5.5 CULTURAL RESOURCES

This section describes existing conditions and potential impacts on cultural resources as a result of construction, operation, and maintenance of the project. It presents the methods and results of cultural resources studies of the project area. The conclusions are summarized in Table 4.5-1 and discussed in more detail in Section 5.5.4, Impact Analysis.

5.5.1 Environmental Setting

5.5.1.1 Cultural Background

Modoc Uplands

The northernmost of the regions defined for organizing cultural resources within the project right-of-way is the Modoc Uplands, which ranges in elevation from 4,800 feet above mean sea level (amsl) at the southern border of Oregon and California near the eastern edge of Goose Lake, to the City of Alturas at 4,400 feet amsl. The Modoc Uplands are characterized by numerous block-faulted Cenozoic basalt flows and smaller rhyolitic domes and shield volcanoes (Bailey 1966). The Modoc Uplands include the Tule Lake Basin to the west of the project right-of-way and the Modoc Plateau, which descends towards Warms Springs Valley and the Pit River drainage.

The region is marked by dry, temperate summers and cold, wet winters during which most of the 30 to 40 centimeters of precipitation is received in the form of snow. Soil development is slow and limited to open meadows and seasonal wetlands in the form of aeolian sediments and pumiceous tephras. Basal ridges and tablelands primarily contain thin deposits of colluvial and alluvial sediments interrupted by expanses of rough, exposed volcanic bedrock. The following descriptions of Modoc Uplands flora and fauna are largely excerpted from Delacorte et al. (1997:10-15).

Vegetation growing in this region is generally transitional between the Sierra Nevada/Cascade uplands and the arid Great Basin to the east. Dominant trees include ponderosa and Jeffrey pine (*Pinus ponderosa* and *P. jeffreyi*), white and Douglas-fir (*Abies concolor* and *Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), and lodgepole pine (*Pinus contorta*), many of which have been reduced through commercial harvest (Pease 1965; Fitzhugh 1988). In more exposed settings, these montane species give way to an open woodland of western juniper (*Juniperus occidentalis*) that has significantly expanded its range as a result of fire suppression and other modern land-use practices.

Among the more common shrubs growing in woodland and more extensive tracts of open country are big and low sagebrush (*Artemisia tridentata* and *Artemisia arbuscula*), serviceberry (*Amelanchier* spp.), buckbrush (*Ceanothus* spp.), bitterbrush (*Purshia tridentate*), rabbitbrush (*Chrysothamnus* spp.), and currants (*Ribes* spp.). Perennial grasses and herbaceous vegetation in dryer settings include bluegrass (*Poa* spp.), squirreltail (*Sitanion hystrix*), buttercup (*Ranunculus* spp.), biscuitroot (*Lomatium* spp.), and the invasive Eurasian annual cheatgrass (*Bromus tectorum*). In more mesic settings around seasonal wetlands are various rushes (*Juncus* spp.), sedges (*Carex* spp.), tufted hairgrass (*Deschampsia*

caespitosa), water groundsel (*Senecio hydrophilus*), cinquefoil (*Potentilla* spp.), and brodiaea (*Brodiaea* spp.).

Diverse fauna inhabit the vegetational mosaic of the Modoc Uplands and like many of the grasses and other plants, constituted an important aboriginal subsistence resource. Large vertebrates of significance include mule deer (*Odocoileus hemionus*) and pronghorn (*Antilocapra americana*), with mountain sheep (*Ovis canadensis*), elk (*Cervus canadensis*), and bison (*Bison bison*) less widely distributed than in the past (O'Connell 1971, 1975; Sampson 1985). Smaller mammals that frequent the area include black-tailed jackrabbit (*Lepus californicus*), cottontail (*Sylvilagus* spp.), porcupine (*Erethizon dorsatum*), and a wide array of squirrels (Sciuridae), pocket gophers (Geomyidae), mice (Heteromyidae), and rats (Cricetidae). Coyote (*Canis latrans*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), badger (*Taxidea taxus*), and striped skunk (*Mephitis mephitis*) are the major contemporary predators, although wolves (*Canis lupus*) and grizzly bears (*Ursus horribilis*) also occupied the area in the past.

Waterfowl that continue to find seasonal nesting habitats in the ephemeral pools and marshes of the Modoc Uplands include a variety of dabbling ducks of the *Anas* genus (e.g., mallard, pintail, shoveler, green-winged teal, and cinnamon teal, etc.) that would have been even more abundant prior to the draining of Tule Lake. Canada geese (*Branta canadensis*) and snow geese (*Chen caerulescens*), American white pelicans (*Pelecanus erythrorhynchos*), and other aquatic birds (e.g., gulls, coots, grebes, and loons) also frequent the Tule and other large lake basins but are of minor consequence over most other parts of the Modoc Uplands. Other birds of food value to indigenous populations probably included sage grouse (*Centrocercus urophasianus*), quail (*Callipepla californica*), and mourning dove (*Zenaida macroura*). Finally, to these economically important taxa can be added more numerous passerine species, migratory raptors, and a diverse herpetofauna, which comprise a conspicuous element of the local wildlife but likely contributed little to the prehistoric diet.

The lava plain is underlain by basalts and andesites extruded over vast areas of land during the Cenozoic Tertiary and Quaternary periods. Mountains in the regions include the Warner Mountains to the east, Adin and Big Valley Mountains to the south, and the Medicine Lake Highlands to the west. Goose Lake, a large alkaline lake in Goose Valley that spans the Oregon-California border, is roughly 2 miles west of the right-of-way. It is a pluvial lake that formed during the Pleistocene from precipitation and melting glaciers and would have been accessible to the region's prehistoric inhabitants. The major landforms with the region include lava platforms, mountains, and basins filled with lava-derived alluvium. Lava flows in the area contain numerous underground tubes, many with percolating water or ice. Volcanic activity occurred fairly continuously from the Pleistocene to 900 years ago. Obsidian sources in the area include Medicine Lake Highlands, East Medicine Lake, Grasshopper Flat/Lost Iron Well/Red Switchback, Buck Mountain, and Blue Mountain (Hughes 1986; Gates 2007).

