- DRAFT -
Initial Study/Negative Declaration

COLDSTREAM CANYON WATERSHED RESTORATION PROJECT
DONNER MEMORIAL STATE PARK

April 2020

State of California
Department of Parks and Recreation
Sierra District
Tahoma, California

- DRAFT -
Initial Study/Negative Declaration

COLDSTREAM CANYON WATERSHED RESTORATION PROJECT
DONNER MEMORIAL STATE PARK

Prepared for

foriver
TRUCKEE RIVER WATERSHED COUNCIL

Truckee River Watershed Council
P.O. Box 8568
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Prepared by

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April 2020

Negative Declaration

Project: Coldstream Canyon Watershed Restoration Project

Lead Agency: California Department of Parks and Recreation -State Parks

Availability of Documents: The Draft Initial Study Negative Declaration is available for review at: California State Parks Internet Website: https://www.parks.ca.gov/?page_id=981

Project Description:
The Coldstream Canyon Watershed Restoration Project (project) is being proposed by the Truckee River Watershed Council (TRWC) in partnership with the CEQA lead agency, California Department of Parks and Recreation – State Parks (CDPR). The project would help restore hydrologic and ecosystem function to the Coldstream Canyon watershed, a 12.5 square-mile watershed near Truckee, California. The project focuses on restoration of three main landforms within the watershed: 1) improvements to CDPR roads, including at up to 21 drainage crossings to improve drainage and decrease water capture and erosion; 2) riparian and wetland habitat enhancement at two adjacent ponds (formerly gravel borrow pits); and 3) channel stabilization and floodplain restoration of a 0.75 mile long stretch of Cold Creek.

This Initial Study/Negative Declaration found that the proposed project and associated activities would have no significant or potentially significant adverse impact to the environment. CDPR Project Requirements apply to the construction phases of the project, which are temporary in nature. Temporary, less than significant adverse impacts are expected to air quality, biological resources, geology and soils, noise, traffic and other resources during creek and pond restoration, construction and during road improvement activities. Altogether, the project is expected to improve the long-term resilience and ecological function of the Coldstream Canyon watershed, which would be positive impacts for the environment and the public. These include long-term improvements to the hydrology, aquatic/riparian habitats, and water quality of Cold Creek, as well as landowner and public services access along Coldstream Road.

Contact: A copy of the Draft Initial Study/Negative Declaration is attached. Questions or comments regarding this Initial Study/Negative Declaration may be addressed to:

Nathan Shasha
California Department of Parks and Recreation
Email: Nathan.Shasha@parks.ca.gov
Mobile Phone: 530-318-4685

Pursuant to Section 21082.1 of the California Environmental Quality Act, California Department of Parks and Recreation (CDPR) has independently reviewed and analyzed the Initial Study and Draft Negative Declaration for the proposed project and fins that these documents reflect the independent judgment of CDPR. CDPR as lead agency, also confirms that the project requirements and avoidance measures detailed in these documents are feasible and will be implemented as stated in the Negative Declaration.

4/9/20

Matt Green Date
District Superintendent (Acting)

4-10-2020

Dan Shaw Date
Environmental Coordinator

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1.0 INTRODUCTION

This document is an Initial Study/Negative Declaration (IS/ND) prepared by Truckee River Watershed Council (TRWC), in partnership with California Department of Parks and Recreation (CDPR), for the Coldstream Canyon Watershed Restoration Project (project) in Coldstream Canyon near Truckee, California. The project focuses on restoration of three main landforms within the watershed: 1) improvements to CDPR roads, including at up to 21 drainage crossings to improve drainage and decrease water capture and erosion; 2) riparian and wetland habitat enhancement at two adjacent ponds (formerly gravel borrow pits); and 3) channel stabilization and floodplain restoration of a 0.75 mile long stretch of Cold Creek.

The document was prepared under the direction of the lead agency under the California Environmental Quality Act (CEQA), California Department of Parks and Recreation (CDPR), and in accordance with CEQA (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations).

1.1 CEQA and Purpose and Intention of this Initial Study

The purpose of this Initial Study is to determine whether project implementation would result in potentially significant or significant effects on the environment. In accordance with CEQA Guidelines, Section 15064, an Environmental Impact Report (EIR) must be prepared if an initial study indicates that the proposed project under review may have a potentially significant impact on the environment. A negative declaration may be prepared instead if the lead agency prepares a written statement describing the reasons why a proposed project would not have a significant effect on the environment, and, therefore, why it does not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a negative declaration shall be prepared for a project subject to CEQA when either:

a) The initial study shows there is no substantial evidence, in light of the whole record before the agency, that the proposed project may have a significant effect on the environment, or
b) The initial study identified potentially significant effects, but revisions in the project plans or proposals made by or agreed to by the applicant before the negative declaration is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and there is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment.

As summarized in Section 4.0, *Environmental Checklist*, this Initial Study determined that the proposed project, inclusive of all technical specifications in the design plans for the project and incorporating all CDPR Standard and Specific Project Requirements (see Section 3.6, *CDPR Standard Project Requirements*), would not have a significant effect on the environment, and therefore a negative declaration is proposed. Therefore, this document is an Initial Study/Negative Declaration (IS/ND).

CDPR as CEQA Lead Agency

CEQA requires that all state and local government agencies consider the environmental consequences of projects they propose to implement, or over which they have discretionary authority, before implementing or approving those projects. As specified in CEQA Guidelines

Section 15367, the public agency that has the principal responsibility for carrying out or approving a project is the lead agency for CEQA compliance. CDPR has principal responsibility for approving the proposed project and is therefore the CEQA lead agency for this IS/ND.

Basis of the Impact Analysis

The impact analysis of this IS/ Proposed ND (Section 4.0, *Environmental Checklist*) is based on the project as described in Section 3.0, *Project Description*. The project description presented is, in turn, based on nearly complete design plans for the road restoration work and for the ponds restoration work, and on preliminary design plans for the creek restoration work. Typicals for the work planned for each of the landforms (road, ponds and creek) are included in Appendix A, *Design Plan Maps and Typical*s. Select visuals from Appendix A are also included within Section 3.0, *Project Description* for easy reference. All design plans and typicals were prepared by the design contractor for the project (contracted by TRWC) Wildscape Engineering, Inc. (Wildscape).

In addition to an evaluation of environmental impacts of the project based on the specific details of the road and pond restoration work, this Initial Study contains a discussion of potential impacts associated with the creek restoration work based on the design description for that portion of the project. As the evaluation of environmental impacts included herein (Chapter 4.0, *Environmental Checklist*) is anticipated to sufficiently address reasonably foreseeable environment effects associated with all components of the project, this ND is anticipated to serve as the adequate CEQA document for the whole project (inclusive of the restoration planned for the roads, ponds and creek). In accordance with CEQA Guidelines, Section 15162 and 15163, a supplemental CEQA analysis (a supplement to this IS/ND) would be required under the following circumstances:

- Substantial changes in the project would result in new or worsened significant environmental impacts, or
- Substantial changes in the circumstances would result in new or worsened significant impacts, or
- New information of substantial importance shows that the project will have one or more significant effects not discussed previously, or an effect that will be substantially more severe than previously described.

A supplemental ND would be prepared by CDPR, with the same kind of notice and public review as this IS/ND, under one or more of the above circumstances. If a supplemental CEQA document is not needed, but there are minor technical changes or additions to the project that CDPR determines are necessary to analyze, then an addendum to this IS/ND could be prepared to satisfy CEQA. An addendum would not need to be circulated for public review but would require approval by CDPR's District Superintendent.

2.0 GENERAL PROJECT INFORMATION

Project Title: Coldstream Canyon Watershed Restoration Project

Lead Agency: California Department of Parks and Recreation
California State Parks – Sierra District
P.O. Box 266
7360 West Lake Boulevard
Tahoma, CA 96142

Contact Person: Nathan Shasha, Environmental Scientist
California Department of Parks and Recreation
(530) 523-3041
Nathan.Shasha@parks.ca.gov

Project Location: The project is located within Coldstream Canyon, a 12.5 square-mile watershed near Truckee, California. Coldstream Canyon is located to the south of Donner Lake and Donner Memorial State Park campground in unincorporated Placer County. The majority of land where project activities are planned is owned and managed by CDPR. A small portion of the proposed restoration falls within the 400-foot wide right-of-way owned by Union Pacific Railroad (UPR) around its main east/west railroad tracks, and a small portion falls within the corner of a parcel of land owned by Sierra Pacific Industries (SPI). Figure 1 shows the regional location of the proposed project. Figure 2 shows the project area.

Project Sponsor: Truckee River Watershed Council
P.O. Box 8568
Truckee, CA 96162
Contact: Project Manager, Eben Swain
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General Plan (CDPR): With the exception of a 0.6 acre section of the project area that is on private land (owned by Sierra Pacific Industries), the project is within the Donner Memorial State Park General Plan area (Planning Zone 3) and is consistent with the vision, purpose, goals and guidelines of the Donner Memorial State Park General Plan (CDPR 2003).

Placer County General Plan and Zoning: The entire project is located within area designated as Timberland in the Placer County General Plan (Placer County 2013), and all parcels within the project area are zoned by Placer County as Residential Forest (RF) or Forest (F) (Placer County 2018). Though the project is consistent with both the County General Plan and zoning designations, consistency with the County designations is not required for the majority of the project area that is CDPR land.

Figure 1. Project Vicinity

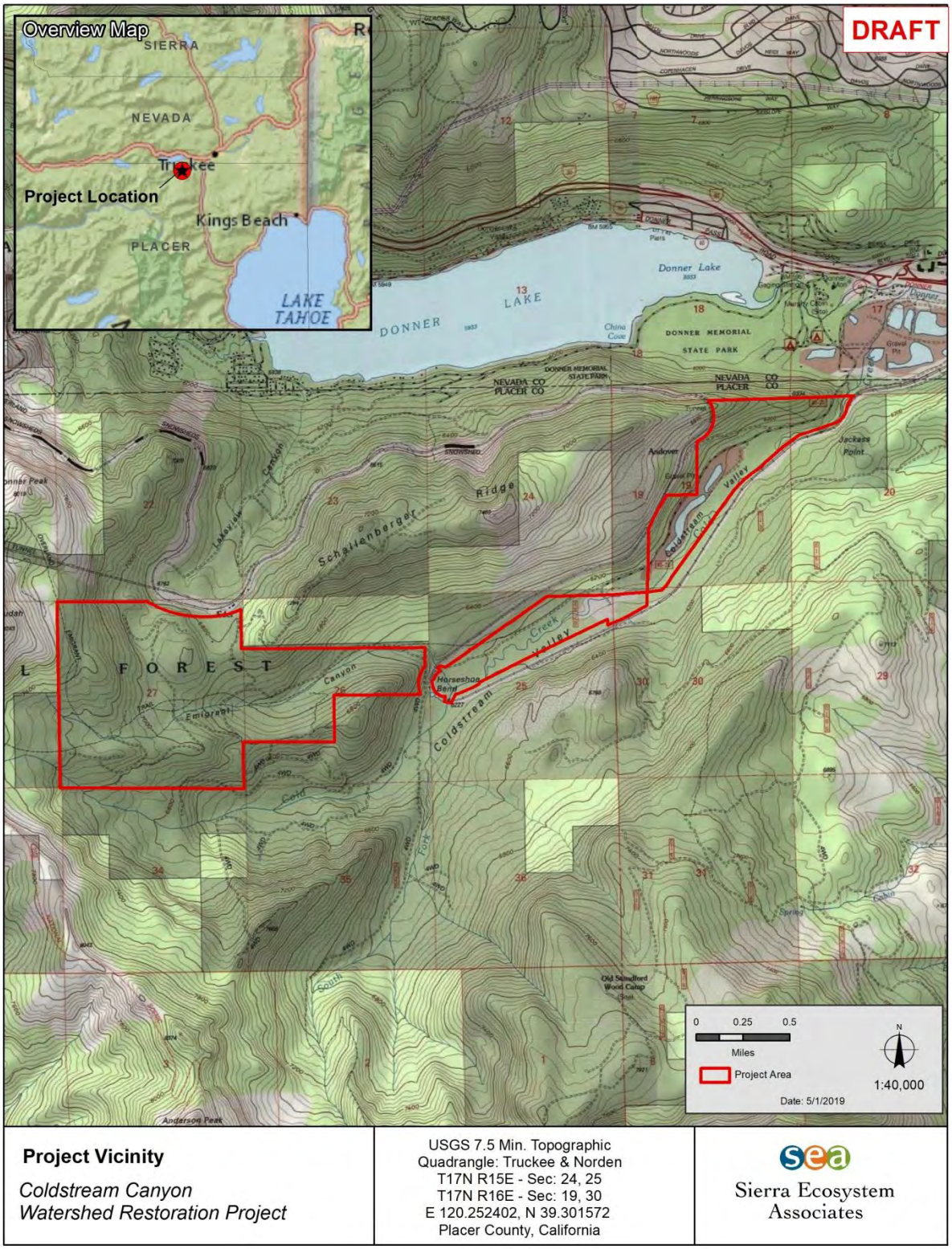


Figure 2. Project Area

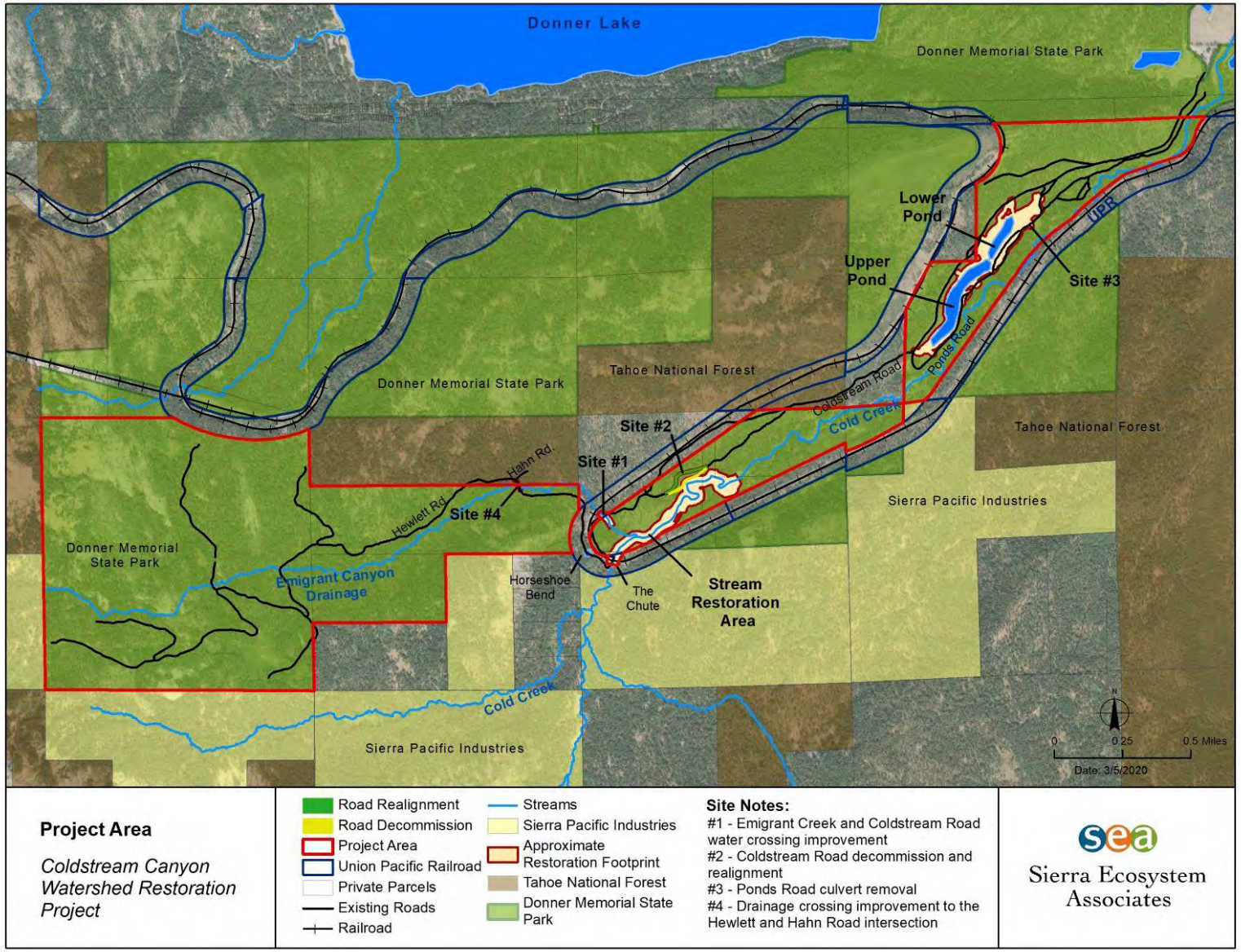


Figure 3. Restoration Area – West

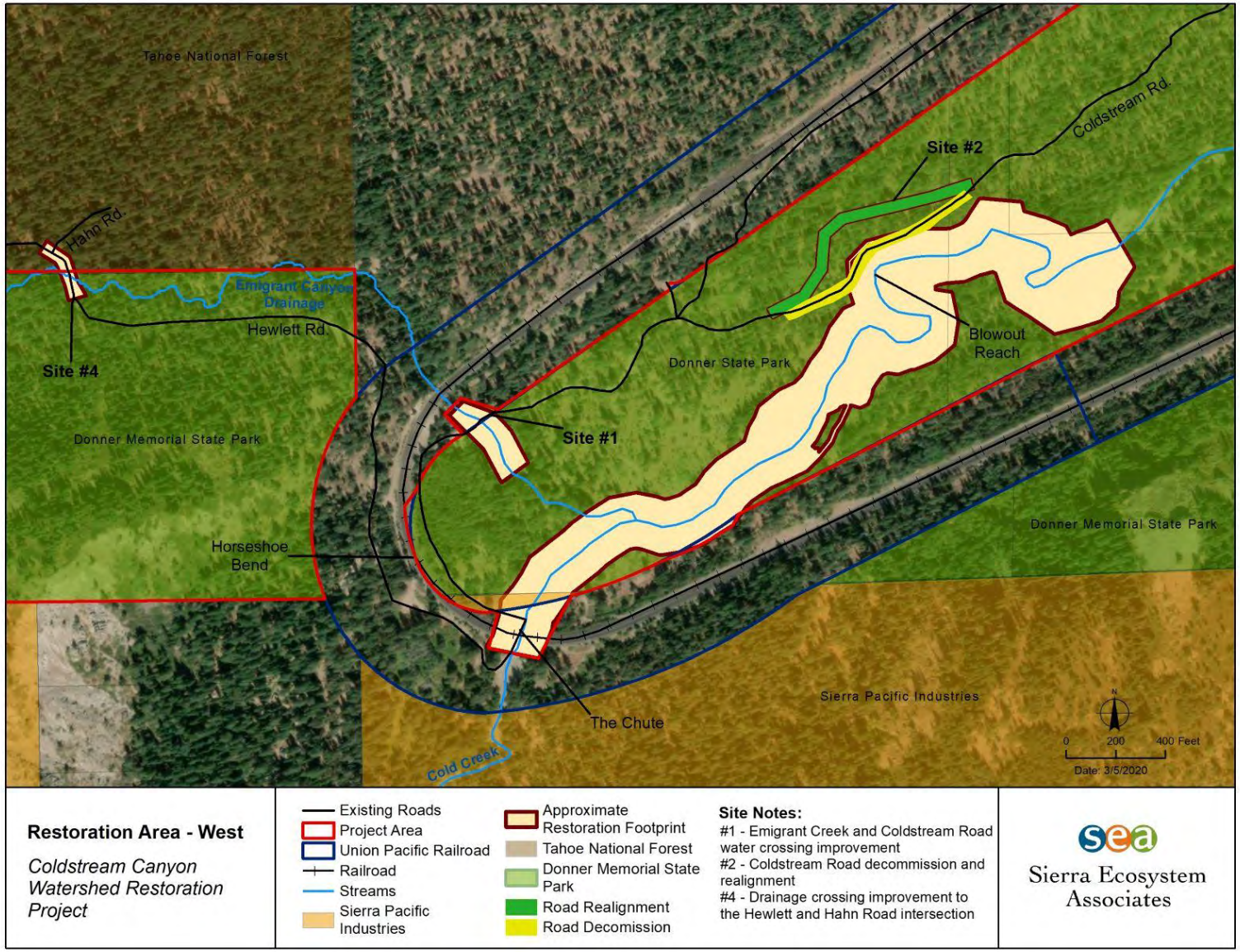
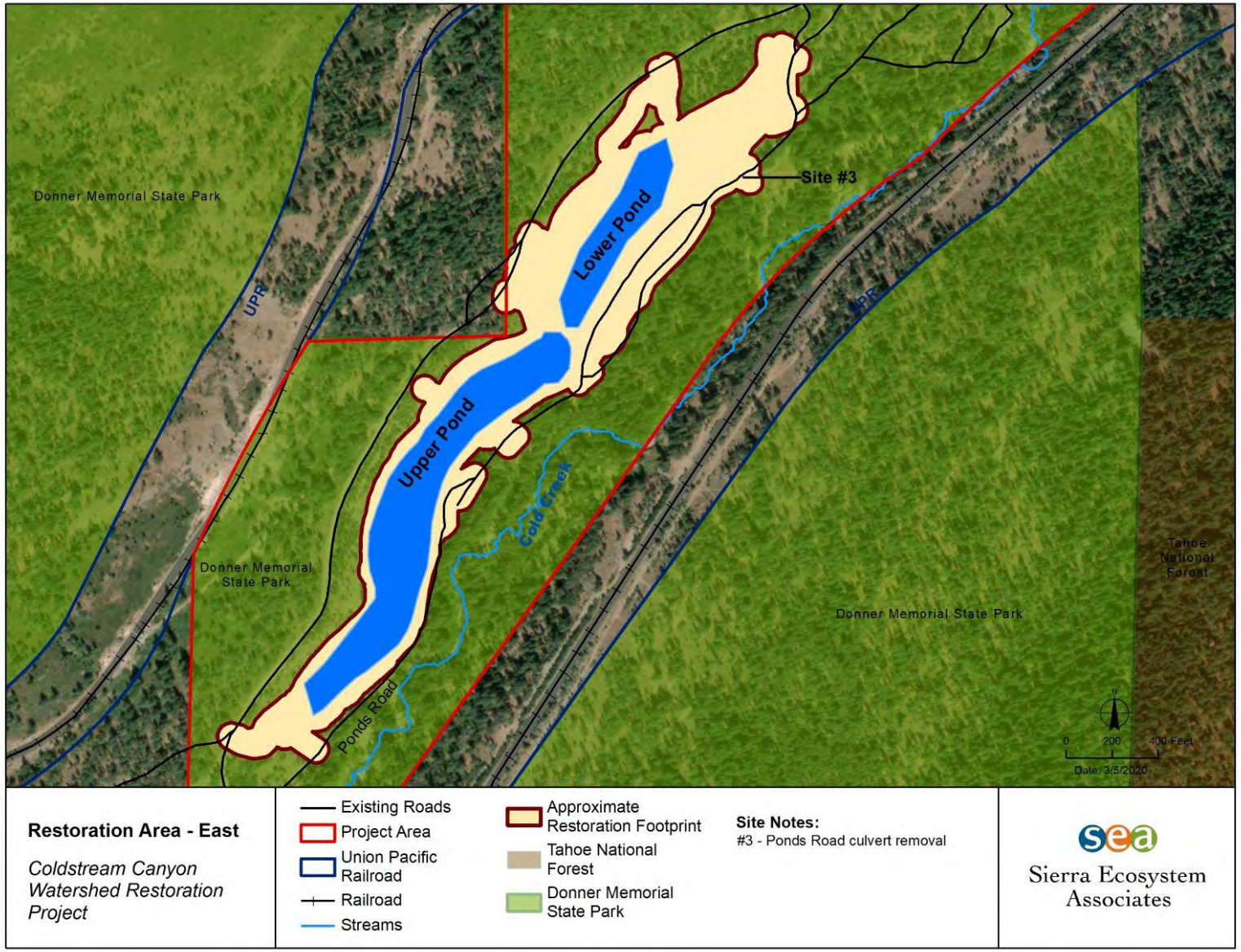


Figure 4. Restoration Area – East



3.0 PROJECT DESCRIPTION

3.1 Introduction

The Coldstream Canyon Watershed Restoration Project (project) is being proposed by the Truckee River Watershed Council (TRWC) in partnership with the CEQA lead agency, California Department of Parks and Recreation – State Parks (CDPR). The project would help restore hydrologic and ecosystem function to the Coldstream Canyon watershed, a 12.5 square-mile watershed near Truckee, California. The project focuses on restoration of three main landforms within the watershed: 1) improvements to CDPR roads, including at up to 21 drainage crossings to improve drainage and decrease water capture and erosion; 2) riparian and wetland habitat enhancement at two adjacent ponds (formerly gravel borrow pits): Upper Pond and Lower Pond; and 3) channel stabilization and floodplain restoration of a 0.75 mile long stretch of Cold Creek.

3.2 Project Location

3.2.1 Regional Setting

The project is located within Coldstream Canyon, a 12.5 square-mile watershed near Truckee, California. Coldstream Canyon is located to the south of Donner Lake and within Donner Memorial State Park in unincorporated Placer County. Cold Creek, the primary stream in the watershed, drains into Donner Creek approximately 0.8 mile downstream of Donner Creek's outlet from Donner Lake and 1.5 miles upstream of where Donner Creek flows into the Truckee River, making Cold Creek a tributary to the 303(d) listed Truckee River, which is listed as impaired for sediment. Elevations in the watershed range from 5,910 feet at the mouth of the canyon to 8,949 feet at the top of the highest peak, Tinkers Knob. The upper portion of the watershed on the west side is the crest of the Sierra Nevada mountain range. The western half of the watershed, the highest portion, consists of narrow valleys and high gradient streams. The valley widens considerably near the middle of the watershed, before narrowing again in a short canyon near the eastern boundary. From the exit of the canyon, Cold Creek flows across the relatively wide Donner Creek valley floor to its confluence with Donner Creek.

The Union Pacific Railroad (UPR), formerly the Central Pacific Railroad (1860s), runs east/west through Coldstream Canyon crossing Cold Creek in the middle of the watershed where the tracks curve to form a horseshoe shape, a location known as Horseshoe Bend. The railroad's circuitous track alignment design through the canyon was a means of establishing a gradual grade that would enable trains to get over the Sierra Nevada. UPR owns a 400-foot wide right-of-way around the tracks through Coldstream Canyon. In addition to CDPR and UPR, landowners in Coldstream Canyon include the U.S. Forest Service (USFS), Sierra Pacific Industries (SPI) and a scattering of private landholdings, including several small private parcels. Some of these landowners have pursued limited residential development. Most of these land holdings are the result of the transfer of Central Pacific Railroad grant holdings to other owners over the past century (TRWC 2007). Additional information about the watershed, including its geology, hydrology, soils and vegetation, and the history and effects of human disturbance in the watershed are discussed in detail in the Coldstream Canyon Watershed Assessment (TRWC 2007) and in the Donner Memorial State Park General Plan (California State Park and Recreation Commission 2003). Figure 1 shows the regional location of the proposed project.

3.2.2 Project Area

With the exception of road improvements upstream of Horseshoe Bend, all project activities lie within the interior of railroad tracks in Coldstream Canyon. Road improvements above Horseshoe Bend are located within the Emigrant Canyon Drainage. The majority of land where project activities are planned is owned and managed by CDPR and is within the general plan area (Planning Zone 3) of Donner Memorial State Park. A portion of the creek restoration planned near Horseshoe Bend, around the UPR railroad tunnel culvert (a large concrete box culvert, see Figure 5), is located within UPR's 400-foot wide right-of-way. In addition, a 0.6-acre corner of a SPI parcel extends within the area planned for creek restoration at Horseshoe Bend. Figure 2 shows the project area. Figure 3 shows restoration details for the western portion of the project area, and Figure 4 shows restoration details for the eastern portion of the project area.

Habitat types in the project area include lodgepole pine mixed with aspen groves and occasional Jeffrey pine. The canopy varies from solid to broken, with meadow clearings. In stream and meadow areas, the groundcover (herbaceous layer) is a classic mesic meadow, mesic forb assemblage, that is characteristic of riparian lodgepole wetlands throughout the northern Sierra Nevada (TRWC 2007). With the exception of a few wet zones, there is minimal riparian vegetation within the active channel of Cold Creek consistent with the lack of surface flow in much of Cold Creek during the fall and, depending on the year, much of the summer. This is due in part to the ongoing instability in Cold Creek near and below the railroad tunnel culvert, also referred to as "The Chute" (see Figure 3, Restoration Area – West). When the creek is swollen with snowmelt, the railroad tunnel culvert confines the upstream water resulting in high velocity flows as the creek exits from the culvert, hence the moniker "The Chute". These high velocity flows erode the banks in the upper reaches and deposit cobble downstream for more than a half mile. Subsurface flows beneath deposited cobble in this reach of the creek, as well as localized areas of surface water, have been observed in the summer and fall. Further downstream, approximately 0.75 – 1 mile from the railroad tunnel culvert, the channel is more stable with surface flow and floodplain vegetation. Around Upper and Lower Pond, some riparian and wetland habitat exists along with homogenous stands of lodgepole pine.

Access to Coldstream Canyon is open to upstream landowners and, with CDPR permission, to the public. Primary access is via Coldstream Road, an unimproved forest road that begins just south of Donner Pass Road where Donner Pass Road intersects Interstate 80 east of Donner Lake. Multiple other unimproved roads connect with Coldstream Road, especially in the Emigrant Canyon Drainage above Horseshoe Bend. Figure 9 shows the location of unimproved roads on CDPR property within the project area. Popular recreation activities include hiking, fishing, biking and cross-country skiing. Private vehicles regularly access the roads and canyon area upstream by driving up Coldstream Road and eventually through the channel of Cold Creek and through the tunnel culvert under the railroad at Horseshoe Bend. The private land parcels upstream of the railroad crossing include those on which the backcountry vacation lodge, the Lost Trail Lodge, is located. Over snow transportation is generally required to access all portions of the project area in the winter.

3.3 Background and Need for the Project

The Coldstream Canyon Watershed Assessment (CCWA), an assessment commissioned by TRWC and completed by River Run Consulting in 2007, provides a geomorphically-based analysis of watershed function and the impacts of human disturbance in Coldstream Canyon. This proposed

project tiers from this assessment, and in particular from the assessment's identification of high priority and feasible restoration actions to improve geomorphic function and channel stability, improve water quality, and improve habitat in the Coldstream Canyon watershed.

As described in the CCWA, Coldstream Canyon has a long history of human use. Legacy impacts include those associated with the construction of the Central Pacific Railroad in the 1860s and the railroad's continued operation since; extensive logging in the watershed in the late 1800s and early 1900s, and following a brief lull, some second-growth timber logging in the second half of the 20th century; and gravel mining in the lower part of the watershed in the 1960s and 1970s. These legacy activities, and the road networks associated with them, led to water quality and ecosystem impacts that include excessive erosion and sedimentation throughout the watershed, diminished riparian habitat, and destabilization of portions of Cold Creek, the primary stream in the watershed. Many of the existing roads capture runoff and are actively eroding. The instability and excessive sediment loading within the Coldstream Valley watershed contributes to sediment loading downstream.

3.3.1 Road Improvements

The CCWA estimates there are 68 acres of roads in the watershed (Table 3-1 in the CCWA) and identifies road erosion associated with active roads as one of three principal sources of fine sediment (silts and clays) contributing to the degraded water quality of Cold Creek (the other two sources are natural erosion associated with steep glaciated volcanic topography of the upper watershed and streambank erosion). A roads assessment commissioned by TRWC and completed by Wildscape Engineering, Inc. in September of 2018 identified multiple areas of degradation on CDPR's road system within Coldstream Canyon, highlighting more than 20 "hotspots" where minor improvements at drainage crossings could reduce sediment loading, stabilize drainage crossings, and generally improve travel conditions. These hotspots include 17 locations in the upper watershed above Horseshoe Bend where a road intersects an ephemeral drainage, and where some erosion and gullying at the point of intersection occurs. Figure 9, Drainage crossings on State Park Roads in Coldstream Canyon, is the CDPR map created based on this assessment. Hotspots identified in the road assessment include four locations in need of especially substantive improvements:

1) the low water crossing at Emigrant Creek and Coldstream Road,
2) an approximately 1,000-foot segment of Coldstream Road that currently runs parallel to the northwest bank of a blown-out meander on Cold Creek (Blowout Reach).
3) the location of a collapsed culvert on Ponds Road, and
4) the drainage crossing at the intersection of Hewlett Road and Hahn Road.

Figure 2, Project Area, shows each of the four locations where substantive restoration is proposed to remedy erosion on an existing roadway. Figure 3, Restoration Area – West, shows the location of the Blowout Reach and its proximity to the proposed road decommissioning and realignment.

3.3.2 Riparian and Wetland Enhancement Upper Pond and Lower Pond

CDPR and TRWC have identified riparian forest and wetland habitat restoration opportunities at two ponds, Upper Pond and Lower Pond, downstream from the proposed restoration of Cold Creek (see Figure 2, Project Area, and Figure 4, Restoration Area - East). The adjacent ponds were formerly borrow pits created as a result of gravel mining activities in the 1960s to early 1980s. The waterbodies collect and hold surface water runoff and are also fed by subsurface groundwater flows. CDPR obtained the ponds and surrounding properties in the early 1990s and identified the potential of the disturbed area to support a native wetland community. The lower pond was the focus of a

pilot study initiated by a partnership between TRWC and CDPR in 2008 to enhance riparian forest and wetland habitat. During the pilot study, three test plots were created, each receiving a different soil and vegetation treatment. Additional riparian and wetland enhancement of the pond area continues to be a focus of CDPR, and the ponds were included subsequently as a component of this project.

3.3.3 Cold Creek Restoration

One of the high priority projects identified in the CCWA to address legacy impacts and restore ecosystem functionality of the Coldstream Canyon watershed is the restoration of the upper valley reach of Cold Creek. The upper valley reach is immediately downstream of where Cold Creek is channelized into the railroad tunnel culvert (The Chute) under the railroad tracks. Constriction of Cold Creek through the railroad tunnel culvert increases flow velocities and has resulted in erosion and instability of the bed and banks of the creek downstream. Temporary deposition of cobble after high flow events exacerbates the problem by forcing flows toward more erodible banks, generating more sediment. The unstable stream channel is eroding and aggrading, resulting in the exposition and deposition of excessive quantities of sediment downstream and causing substantive downstream instability, especially in the area of the Blowout Reach (TRWC 2007).

Associated with the instability of Cold Creek below the railroad tunnel culvert is the degradation of floodplains adjacent to the creek and general loss of aquatic and riparian habitat. The high sediment load carried by the creek as it exits the railroad tunnel culvert, combined with erosion of banks within the reach, has led to an ongoing cycle of bar deposition and bank erosion. While the constriction of Cold Creek through the railroad tunnel culvert is the greatest factor creating creek instability, the railroad tunnel culvert is a key piece of infrastructure supporting UPR's main east/west railroad line. Retrofitting or replacing the culvert would involve interrupting eastern and/or western-bound railroad traffic for, potentially, multiple weeks, adding substantial multi-agency coordination and financial costs to a culvert retrofit or replacement project. A more feasible opportunity identified in the CCWA and echoed as a high priority stream restoration project in the 2016 Donner Basin Watershed Assessment (TRWC 2016) is stabilization of the area downstream from the culvert.

Figure 5. Railroad Tunnel Culvert (The Chute) on Cold Creek (looking downstream)

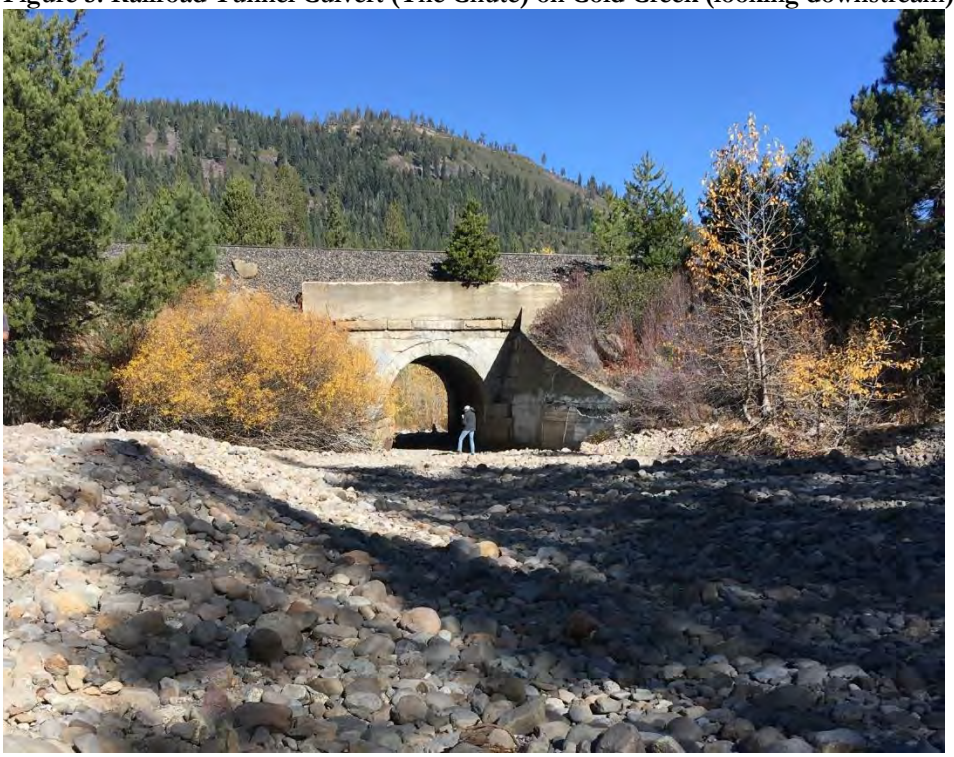


Figure 6. Depositional Zone Downstream from the Railroad Tunnel Culvert (The Chute) (looking upstream)

This project is the third project TRWC has sponsored within Coldstream Canyon in partnership with CDPR. As described above, TRWC and CDPR worked together on a pilot study to enhance riparian wetland habitat at the Lower Pond from 2008-2010. In 2012, TRWC and CDPR completed the Coldstream Lower Floodplain Enhancement Project restoring and creating improved floodplain

along approximately 2,500 feet of Cold Creek at the bottom of Coldstream Canyon, just upstream from the confluence of Cold Creek and Donner Creek.

3.4 Project Overview

The project focuses on restoration of three main landforms within the watershed: 1) improvements to CDPR roads, including at up to 21 drainage crossings to improve drainage and decrease water capture and erosion; 2) riparian and wetland habitat enhancement at two adjacent ponds (formerly gravel borrow pits): Upper Pond and Lower Pond; and 3) channel stabilization and floodplain restoration of a 0.75 mile long stretch of Cold Creek.

The project would be constructed in two phases (Phase 1 and Phase 2) in approximately four construction seasons. Phase 1 includes the road and pond restoration work. Construction of Phase 1 is planned to be initiated and completed in one to two construction season, the summer and fall of 2020 and possibly 2021, with funding provided by a combination of California bond money (Propositions 1 and 68), CDPR assistance, and individual and grant donations administered by TRWC. Phase 2 includes all of the restoration of Cold Creek. Construction of Phase 2 would take place over three construction seasons with restoration commencing in the uppermost section of the creek (just below The Chute) in season one (Phase 2, season 1) and then progressing downstream over the following two seasons (Phase 2, season 2 and Phase 2, season 3). Approximately 0.25 linear mile of creek would be restored in each construction season. The uppermost section of the restoration area is referred to in this document as the Upper Reach, followed by the Middle Reach, and the Lower Reach. The timeline for initiation of Phase 2 is dependent on securing additional funding for the project. TRWC and CDPR anticipate the earliest potential date for initiation of Phase 2 as the summer of 2021.

Table 1. Project Schedule

Phase	Restoration Activity	Year
Phase 1 (summer/fall 2020 and 2021)	Road Realignment and Road Crossing Drainage Improvements	summer/early fall 2020
	Upper Pond and Lower Pond Restoration	summer/early fall 2020 and/or 2021
Phase 2 (three construction seasons – start date dependent on available funding)	Cold Creek Restoration (Upper Reach)	Dependent on available funding with potential to begin as soon as summer/fall of 2021
	Cold Creek Restoration (Middle Reach)	Dependent on available funding with potential to begin as soon as summer/fall of 2022
	Cold Creek Restoration (Lower Reach)	Dependent on available funding with potential to begin as soon as summer/fall of 2023

The total footprint of the area where restoration activity would take place – including staging areas and areas subject to disturbance by temporary stockpiling of fill or compaction by construction equipment – is approximately 56.5 acres. For the purpose of this document, this area is referred to as the approximate restoration footprint or project footprint. The project footprint includes roughly 55.4 acres of CDPR property, approximately 0.6 acre of property owned by SPI, and approximately

0.5 acre within UPR's 400-foot right-of-way around the railroad tracks at Horseshoe Bend (Figure 2, Project Area and Figure 3, Restoration Area - West).

3.4.1 Project Objectives

The overall goal of the project is to improve hydrologic and ecosystem functionality within Coldstream Canyon through restoration of degraded areas. Project objectives are specific to each landform as follows:

- Roads
  - Restore hydrologic function and/or improve road conditions at and along identified sections of degraded roads to reduce erosion and sediment transfer within the watershed, and to improve access to the canyon for private property owners, fire personnel, and CDPR personnel.
- Ponds: Upper Pond and Lower Pond
  - Enhance and create wetland habitat and improve riparian vegetation at existing ponds (former gravel borrow pits).
- Cold Creek
  - Decrease further migration of large episodic sediment pulses to the lower undisturbed reaches by increasing channel and floodplain roughness, creating floodplain terraces, increasing sinuosity, and stabilizing the actively eroding reaches of Cold Creek directly downstream of the railroad tunnel culvert.
  - Improve riparian habitat and increase the ability of the creek system to transport and deposit sediment loads in a more balanced way by stabilizing the outer banks and restoring geomorphic processes and raising water table in the severely degraded reaches downstream of the railroad culvert.

3.4.2 Project Detail

The following details describe the proposed restoration planned for each of the three main landforms associated with the project: 1) roads, 2) ponds, and 3) Cold Creek. As described in Section 1.0, *Introduction*, the narrative details below are based on nearly complete design plans for the road restoration work and for the ponds restoration work, and on preliminary design plans for the creek restoration work. Typicals for the work planned for each of the landforms (road, ponds and creek), along with design plan maps for the pond and the creek work, are included in Appendix A, *Design Plan Maps and Typical*s. Select visuals from Appendix A are also included within Section 3.0, *Project Description* for easy reference. All design plans and typicals were prepared by the design contractor for the project (contracted by TRWC) Wildscape Engineering, Inc. (Wildscape).

3.4.2.1 Roads (Phase 1)

Objective:
Restore hydrologic function and/or improve road conditions at and along identified sections of degraded roads to reduce erosion and sediment transfer within the watershed, and to improve access to the canyon for private property owners, fire personnel, and CDPR personnel.

Summary: The project proposes maintenance of the CDPR roads system to improve drainage and decrease water capture and erosion, and includes implementation of improvements at up to 21 locations where a road crosses a drainage. Figure 9 shows the approximately 21 locations in the project area where an existing CDPR road crosses a drainage. Eighteen of these improvements would occur at ephemeral drainage crossings upstream of Horseshoe Bend and within the road prism. The improvements would involve re-shaping the road to better convey runoff (out-sloping or crowning), and/or to repair or install rolling dips within the road surface to prevent road capture of runoff and better convey flows in their natural pattern. In some areas these treatment methods may be combined with rock armoring to further stabilize the rolling dip. With the exception of the Hewlett Road Crossing (Site #4 on the project area map), no design plans have been drawn for the drainage crossing improvements upstream of Horseshoe Bend, however Figures 8 and 9 (below) and Appendix A, *Design Plan Maps and Typical*s, provides examples of the kind of road improvements (out-sloping, crowning, rolling dips and rock armor). planned for CDPR roads in the upper watershed. Design plans have been developed at three of 21 drainage crossings where improvements would be substantive (Sites #1, #3 and #4 on the project area map). In addition, the project proposes to decommission an approximately 1,050 foot segment of Coldstream Road that runs parallel to the north edge of an eroding blown-out meander of Cold Creek and realign the segment further from the creek's edge (Site #2 on the project area map).

Restoration Detail: The following details describe the restoration proposed to address road erosion and drainage concerns at Sites #1, #2, #3 and #4 on the project area map (Figure 2, Project area). Restoration plans and typicals for the road work are included in Appendix A, *Design Plan Maps and Typicals*. Note that road sites #1, #2 and #4 are reflected in the plan set for the roads. Road improvement site #3 is reflected in the plan set for the ponds work.

- Emigrant Creek Crossing (Site #1 on the project area map): Emigrant Creek crosses beneath the UPR tracks through a culvert approximately 140 feet upstream of where the creek crosses Coldstream Road. During periods of high flow (most common as snow melts in spring and early summer) Emigrant Creek, constricted as it runs through the culvert, exits the culvert at a high velocity, carrying cobble and sediment downstream and contributing to an accumulation of cobble and sediment where it intersects Coldstream Road. The accumulated sediment and cobble limits the conveyance capacity of the existing low water crossing on Coldstream Road and results in overbanking, flow down the road, and significant gullying and sediment transport. To improve the low-water crossing design plans direct the removal of deposited cobble and sediment, re-grading the road to eliminate gullies, raising the elevation of the road to redirect flow, improving water bars, and stabilizing the crossing with rock salvaged onsite.
- Coldstream Road Realignment (Site #2 on the project area map): Large cut banks on the north edge of an eroding blown-out meander on Cold Creek (identified as "Blowout Reach" in Figure 3, Restoration Area – West) threaten to wash out a large segment of Coldstream Road (previously flooded and washed out in 1997). To protect the road from complete and/or partial erosion, design plans specify decommissioning approximately 1,050 feet of the road (closest to the creek channel) and constructing a new road segment just north of the existing alignment. Decommissioning includes removing two existing culverts and reconstructing ephemeral channels, and standard ripping, re-contouring to restore natural topography and drainage, localized seeding (with approved native seed mix per State Park guidelines) and mulching of the disturbed area. Where two ephemeral drainages intersect the new road, low-water rock lined crossings would be installed. The new segment to be

constructed would be crowned or outsloped as appropriate to the topography. The approximate length of the proposed new segment is 1,100 feet (approximately 100 feet longer than the segment it is replacing).

- Ponds Road Culvert Removal (Site #3 on the project area map): An existing culvert on Ponds Road has collapsed resulting in ongoing erosion at the drainage crossing. To restore hydrologic connectivity and reduce erosion, design plans specify removing the collapsed culvert and replacing it with a rolling dip armored with rock salvaged from the site and imported as needed. In addition, a second low water crossing east of the collapsed culvert may be installed to improve drainage conditions in the area. The second crossing would involve grading the road prism, installing a rolling dip, and stabilizing the area with rock armor.
- Hewlett Road Crossing (Site #4 on the project area map): An intermittent drainage channel crosses Hewlett Road at its intersection with Hahn Road. The channel is incised upstream of the crossing, and the crossing itself is severely incised and nearly impassable. To improve the drainage crossing design plans specify re-grading the road in the immediate vicinity of the crossing, installing a rolling grade dip to prevent road capture of flows, and keying in rock armor to improve overall stability.

Figure 8. Road Surface Geometry - Typical

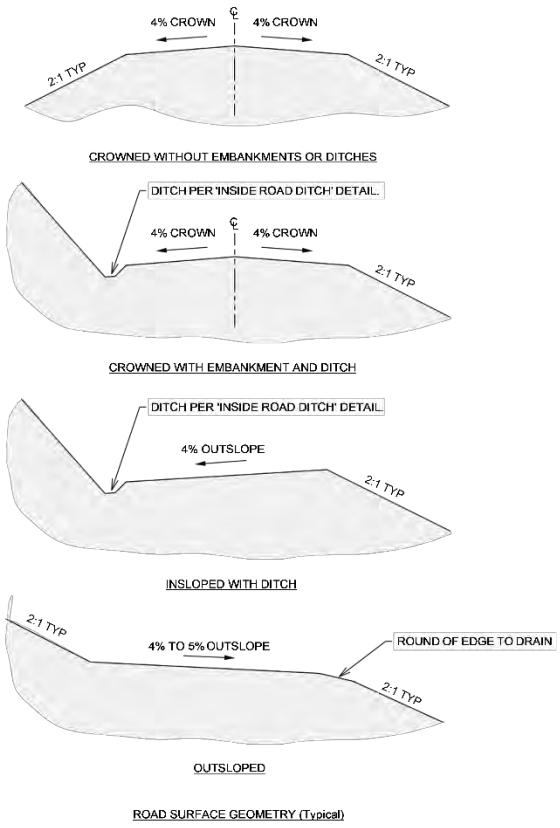


Figure 7. Road Weir Grade Control - Typical

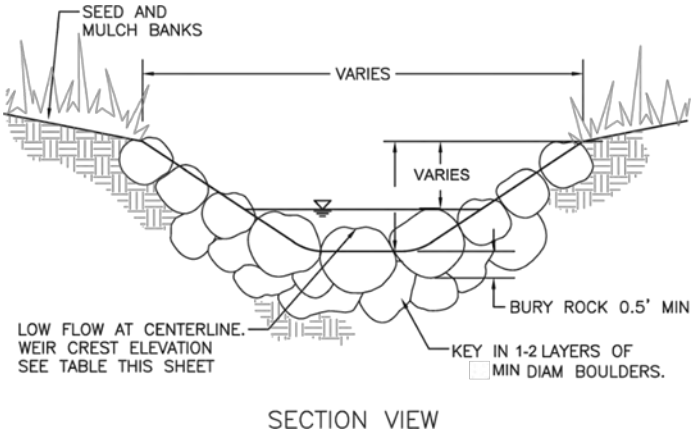
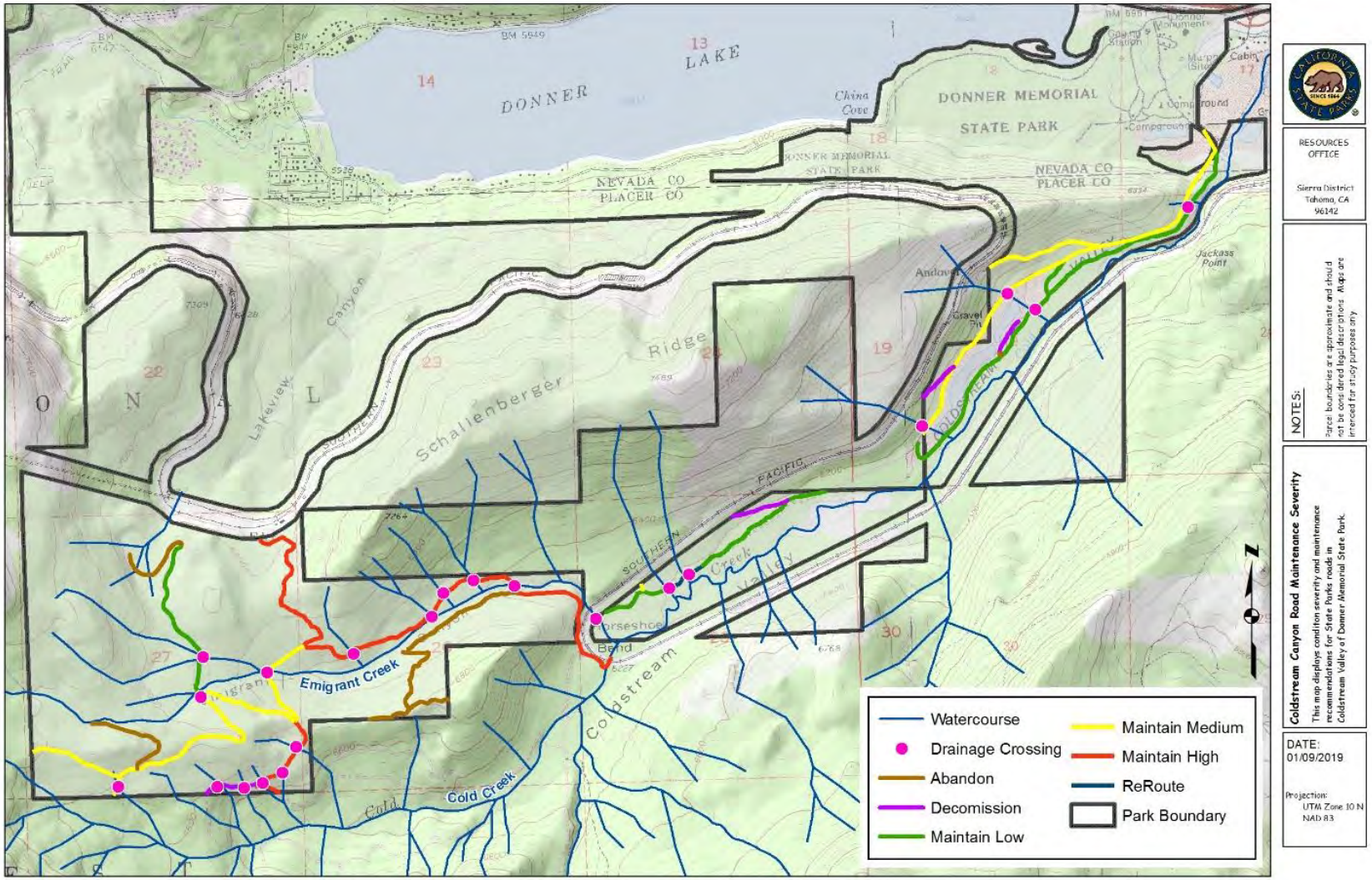


Figure 9. Drainage crossings on State Park Roads in Coldstream Canyon



Source: California Department of Parks and Recreation. January 2019.

3.4.2.2 Ponds: Upper Pond and Lower Pond (Phase 1)

Objective: Enhance and create wetland habitat and improve riparian vegetation at existing ponds (former gravel borrow pits).

Summary: Downstream of the restoration planned in Cold Creek, two adjacent ponds were identified by CDPR and TRWC as an opportunity to enhance and create riparian forest/willow and wetland habitat. The ponds are former borrow pits created when the watershed was mined for gravel in the 1960s – 1980s. The ponds are distinguished as "Upper Pond" and "Lower Pond" on the project area map in accordance with their location relative to the flow of Cold Creek (Figure 2, Project Area and Figure 4, Restoration Area - East). A pilot project to create and enhance wetland habitat around the lower pond was conducted by CDPR in 2008. This project builds on that successful pilot project. Because the Upper Pond is steeper and deeper, restoration would be minimal and would include decommissioning and reclaiming (via ripping, seeding and mulching) several existing disturbed areas, consisting of primarily upland habitat. Restoration at Lower Pond focuses on expanding riparian and wetland habitat at the pond by removing conifers (mainly lodgepole) around the pond edge and along the down slope (northeastern) edge of Lower Pond and excavating the previously forested area that has developed on gravel mining spoils to a surface elevation that supports wetland vegetation and seasonal inundation. Much of the material planned for excavation is sand discarded on-site during material sorting (spoils) associated with the gravel mining activities that created the ponds. Additional restoration activities at Lower Pond include obliterating and reclaiming various disturbed areas, including areas compacted by vehicles, and excavating small backwater channels to increase the area of open water. To facilitate responsible access and prevent vehicle trespass into restored areas, boulders would be strategically placed at dispersed parking areas around the ponds.

Restoration Detail: Bullets below detail the specific project activities associated with ponds restoration.

- Remove approximately 190 small (generally 10" or fewer diameters at breast height) lodgepole pine trees at select locations noted on the plans of the Lower Pond (70 on the east shoreline, 70 on the west shoreline, and 50 on the northern edge of the pond). CDPR Project Requirements pertaining to removal of trees apply (see Table 4, CDPR Project Requirements, BIO-1).
- Excavate up to 11,000 cy existing sandy fill material at the down slope (eastern) edge of the Lower Pond to expand riparian forest and wetland habitat and to create two small open water backwater channels at the Lower Pond.
- Install log and boulder weirs for slope stabilization along drainage gullies on the steeper western banks above the Lower Pond (between the pond and Coldstream Road).
- Install logs for resting and roosting habitat in various locations near the Lower Pond.
- Decommission and reclaim (rip, seed, and mulch) several existing disturbed areas including approximately 0.43 acre of un-essential access and spur roads.
- Plant several dozen riparian forest/scrubs plants, willows, and various wetland plants throughout the restoration area as well as disperse riparian and wetland seed mixtures.
- Rip, seed, and mulch all areas disturbed by construction with a custom adapted native seed mix as specified in the design plans and approved by CDPR.

3.4.2.3 Cold Creek (Phase 2)

Objectives:

- Decrease further migration of large episodic sediment pulses to the lower undisturbed reaches by increasing channel and floodplain roughness, creating floodplain terraces, increasing sinuosity, and stabilizing the actively eroding reaches of Cold Creek directly downstream of the railroad tunnel culvert.
- Improve riparian habitat and increase the ability of the creek system to transport and deposit sediment loads in a more balanced way by stabilizing the outer banks and restoring geomorphic processes and raising water table in the severely degraded reaches downstream of the railroad culvert.

Summary: The Cold Creek railroad tunnel culvert is much narrower than the active channel and floodplain upstream and downstream, and embankment fill on either side of the culvert occupies the historic alluvial fan and floodplain. As a result, flood flows are constrained within the narrow culvert, which backwaters during high runoff events and flows nearly full during large rain-on-snow floods (TRWC 2007). The massive hydraulic force caused by confinement at the downstream end of the culvert has resulted in severe bank and channel erosion leading to excessive erosion and aggradation in the downstream channel. Restoration plans address approximately 0.75 linear miles of Cold Creek extending from the channelized section of the creek immediately downstream of the The Chute, through the confluence of Cold Creek with the Emigrant Canyon Drainage, and extending downstream to encompass the long meandering stretch of the creek below (depositional reaches). Design plans describe each approximately 0.25-mile section of Cold Creek's restoration as Upper Reach, Middle Reach, and Lower Reach, according to their location.

To transport flow and sediment in a more balanced way and to take the pressure off the outer vulnerable banks, restoration focuses on stabilizing channel banks, aggrading the channel to increase floodplain connectivity and increase channel sinuosity to support system dynamics. Restoration plans prescribe the use of a variety of engineered biotechnical structures including: log bendway weir structures near The Chute, and large rootwad/boulder toe protection at and downstream of the Emigrant Creek confluence (Upper Reach), as well as large boulder/log complex structures in the lower depositional zones (Middle Reach and Lower Reach). As a component of habitat enhancement as well as for long-term erosion control and stabilization of the creek channel, all disturbed areas would be revegetated with native and local plant species. With the exception of the restoration planned around The Chute at Horseshoe Bend, restoration would take place on CDPR property. At Horseshoe Bend, up to 400 linear feet of the creek restoration would be within the UPR right-of-way and up to 0.6 of an acre of activity on SPI property.

Restoration Detail:

- Upper Reach: The Upper Reach includes the creek area immediately downstream of The Chute (including the 0.6 of an acre of SPI property) and extends through Cold Creek's confluence with the Emigrant Canyon Drainage. The following restoration actions are planned for the Upper Reach:
    - Near The Chute: Excavate and lower the steep, erodible banks to create active floodplain terraces for improved conveyance and sediment deposition. Incorporate alternating large log/boulder bendway weir structures into the toe of the banks to

form, over time, a more sinuous channel with improved geomorphic complexity. Install large boulder weir step pools immediately downstream of the railroad tunnel culvert to provide channel grade control and prevent further down cutting. Stabilize the lowered floodplain and banks with a combination of large woody debris, native cobble/gravels, native seeding and salvaged willow pole plantings, and biodegradable erosion control blanket installations

  - At the confluence of Cold Creek and the Emigrant Canyon Drainage (Emigrant Fork Confluence): Install boulder step pools, remove and rework the over-deposited in-channel sediment (largely from 1997 flood event), and rebuild and stabilize the significantly eroded left bank (looking downstream).
  - Immediately downstream of the Emigrant Fork Confluence: Rebuild and stabilize the south bank (right bank when looking downstream) of the channel by installing boulder/log rootwad structures, and cobble/boulder toe protection between rootwads. These actions are intended to prevent further southward lateral migration of the channel and shift the middle of the channel (the thalweg) northward:

- Middle Reach and Lower Reach: The Middle Reach and Lower Reach are depositional reaches, but are unstable because the channel is incised within materials deposited during a large flood event. This area includes the "Blowout Reach" where the 1997 flood event washed out a portion of Coldstream Road. In these reaches the following restoration activities would take place: Install large alternating log/boulder complex structures to alleviate outward pressure on the more vulnerable (easily eroded) outer terrace banks. Key in and layer onsite/native large woody debris and large boulders, backfill with native cobbles and compacted fill material, to increase sinuosity and encourage aggradation and plant willow cuttings and other native plants. Construct an overflow channel to tie into an existing secondary channel and rebuild and stabilize the west bank of the Blowout Reach.
- Revegetation and stabilization: Revegetation and implementation of erosion control measures would be implemented in all areas disturbed by construction activity and to stabilize the lowered floodplain and banks within each reach (Upper, Middle and Lower). Planting plans specify riparian seed mixtures for rebuilt banks, and describe revegetation with plants according to the elevation, soil type and proximity to the creek channel including mid-level bank riparian plants, floodplain riparian plants, and upland terrace plants. Erosion control and revegetation measures shall consist of, but are not limited to; orange exclusion fencing, silt fencing, fiber rolls, coir logs, biodegradable erosion control blankets and stakes, seeds, compost, wood chips or pine needle mulch, recycled paper mulch and plant-derived tackifiers, willow stakes and salvaged willow root balls. All long term erosion control measures will be plastic free. All temporary erosion control measures where plastic materials are unavoidable shall be completely removed at the end of the project. Revegetation and long-term stabilization activities would take place towards the end of each construction season. Appendix A, *Design Plan Maps and Typicals*, includes descriptions of the revegetation planned for Cold Creek.

Figure 10. Boulder Log Rootwad Structures - Typical

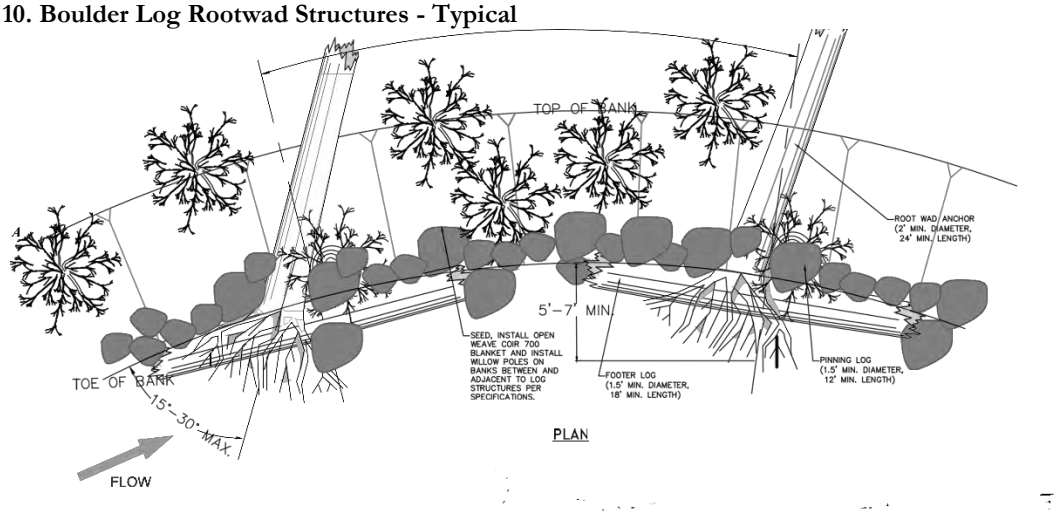
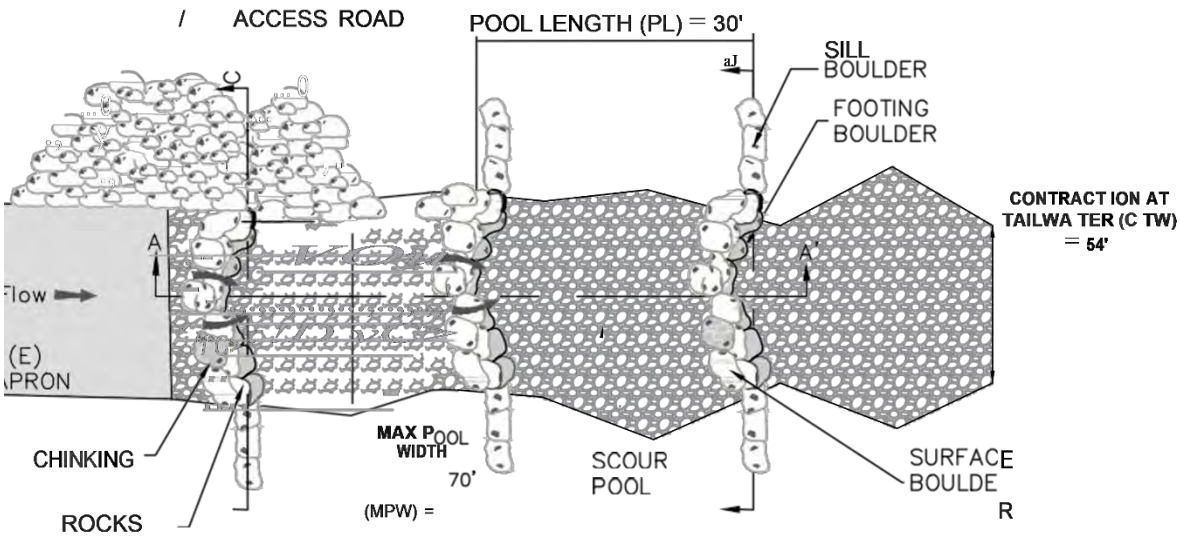


Figure 11. Boulder Step Pool – Typical



3.5 Project Implementation

The following section provides details regarding how the project will be implemented. These details include the following: he project's construction schedule, cut and fill quantities anticipated, equipment to be used within the project area, access and staging for the project, dewatering and diversion best practices, invasive species prevention, general avoidance and disturbance minimization during construction, and post project management

3.5.1 Schedule

The project is anticipated to proceed in two phases over a total of up to four construction seasons. Pending required funding is received; the project would proceed according to the schedule as shown in Table 1, *Project Schedule*.

All restoration activities in any given year would commence in late spring/early summer after necessary permits are received and the area is determined to be dry enough to support construction equipment without causing unnecessary soil compaction, erosion, or other avoidable environmental impacts. TRWC, in consultation with CDPR and the project contractor, would determine when conditions are suitable for ground disturbing activities to commence. Consistent with design plan technical specifications and TRWC contract requirements, all grading activities would be completed by October 15 and temporary stockpiling of soils, materials, or equipment near riparian or wetland areas would be removed by October 15 unless an extension is granted by CDPR. Revegetation and site stabilization activities may take place after October 15. Estimated work hours during project construction for each phase are 8:00am to 6:30pm, Monday through Friday. Occasional work on weekends may be required depending on weather, contractor schedule, and construction progress.

The restoration activities planned for each phase would be completed in stages over the course of the construction season, with all project actions including revegetation of disturbed areas, completed within the construction season of that year. For the restoration of Cold Creek – where restoration is anticipated to be completed in stages over two to three construction seasons – each stage of the restoration would be completed within the construction season, including preliminary revegetation and soil stabilization activities (some of the revegetation may be phased after October 15, depending on the revegetation specifications, water year and plant type). TRWC would require the chosen contractor to develop a construction schedule organized to minimize total overall disturbance to soils. The contractor schedule would also be in accordance with limitations dictated by the results of field surveys, relevant permits including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) Construction General Permit and associated Storm Water Pollution Prevention Plan (SWPPP), and this document.

3.5.2 Borrow and Fill Material

The design and phasing of the project is organized to minimize the need to import and off haul of materials as much as possible through the reuse (balance) of material on site. For example, conifers cut to expand riparian forest habitat along the shorelines of Lower Pond would be considered for use within the pond as habitat and large woody debris. Likewise, cobble excavated in the Upper Reach of Cold Creek may be used as bank stabilization material downstream in the Middle Reach and Lower Reach of Cold Creek. Though most of the cut and fill material required is expected to balance out, some materials would need to be hauled off site. Topsoil, rock or other materials may

need to be imported to the site to meet project design requirements. All imported materials would be certified weed free.

Based on March 2020 estimates from the design contractor, between 8,900 and 10,500 cubic yards (cy) of material may need to be off-hauled. Using the highest (most conservative) estimate of 10,500 cy, off haul of this material would require approximately 525 truck trips if using dump trucks with 20 cy capacity. If CDPR is unable to negotiate temporary storage at the Caltrans yard at the base of the park, then it would likely require a 14.2-mile round trip from the lower parking area at Donner State Park to Teichert Quarry at 13879 Joerger Road in Truckee, CA. The haul road (Coldstream Road) up to the Railroad Culvert is an additional 3.3 miles one way. Table 2, below, provides estimates of cut and fill quantities for each landform and the total estimated range of cut and fill for the project.

Table 2. Estimated Range of Cut and Fill Quantities

Area	Cut (cy)		Fill (cy)		Net (Cut – Fill) (cy)	
	Low	**High**	**Low**	**High**	**Low**	**High**
Roads	300	600	4,300	8,500	(4,000)	(7,900)
Ponds	7,100	10,100	300	400	6,800	9,700
Creek - Upper Reach	2,100	3,000	1,000	1,400	1,100	1,600
Creek - Mid Reach	3,900	5,600	1,600	2,200	2,400	3,400
Creek - Lower Reach	2,800	3,900	200	200	2,600	3,700
TOTAL	16,200	23,200	7,400	12,700	**8,900**	**10,500**

3.5.3 Equipment

Equipment needs vary depending on the phase of the project. Heavy equipment work would largely take place in the dry summer months (July-September) and would not operate during storms or in saturated conditions subject to the requirements of the NPDES permit and SWPPP for the project. In accordance with design plan guidelines and with CDPR and relevant permit requirements, all heavy equipment would be cleaned and inspected prior to each phase of construction, and temporary best management practices would be installed to protect sensitive resources and water. Revegetation and site stabilization would be initiated in the late summer/early fall (September – October) once all grading and all engineered installations are complete. Table 3 identifies construction equipment anticipated for each phase. In addition to the construction equipment identified in Table 3, the construction contractor would be required (per TWRC contract requirements) to deliver and service temporary portable chemical toilet facilities for use by construction personnel. Such facilities shall be located adjacent to active construction sites for the duration of the construction period.

