793 m E/ 4447373 m N (WGS84). A project area map is attached.

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Gregory G. White, Ph.D.
Sub Terra Consulting, Archaeology & Paleontology
3153 Chico Ave., Chico, CA 95928
gwhite@subterraconsulting.com
530-513-1943 (cell)

Tasmom Koyom
Beverly Ogle
29855 Plum Creek Road
Paynes Creek, CA 96075

February 12, 2016

RE: *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage
Replacement Project, Tehama County, California*

Dear Beverly,

My firm, Sub Terra Consulting, has been retained by Tehama Environmental Solution, of Red Bluff, CA to complete cultural resource studies for the proposed *U.S. Fish and Wildlife Service Lower Deer Creek Falls Fish Passage Replacement Project*. The project is located on Deer Creek 11 miles west of Deer Creek Meadows, in T27N/R3E, S25 (MDBM) as depicted on the USGS 7.5' quadrangle "Onion Butte, Calif." The Project Area centroid is located at UTM Zone 10, 620793 m E/ 4447373 m N (WGS84). A project area map is attached.

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Sub Terra Consulting, Archaeology & Paleontology
3153 Chico Ave., Chico, CA 95928
gwhite@subterraconsulting.com
530-513-1943 (cell)



Enterprise Rancheria

Estom Yumeka Maidu Tribe

2133 Monte Vista Ave
Oroville, CA. 95966

Ph: (530) 532-9214
Fax: (530) 532-1768
Email: info@enterpriserancheria.org

February 19, 2016

Gregory G. White, Ph.D.
Sub Terra Consulting
Via email: gwhite@subterraconsulting.com

Dear Dr. White,

Thank you for your letter dated February 12th, 2016 regarding the U.S.F.W.S Lower Deer Creek Falls Fish Passage project in Tehama County.

After a thorough examination of the project and discussions with our cultural site specialist, we have determined that this project is not within the aboriginal territory of the Estom Yumeka Maidu tribe.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Creig Marcus
Tribal Administrator
Enterprise Rancheria Estom Yumeka Tribe
creigm@enterpriserancheria.org

*HISTORICAL RESOURCE INVESTIGATION FOR THE
U.S. FISH AND WILDLIFE SERVICE, RED BLUFF FISH AND WILDLIFE OFFICE,
LOWER DEER CREEK FALLS FISH PASSAGE REPLACEMENT PROJECT,
TEHAMA COUNTY, CALIFORNIA*

ATTACHMENT B: SITE RECORDS

PRIMARY RECORD

Primary # 52-112112
Trinomial _____
NRHP Status Code _____

Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 2

Resource Name or # (Assigned by recorder): 05-06-51-439

P1. Other Identifier: Windy Cut Lookout

*P2. Location: Not for Publication Unrestricted

*a. County: Tehama

and (P2b and P2c or P2d. Attach a Location Map as necessary)

*b. USGS 7.5' Quad: Onion Butte; Date 1995; T 27N; R 3E; NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec 25; MD B. M.

c. Address _____ City _____ Zip _____

d. UTM: (Give more than one for large and/or linear resources) Zone 10; 621180 mE/ 4446520 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate): From the Almanor Ranger Station make a right on Highway 32 and proceed for 11 miles. From this spot turn onto Highway 32 and proceed for 12.8 miles to a small paved clearing on the right side of the road.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size setting, and boundaries)

This site used to be the location for Windy Cut Lookout; today the ground is completely covered with pavement. The area around the pavement is covered with thick brush. There is some evidence of the rock foundation from Windy Cut Lookout scattered along the hillside, but there is much modern garbage including washers, dryers, water heaters and much more scatter along with brush making identification of Windy Cut Lookout artifacts difficult. It is unknown if any part of the Windy Cut Lookout foundation is intact below the pavement.

P3b. Resource Attributes: (List attributes and codes) AH1

*P4. Resources Present: Building Structure Object Site District Element of District Other (isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #)

*P6. Date Constructed/Age and Sources: Historic
 Prehistoric Both

*P7. Owner and Address:

Lassen National Forest
2550 S. Riverside Dr.
Susanville, CA 96130

*P8. Recorded By: (Name, affiliation, and address) Jaime Moore

*P9. Date Recorded: 05-07-2003

*P10. Survey Type: (Describe)
Archaeological Reconnaissance

*P11. Report Citation: Cite survey report and other sources, or enter "none." Windy Cut Survey R200305080016

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record
 Archaeological Record District Record Linear Feature Record Milling Station record Rock Art Record
 Artifact Record Photograph Record Other (List) _____