Soil development within the region is limited to open meadows, ephemeral pools, and seasonal wetlands where aeolian sediments and pumiceous tephras from Holocene eruptions of the Medicine Lake Highlands have been redeposited to varying depths. Elsewhere, exposed ridges support only thin sediments overlying decomposing basalt bedrock. Vegetation on the Modoc Plateau mostly consists of juniper savannah, where Sierra juniper (*Juniperus* spp.) trees dot the landscape at varying densities against a sagebrush (*Artemisia* spp.) and bunchgrass (*Stipa* spp.) background. Portions of the right-of-

way are also characterized by a mosaic of sagebrush steppe, juniper savannah, ponderosa pine/scrub (pine intermixed with sage brush and juniper), and open ponderosa pine forest, while the surrounding mountains are characterized by montane forest with ponderosa pine, Douglas fir, sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), and other high-altitude species.

Diverse fauna inhabit the vegetated areas of the Modoc Plateau. Large vertebrates include mule deer and pronghorn, though mountain sheep inhabited the more rugged uplands in the past. Elk and bison have also been recovered from the region in archaeofaunal collections (Sampson 1985). Squirrels, pocket gophers, black-tailed jackrabbits, porcupines, mice, and rats are common smaller mammals in the area. Ephemeral pools and marshes provide seasonal nesting habitats for waterfowl. Historically, there was a spring-run of suckers (*Catostomus* spp.) in the tributaries of Tule, Goose, and Lower Klamath Lakes. Current predators consist of coyotes, striped skunks, mountain lions, badgers, and bobcats, while wolves and grizzly bears would have inhabited the area in the past. Today, much of the Modoc Plateau is used for grazing and lumbering, though intensive agriculture is practiced on the Tule Lake lakebed to the west. The high lava plains of the Modoc Plateau are generally uncleared and uncultivated. Logging of pine and fir primarily takes place on adjacent mountains where larger timber is available.

Madeline Plains

The Madeline Plains region of the project right-of-way includes the well-watered valleys of the Pit River system (e.g., Warm Springs and South Fork), as well as the scrub-covered flats of the Madeline Plains. Structurally, the valleys consist of broad, down-warped troughs bounded by Basin and Range-type faulting on the west and the towering Warner Mountains on the east. Apart from locally offset scarps and low basalt bluffs, terrain over most the valley bottoms is comparatively level to gently rolling, with an average elevation of 4,300 feet amsl. The South Fork of the Pit River courses north through South Fork Valley, joining the northern branch near the City of Alturas where the stream turns west and eventually drains into the Sacramento River. Alluvium washed from the surrounding uplands blankets most of the valleys, especially cut-off meanders, pools, and marshes formed by periodic flooding of the Pit River.

In contrast to the valleys, the Madeline Plains are a nearly featureless landscape that was formed when pluvial Lake Madeline receded and finally dried up after its last major high stand following the deposition of the Trego Hot Springs tephra, dated at 23,400 before the present (Young 1996). Prominent wave-cut benches can still be seen along the flanks of the basin, which formerly drained into Secret Valley and the Honey Lake Basin of the Lake Lahontan impoundment (Mifflin and Wheat 1979). Temperatures and precipitation on the Madeline Plains, situated at an elevation of approximately 5,300 feet amsl, are similar to those in the Modoc Uplands, though the nearly impervious alluvial/lacustrine sediments inhibit drainage, and large areas of the plains can be seasonally inundated with a thin sheet of water. An exception occurs along the flanks and the southern end of the basin near Spanish Springs, where more recent colluvial deposits and outcrops of Quaternary-age basalt rise above the plains and provide substantially better drainage.

Vegetation across most of the Madeline Plains and the better-drained sections of the Pit River valleys resembles that over much of the Modoc Uplands, constituting a sagebrush-steppe community (Billings 1951; Cronquist et al. 1972). Plants characteristic of this association include big and low sagebrush,

bitterbrush (*Purshia tridentate*), rabbitbrush, and various native and introduced grasses. At higher elevations along the base of the surrounding hills, these are interspersed with stands of western juniper, which appears to have expanded its range during the historic period.

A second riverine or marsh community occurs in moist areas bordering the Pit River and its sloughs. Plants growing in this mesic environment include bulrush (*Scirpus* spp.), cattail (*Typha* spp.), common reed (*Phragmites communis*), willow (*Salix* spp.), bentgrass (*Agrostis* spp.), and various rushes and sedges. In better-drained places along the stream channels are also stands of wild rose (*Rosa* spp.), mustard (*Brassica* spp.), peppergrass (*Lepidium* spp.), thistle (*Cirsium* spp.), mullein (*Verbascum* spp.), and Great Basin wild rye (*Leymus cinereus*). To the south in moister sections of the Madeline Plains is a similarly luxuriant meadow association, supporting taxa such as bentgrass and hairgrass (*Eleocharis* spp.), squawroot (*Perideridia* spp.), and various rushes and sedges. *Perideridia*, or *epos*/*yapa* as it was called aboriginally (Kniffen 1928, Riddell 1960), may have been especially important in these contexts because it provided large quantities of nutritious roots that were gathered, dried, and stored for winter food. Indeed, the local distribution of this plant appears to coincide closely with the ground stone scatters that distinguish Madeline Plains archaeological sites from those of other areas within the project right-of-way.

Fauna within Madeline Plains region generally resemble those of the Modoc Uplands. Deer inhabit the brushy river bottoms and wooded foothills, while pronghorn congregate seasonally in large herds on the open flats and valley bottoms. Cottontails and jackrabbits (*Lepus* spp.) have a similar distribution and are joined by a host of smaller rodents and their predators (e.g., coyote, badger, fox, etc.). Even more abundant are the thousands of resident and migratory waterfowl and shorebirds that flock to the streams, sloughs, and marshes of the Pit River system and the seasonally flooded parts of the Madeline Plains. Greater sage grouse may have been of comparable significance in terms of aboriginal subsistence, which would have found ideal habitat over much of the sagebrush-covered plains.

Other aquatic fauna of importance along permanent waterways of the Pit River drainage include river otter (*Lontra canadensis*), muskrat (*Ondatra zibethica*), mink (*Mustela vison*), and raccoon (*Procyon lotor*) that thrive in this biotically rich habitat. Native fish of the Pit River and its tributaries include an assortment of mostly 'warm-water' species such as suckers, squawfish (*Ptychocheilus grandis*), California roach (*Hesperoleucus symmetricus*), dace (*Rhinichthys osculus*), sculpin (*Cottus* spp.), lamprey (*Lampetra lethophaga*), and trout (*Salmo* spp.). Finally, aquatic invertebrates of potential economic importance are freshwater mussel (*Anodonta californiensis*, *Gonidea angulata*, and *Margaritifera falcata*) and possibly crayfish (*Pacifastacus* spp.).