Table 3. Construction Equipment by Phase and Landform

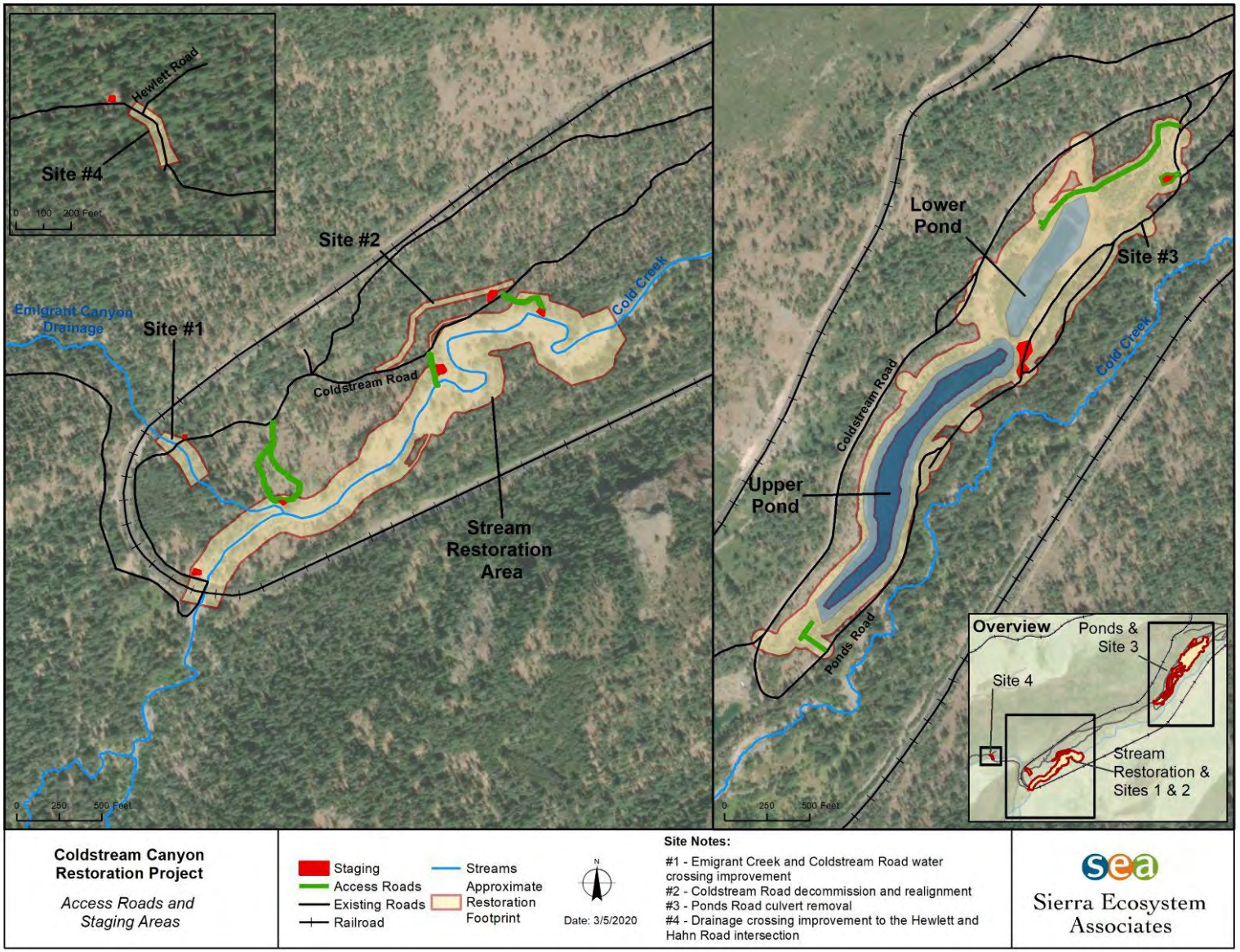
Phase	Activity	Construction Equipment
Phase 1 (summer/fall 2020)	Road Realignment and Road Crossing Drainage Improvements	For excavation, grading, and dust abatement: • Medium hydraulic excavator with bucket/thumb attachment • One to two haul trucks • Small or medium bulldozer • Small or medium loader • Water truck
	Upper Pond and Lower Pond Restoration	For excavating and grading new open water/wetland habitat areas, decommissioning upland disturbed areas and spur roads, removing lodgepole trees, and for dust abatement: • One medium or large hydraulic excavator • One front end loader • One medium bulldozer • One to two haul trucks • Chainsaws • Woodchipper • Water truck
Phase 2 (three construction seasons – start date dependent on available funding)	Cold Creek Restoration Upper Reach	For excavating and grading the activated floodplain and installing the large log/boulder bendway weir structures, and for dust abatement: • One to two large excavators with bucket/thumb attachment • One to two front end loaders • One medium or large bulldozer • Two to four large dump trucks/ haulers • Water truck
	Cold Creek Restoration Middle Reach	For removing and reworking the channel material, and for installation of bank stabilization material (e.g. boulder weir step pools, engineered log structures), and for dust abatement: • One to two large excavators with bucket/thumb attachment • One to two front end loaders • One medium or large bulldozer • One to two large dump trucks/ haulers • Water truck
	Cold Creek Restoration Lower Reach	For removing and reworking the channel material, and for installation of bank stabilization material (e.g. boulder weir step pools, engineered log structures), and for dust abatement: • One to two large excavators with bucket/thumb attachment • One to two front end loaders • One medium or large bulldozer • One to two large dump trucks/ haulers • Water truck

3.5.4 Access and Staging

Access routes and staging areas for construction equipment were identified with consideration given to reducing the distance equipment would need to travel, and to avoid known sensitive resources. As much as possible, existing dirt or gravel roads would serve as primary access routes. Design plans position staging areas in previously disturbed and flat open areas. Along Cold Creek, staging areas and equipment access would take advantage of the overly terraced depositional upland areas and the dry creek bed (seasonally dependent). The approximate restoration footprint, shown in Figure 2, Project Area, includes areas where equipment would be staged. Figure 12 shows where access roads and staging areas (in addition to the existing dirt and gravel roads) are planned within the restoration footprint. Specific access routes and staging areas for the restoration sites would adhere to the following best management practices.

- Roads: As much as possible, confine access routes and staging areas for all road improvements to the existing road prism and parking areas with any minimal staging of fill material or equipment taking advantage of disturbed level areas immediately adjacent to the road.
- Ponds: Use Coldstream Road Ponds Road, and additional spur roads and parking areas as the primary access routes and staging area for equipment working on restoration in and near the ponds. As existing roads around the ponds are decommissioned per restoration design plans, back out equipment to avoid re-compacting any areas. Where needed, rubber mats to protect soils and vegetation (Timber mats, Duradeck, or similar) shall be installed along temporary access routes to protect sensitive meadow/wetland habitat.
- Cold Creek: Utilize Coldstream Road, existing parking areas and the existing high terrace and gravel bar areas as the primary access routes and staging area for equipment working along Cold Creek.

Figure 12. Access Roads and Staging Areas



3.5.5 Dewatering and Diversion

In addition to CDPR Project Requirements for sedimentation and erosion control (see Table 4, CDPR Project Requirement GEO-1 in Section 3.6, *CDPR Project Requirements*) design plan technical specifications and TRWC contract requirements specify the following site protection and erosion control measures:

Dewatering: Any earthwork activities in the ponds and Cold Creek would take place during the drier months from July through September in order to minimize groundwater encounters as much as possible. To ensure continued water quality protection if and when groundwater is encountered, a Dewatering Plan shall be required prior to any earthwork activities. The Dewatering Plan shall include protocol to ensure any encountered groundwater will be pumped and safely discharged to an appropriate upland location to allow for infiltration or to a containment vessel to utilize for dust control so as not to result in any surface water discharge or sediment release.

Clear Water Diversion: Any creek channel work would take place during the drier months of July through September when the channel is expected to be largely dry; however a significant wet year preceding construction or a series of summer/fall rainstorms could produce flow in reaches slated for improvements. To prevent flow disruption and protect water quality in the case of such an event, a Clear Water Diversion and a Diversion Plan shall be required to be developed and installed prior to any earthwork in the creek. The Diversion Plan shall include all elements necessary to safely and cleanly convey streamflow around the work areas including upstream and downstream coffer dams and piping or clean gravel bag diversions to direct flow around work areas. Fish relocation, pipe screening, outlet armoring and pump intakes will be implemented if water is unable to be conveyed via gravity. At a minimum the Diversion Plan installations would be designed and configured to accommodate the larger of either 1) 50-year summer rain event based on an approved flood frequency analysis, or 2) double the average base flow from June to October. All biological and archeological resources will be protected per CDPR Standard Project Requirements. See Table 4, CDPR Project Requirements in Section 3.6, *CDPR Project Requirements.*

Additional Water Quality Protection Contingencies: In order to provide continued water quality protection when working in the pond and creek the following measures shall also be required:

- Any diversion or dewatering systems will be constructed, operated and monitored cautiously and attentively.
- Prior to dewatering any surface waters in the creek a qualified biologist will inspect and safely remove any species of concern.
- All project activities that involve the need for a water diversion or new ground disturbance will be required to be completed by October 15th each year in accordance with contract requirements and relevant permits (e.g. Clean Water Act Section 401 Water Quality Certification, NPDES General Permit for Stormwater Discharges associated with Construction Activity).
- Prior to installation and during operation of a clear water diversion a CDPR representative or Qualified SWPPP Practitioner (QSP) will closely monitor the 5- and 7- day forecasted weather in order to postpone the installation or quicken the decommission of a diversion site prior to a predicted 30 percent chance or greater predicted storm event.
- Creek reach restoration efforts will be divided into milestones so as to be scheduled for diversion and completion within forecasted dry weather windows. For example if a 1,000

linear feet reach is expected to take 10 days to complete, construction would not be initiated until there are 10 clear days of weather in the forecast. Alternatively coordination with contractor would ensure that a smaller area of disturbance occurs based on forecasted dry weather windows.

- Additional piping and pumps (if not gravity fed) will be mobilized on site during all scheduled diversions in order to deploy additional capacity in the event of a sudden or un-forecasted rain event that may result in a temporary discharge spike or pump failure.
- Diversion installations will only remain in place for the time necessary to complete installations and will be removed immediately once in-channel work is complete.
- All creek installations shall be designed at a minimum to be stable under a 50-year flow event and inspected for adherence with the plans prior to acceptance. Geomorphic cross-sections will be identified and clearly marked for pre- and post-construction photo and survey monitoring along the each reach of the creek (Upper, Middle and Lower) to identify if and when any localized areas require additional adaptive management efforts to ensure functionality and continued water quality protection

3.5.6 Invasive Species Prevention

Components of the project, including those associated with road and drainage improvements, creek stabilization, and aspects of the proposed pond restoration require placement of boulders, root wads, logs, cobble, gravel armor and/or riprap for bank stabilization and habitat improvement. Specified erosion control materials would come from the project area whenever possible. While the design and phasing of the project is organized to minimize the need for import and off haul of materials, there may be imported material needed for some components. In cases where imported material is determined to be needed, the contractor would adhere to CDPR Project Requirements (see CDPR Project Requirement BIO-8 in Section 3.6, *CDPR Project Requirements*) and all imported materials would be from weed-free sources and the designated CDPR representative would be notified in writing of the source of material prior to importation. These requirements are consistent with and stem from CDPR's intention to limit or eliminate the introduction and spread of invasive plants. In addition, and consistent with CDPR requirements, all vehicles, hand tools, mechanized tools and personal protective equipment (PPE) would be cleaned prior to arrival in the project area and the project contractor would be required to use the California Invasive Plant Council's (Cal-IPC) best management practice checklists for clearing vehicles, tools and PPE (California Invasive Plant Council 2012). To ensure these project requirements are adhered to, the completed checklist for all applicable equipment shall be shared with a designated CDPR representative.

3.5.7 General Avoidance and Disturbance Minimization During Construction

Prior to the start of on-site construction activities, the contractor, in consultation with TRWC and CDPR, would flag and stake the limits of disturbance, and all associated access routes, with high visibility tape and/or paint to avoid and minimize to the greatest degree possible adverse impacts to soils and habitats outside of the area of project impact. In accordance with the general notes of the design plans, all-natural vegetation and other features identified for protection within construction areas and adjacent areas would be flagged for protection and avoidance, and flagging would be maintained in good condition throughout the construction period. Exclusion fencing would be installed to protect native trees and shrubs where they are near proposed grading or excavation. All flagging and fencing will be promptly removed once work in that area is complete. As much as

possible, and in accordance with the design plans, any riparian vegetation removed during construction would be salvaged and replanted on site. In addition, and in accordance with the project's Spill Prevention and Response Plan (SPRP), an anticipated component of the Storm Water Pollution Prevention Plan (SWPPP), refueling, lubrication and maintenance of construction equipment would be confined to delineated construction staging areas as described on a map within the SWPPP, and all equipment would be inspected for leaks prior to the start of on-site construction and regularly thereafter.

3.5.8 Post Project Management

Each restored area of the project would be monitored by TRWC and CDPR for a minimum of three years following completion of the restoration activity. Post project management may include watering of any transplants following installation (regardless of the seasonal timeframe) throughout the two-three year growing period to ensure each transplant is receiving water to its root system. Based on late season revegetation (in September or October) no irrigation is required for other types of revegetation (e.g. seeds). Additional minor post project intervention (such as additional revegetation) would be managed by TRWC, in coordination with CDPR, through annual volunteer work events or contractor agreements. If any problems that require large-scale intervention are detected in the years following completion of the restoration activity, TRWC and CDPR would develop a plan to address the issue and act. Funding for additional long-term maintenance, if needed, would come from a mix of TRWC operational budget, private foundation grants, and CDPR operational budget.

3.6 CDPR Project Requirements

CEQA considers CDPR as both a Lead Agency and a Trustee Agency. The lead agency is a public agency that has the primary responsibility for carrying out or approving a project and for implementing CEQA. A Trustee Agency is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California; in the case of this project, this includes all resources within CDPR land. As a component of meeting its responsibility to ensure that its actions protect both cultural and natural resources, CDPR developed a list of project requirements that are included in the project design to avoid or minimize impacts to resources to less than significant levels.

CDPR has two types of project requirements, Standard Project Requirements and Specific Project Requirements. Standard Project Requirements are assigned to all projects state-wide, while Specific Project Requirements are assigned based on the specific actions required to complete the project. Table 2 describes the CDPR Standard and Specific Project Requirements that are included in this project:

Table 4. CDPR Project Requirements

Issue	Project Requirement
Aesthetics	
Standard Project Requirement **AES-1** Scenic Views	• The contractor shall store all project-related materials within existing disturbed areas and/or within the area of construction, and, when possible, outside of the viewshed of Coldstream Road.

Air Quality	
Standard Project Requirement **AIR-1** Emissions of Fugitive Dust	• All trucks or light equipment hauling soil, sand, or other loose materials on public roads shall be covered or required to maintain at least two feet of freeboard. • Paved streets adjacent to the Park shall either be swept or washed at the end of each day, or as required, to remove excessive accumulations of silt and/or mud that could have resulted from project-related activities. • During dry, dusty conditions, all active construction areas shall be lightly sprayed with dust suppressant to reduce dust without causing runoff. (Water for dust suppression is expected to be provided via a metered water source managed by Tahoe Donner Public Utility District.) • Excavation and grading activities shall be suspended when sustained winds exceed 15 miles per hour (mph), instantaneous gusts exceed 25 mph, or when dust occurs from remediation related activities where visible emissions (dust) cannot be controlled by watering or conventional dust abatement controls.
Biological Resources	
Specific Project Requirement **BIO-1** Protections for Nesting Owls and Raptors	• All trees greater than 14" DBH will be approved by CDPR District Forester before being removed. In addition, to avoid disturbance of California spotted owl nests and active raptor nests, living or dead trees greater than 10 inches in diameter at breast height (DBH) shall not be removed during typical breeding season (March 1 through August 31). If trees greater than 10 inches DBH must be removed during breeding season, a survey for active nest sites shall be conducted by a qualified biologist prior to tree removal. The survey shall be conducted no more than 10 days prior to the proposed tree removal activities. Survey results shall be submitted to CDFW. If active nests are found on or immediately adjacent to proposed project areas, a minimum 300-foot buffer shall be established from active construction areas. CDFW shall be consulted to determine appropriate protective measures. No trees with nests shall be removed until the nest is determined to be inactive.
Specific Project Requirement **BIO-2** Southern Long-Toed Salamander Field Assessment	• Prior to the start of on-site construction activities, a qualified biologist shall conduct a field assessment to determine areas of suitable habitat and of the presence or absence of southern long-toed salamander in the project area. Suitable habitat and areas of occurrences shall be demarcated and any salamanders located within these areas shall be relocated to nearby suitable habitat by a CDPR-approved herpetologist. • Prior to the start of on-site construction activities, a qualified biologist shall train on-site construction personnel on the identification, life history of the southern long-toed salamander, work constraints, and any other pertinent information related to the species (See Specific Project Requirement Bio-8, Worker Environmental Awareness Program Training).
Specific Project Requirement **BIO-3** Survey for Snowshoe Hare	• New ground disturbance within areas of riparian vegetation that provide potential habitat for Sierra Nevada snowshoe hare shall be avoided to the extent feasible. If disturbance to riparian vegetation cannot be avoided, a qualified biologist shall be retained to survey the proposed area of disturbance prior to construction. If evidence of occurrence of snowshoe hare is found, a minimum 500-foot non-disturbance buffer shall be established around nest or burrow sites and CDFW shall be consulted to approve additional avoidance and/or impact minimization measures. Such measures could include monitoring, buffer zones or seasonal work

	restrictions.
Specific Project Requirement **BIO-4** Willow Flycatcher and Yellow Warbler Field Assessment	• If ground disturbance activity is planned that would impact suitable habitat for willow flycatcher (consisting of deciduous riparian scrub/shrub and trees) within the nesting period of the willow flycatcher (late spring/early summer) and more than one year has passed since the habitat was surveyed for the presence of willow flycatcher, than a preconstruction survey for the bird shall be required prior to groundbreaking. (The most recent willow flycatcher surveys for the project area were conducted in June and July of 2019 – see Appendix C). • If active nests are found, construction work within 300 feet of the nesting area shall be prohibited during breeding season (May 1 to August 31) and/or until nests are inactive. In addition, CDFW shall be consulted and informed of any results that indicate the presence of active willow flycatcher or yellow warbler nests within the project area.
Specific Project Requirement **BIO-5** Fish Protection Measures	• Machinery, fencing and construction of log/boulder structures shall not prevent the movement of fish species throughout their range through the project area. Structures shall not be constructed to a height and width that would prevent upstream or downstream travel. In addition, the following Best Management Practices shall be adhered to: o Prior to project activities within the active channel of Cold Creek, fish will be excluded from the area through the use of standard methods such as seining and/or electrofishing. Standard depletion methods will be utilized to ensure maximum fish removal is attained. o Handling of fish will be minimized. o Fish will be immediately relocated to the active channel outside of the project area; they will not be retained in holding tanks for any period of time. o The Restoration Design Plans and technical specifications for work within the creek shall identify measures that delineate and provide specifications for any water crossings to minimize heavy equipment entry into or crossing water as is practicable.
Specific Project Requirement **BIO-6** Preconstruction Survey for Sensitive Plant Species	• TRWC, in coordination with CDPR, shall appoint a qualified botanist to conduct preconstruction surveys for sensitive plant species that have the potential to occur within the project footprint including for alder buckthorn (Rhamnus alnifolia), Plumas ivesia (Ivesia sericoleuca), Santa Lucia dwarf rush (Juncus luciensis), Mingan moonwort (Botrychium minganense), and scalloped moonwort (Botrychium crenulatum). As habitat for most of the sensitive plant species with the potential to occur in the project area is limited to the area around Lower Pond the survey may, at the botanist's discretion, be limited to that area. The survey shall take place prior to the start of ground disturbance activities during a period that coincides with the evident and identifiable period for each species: May through July. If occurrences are found within the project area, TRWC, in consultation with CDPR and a qualified botanist, shall develop a Sensitive Plant Species Protection and Implementation Plan to undertake one or more of the following construction actions: o Avoid potential impacts to sensitive plants by routing construction activity away from identified sensitive plants with consideration given to avoiding alternation of existing hydrology near existing occurrence to prevent drying or erosion.

	○ Protect occupied habitat for the sensitive plants by flagging or delineating the habitat with construction flagging or fencing where avoidance is feasible. Personnel and construction equipment would be prohibited within these flagged/delineated areas. ○ Relocate sensitive plants to suitable habitat outside of the project footprint. • Once the construction actions are determined, TRWC, in consultation with CDPR, shall design and implement a maintenance and monitoring program for affected populations or relocated populations to document potential project related impacts. This maintenance and monitoring program shall be incorporated into the Sensitive Plant Species Protection and Implementation Plan and execution of the plan and program shall be documented and kept as a reference by CDPR.
Standard Project Requirement **BIO-7** Worker Environmental Awareness Program Training	• A Worker Environmental Awareness Program (WEAP) training shall be developed and implemented for all personnel that may access the site prior to commencing any disturbance activities. TRWC and the construction supervisor(s) shall be responsible for ensuring all construction staff that may engage in ground disturbance activity are adequately briefed. The WEAP shall include a review of the special status species and other sensitive resources that exist in the project area, including the locations of sensitive biological resources and their legal status and protections, permit conditions, seasonal restrictions, and measures to be implemented for mitigation and avoidance. The WEAP shall emphasize the need to avoid entry into areas where biological resources have been identified based on pre-disturbance field surveys and to implement the buffer avoidance or other protection measures in accordance with the CDPR Project Requirements for biological resources. WEAP training shall also cover penalties associated with take of any species. Biological briefing brochures describing key species and other information shall be used as part of the training and retained on site for reference. A record of all trained personnel shall be maintained by the construction supervisor(s) and TRWC.
Standard Project Requirement **BIO-8** Invasive Species Prevention	• Consistent with CDPR's intention to limit or eliminate the introduction and spread of invasive plants the following measures shall be implemented: ○ All imported/planted vegetation will be native and approved by the Sierra District Vegetation Specialist before being purchased. ○ In cases where imported material is determined to be needed, the contractor shall adhere to CDPR requirements and all imported materials shall be from weed-free sources and the designated CDPR representative shall be notified in writing of the source of material prior to importation ○ All vehicles, hand tools, mechanized tools and personal protective equipment (PPE) shall be cleaned prior to arrival in the project area and the project contractor shall be required to use the California Invasive Plant Council's (Cal-IPC) best management practice checklists for clearing vehicles, tools and PPE (California Invasive Plant Council 2012). ○ To ensure these project requirements are adhered to, the completed checklist for all applicable equipment shall be shared with a designated CDPR representative.
Cultural Resources	
Specific Project	• A qualified archaeologist (RPA) shall be retained by TRWC and/or CDPR

Requirement **CUL-1** Supplementary Field Verification	to complete supplementary field verification of the sensitive areas listed in Table 11 (Section 4.2.5, *Cultural Resources*) prior to construction. These areas are within or near the project footprint and contain known cultural resources, the significance of which has not been evaluated. • In addition, a qualified archeologist (RPA) shall complete field verification for the site(s) in the upper watershed where a planned road drainage improvement intersects or comes close to intersecting with CDPR identified sites of potential cultural resources. According to 2012 and 2014 surveys completed by CDPR Associate State Archaeologist for the Sierra District, Denise Jaffke, there is least one site, EMTR-12-I10, that may be close to a planned road improvement above Horseshoe Bend. As there are no design plans associated with the drainage improvements in the upper watershed, TRWC and CDPR shall coordinate with the retained archeologist once final improvement sites are selected to ensure any necessary field verification takes place prior to construction. • In all cases the retained archaeologist shall adhere to professional standards regarding the evaluation and treatment of all previously identified or newly identified resources including assessing the potential for project impacts and prioritizing avoidance of the resource with implementation of protective measures (e.g.,. exclusion fencing or flagging) as needed. In instances where the resource cannot be avoided, the resource shall be evaluated to determine its historical, archaeological or tribal significance. If the resource is not found significant, construction may proceed. If the evaluation determines significance, mitigation measures shall be devised by the archaeologist for approval by CDPR before construction may proceed.
Specific Project Requirement **CUL-2** Supplementary Worker Environmental Awareness Program (WEAP) Training	• In addition to the Worker Environmental Awareness Program (WEAP) training required for biological resources (see CDPR Project Requirement BIO-7), all construction personnel shall be trained regarding the recognition of cultural and heritage resources, and informed of the possibility of encountering subsurface prehistoric or historical cultural resources and/or human remains. At a minimum WEAP topics regarding heritage and cultural resources to cover with personnel include: o types of heritage and cultural resources expected in the project area; o types of evidence that indicates heritage or cultural resources might be present (e.g., ceramic shards, trash scatters, lithic scatters); o importance of avoiding areas flagged or otherwise identified as sensitive; o protocol to be followed if a cultural or tribal cultural resources or human remains are encountered o penalties for removing or intentionally disturbing heritage and cultural resources.
Standard Project Requirement **CUL-3** Undocumented Cultural Resources	• In the event that previously undocumented cultural resources are encountered during project construction (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic trash), work within the immediate vicinity of the find will stop until a qualified a qualified archeologist (RPA) has evaluated the find and implemented appropriate treatment measures to avoid have a significant impact to historical resources per Public Resources Code 15064.5
Standard Project Requirement **CUL-4**	• In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor

Protocol in the Event of the Discovery of Human Remains	will notify the appropriate CDPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The CDPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with Section 7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities. The local County Coroner will make the determination of whether the human bone is of Native American origin. • If the Coroner determines the remains represent Native American interment, the NAHC in Sacramento and/or tribe will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (Public Resources Code Section 5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination. • If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the Native American Heritage Commission/Tribal Cultural representatives will occur as necessary to define additional site mitigation or future restrictions.
Geology and Soils (Erosion)	
Specific Project Requirements **GEO-1** Sedimentation and Erosion Control Measures	• Prior to the start of construction involving ground-disturbing activities, TRWC shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) for CDPR approval that identifies temporary Best Management Practices (BMPs) (e.g., tarping of any stockpiled materials or soil; use of silt fences, straw bale barriers, fiber rolls, etc.) and permanent (e.g., structural containment, preserving or planting of vegetation) for use in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during all excavation, grading, trenching, repaving, or other ground-disturbing activities. The SWPPP shall include BMPs for hazardous waste and contaminated soils management and a Spill Prevention and Control Plan (SPCP), as appropriate. • The contractor shall restore any temporary access routes created as part of the project to pre-project conditions, and use native and local plant species to revegetate all disturbed areas, including temporary disturbances associated with the movement and storage of construction equipment. All areas of disturbance shall be de-compacted per project plans and field direction. • Where needed, rubber mats to protect soils and vegetation (Timber mats, Duradeck, or similar) shall be installed along temporary access routes to protect sensitive meadow/wetland habitat. • No track-mounted or heavy-wheeled vehicles shall be allowed in identified environmentally sensitive areas at any time; foot traffic shall only be allowed with specific permission from a CDPR representative after clearance from a certified biologist. At the discretion of the contractor, mechanized vehicles on identified resource sites would be restricted to a short term use of rubber tire tractors only. All such vehicles must enter and exit the area via the same route of travel (by backing up). Vehicles are strictly prohibited from turning on the surface of sensitive areas.

	• All construction activities shall be suspended during heavy precipitation events (i.e., at least 1/2-inch of precipitation in a 24-hour period) or when heavy precipitation events are forecast. • If a rain event is anticipated, the contractor shall properly winterize the site by covering any stockpiled materials or soils and by constructing silt fences, straw bale barriers, fiber rolls, or other structures around stockpiles and graded areas.
Standard Project Requirement **GEO-2** Protection of Paleontological Resources	• Should any evidence of paleontological resources (e.g. fossils) be encountered during grading or excavation either onsite or offsite as a result of project construction, work shall be suspended within 100 feet of the find and TRWC shall be immediately notified. At that time, TRWC shall coordinate any necessary investigation of the site with a qualified paleontologist as needed to assess the resource and provide management recommendations, such as avoiding the resource and/or excavating and recording data on the resource. The contractor shall implement any measures deemed necessary by TRWC for the protection of the paleontological resource.
Hazards and Hazardous Materials	
Standard Project Requirement **HAZ-1** Spill Prevention and Response	The following measures shall be made a part of the construction bid specifications and implemented prior to and during construction. • The contractor, in coordination with TRWC and CDPR, shall set up decontamination areas for vehicles and equipment at Park entry/exit points. The decontamination areas shall be designed to completely contain all wash water generated from washing vehicles and equipment. BMPs shall be installed, as necessary, to prevent the dispersal of wash water beyond the boundaries of the decontamination area, including over-spray. • The SWPPP prepared for the project shall include a Spill Prevention and Response Plan (SPRP) to provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. The SPRP shall contain BMPs for spill prevention and include an emergency response program to address quick and safe cleanup of accidental spills. The emergency response program shall include reporting requirements and directions consistent with the Comprehensive Environmental Response, Compensations, and Liability Act (CERCLA), Emergency Planning and Community Right-to-Know Act (EPCRA) and California law. In addition, the contractor shall immediately notify CDPR in the event of any spill or release of any chemical during construction. In addition, the SPRP would include (but not be limited to); o Requirement that staff have appropriate training in compliance with 29 CFR, Section 1910.120. o Requirement that equipment shall be regularly inspected as well as cleaned and repaired (other than emergency repairs) outside of the project area boundaries and that all contaminated spill residue, or other hazardous compounds shall be contained and disposed of outside of outside the boundaries of the site at a lawfully permitted or authorized designation. o A map that delineates construction staging areas, where refueling, lubrication, and emergency repair of equipment would occur. Areas designated for refueling, lubrication, and emergency repair of equipment shall be at least 50 feet from any spring/seep/wetland/marsh areas and 100 feet from creeks and

	ponds/lakes and shall be approved by CDPR. o A list of items required in a spill kit on-site that would be maintained throughout the life of the project. Each vehicle would be equipped with a spill containment kit sufficient to mitigate spills associated with a ruptured hydraulic line or fuel tank. o Procedures for the proper storage, use, and disposal of any solvents or other chemicals used in the restoration process; o Requirement that the contractor shall, prior to the start of on-site construction activities, inspect all equipment for leaks and regularly inspect the equipment thereafter until equipment is removed from the project area. o Requirement that all contaminated water, sludge, spill residue, or other hazardous compounds shall be contained and disposed of outside the boundaries of the site, at a lawfully permitted or authorized destination. • A Materials Management Plan shall be prepared to include protocols and procedures that would protect human health and the environment during remediation and/or maintenance activities that cause disturbances to the native soil and/or mine and mill materials causing the potential exposure to metals and dust resulting from materials disturbances. The Materials Management Plan would include the following (where applicable): o Requirement that staff have appropriate training in compliance with 29 CFR, Section 1910.120; o Methods to assess risks prior to starting onsite work; o Procedures for the management and disposal of waste soils generated during construction activities or other activities that might disturb contaminated soil; o o Monitoring requirements; o o Storm water controls; o o Record-keeping; and, o o Emergency response plan.
Standard Project Requirement **HAZ 2** Fire Suppression and Control	The following measures shall be implemented as part of the project. • Prior to the start of construction, TRWC shall prepare a Fire Safety Plan for the project. The plan shall include the emergency calling procedures for CalFire, USFS, and local fire department(s). • All heavy equipment shall include spark arrestors or turbo chargers (which eliminate sparks in exhaust) and have fire extinguishers on-site. • Construction crews shall park vehicles a safe distance from flammable material, such as dry grass or brush. At the end of each workday, construction crews shall park heavy equipment over a non-combustible surface to reduce the chance of fire. • Lead construction personnel shall have a radio that allows direct contact with CalFire and a centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire. • Prior to the start of on-site construction activities, the contractor and staff shall clean and repair (other than emergency repairs) all equipment outside the project area boundaries. • Under dry conditions, a filled water truck and/or fire engine crew shall be onsite during activities with the potential to start a fire. • The contractor in coordination with CDPR shall designate and/or locate staging and stockpile areas within the existing maintenance yard area or

	existing roads and campsites to prevent leakage of oil, hydraulic fluids, etc. into Cold Creek and other stream courses.
Noise	
Standard Project Requirement **NOISE-1** Noise Exposure Limitations	• Internal combustion engines used for project implementation shall be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for project-related activities shall utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever necessary.
Transportation	
Specific Project Requirement **TRANS-1** Right of Passage and Advance Notice of Road Closures	• The contractor for the restoration project shall, as much as possible, maintain at least one lane of vehicle passage along Coldstream Road during construction by, for example, staging all equipment within one lane of passage. • TRWC contract requirements shall specify speed limits for heavy equipment and vehicles traveling to and from the project site on Coldstream Road. • CDPR rangers will be notified in advance of road closures and CDPR staff will help to coordinate road closure and placement of appropriate signage as necessary. • If closure of Coldstream Road is unavoidable TRWC and/or CDPR shall: o Notify all landowners in Coldstream Canyon of the temporary closure of Coldstream Road within one month, and at least two weeks prior, to closure. The notice shall include the location of the proposed road closure and anticipated dates and times of the road closure, and provide recipients with contact information for TRWC and/or CDPR to gather additional details and updates. The notice shall be distributed via U.S. mail to private parcel holders within Coldstream Canyon, and also posted along Coldstream Road at visually obvious locations. o Notify emergency response agencies including the Truckee Fire Protection District and nearest CalFire station of any planned closures at least two weeks prior to closure. o Designate a Sierra District CDPR contact and notify the designated contact in regards to any road closures associated with the planned construction at the beginning of the construction season, and keep CDPR updated in regards to schedule, timing and duration of potential closure as construction proceeds. o CDPR shall install a temporary sign at the base of Coldstream Road that notifies passers of construction delays and evacuation precautions. The sign shall remain throughout the construction season for each phase.

3.7 Consistency with Local Plans and Policies

The project is a resource management project and is consistent with the mission of CDPR and its management directives aimed at preserving the state's extraordinary biological diversity and protecting valued natural and cultural resources. The project is located within Planning Zone 3 of the Donner Memorial State Park General Plan, and is consistent with the Donner Memorial State Park General Plan vision, purpose, and goals for the area. The project is not in a preserve or

wilderness. In addition, though the project is consistent with the designated land use (Timberland) in Placer County's General Plan and with Placer County's zoning (Residential Forest) of the area, consistency with the County land use designations is not required for the majority of the project area that is CDPR land.

3.8 Required Permits and Approvals

TRWC is seeking approval from CDPR, as the lead agency with primary discretionary approval for the project. As the lead agency for compliance with CEQA, CDPR reviews the CEQA document for adequacy, and may subsequently adopt the CEQA document and approve the project following an appropriate public notification and review process in accordance with CEQA Guidelines §15070. In addition, TRWC, as the project proponent, must obtain appropriate permissions and permits from UPR and SPI given that a small portion of the uppermost creek restoration around Horseshoe Bend is within UPR's 400-foot right-of-way around the railroad tracks, and that another small portion (approximately 0.6 acre) at Horseshoe Bend is located within the corner of a parcel owned by SPI. Permissions and permits likely include a preliminary engineering agreement from UPR, as well as execution of the appropriate license, right of entry and construction and maintenance agreements from both UPR and SPI. TRWC would obtain all other applicable permits for the project from federal, state, regional, and local agencies with approval authority over various project actions. Table 5, Required Permits and Approvals, lists the additional permits and approvals likely required for project implementation.

Table 5. Required Permits and Approvals

Agency	Permit or Approval	Action Requiring Permit Approval or Review
Federal		
U.S. Army Corps of Engineers	Clean Water Act Section 404 permit – likely Nationwide Permit #27 for Aquatic Habitat Restoration, Enhancement, and Establishment Activities (Verification of compliance with Nationwide Permit #27 would likely require a wetland delineation.)	Discharge of dredged or fill material into waters of the United States
State		
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Potential disturbance to the bed or bank of jurisdictional waters
California Department of Fish and Wildlife	California Endangered Species Act Consultation	Potential impacts on state-listed species and habitats
Lahontan Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	Potential impacts on state water quality; required when a federal permit is issued

Lahontan Regional Water Quality Control Board	Porter Cologne Water Quality Control Act- Lahontan Basin Plan - Exemption for discharge of fill in the 100-year floodplain of drainages within the Truckee River Hydrologic Unit	Discharge of waste materials to lands within the 100-year floodplain
State Historic Preservation Office (SHPO)	SHPO Consultation (through the National Historic Preservation Act Section 106 process)	Potential impacts on cultural resources
State Water Resources Control Board	Water Quality Order No. 99-08 – NPDES General Permit for Stormwater Discharges associated with Construction Activity (This permit requires preparation of a SWPPP)	Discharges of stormwater runoff associated with construction activity involving land disturbance of 1 or more acres
Washoe Tribe, Colfax-Todds Valley Consolidated Tribe, Shingle Springs Band of Miwok Indians, Tsi-Akim Maidu, and United Auburn Indian Community of the Auburn Rancheria	AB 52 Consultation	AB 52 requires a project lead agency to consult with any California Native American tribes affiliated with the geographic area of the proposed project

4.0 ENVIRONMENTAL CHECKLIST

This Initial Study is a public document being used by CDPR, the designated lead agency for CEQA purposes, to determine whether the project may have a significant effect on the environment. This section evaluates the potential environmental impacts of the proposed project, followed by the CEQA Mandatory Findings of Significance. The degree of change from existing conditions caused by the project is compared to the impact evaluation criteria to determine if the change is significant. Existing conditions serve as a baseline for evaluating the impacts of the project.

The following terminology is used to describe the various levels of environmental impacts associated with the project:

- A finding of *no impact* is identified if the analysis concludes that the proposed project would not affect a particular environmental topical area in any way.
- An impact is considered *less than significant* if the analysis concludes that the proposed project would not cause a substantial adverse change in the environment, or would result in a positive change to the environment.
- An impact is considered *less than significant with mitigation* if the analysis concludes that the proposed project has the potential to cause a substantial adverse change in the environment, but the proposed project includes measures to mitigate the potential impact to a less than significant level.
- An impact would be considered a *potentially significant impact* if the analysis concludes that the proposed project could cause a significant environmental effect. Proposed projects that potentially produce a significant impact(s) warrant the greater level of analysis and consideration provided by an Environmental Impact Report (EIR).

4.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving several impacts that require mitigation to reduce the impact from "Potentially Significant" to "Less Than Significant" as identified by the checklist in the following pages.

☒	None				
☐	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Energy
☐	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	☐	Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

☒	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☐	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	7 I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. 7

Signature: Dan Shaw	**Date:** 4-8-2020
Printed Name and Title: Dan Shaw Senior Environmental Scientist	

4.2 Evaluation of Environmental Impacts

4.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Setting

Coldstream Canyon occupies a glacial basin lying due east of the crest of the main Sierra Nevada at an elevation of around 6,200 feet. The visual character of the project area is primarily forested and canopy varies from solid to broken, with meadow clearings. Evidence of human presence is obvious, but not overwhelming, and many visitors to the canyon are likely to experience a relatively quiet forested environment, though the existing roads, evidence of relatively recent (1960s-1980s) gravel mining activities, railroad tracks, proximity to Interstate 80 (I-80) and the Town of Truckee, and the scattered private parcels where some private residences are maintained, provide strong evidence of a human occupied and utilized landscape. Parcels at the bottom of the canyon near 1-80 where Coldstream Road originates are industrial. These parcels include a large property owned by Teichert-Stonebridge LLC (Teichert) that is devoid of any significant vegetation and used by Teichert as a storage area, and an active California Department of Transportation (Caltrans) sorting yard. The Teichert property is currently undergoing planning and permitting for a large residential housing development project. This area is heavily used during business hours, with large equipment and trucks delivering, dumping and sorting road debris materials.

Visitors generally access the canyon by hiking, biking or driving up Coldstream Road. This road eventually crosses through the channel of Cold Creek and through the railroad tunnel culvert under the railroad at Horseshoe Bend. Popular recreation activities include hiking, fishing, biking, rock climbing, and cross country skiing.

Impact Discussion

a) Would the project have a substantial adverse effect on a scenic vista?

Finding: No Impact

The project would take place within the interior of Coldstream Canyon and is not visible outside of the canyon. In addition, the project is a restoration project that, compared to the size of the 12.5 square mile watershed involves a relatively small portion of the landscape, 56.5 acres, less than 1/10 of a square mile. In addition, the project is a restoration project and would not, overall, change the existing visual character or quality of the project area or its surroundings. There would be no impact to any scenic vista.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Finding: No Impact

Coldstream Canyon is less than one-mile south of I-80 and east of State Route 89 (SR 89). Both I-80 and SR 89 are listed as Eligible State Scenic Highways (Caltrans 2019) and are the nearest highways to the project. However, the interior of the canyon, where the restoration project would take place, is not visible from either I-80 or SR-89 due to both the canyon's topography and forested condition. Therefore there would be no impact to any scenic resources along a state scenic highway.

c) In nonurbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Finding: Less than Significant Impact

The project is a restoration project involving small improvements to existing roads, in-channel stream restoration work, and wetland and riparian enhancement at existing ponds. These restoration activities would enhance the natural setting of the area to a more historically representative condition and visual character, and would involve the use of on-site materials, imported native materials, and would not, overall, change the existing visual character or quality of the project area or its surroundings. Any visual impacts to the project area would be associated with intermittent and limited duration construction activities when equipment, fencing, stockpiles and other construction-related materials would be present, and/or immediately post-project when minor landscape scarring may be visible while revegetation seedings take root. These short-term impacts would be reduced to a less than significant with implementation of CDPR Project Requirements Pertaining to Aesthetics (see Table 4, *CDPR Project Requirements*).

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Finding: Less than Significant Impact

Construction activities would temporarily introduce equipment and vehicles to the project area. To the extent that construction activities would occur in the evening hours (up to 6:00 pm) after sunset, impacts from construction lighting may occur. However, these construction-related impacts would be temporary; lasting approximately six to eight weeks each fall over the construction

period (four to five years). The project does not include any new operational lighting and would not create any new permanent sources of light or glare once in operation. Because there would not be any new sources of permanent light or glare and there would be minimal temporary lighting from construction activities, impacts to this threshold would be less than significant.

Mitigation Measures

No mitigation measures required.

4.2.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Setting

The project area is designated as Agriculture/Timberland in the Placer County General Plan. All parcels within the project area are zoned by Placer County as Residential Forest or Forest. The watershed is primarily forested, excluding the headwaters. In general, vegetation grows at a gradual elevational gradient with Jeffery pine to white fir pine, to red fir from lower to higher elevations, respectively. Brush understory occurs along much of the south-facing slopes on Shallenberger Ridge. At valley bottoms and along streams there are wet meadows and aspen patches. Lodgepole forest is also common (TRWC 2007).

Impact Discussion

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Finding for Items (a), (b), (c) and (e): No Impact

There is no prime or unique farmland, farmlands of statewide importance, or Williamson Act properties within the project area. The project area is currently zoned Forest or Residential Forest by Placer County and lies outside of the survey boundary of the Farmland Mapping and Monitoring Program (California Department of Conservation 2016). The proposed activities would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, or involve other changes that would result in conversion of farmland or forest. In addition, the restoration nature of the proposed project does not conflict with existing zoning, does not give cause for rezoning, and does not involve converting land from agricultural or forest uses to non-agricultural or non-forest uses.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

Finding: Less than Significant Impact

Approximately 190 small diameter (generally 10" or fewer diameters at breast height) lodgepole pine trees around the shoreline of Lower Pond would be removed with project implementation. The tree removal is planned to address conifer encroachment of a wet meadow area and to expand the riparian forest and wetland habitat around Lower Pond, and would not affect the management of any forest resource as defined in the Public Resource Code Section 12220(g), which states that:

> *Forest land is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.*

Because tree removal associated with the project would be limited and would not constitute a substantive loss or conversion of forest land to a non-forest use, this impact would be less than significant.

Mitigation Measures

No mitigation measures required.

4.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Setting

Coldstream Canyon is located within the boundaries of the Mountain Counties Air Basin (MCAB) in Placer County and under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). The federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) require that federal and State ambient air quality standards be established, respectively, for six common air pollutants, known as criteria pollutants. The criteria pollutants are particulate matter (PM), ground-level ozone, carbon monoxide (CO), sulfur oxides, nitrogen oxides (NOX), and lead.

Placer County is designated as nonattainment for federal and state ozone (O3) standard, and nonattainment for the state particulate matter standard that is 10 microns or less in diameter (PM10) (California Air Resources Board 2019). Placer County is designated as in attainment or unclassified for all other State ambient air quality standards. Ozone is not emitted directly into the air but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROG) and generic NOX Nonattainment for ozone is believed to be due to the transport of ozone from the greater San Francisco Bay Area and Sacramento Area via the prevailing wind (CDPR 2003). Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Within the Truckee area, particulate matter is attributed to the use of wood-burning stoves and dust generated by road sand, with nonattainment for PM_{10} primarily occurring during the winter months.

Table 4 below shows the Placer County area designations for State and National ambient air quality standards.

Table 6. Placer County Area Designations for State and Federal Ambient Air Quality

Placer County Area Designations for State and Federal Ambient Air Quality		
Critical Pollutants	State Designation	National Designation

Ozone	Nonattainment	Nonattainment
PM 10	Nonattainment	Unclassified
PM2.5	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment

The CAA requires each state to prepare an air quality control plan referred to as a State Implementation Plan. State Implementation Plans are modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. Due to the nonattainment designations, PCAPCD, along with the other air districts in the MCAB region, periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the ambient air quality standards, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies.

On October 13, 2016, the PCAPCD Board of Directors adopted the Review of Land Use Projects under CEQA Policy (Policy). The Policy establishes the thresholds of significance for criteria pollutants as well as greenhouse gases and the review principles which serve as guidelines for the PCAPCD staff when the PCAPCD acts as a reviewing/commenting agency on the environmental documents prepared by lead agencies. The PCAPCD significance thresholds for criteria pollutants during the construction phase of a project are:

- 82 lbs./day for ROG
- 82 lbs./day for NOX
- 82 lbs./day for PM10

Impact Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Finding for Items (a), (b) and (c): Less than Significant Impact

Air quality impacts associated with the project would be limited to the period of project construction. During construction, emissions would be generated from construction equipment, vegetation clearing and earth movement activities, construction worker commutes, and construction material hauling for the entire construction period. Fugitive dust emissions would be greatest during the initial site preparation activities, and also associated with haul trips on the unimproved forest

roads, and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions.

Given the quantity of construction equipment associated with project construction, combined with the phasing of the project: anticipated to take place over four years, the project would not likely violate any air quality standard or contribute substantially to an existing or projected air quality violation, nor result in a cumulatively considerable net increase of any criteria air pollutant for which the PCAPCD is already designated as non-attainment. To demonstrate this, the proposed project's construction emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. Factors that contribute to an analysis of air quality emissions associated with a construction activity include the anticipated construction schedule, equipment to be used and the number and distance of estimated truck trips. The model applies inherent default values for various land uses, including trip generation rates based on the Institute of Transportation Engineers (ITE) Manual, vehicle mix, trip length, average speed, etc. Where project-specific information is available, such information was applied to the model.

CalEEMod was run under a scenario that assumed the use of the greatest quantity and types of construction equipment planned in a single season (all of the construction equipment planned to be used for the roads and ponds restoration in Phase 1). In addition, inputs to the model combined the majority of anticipated haul trips into a single year; assuming 300 haul trips with 20 cubic yard capacity trucks traveling a round trip of approximately 17.5 miles in a single construction season (as opposed to 525 haul trips spread over the course of four construction seasons).

According to the CalEEMod results, the project would result in maximum construction criteria air pollutant emissions as shown in Table 7. As shown in the table, the proposed project's construction emissions would be below PCAPCD applicable thresholds of significance for ROG, NOX, and PM_{10} (below 82 lbs. /day). Based on this analysis and with incorporation of CDPR Project Requirements Pertaining to Air Quality (see Table 4, CDPR Project Requirement *AIR-1* in Section 3.6, *CDPR Project Requirements*), the project would not conflict with or obstruct implementation of any applicable air quality plan, violate any air quality standard or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria air pollutants for which the PCAPCD is already designated as non-attainment.

Table 7. Maximum Predicted Daily Emission Estimates

Maximum Predicted Daily Project Emission Estimates			
Pollutant	Project Emissions (lbs./day)	PCAPCD Significant Thresholds (lbs./day)	Exceeds Threshold?
ROG	0.85	82	No
NO_X	7.84	82	No
PM_{10}	41.66	82	No
Source: CalEEMod, June 2016.3.2			

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Finding: Less than Significant Impact

The project includes operations that would result in short-term diesel exhaust emissions from on-site construction equipment and would generate diesel particulate matter (DPM) emissions, a toxic air contaminant, from the use of off-road diesel equipment. The nearest receptors include residents at some private parcels in the project vicinity and the members of the public visiting the project area for recreational purposes. Considering that the project footprint where construction activity would take place is a quarter mile or more from any residentially occupied parcels; that the operation of construction equipment is regulated by federal, State, and local regulations and would occur intermittently throughout the course of a day; and that recreation access to areas under construction would be restricted; the likelihood is extremely low that any individual would be exposed to high concentrations of DPM for any extended period of time. This impact would be less than significant.

e) Would the project create objectionable odors affecting a substantial number of people?

Finding: Less than Significant Impact

The project is a restoration project and the only objectionable odors would be associated with exhaust from construction equipment. As discussed in Item (d) above, the project footprint is a quarter mile or more from any residentially occupied parcels; the operation of construction equipment is regulated by federal, State, and local regulations and would occur intermittently throughout the course of a day; and recreation access to areas under construction would be restricted. This impact would be less than significant.

Mitigation Measures

No mitigation measures required.

4.2.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Setting

The project area is located at approximately 6,200 feet in elevation in Coldstream Canyon. The project area is forested mixed conifer consisting mostly of lodgepole pine (*Pinus contorta*) and white fir (*Abies concolor*). The primary water flow through the project area originates from Cold Creek and from the Emigrant Canyon Drainage (a drainage in the upper western portion of the Coldstream Canyon Watershed, sometimes referred to as Emigrant Creek). These waterbodies flow through two focal points (concrete culverts) under the Union Pacific Railroad (UPR) tracks and converge within the proposed stream restoration area. High flows are constrained and channeled through the culverts during spring runoff and result in substantive bank erosion and sediment deposition, and have reduced the riparian habitat downstream of the culverts for approximately 0.75 mile. In the narrow corridors where riparian habitat exists, vegetation includes multiple willow species (*Salix spp.*), black cottonwood (*Populus trichocarpa*), quaking aspen (*Populus tremuloides*), and mountain alder (*Alnus incana ssp. tenuifolia*).

Cold Creek and the surrounding area provides habitat for many wildlife species. Trout species, including brown (*Salmo trutta*), rainbow (*Oncorhynchus mykiss)*, and brook (*Salvelinus fontinalis*), may be present. In addition, CDPR staff have identified at least two native species present within the depositional reaches: redside dace and a species of sculpin (not listed species). The ponds in the

project area provide breeding habitat to amphibians, including the southern long-toed salamander (*Ambystoma macrodactylum sigillatum*), a state recognized species of special concern. Waterfowl such as mallard (*Anas platyrhynchos*) also frequent the meadow streams and gravel-pit ponds. The project area and adjacent areas provide potential nesting and foraging habitat for many birds including the willow flycatcher (*Empidonax traillii*), yellow warbler (*Setophaga petechia*), and various raptor species (sharp-shinned hawk, Cooper's hawk, red-tailed hawk, northern goshawk, osprey, and bald eagle). American beavers (*Castor canadensis*) are active within the area building dams and have raised the surface water level of the upper pond and potentially other locations.

Impact Discussion

The overall goal of the project is to improve hydrologic and ecosystem functionality within Coldstream Canyon through restoration of degraded areas. Project objectives include reducing erosion and excessive sediment transfer within the watershed, enhancing and creating wetland habitat at the ponds, and improving riparian habitat along Cold Creek. The conditions that would be created by the proposed restoration would be beneficial to a variety of listed and other special-status species. Adverse impacts to biological resources would be temporary and limited to the period of project construction. Construction activities that could disturb biological resources include, but are not limited to: personnel and equipment access to the restoration sites, staging of equipment, grading of streambanks, clearing vegetation, and general in-stream and wetland disturbance associated with the project. The impact discussion below is specific to each of the biological resource considerations in the environmental checklist.

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Finding: Less Than Significant Impact

Several special-status species, including several federal and state listed plants and animals, as well as several plant species categorized by the California Native Plant Society (CNPS 2012) as rare throughout their range have habitat within or near the project area. Table 6 displays special-status animal and plant species occurrences based on a query of the California Natural Diversity Database (CNDDB) (CDFW 2019) and the U.S. Fish and Wildlife Service (USFWS) Database (USFWS 2019). Animal species listed within the table are within five miles of the project. Plant species listed in the table are based on a search of nine U.S. Geologic Service (USGS) quadrangles.[1] Figure 13 displays the associated map of special-status species identified within proximity to the project area.

This data, in combination with field reconnaissance of the habitat on-site in October 2018 and July 2019, and with consideration given to the type of disturbance, area of impact, and timing of construction, was used to determine potential adverse effects from the project to each of the listed species with habitat within or near the project area. A description of each of these listed species, an analysis of on-site conditions, and an explanation of potential effects of the project to each individual species follows below.

[1] This list of plant species was provided by CDPR (Environmental Scientist, Dan Lubin) in March of 2020.

Table 8: Special Status and Rare Species[2]

Scientific Name	Common Name	Federal Listing	California Listing	CA Rare Plant Rank	CDFW Status
Animals					
Accipiter cooperii	Cooper's hawk	None	None	NA	WL
Accipiter gentilis	northern goshawk	None	None	NA	SSC
Ambystoma macrodactylum sigillatum	southern long-toed salamander	None	None	NA	SSC
Aplodontia rufa californica	Sierra Nevada mountain beaver	None	None	NA	SSC
Cypseloides niger	black swift	None	None	NA	SSC
Empidonax traillii	willow flycatcher	None	Endangered	NA	NA
Gulo gulo luscus	California wolverine	Proposed Threatened	Threatened	NA	FP
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	NA	FP
Lepus americanus tahoensis	Sierra Nevada snowshoe hare	None	None	NA	SSC
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	Threatened	None	NA	NA
Pandion haliaetus	osprey	None	None	NA	WL
Rana sierrae	Sierra Nevada yellow-legged frog	Endangered	Threatened	NA	WL
Setophaga petechia	yellow warbler	None	None	NA	SSC
Strix occidentalis occidentalis	California spotted owl	None	None	NA	SSC
Vulpes vulpes necator	Sierra Nevada red fox	Candidate	Threatened	NA	NA
Plants					
Botrychium ascendens	upswept moonwort	None	None	2B.3	NA
Botrychium crenulatum	scalloped moonwort	None	None	2B.2	NA
Botrychium lunaria	common moonwort	None	None	2B.3	NA
Botrychium minganense	Mingan moonwort	None	None	2B.2	NA
Bruchia bolanderi	Bolander's bruchia	None	None	4.2	NA
Carex davyi	Davy's sedge	None	None	1B.3	NA
Carex lasiocarpa	woolly-fruited sedge	None	None	2B.3	NA

[2] Animal species listed are those within a five-mile radius of the project. Plants species;listed are those within the USGS, Truckee and Norden topographic quadrangle.

Carex limosa	mud sedge	None	None	2B.2	NA
Ceanothus fresnensis	Fresno ceanothus	None	None	4.3	NA
Cryptantha glomeriflora	clustered-flower cryptantha	None	None	4.3	NA
Drosera anglica	English sundew	None	None	2B.3	NA
Epilobium howellii	subalpine fireweed	None	None	4.3	NA
Epilobium oreganum	Oregon fireweed	None	None	1B.2	NA
Erigeron miser	starved daisy	None	None	1B.3	NA
Eriophorum gracile	slender cottongrass	None	None	4.3	NA
Glyceria grandis	American manna grass	None	None	2B.3	NA
Hackelia amethystina	amethyst stickseed	None	None	4.3	NA
Ivesia sericoleuca	Plumas ivesia	None	None	1B.2	NA
Juncus luciensis	Santa Lucia dwarf rush	None	None	1B.2	NA
Lewisia longipetala	long-petaled lewisia	None	None	1B.3	NA
Meesia triquetra	three-ranked hump moss	None	None	4.2	NA
Meesia uliginosa	broad-nerved hump moss	None	None	2B.2	NA
Mertensia oblongifolia var. oblongifolia	sagebrush bluebells	None	None	2B.2	NA
Nardia hiroshii	Hiroshi's flapwort	None	None	2B.3	NA
Phacelia stebbinsii	Stebbins' phacelia	None	None	1B.2	NA
Potamogeton epihydrus	Nuttall's ribbon-leaved pondweed	None	None	2B.2	NA
Potamogeton robbinsii	Robbins' pondweed	None	None	2B.3	NA
Pseudostellaria sierrae	Sierra starwort	None	None	4.2	NA
Rhamnus alnifolia	alder buckthorn	None	None	2B.2	NA
Rorippa subumbellata	Tahoe yellow cress	Species of Concern	Endangered	1B.1	NA
Scutellaria galericulata	marsh skullcap	None	None	2B.2	NA
Sidalcea multifida	cut-leaf checkerbloom	None	None	2B.3	NA
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	None	None	2B.2	NA
Subularia aquatica ssp. americana	water awlwort	None	None	4.3	NA
CA Native Plant Society – CA Rare Plant Rank:			**CDFW Status:**		

1B: Rare, Threatened or Endangered in California and Elsewhere 0.1 Seriously threatened in California 0.2 Moderately threatened in California 0.3 Not very threatened in California 2B: Rare, Threatened, or Endangered in California, But More Common Elsewhere 0.1 Seriously threatened in California 0.2 Moderately threatened in California 0.3 Not very threatened in California 3: Plants about which more information is needed 0.1 Seriously threatened in California 0.2 Moderately threatened in California 0.3 Not very threatened in California 4. Watch List: Plants of limited distribution 0.1 Seriously threatened in California 0.2 Moderately threatened in California 0.3 Not very threatened in California	WL - Watch List SSC - Species of Special Concern FP – Fully Protected

Animals

Cooper's hawk (*Accipiter cooperii*)

Cooper's hawk is listed as a CDFW watch list species and is also protected by the Migratory Bird Treaty Act. According to the CNDDB, habitat and potential nesting habitat for Cooper's hawk exists near the Sierra Crest, upstream of the project area. Cooper's hawk prefers dense stands of riparian or conifer forest near water. (Zeiner et al 1988-1990). Project activities do include removal of approximately 190 small diameter (generally 10" or fewer diameters at breast height) lodgepole pines at Lower Pond and would also involve removal of vegetation to create the new road realignment (Site #2 on the project area map). In addition, the general intensity of construction activity could significantly impact any Cooper's hawk nesting within or near the project footprint. Implementation of CDPR Project Requirement BIO-1: Protections for Nesting Owls and Raptors, would ensure any potential nesting impacts to Cooper's hawk would be avoided, reducing potential adverse effects to this species to less than significant.

Northern goshawk *(Accipiter gentilis)*

Northern goshawk is a CDFW Species of Special Concern. Goshawks typically live in large tracts of coniferous forests and on forest edges. According to the CNDDB, foraging and potential nesting habitat exists within the project area. In accordance with CDPR Project Requirement BIO-1: Protections for Nesting Owls and Raptors, a CDPR-approved biologist will conduct protocol level surveys within the project area identified to ensure no reproductively active California spotted owls or northern goshawks are present. If an active nest is detected, project activities will not be conducted within five hundred (500) feet of northern goshawk nests during the breeding season (February 15 to August 15), or until the young fledge, as determined by a CDPR-approved biologist. If a CDPR-approved biologist determines nests have failed, project work may commence within buffer zones prior to August 15. Implementation of CDPR Project Requirement BIO-1: Protections for Nesting Owls and Raptors, would ensure any potential nesting impacts to northern goshawk would be avoided, reducing potential adverse effects to this species to less than significant.

Southern long-toed salamander (*Ambystoma macrodactylum sigillatum*)

The southern long-toed salamander is a CDFW Species of Special Concern. It inhabits alpine meadows, high mountain seasonal ponds and lakes. It occurs in mixed Sierra Nevada coniferous forest and alpine communities and requires riparian vegetation, woody debris such as logs and large branches for cover, and other overhead shade structures (Howard 1997). According to the CNDDB,

southern long-toed salamander habitat exists within the project area. Project activities are intended to restore riparian forest and wetland habitat, restoration that would benefit the salamander. However, salamander mortality could occur during project construction, especially construction activities involving heavy machinery and timber removal. Implementation of CDPR Project Requirement BIO-2, Southern Long-Toed Salamander Field Assessment, would reduce the potential for significant adverse impacts to southern long-toed salamander to less than significant.

Sierra Nevada mountain beaver *(Aplodontia rufa californica)*
Surveys searching for the presence of mountain beaver (Aplodontia rufa) were completed by Sierra Ecotone Solutions (G. Alling) in 2019. The project areas (Upper and Lower Ponds, 10 reaches in Cold Creek, the Coldstream Road crossing of Emigrant Creek, Ponds Road culvert removal and the Coldstream Road decommission and realignment) were surveyed for the individuals and for the den locations that are identifiable by the presence of vegetation stored at the burrow entrance. Burrows are located in close proximity to water in montane riparian habitat. No mountain beaver or evidence of mountain beaver burrows or den sites were observed and therefore project construction would not impact the species. Preconstruction biological survey results are included as Appendix C.

Black swift (*Cypseloides niger*)
Black swifts are a CDFW species of special concern. They prefer habitat in deep canyons with falling water, and prefer nesting on shaded cliff walls near areas of dripping or falling water (Wiggins 2004). Favorable nesting characteristic for the species do not exist within the project area and according to CDPR biologist, L. Ashli, the last record for this species in the Truckee area was in 1989. Assuming the species is not in the project area; project activities would have no impact on the species.

Willow flycatcher *(Empidonax traillii)*
This species is listed as Threatened in California. The willow flycatcher prefers dense riparian vegetation such as willows and cottonwoods along meadows and streams. Two preconstruction surveys for willow flycatcher were conducted by Sierra Ecotone Solutions (G. Alling) in accordance with *A Willow Flycatcher Survey Protocol for California* (Bombay et al. 2000) in June 2019 and July 2019. No willow flycatchers were detected during the surveys. Preconstruction biological survey results are included as Appendix C. Though project activities are intended to increase the habitat characteristics that are favorable to the willow flycatcher, construction activities could negatively impact the species. If ground disturbance activity is planned that would impact suitable habitat for willow flycatcher (consisting of deciduous riparian scrub/shrub and trees) within the nesting period of the willow flycatcher (late spring/early summer) and more than one year has passed since the habitat was surveyed for the presence of willow flycatcher, than a preconstruction survey for the bird in accordance with CDPR Project Requirement BIO-4 Willow Flycatcher and Yellow Warbler Field Assessment, would be required prior to groundbreaking.

North American wolverine (Gulo gulo luscus)
The wolverine is federally listed as proposed threatened, and is listed as threatened in California. Wolverines prefer extensive wilderness dominated by coniferous forest large enough to support wide-ranging, solitary individuals. They are commonly found in stands dominated by fir (Abies spp.), Douglas-fir, or lodgepole pine and prefer high-elevation habitats in summer. Habitat selection is variable and could be influenced by abundance of prey, presence of human disturbance, or denning requirements. Overall, wolverines appear to avoid areas that are heavily utilized by people (Zeiner et al 1988-1990). A single wolverine known as SC2008-325 or "Buddy" has been ranging to the north of the project area from Fordyce Lake to Sagehen Creek. The closest known detection is

approximately ten miles away. A wolverine occurrence in the summer when project activities are ongoing is very unlikely. Project activities are not likely to have a significant impact on this species.

Bald eagle *(Haliaeetus leucocephalus)*
Bald eagle has been federally delisted, but it is still listed as endangered under the California ESA (CESA). Nesting habitat is characterized by mature or old-growth trees or snags near a large body of water. Bald eagles may occur in project area when foraging. Occurrences of nesting bald eagles have been recorded adjacent to Donner Lake. Nesting habitat within the project area is poor due to lack of large snags and old growth trees. Implementation of CDPR Project Requirement BIO-1, Protections for Nesting Owls and Raptors, would ensure any potential nesting impacts to bald eagles would be avoided, reducing potential adverse effects to this species to less than significant.

Sierra Nevada snowshoe hare *(Lepus americanus tahoensis)*
The Sierra Nevada snowshoe hare is a CDFW Species of Special Concern. The hare is usually found in upper montane forests and favors habitats with a dense shrub layer. Project activities are designed to stabilize the channel of Cold Creek, creating a more consistent and potentially larger area favorable to the growth of riparian shrubs. This increase in riparian habitat is likely to increase the dense shrub layer that is preferred by the hare, and would be a favorable long-term impact. Project construction in the riparian area of Cold Creek and near Upper and Lower Pond would have a temporary impact on the limited existing habitat in the project area. Implementation of CDPR Project Requirement BIO-3, Survey for Snowshoe Hare, would be implemented to reduce any potential impacts to less than significant.

Lahontan cutthroat trout *(Oncorhynchus clarkii henshawi)*
Lahontan cutthroat trout (LCT) is listed as federally threatened. It inhabits lakes and streams and requires spawning habitat with cool water, pools close to cover and velocity breaks, vegetated stream banks, and relatively rocky substrates. The long term impacts of project activities are expected to improve and increase many of these conditions. Although LCT habitat exists within the project area, LCT are not known to occur within the watershed of the project area based on existing records including the CNDDB (CDFW 2019) and the USFWS Database (USFWS 2019) and therefore no impact to this species is anticipated.

Osprey (*Pandion haliaetus*)
Osprey is on the CDFW species Watch List. Osprey prefer a wide range of forest habitat near lakes, rivers, and coastal waters with adequate supplies of fish. They require large snags or other suitable nesting platforms within 15 miles of fishable water. Foraging may occur within the project area. Nesting is known to occur nearby on the south shore of Donner Lake. Nesting habitat within project area is poor. Implementation of CDPR Project Requirement BIO-1, Protections for Nesting Owls and Raptors, would ensure any potential nesting impacts to osprey would be avoided, reducing potential adverse effects to this species to less than significant.

Sierra Nevada yellow-legged frog *(Rana sierrae)*
The Sierra Nevada yellow-legged frog (SNYLF) is federally listed as endangered and listed as threatened in California. This amphibian inhabits lakes, tarns, ponds, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada Mountains. Waters that do not freeze to the bottom and which do not dry up are required. It prefers open shorelines that gently slope up to shallows of a few inches (CaliforniaHerps 2017). Designated critical habitat exists less than 0.5 miles

from the project boundary. Proximity of the project to SNYLF critical habitat is shown in Figure 13. The long-term impact of project activities could increase aquatic habitat.

Sierra Ecotone Solutions (G. Alling) competed a visual encounter survey (following USFS VES protocol dated) in the Coldstream Canyon Watershed Restoration Project area including throughout the reaches of Cold Creek proposed for restoration (Upper Reach, Middle Reach and Lower Reach), the Coldstream Road crossing of Emigrant Creek, Coldstream Road decommission and realignment, Upper and Lower Ponds and the Ponds Road culvert removal and areas immediately adjacent (within 100 feet) to the proposed activities. A total of three (3) surveys were performed on September 11, 2018, June 1, 2019 and June 25, 2019. No SNYLF or SNYLF habitat was found. Preconstruction biological survey results are included as Appendix C. As SNYLF is not present within the project area, the project would have no impact on this species.

Yellow warbler *(Setophaga petechial)*
The Yellow warbler is a CDFW Species of Special Concern. This species prefers riparian vegetation below elevations of 8,000 feet. Suitable nesting habitat occurs along portions of Cold Creek and tributaries, and previous occurrences have been documented in the area. To ensure the project avoids potentially significant impact to this species, Implementation of CDPR Project Requirement BIO-3, Willow Flycatcher and Yellow Warbler Field Assessment, would be implemented.

California spotted owl (Strix occidentalis occidentalis)
The California spotted owl is a CDFW Species of Special Concern. It prefers dense, old-growth, multi-layered mixed conifer, redwood, fir, and Douglas-fir habitats, from 0-7,600 feet elevation (Zeiner et al 1988-1990). The project area is suitable for foraging spotted owls. Larger trees in and around project area could support nesting. According to the CNDDB, there are numerous occurrences just outside the project area with at least one occurrence of nesting. Implementation of Implementation of CDPR Project Requirement BIO-1, Protections for Nesting Owls and Raptors, would ensure any potential nesting impacts to the California spotted owls would be avoided, reducing potential adverse effects to this species to less than significant.

Sierra Nevada red fox *(Vulpes vulpes necator)*
The Sierra Nevada red fox is a candidate for federal listing and is listed as threatened in California. Habitat for this species is in rugged alpine areas and conifer forests of the Sierra Nevada and Cascade ranges most often above 7,000 feet. The fox prefers forests interspersed with meadows or alpine fell-fields, as it utilizes open areas for hunting and forested habitats for cover and reproduction. It prefers areas with little to no human activity. Potential habitat exists within the project area, although occurrences are very rare. The last occurrence of the fox was a positively identified skeleton found four miles north of the project area in 1941 (CDFW 2019). Only two populations are known to exist in California: near Lassen peak and Sonora Pass (USFWS 2015). Project activities are not likely to have an impact on this species.

Plants
Austin's astragalus (*Astragalus austiniae)*
Austin's astragalus prefers rocky, alpine, boulder and rock fields in subalpine coniferous forest. It tolerates exposed rocky areas along the mountain ridges west of Lake Tahoe. Project activities are proposed in Coldstream Canyon and not on rocky ridges. Due to lack of suitable habitat within the project area, project activities are not likely to impact this species.

Scalloped moonwort (*Botrychium crenulatum)*
Suitable habitat for scalloped moonwort includes meadows, bogs, fens, marshes, swamps, and seeps in upper and lower montane coniferous forest from 4,100 to 10,800 feet (California Native Plant Society 2012). Though there are no known populations that occur within Coldstream Canyon (CDFW 2019), habitat conditions for the species may be present within the project footprint near Lower Pond. With implementation of CDPR Project Requirement BIO-6, Preconstruction Survey for Sensitive Plant Species, project activities would have a less than significant impact.

Mingan moonwort (*Botrychium minganense)*
This species occurs in bogs, fens, meadows or riparian corridors in upper and lower montane coniferous forests from 5,100 to 10,300 feet (California Native Plant Society 2012; CNDDB 2019). Though there are no known populations that occur within Coldstream Canyon (CDFW 2019), habitat conditions for the species may be present within the project footprint near Lower Pond. With implementation of CDPR Project Requirement BIO-6, Preconstruction Survey for Sensitive Plant Species, project activities would have a less than significant impact.

Starved daisy (*Erigeron miser)*
Starved daisy habitat consists of upper montane conifer forest on rocky soils from 6,000 – 8,600 feet in elevation. This species occurs mostly on rocky outcrops and crevices. No occurrences are known within the project area (CDFW 2019), but suitable habitat may exist adjacent to the project area in the rocky outcrops along the edges of Coldstream Canyon. Due to lack of suitable habitat within the project area, project activities are not likely to impact this species.

Donner Pass buckwheat *(Eriogonum umbellatum var. torreyanum)*
The Donner Pass buckwheat grows in open rocky areas with sage brush associations. It prefers shallow granitic soils. Suitable habitat such as undisturbed rocky areas and granitic soils are not present in the valley bottom within the project footprint. Granitic soils or rocky areas within the project footprint are generally the result of frequent flooding and deposition associated with Cold Creek downstream of railroad tunnel culvert and would not support establishment of this species. Due to lack of suitable habitat within the project footprint, project activities are not likely to impact this species.

Plumas ivesia (*Ivesia sericoleuca)*
The Plumas ivesia occurs in open meadows with standing water, seeps, and other vernally mesic areas. Though there are no known populations that occur within Coldstream Canyon (CDFW 2019), habitat conditions for the species may be present within the project footprint near Lower Pond. With implementation of CDPR Project Requirement BIO-6, Preconstruction Survey for Sensitive Plant Species, project activities would have a less than significant impact.

Santa Lucia dwarf rush *(Juncus luciensis)*
This rush occurs in open meadows with standing water, seeps, and vernal pools. Though there are no known populations that occur within Coldstream Canyon (CDFW 2019), habitat conditions for the species may be present within the project footprint near Lower Pond. With implementation of CDPR Project Requirement BIO-6, Preconstruction Survey for Sensitive Plant Species, project activities would have a less than significant impact.

Long-petaled lewisia *(Lewisia longipetala)*
This species grows in subalpine and alpine climates in moist areas in rocky habitat, such as talus that retains patches of snow year-round. Most specimens grow on north-facing slopes with little surrounding vegetation. The plant thrives in the snow, growing largest and most densely in areas of high snowpack and becoming easily water-stressed when far away from areas with snow (Halford and Nowak 1996). These habitat conditions are not present within the project footprint. There are no known populations that occur in the project area or vicinity (CDFW 2019). Project activities are not likely to impact this species.

Broad-nerved hump moss (*Meesia uliginosa)*
This species grows in montane fens on saturated ground, usually in full sunlight. Habitat elevations range from 5000-6000 feet. The project area is slightly outside the favorable elevation range of this species and there are no saturated mountain fens within the project area. Neither are there known populations that occur in the project area or within four miles of the project area (CDFW 2019). Because favorable habitat conditions do not exist, project activities are not likely to impact this species.

Alder buckthorn (*Rhamnus alnifolia)*
Alder buckthorn grows in wet forested areas and meadows. Suitable habitat exists within the project area. There are known occurrences nearby and one occurrence just upstream from where Cold Creek crosses under the railroad in the project area (CDFW 2019). With implementation of CDPR Project Requirement BIO-6, Preconstruction Survey for Sensitive Plant Species, project activities would have a less than significant impact on this species.

Marsh skullcap (*Scutellaria galericulata)*
Marsh skullcap prefers moist habitat and meadows with little canopy cover usually on the edges of streams. The nearest recorded occurrence is along the Truckee River, 0.5 mile east of Truckee (CDFW 2019). Favorable habitat conditions for the species are not present within the project area and there are no known populations that occur nearby. Project activities are not likely to impact this species.

In summary, implementation of CDPR Project Requirements BIO-1 through BIO-6 would generally reduce potentially adverse impacts to special-status species to less than significant. In addition to these project requirements TRWC, in coordination with CDPR, shall implement CDPR Project Requirement BIO-7, Worker Environmental Awareness Program (WEAP) training, requiring the development of a WEAP to educate all construction personnel who would have the potential to encounter sensitive resources, including special status species over the course of the construction period (4 years). Combined, Project Requirements BIO-1 through BIO-7 would reduce potentially adverse impacts to special-status species to less than significant.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Finding: Less Than Significant Impact

Over the long-term, riparian habitat and sensitive vegetation communities associated with riparian areas would benefit from implementation of the project. Within the channel of Cold Creek, the

project would reduce the erosional and depositional forces of water exiting from The Chute and over time, form a more stable and sinuous channel with improved geomorphic complexity. Design plans specify revegetation with riparian seed mixtures for rebuilt banks, and describe revegetation with plants according to the elevation, soil type and proximity to the creek channel including mid-level bank riparian plants, floodplain riparian plants, and upland terrace plants. In addition, the purpose of the restoration planned for Upper Pond and Lower Pond is to restore and enhance wetland habitat and riparian vegetation.

