

**DRAFT INITIAL STUDY
NEGATIVE DECLARATION**

**GROVER HOT SPRINGS STATE PARK
NATURE TRAIL ADA IMPROVEMENTS PROJECT**



July 2017

**State of California
Department of Parks and Recreation
Sierra District**

Notice of Completion & Environmental Document Transmittal

2017072044

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Grover Hot Springs SP Nature Trail ADA Improvements

Lead Agency: California Department of Parks and Recreation Contact Person: Brad Michalk
Mailing Address: One Capitol Mall, Suite 410 Phone: (916) 445-8783
City: Sacramento Zip: 95814 County: Sacramento

Project Location: County: Alpine City/Nearest Community: Markleeville
Cross Streets: Hot Springs Road @ Shay Creek Road Zip Code: 96120
Longitude/Latitude (degrees, minutes and seconds): 119 0 50 ' 27.1 " N / 38 0 41 ' 53.6 " W Total Acres: 320
Assessor's Parcel No.: 002-190-010 Section: 24 Twp.: 10N Range: 19E Base: MD
Within 2 Miles: State Hwy #: N/A Waterways: Hot Springs Creek
Airports: N/A Railways: N/A Schools: N/A

Document Type:

CEQA: [] NOP [] Draft EIR NEPA: [] NOI Other: [] Joint Document
[] Early Cons [] Supplement/Subsequent EIR [] EA [] Final Document
[X] Neg Dec (Prior SCH No.) [] Draft EIS [] Other:
[] Mit Neg Dec Other:

Local Action Type:

[] General Plan Update [] Specific Plan [] Rezone [] Annexation
[] General Plan Amendment [] Master Plan [] Prezone [] Redevelopment
[] General Plan Element [] Planned Unit Development [] Use Permit [] Coastal Permit
[] Community Plan [] Site Plan [] Land Division (Subdivision, etc.) [X] Other: Trail Project

Development Type:

[] Residential: Units Acres
[] Office: Sq.ft. Acres Employees
[] Commercial: Sq.ft. Acres Employees
[] Industrial: Sq.ft. Acres Employees
[] Educational:
[] Recreational:
[] Water Facilities: Type MGD
[] Transportation: Type
[] Mining: Mineral
[] Power: Type MW
[] Waste Treatment: Type MGD
[] Hazardous Waste: Type
[X] Other: Recreational Trail Project

Project Issues Discussed in Document:

[X] Aesthetic/Visual [] Fiscal [X] Recreation/Parks [X] Vegetation
[X] Agricultural Land [X] Flood Plain/Flooding [X] Schools/Universities [X] Water Quality
[X] Air Quality [X] Forest Land/Fire Hazard [] Septic Systems [] Water Supply/Groundwater
[X] Archeological/Historical [X] Geologic/Seismic [] Sewer Capacity [X] Wetland/Riparian
[X] Biological Resources [X] Minerals [X] Soil Erosion/Compaction/Grading [] Growth Inducement
[] Coastal Zone [X] Noise [X] Solid Waste [X] Land Use
[X] Drainage/Absorption [X] Population/Housing Balance [X] Toxic/Hazardous [X] Cumulative Effects
[] Economic/Jobs [X] Public Services/Facilities [X] Traffic/Circulation [] Other:

Present Land Use/Zoning/General Plan Designation:

Open Space/Open Space

Project Description: (please use a separate page if necessary)

DPR proposes to construct accessibility improvements to the existing Nature Trail at Grover Hot Springs State Park. Accessibility improvements are designed to bring the trail in compliance with California State Parks accessibility guidelines and associated legal mandates. Project implementation will meet accessibility requirements and guidelines as stated in "California State Parks Accessibility Guidelines" and the federal access board's outdoor recreation guidelines, and will assist in meeting the legal accessibility requirements as stated in the (Tucker v. California Department of Parks and Recreation) consent decree.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

<input type="checkbox"/> Air Resources Board	<input type="checkbox"/> Office of Historic Preservation
<input type="checkbox"/> Boating & Waterways, Department of	<input type="checkbox"/> Office of Public School Construction
<input type="checkbox"/> California Emergency Management Agency	<input type="checkbox"/> Parks & Recreation, Department of
<input type="checkbox"/> California Highway Patrol	<input type="checkbox"/> Pesticide Regulation, Department of
<input type="checkbox"/> Caltrans District # _____	<input type="checkbox"/> Public Utilities Commission
<input type="checkbox"/> Caltrans Division of Aeronautics	<input checked="" type="checkbox"/> Regional WQCB # <u>6</u>
<input type="checkbox"/> Caltrans Planning	<input type="checkbox"/> Resources Agency
<input type="checkbox"/> Central Valley Flood Protection Board	<input type="checkbox"/> Resources Recycling and Recovery, Department of
<input type="checkbox"/> Coachella Valley Mtns. Conservancy	<input type="checkbox"/> S.F. Bay Conservation & Development Comm.
<input type="checkbox"/> Coastal Commission	<input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
<input type="checkbox"/> Colorado River Board	<input type="checkbox"/> San Joaquin River Conservancy
<input type="checkbox"/> Conservation, Department of	<input type="checkbox"/> Santa Monica Mtns. Conservancy
<input type="checkbox"/> Corrections, Department of	<input type="checkbox"/> State Lands Commission
<input type="checkbox"/> Delta Protection Commission	<input type="checkbox"/> SWRCB: Clean Water Grants
<input type="checkbox"/> Education, Department of	<input type="checkbox"/> SWRCB: Water Quality
<input type="checkbox"/> Energy Commission	<input type="checkbox"/> SWRCB: Water Rights
<input checked="" type="checkbox"/> Fish & Game Region # <u>2</u>	<input type="checkbox"/> Tahoe Regional Planning Agency
<input type="checkbox"/> Food & Agriculture, Department of	<input type="checkbox"/> Toxic Substances Control, Department of
<input checked="" type="checkbox"/> Forestry and Fire Protection, Department of	<input type="checkbox"/> Water Resources, Department of
<input type="checkbox"/> General Services, Department of	
<input type="checkbox"/> Health Services, Department of	Other: _____
<input type="checkbox"/> Housing & Community Development	Other: _____
<input type="checkbox"/> Native American Heritage Commission	

Local Public Review Period (to be filled in by lead agency)

Starting Date July 20, 2017 Ending Date August 24, 2017

Lead Agency (Complete if applicable):

Consulting Firm: _____	Applicant: _____
Address: _____	Address: _____
City/State/Zip: _____	City/State/Zip: _____
Contact: _____	Phone: _____
Phone: _____	

Signature of Lead Agency Representative: [Signature] Date: 07/19/17

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

NEGATIVE DECLARATION

PROJECT: Nature Trail ADA Improvements Project

LEAD AGENCY: California State Parks

AVAILABILITY OF DOCUMENTS: The Initial Study for this Negative Declaration is available for review at:

- Sierra District Headquarters
California State Parks
7360 West Lake Boulevard
Tahoma, CA 96142
- Grover Hot Springs State Park
3415 Hot Springs Road
Markleeville, CA 96120
- Alpine County Library
270 Laramie Street
Markleeville, CA 96120
- Internet Address: [http://www.parks.ca.gov/CEQA Notices](http://www.parks.ca.gov/CEQA%20Notices)

PROJECT DESCRIPTION:

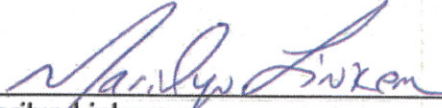
The California Department of Parks and Recreation (DPR) proposes to construct accessibility improvements to the existing Nature Trail at Grover Hot Springs State Park. Accessibility improvements are designed to bring the trail in compliance with California State Parks accessibility guidelines and associated legal mandates. Project implementation will meet accessibility requirements and guidelines as stated in "California State Parks Accessibility Guidelines" and the federal access board's outdoor recreation guidelines, and will assist in meeting the legal accessibility requirements as stated in the (Tucker v. California Department of Parks and Recreation) consent decree.

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

Brad Michalk
California State Parks
Northern Service Center
One Capitol Mall, Ste. 410
Email: CEQANSC@parks.ca.gov
Fax: 916-445-8883

Nature Trail ADA Improvements
Grover Hot Springs SP
California Department of Parks & Recreation


Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (DPR or California State Parks) has independently reviewed and analyzed the Initial Study and Draft Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DPR. DPR, as lead agency, also confirms that the Standard and Specific Project Requirements detailed in these documents are feasible and will be implemented as stated in the Negative Declaration.



Marilyn Linkem
District Superintendent
Sierra District

7-19-2017

Date



Brad Michalk
Environmental Coordinator
Northern Service Center

07/19/2017

Date

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Chapter 1 Introduction

1.1 INTRODUCTION AND REGULATORY GUIDANCE

The Initial Study/ Negative Declaration (IS/ND) was prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Nature Trail Accessibility Improvements Project at Grover Hot Springs State Park, Alpine County, California. This document was prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 et seq., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 et seq.

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that there is no substantial evidence that the project may have a significant effect on the environment, the lead agency may prepare a Negative Declaration [CEQA Guidelines §15064(f-3)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/ND conforms to the content requirements under CEQA Guidelines §15071.

1.2 LEAD AGENCY

The lead agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The lead agency for the proposed project is DPR. The contact person for the lead agency regarding specific project information is:

Travis Segebart
Associate Landscape Architect
One Capitol Mall, Suite 410
Sacramento, CA 95814
Phone: (916) 445-8933
Email: Travis.Segebart@parks.ca.gov

Questions or comments regarding this Initial Study/ Negative Declaration should be submitted to:

Brad Michalk
California State Parks
Northern Service Center

One Capitol Mall, Ste. 410
Email: CEQANSC@parks.ca.gov
Fax: 916-445-8883

Submissions must be in writing and postmarked or received by fax or email no later than August 24, 2017. The originals of any faxed document must be received by regular mail within ten working days following the deadline for comments, along with proof of successful fax transmission. Email or fax submissions must include full name and address. All comments will be included in the final environmental document for this project and become part of the public record.

1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Nature Trail Accessibilities Improvement Project at Grover Hot Springs State Park. No mitigation measures were necessary to eliminate potentially significant impacts or reduce them to a less-than-significant level.

DPR has organized this document as follows:

Chapter 1 - Introduction.

This chapter provides an introduction to the project and describes the purpose and organization of this document.

Chapter 2 - Project Description.

This chapter describes the reasons for the project, scope of the project, and project objectives.

Chapter 3 - Environmental Setting, Impacts, and Mitigation Measures.

This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental issue, and evaluates the potential impacts identified in the CEQA Environmental (Initial Study) Checklist. Mitigation measures are incorporated, where appropriate, to reduce potentially significant impacts to a less than significant level.

Chapter 4 - Mandatory Findings of Significance.

This chapter identifies and summarizes the overall significance of any potential impacts to natural and cultural resources, cumulative impacts, and impact to humans, as identified in the Initial Study.

Chapter 5 - References.

This chapter identifies the references and sources used in the preparation of this IS/ND.

Chapter 6 - Report Preparation

This chapter provides a list of those involved in the preparation of this document.

1.4 SUMMARY OF FINDINGS

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project.

Based on the Initial Study and supporting environmental analysis provided in this document, the proposed ADA Nature Trail Project would result in less than significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems.

In accordance with §15064(f) of the CEQA Guidelines, a ND shall be prepared if the proposed project will not have a significant effect on the environment. Based on the available project information and the environmental analysis presented in this document, there is no substantial evidence that the proposed project would have a significant effect on the environment.

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Chapter 2 Project Description

2.1 INTRODUCTION

This Initial Study/ Negative Declaration (IS/ND) has been prepared by the California Department of Parks and Recreation (DPR or California State Parks) to evaluate the potential environmental effects of the proposed Nature Trail Accessibilities Improvement Project at Grover Hot Springs State Park (GHSSP), located in Alpine County, California. The proposed project would improve the Nature Trail to enhance the trail and improve access for patrons with physical disabilities.

2.2 PROJECT LOCATION

GHSSP is located four miles west of Markleeville, at the end of Hot Springs Road in an alpine meadow and pine forest at 5,900 feet surrounded by peaks that just top 10,000 feet. Presently, GHSSP encompasses about 550 acres of parkland including 76 campsites and a day-use/picnic area. Township 10N, Range 19E, Section 24, Mount Diablo Base Meridian, USGS 7.5' Markleeville, CA Quadrangle.