Honey Lake Basin

Upon leaving Secret Valley, the project right-of-way continues south into the Honey Lake Basin. As with most of the valleys that make up the Pluvial Lake Lahonton system in California and Nevada, Honey Lake is bordered by steep, generally north-south trending mountains that drain into a series of alkaline playas and marshy sumps. However, under wetter conditions during the Pleistocene, the Honey Lake Basin contained a deep lake that was connected via Astor and Sand Passes to the Pyramid and Smoke Creek arms of Lake Lahonton. Today, most of these impoundments have either dried completely, are only

periodically flooded, or contain only a fraction of their original volume as indicated by the prominent wave-cut terraces that ring the Honey Lake and other basins.

Geomorphological conditions and soil development are consistent throughout the region. Low-lying areas that formed the floor of ancient lakes and extant playas consist of fine-grained alluvial sediments and clays containing high concentrations of alkaline salts, heavy metals, and other evaporates (Mifflin and Wheat 1979; Smith and Street-Perrott 1983). Often bordering the leeward side of these playas are Holocene dune fields that formed when beach and alluvial sand was exposed and redeposited by aeolian processes following the desiccation of the lakes. At higher elevations on the valley piedmont is more course-grained Quaternary alluvium that blankets most of the basins to a depth of several hundred meters or more. Finally, steeper slopes contain increasingly massive accumulations of alluvial and then colluvial debris that form broad, often coalescing bajadas along the mountain fronts.

The current climate of the Honey Lake Basin and regions to the south is regulated by many factors, including elevation and the influence of numerous mountain ranges that produce rain shadows of varying intensity. In general, climatic conditions throughout the area are characterized by warm, dry summers and cold, wet winters, with the lowest temperatures of the year occurring around the winter solstice when cold air becomes trapped in the basins and daily temperatures fluctuate little.

Topographic gradients in temperature and precipitation exert a strong influence on the distribution of plant and animal species in this part of the project right-of-way. At low elevations in the Honey Lake and other valley bottoms is a shadscale scrub community (Billings 1951; Cronquist et al. 1972). Woody shrubs characteristic of this zone include shadscale (*Atriplex confertifolia*), saltbrush (*Atriplex* spp.), greasewood (*Sarcobatus* spp.), spiny hopsage (*Grayia spinosa*), Nevada ephedra (*Ephedra nevadensis*), rabbitbrush, and big sagebrush. Important seed-bearing grasses and weedy annuals in the shadscale and other lowland communities are ricegrass (*Oryzopsis* spp.), Great Basin wild rye, wheatgrass, needlegrass (*Achnatherum* spp.), blazing star (*Mentzelia albicaulis*), tansy mustard (*Descurainia* spp.), inkweed (*Suaeda depressa*), and several members of the Asteraceae family. A second lowland habitat of importance along the Susan River and other seasonally flooded areas of the Honey Lake Basin is a Great Basin wetland. Emergent and other vegetation distinguishing the habitat include bulrush, cattail, common reed, rushes, sedges, willow, alkali arrow grass (*Triglochin debilis*), spike-rush (*Eleocharis rostellata*), ditch grass (*Ruppia* spp.), alkali sacaton (*Sporobolus airoides*), saltgrass (*Distichlis spicata*), yerba mansa (*Anemopsis californica*), and brodiaea (*Brodiaea spp*).

At higher elevations in the mountains is a fairly typical sagebrush community composed of woody shrubs (e.g., sagebrush, bitterbrush, rabbitbrush) and a variable mix of perennial grasses and herbaceous annuals. Where temperatures are sufficiently cool and moisture adequate, there are open stands of Utah juniper (*Juniperus osteosperma*) that continue to the crest of the most low-elevation mountain ranges. Finally, along the eastern slope of the Sierra Nevada Range are a series of montane coniferous forests (Billings 1951) that extend down nearly to the floor of the Honey Lake Basin. Trees characteristic of these environments include ponderosa, Jeffrey and lodgepole pine, Douglas fir and red fir (*Abies magnifica*), and, at lower elevations in the Diamond Mountains, California black oak (*Quercus kelloggii*).

Various large and small mammals, resident and migratory birds, and reptiles frequent the Honey Lake Basin. Mule deer and pronghorn are presently the largest vertebrates of significance, with mountain sheep and possibly bison present but never as abundant as in the past. Small mammals include, among others, jackrabbit, cottontail, and a wide array of squirrels, pocket gophers, and rodents such as kangaroo rats and mice (*Dipodomys* spp. and *Microdipodops* spp.), woodrats (*Neotoma* spp.), and pocket mice (*Perognathus* spp.). Apart from assorted foxes and mustelids, coyote and bobcat are the major predators, joined in the Sierra Nevada high country by mountain lions, black bears (*Ursus americanus*), and ringtails (*Bassariscus astutus*). Resident and migratory waterfowl of the same species found elsewhere within the project vicinity frequent the few remaining wetlands and would have been substantially more abundant in the past. Other birds include a variety of native gallinaceous fowl and more numerous raptors and passerine species. Cold-blooded vertebrates of significance in the aboriginal diet included various native fish of the Susan River (e.g., sucker, trout) and the Pyramid Lake/Truckee watershed (e.g., Cui-ui [*Chasmistes cujus*], Tahoe sucker [*Catostomus tahoensis*], and trout [*Salmo spp.i*]). Amphibians and reptiles are represented by numerous species, and invertebrates of subsistence value were represented by one or more species of freshwater mussels.

Long Valley Region

The Long Valley region is situated east of the Sierra Nevada Range at an elevation of 4,500 feet amsl. Long Valley is a north-south trending valley beginning at its northern extreme near the town of Doyle, the center of residential and commercial development for the area. The water table in the area appears to be relatively shallow, as evidenced by marshy pastures. Areas surrounding US 395 are characterized by a sagebrush scrub community. The region's natural environment has been altered by a number of historic period activities, including farming, ranching, mining, and transportation. Much of the valley in the project vicinity surrounding US 395 is planted with alfalfa with the remaining area being used for cattle grazing.

The Long Valley region lies in the rain shadow of the Sierra Nevada Range and experiences a continental climate characterized by hot, dry summers and cold winters. Most regional precipitation occurs as winter rain or snow, but brief late-afternoon thunderstorms are not uncommon during the summer. Long Valley Creek is the principal waterway coursing through the project right-of-way, roughly paralleling US 395 and flowing north into Honey Lake. Numerous perennial and seasonal creeks flow into Long Valley Creek from the surrounding mountain ranges. According to the U.S. Department of Agriculture (1996), annual precipitation near Doyle averaged 27.6 centimeters between 1948 and 1995. Regional temperatures ranged from below freezing to more than 100 degrees Fahrenheit, with daily minimum and maximum temperatures at Doyle (years 1961 to 1990) ranging from 34.5 degrees Fahrenheit to 64.6 degrees Fahrenheit (U.S. Department of Agriculture 1996).