LOCATION MAP

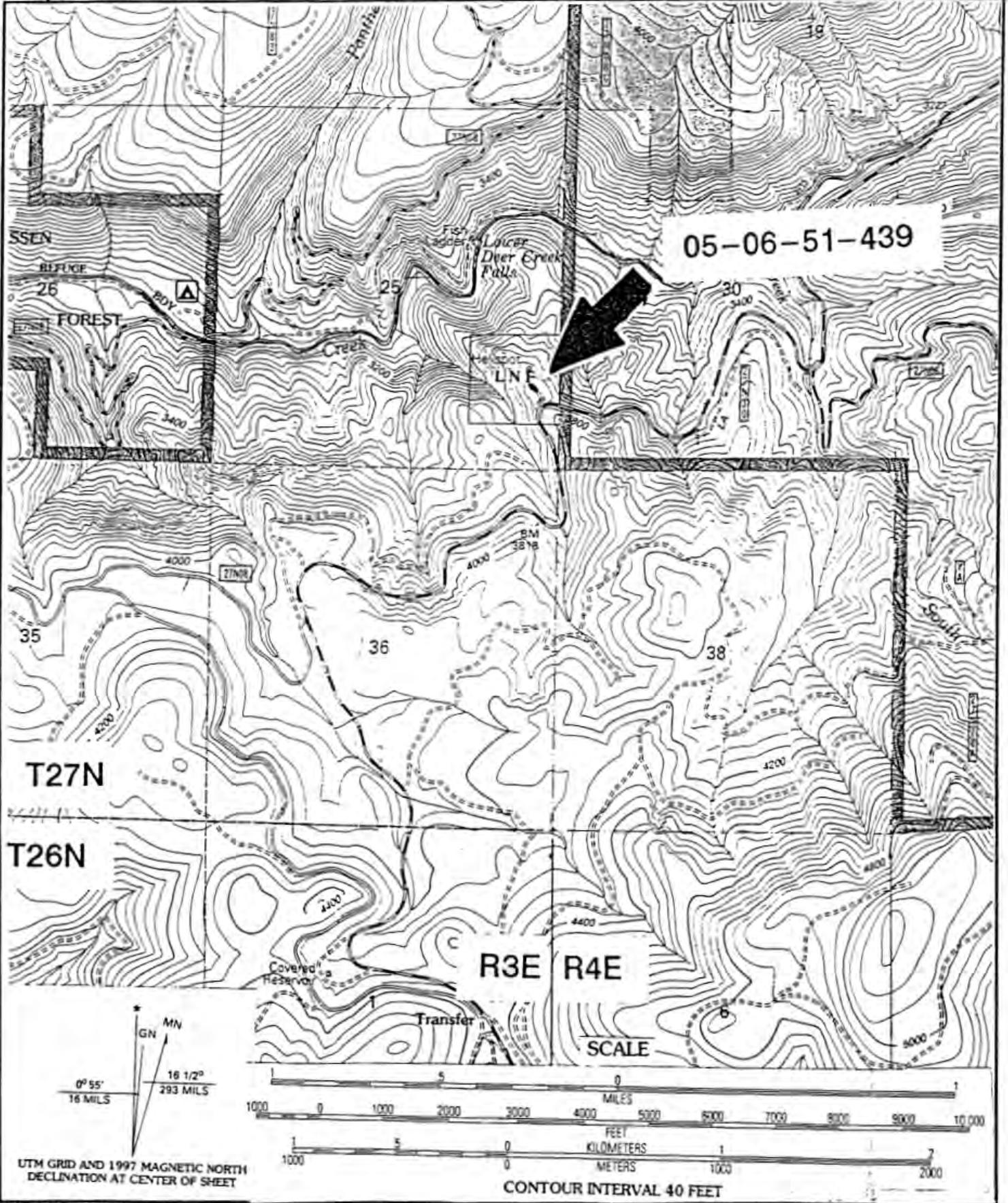
Page 2 of 2

*Resource Name or # (Assigned by recorder): FS 05-06-51-439

*Map Name: Onion Butte

*Scale: 1:24,000

*Date of Map: 1995



PRIMARY RECORD

P1. Other Identifier:

P2. Location: Not for Publication Unrestricted

a. County: Tehama

b. USGS 7.5': Onion Butte, CALIF Date: 1995;
T 27N; R3E; NE¼ of the NW¼ of the SE¼ of Section 25.

c. Address: N/A; City: N/A; Zip: N/A

d. Lat/Long: Centroid Latitude 40.1662566° and Longitude -121.5828423°

UTM: Centroid Zone10; 620676.36 m E/ 4447173.06 m N (G.P.S./WGS84)

e. Other Locational Data:

From the U.S. Forest Service Road 27N08 Deer Creek Bridge proceed 1,520 meters east on the Deer Creek Trail to a trail spur leading 50 feet in elevation downhill to a high bench overlooking Deer Creek. Site is located on the bench, which is also used as an informal but regularly maintained campsite.

P3a. Description:

This is a small prehistoric occupation site. The site measures 110 meters long northwest-southeast by 30 meters wide southwest-northeast and occupies an area of 0.4 acres (1,619 m²). The site area was defined based on the distribution of a low-density, low-diversity scatter of chipped stone artifacts with one localized midden area marked by moderate-density and moderate diversity scatter. Artifacts observed included approximately 30 small, secondary flakes of coarse-grained basalt and dark, fine-grained metavolcanics, three large flakes of white quartzite, three large spalls or spall tools of coarse-grained basalt, one large core tool made from a fine-grained metavolcanic cobble (see **Continuation Sheet 5**), and fire-cracked rock (1 artifact per 47.6 m²). Most of the site area is characterized by a low-density and low-diversity chipped stone scatter associated with a light tan, compacted, silty lithisol. The north end of the site contains a small midden locality measuring approximately 20-x-10 meters marked by a dark, powdery lithisol containing fire-cracked rock, most of the secondary flakes (see **Continuation Sheet 4**), the basalt spalls, the quartzite flakes, and the basalt core tool. One possible cupule petroglyph boulder was also observed on the south end of the site (see **A4, Continuation Sheet 6**).

P3b. Resource Attributes: AP2 Lithic Scatter; AP5 Petroglyph (provisional); AP15 Habitation Debris.

P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: View east across modern campsite near center of site.

P6. Date Constructed/Age and Sources:

Historic; Prehistoric; Both

P7. Owner and Address:

Sierra Pacific Industries
PO Box 496028, Redding, CA 96049-6028

P8. Recorded by:

G. White, A. White, Sub Terra Consulting
3153 Chico Avenue, Chico, CA 95928

P9. Date Recorded: 12-23-2015

P10. Survey Type: (Describe)

Pedestrian, intensive.