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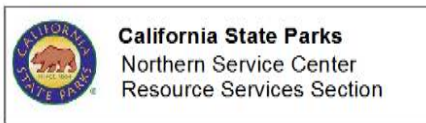
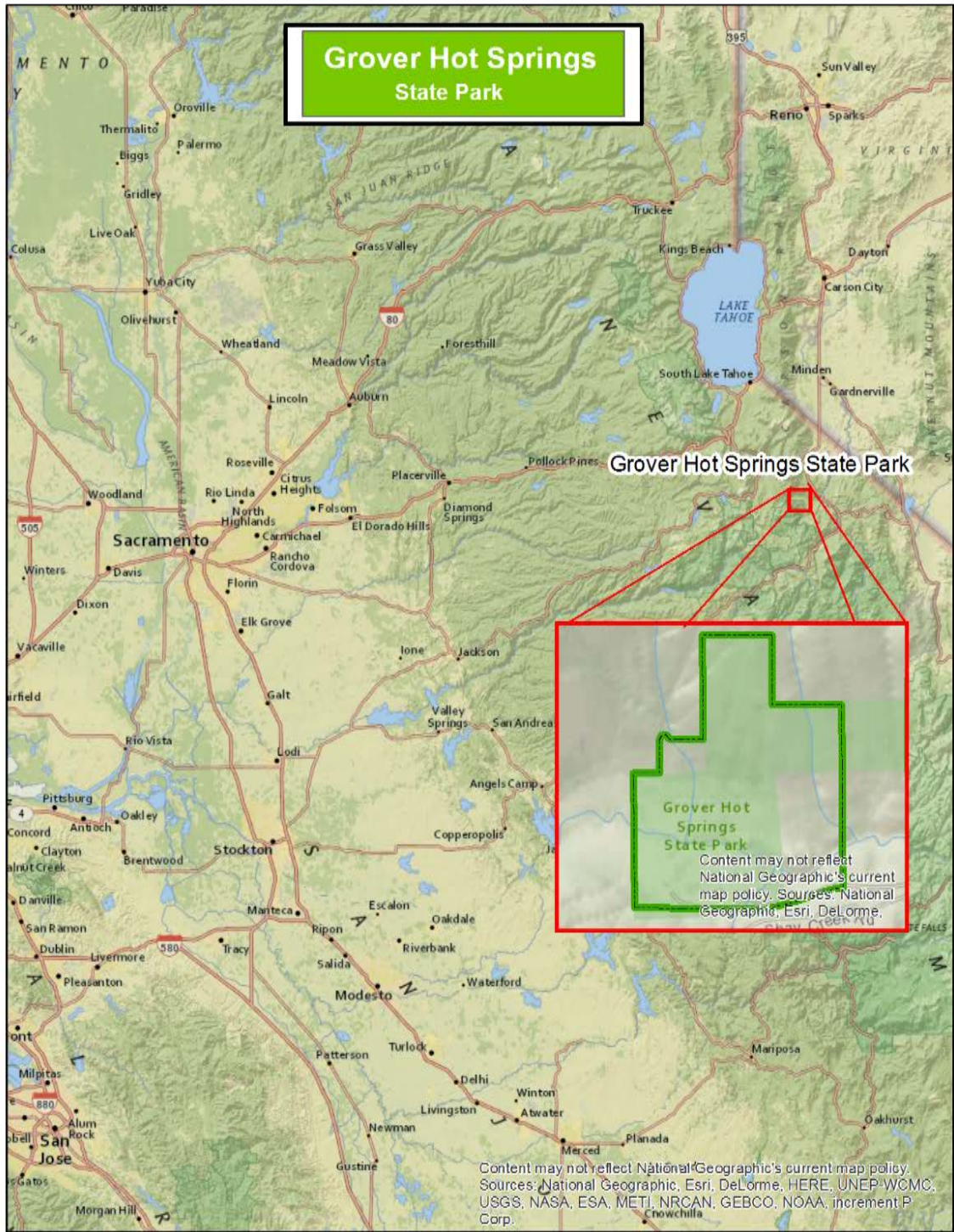


Figure 1: Vicinity Map

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2.3 BACKGROUND AND NEED FOR THE PROJECT

California State Parks designed the accessibility improvements to bring the trail in compliance with accessibility guidelines and associated legal mandates. Project implementation will meet accessibility requirements and guidelines as stated in “California State Parks Accessibility Guidelines” and the federal access board’s outdoor recreation guidelines, and will assist in meeting the legal accessibility requirements as stated in the (Tucker v. California Department of Parks and Recreation) consent decree.

2.4 PROJECT OBJECTIVES

The mission of the California Department of Parks and Recreation is to 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 recreation. The California’s Recreation Policy adopted by the California State Park and Recreation Commission on September 23, 2005, also reiterates this mission.

This objective of this project would be to improve the existing nature trail to make it accessible to people with disabilities.

2.5 PROJECT DESCRIPTION

This project involves accessibility improvements to the existing Nature Trail at Grover Hot Springs State Park. These improvements will bring the trail into compliance with California State Parks’ accessibility guidelines as well as associated legal mandates. Project implementation will meet accessibility requirements and guidelines as stated in “California State Parks Accessibility Guidelines” and the federal access board’s outdoor recreation guidelines, and will assist in meeting the legal accessibility requirements as stated in the (*Tucker v. California Department of Parks and Recreation*) consent decree. As a designated Level 3 park for accessibility, it is the Department of Parks and Recreation’s (DPR) responsibility to address providing at least 0.5 miles of accessible trail within the park unit. Once implemented this project would create approximately 0.85 additional miles of accessible trail. The project would also remove and restore sections of existing trail that impact the meadow and stabilize small sections of eroding stream banks and bed.

The existing Nature Trail is an approximately 0.7-mile trail originating near the hot springs pool and meandering through alkaline wet meadow areas along the Hot Springs Creek. The existing trail ends near the campground. The accessibility improvements will relocate a significant section of the existing trail out of sensitive wetland areas and upgrade other existing sections. The project will bypass portions of the existing Nature Trail, which will be removed and restored as well as several user-created trails. The Nature Trail will begin with rock causeways, drain lenses, and a boardwalk as it meanders along the existing trail alignment to the existing bridge that crosses Hot Springs Creek. The project will also replace the deck planks on the existing bridge. Construction work related to the nature trail will remove the existing culvert and fill

material where the existing trail crosses a seasonal drainage, and construct a boardwalk in its place. The project will utilize sections of the existing trail just past the creek crossing, and reconstruct portions of drain lenses. Work includes a reroute of portions of the trail where it meanders up mild grades to the forest edge, to an area outside a meadow wetland, where it will instead meander through the forest. The reroute will include rock causeways, a bridge over a small tributary, and a puncheon. The trail will utilize a section of the existing Burnside Lake Trail, which will require surface improvements and then turn to the south onto the edge of a wooded knoll. The main trail will continue east across the meadow wetland with a new boardwalk. The project will construct a new accessible parking stall in an existing parking area near the end of the trail. A section of this boardwalk will include viewing platforms with a bench at each platform.

Sections of the existing trail do not meet linear grade/cross slope requirements, width, or surface firmness and stability ADA trail guidelines. Campers access the trail by walking from their campsites while day use visitors park at either day use parking areas. DPR will construct one accessible parking space near the trailhead near the end of the trail. DPR will add one additional accessible parking space at the hot springs pool area and reconstruct an existing space. DPR will be replace the failing portions of the park road including a crosswalk from the parking to the trail, as part of the accessible parking construction. At the completion of the trail work, the District will install up to 12 interpretive panels along the trail as well as new directional signs. The signs will be on 6" by 6" posts dug to a depth of 18 to 36 inches.

Local areas of streambank erosion will also have biotechnical treatments. DPR will install brush boxes along outside bends with high eroding banks to reduce flow velocity and erosion rates (see Appendix B). These will be constructed when the streambank is dry and planted with native willow collected on site.

DPR will rehabilitate existing trails designated for removal on the plans by decompacting the surface to a depth of three inches and placing native sod plugs to disrupt entrenched sections and spread captured water onto the meadow, as well as by spreading native seed. The existing trails that will remain may have some minor cross slope correction or reroutes for drainage.

This project proposes to use a variety of construction techniques including rock walls, rock causeways, adjusting cross/longitudinal slopes, drain lenses, bridges/puncheon, and boardwalks to meet all ADA trail standards.

The project will consist of the following elements.

Rock Retaining Wall – Sections of the trail will require a downhill side rock retaining wall to support the trail bed and contain trail surface material.

- Retaining wall rock approximately 12"-18".
- Length of rock retaining wall= 48 feet
- Width of rock retaining wall = Approximate Average 1 foot

- Height of rock retaining wall = Approximately Average 3 feet
- Volume of rock retaining wall = 5.3 cubic yards
- Volume of excavation required for wall footing= 1.5 cubic yards or 1' wide by 0.8' deep for the length of the wall.

Junk Retaining Wall – The existing approaches to the bridge is comprised of junk retaining walls supporting the trail bed and contain trail surface material. The project will place additional rock along these walls to provide additional strength.

- Retaining wall rock approximately 12"-18"
- Rock retaining wall length = 220 feet
- Width of rock retaining wall = Approximate Average 1 foot
- Height of rock retaining wall = Approximately Average 5 feet
- Volume of rock retaining wall = 41 cubic yards

Causeway Rock Wall – Sections of the trail will require causeways with single tiered rock wall 12"-18" tall on each side. The elevated trail will assist in keeping the trail dry in poor drainage locations and prevent sediment transport caused by poor drainage and visitor use. In addition, the rock wall will assist in containing aggregate/soil material necessary for a firm and stable surface.

- Retaining wall rock approximately = 12"-18"
- Length of causeway wall = 7932 feet
- Volume of rock retaining wall = 294 cubic yards
- Volume of excavation required for wall footing = 147 cubic yards or 1' wide by 0.5' deep typical for the length of the wall

Drain Lense – The project will construct drain lenses in sections of the trail to allow seasonal drainages to flow under the trail. Ground disturbance for the drain lenses is 80' x 8' x 1' depth, or 24 cubic yards.

Boardwalk - The new boardwalks will traverse low areas for a total 1093 linear feet. Ground disturbance for each pier is less than 10" depth typical for an 18" x 18" pad typical footing for a total of 19 cubic yards. One boardwalk section will require the removing of a culvert and fill material. The project will require excavating approximately 23 cubic yards of fill material.

Bridge – Install one glulam stringer bridge over existing tributary. Ground disturbance will occur to construct the bridge abutments for a total of two abutments. Ground disturbance for each abutment is 8' x 2' x 1' depth for a total of 1.5 cubic yards for both abutments.

Puncheon – Install three puncheons. If there is ground disturbance, it is minor to provide a level pad for mudsill (less than 2" depth typical for a 1' x 8' pad) footing.

Trail Rehabilitation – The project will remove approximately 20,000ft² of volunteer trails. The techniques used in removal will be to decompact the trail surface and use

native seed/mulch and salvaged sod plugs to help re-vegetate the trail corridor and reduce continued water capture. This will help restore the natural meadow function by getting the water back onto the meadow surface. Only hand crews using only hand tools will remove and restore volunteer trails. Environmental Scientists will survey sites considered for sod salvaging and native seed/mulch collecting for invasive weed species prior to harvest. See the attached Typical for the details of trail removal.

Vegetation Management –

- All invasive non-native plant infestations in the project area shall be treated in advance of project construction to prevent the spread and proliferation due to project soil disturbance.
- Any soil resulting from excavation, trenching, etc. shall be used as backfill, whenever possible. Any imported new fill or other construction materials shall be from certified-weed free source verified by the project manager and staged on disturbed ground or paved surface.
- Any disturbance to the edges of the trail corridor will be rehabilitated by decompacting soils and spreading local native duff.
- All heavy equipment, equipment, and tools must be cleaned and free of plant parts, dirt, etc. prior to working at Grover Hot Springs State Park and cleaned before leaving the park unit.
- Staging of heavy equipment, equipment, tools, supplies, and materials will be on already disturbed soil and/or existing harden surfaces devoid of vegetation.
- The District Forester or his qualified designee will walk the trail and flag any hazardous trees that need to be removed.

Accessible Parking – The project will construct an accessible parking space in the parking area near the trailhead near the campground and two stalls near the hot springs pool. The maximum ground disturbance of undisturbed soil for accessible parking construction would be 30' x 20' x 1'.

Interpretive Panel – The project will install six to twelve interpretive panels with the bottom of the panel 28" to 32" above ground surface. Volume of excavation required for each post = .06 cubic yards or, 6" x 6" x 3' excavation for each sign.

Trail Signs - One accessible trail information sign will be located at each end of the trail and four directional signs. The information sign will be mounted on (2) 4X4 redwood post and directional signs will be mounted on (1) 4X4 redwood post.

- Size of accessible trail information sign = .36 inches wide X 24 inches tall.
- Volume of excavation required for (6) post = 0.2 cubic yards or 6" x 6" x 3' excavation for each post.

Benches – The project will install one redwood bench, attached to the boardwalk overlook area.

Brush Box – The project will install brush boxes along selected locations of Hot Springs Creek to impede stream bank erosion and reduce sediment input into the creek, treating approximately 150' of bank. Hand crews will construct the brush boxes with hand tools only. The installation of the brush boxes may occur along the creek at approximately the center of the meadow and along the creek near the campground to protect against bank erosion. Appendix B contains the details of brush-box construction technique.

Trail Reconstruction – Existing trails that will remain may have some minor tread surface adjustment for drainage. The single trail reroute will be the removal of the old route and construction of a 275' sustainable trail route. Ground disturbance for trail reconstruction is 5 cubic yards.

2.6 PROJECT REQUIREMENTS

CEQA considers the Department of Parks and Recreation 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. DPR takes this distinction with responsibility to ensure that its actions protect both cultural and natural resources on all projects. Therefore, DPR maintains a list of Project Requirements that are included in project design to reduce impacts to resources.

DPR developed a list of Standard Project Requirements that it uses on projects statewide to avoid significant project-related impacts to the environment. From this list, standard project requirements are assigned, as appropriate to all projects. For example, projects that include ground-disturbing activities, such as trenching would always include standard project requirements addressing the inadvertent discovery of archaeological artifacts. However, for a project that replaces a roof on an historic structure, ground disturbance would not be necessary; therefore, standard project requirements for ground disturbance would not be applicable and DPR would not assign it to the project.

DPR also makes use of specific project requirements. These are project requirements that are developed to address project impacts for projects that have unique issues; they would not typically be standardized for projects statewide.