The region is characterized by complex local geology. Long Valley is bounded by three upland bedrock formations. The western boundaries at the southern end of Long Valley consist of the Verdi and Bald Mountain Ranges and part of the granitic Sierra Nevada Range, which also include pre-Tertiary metamorphic formations. Volcanic rocks mostly composed of andesite are of Tertiary age and lie above the bedrock complex. The Bald Mountain Range terminates near Beckwourth Pass, north of which lies the Diamond Mountain Range. Small streams of the Bald and Diamond Mountain Ranges flow east and

provide the sources for Long Valley Creek. The Diamond Mountains are a continuation of the Sierra Nevada Range formed by granitic plutons related to the Sierran uplift.

Long Valley is bounded on the east by the Fort Sage Mountains, which were also formed by an uplifted granitic pluton. The Mesozoic rocks of the Sierra Nevada and associated ranges are overlain by middle and late Cenozoic continental volcanic and sedimentary rocks, called "roof pendants," that have eroded onto the Sierran slopes (Elston 1979:7). These metamorphic formations are interdigitated with Sierran granitics and appear along the western slopes of the Fort Sage Mountains. These older deposits are incorporated into sediments, knolls, and low-lying ridges in some places at the western base of the mountains on the eastern terraces above Long Valley Creek. Metamorphic formations include a variety of silicate rocks generically described as chert, jasper, chalcedony, and agate, along with coarser grained metavolcanic rocks. The silicates predominantly occur as cobbles and small boulders less than 20 centimeters in diameter. Quartz crystal is also found in selected locations and deposits in the area.

Soils within much of Long Valley result from the weathering and erosion of local granitic rocks in the Fort Sage Mountains and foothills. Degradation of the mountains has also exposed knolls and small hills at their base. These foothill formations are made up of more durable underlying rock types. Less resistant locations have been eroded, forming swales and terraces of colluvial sands primarily derived from erosion of upland granitics. The more resistant knolls, ridges, and hills are covered with much shallower soils. Granitic outcrops occur on these prominences, as well as a mixture of redeposited volcanic and metasedimentary rocks. This mixture is particularly prominent on the south-facing slopes of these knolls and small ridges. Prevailing south and southwesterly winds have eroded soils on the southern slopes, exposing these rocks. Aeolian deposits have accumulated on the north-facing slopes and adjacent swales, contributing to the depth of the soils on those terraces and swales. The relatively deep aeolian and colluvial soil deposition on swales and terraces has important implications for the nature of archaeological materials on those terraces. Soil deposits are generally devoid of naturally deposited large rocks and cobbles. When such materials are found in archaeological deposits on the terraces, they are probably the result of human transport.

Long Valley vegetation is typical of flora in the Great Basin at this elevation (approximately 4,500 feet amsl) and latitude. The region is just below the transition zone between sagebrush prairie and the piñon-juniper community and is typical of the low sage, sagebrush, bitterbrush, and perennial grassland habitats. These plant communities are dominated by sagebrush with rabbitbrush, Nevada ephedra, and antelope bitterbrush. The grassland communities include but are not limited to bluebunch wheatgrass (*Agropyron spicatum*), Idaho fescue (*Festuca idahoensis*), Mountain brome (*Bromus marginatus*), Indian ricegrass (*Oryzopsis hymenoides*), and needlebrush. Stands of willow trees are abundant in pockets adjacent to Long Valley Creek, and western junipers are scattered throughout the project vicinity. Western junipers are, however, more abundant at slightly higher elevations.

Wildlife in the region includes pronghorn, mule deer, and small mammals such as chipmunk (*Eutamias* spp.), antelope ground squirrel (*Ammospermophilus leucurus*), jackrabbit, cottontail, and coyote (Offermann 1996:5-6). A variety of bird species also inhabit the area, including sage grouse; mourning dove; quail (*Callipepla Californica*); red-tailed hawk (*Buteo jamaicensis*); and other raptors, crows, and

magpies (Corvidae), with waterfowl (*Anseriformes*) present near Honey Lake. The common fish historically found in Long Valley Creek was the Lahontan sucker (*Pantosteus lahontan*).

5.5.1.2 Cultural Resources Summary

On May 11, 2020, Stantec requested that NEIC conduct a search of the California Historical Resources Information System. The records search included a 0.25-mile buffer around the APE. The search encompassed 180 miles extending through Modoc, Lassen, and Sierra Counties from New Pine Creek, California in the north to Bordertown, Nevada in the south. On May 19, 2020, the NEIC provided the existing data (records and shapefiles) for cultural resources investigations within 0.25-mile of the APE (I.C. File No. D20-81).

A total of 586 cultural resource have been recorded within 0.25-mile of the APE. Of these, 259 resources are located within the APE, and 327 resources have been recorded within 0.25-mile of the APE (Table 5.5-1). Of these, 259 resources are located within the APE, and 327 resources have been recorded within 0.25-mile of the APE. The *Cultural Resources Technical Report* (Appendix D) includes more details regarding previously recorded sites within each county.

Table 5.5-1: Previously Recorded Resources within Each County

	Lassen County	Modoc County	Sierra County	Plumas County	Total
Within 0.25 Mile of APE	193	113	20	1	327
Within the APE	150	99	10	0	259
Total	343	212	30	1	586

Note:
APE = Area of Potential Effects

5.5.1.3 Cultural Resources Survey Boundaries

The project APE for archaeology encompasses the extent of all proposed ground-disturbing activities along the fiber optic utility line and underground vault locations proposed as part of the project and is equivalent to the right-of-way. The APE has been approved by BLM. The horizontal APE varies in width but averages 200 feet across and is centered on US 395 for most of its length, except where it departs US 395 to follow Lassen County Road A3. In certain areas, for instance in the City of Alturas, the right-of-way contracts to a width of 60 feet; in other areas, such as at Hallelujah Junction, it expands to a width of 600 feet. The right-of-way extents serve as the boundary within which Zayo would conduct all project construction and staging activities.