Construction activities could adversely impact the limited existing riparian vegetation and other sensitive communities within the project footprint. Riparian vegetation may be pruned or removed to provide access for equipment or personnel to restoration sites, and equipment and personnel in the area during construction could disturb or compact soils with adverse impacts to existing riparian vegetation. These impacts would be reduced to less than significant by adherence to the conditions of the NPDES General Permit for Stormwater Discharges associated with Construction Activity and the associated SWPPP, and by implementation of CDPR Standard Project Requirements pertaining to erosion control and post project restoration (described in Section 3.6.1), implementation of erosion control BMPs in the restoration design plans (Appendix B), and implementation of MM GEO-1: Sedimentation and Erosion Control Measures. With implementation of these measures, impacts to riparian habitat would be less than significant.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Finding: Less Than Significant Impact

Jurisdictional waters of the U.S. include jurisdictional wetlands as well as all other waters of the U.S. such as creeks, ponds, and intermittent drainages. Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The majority of jurisdictional wetlands in the United States meet three wetland assessment criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Multiple areas of the project footprint have a high potential for meeting the full definition of federally protected wetlands including areas immediately adjacent to Upper and Lower Pond and areas within and adjacent to Cold Creek.

Project activities would cause direct impacts to wetlands through fill and hydrological interruption during construction, however, restoration objectives include restoring and enhancing wetland habitat at the ponds and stabilizing the floodplain of Cold Creek, activities which could, over the long-term, increase the total acreage of wetlands within Coldstream Canyon. In addition, the placement of any fill within jurisdictional waters of the U.S. including within the channel of Cold Creek and within or adjacent to the ponds would require a Clean Water Act (CWA) section 404 permit, which requires completion of a wetland and/or waters delineation, a U.S. Army Corps of Engineers verification of that delineation, and proof of compliance with the CWA Section 404. Furthermore, because the project would require a CWA Section 404 permit, a CWA Section 401 Water Quality Certification (WQC) would also be required and obtained from the LRWQCB. A Section 401 WQC would ensure that the activities of the proposed project comply with all applicable water quality standards, limitations and restrictions. Finally, the project is within the Truckee River Hydrologic Unit and

would also therefore require an exemption from LRWQCB for any discharge of fill within the 100-year floodplain in accordance with the Porter Cologne Water Quality Control Act. TRWC conformance with these existing permitting requirements would reduce the impacts of project activities to less than significant.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Finding: Less Than Significant Impact

Coldstream Canyon likely serves as a wildlife corridor for terrestrial and aquatic species that migrate from or to lower elevation areas to upland areas. By meeting the restoration goal and objectives of the project, conditions for movement of fish and other aquatic species would improve with project implementation. In particular, construction of instream structures within Cold Creek would slow water speeds and create more complex habitat and improve fish passage, a long-term beneficial effect to fish. Further, project implementation would not preclude use of the site in the future as a wildlife corridor or nursery sites.

Construction activities would have a less than significant impact on terrestrial wildlife movement through the canyon because construction activities are temporary and would occur within a finite and relatively small area relative to the size of the canyon. Migrating terrestrial species could, therefore, easily avoid construction areas. However, construction activities, in particular, dewatering or instream channel work, could temporarily impact migrating fish. To avoid any impacts to migrating fish within Cold Creek, implementation of CDPR Project Requirement BIO-5, Fish Protection Measures, would be required.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Finding: No Impact

Project activities include removing approximately 190 small diameter lodgepole pines along the shores of Lower Pond. Remaining trees would be protected with exclusion fencing installed to help protect native trees and shrubs where they are in close proximity to proposed grading or excavation. The Placer County General Plan protects landmark trees and major groves of native trees. The trees proposed for removal are small diameter (generally 10" or fewer diameters at breast height) and would not be considered landmark trees. Project activities would not conflict with any local policies or ordinances protecting biological resources.

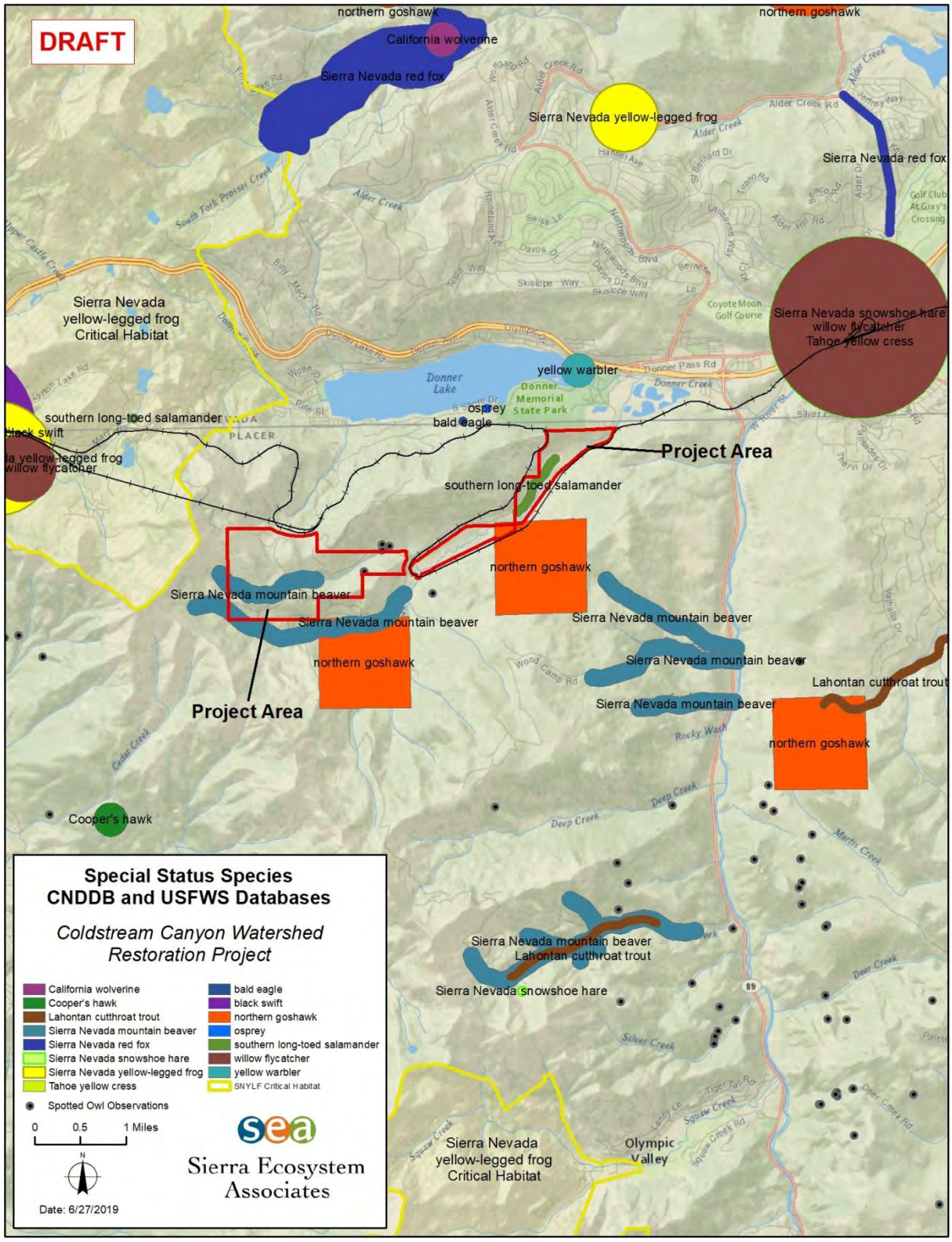
f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Finding: No Impact

There are no approved habitat conservation plans or natural community conservation plans that apply to the proposed project area and therefore project activities would not conflict with any such

plans. The project is aligned with and proactively implements the park-wide goals and guidelines of the Donner Memorial State Park General Plan pertaining to natural resources including for vegetation management, riparian and wetland areas, and habitat restoration (see Section 4.2.11, *Land Use*).

Figure 13: Special Status CDFW and USFWS Species in the Project Vicinity



4.2.5 Cultural Resources

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

Setting

A Phase 1A cultural resource study was prepared for the project in early 2019 by Consulting Archaeologist, Susan Lindström, Ph.D. (Lindström 2019). The cultural resource report (cultural report) based on Lindström's study includes a discussion of the historical and archaeological background of Coldstream Canyon and vicinity and includes the results of a records search with the California Historical Resources Information System, North Central Information Center (NCIC) at California State University Sacramento, and results of a record search of CDPR cultural files. The cultural report also records the initial Native American outreach completed in accordance with CEQA guidelines and mandates under California Assembly Bill 52 (pursuant to PRC 21080.3.1).

At the time of Lindström's cultural resource study the project area was defined as the area downstream of The Chute and roughly bound by the UPR railroad tracks, and therefore the records search focused on the area downstream of the UPR tracks. However, CDPR Associate State Archaeologist for the Sierra District, Denise Jaffke, conducted surveys of the area west (upstream) of Horseshoe Bend in 2012 and 2014. The technical report is still pending for the surveys, but CDPR has a map with archaeological resources identified within the upstream area. The following cultural setting description is excerpted and/or summarized from the cultural report, with additional references drawn from the IS/MND for the Coldstream Floodplain Enhancement Project (CDPR 2011). As the cultural report describes, much of its content was in turn adapted from information provided in an early overview of Donner State Park (Lindström 1987) and a later historical background for the Donner Lake Basin Watershed Assessment (Lindström 2015). Archaeological context is derived from cultural resource investigations on Donner Pass (Lindström 1999) and from CDPR's recent archaeological findings in Coldstream Canyon and surrounding uplands (Jaffke 2013). The cultural report is attached as Appendix B to this document.

Ethnographic Context

As the cultural report summarizes, prior archaeological and ethnographic studies indicate that the northern Washoe, or Wélmelti' are the applicable tribal authorities for lands encompassing the study area. The project area itself lies within the nuclear territory of the Washoe Indians (Downs 1966). Numerous prehistoric sites dating from the last 9,000 years have been inventoried in the project vicinity, and some are marked by Washoe place names.

The Washoe once embodied a blend of Great Basin and California in their geographical position and cultural attributes. While they were an informal and flexible political collective, Washoe ethnography hints at a level of technological specialization and social complexity for Washoe groups, non-characteristic of their surrounding neighbors in the Great Basin. Semi-sedentism and higher population densities, concepts of private property, and communal labor and ownership are reported and may have developed in conjunction with their residential and subsistence resource stability (Lindström 1996). The Washoe also have a tradition of making long treks across the Sierra passes to hunt, trade and gather acorns. Archaeological evidence of these ancient subsistence activities is found along the mountain flanks as temporary small hunting camps containing flakes of stone and broken tools. In the high valleys permanent base camps are represented by stone flakes, tools, grinding implements, and house depressions.

In a recent ethnographic study of Washoe encampments, Rucks (2005) reported on the noteworthy concentration of settlements along the Truckee River between Donner Creek and the Little Truckee River at Boca, suggesting that this stretch of river was unusually productive (d'Azevedo 1956; Rucks 2005). "Extensive use and habitation" of Donner Creek, were reported to Heizer and Elsasser (1953:7) by their Washoe consultants during the 1950s. These camps may have centered claims on resource catchments, including easier-to-fish feeder streams, but the river itself may have been regarded more as a common source of the fish (Rucks 2005). It was the feeder streams that were the favored fishing locations, because "the water was too rough and there were too many bears along the Truckee River" (d'Azevedo 1955 field notes in Rucks 2005).

The settlement known as *Datsáshit mál'im detdéyi?* is located on Donner Creek ¼ mile downstream from where the State Route 89 crosses the creek (d'Azevedo 1956: #129). *Dewbeyulélbeti?* is at the junction of Donner Creek and the Truckee River, on the sunny side of the hill where a lumber mill was once located. A large rock containing a bedrock mortar or *lam* marks the camp. This is where *welmelti* [Northern Washoe] got much of their fish and game. Donner Creek was better fishing than Truckee; it was smaller and could be diverted (Freed 1966: #14). (This might also be the case for Cold Creek in higher flow, although there is no specific documentation.). Families owned fish blinds and the reference to "*yutsim*" (a technique of capturing stranded fish by temporarily damming a creek) refers to one of several communal fishing practices. The *yutsim* at Donner Creek targeted the late-season whitefish runs and was one of the last harvests before winter. The stores of whitefish may have sustained those Washoes who elected to remain in the Truckee River uplands into the winter season. d'Azevedo's Washoe consultants specifically referenced over-wintering at higher altitudes, up the Truckee River to Donner Lake and in eastern Sierra Valley, as an interim strategy during mild winters and/or poor pine nut harvests.

Historic declines in Washoe population and traditional resource use were caused by disruptions imposed by incoming Euroamerican groups. By the l850s Euroamericans had permanently occupied Washoe territory and changed traditional lifeways. As mining, lumbering, grazing, commercial fishing, tourism, and the growth of settlements disrupted traditional Washoe relationships to the land, Washoes were forced into dependency upon Euroamerican settlers (Lindström et al. 2000, 2007). Into the early 20th century, Washoes survived by establishing patronage relationships on ranches and resorts and trading goods and services to the dominant Euroamerican population (selling baskets, catching fish and game, and working as domestic laborers, wood cutters, ice harvesters, caretakers, game guides, etc.). In exchange Washoes arranged for camping privileges on traditional lands with access to what resources remained. Beginning in 1917, however, the Washoe Tribe began acquiring back a small part of their traditional lands (Nevers 1976:90-91). They remain

as a recognized tribe by the U.S. government and have maintained an established land base. Tribal members are governed by a council that consists of members of the Carson, Dresslerville, Woodfords, and Reno-Sparks Indian colonies, as well as members from non-reservation areas. Into the 21st century, contemporary Washoe have developed a Comprehensive Land Use Plan (Washoe Tribal Council 1994) that includes goals of reestablishing a presence within the Tahoe Sierra and re-vitalizing Washoe heritage and cultural knowledge, including the harvest and care of traditional plant resources and the protection of traditional properties within the cultural landscape (Rucks 1996:3).

Historic Context

Historic topics germane to the project area center around heritage themes involving transportation (the Emigrant Trail passes through the canyon) and early settlement, logging, ice production, and gravel mining.

Transportation and Early Settlement

Some of the first Euroamerican visitors to the Truckee area were members of the Stephens-Murphy-Townsend emigrant party who ascended the Truckee River and crossed over Donner Pass in mid-November of l844. This route, which traversed along Donner Lake and through Truckee on present-day Donner Pass Road, has later become known as the Truckee route of the Emigrant Trail. During the period l845-l848 it is estimated that about 2,600 individuals traveled from "the States" to California (Unruh l979:119), with most using the Truckee/Donner Pass gateway -- the most notable being the Donner Party. The ordeal of starvation and cannibalism, endured by their members in the winter of l846-1847 at Alder Creek and Donner Lake, is a well-known and tragic episode in the American settlement of the West and is now memorialized at Donner Memorial State Historic Park.

Transcontinental Railroad

In l852 the California legislature called upon the federal government to build a railroad to the Pacific and by l853 Congress had instructed the U.S. Army to survey feasible routes for a railroad (Kraus 1969). Theodore D. Judah made his first examination of a potential route for the railroad via Donner Pass and through Truckee in the fall of l860 and found it to be the most favorable. The Central Pacific Railroad Company (CPRR) was chosen to build the rails east. The company was granted a strip of land on both sides of the right-of-way and one square mile of land for each mile of railroad completed, to be awarded in a checkerboard pattern on alternating sides of the track. The company could then sell this land to raise more money, which it proceeded to do for its Truckee holdings. The first rail was laid at Sacramento on October 27, l863. By May of l868 the railroad was built between Truckee and Reno but the line between Cisco and Truckee was not completed until June l5, l868. The entire transcontinental route was finished on May l0, l869, with the last rail joining the Central Pacific Railroad and the Union Pacific at Promontory, Utah.

Logging

Logging was first initiated in the Truckee area after the discovery of Nevada's Comstock Lode silver mines in l859. When production began to fall in the mines in l867, the lumbering business also began to suffer. A new market for lumber was found in the railroad. As the rails reached the summit in l866-1867, Truckee became a major lumbering center with at least 18 saw mills establishing operations to supply the railroad with cordwood for fuel, lumber for construction and ties for the roadbed. After the completion of the railroad in l868-1869 lumber companies diversified and grew as new markets were opened to them. The expansion beyond saw milling

targeted such facilities as planning mills, box factories, sash and door establishments, a chair factory and furniture factory, shingle mills, and charcoal earthen and brick kilns. By the turn of the 19th -20th century, lands were largely stripped of pine, but stands were re-entered to harvest fir for use as pulpwood for paper mills. Fir, considered unsuitable for railroad ties and mine timbers, had been largely ignored during the earlier harvesting. The Floriston Pulp and Paper Company commenced operations at Floriston in 1899. Pulpwood was locally processed at their mill, which was located down the Truckee River Canyon on the railroad near the California/Nevada state line. Organized primarily by the Fleischhacker Brothers, the company operated the second largest paper mill in the United States during its period of operations between 1900 and 1930. Control of the company went to Crown-Columbia in 1912, to Crown-Willamette in 1914 and later to the Crown-Zellerbach Corporation. In 1912 the company held 20,200 acres in Placer County and by 1914 practically all the white and red fir had been cleared off this acreage. The cultural report includes several maps that provide a graphic chronicle of sawmills and logging road developments in the headwaters of Coldstream Canyon that centered around Horseshoe Bend.

Ice Production

Lumbermen released from seasonal logging work usually found employment in Truckee's ice industry. From 1868 through the 1920s, ice harvesting rivaled the economic importance of the lumber industry (Hansen 1987; Itogawa 1974; Macaulay 2002). Eastern ice and Alaskan ice were costly and not dependable, so closer sources were sought. With the completion of the first transcontinental railroad across Donner Pass in 1869, natural ice could be harvested and transported cost-effectively, and Truckee-Donner ice soon dominated the industry. While Donner Lake wasn't cold enough for consistent ice production, ice operations were set up along its perimeters and tributaries, e.g., Sitka Ice Company, Donner Ice Company, Pacific Ice Company, and Union Ice Company. Up to 35,000 tons of ice were harvested in one year at Donner Lake (Meschery 1978:48). In 1895 the Donner Ice Company (of Chicago) purchased holdings at the mouth of Coldstream Canyon and developed its pond below the junction of Coldstream and Donner Creek outlets (MacAulay personal communication 1984 in Lindström 1987:22).

Aggregate (Gravel) Mining

Coldstream Canyon is underlain by thick deposits of glacial outwash, valued for railroad and road construction and even for gold (Richards 2006). As early as 1874, the Central Pacific Railroad recognized the value of the crushed, washed and partially sorted deposits of gravels in the Coldstream Canyon and Donner Meadow. They developed a quarry about a mile up from the lower end of Coldstream Valley. Small quarries were opened on two different railroad spurs that ran near the Coldstream-Donner meadow to provide rail ballast and construction rock. Later, in the post-World War II period, the need for quality aggregates to build the modern highway system led to the sale of Donner Meadow and renewed quarrying commenced by 1953. The State of California sued in condemnation proceedings to obtain an adjoining 74 acres to use for a quarry to build improvements to U.S. 40. This mix of sand, rock and silt was mined extensively during the 1960s to build Interstate 80 and other local highways and for subdivision development (Richards 2006). To build Interstate 80, Teichert Aggregates Corporation opened a large gravel quarry during the 1960s in the eastern extension of historic Donner Meadow at the confluence of Cold Creek and Donner Creek with subsequent quarries developed farther up Cold Creek. Teichert Aggregates moved their quarry from Coldstream Canyon to Martis Valley in 1983 (Sierra Sun 8/18/1983, 6/07/2008).

Prior Archeological Studies and Known Cultural Resources

Archival research and archaeological literature review (including CDPR findings and the NCIC records search results) disclosed that the entire project area has been subject to prior archaeological study including a total of five previous archaeological studies within the project area, and four additional studies within a 1/8-mile search radius (Table 9 and Figure 14). In addition, all valley locales enclosed within the bounds of the railroad have been intensively examined (Jaffke 2013). Upstream of Horseshoe Bend, CDPR Associate State Archaeologist for the Sierra District, Denise Jaffke, conducted surveys in 2012 and 2014. Though the technical report is still pending, CDPR has a map with archaeological resources identified within the upstream area.

The records review by the NCIC documents the route of the first transcontinental railroad (CA-PLA-841H, designated State Historic Landmark No. 780) and the route of the Emigrant Trail (CA-PLA-699H), along with a single isolated find (prehistoric projectile point) found within the 1/8th - mile search radius. Jaffke's (2013) intensive survey of Coldstream Canyon resulted in the identification of 10 archaeological sites. In addition to the Phase1A cultural resource study conducted by Lindström, Jaffke completed a pedestrian survey along the proposed road realignment (Site #2 on the project area map) followed by a metal detector survey along the proposed alignment in areas devoid of brush in June 2019. The survey was conducted due to the known proximity of the Emigrant Trail to the realignment. Jaffke reported that metal objects were found along the proposed route, but that they were not of significant quantities to indicate a substantial buried historic deposit. Combined NCIC and CDPR results comprise a total of 11 archaeological sites and 15 isolated finds within the Coldstream Canyon project footprint and 1/8-mile radius. The 11 identified archaeological sites within and surrounding the project footprint are summarized in Table 9. A description of the 15 isolated finds is included in the cultural resources report (Appendix B).

Table 9. Prior Archaeological Studies Within and/or Near the Project Footprint

Report #	Author(s)/Year	Title	Study Location
NCIC #8619	Arrington et al/2006	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project	Within project footprint
NCIC #9958	Henning 1949	Overland Emigrant Trail	Within project footprint
NCIC #10434	Snyder 1997	Central Pacific Transcontinental Railroad, Sacramento to Nevada State Line-HAER CA-196	Within project footprint
NCIC #11366	Jaffke 2013	Cultural Resources Inventory Report Coldstream Canyon, Donner Lake Memorial Park	Within project footprint
NCIC #11886	Lindström 2015	Donner Lake Basin Watershed Assessment, A Contextual Overview of Human Land Use and Environmental Conditions: Workbook	Within project footprint
NCIC #7331	Schoemheid 1993	Terry Timber Harvest Plan	Within 1/8-mi radius
NCIC #7340	Calvert 1997	Horseshoe Bend Timber Harvest Plan	Within 1/8-mi radius
NCIC #7341	Smith 1996	Emigrant Trail Conservation Timber Harvest Plan	Within 1/8-mi radius
No #	Stewart 1990	Bohemia, Inc. Timber Harvest Plan	Within 1/8-mi radius

Figure 14. Prior Archeological Coverage of the Project Area (excerpted from the cultural report, Appendix B)

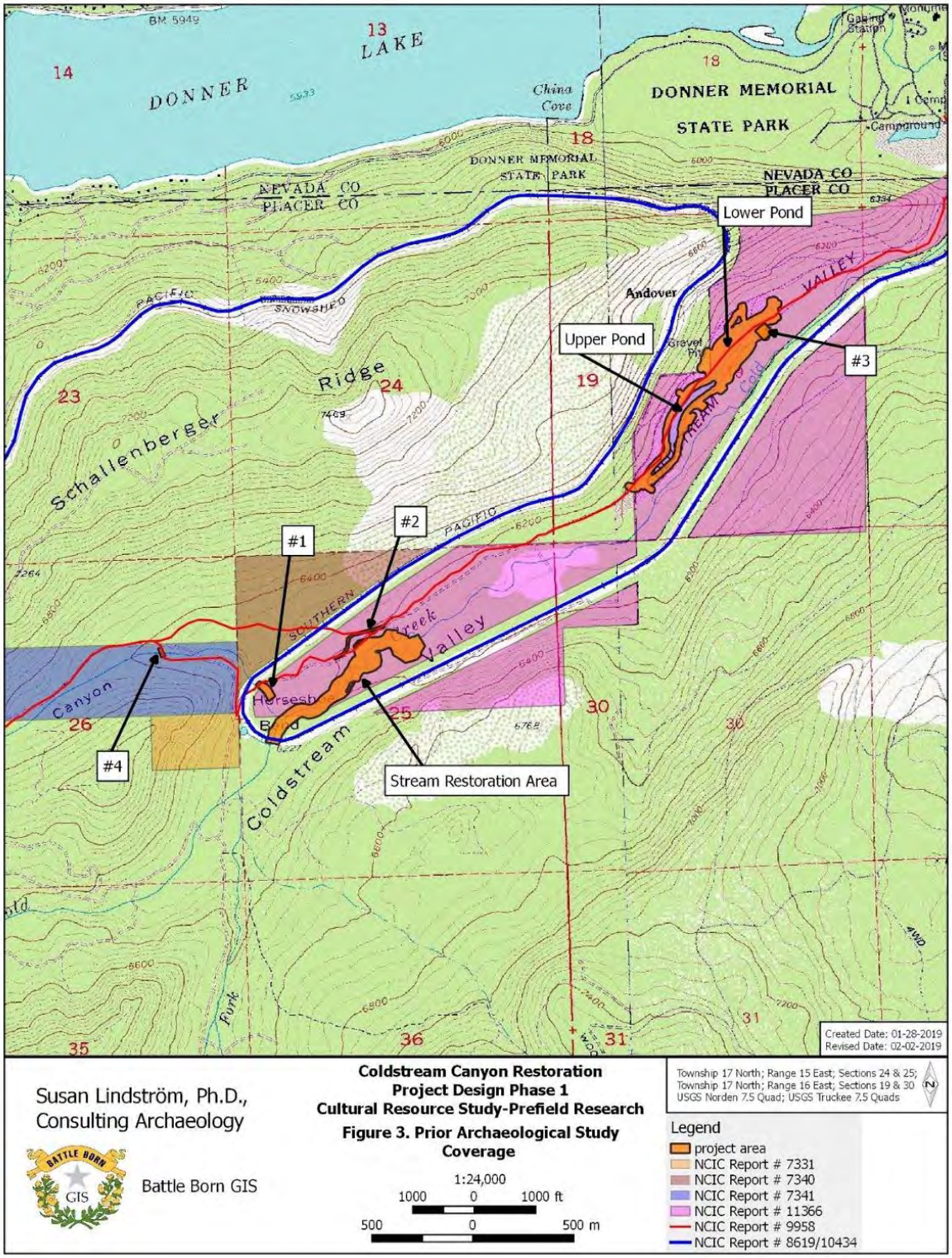


Figure notes: The numbers #1, #2, #3 and #4 in this map indicate the location of the four substantive road improvements planned. See Figure 2, Project Area.

Table 10. Summary of Known Cultural Resources Within/Adjacent to Project Footprint

Resource No.	Resource Type	Report No.	Location
Cultural Sites			
CA-PLA-699H	Emigrant Trail	NCIC #11366	Within project footprint
CA-PLA-841H	Transcontinental Railroad	NCIC #11366	Within project footprint
P-31-5653/CA-PLA-2486/H	Historic refuse scatter, Chinese ceramics, hearth feature; prehistoric lithic scatter	NCIC #11366	Within project footprint
P-31-5635/CA-PLA-2482	Prehistoric lithic scatter	NCIC #11366	Within 1/8-mi radius
P-31-5634/CA-PLA-2481H	Historic refuse scatter, Chinese ceramics	NCIC #11366	Within 1/8-mi radius
P-31-5636/CA-PLA-2483/H	Historic refuse scatter, Chinese ceramics; prehistoric lithic scatter	NCIC #11366	Within 1/8-mi radius
P-31-5637/CA-PLA-2484/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	NCIC #11366	Within 1/8-mi radius
P-31-5638/CA-PLA-2485/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	NCIC #11366	Within 1/8-mi radius
P-31-5654/CA-PLA-2487H	Historic refuse scatter, two pit/depressions	NCIC #11366	Within 1/8-mi radius
P-31-5655/CA-PLA-2488H	Historic refuse scatter, artificial flat (two structure platforms?)	NCIC #11366	Within 1/8-mi radius
P-31-5656/CA-PLA-2489H	Historic refuse scatter	NCIC #11366	Within 1/8-mi radius

Impact Discussion

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Finding: Less Than Significant Impact

According to CEQA, lead agencies are required to identify historical resources that may be affected by any undertaking that triggers CEQA environmental review. The significance of such resources must be evaluated using the criteria for listing in the California Register of Historic Resources (CRHR) (Public Resources Code §5024.1). Generally, a resource is considered to be historically significant if it has integrity and meets the criteria for listing in the CRHR. Resources already listed or determined eligible for the National Register of Historic Places (NRHP) are by definition eligible for the CRHR. Integrity is defined as the authenticity of a historical resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance. CRHR regulations specify that integrity is a quality that applies to historical resources in seven ways: location, design, setting, materials, workmanship, feeling, and association. In addition, for a resource to be eligible for the CRHR, it must satisfy each of the following three standards.

a) A property must be significant at the local, state, or national level, under one or more of the following criteria.
    i. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.

ii. It is associated with the lives of persons important to the nation or California's past.
iii. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
iv. It has yielded, or may be likely to yield, information important to the prehistory or history of the state or the nation.

b) A resource must retain enough of its historic character or appearance to be recognizable as a historic property, and to convey the reasons for its significance.
c) It must be 50 years old or older (except for rare cases of structures of exceptional significance).

There would be no long-term impacts to cultural resources associated with the project as project operation would not introduce any additional people, infrastructure or equipment to the area that would degrade a resource. However, existing known cultural resources as well as not-yet-identified cultural resources within or adjacent to the project footprint could be impacted by construction activities. Construction activities that could disturb a resource include, but are not limited to: access to the restoration sites, staging of equipment, grading of streambanks, clearing vegetation, road decommissioning, replacement and repair, and restoration and re-vegetation measures. Such activities can disturb or compact soils, crush or displace artifacts, and could alter prehistoric and historic features or deposits. Ground-disturbing activities are short-term or temporary, but damage, if any, to non-renewable historic, archeological and paleontological resources would be permanent.

There are multiple identified cultural resources within or adjacent to (within 1/8 mile) of the project footprint including those summarized in Table 10. While the status of these resources as historically significant has not been established, it is possible they could be determined to be historic resources as defined in §15064.5 in which case any impacts to the resource would need to be avoided to maintain a less than significant impact. In particular, CA-PLA-2486/H and CAL-PLA-2489H are sites of historic refuse scatter within or very near project ground disturbing activities for which historical associations have not yet been determined, and CA-PLA-2483/H and 2484/H are sites of historic and prehistoric refuse scatter also near project ground disturbing activities. Further, CA-PLA-699H, the Emigrant Trail corridor, intersects most project components.

The cultural resources report did not include an NCIC records search or NAHC sacred lands search of the project area in the upper portion of the watershed (above Horseshoe Bend) where multiple road drainage improvements are planned. However, CDPR consultation for that area is possible given surveys completed by Jaffke for the area in 2012 and 2014 and associated maps developed from the surveys. Though the road drainage improvements are planned within the road prism, the earthwork activities associated with the improvements could impact cultural resources in the immediate vicinity. Based on correspondence with Jaffke (Jaffke pers. com 2018) one point on CDPR's map of potential cultural resource areas upstream of Horseshoe Bend appears to be within close proximity to the site of a potential drainage improvement (EMTR-12-I10 on CDPR's map).

To ensure potential historic resources are not adversely impacted by the project the following CDPR Project Requirements would be implemented:

- CDPR Project Requirement CUL-1, Supplementary Field Verification

- CDPR Project Requirement CUL 2, Worker Environmental Awareness Program (WEAP) Training
- CDPR Project Requirement CUL, Undocumented Cultural Resources

CDPR Project Requirement CUL-1 requires that the five most culturally sensitive sites near ground disturbance activities below Horseshoe Bend (CA-PLA-2486/H. CAL-PLA-2489H, CA-PLA-2483/H, 2484/H, CA-PLA-699H) be field verified in relation to proposed project ground disturbance, and also requires evaluating the historical significance of the collapsed culvert proposed for removal as associated with the Ponds Road culvert removal (Site #3 on the project are map). Evaluation of the culvert is required as the culvert is presumed to be older than 50 years and thus potentially eligible for qualification as a historical resource. The measure also requires that a qualified archeologist (RPA) complete field verification for the site(s) in the upper watershed where a planned road drainage improvement intersects or comes close to intersecting with CDPR identified sites of potential cultural resources according to Jaffke's 2012 and 2014 surveys (at least one site). Table 11 (below) displays each of the resource types and field verification activities required prior to construction.

CDPR Project Requirement CUL-2 requires that construction personnel be trained regarding the recognition of cultural and heritage resources, and CDPR Project Requirement CUL-3 specifies that in the event a previously undocumented cultural resource is encountered during project construction that work within the immediate vicinity of the find will stop until a qualified archeologist (RPA) has evaluated the find and implemented appropriate treatment measures to avoid have a significant impact to historical resources per Public Resources Code (PRC) 15064. Implementation of these CDPR Project Requirements (CUL-1, CUL-2 and CUL-3) would prevent significant adverse effects to documented and undocumented historic resources, reducing the potential impacts of the project to less than significant.

Table 11. Supplementary Field Verification Required Under CDPR Project Requirement CUL-1

Resource No.	Resource Type	Field Verification Activity	Project Component
CA-PLA-699H	Emigrant Trail	GPS locate trail and associated features; with particular attention and complete survey of the proposed realigned road segment (Site #2 on the project area map). Assess project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Road improvements-Site #1, #2, #3, #4; Upper and Lower ponds restoration; stream restoration
No number	Crushed, rusted, gated culvert with trap door and latch chain	Archaeological inventory and evaluation to determine if feature is older than 50 years; feature is likely not significant and not a project constraint	Road improvements-Site #3
P-31-5653/ CA-PLA-2486/H	Historic refuse scatter, Chinese ceramics, hearth feature; prehistoric lithic scatter	Field verity site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Stream restoration

P-31-5636/ CA-PLA-2483/H	Historic refuse scatter, Chinese ceramics; prehistoric lithic scatter	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Upper Pond restoration
P-31-5637/ CA-PLA-2484/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Lower Pond restoration
P-31-5656/ CA-PLA-2489H	Historic refuse scatter	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Stream restoration

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Finding: Less Than Significant Impact

Public Resource Code (PRC) Section 21083.2 states that if a project could affect a resource that has not met with the definition of a historical resource set forth in PRC Section 21084, then the lead agency should determine whether a project would have a significant effect on "unique" archaeological resources. PRC 21082.2(g) states: "… a 'unique archaeological resource' means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

a) Contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information.
b) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
c) Is directly associated with a scientifically recognized important prehistoric or historic event or person."

A resource that merely adds to the current body of knowledge without meeting one of the above criteria is considered a non-unique archeological or paleontological resource.

As described under Item (a), above, there are multiple identified cultural resources within or adjacent to the project footprint that could be impacted by construction activity. Whether any of these resources may be considered unique archeological resources is unknown. In addition, ground disturbance could unearth additional potentially significant archeological resources. To avoid impacts to archeological resources within the project area, CDPR Project Requirements CUL-1, CUL-2, and CUL-3, would be implemented. With implementation of these project requirements any impacts to unique archeological resources, including to any previously unidentified resources discovered as a result of earthmoving activities, would be reduced to less than significant.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Finding: Less Than Significant Impact

Prior archeological studies of the project area have not identified any burial sites or ceremonial grounds. Therefore, no human remains are known to be buried within the project area. In the event that human remains are discovered, implementation of CDPR Project Requirement CUL-4, Protocol in the Event of the Discovery of Human Remains, would reduce potentially significant impacts to a less than significant level.

Mitigation Measures

No mitigation measures required.

4.2.6 Energy

Would the project:	Significant Unavoidable Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Setting

In 2019, Placer County prepared a Draft Sustainability Plan to show its commitment to reduce greenhouse gas emissions and enhance community resiliency to long-term changes associated with climate-related hazards. Primary goals of the Sustainability Plan include implementation of the County General Plan, conformance to California laws and regulations, and identification of feasible greenhouse gas emission reduction measures. Energy usage in California varies by construction materials, types of energy use, and the efficiency of electricity-consuming devices. Construction of new residential and nonresidential structures requires compliance with standards for heating, cooling, water heating, lighting, and ventilation all laid out in the California Code of Regulations, Title 20 (Public Utilities and Energy) and Title 24 (Building Standards Code). More than 90% of transportation energy consumption in California is attributed to petroleum and vehicle use (Placer County 2018).

Impact Discussion

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Finding: Less Than Significant Impact

Construction activities for the project would not result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy resources. Construction does not involve any new buildings requiring compliance with Titles 20 and 24 of the California Code of Regulations. The contractor would use only as much heavy equipment as needed to complete the project. Project construction would not involve excessive energy use or loss.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Finding: No Impact

Neither the State of California nor Placer County has an existing standard or threshold for renewable energy or energy efficiency. Therefore, the project would not conflict with a state or local plan for renewable energy or energy efficiency.

Mitigation Measures

No mitigation measures required.

4.2.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Setting

The 12.5 square-mile Coldstream Canyon watershed is located in the geomorphic province of the Sierra Nevada. As described in the CCWA (TRWC 2007), the watershed has a high degree of relief and varied terrain. The western half of the watershed, the highest portion, consists of narrow valleys and high gradient streams. The valley widens considerably near the middle of the watershed, before narrowing again in a short canyon near the eastern boundary. From the exit of the canyon, Cold Creek flows across the relatively-wide Donner Creek valley floor to its confluence with Donner Creek.

The upper elevations of the Coldstream Canyon watershed show common features of glacial erosion, particularly along the western portion, where steep slopes/ridges were formed (30%-88% slopes). Discontinuity of valley gradients seen throughout the watershed originate from differing glacier source area sizes, creating different slopes. These variations in watershed slope are factors in sediment production and erosion.

There are two general soil groupings found within the watershed, moraine and outwash (Tallac) and bedrock (Meiss and Waca) (TRWC 2007; NRCS 2019). As described in the CCWA (TRWC 2007), the Tallac soil has a weakly cemented silica hardpan at 40-70 inches deep which can act as a restricting horizon for the continued downward movement of water. The latter two soils are differentiated by the parent material. Waca soils are formed over andesitic tuff, which are generally softer materials, whereas the Meiss soils formed over harder andesitic rock. Much of the main valley bottom is Tallac soils, developed over glacial deposits, while valley walls are the Waca and Meiss soils. Most of the barren areas in steeper upper portions of the watershed are mapped as undifferentiated rockland or rock outcrop complexes. Most materials exposed at the surface of the watershed at higher elevations are Miocene age or younger volcanic deposits. Isolated outcrops of intrusive granitic rocks are found in the western edge of the watershed. Pleistocene-age glacial deposits are found throughout the valley bottoms of the watershed. Extrusive rocks resulting from ash or lahars with a very fine matrix are common in the watershed, including silt or smaller fine particles, which are susceptible to erosion into steep landforms (TRWC 2007).

The Coldstream Canyon Watershed Assessment identifies a fault (name unidentified) along the outcrop of granitic rocks in the western portion of the watershed that influences the watershed gradient in that location (TRWC 2007). Faults located near the project area include the Mohawk Valley Fault (the southern section of which lies approximately 20 miles northwest of Truckee in Sierra County), Dog Valley Fault (which extends from Dog Valley southwest to Donner Lake) (Town of Truckee 2006), and the recently discovered Polaris Fault (a strike-slip fault that is 22 miles in length and stretches from just west of Martis Creek Dam to Lake Tahoe) (Hunter et. al 2011). These faults could result in a maximum credible earthquake of 7.0, 6.75, and 6.9 respectively. Additionally, several small trace faults are also located nearby in the Town of Truckee (Town of Truckee 2006; Hunter et. al 2011). None of these faults have been identified on the Alquist-Priolo Earthquake Fault Zoning Map (California Department of Conservation 2015). However, micro-earthquakes are common in the Donner-Truckee area and, on occasion, larger earthquakes, up to 6.3 have occurred in historic time (CDPR 2003).

Impact Discussion

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- **i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?**
- **ii. Strong seismic ground shaking**
- **iii. Seismic-related ground failure, including liquefaction?**
- **iv. Landslides**

Finding: Less than Significant Impact

In 1972 the Alquist-Piolo Earthquake Fault Zoning Act was implemented to regulate construction and development near active faults, designating a zone of 200 to 500 feet on both sides of an active fault trace. Under the Alquist-Piolo Eartquake Fault Zoning Act, no buildings may be constructed for human occupancy within fifty feet of an active fault trace. While the project area is not within an

area of concern as specified by the Alquist-Priolo Earthquake Fault Zoning Map (California Geological Survey 2019), the project area is mildly susceptible to ground shaking due to the proximity of the Mohawk Valley, Dog Valley, and Polaris Faults and, in the case of a substantial seismic event there is the potential for liquefaction where unconsolidated granular soils are water saturated. In addition, while no major landslides have been mapped in the park, the potential for landslides exists in the steeper terrain of Shallenberger Ridge, and in the steeper terrain of Lakeview and Coldstream Canyons (CDPR 2003).

As a restoration project, the project does not include construction of structures for recreational use or for human occupancy, and therefore would not subject structures or people to adverse effects due to rupture of a known fault, or increase the exposure of people to seismic ground shaking, seismic related ground failure, or landslides. Project implementation would involve the use of a limited amount of heavy equipment and relatively shallow excavation, fill and stabilization activities. These activities are not associated with triggering seismic ground shaking, seismic-related ground failure, or landslides. In addition, the project schedule and relevant permit requirements limit construction activity in the area to the dry season, when soils are determined to be dry enough to support construction equipment. This requirement reduces the exposure of construction personnel to liquefaction in the event of an earthquake and also limits exposure to landslides associated with rain events. Overall, the project would not result in significant exposure of people to substantial adverse effects associated with earthquakes, liquefaction and landslides.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Finding: Less than Significant Impact

Objectives for the project include improving road conditions at and along identified sections of degraded roads to reduce erosion and sediment transfer within the watershed; and also include stabilizing actively eroding reaches of Cold Creek, and increasing the ability of the creek system to transport and deposit sediment loads in a more balanced way. Activities associated with implementation of the restoration project, however, do have the potential to remove topsoil and increase erosion. These activities include excavation and disturbances of soils including within the channel of Cold Creek and on the shoreline of Lower Pond, modification (grading) of existing roadways at up to 21 drainage crossings, and decommissioning of disturbed areas and roadways (ripping, seeding and mulching). To reduce the potential for substantial soil erosion or loss of topsoil the erosion control and post project restoration measures (CDPR Specific Project Requirement GEO-1, Sedimentation and Erosion Control Measures) described in Table 4, *CDPR Project Requirements* would be implemented. These measures, in combination with 1) adherence to the project schedule and design, and 2) conformance with existing applicable local, state, and federal regulations and project requirements would reduce potential impacts to loss of topsoil and soil erosion to less than significant.

1) The **project schedule** expects completion of the project in two phases over a total of approximately four construction seasons. As described in the Project Description, Table 1, *Project Schedule*, all restoration activities in any given construction season would commence in summer after necessary permits are received and the area is determined to be dry enough to support construction equipment without causing unnecessary soil compaction, erosion, or other avoidable environmental impacts. TRWC, in consultation with CDPR and the project contractor would determine when conditions are suitable for ground disturbing activities to

commence. The restoration activities planned for each phase of the project would be completed within the construction season, including revegetation of disturbed areas. Work within Cold Creek would be limited to those months and weeks when surface flows are either nonexistent or significantly reduced. For work

2) Project implementation would **require coverage under a NPDES stormwater discharge permit**. As the project disturbs more than one acre of soil, NPDES permit coverage would be obtained under the General Permit for Discharges of Storm Water Associated with Construction Activity, Construction General Permit (CGP) Order 2009-0009-DWQ from the State Water Resources Control Board (SWRCB). To obtain coverage under the CGP a Stormwater Pollution Prevention Plan (SWPPP) is required to be prepared by a Qualified SWPPP Developer (QSD) and retained on site during construction. The SWPPP has two major objectives: 1) to help identify the sources of sediment and other pollutants that affect the quality of storm water discharges; and 2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in storm water and non-storm water discharges. The SWPPP must include BMPs for both construction and post-construction periods. In addition, the dewatering and diversion requirements described in Section 3.5.5, *Dewatering and Diversion* shall apply. CDPR Project Requirement GEO-1, Sedimentation and Erosion Control Measures also applies and includes the following sedimentation and erosion control measures.
    a. The contractor shall restore any temporary access routes created as part of the project to pre-project conditions, and use native and local plant species to revegetate all disturbed areas, including temporary disturbances associated with the movement and storage of construction equipment. All areas of disturbance shall be de-compacted per project plans and field direction.
    b. Where needed, rubber mats to protect soils and vegetation (Timber mats, Duradeck, or similar) shall be installed along temporary access routes to protect sensitive meadow/wetland habitat.
    c. No track-mounted or heavy-wheeled vehicles shall be allowed in identified environmentally sensitive areas at any time; foot traffic shall only be allowed with specific permission from a CDPR representative after clearance from a certified biologist. At the discretion of the contractor, mechanized vehicles on identified resource sites would be restricted to a short term use of rubber tire tractors only. All such vehicles must enter and exit the area via the same route of travel (by backing up). Vehicles are strictly prohibited from turning on the surface of sensitive areas.
    d. All construction activities shall be suspended during heavy precipitation events (i.e., at least 1/2-inch of precipitation in a 24-hour period) or when heavy precipitation events are forecast.
    e. If a rain event is anticipated, the contractor shall properly winterize the site by covering any stockpiled materials or soils and by constructing silt fences, straw bale barriers, fiber rolls, or other structures around stockpiles and graded areas.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Finding: Less Than Significant Impact

The proposed project is located on aquolls, borolls, pits, borrows, and Tallac-cryumbepts soil types, all of which are of stable composition (NRCS 2019). Direct impacts related to the potential for landslides, liquefaction, and soil erosion are addressed in Items (a) and (b) above. Construction activities are not anticipated to result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, impacts would be less than significant

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Finding: No Impact

The proposed project does not involve the construction of structures, for human habitation or public gathering. Therefore, development of the project would not create substantial risks to life or property related to expansive soils.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Finding: No Impact

The project is a restoration project and does not involve septic tanks or alternative wastewater disposals systems. Therefore, there is no impact.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Finding: Less Than Significant Impact

Paleontological resources are the fossilized evidence of past life found in the geologic record. No paleontological resources or unique geologic features are known to exist within Coldstream Canyon. However, subsurface paleontological resources or unique geologic features could be discovered during excavation conducted for the project. Implementation of CDPR Project Requirement GEO-2, Protection of Paleontological Resources (see Table 4, *CDPR Project Requirements)*, would ensure that impacts to such resources discovered during ground disturbance activities would be less than significant.

Mitigation Measures

No mitigation measures required.

4.2.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Setting

Greenhouse gas emissions, gases that trap heat in the Earth's atmosphere, are emitted by both natural and industrial processes. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation or 'heat.' This heat can become trapped in the atmosphere through greenhouse gas absorption. Many gases with greenhouse gas properties found in the atmosphere are naturally occurring (including water vapor, carbon dioxide, methane, and nitrous oxide). Remaining greenhouse gases are human-made and include the following: carbon dioxide, methane, nitrous oxide, and fluorinated gases. Greenhouse gases contribute to global climate change.

California greenhouse gas emissions are primarily regulated by the State of California. In 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act (Assembly Bill 32), requiring a statewide reduction to 1990 greenhouse gas levels by the year 2020. Additionally, Assembly Bill 97, passed in 2007, directed the California Office of Planning and Research to develop guidelines for analysis and mitigation of greenhouse gas emissions impacts.

Currently there is no Climate Action Plan applicable to the project area.

Impact Discussion

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Finding for Items (a) and (b): Less than Significant Impact

As discussed in Section 4.2.3, *Air Quality*, the project is a watershed restoration project and thus there are no emissions associated with its operation. Any air quality impacts associated with the project are limited to the period of project construction. GHG emissions of primary concern from project construction include carbon dioxide (CO2), methane (CH4), and nitrous oxide (NOX). Construction related activities resulting in exhaust emissions may come from fuel combustion for heavy-duty diesel and gasoline-powered equipment, portable auxiliary equipment, material delivery trucks, and worker commuter trips.

To evaluate the impacts of projects on global climate change, PCAPCD has established thresholds of significance for land use development projects that occur within its jurisdiction (PCAPCD 2017:24). PCAPCD's policy document, "California Environmental Quality Act Thresholds of Significance –Justification Report" notes the following in describing how each of the thresholds should be applied (PCAPCD 2016a):

1) A bright-line threshold of 10,000 metric tons of CO2 equivalent per year (MTCO2e/year) for the construction and operational phases of land use projects as well as stationary source projects;
2) An efficiency matrix for the operational phase of land use development projects when emissions exceed the De Minimis Level; and
3) A De Minimis Level for the operational phases of 1,100 MTCO2e/year.

GHG emissions from projects that exceed 10,000 MTCO2e/year would be deemed to have a cumulatively considerable contribution to global climate change. The De Minimis Level for the operational phases of 1,100 MTCO2e/year represents an emissions level which can be considered as less than cumulatively considerable and be excluded from the further GHG impact analysis. To determine the significance of the project's GHG emissions, the PCAPCD's GHG thresholds are compared to the estimate of GHG emissions associated with the proposed project based on CalEEMod.

As previously mentioned in Section 4.2.3, *Air Quality*, CalEEMod was run under a scenario that assumed the use of the greatest quantity and types of construction equipment planned in a single season based on identified construction equipment in Table 2. In addition, though haul trips associated with the project would be distributed over four construction seasons, inputs to the model combined the majority of anticipated haul trips into a single year; assuming 300 haul trips with 20 cubic yard capacity trucks traveling a round trip of approximately 17.5 miles in a single construction season. Table 12 summarizes the results of this analysis using carbon dioxide equivalent (CO2e). CO2e is the functionally equivalent amount or concentration of carbon dioxide (including Bio-CO2, NBio-CO2, and CH4) and is a standard unit of measurement of carbon footprints.

Table 12. Predicted CO2e Emission Estimates vs. PCAPCD Bright-Line Threshold

CalEEMod Estimated CO2e Emissions (Unmitigated) (MT/year)	189
PCAPCD Bright-Line Threshold – cumulative considerable contribution of CO2e (MT/year)	10,000

Based on CalEEMod analysis, construction of the project in any given year is far from exceeding PCAPCD adopted GHG thresholds of significance. Therefore the project does not generate greenhouse gas emissions that would have a significant effect on the environment, and does not conflict with any other applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Further, through revegetation and enhancement of the floodplain and riparian areas, the project would likely result in additional plant sequestration of carbon dioxide and reduce potential GHG emissions once the project has matured. Overall, the project would not generate substantial GHG emissions which could be considered to have a significant impact on the environment. The impact of the project is less than significant.

Mitigation Measures

No mitigation measures required

4.2.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Setting

The project area falls within a State Responsibility Area (SRA) and is identified by the California Department of Forestry and Fire Protection (CalFire) as a very high fire hazard severity zone (CalFire 2007). Fire protection in the vicinity is primarily a joint effort between CalFire, USFS, and Placer County Fire Protection District.

Impact Discussion

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Finding: Less than Significant Impact

The project includes temporary construction activities involving the transportation and use of limited quantities of miscellaneous hazardous substances, including diesel fuels, lubricants, and solvents. These chemicals would be transported to the project via Interstate 80 and Coldstream

Road. Handling and transportation of these materials could result in the exposure of workers to hazardous materials. Federal and State laws regulate the handling, storage and transportation of these and other hazardous materials. Additionally, these laws provide mechanisms to prevent and rapidly respond to spills. No hazardous materials would be used or stored within the project area after project construction. Therefore, the potential for impacts related to hazardous materials transport, use, or disposal would be considered less than significant with adherence to Federal and State regulations.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Finding: Less than Significant Impact

During project implementation, hazardous substances could be released to the environment from construction related vehicle or equipment fluid spills or leaks. Chemicals present on site during the project would be handled by the contractor in accordance with applicable Federal, State, and local regulations for hazardous substances. In addition, CDPR Project Requirement, HAZ-1: Spill Prevention and Response, identifies measures to avoid spills and reduce the potential for adverse impacts should a spill occur. Adherence with Federal, State and local regulations for hazardous substances and implementation of CDPR Project Requirement HAZ-1 (see Table 4, *CDPR Project Requirements)* would reduce risks associated with a release of hazardous materials during construction to a less than significant level.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Finding: No Impact

The nearest school to the proposed project area, Truckee Elementary School (11911 Donner Pass Rd., Truckee), is located more than one mile northeast of the project area. Therefore, no impacts would occur related to emissions or handling of hazardous materials within one-quarter mile of an existing or proposed school.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Finding: No Impact

The California Environmental Protection Agency (CALEPA) is responsible for compiling information on hazardous material sites in California that together comprise the "Cortese" list. A review of this list found that the project area is not included on any list of hazardous materials sites and there are no hazardous materials sites compiled within a quarter-mile of the proposed site that could pose as a significant hazard to the public or environment (Department of Toxic Substances Control 2019).

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Finding for Items (e) and (f): No Impact

The nearest airport to the project is the Truckee-Tahoe Airport, located approximately six miles away. Consequently, the project has no impacts pertaining to airports or airstrips and no impacts to safety concerns associated with airports or airstrips.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Finding: Less than Significant Impact

Coldstream Road functions as the primary ingress and egress through the canyon, including for private landowners, some with permanent or temporary dwelling structures on their property. While there is no publicly adopted emergency response plan or emergency evacuation plan for Coldstream Canyon, closure of Coldstream Road could impair evacuation of residents and visitors above Horseshoe Bend. Because the project may result in temporary road closure of sections of Coldstream Road during restoration activities, emergency ingress and egress is a consideration, especially in the event of a wildfire. CDPR Project Requirement TRANS-1, Right of Passage and Advance Notice of Road Closures, would ensure that private landowners within the project vicinity have advance information regarding the timing and duration of any road closures prior to project implementation and would also ensure that CDPR is aware of the timing and duration of any road closures, and could, therefore, manage visitor access accordingly. CDPR Project Requirement TRANS-1 (see Table 4, *CDPR Project Requirements)* also requires the contractor to, when possible, maintain at least single vehicle access through the construction area. With implementation of CDPR Project Requirement TRANS-1, the project would not impair emergency evacuation and this impact is less than significant.

h) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Finding: Less than Significant Impact

The project footprint is surrounded by vegetation, trees, and shrubs in a mesic meadow characteristic of riparian lodgepole wetlands where the risk of fire is a possibility. Equipment used during construction activities may generate sparks that could ignite dry vegetation on or adjacent to the construction area and cause wildland fires in the area. The nearest fire station to the project area is approximately two miles to the northeast at the Truckee Fire Protection District Station 92, which is located at 11473 Donner Pass Rd. While the potential wildland fire risk is minimal, to further reduce the risk, CDPR Project Requirement HAZ-2, Fire Suppression and Control, would be

incorporated. With incorporation of these Project Requirement, this impact would be less than significant.

Mitigation Measures

No mitigation measures required.

4.2.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in a substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Setting

Coldstream Canyon watershed extends from the crest of the Sierra to its confluence at Donner Creek downstream. Cold Creek is the main drainage in the watershed and the project area includes Cold Creek's confluence with the Emigrant Creek tributary just below Horseshoe Bend. The creek is channelized though a concrete culvert at Horseshoe Bend. This channelization disrupts sediment flow and induces scour and erosion downstream. At the mouth Coldstream Canyon (near Donner Pass Road), Cold Creek drains into Donner Creek approximately 0.8 mile downstream of Donner Creek's outlet from Donner Lake and 1.5 miles upstream of where Donner Creek flows into the Truckee River, making Cold Creek a tributary to the Truckee River.

The Truckee River is included on California's Clean Water Act Section 303(d) list as water quality impaired due to sediment and a Total Maximum Daily Load (TMDL) has been established for the river. Within the Truckee River watershed, Coldstream is known to be a significant contributor of sediment. A 2001 report, *Water quality assessment and modeling of the California portion of the Truckee River Basin*, prepared by the Desert Research Institute, calculated average annual suspended sediment load, normalized by area, for tributaries to the Truckee River (McGraw, D., A. et al. 2001). Extrapolating on this data, the CCWA (TRWC 2007) determined that Cold Creek has an estimated annual sediment loading rate of 209 tons/square mile making it one of three principal sediment producers into the Truckee River on a per unit basis (Squaw Creek 309 tons/square mile/year; Grays Creek 226 tons/square mile/year).

Elevations in the watershed range from 5,910 feet at the mouth of the valley to 8,949 feet at the top of the highest peak, Tinkers Knob. The western half of the watershed, the highest portion, is the crest of the Sierra Nevada mountain range. This portion of the watershed consists of narrow valleys and high gradient streams. The valley widens near the middle of the watershed, before narrowing again downstream into a canyon. From the exit of the canyon, Cold Creek flows across the relatively wide Donner Creek valley floor to its confluence with Donner Creek. Cold Creek was channelized in this location (the northern section of its alluvial fan between its exit from the canyon and its confluence with Donner Creek) as a function of gravel mining activities in the 1960s. The Coldstream Lower Floodplain Enhancement Project, a joint partnership between TRWC and CDPR, addressed this historic disturbance, restoring and improving the floodplain along approximately 2,500 feet of Cold Creek at the bottom of Coldstream Canyon in 2012.

The creek and pond restoration, and three of the major road improvements (Site #1, #2, and #3 on the project area map, Figure 2) concern the middle of the Coldstream Canyon watershed where the canyon is wider. Road improvements above Horseshoe Bend are located within the Emigrant Creek Drainage. Figures 2-1 and 2-2 in the CCWA (TRWC 2007) delineate the boundaries of the Coldstream watershed, its topography, and streams. These figures are excerpted below as Figures 15 and 16, for reference.

The CCWA provides the following overview of Coldstream Canyon's hydrology: "Cold Creek's runoff regime is typical of that of watersheds along the east side of the Sierra Crest. The vast majority of runoff is produced as a result of snow melt runoff. Typically runoff begins in March, peaks in May or early June, and then gradually recedes during the summer, reaching a minimum sometime in September. Summer thunderstorm activity is highly variable and there are often years that entirely lack thunderstorms. When they do occur, they tend to be localized and of a small magnitude and peak flows are not generated. In contrast, frontal rain storms which generally occur

from November through May are the source of the largest flows. These events are most notably rain on snow event producers. Due to the intensity and duration of these events, a subsequent yearly peak flow could occur during these months. Rain on snow floods tend to have a large impact on channel morphology, with far more potential for channel changes than during the typical snowmelt flood. Snow melt peak flows tend to be a smaller scale, have less variance, and have an upward limit defined by maximum snowmelt rates controlled by temperature, vapor pressures, and solar radiation.

Cold Creek is an ungauged basin; there is no USGS real time streamflow data for the creek. However, Donner Creek has been gauged at the State Route 89 bridge since March of 1993 and at the outlet from Donner Lake continuously since 1958 (TRWC 2007). Because Cold Creek enters between the two Donner gauges, stream flow can be estimated by subtracting Donner Lake's outflow from the gauge at Donner Creek on Highway 89."

The restoration planned for Cold Creek is immediately downstream of where Cold Creek is channelized through a tunnel culvert under the railroad tracks at Horseshoe Bend. Constriction of Cold Creek through the railroad tunnel culvert increases velocities and has resulted in erosion and instability of the bed and banks of the creek. Temporary deposition of cobble after high flow events exacerbates the problem by forcing flows toward more erodible banks, generating more sediment. The unstable stream channel is eroding and aggrading, resulting in the exposition and deposition of excessive quantities of sediment downstream and causing substantive downstream instability, especially in the area of the "Blowout Reach" (Figure 3, Restoration Area – West). The high sediment load from both the watershed, and erosion of banks within the reach, lead to an ongoing cycle of bar deposition, incision, and bank erosion. Associated with the instability of Cold Creek below the railroad crossing is the degradation of floodplains adjacent to the creek and general loss of aquatic and riparian habitat.

Figure 15. Coldstream Canyon Topographic Map and Watershed Location (excerpted from CCWA, TRWC 2007)

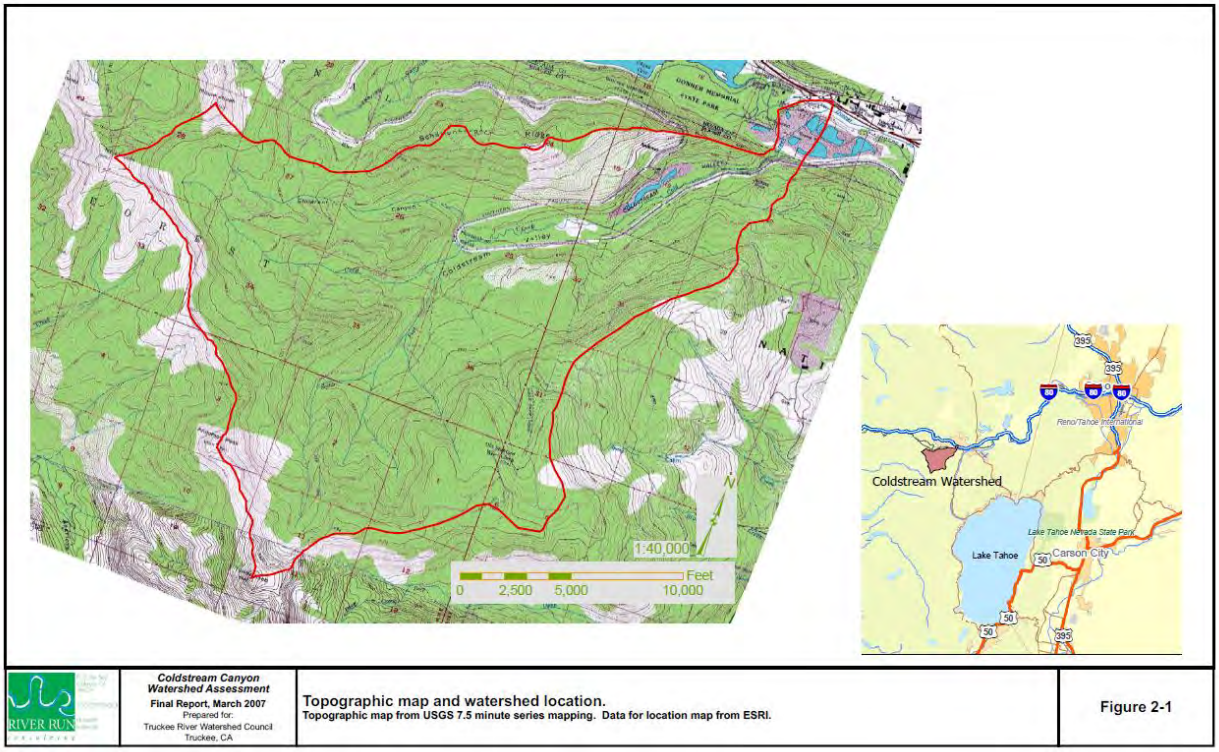
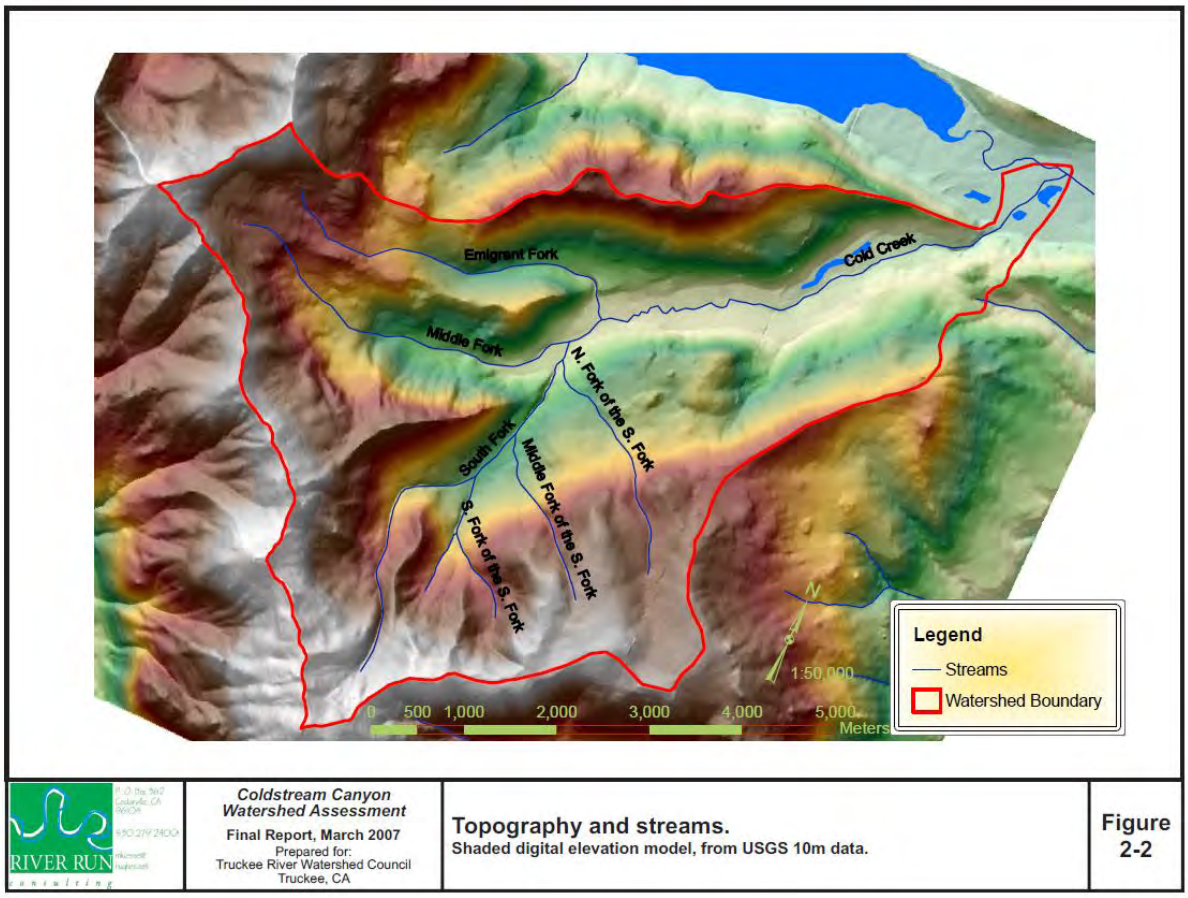


Figure 16. Coldstream Canyon Topography and Streams (excerpted from CCWA, TRWC 2007)



Impact Discussion

a) Would the project violate any water quality standards or waste discharge requirements?

Finding: Less Than Significant Impact

Consistent with the goals and objectives for the project, the various road improvements, as well as the restoration planned for Cold Creek would, over the long-term, improve water quality by reducing sediment transfer into the watershed. However, construction activities, particularly those within or immediately adjacent to a stream bed or channel could potentially cause or result in temporary increases in erosion and/or siltation leading to increased levels of suspended sediments and turbidity within water bodies in the watershed including ephemeral stream channels, Emigrant Creek, Cold Creek, and/or Upper Pond or Lower Pond. TRWC and CDPR are cognizant of the following risks:

- Construction activities in locations where surface water is present and soils are wet.
- Accidental release of pollutants from construction equipment, such as oil and gas from machinery; or as a result of improper storage of hazardous materials on-site.
- A significant wet year preceding construction or a series of summer/fall rainstorms that could produce flow in reaches of Cold Creek where improvements are planned.
- General erosion and sedimentation to surface waters as a result of construction activity.

The schedule and design of the project was developed to avoid and minimize these risks. Specifically the project schedule (see Section 3.5.1, *Schedule*) dictates the following:

- All restoration activities in any given year shall commence in late spring/early summer after necessary permits are received and the area is determined to be dry enough to support construction equipment without causing unnecessary soil compaction, erosion, or other avoidable environmental impacts. TRWC, in consultation with CDPR and the project contractor, would determine when conditions are suitable for ground disturbing activities to commence.
- All grading activities shall be completed by October 15 and temporary stockpiling of soils, materials, or equipment near riparian or wetland areas would be removed by October 15.
- The restoration activities planned for each phase shall be completed in stages over the course of the construction season, with all project actions including revegetation of disturbed areas, completed within the construction season of that year. For the restoration of Cold Creek – where restoration is anticipated to be completed in stages over two to three construction seasons – each stage of the restoration shall be completed within the construction season, including all revegetation and soil stabilization activities.
- TRWC shall require the chosen contractor to develop a construction schedule organized to minimize total overall disturbance to soils. The contractor schedule shall also be in accordance with limitations dictated by the results of field surveys, relevant permits including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) Construction General Permit and associated Storm Water Pollution Prevention Plan (SWPPP).

Implementation of the project would also require adherence to the site protection and erosion control measures described in Section 3.5.1, *Dewatering and Diversion,* and would additionally, require conformance with existing applicable regulatory standards and associated permit requirements. The specific regulatory standards and associated permit requirements addressing potential impacts to water quality include.

- Section 401 of the Clean Water Act (CWA) requires a Section 401 water quality certification from the applicable Regional Water Quality Control Board (in this case LRWQCB) for any project that involves dredging, filling, or otherwise impacting, either temporarily or permanently, waters of the U.S. (activities for which a CWA Section 404 permit is also required). LRWQCB also regulates discharge of waste to waters of the State under the Porter-Cologne Water Quality Control Act. In accordance with Section 401 of the CWA and with the Waste Discharge Requirements (WDRs) of the Porter-Cologne Water Quality Control Act, the project applicant (TRWC) cannot initiate construction without LRWQCB approval of a project application describing how the proposed project complies with State water quality standards and will not result in adverse impacts to waters of the State, including Waters of the U.S. Water quality standards and LRWQCB policies for protecting waters of the State are defined in the Water Quality Control Plan for the Lahontan Region (Basin Plan).
- Section 402 of the CWA establishes the NPDES permit program for the discharge of any pollutant into Waters of the United States. Dischargers whose projects disturb one (1) or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ from the State Water Resources Control Board (SWRCB). In order to

obtain NPDES permit coverage TRWC must develop and submit a SWPPP. The SWPPP is required to be prepared and retained on site during construction, and must contain BMPs to reduce impacts from erosion and sedimentation.

- Section 404 of the Clean Water Act (CWA) requires a Section 404 permit before any point source discharge of dredged or fill material into waters of the U.S. (waters of the U.S. includes wetlands). Discharge of fill material includes channel protection devices such as placement of bendway weir structures and placement of other materials within Cold Creek (e.g. boulders and logs). Discharge of dredged material includes the redeposit of dredged material, other than incidental fall back, into waters of the U.S. The U.S. Army Corps of Engineers (USACE) issues 404 permits, and the project would likely fall within issuance of a verification letter from USACE for coverage under an existing Nationwide Permit (NWP), likely NWP #27 for Aquatic Habitat, Restoration, Enhancement and Establishment Activities.

In addition to these regulatory standards and associated permit requirements, CDPR Project Requirement GEO-1, Sedimentation and Erosion Control Measures (see Table 4, *CDPR Project Requirements)* includes multiple additional measures to ensure erosion and sedimentation from the project are kept to a minimum; and CDPR Project Requirement HAZ-1, Spill Prevention and Response, would be implemented to avoid spills and reduce adverse impacts associated with any spills that may occur (see Table 4, *CDPR Project Requirements* for the full text of these measures). The combination of the project schedule and design, existing regulatory standards and permit requirements, and implementation of CDPR Project Requirements would ensure the project does not violate any water quality standard or waste discharge requirement.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Finding: No Impact

Although groundwater may be encountered during construction, management of sustainable groundwater resources will not be impeded. A likely beneficial outcome for both the ponds and creek component will be an increase in seasonal retention of groundwater within the project area. The overall goal of the project is to improve hydrologic and ecosystem functionality within Coldstream Canyon through restoration of degraded areas. Project activities are designed to increase riparian and wetland habitat, particularly around Lower Pond and within the channel of Cold Creek, Riparian areas and wetlands store moisture and generally support water infiltration, which could increase groundwater recharge and improve shallow groundwater storage over existing conditions. This is a beneficial effect. There is no impact to this threshold.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) result in a substantial erosion or siltation on or off-site;
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) impede or redirect flood flows?

Finding: Less Than Significant Impact

Three landforms within the watershed are proposed for restoration: roads, ponds, and a section of Cold Creek.

- Road restoration would repair sections of road that cross ephemeral drainages, reducing the flow of water captured by the road prism and restoring the ephemeral drainage channel. This restoration would not constitute a substantial alteration to the existing drainage pattern of the area, but would restore hydrologic function and/or improve road conditions, and reduce erosion and sediment transfer within the watershed. This is a beneficial effect.
- Ponds are fed by localized ephemeral drainages and by groundwater, and creation and enhancement of wetland habitat and riparian vegetation in the pond area would have no impact to existing drainage patterns. Rather, the restoration planned for the pond would benefit the hydrologic function of the watershed: increasing wetland and riparian habitat and potentially supporting groundwater recharge, infiltration and groundwater storage. These are beneficial effects.
- The creek restoration project would not alter the existing drainage pattern of Cold Creek or of any of its tributaries. The tributaries would continue to drain into Cold Creek and Cold Creek would continue to drain into its confluence with Donner Creek just below Donner Lake. Overall flow through the reach would not be altered, however design elements may increase channel sinuosity and stream/floodplain interaction in an effort to stabilize erosion and sediment transfer. Implementation of the creek design would create a less confined channel that provides greater opportunity for deposition. This is the purpose of the project and a beneficial hydrological effect.