Table 1: Project Requirements	
Element/Title	Requirement
SPR AIR 1	<p>Air Quality</p> <ul style="list-style-type: none"> ▪ All active construction areas will be watered at least twice daily during dry, dusty conditions. ▪ All trucks hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard. ▪ All equipment engines will be maintained in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements. ▪ Excavation and grading activities will be suspended when sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads. ▪ Earth or other material that has been transported onto paved streets by trucks, construction equipment, erosion, or other project-related activity will be promptly removed.
SPR BIO 1	<p>Raptors and Migratory Birds</p> <p>If construction-related activities exceeding ambient noise levels are conducted between February 1 through and August 15 then focused surveys for nesting migratory bird and raptor species will be conducted by a DPR-approved biologist before construction activities occur in these months to identify active nests. The following requirements apply to the surveys:</p> <ul style="list-style-type: none"> ▪ Surveys for active raptor nests will be conducted within a 500-foot radius of the project area no more than 7 days prior to the beginning of construction. If active nests are located within a 500-foot radius of the project then, on a case by case basis, an appropriate buffer will be established at the discretion of a DPR-approved biologist. No construction activities will occur within buffer zones until the young have fledged and the young will no longer be impacted by construction activities, as determined by the DPR-approved biologist. ▪ Surveys for active migratory bird nests will be conducted within a 150-foot radius of the project no more than 7 days prior to the beginning of construction. If active nests are located within a 150-foot radius of the nest site then, on a case by case basis, an appropriate buffer will be established at the discretion of a DPR-approved biologist. No construction activities will occur within buffer zones until the young have fledged and the young will no longer be impacted by construction activities, as determined by the DPR-approved biologist.
SPR CULT 1	<p>Previously Undocumented Resources</p> <p>If previously unknown cultural resources (including but not limited to dark soil containing shell, bone, flaked stone, ground stone, or deposits of historic material) are discovered, work shall immediately cease within 10 feet of the find(s) and notify the State's Representative of the location and description of the find(s). Contractors shall be directed to other project tasks. Contractors shall not work in the area until receipt of written approval from the State's Representative to resume activity in the area of</p>

	the discovery.
SPR CULT 2	Archaeological Monitoring
	Contractors shall allow on-site archaeological/Native American monitoring at the discretion of the DPR-approved archaeologist/Native American monitor.
PSR CULT 3	Environmentally Sensitive Area
	<p>Trail construction, rehabilitation or removal in the vicinity of the above mentioned archaeological resources are minimized to activities that will not cause ground disturbance. An environmentally sensitive area will be established in the field prior to all construction activities in the vicinity of CA-ALP-117 and -118. All construction personnel will also be required to attend a cultural resources sensitivity training as part of Cultural SPR-3 Pre-Construction Environmental Sensitivity Training. California State Parks Archaeologists will provide cultural resource training to construction staff, prior to project implementation. Construction personnel will be briefed about the Environmental Sensitive Area. Training will also discuss work stoppage and protocols if cultural resources are inadvertently discovered during project implementation.</p> <p>All work on the northern segment of the trail will be confined to the existing trail footprint and tread way.</p>
SPR CULT 4	Human Remains Discovery
	<p>In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR 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 DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §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.</p> <p>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 (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination.</p> <p>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.</p>
PSR HYDRO 1	Erosion and Sedimentation Control

	<ul style="list-style-type: none"> ▪ Limit disturbance area to the necessary extent as outlined in the project plans. ▪ Design, install, and maintain temporary BMP's for the protection of disturbed areas that may be subjected to erosion or surface run-off with the potential to release sediment, nutrients, or hazardous materials to surface or ground water sources. ▪ Use designated and established staging, re-fueling, and maintenance areas for equipment that has the required BMP's to prevent the potential for contamination of surface or ground water sources. ▪ Stockpiled material shall utilize appropriate BMPs according to the permitting requirements to ensure that wind and water erosion potential is eliminated. ▪ Schedule work in wet meadow and stream areas during the dry season. Use Silt fence or fiber rolls to prevent runoff in the vicinity of streams ▪ Prevent damage to vegetation outside the project area ▪ Staging of heavy equipment, equipment, tools, supplies, and materials will be on already disturbed soil and/or existing harden surfaces devoid of vegetation. ▪ Vehicles will be parked at developed parking areas only. ▪ Daily work access for crews will be along existing trail routes only.
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2.7 PROJECT IMPLEMENTATION

Project construction would begin during the summer of 2018, and continue for approximately 3-5 months in 2018, 2019, & 2020. DPR would schedule work only during daylight hours and when it would incur the least amount of impact to visitors. DPR however, could implement weekend work to accelerate construction or address emergency or unforeseen circumstances. During construction, partial closures of the day use areas would be required for the safety of visitors and staff.

DPR would use construction crews with hand tools and mechanical equipment such as a rubber tire backhoe or mini excavator for bridge abutment work and installation of bridge stringers. A bobcat or mini excavator will be used to remove vegetation and for drilling holes for boardwalk footings. A rubber tire mule or gator will be used to transport materials for the boards and trail turnpike. Hand tools and chain saws will be used in sensitive areas. Most carpentry work will be done with battery powered and hand tools although a generator may be used. For the mowed sections of the trail, a high weed mower and/or brush cutter and weed whip will be used. Daily work access for crews will be along existing trail routes only.

Best Management Practices (BMPs) would be incorporated into this project design to ensure that the natural and cultural resources in and around the project area are adequately protected during and after construction. DPR obtained the BMPs discussed

in this document and used in the implementation of this project from the *California Stormwater Quality Association (CSQA), Stormwater Best Management Practices Construction Handbook*. The project would employ temporary BMPs to keep sediment on-site throughout the duration of the project; during construction, DPR would check BMPs daily, and maintain, and modify as needed. DPR would use BMPs after construction to stabilize the site and minimize erosion.

2.8 VISITATION TO GROVER HOT SPRINGS SP

GHSSP receives an average of 19,787 visitors per year (DPR, 2014). The proposed project is designed to provide a trail system that meets DPR standards for accessible trails. The trail is not expected to increase visitation substantially over existing rates.

Year	Paid Day Use	Free Day Use	Camping	Total	Boat Launches
2004	8317	22517	9485	40,319	0
2005	3136	5954	6214	15,304	0
2006	6636	9585	7474	23,695	0
2007	12,375	17,783	9562	39,720	0
2008	2201	18,170	6482	26,853	0
2009	2534	9751	7063	19,348	0
2010	1194	14,305	1758	17,257	0
2011	1541	7900	6452	15,893	0
2012	3407	6276	0	9683	0
2013	2324	4110	0	6434	0
2014	985	2169	0	3154	0
Total	44650	118520	54490	217,660	0
Average	4059	10775	5449	19787	0

Source: DPR Field Operations, 2014

2.9 CONSISTENCY WITH LOCAL PLANS AND POLICIES

All project components are located entirely within the boundaries of GHSSP. The project is consistent with the DPR mission and its management directives aimed at creating opportunities for high-quality outdoor recreation. The proposed project is consistent with local plans and policies currently in effect. Please see Chapter 3, Section IX, Land Use and Planning, for further details.

2.10 DISCRETIONARY APPROVALS

The project consists of a partial realignment of portions of an existing trail and includes new stream crossings and work within wetlands. DPR retains approval authority for the proposed Nature Trail Improvements at GHSSP. The project also requires consultation with the following government agencies:

- California Department of Fish and Game
- U.S. Army Corps of Engineers
- Lahontan Regional Water Quality Control Board

Additional internal document reviews include compliance with Public Resources Code § 5024. DPR will acquire all necessary reviews and permits prior to implementing any project components requiring regulatory review.

2.11 RELATED PROJECTS

Projects in the park can include on-going general maintenance of the park facilities but the District has identified no other future projects.

Chapter 3 Environmental Checklist

PROJECT INFORMATION	
1. Project Title:	Nature Trail ADA Improvements
2. Lead Agency Name & Address:	California Department of Parks and Recreation
3. Contact Person & Phone Number:	Brad Michalk
4. Project Location:	Grover Hot Springs State Park
5. Project Sponsor Name & Address:	California Department of Parks and Recreation Travis Segebart Associate Landscape Architect One Capitol Mall, Suite 410 Sacramento, CA 95814 Phone: (916) 445-8933 Email: Travis.Segebart@parks.ca.gov
6. General Plan Designation:	State Park
7. Zoning:	Recreation
8. Description of Project:	DPR proposed to construct accessibility improvements to the existing Nature Trail at Grover Hot Springs State Park. Accessibility improvements are designed to bring the trail in compliance with California State Parks accessibility guidelines and associated legal mandates. Project implementation will meet accessibility requirements and guidelines as stated in "California State Parks Accessibility Guidelines" and the federal access board's outdoor recreation guidelines, and will assist in meeting the legal accessibility requirements as stated in the (Tucker v. California Department of Parks and Recreation) consent decree.
9. Surrounding Land Uses & Setting:	Refer to Chapter 3 of this document (Section IX, Land Use Planning)
10. Approval Required from Other Public Agencies	Refer to Chapter 2, Section 2.10

1. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact", as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | <input checked="" type="checkbox"/> None |

DETERMINATION

On the basis of this initial evaluation:

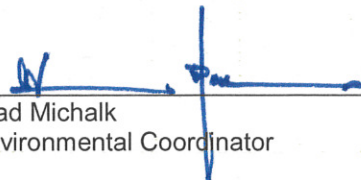
I find that the proposed project **COULD NOT** have a significant effect on the environment and a **NEGATIVE DECLARATION** will be prepared.

I find that, although the original scope of the proposed project **COULD** have had a significant effect on the environment, there **WILL NOT** be a significant effect because revisions/mitigations to the project have been made by or agreed to by the applicant. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

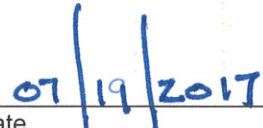
I find that the proposed project **MAY** have a significant effect on the environment and an **ENVIRONMENTAL IMPACT REPORT** or its functional equivalent will be prepared.

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the impacts not sufficiently addressed in previous documents.

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or Negative Declaration, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required.



Brad Michalk
Environmental Coordinator



Date

ENVIRONMENTAL ISSUES

I. AESTHETICS.

ENVIRONMENTAL SETTING

GHSSP is located in the central portion of Alpine County on the east side of the Sierra Nevada near its interface with the extreme western edge of the Great Basin. The Great Basin is the largest desert in the United States, occupying an arid expanse of about 190,000 square miles, bordered by the Sierra Nevada on the west, the Rocky Mountains on the east, the Columbia Plateau on the north, and the Mojave and Sonoran deserts to the south. Elevations within the GHSSP range from about 5,000 to 9,500 feet above mean sea level (msl) making for a cool or cold desert environment.

The project itself is located on a large meadow situated at 6,000 feet elevation, surrounded by steep peaks up to 10,000 feet in elevation. Hot Springs Creek bisects the meadow from west to east by, a perennial stream as well as numerous unnamed drainages that with the perimeter areas covered in Jeffrey pine, white fir and cedar, with an occasional pinyon pine and juniper.

The park is located in a rural area with the nearest development consisting of rural residential area located approximately 2 miles east of the park. State Highway 89, a State-designated Scenic Highway is located approximately 3.5 miles east of the meadow.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The project entails improving an existing trail, including some rerouting, to facilitate use by visitors with disabilities as well as creating a more sustainable trail. Construction, would temporarily affect the overall appearance of the project site. The presence of construction equipment and fencing would present a limited, temporary adverse visual impact to those visiting the site. The project would place new structures (e.g. boardwalk) in the view

corridor but these structures are designed with materials that blend with the natural setting. Less than Significant Impact.

b-d) Although State Route 89 through Alpine County is an officially designated State Scenic Highway (California Department of Transportation, n.d.), the project site is not located within its view shed and would not damage scenic, natural or cultural resources. Finally, the project has no potential to degrade the visual character of the site or its surroundings, or create a new source of light or glare. No Impact.

II. AGRICULTURAL AND FOREST RESOURCES.

ENVIRONMENTAL SETTING

GHSSP is a 553-acre park located in Alpine County, California. Forest/timber lands primarily within the Humboldt-Toiyabe National Forest surround the Park. A large lot residential community is located just to the east of the Park. The Park is zoned "Recreation" by Alpine County and does not support any agricultural operations or farmland. State Park lands, by definition, cannot be used for commercial agricultural or forestry purposes. The project area encompasses no land under a Williamson Act contract and no Williamson Act land is located in the vicinity of the project.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT*:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by government Code § 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* 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 Department of Conservation as an optional model for use in assessing impacts on agricultural and farmland.

DISCUSSION

a-e) GHSSP does not support any agricultural/timber operations, is not zoned as prime agricultural or timber production land, or used for grazing purposes. This project would have no impact on any category of California Farmland, conflict with any existing zoning for agricultural use or Williamson Act contract. There would be no loss of forestland or conversion of land to non-forest use or conversion of Farmland to non-agricultural use. No Impact.

III. AIR QUALITY.

ENVIRONMENTAL SETTING

GHSSP is located in Great Basin Valleys, an air basin consisting of Alpine, Mono and Inyo Counties. This air basin lies between the Sierra Nevada mountains to the west, the Great Basin to the northeast, and the Mojave Desert to the southeast (California Air Resources Board, n.d.). The Great Basin Unified Air Quality Pollution Control District (GBUAPCD) is the local agency for air quality planning with authority over air pollutant sources.

Overall, due to the rural lifestyle, low population density, and limited industry, the County's air quality is generally good.

Air Quality Designations

The California Air Resources Board (CARB) makes state area designations for ten criteria pollutants (an air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set): ozone, suspended particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide and visibility reducing particles (VRPs) (CalEPA, 2016).

A pollutant is designated "attainment" if the state standard for that pollutant was not violated at any site in the area for a three-year period. If there was at least one violation of a state standard for a pollutant in the area, it is designated as "non-attainment" for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified". Non-attainment/transitional is a subcategory of the non-attainment designation; an area is designated non-attainment/transitional to signify the area is close to attaining the standard for that pollutant (CalEPA, 2016).

Alpine County is in "attainment" or is "unclassified" for every state and federal air quality standard with the exception of Respirable Particulates (PM₁₀), which is designated as "nonattainment" under the state standard (California Air Resources Board, 2012). However, the "non-attainment" designation was made for the whole GBUAPCD area. None of the test sites used to make this determination was located in Alpine County, where the project is located. The predominant sources of PM₁₀ pollution in Alpine County is from controlled burns and wildfires. Overall, due to the rural lifestyle, low population density, and limited industry, the County's air quality is generally good (Alpine County, 2009).

Air Quality Attainment Status		
Pollutant	State Status	National Status
Ozone	Attainment	Attainment
PM ₁₀	Non-attainment	Unclassified
PM _{2.5}	Attainment	Unclassified
Carbon Monoxide	Attainment	Attainment
Nitrogen Monoxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	No Federal Standard
Lead	Attainment	Attainment

Source: CARB 2012

Sensitive Receptors

Sensitive receptors include individuals as well as groups relating to specific land uses. Some individuals are considered to be more “sensitive” than others to air pollutants. The reasons for greater sensitivity than average include health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, the elderly and infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive receptors because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on the human respiratory function. Sensitive receptors in the proposed project area include recreational users (trail-users, park visitors, etc.) as well as the isolated residential development in the vicinity of the project.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT*:				
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations (e.g., children, the elderly, individuals with compromised respiratory or immune systems)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

* Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make these determinations.