P11. Report Citation:

Historical Resource Investigation for the U.S. Fish and Wildlife Service, Red Bluff Fish and Wildlife Office, Lower Deer Creek Falls Fish Passage Replacement Project, Butte County, California. Gregory G. White, Ph.D., February 22, 2016. MS on file, Northeast Information Center of the California Historical Resources Information System, California State University, Chico.

Attachments: Location Map Sketch Map Continuation Sheet Archaeological Record

ARCHAEOLOGICAL SITE RECORD

Page 2 of 11

Resource Name or #: LCD-01

A1. Dimensions: a. Length: 110 meters (361 feet) NW-SE × b. Width: 30 meters (98 feet) SW-NE.

Method of Measurement: Paced Taped Visual estimate Other: High-resolution GPS field data.

Method of Determination (Check any that apply.): Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Boundary determination based on surface observation and digital coordinates of artifacts.

Reliability of Determination: High Medium Low Explain:

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain):

Conditions affecting the survey were moderate, there was indirect sun with partial, winter exposure, minimal on-site vegetation, wet soil conditions, and moderate leaf litter.

A2. Depth: None Unknown; Method of Determination: No probes attempted.

A3. Human Remains: Present Absent Possible Unknown (Explain): None observed.

A4. Features:

One possible petroglyph boulder was observed (see **Continuation Sheet 6**). The boulder is located on the edge of the high bench overlooking Deer Creek on the east end of the site, associated with a low-density lithic scatter. The boulder consists of a large, irregular, water-rounded boulder of grainy breccia measuring approximately 3 meters (10 feet) in diameter, just its top exposed above ground. The prominent face of the boulder tilted toward the center of the site catches the angled sunlight, highlighting three large (3–4 cm diameter) and approximately 20 small (2–3 cm diameter) round, cup-shaped depressions 0.5–1.0 centimeter deep. The depressions lack clear evidence that they were deliberately manufactured. Three lines of evidence point toward their production by natural forces: (1) the boulder is part of the Pleistocene-aged sediment forming the substrate of the high bench and the pitting may have accrued when the boulder tumbled into place, and (2) the depressions are heavily weathered and lack the sharp relief and obvious pecking scars that might positively indicate that they were deliberately manufactured. However, two characteristics indicate they were indeed deliberately manufactured: (1) each depression stands to some degree alone from the others, and (2) the depressions occur in clusters and alignments. In my opinion, the latter two features cast the weight of the evidence in favor of these being petroglyph features; their lack of sharp relief may be considered a product of significant age and heavy weathering.

A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):

Artifacts observed included approximately 30 small, secondary flakes of coarse-grained basalt and dark, fine-grained metavolcanics, three large flakes of white quartzite, three large spalls or spall tools of coarse-grained basalt, one large core tool made from a fine-grained metavolcanic cobble (see **Continuation Sheet 5**), and fire-cracked rock (1 artifact per 47.6 m²).

A6. Were Specimens Collected? No Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

A7. Site Condition: Good Fair Poor (Describe disturbances.):

The site has one primary, well-maintained, modern campsite served by a large, actively used rock fire ring and rocks and logs used for seats. There are also several secondary modern campsites each with cleared spaces used for tents and other activities. Use of the site for camping has resulted in negative effects, but the extent of these effects cannot be determined based on the surface examination reported here. These effects probably include but are not limited to casual artifact transport and collection, movement of stones that may have been associated with prehistoric features now incorporated into modern camp features such as fire rings, fire effects on artifacts and soils, and introduction of modern charcoal into prehistoric deposits.

A8. Nearest Water (Type, distance, and direction.):

Perennial Deer Creek is situated on the immediate south edge of the site.

A9. Elevation:

Approximately 3000–3020 feet amsl.

ARCHAEOLOGICAL SITE RECORD

Page 3 of 11

Resource Name or #: LCD-01

A10. Environmental Setting.

The area around the site is a mixed chaparral community characterized by an open to dense canopy made up of tightly intertwined woody shrubs that range from one to nearly 20 feet in height. Mixed chaparral communities are generally dominated by one or more species of ceanothus and manzanita. Other associated species include gray pine, live oak, mountain mahogany, whitethorn, chamise, scrub oak, and poison oak. South-facing slopes nearby and north-facing slopes at slightly higher elevations above the site are characterized by montane hardwood, montane hardwood-conifer, Douglas-fir forest, closed-cone pine forest, and blue oak woodland.

A11. Historical Information:

None.

A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined

A13. Interpretations:

The site is situated on a high terrace on the north side of Deer Creek overlooking a sharp bend in the creek characterized by well-developed pools divided by high-turbidity rapids, making the site optimal for access to salmon and steelhead harvest. The canyon walls around the site are characterized by stands of interior live oak (*Quercus wislizeni*), canyon live oak (*Quercus chrysolepis*), and scattered black oak (*Quercus kelloggii*), indicating the location was optimal for harvest of a variety of acorn crops. The artifact inventory and midden soil observed by the current investigation is consistent with the possibility that the site represents a Yana/Yahi fall-winter settlement focused on acorn and fish harvest.

A14. Remarks:

None.