Increases in erosion or siltation associated with any of the project components (roads, ponds or creek) would be limited to the period of project construction. Potential impacts associated with erosion and sediment loading would be avoided and minimized by the following:

- adherence to existing applicable regulatory standards and associated permit requirements (described in the impact discussion for items a above);
- adherence to the project implementation practices described under Section 3.5, *Project Implementation*, and in particular the water quality protection contingencies and post project requirements described in subsection 3.5.5 and subsection 3.5.8; and by
- implementation of CDPR Project Requirement GEO-1, Sedimentation and Erosion Control Measures, and CDPR Project Requirement HAZ-1 Spill Prevention and Response (see Table 4, *CDPR Project Requirements*).

Overall, the combination of the project schedule and design, existing regulatory standards and permit requirements, application of the water quality protection contingencies and post project restoration measures, and implementation of the specified CDPR Project Requirements would reduce erosion or siltation on or off site to less than significant levels.

The restoration project would not contribute runoff water that would exceed existing or planned stormwater drainage basin capacity, because there are currently no stormwater drainage systems in

the project area. Any runoff associated from storm events during construction would be confined to temporary BMP's or to the surface water bodies within the project area. The project could result in temporary sources of polluted runoff during construction. Potential impacts associated with the introduction of construction-related erosion material or contaminants into surface waters would be reduced to a less than significant level by conformance with existing federal, state and local water quality regulations as discussed under Item (a) above, and by implementation of CDPR Project Requirement GEO-1, Sedimentation and Erosion Control Measures and CDPR Project Requirement HAZ-1, Spill Prevention and Response (see Table 4, *CDPR Project Requirements*).

Overall the project would not alter an existing drainage pattern of the site or area, increase the rate or amount of surface runoff in a manner that would result in a substantial erosion or siltation on or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, provide substantial additional sources of polluted runoff; or impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Finding: No Impact

The project would not expose people or structures to impacts from inundation by seiche, tsunami, or mudflow. Therefore, there is no impact.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Finding: No Impact

The overall goal of the project is to improve hydrologic and ecosystem functionality within Coldstream Canyon through restoration of degraded areas. The project would not conflict with any water quality control plan or sustainable groundwater management plan applicable to the project area.

Mitigation Measures

No mitigation measures required.

4.2.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Setting

The majority of the project footprint is located within Donner Memorial State Park, Planning Zone 3, owned and managed by CDPR. A small portion of the proposed restoration, (approximately 0.5 acre) is located within the 400-foot wide right-of-way owned by UPR around its main east/west railroad tracks. An additional small portion (approximately 0.6 acre) is located within the corner of a parcel of land owned by SPI. All property within the project area is within Placer County and is therefore also within the jurisdiction of the Placer County General Plan. The entire project is located within area designated as Timberland in the Placer County General Plan (Placer County 2013) and all parcels within the project area are zoned by Placer County as Residential Forest or Forest (Placer County 2018).

The Donner Memorial State Park General Plan (2003) presents conceptual parameters and guidelines for the long-term management, development and operation of Donner Memorial State Park. As described in the Donner Memorial State Park General Plan, the purpose, vision and management mission for Donner Memorial State Park are as follows (CDPR 2003).

Declaration of Purpose for Donner Memorial State Park

> Donner Memorial State Park is established to commemorate the people who have crossed the Sierra Nevada through time, and the Donner Party tragedy that took place here in the winter of 1846 - 47; to preserve and interpret its natural and cultural resources as part of the Truckee River Basin, a major passageway to the crest of the Sierra Nevada; to manage its landscape in a way that restores biological diversity and provides an important link in the fragmented ecosystem of the Sierra Nevada; and to provide for the public's use and enjoyment of its scenic and recreational features and for the interpretation of its prehistoric, historic, and natural resources.

Park Vision Statement for Donner Memorial State Park

> Donner Memorial State Park will be a place where the stories of history coexist comfortably with the spectacular natural setting through which this history has passed and continues. Educational facilities and programs to increase understanding of this particular natural environment and how it relates to the Sierra Nevada and the Great Basin will be developed in tandem with historic interpretation. Visitors can experience a variety of recreational opportunities through the changing seasons: water-oriented activities at Donner Lake, family and group day use and overnight camping, and varied forms of trail access and use in the lower reaches of the mountains, as well as the uplands in Coldstream Canyon, with connections to a greater Tahoe regional trails system. The visitor will gain a rich recreational

experience and an expanded knowledge of both the natural and cultural resources of the area.

Department Mission for management of Donner Memorial State Park is:

Provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

Impact Discussion

a) Would the project physically divide an established community?

Finding: No Impact

The proposed project includes the maintenance of CDPR roads system to improve drainage and decrease water capture and erosion, restoration of two adjacent ponds downstream of the upper valley reach of Cold Creek, and restoration of 0.75 linear miles of Cold Creek to increase overall stability of the eroding and aggrading stream channel below the railroad tunnel culvert. There are some private residential parcels in the project vicinity, including just upstream of Upper Pond. The Lost Trail Lodge is located on a private parcel approximately half a mile south across the railroad tracks from Horseshoe Bend.

The project would not change the existing land use, character or quality of the project area or its surroundings, and does not introduce any physical structures to the canyon that would divide the existing community. The proposed road improvements and road realignment would reduce the risk of long term road closure that could otherwise result from extreme degradation and/or complete flooding and erosion if CDPR did not take action to address identified existing road degradation and erosion.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Finding: No Impact

The project is located within Planning Zone 3 of the Donner Memorial State Park General Plan, and is consistent with the purpose, vision, and management mission established for the park. The project's goal and objectives are also well aligned with the Donner Memorial State Park General Plan park-wide goal to: *preserve and enhance the form and function of the park's ecosystems, in order to protect its physical and natural features and biological processes*. In addition, the project is well aligned and assists with implementation of the following Donner Memorial State Park General Plan resource specific goals:

Vegetation Management Goals

- Promote and achieve improvements in the quality and function of the park's aquatic and wetland ecosystems.

Watershed Management Goals:

- Restore geomorphic function to the watershed to the extent possible, thereby significantly reducing or eliminating unnatural soil and streambank erosion, stream

sedimentation, and habitat degradation, and to eliminate, where possible, manmade channel restrictions/obstructions within the park's watersheds.

- Manage the Cold Creek watershed to re-establish geologic stability and ecological balance.

The project is not in a preserve or wilderness and is consistent with the designated land use, Timberland and Agricultural/Timberland, in Placer County's General Plan (Placer County 2013) and with Placer County's Zoning (Residential Forest) of the area. TRWC would obtain the necessary permission and permits from UPR and SPI for those portions of the project within UPR and SPI property, including a preliminary engineering agreement from UPR, as well as execution of the appropriate license, right of entry and construction and maintenance agreements from both UPR and SPI. Overall the project is not in conflict with the applicable plans, policies, or regulations of any of the agencies with jurisdiction over the project.

Mitigation Measures

No mitigation measures required.

4.2.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Setting

In compliance with the California Surface Mining and Reclamation Act (SMARA), the California Division of Mines and Geology has established a classification system to denote both the location and significance of key extractive resources. Under SMARA, the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The 1995 Mineral Land Classification Map of Placer County, Plate 4 (Loyd 1995) maps the area around Coldstream Canyon as MRZ-3a (sg-15) - glacial deposits for aggregate. The mining history of Coldstream Canyon reflects activity associated with aggregate extraction. As described in Section 4.2.5, *Cultural Resources*, Coldstream Canyon has provided significant aggregate material since as early as 1874 and multiple quarries have been established in the canyon, including extensive mining during the 1960s when aggregate mined from the area contributed material to build Interstate 80 and other local highways, and for subdivision development (Richards 2006). Teichert Aggregates Corporation opened a large gravel quarry during the 1960s in the eastern extension of historic Donner Meadow at the confluence of Cold Creek and Donner Creek with subsequent quarries developed farther up Cold Creek. Teichert Aggregates moved their quarry from Coldstream Canyon to Martis Valley in 1983 (Sierra Sun 8/18/1983, 6/07/2008). There are no currently active mines in the project vicinity and mining has not occurred in the project vicinity for more than three decades.

Impact Discussion

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Finding for Items (a) and (b): No Impact

Despite the presence of construction aggregate in Coldstream Canyon, no mineral extraction operations currently occur in the project vicinity, and no portion of the project area is designated by the Placer County General Plan as a mineral resource recovery site. In addition, mining activities would be inconsistent with the purpose, vision, management directives and goals of the Donner Memorial State Park General Plan (see Section 4.2.11, *Land Use and Planning*). Any fill removed from the project area as a result of restoration activities, including fill that might be classified as construction aggregate, would either be deposited at the Caltrans yard at the base of the park, or

hauled to Teichert Quarry in Truckee, California. The project would result in no impact associated with the loss of availability of mineral resources.

Mitigation Measures

No mitigation measures required.

4.2.13 Noise

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Setting

Noise is typically defined as a sound that is loud, unpleasant, and undesired within an environment (Oxford University Press 2019). Often, the magnitude of sound sensation (loudness) is judged on an individual basis and is subjective to the observer. Measured sound pressure magnitude is quantified using logarithmic ratio of pressures and rated by the decibels (dB) scale (Britannica 2019). Ambient noise is an all-encompassing noise level associated with a given environment, with contributing factors including mechanical equipment, machinery, and vehicle traffic.

As described in the Donner Memorial State Park General Plan (2003) Coldstream Canyon sits in a natural bowl surrounded by mountain peaks on three sides and is a recreational draw for the area. Major railroad and vehicle transportation corridors exist through the valley and along the mountain sides creating a constant background 'roar' within portions of the canyon. In particular, Interstate 80 is within two miles of the project area and, according to the 2003 Donner Memorial State Park General Plan, carries approximately 23,250 non-commercial vehicles per day (8,486,250 annually) through the Donner Pass Road off-ramp (access to the park's entrance area). In addition, UPR's main east/west line runs through the middle of the project area with frequent train traffic (as many as two per hour). Despite these influences, the project area can be described as one of natural quiet when no trains are running. Birdsong, wind in the trees and the flow of water comprise the ambient noise environment.

Impact Discussion

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Would the project result in Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Finding for Items (a), (b), (c) and (d): Less than Significant Impact

Planned restoration activities involve the use of heavy equipment including bulldozers, excavators and dump trucks/haulers that have the potential to increase noise levels beyond what is currently experienced in the area. These noise impacts would be intermittent and limited to the period of project construction but, nonetheless, could result in a temporary increase in noise that temporarily and intermittently exceeds noise level limits specified in Article 9.36, Noise, of the Placer County Code. In addition, use of construction equipment could result in intermittent minor ground-borne vibration associated with grading activities. However, the project is in an open space area with limited residential and no commercial facilities in the vicinity. In addition, the majority of any construction work is expected to occur on days and within hours specified by the Placer County Code (Chapter 9, Section 9.36.030, "Exemptions") as exempt from noise standards. CDPR Project Requirement NOISE-1, Noise Exposure Limitations, would ensure construction equipment and vehicles operating within the project area are fitted with appropriate muffling devices. Adherence with the project schedule combined with implementation of CDPR Project Requirement NOISE-1, Noise Exposure Limitations (see Table 4, *CDPR Project Requirements*), would reduce any impacts associated with noise to less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) Would the project result in, for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Finding for Items (e) and (f): No Impact

The proposed project is not within two miles of any airport and does not fall within an airport land use plan. As the project would not expose sensitive receptors to excessive noise levels from airport/aircraft operations, there would be no impact.

Mitigation Measures
No mitigation measures required.

4.2.14 Population and Housing

Would the project:	Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Setting

The proposed project area is located in Placer County approximately 4 miles west of Truckee (population 16,561), in Coldstream Canyon and Donner Memorial State Park (USCB 2019a). Placer County as a whole has a population of approximately 393,149 as of July 2018 (USCB 2019b). The project area and the surrounding region is considered to be an undeveloped rural area with mixed agricultural and public uses.

Impact Discussion

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Finding for Items (a) and (b): No Impact

The project would not directly or indirectly induce population growth in the area nor would it displace housing or require construction of replacement housing. Therefore, there is no impact.

Mitigation Measures

No mitigation measures required.

4.2.15 Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Setting

Public services are generally provided via fire districts, public utility districts, school districts, sewer districts, water districts, and single purpose districts in addition to those provided by Placer County and any State and Federal agencies. Donner Memorial State Park is located roughly three miles from downtown Truckee. The Truckee Fire District provides fire protection to the project area and is located approximately three miles away. CDPR Rangers (District office located at 7360 West Lake Boulevard in Tahoma) primarily supply police protection to the project area. However, the Truckee Police Department does respond to emergency calls and assists with criminal investigations. CDPR Rangers are peace officers under state law, with authority similar to that of city police or county sheriff personnel.

Impact Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Finding: No Impact

The project is a watershed restoration project. No new public services would be necessary to support the project, and the project would not increase the intensity of use of fire protection, police protection and would have no impact impacts to any schools. With regards to recreation facilities: the proposed project would be primarily located on land owned and managed by CDPR that is open to the public. Some sites within the project area would be closed during construction and

revegetation, however, these closures would be temporary and would not change general recreation access to the area or conflict with any recreation-related goals or guidelines of the Donner Memorial State Park General Plan. The project would not impact fire protection services, police protection services, school services, park services, or other public facilities.

Mitigation Measures

No mitigation measures required.

4.2.16 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Setting

The proposed project would be primarily located on land owned and managed by CDPR. Access to Coldstream Canyon is open to upstream landowners and, with CDPR permission to the public (public access may be subject to entrance fees). Primary access to the site is via Coldstream Road, an unpaved forest road that begins just south of Donner Pass Road where Donner Pass Road intersects with Interstate 80 east of Donner Lake. Donner Memorial State Park, within which the proposed project is located, has a wide variety of recreational activities including hiking, biking, camping, fishing, cross country skiing and wildlife viewing. Users, particularly upstream landowners, regularly access the roads and canyon area upstream by driving vehicles up Coldstream Road and eventually through the channel of Cold Creek and through the tunnel culvert under the railroad at Horseshoe Bend. Private land parcels are scattered throughout the canyon including just upstream of Upper Pond and upstream of the railroad crossing.

Impact Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Finding: No impact

The proposed project would not induce any population growth, nor is it anticipated that it would directly result in a substantial increase in visitation of the project area. Therefore, this impact is less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Finding: Less than Significant Impact

The only new facility associated with the project is construction of the approximately 1,100 linear foot realigned road segment. Construction of this new segment would involve grading and vegetation removal. Adverse physical effects of the proposed project – including this realigned road segment – on the environment are evaluated throughout this checklist and none have been identified

as significant. No additional mitigation would be required related to construction of this road segment and this impact is less than significant.

Mitigation Measures

No mitigation measures are required.

4.2.17 Transportation

Would the project:	Significant Unavoidable Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3,subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

Setting

Primary access to Coldstream Canyon is via Coldstream Road, an unimproved forest road, mainly on CDPR property, that begins just south of Donner Pass Road where Donner Pass Road intersects Interstate 80 east of Donner Lake. CDPR has the authority to gate Coldstream Road and direct vehicle access to Coldstream Canyon through Donner Memorial State Park's main entrance, 0.25 mile west on Donner Pass Road, but in recent practice, the gate is rarely closed. In event of gate closure those who own private parcels within Coldstream Canyon have a key to the gate for access. Popular recreation activities within the canyon include hiking, fishing, biking and cross country skiing. The private land parcels upstream of the railroad crossing include those on which the backcountry vacation lodge, the Lost Trail Lodge, is located.

Private landowners regularly access the roads and canyon area upstream by driving up (west) on Coldstream Road. The only vehicle crossing of the railroad within the canyon is through the railroad tunnel culvert at Horseshoe Bend, however, for much of the year, especially during winter conditions and spring runoff, this crossing is impassable due to water in Cold Creek and significant erosion immediately downstream of culvert. When impassable conditions are present, vehicles often park in an unimproved flat area on the east side of the railroad tracks, just upstream of where Coldstream Road crosses through the Emigrant Canyon Drainage (Emigrant Creek), and advance on foot across the tracks for up-canyon access. Several landowners maintain a vehicle on either side of the tracks, resuming vehicle travel in the parked vehicle on the opposite side of the tracks after crossing the tracks on foot. When flows recede in Cold Creek and the creek bed dries, in the late summer and early fall of most years, private landowners often reconstruct the eroded crossing at the railroad tunnel culvert in order to resume driving on Coldstream Road through the railroad tunnel culvert. To reconstruct the crossing borrow material is often excavated (illegally) from nearby UPR or CDPR property and placed within the creek bed. Over snow transportation is generally required to access all portions of the project area in the winter

Multiple additional unimproved roads in the project vicinity connect with Coldstream Road, especially in the Emigrant Canyon Drainage above Horseshoe Bend. Most of these roads are on National Forest property and under the jurisdiction of the USFS. Roads within the 400 foot

easement around the railroad tracks are under the jurisdiction of UPR, however access to the tracks is often located on roads managed by CDPR. Other roads in the vicinity are those on private parcels and are under the jurisdiction of the various private owners.

Impact Discussion

a) Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3,subdivision (b)?

Finding for Items (a) and (b): Less Than Significant Impact

The project would involve limited use of Federal, State and County roads including Interstate 80 and Donner Pass Road for the ingress and egress of construction equipment and for the ingress and egress of worker vehicles. Construction equipment associated with each phase of the project is limited to a dozen or less pieces of equipment (bulldozers, excavators, haulers etc.…) and, with the exception of haul trucks exporting or importing material, equipment would be staged within Coldstream Canyon on CDPR roads and property for the duration of the construction season. The project would not result in a substantial increase in traffic relative to the capacity of the existing roads system and would not conflict with any plan, ordinance or policy establishing measures of effectiveness for performance or safety of the circulation system. This impact is less than significant.

c) Would the project substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections), or incompatible uses (e.g. farm equipment)?

Finding: No Impact

The project would improve existing CDPR roads by reducing and restoring gullying and potholes created by road poor drainage. The project would also prevent the potential for complete washout of the segment of Coldstream Road in close proximity to the Blowout Reach (see Figure 3, Restoration Area – West), a segment rebuilt after it washed away when Cold Creek flooded in 1997. With implementation of the project the segment adjacent to the Blowout Reach would be decommissioned and rebuilt several hundred feet distant from the creek bed. The project would not increase any traffic hazards or involve design features incompatible with existing vehicle use in the canyon.

d) Would the project result in inadequate emergency access?

Finding: Less Than Significant Impact

TRWC has specified that its contract requirements for each of the restoration activities shall include directions to the contractor to develop a construction schedule that leaves at least one lane of passage on Coldstream Road at all times and that generally avoids, to the extent possible, any closure of Coldstream Road. However, despite these requirements, some aspects of the project and/or unforeseen disruptions to the project schedule could result in temporary road closure of sections of Coldstream Road during restoration activities. In particular, Coldstream Road at its crossing with the Emigrant Canyon Drainage may need to be closed while the elevation of the road through that

section is raised during Phase 1 of the project. Coldstream Road may also need to be temporarily closed at The Chute during Phase 2 of the project. In addition, sections of Coldstream Road above Horseshoe Bend may be temporarily closed for up to one hour at a time while drainage improvements are implemented.

Vehicles, including emergency vehicles, are not typically able to access property upstream of the railroad tunnel culvert for much of the year due to water in Cold Creek. Given these existing limited travel conditions, restricting vehicle upstream of Horseshoe Bend would not pose a condition unfamiliar to private landowners in the area. However, road closure during the dry season when landowners assume upstream travel is unimpeded could create emergency access challenges that pose a safety risk in the event of an emergency, such as a wildfire. CDPR Project Requirement TRANS-1, Right of Passage and Advance Notice of Road Closures (see Table 4, *CDPR Project Requirements*), would ensure that private landowners within the project vicinity have advance information regarding the timing and duration of any road closures prior to project implementation. This notice would enable landowners to plan for alternative means of ingress and egress, such as parking cars on both sides of the railroad tracks. TRANS-1 would also ensure that CDPR is aware of the timing and duration of any road closures within Donner Memorial State Park enabling CDPR to better manage visitor and emergency access to the area, including managing access in the event of an emergency. In addition, TRANS-1, by requiring the contractor to, as much as possible, maintain at least single vehicle access through the construction area, reinforces TRWC's construction contract requirements and would limit the duration of any full road closure to the minimum time possible.

Mitigation Measures

No mitigation measures are required.

4.2.18 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Setting

The project area lies within the nuclear territory of the northern Washoe, or Wélmelti', and the Washoe are the applicable tribal authorities for lands encompassing the study area. Section 4.2.5, *Cultural Resources* describes the ethnographic context of the project area. Native American consultation pursuant to CEQA guidelines and mandates under California Assembly Bill 52 (PRC 21080.3.1) included a request for a sacred lands file search from the Native American Heritage Commission (NAHC) and formal outreach to the Washoe Tribe and to the four other tribes on the NAHC's contact list for the project area: Colfax-Todds Valley Consolidated Tribe, Shingle Springs Band of Miwok Indians, Tsi-Akim Maidu, and United Auburn Indian Community of the Auburn Rancheria. This outreach was conducted in December 2018 and January 2019. The NAHC did not identify any Native American cultural resources in the immediate project area, and none of the tribes responded requesting additional consultation for the project, though the United Auburn Indian Community requested to be kept informed of on-going project activities. A summary communications log is listed in the cultural report in Appendix B (Lindström 2019), Table 3 and relevant Native American correspondence is contained in Appendix 3 of Appendix B.

Impact Discussion

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by

substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

Finding for Items (a) and (b): Less Than Significant Impact

As described in Section 4.2.5, *Cultural Resources*, a total of 11 archaeological sites and 15 isolated finds have been identified within the project footprint or within a 1/8-mile radius of the project footprint. Many of these sites include prehistoric lithic scatter that may be of cultural value to the Washoe. The 11 identified archaeological sites within and surrounding the project footprint are summarized in Table 9. A description of the 15 isolated finds is included in the cultural resources report (Appendix C). Implementation of CDPR Project Requirements CUL-1, CUL-2, and CUL-3, would reduce any impacts to tribal cultural resources – including to any previously unidentified resources discovered as a result of earthmoving activities, to less than significant.

Mitigation Measures

No mitigation measures required.

4.2.19 Utilities and Service Systems

Would the project:	Significant Unavoidable Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

Utilities are typically provided by public utility districts, school districts, sewer districts, water districts, and other single use districts in addition to those provided by Placer County and any State and Federal agencies. The Truckee Donner Public Utility District (TDPUD) provides service to the project vicinity; however there are no public utilities within the project area requiring TDPUD service. Placer County sets standards for water, wastewater treatment, electricity, and natural gas in the "Public Facilities and Services" section of the Placer County General Plan (Placer County 2013).

Impact Discussion

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

c) Would the project result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Finding for Items (a) and (c): No Impact

The project does not involve or require the use of any electric power, natural gas or telecommunications facilities. Implementation of the project would not involve the development of land uses generating wastewater and would therefore not require any wastewater treatment

capacity/facilities. As such, the proposed project would not exceed wastewater treatment requirements of LRWQCB. The proposed project would not require service by wastewater treatment facilities and would not affect wastewater treatment capacity. The proposed project would not require the construction or expansion of any stormwater drainage facilities. There are no impacts associated with wastewater, wastewater treatment or stormwater facilities.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Finding: Less than Significant Impact

The proposed project would require the use of water for dust suppression. Water would be provided via a metered water source from TDPUD. The use of TDPUD metered water would require a permit. No additional water would be needed during project operation. The potential for impacts would be less than significant.

d) Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Finding for Items (d) and (e): Less than Significant Impact

During project construction (road crossing drainage improvements and restoration activities), some debris may accumulate and be disposed of at an approved landfill, which would be removed by the contractor for the project. There would be trash associated with the proposed project from construction workers who would haul their trash out and clean up the site daily. The Tahoe Truckee Sierra Disposal Eastern Regional Landfill is approximately 12 miles from the project area and currently has the capacity to take the relatively small amounts of trash/debris that the proposed project may involve. Contractors and TRWC would comply with all relevant federal, state, and local statutes and regulations related to the generation and disposal of solid waste. Any impacts associated with solid waste and its disposal would be less than significant.

Mitigation Measures

No mitigation measures required.

4.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant Unavoidable Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
c) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Setting

The project area falls within a State Responsibility Area (SRA) and is identified by the California Department of Forestry and Fire Protection (CalFire) as a very high fire hazard severity zone (CalFire 2007). The project setting is classic mesic meadow characteristic of riparian lodgepole wetlands where the risk of fire is a possibility. Sources of wildfire within the project area are from both natural (i.e., lightning) and human causes. Lightning is often associated with thunderstorms, which naturally occur in the area during the summer and fall months. Fire suppression and response in the vicinity is a joint effort between CalFire, USFS, Placer County Fire Protection District and the Truckee Fire Protection District. The nearest fire station to the project area is approximately two miles to the northeast at the Truckee Fire Protection District Station 92, which is located at 11473 Donner Pass Road.

Impact Discussion

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Finding: Less Than Significant Impact

There is no adopted emergency response plan or emergency evacuation plan associated with the project area, and the project would not impair implementation of the Truckee fire district's emergency evacuation guide (Truckee Fire District 2020). The road work associated with the project would improve degraded areas of roadway thereby improving vehicle access to the canyon, including for fire personnel. However, and as discussed in 4.2.17, *Transportation/Traffic*, the project may result in temporary road closure of sections of Coldstream Road during restoration activities. Implementation of CDPR Project Requirement TRANS-1, Right of Passage and Advance Notice of Road Closures, would ensure that private landowners, CDPR ranger staff and emergency response

agencies within the project vicinity have advance information regarding the timing and duration of any road closures prior to project implementation.

b) Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Finding: Less than Significant Impact

Equipment used during construction activities may generate sparks that could ignite dry vegetation on or adjacent to the construction area and cause wildland fires in the area. Wildfire Risk would be reduced with implementation of CDPR Project Requirement HAZ-2. Fire Suppression and Control, This project requirement includes the following measures:

- Prior to the start of construction, TRWC shall prepare a Fire Safety Plan for the project and ensure that construction personnel are familiar with the plan. The plan shall include the emergency calling procedures for CalFire, USFS, and local fire department(s).
- All heavy equipment shall include spark arrestors or turbo chargers (which eliminate sparks in exhaust) and have fire extinguishers on-site.
- Construction crews shall park vehicles a safe distance from flammable material, such as dry grass or brush. At the end of each workday, construction crews shall park heavy equipment over a non-combustible surface to reduce the chance of fire.
- Lead construction personnel shall have a radio that allows direct contact with CalFire and a centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.
- Prior to the start of on-site construction activities, the contractor and staff shall clean and repair (other than emergency repairs) all equipment outside the project area boundaries.
- Under dry conditions, a filled water truck and/or fire engine crew shall be onsite during activities with the potential to start a fire.
- The contractor in coordination with CDPR shall designate and/or locate staging and stockpile areas within the existing maintenance yard area or existing roads and campsites to prevent leakage of oil, hydraulic fluids, etc. into Cold Creek and other stream courses.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Finding: No Impact

The project does not include any infrastructure or installations or the maintenance of any infrastructure or installations that would exacerbate fire risk. Project activities are associated with improving hydrologic function, riparian habitat and reducing erosion and would not increase visitation to the project area.

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Finding: No impact

Project activities would be temporary and, once complete, would improve hydrologic and ecosystem functionality within Coldstream Valley through restoration of degraded areas and would not expose people or structures to new risks of wildfire compared to existing conditions.

Mitigation Measures

No mitigation measures required.

4.2.21 Mandatory Findings

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Finding: Less Than Significant Impact

This Initial Study/Negative Declaration found that the proposed project and associated activities would have no significant or potentially significant adverse impact to the environment. CDPR Project Requirements apply to the construction phases of the project, which are temporary in nature. Temporary, less than significant adverse impacts are expected to air quality, biological resources, geology and soils, noise, traffic and other resources during creek and pond restoration, construction and during road improvement activities. Altogether, the project is expected to improve the long-term resilience and ecological function of the Coldstream Canyon watershed, which would be positive impacts for the environment and the public. These include long-term improvements to the hydrology, aquatic/riparian habitats, and water quality of Cold Creek, as well as landowner and public services access along Coldstream Road.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Finding: No Impact

As a wildlife and watershed restoration initiative, this project would remediate and restore damage caused to the watershed by past actions, and therefore the proposed project's impacts would not be cumulatively considerable when viewed in connection with the effects of past projects. There are no significant or potentially significant long-term, adverse impacts associated with the project and therefore, there is no anticipated cumulatively considerable impact. Any cumulative impacts associated with the project would be limited to the period of project construction, and to the combined impacts associated with the construction of other projects in the project area. As there are no other reasonably foreseeable proposed projects in the area, and as any such project would require coordination with and approval of CDPR, there would be no cumulatively considerable impacts associated with this project.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Finding: Less Than Significant Impact

The project would have less than significant impacts to human beings associated with temporary construction noise, road closures and general access, and aesthetic experience of the canyon. However, these impacts were identified as less than significant for all resources areas and, therefore, are not substantial adverse effects.

5.0 ACRONYMS AND ABBREVIATIONS

CAA	Clean Air Act
Cal-IPC	California Invasive Plant Council
CalFire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CESA	California Endangered Species Act
CRHR	California Register of Historic Resources
CO2	Carbon Dioxide
CCWA	Coldstream Canyon Watershed Assessment
CDPR	California Department of Parks and Recreation
CPRR	Central Pacific Railroad Company
CALEPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQA	California Environmental Quality Act
CH4	Methane
CO	Carbon Monoxide
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CWA	Clean Water Act
CGP	Construction General Permit
dB	Decibels
DBH	Diameter at Breast Height
DPM	Diesel Particular Matter
EPCRA	Emergency Planning and Community Right-to-Know Act
EIR	Environmental Impact Report
IS	Initial Study
ITE	Institute of Transportation
LCT	Lahontan Cutthroat Trout
LRWQCB	Lahontan Regional Water Quality Control Board
MND	Mitigated Negative Declaration
MCAB	Mountain Counties Air Basin
NCIC	North Central Information Center
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
ND	Negative Declaration
NOX	Nitrogen Oxides
O3	Ozone
PM	Particulate Matter
PCAPCD	Placer County Air Pollution Control District
PPE	Personal Protective Equipment
PRC	Public Resource Code
QSD	Qualified SWPPP Developer
RPA	Registered Professional Archeologist
ROG	Reactive Organic Gases

SAA	Streambed Alteration Agreement
SMARA	Surface Mining and Reclamation Act
SNYLF	Sierra Nevada Yellow-Legged Frog
SPI	Sierra Pacific Industries
SPRP	Spill Prevention and Response Plan
SRA	State Responsibility Area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDPUD	Truckee Donner Public Utility District
TMDL	Total Maximum Daily Load
TRWC	Truckee River Watershed Council
UPR	Union Pacific Railroad
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
UPR	Union Pacific Railroad
WEAP	Worker Environmental Awareness Program
WDRs	Waste Discharge Requirements
WQC	Water Quality Certification

6.0 LIST OF PREPARERS

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Mandatory Findings

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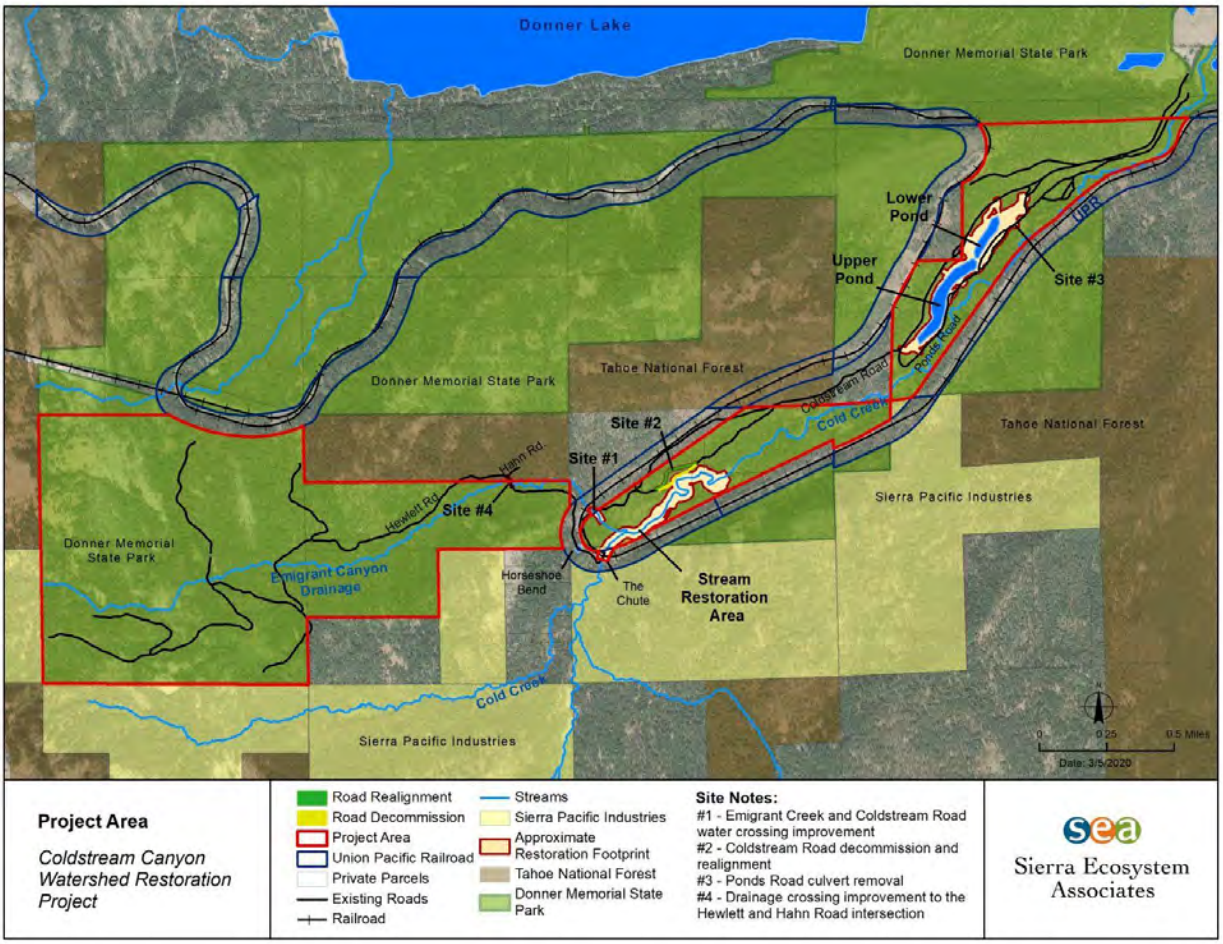
Appendix A
Design Plan Maps and Typicals

ROAD IMPROVEMENTS

Design Plans for Sites #1, #2, and #4



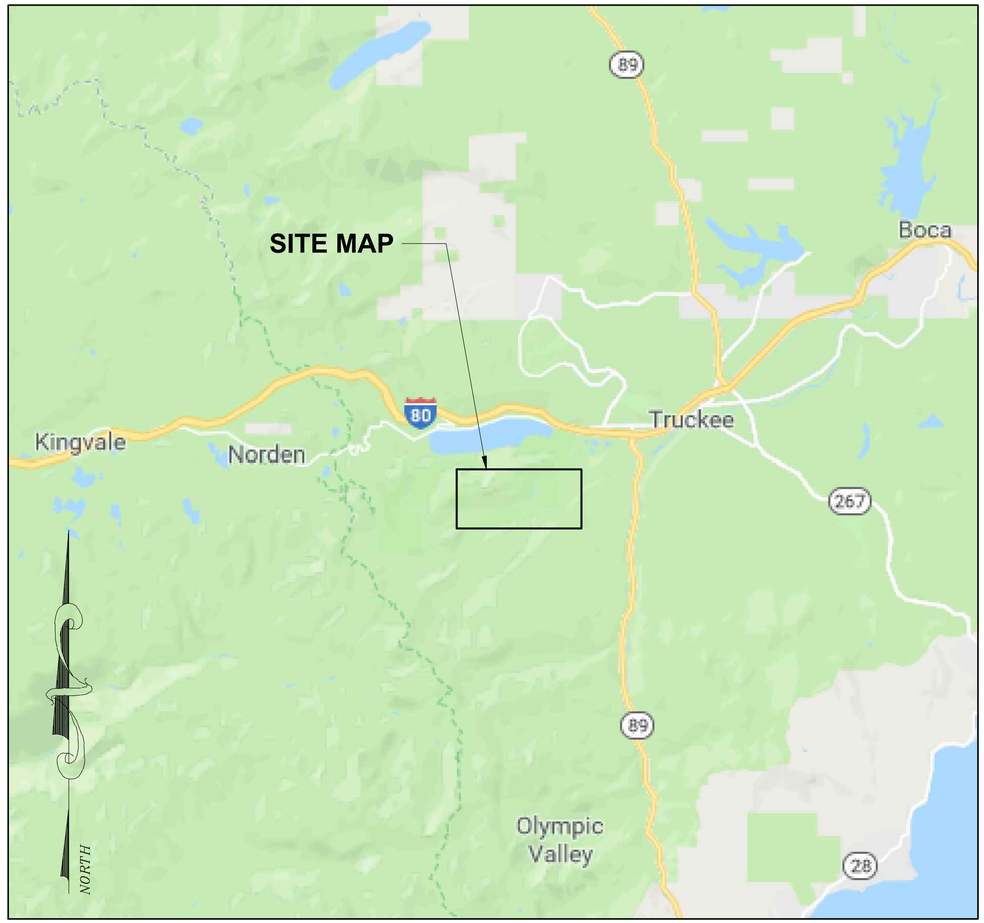
NOTE: Site #3, Ponds Road culvert removal, in the project area map above is shown in the design plan set for the ponds

COLDSTREAM CANYON ROADS IMPROVEMENTS

PLACER COUNTY, CA

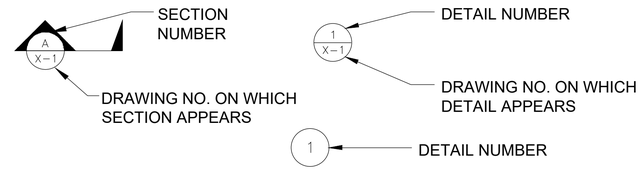
VICINITY MAP

Not to Scale



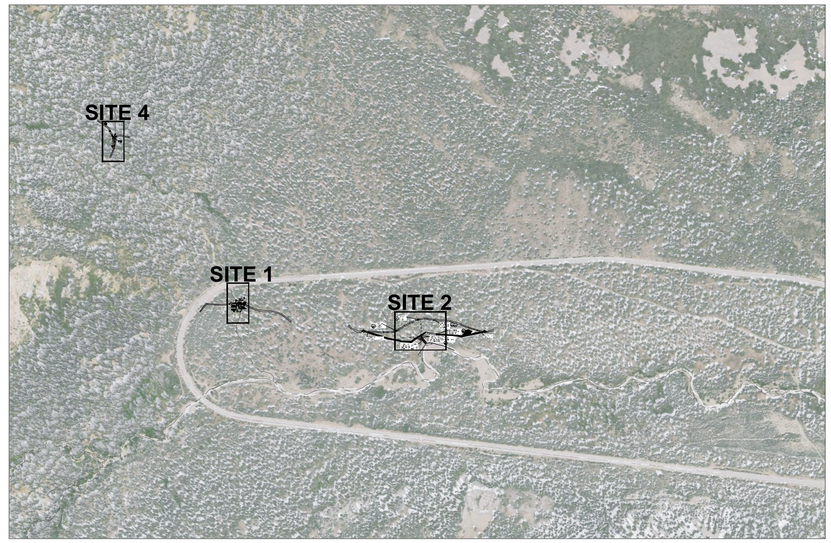
SHEET INDEX

DRAWING SYMBOLS



KEY PLAN

Scale: 1"= 1000'



LEGEND

- (E) CONTOUR
- (P) CONTOUR
- TEMP. STAGING
- LIMIT OF DISTURBANCE
- ARMORED CROSSING
- ROAD DECOMMISIONING
- FLOWLINE

LAND OWNER/ PROJECT PARTNER

GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPOSED WORK WON'T IMPACT EXISTING UTILITIES. CONTACT UNDERGROUND SERVICE ALERT (USA) AT 811 AT LEAST 48 HOURS IN ADVANCE AND NO MORE THAN 14 DAYS BEFORE DIGGING.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE DESIGN PLANS AND ALL PROJECT PERMITS.
3. ALL BASIC CONSTRUCTION BMPs, SUCH AS GOOD HOUSE KEEPING,TREE PROTECTION, VEHICLE AND EQUIPMENT FUELING AND MAINTENANCE, ETC. SHALL BE EMPLOYED BY THE CONTRACTOR AT ALL TIMES. THE AREA OF DISTURBANCE SHALL BE LIMITED TO THE MAXIMUM EXTENT PRACTICABLE.

ABBREVIATIONS

APPROX.	APPROXIMATELY
CONC	CONCRETE
DIAM.	DIAMETER
(E) / (N)	EXISTING / NEW
TYP	TYPICAL
'	FEET (FT.)
"	INCHES (IN.)
TEMP.	TEMPORARY
DBH	DIAMETER AT BREAST HEIGHT

APPROVED:

LISA WALLACE, EXECUTIVE DIRECTOR
TRUCKEE RIVER WATERSHED COUNCIL — DATE

PLACEHOLDER
CALIFORNIA STATE PARKS — DATE

CAROL Y BEAHAN, P.E.
WILDSCAPE ENGINEERING, INC. — DATE

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www.wildscape-engineering.com

COLDSTREAM CANYON ROADS IMPROVEMENTS
PLACER COUNTY, CA 96161

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CYB/GRH	GRH/NCP	CYB

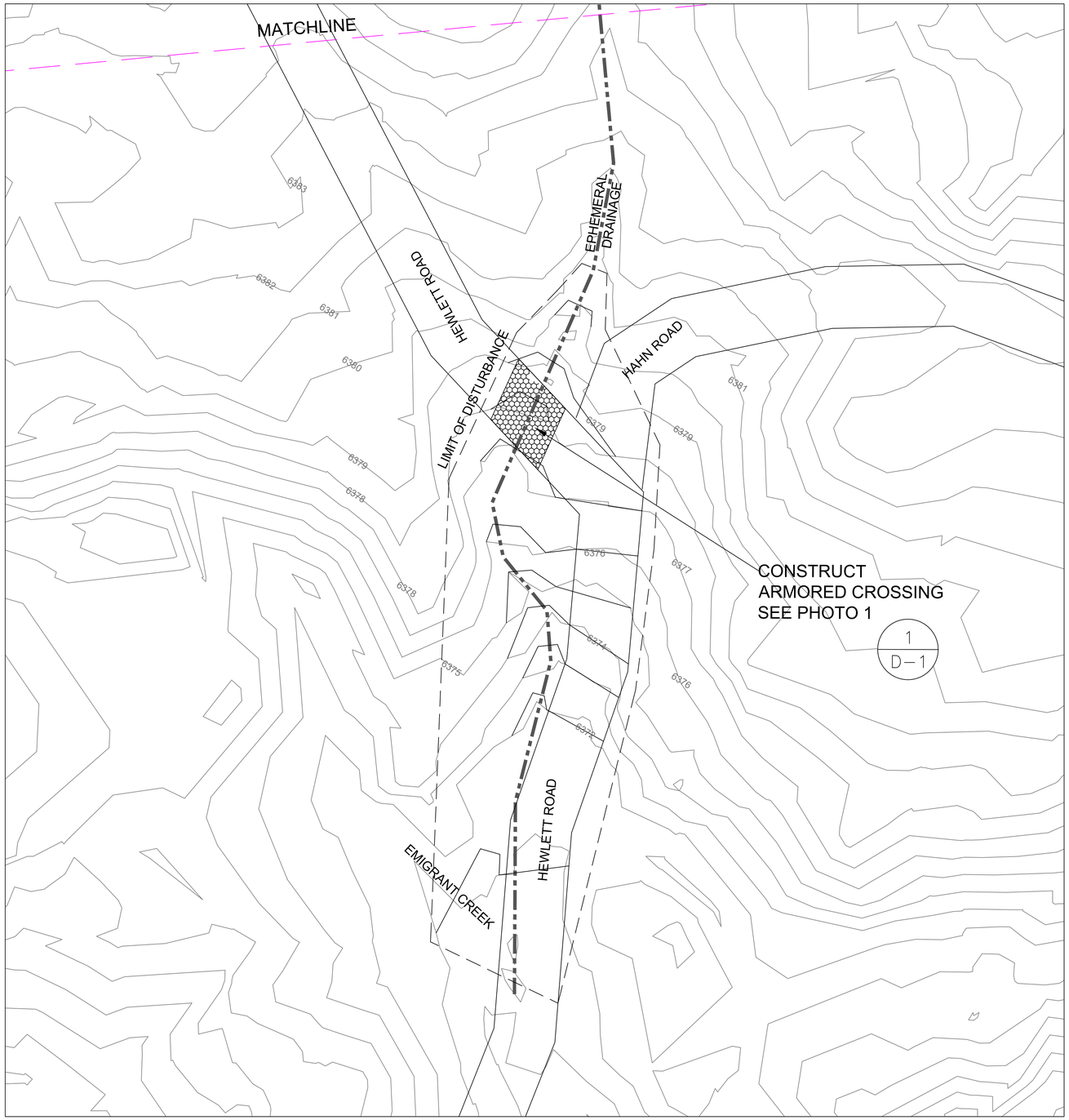
File Date: 08/13/2019

REVISIONS:

No.	Date	Description

Sheet Title: COVER SHEET

G-1

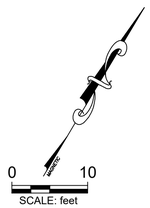


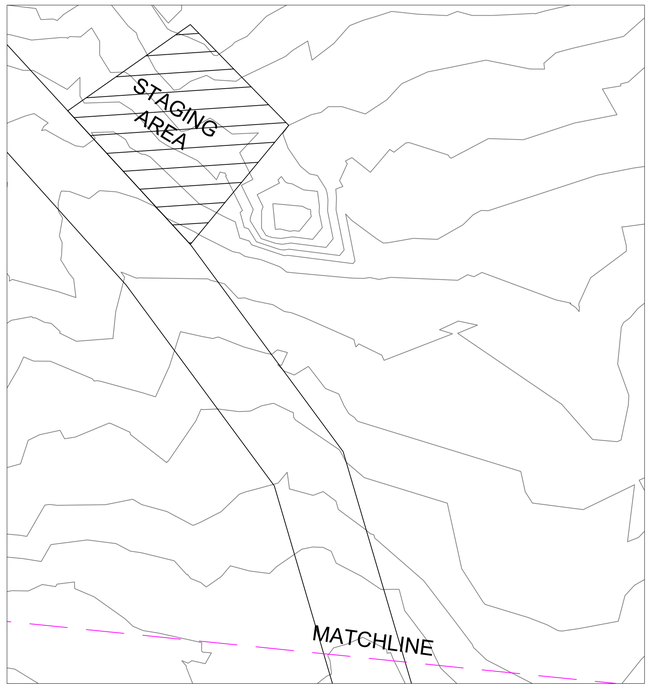
SITE 4 PLAN

PHOTO 1 - EPHEMERAL DRAINAGE CROSSING ON HEWLETT ROAD

NOTES:

1. WORK SHALL NOT COMMENCE UNTIL AFTER EMIGRANT CREEK IS NO LONGER FLOWING (LATER SUMMER/EARLY FALL) AND THE 3-DAY WEATHER FORECAST SHOWS 0% CHANCE OF RAIN.
2. APPROX. CUT QUANTITY IS 10-15 CY (TO BE OFFHAULED OR USED AT OTHER PROJECT SITES AS APPLICABLE). APPROX. FILL QUANTITY (ANGULAR ROCK) IS 5 CY.
3. STABILIZE DRAINAGE CHANNEL IMMEDIATELY UPSTREAM AND DOWNSTREAM OF CROSSING BY GRADING BACK BANKS AND KEYING IN 8" TO 12" DIAM. ANGULAR ROCK MINIMUM OF 6" DEPTH.
4. CONTRACTOR SHALL NOT BLOCK HAHN ROAD AND SHALL ALLOW VEHICULAR PASSAGE ON HEWLETT ROAD TO THE EXTENT PRACTICABLE.





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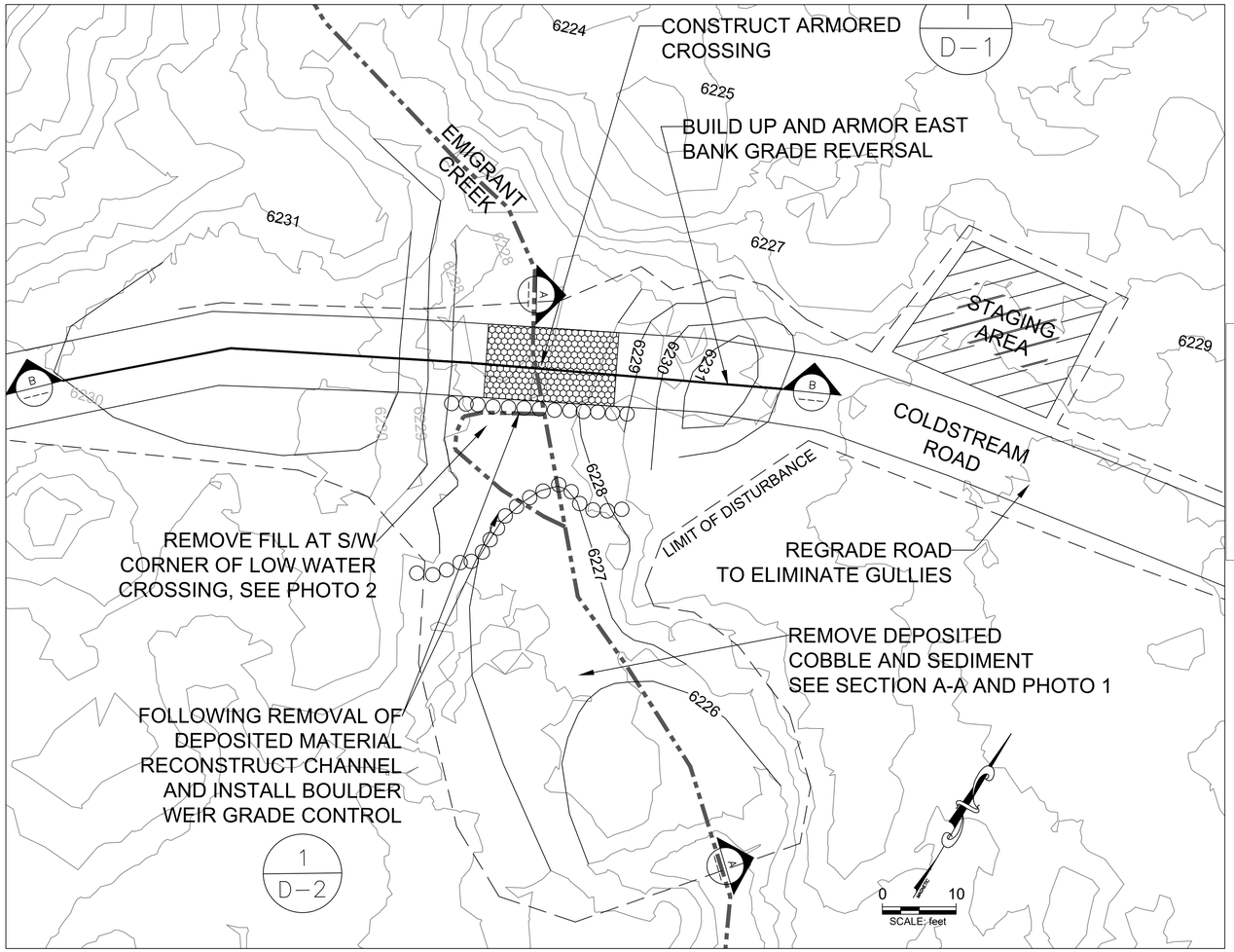
No.	Date	Description

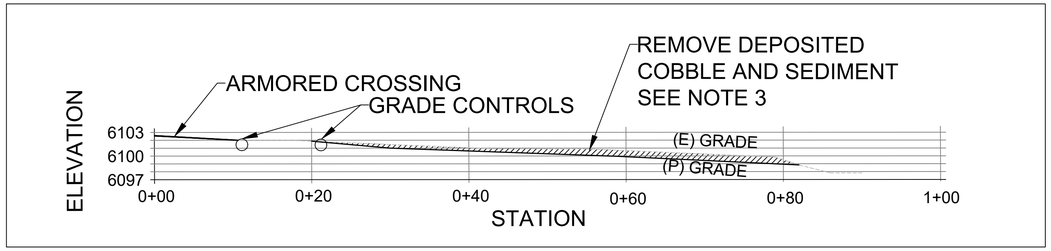
N
0 10
1" = 10'

Sheet Title
SITE 4
HEWLETT RD
EPHEMERAL
CROSSING

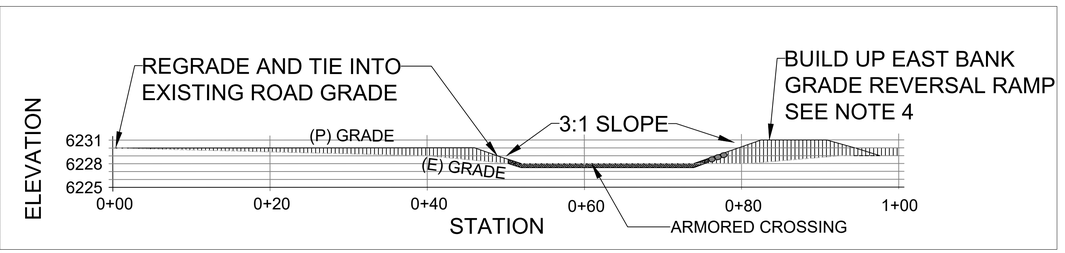
C-1



SITE 1 PLAN



SECTION A-A



SECTION B-B

LEGEND
- CUT
- FILL

REMOVE DEBRIS AT SOUTHWEST CORNER LOW WATER CROSSING AND RECONNECT NATURAL CHANNEL (WHITE)

PHOTO 2 - SOUTHWEST CORNER OF ARMORED CROSSING (2019)

REMOVE DEPOSITED COBBLE/GRAVEL AND DEBRIS/REGRADE CHANNEL; STABILIZE ALL DISTURBED AREA W/ROCK SALVAGED ONSITE

PHOTO 1 - EMIGRANT CREEK DOWNSTREAM OF ROAD CROSSING (2018)

NOTES:
1. WORK SHALL NOT COMMENCE UNTIL AFTER EMIGRANT CREEK IS NO LONGER FLOWING (LATER SUMMER/EARLY FALL) AND THE 3-DAY WEATHER FORECAST SHOWS 0% CHANCE OF RAIN.
2. STAGING SHALL BE APPROXIMATELY WHERE SHOWN AND OUTSIDE OF THE ROADWAY SO AS TO NOT OBSTRUCT TRAFFIC.
3. APPROX. CUT QUANTITY (IN-CHANNEL REMOVAL OF DEPOSITED COBBLE/SEDIMENT) IS 20-25 CY. STOCKPILE COBBLE IN STAGING AREA AND REUSE AT SITES 2 AND 3 (SEE SHEETS C-2 AND C-3).
4. APPROX. FILL QUANTITY (BUILD UP EAST BANK WATER BAR TO PREVENT EMIGRANT CREEK FROM OVERFLOWING DOWN ROAD DURING HIGH FLOWS) IS 15-20 CY. IMPORT SUITABLE MATERIAL (I.E. ROAD BASE) AS NEEDED AND COMPACT IN 6" MAX LIFTS TO 95% RELATIVE COMPACTION. KEY IN 8" TO 10" DIAM. ROCK SALVAGED ONSITE TO ARMOR. SLOPES FOR EAST BANK WATERBAR FROM TOE TO CREST SHOULD BE 3:1.

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File Date: 08/13/2019

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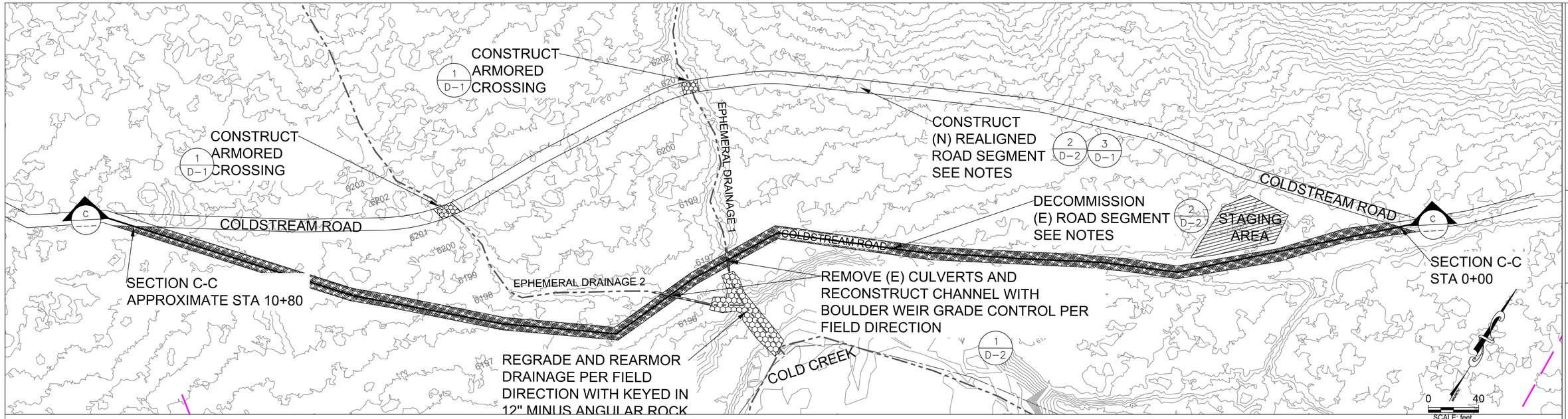
No.	Date	Description

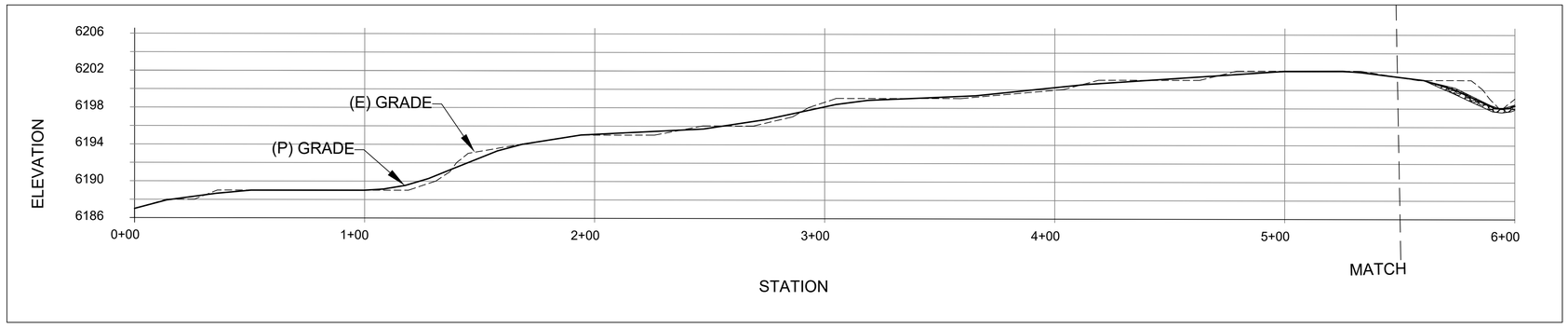
N
0 10
1" = 10'

Sheet Title
SITE 1 EMIGRANT CREEK CROSSING

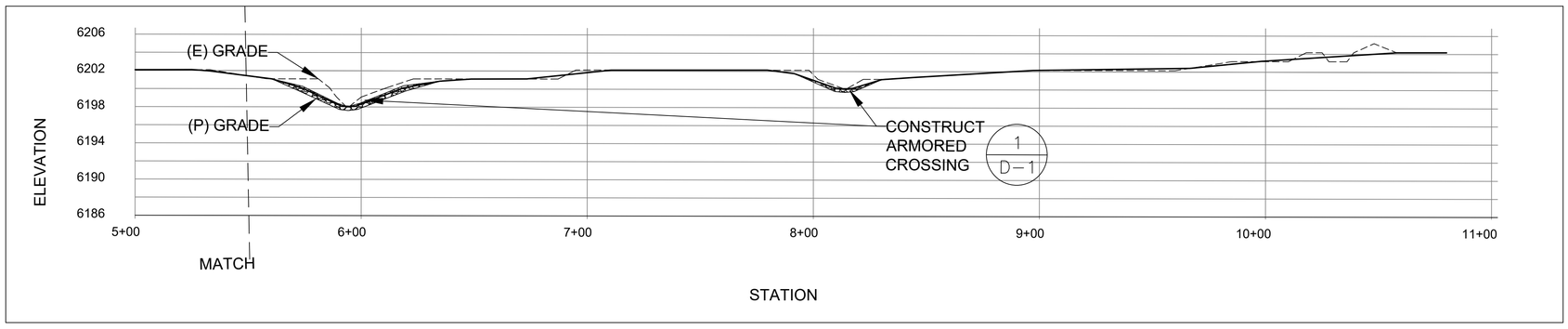
C-2
3 of 6



SITE 2 PLAN



SECTION C-C: (N) ROAD PROFILE - 4:1 VERTICAL EXAGGERATION



SECTION C-C: (N) ROAD PROFILE - 4:1 VERTICAL EXAGGERATION (CONTINUED)

NOTES:

1. ALL WORK ON SITE 2 SHALL BE PERFORMED AS DIRECTED AND APPROVED BY PROJECT ENGINEER OR STATE PARKS REPRESENTATIVE.
2. DECOMMISSION (E) SEGMENT OF COLDSTREAM ROAD AND CONSTRUCT (N) REALIGNED SEGMENT AS SHOWN AND AS FIELD-FLAGGED. DECOMMISSIONING SHALL CONSIST OF RESTORATION OF TOPOGRAPHY AND DRAINAGE PATTERN AND BERM REMOVAL. THIS INCLUDES REMOVAL AND SALVAGE OF ORGANIC MATERIAL FROM ROAD PRISM, RIPPING AND DECOMPACTION USING TEETH OF EXCAVATOR BUCKET OR OTHER APPROVED METHOD TO 8" DEPTH IN DIRECTION PERPENDICULAR TO SLOPE.
3. FOLLOWING DECOMPACTION APPLY UPLAND SEED MIX (DETAIL 3 SHEET D-2) AND SALVAGED ORGANIC DEBRIS AND FOREST DUFF.
4. APPROX. LENGTH OF (E) ROAD SEGMENT TO BE DECOMMISSIONED IS 1,050 FT. APPROX. LENGTH OF (N) REALIGNED SEGMENT IS 1,100 FT. APPROX. CUT VOLUME IS 300 CY (~200 CY TOPSOIL AND ~100 CY CUT TO CREATE BALANCED ROAD SECTION). APPROX. FILL VOLUME IS 300 CY (~200 CY IMPORTED CLASS 2 AGGREGATE BASE AND ~100 CY FILL TO CREATE BALANCED CUT).
5. STAGING SHALL BE ALLOWABLE WITHIN THE DECOMMISSIONED ROAD SEGMENT ROAD PRISM.
6. UNLESS OTHERWISE SPECIFIED IN THE FIELD, (N) REALIGNED ROAD SEGMENT CONSTRUCTION SHALL BE ACCORDING TO DETAIL 2 SHEET D-2 WITH VEGETATION MANAGEMENT PER DETAIL 3 SHEET D-3.
7. REMOVE (E) CULVERTS (X2) AND RECONSTRUCT EPHEMERAL CHANNELS, MATCHING UPSTREAM CHANNEL GEOMETRY. ARMOR WITH 12" MIN. DIAM. ANGULAR ROCK, KEY IN TO MINIMUM 6" DEPTH, AND REUSE COBBLE FROM SITE 2 TO FILL IN GAPS.

LEGEND

CUT

FILL

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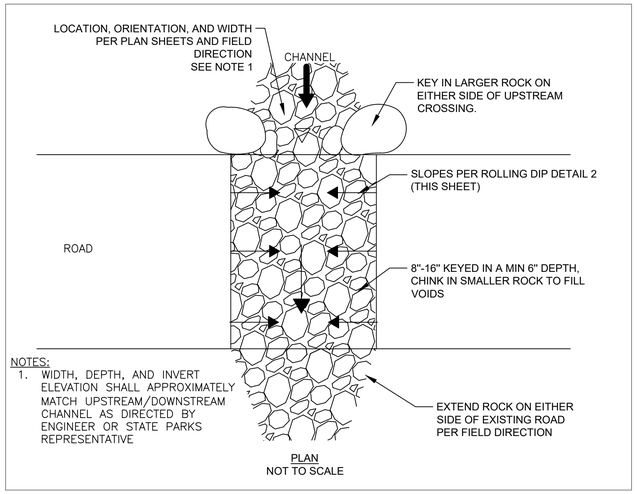
N

0 40
1" = 40'

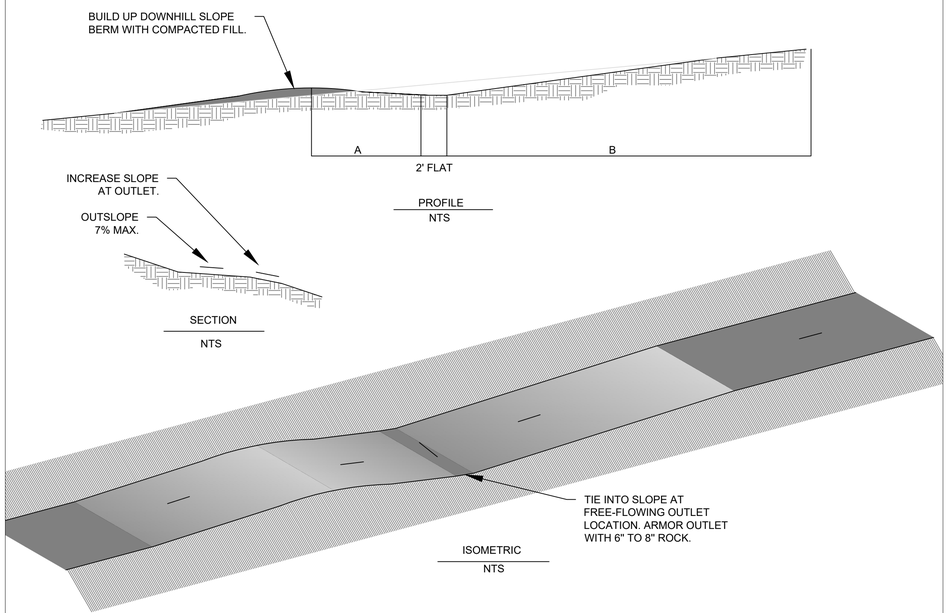
Sheet Title
SITE 2 COLDSTREAM ROAD REALIGNMENT

C-3
4 of 6

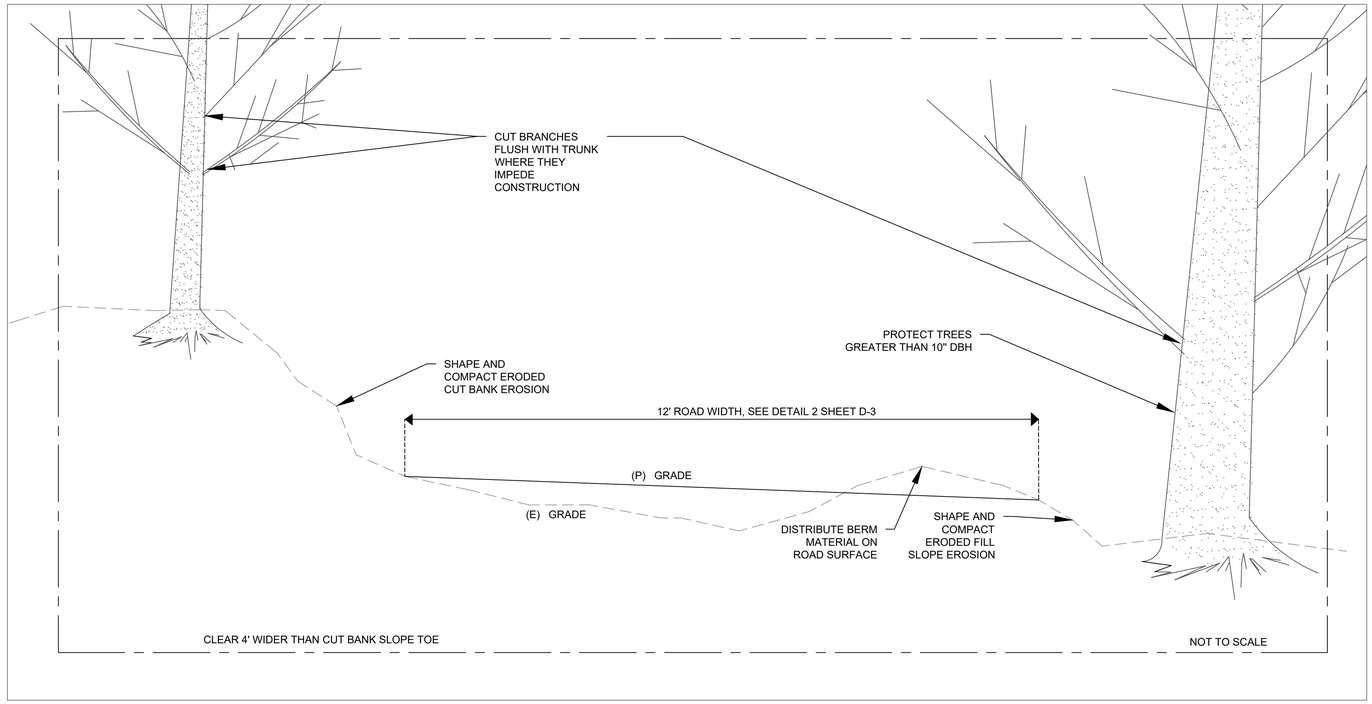


1 ARMORED CROSSING

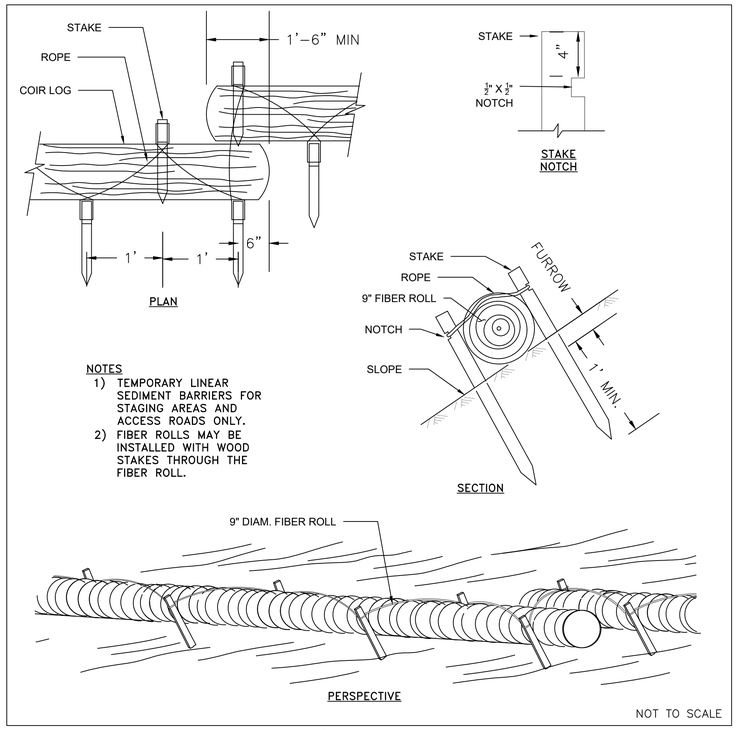
ROAD GRADE (%)	TROUGH: min. depth below downslope berm	A: REVERSE GRADE: distance from through axis to downroad berm (ft)	A: grade (%)	B: UPSLOPE APPROACH: distance from up-road start of rolling dip to through axis (ft)	B: grade (%)
<5%	8"	15	-5%	30	10%
10%	8"	15	-5%	45	15%
15%	8"	15	-5%	60	20%
>15%	8"	10	-10%	60	25%



2 ROLLING DIP



3 ROAD MAINTENANCE AND VEGETATION MANAGEMENT TYPICAL (MODIFIED FROM STATE PARKS)



4 FIBER ROLL

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PLACER COUNTY, CA 96161

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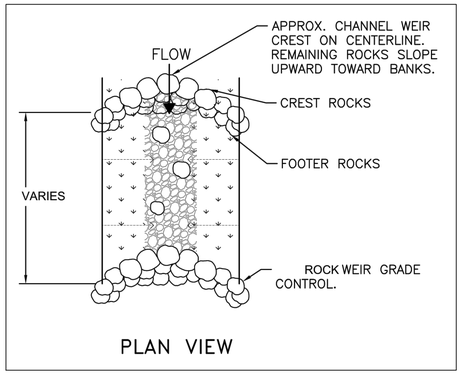
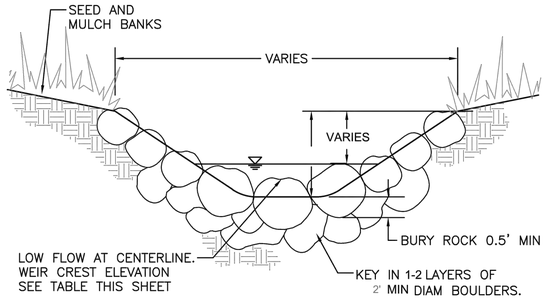
Sheet Title
STANDARD DETAILS 1

D-1



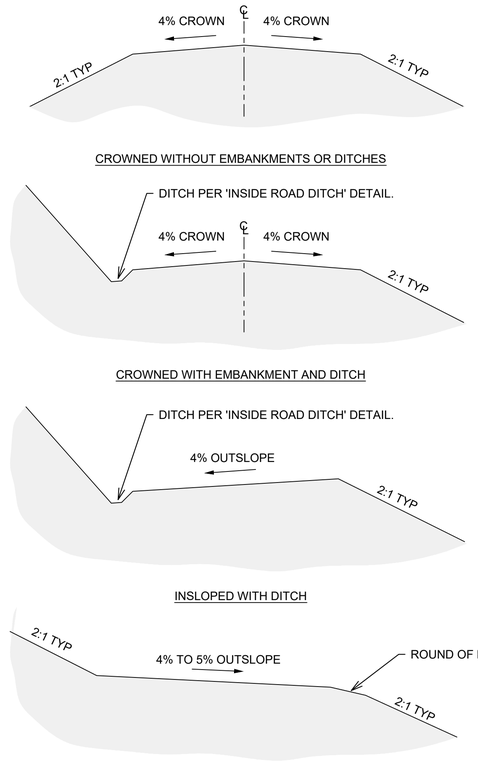
PLAN VIEW



SECTION VIEW

NOTE: WEIR ELEVATION TARGET TO BE FIELD DIRECTED BY ENGINEER OR STATE PARKS REPRESENTATIVE AND BE WITHIN +/- 0.2' TOLERANVE.