DISCUSSION

- a) Air quality in Alpine County is regulated by the Great Basin Unified Air Pollution Control District (GBUAPCD). The GBUAPCD has not developed an air quality plan that includes Alpine County. Therefore, the project would not conflict with or obstruct implementation of any air quality plans. No Impact would occur.

- b) The proposed project would not emit air contaminants at a level that by themselves would violate any air quality standard or contribute to a permanent or long-term emission of dust. The proposed project would involve the use of equipment and materials that would emit ozone precursors. Increased emission of dust (particulate matter) could contribute to existing non-attainment conditions, which could interfere with achieving the projected attainment standards. Integration of **Standard Project Requirement AIR 1** in project design would reduce impacts to less than significant.

SPR AIR 1 - AIR QUALITY

- **All active construction areas will be watered at least twice daily during dry, dusty conditions.**
 - **All trucks hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard.**
 - **All equipment engines will be maintained in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements.**
 - **Excavation and grading activities will be suspended when sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.**
 - **Earth or other material that has been transported onto paved streets by trucks, construction equipment, erosion, or other project-related activity will be promptly removed.**
- c) See b) above.
- d) As mentioned above, the proposed project would generate equipment exhaust emissions for the duration of the project. Various sensitive receptors (nearby day use visitors) may be present in the general area and could be affected. Integration of **Standard Project Requirement AIR 1** in project design would reduce impacts to Less than Significant.
- e) Construction activities do not usually emit offensive odors and any odors released are generally confined to the vicinity of the source. Although construction activities occurring in association with the proposed project could generate airborne odors with the operation of construction vehicles (i.e. diesel exhaust), these emissions would only occur during the daytime hours and would generally be restricted to the immediate vicinity of the project site. Integration of **Standard Project Requirement AIR 1** in project design would reduce impacts to Less than Significant.

IV. BIOLOGICAL RESOURCES.

ENVIRONMENTAL SETTING

Grover Hot Springs State Park (GHSSP) is a 553-acre park unit in Alpine County located on the eastern slope of the Sierra Nevada Mountains about four miles west of the community of Markleeville.

Vegetation/Habitat

Several forest, shrub, and meadow vegetation types occur in GHSSP in and surrounding the hot springs complex (Dean 2011). These types can be categorized into specific plant communities (equivalent to alliances) most of which have been defined by Sawyer et al (2009) and conform to the U.S. National Vegetation Classification Standard adopted by the federal government (USNVC 2015). They include:

Pinus jeffreyi* (Jeffrey pine forest) Forest Alliance

***Populus trichocarpa* (Black cottonwood forest) Forest Alliance**

Artemisia tridentata* (Big sagebrush) Shrubland Alliance

Alnus incana* (Mountain alder thicket) Shrubland Alliance

***Salix geyeriana* (Geyer willow thickets) Shrubland Alliance**

***Salix lutea* (Yellow willow thickets) Shrubland Alliance**

Dry Meadow vegetation type* – no match with Sawyer et al (2009)

Ryegrass Meadow plant community types – no match with Sawyer et al (2009)

Wet Meadow vegetation types: *Carex nebracensis* (Nebraska sedge meadows)

Herbaceous Alliance and *Juncus arcticus* (var. *balticus*, *mexicanus*) (Baltic and Mexican rush marshes) Herbaceous Alliance*

Alkaline Meadow plant community types – no match with Sawyer et al (2009)

***Schoenoplectus americanus*-*Eleocharis rostellata* Association**

Ruderal – no match with Sawyer et al (2009)

Vegetation types occurring within the project area are highlighted with an asterisk above and described below. These descriptions summarize field work conducted in GHSSP by Dean (2011).

***Pinus jeffreyi* (Jeffrey pine forest) Forest Alliance**

Forested areas within the project's boundaries are composed of *Pinus jeffreyi* Forest Alliance, a plant community dominated by Jeffrey pine (*Pinus jeffreyi*). Other common tree species are lodgepole pine (*Pinus contorta* ssp. *murrayana*), incense cedar (*Calocedrus decurrens*), and white fir (*Abies concolor*). On well-shaded, dry slopes the understory consists of huckleberry oak (*Quercus vaccinifolia*), snowberry (*Symphoricarpos mollis*), and spreading dogbane (*Apocynum androsaemifolium*). The sparse understory of open, rocky, upland areas typically includes shrubby western juniper (*Juniperus occidentalis*), sagebrush (*Artemisia tridentata*), antelope bitterbrush (*Purshia tridentata*), and whitethorn ceanothus (*Ceanothus cordulatus*). The herbaceous layer may include groundsmoke (*Gayophytum* spp.) and pussypaws (*Calyptridium monospermum*).

***Artemisia tridentata* (Big sagebrush) Alliance**

Within the project area this shrub community (Sagebrush Scrub) occurs near the Hot Springs trailhead and just south of the bridge crossing of Hot Springs Creek. Shrubs associated with this community are antelope bitterbrush, yellow rabbitbrush (*Chrysothamnus viscidiflorus*), hairless gaping keckiella (*Keckiella breviflora*), and greenleaf manzanita (*Arctostaphylos patula*). Herbs commonly observed within this plant community vary by location and may include groundsmoke, mustang mint (*Monardella lanceolata*), clustered blazingstar (*Mentzelia congesta*), Douglas's sedge (*Carex douglasii*), Bailey's buckwheat (*Eriogonum baileyi* ssp. *baileyi*), Wright's buckwheat (*Eriogonum wrightii*), woollypod milkvetch (*Astragalus purshii*), and the nonnative cheatgrass (*Bromus tectorum*).

***Alnus incana* (Mountain alder thicket) Shrubland Alliance**

Riparian vegetation consisting of *Alnus incana* Shrubland Alliance forms an open, large shrub-dominated plant community along Hot Springs Creek and is encountered only at the bridge crossing portion of the project area. Mountain alder (*Alnus incana*) dominates this type; other common shrubs include American dogwood (*Cornus sericea*), blue elderberry (*Sambucus mexicana*), and Wood's rose (*Rosa woodsii*). Black cottonwood (*Populus trichocarpa*) and quaking aspen (*Populus tremuloides*) are the most common tree species.

Dry Meadow vegetation type

As described by Dean (2011) this meadow community is “transitional between Sagebrush Scrub and Moist or Wet Meadow.” This vegetation comprises most of the project area. Since none of the main drainages (e.g. Buck Creek, Shay Creek, Hot Springs Creek) supply the meadow, precipitation provides the source of water for this community. Because density and species dominance changes every few feet it is difficult to classify this vegetation into a Sawyer et al (2009) Alliance type.

Grass, sedge, and rush species dominate the Dry Meadow, including Kentucky bluegrass (*Poa pratensis*), clustered field sedge (*Carex praegracilis*), rush blue grass (*Poa secunda* ssp. *juncifolia*), Baltic rush (*Juncus balticus*), and blue wildrye (*Elymus glaucus*). Characteristic native herbs in the dry meadow community include yarrow (*Achillea millefolium*), meadow beardtongue (*Penstemon rydbergii* var. *oreocharis*), Lemmon's yampah (*Perideridia lemmonii*), and Brewer's fleabane (*Erigeron breweri*). Dense boisduvalia (*Epilobium densiflorum*) and hairy owl's clover (*Castilleja tenuis*) occur in more moist locations where water pools. Common non-native herbs include tumble mustard (*Sisymbrium altissimum*), field pepperweed (*Lepidium campestre*), cheatgrass, and field pennycress (*Thlaspi arvense*).

Wet Meadow vegetation types

Wet Meadow vegetation is broadly distributed across the both the alkaline and non-alkaline meadow systems. Depending on location, the meadow is either dominated by Nebraska sedge (*Carex nebracensis*), Baltic rush (*Juncus balticus*), or co-dominated by these species. (Dean 2011). Locations dominated by Nebraska sedge are classified as the **Carex**

nebracensis Herbaceous Alliance (Nebraska sedge meadows) plant community type and **Juncus arcticus (var. balticus, mexicanus) (Baltic and Mexican rush marshes) Herbaceous Alliance** comprises locations dominated by Baltic rush. Common associates of both types include arnica (*Arnica chamissonis*), longstalk starwort (*Stellaria longipes*), Douglas' knotweed (*Polygonum douglasii*), and slender cinquefoil (*Potentilla gracilis*). In wetter locations common associates include large leaved avens (*Geum macrophyllum*), cow parsnip (*Heracleum lanatum*), willow dock (*Rumex salicifolius*), variegated clover (*Trifolium variegatum*), western water hemlock (*Cicuta douglasii*), and California false hellebore (*Veratrum californicum* var. *californicum*).

Within the project area **Wet Meadow** vegetation is confined to locations north of Hot Springs Creek.

SPECIAL-STATUS SPECIES

Sensitive biological resources that occur or potentially occur in or near the proposed project site are discussed in this section. Special-status species (sensitive species) are defined as plants and animals that are legally protected or that are considered sensitive by federal, state, or local resource conservation agencies and organizations. Specifically, this includes species listed as State or federally Threatened or Endangered, those considered as candidates for listing as Threatened or Endangered, species identified by the US Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (DFW) as Species of Special Concern (SSC), animals identified by CDFG as Fully Protected or Protected (FP, P), and plants considered by the California Native Plant Society (CNPS)¹ to be rare, threatened, or endangered. Also included are habitats that are considered critical for the survival of a listed species or have special value for wildlife species and plant communities that are unique or of limited distribution.

All special-status species and their habitats were evaluated for potential impacts from the proposed Nature Trail Accessibility Improvements Project. Existing available data was collected and reviewed to determine the proximity of special status plants, animals, and their habitats to the project area. Queries of the California Department of Fish and Wildlife's California Natural Diversity Database (CDFW 2016) and the U.S. Fish and Wildlife Service (USFWS 2016) were conducted for special-status species and habitats within the Markleeville United States Geological Society (USGS) quadrangle map. A query of the California Native Plant Society's On-line Inventory, Eighth Edition (CNPS 2016) was conducted for special-status plant species within the Markleeville and eight surrounding 7½ -minute USGS quadrangle maps (Freel Peak, Woodfords, Carters Station, Heenan Lake, Wolf Creek, Ebbetts Pass, Pacific Valley, Carson Pass).

¹ California Native Plant Society (CNPS) Rare Plant Ranks: 1A = presumed extinct in California; 1B = rare or endangered in California and elsewhere; 2 = rare or endangered in California, more common elsewhere; 3 = need more information; 4 = plants of limited distribution. Threat code extensions are .1 = seriously endangered in California; .2 = fairly endangered in California; and .3 not very endangered in California.

Special-status plant and animal species are described below along with their potential to occur within the project area and the potential impacts to these species from project implementation.

Plant Species

Thirty-five special status species have been identified by the California Natural Diversity Database (CNDDDB), CNPS, and U.S. Fish and Wildlife Service (USFWS) as occurring or having a potential to occur within the Markleeville and eight surrounding USGS quadrangle maps. Dean (2011) identifies 23 special status plant species that could potentially occur within the project area; however, most of the species identified by (Dean 2011) as well as the CNDDDB, USFWS, and CNPS are restricted to habitat that does not exist within the project footprint. Suitable habitat may be available in the project area for the following 13 species.

Special-Status Plant Species that are Known to Occur, or Could Potentially Occur within the Project Area

Alder buckthorn (*Rhamnus alnifolia*) – Alder buckthorn is a California Rare Plant Rank 2B.2 perennial deciduous shrub of lower montane coniferous forest, meadows and seeps, riparian scrub, and upper montane coniferous forest habitats that is reported from Alpine, Nevada, Placer, Sierra, Plumas, and Lassen Counties. It blooms from May to July and occurs at elevations of approximately 4500 feet to 7000 feet amsl (above mean sea level). Potentially suitable habitat occurs in locations adjacent to the project area

Bolander's bruchia (*Bruchia bolanderi*) – Bolander's bruchia is a California Rare Plant Rank moss species that inhabits damp soil at elevations from approximately 5580 feet to 9180 feet amsl in the Sierra Nevada and Cascade Ranges of central and northern California. Although this species has not been reported from Alpine County there is potentially suitable habitat in locations adjacent to the project area.

Clustered-flower cryptantha (*Cryptantha glomeriflora*) – Clustered-flower cryptantha is a California Rare Plant Rank 4.3 annual herb that blooms from June to September and occurs at elevations from approximately 5,900 feet to 12,300 feet amsl in sandy granitic or volcanic locations of Great Basin scrub, meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest habitats. This California endemic has been reported from Alpine, Fresno, Inyo, Mono, Nevada, Sierra, Tulare, and Tuolumne Counties. Potentially suitable habitat occurs in the project area.

Cut-leaf checkerbloom (*Sidalcea multifida*) – Cut-leaf checkerbloom is a California Rare Plant Rank 2B.3 perennial herb of Great Basin scrub, lower montane coniferous forest, meadows and seeps, and pinyon and juniper woodland habitat that blooms from May to September and occurs at elevations from approximately 5740 feet to 9190 feet amsl. It has been reported from Alpine, Inyo, Mono, and Tulare Counties. Potentially suitable habitat occurs in the project area.

Davy's sedge (*Carex davyi*) – Davy's sedge is a California Rare Plant Rank 1B.3 perennial herb that blooms from May to August and occurs at elevations from approximately 4920 feet to 10,500 feet amsl. It inhabits subalpine coniferous forest and upper montane coniferous forest

habitats of Alpine, Calaveras, El Dorado, Nevada, Placer, Sierra and Tuolumne Counties. Potentially suitable habitat for this species occurs in locations adjacent to the project area.