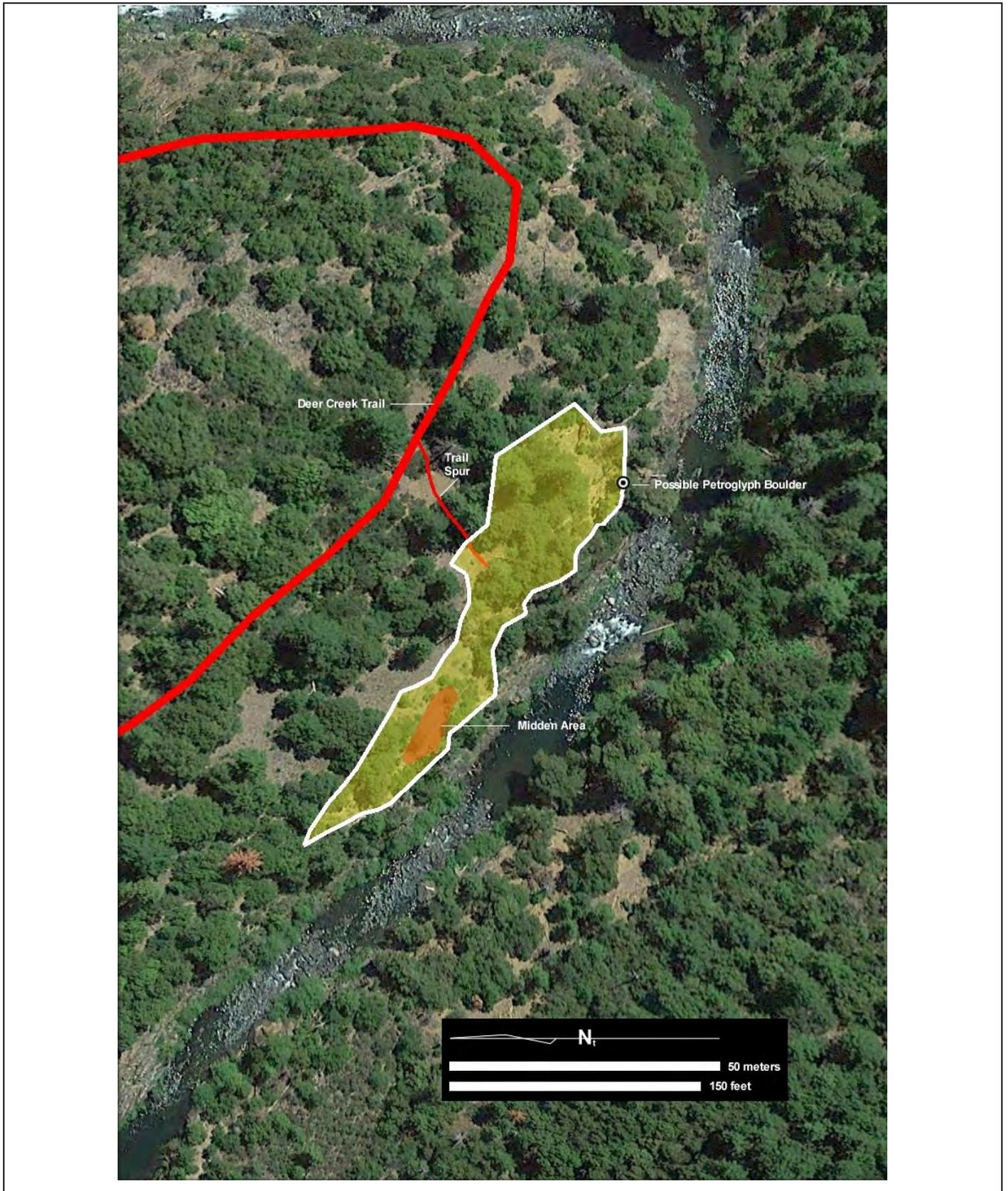
A15. References:

None.

A16. Photographs:

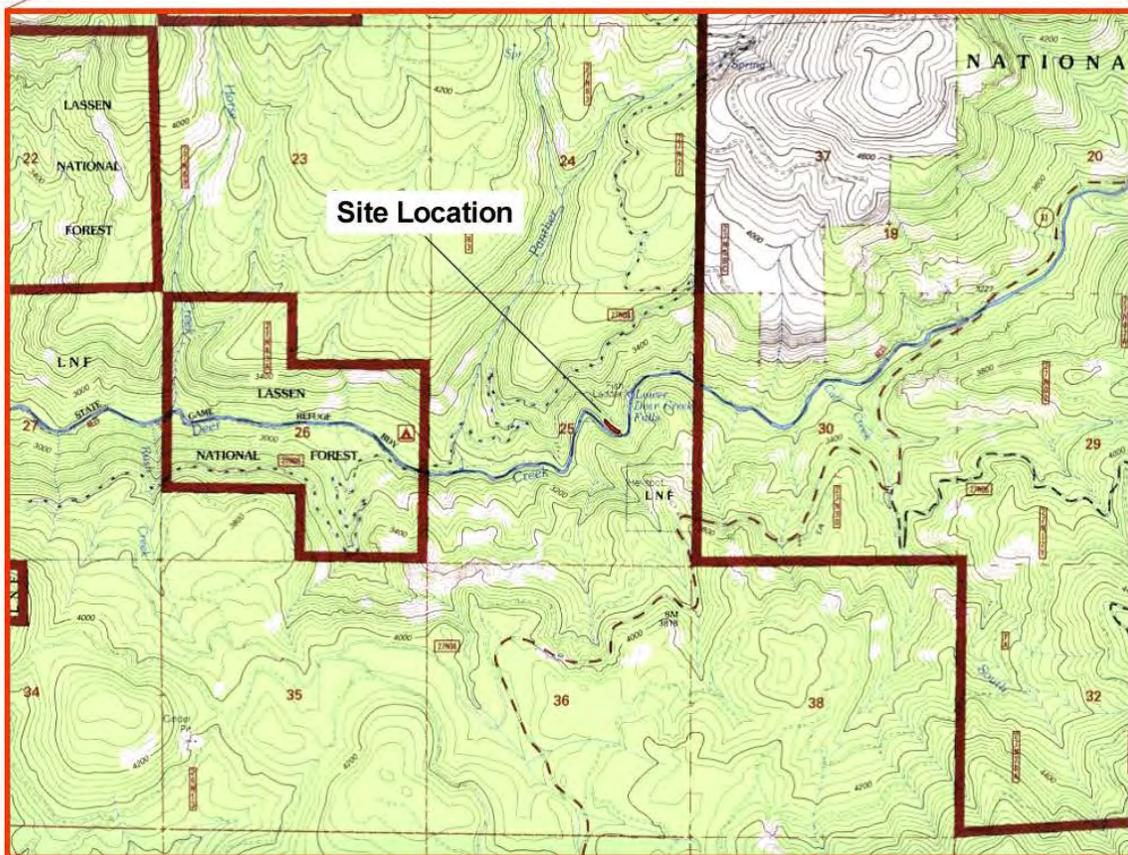
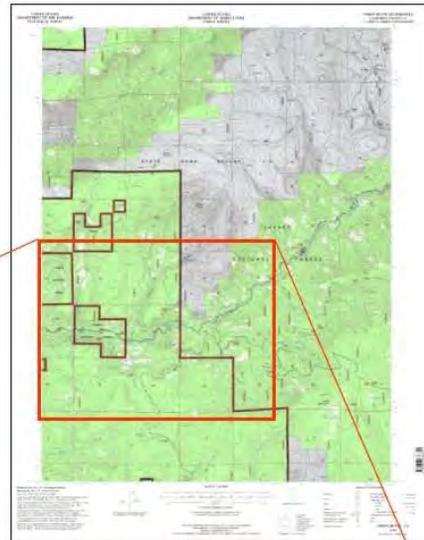
Original media/negatives on file with Sub Terra Consulting.