1 BOULDER WEIR GRADE CONTROL



CROWNED WITHOUT EMBANKMENTS OR DITCHES

CROWNED WITH EMBANKMENT AND DITCH

INSLOPED WITH DITCH

OUTSLOPED

ROAD SURFACE GEOMETRY (Typical)

(Not to scale)

NOTES:

1. WHEN TOPOGRAPHY ALLOWS, OUTSLOPE IS PREFERRED CONFIGURATION.
2. INSLOPE AND CROWNED ROAD CONFIGURATIONS REQUIRE DITCH RELIEF CULVERTS TO CONVEY RUNOFF UNDER ROADWAY.
3. DITCH SHALL HAVE POSITIVE FLOW TO OUTLET OR DITCH RELIEF CULVERT. SEE TYPICAL DITCH RELIEF CULVERT DETAIL FOR REQUIREMENTS.
4. DRAINAGE ON OUTSLOPED ROADS SHALL BE COMPLIMENTED WITH REVERSE GRADE DIPS UNLESS OTHERWISE SPECIFIED. .

2 ROAD GEOMETRY TYPICALS

RIPARIAN SEED MIX

SCIENTIFIC NAME	COMMON NAME	FORM	QUANTITY PLS (LBS/ACRE)
AGROSTIS STOLONIFERA	REDTOP BENTGRASS	GRASS	10
DESCHAMPSIA CESPITOSA	TUFTED HAIRGRASS	GRASS	10
ELYMUS GLAUCUS	BLUE WILDRYE	GRASS	10
ELYMUS TRITICOIDES	CREEPING WILDRYE	GRASS	10
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	GRASS	10
		TOTAL	**50**

UPLAND SEED MIX

SCIENTIFIC NAME	COMMON NAME	FORM	QUANTITY PLS (LBS/ACRE)
*ACHILLEA MILLIFOLIUM**	COMMON YARROW	FORB	5
ARTEMISIA TRIDENTATA	MOUNTAIN SAGEBRUSH	SHRUB	5
*BROMUS CARINATUS**	CALIFORNIA BROME	GRASS	10
BROMUS MARGINATUS	MOUNTAIN BROME	GRASS	5
ELYMUS TRACHYCAULUS	SLENDER WHEATGRASS	GRASS	5
*ELYMUS ELYMOIDES**	SQUIRRELTAIL	GRASS	8
*ELYMUS GLAUCUS**	BLUE WILDRYE	GRASS	10
LUPINUS LEPIDUS	LUPINE	FORB	2
*POA PRATENSIS**	KENTUCKY BLUEGRASS	GRASS	5
POA SECUNDA	SANDBERG BLUEGRASS	GRASS	5
PURSIA TRIDENTATA	BITTERBRUSH	SHRUB	5
WYETHIA MOLLIS	MULES EAR	FORB	3
		TOTAL	**68**

PLS LBS/ACRE = PURE LIVE SEED POUNDS PER ACRE (BROADCAST RATE).
* CALIFORNIA STATE PARKS OHV BMP MANUAL (2007)
ADAPTED PLANTS FROM RECOMMENDED SEED MIXTURE
~ LOCAL COLLECTION ONLY

3 SEED MIXES

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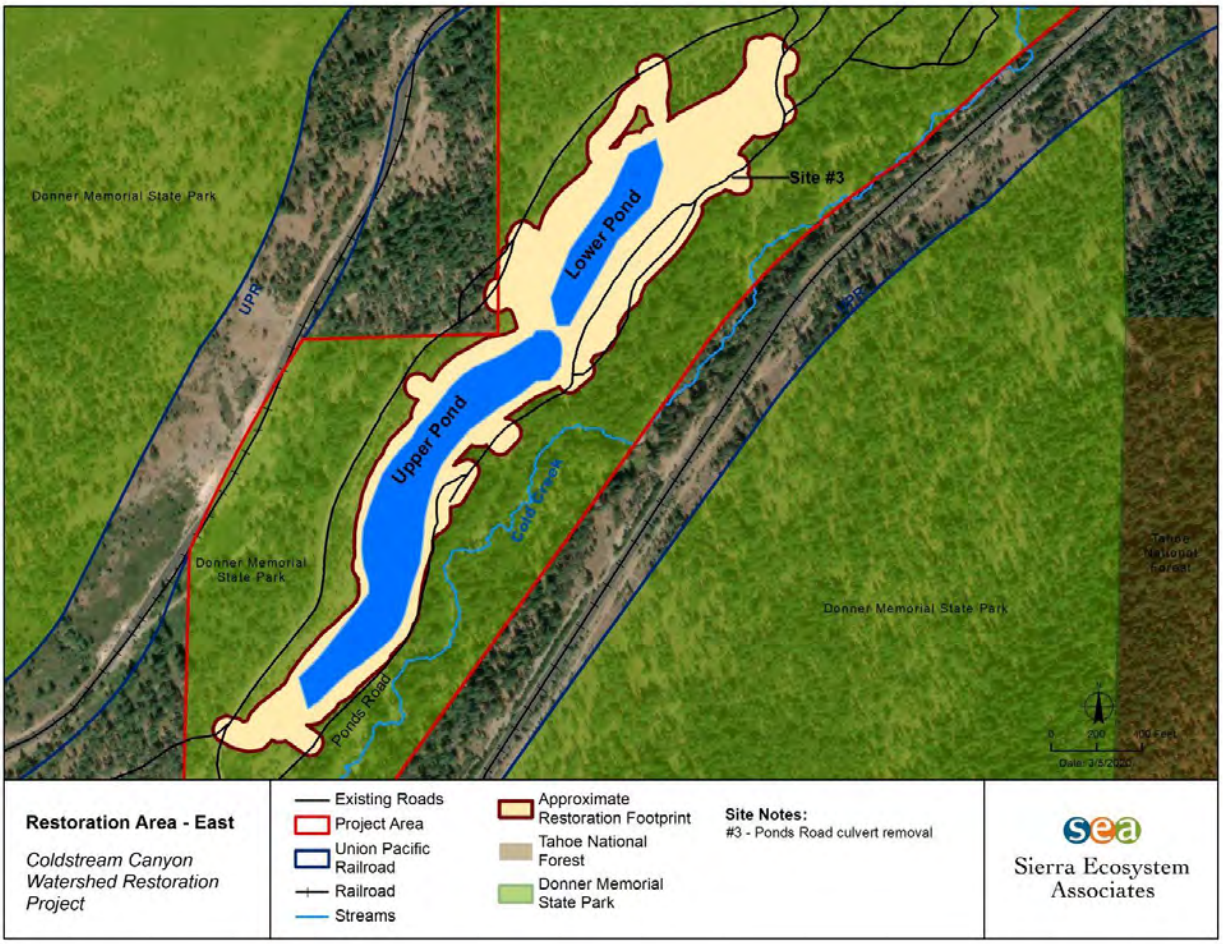
Sheet Title
STANDARD DETAILS 2

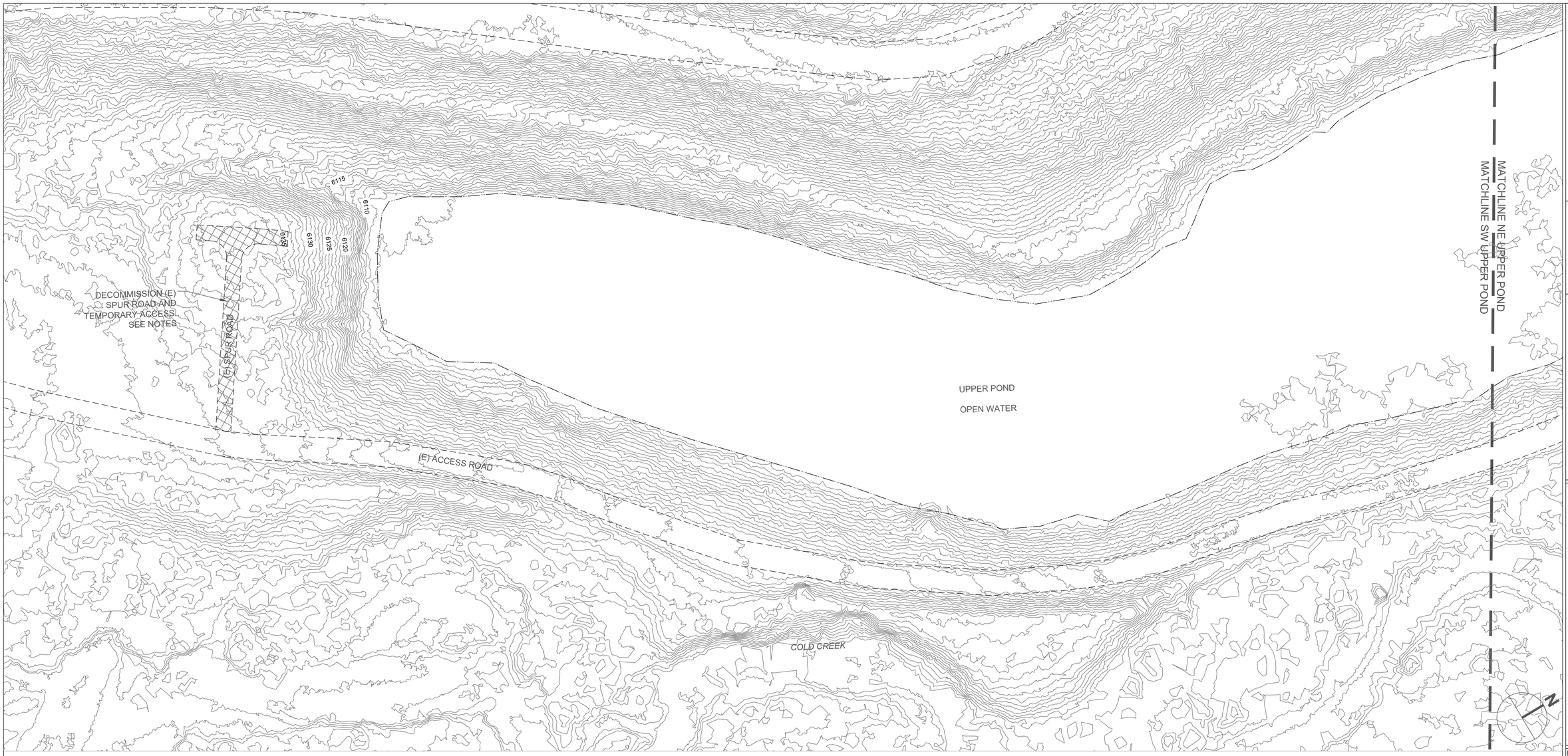
D-2
6 of 6

PONDS RESTORATION

Preliminary Erosion and Grading Control Plans



NOTE: The road improvement planned on Ponds Road (Site #3, Ponds Road culvert removal) is shown in this design plan set.



NOTES:

1. DECOMMISSIONING SHALL CONSIST OF RESTORATION OF TOPOGRAPHY AND DRAINAGE PATTERN AND BERM REMOVAL. THIS INCLUDES REMOVAL AND SALVAGE OF ORGANIC MATERIAL FROM ROAD PRISM, RIPPING AND DECOMPACTION USING TEETH OF EXCAVATOR BUCKET OR OTHER APPROVED METHOD TO 8" DEPTH IN DIRECTION PERPENDICULAR TO SLOPE. FOLLOWING DECOMPACTION APPLY UPLAND SEED MIX (SHEET R-8) AND SALVAGED ORGANIC DEBRIS AND FOREST DUFF.

POND RESTORATION LEGEND

- (E) EMERGENT MARSH TO BE PRESERVED
- CUT TREES TO ENHANCE RIPARIAN FORESTED / WILLOW HABITAT
- RIP, SEED, SPREAD BOULDERS, LOG DEBRIS AND WOOD CHIPS
- REMOVE FILL FROM BASE OF (E) WILLOWS
- LOG FOR RESTING / ROOSTING HABITAT
- LOG AND BOULDER WEIR (3/D-7)
- BOULDER
- GW - MW GROUNDWATER MONITORING WELL
- (E) CULVERT TO REMAIN
- (E) ROAD EDGE
- (P) PARKING/ TRAIL/ ROAD EDGE

- DIRECTION OF WATER FLOW
- (E) 1' CONTOUR
- (P) 1' CONTOUR
- (P) PARTIAL FOOT CONTOUR
- LIMIT OF GRADE
- ESA FENCE
- SILT FENCE
- TURBIDITY CURTAIN
- WATERLINE

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PLACER COUNTY AND NEVADA COUNTY, CA 96161

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NONE		

0 40
1" = 40'

Sheet Title
GRADING AND EROSION CONTROL SW UPPER POND

C-4

NOTES:

1. DECOMMISSIONING SHALL CONSIST OF RESTORATION OF TOPOGRAPHY AND DRAINAGE PATTERN AND BERM REMOVAL. THIS INCLUDES REMOVAL AND SALVAGE OF ORGANIC MATERIAL FROM ROAD PRISM, RIPPING AND DECOMPACTION USING TEETH OF EXCAVATOR BUCKET OR OTHER APPROVED METHOD TO 8" DEPTH IN DIRECTION PERPENDICULAR TO SLOPE. FOLLOWING DECOMPACTION APPLY UPLAND SEED MIX (DETAIL 3 SHEET D-2) AND SALVAGED ORGANIC DEBRIS AND FOREST DUFF.

POND RESTORATION LEGEND

- (E) EMERGENT MARSH TO BE PRESERVED
- CUT TREES TO ENHANCE RIPARIAN FORESTED / WILLOW HABITAT
- RIP, SEED, SPREAD BOULDERS, LOG DEBRIS AND WOOD CHIPS
- REMOVE FILL FROM BASE OF (E) WILLOWS
- LOG FOR RESTING / ROOSTING HABITAT
- LOG AND BOULDER WEIR (3 / D-7)
- BOULDER
- GW - MW GROUNDWATER MONITORING WELL

- (E) CULVERT TO REMAIN
- (E) ROAD EDGE
- (P) PARKING/ TRAIL/ ROAD EDGE
- DIRECTION OF WATER FLOW
- (E) 1' CONTOUR
- (P) 1' CONTOUR
- (P) PARTIAL FOOT CONTOUR
- LIMIT OF GRADE

- ESA FENCE
- SILT FENCE
- TURBIDITY CURTAIN
- WATERLINE

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COLDSTREAM CANYON RESTORATION PROJECT

PLACER COUNTY AND NEVADA COUNTY, CA 96161

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No.	Date	Description
NONE		

0 40
1" = 40'

Sheet Title
GRADING AND EROSION CONTROL NE UPPER POND

C-5

NOTES:

1. IF (P) SWALE INTERSECTS WITH (E) BEAVER DAM WORK WITH STATE PARKS TO ENHANCE AND STABILIZE PER FIELD DIRECTION.
2. DECOMMISSIONING SHALL CONSIST OF RESTORATION OF TOPOGRAPHY AND DRAINAGE PATTERN AND BERM REMOVAL. THIS INCLUDES REMOVAL AND SALVAGE OF ORGANIC MATERIAL FROM ROAD PRISM, RIPPING AND DECOMPACTION USING TEETH OF EXCAVATOR BUCKET OR OTHER APPROVED METHOD TO 8" DEPTH IN DIRECTION PERPENDICULAR TO SLOPE. FOLLOWING DECOMPACTION APPLY UPLAND SEED MIX (DETAIL 3 SHEET D-2) AND SALVAGED ORGANIC DEBRIS AND FOREST DUFF.

PRIVATE PROPERTY

INSTALL LOG / BOULDER WEIRS ACROSS (E) DRAINAGE SLOPE. PLACED PER FIELD DIRECTION (3 D-7)

MATCHLINE SW LOWER POND
MATCHLINE NE UPPER POND

MATCHLINE NE LOWER POND
MATCHLINE SW LOWER POND

APPROX. TEMPORARY CONSTRUCTION ACCESS, TO BE FIELD FLAGGED

TREE REMOVAL SEE NOTES 0.63 ACRES

SELECTIVE TREE REMOVAL PER FIELD DIRECTION

TREE REMOVAL SEE NOTES 0.56 ACRES

PROTECT (E) BEAVER DAM. SEE NOTE 1

OPEN WATER

2, 25' WIDE, ROCK LINED SWALES AT ELEV 0.5' OR LESS BELOW (E) BERM GRADE. SEE NOTE 1

(E) BERM REMNANTS

(E) ISLAND

(N) OPEN WATER CHANNEL

NEW 6' SIDE CHANNEL BOTTOM EL. 6099.5'

CONVERT (E) ROAD TO 4' WIDE TRAIL AND DECOMMISSION PARKING AREA. OPTIONAL STAGING DURING CONSTRUCTION, DECOMMISSION POST USE

CONVERT (E) ROAD TO 4' WIDE SINGLE TRACK TRAIL

DECOMISSION (E) ROAD. SEE NOTES

(E) ACCESS ROAD

MAINTAIN SINGLE ACCESS AND PARKING AREA

CONSTRUCT 4' WIDE TRAIL TO BE FLAGGED IN FIELD

GW - MW #16 @ADJ ELEV. 6102

GW - MW #11 @ADJ ELEV. 6102

TEMPORARY STAGING AREA

MAINTAIN 3 CAR PARKING AREA

OUT

POND RESTORATION LEGEND

- (E) EMERGENT MARSH TO BE PRESERVED
- CUT TREES TO ENHANCE RIPARIAN FORESTED / WILLOW HABITAT
- RIP, SEED, SPREAD BOULDERS, LOG DEBRIS AND WOOD CHIPS
- REMOVE FILL FROM BASE OF (E) WILLOWS
- LOG FOR RESTING / ROOSTING HABITAT
- LOG AND BOULDER WEIR (3 D-7)
- BOULDER

- GW - MW GROUNDWATER MONITORING WELL
- (E) CULVERT TO REMAIN
- (E) ROAD EDGE
- (P) PARKING/ TRAIL/ ROAD EDGE
- DIRECTION OF WATER FLOW
- (E) 1' CONTOUR
- (P) 1' CONTOUR

- (P) PARTIAL FOOT CONTOUR
- LIMIT OF GRADE
- ESA FENCE
- SILT FENCE
- TURBIDITY CURTAIN
- WATERLINE

90% DESIGNS
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WILDSCAPE ENGINEERING

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1901 Airport Road, Suite 108
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www.wildscape-engineering.com

COLDSTREAM CANYON RESTORATION PROJECT

PLACER COUNTY AND NEVADA COUNTY, CA 96161

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No.	Date	Description
NONE		

1" = 40'

Sheet Title

GRADING AND EROSION CONTROL SW LOWER POND

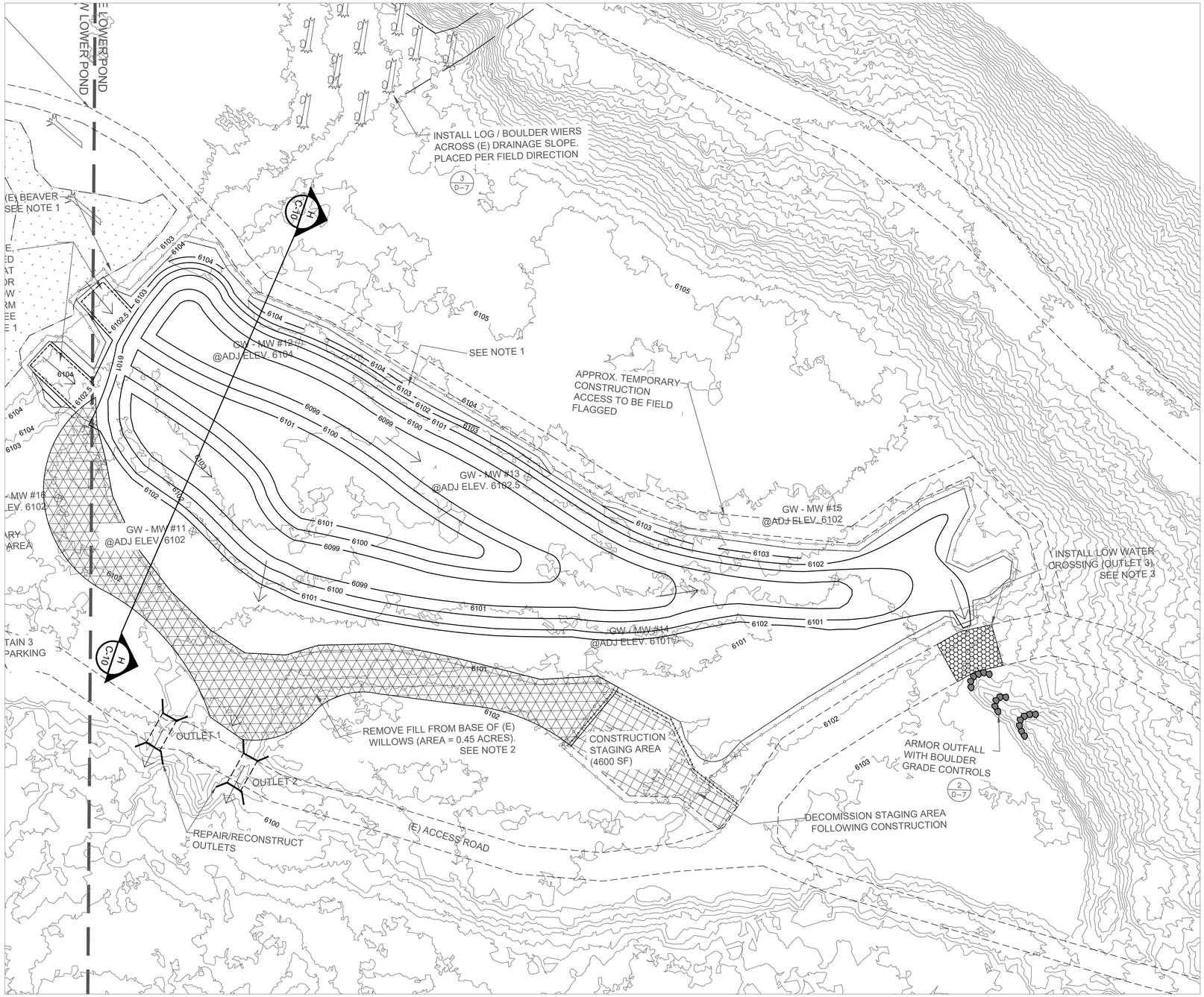
C-6

POND RESTORATION LEGEND

- (E) EMERGENT MARSH TO BE PRESERVED
- CUT TREES TO ENHANCE RIPARIAN FORESTED / WILLOW HABITAT
- RIP, SEED, SPREAD BOULDERS, LOG DEBRIS AND WOOD CHIPS
- REMOVE FILL FROM BASE OF (E) WILLOWS
- LOG FOR RESTING / ROOSTING HABITAT
- LOG AND BOULDER WEIR (3 / D-7)
- BOULDER
- GW - MW GROUNDWATER MONITORING WELL
- (E) CULVERT TO REMAIN
- (E) ROAD EDGE
- (P) PARKING/ TRAIL/ ROAD EDGE
- DIRECTION OF WATER FLOW
- (E) 1' CONTOUR
- (P) 1' CONTOUR
- (P) PARTIAL FOOT CONTOUR
- LIMIT OF GRADE
- ESA FENCE
- SILT FENCE
- TURBIDITY CURTAIN
- WATERLINE

NOTES:

1) GRADING PLAN AS SHOWN IS APPROXIMATE. FINAL GRADING PER FIELD DIRECTION TO AVOID (E) WILLOW AREAS AND DESIRABLE WETLAND VEGETATION.
2) REMOVE EXISTING FILL MATERIAL FROM AROUND WILLOW PLANTS WITH MINI EXCAVATOR TO AVOID IMPACTING (E) VEGETATION.
3) OVERFLOW ELEVATIONS SET AT:
   OUTLET 1 = 6101.5'
   OUTLET 2 = 6101.5'
   OUTLET 3 = 6102'
4) CEQA ROADS SITE 3 CORRELATES TO CULVERT UPGRADES
5) DECOMMISSIONING SHALL CONSIST OF RESTORATION OF TOPOGRAPHY AND DRAINAGE PATTERN AND BERM REMOVAL. THIS INCLUDES REMOVAL AND SALVAGE OF ORGANIC MATERIAL FROM ROAD PRISM, RIPPING AND DECOMPACTION USING TEETH OF EXCAVATOR BUCKET OR OTHER APPROVED METHOD TO 8" DEPTH IN DIRECTION PERPENDICULAR TO SLOPE.



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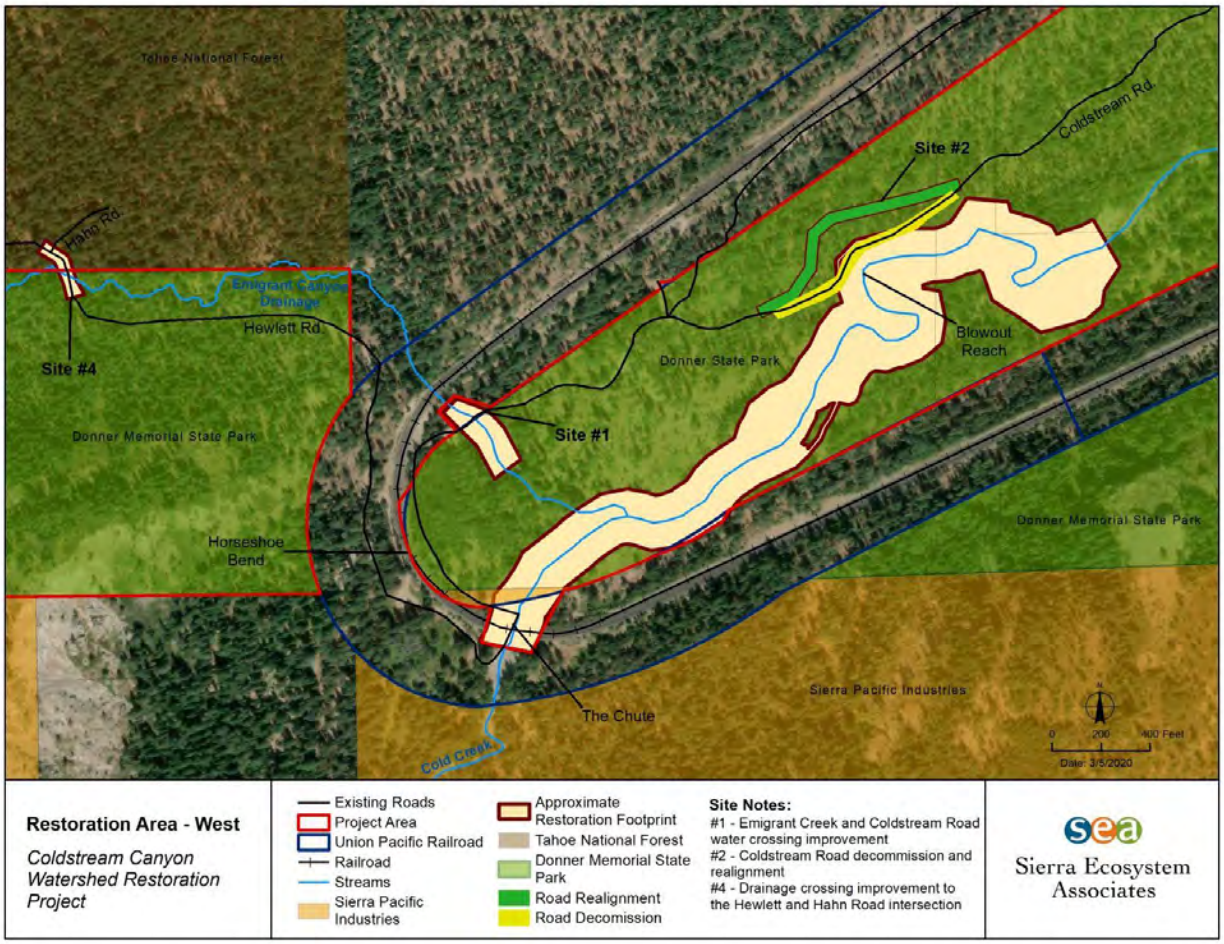
1" = 40'

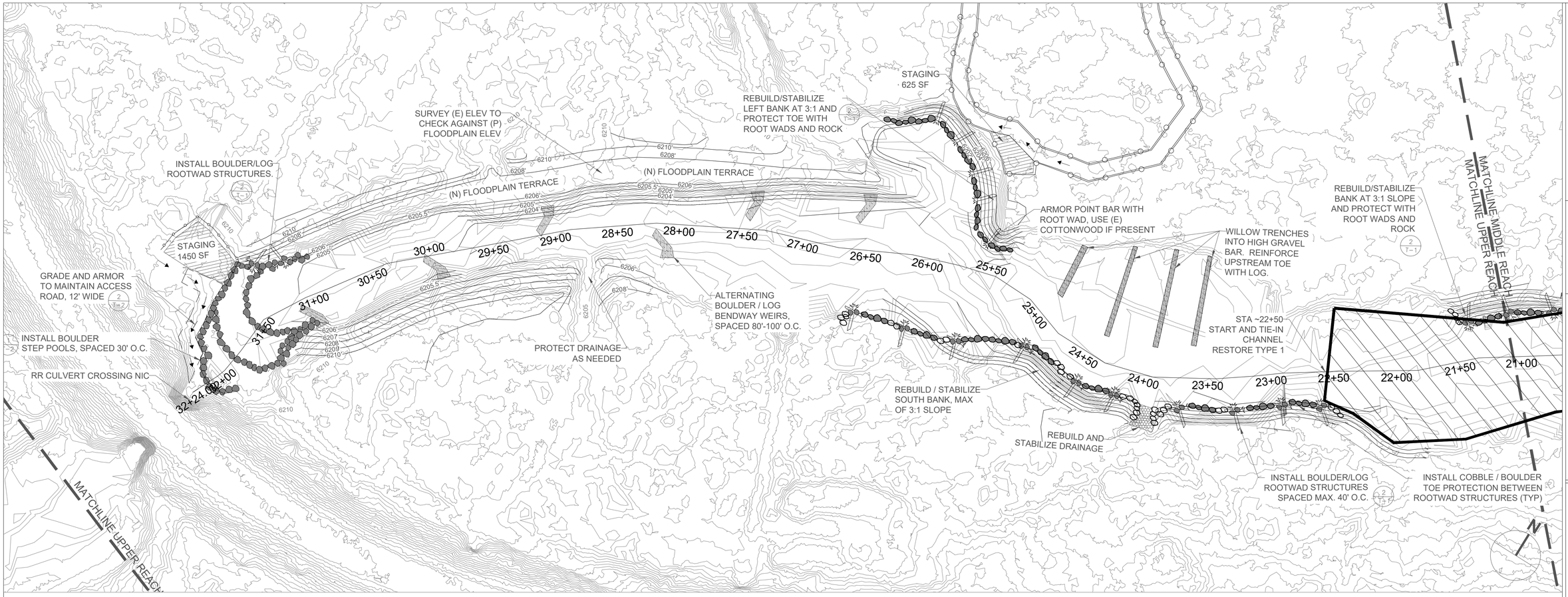
Sheet Title
GRADING AND EROSION CONTROL NE LOWER POND

C-7

COLD CREEK RESTORATION

Preliminary Designs and Typicals





CREEK RESTORATION LEGEND

- TEMPORARY STAGING AREA
- STABILIZE DRAINAGE AREA
- BOULDER LOG ROOTWAD STRUCTURES
- BOULDER STEP POOLS
- WILLOW TRENCH
- BOULDER/LOG BENDWAY WEIR
- (E) RAILROAD
- ROAD/TRAIL/PARKING AREA EDGE
- STAGING ACCESS ROUTE
- (E) 1' CONTOUR
- (P) 1' CONTOUR
- (P) PARTIAL FOOT CONTOUR
- (E) CREEK ALIGNMENT AND STATIONING
- ESA FENCE
- SILT FENCE

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FOR CEQA USE ONLY

CHANNEL RESTORE TYPE 1:
INSTALL UP TO 30 ROCK DEBRIS JAM STRUCTURES (TYPICAL 2 SHEET T-3), IN STRATEGIC LOCATIONS, TO INCREASE CHANNEL SINUOSITY AND PREVENT FURTHER OUTWARD MIGRATION. INSTALL UP TO 30 FLOODPLAIN ROUGHNESS STRUCTURES TO IMPROVE SEDIMENT DEPOSITION. INSTALL UP TO 12 BOULDER GRADE CONTROL STRUCTURES (TYPICAL 1 SHEET T-3) TO MAINTAIN CHANNEL SLOPE. ALL WORK TO BE PERFORMED AS DIRECTED BY THE ENGINEER OR STATE PARKS REPRESENTATIVE.

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0 40
1" = 40'

Sheet Title
GRADING AND EROSION CONTROL UPPER REACH

C-1

CREEK RESTORATION LEGEND

- TEMPORARY STAGING AREA
- STABILIZE DRAINAGE AREA
- BOULDER LOG ROOTWAD STRUCTURES
- BOULDER STEP POOLS
- WILLOW TRENCH
- BOULDER/LOG BENDWAY WEIR
- (E) RAILROAD
- ROAD/TRAIL/PARKING AREA EDGE
- STAGING ACCESS ROUTE
- 62 (E) 1' CONTOUR
- 62 (P) 1' CONTOUR
- 62.5 (P) PARTIAL FOOT CONTOUR
- 16+00 (E) CREEK ALIGNMENT AND STATIONING
- ESA FENCE
- SILT FENCE

CHANNEL RESTORE TYPE 1:
INSTALL UP TO 30 ROCK DEBRIS JAM STRUCTURES (TYPICAL 2 SHEET T-3), IN STRATEGIC LOCATIONS, TO INCREASE CHANNEL SINUOSITY AND PREVENT FURTHER OUTWARD MIGRATION. INSTALL UP TO 30 FLOODPLAIN ROUGHNESS STRUCTURES TO IMPROVE SEDIMENT DEPOSITION. INSTALL UP TO 12 BOULDER GRADE CONTROL STRUCTURES (TYPICAL 1 SHEET T-3) TO MAINTAIN CHANNEL SLOPE. ALL WORK TO BE PERFORMED AS DIRECTED BY THE ENGINEER OR STATE PARKS REPRESENTATIVE.

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REBUILD AND STABILIZE DRAINAGE

REBUILD AND STABILIZE ERODED BANK

STAGING- 2500 SF

INSTALL FLOODPLAIN ROUGHNESS

REBUILD/STABILIZE BANK AT 3:1 SLOPE AND PROTECT WITH ROOT WADS AND ROCK (2 / T-1)

INSTALL BOULDER ROOTWAD/BENDWAY WEIR COMBINATION BETWEEN (E) MATURE TREES PER FIELD DIRECTION. REGRADE BANKS STEEPER THAN 2.5:1 (T-1 / 2 / T-1)

OBBLE / BOULDER ECTION BETWEEN RUCTURES (TYP)

MATCHLINE MIDDLE REACH

MATCHLINE UPPER REACH

MATCHLINE UPPER REACH

MATCHLINE MIDDLE REACH

N

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1" = 40'

Sheet Title
GRADING AND EROSION CONTROL MID REACH

C-2

65% DESIGNS
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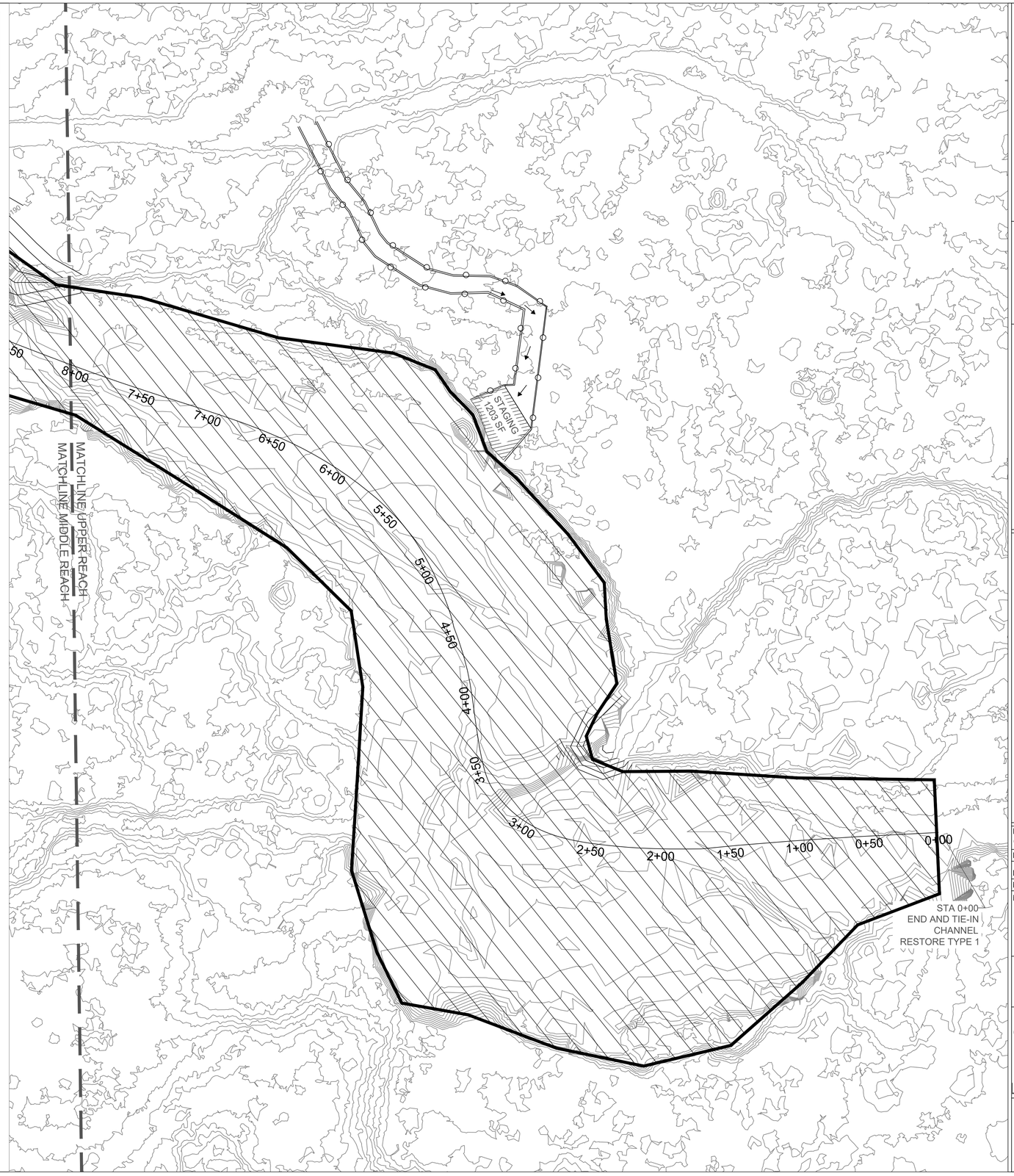
CREEK RESTORATION LEGEND

- TEMPORARY STAGING AREA
- STABILIZE DRAINAGE AREA
- BOULDER LOG ROOTWAD STRUCTURES
- BOULDER STEP POOLS
- WILLOW TRENCH
- BOULDER/LOG BENDWAY WEIR
- (E) RAILROAD
- ROAD/TRAIL/PARKING AREA EDGE
- STAGING ACCESS ROUTE
- 62 (E) 1' CONTOUR
- 62 (P) 1' CONTOUR
- 62.5 (P) PARTIAL FOOT CONTOUR
- 16+00 (E) CREEK ALIGNMENT AND STATIONING
- ESA FENCE
- SILT FENCE

CHANNEL RESTORE TYPE 1:
INSTALL UP TO 30 ROCK DEBRIS JAM STRUCTURES (TYPICAL 2 SHEET T-3), IN STRATEGIC LOCATIONS, TO INCREASE CHANNEL SINUOSITY AND PREVENT FURTHER OUTWARD MIGRATION. INSTALL UP TO 30 FLOODPLAIN ROUGHNESS STRUCTURES TO IMPROVE SEDIMENT DEPOSITION. INSTALL UP TO 12 BOULDER GRADE CONTROL STRUCTURES (TYPICAL 1 SHEET T-3) TO MAINTAIN CHANNEL SLOPE. ALL WORK TO BE PERFORMED AS DIRECTED BY THE ENGINEER OR STATE PARKS REPRESENTATIVE.



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NONE		

0 40
1" = 40'

Sheet Title
GRADING AND EROSION CONTROL LOWER REACH

C-3

RESTORATION AND PLANTING ACREAGES

CREEK RIPARIAN SEED ONLY

NAME	SQ. FT.	ACRES
RIPARIAN SEED 1	267	0.01
RIPARIAN SEED 2	333	0.01
RIPARIAN SEED 3	243	0.01
RIPARIAN SEED 4	2229	0.05
RIPARIAN SEED 5	1420	0.03
RIPARIAN SEED 6	738	0.02
RIPARIAN SEED 7	1059	0.02
RIPARIAN SEED 8	436	0.01
RIPARIAN SEED 9	645	0.01
RIPARIAN SEED 10	583	0.01
RIPARIAN SEED 11	482	0.01
RIPARIAN SEED 12	226	0.01
RIPARIAN SEED 13	5319	0.12
RIPARIAN SEED 14	4292	0.10
RIPARIAN SEED 15	11753	0.27
RIPARIAN SEED 16	1220	0.03
RIPARIAN SEED 17	950	0.02
RIPARIAN SEED 18	1394	0.03
RIPARIAN SEED 19	1966	0.05
RIPARIAN SEED 20	7002	0.16
RIPARIAN SEED 21	2365	0.05
TOTAL	44922	1.03

CREEK WILLOW CUTTINGS

NAME	SQ. FT.	ACRES
WILLOW 1	4511	0.10
WILLOW 2	668	0.02
WILLOW 3	2616	0.06
WILLOW 4	1972	0.05
WILLOW 5	1302	0.03
WILLOW 6	416	0.01
WILLOW 7	4328	0.10
WILLOW 8	950	0.02
WILLOW 9	3480	0.08
TOTAL	20242	0.46

UPLAND

NAME	SQ. FT.	ACRES
UPLAND 1	4597	0.11
UPLAND 2	9173	0.21
UPLAND 3	4842	0.11
UPLAND 4	11500	0.26
UPLAND 5	5021	0.12
UPLAND 6	3331	0.08
UPLAND 7	5651	0.13
UPLAND 8	1062	0.02
UPLAND 9	558	0.01
UPLAND 10	2105	0.05
UPLAND 11	2012	0.05
UPLAND 12	2500	0.06
UPLAND 13	10439	0.24
UPLAND 14	1757	0.04
TOTAL	64547	1.48

CREEK FLOODPLAIN AND WILLOW PLANTING

NAME	SQ. FT.	ACRES
FLOODPLAIN AND WILLOW 1	200	0.00
FLOODPLAIN AND WILLOW 2	278	0.01
FLOODPLAIN AND WILLOW 3	224	0.01
FLOODPLAIN AND WILLOW 4	1841	0.04
FLOODPLAIN AND WILLOW 5	1034	0.02
FLOODPLAIN AND WILLOW 6	515	0.01
FLOODPLAIN AND WILLOW 7	776	0.02
FLOODPLAIN AND WILLOW 8	325	0.01
FLOODPLAIN AND WILLOW 9	500	0.01
FLOODPLAIN AND WILLOW 10	535	0.01
FLOODPLAIN AND WILLOW 11	373	0.01
FLOODPLAIN AND WILLOW 12	182	0.00
FLOODPLAIN AND WILLOW 13	4466	0.10
FLOODPLAIN AND WILLOW 14	2978	0.07
FLOODPLAIN AND WILLOW 15	1307	0.03
FLOODPLAIN AND WILLOW 16	877	0.02
FLOODPLAIN AND WILLOW 17	343	0.01
FLOODPLAIN AND WILLOW 18	278	0.01
FLOODPLAIN AND WILLOW 19	409	0.01
FLOODPLAIN AND WILLOW 20	233	0.01
FLOODPLAIN AND WILLOW 21	524	0.01
FLOODPLAIN AND WILLOW 22	424	0.01
FLOODPLAIN AND WILLOW 23	7556	0.17
TOTAL	18199	0.60

POND AREA RIPARIAN SEED AND PLANT

NAME	SQ. FT.	ACRES
RIPARIAN SEED AND PLANT 1	8499	0.20
RIPARIAN SEED AND PLANT 2	40197	0.92
RIPARIAN SEED AND PLANT 3	6190	0.14
TOTAL	54885	1.26

POND AREA WET MEADOW SEED ONLY

NAME	SQ. FT.	ACRES
WET MEADOW SEED 1	35209	0.81
WET MEADOW SEED 2	4398	0.10
TOTAL	39607	0.91

POND AREA WET MEADOW SEED AND PLANT

NAME	SQ. FT.	ACRES
WET MEADOW SEED AND PLANT 1	18425	0.42
TOTAL	18425	0.42

POND AREA WET MEADOW SEED AND WILLOW PLANT

NAME	SQ. FT.	ACRES
WET MEADOW WILLOW 1	21571	0.50
WET MEADOW WILLOW 2	24250	0.56
TOTAL	45821	1.05

NOTES:

1) SALVAGE ALL WILLOW ROOT WADS FROM DISTURBED AREAS FOR LATER PLACEMENT PER FIELD DIRECTION. INSTALL CUTTINGS WITH $\frac{2}{3}$ BELOW AND $\frac{1}{3}$ ABOVE (E) GROUND SURFACE. SEE SPECIFICATIONS.
2) INSTALL BIODEGRADABLE EROSION CONTROL BLANKET OVER RE-GRADED AND SEEDED STREAMBANKS. SEE SPECIFICATIONS.
3) INSTALL ALL RIPARIAN FOREST/WILLOW TRANSPLANTS IN GROUPS, NOT SINGULAR PLANTS, PER FIELD DIRECTION.
4) NATIVE SEEDS TO BE BROADCAST APPLIED FOLLOWING RIPPING. SOIL SEEDS ARE APPLIED TO SHOULD BE ROUGH AND "CHUNKY". SEEDS WILL NOT BE RAKED INTO SOIL OR COVERED WITH SOIL.
5) CREEK TRANSPLANTS WILL REQUIRE IRRIGATION FOR AT LEAST 2-3 GROWING SEASONS.

UPLAND SEED LEGEND

CREEK UPLAND/STAGING AND ACCESS SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	FORM	QUANTITY PLS (LBS/ACRE)
*ACHILLEA MILLIFOLIUM**	COMMON YARROW	FORB	5
ARTEMISIA TRIDENTATA	MOUNTAIN SAGEBRUSH	SHRUB	5
*BROMUS CARINATUS**	CALIFORNIA BROME	GRASS	10
BROMUS MARGINATUS	MOUNTAIN BROME	GRASS	5
ELYMUS TRACHYCAULUS	SLENDER WHEATGRASS	GRASS	5
*ELYMUS ELYMOIDES**	SQUIRRELTAIL	GRASS	8
*ELYMUS GLAUCUS**	BLUE WILDRYE	GRASS	10
LUPINUS LEPIDUS	LUPINE	FORB	2
POA PRATENSIS~	KENTUCKY BLUEGRASS	GRASS	5
POA SECUNDA	SANDBERG BLUEGRASS	GRASS	5
PURSIA TRIDENTATA	BITTERBRUSH	SHRUB	5
WYETHIA MOLLIS	MULES EAR	FORB	3
		TOTAL	**68**

COLD CREEK SEED AND PLANT LEGENDS

STREAMBANK RIPARIAN SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	FORM	QUANTITY PLS (LBS/ACRE)
AGROSTIS STOLONIFERA	REDTOP BENTGRASS	GRASS	10
DESCHAMPSIA CESPITOSA	TUFTED HAIRGRASS	GRASS	10
ELYMUS GLAUCUS	BLUE WILDRYE	GRASS	10
ELYMUS TRITICOIDES	CREEPING WILDRYE	GRASS	10
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	GRASS	10
		TOTAL	**50**

WILLOW CUTTINGS

SCIENTIFIC NAME	COMMON NAME	STOCK	ON CENTER SPACING (FT)
SALIX LEMMONII	LEMMON'S WILLOW	CUTTINGS (4-6')	2

PLANTING AREA TYPES

- CREEK WILLOW CUTTINGS
- CREEK RIPARIAN SEED ONLY
- POND AREA WET MEADOW SEED ONLY
- POND AREA WET MEADOW SEED AND PLANT
- POND AREA RIPARIAN SEED AND PLANT
- UPLAND
- POND AREA WET MEADOW SEED AND WILLOW PLANT
- CREEK FLOODPLAIN AND WILLOW PLANTING

POND SEED AND PLANT LEGENDS

POND RIPARIAN PLANTING

SCIENTIFIC NAME	COMMON NAME	STOCK	ON CENTER SPACING (FT)
ALNUS INCANA TENUFOLIA	MOUNTAIN ALDER	5 GAL	40
CORNUS SERICEA	RED-OSIER DOGWOOD	1 GAL	10
POPULUS BALSAMIFERA TRICHOCARPA	BLACK COTTONWOOD	CUTTINGS (6-8')	30
POPULUS BALSAMIFERA TRICHOCARPA	BLACK COTTONWOOD	5-7 GAL	40
ROSA WOODSII	WOOD'S ROSE	1 GAL	20
SALIX LEMMONII	LEMMON'S WILLOW	PRUNED ROOT WADS	20
SALIX LEMMONII	LEMMON'S WILLOW	CUTTINGS (4-6')	10
SALIX LUCIDA VAR. LASIANDRA	WHIPLASH WILLOW	5 GAL	20

POND WILLOW PLANTING

SCIENTIFIC NAME	COMMON NAME	STOCK	ON CENTER SPACING (FT)
SALIX LEMMONII	LEMMON'S WILLOW	PRUNED ROOT WADS	20
SALIX LEMMONII	LEMMON'S WILLOW	CUTTINGS (4-6')	10
SALIX LUCIDA VAR. LASIANDRA	WHIPLASH WILLOW	5 GAL	20

POND WETLAND PLANTING

SCIENTIFIC NAME	COMMON NAME	STOCK	ON CENTER SPACING (FT)
CAREX LENTICULARIS	LAKESHORE SEDGE	10 CU. INCH TUBELINGS	2-4
CAREX NEBRASCENSIS	NEBRASKA SEDGE	10 CU. INCH TUBELINGS	2-4
CAREX UTRICULATA	BEAKED SEDGE	10 CU. INCH TUBELINGS	2-4
ELEOCHARIS MACROSTACHYA	PALE SPIKERUSH	10 CU. INCH TUBELINGS	2-4

POND RIPARIAN SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	FORM	QUANTITY PLS (LBS/ACRE)
AGROSTIS STOLONIFERA	REDTOP BENTGRASS	GRASS	10
DESCHAMPSIA CESPITOSA	TUFTED HAIRGRASS	GRASS	10
ELYMUS TRITICOIDES	CREEPING WILDRYE	GRASS	20
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	GRASS	10
		TOTAL	**50**

WETLAND SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	FORM	QUANTITY PLS (LBS/ACRE)
CAREX LENTICULARIS	LAKESHORE SEDGE	SEDGE/RUSH	5
CAREX NEBRASCENSIS	NEBRASKA SEDGE	SEDGE/RUSH	5
CAREX UTRICULATA	BEAKED SEDGE	SEDGE/RUSH	5
ELEOCHARIS MACROSTACHYA	PALE SPIKERUSH	SEDGE/RUSH	5
		TOTAL	**20**

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NONE		

Sheet Title
REVEGETATION SEED AND PLANT COMPOSITIONS

R-1

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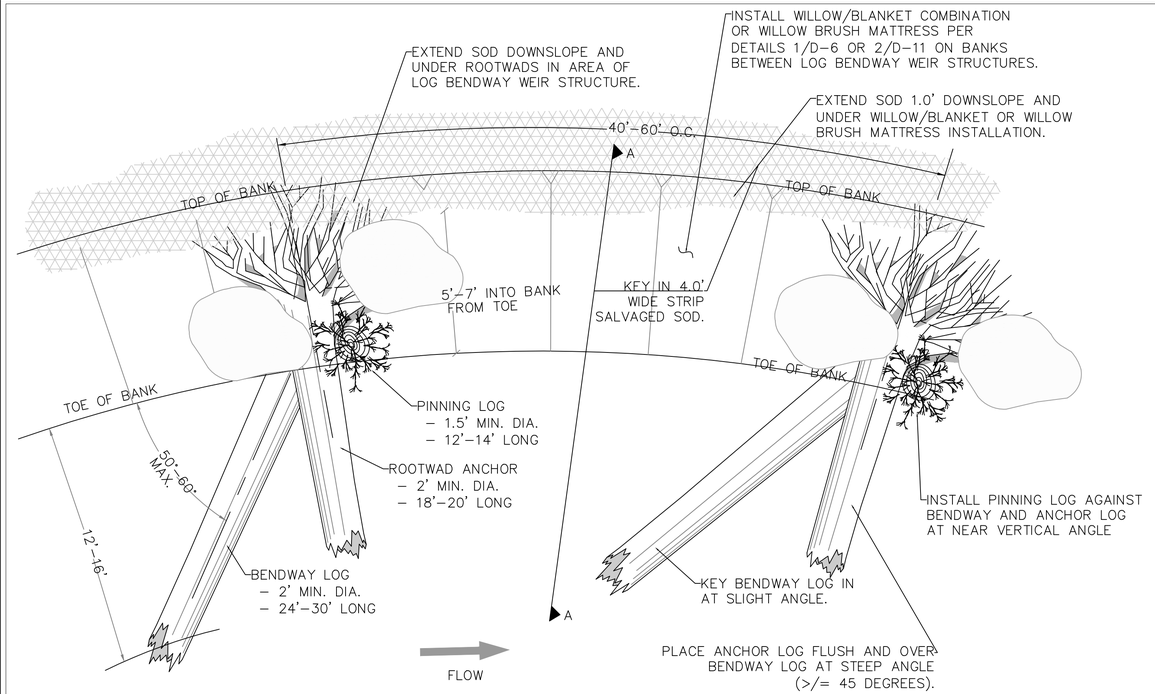
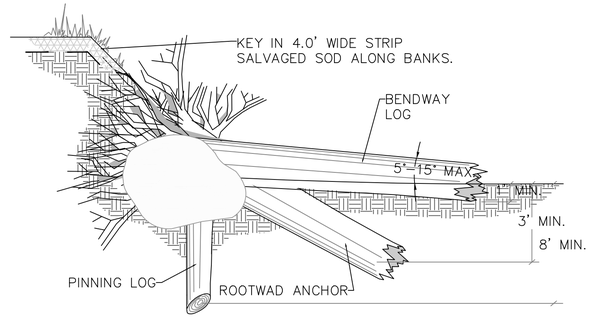
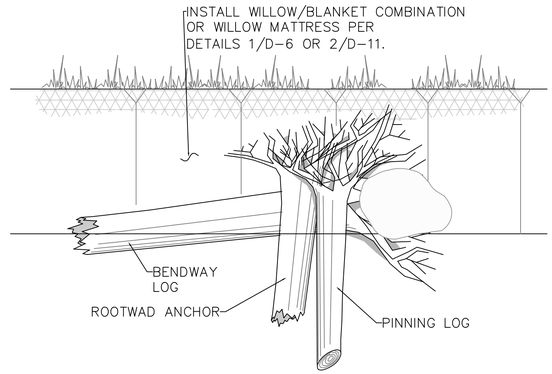


PLAN



SECTION A



SECTION B

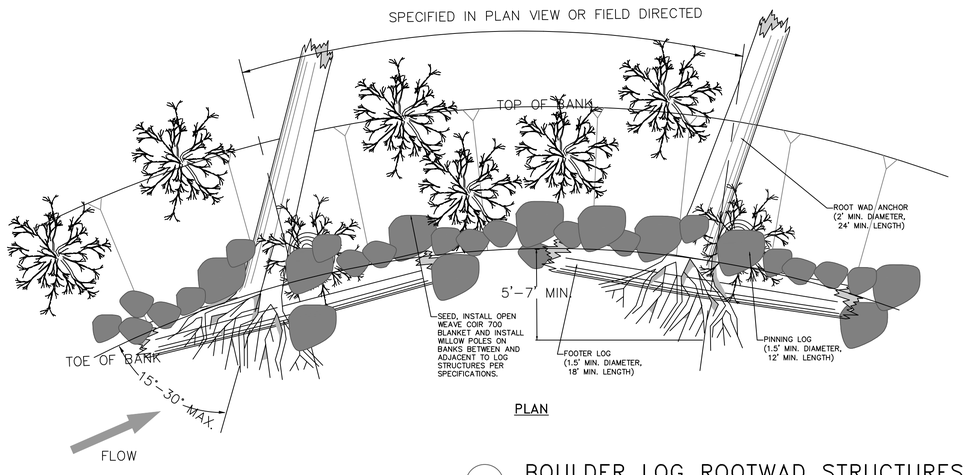
NOTES:

1. BENDWAY WEIR LOG REVETMENT MAY SUBSTITUTE FOR LOG REVETMENT 3/D-4 ON GRADUAL BENDS WHERE OUTSIDE BEND IS IN CLOSE PROXIMITY TO BURIED UTILITIES AND/OR EXISTING CHANNEL.
2. PURPOSE OF LOG BENDWAY WEIR REVETMENT IS TO CONVEY HIGHER VELOCITY FLOWS AWAY FROM THE OUTSIDE BEND BANK.
3. BENDWAY WEIR REVETMENT SHALL BE POSITIONED NEAR UPSTREAM END OF BEND SO AS NOT TO APPLY UNNECESSARY PRESSURE TO DOWNSTREAM RIFFLE BANK.

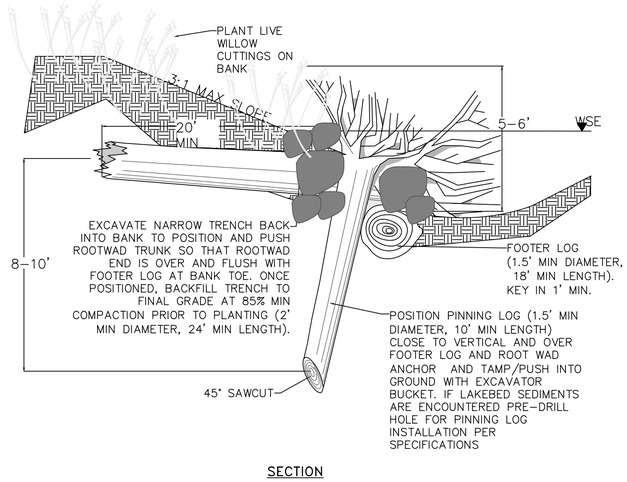
1 LOG (BENDWAY WEIR) REVETMENT
NTS

ROOT WAD REVETMENT PURPOSE AND INSTALLATION

1. PURPOSE IS TO PROVIDE STREAMBANK PROTECTION BY DIRECTING HIGHER FLOWS AWAY FROM OUTER BANK AND CREATE HABITAT VIA SCOUR POOLS WITH OVERHEAD COVER.
2. START AT MOST UPSTREAM END OF OUTSIDE MEANDER BEND. CONSTRUCT TOE TRENCH AT LEAST 1.0' DEEP (I.E. 2/3RDS DIAMETER FOOTER LOG).
3. USING AN EXCAVATOR WITH A THUMB, POSITION FOOTER LOGS IN TRENCH BELOW STREAM INVERT. PARTIALLY EXCAVATE FOR AND POSITION ROOT WAD LOGS SO THAT THE ROOT MASS RESTS ON AND OVERHANGS THE FOOTER LOG, POINT SLIGHTLY DOWNWARDS VERTICALLY TOWARDS THE CHANNEL INVERT AND IS HORIZONTALLY ANGLED PERPENDICULAR TO THE FLOW (I.E. MAX OF 30 FROM STREAMBANK). THE REMAINDER OF THE ROOT WAD LOG (I.E. BOLE) SHOULD BE COMPLETELY EMBEDDED BEHIND THE BANK.
4. PIN THE FOOTER AND ROOT WAD LOGS IN PLACE BY PLACING AND TAMPING IN (WITH EXCAVATOR BUCKET) THE PINNING LOG NEAR VERTICAL AND OVERLAPPING THE TWO STRUCTURES ON THE DOWNSTREAM END.
5. SPACE ROOT WAD STRUCTURES 15' TO 20' ON CENTER ALONG ENTIRE OUTER BEND.
6. BACKFILL REVETMENT STRUCTURES TO SPECIFIED GRADES, BEING SURE TO FILL HOLES AND GAPS AND PLUG AND COMPACT BETWEEN JOINTS IN ORDER TO ENSURE STABILITY. SEED, MULCH AND PLANT IN BETWEEN AND DIRECTLY BEHIND THE STRUCTURES ACCORDING TO THE DETAILS AND SPECIFICATIONS.
7. WHEN LODGEPOLE ROOTBALL IS < THAN 3' IN DIAMETER, THE DOUBLE LOG ROOTWAD REVETMENT, DETAIL 3/D-5 MAY BE SUBSTITUTED.
8. WHEN LAKEBED SEDIMENTS PREVENT TAMPING/PUSHING OF LOGS, BOULDERS MAY BE INCORPORATED PER DETAIL 1/D-13.



PLAN



SECTION

2 BOULDER LOG ROOTWAD STRUCTURES
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TYPICALS 1

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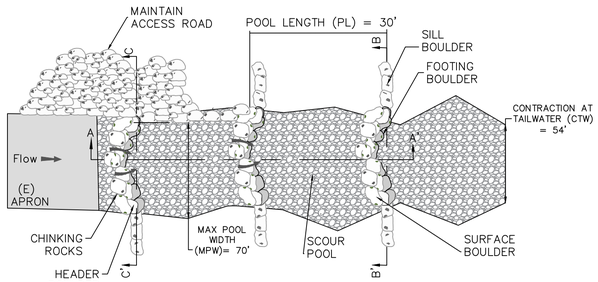
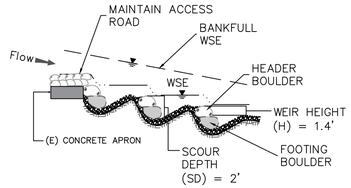
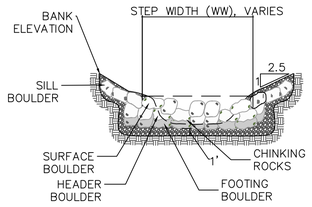


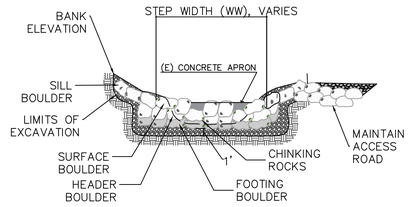
PLAN VIEW



A–A'

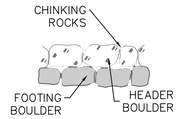


B–B'
CROSS SECTION OF ROCK STEPS NOT LOCATED AT RR TUNNEL APRON



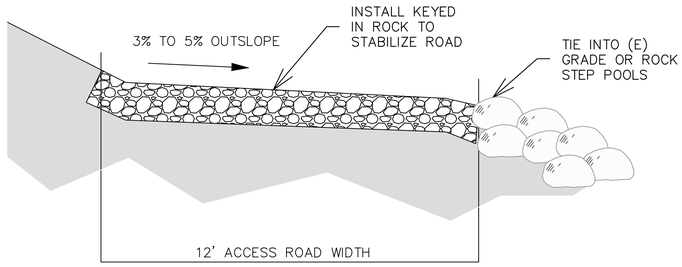
C–C'
CROSS SECTION OF ROCK STEP AT APRON OF RR TUNNEL

NOTES
1. USE BOULDERS TO CONSTRUCT SIDE SLOPES GRADED AT 2.5:1 UNTIL TIE IN TO EXISTING BANKS. ARMOR TIE IN POINTS WITH BOULDERS KEYED IN A DEPTH EQUAL TO THE MAXIMUM DIMENSION OF BOULDER.
2. ROCK STEP ADJACENT TO (E) CONCRETE APRON SHOULD BE APPROX LEVEL WITH THE APRON
3. FOOTING BOULDERS SHOULD BE LARGER THAN 3'. SILL AND HEADER BOULDERS SHOULD BE LARGER THAN 2'.

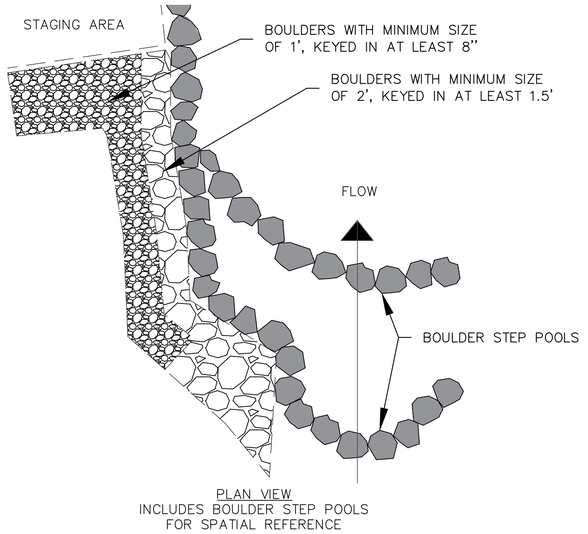


CHINKING DETAIL

1 BOULDER STEP POOL (MODIFIED FROM NRCS)
NTS

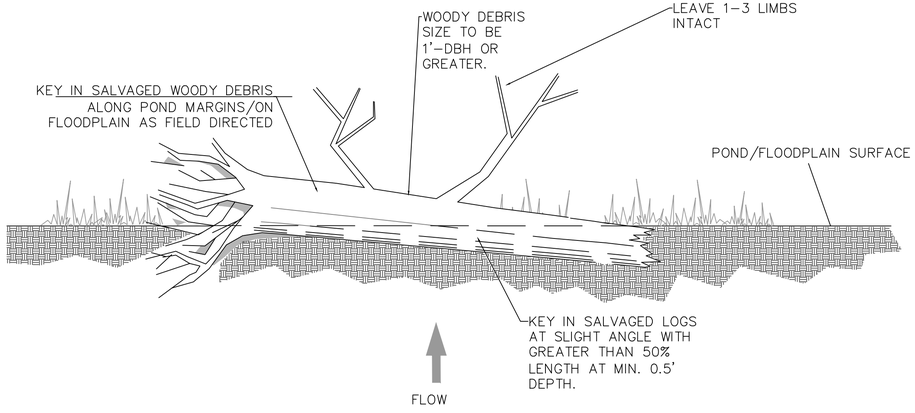


SECTION VIEW



PLAN VIEW
INCLUDES BOULDER STEP POOLS FOR SPATIAL REFERENCE

2 MAINTAIN ACCESS ROAD
NTS



3 POND MARGIN/FLOODPLAIN WOODY DEBRIS
NTS

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TYPICALS 2

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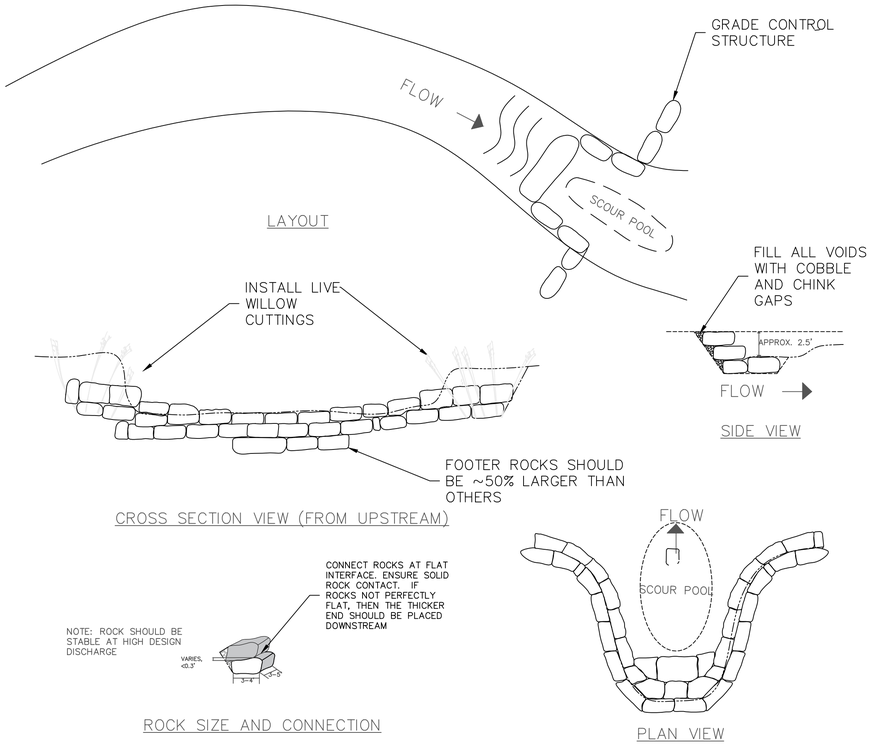
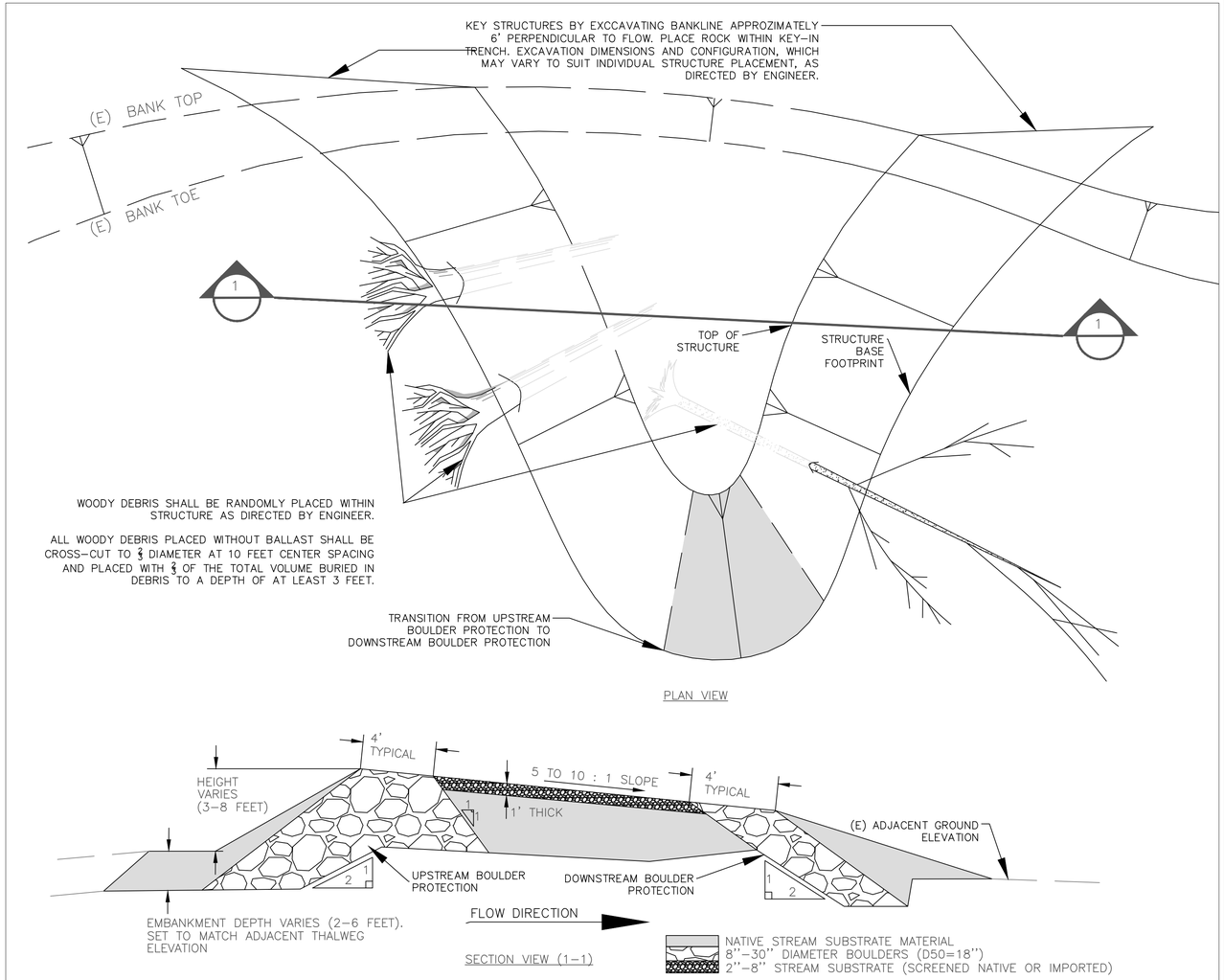
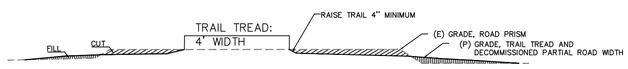


1 BOULDER GRADE CONTROL
NTS



2 ROCK DEBRIS JAM (MODIFIED FROM SH+G, 2006)
NTS

NOTES:
1) RESHAPE TOPOGRAPHY BY CUTTING OUT OF THE ROAD SURFACE AND APPLYING FILL MATERIAL TO AREA ADJACENT TO ROAD PRISM AS FIELD DIRECTED BY ENGINEER OR THEIR REPRESENTATIVE.
2) REVEGETATE CUT AND FILL AREAS (EXCLUDING THE TRAIL TREAD) BY RIPPING TO MINIMUM 8" DEPTH USING TEETH OF EXCAVATOR BUCKET SWEEPING PERPENDICULAR TO TOPOGRAPHIC GRADIENT, THEN SEEDING PER SHEET R-8
3) TRAIL TREAD SHALL BE 4' WIDE WITH AT LEAST 2% SUPERELEVATION SLOPE IN EITHER DIRECTION OR CROWN WITH 2% SLOPE IN BOTH DIRECTIONS



3 ROAD TO TRAIL CONVERSION
NTS

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TYPICALS 3

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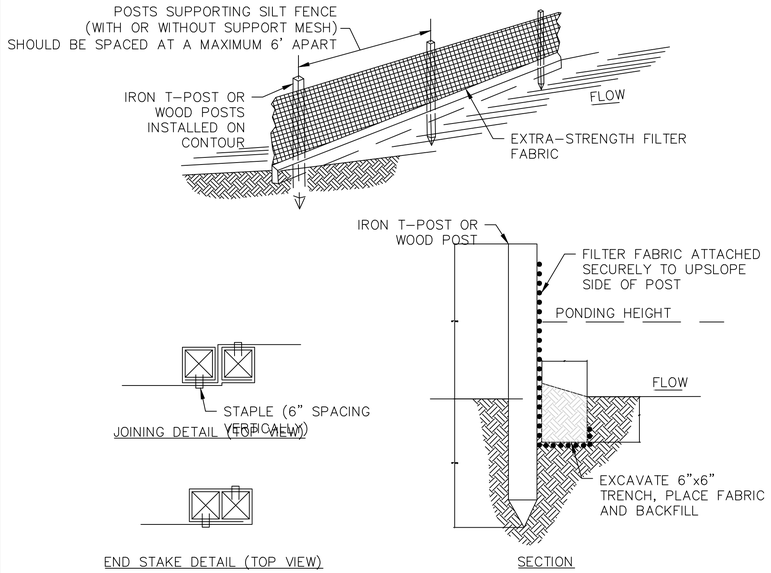
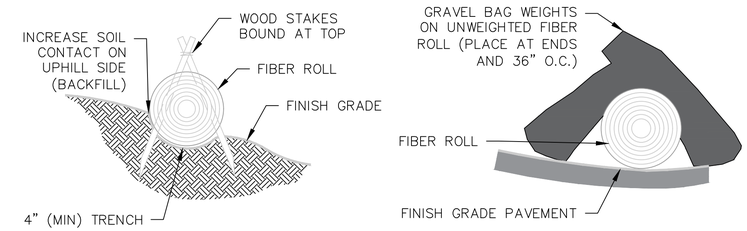
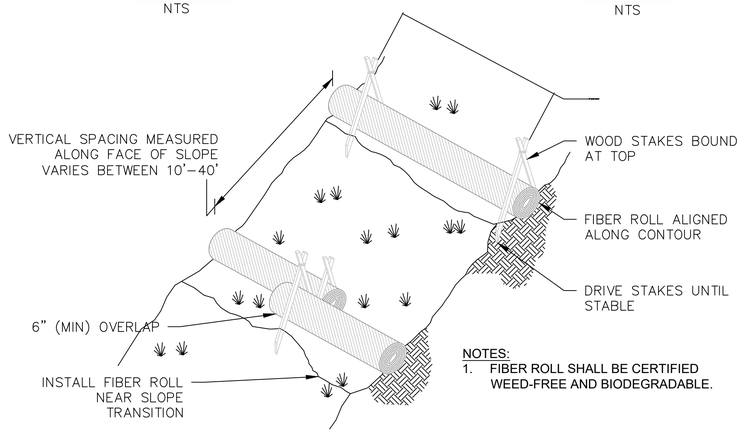


NOTES:
1. USED IN AREAS WHERE SHEET FLOW OCCURS..
2. SILT FENCE SHOULD BE WOVEN POLYPROPYLENE WITH A MINIMUM WIDTH OF 36 INCHES AND A MINIMUM TENSILE STRENGTH OF 100 LB FORCE.
3. INSTALL ALONG A LEVEL CONTOUR SO WATER DOES NOT POND MORE THAT 1.5 FEET AT ANY POINT ALONG THE SILT FENCE..
4. PROVIDE SUFFICIENT ROOM FOR RUNOFF TO POND BEHIND THE FENCE AND TO ALLOW SEDIMENT REMOVAL EQUIPMENT TO PASS BETWEEN THE SILT FENCE AND TOES OF SLOPES OR OTHER OBSTRUCTIONS.
5. TURN THE ENDS OF THE FILTER FENCE UPHILL TO CREATE A "J" SHAPE, TO PREVENT STORMWATER FROM FLOWING AROUND THE FENCE.
6. LEAVE AN UNDISTURBED OR STABILIZED AREA IMMEDIATELY DOWN SLOPE FROM THE FENCE WHERE FEASIBLE.
7. SILT FENCES SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.
8. REMOVE SEDIMENT WHEN DEPOSITS REACH APPROXIMATELY 1/3 HEIGHT OF BARRIER.