Fiddleleaf hawksbeard (*Crepis runcinata*) – Fiddleleaf hawksbeard is a California Rare Plant Rank 2B.2 perennial herb that blooms from May to August and occurs at elevations of approximately 4100 feet to 6480 feet amsl in Alpine, Inyo, Lassen, Mono, Modoc, Sierra Counties and throughout much of the western United States. It occupies mesic, alkaline areas within Mojavean desert scrub and pinyon and juniper woodland habitats. Dean (2011) has identified and mapped locations of fiddleleaf hawksbeard in the alkaline system south of Hot Springs Creek, but not within the project area.

Golden violet (*Viola purpurea* ssp. *aurea*) – Golden violet is a California Rare Plant Rank 2B.2 perennial herb that blooms from April to June and occurs at elevations of approximately 3280 feet to 8200 feet amsl in Alpine, Lassen, Kern, Los Angeles, Mono, Sierra, San Bernardino, and San Diego Counties. It occupies sandy locations in Great Basin scrub, and pinyon and juniper woodland habitats. Potentially suitable habitat for this species occurs in the project area.

Holly fern (*Polystichum lonchitis*) – Holy fern is a California Rare Plant Rank 3 perennial rhizomatous herb that blooms from June to September and occurs at elevations of approximately 5900 feet to 8530 feet amsl. It occupies granitic or carbonate locations in subalpine coniferous forest and upper montane coniferous forest habitat of Alpine, El Dorado, Glenn, Plumas, Shasta, Siskiyou, and Trinity Counties. Potentially suitable habitat for this species occurs in or adjacent to the project area.

Liddon's sedge (*Carex petasata*) – Liddon's sedge is a California Rare Plant Rank 2B.3 perennial herb that blooms from May to July and occurs at elevations from approximately 1970 feet to 10,890 feet amsl. It inhabits broadleafed upland forest, lower montane coniferous forest, meadows and seeps, and pinyon and juniper woodland habitats in Alpine, Inyo, Lassen, Mono, Modoc, Plumas, Shasta, and Sierra Counties. Potentially suitable habitat for this species occurs in the project area.

Marsh willowherb (*Epilobium palustre*) – Marsh willowherb is a California Rare Plant Rank 2B.3 perennial rhizomatous herb that blooms from July to August and inhabits bogs and fens and mesic meadows and seeps. Although not reported from Alpine County there is potentially marginally suitable habitat for this species in the project area.

Mud sedge (*Carex limosa*) – Mud sedge is a California Rare Plant Rank 2B.2 perennial rhizomatous herb that blooms from June to August and occurs at elevations from approximately 3930 feet to 8860 feet amsl in the Sierra Nevada and Cascade Ranges of central and northern California. It can be found in various habitats, including bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest. Although not reported from Alpine County there is potentially suitable habitat for this species in the project area.

Subalpine fireweed (*Epilobium howellii*) – Subalpine fireweed is a California Rare Plant Rank 4.3 perennial stoloniferous herb of mesic locations in meadows and seeps and subalpine

coniferous forest habitats of Alpine, El Dorado, Fresno, Madera, Mono, Nevada, Sierra, and Tuolumne Counties. It occurs at elevations of approximately 6560 to 10,230 feet amsl and blooms from July to August. Potentially suitable habitat for this species occurs in the project area.

Upswept moonwort (*Botrychium ascendens*) – Upswept moonwort is a California Rare Plant Rank 2B.3 perennial rhizomatous herb found in mesic locations of lower montane coniferous forest and meadows and seeps habitat of several California counties, including Alpine County. It blooms from July to August and occurs at elevations from approximately 3650 feet to 8860 feet amsl. Suitable habitat for this species occurs in wet locations within project area.

Wildlife Species

Twenty-two special-status wildlife species have been identified by the California Natural Diversity Database (CNDDDB 2016) and U.S. Fish and Wildlife Service (USFWS 2016) as occurring or having a potential to occur within the Markleeville and eight surrounding 7½ - minute USGS quadrangle maps. Suitable habitat is available within the park for thirty-four of these species, ten of which have been reported to occur in the park (Appendix 2: Special Status Wildlife Species Evaluated for Project). These species are described below.

Special-Status Wildlife Species that are known to Occur, or Could Potentially Occur Within or Adjacent to the Project Area

INSECTS

Morrison bumble bee (*Bombus morrisoni*) and **Western bumble bee** (*Bombus occidentalis*) – These two bee species are identified by CDFW as critically imperiled and imperiled, respectively. They are generalist foragers, feeding on diverse pollen and nectar resources, including food plants such as thistle (*Cirsium* spp.), lupine (*Lupinus* spp.) and *Chrysothamnus* spp. (CNDDDB 2016; Koch et al. 2012).

The closest reported location in the CNDDDB (2016) for Morrison bumble bee is several miles north of the project area along the West Fork Carson River near the community of Woodfords. The closest reported CNDDDB location for western bumble bee is at a much higher elevation to the south in Hope Valley. Potentially suitable habitat for these species occurs in more open locations within or adjacent to the project area.

BIRDS

All raptor species and their nests are protected under Fish and Game Code §3503.5. Migratory non-game native bird species are protected under the federal Migratory Bird Treaty Act (MBTA). These protections prohibit the take (including disturbances which would cause abandonment of active nests containing eggs and/or young) of all birds and their active nests.

Raptors

Great gray owl (*Strix nebulosa*) – This State Endangered very large owl has a wingspan

measuring from 54 to 60 inches and a length of 24 to 33 inches to (Cornell 2016a). In California the great gray owl inhabits mixed conifer or red fir forests in or on the edge of meadows. Small mammals, especially rodents, form the bulk of this owl's diet. Nest locations consist of broken-topped dead trees or existing nests of other bird species. A great gray owl was observed in GHSSP in 1979 (CDFW 2016) and there is excellent breeding and foraging habitat in and adjacent to the project area.

Northern goshawk (*Accipiter gentilis*) – The SSC northern goshawk is the largest of the accipiter hawks and prefer old-growth conifer, mixed hardwood-conifer, birch, or aspen forests for nesting (Cornell 2016b, Squires and Reynolds 1997, Small 1994; Zeiner et al. 1990a). This species diet depends on season and region, but generally small rodents, squirrels, large songbirds, and medium-sized game birds form the bulk of their diet. The nesting period typically starts in March or early April, with only one brood being produced per season. Fledging occurs approximately 36 days after hatching. A northern goshawk was observed in GHSSP in 2010 (eBird 2016) and there is suitable breeding and foraging habitat in and adjacent to the project area.

Migratory Birds

Willow flycatcher (*Empidonax traillii*). – Habitat for this State Endangered species generally consists of extensive, dense willow thickets along riparian or other wetland areas (Cornell 2016c). Insects provide most of this small bird's diet, which is supplemented by berries in the fall. A willow flycatcher was observed in the Markleeville area in 2015 (eBird 2016). There is suitable habitat along Hot Springs Creek for willow flycatcher

MAMMALS

Sierra Nevada mountain beaver (*Aplodontia rufa californica*) – This SSC short-tailed rodent is about 12 to 20 inches in length and weighs approximately 1 to 2 pounds (iNaturalist 2016). It can be found in scattered populations throughout the Cascade, Klamath, and Sierra Nevada Ranges. Mountain beavers prefer dense riparian forest typically in close proximity to water and deep, friable soils that allow for easy burrowing (CDFG 1989; iNaturalist 2016; Zeiner et al. 1990b). This species feeds on a variety of plant material, including willows (*Salix* spp.), lupine (*Lupinus* spp.), and grasses. Suitable habitat for this species may be present near project sites.

Sensitive Bat Species – The project area is within the potential range of several sensitive bat species, some of which are known to roost in tree cavities. SSC bats that might roost within or adjacent to the project area include the hoary bat (*Lasiurus cinereus*). Other sensitive bat species that might roost within or adjacent to the project areas are the silver-haired bat (*Lasionycteris noctivagans*), the long-legged myotis (*Myotis volans*), and the long-eared myotis (*Myotis evotis*).

SENSITIVE NATURAL COMMUNITIES

Sensitive plant communities are those that are regionally uncommon or unique, unusually diverse, or of special concern to local, state, and federal agencies. Removal or substantial

degradation of these plant communities constitutes a significant adverse impact under CEQA. The California Department of Fish Game's California Natural Diversity Database (CNDDDB) maintains a list of the state's plant communities (also known as alliances) and identifies those of high inventory priority due to their rarity and threat. These are considered sensitive natural communities by regulatory agencies.

The CDFW classifies *Alnus incana* (**Mountain alder thicket**) **Shrubland Alliance** as a sensitive natural community. Within the project area this community is limited to the bridge crossing over Hot Springs Creek.

WATERS OF THE UNITED STATES AND WETLANDS

The federal Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States. The intent was to maintain the chemical, physical, and biological integrity of the nation's waters [Federal Water Pollution Control Act/Clean Water Act, 33 U.S.C. 1251, §101(a), 2002]. It was also intended to provide a mechanism for regulating discharges of pollutants into the waters of the U.S and gave the U.S. Environmental Protection Agency (USEPA) authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for all contaminants in surface waters.

Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. The term "waters of the U.S." applies to the jurisdictional limits of the authority of the US Army Corps of Engineers (USACE) to regulate navigable waters under Section 404 of the CWA. Navigable waters are defined in Section 502(7) of the Act as "waters of the United States, including the territorial seas." By definition, navigable waters include all wetlands and tributaries to "waters of the United States."

Under Section 404 of the Act, the USACE has authority to regulate the discharge of dredged or fill material into navigable waters. The authority for the USACE to regulate navigable waters is also provided under Section 10 of the federal Rivers and Harbors Act of 1899. Under this statute, the USACE regulates excavation or filling operations or the alteration or modification of the course, location, condition, or capacity of any navigable water of the United States. Waters are defined as all waters used in interstate or foreign commerce, waters subject to the ebb and flow of the tide, all interstate waters including interstate wetlands and all other waters such as: intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds.

The federal Clean Water Act (CWA) and the U.S. Army Corps of Engineers (USACE) defines wetlands as areas that are inundated or saturated by surface or ground water 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 USACE-jurisdictional wetlands meet three wetland delineation criteria: (1) hydrophytic vegetation, (2) hydric soil types, and (3) wetland hydrology. USACE-jurisdictional wetlands occur in three project locations north of Hot Springs Creek.

For purposes of Section 404 of the Clean Water Act, the lateral limits of USACE-jurisdiction over non-tidal water bodies (e.g. streams) extend to the ordinary high water mark (OHWM), in the absence of wetlands (USACE 2005). No project locations are located within the OHWM of any park streams, including Hot Springs Creek.

The State Water Resources Control Board regulates the alteration of any federal water body, including wetlands and streams identified above, through Section 401 of the Clean Water Act. The appropriate Regional Water Quality Control Board(s) certify that water quality of the affected water body is not subject to unacceptable environmental impacts through provisions of the 401 certification program (SWRCB 2016).

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands, as defined by §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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to

Biological Resources is based on criteria **IV** a-f, described in the environmental checklist above.

DISCUSSION

This project proposes accessibility improvements to the existing 0.7-mile Nature Trail at Grover Hot Springs State Park. Accessibility improvements include relocating a section of the existing trail out of sensitive wetland areas and upgrading other existing sections. Relocation of the trail will include the removal and restoration of existing formal trail sections and several user-created trails. Improvements to existing trail segments include construction of rock causeways, drain lenses, and a boardwalk. Where the existing trail crosses a seasonal drainage, the existing culvert and fill material will be removed and a boardwalk constructed in its place.

a) Sensitive Species

(i) Special status plant species.

Suitable to marginally suitable habitat occurs within the project area for 13 special status plant species, as described in the Environmental Setting. Extensive special status plant species surveys were conducted during the months of June, July, August and September 2010 by botanists Ellen Dean and others (Dean 2011). Additional surveys were conducted by a DPR botanist within project areas in July 2014 and August and September of 2015.

A single species, fiddleleaf hawksbeard, was located south of Hot Springs Creek in alkaline meadow areas outside of the project footprint (Dean 2011). No other special status plants were located during any of the surveys identified above.

ii) Morrison bumble bee and Western bumble bee.

As described in the Environmental Setting, potentially suitable habitat for these species occurs in the more open locations within or adjacent to the project area. Few food plants typically utilized by these species were located within the project footprint during plant surveys conducted in 2014 and 2015; therefore, any potential impacts from project implementation would be less than significant.

(iii) Raptors and migratory birds.

As described in the Environmental Setting above, suitable nesting habitat for several species of raptors and migratory birds exists within or adjacent to the project area. Other avian species not identified in the Environmental Setting may also be present during the breeding season within or adjacent to the project area. Construction activities that generate noise above ambient levels could impact nesting birds if conducted during the breeding season. Integration of **Standard Project Requirement Bio-1: Raptors and Migratory Birds** would reduce project impacts to a less than significant level.

SPR BIO 1 – RAPTORS AND MIGRATORY BIRDS

If construction-related activities exceeding ambient noise levels are conducted between February 1 through and August 15 then focused surveys for nesting migratory bird and raptor species will be conducted by a DPR-approved biologist before construction activities occur in these months to identify active nests. The following requirements apply to the surveys:

- Surveys for active raptor nests will be conducted within a 500-foot radius of the project area no more than 7 days prior to the beginning of construction. If active nests are located within a 500-foot radius of the project then, on a case by case basis, an appropriate buffer will be established at the discretion of a DPR-approved biologist. No construction activities will occur within buffer zones until the young have fledged and the young will no longer be impacted by construction activities, as determined by the DPR-approved biologist.
- Surveys for active migratory bird nests will be conducted within a 150-foot radius of the project no more than 7 days prior to the beginning of construction. If active nests are located within a 150-foot radius of the nest site then, on a case by case basis, an appropriate buffer will be established at the discretion of a DPR-approved biologist. No construction activities will occur within buffer zones until the young have fledged and the young will no longer be impacted by construction activities, as determined by the DPR-approved biologist.