A17. Form Prepared by: G. White, 12-23-2015
Sub Terra Consulting, 3153 Chico Avenue, Chico, California 95928

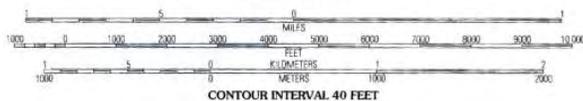


LOCATION MAP

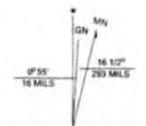
ONION BUTTE QUADRANGLE CALIFORNIA-TEHAMA CO. 7.5-MINUTE SERIES (TOPOGRAPHIC)



SCALE 1:24 000



NATIONAL GEODETIC VERTICAL DATUM OF 1929
TO CONVERT FEET TO METERS MULTIPLY BY 0.3048



QUADRANGLE LOCATION

CONTINUATION SHEET

Recorded by: G. White, A. White

Date: 12-23-2015

Continuation 1 Update



View from approximate site centroid looking east toward the east end of the site. Modern campsite in foreground.



View near site centroid looking south toward the edge of the high bench overlooking Deer Creek.

CONTINUATION SHEET

Recorded by: G. White, A. White

Date: 12-23-2015

Continuation 3 Update



View looking northwest toward the north end of the site. Midden area is contained in the rock-strewn opening.



View of coarse-grained basalt and fine-grained metavolcanic flakes on the midden area surface.

CONTINUATION SHEET



Large metavolcanic core tool.

CONTINUATION SHEET



Possible petroglyph boulder showing possible weathered cupules. Overview (top), Closeup (bottom)

PRIMARY RECORD

P1. Other Identifier:

P2. Location: Not for Publication Unrestricted

a. County: Tehama

b. USGS 7.5': Onion Butte, CALIF Date: 1995;
T 27N; R3E; SE¼ and SW1/4 of the NE¼ of Section 25.

c. Address: N/A; City: N/A; Zip: N/A

d. Lat/Long: Centroid Latitude 40.1680250° and Longitude -121.5814410°

UTM: Centroid Zone10; 620792.56 m E / 4447371.26 m N (G.P.S./WGS84)

e. Other Locational Data:

From the U.S. Forest Service Road 27N08 Deer Creek Bridge proceed 1.8 kilometers east on Lassen National Forest Trail 4E15, the Deer Creek Trail, to a trail spur leading 70 feet in elevation downhill to Deer Creek Falls. Site is located in bedrock on the western margin of the falls.

P3a. Description:

This is an historical site, the Lower Deer Creek Falls Fish Ladder, constructed in 1943 by the U.S. Fish and Wildlife Service as part of the U.S. Fish and Wildlife Service and U.S. Bureau of Reclamation *Shasta Salmon Maintenance Program* which sought to expand salmon spawning habitat in Deer Creek and Battle Creek in order to offset the loss of extensive salmon spawning habitat resulting from the construction of Shasta Dam. The Program was funded by fish and wildlife protection provisions embedded in Central Valley Project legislation of 1940 (*54 Stat. 1198, 1199*). The site consists of two main components, a vertical slot pool-weir fish ladder composed of seven weirs spanning 75 feet (22.8 meters), and an exit channel composed of a concrete retaining wall and sections carved from bedrock spanning 90 feet (27.4 meters). The site occupies 0.1 acres.

P3b. Resource Attributes: AH6; HP20

P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: View looking north toward Lower Deer Falls; fishway entrance visible in the left foreground.

P6. Date Constructed/Age:
 Historic; Prehistoric; Both

P7. Owner and Address:
Western Rivers Conservancy
424 Clay Street, Lower Level
San Francisco, CA 94111

P8. Recorded by:
G. White, A. White, Sub Terra Consulting
3153 Chico Avenue, Chico, CA 95928

P9. Date Recorded: 12-23-2015

P10. Survey Type: (Describe)
Pedestrian, intensive.