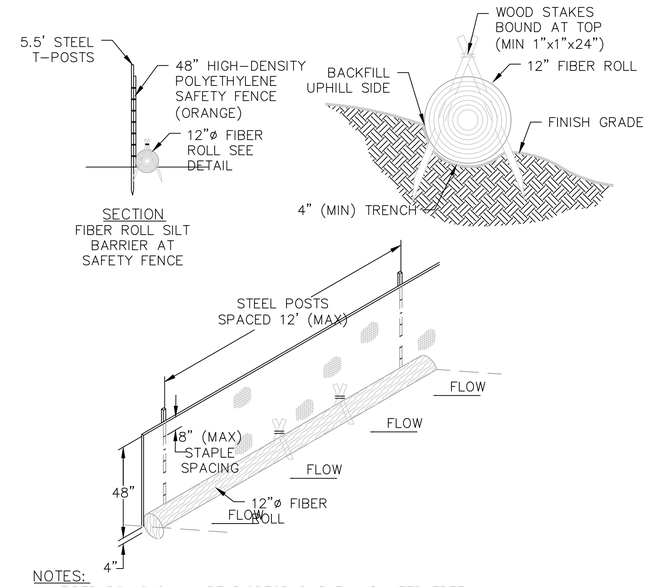
1 SILT FENCE
NTS





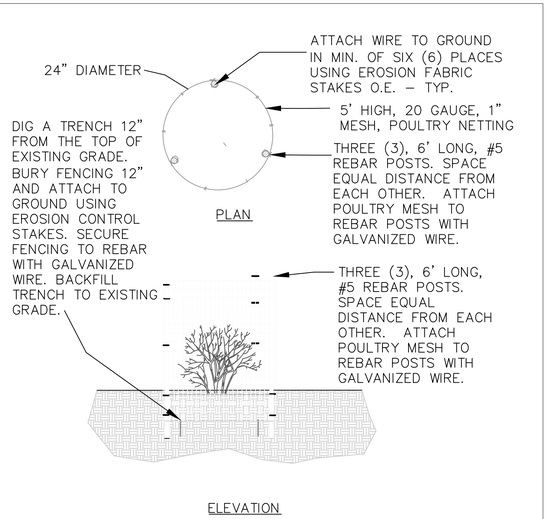
NOTES:
1. FIBER ROLL SHALL BE CERTIFIED WEED-FREE AND BIODEGRADABLE.

2 FIBER ROLL – ON SLOPE
NTS

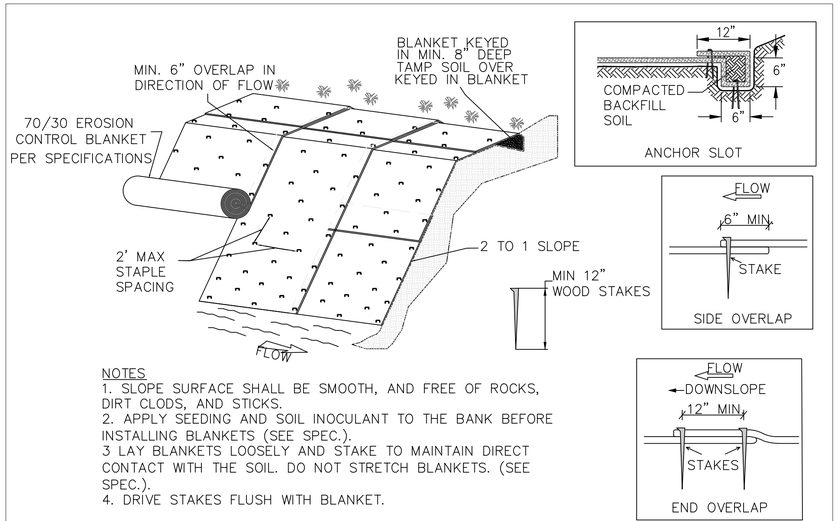


NOTES:
1. FIBER ROLLS SHALL BE BIODEGRADABLE AND WEED FREE.
2. ORANGE SAFETY FENCES SHALL BE HIGH DENSITY POLYETHYLENE WITH A MESH OPENING OF APPROXIMATELY 1 INCH BY 4 INCHES AND A MINIMUM HEIGHT OF 4 FEET.
3. FIBER ROLL SILT BARRIER SHALL BE INSTALLED ALONG CONTOUR AND ON SLOPES 5H:1V OR FLATTER.
4. FIBER ROLL SHALL BE INSTALLED BY SHAPING A 4 INCH DEEP FURROW TO MATCH THE SHAPE OF THE LOG, SECURING IN FURROW WITH WOOD STAKES, AND TAMPING THE GROUND AROUND THE FIBER ROLL TO FILL VOIDS BETWEEN THE LOG AND THE GROUND.
5. DETAIL MODIFIED FROM 2015 TRPA BMP HANDBOOK

3 EXCLUSION FENCE/FIBER ROLL COMBINATION
NTS

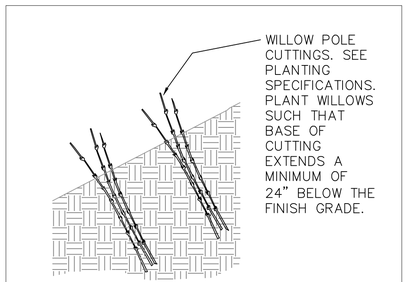


4 WIRE CAGE DEER PROTECTION
NTS



NOTES
1. SLOPE SURFACE SHALL BE SMOOTH, AND FREE OF ROCKS, DIRT CLODS, AND STICKS.
2. APPLY SEEDING AND SOIL INOCULANT TO THE BANK BEFORE INSTALLING BLANKETS (SEE SPEC.).
3 LAY BLANKETS LOOSELY AND STAKE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH BLANKETS. (SEE SPEC.).
4. DRIVE STAKES FLUSH WITH BLANKET.

5 EROSION CONTROL BLANKET
NTS



6 WILLOW POLE PLANTING
NTS

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TYPICALS 4

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Appendix B
Cultural Resources Report

COLDSTREAM CANYON RESTORATION PROJECT

DESIGN PHASE 1

CULTURAL RESOURCE STUDY: PREFIELD RESEARCH-ARCHAEOLOGICAL LITERATURE REVIEW AND NATIVE AMERICAN CONSULTATION

report prepared by

Susan Lindström, Ph.D. (RPA), Consulting Archaeologist, Truckee, California

with contributions by

Tom Macaulay, Reno, Nevada

report prepared for

Wildscape Engineering, Inc., South Lake Tahoe, California

on behalf of

Truckee River Watershed Council, Truckee, California

and

California Department of Parks and Recreation, Sierra District

January 2019

TABLE OF CONTENTS

Note that this appendix contains confidential archaeological site information. To prevent the deliberate and/or inadvertent destruction of cultural resources, this information should be used for planning purposes only and should not be distributed to the public. Releasing information about the nature and location of archaeological resources is restricted under Section 304 of the

National Historic Preservation Act (16 U.S.C. 470w-3) and Section 9 of the Archaeological Resources Protection Act (16 U.S.C. 470hh; 36 CFR296.18).

SUMMARY

Project Background, Authority and Scope

The Truckee River Watershed Council, along with partner California Department of Parks and Recreation (State Parks), Sierra District, are planning several restoration projects in Coldstream Canyon to reduce erosion, improve water quality and protect and enhance wetland and riparian habitat. Seven distinct problem areas have been targeted for restoration work. Improvements along four sections of degraded forest road include: Site #1 Emigrant/Coldstream Road Crossing; Site #2 Coldstream Road Decommission and Realignment; Site #3 Ponds Road Culvert Removal; and Site #4 Drainage Crossing on Hewlett/Hann Road. Restoration is also planned at two former gravel mining pits (Upper Pond and Lower Pond) and along a ¾-mile-long stretch of Cold Creek.

Environmental review policies must be in keeping with state and county antiquities guidelines under the California Environmental Quality Act (CEQA Section 15060-15065; 5024 Public Resources Code). Because project activities may involve the waters of the United States, the project sponsor may need to obtain a permit from the U.S. Army Corps of Engineers (USACE). In that event, the study must also comply with federal antiquities mandates under Section 106 of the National Historic Preservation Act.

Within this regulatory context, cultural resource studies to inventory, record and evaluate cultural resources within a proposed project area are customarily performed in a series of phases, each one building upon information gained from the prior study. The inventory phase (*Phase 1*) involves prefield research and Native American contact (*Phase 1A*), field reconnaissance/resource discovery (*Phase 1B*), and documentation of any cultural resources located within the project area (*Phase 1C*). If cultural properties are present and subject to project-related impacts, their significance is evaluated according to eligibility criteria established in the National Register of Historic Places and/or California Register of Historical Resources (*Phase 2*). If project redesign to avoid impacts to eligible resources is unfeasible, then mitigation measures are implemented (*Phase 3*). Mitigation (or data recovery) typically involves supplemental archival research, field excavation, photo documentation, mapping, archaeological monitoring, interpretation, etc.

The objectives of this study are designed to satisfy cultural guidelines pertaining only to *Phase 1A.* To conduct this work, Wildscape Engineering, Inc. contracted with Susan Lindström, Ph.D., Consulting Archaeologist. Tasks included:

- review historical and archaeological background research of the project area;
- conduct a record search with the California Historical Resources Information System, North Central Information Center (NCIC) at California State University, Sacramento and the Department of Parks and Recreation (DPR) cultural files;
- request Sacred Lands File searches with the Native American Heritage Commission and initiate follow-up contacts with local tribal organizations identified by the Commission;
- present findings in a *Phase 1A* technical report.

Findings

DPR findings, along with NCIC records search results, disclosed that the entire Coldstream Canyon Restoration Project has been subject to prior archaeological study. A total of five prior archaeological studies have been conducted within the Coldstream project area and four additional studies have occurred within a 1/8-mile search radius. All valley locales enclosed within the bounds of the railroad have been intensively examined. The upland project area located above and to the west of Horseshoe Bend has received more general coverage. Combined DPR and NCIC cultural resource inventories document 10 archaeological sites (including the route of the first transcontinental railroad and Emigrant Trail) and 15 isolated finds within or near the project area.

Initial Native American outreach was accomplished according to CEQA guidelines and mandates under California Assembly Bill 52 (pursuant to PRC 21080.3.1). No specific project concerns have been identified.

Conclusions and Recommendations

Environmental review policies that comply with guidelines established by CEQA and Section 106 of the National Historic Preservation Act, require that a cultural study be performed to determine prior archaeological investigations and known cultural resources and/or Native American traditional properties within a proposed project. With the completion and submittal of this preliminary report, federal, state and county requirements for the first phase of a cultural resource inventory have been accomplished.

Because the entire project area has been subject to archaeological survey, no additional survey is recommended, except for supplementary field verification of sensitive areas within or near known cultural resources. Implementation of any further project-related archaeological work would be subject to the review and discretion of the DPR archaeologist. Known cultural resources requiring further archaeological investigation are summarized below, along with the various project components of which they are a part. The table does not include isolated finds; the project sponsor should not be further constrained regarding these resources.

Resource No.	Resource Type	*Further Work Recommended	Project Component
CA-PLA-699H	Emigrant Trail	GPS locate trail and associated features; assess project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Road improvements-Site #1, #2, #3, #4; Upper and Lower ponds restoration; stream restoration
CA-PLA-841H	Transcontinental Railroad	Architectural assessment of railroad culverts/tunnels at Cold Creek and Emigrant Creek crossings if project plans involve structural alterations and/or demolition	Stream restoration; road improvements Site #1

No number	Crushed, rusted, gated culvert with trap door and latch chain	Archaeological inventory and evaluation to determine if feature is older than 50 years; feature is likely not significant and not a project constraint	Road improvements-Site #3
P-31-5653/ CA-PLA-2486/H	Historic refuse scatter, Chinese ceramics, hearth feature; prehistoric lithic scatter	Field verity site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Stream restoration
P-31-5636/ CA-PLA-2483/H	Historic refuse scatter, Chinese ceramics; prehistoric lithic scatter	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Upper Pond restoration
P-31-5637/ CA-PLA-2484/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Lower Pond restoration
P-31-5656/ CA-PLA-2489H	Historic refuse scatter	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Stream restoration

*If additional cultural resources are discovered during project construction, project activities should cease near the find and the project sponsor should consult a qualified archaeologist for recommended procedures. In the unlikely event that human remains are encountered, all activities should stop, and the County Coroner's Office should be contacted.

PROJECT BACKGROUND AUTHORITY AND SCOPE

PROJECT LOCATION AND DESCRIPTION

The Truckee River Watershed Council (TRWC), along with partner State Parks are planning several restoration projects in Coldstream Canyon. Coldstream Canyon is situated at the eastern base of the pacific crest of the Sierra Nevada south of Donner Pass and southwest of the Town of Truckee (Placer County). The project area is roughly bound by the Union Pacific Railroad tracks around Horseshoe Bend in Township 16 North, Range 17 East, sections 31 and 32 and Township 15 North, Range 17 East, Section 5, M.D.M., USGS Kings Beach 7.5 Quad (figures 1-2). The goal of the restoration is to reduce flooding and erosion and protect and enhance wetland and riparian habitat. Seven distinct problem areas have been targeted for restoration work.

Road Improvements

Four sections of degraded forest road involve the following improvements.

Site #1 Emigrant/Coldstream Road Crossing. The Emigrant Creek railroad culvert crossing, located about 140 feet upstream of the Emigrant Creek crossing with Coldstream Road, generates high velocity flow that has contributed to accumulation of cobble and sediment on the downstream side of the crossing (Figure 2; Photo 1). This limits the conveyance capacity of the crossing and results in overbanking, flow down the road, and significant gullying and sediment transport. The low water crossing will be reconstructed to have a larger conveyance area for the anticipated flows and sediment and stabilized with buried boulders/rock within the road prism. Deposited material immediately downstream of the road crossing will be removed and salvaged for reapplication as channel armoring or in bank stabilization areas further downstream and a more appropriately sized channel connection will be constructed and stabilized with boulder weirs. A more robust rolling dip will be built within the road prism on the approach to the crossing. All areas disturbed by project construction, staging and access would be appropriately revegetated according to geography and micro-topography.

Site #2 Coldstream Road Decommission and Realignment. A 1,050-foot portion of Coldstream Road would be decommissioned and realigned to the north. Large cut banks on the north edge of a blown-out meander on Cold Creek threaten to wash out this segment of Coldstream Road, a portion of which was washed out due to flooding in 1997 (Figure 2; Photo 2).

Site #3 Ponds Road Culvert Removal. A collapsed culvert on Ponds Road would be replaced with a new culvert with a rock-armored dip. The culvert is rusted sheet metal with gated and chain (trap) opening (Figure 2; Photo 3). The failure of the existing culvert on Ponds Road is resulting in ongoing erosion at the crossing.

Site #4 Drainage Crossing on Hewlett/Hann Road. An intermittent drainage channel crosses Hewlett Road at its intersection with Hann Road (Figure 2). The channel is incised upstream of the crossing, and the crossing itself is severely incised and nearly impassable and needs to be improved.

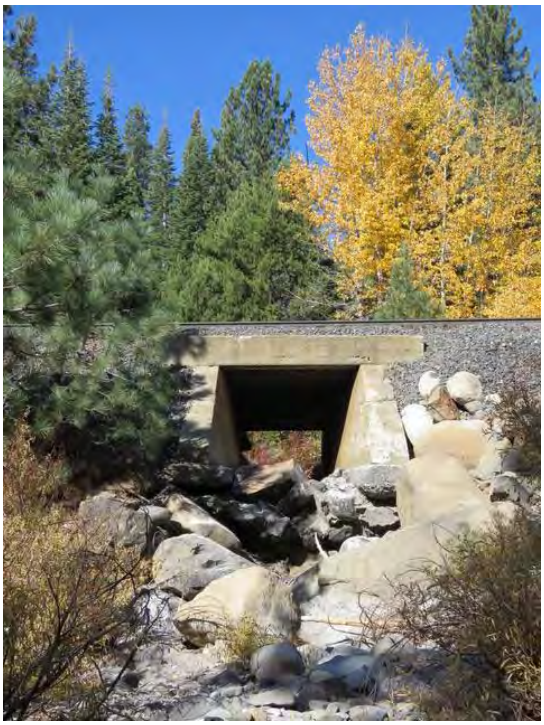


Photo 1. Road Project Site #1; Emigrant Creek railroad culvert crossing (view northwest)

Photo 2. Road Project Site #2; incised and unstable stream channel at blown out meander where existing Coldstream Road will be decommissioned and realigned (view southwest)

Photo 3. Road Project Site #3; collapsed metal culvert

Ponds Restoration

Restoration is planned at two adjacent gravel ponds, former gravel pits from late-1960s gravel mining activities (photos 4 and 5). The ponds are distinguished as "Lower Pond" and "Upper Pond" on the project area map in accordance with their location relative to the flow of Cold Creek (Figure 2). Conifers (mainly lodgepole) in specified areas along the "fringe" (i.e. in close proximity to water) of both ponds would be manually removed, to encourage willow riparian habitat expansion. At the Lower Pond, excavation of up to 11,000 cubic yards of sandy material left behind from the gravel mining activities would be removed and two small backwater channels would be excavated to increase the area of open water. Log and boulder roughness features would be installed along the southwest side of the Lower Pond to stabilize slopes and enhance habitat for resting and roosting wildlife. Several existing disturbed areas including approximately ½ acre of un-essential access and spur roads would be decommissioned and reclaimed (rip, reseed and mulch) and an existing road along the east shore of the Lower Pond would be converted to a single-track trail. Existing disturbed areas would be modified to facilitate limited responsible parking use. A new shoreline trail would be constructed between the new Upper Pond parking lot and the eastern shore of the Upper Pond.

Photo 4. Lower Pond (view southwest)

Photo 5. Upper Pond (view southwest)

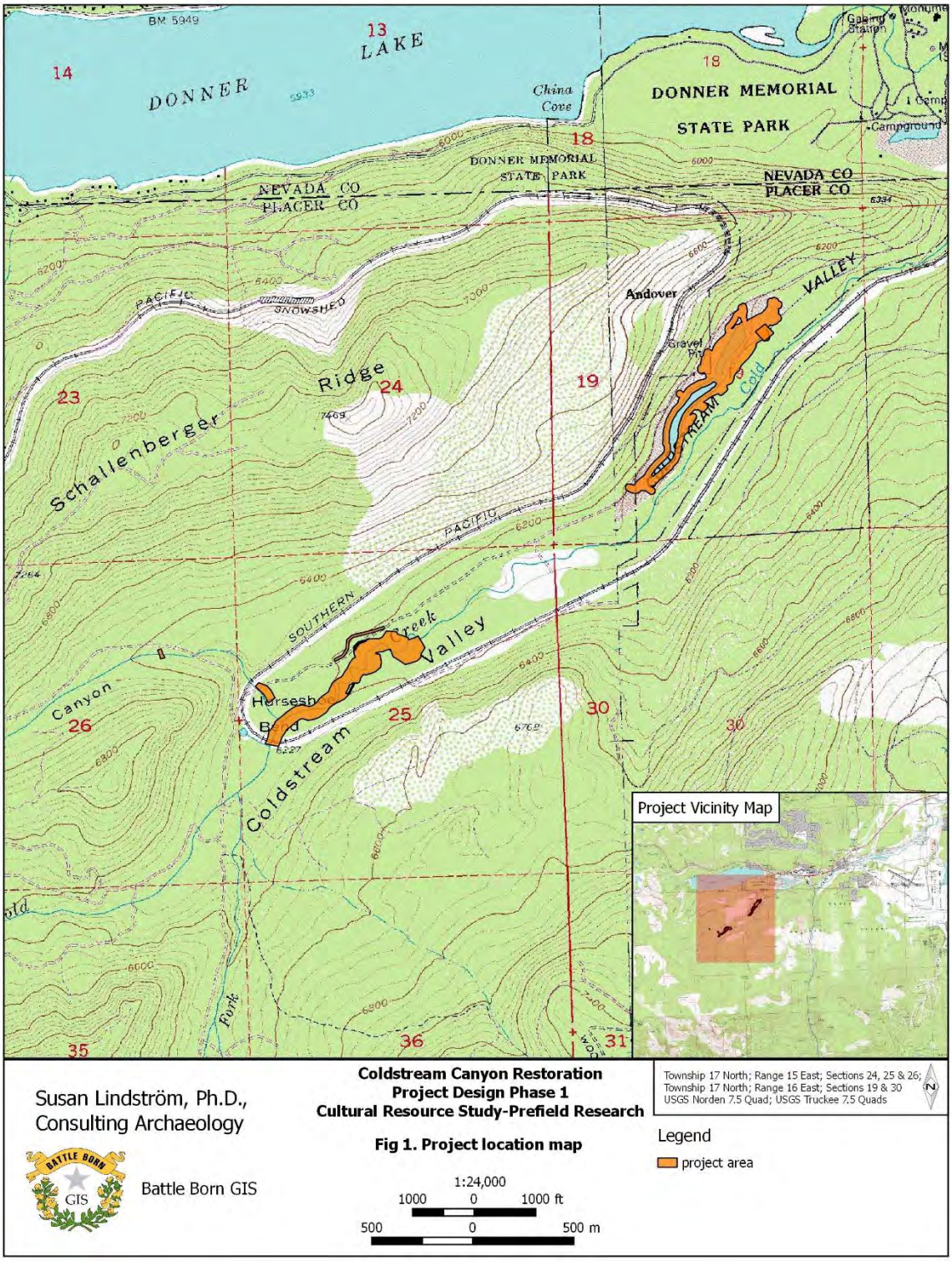
Restoration within the Cold Creek Channel

The constriction of Cold Creek at the railroad culvert tunnel has produced an unstable channel that is actively incising and eroding immediately downstream of the culvert and aggrading and depositing large amounts of material further downstream. This deposited material causes further widening and exacerbated erosion when the main channel is forced to migrate around the large deposited gravel bars and scour out the more susceptible earthen outer banks. (Figure 2; Photo 6). Restoration work would involve channel stabilization and floodplain restoration laying back steep eroded banks and incorporating large root wad and boulder structures and boulder/cobble toe protection. Work would be conducted along a ¾-mile-long stretch of Cold Creek to encompass the channelized section of the creek immediately downstream of the railroad culvert crossing (the Chute), and the long erosional meander form extending downstream from the Cold Creek and Emigrant Creek confluence (Emigrant Fork Confluence). All disturbed areas would be revegetated with native and local plant species.

Photo 6. Stream erosion below Union Pacific railroad culvert (view southwest)

Project construction would be conducted in three phases spaced over four-to-five construction seasons: road restoration work would take place in construction season year one and comprise the first phase (Phase 1); pond restoration would take place in construction season year two and comprise the second phase (Phase 2); and restoration of Cold Creek would take place over construction seasons years three through five and comprise the third phase (Phase 3).

The total footprint of the area where restoration activity would take place – including areas subject to disturbance by temporary stockpiling of fill or compaction by construction equipment – is about 57 acres. The project area includes ground disturbance areas and any existing roads, trails and parking lots that would be used for temporary access and staging during construction.


BM 5949
13
LAKE
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DONNER
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China Cove
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DONNER MEMORIAL STATE PARK
Campground
NEVADA CO
PLACER CO
6000
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6400
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6800
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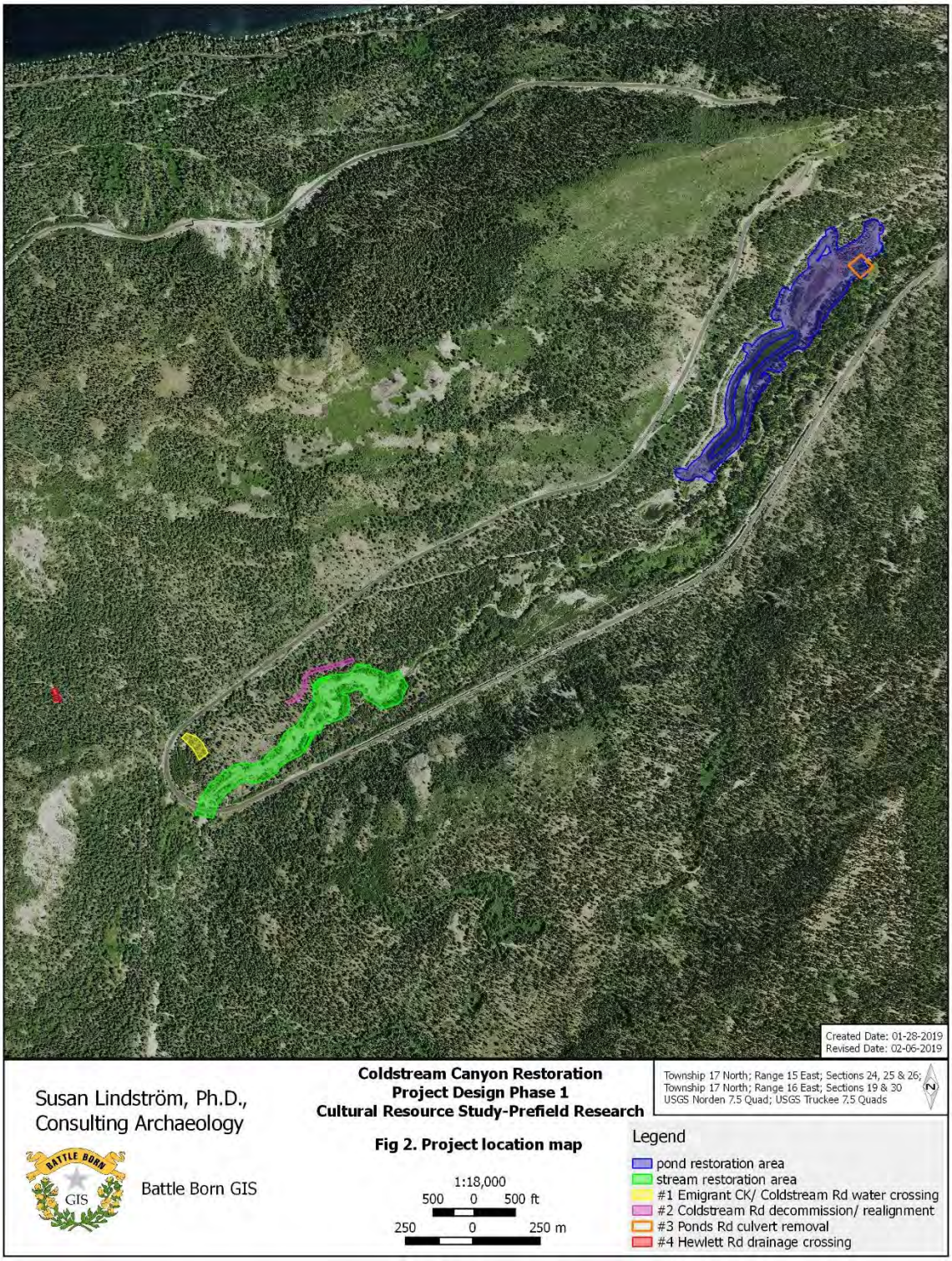
7200
PACIFIC
SNOWSHED
Andover
Gravel Pit
VALLEY
Cold
STREAM
Ridge
24
19
23
7469
Schallenberger
SOUTHERN
Creek
Valley
Canyon
26
25
30
Horseshoe
Bend
Coldstream
Project Vicinity Map
Susan Lindström, Ph.D.,
Consulting Archaeology
Battle Born GIS
Coldstream Canyon Restoration
Project Design Phase 1
Cultural Resource Study-Prefield Research
Fig 1. Project location map
1:24,000
1000 0 1000 ft
500 0 500 m
Township 17 North; Range 15 East; Sections 24, 25 & 26;
Township 17 North; Range 16 East; Sections 19 & 30
USGS Norden 7.5 Quad; USGS Truckee 7.5 Quads
Legend
project area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Revised Date: 02-06-2019
Susan Lindström, Ph.D.,
Consulting Archaeology
Battle Born GIS
Coldstream Canyon Restoration
Project Design Phase 1
Cultural Resource Study-Prefield Research
Fig 2. Project location map
Township 17 North; Range 15 East; Sections 24, 25 & 26;
Township 17 North; Range 16 East; Sections 19 & 30
USGS Norden 7.5 Quad; USGS Truckee 7.5 Quads
N
1:18,000
500 0 500 ft
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Legend
pond restoration area
stream restoration area
#1 Emigrant CK/ Coldstream Rd water crossing
#2 Coldstream Rd decommission/ realignment
#3 Ponds Rd culvert removal
#4 Hewlett Rd drainage crossing

REGULATORY BACKGROUND

As part of the California Environmental Quality Act (CEQA Section 5024, Public Resource Code) planning process, baseline environmental studies are required, including a cultural resource inventory. A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Because project activities may involve the waters of the United States, the project sponsor may need to obtain a permit from the U.S. Army Corps of Engineers (USACE). The study must also comply with federal antiquities mandates (under Section 106 of the National Historic Preservation Act. In accordance with 33 Code of Federal Regulations (CFR) Part 325, Appendix C, the "permit area" for this activity includes the area of potential effect (APE) to be disturbed by the proposed project. (Note, the APE is three dimensional and includes all areas that may be affected by the project, including the surface and extending below ground to the depth of any project excavation.)

Federal Guidelines and the National Register of Historic Places

The National Historic Preservation Act of 1966 (as amended 16 USC§ 470 *et seq*.) is the primary federal legislation that outlines the federal government's responsibility to cultural resources. These regulations describe the process that a federal agency takes to identify cultural resources and the level of effect that the proposed undertaking would have on historic properties. Section 106 of the act is outlined in the federal regulations at 36 CFR Part 800. The act requires the federal government to take into consideration the effects of a project (or "undertaking") on cultural resources listed in or eligible for listing in the National Register of Historic Places (National Register). The Section 106 review process involves a four-step procedure: (1) establish an area of potential effect (APE) for the undertaking; (2) identify and evaluate cultural properties within that APE; (3) aassess any potential adverse effects on properties within the APE that are listed in or may be eligible for listing in the National Register; and (4) Resolve potential adverse effects by consulting with the State Historic Preservation Officer (SHPO) and other review agencies including Indian Tribes if necessary, to develop an agreement that addresses the proper treatment of cultural properties.

The National Register is an elite register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture that fall under the jurisdiction of the federal government and/or on private land. Properties that may not be individually eligible for listing on the National Register can meet the criteria of eligibility if they are integral parts or "contributing elements" of an eligible site or district. Properties can be significant on the national, state, or local level. The regulations provided in 36 CFR Part 60.4 describe the criteria (A through D) that focus on a cultural property's associations with significant **events** (Criterion A) and **personalities** (Criterion B) in the nation's history and cultural heritage, its **distinctive** technical, architectural or artistic **characteristics** (Criterion C), and/or a property's **information potential** (Criterion D). A property must not only be shown to be eligible under one or more of these criteria, but it must also have **integrity** of at least some of the aspects of location, design, setting, materials, workmanship, feeling, and/or association. Resources generally must be older than 50 years and are evaluated within a specific and important time frame or **period of significance** during which the property was constructed, occupied, or used.

State Guidelines and the California Register of Historical Places

State antiquities mandates under CEQA (Section 5024, Public Resource Code) also provide guidelines for the management, protection, and preservation of cultural resources. The CEQA process is outlined in CEQA Guidelines (Section 15060-15065). Under CEQA provisions, the State Public Resource Code was amended (in 1992) with the addition of Section 5024.1, which authorized the establishment of the California Register of Historical Resources. The significance of a cultural resource on a state level is typically evaluated in terms of criteria established in the California Register (criteria 1 through 4), which are patterned after National Register eligibility criteria (criteria A through D). The California Register includes properties that are listed in or have been formally determined eligible for listing in the National Register, ones qualifying as State/Local Historical Landmarks or eligible Points of Historical Interest, as well as resources designated under a local ordinance as contributing to the significance of a local historic district.

The concepts of "focus" and "visibility" also help determine the integrity of archaeological properties. Visibility pertains to the overlay and abundance of archaeological remains at a site; focus refers to the extent to which those remains are understandable. If a property is sparsely manifest or missing or if it cannot be placed within a heritage theme or geographical space or time period, it thereby lacks visibility and focus and is considered ineligible (Deetz 1996:128; Little and Siebert 2000; McClelland et al. 1999; Townsend et al. 1993; USDA National Park Service 1991).

In further expanding upon the generalized National Register and California Register eligibility criteria, evaluation standards for linear features (such as roads, trails, railroads, flumes, etc.) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods: (1) size and length; (2) presence of distinctive engineering features and associated properties; (3) structural integrity; and (4) setting. The highest probability for register eligibility exists within the intact, longer segments, where multiple criteria coincide (Mikesell 1990; Owen 1991; Supernowicz 1991). When a linear feature system is evaluated as an eligible district or as an individually eligible property with multiple components, "contributing" and "non-contributing" elements must be identified. Contributing structures, buildings, objects, sites, and linear features are those elements associated with the property's period and area of significance that also possess an adequate level of integrity. Non-contributing elements are either not present during the historic period, or they are not part of the property's documented significance, or they have lost integrity and no longer reflect historic character. When a cultural resource is considered as a system, it must contain a high proportion of contributors to non-contributors (JRP and Caltrans 2000:96).

PROJECT SCOPE

Within this regulatory context, cultural resource studies are customarily performed in a series of phases, each one building upon information gained from the prior study.

> *Phase 1* Inventory. First, archival research and an archaeological field reconnaissance are performed to inventory and record known cultural resources and identify potential project constraints. *Phase 1A* of the inventory involves prefield research, Native American

consultation and the required records search at the appropriate archaeological clearing house. A *Phase 1B* field survey to identify surface sites, features, buildings, and/or artifacts follows. If cultural resources are discovered, *Phase 1C* cultural resource recording is initiated.

Phase 2 Evaluation. Once cultural properties are recorded and if they may be subject to project-related impacts, their significance is evaluated according to criteria established in the National Register of Historic Places and/or the California Register of Historical Resources. For significant resources, a determination of project impacts is assessed and detailed measures to mitigate impacts are proposed. If project redesign to avoid impacts is unfeasible, then mitigation measures are recommended to recover the significant information contained within these cultural properties prior to project ground disturbance activities.

Phase 3 Impact Mitigation and Data Recovery. A final phase may involve the implementation of mitigation measures recommended during the prior evaluation phase. Mitigation, or data recovery, typically involves additional archival research, field excavation, photo documentation, mapping, archaeological monitoring, etc.

The objectives of this study are designed to satisfy cultural guidelines pertaining only to *Phase 1A.* Tasks include:

- review historical and archaeological background research of the project area;
- conduct a record search with the California Historical Resources Information System, North Central Information Center (NCIC) at California State University, Sacramento and the Department of Parks and Recreation (DPR) cultural files;
- request a Sacred Lands File search by the Native American Heritage Commission and initiate follow-up contacts with local tribal organizations identified by the Commission;
- present findings in a preliminary technical report.

SETTING

The cultural setting of this report is primarily adapted from information provided in an early overview of Donner State Park (Lindström 1987) and a later historic background for the Donner Lake Basin Watershed Assessment (Lindström 2015). Archaeological context is derived from cultural resource investigations on Donner Pass (Lindström1999) and from DPR's recent archaeological findings in Coldstream Canyon and surrounding uplands (Jaffke (2013).

Prior archaeological and ethnographic studies indicate that the Washoe Indians are the applicable tribal authorities for lands encompassing the study area. Numerous prehistoric sites dating from the last 9,000 years have been inventoried in the project vicinity, and some are marked by Washoe place names. Historic topics germane to the project area center around heritage themes involving transportation and early settlement, logging, ice production, and gravel mining.

PHYSICAL ENVIRONMENT

Coldstream Valley occupies a glacial basin lying due east of the crest of the main Sierra Nevada at an elevation of around 6,200 feet. The valley is drained by Cold Creek, with a single

outlet on its east end that is emptied by Donner Creek and joins the Truckee River drainage basin near the town of Truckee. Surrounding uplands crest towards Schallenberger Ridge on the north and towards the pacific crest of the Sierra Nevada on the west.

The project area is situated in the Truckee Basin, an alluviated structural basin where low hills and ridges are Tertiary and Pleistocene volcanic rocks (Birkeland l963) and valley floors are covered with relatively flat-laying alluvial, glacial and glacio-fluviatile deposits (Birkeland l964). Holocene glaciation within the past 10,000 years was limited to the advance of small cirque glaciers. Coldstream Valley is underlain by thick deposits of glacial outwash that were mined in the 19th century to build the nation's first transcontinental railroad and again during the 20th century to build the first transcontinental highway and later Interstate 80. Pleistocene volcanic activity occurred between 2.3 and l.2 million years ago. These flows are correlated with the Lousetown Formation, a series of early Quaternary basaltic rocks extruded from several local vents that underlie much of the Truckee Basin and its flanks. The presence of tool stone-quality basalt in the project's vicinity attracted prehistoric populations into the general area for stone tool manufacture.

Native vegetation is characterized as mixed conifer uplands that fall within Storer and Usinger's (1971) Subalpine Belt. Wetlands support a luxuriant growth of willows and assorted grasses and forbs. Typical fauna associated with these plant communities include mule deer and black bear, along with numerous small mammals and aquatic species. It is doubtful that modern plant and animal communities closely resemble their pristine composition due to past disturbance and the native ecology of the project area has been significantly changed. In earlier times the area is thought to have supported a luxuriant growth of native bunch grasses that allowed an abundant large game population and provided a nutritious source of seeds for use by prehistoric peoples. During the mild season, small groups traveled through high mountain valleys fishing and collecting edible and medicinal roots, seeds, and marsh plants. In the higher elevations and along mountain passes, men hunted large game (mountain sheep, antelope and deer) and trapped smaller mammals. Native fisheries were depleted by the 1920s. Historic railroad construction, ice production and gravel mining have altered Cold Creek hydrology. Landscape changes in Coldstream Valley are graphically illustrated by comparing aerial photographs dating from 1939 (Map 1) and 1972 (Map 2). Changes in creek hydrology are schematically represented on maps 3-12. Forests within the Cold Creek watershed were intensively harvested from the later 1860s, with reduced cutting into the 1980s and 1990s. Bohemia and Cadellus (Santa Fe Pacific Industries) bought lands in Coldstream Valley for timber and logged much of it. Logging by DPR in the early 2000s was limited to aspen groves and creek corridors to improve conditions for the aspen community (Denise Jaffke personal communication 1/25/19).

The geographic and biological setting of the study area, along with the dramatic and spectacular summit views, have undoubtedly had important implications for both Native American and Euroamerican land use here. The broader and more broken crest zone within and surrounding Coldstream Canyon, enhanced by resource-rich upland food catchments, has both enabled and encouraged trans-sierran contact between people from its respective flanks. The Washoe Indians have a tradition of making long treks across sierran passes for the purpose of hunting, trading, visiting and gathering acorns. These aboriginal trek routes, patterned after game trails, are often the precursors of historic and modern travelways. The first emigrant wagon parties to cross the Sierra Nevada moved through Washoe territory up Coldstream Canyon and over passes defined by Donner Peak, Mount Judah and Mt. Lincoln. Early travel through this corridor paved the way for a series of

major trans-sierran travelways, including the first transcontinental railroad and the first transcontinental highway. The extraordinary setting of the study area was promoted in 1876 in a widely distributed transcontinental tourist guide sponsored by the railroad.

> Near Truckee the railroad leaves the river which turns to the south, and it follows Donner Creek, the outlet of Donner lake, for a short distance and then turns up the great and magnificent canon of Cold Stream Creek, in a direction nearly south-west…Along and rounding this Cold Stream Canon are the finest views on the eastern side of the Sierras, not shut out by snow sheds from the traveler by rail. The canon is wide and long, and far above and across, the road-bed is cut on the steep mountain side, and then protected by long snow sheds till at last it enters tunnel No. 13. Looking up the canon, on the right, soon after entering, or back, after the Horse-Shoe Curve has been made, a long line of purple pyramids and jagged precipices surround the valley, and if the road is not at the bottom of everything, the enormous face of the mountain seems to forbid the more daring attempt to ascend. [*The Pacific Tourist* 1876:228]

NATIVE AMERICAN PERIOD

Prehistory

Current understanding of northern Sierra Nevada and western Great Basin prehistory is framed within a chronological sequence spanning nearly 12,000 years that is drawn from paleoclimatic and archaeological studies throughout the western Great Basin, eastern Sierra front and the Tahoe-Truckee area (especially see Elston 1971, 1982, 1986; Elston et al. 1977, 1994, 1995; Heizer and Elsasser 1953; Grayson 1993). This work has been summarized by Waechter and Lindström (2014) and is excerpted below. In broadest terms, the archaeological signature of the Tahoe Sierra marks a trend from hunting-based societies in earlier times to more dispersed populations that were increasingly reliant upon diverse resources by historic contact. The change in lifeways may be attributed partially to factors involving paleoclimatic fluctuations, a shifting subsistence base, and variable demographics.

Pre-Archaic remains suggest occupation by at least 9,000 years ago in the Tahoe Sierra during the Late Pleistocene/Early Holocene (~12,500-8,000 years ago) as glaciers retreated, pluvial lakes shrank, and climates warmed (Elston's et al. 1977 "Tahoe Reach Phase"). Technologically, this period is marked by large-stemmed "Parman" and "Great Basin Stemmed" projectile point styles. Early populations were highly mobile in the pursuit of large game animals.

Pre-Archaic to Early Archaic occupation dates from about 7,000-5,500 years ago during the Middle Holocene (~8,000 to 5,500 years ago). Increased warming and drying caused diminished creek flows and lake levels in Tahoe and Donner and other regional lakes to drop, allowing trees to grow in areas that were once inundated (Lindström et al. 2000). This period is characterized by a decrease in the number of archaeological sites that may reflect declining resources and populations in the Tahoe Sierra. Marker artifacts present during this time extend into later periods and so are difficult to distinguish (Rosenthal and McGuire 2004).

The "Early" Late Holocene dating between 5,500 and 2,000 years ago (Elston's et al. 1977 "Early Martis Phase") witnessed the end of the Mid-Holocene droughts, with a consequent expansion of forests and woodlands (Wigand 2005) and a rise in Lake Tahoe and other regional lakes and

streams that drowned ancient forests along the shoreline (Lindström et al. 2000). This was the most intensive period of prehistoric occupation in the region. The archaeology indicates an increase in the numbers of sites and diversity of habitats where Middle Archaic populations are found. Evidence of cultural complexity and elaboration (beginning around 4,000 years ago) is reflected in larger and more permanent house types, craft specialization, stylistic variety in projectile points ("Elko-Martis Series"), and basalt bifacing technology (McGuire and Bloomer 1997; McGuire et al. 2006).

A warming and drying trend with a decline in winter precipitation during the "Middle" Late Holocene between 2,000 and 1,000 years ago (Elston's et al. "Late Martis" / "Early Kings Beach" phases) coincided with profound cultural changes. The bow and arrow (represented by smaller projectile points) largely replaced the atlatl dart and spear and hunters shifted to finer-grained tool stone like chert and obsidian more commonly than basalt. Land use diversified, and people expanded into previously under-used habitats. Populations intensified their consumption of less favored resources (e.g., roots, seeds, small mammals) that required more time and effort to procure and process.

Around 1,000 years ago during the Late Holocene (Elston's et al 1977 "Kings Beach" Phase), much of the west was affected by frequent and dramatic fluctuations in temperature and precipitation marked by prolonged and severe droughts (Stine 1994). Late Archaic human populations continued to rise and stressed by periodic but extreme warm and dry conditions (known as the "Medieval Climatic Anomaly"), shifted away from large game hunting to the further pursuit of foods previously ignored (e.g., plants, fish and small game). This period is reflected archaeologically in more intensive use of all parts of the Tahoe Sierra landscape, with more dispersed and ephemeral settlement patterns allowing for year-round residence in the Tahoe highlands at sometimes and prohibiting even seasonal occupation at other times. These changes and the introduction of small side-notched arrow points ("Desert Side-Notched" Series) towards the end of the prehistoric period, may reflect the arrival of incoming Numic-speaking populations (e.g., Paiute groups) into an area that had been occupied for thousands of years by Hokan-speakers (Jacobsen 1966), the protohistoric ancestors of the Washoe Indians (Elston's et al 1977 "Late Kings Beach Phase"). Prior to this time, their relatively rich environment afforded the Washoe a degree of isolation and independence from neighboring peoples and may account for their long tenure in their known area of historic occupation (d'Azevedo 1984; 1986:466, 471; Lindström 1992, 1996; Price 1962). It is estimated that the prehistoric Washoe had one of the highest population densities in the western Great Basin.

The Washoe regard all "prehistoric" remains and archaeological sites within the Truckee-Tahoe basins as associated with their own past. In support of this contention, they point to the traditions of adjoining groups (e.g., Northern Paiute and neighboring California Indians) that include stories about migrations and movement, whereas theirs do not (Rucks 1996:6). However, use by neighboring Maidu, Miwok and Northern Paiute groups is not ruled out (Bloomer and Lindström 2006:10). Washoe ethnographer, Waren d'Azevedo (1984:23), pointed out that much of the Washoe range, including the core territory, was used jointly by adjacent non-Washoe peoples and constituted a ventilated corridor of trade and travel. He further noted that, in terms of clear-cut tribal boundaries, the overall picture is one of extensive interaction among Washoes and their neighbors, an arrangement that engaged in cooperative practices of trade, inter-visiting and intermarriage between Washoe subgroups and the Pyramid Lake and Walker River Paiute, the Miwok, and the Maidu.

Washoe History

The study area lies within the nuclear territory of the Washoe Indians (Downs l966) or *Wa she shu* (Nevers l976). Early explorer, James Clyman, is the first to record their name, writing that they called themselves "*Washee, Washew, Waushu*" (Camp 1960 in d'Azevedo 1984:146 and quoted in Rucks 2005).

Washoe Settlements

In Washoe terms, nearby Donner Lake is generally mentioned as *datsásut*, without the qualifier for "lake" or *dá'aw* (d'Azevedo 1956:53, #126). Nevers (1976:4; Nevers, personal communication in Rucks 2005) refers to the lake as *behézing wí.giya* or "little eye", as it looks like a little eye when viewed from above. In a recent ethnographic study of Washoe encampments, Rucks (2005) reported on the noteworthy concentration of settlements along the Truckee River between Donner Creek and the Little Truckee River at Boca, suggesting that this stretch of river was unusually productive (d'Azevedo 1956; Rucks 2005). "Extensive use and habitation" of Donner Creek, were reported to Heizer and Elsasser (1953:7) by their Washoe consultants during the 1950s. These camps may have centered claims on resource catchments, including easier-to-fish feeder streams, but the river itself may have been regarded more as a common source of the fish (Rucks 2005). It was the feeder streams that were the favored fishing locations, because "the water was too rough and there were too many bears along the Truckee River" (d'Azevedo 1955 field notes in Rucks 2005).

The settlement known as *Datsáshit mál'im detdéyi?* is located on Donner Creek ¼ mile downstream from where the State Route 89 crosses the creek (d'Azevedo 1956: #129). *Dewbeyulélbeti?* is at the junction of Donner Creek and the Truckee River, on the sunny side of the hill where a lumber mill was once located. A large rock containing a bedrock mortar or *lam* marks the camp. This is "where *welmelti* [Northern Washoe] got much of their fish and game. Donner Creek was better fishing than Truckee; it was smaller and could be diverted (Freed 1966: #14). (This might also be the case for Cold Creek in higher flow, although there is no specific documentation.) Families owned fish blinds and the reference to "*yutsim*" (a technique of capturing stranded fish by temporarily damming a creek) refers to one of several communal fishing practices. The *yutsim* at Donner Creek targeted the late-season whitefish runs and was one of the last harvests before winter. The stores of whitefish may have sustained those Washoes who elected to remain in the Truckee River uplands into the winter season. d'Azevedo's Washoe consultants specifically referenced over-wintering at higher altitudes, up the Truckee River to Donner Lake and in eastern Sierra Valley, as an interim strategy during mild winters and/or poor pine nut harvests:

> [They] Lived there [along Donner Creek] all year round—even in deep snow when just the roofs of the *galis dangal* [winter homes] were showing. This was possible because there was plenty of wood there, and also they could gather an abundance of food for winter. [d'Azevedo 1956:54)]

This view is also supported by James Clyman's encounter with Washoe in the still severe winter conditions of early May 1846 near Donner Lake (d'Azevedo 1984:33 and quoted in Rucks 2005).

Freed (1966:81, #14) described a nearby Washoe camp, *deiubeiyulElbEthi* ("water flowing

down") at the confluence of Donner Creek and the Truckee River, "…where *welmelti* got much of their fish and game. Just upstream was the ethnographic settlement of *dat'sa sut ma'lam detde'yi'* ("mouth of stream + tributary + live there"), located on Donner Creek ¼ mile downstream from where State Route 89 crosses the creek These were the Washoe people who may have encountered the Donner Party when they were going there for a *yutsim,* as Bertha Holbrook recounted to d'Azevedo:

> …they fed the Donner Party for a while but then they had to quit because they had just enough to barely last them through the winter themselves [d'Azevedo 1956: 54, #129]

Washoe legends abound concerning ancestors who witnessed the [Donner Party] ordeal while trekking or hunting on snowshoes from nearby encampments. They were too frightened of the strange people to make themselves known. They did, however, leave food in sight of the party and took back tales of death and cannibalism to their people (d'Azevedo 1984:147 and quoted in Nevers 1976:44-45). One example comes from Patrick Breen, who wintered at the Donner Lake camps and entered in his diary on Sunday, February 28, 1847:

> Froze hard last night, today fair and sunshine, wind SE, 1 solitary Indian passed by yesterday, come from the lake, had a heavy pack on his back, gave me 5 or 6 roots resembling onions in shape, taste something like a sweet potato, all full of little tough fibers.

Years later, John Breen said of the Indian that "he did not seem to be at all curious as to how or why there was a white man alone (as it must have seemed to him) in the wilderness of snow." When the Indian saw Breen he halted and gestured to him not to come any nearer, then took the roots and laid them on the snow, all the while cautioning Breen not to approach until he was out of reach. John further reported that the roots were very palatable. The emigrant Isaac Wistar passed through the area in 1849 and wrote:

> We surprised and caught the two Indians, both naked as they were born, and without arms [i.e., weapons], which they had probably concealed…remembering their kindness to the Donner Party in 1846, we treated them gently and gave them a little of our vanishing hard tack…and released them. [Wistar 1914:110 quoted in d'Azevedo 1984:147]

Washoe Economy and Historic Contact

The Washoe once embodied a blend of Great Basin and California in their geographical position and cultural attributes. While they were an informal and flexible political collectivity, Washoe ethnography hints at a level of technological specialization and social complexity for Washoe groups, non-characteristic of their surrounding neighbors in the Great Basin. Semi-sedentism and higher population densities, concepts of private property, and communal labor and ownership are reported and may have developed in conjunction with their residential and subsistence resource stability (Lindström 1996). The Washoe also have a tradition of making long treks across the sierran passes to hunt, trade and gather acorns. Archaeological evidence of these ancient subsistence activities is found along the mountain flanks as temporary small hunting camps containing flakes of stone and broken tools. In the high valleys permanent base camps are represented by stone flakes, tools, grinding implements, and house depressions.

Historic declines in Washoe population and traditional resource use were caused by disruptions imposed by incoming Euroamerican groups. By the l850s Euroamericans had permanently occupied Washoe territory and changed traditional lifeways. As mining, lumbering, grazing, commercial fishing, tourism, and the growth of settlements disrupted traditional Indian relationships to the land, Washoes were forced into dependency upon Euroamerican settlers (Lindström et al. 2000, 2007). Into the early 20th century, Washoes survived by establishing patronage relationships on ranches and resorts and trading goods and services to the dominant Euroamerican population (selling baskets, catching fish and game, and working as domestic laborers, wood cutters, ice harvesters, caretakers, game guides, etc.). In exchange Washoes arranged for camping privileges on traditional lands with access to what resources remained. Beginning in 1917, however, the Washoe Tribe began acquiring back a small part of their traditional lands (Nevers 1976:90-91). They remain as a recognized tribe by the U.S. government and have maintained an established land base. Tribal members are governed by a council that consists of members of the Carson, Dresslerville, Woodfords, and Reno-Sparks Indian colonies, as well as members from non-reservation areas. Into the 21st century, contemporary Washoe have developed a Comprehensive Land Use Plan (Washoe Tribal Council 1994) that includes goals of reestablishing a presence within the Tahoe Sierra and re-vitalizing Washoe heritage and cultural knowledge, including the harvest and care of traditional plant resources and the protection of traditional properties within the cultural landscape (Rucks 1996:3).

EUROAMERICAN PERIOD

Historic events in Coldstream Canyon are tied to the history of the community of Truckee. Truckee's beginnings are marked by the arrival of Joseph Gray, who built a stage station near present-day downtown Truckee in l863. Gray was soon joined by a blacksmith named S. S. Coburn, and the fledgling settlement of Gray's Toll Station was renamed Coburn's Station. Coburn's Station grew from two structures into a thriving town which accommodated emigrants, stagecoach travelers and freight wagons in route westward to California's gold fields and eastward to the Comstock Lode in Nevada. In 1868 Coburn's Station burned. Soon after this fire the town was renamed Truckee by Central Pacific Railroad officials.

As a community at the crossroads over the Sierra, Truckee assumed a multi-cultural character and became infamous for its violent discrimination against the Chinese. Truckee also gained a reputation as a rough and tough lumber and railroad town, with its scores of brothels, saloons and sporting houses. Bootleg whiskey remained a prime source of community income throughout the era of prohibition and the hey-day of the red-light district lasted until World War II. The Truckee Jail housed famous criminals like Baby-Face Nelson and Juanita "Ma" Spinelli.

Throughout the 19th and early 20th centuries, Truckee thrived on the related industries of lumbering, railroading, dairying, and ice. By the 1920s the industrial economy and society of Truckee had largely disappeared, due in major part to the relocation of the central railroad switching yard to Roseville, the depletion of local timber supplies, and the introduction of artificial ice with the development of mechanical refrigeration. To replace the loss of its industrial base, the community began to develop into a recreation-based economy. Small resorts and hotels developed in the region as the transcontinental railroad and its corresponding freight and wagon road rendered Truckee accessible by the 1860s. During the 1890s Truckee was host to winter carnivals. Tourism was further boosted by the designation of the first transcontinental highway through Truckee in 1913 and the subsequent completion of old State Highway 40 over Donner Summit. Historic Truckee was unique

among turn-of-the-century mountain communities, in that summer recreationists and winter-sports enthusiasts could easily reach the town in summer or winter. With a relative ease of access, tourism was fast providing a sounder economy. The 1960 Winter Olympics at nearby Squaw Valley ultimately secured Truckee's position as a center point for year-round recreation and the area became a focal point of early mountain residential development.

Early Explorations

The growing interest in the American far west stimulated the U.S. government to dispatch expeditions to explore the region, produce accurate maps, and report back on the region's inhabitants and resources. One of the first of these expeditions to reach the area was that of John C. Fremont. His campaign of l845-1846 moved up the Truckee River, camping at Coldstream on December 3, l845. They passed along the northern periphery of Donner Lake, crossed Donner Pass and traveled down to Sutter's Fort. The party moved quickly through the area to avoid being caught by winter weather (Jackson et al. 1982:13).

Transportation and Early Settlement

Emigrant Travel

Some of the first Euroamerican visitors to the Truckee area were members of the Stephens-Murphy-Townsend emigrant party who ascended the Truckee River and crossed over Donner Pass in mid-November of l844. This route, which traversed along Donner Lake and through Truckee on present-day Donner Pass Road, has later become known as the Truckee Route of the Emigrant Trail. During the period l845-l848 it is estimated that about 2,600 individuals traveled from "the States" to California (Unruh l979:119), with most using the Truckee/Donner Pass gateway -- the most notable being the Donner Party. The ordeal of starvation and cannibalism, endured by their members in the winter of l846-1847 at Alder Creek and Donner Lake, is a well-known and tragic episode in the American settlement of the West and is now memorialized at Donner Memorial State Historic Park. The emigrant route over Donner and neighboring passes has been addressed in archaeological investigation (Lindström 1999) and in multiple popular publications (e.g., Curran 1982, Fey et al. 2002; Grayson 1986) and. The focus of this report is on the trail route through Coldstream Valley and up and over Middle Pass/Coldstream Pass and South Pass/Roller Pass (depicted on Map 3).

According to the accounts of the emigrants themselves, the crossing of the sierran crest was the most difficult section. The three passes were forged over the Sierra Nevada above Donner Lake on the Truckee River Route (Curran 1982:175):

> #1: “North Pass” or “Donner Pass”, between old Highway 40 and the Union Pacific Railroad snow sheds;
>
> #2: “South Pass” or “Roller Pass” – Mt. Lincoln-Mount Judah Pass, the steepest pass where the roller was used;
>
> #3: “Middle Pass” or “Coldstream Pass” – Mount Judah-Donner Peak, located about 1 ½ miles north of Roller Pass; the last pass opened and the easiest of the three.

All three passes are shown on Photo 7. The trail route through Cold Stream Canyon appears on Figure 3. Since emigrants accessed both Roller Pass and Coldstream Pass along a branch of the Truckee

Route in Coldstream Canyon, all three pass routes are considered part of the Truckee Route. These three passes were but local variants in what was basically one route over the Sierra (Howard 1998:39). Just as alternative routes were found over these three main passes, it seems likely that alternative "sub-routes" were also scouted and followed in the vicinity of each of these three main passes. The evidence seems to show that all three were used, with the bulk of the traffic going through the pass between Mt. Lincoln and Mt. Judah known as Roller Pass (Fey et al 2002:109; Nesbitt 1990:3). The name for this crossing came from the construction of a roller cut from tree trunks, which acted as bearing for chains connecting a wagon to multiple yokes of oxen, using winches and log rollers laid between rocks or trees. This allowed some teams to pull directly up the hill, while others pulled down hill (Fey et al 2002:108). A yoke of oxen is two oxen, and some used as many as twelve yoke to take a wagon up this pass (Curran 1982:171).

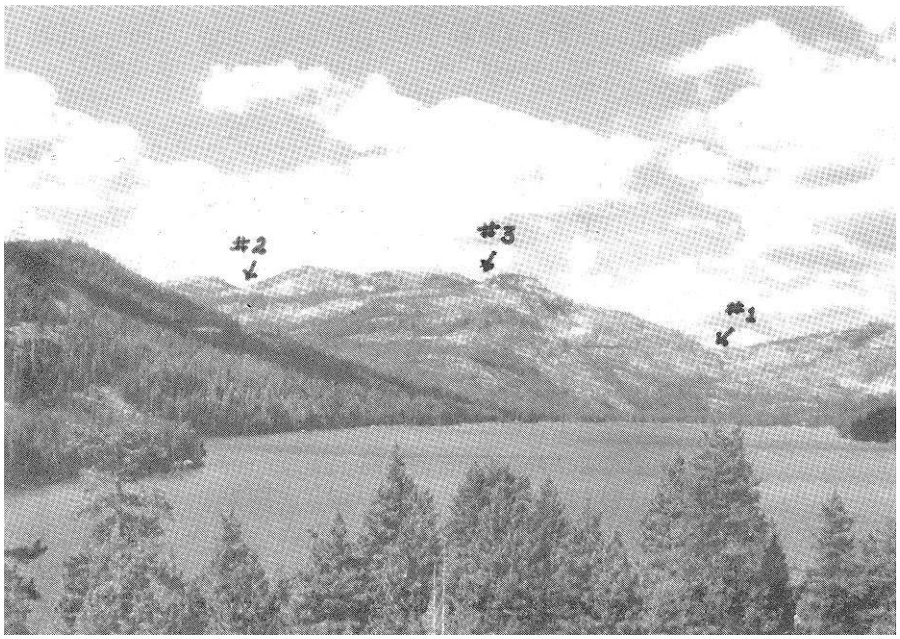


Photo 7. Donner Pass (#1), Roller Pass (#2), Coldstream Pass (#3); view west (adapted from Curran 1982:175)

In 1846, facing the final obstacle over Donner Pass, the Joseph Arman party decided to find an easier way and explored the valley to the south of Donner Lake.

> We spent three days there exploring the mountains to find a pass where we might make a crossing. A party of us took our horses and went to the summit and traced it both ways and finally decided on the place to make the crossing. [Diary of Joseph Aram 1846 in Curran 1982:169]

This trail in the valley south of Donner Lake was called the Cold Stream Canyon Trail. The Aram Party and the Carriger Party (with Caleb Greenwood as guide) are credited as having first located and used this pass (Curran 1982:171).

By l846 and thereafter, emigrants who traveled the Truckee Route of the California Trail sought to avoid the steep granite ledges of Donner Pass and instead went southward from Donner Lake into Coldstream Valley, following the branch of the Truckee River Route first scouted by the Joseph Aram Party. According to the diaries, the route lay along a stream, the first few miles easy

going, then into a steeper, rocky country and finally, the pass. This indicates that the trail went up Cold Stream, the first five miles of which is gently rising from an elevation of 6,000 feet to 6,500 feet, then a more abrupt rise in the next mile and a half to 7,000 feet that brings one to the foot of almost perpendicular cliffs. Three peaks, Mt. Lincoln 8,383 feet, Mt. Judah, 8243 feet and Mt. Donner, 8,017 feet bar the westerly progress. In the last ½ mile the emigrants had to gain 1,000 feet in elevation over lava flows and volcanic ash. The saddle was 7,850 feet high (Nesbitt 1990:3).

The same trail through Coldstream Canyon was used to access both Roller and Cold Stream passes until it reached a point in Emigrant Canyon about one mile east of the summit known as Emigrant Meadow (Grayson 1986:42). This meadow and spring is west of the South Pass and is so named today (Nesbitt 1990:15). After using the meadow as a staging area, the emigrants pulled their wagons one by one up a thirty-degree slope for approximately 400 feet to the top of the pass by using a log roller on the lip of the pass. The route acted as a bearing for chains connecting multiple yokes of oxen at the crest with a wagon below. Some wagon parties used additional chains running up to and around the roller to permit the other oxen to pull downhill. Many rust-scarred rocks remain along this route (Grayson 1986:47). Personal accounts of the ordeal appear in several emigrant diaries and literal quotes are excerpted below.

> Joseph Aram (1846). We put on about five yoke on a wagon, and had as many men with it as was necessary to keep it from sliding sideways. Then with five yoke on the summit letting down our long one hundred and fifty feet rope, and hitched it with the leaders that were on the wagon, by this process we succeeded in getting all the wagons up safely.
>
> Nicholas Carriger (September 22, 1846). After a week of painful travelling we came to the River Truckee, which we had to cross thirty eight times before we arrived at the base of the eastern slope of the Sierra Nevada – The Sierra Nevada being very steep and our cattle very poor out pilot Mr. Greenwood, who had already informed us that we had arrived in California, advised us to follow the counsel of our fellow traveler Mr. Judson Green, who had proposed to make a roller, and fasten chains to the wagons, and pull them over the mountains with 12 yoke oxen on top and the same at the bottom 23 halling way.
>
> Mary A. Jones (1846). We had much hard road on the way and passed the fated Donner party…bye and bye we reached the great mountain and pitched our tent at the foot of it. In the morning my husband got up and looked out and said, 'Mary, it is snowing, and we are doomed to stay in this place all winter.' I said, 'Oh no. It will quit snowing pretty soon.' And we got up the mountain before dark. I carried one baby and led the other most all the way up. The way we climbed the mountain we hitched nine or ten yoke of oxen to a wagon and drove them as far as they could go and a chain that worked over a roller; on top of the mountain and a man at each wheel did the work. The chain broke with one wagon on it was turned over, but it did little damage for it had little in it. We camped on the mountain that night, and oh, how cold and windy it was, and the men to go down a mile or more to get water before we could get supper. But we had our supper after awhile and went to bed and were soon all asleep, for we were all very tired.
>
> Heinrich Lienhard (1846). From the place where we stopped at noon we could see the summit across the tops of the tall firs. We were very much astonished to see what appeared to be several covered emigrant wagons on the top of the trees and could not understand how they got there. Only later did we realize that the wagons were not on the top of the

trees but on the highest ridge beyond the trees…We immediately recognized the difficulty of crossing it. The combined efforts of twenty men would hardly be sufficient to drive up there… Since no animal could climb up there all the ox chains had been fastened together, and when these did not reach from the base to the summit, a number of tall young first had been notched deeply enough that the chains could be fastened to them. Up on top twenty oxens were hitched together by chains, one behind the other. Below, a wagon was fastened to the long line of chains and young trees, and various were also tied to the tongue and to the back of the wagon for purpose of holding it.

Elisha D. Perkins (1849). The road from the Donner Huts has been changed, instead of going around Truckee's Lake as formerly, it begins to ascend the mountains immediately, being a savings of some 4 or 5 miles. The Lake is some 2 miles to the right…The ascent to the pass from Donner Cabins is about 5 miles over rocks & steep bluffs…Up, up, we toiled wondering every five minutes how 'the dickens' ox teams & wagons can get over here, & it is a wonder indeed, until at 3 P.M. arrived at the foot of the terrible 'Passage on the Backbone.' For half hour before arriving we could hear the shouts of teamsters urging their cattle up the steep, & when we were near enough to see through the forest we could look up nearly over our heads & see wagons & cattle looking like pigmies, & as if almost suspended in the air. The 'Pass' is through a slight depression in the mountains being some 1500 or 2000 feet lower than the tops in its immediate vicinity… As we came up to it the appearances was exactly like marching up to some immense wall built directly across our path, so perpendicular is this dividing ridge…

Joseph Hackney (1849). We arrived at the main difficulty from here to the summit is one mile it is as steep as the roof of a house.

John A. Markle (August 21, 1849). Today we traveled 12 miles. Soon after starting we crossed the Southeast end of a mountain. The road then was very good for three or four miles when we commenced climbing over rocks and stones. 10 miles brought us to the summit of the long dreaded Sierra Nevada. We came within about ½ mile of the top when it became so steep that we had to double team. The ascent was difficult, but not so much as I expected. We had all the wagons on the Summit by 1 o'clock P.M. 2 miles more brought us down into a valley [Summit Valley/Lake Van Norden] where we encamped. The descent was gentle with some places pretty steep, but not so rough as the ascent. The view from the peak on the south side of the gap was magnificent."

D. Jaggers (August 22, 1849). We passed the highest of the Sierra this morning. At the same place we saw the windlass with which the first emigrants to California drew up their wagons.