In general, the vertical APE would include open trench installation, which would require excavation of a trench measuring up to 12 inches wide and 36 inches deep below the existing ground surface. The applicant proposes HDD to install conduit beneath paved roadways, drainages, and other environmentally sensitive areas identified during the NEPA environmental review process. Vaults would be installed at the starting and ending points between HDD segments and at service junctions. Each of

the vaults would measure 36 inches wide and 48 inches long, and the bottom of the vault would be set at least 36 inches below the existing ground surface. Table 5.5-2 outlines land ownership by entity for the APE.

Table 5.5-2: Land Ownership Underlying the Area of Potential Effects

Ownership	Acres of Area of Potential Effects
Bureau of Indian Affairs	166.54
Bureau of Land Management	1661.50
U.S. Fish and Wildlife Service	86.11
California Department of Fish and Wildlife	104.12
State Lands	104.12
Undefined	3715.18
Hallelujah Junction Wildlife Area	173.89
U.S. Forest Service	0.78
Total	**6011.45**

Note:
"Undefined" includes land within Caltrans right-of-way or local roadways that is not within jurisdiction of federal/state resource agencies identified in the table.

Stantec conducted a Cultural Resources Inventory and Evaluation for the Project. Between June 1 and July 2, 2020, Stantec archaeologists conducted a pedestrian field survey of the APE. The California project segment would extend 193.9 miles across portions of Modoc, Lassen, and Sierra Counties. Stantec archaeologists were accompanied by Pit River tribal representatives when surveying traditional tribal territories of the Pit River Tribe.

The Area of Direct Impact (ADI) for the project would encompass all areas of direct ground disturbance associated with construction, including all areas that would be subject to plowing and furrowing, trench installation, vault installation, and directional boring. The horizontal extents of the ADI are expected to average 6 to 18 inches across for plowing and furrowing and trench installation. The vertical ADI for plowing, trenching, and vault excavations would average 42 inches, though deeper excavations would be required for directional boring to bypass sensitive areas or paved roads. Temporary staging areas would not require grading, grubbing, or clearing and would not be considered part of the ADI, though they would be confined to the right-of-way boundaries.

The entire APE was surveyed during these efforts. All sites located within the APE were recorded or updated, however, preliminary evaluations were only applied to sites which intersect the ADI.

Based on background research and pedestrian survey efforts, a total of 248 sites are located within the APE. Of these sites,197 would be avoided by the project, have been determined not eligible or recommended not eligible, and 51 would require additional testing or analysis (Table 5.5-3).

Table 5.5-3: Total Survey Site Counts and Recommendations

Property	All	Avoid/Recommend/Determined Not Eligible	Eligible/Testing or Additional Analysis
Total	248	197	51

5.5.1.4 Buried Site Sensitivity

As part of the cultural resource inventory, a desktop buried site sensitivity analysis was developed to describe the relative likelihood of a paleosol with the potential to contain archaeological material to occur in the proposed project area. Using systems theory as a guiding framework, this study assumes the interrelatedness of diverse ecological and cultural factors to analyze patterns of geology, hydrology, climate, sedimentology and anthropogenic land use, and to identify the potential for buried sites within the project area. Digital spatial data for geologic units and soils data were available for the entire project area and were used as base layers for the sensitivity model. This foundation was then modified by subsequent data related to paleoclimate, hydrology, historical map imagery, site location data, as well as historical and modern anthropogenic land use patterns. Using the results of the model, areas of the project were classified as containing either no, low, medium, or high sensitivity for containing paleosols (buried soil horizon) that may contain intact buried archaeological resources.

The geology and soils that are present in the project APE generally date to the Pleistocene and Holocene and are primarily associated with loess, alluvial, and lake deposits. These data suggest that the area is associated with active landscapes affected by short- and long-term episodes of deposition. These conditions across the project APE in combination with its generally arid climate do not make it conducive to long-term permanent settlement.

The regional archaeological and ethnographic record indicates that the area was typically inhabited by mobile populations that occupied areas located at or near the intersection of watercourses and resources (e.g., plants and animals). Based on the geology, soil types, and the known distribution of archaeological and ethnographic sites, the project APE generally exhibits a low to moderate sensitivity for the presence of buried archaeological sites or other cultural material. However, the areas along the margins of existing lakes (e.g., Lake Madeline and Honey Lake) and former Pleistocene lakes (e.g., Lake Lahontan) have a high sensitivity for the presence of buried archaeological sites or other cultural material because of their age and proximity to environments containing resources (e.g., water, plants, and animals) that were attractive to human occupation. Regardless, any sites in these areas would likely be associated with mobile populations and would represent temporary use of the area.

In summary, the overall sensitivity of the proposed project APE for the presence of buried archaeological sites is low to moderate, with any buried sites not likely occurring at a depth greater than 100 centimeters because of the types of soils across the APE.

5.5.2 Regulatory Setting

5.5.2.1 Federal

National Environmental Policy Act

Encroachment onto federal lands would require discretionary authorization from the respective administering agencies. These encroachment authorizations would likely be in the form of "special use permits." BLM is the NEPA lead agency for the project, with the Bureau of Indian Affairs (BIA) and USFWS acting as NEPA cooperating agencies.

NEPA (40 CFR 1500-508) requires that federal projects take into account effects on historic and cultural resources. NEPA Section 1500.1 states the following:

> *(a) The National Environmental Policy Act (NEPA) is our basic national charter for protection of the environment. It establishes policy, sets goals (section 101), and provides means (section 102) for carrying out the policy. Section 102(2) contains "action-forcing" provisions to make sure that federal agencies act according to the letter and spirit of the Act. The regulations that follow implement section 102(2). Their purpose is to tell federal agencies what they must do to comply with the procedures and achieve the goals of the Act. The President, the federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive requirements of section 101.*
>
> *(b) NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.*
>
> *(c) Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork--even excellent paperwork--but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose.*

Following NEPA Section 1500.2:

> *Federal agencies shall to the fullest extent possible:*
>
> *(a) Interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in the Act and in these regulations.*
>
> *(b) Implement procedures to make the NEPA process more useful to decision makers and the public; to reduce paperwork and the accumulation of extraneous background*

> *data; and to emphasize real environmental issues and alternatives. Environmental impact statements shall be concise, clear, and to the point, and shall be supported by evidence that agencies have made the necessary environmental analyses.*
>
> *(c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.*
>
> *(d) Encourage and facilitate public involvement in decisions which affect the quality of the human environment.*
>
> *(e) Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.*
>
> *(f) Use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.*

National Historic Preservation Act

The project will cross lands managed by federal agencies. The applicant must obtain permits to construct and operate the project through lands managed by these agencies, and the issuance permits are considered federal undertakings subject to the provisions of Section 106 (54 USC Section 306108) of the National Historic Preservation Act (NHPA) and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800). Section 106 of the NHPA requires federal agencies to consider the effects of their proposed actions (undertakings) on historic properties and provides the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. Because the project would cross lands under the direct jurisdiction of several federal land-managing agencies, these agencies must be consulted and must comply with Section 106 requirements. The federal lead agency and cooperating agencies would require that Zayo provides the information that they deem necessary to meet their Section 106 obligations.