P11. Report Citation:

Historical Resource Investigation for the U.S. Fish and Wildlife Service, Red Bluff Fish and Wildlife Office, Lower Deer Creek Falls Fish Passage Replacement Project, Butte County, California. Gregory G. White, Ph.D., February 22, 2016. MS on file, Northeast Information Center of the California Historical Resources Information System, California State University, Chico.

Attachments: Location Map Sketch Map Continuation Sheet Archaeological Record

ARCHAEOLOGICAL SITE RECORD

Page 2 of 10

Resource Name or #: LDC-02 Lower Deer Creek Falls Fish Ladder

A1. Dimensions: a. Length: 111.8 feet N-S × b. Width: 60 feet E-W.

Method of Measurement: Paced Taped Visual estimate Other: High-resolution GPS field data.

Method of Determination (Check any that apply.): Artifacts Features Soil Vegetation Topography

Cut bank Animal burrow Excavation Property boundary Other (Explain):

Boundary determination based on surface observation and digital coordinates of fish ladder features.

Reliability of Determination: High Medium Low Explain:

Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined

Disturbances Vegetation Other (Explain):

Conditions affecting the survey were moderate, there was indirect sun with partial, winter exposure, minimal on-site vegetation, wet soil conditions, and moderate leaf litter.

A2. Depth: None Unknown; Method of Determination: No subsurface component, built on rock.

A3. Human Remains: Present Absent Possible Unknown (Explain): None observed.

A4. Features:

The Lower Deer Creek Falls Fish Ladder consists of two main components, a vertical slot pool-weir fish ladder spanning 75 feet (22.8 meters) and composed of seven weirs, and an exit channel spanning 90 feet (27.4 meters). The fishway entrance structure, the lowest tier of the ladder, deposits flow perpendicular to streamflow 70 feet (21.3 meters) downstream from the falls. The weir wings are constructed of 12-inch (30.5 centimeter) thick, square-finished concrete walls formed to 3.9 foot (1.2 meter) wide vertical slots bracketed by angle iron secured by cast bolts for flashboard slots. The bottom of each slot is finished with a molded concrete flow-invert sill. A carved-out bedrock face forms the east-facing perimeter wall of the bottom six weir pools, while the west-facing perimeter wall in this section is constructed of 12-inch (30.5 centimeter) thick crown-finished concrete with an exterior informal mosaic finish of cast field stone. The seventh, topmost, weir pool is carved from bedrock and is the largest pool, considered a turning pool, where streamflow turns 90 degrees to a final exit slot forming the entrance to exit channel tunnel. Weir pools vary from 4.0–7.0 feet (1.2–2.1 meters) wide and 6.5–8.25 feet (2.0–2.5 meters) long.

From the turning pool, the fishway exit passage is 90.0 feet (27.4 meters) long, exiting into Deer Creek 35 feet (10.7 meters) upstream from the crest of the falls. From the turning pool, the fishway exit passage enters a tunnel measuring 5.5 feet (1.7 meters) in diameter and 15 feet (4.6 meters) long, carved from breccia bedrock. The vertical slot weir at the tunnel entrance is also set with angle iron for flashboard mounts, enabling closure of the fishway exit passage. Upstream from the tunnel, the fishway exit channel emerges into a constructed channel measuring 4.0 feet (1.2 meters) wide and 71.0 feet (21.6 meters) long framed on its west wall by a carved bedrock face and on the first 30.0 feet (9.1 meters) of its east wall by a vertical concrete retaining wall consisting of a 12-inch (30.5 centimeter) thick, square-finished concrete wall, and the final 41.0 feet (12.5 meters) constructed from carved bedrock.

A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):

Bedrock notches in the immediate vicinity of the fish ladder contained in several instances of modern stashed scrap and materials associated with fish ladder maintenance including milled lumber fragments, steel chain, and cable and wire fragments. No historical or prehistoric cultural features and no additional features related to the 1943 construction were observed. The absence of additional features is likely attributable to the propensity of Deer Creek to flood and scour bare rock and alluvium in the immediate vicinity of the channel.

A6. Were Specimens Collected? No Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

A7. Site Condition: Good Fair Poor (Describe disturbances.):

Weathering of concrete and steel features of the structure was observed consistent with the age of the structure and the pounding it receives from water and water-borne sediment, evident during the December 22nd – 23rd field visit. Concrete walls were generally characterized by loss of surface finish and differential weathering along batch lines, resulting in notable crimped joints on the wings of lower tier weir structures and on the stream-side face of the fish passage exit channel high concrete retaining wall. The first, lowermost weir step was significantly altered, with one wing entirely missing and the other heavily

ARCHAEOLOGICAL SITE RECORD

Page 3 of 10

Resource Name or #: LDC-02 Lower Deer Creek Falls Fish Ladder

A7. Site Condition (continued):

sculpted and partially undermined by stream scouring. Absence of this first weir meant that the lowermost step of the ladder was missing and resulting in a double-high step to the second tier. The California Department of Fish and Wildlife monitors and maintains the structure two to three times annually, and in recent years addressed the first tier blowout by building a temporary rock wall dam to retain an approximation of the first pool.

A8. Nearest Water (Type, distance, and direction.):

The site incorporates perennial Deer Creek streamflow.

A9. Elevation:

Approximately 3020–3037 feet amsl.

A10. Environmental Setting.