Transcontinental Railroad

In l852 the California legislature called upon the federal government to build a railroad to the Pacific and by l853 Congress had instructed the U.S. Army to survey feasible routes for a railroad (Kraus 1969). Theodore D. Judah made his first examination of a potential route for the railroad via Donner Pass and through Truckee in the fall of l860 and found it to be the most favorable. The Central Pacific Railroad Company (CPRR) comprised of Leland Stanford, Charles Crocker, Mark Hopkins, and Collis P. Huntington, was chosen to build the rails east. The company was granted a strip of land

on both sides of the right-of-way and one square mile of land for each mile of railroad completed, to be awarded in a checkerboard pattern on alternating sides of the track. The company could then sell this land to raise more money, which it proceeded to do for its Truckee holdings. The first rail was laid at Sacramento on October 27, l863. Heavy snow and tunneling through granite rock near Donner Pass presented major obstacles. By the summer of l867 the railroad was still not completed between Cisco and Truckee and a second phase of construction, east of the summit, was worked simultaneously with that at the summit and locomotives, rails, cars, and parts were hauled eastward over a parallel freight and wagon road known as the Dutch Flat and Donner Lake Wagon Road. By May of l868 the railroad was built between Truckee and Reno but the line between Cisco and Truckee was not completed until June l5, l868. The entire transcontinental route was finished on May l0, l869, with the last rail joining the Central Pacific Railroad and the Union Pacific at Promontory, Utah.

While most reporting in the early period press centered upon construction of the tunnels and snow sheds surrounding Donner Pass, a few accounts regarding the rail route through Coldstream have been reported: "CPRR Bridge Construction" in Coldstream Canyon (reference 11/30/1867 quoted in Krause 1969) and word of a "CPRR train wreck" near Coldstream (*Truckee Republican* 12/20/1876:2/1). The rail route through Coldstream Valley is shown on maps 4-12.

Railroad Reorganization and Improvements. Concern over the CPRR's ability to meet its obligations on the government debt it had incurred during its construction days prompted its takeover by the Southern Pacific Company (SP) in 1899 (Myrick 1962:29; Signor 1985:51). With the reorganization of the railroad, upgrading efforts were initiated to reduce grades and curvature and increase safety. Just as the Donner grade served as a proving ground for the initial development, testing and improvement of railroad engineering and construction techniques, railroading technology was further advanced under SP ownership to suit the operating characteristics of the Donner grade. Innovations and improvements entailed extensive double-tracking, the design of a new "cab-forward" engine type, exhaust systems, safety brakes, and the addition of new sidings, a turntable, and concrete snow sheds. Because the original No. 1 track at Donner Summit was steep and narrow, a new two-mile No. 2 track tunnel opened less than one mile south of the No. 1 track and under Mount Judah. This new tunnel (Tunnel No. 41) was in operation in 1925 and it held the record as the third longest in the continental U.S. (maps 10-12). In 1926 the new station and snow shed settlement of Norden became the mountain "nerve center" for the newly-double-tracked railroad. Microwave technology finally brought an end to the Norden operations in 1985 (Steinheimer and Dorn 1989:39, 44, 47).

In 1967, in order to make full use of the No. 1 track between Norden and Andover (Map 11) in Coldstream Canyon, tunnels no. 6 through 12 were brought up to current clearance standards. The century old bore of Tunnel No. 6 on Donner Summit was enlarged by lowering the floor 3 ½ feet (Signor 1985:212). In the early 1990s SP consolidated all traffic onto No. 2 track. Between 1993 and 1994, rails, ties and track hardware were removed from the historic alignment through the summit tunnels nos. 6 through 10, leaving the railroad bed as a gravel road (Kibbey 1996:33). In 1996 the Southern Pacific Company was purchased by the Union Pacific Company (*Sierra Sun* 1997) -- an ironic acquisition in that these two railroads, which had been rivals since the early 1860s, ultimately merged into one.

Chinese Labor. Up to l5,000 Chinese were employed to meet the inadequate labor supply. The organization of Sisson, Egbert and Company (later known as Sisson, Wallace and Company and Sisson, Crocker and Company) was a subsidiary of the CPRR and was established in l866 at Coburn's Station exclusively to import Chinese railroad workers. Many Chinese, who were already organized

into sophisticated societies for mutual aid and assistance, came directly from Canton Province through labor exchanges set up by Crocker and shrewd and intelligent Chinese businessmen (CPRR 1865a:8; Earl 1989:1).

Chinese railroad laborers worked from sunrise to sunset, six days per week. The feats of the Chinese railroad construction workers were remarkable, and many were killed by avalanche or died of exposure or construction accidents (Earl 1989:1). Workers were initially paid one dollar per day; later this wage was raised to $35 per month, leaving $20 to $30 per man in gold, after deducting their living expenses. Non-Asian men were paid about the same, but with their board included (Gillis 1870:161). Chinese workers were divided into gangs of about 12 to 20 each. Each gang had a "head man" and a cook who not only served items in the traditional Chinese diet (dried oysters and abalone, dried bamboo, seaweed, mushrooms, dried fruits, rice, crackers, vermicelli, salted cabbage, Chinese sugar, peanut oil, Chinese bacon, pork, and poultry) but was also required to serve barrels of lukewarm tea during the work day and provide a large boiler of hot water for each worker to sponge bathe and change into clean clothes before the evening meal (Chinn 1969). Non-Asian workers drank cold water, which was too often contaminated and caused illness. The company provided the Chinese with low cloth tents, but many preferred to live in dugouts or to burrow into the earth (Chinn 1969; Earl 1989:1).

CPRR constructed a "large boarding and lodging house on Coldstream, this side of the summit" where 400 men lived to shovel snow and keep the railroad clear (*Truckee Republican* 11/7/1868:2/2). Recent archaeological investigations in Coldstream Canyon (Jaffke 2013) disclosed at least five historic sites containing Chinese ceramics, ones that are diagnostic of Chinese railroad construction/maintenance work camps. It is feasible that at least one (or more) or these sites may represent the boarding house complex reported in 1868.

With the completion of the transcontinental railroad in 1869, Chinese immigrants were channeled into other regional occupations. Truckee had an especially large subpopulation of Chinese and during the 1870s, Chinese residents comprised over one-third of the population. This forced them into direct competition with Euroamerican residents, especially during times of economic hardship. Truckee soon assumed a leadership role in the anti-Chinese movement in the West. A general boycott in l885-1886 of firms that continued to employ Chinese (such as Sisson, Crocker and Company) spelled the ultimate demise of the Chinese community of Truckee and most were expelled from town in 1886.

Dutch Flat Donner Lake Wagon Road/Lincoln-Victory Highway/Old Highway 40

In 1864 the Dutch Flat and Donner Lake Wagon Road was opened over Donner Pass, following basically the same route that the earliest emigrants had traveled. The freight/passenger wagon road was situated near the proposed alignment of the CPRR (later Southern Pacific Railroad and currently owned by the Union Pacific Railroad). It follows present-day Donner Pass Road /old Highway 40 along the north side of Donner Lake and through Truckee's downtown. The wagon road was designed to facilitate the transport of supplies to points along the rail line. The road formed the final link in a continuous freight and passenger road from Dutch Flat to the Comstock mines near Virginia City (Howard 1998; Protteau 1988). Although the main travelway bypassed Coldstream Canyon, a branch road was likely constructed to facilitate railroad construction there.

During the 1860s, as the railroad rendered Truckee and Donner Lake accessible, small resorts and hotels were established around Donner Lake. In 1913 the old Dutch Flat Donner Lake Wagon Road was designated as a link in the Lincoln Highway, the nation's first transcontinental highway. Local businessmen realized the tourism potential of automobile travel along a nationally recognized highway. With its favored location adjacent to the railroad, and later to transcontinental highways, the Truckee area also became a focal point of early mountain residential development. Residential subdivisions along Donner Lake date to the 1910s; Coldstream Canyon was bypassed by commercial and residential development interests. In 1923 portions of the Lincoln Highway were re-designated as the Victory Highway, as a memorial to veterans of World War I. The Victory Highway through Truckee and down the Truckee River Canyon was completed in 1926, following the same route taken by the Stevens-Murphy-Townsend emigrant party in 1844. In 1928 the Lincoln Highway/Victory Highway was incorporated into the Federal Highway system and the route through Truckee was designated as U.S. Route 40. In 1963-1964 portions of the two-lane U.S. 40 were incorporated into the new interstate highway system and became the four-lane Interstate 80.

Logging

Logging was first initiated in the Truckee area after the discovery of Nevada's Comstock Lode silver mines in l859. When production began to fall in the mines in l867, the lumbering business also began to suffer. A new market for lumber was found in the railroad. As the rails reached the summit in l866-1867, Truckee became a major lumbering center with at least 18 saw mills establishing operations to supply the railroad with cordwood for fuel, lumber for construction and ties for the roadbed. After the completion of the railroad in l868-1869 lumber companies diversified and grew as new markets were opened to them. The expansion beyond saw milling targeted such facilities as planing mills, box factories, sash and door establishments, a chair factory and furniture factory, shingle mills, and charcoal earthen and brick kilns.

The history of lumbering in the Truckee Basin had its beginnings at Donner Lake and several lumbermen operated in the Donner Lake Basin during the period from 1864 to 1904. Angus McPherson established a water-powered sawmill at the east end of Donner Lake in 1864 (maps 4 and 13). Between 1864 and 1867 Angus McPherson and his brother, John, engaged in a series of property transfers involving their holdings between the east end of Donner Lake, Coldstream Valley and the Truckee River. Reference is made to McPherson's sawmill near the mouth of Coldstream Valley (Richards in *Sierra Sun* 5/20/2005), which may be associated with the mill site (#72) shown on Knowles' 1942 map of lumbering in the Truckee Basin (Map 13) and an unnumbered locale depicted on Wilson's 1992, Map 2. McPherson later transferred ownership of land holdings to the Donner Lake Sawmill Company. Concurrent with the sawmill operations of McPherson and the Donner Lake Sawmill Company, the Towle Brothers were also logging at the east end of Donner Lake ca. 1867 or 1872, where they had built (or reused) a dam along a prominent lateral moraine on Donner Creek. This sawmill is depicted on Knowles' map as #51 (Map 13). The sawmills at the east end of Donner Lake were small operations and the fact that they were operating in proximity indicates that their businesses were limited and conducted on a sporadic basis. Timber around Donner Lake was mostly cut out by 1881.

There is some available documentation of other sawmills and/or wood contractors cutting in Coldstream Canyon: A. P. Stanford and his successor, John Kneeland (1868-1882); the Champion Brothers (ca. 1877); R. S. Fergerson (ca. 1887); David Smith and J. L. Lewison (1887-1898); and

David Smith (1902). An aerial photograph from 1939 (Map 1) shows various ground disturbances surrounding Horseshoe Bend that may be attributed to historic logging activities.

Stanford Mill. The Stanford Mill was built by A. P. Stanford near the headwaters of Cold Creek in 1868. Stanford's successor, John Kneeland, manufactured quantities of lumber at this plant for the CPRR until 1882. The mill had a daily cut of 30,000 feet (Knowles 1942:20; *Truckee Republican* 10/21/1873:3/1; Wilson 1992:80). The mill location appears on Wilson's map as #120 and on Knowles' 1942 map as #76 (Map 13).

Champion Brothers. A Notice of co-partnership (i.e., incorporation) between Josiah Champion and Frank Champion under name "The Champion Land, Flume and Wood Company" was filed with Nevada County Clerk on November 17, 1877 (California State Archives Incorporation Records). Timber lands were located above Kneeland's Mill, where wood was cut under contract with the CPRR and moved to the track at the Champion Siding (*Truckee Republican* 9/11/1878:3/1, 12/22/1880:3/2, 9/16/1882:3/1).

R. S. Fergerson. R. S. Fergerson secured a contract for cutting a large quantity of railroad wood at Coldstream in 1877 (*Truckee Republican* 12/7/1887:3/1).

Lewison and Smith. Lewison and Smith's mill and flume appears on Wilson's (1992) map as #112 and on Knowles' 1942 map as #116 (Map 13). Knowles (1942:44) describes their operations.

> From 1887 until about 1898 Mr. Smith was the partner of J. L. Lewison in the mill on Coldstream Creek in Placer County. Lewison & Smith began operating their new mill on Coldstream, southwest of Donner Lake, in September 1887. By the end of November they had cut 1 million feet of lumber. They built a dam across Coldstream which would float 700,000 feet of logs. A flume a mile and a half in length took lumber from their mill to their yard at Stanford siding on the Southern Pacific [railroad] and this flume also extended back into a body of fine red fir and pine timber for a distance of 4 ½ miles from which point not less than 10,000 cords of wood were flumed yearly. Their annual cuts ran from 1 to 2 million feet. In 1892 they supplied 300,000 feet of snow shed material and 30,000 ties to the Southern Pacific Company.

Various events at the Lewison and Smith, chronicled by the local *Truckee Republican* newspaper, are paraphrased below.

> The mill on Cold Creek was their "second mill site." [*Truckee Republican* 11/30/1887]
>
> New Saw mill is owned by two of our represent native men, Messers J. L. Lewison and J. H. Smith; the new mill is to be erected at Coldstream. [*Truckee Republican* 5/7/1887:3/2]
>
> The building of the new saw mill at Coldstream is a sure thing. [*Truckee Republican* 5/14/1887:3/1]
>
> The timbers for the new saw mill at Coldstream are all out and framing will commence tomorrow. [*Truckee Republican* 6/8/1887:3/1]

> An accident occurred at Lewison and Smith's Coldstream mill; Jack Kane was killed by a falling derrick. [*Truckee Republican* 6/29/1887:3/2]
>
> Smith and Lewison's mill in Coldstream Valley is to have an iron roof; they are waiting for machinery to include a 55-horse-power engine; the mill cut 35,000 feet per day; wood is moved through a flume one mile in length. [*Truckee Republican* 7/13/1887:3/2]
>
> The lumber yard of Lewison and Smith burned last night at 11 o'clock; the lumber yard is at Stanford's Siding, seven miles west of Truckee. [*Truckee Republican* 10/7/1888:3/1]

Floriston Pulp and Paper Company. By the turn of the 19th -20th century, lands were largely stripped of pine, but stands were re-entered to harvest fir for use as pulpwood for paper mills. Fir, considered unsuitable for railroad ties and mine timbers, had been largely ignored during the earlier harvesting. The greater "digestibility" of fir species (over pine) now made them the targets of harvest. The Floriston Pulp and Paper Company commenced operations at Floriston in 1899. Pulpwood was locally processed at their mill, which was located down the Truckee River Canyon on the railroad near the California/Nevada state. Organized primarily by the Fleischhacker Brothers, the company operated the second largest paper mill in the United States during its period of operations between 1900 and 1930. Control of the company went to Crown-Columbia in 1912, to Crown-Willamette in 1914 and later to the Crown-Zellerbach Corporation. In 1912 the company held 20,200 acres in Placer County and by 1914 practically all the white and red fir had been cleared off this acreage.

> The company's methods of logging there were very interesting. They began cutting the logs in October in order that they might season for 6 or 8 months. All trees were cut to a diameter of 12 inches and each tree was cut to a 4 or 6-inch top diameter. The system of winter cutting, however, made it necessary to leave stumps as high as 6 feet so that many cords were thus left in the woods in this form. In summer, or as early as the weather permitted, the cut logs, thoroughly seasoned, were packed on mules or by horse teams and wagons to the company's flume which conveyed them to the mill. [Knowles 1942:50]

In 1902 D. L. Smith contracted for delivery of 50,000 cords of four--foot wood to Floriston – the largest such contract in Truckee Basin.

> In 1902 'the largest wood contract ever let in the Truckee Basin' was secured by David Smith. The contract called for 50,000 cords of 4-foot wood for the Floriston Pulp & Paper Company to be used in making paper for the Pacific Coast Dailies. Some was also used to make orange wrappers. In order to fill the contract Mr. Smith built a flume into his heavily wooded tract on Coldstream where he had about 60 men cutting and chopping in Strong's Canyon south of Donner Lake, at the rate of about 7,000 cords a year…from his timberland in Placer County. [Knowles 1942:42, 50]

Duffy Camp, located at the headwaters of Bronco Creek and above the Floriston Mill, was the center of the company's logging operations until 1914 (Knowles 1942:45-46, 52-53; Wilson 1992:69).

> In 1914 with the exhaustion of fir around Duffy Camp, logging operations were moved over the Sierra Nevada …in the early part of 1921… [the company] began to clear off timber from its holdings at Stanford, about 2 miles south of Donner Lake. They installed a tramway to haul wood down the mountain sides in buckets and it was then loaded onto cars and taken

via the Southern Pacific Railroad to Floriston. The buckets were controlled by cables and operate at the rate of one a minute, each bucket holding half a cord of wood. The tramway could operate in 10 feet of snow. [Knowles 1942:50]

Several maps provide a graphic chronicle sawmills and logging road developments in the headwaters of Coldstream Canyon that centered around Horseshoe Bend. An 1889 topographic map (Map 5) shows the Coldstream Road ending near the bottom of the canyon. Structures and a possible road or flume appear at the location of Lewison and Smith Mill. There is no indication of Stanford's or Kneeland's mill works, which ceased operation in 1882 on Horseshoe Bend. An 1897 topo map (Map 6) shows the Coldstream Road constructed all the way to Horseshoe Bend, and an expansion of Lewison and Smith's mill works. On the 1915 map of the Tahoe National Forest (Map 7), the Coldstream Road extends considerably farther to the southwest beyond Horseshoe Bend, a possible indication of expanded logging in the Cold Creek watershed. Structures remain at the site of the Lewison and Smith Mill. By the 1921 Tahoe National Forest map (Map 8), mill structures are gone. On the 1926 forest map (Map 9), a road branching from the Coldstream Road is extended to the southeast up to a "Wood Camp" and all the way to the Truckee River. The Coldstream Road system is further expanded on the 1930 Tahoe National Forest map (Map 10), now reaching southward to join an east-west road network around Tinker Knob. "Stanford" is called out on the 1940 (1946/1951 reprint) as a stop on the railroad, one that includes at least three buildings (Map 11). Disturbed ground surrounding Horseshoe Bend near the Stanford railroad siding and surrounding sawmill complex can be traced on a 1939 aerial photograph (Map 1). By 1962, the Coldstream Road system has expanded to Andover and Eder (Map 12).

According to an undated map of the Southern Pacific Railroad Right-of-Way. The spur up to the old Lewison and Smith mill was taken out in 1916. A center siding at "Stanford" was added in 1937 to replace an earlier siding. "Stanford" was abandoned ca. 1951 (Map 14).

Avocational historian, Tom Macaulay, visited the area in 1994 and photo documented wooden tram towers (Photo 8), a metal wood bucket (Photo 9) and collapsed structures (Photo 1), which may represent operations by the Floriston Pulp and Paper Company and/or contractor D. L. Smith near the Stanford Siding. A historic photo in the Macaulay collection (reproduced in this report as Photo 11), shows a flume in Coldstream Canyon with caption, "Duffy's Wood Flume near Champion".

Photo 8. Wood-framed tramway towers at Stanford (courtesy Tom Macaulay Collection, 1994)

Photo 9. Metal tram car (pulp wood container) at Stanford (courtesy Tom Macaulay Collection, 1994)

Photo 10. Concrete foundations/milled wood debris at Stanford (courtesy Tom Macaulay Collection, 1994)

Photo 11. "Duffy's Wood Flume near Champion" (courtesy Tom Macaulay Collection, 1994)

Ice Production

Lumbermen released from seasonal logging work usually found employment in Truckee's ice industry. From 1868 through the 1920s, ice harvesting rivaled the economic importance of the lumber industry (Hansen 1987; Itogawa 1974; Macaulay 2002). Eastern ice and Alaskan ice were costly and not dependable, so closer sources were sought. With the completion of the first transcontinental railroad across Donner Pass in 1869, natural ice could be harvested and transported cost-effectively, and Truckee-Donner ice soon dominated the industry. Sawdust supplied by the many local sawmills was packed into the storage houses as insulation; ice blocks could be preserved for up to three years. Sierra ice was noted for its crystal purity and it was served in large hotels throughout the nation. In addition, it cooled the 140-degree temperatures deep in the shafts of the Comstock mines. Ice was also used to refrigerate California produce for rail shipment to the eastern markets. Competition from artificial ice gradually forced the closing of the ice ponds in the Truckee Basin in 1927. By the time the ice business died out, more than 26 companies had worked the Sierra's ice harvests.

While Donner Lake wasn't cold enough for consistent ice production, ice operations were set up along its perimeters and tributaries, e.g., Sitka Ice Company, Donner Ice Company, Pacific Ice Company, and Union Ice Company. Up to 35,000 tons of ice were harvested in one year at Donner Lake (Meschery 1978:48). In 1895 the Donner Ice Company (of Chicago) purchased holdings at the mouth of Coldstream Canyon and developed its pond below the junction of Coldstream and Donner Creek outlets (MacAulay personal communication 1984 in Lindström 1987:22).

By 1911, reference is made to ice works in Coldstream Canyon at "Champion" (*Sierra Sun* 8/16/1989; *Truckee Republican* 12/21/1911:4/4). Operations of the Champion Ice Company in Coldstream Valley appear in photos 11-18. An excellent overview of the ice works is depicted in Photo 12 and captioned, "Harvesting the ice crop at Cold Stream ice camp." Closer views are shown on photos 13 and 14, with a long view of the ice house shown in Photo 15. Photo 16 zooms into the ice warehouse with accompanying caption, "Ice harvest crew at elevator…building and hill background." Photo 17 shows crews harvesting ice on the pond, with accompanying caption, "Champion I C."

Using the snow shed (appearing in Photo 17 at the back right as a dark line along the railroad grade) it is possible to tentatively places the ice pond location in Coldstream Valley. In the 1939 aerial photograph (Map 1), it also shows a snow shed northeast of Horseshoe Bend. On this same aerial photo, a cleared and disturbed area along Cold Creek clearly appears slightly to the south and west of the snow shed. Comparing the juxtaposition of the snow sheds and ice pond strongly suggests that the cleared area along Cold Creek is the site of the Champion Ice Company (located in the northeast corner of Section 25, Township 17 North, Range 15 East). This observation was first suggested by Jaffke (2013:51, Figure 24), showing a later aerial photo depicting a possible artificial ice pond site. The company ice pond appears in Photo 18, captioned "Champion Coldstream 1918", without a cover of snow and ice.

Photo 12. "Harvesting the ice crop at Cold Stream ice camp" (courtesy Tom Macaulay Collection, 1994)

Photo 13. Ice works at Champion Ice Company (courtesy Tom Macaulay Collection, 1994)

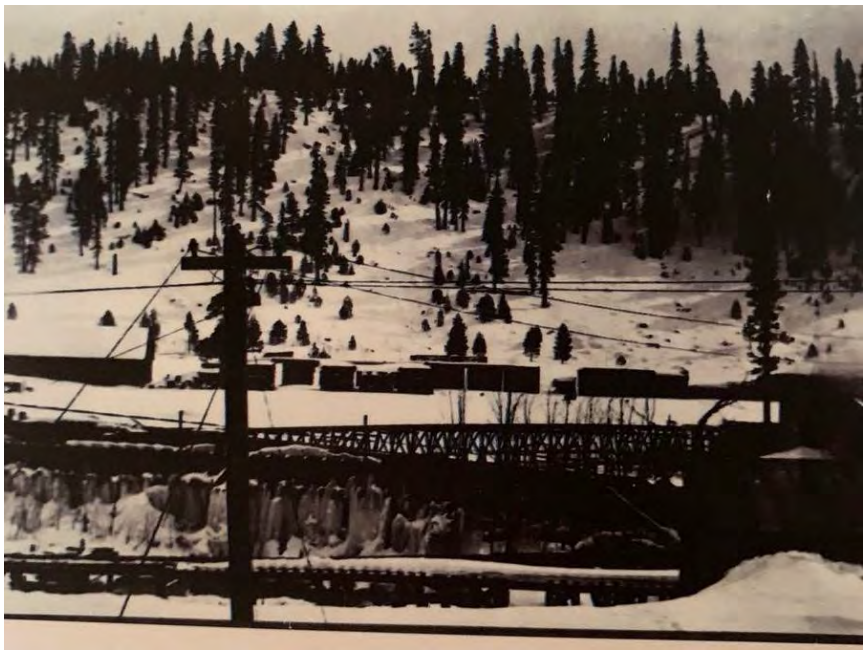


Photo 14. Ice works at Champion Ice Company, close up (courtesy Tom Macaulay Collection, 1994)

Photo 15. Champion Ice Company, Coldstream Valley, overview (courtesy Tom Macaulay Collection, 1994)

Photo 16. Ice harvest crew at elevator, Champion Ice Company (courtesy Tom Macaulay Collection, 1994)

Photo 17. Harvesting ice on ice pond at Champion Ice Company (courtesy Tom Macaulay Collection, 1994)

Photo 18. "Champion Coldstream 1918"; melted ice pond without ice and snow cover (courtesy Tom Macaulay Collection, 1994)

Gravel Mining

Coldstream Valley is underlain by thick deposits of glacial outwash, valued for railroad and road construction and even for gold (Richards 2006). In June of 1905 the *Truckee Republican* (page 16) reported that gold had been discovered in the gravels on the Donner Ice Company land. The finds were reported near the confluence of Donner and Cold creeks on a low ridge among the cattle that grazed Donner Meadow. W. H. M. Smith had the sand and gravel assayed at $3.20 a ton. No mining was ever done.

As early as 1874, the Central Pacific Railroad recognized the value of the crushed, washed and partially sorted deposits of gravels in the Coldstream Valley and Donner Meadow. They developed a quarry about a mile up from the lower end of Coldstream Valley. Small quarries were opened on two different railroad spurs that ran near the Coldstream-Donner meadow to provide rail ballast and construction rock.

In the post-World War II period, the need for quality aggregates to build the modern highway system led to the sale of Donner Meadow and renewed quarrying commenced by 1953. The State of California sued in condemnation proceedings to obtain an adjoining 74 acres to use for a quarry to build improvements to U.S. 40. This mix of sand, rock and silt was mined extensively during the 1960s to build Interstate 80 and other local highways and for subdivision development (Richards 2006). To build Interstate 80, Teichert Aggregates Corporation opened a large gravel quarry during the 1960s in the eastern extension of historic Donner Meadow at the confluence of Cold and Donner creeks with subsequent quarries developed farther up Cold Creek. The extent of quarry

operations is shown on a 1972 aerial photograph (Map 2). Teichert Aggregates moved their quarry from Coldstream Canyon to Martis Valley in 1983 (*Sierra Sun* 8/18/1983, 6/07/2008).

Land Acquisition History

Jaffke (2013:20) has summarized the land acquisition history of Coldstream Valley, based upon a 2001 search of property ownership by the State Parks Office of Acquisition and Real Property Services. State ownership within Coldstream Canyon began in 1991 when the Nature conservancy transferred a large portion of the canyon to California State Parks. The Conservancy property was acquired by Walter Hewlett through the trustee sale of the bankrupt Sunstone International Limited Corporation. He bought land near the valley entrance and above Horeshoe Bend reportedly to deny access to Sunstone developers and sold land at low market value to the Nature Conservancy and DPR. Walter Harvey, Principal of Sunstone, was attempting to develop a controversial ski resort during the early to mid-1980s. A multi-million-dollar resort was planned to accommodate 20,000-30,000 skiers per day, a 300-unit hotel, roads, wells, sewers, 4,000 to 7,000 residential units, an equestrian center, ski school, tennis courts, commercial space, and parking for 10,000 cars, with all power, sanitary, water, fire, police, garbage, snow removal infrastructure located on site (*Sierra Sun* 1/25/1990). The Sunstone field office was based inside abandoned railroad cars situated by the artificial lake (i.e., Upper and Lower ponds) at Teichert Aggregates gravel pit (*Sierra Sun* 8/16/1984). Throughout resort planning and negotiations, the Oregon California Trails Association and Truckee Donner Historical Society played an active role in raising public awareness of Coldstream Valley heritage, especially the protection and interpretation of the Emigrant Trail and the importance of keeping access open to the public.

METHODS

PROJECT PERSONNEL AND RESEARCH CONTACTS

To conduct the cultural resource study, Wildscape Engineering, Inc. contracted with Susan Lindström, Ph.D., Consulting Archaeologist. Dr. Lindström (RPA) has over 44 years of professional experience in regional prehistory and history, holds a doctoral degree in anthropology/archaeology and since 1982 has maintained certification by the Register of Professional Archaeologists (RPA, former Society of Professional Archaeologists/SOPA). She exceeds the Secretary of Interior's Professional Qualifications Standards (48 FR 44738-44739) in these and related disciplines (resume in Appendix 4). Devin Blom, Battle Born GIS, coordinated the GIS mapping effort and prepared project maps.

Denise Jaffke, Associate State Archaeologist, Department of Parks and Recreation Sierra District, kindly shared DPR cultural resource files and historical background information. Resources on file at the Truckee Donner Historical Society were reviewed on January 22, 2018. Bill Oudegeest of the Donner Summit Historical Society was also contacted on January 22nd. Historic aerial photographs were examined at the office of the Tahoe National Forest, Truckee Ranger District.

Avocational historian and ice industry expert, Tom Macaulay, is an important contributor to the report. Over decades, he has assembled extensive research and photo documentation on the sierra ice and lumber industries. His files contain a master index of newspapers, periodicals, unpublished manuscripts, maps, etc., of which selected entries were consulted in preparation of

this report and pertinent photographs are reproduced as courtesy of his vast photograph collection. Primary sources on file in Dr. Lindström's personal library were also reviewed (e.g., historic maps, water rights files, lumber company records, land ownership documents, etc.).

Although the scope of this study was limited to an "arm-chair" records review, valuable field orientation was gained in a cursory field tour organized by Wildscape Engineering, Inc. on October 25, 2018 of key locales planned for restoration.

PRIOR ARCHAEOLOGICAL STUDIES AND KNOWN CULTURAL RESOURCEES

Prior Archaeological Studies

An in-house records search was conducted by the North Central Information Center (NCIC), a branch of the California Historical Resources Information System (CHRIS) and adjunct of the State Office of Historic Preservation (OHP). Records within the project area were reviewed by NCIC staff to identify any properties listed on the National Register, California Register and other listings, including the Office of Historic Preservation files and the following sources (NCIC File No.: PLA-18-121; see Appendix 2).

- ✓ *California Inventory of Historical Resources*
- ✓ *California State Historical Landmarks*
- ✓ *National Register of Historical Places/California Register of Historic Resources listings*
- ✓ *Office of Historic Preservation Historic Property Data File (updates)*
- ✓ *Determination of Eligibility (updates)*
- ✓ *Points of Historic Interest*
- ✓ *Caltrans Bridge Inventory*
- ✓ *Historic Spots in California*

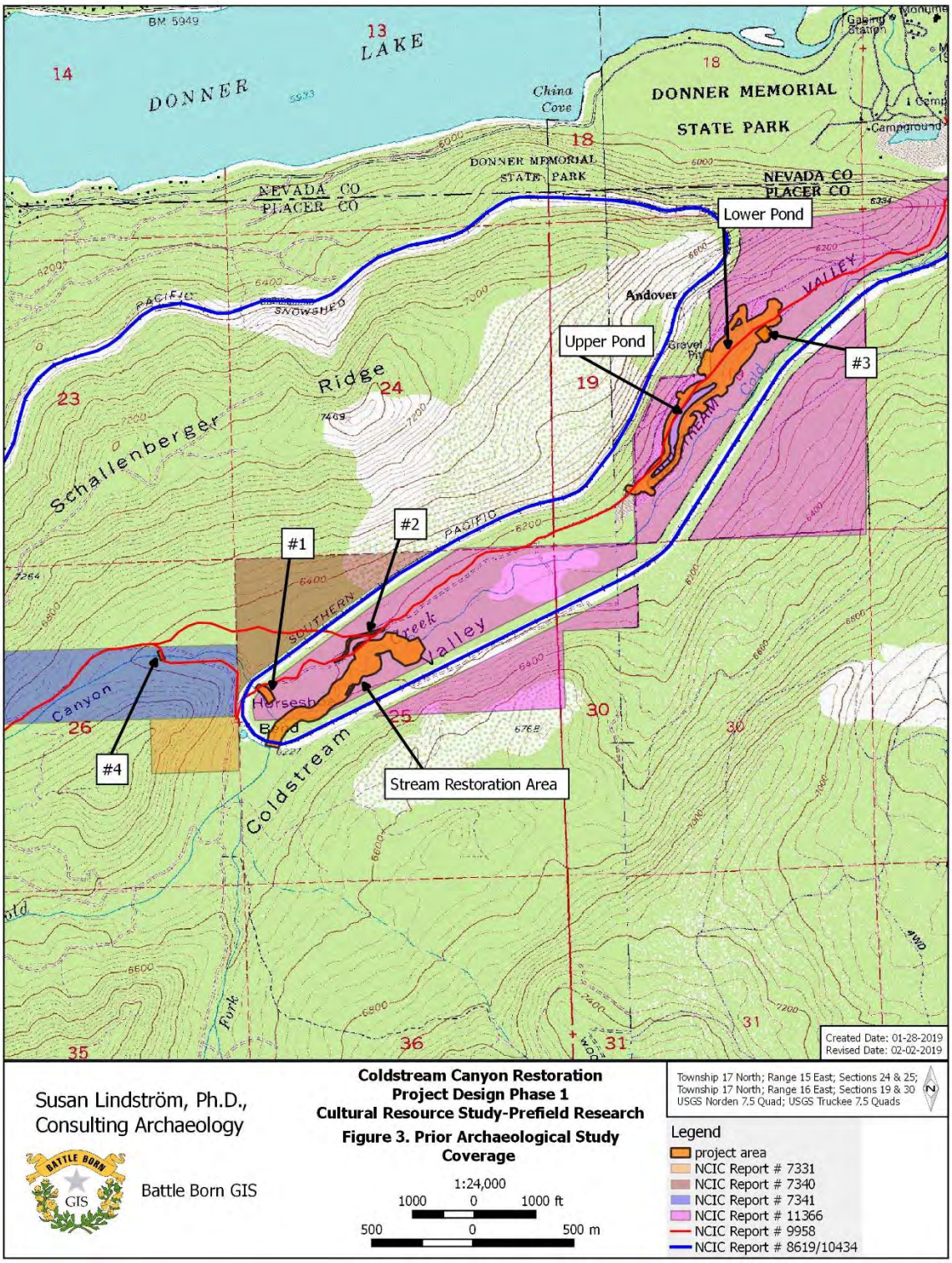
The most substantive work within the study area was accomplished in 2012 and 2013 by Jaffke (2013) in her complete cultural resources inventory of 125 acres in Coldstream Canyon. The inventory was sponsored by California Department of Parks and Recreation (DPR) to comply with the park's general plan, as well as CEQA requirements. Efforts to identify historic properties involved archival research, informant interviews, a review of historical maps, and an intensive coverage pedestrian survey.

DPR findings, along with NCIC records search results, disclosed that the entire Coldstream Canyon Restoration Project has been subject to prior archaeological study. A total of five prior archaeological studies have been conducted within the Coldstream project area. Four additional studies have occurred within a 1/8-mile search radius (as shown in Table 1 and on Figure 3). All valley locales enclosed within the bounds of the railroad have been intensively examined (Jaffke 2013). The upland project area located above and to the west of Horseshoe Bend (road project Site #4) received more general coverage (Smith 1996). Note that Stewart's (1990) study was not included in NCIC 1/8-mile search radius so it does not appear on Figure 3. Stewart surveyed the south half of Section 25, west half of the southeast quarter of Section 26 and east half of Section 35 (Township 17 North, Range 15 East).

Cumulative archaeological coverage within and surrounding the project area is summarized on Table 1 and shown on Figure 3.

Table 1. Prior archaeological studies within and/or near the project area

Report #	Author(s)/Year	Title	Study Location
NCIC #8619	Arrington et al/2006	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project	Within project area
NCIC #9958	Henning 1949	Overland Emigrant Trail	Within project area
NCIC #10434	Snyder 1997	Central Pacific Transcontinental Railroad, Sacramento to Nevada State Line-HAER CA-196	Within project area
NCIC #11366	Jaffke 2013	Cultural Resources Inventory Report Coldstream Canyon, Donner Lake Memorial Park	Within project area
NCIC #11886	Lindström 2015	Donner Lake Basin Watershed Assessment, A Contextual Overview of Human Land Use and Environmental Conditions: Workbook	Within project area
NCIC #7331	Schoemheid 1993	Terry Timber Harvest Plan	Within 1/8-mi radius
NCIC #7340	Calvert 1997	Horseshoe Bend Timber Harvest Plan	Within 1/8-mi radius
NCIC #7341	Smith 1996	Emigrant Trail Conservation Timber Harvest Plan	Within 1/8-mi radius
No #	Stewart 1990	Bohemia, Inc. Timber Harvest Plan	Within 1/8-mi radius


Lower Pond
Upper Pond
#1
#2
#3
#4
Stream Restoration Area
Created Date: 01-28-2019
Revised Date: 02-02-2019
Susan Lindström, Ph.D.,
Consulting Archaeology
Battle Born GIS
Coldstream Canyon Restoration
Project Design Phase 1
Cultural Resource Study-Prefield Research
Figure 3. Prior Archaeological Study Coverage
1:24,000
1000 0 1000 ft
500 0 500 m
Township 17 North; Range 15 East; Sections 24 & 25;
Township 17 North; Range 16 East; Sections 19 & 30
USGS Norden 7.5 Quad; USGS Truckee 7.5 Quads
Legend
project area
NCIC Report # 7331
NCIC Report # 7340
NCIC Report # 7341
NCIC Report # 11366
NCIC Report # 9958
NCIC Report # 8619/10434

Known Cultural Resources

A records review by the NCIC documents the route of the first transcontinental railroad (CA-PLA-841H, designated State Historic Landmark No. 780) and the route of the Emigrant Trail (CA-PLA-699H) within the project area, along with a single isolated find (prehistoric projectile point, P-31-2734) within the 1/8th -mile search radius. Stewart's (1990) report (not included in NCIC 1/8-mile search radius) reported a "historic sawmill site" somewhere within his study area; no other information is provided. Stewart's mill is likely part of the historic Stanford Mill and Lewison and Smith Mill complex.

Jaffke's (2013) intensive survey of Coldstream Canyon resulted in the identification of 10 archaeological sites. Fieldwork consisted of relocating and recording four previously identified archaeological sites (i.e., two historic, two multicomponent) and recording newly identified prehistoric and historic resources. The resources identified in 2012 and recorded in 2013 include a total of six sites (i.e., three historic, one prehistoric and two multicomponent sites) and 14 isolated finds.

Combined NCIC and DPR results are summarized on Table 2 and shown on the cultural resources location map in the accompanying confidential appendix. Three resources occur inside the project area and eight additional resources are within the 1/8th -mile radius.

Table 2. Summary Known Cultural Resources Within/Adjacent to Project Area

Resource No.	Resource Type	Report No.	Location
Cultural Sites			
CA-PLA-699H	Emigrant Trail	NCIC #11366	Within project area
CA-PLA-841H	Transcontinental Railroad	NCIC #11366	Within project area
P-31-5653/CA-PLA-2486/H	Historic refuse scatter, Chinese ceramics, hearth feature; prehistoric lithic scatter	NCIC #11366	Within project area
P-31-5635/CA-PLA-2482	Prehistoric lithic scatter	NCIC #11366	Within 1/8-mi radius
P-31-5634/CA-PLA-2481H	Historic refuse scatter, Chinese ceramics	NCIC #11366	Within 1/8-mi radius
P-31-5636/CA-PLA-2483/H	Historic refuse scatter, Chinese ceramics; prehistoric lithic scatter	NCIC #11366	Within 1/8-mi radius
P-31-5637/CA-PLA-2484/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	NCIC #11366	Within 1/8-mi radius
P-31-5638/CA-PLA-2485/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	NCIC #11366	Within 1/8-mi radius

P-31-5654/CA-PLA-2487H	Historic refuse scatter, two pit/depressions	NCIC #11366	Within 1/8-mi radius
P-31-5655/CA-PLA-2488H	Historic refuse scatter, artificial flat (two structure platforms?)	NCIC #11366	Within 1/8-mi radius
P-31-5656/CA-PLA-2489H	Historic refuse scatter	NCIC #11366	Within 1/8-mi radius
Cultural Isolates (DPR)			
CS-IF-2	Historic glass fragment and metal strap pieces	NCIC #11366	Within project area
CS-IF-11	Historic can	NCIC #11366	Within project area
P-31-2734	Prehistoric basalt biface	(Stewart 1990)	Within 1/8-mi radius
EMCR-14-S1	Prehistoric lithic scatter; Emigrant Trail metal sign	NCIC #11366	Within 1/8-mi radius
CS-IF-1	Historic heavy metal cauldron	NCIC #11366	Within 1/8-mi radius
CS-IF-3	Historic large sheet metal fragments (6)	NCIC #11366	Within 1/8-mi radius
CS-IF-4	Historic large corrugated metal sheets, railroad spikes, burned fence posts on artificial flat	NCIC #11366	Within 1/8-mi radius
CS-IF-5	Historic can	NCIC #11366	Within 1/8-mi radius
CS-IF-6	Historic rock retaining wall	NCIC #11366	Within 1/8-mi radius
CS-IF-7	Two excavated areas adjacent to road	NCIC #11366	Within 1/8-mi radius
CS-IF-8	Historic can scatter	NCIC #11366	Within 1/8-mi radius
CS-IF-9	Excavated area with associated berm	NCIC #11366	Within 1/8-mi radius
CS-IF-10	Historic *Clorox* bottle (amber)	NCIC #11366	Within 1/8-mi radius
CS-IF-12	Prehistoric basalt waste flakes (3)	NCIC #11366	Within 1/8-mi radius
CS-IF-13	Historic 50-gallon drum (modified)	NCIC #11366	Within 1/8-mi radius
CS-IF-14	Prehistoric basalt waste flake	NCIC #11366	Within 1/8-mi radius

Although the route of the Emigrant Trail through Coldstream Canyon was not formally recorded in the DPR study (Jaffke 2013:23-25), reference was made to earlier avocational efforts and formal studies by the State of California to trace and mark the alignment. The Oregon California Trails Association (OCTA) has developed a classification system to encourage recording consistency throughout the national trail system. Rating categories are as follows:

> Class I - pristine original trail: clear evidence of the original trail remains unaltered by subsequent use or development.; eligible for listing in the National Register for the integrity of the route and physical evidence.
> Class II - used original trail: trail route retains its original character; although subsequent light use, the road has not been improved; eligible for listing in the National Register for the integrity of location and character.
> Class III - verified original trail: route is accurately known and verified in written, artifact, and/or topographic evidence, but no actual trail remains due to subsequent weathering, erosion or logging; eligible for listing in the National Register for the integrity of the location and environment.
> Class IV - impacted original trail: trail route is accurately known, but the trail itself has permanently lost its original physical and environmental integrity; ineligible for listing in the National Register.
> Class V - approximate original trail: trail route is no longer verifiable or accurately known; ineligible for listing in the National Register.

Individual segments along the Emigrant Trail were rated in 1991, from the mouth of Coldstream Valley up to Roller Pass, with evaluations ranging from Class I, Class IV and Class V (State of California 1991).

Efforts to mark the Emigrant Trail throughout Coldstream Valley have been summarized by Jaffke (2013:23-25) and are excerpted below.

> The old emigrant road was first marked in the 1920s by P. M. Weddell, a San Jose high school teacher, with homemade signs, some had a wagon tracing. These signs no longer exist in our study area. Permanent bronze plaques were later placed by the Native Sons and other groups…[A] tablet…stands on Coldstream Canyon Road about 150 yards south of its junction with Donner Pass Road (Old Highway 40). It Reads: "The emigrant trail in the pioneer days of California turned to the south at this point for approximately three miles, then west across the summit of the Sierra about a mile south of the present railroad. It was here that the Donner party missed the trail, owing to the early snows, resulting in tragedy."
>
> In 1950, Parks' survey crew documented the alignment with detailed mapping of he first 15 miles of trail. The intent at the time was to define the trail and obtain easements for the same. The conclusion drawn from this study was that the trail in use from 1846 to 1952 was a series of trails rather than one direct route, but the team plotted the trail as one route which generally followed the current alignment of Coldstream Road.

Several organizations, including Parks, Trails West, and Oregon-California Trails Association (OCTA), have identified physical manifestations of the trail in Coldstream Valley. Don Buck, member of OCTA, has plotted portions of the Emigrant Trail through Coldstream Valley and he suggests that the physical manifestations of the trail were located near the beginning and ending of the valley. The collective research indicates that evidence of the trail is located near Horseshoe Bend (already plotted) and near the beginning of Coldstream Valley (not plotted). Past logging actions, Teichert gravel quarrying activities, and other development has obliterated most of the trail through Coldstream.

It appears that much of the Emigrant Trail within the valley evolved into Coldstream Road. Some separation, however, was noted on the survey… [for example] …the differentiation near the Placer/Nevada County line… [and] …the area to the west around Horseshoe Bend. Here the two alignments separate with the Emigrant Trail angling across the tracks and Coldstream Road crossing the "horseshoe" and running to the south.

The approximate 800-foot segment of the Truckee Route of the Emigrant Trail…located near Horseshoe Bend, was recorded by Lucky Gillett and David Levy Forestry in 1997 when the parcel was surveyed for Hahn, a private landowner. They note "E.T." spray painted on trees and boulders along the way along with older "heel & toe" blazes, although very faint. The trail in this area is classified as Class V-Approximate Original Trail...Gillett and Forestry confirms this assessment and states that the trail route has been impacted by past logging and firefighting suppression bulldozing from the large Donner burn of the 1960s.

Nelson Stone, a person charged with periodic maintenance of the Coldstream road, provided use information during the 1930s to the 1970s during a legal case…in a letter to the Nature Conservancy (October 1, 1991) …Stone recalls the dirt road averaging 20 feet in width. The road was marked during the entire length as the Emigrant Trail, along with direction signs posted for State Route 40 to Coldstream Canyon, Horseshoe Bend, and Tinkers Knob. There was a substantial increase in use beginning in the 1950s and continuing thru to the 1970s. The Nevada County Historical Society posted and maintained Emigrant Trail signs from 1968-1974.

In addition to the above, The *Sierra Sun* newspaper (9/5/1946) reported that the "Donner Trail Coldstream reroute will be marked by Ranger H. I. Snyder." Curran (1982:163) presents a schematic map of trail through Coldstream Canyon. Grayson (1986: Map 4) plots the route through Coldstream Valley on a USGS topographic map. Fey et al. (2002:105-109) also show the route through Coldstream on a composite of USGS topographic maps, photos, and schematic drawings.

NATIVE AMERICAN CONSULTATION

Initial Native American outreach was accomplished according to CEQA guidelines and mandates under California Assembly Bill 52 (pursuant to PRC 21080.3.1). A request for a sacred lands file search was directed to the Native American Heritage Commission on December 17, 2018 and a response and follow-up contact list were received on January 3, 2019. Although the

Commission identified no Native American cultural resources in the immediate project area, follow-up contacts to incorporate opinions, knowledge and sentiments regarding the project were advised:

> …the absence of specific site information in the Sacred Lands Files 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… [Correspondence: Native American Heritage Commission to Susan Lindström 10/23/18]

Follow-up correspondence was sent to the five tribes on the Commission's contact list (Colfax-Todds Valley Consolidated Tribe, Shingle Springs Band of Miwok Indians, Tsi-Akim Maidu, United Auburn Indian Community of the Auburn Rancheria, and Washoe Tribe of Nevada and California). These five groups were notified by mail and email on January 7th. The United Auburn Indian Community acknowledged receipt of the project information in a January 8th email and agreed to circulate it amongst tribal members. This email was followed by a comment memo on January 16th, asking to be kept informed of on-going project activities. Subsequent phone calls were made on December 11th to the Washoe Tribe, on January 23rd and to the Colfax-Todds Valley Consolidated Tribe, Shingle Springs Band of Miwok, and the Tsi-Akim. Pamela Cubbler, Treasurer for the Colfax-Todds Valley group had no specific information for the project area but asked that project information be resent; the information was emailed that day. A voice mail was left with Jenifer Barker, Executive Secretary for the Shingle Springs Miwok. Cultural Outreach Coordinator, Kara Perry, returned the phone call on January 28th and also asked that project information be resent; an email was sent on January 30th. Attempts to contact Grayson Coney of the Tsi-Akim Maidu by phone were unsuccessful and the mailed letter was returned. A summary communications log is listed in Table 3 and relevant Native American correspondence is contained in Appendix 3.

Table 3. Summary of Native American Communications

Tribe	**Contact Date**	**Comments**
Native American Heritage Commission	12/17/18; 1/3/19	Request search of Sacred Land Files; Response/contact list received
Colfax-Todds Valley Consolidated Tribe	1/7/19; 1/23/19	Mailed/emailed project information; Follow-up phone call; Pamela Cubbler, Treasurer, requested information to be resent
Shingle Springs Band of Miwok	1/7/19; 12/11/18; 1/28/19; 1/30/19	Mailed/emailed project information; Follow-up phone call; left voice mail; with Jennifer Barker, Executive Secretary; Kara Perry, Cultural Outreach Coordinator, returned call, asking that information be resent; Information resent

Tsi-Akim Maidu	1/7/19; 12/11/18	Mailed/emailed project information; Follow-up phone call; unable to leave voice mail; mailed information returned
United Auburn Indian Community	1/7/19; 1/8/19; 1/16/19	Mailed/emailed project information; Tribe acknowledged receipt of information; Response memo received
Washoe Tribe	1/7/19; 12/11/18	Mailed/emailed project information; Follow-up phone call

CONCLUSIONS AND RECOMMENDATIONS

Environmental review policies in compliance with guidelines established by CEQA (Section 5024, Public Resources Code) require that a cultural study be performed to inventory any prior archaeological studies, known cultural resources and Native American traditional properties within a proposed project. Because project activities may involve the waters of the United States, the study must also comply with federal antiquities mandates (under Section 106 of the National Historic Preservation Act) and in accordance with the USACE 33 Code of Federal Regulations (CFR) Part 325, Appendix C. Initial Native American outreach is accomplished according to CEQA state guidelines and mandates under California Assembly Bill 52 (pursuant to PRC 21080.3.1). With the completion and submittal of this preliminary report, federal, state and county requirements for the first phase of a cultural resource inventory have been accomplished.

FINDINGS

Archival research and archaeological literature review (including DPR findings and the NCIC records search results) disclosed that the entire Coldstream Canyon Restoration Project has been subject to prior archaeological study. A total of five previous archaeological studies have been conducted within the Coldstream project area. Four additional studies have occurred within a 1/8-mile search radius. All valley locales enclosed within the bounds of the railroad have been intensively examined. The upland project area located to the west of Horseshoe Bend (road project Site #4) received more general coverage (Smith 1996).

A records review by the NCIC documents the route of the first transcontinental railroad (CA-PLA-841H, designated State Historic Landmark No. 780) and the route of the Emigrant Trail (CA-PLA-699H), along with a single isolated find (prehistoric projectile point) found within the 1/8th - mile search radius. Jaffke's (2013) intensive survey of Coldstream Canyon resulted in the identification of 10 archaeological sites. Combined NCIC and DPR results comprise a total of 11 archaeological sites and 15 isolated finds within the Coldstream Canyon Restoration Project area and 1/8-mile radius.

Native American outreach has been accomplished according to CEQA guidelines and mandates under California Assembly Bill 52 (pursuant to PRC 21080.3.1). No specific project concerns have been identified.

RECOMMENDATIONS

Summary

As noted above, the entire project area has been subject to archaeological survey; therefore, no additional survey is recommended, except for supplementary field verification of sensitive areas within or near known cultural resources. Resources involving further archaeological investigation are summarized in Table 4, along with the various project components of which they are a part. The table does not include isolated finds. It is assumed that all their potentially important information has been recovered in prior study. As per standard archaeological procedure, isolated artifacts are not typically considered significant in terms of National or California Register criteria. For all the 15 items inventoried, data potential has been exhausted, as all their significant information has been documented in previous archaeological reports. The project sponsor should not be further constrained regarding these resources. Note that implementation of any further project-related archaeological investigations would be subject to the review and discretion of the DPR archaeologist.

Table 4. Summary of Known Cultural Resources Requiring Further Archaeological Study

Resource No.	Resource Type	Further Work Recommended	Project Component
CA-PLA-699H	Emigrant Trail	GPS locate trail and associated features; assess integrity of surviving segments; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Road improvements-Site #1, #2, #3, #4; Upper and Lower ponds restoration; stream restoration
CA-PLA-841H	Transcontinental Railroad	Architectural assessment of railroad culverts/tunnels at Cold Creek and Emigrant Creek crossings if project plans involve structural alterations and/or demolition	Stream restoration; road improvements Site #1
No number	Crushed, rusted, gated culvert with trap door and latch chain	Archaeological inventory and evaluation to determine if feature is older than 50 years; feature is likely not significant and not a project constraint	Road improvements-Site #3
P-31-5653/ CA-PLA-2486/H	Historic refuse scatter, Chinese ceramics, hearth	Field verity site location; assess potential project impacts; implement protective measures as needed; if	Stream restoration

	feature; prehistoric lithic scatter	avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	
P-31-5636/ CA-PLA-2483/H	Historic refuse scatter, Chinese ceramics; prehistoric lithic scatter	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Upper Pond restoration
P-31-5637/ CA-PLA-2484/H	Prehistoric lithic scatter; historic refuse scatter, Chinese ceramics	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Lower Pond restoration
P-31-5656/ CA-PLA-2489H	Historic refuse scatter	Field verify site location; assess potential project impacts; implement protective measures as needed; if avoidance unfeasible, evaluate resource; if not significant, no further project constraints; if significant, carry-out mitigation measures/data recovery	Stream restoration

Cultural Resources Within or Near All Project Components

The Emigrant Trail corridor (CA-PLA-699H) intersects all proposed project components. Most of the actual trail treadway has been lost to prior disturbance (road construction/maintenance/use, logging, ice production, gravel mining, etc.) and its exact location is difficult if not impossible to discover. Because of a lack of physical evidence and precise location, delineation of the trail alignment has largely relied on the observations of past investigators who had access to more available physical evidence. That said, selective field survey is recommended to ground-truth current condition and integrity of the Emigrant Trail and inventory any remnant trail segments and associated trail features (e.g., multiple generations of historic trail markers, rust marks, artifact scatters, etc.) that may exist within the project area. In this way, any surviving sections and/or associated artifacts and features can be more effectively protected and managed. If project redesign to avoid impacts to intact segments of trail is not feasible, then resource significance should be evaluated, and mitigation measures should be

implemented as appropriate. Future public interpretation efforts by DPR might consider developing a "memorial" trail through Coldstream Canyon, from Donner State Park up to and over Roller Pass based on expected and actual trail locations (Nesbitt 1990:7). Proper interpretive information would help to mitigate trail location uncertainty.

Several dirt roads of indeterminate age and historical association traverse sections of the project area. Future road maintenance improvements, decommissioning and/or construction should consider the potential for these roads to be historic (i.e., older than 50 years). Historic maps and aerial photographs document a network of historic roads associated with historic logging operations and/or ice works in Coldstream Canyon. These and other archival resources should be consulted prior to any ground disturbing activities, with follow-up field survey and resource evaluations as needed.

Cultural Resources Within or Near the Ponds Restoration Project Component

Archaeological site CA-PLA-2483/H is located within the Upper Pond restoration area and CA-PLA-2484/H is located very close to the northwestern periphery of the Lower Pond restoration area. Locations of both sites should be field verified in relation to proposed project ground disturbance activities. If project redesign to avoid impacts is not feasible, then the site' significance should be evaluated, and appropriate mitigation measures should be implemented.

Both resources are multi-component sites containing evidence of prehistoric and historic Chinese occupation. Archival information documents the presence of Chinese laborers and railroad construction work camps along the route of the transcontinental railroad (CA-PLA-699H). A local newspaper account from 1868 reports a large boarding and lodging house on Cold Creek, where 400 men lived and shoveled snow to keep the railroad clear. Recent archaeological investigations in Coldstream Canyon by DPR (Jaffke 2013) disclosed at least five historic sites containing Chinese ceramics, ones that are diagnostic of Chinese railroad construction/maintenance work camps. Jaffke (2013:49) has emphasized the importance of further study on these Chinese railroad construction camps, as well as historic chain of title research to build a comprehensive land ownership history to better interpret problematic archaeological remains and landscape features.

> The Chinese camp sites identified in Coldstream should be formally evaluated to determine if they are significant as contributing elements to the larger Central Pacific Railroad property. Evaluation would likely include additional archival research to determine camp crew site type…and limited archaeological investigation to define the nature and extent of the surface and subsurface deposits…Work camps are resources consisting of many discrete features and deposits that can collectively contribute to the historical importance of the larger property, in this case the Central Pacific Railroad. These sites lend themselves to comparative studies focused on themes of ethnicity, social/cultural behavior, technology, and cultural geography. [Jaffke 2013:49]
>
> Conducting a chain of title for the earlier periods of land ownership would help to clarify questions of modified landscape features that appear unrelated to the construction of the railroad, historic logging era, or later aggregate quarry activities…Further research at

> Placer County Assessor and Recorder offices may help to answer these questions as well as build a comprehensive land ownership history for Coldstream Canyon. [Jaffke 2013:50-51]

These two sites (CA-PLA-2483/H and -2484/H) also comprise a prehistoric archaeological component. Jaffke (2013:49) has also expressed concerns over their protection and management and lobbied for increased Native American outreach and involvement of Washoe tribal representatives in the project planning and implementation process, to include opportunities for cooperative management based on traditional practices and ecological knowledge on Washoe ancestral lands (Jaffke 2013:50).

> Many of the sites have experienced substantial impact due to past quarrying, logging, and recreational activities as well as casual artifact collecting and probably pothunting events. Resource protection, rather than interpretation, should be the focus of management of significant sites in this zone because of the large number of people passing through this area, and the difficulty in monitoring visitor use and associated activities.

Cultural Resources Within or Near the Stream Restoration Project Component

Archaeological sites CA-PLA-2486/H and CAL-PLA-2489H fall within or very near project ground disturbing activities along the stream channel. CA-PLA-2486/H is a multi-component site associated with both prehistoric and historic Chinese occupation. Protection and management concerns for these archaeological site types are noted above. Site CA-PLA-2486/H is a historic refuse scatter, where historical associations have not yet been determined. The location of these sites should be field verified in relation to proposed project ground disturbance activities. If project redesign to avoid impacts is not feasible, then the sites' significance should be evaluated, and appropriate mitigation measures should be implemented.

The constrictions of Cold and Emigrant creeks at their respective railroad culvert/tunnel crossings have produced incised and unstable creek channels that are causing excessive erosion and aggradation downstream and the degradation of Coldstream Road. Should future restoration work involve any alteration or demolition of these historic railroad structures, assessment by a qualified architectural historian is required.

Unanticipated Discoveries

Although the project area has been subject to systematic surface archaeological investigations, it is possible that buried or concealed cultural resources could be present and detected during project ground disturbance activities. In the event of unanticipated discoveries, project activities should halt near the find and the project sponsor should consult a qualified archaeologist (RPA) to evaluate the resource. If the discovered resource is determined to be significant, mitigation measures should devise a mitigation plan submitted for approval by the reviewing agency. Mitigation (if appropriate) should be implemented before ground-disturbing work near the resource find can continue.

In the unlikely event that human remains are encountered during the proposed project, all activities should stop, and the County Coroner's Office should be contacted pursuant to Public

Resources Code (PRC) Section 7050.5. If the remains are determined to be of Native American origin, the Native American Heritage Commission should be notified within 24 hours of determination, as required by PRC Section 5097.94, 5097.98 and 5097.99. The Commission should notify designated "Most Likely Descendants", who should provide recommendations for the proper treatment of the burial remains within 24 hours.

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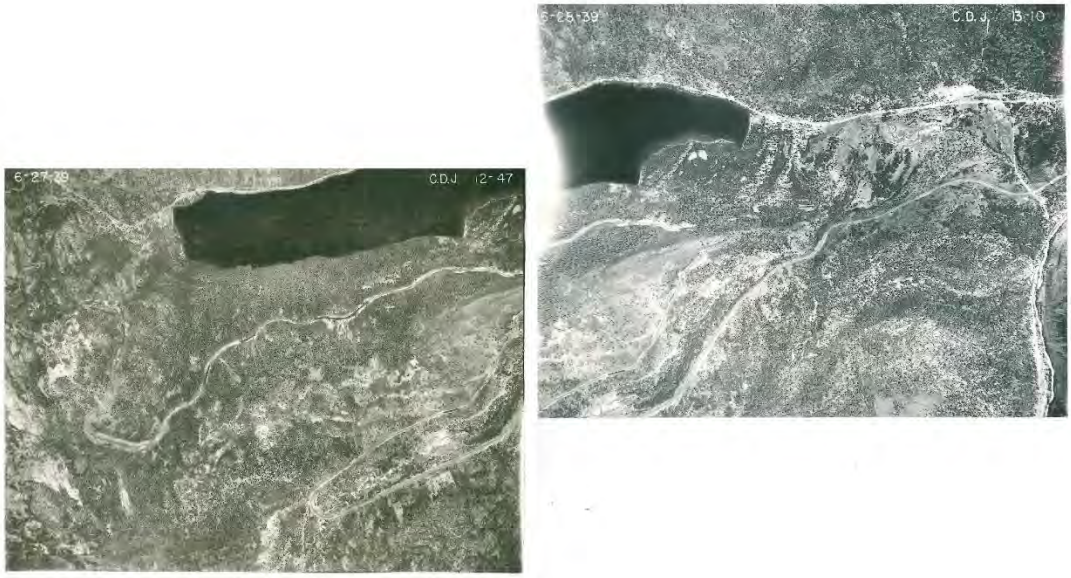
APPENDIX 1

Historic Maps



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Map 1. 1939 aerial photo

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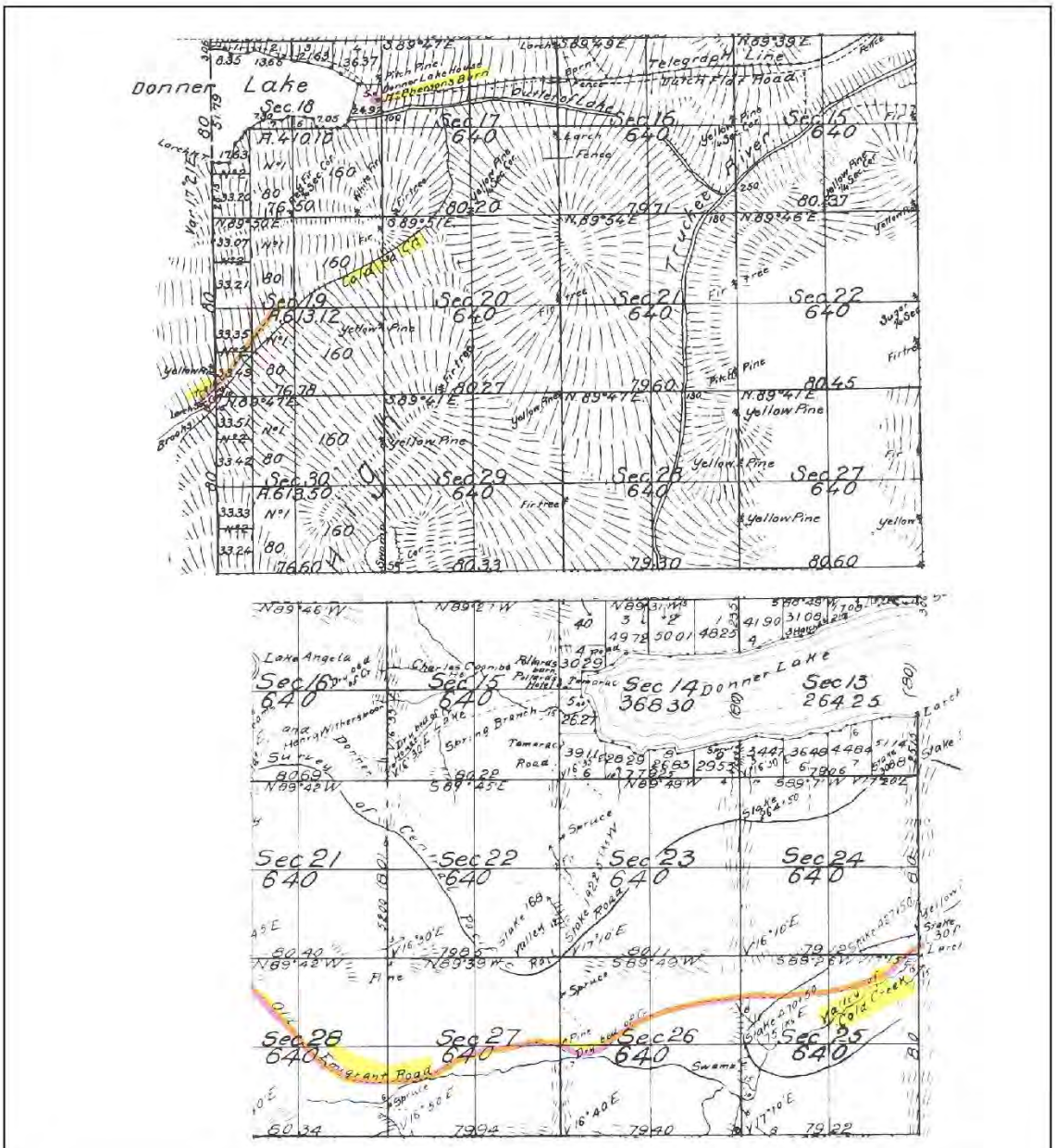
Map 2. 1972 aerial photo

N

Created Date: 01-28-2019
Revised Date: 02-06-2019



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Map 3. General Land Office Survey
Plat 1865

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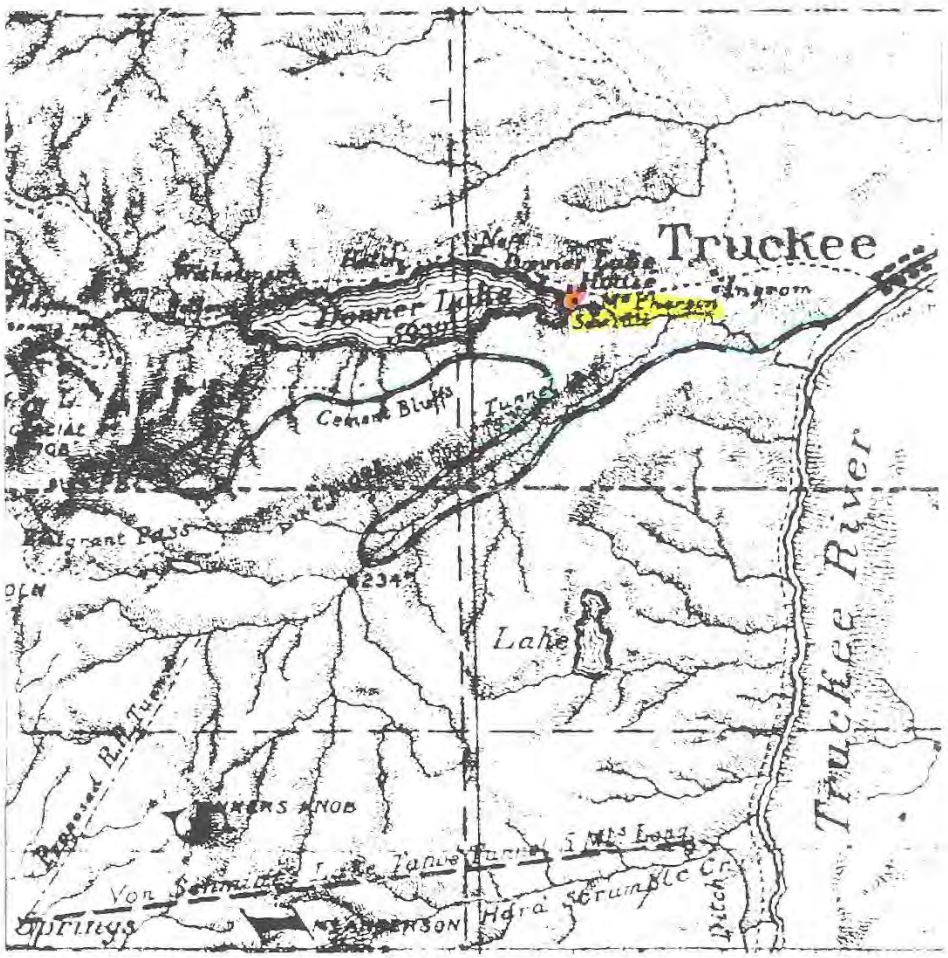

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Map 4. Topographic Map of Lake Tahoe and Surrounding Country 1874

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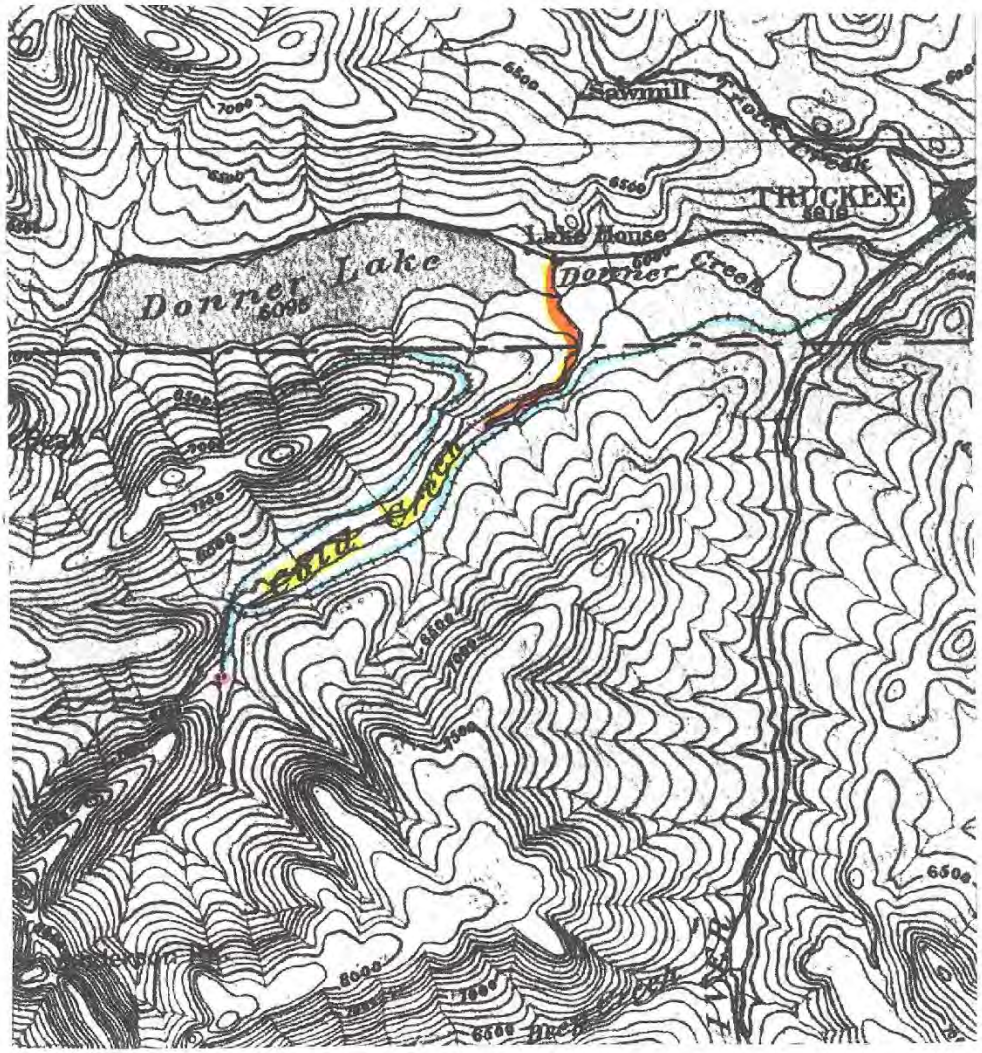
Revised Date: 02-06-2019



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Map 5. USGS Truckee Sheet 1889