Regulations at 36 CFR Part 800 provide a process for satisfying the requirements of Section 106 that involves identifying historic properties, determining the effects of an undertaking on historic properties, and resolving adverse effects on historic properties. These activities would occur within a consultation process involving the federal agency or agencies, the State Historic Preservation Officer (SHPO), and other participants as defined at 36 CFR Part 800.2. BLM is identified as the lead agency for Section 106 compliance for the project.

National Register of Historic Places

Regulations listed in 36 CFR Part 800.16 define a "historic property" as any prehistoric or historic period district, site, building, structure, or object listed in or eligible for listing in the NRHP. Cultural resources that

cannot be avoided by a project must be evaluated according to NRHP criteria listed under 36 CFR Part 60.4, which states the following:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the 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) that have yielded, or may be likely to yield, information important in prehistory or history.

A cultural resource that meets one or more of the above criteria and retains integrity sufficient to convey its significance may be determined to be eligible for listing in the NRHP.

A property of traditional or Native American religious and cultural importance, called a Traditional Cultural Property (TCP) per Section 101(d)(6)(A) of the NHPA, can also be evaluated for eligibility and listed in the NRHP. The TCP must be a physical property or place, must retain integrity, and must meet one of the four basic NRHP criteria per 36 CFR Part 60.4. Such properties are usually found to be NRHP-eligible under 36 CFR 60.4(a) or for their association with important events that have made contributions to the broad patterns of local or regional Native American history. The identification and evaluation of TCPs involves obtaining information from contemporary tribes regarding traditional values that are represented by cultural resources.

Consultation is a significant part of the Section 106 process, and regulations under 36 CFR Part 800.2(c)(2) outline the steps that federal lead agencies must take in consulting with federally recognized tribes on tribal and other lands. Non-federally recognized tribes with concerns about an undertaking's effects on historic properties are often invited to participate as "additional consulting parties" under 36 CFR Part 800.2(c)(5).

5.5.2.2 State

California Environmental Quality Act

For projects financed or approved by public agencies, CEQA requires that the effects of a project on historical resources be assessed. "Historical resources" are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance.

Cultural Resources

Under CEQA Guidelines, an impact is considered significant if a project will have an effect that may change the significance of a resource (PRC Section 21084.1). Actions that would change the significance of a historical resource include demolition, replacement, substantial alteration and/or relocation of historical properties. Before the significance of impacts can be determined and mitigation measures developed, the significance of cultural resources must be determined.

A basis for defining the significance of historical resources under CEQA may be found in PRC 5024.1, Title 14 CCR Section 4850.3. CRHR was established "to identify the state's historical resources and indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Historical resources may be listed in the CRHR if they meet the eligibility criteria for listing in the register as defined at PRC 5024.1, Title 14 CCR Section 4850.3. According to CEQA Guidelines Section 15064.5(a)(3), "a resource shall be considered by the lead agency to be 'historically significant' if the resource has integrity and meets at least one of the criteria for listing in the California Register of Historic Resources."

Integrity describes the degree to which a resource's defining characteristics persist, and it is assessed in terms of retention of location, design, setting, materials, workmanship, feeling, and association. To maintain integrity, a resource must possess at least some of these aspects. A historical resource may have lost sufficient integrity to be eligible for listing in the NRHP and yet still be eligible for listing on the CRHR. A resource may have lost its historic character and yet still be eligible for listing on the CRHR if it has the potential to yield significant scientific or historical information or specific data.

A project that may cause a substantial adverse change to the significance of a historical resource is considered to have a significant adverse impact on the environment (CEQA Guidelines Section 15064.5[4][b]). A substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5[4][b][1]).

California Register of Historical Resources

CEQA requires lead agencies to consider the potential impacts of a project on historical resources. "Historical resources" may include but are not limited to any object, building, structure, site, area, place, record, or manuscript that is considered historically or archaeologically significant (PRC Section 5020.1). Generally, a resource would be considered historically significant if it is listed or is eligible for listing in the CRHR. Per PRC Section 5024.1, a resource may be listed as a historical resource in the CRHR if it meets any of the following criteria:

(1) It is associated with events that have made a contribution to the broad patterns of California history;

(2) It is associated with the lives of persons important in our past;

(3) It embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important individual or possesses high artistic values; or

(4) The resource has yielded, or may be likely to yield, important information in prehistory or history.

These criteria mirror the NRHP criteria found under 36 CFR Part 60.4. The CRHR was created to identify important cultural resources and to indicate what properties would be subject to protection from substantial adverse change, to the extent prudent and feasible. Certain resources are automatically included in the CRHR, including California properties listed or determined to be eligible for listing in the NRHP, California Historical Landmarks numbers 770 and above, and California Points of Historical Interest.

Per CEQA Guidelines Section 15064.5[b], project activities may have a significant impact on the environment if they would cause a substantial adverse change in the significance of a historical resource. Activities that could result in a substantial adverse change include demolition, replacement, substantial alteration, and/or relocation of the resource. Steps that must be implemented to comply with CEQA Guidelines include the identification of cultural resources that may be impacted by a project; the evaluation of cultural resources that cannot be avoided by a project based on established thresholds of historical, architectural, archaeological, cultural, or scientific importance; the evaluation of the effects of a project on historical resources; and the development and implementation of measures to mitigate the effects of the project on historical resources and unique archaeological resources as defined under PRC Section 21083.2.

The State Office of Historic Preservation has broad authority under federal and state law regarding the implementation of historic preservation programs within California. The SHPO comments on effect determinations and the eligibility of cultural resources for listing in the NRHP and CRHR.

The California Governor's Office of Planning and Research offers guidance on procedures to identify historical resources, evaluate their importance and potential for listing in the CRHR, and estimate potential impacts on historical resources. The guidance strongly recommends that Native American concerns and the concerns of other interested parties be solicited as part of the cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

5.5.2.3 Local

CPUC has exclusive discretionary authority over this project's siting, design, and construction. However, a summary of local standards or ordinances that describe the visual character of the project area is provided for informational purposes and to assist with the CEQA review process.