Lower Deer Creek Falls is located in a narrow notch-shaped, rocky gorge formed by the impingement of breccia and basaltic bedrock and massive, loose boulders. The falls is marked by a vertical drop of 15 feet across a section of channel measuring approximately 35 feet, terminating in a large, 125 foot (38 meter) long pool. This section of Deer Creek flows roughly north-to-south, and the existing fish passage structure redirects to the west, routed through boulders and bedrock around the falls.

A11. Historical Information:

See final report *Historical Resource Investigation for the U.S. Fish and Wildlife Service, Red Bluff Fish and Wildlife Office, Lower Deer Creek Falls Fish Passage Replacement Project, Butte County, California*. Gregory G. White, Ph.D., February 22, 2016. MS on file, Northeast Information Center of the California Historical Resources Information System, California State University, Chico..

A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined

A13. Interpretations:

The structure was built at this location in 1943 for the purpose of enabling anadromous fish passage around Lower Deer Creek Falls to spawning habitat upstream, a purpose it still continues to serve. The structure was installed on the basis of specific expectations for measureable improvements in spring-run chinook salmon populations, and the state and federal agencies engaged in the management of the facility have maintained the operational status of the structure and monitored affected salmon populations for more than 70 years (e.g., Harvey 1997). On this basis the structure can be judged to possess a strong quality of association with its interpretive context, as defined below.

A14. Remarks:

None.

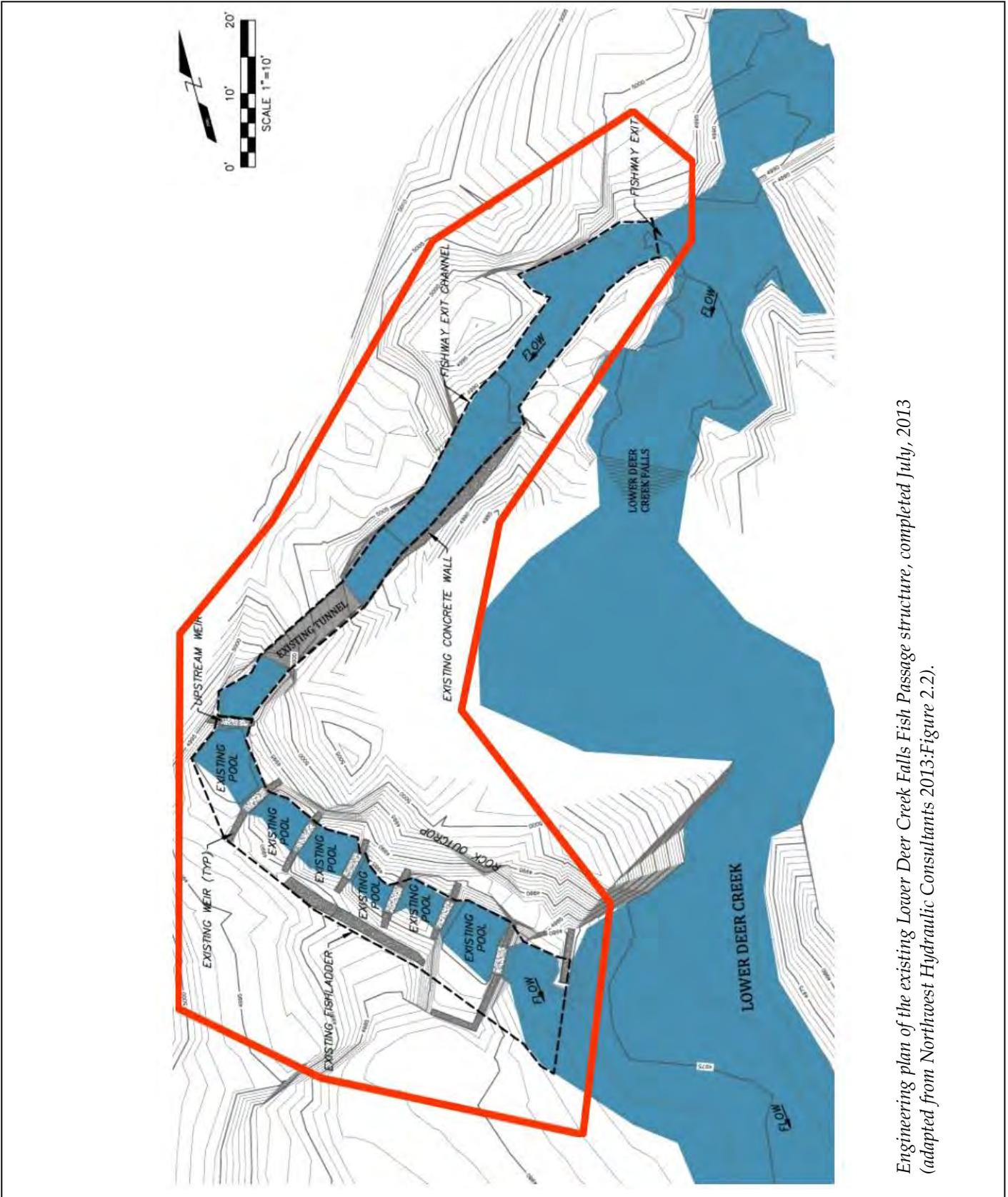
A15. References:

None.

A16. Photographs:

Original media/negatives on file with Sub Terra Consulting.