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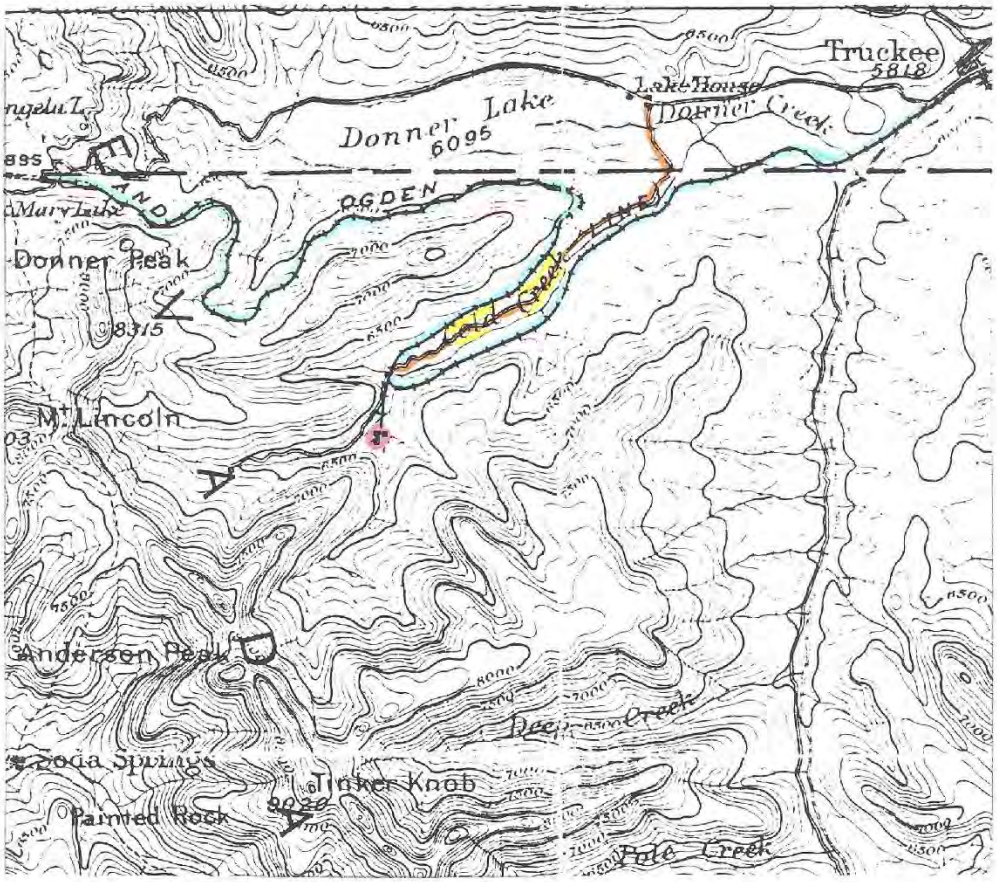
Revised Date: 02-06-2019



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Map 6. USGS Truckee Sheet 1897

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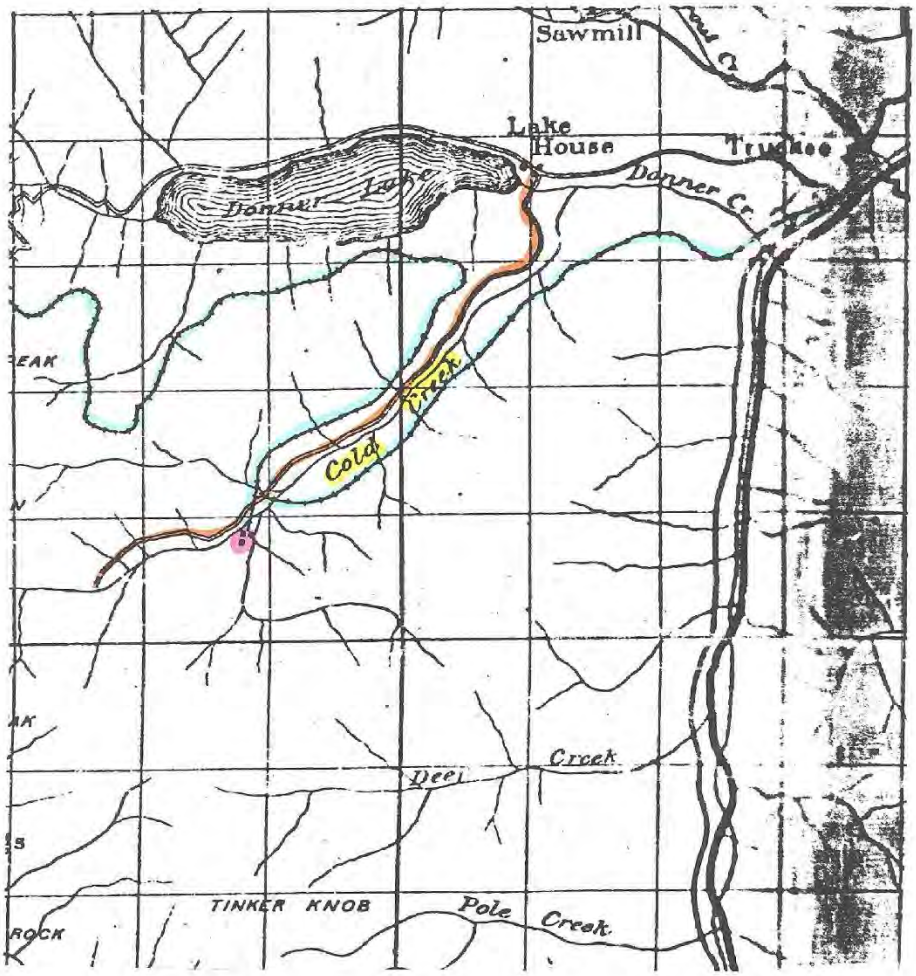

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Map 7. Tahoe National Forest 1915

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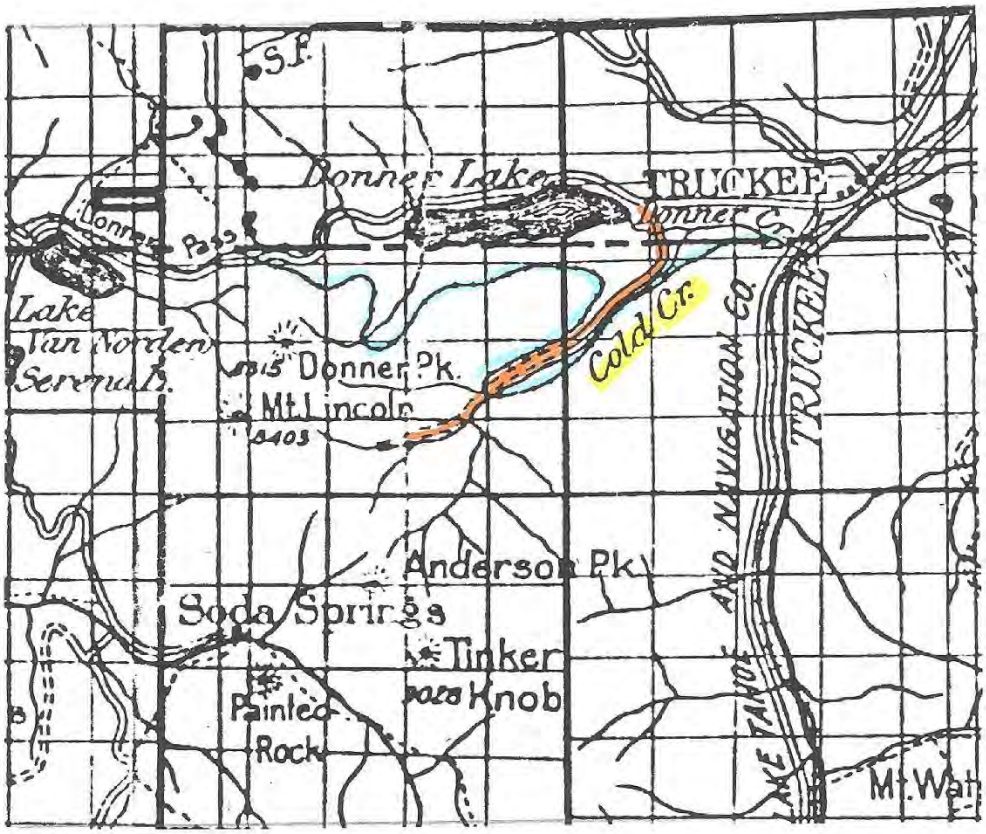
Revised Date: 02-06-2019



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Map 8. Tahoe National Forest 1921

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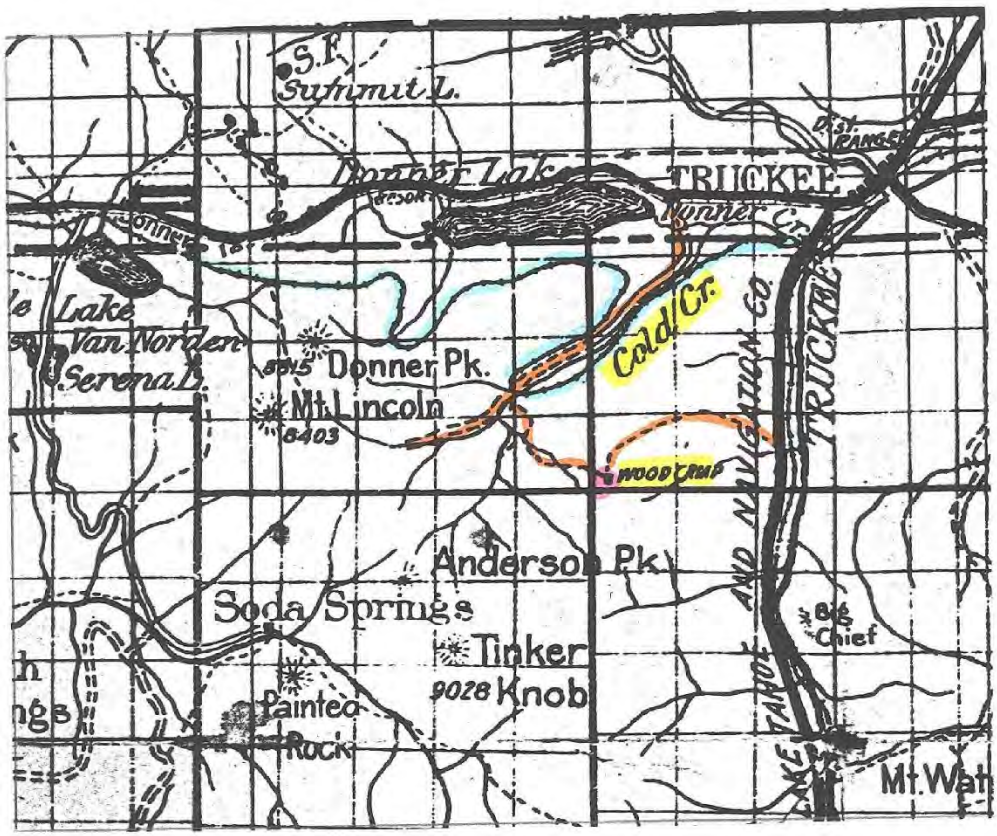
Revised Date: 02-06-2019



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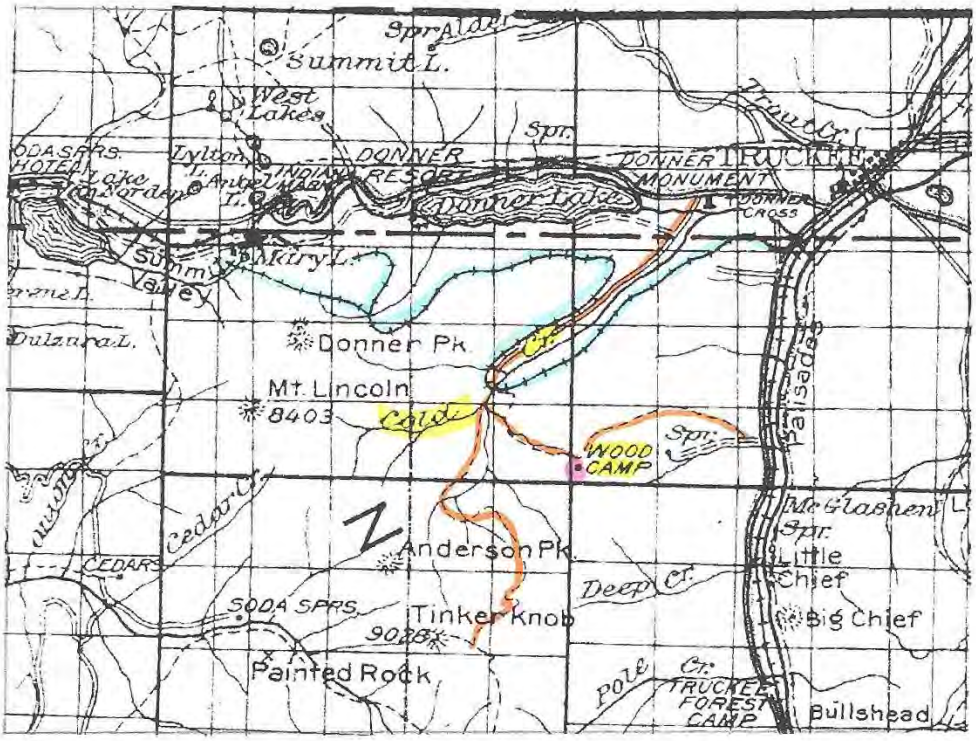
Map 9. Tahoe National Forest 1926

Created Date: 01-28-2019
Revised Date: 02-06-2019



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Map 10. Tahoe National Forest 1930

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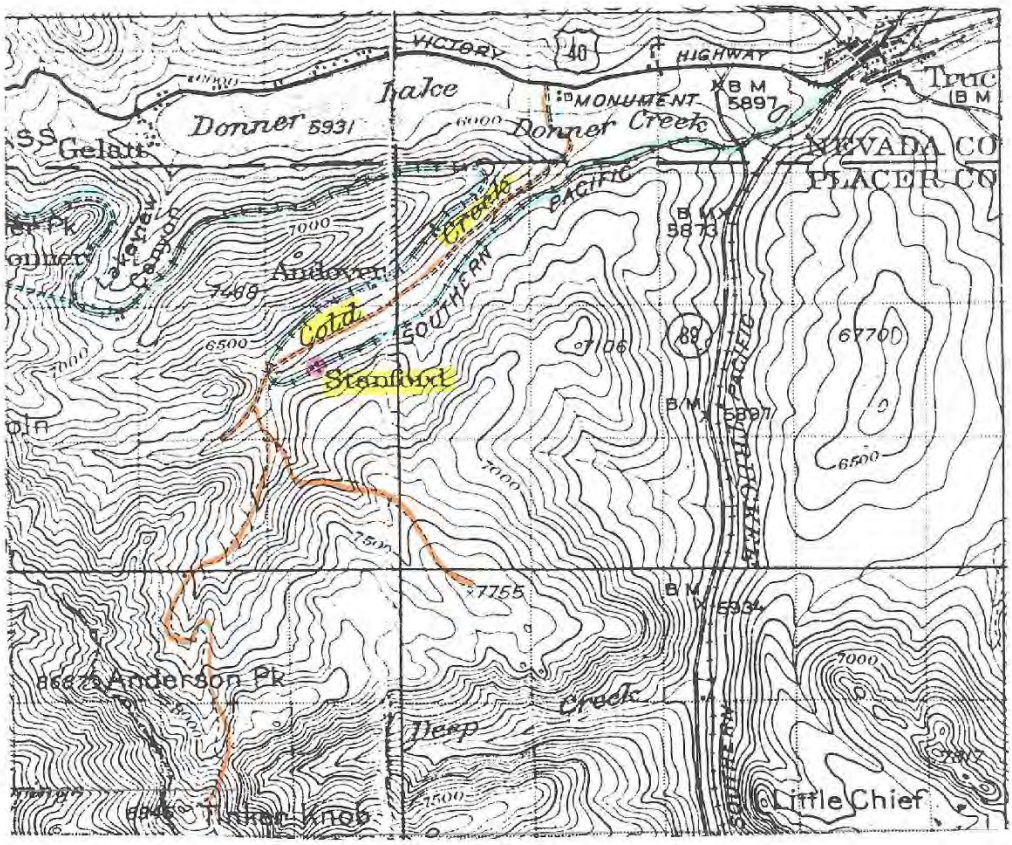
Revised Date: 02-06-2019



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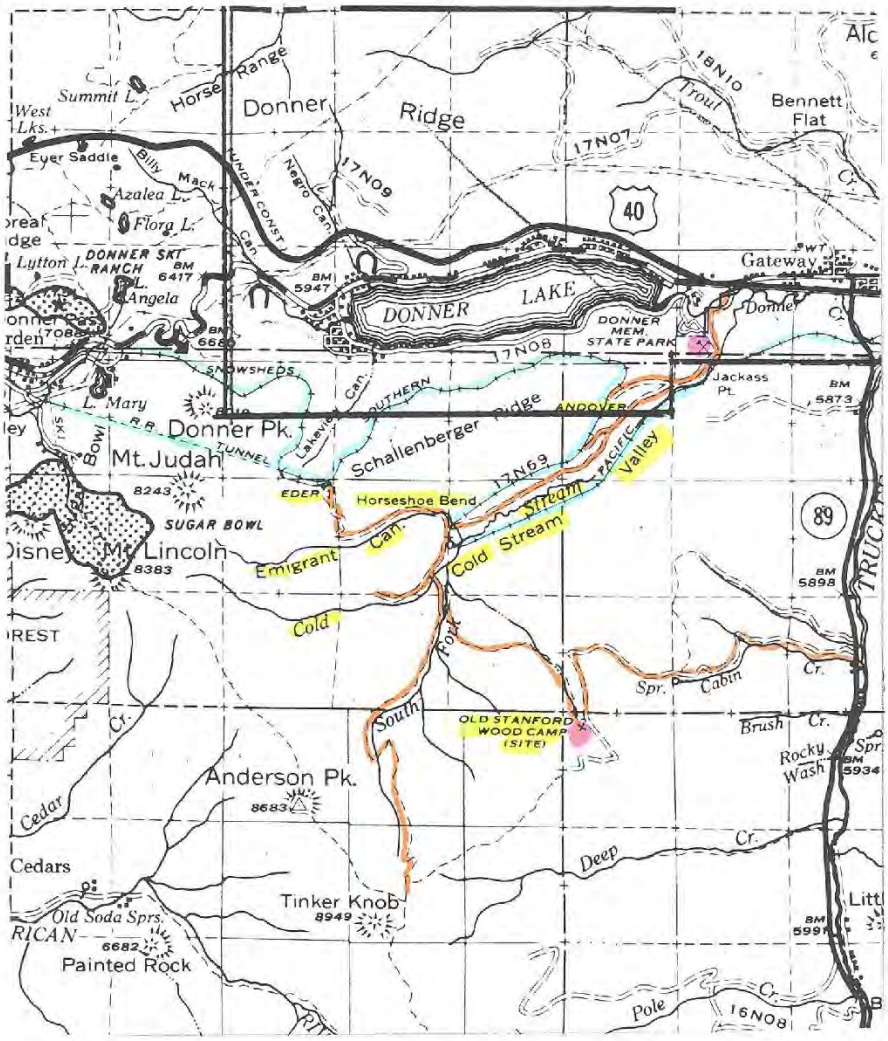
Cultural Resource Study-Prefield Research

Map 11. USGS Truckee Quad 1940
(1946/1951 reprint)

Created Date: 01-28-2019
Revised Date: 02-06-2019



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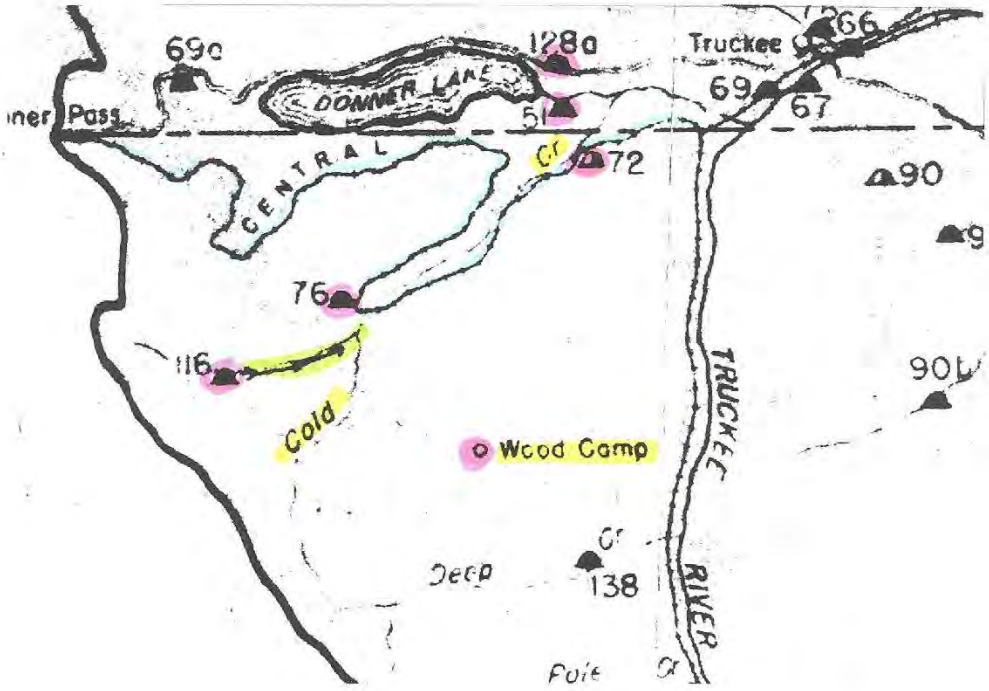
Coldstream Canyon Restoration
Project Design Phase 1
Cultural Resource Study-Prefield Research

Map 12. Tahoe National Forest
Truckee Ranger District 1962

Created Date: 01-28-2019
Revised Date: 02-06-2019



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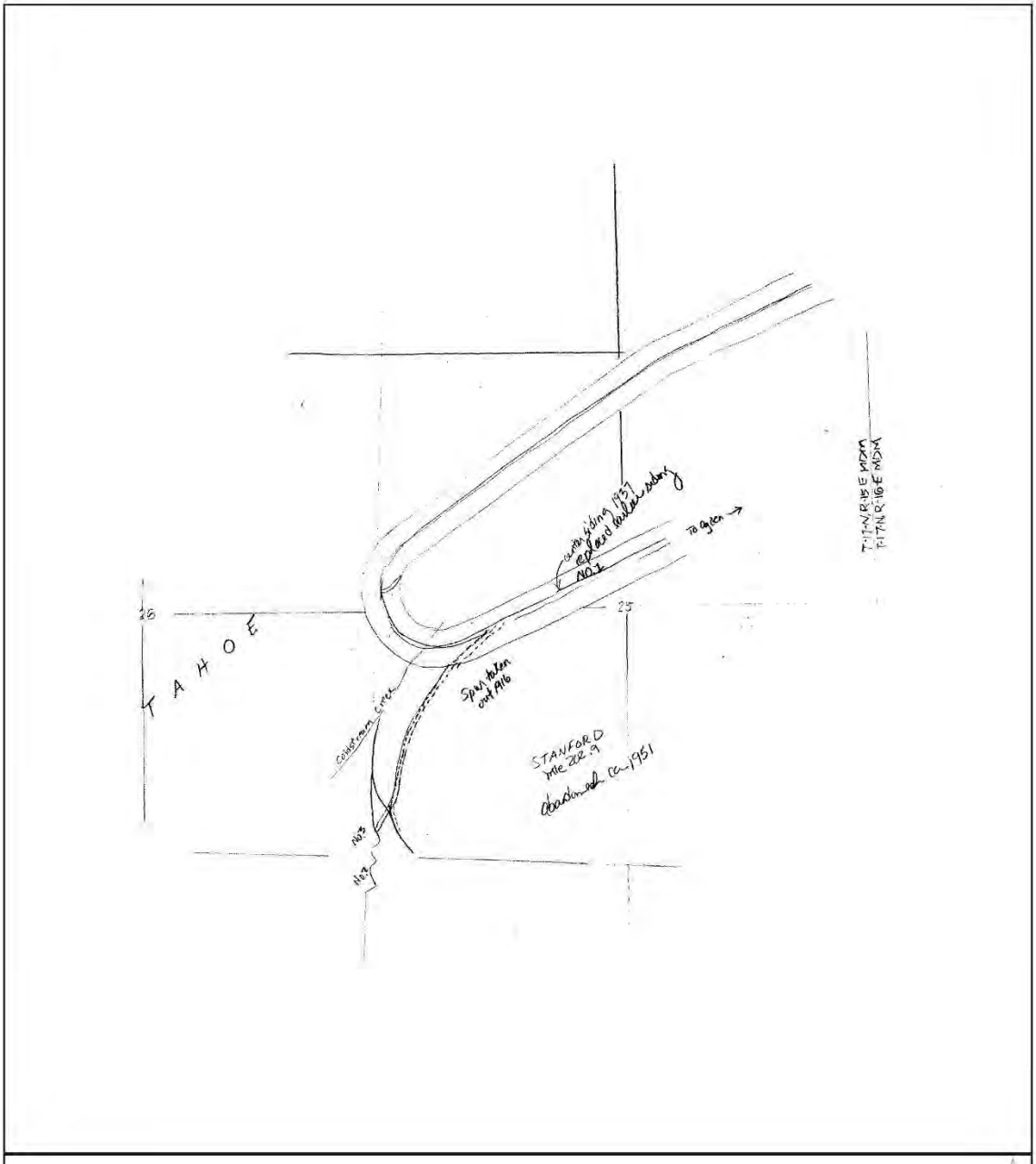
Coldstream Canyon Restoration
Project Design Phase 1
Cultural Resource Study-Prefield Research

Map 13. Lumbering History of the Truckee River Basin 1856-1936 (Knowles 1942)

Created Date: 01-28-2019
Revised Date: 02-06-2019



Susan Lindström, Ph.D.,
Consulting Archaeology

Battle Born GIS

Coldstream Canyon Restoration
Project Design Phase 1
Cultural Resource Study-Prefield Research

Map 14. Right-of-Way and Track Map
Southern Pacific Company (undated)

Created Date: 01-28-2019
Revised Date: 02-06-2019

APPENDIX 2

North Central Information Center Correspondence

California Historical Resources Information System

NORTH CENTRAL INFORMATION CENTER

AMADOR
EL DORADO
NEVADA
PLACER
SACRAMENTO
YUBA

California State University, Sacramento
6000 J Street, Folsom Hall, Suite 2042
Sacramento, California 95819-6100
phone: (916) 278-6217
fax: (916) 278-5162
email: ncic@csus.edu

12/21/2018

NCIC File No.: PLA-18-121

Susan Lindstrom
Consulting Archaeologist
P.O. Box 3324
Truckee, CA 96160

Re: Coldstream Canyon Restoration and Project Design Phase 1 Project

The North Central Information Center received your record search request for the project area referenced above, located on the Norden and Truckee USGS 7.5' quads. The following reflects the results of the records search for the project area and a 1/8-mi radius.

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☒ shapefiles

Resources within project area:	P-31-964
Resources outside project area, within radius:	P-31-2734
Reports within project area:	8619 9958 10434 11366 11886
Reports outside project area, within radius:	7331 7340 7341

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed/NA
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed/NA

OHP Historic Properties Directory:	☒ enclosed	☐ not requested	☐ nothing listed/NA
Archaeological Determinations of Eligibility:	☒ enclosed	☐ not requested	☐ nothing listed/NA
CA Inventory of Historic Resources (1976):	☒ enclosed	☐ not requested	☐ nothing listed/NA
Caltrans Bridge Survey:	☐ enclosed	☐ not requested	☒ nothing listed/NA
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed/NA
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Soil Survey Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,

Paul Rendes, Assistant Coordinator
North Central Information Center

APPENDIX 3

Native American Correspondence

Susan Lindström, Ph.D.

Consulting Archaeologist

P.O. Box 3324

Truckee CA 96160

530-587-7072

susanglindstrom@gmail.com

DATE: December 17, 2018

TO: Native American Heritage Commission

1550 Harbor Boulevard, Suite 100

West Sacramento, CA 95691

916-373-3710; 916-373-5471 (fax)

nahc@nahc.ca.gov

RE: Coldstream Canyon Restoration and Project Design Phase 1 Project

Cultural Resource Study

I am writing to request a records search of the Sacred Land Files. The Truckee River Watershed Council (TRWC), along with partner California Department of State Parks (CDSP) have planned several restoration projects within Coldstream Canyon. The goal of the restoration is to reduce flooding and erosion and protect and enhance riparian habitat. The project is located in Placer County about one mile southwest of the Town of Truckee (Township 17 North/Range 15 East/ Sections 24 & 25, Township 17 North/Range 16 East/Sections 19 & 30). (See accompanying map.)

I wish to bring this project to your attention and I invite your opinions, knowledge and sentiments regarding any potential concerns for traditional Native American lands within the project vicinity.

Thank you very much.

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

January 3, 2019

Susan Lindstrom
Consulting Archeologist

Sent by Email: susanglindstrom@gmail.com
Number of Pages: 2

RE: Coldstream Canyon Restoration and Project Design Phase 1, Truckee, Placer County

Dear Ms. Lindstrom:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult.** If a response has not been received within two weeks of notification, the NAHC 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 via email: Sharaya.Souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Analyst
(916) 573-0168

Native American Heritage Commission
Native American Contacts List
1/3/2019

Colfax-Todds Valley Consolidated Tribe
Pamela Cubbler, Treasurer
P.O. Box 4884 Miwok
Auburn CA 95604 Maidu
PCubbler@colfaxrancheria.com
(530) 320-3943

Colfax-Todds Valley Consolidated Tribe
Clyde Prout, Chairman
P.O. Box 4884 Miwok
Auburn CA 95604 Maidu
miwokmaidu@yahoo.com
(916) 577-3558

Shingle Springs Band of Miwok Indians
Regina Cuellar, Chairperson
P.O. Box 1340 Miwok
Shingle Springs CA 95682 Maidu
rcuellar@ssband.org
(530) 387-4970
(530) 387-8067 Fax

Tsi Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 510 Maidu
Browns Valley CA 95918
tsi-akim-maidu@att.net
(530) 274-7497

Tsi Akim Maidu
Don Ryberg, Chairperson
P.O. Box 510 Maidu
Browns Valley CA 95918
tsi-akim-maidu@att.net
(530) 274-7497
(530) 559-8595

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road Maidu
Auburn CA 95603 Miwok
(530) 883-2390 Office
(530) 883-2380 Fax

Washoe Tribe of Nevada and California
Darrel Cruz, Cult Res Dept. THPO
919 Highway 395 North Washoe
Gardnerville NV 89410
Darrel.Cruz@washoetribe.us
(775) 265-8600 x10714
(775) 546-3421 Cell

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

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

This list is only applicable for contacting local Native American Tribes for the proposed: Coldstream Canyon Restoration and Project Design Phase 1, Truckee, Placer County.

Susan Lindström, Ph.D.

Consulting Archaeologist

P.O. Box 3324

Truckee CA 96160

530-587-7072

530-713-1920 (cell)

susanglindstrom@gmail.com

DATE: January 7, 2019

TO: Pamela Cubbler, Treasurer

(Clyde Prout, Chairman)

Colfax-Todds Valley Consolidated Tribe

P.O. Box 4884

Auburn, CA 95604

pcubbler@colfaxrancheria.com (miwokmaidu@yahoo.com)

530-320-3943; 530-367-2093 (home); (916-577-3558)

RE: Coldstream Canyon Restoration and Project Design Phase 1 Project

The Truckee River Watershed Council (TRWC), along with partner California Department of State Parks (CDSP) have planned several restoration projects within Coldstream Canyon. The goal of the restoration is to reduce flooding and erosion and protect and enhance riparian habitat. The project is located in Placer County about one mile southwest of the Town of Truckee (Township 17 North/Range 15 East/ Sections 24 & 25, Township 17 North/Range 16 East/Sections 19 & 30). (See accompanying map.)

I am following up on the Native American Heritage Commission's recommendation to reach out to tribes/individuals that may have information about this project. I wish to bring this project to your attention, and I invite your opinions, knowledge and sentiments regarding any potential concerns for traditional Native American lands within the project vicinity.

Thank you very much.

Susan Lindström, Consulting Archaeologist

Susan Lindström, Ph.D.

Consulting Archaeologist

P.O. Box 3324

Truckee CA 96160

530-587-7072

530-713-1920 (cell)

susanglindstrom@gmail.com

DATE: January 7, 2019

TO: Grayson Coney, Cultural Director

(Don Ryberg, Chairperson)

Tsi Akim Maidu

P.O. Box 510

Browns Valley, CA 95918

530-274-7497; Tsi-akim-maidu@att.net

RE: Coldstream Canyon Restoration and Project Design Phase 1 Project

The Truckee River Watershed Council (TRWC), along with partner California Department of State Parks (CDSP) have planned several restoration projects within Coldstream Canyon. The goal of the restoration is to reduce flooding and erosion and protect and enhance riparian habitat. The project is located in Placer County about one mile southwest of the Town of Truckee (Township 17 North/Range 15 East/ Sections 24 & 25, Township 17 North/Range 16 East/Sections 19 & 30). (See accompanying map.)

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Thank you very much.

Susan Lindström

Consulting Archaeologist

Susan Lindström, Ph.D.
Consulting Archaeologist

P.O. Box 3324
Truckee CA 96160
530-587-7072
530-587-7072 (cell)
susanglindstrom@gmail.com

DATE: January 7, 2019

TO: Darrel Cruz, THPO
Cultural Resources Department
919 Highway 395 South
Gardnerville, NV 89410
darrel.cruz@washoetribe.us
775-782-0014; 775-546-3421 (cell)

RE: Coldstream Canyon Restoration and Project Design Phase 1 Project

The Truckee River Watershed Council (TRWC), along with partner California Department of State Parks (CDSP) have planned several restoration projects within Coldstream Canyon. The goal of the restoration is to reduce flooding and erosion and protect and enhance riparian habitat. The project is located in Placer County about one mile southwest of the Town of Truckee (Township 17 North/Range 15 East/ Sections 24 & 25, Township 17 North/Range 16 East/Sections 19 & 30). (See accompanying map.)

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Thank you very much.

Susan Lindström
Consulting Archaeologist

Susan Lindström, Ph.D.

Consulting Archaeologist

P.O. Box 3324

Truckee CA 96160

530-587-7072

530-713-1920 (cell)

susanglindstrom@gmail.com

DATE: January 7, 2019

TO: Regina Cuellar, Chairperson

Shingle Springs Band of Miwok Indians

P.O. Box 1340

Shingle Springs, CA 95682

rcuellar@ssband.org; 530-387-4970

RE: Coldstream Canyon Restoration and Project Design Phase 1 Project

The Truckee River Watershed Council (TRWC), along with partner California Department of State Parks (CDSP) have planned several restoration projects within Coldstream Canyon. The goal of the restoration is to reduce flooding and erosion and protect and enhance riparian habitat. The project is located in Placer County about one mile southwest of the Town of Truckee (Township 17 North/Range 15 East/ Sections 24 & 25, Township 17 North/Range 16 East/Sections 19 & 30). (See accompanying map.)

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Thank you very much.

Susan Lindström

Consulting Archaeologist

Susan Lindström, Ph.D.

Consulting Archaeologist

P.O. Box 3324

Truckee CA 96160

530-587-7072

530-713-1920 (cell)

susanglindstrom@gmail.com

DATE: January 7, 2019

TO: Gene Whitehouse, Chairperson

United Auburn Indian Community of the Auburn Rancheria

10720 Indian Hill Road

Auburn, CA 95603

530-883-2390

RE: Coldstream Canyon Restoration and Project Design Phase 1 Project

The Truckee River Watershed Council (TRWC), along with partner California Department of State Parks (CDSP) have planned several restoration projects within Coldstream Canyon. The goal of the restoration is to reduce flooding and erosion and protect and enhance riparian habitat. The project is located in Placer County about one mile southwest of the Town of Truckee (Township 17 North/Range 15 East/ Sections 24 & 25, Township 17 North/Range 16 East/Sections 19 & 30). (See accompanying map.)

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Thank you very much.

Susan Lindström

Consulting Archaeologist

MIWOK MAIDU United Auburn Indian Community of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Calvin Moman, Secretary | Jason Camp, Treasurer | Gabe Cayton, Council Member

January 16, 2019

Susan Lindstrom
Susan Lindstrom, Consulting Archaeologist
P.O. Box 3324
Truckee, CA 96160

Subject: Coldstream Canyon Restoration and Project Design Phase 1

Dear Susan Lindstrom,

Thank you for providing additional information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and whose service area includes El Dorado, Nevada, Placer, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

We are currently reviewing the information provided by your agency in order to ascertain whether the project could affect cultural resources that may be of importance to the UAIC. Please continue to send us copies of the proposed project's environmental documents so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. The information gathered will provide us with a better understanding of the project and the cultural resources on site and is invaluable for consultation purposes. Finally, please contact us if you find any Native American cultural resources in, or around, your project area.

Thank you again for taking these matters into consideration, and for involving the UAIC in the planning process. We look forward to reviewing the additional documents requested. Please contact Melodi McAdams, Cultural Resources Supervisor, at (530) 328-1109 or email at mmcadams@auburnrancheria.com if you have any questions.

Sincerely,

Gene Whitehouse,
Chairman

CC: Matthew Moore, Tribal Historic Preservation Officer

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

APPENDIX 4

Resume

RESUME

Susan Lindström, Ph.D.
Box 3324, Truckee CA 96160
530-587-7072 (530-713-1920 cell)
susanglindstrom@gmail.com

Education

Ph.D. Archaeology 1992 - University of California Davis
M.A. Anthropology 1978 - University of California Davis
B.A. Anthropology 1972 - University of California Berkeley

Expertise

Cultural Resource Management
Archaeology (prehistoric and historic period)
History and archival records research
Ethnography, ethnohistory, oral history
Native American consultation
Interpretation and public education

Professional Organizations

Register of Professional Archaeologists
(member since 1982)
Society for Historical Archaeology
Society for California Archaeology
Various county and regional historical societies

Lindström's qualifications include archaeological field work and analytical and archival research in the prehistory and history of the western United States including California, the northern and western Great Basin in Nevada and Oregon, and the Cascade Range and the Columbia River Plateau in Oregon and Washington. Her area of expertise is centered in the north-central Sierra where she has over 43 years of experience in historic preservation matters on a local, state and federal level. She has resided in the Tahoe Sierra and accrued full-time professional experience here since 1973.

Heritage Resource Management -- As Forest Archaeologist from 1973 until 1978 for the Tahoe National Forest and "zone" Archaeologist for the El Dorado National Forest and Lake Tahoe Basin Management Unit, and as District Archaeologist for the Bureau of Land Management in 1978 (Burns, Oregon), Lindström initiated and implemented heritage resource programs for the inventory, protection, management and interpretation of prehistoric and historic heritage resources. She conducted training sessions on heritage resource identification and on antiquities legislation.

Contracting and Consulting -- Between 1980 and the present time, as a private consultant, Lindström has conducted and/or supervised fieldwork, data analysis, archival research, and report preparation for hundreds of federal, state, county, and private projects within the north-central Sierra and adjoining regions in California and Nevada. During this time, she has served as an expert witness on historic and prehistoric resources involving California State Supreme Court cases within the Tahoe Sierra.

Teaching -- Lindström instructed introductory level courses in cultural and physical anthropology and archaeology at the University of Nevada, Reno and the University of California, Davis and was appointed as an adjunct professor to the University of Nevada, Reno in 2010.

****Research, Publications and Papers*** -- Academic and heritage management reports pertain to regional prehistory and history, as well as print and video publications for the popular audience (including research findings on the Donner Party, California gold mining, Washoe Indians, and California ethnobotany).

Secretary of Interior Standards: Archaeology and History (Prehistory, Ethnography, Ethnohistory, Ethnobotany, History, Paleoenvironmental Studies)

Lindström's 43 years of full-time professional experience in archaeological research, administration and management at the supervisory level involves the study of resources of the prehistoric, ethnographic, ethnohistoric, and historic period. In the Lake Tahoe Basin and Truckee Basin alone, Lindström has supervised and/or participated in the cumulative survey of nearly 50,000 acres. Her work in the adjoining sierran foothills and valleys approaches an additional 25,000 acres.

Prehistory. Experience in prehistoric archaeology largely pertains to the study of hunter-gatherer groups in the far west. Her surveys and excavations center upon the prehistoric ancestors of the Washoe and Maidu Indians of the north-central Sierra.

Lindström's Ph.D. dissertation focused on Washoe fishing in the Truckee River Drainage Basin. Her M.A. thesis explored high-elevation prehistoric land use in the Truckee-Tahoe Sierra.

During the 1990s she participated in the development of a research design for the Framework for Archaeological Resource Management (FARM), a heritage resource management document used by all north-central sierran forests.

She is presently a reviewer for the *Journal of California Archaeology*.

Ethnography, Ethnohistory, Ethnobotany. Lindström has developed an extensive knowledge of Washoe and Maidu territory and has maintained a good working relationship with these groups beginning in 1973. Since 2000 she has collaborated with prominent Washoe ethnographers such as Warren D'Azevedo and Merideth (Penny) Rucks. Lindström conducted and coordinated ethnographic research to develop a management plan for Cave Rock, a high-profile Washoe Traditional Cultural Property within the Lake Tahoe Basin. She authored a chapter on Native Californian ethnobotany that appears in a standard source book on California vegetation.

History. Experience in historic sites archaeology has focused on resources associated with the study of mining, logging, ranching, transportation, and water management resources. Since 1991 Lindström has conducted excavations at several rural work camps and industrial sites, many involving Chinese wood cutters and colliers. In 1987 and 1990 she field-directed excavations at two Donner Party camps (Murphy's Cabin and Alder Creek) and co-authored a book detailing the archival research, archaeology, architecture, dendrochronology, and zooarchaeology surrounding the tragedy.

Paleoenvironmental Studies. Lindström is a contributor to the 1997 congressionally funded, multi-disciplinary study assessing the environmental health and ecosystem management of the Sierra Nevada (*Sierra Nevada Ecosystem Project* [SNEP]) and the pilot case study focusing on the Lake Tahoe Basin.

She is also a contributor to the *Lake Tahoe Watershed Assessment* study, published in 2000 by the Pacific Southwest Research Station, USDA Forest Service, in collaboration with the Pacific Southwest Region of the USDA Forest Service, the Tahoe Regional Planning Agency, the University of California at Davis, the University of Nevada at Reno, and the Desert Research Institute, Reno, Nevada. The study was mandated as part of former President Clinton's actions to protect Lake Tahoe.

Through a series of snorkel and SCUBA surveys during the 1980s and 1990s in Lake Tahoe and its tributary lakes, Lindström investigated lake level changes and explored submerged remnant forests and prehistoric milling features as paleoenvironmental indicators over the past 6000 years. She presented her findings in scientific journals as a co-author with geologists, hydrologists and limnologists. Her work was also featured in *National Geographic* magazine (March 1992).

Secretary of Interior Standards: Closely Related Fields

Lindström's 43 years of full-time experience also entails research, writing, inventory, evaluation, data recovery, and management in closely related fields pertaining to the "built environment." Her work falls within the historical context of mining, logging, water supply engineering, and ranching landscapes, as well as transportation and communications networks, and town sites. Evaluation and data recovery have been directed to 19th and 20th century structural remains for the following resource types: Chinese/Basque/miner cabins; bake ovens/hearths; sawmills; railroad grades and camps; flumes; ditches; pipelines; dams; reservoirs; water tanks; ice works; ranch complexes; charcoal kilns; mine features; trails/roads/highways; utility lines; and fences.

For her projects involving more complex structural properties such as intact standing buildings, bridges and other architectural features, Lindström has had the opportunity to collaborate and learn from prominent architectural historians, beginning in the early 1980s with the Town of Truckee National Register District nomination process up until the present time.

Lindström also has experience with several historic preservation projects. She authored the heritage resource components for local community plans (from 1989 through 2005) and for county general plans (beginning in 1991). During the 1980s she served as a charter member of the Truckee Historical Preservation Advisory Council. She assisted in the preparation of the Truckee Historic Preservation Plan in 2009, followed by the formal National Register District nomination and subsequent Truckee Streetscape project. She served as a member of the "Placer County Department of Museums Collections Management Task Force" in 2000 and is currently an advisor to the California Department of Parks and Recreation (Sierra District) for their upcoming museum at Donner Memorial State Historic Park.

*available upon request

Appendix C
Preconstruction Biological Survey Results

SIERRA ECOTONE SOLUTIONS
530.416.2440 • PO Box 1297 Zephyr Cove, NV 89448 • SierraEcotoneSolutions.com

25 October 2019

Ms. Carol Beahan
Wildscape Engineering
1901 Lisa Maloff Way
Suite 108
South Lake Tahoe, CA 96150
-via e-mail-

SUBJECT: 2018-2019 COLDSTREAM CANYON WATERSHED RESTORATION PROJECT PRECONSTRUCTION BIOLOGICAL SURVEYS RESULTS

Ms. Beahan:

This memorandum is to inform you of the completion of biological surveys for Sierra Nevada yellow-legged frog, willow flycatcher and mountain beaver surveys. The Coldstream Canyon Watershed Restoration Project area was surveyed for the presence of the above wildlife species/types in late 2018 and 2019. Each of the three survey types are described below and the results summarized.

Sierra Nevada Yellow-Legged Frog
A visual encounter survey (following USFS VES protocol dated 2005) was performed in the Coldstream Canyon Watershed Restoration Project area including the 10 reaches in Cold Creek proposed for restoration, the Coldstream Road crossing of Emigrant Creek, Coldstream Road decommission and realignment, Upper and Lower Ponds and the Ponds Road culvert removal and areas immediately adjacent (within 100 feet) to the proposed activities. A total of three (3) surveys were performed on 11 September 2018, 11 June and 25 June 2019.

The SNYLF is strongly associated with montane riparian habitats in lodgepole pine, yellow pine sugar pine, white fir whitebark pine and wet meadow vegetation types (Zeiner et al. 1988). Typically, SNYLFs prefer well illuminated, sloping banks of meadow streams, riverbanks, isolated pools, and lake borders with vegetation that is continuous to the water's edge. In high elevations, breeding occurs between May and August as soon as the meadows and lakes are free of snow and ice. Sierra Nevada yellow-legged frogs usually lay their eggs in clusters submerged along stream banks or on emergent vegetation. Tadpoles and adults of this species overwinter in deep pools with undercut banks that provide cover. Adults are highly aquatic and are typically associated with near shore areas for reproduction, cover, foraging, and over-wintering. They are

most abundant along lake shores and low gradient streams with irregular shores and rocks (Mullaly and Cunningham 1956). It is believed that adult frogs use the deepest sections of lakes for overwintering (Bradford et al. 1993).

The habitat present along Cold Creek is marginally suitable for SNYLF as there are limited pools present in the late summer/fall when much of the water is subsurface and therefore not available for over-wintering individuals. The margins along the upper and lower ponds are also marginally suitable due to the uniformity of the shoreline and limited variability of micro-habitats.

The project sites and surrounding areas were surveyed prior to any ground disturbing activities for the presence of amphibian species using the Visual Encounter Survey (VES) methodology as noted above. No Sierra Nevada yellow-legged frog were observed during the three visits. Other non-sensitive amphibian species were observed in the project area: Sierran treefrog (*Pseudacris sierra*), Sierra garter snake (*Thamnophis couchii*), and rubber boa (*Charina bottae*). VES survey sheets are provided in Appendix A.

Willow Flycatcher
The willow flycatcher surveys adhered to *A Willow Flycatcher Survey Protocol for California* (Bombay et al. 2000). The primary objective of the protocol is to determine the presence or absence of willow flycatchers at a given site during the year in which surveys are completed.

The willow flycatcher survey was performed on State Park Lands located within the project area and included the 10 reaches identified along Cold Creek for restoration and both the Upper and Lower Ponds. A map of the areas surveyed are included in Appendix B.

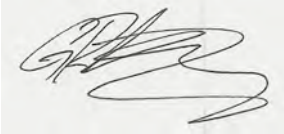
Locations of survey points were placed in the field in areas of suitable habitat. Vegetation types in the riparian area along Cold Creek vary between patchy stands of *Salix, Alnus, Populus* and conifers. Survey points were only called in riparian deciduous scrub of either *Salix, Alnus* or *Populus* species.

Two surveys are required to document presence or absence. One survey must be conducted between Survey Period 2 (June 15-25); the other during either Survey Period 1 (June 1-14) or Survey Period 3 (June 26-July15). For this project the first surveys were conducted on 18 and 19 June 2019 during Survey Period 2 and the second surveys were conducted on 5 and 6 July 2019 during Survey Period 3. No willow flycatchers were detected during the surveys. Survey field data survey forms are included in Appendix A.

Mountain Beaver
Surveys searching for the presence of mountain beaver (*Aplodontia rufa*). The project areas (Upper and Lower Ponds, 10 reaches in Cold Creek, the Coldstream Road crossing of Emigrant Creek, Ponds Road culvert removal and the Coldstream Road decommission and realignment) were surveyed for the individuals and for the den locations that are

identifiable by the presence of vegetation stored at the burrow entrance. Burrows are located in close proximity to water in montane riparian habitat. No mountain beaver or evidence of mountain beaver burrows or den sites were observed.

Regards,



Garth Alling
Principal Biologist

Appendices

References:

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Appendix A – Visual Encounter Survey Data Forms and Willow Flycatcher Field Survey Forms

Visual Encounter Survey Data Form

☐ Bullfrog Survey

Site Name: COLDSTREAM CANYON **Date:** 11 SEP 2018 **Occurrence ID:** _____

Observers: G. ALLING **GPS File:** _____

Start Time: 1010 **End Time:** 1722 **Survey Time (Min):** 432

Zone: 10S **UTM Starting Point: N** 4352622 **E** 0735315 **Elevation (m):** 6220

Zone: 10S **UTM Ending Point: N** 4354855 **E** 0737684 **Elevation (m):** 6138

Only take UTMs if this is a new survey location

Water Temp In (°C): 58° **Water Temp Out (°C):** 60°

Air Temp In (°C): 70°F **Air Temp Out (°C):** 72°F

Type of Survey (circle one): (DAY) NIGHT **Site (circle one):** BREEDING NON-BREEDING

Survey Number (circle one): (1) 2 **Moon phase (night surveys only):** _____

Cloud Cover (%): Start: 0 **End:** 0 Clear Overcast Partly Cloudy

Wind (Moving): (Calm) (Light) Strong

Precipitation (current): (None) Drizzling Sprinkling Raining Snowing

Precipitation (last 48 hours): (None) Drizzling Sprinkling Raining Snowing

Watershed Condition: (Natural) Urbane Grazed (Logging) Burned Other: TR / ROADS

Habitat: (Stream) Wetland Meadow Pond Lake

Predominant Vegetation (ex. GF/NO/CF): _____ **% Aquatic Vegetation:** _____

Predominate Substrate: (DRY Meadow) (Silt) (Sand) Pebble (Cobble) Boulder Bedrock

Water Source: Meadow (H_2O present) (Lentic (standing)) Lotic (flowing) Dry (No H_2O)

Water Turbidity: **(Clear)** 1 (2) 3 4 5 **(Turbid)**

Fish Presence: (No) Yes **If Yes, Species Code:** _____ **Density:** Low Med High

Species Code: _____ **Density:** Low Med High

11 SOP 2014

Species	Age Class	Number	Observed/ Heard/ Captured	Species	Age Class	Number	Observed/ Heard/ Captured
THCO	AD	2	OBS				

Description of Area Searched:

FROM HORSETAIL BOUND (RR) CROSSING DOWN COLD SPRING TO UPPER & LOWER PONDS. CUTTHROAT CK. CROSSING

Additional Site Notes:

THCO @ UPPER POND

Veg Class Key: (Record Dominate ground cover, shrub layer, and canopy (ex. GF/NO/CF) within 5m of search area)

Ground cover -	GF= Graminoid/Forb	RO= Rock	
	BS= Bare Soil	SW = Standing Water	
Shrub Layer -	SH = Shrub	NO = None	
Canopy -	CF = Conifer	DE= Deciduous	NO=None

Age Class Key:

AD = Adult	SA = Sub-adult
JV = Juvenile	TP = Tadpole
LA = Larva	EG = Egg mass

Camera #:

Photo	Description

Species Key:

AMMA = Long-toed salamander	RASI = Sierra yellow-legged frog
BUBO = Western toad	THAM = Unidentified garter snake
BUCA = Yosemite toad	THCO = Sierra garter snake (green)
CHBO = Rubber Boa	THEL = Mountain garter snake (yellow)
CRLU = Great Basin Rattlesnake	THSI = Valley garter snake (yellow/red)
PSSI = Sierran treefrog	Ua = unknown amphibian
RACAS = American Bullfrog	

Visual Encounter Survey Data Form

☐ Bullfrog Survey

Site Name: COLDSTREAM CYN **Date:** 11 JUN 2019 **Occurrence ID:** _____

Observers: G. ALLING **GPS File:** _____

Start Time: 0915 **End Time:** 1707 **Survey Time (Min):** 472

Zone: 10S **UTM Starting Point: N** 4352622 **E** 0735315 **Elevation (m):** 6220 Only take UTMs if this is a new survey location

Zone: 10S **UTM Ending Point: N** 4354855 **E** 0737884 **Elevation (m):** 6135

Water Temp In (°C): 44°F **Water Temp Out (°C):** 46°F

Air Temp In (°C): 63°F **Air Temp Out (°C):** 77°F

Type of Survey (circle one): (DAY) NIGHT **Site (circle one):** BREEDING NON-BREEDING

Survey Number (circle one): 1 (2) **Moon phase (night surveys only):** _____

Cloud Cover (%): Start: 10% **End:** 15% Clear Overcast Partly Cloudy

Wind (Moving): Calm (Light) Strong

Precipitation (current): (None) Drizzling Sprinkling Raining Snowing

Precipitation (last 48 hours): (None) Drizzling Sprinkling Raining Snowing

Watershed Condition: (Natural) (Urbane) Grazed (Logging) Burned Other: RR & ROADS

Habitat: (Stream) (Wetland) (Meadow) (Pond) Lake

Predominant Vegetation (ex. GF/NO/CF): GF/PO/BS/SH/DF **% Aquatic Vegetation:** _____

Predominate Substrate: Meadow (Silt) (Sand) Pebble (Cobble) Boulder Bedrock

Water Source: Meadow (H_2O present) Lentic (standing) (Lotic (flowing)) Dry (No H_2O)

Water Turbidity: **(Clear)** 1 (2) 3 4 5 **(Turbid)**

Fish Presence: (No) Yes **If Yes, Species Code:** _____ **Density:** Low Med High

Species Code: _____ **Density:** Low Med High

11 JUNE 2019

Species	Age Class	Number	Observed/ Heard/ Captured	Species	Age Class	Number	Observed/ Heard/ Captured
CHBO	AD	1	OBS				
PSSI	AD	20	H				
THCO	AD	1	OBS				

Description of Area Searched:

SNAKE VES PERFORMED FROM ABOVE RR CROSSING @ HORSESHOE BEND ON COLD STREAM CREEK TO TRANSITIONAL ROAD & BACK TO START. SURVEY CONTINUED ALONG MARGINS OF BOTH UPPER & LOWER PONDS

Additional Site Notes:

PSSI OBSERVED/AUD @ LOWER POND

Veg Class Key: (Record Dominate ground cover, shrub layer, and canopy (ex. GF/NO/CF) within 5m of search area)

Ground cover -	GF= Graminoid/Forb	RO= Rock	
	BS= Bare Soil	SW = Standing Water	
Shrub Layer -	SH = Shrub	NO = None	
Canopy -	CF = Conifer	DE= Deciduous	NO=None

Age Class Key:

AD = Adult	SA = Sub-adult
JV = Juvenile	TP = Tadpole
LA = Larva	EG = Egg mass

Camera #:

Photo	Description

Species Key:

AMMA = Long-toed salamander	RASI = Sierra yellow-legged frog
BUBO = Western toad	THAM = Unidentified garter snake
BUCA = Yosemite toad	THCO = Sierra garter snake (green)
CHBO = Rubber Boa	THEL = Mountain garter snake (yellow)
CRLU = Great Basin Rattlesnake	THSI = Valley garter snake (yellow/red)
PSSI = Sierran treefrog	Ua = unknown amphibian
RACAS = American Bullfrog	

Visual Encounter Survey Data Form

☐ Bullfrog Survey

Site Name: COLDSTREAM CANYON **Date:** 25 JUL 2019 **Occurrence ID:** _____

Observers: G. ALLING **GPS File:** _____

Start Time: 0907 **End Time:** 1725 **Survey Time (Min):** 498

Zone: 10S **UTM Starting Point: N** 4357822 **E** 0735315 **Elevation (m):** 6220

Zone: ____ **UTM Ending Point: N** 4354855 **E** 0737684 **Elevation (m):** 2138

Only take UTMs if this is a new survey location

Water Temp In (°C): 53°F **Water Temp Out (°C):** 55°F

Air Temp In (°C): 66°F **Air Temp Out (°C):** 78°F

Type of Survey (circle one): (DAY) NIGHT **Site (circle one):** BREEDING NON-BREEDING

Survey Number (circle one): 1 2 (3) **Moon phase (night surveys only):** _____

Cloud Cover (%): Start: 0% **End:** 0% (Clear) Overcast Partly Cloudy

Wind (Moving): Calm (Light) Strong

Precipitation (current): (None) Drizzling Sprinkling Raining Snowing

Precipitation (last 48 hours): (None) Drizzling Sprinkling Raining Snowing

Watershed Condition: (Natural) Urbane Grazed (Logging) Burned **Other:** RR/ROADS

Habitat: (Stream) (Wetland) Meadow (Pond) Lake

Predominant Vegetation (ex. GF/NO/CF): GF/RO/BS/SH/DF **% Aquatic Vegetation:** _____

Predominate Substrate: Meadow Silt Sand Pebble Cobble Boulder Bedrock

Water Source: Meadow (H_2O present) Lentic (standing) Lotic (flowing) Dry (No H_2O)

Water Turbidity: **(Clear)** 1 (2) 3 4 5 **(Turbid)**

Fish Presence: (No) Yes **If Yes, Species Code:** _____ **Density:** Low Med High

Species Code: _____ **Density:** Low Med High

25 JUL 2019

Species	Age Class	Number	Observed/ Heard/ Captured	Species	Age Class	Number	Observed/ Heard/ Captured
PSSI	AD	5	H				
THCO	AD	1	O				
PSSI	AD	1	O				

Description of Area Searched:

VES START ABOVE HORSESHOE POND @ "THE CHUTE" DOWN COLDSTREAM CREEK, UPPER & LOWER PONDS. OVERGRANT CK CROSSING & BACK TO STARTING POINT.

Additional Site Notes:

PSSI OBSERVED @ LOWER POND & COLDSTREAM CK.

Veg Class Key: (Record Dominate ground cover, shrub layer, and canopy (ex. GF/NO/CF) within 5m of search area)

Ground cover -	GF= Graminoid/Forb	RO= Rock	
	BS= Bare Soil	SW = Standing Water	
Shrub Layer -	SH = Shrub	NO = None	
Canopy -	CF = Conifer	DE= Deciduous	NO=None

Age Class Key:

AD = Adult	SA = Sub-adult
JV = Juvenile	TP = Tadpole
LA = Larva	EG = Egg mass

Camera #:

Photo	Description

Species Key:

AMMA = Long-toed salamander	RASI = Sierra yellow-legged frog
BUBO = Western toad	THAM = Unidentified garter snake
BUCA = Yosemite toad	THCO = Sierra garter snake (green)
CHBO = Rubber Boa	THEL = Mountain garter snake (yellow)
CRLU = Great Basin Rattlesnake	THSI = Valley garter snake (yellow/red)
PSSI = Sierran treefrog	Ua = unknown amphibian
RACAS = American Bullfrog	

Form 1 **Willow Flycatcher Field Survey Form**

Site COLD CREEK - ____ - ____ Date 06/18/19 (mo/day/year) Observer G. ALLING

Visit # 2 Temp 48-68 °F C/(F) Wind 1-2 %Cloud 0 Precip 0

point #	time	wifl #	wifl distance	bearing	audio fitz-bew	audio whit	visual
1	0430-0436	NO					
2	0438-0444						
3	0447-0453						
4	0458-0504						
5	0504-0515						
6	0518-0524						
7	0530-0536						
8	0540-0546						
9	0548-0554						
10	0611-0617						
11	0620-0626						
12	0629-0635						
13	0638-0644						
14	0648-0654						
15	0659-0705						
16	0708-0704						
17	0707-0713						
18	0717-0723						
19	0726-0730						
20	0733-0734						
21	0742-0748						
22	0753-0759						
23	0817-0823						
24	0831-0837						
25	0842-0848						
26	0914-0920						
27	0926-0932						
28	0946-0952						
29	0955-1001						

Brown-headed cowbirds present? NO

Notes: _____

page ____ of ____

Form 1 **Willow Flycatcher Field Survey Form**

Site COLDSTREAM CANYON UPPER & LOWER PAIRS Date 06/19/19 (mo/day/year) Observer G. ALLING

Visit # 2 Temp 68-70°F C/F Wind 2 %Cloud 15% Precip 0

point #	time	wifl #	wifl distance	bearing	**audio fitz-bew**	audio whit	visual
1	0428-0434	NO					
2	0438-0444						
3	0449-0455						
4	0459-0505						
5	0510-0516						
6	0519-0525						
7	0530-0536						
8	0540-0546						
9	0549-0555						
10	0601-0607						
11	0617-0623						
12	0628-0634						
13	0650-0656						
14	0659-0705						
15	0717-0723						
16	0727-0733						
17	0752-0754						
18	0804-0810						
19	0817-0823						
20	0841-0847						
21	0901-0907						
22	0920-0926						
23	0931-0937	↓					

Brown-headed cowbirds present? NO

Notes:

page ____ of ____

Form 1 **Willow Flycatcher Field Survey Form**

Site COLD CREEK - ____ - ____ Date 07/05/19 (mo/day/year) Observer G. ALLING

Visit # 1 Temp 46 - 62 C/F Wind 2 %Cloud 10% Precip 0

point #	time PDT	wifl #	wifl distance	bearing	**audio fitz-bew**	audio whit	visual
1	0440-0446	Ø					
2	0449 - 0455	Ø					
3	0458 - 0504	Ø					
4	0509 - 0515	Ø					
5	0517 - 0523						
6	0526 - 0532						
7	0535 - 0541						
8	0545 - 0551						
9	0554 - 0600						
10	0611 - 0617						
11	0619 - 0625						
12	0628 - 0634						
13	0637 - 0643						
14	0652 - 0658						
15	0705 - 0711						
16	0715 - 0721						
17	0732 - 0738						
18	0743 - 0749						
19	0752 - 0758						
20	0803 - 0809						
21	0813 - 0819						
22	0824 - 0830						
23	0834 - 0840						
24	0849 - 0855						
25	0907 - 0908						
26	0911 - 0917						
27	0920 - 0926						
28	0934 - 0940						
29	0945 - 0951	✓					

Brown-headed cowbirds present? NO

Notes: _____

page ____ of ____

Form 1 **Willow Flycatcher Field Survey Form**

Site COLDSTREAM CANYON - - UPPER/LOWER POND Date 07/06/14 (mo/day/year) Observer G. ALLEN

Visit # 1 Temp 52-60 °F C (F) Wind 2 %Cloud 15% Precip Ø

point #	time	wifl #	wifl distance	bearing	**audio fitz-bew**	audio whit	visual
1	0438-0444	NO					
2	0449-0455	↓					
3	0459-0505						
4	0511-0517						
5	0521-0527						
6	0530-0536						
7	0539-0545						
8	0550-0557						
9	0610-0616						
10	0618-0624						
11	0640-0646						
12	0651-0657						
13	0709-0715						
14	0719-0725						
15	0728-2734						
16	0739-0745						
17	0814-0820						
18	0827-0833						
19	0841-0845						
20	0901-0907						
21	0910-0917						
22	0927-0933						
23	0940-0946	↓					

Brown-headed cowbirds present? NO

Notes:

Form 2 **Willow Flycatcher Survey Summary- Site Description** GC 1/8/19

Date 07/05/19

Site Name COLD CREEK Observer G. ALCING

Name of Manager / Owner DONNER STATE PARK County NEVADA

USGS Quad Name NORDEN :UTMs: _____ north; _____ east

Location T 17N, R 15E, Sec 25, 1/4. NW 1/16____ Elev. 6300

Willow Flycatchers present? NO **breeding season / migrant;** **Estimate # Territories** _____
(circle one)

SITE DESCRIPTION

Type: ☐ meadow; ☒ riparian system; ☐ other_____

size of area surveyed: ± 17 ACRES (specify units: acres/hectares)

total number of survey points 29

I. Vegetation

Percent of meadow with **RDS (riparian deciduous shrub)** component 30%

Percent of RDS component consisting of: willow 60, alder 10, other 30

Average RDS height: ☐ <1 m; ☐ 1 - 2 m; ☒ >2 m

Distribution of RDS: ☒ linearly (along stream only) ☐ away from stream, ☐

other_____

Dominant herbaceous vegetation:

☐ sedge; ☐ grasses; ☐ juncus; ☐ forbs

(rank species groups from 1 (least dominant) to 4 (most dominant); if unknown leave blank)

Percent overstory tree cover within RDS areas: ☒ < 10%; ☐ 10-20%; ☐ 20-50%; ☐ >50%

overstory tree species: ASPEN & CONIFER

II. Hydrology

Percent of site with surface water or saturated soils 20 %

Source of standing water within RDS patch:

☒ in-channel pools; ☒ oxbows, ☐ spring fed ponds(s); ☐ lake margin; ☒ seep/snowmelt

☐ other_____ ☐ NONE

Livestock present at time of survey? NO Evidence of beaver activity? YES

Evidence of : ☐ RDS highlining, ☐ RDS hedging ☒ bank disturbance

DESCRIBE BANK EROSION

Evidence of nesting or color banded WIFLs? NO

ATTACH TOPOGRAPHIC MAP (with survey area, survey points, and WIFL locations marked)

Form 2 **Willow Flycatcher Survey Summary- Site Description** 06/19/19

Date 07/06/19

Site Name COLDSTREAM UPPER & LOWER POND Observer G. ALLEN

Name of Manager / Owner DONNER STATE PARK County NEVADA

USGS Quad Name NORDEN :UTMs: _____ north; _____ east

Location T 17N, R 16E, Sec 19, 1/4. _____ 1/16 _____ Elev. _____

Willow Flycatchers present? _____ **breeding season / migrant;** **Estimate # Territories** _____
(circle one)

SITE DESCRIPTION

Type: ☐ meadow; ☐ riparian system; ☑ other BANKS OF PONDS

size of area surveyed: ≈ 40 ACRES (specify units: acres/hectares)

total number of survey points 23 → ONLY BANKS OF PONDS SURVEYED

I. Vegetation

Percent of meadow with **RDS (riparian deciduous shrub)** component 20%

Percent of RDS component consisting of: willow 80, alder 10, other 10

Average RDS height: ☐ <1 m; ☐ 1 - 2 m; ☒ >2 m

Distribution of RDS: ☒ ~~linearly (along stream only)~~ BANKS ☐ away from stream, ☐ other _____

Dominant herbaceous vegetation:
☐ sedge; ☐ grasses; ☐ juncus; ☐ forbs
(rank species groups from 1 (least dominant) to 4 (most dominant); if unknown leave blank)

Percent overstory tree cover within RDS areas: ☒ ≤ 10%; ☐ 10-20%; ☐ 20-50%; ☐ >50%
overstory tree species: CONIFER

II. Hydrology

Percent of site with surface water or saturated soils 50 %

Source of standing water within RDS patch:
☐ in-channel pools; ☐ oxbows, ☐ spring fed ponds(s); ☒ ~~lake~~ margin; ☐ seep/snowmelt
☐ other _____ ☐ NONE

Livestock present at time of survey? NO Evidence of beaver activity? _____

Evidence of : ☐ RDS highlining, ☐ RDS hedging ☐ bank disturbance

DESCRIBE MARGINS / BANKS OF POND

Evidence of nesting or color banded WIFLs? NO

ATTACH TOPOGRAPHIC MAP (with survey area, survey points, and WIFL locations marked)

Form 3 Willow Flycatcher Survey Summary- Results Summary

Site Name COLD CREEK & UPPER/LOWER PONDS Observer(s) G. ALLEN

Name of Manager / Owner DONNER STATE PARK County NEVADA

USGS Quad Name NORDEN :UTMs: _____ north; _____ east

Location T 17N, R 15E, Sec 25, 1/4. NW 1/16

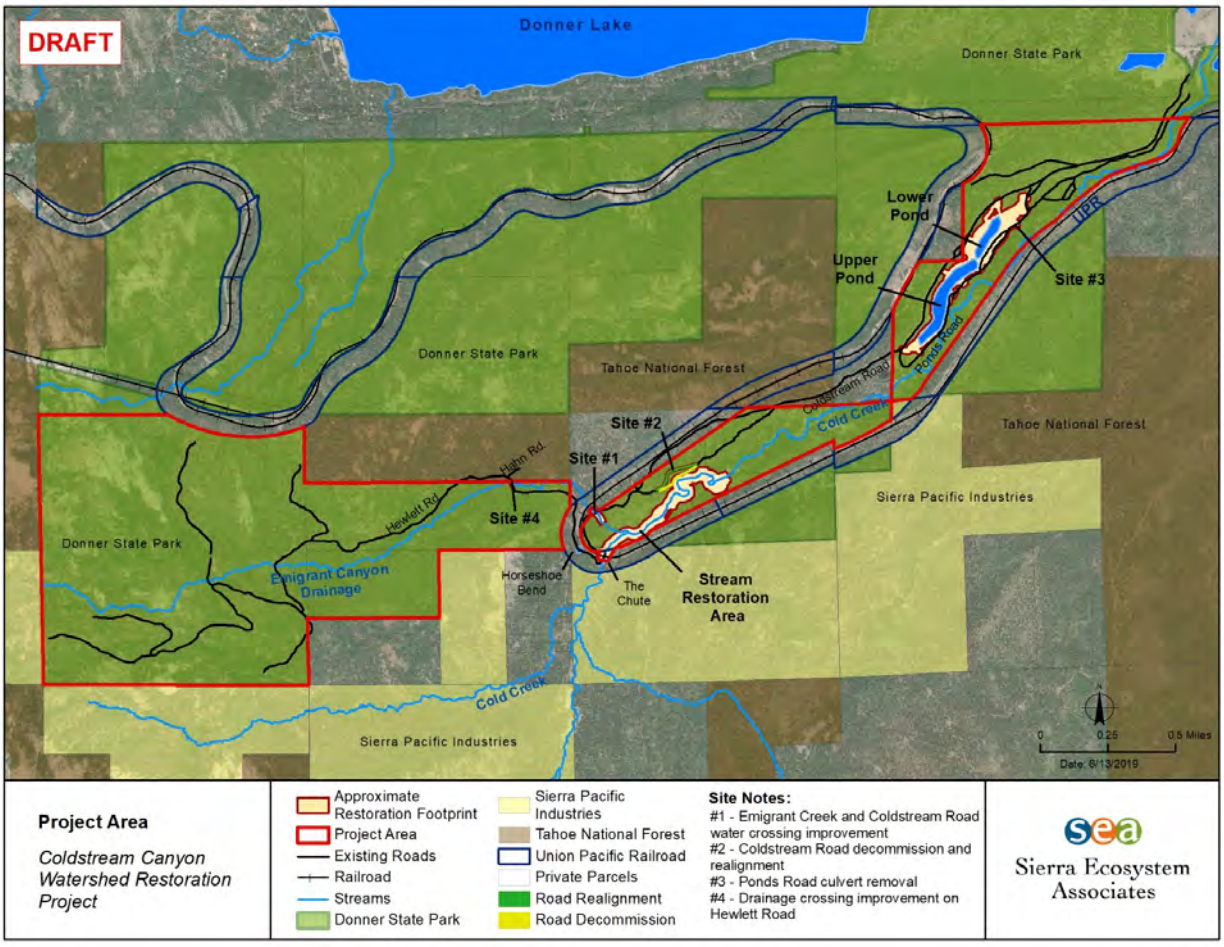
survey visit #	Date (mm/dd/yy)	survey time	WIFL (present/absent/unconf.)	# singing WIFLs	cowbirds present?
survey: 1 followup:	05 JUN 2019	Start: 0440 Stop: 0951	ABSENT	Ø	NO
survey: 1 followup:	06 JUN 2019	Start: 0435 Stop: 0946	ABSENT	Ø	NO
survey: 2 followup:	18 JUN 2019	Start: 0430 Stop: 1001	ABSENT	Ø	NO
survey: 2 followup:	19 JUN 2019	Start: 0428 Stop: 0937	ABSENT	Ø	NO
Total # of presumed breeding territories after all visits completed (no migrants) _____					

willow flycatcher locations

dates present	WIFL #	WIFL location	detection types*
		☐T,R,sec,1/4,1/16 ☐lat/long ☐UTM	
		☐T,R,sec,1/4,1/16 ☐lat/long ☐UTM	
		☐T,R,sec,1/4,1/16 ☐lat/long ☐UTM	
		☐T,R,sec,1/4,1/16 ☐lat/long ☐UTM	
		☐T,R,sec,1/4,1/16 ☐lat/long ☐UTM	

**list all detection types eg: fitz-bew, whit, visual etc.

Appendix B – Survey Areas



Project Area

Coldstream Canyon Watershed Restoration Project

- Approximate Restoration Footprint
- Project Area
- Existing Roads
- Railroad
- Streams
- Donner State Park
- Sierra Pacific Industries
- Tahoe National Forest
- Union Pacific Railroad
- Private Parcels
- Road Realignment
- Road Decommission

Site Notes:

#1 - Emigrant Creek and Coldstream Road water crossing improvement
#2 - Coldstream Road decommission and realignment
#3 - Ponds Road culvert removal
#4 - Drainage crossing improvement on Hewlett Road

Sierra Ecosystem Associates