Sierra County General Plan

Cultural Resources Goal: Identify and protect the cultural, historical and archaeological resources of Sierra County recognizing that the historic structures, archaeological sites, and cultural resources centered upon the County's agricultural, mineral and forest setting is the link to the County's past and should continue to define the future.

Cultural Resources

Since all of the County's cultural resources have not been (and may never be) located, it is important to recognize areas with potential sensitivity for cultural resources.

Modoc County General Plan

Historic and Cultural Resources: Prehistoric and historic archaeological sites of the Native American Modoc and Achumawi are central to the understanding and interpretation of the Native American cultural heritage of Modoc County. Early settler-Indian battle sites, many of which are registered as State Historical landmarks, give testimony to the historical interactions and conflicts between Native American culture and Euro-American culture.

Lassen County General Plan

Lassen County's General Plan does not discuss cultural resources.

5.5.3 Impact Questions

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

5.5.4 Impact Analysis

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less Than Significant Impact. As described above, most of the cultural resources that have been identified in the project survey area are recommended or determined not eligible on the NRHP or CRHR, and therefore, do not meet the criteria to be considered a historical resource.

Construction work areas would avoid 197 sites entirely. Of these 197 sites, 14 have been determined or recommended eligible for listing on the NRHP and CRHR and 12 have been recommended or determined not eligible for listing on the NRHP and CRHR. To further protect these resources, APM CR-5 and CR-6, which requires archaeological monitoring, and APM CR-1, which requires flagging, fencing, monitoring and/or signage to avoid accidental encroachment, would be implemented. Therefore, no impacts on these known historical resources or potential historical resources would occur.

A potentially significant impact would occur if an eligible cultural resource is located within the ADI. As described above, the applicant would avoid known cultural resources to the greatest extent possible with implementation of APM CR-1. Additional avoidance measures include APM-CR-2, which requires the applicant to reroute the alignment in or near the US 395 road shoulder in areas of fill or prior disturbance or directionally bore and place the fiber optic line conduit a minimum of 2 meters below the known maximum depth of archaeological sites.

However, where resources cannot be avoided per APM CR-1 and APM CR-2, the applicant would implement APM CR-4 and APM CR-5 which includes formal evaluation, archeological test excavations and data recovery within the ADI. Archeological testing and data recovery would be performed in consultation with tribal representatives.

In the event that additional historical resources are discovered during construction activities, APMs CR-3, 5, CR-7, and CR-8 would reduce the potential damage or destruction to historical resources from the inadvertent discovery because the applicant would train workers on procedures for unanticipated discoveries, properly treat human remains if discovered, establish work exclusion zones around new discoveries until an appropriate action can be taken to evaluate and manage the new resource in consultation with CPUC staff, and ensure that a qualified archaeological monitor is present during ground-disturbing construction in areas with high or moderate sensitivity for buried resources. Therefore, impacts would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant Impact. The majority of the project alignment would occur within the existing roadway right-of-way and has been previously disturbed through construction of US 395 and other local roadways; however, the potential for buried archaeological sites still exists based on cultural sensitivity of the region. As described in Section 5.5.1, Environmental Setting, the regional archaeological and ethnographic record indicates that the area was typically inhabited by mobile populations that occupied areas located at or near the intersection of watercourses and resources (e.g., plants and animals). However, the overall sensitivity of the proposed project APE for the presence of buried archaeological sites is low to moderate, with any buried sites not likely occurring at a depth greater than 100 centimeters because of the types of soils across the APE.

Stantec's intensive pedestrian field survey of the APE resulted in the recordation or update of the 248 sites located within the APE. Of these sites,197 were determined to be avoidable through project design or have been determined or recommended not eligible for the CRHR or the NRHP; the remaining 51 sites would require additional testing or analysis to determine eligibility as summarized in APM CR-5. Such sites include lithic scatters with tools or diagnostic artifacts, prehistoric habitational debris, and known ethnographic sites, as further detailed in Appendix D.

A potential impact would occur if an eligible cultural resource is located within the ADI. The applicant would avoid known cultural resources to the greatest extent possible with APM CUL-1. If necessary, additional avoidance measures would be implemented (APM CR-2) to either reroute the alignment in or

near the US 395 road shoulder in areas of fill or prior disturbance or directionally bore and place the fiber optic line conduit under archaeological sites to a minimum depth of 2 meters or 1 meter below known maximum depth of cultural resources. However, where avoidance measures are not feasible, archeological test excavations may be required to obtain information sufficient to evaluate the eligibility of sites for inclusion in the NRHP and the CRHR (APM CR-4 and APM CR-5).

Project construction would create subsurface disturbances that could result in damage to or destruction of previously undiscovered subsurface archaeological deposits. Although all the areas of construction and access roads have been subject to the archaeological survey, the potential remains for previously unidentified archaeological remains to be discovered below the visible ground surface. As discussed above, in the event that archaeological resources are discovered during construction, implementation of APM CR-5, CR-7, and CR-8 would ensure that potential impacts to archaeological resources remain less than significant. As a result, with implementation of APM CR-1 to APM CR-8, the project would have a less-than-significant impact.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. The possibility exists that unmarked burials may be unearthed during proposed project construction. APM CR-8 outlines procedures for an inadvertent discovery of human remains during proposed project construction. The CPUC would consult with eligible tribes under PRC Section 21080.3.1 once the application is complete. Impacts on TCRs are addressed in Section 5.18, Tribal Cultural Resources, because, under AB 52, the CPUC must identify these resources during consultation. Any discovery of Native American human remains on Federal lands will be handled in accordance with the Native American Graves Repatriation Act (NAGPRA). Under NAGPRA (25 USC 3001) and implementing regulations 43 CFR Part 10, the federal landowner is responsible for the protection of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are discovered on federal lands.

Inadvertent discoveries on non-federally owned or managed lands would comply with California State law governing the treatment of Native American human remains and associated funerary objects found on state or private lands including PRC, 5097.9-5097.991 and Health and Safety Code 7050.5. Per the Health and Safety Code, the County Coroner must be notified of the discovery of human remains. If the remains are determined to be Native American, the coroner will notify the NAHC, and follow the procedures outlined in the CEQA Guidelines Section 15064.5(e). With implementation of APM CR-8, the impact would remain less than significant.

5.5.5 Draft Environmental Measures

APM CR-1: Avoid and Minimize Impacts to Significant or Potentially Significant Cultural Resources.