(iv) **Sierra Nevada mountain beaver.**

This mammal species requires dense understory for food and cover and needs an abundant supply of water. Burrows are constructed in soft soil, typically adjacent to a stream. While suitable habitat for this species may exist in locations adjacent to Hot Springs Creek, none of this habitat would be impacted by the project.

(v) **Sensitive bat species.**

Several sensitive bat species may occur within or adjacent to the project area, including species that are known to roost in tree cavities. No potential bat habitat would be impacted by this project.

- b) As described in the Environmental Setting, riparian habitat is limited to the bridge crossing of Hot Springs Creek. This project would not result in the removal of any existing riparian vegetation. No Impact.
- c) Areas of federally protected wetlands, as defined in Section 404 of the federal CWA, occur in three project locations north of Hot Springs Creek, as described in the Environmental Setting. These wetlands are subject to regulation by the USACE and the RWQCB under sections 404 and 401 of the CWA, respectively. Work activities in wetland areas include 1) rehabilitation of volunteer trail sections through decompaction of the trail surface and utilizing native seed/mulch and salvaged sod plugs to help re-vegetate the trail corridor and reduce continued water capture; 2) construction of rock-lined

causeways; and 3) construction of a boardwalk (eastern –most trail section).

This project will require issuance of 401 and 404 permits prior to the start of work to address temporary and permanent impacts. All permit/agreement conditions would be implemented, ensuring any potential impacts remain at a less than significant level.

- d) The proposed project would not impede fish passage or wildlife movement. No fish-bearing streams would be affected by project implementation. The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. No Impact.
- e) The California Department of Parks and Recreation (DPR) is not subject to local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; however, Department policy and its Mission Statement incorporate the protection of natural resources into the short-term and long-term management goals for its park units. Furthermore, DPR operates cooperatively with sister agencies and local jurisdictions to insure natural resources are protected in perpetuity. No Impact.
- f) This project would not conflict with any Habitat Conservation Plans, Natural Communities Conservation Plans, or other approved habitat conservation plan. No Impact.

V. CULTURAL RESOURCES.

The information provided for cultural resources was excerpted from the *Archaeological Excavation Report and Evaluation for Three Prehistoric Sites CA-ALP117, CA-ALP-118, and CA-ALP-268, Grover Hot Springs State Park, Alpine County California*, prepared by Denise Jaffke, Sierra District Archaeologist, and William Bloomer of Lithic Arts, a local area expert.

ENVIRONMENTAL SETTING

Grover Hot Springs State Park lies in Hot Springs Valley at an elevation of nearly 6,000 feet, with mountains rising abruptly on three sides. Hawkins Peak, at 10,023 feet, is three miles northwest of the valley, and Markleeville Peak, 9,417 feet, lies four miles to the southwest. The location of the project area falls within Township 10 North, Range 19 East and includes a portion of Section 24 (Figure 2). The land and natural resources incorporated in the park and its surroundings, with the exception of the hot springs, are representative of the northern portion of the eastern escarpment of the Sierra Nevada crest. Lying in a 6,000-foot-high glaciated valley, it is three miles west of the county seat of Alpine County, Markleeville.

Glaciation and a cold/dry climate dominated until about 10,000 years ago. Glacial termination marks the beginning of the Early Holocene, a period of climatic change from approximately 10,000 to 7000 B.P. (years before present) when the general climate was in a warming and drying trend, but with cool and moist winters. Flora and fauna at that time were the precursors to historic ecological communities.

The Middle Holocene, from 7000 to 4000 B.P., saw an increased warm/dry climate, to the point of drought conditions. Precipitation fell primarily as summer rains with decreased winter snow. Tahoe's waterline fell at least 20 feet and it is likely that smaller lakes and streams became seasonally desiccated. Vegetation likely changed to drought tolerant xeric plants with animal populations adapted to a xeric ecology.

Eventually, more modern Late Holocene conditions prevailed, setting the stage for intensive habitation from 4000 years ago until Euro-American settlement. Late Holocene conditions fluctuated from generally cool and moist with wet winters to very warm and dry periods of drought. Pinyon pine forests extended northward into the project vicinity after 2000 B.P. (Elston 2002), becoming increasingly available as an important Washoe food resource. During most of this period, upland landforms were essentially the same as they appear today. Vegetation and animal communities have been altered by historic activities, but except for the extinction of grizzly bears, wolverines and mountain sheep, the predominant prehistoric character of eastern Sierran landscape might remain largely representative of the Late Holocene paleoenvironment.

At approximately 6,000 ft. in elevation, the eastern Sierra plant and animal communities surrounding the project area are characterized within a Transition Zone between the Jeffery Pine Belt and the Sagebrush Belt (Storer and Usinger 1963). Jeffery pine (*Pinus jeffreyi*), lodgepole pine (*Pinus contorta*) and white fir (*Abies concolor*) dominate at upper elevations while juniper (*Juniperus occidentalis*) and incense cedar (*Libocedrus decurrens*) are also present. Quaking aspen (*Populus tremuloides*) and black cottonwood (*Populus trichocarpa*)

line the stream bank. Understory plants include mountain mahogany (*Cercocarpus ledifolius*), Manzanita (*Arctostaphylos patula*) and tobacco brush (*Ceanothus velutinus*).

Fauna in the project vicinity should have included the same species generally present today with the possible additions of prong-horned antelope (*Antilocapra americana*) and mountain sheep (*Ovis canadensis*) at the higher elevations. Common mammals include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), black bear (*Ursus americanus*), bobcat (*Lynx rufus*), mountain lion (*Felix concolor*), marmot (*Marmota flaviventris*), striped skunk (*Mephitis mephitis*), jackrabbits (*Lepus* sp.), cottontails (*Sylvilagus* sp.) and ground squirrels (*Spermophilus* sp.). Resident and migratory bird species are abundant. Most notable are the golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), red tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperi*), and California quail (*Lophortyx californicus*).

Prehistory

Current understanding of northern Sierra Nevada and western Great Basin prehistory is framed within a hypothetical sequence spanning nearly 12,000 years of environmental change and human adaptation (Elston 1986; Grayson 1993). The archaeological phenomena, which generally reflect the adaptive strategies used in prehistory to cope with changing environments and evolving social dynamics, are chronologically organized into five time periods (Western Great Basin Adaptive Sequence: Table 1). Within this overarching framework, a regional chronology for the Eastern Sierra Front has been developed through substantial programs of archaeological investigation throughout the northern Sierra and the Truckee Meadows (Elston 1971; Elston et al. 1977; Elston et al. 1994, 1995a; Moore and Burke 1992; Zeier and Elston 1986). The Eastern Sierra Front Chronology (Elston et al. 1994, 1995a) provides a relevant temporal framework for comparing and interpreting Tahoe archaeology.

The earliest recognized period in western Great Basin prehistory, from ca. 11,500 to 10,000 B.P., is marked by the presence of fluted projectile points. Most Great Basin fluted points are surface finds from Late Pleistocene/Early Holocene lakeshores. Grayson (1993) suggests that this is because plants and animals associated with shallow lakes and the surrounding steppe would have been the most abundant local food resources of that time.

Pre-Archaic sites date from ca. 10,000 to 7000 B.P. and are located on lakeshores, river terraces, and high ground above valleys (Basgall 1988; Davis and Rusco 1987; Martin 1998; Willig 1988; Zancanella 1988). People probably entered the Tahoe Basin and upland eastern Sierra during this time, soon after the Early Holocene retreat of Sierran glaciers. The earliest well dated archaeological evidence of human presence in the Tahoe Basin is marked by a Pre-Archaic stone tool assemblage from South Lake Tahoe along Taylor Creek (Martin 1998). Subsistence adaptation at this time probably relied on high residential mobility in the pursuit of large game animals (Elston et al. 1995b) and non-intensive plant food processing and storage. The use of fluted points is thought to have continued into the Pre-Archaic, but the most distinctive tools in the Pre-Archaic toolkit are large, stemmed, edge-ground projectile points of the Great Basin Stemmed series and enigmatic flaked stone crescents. These are the temporal markers representing northern Sierra occupation during the Tahoe Reach period (Elston et al. 1995a).

The Early Archaic period (ca. 7000 to 4000 B.P.) begins with a Middle Holocene warming trend, during which lakes and marshes receded, and drought tolerant vegetation communities expand. Elston et al. (1995b) predict that, as warming causes resource distributions to constrict, human subsistence strategies should become more logistical. Diet breadth should begin to increase, probably with the incorporation of more plant resources, and residential sites should be tethered to reliable water. Drying lowlands may have prompted people to travel into upland resource zones where, in addition to hunting, prehistoric economies also incorporated seed processing and fishing. Unfortunately, archaeological sites dated to the Early Archaic are rare, and populations probably were small (Elston 1986). No diagnostic projectile point types have been identified for most of the Early Archaic Spooner period (Elston et al. 1995a). It isn't until near the end of this period, ca. 5000 B.P., that the Martis Contracting Stem and Martis Split Stem atlatl dart points were thought to have appeared; although more recent research suggests that contracting stem forms were used throughout Early Archaic times (Milliken and Hildebrandt 1997). These two points are considered equivalent to contracting stem and split stem points of the Gatecliff series (Elston et al. 1995a).

Late Holocene archaeology, beginning with the later Early Archaic, is better known, and Late Holocene chronologies are well developed (Elston et al. 1995a; Grayson 1993). The Martis Contracting Stem and Martis Split Stem projectile points represent a late aspect of the Early Archaic, but continue in the archaeological record through the Early Martis period to 3000 B.P. Most of the archaeological sites in the western Great Basin date to the Late Holocene, suggesting that populations were increasing. Increased site numbers are also probably due, in part, to better preservation. Late Holocene climate, after ca. 4000 B.P., saw a trend toward cooling and increased moisture (Lindström and Bloomer 1994). The Early Archaic at this time is characterized by diversified land use with large sites located near permanent water. Big game hunting continued, but with intensified seed processing and storage (Elston 1986).

The Middle Archaic begins at about 4,000 years ago, during the Early Martis period, and continues through the Late Martis period to ca. 1300 B.P. (Elston et al. 1995a). The Martis Contracting Stem and Martis Split Stem points reflect an early aspect of the

Middle Archaic, but Martis Corner-notched projectile points (ca. 3000–1300 B.P.) are the predominant Middle Archaic time marker. The environment at this time would have been predominantly cool and wet, becoming warmer and drier by about 1,500 years ago (Lindström and Bloomer 1994). With a return to more optimal living conditions and rising population densities, there was more intensive prehistoric use of the Tahoe Sierra and eastern Sierra front. Elston (1986) notes that the Early/Middle Archaic transition was gradual; probably marked by changes in settlement and subsistence practices. He points to consistent site reoccupation as an indicator of a developing settlement strategy, and further explains that the nature of the residential sites and the occurrence of specialized cache sites, “suggest that some groups regularly exploited a limited territory” (Elston 1986:142). Big game hunting was still important, but resource diversification probably included an increase in the use of small mammals. A hallmark of Middle Archaic prehistoric culture in the Tahoe Sierra is the increased use of basalt in the manufacture of stone tools. In the north-central Sierran region, the “lithic landscape” is marked by at least 17 basalt flows that were the focus of prehistoric quarrying activities. At this time, lithic technology became focused on the production of large

bifaces, using toolstone procured from large quarries such as Watson Creek on Tahoe's north shore (Bloomer et al. 1997) and Steamboat Hills on Mt. Rose's lower eastern flank (Burke 1987).

The Late Archaic period, about 1,300 years ago to historic contact, has been equated with the Washoe, a distinct Native American culture described in ethnographic accounts written by early anthropologists. This period is marked by an overall drying trend, punctuated by cool-moist episodes alternating with extended severe drought that lasted until about 500 years ago. Such extreme climatic fluctuations may have allowed for year-round high elevation residence at times and prohibited even seasonal occupation at other times. The early half of this period (Early Kings Beach period; ca. 1300 – 700 B.P.) is marked by Rose Spring series arrow points, the latter half (Late Kings Beach period; ca. 700 – 150 B.P.) by Desert Side-notched and cottonwood arrow points. Bow and arrow technology replaced the atlatl and dart during the Late Archaic. At the same time, the Middle Archaic production of large bifaces was replaced by an emphasis on a core/flake technology and the use of simple flake tools. Resource diversification continued to increase, with greater emphasis on plants and small game.

Washoe Land Use

Washoe land use strategies are ethnographic patterns that represent the latest manifestation of prehistoric Tahoe and eastern Sierra land use. Subsistence and settlement patterns were documented by anthropologists (Downs 1966; Freed 1966; Price 1980) during a relatively short historic period of fluctuating paleoclimate and European intrusion that probably altered the course of Washoe activities. Therefore, Washoe land use is viewed not as analogy to the past, but as a guide for looking at prehistoric land use in light of paleoclimatic history and subsistence adaptation.

Washoe land use is best characterized as generally following a “seasonal cycle of procurement” (d’Azevedo 1986: 472) where temporary subsistence camps were located to take advantage of available plant and animal resources throughout the year. The general tendency was to move from low elevation winter villages to high elevation summer villages and back again, but not everyone moved from their villages. The degree and duration of movement depended on seasonal resource abundance. In fact, Tahoe villages might have seen year round occupation during warm/dry winters and gone unoccupied during summers when resources were scarce (Lindström and Bloomer 1994:28). This flexibility in subsistence transhumance translates to seasonal use of the eastern Sierra uplands by small groups from permanent lowland villages and was probably characteristic of eastern Sierra Washoe settlement throughout prehistory.

Woodfords and Diamond Valley communities, north of the project area, were likely permanent settlements (d’Azevedo 1986: 467). Prehistoric archaeological sites at Markleeville indicate the location of a possible year-round residential village. These communities enjoyed ready access to the high country, the eastern pinyon groves, other plants and animal resources, and toolstone in and around the project area.