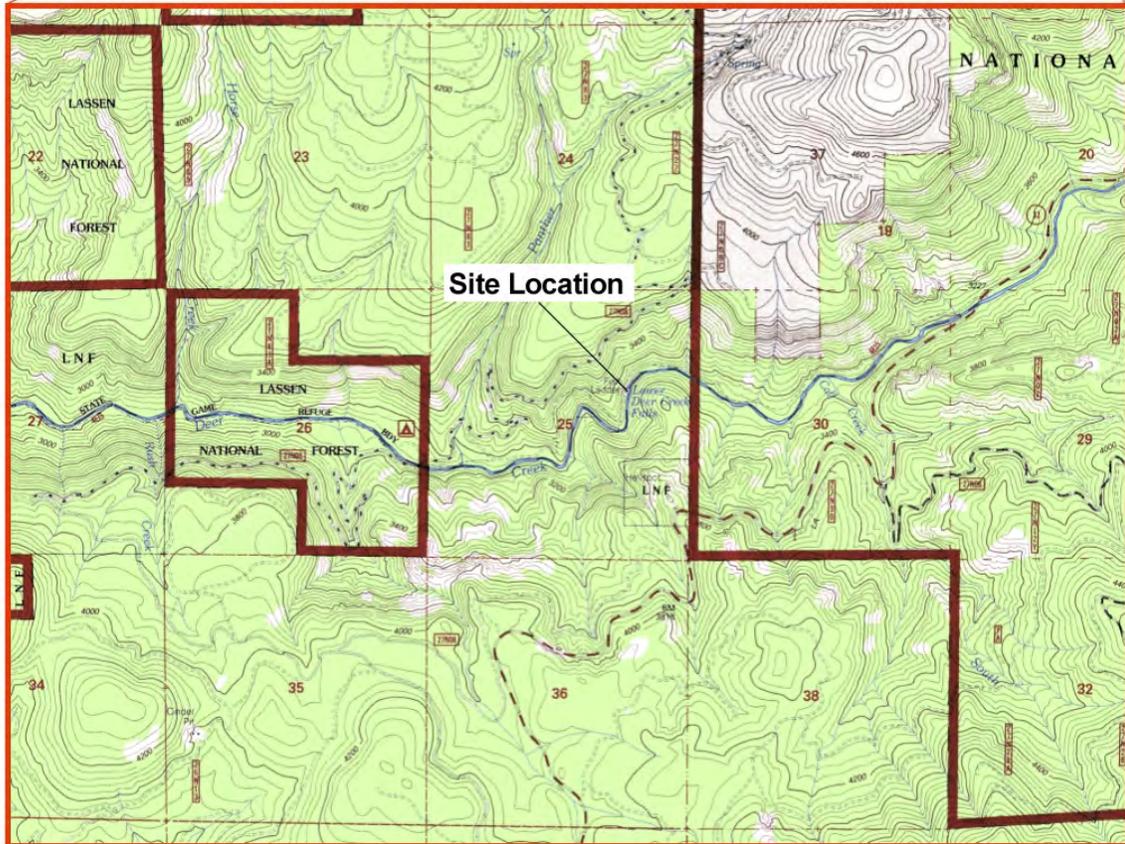
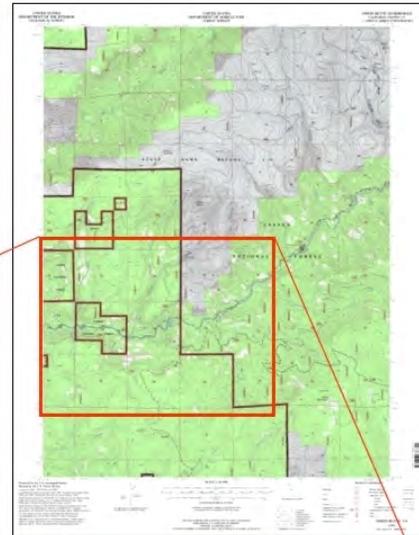
A17. Form Prepared by: G. White, 12-23-2015
Sub Terra Consulting, 3153 Chico Avenue, Chico, California 95928



Engineering plan of the existing Lower Deer Creek Falls Fish Passage structure, completed July, 2013
(adapted from Northwest Hydraulic Consultants 2013:Figure 2.2).

LOCATION MAP

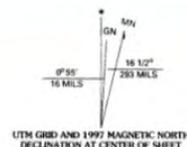
ONION BUTTE QUADRANGLE CALIFORNIA-TEHAMA CO. 7.5-MINUTE SERIES (TOPOGRAPHIC)



SCALE 1:24 000



NATIONAL GEODETIC VERTICAL DATUM OF 1929
TO CONVERT FEET TO METERS MULTIPLY BY 0.3048



QUADRANGLE LOCATION

Recorded by: G. White, A. White

Date: 12-23-2015

Continuation 1 Update



*View looking north toward Lower Deer Creek Falls, showing low water conditions.
Photo taken July, 2013 (adapted from Northwest Hydraulic Consultants 2013: Photo 2.2).*



*View looking north toward Lower Deer Creek Falls, showing high water conditions.
Photo taken December, 2015 (Photo by G. White).*

CONTINUATION SHEET

Recorded by: G. White, A. White

Date: 12-23-2015

Continuation 2 Update



View looking east, down the fish ladder from the turning pool, showing low water conditions. Photo taken July, 2013 (adapted from Northwest Hydraulic Consultants 2013: Photo 2.3).



View looking east, down the fish ladder from the turning pool, showing high water conditions. Photo taken December, 2015 (Photo by G. White).



View looking north-northwest from the edge of the pool below the falls toward the mouth of the fish ladder, showing erosion of the first tier weir wings and the first tier temporary rock structure (adapted from Northwest Hydraulic Consultants, Incorporated 2013:Photo 5.1).

CONTINUATION SHEET



View north from the turning pool toward the entrance to the fish passage exit tunnel, showing concrete rockwork on the exit channel weir.

CONTINUATION SHEET



View looking north of the south, exterior wall of the third tier weir pool wall, showing concrete and rock work.