Wherever feasible, the applicant shall avoid or minimize impacts to archaeological resources, regardless of its CRHR or NRHP eligibility status. This includes siting all ground-disturbing activities outside a buffer zone established around each recorded archaeological site within or immediately adjacent to the

alignment. Because many archaeological resources are made up of subsurface deposits, features, and artifacts, it may not be possible to recognize all potentially significant attributes of archaeological resources during construction activities. There is the potential for making unanticipated discoveries of previously unidentified remains at archaeological sites that could require efforts to reassess their CRHR or NRHP eligibility. Avoiding impacts or minimizing the area of an archaeological resource that could be affected during construction protects the resource and reduces the possibility that unanticipated discoveries would cause project delays. The applicant will avoid or minimize impacts to archaeological resources by redesign, reroute, and implementation of avoidance procedures (i.e., establishing environmentally sensitive areas), or other protective measures within or immediately adjacent to construction activities. Additionally, impacts will be avoided or minimized through the following measures prior to construction.

APM CR-2: Design Avoidance.

Where sites cannot be avoided, the proponent shall use directional bore and place the fiber optic line conduit under archaeological sites to a depth of at minimum 2 meters or 1 meter below known maximum depth of cultural resources.

APM CR-3: Conduct a Pre-Construction Worker Education Awareness Program.

The Worker Environmental Awareness Program (WEAP) will be provided for all proposed project personnel who have the potential to encounter and alter unique archaeological sites, historical resources, or historic properties, or properties that may be eligible for listing in the CRHR or NRHP. This includes construction supervisors as well as field construction personnel. No construction worker will be involved in ground-disturbing activities without having participated in the WEAP.

APM CR-4: Evaluate the Significance of All Cultural Resources That Cannot Be Avoided.

Archaeological resources, buildings, and structures that cannot be avoided and that have not been evaluated to determine their eligibility for listing in the CRHR will be evaluated to determine their historical significance. Evaluation studies shall be conducted and documented as per applicable laws, regulations, and guidelines and in accordance with professional standards. Evaluation of properties will take into account attributes of each property that could contribute to its historical significance. Evaluation procedures will be consistent with applicable laws, regulations, and guidelines and in accordance with professional standards as follows**APM CR-5: Implement Measures to Minimize Impacts to Significant Archaeological Sites.**

Prior to construction and during construction, the following measures will be implemented by the applicant to minimize unavoidable impacts to significant archaeological sites.

- To the extent practical, all activities shall minimize ground surface disturbance within the bounds of unique archaeological sites or historical resources.

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- Portions of significant archaeological sites, historical resources, or historic properties that can be avoided will be protected as environmentally sensitive areas and will remain undisturbed by construction activities.
- Monitoring by qualified professionals and/or Native Americans to ensure that impacts to sites are minimized will be carried out at each affected cultural resource for the period during which construction activities pose a potential threat to the site and for as long as there is the potential to encounter unanticipated cultural or human remains.
- Additional archaeological studies will be carried out at appropriate sites to ascertain if project facilities could be located on a portion of a site and cause the least amount of disturbance to significant cultural materials.
- If impacts to significant archaeological (NRHP- or CRHR-eligible) sites cannot be avoided, archaeological data recovery will be carried out in the portions of affected significant sites that will be impacted.
- A data recovery plan will be prepared, reviewed by the appropriate agencies, and then implemented to recover an adequate sample of cultural remains that can be used to address important research questions per CRHR Criterion 4 or NRHP Criterion D eligibility. Archaeological data recovery will involve scientific excavations; identification of recovered cultural and ecological remains; cataloging, scientific analysis, and interpretation of recovered materials; and preparation of a scientific technical report that describes the methods and results of the data recovery program.
- Reports of any excavations at archaeological sites will be filed with the appropriate Information Center of the California Historical Resources Information System.

APM CR-6: Implement measures to minimize impacts to significant buildings and structures. Prior to construction and during construction, the applicant will implement the following measures to minimize unavoidable impacts to significant buildings and structures.

- Locate proposed project facilities to minimize effects on significant buildings or structures.
- If impacts to significant buildings or structures cannot be avoided, document significant architectural and engineering attributes consistent with National Park Service Historic American Buildings Survey/Historic American Engineering Record documentation standards.
- File reports and other documentation with the National Park Service, if appropriate, and appropriate Information Center of the California Historical Resources Information System

APM CR-7: Prepare and Implement a Construction Monitoring and Unanticipated Cultural Resources Discovery Plan.

During construction, it is possible that previously unknown archaeological or other cultural resources or human remains could be discovered. Prior to construction, the applicant will prepare a Construction

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Monitoring and Unanticipated Cultural Resources Discovery Plan to be implemented if an unanticipated discovery is made. At a minimum the plan shall detail the following elements:

- Worker and supervisor training in the identification of cultural remains that could be found in the proposed project area
- Worker and supervisor response procedures to be followed in the event of an unanticipated discovery, including appropriate points of contact for professionals qualified to make decisions regarding the potential significance of any find
- Identification of persons authorized to stop or redirect work that could affect the discovery and their on-call contact information
- Provide for monitoring of construction activities in archaeologically sensitive areas
- Stipulate a minimum radius around any discovery within which work will be halted until the significance of the resource has been evaluated and mitigation implemented as appropriate
- Procedures for identifying and evaluating the historical significance of any find
- Procedures for consulting Native Americans in the process of identification and evaluation of significance of discoveries involving Native American cultural materials
- Procedures to be followed for the treatment of discovered human remains per current state law and protocol developed in consultation with Native Americans.

APM CR-8: Inadvertent Discovery of Human Remains.

Any human remains discovered during project activities in California will be protected in accordance with current state law, specifically Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill (AB) 2641. The provisions of the Native American Graves and Repatriation Act (NAGPRA) are applicable when Native American human remains are found on federal land (Bureau of Land Management land in California and Nevada). The discovery of human remains will be treated as defined in the Construction Monitoring and Unanticipated Cultural Resources Discovery Plan. Archaeological excavations at sites will not, if at all possible, inappropriately disturb or remove human remains. Native Americans will be consulted to develop a protocol to be followed if human remains are encountered during any project activity, as required by state and federal law. When human remains are discovered, work must cease around the find and the area will be flagged off to protect the discovery from disturbance (AB 2641 and NAGPRA). The discovery must be reported immediately to the County Coroner (Section 7050.5 of the Health and Safety Code). If the Coroner determines that the remains are Native American, the Coroner will notify the Native American Heritage Commission (NAHC), which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code [PRC]). The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the

remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641). NAGPRA also requires notification of the appropriate Native American group and certification by that group before the ground-disturbing activity is resumed.