Hunting deer and mountain sheep was often done by one or two individuals with bow and arrows (d’Azevedo 1986:477-479). Small groups of hunters in pursuit of herds constructed

hunting blinds with rock, poles and brush. Large group hunts were organized to drive deer and antelope herds towards waiting hunters or into corrals where they were shot. Prior to the advent of bow and arrow technology about 1,300 years ago, atlatls (throwing sticks) were used to throw darts fitted to long shafts. Large drives were also used to hunt rabbits, driving hundreds of animals into long nets. Other small mammals, such as porcupine, beaver, badger, marmots and squirrels were shot or trapped. Mice, rats, gophers and moles were also taken. Most birds were eaten, but reptiles were not.

Fish were a predictable and consistent year-round Washoe resource (d'Azevedo 1986; Lindström 1992). Tahoe and its tributaries from spring through summer, and spring and fall runs of trout and whitefish along the Carson River were prime fisheries (d'Azevedo 1986: 473). Dried fish were transported to winter villages and could have been transported to seasonal camps at high elevations where fish were not available.

Gathering plants was an intensive effort from spring through fall for food, medicinal and raw material for many manufactured items (d'Azevedo 1986: 473-477). Fresh greens are typically abundant in the spring. Roots, bulbs and seeds are harvestable during summer, while pine nuts were the most abundant and valuable local plant resource in the fall. Acorns were also a valuable fall resource, but had to be gathered by trekking west over the Sierra crest to oak groves on the western slopes. Therefore, acorns were probably not a staple for the most distant Washoe groups. Insects, worms, larvae and honey were also collected.

Euro-American Land Use

Euro-American land use is only briefly mentioned, given the general focus of the current investigation and dearth of historic artifacts recovered from the investigation. The following summary of Euro-American presence of Grover Hot Springs is drawn from W. Turrentine Jackson's *Report on The History of the Grover Hot Springs State Park Area and Surrounding Region of Alpine County* (1964).

Perhaps the first white men to see the hot springs at Grover were those who accompanied John C. Fremont on his crossing of Sierra Nevada during the winter of 1843-1844. Frederic S. Dellenbaugh indicates on a map of Fremont's route that the party traveled up Markleeville Creek and camped at hot springs in the valley. Since that time many visitors have commented on the beauty of the area and the therapeutic qualities of the hot springs.

Prior to the creation of Alpine County, when the area was still in Amador County, travelers periodically reported to the Sacramento newspapers on their activities and observations and at least one told of the beauties of Hot Springs Valley in the summer of 1863:

About three miles from Markleeville is a most beautiful valley, called Hot Springs Valley. It is owned by Hawkins, the pioneer settler in this section. In this valley is one of the most remarkable hot springs in the State. The water at the spring is nearly 200 degrees Fahrenheit, and discharges an enormous quantity of carbonic gas. It contains a large quantity of lime, soda and sulphate of iron in solution, which, as it flows over the ground, deposits a thick mass of tufa, and this is covered by a coating of muriate of soda. This would make a

most delightful place for a hydropathic establishment, as its surroundings are really beautiful, situated in a charming valley, quite sheltered from the prevailing winds by lofty mountains covered to their very summits with splendid trees. Here is the only place in this section where the sugar pine grows. Here, also may be found in the greatest perfection the balsam, fir, juniper, pitch and yellow pine, cedars and nearly all the indigenous forest trees of California (Sacramento Daily Union, August 13, 1863. 1-6. California State Library as quoted in Jackson 1964).

Kilgore operated a dairy business and improved the property by building a bath house, barn and outhouses between 1864 and 1866. In 1864, the year of the creation of Alpine County, two newspapers came into existence: The Alpine Chronicle of Markleeville and the Monitor Gazette. The editors of both journals periodically published descriptions and news items concerning this place of natural beauty in the county, like the following example:

The Geysers or Hot Springs. These boiling springs lay in a southwest direction and about four miles from Markleeville, Alpine County, and are in John Hawkins' Ranch. The largest spring is circular in form, about twelve feet in diameter and eight feet in depth. A mound or ring has been thrown around the edge, the accumulations of sediment deposited from the water. There are some half dozen smaller springs within a circuit of an acre, one of which, about a foot in diameter, boils briskly, and contains a red sediment which gives a very beautiful appearance. The big spring and some of the smaller ones will cook an egg in a few minutes, and a friend at our elbow suggests that if the backsliding followers of John the Baptist had have taken their initiatory in one of them, they would have remembered the obligation a little longer. (Monitor Gazette, June 18, 1864. Bancroft Library. In Jackson 1964).

John Hawkins, the owner of the ranch in Hot Springs Valley where the springs were located, was listed in the Register of Alpine County, 1873, as a farmer from Vermont, 54 years of age, whose chief residence was at Cary's Mills or Woodford's. This would indicate that he was 45 when this description was written. Between 1864 and 1866 many improvements were made in the valley and Hawkins' leased his ranch to C. H. Kilgore. A county newspaper editor revealed developments:

Hot Springs Valley--Three years ago we visited the hot springs three miles west of Markleeville, then in the state nature left them. A devious trail was the only avenue of approach and facilities for bathing were confined to a natural pond sufficiently removed from the springs to cool the water pond sufficiently remove to the right temperature. Even then it was a grand luxury, one that no combination of waters heated by art could furnish, to dally, and swim, and roll in the limpid waters, soft, warm, and continually flowing in and out, therefore pure and healthy. On Thursday we again visited this beautiful valley, riding over a very good carriage road, and though the hard times have prevented the improvements which the place deserves, enough is done to show what a fine place of resort might be made here if times would justify. Mr. C. H. Kilgore has the valley leased and is carrying on quite a dairy business, making butter

and cheese, a convenient though rude bath house has been constructed, a comfortable dwelling, barn and outhouses make it look home-like, and we would like very much if it were possible to enjoy, daily, the luxury of a bath of the kind we had Thursday, for we are getting old and believe this is the fabled fountain of youth. (Alpine Miner, July 28, 1866, Bancroft Library. In Jackson 1964).

Hawkins was interested in selling, his ranch in 1866 and Henry Eno, the county judge, recognizing both the beauty and value of the valley wanted very much to purchase the property. He wrote a relative from the county seat at Silver Mountain:

What I aim at & what I want more than anything else is to be able to own the Hot Spring ranch of about 160 acres situated 12 miles from here & about a thousand feet lower down in the Valley--there is a beautiful stream of water flowing through it abounding in speckled trout--about 25 tons of hay (always worth \$25 per ton and often \$40) can be cut from it & with comparatively little expense a hundred tons could be made a year--it is in a valley with mountains 1000 feet or more high on each side--but the great beauty & excellence of it is the Hot Springs--about eight or ten springs in a half acre several of them hot enough to boil an egg—also an ice cold spring, so that the water can be made of what temperature you please--the water flowing from all & running together on a half-acre would amount to at least 25 inches as miners compute it (which is water running through an orifice 25 inches long by inch wide under seven inch pressure) eighty acres of the land is first rate--no timber on it on each side plenty of the best pine, cedar, fir, & tamarack--in the summer season it is a most delightful spot--it can now I understand be bought for a \$1000 (Henry Eno to William Eno, April 24, 1866. Eno Papers, Yale University Library. In Jackson 1964).

Apparently the land did not sell for in February 1869, C. H. Kilgore again leased the Hot Springs Valley Ranch, and in partnership with Dan Hawkins, expected to launch a dairy business. The Alpine Chronicle noted, "This is one of the loveliest spots in the county, and the very place from which to expect good butter." By April, the newspaper reported the partners were ready to turn out a large quantity of butter." The relationship between John Hawkins and Dan Hawkins, if any, is not clear. Both men were listed in the Register of 1873 but Daniel Robert Hawkins, age 24, recorded his birthplace as Ohio and his current residence at Markleeville, both of which differed from the older Hawkins. Both were farmers, and they may have been relatives, even father and son. When summer came, the local press again was full of praise for the local resort.

Hot Springs Valley, this beautiful valley, situated about eight miles from Markleeville, is quite a favorite place of resort for our citizens particularly on Sundays. Dan Hawkins, the worthy proprietor, has a fine bathing house, as well as a large swimming bath, to which his friends have free access. A Sunday or two ago a large number of ladies visited the valley and enjoyed the luxuries of the bath. The young ladies of the party will no doubt recommend

bathing in the pellucid waters of the valley for beautifying the complexion-- equal to Florida water. (Alpine Chronicle, June 26, 1869. In Jackson 1964).

In 1873 the woodchoppers who for years have been cutting the trees of Alpine County and floating them down the tributaries and main stream of the Carson River to the Nevada mines moved in on Hot Springs Valley and denuded the hillsides. A local editor revealed the destruction after a visit to Hawkins' Hot Spring:

A few days since we drove down to this once beautiful locality. We say once beautiful, because the blight that has fallen on this whole slope, has not spared it but is rapidly devouring this fairest spot within the confines of our county; rendering desolate the tract, that left alone or improved upon, would, in a few years, have been one of the favorite Summer resorts of the coast; --the Springs alone warrant the assertion.

One year ago we visited them for the first time. We then found a stretch of meadow land surrounded on three sides by lofty mountains covered with a dense growth of evergreen trees, which cast an almost perpetual shadow on the ground beneath, in approaching the springs from the east we skirted the south side of the meadow, at the base of the mountain. Just beyond, on the west side, the trees had crept down, and covering a portion of the valley, formed one of the loveliest picnic grounds imaginable.

We went there to enjoy again the same beautiful solitude, but found instead that the irrepressible, conscioncelss (sic) woodchopper had already denuded the valley and begun stripping the mountains. Except immediately around and above the springs the attractiveness is all gone. Five wood camps within a radius of a mile will soon accomplish their purpose and render useless land that might be used for a better purpose, without such a cruel sacrifice.

Mr. Hawkins, the genial proprietor of the springs, is sanguine of future prosperity, through the agency of his property. We hope he may succeed, but really fail to see what attractions there will be except to invalids who seek the healing waters, if he allows his land to be stripped of all its beauty, [Alpine Miner, September 13, 1873] (Jackson 1964).

During 1874, when Hot Springs Valley was least attractive, Alvin Merrill Grover formed a partnership with Daniel Hawkins and obtained an interest in the land in Hot Springs Valley apparently by filing a homestead. The Alpine Chronicle announced on January 16, 1874 "Hawkins & Grover have made, and are making improvements upon their property. The old bath house has been removed, and a new one built in connection with the swimming bath, which has been enclosed. There is not in Alpine a more picturesque valley than this, and we doubt not that it will be a favorite resort this coming season." At this time, Dan Hawkins was Deputy County Clerk and A. M. Grover was Deputy Sheriff in Markleeville and also the County Tax Assessor. Grover was born in West Gardiner, Maine, in July, 1844. He ran away from home when he was about six-teen years old and later he told of hiding in a rain barrel while his step-father and older brother searched for him. He came to California in 1860 or 1861

following the route over Kit Carson Pass. He mined at Chinese Camp and drove a team to Silver Mountain which was booming in 1863. Grover and Hawkins were not only associated in ranching activities in Hot Springs Valley but also in the New England Water Company. At one time, Grover owned a hotel in Silver Mountain and when that community was abandoned he moved the structure to Markleeville. According to the members of his family:

Alvin Merrill Grover developed the hot springs, having paying guests, and it was considered quite a fashionable spa at the time. There was a swimming and bathing pool surrounded by mud baths. Various springs were said to contain different minerals, and the waters were considered comparable to those of Carlsbad, Germany. Many people came for rheumatism and supposedly left in much better condition than when they arrived [Records of the Families of California Pioneers, XXV, Daughters of the American Revolution;1957. pp. 40-44. State Library.] (Jackson 1964).

In addition to his homestead of 185 acres in Hot Springs Valley, Grover obtained a patent to 5,000 acres of grazing land at Wolff Creek. He was a successful farmer owning many pieces of property in Alpine County. As the population of Alpine County declined, Hot Springs Valley remained a favorite recreation place for the county's citizens. As July 4, 1878 approached, A. M. Grover ran an announcement in the Chronicle that there would be a picnic at Hot Springs Valley on that national holiday followed by a grand ball in the afternoon and evening.

Little information is available on the activities at Grover's Hot Spring between 1878-1888. The California State Mineralogist in the latter year noted that the hot springs four miles west of Markleeville were noted for their curative properties and that in Hot Springs Valley there was a "large deposit of limestone of very good quality." By 1895 the ownership of the spring had passed to Mrs. H. A. Grover and the bathing facilities at the springs were well patronized.

Visitors to the hot springs were housed in nearby Markleeville at the Hot Springs Hotel. This building was originally known as the Old Fiske House and was located in Silver Mountain. In 1883, A. M. Grover purchased the building, took a crew to Silver Mountain and systematically tore down the structure marking every board and saving some nails, carted it to the new site in Markleeville, and placed it on new foundations. Around 1900, the name of this building was changed to the Alpine Hotel and it is still standing. [The Oakland Tribune, January 18, 1959.] (Jackson 1964).

In 1915, the United States Geological Survey made a comprehensive report on the "Springs of California." As for Grover's in Alpine County, the reporters noted that the place had been visited as a camping resort for years and that in 1909 a pool 3 to 4 feet deep and about 30 feet square was used for bathing. The reporter noted that "considerable heated water rises at Grover's". The geologists recorded in addition, the slopes that surround the springs are granitic, but less than half a mile to the east there is lava that possibly has some relation to the hot water and to its content of lime carbonate. The fact that an extensive fault passes close to the springs suggests, however, a more plausible cause for the issuance of the hot water (Jackson 1964).

In 1920, the California State Mineralogist confirmed the earlier observations by stating, "Two groups of hot springs issue from a terrace on the edge of a meadow 200 to 300 yards south of Markleeville Creek. The springs deposit a good deal of calcite, and the terrace has probably been built up in this way. The combined flow from the dozen springs is probably 12 miner's inches, and the temperature of the water ranges from 128° to 146° F., being in one case too hot to drink, Water from one group is collected in a small bathing pool." Campers and local residents in Alpine County resorted to the springs in the summer months and the water had a reputation for benefitting colds and rheumatism. In October, 1920 there was a movement on foot in Markleeville to obtain the springs and the surrounding land and convert the place into a free camp site and park for tourists visiting in Alpine County. The State Mineralogist supported the movement by saying, "It is admirably fitted for such use, as the location is one of natural beauty [Report of The California State Mineralogist, XVII, 1920, pp. 404-405.] (Jackson 1964).

There is a rustic dwelling constructed in the 1920s that is located near the present Hot Springs pool facility, locally known as the Scossa Cabin.

The place was a seasonal residence for [Joseph] Scossa, used from the first spring thaw to the end of the hunting season in the fall. His main activity there was to look after his hot springs resort. The cattle that grazed in the meadow were not his; he only leased out the land to the owner of the herds. The cabins place in history, then, is its connection with Scossa's resort, which was the last period of private ownership of the hot springs. The place was used as a residence for park personnel until recently. (Lortie 1978).

The State of California started acquisition of the hot springs property in 1920, and incorporated the hot springs into the State Park system in 1928. It has been State Park's policy since inception of Grover Hot Springs State Park that the bathing facilities are open to the public, and only a standard use-fee is to apply for visitors to the pool and recreation activities.

Cultural Resources Inventory

The entire project area and vicinity were subjected to intensive pedestrian survey by California State Parks archaeologists Steven Hilton, Scott Green and Dionne Gruver from the Northern Service Center and Denise Jaffke, California State Parks, Sierra District Archaeologist. The above mentioned archaeological sites and features were noted. Avoidance strategies were developed in the field during the inventory; the results are incorporated into the analyses provided below.

Cultural Resources within the APE

Two Prehistoric Sites are located within the proposed project area; CA-ALP-117 and CA-ALP-118. Both of these sites are located along Hot Springs Creek and within the vicinity of Hot Springs Trail. CA-ALP-118 was recommended as eligible for listing on the NRHP and CRHR for its ability to contribute information important to prehistory (Criteria D/4), by the Sierra District Archaeologist in 2008. CA-ALP-117 was recommended as not eligible during the same evaluation project. Since 2008, additional studies near these two sites suggest the sites may be temporally related. Additional archaeological studies are necessary to determine the relationship between these two geographically proximate archaeological sites. The existing

Hot Springs Trail is located adjacent to CA-ALP-118 and CA-ALP-117, there is also a user-defined trail bisecting the two sites.

There is an unrecorded historic Water Conveyance System (WCS) consisting of a ditch, earthen berm and dam features located along the northern and southern periphery of the Hot Springs Meadow. North of the Hot Springs Meadow almost all of the annual and ephemeral drainages flowing south, from above the meadow, were at some time in the past intersected by the WCS. The drainages are channeled, or dammed to flow into the ditch that runs west to east. The ditch is a typical 3-foot-wide x 1-foot-deep feature, with berms on both sides. The ditch conveyed water downslope to the east and continues through the campground and beyond the State Park boundaries towards a ranch and perhaps to the city of Markleeville. The existing Nature/Waterfall Trail traverses alongside and bisects the WCS in various places. The WCS does not currently carry any water and is no longer functional due to various breaches along the course of the ditch from seasonal flooding, debris flow, and subsequent agricultural and recreational use of the area. This historical element of past ranching and water conveyance activities has not been evaluated for inclusion on the NRHP or CRHR.

South of the Hot Springs Meadow the hot springs themselves, a modern pool, and the Scossa Cabin are located. These historical buildings and features are near the parking lot and trail terminus. The features associated with the historical use of the hot springs will not be affected by the current proposed project, as they are currently in use and within a paved parking area. The parking lot is used by current visitors to the hot springs.

Native American Consultation

The Native American Heritage Commission (NAHC) was requested in May 2015 to conduct a sacred lands file search and provide a list of locally interested Native American individuals and entities. The sacred land files search did not reveal any sacred lands within GHSSP. The NAHC enclosed a list of Native Americans who may have knowledge of the cultural resources in the project area.

The Native American individuals and entities were sent a letter and project area map in November 2015 via certified mail. Receipts of delivery of the project description and maps, to the 4 Native American contacts provided by the NAHC, were received by State Parks in December 2015. To date, no additional mailing or letters have been sent or received by California State Parks.

In late December 2015, each of the contacts provided by the NAHC were contacted via phone and e-mail soliciting information regarding cultural resources in the project area. As of January 2016, no additional information from Native American contacts has been received by California State Parks.

POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Disturb any human remains including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code 21074? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Cultural Resources is based on criteria V a-c, described in the environmental checklist above.

DISCUSSION

- a) There are no historical buildings located within the proposed project area. The current Hot Springs Pool facility and surrounding infrastructure are located outside the area of potential effect. The Water Conveyance System (ditch) on the northern periphery of the Hot Springs Meadow is bisected by the existing trail a few times. All of the proposed work is within the existing trail footprint; keeping the work to the planned APE will cause no effect to the historical significance or integrity of the water conveyance system. No Impact.
- b) As stated in the Environmental Setting above, archaeological sites are located within the proposed project area, and there are prehistoric archaeological sites, and historic archaeological features close to the proposed project area of direct impact. Additionally, buried archaeological deposits in this area are not unusual and are very important to the understanding of the past.

Trail construction and rehabilitation activities related to this proposed project, including but not limited to user-defined trail rehabilitation, earth movement, plant removal and planting, staging areas, or operation of equipment could significantly impact unrecorded archaeological deposits located within the proposed project area. Adherence to **Cultural SPR – 1 Previously Undocumented Resources, and Cultural SPR 2 - Archaeological Monitoring** would reduce impacts to archaeological resources to a Less than Significant level.

SPR CULT 1 - PREVIOUSLY UNDOCUMENTED RESOURCES

If previously unknown cultural resources (including but not limited to dark soil containing shell, bone, flaked stone, ground stone, or deposits of historic material) are discovered, work shall immediately cease within 10 feet of the find(s) and notify the State’s Representative of the location and description of the find(s). Contractors shall be directed to other project tasks. Contractors shall not work in the area until

receipt of written approval from the State's Representative to resume activity in the area of the discovery.

SPR CULT 2 - ARCHAEOLOGICAL MONITORING

Contractors shall allow on-site archaeological/Native American monitoring at the discretion of the DPR-approved archaeologist/Native American monitor.

PSR CULT - 3 ENVIRONMENTALLY SENSITIVE AREA.

Trail construction, rehabilitation or removal in the vicinity of the identified archaeological resources shall be limited to activities that will not cause ground disturbance. An environmentally sensitive area will be established in the field prior to all construction activities in the vicinity of CA-ALP-117 and -118. All construction personnel will also be required to attend a cultural resources sensitivity training as part of Cultural SPR-3 Pre-Construction Environmental Sensitivity Training. California State Parks Archaeologists will provide cultural resource training to construction staff, prior to project implementation. Construction personnel will be briefed about the Environmental Sensitive Area. Training will also discuss work stoppage and protocols if cultural resources are inadvertently discovered during project implementation.

All work on the northern segment of the trail will be confined to the existing trail footprint and tread way.

- c) In many of California's historic townsites and rural communities, discoveries have been made of Native American and non-Native American human bone. There has never been any human bone or human burials identified in or near the proposed project area.

However, there is always a potential of unanticipated discoveries of human bone. If any human remains or burial artifacts were identified, implementation of **Cultural SPR 4 - Human Remains Discovery** would reduce the impact to a Less than Significant level.

SPR CULT 4 - HUMAN REMAINS DISCOVERY

In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR 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 DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §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 (PRC §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.

- d) The Native American Heritage Commission's search of their sacred land files did not identify any previously recorded sacred lands or Tribal Cultural Resources within the proposed project area. Consultation with four individuals identified by the NAHC and representing the Calaveras Band of Me-Wuk Indians, and the Washoe Tribe of California and Nevada did not reveal any Tribal Cultural Resources, or identify any tribal concerns regarding resources within the proposed project area. No Impact.

VI. GEOLOGY AND SOILS.

ENVIRONMENTAL SETTING

Grover Hot Springs State Park is located in the eastern margin of the Sierra Nevada, near the transition zone between the Sierra Nevada Mountains and the Basin and Range province to the east (Conservation, Geological Gems of California State Parks-Geogem Note 35 Grover Hot Springs State Park, 2015). The Sierra Nevada is a nearly intact block of igneous and metamorphic rocks that has been uplifted and tilted to the west. The boundary between the Sierra Nevada and the Basin and Range geomorphic province to the east is marked by a major zone of faults known as the Sierra Frontal fault system. The faults allow the Sierra crest to rise, while the blocks to the east drop and stretch due to plate tectonics.

The area is underlain by Mesozoic granitic rocks (Department of Conservation, 2007). The granites are part of the Sierra Nevada batholith emplaced during the Jurassic and Cretaceous periods. They vary in composition from biotite granites to quartz monzonites. Pliocene volcanic rocks overlie the granites. The volcanics are pyroclastics dominated by flow breccias with lithic blocks ranging from less than an inch to a foot.

High angle north-south trending faults associated with Basin and Range crustal extension traverse the area, known as the Sierra Frontal fault zone. One strand of this fault, the Genoa Fault, follows the base of the mountain front south from Genoa, Nevada then extends into the mountains near the Grover Hot Springs. This fault is active, clearly offsetting young geologic deposits (younger than the last ice age). A splay of the Genoa Fault helped form the valley in which the Grover Hot Springs State Park is located and is probably the conduit for the rising hot water that emanates at the hot springs.

The hot springs are located along the south side of the valley. The water is approximately 140 degrees Fahrenheit, and flow is about 100 gallons per minute. Groundwater likely circulates along the fault where it is exposed to, and is heated at depth by deep-seated hot rocks, then moves back upward along the weakness plane along the fault. The rising mineral rich hot water deposits carbonate formations (travertine) when the water reaches the surface (Hodgson, 2003). The water spread out over the meadow surface flowing north toward Hot Springs Creek. Other hot springs also occur along this trend, extending from Mono and Long Valley to the south, Steamboat, and Beckworth to the north.

Glaciation sculpted the valley was during the Pleistocene and moraines are evident in the park. The most recent glaciation was perhaps as recently as 11,000 years ago. Alluvium covers the valley floor is by, including recent stream deposits and glacial materials. Large boulder erratics and lines of terminal moraines are present on the valley floor.

The area is seismically active, with numerous small earthquakes recorded on a regular basis. The area is located within seismic hazard zone 3 (Homefacts, 2017).

The topography includes the low gradient broad valley floor bottom at approximately 600 feet in elevation, which surrounded by steep valley walls and peaks that rise to over 9000 feet.

There is no evidence of mining activity or economic mineralization in the area of the park.

Soils in the eastern portion of the unit are Joecut-Heenlake association, generally a gravelly sandy loam, whose parent material is colluvium derived from andesite or tuff breccia over residuum derived from andesite or tuff breccia. In the western portion the soil unit is Toiyabe-Corbett-Rock outcrop complex, very bouldery to gravelly loamy coarse sand whose parent material is colluvium derived from granodiorite over residuum derived from granodiorite. The central meadow area is Cavebear-Hopeval complex, a loam to sandy or gravelly loam derived whose parent material is alluvium and outwash derived from mixed rocks sources (United States Department of Agriculture, n.d.).

WOULD THE PROJECT:	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
a) Expose people or structures to 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.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?

DISCUSSION

- a) i-ii** The project site is located within the Sierra Nevada and is potentially affected by seismic sources located within the Sierra Nevada Mountains, the Sierra Nevada Foothills Fault System to the west, and the Sierra Nevada Frontal Fault System in the vicinity. The project's only proposed structures are trails and interpretive signage. There are no buildings or structures that could be destabilized by seismic activity. This would be a Less-than-Significant Impact (Conservation, 1985).
- iii.** Risks of liquefaction are considered low as the soils are not clayey. No Impact.
- iv.** Risks of landslide are considered low; no evidence of landslide activity, and the project would not create or modify any natural slopes exceeding 15 percent, No Impact.
- b)** Trail construction activities would disturb soil and increase the short term potential for soil erosion from wind and water during construction. However standard BMP's/ construction practices for erosion and sedimentation control BMP's will be used to minimize effects during implementation. These will include use of burlap wattles and silt fences near streams, minimizing area of disturbance, and, mulching disturbed areas with native material. Long-term erosion will be reduced compared to current conditions due to improved layout of the trails. Currently the trails are below grad and capture and concentrate drainage. The project will build trails that are crowned on the meadow surface or are outsloped on hillsides to maintain sheet flow. Any areas to be restored will be revegetated with grasses or restore naturally with vegetation. Less-than-Significant impact.
- c, d)** Soils in the project area have a low potential for expansion and are not unstable or susceptible to landslide, lateral spreading, subsidence, liquefaction, or collapse. No Impact.
- e)** The project does not include wastewater facilities. No Impact.
- f)** The project is outside the area of the Hot Springs. The project is not located in an area with known paleontological resources. Less-than-Significant Impact.

VII. GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL SETTING

California is the fifteenth largest emitter of greenhouse gases (GHGs) in the world, representing about two percent of worldwide emissions. In an effort to help curb global warming, new state laws regulating GHGs were enacted in 2006. Assembly Bill 32, the Global Warming Solutions Act, requires the State to implement a series of actions to achieve a reduction in GHG emissions to 1990 levels by 2020 (California Air Pollution Control Officers Association, 2008).

Through AB 32, the statewide cap for 2020 GHG emissions has been set at 427 million metric tons of carbon dioxide equivalents (MMTCO₂E). Reducing GHG emissions to this level means cutting approximately 30% from business-as-usual emission levels projected for 2020, or about 10% from today's levels. On a per capita basis, that means reducing our annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020.

In December 2009, the Natural Resource Agency adopted amendments to the *Guidelines for Implementation of the California Environmental Quality Act* addressing the significance of impacts for greenhouse gas emissions (California Natural Resources Agency, 2009). Section 15064.4 of the amended CEQA Guidelines states: "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

The project site is located in Alpine County, approximately 9 miles west of Markleeville, California, within the Great Basin Valleys – Air Basin. The Great Basin Unified Air Quality Pollution Control District (GBUAQPCD) is a regional environmental regulatory agency (one of thirty-five local air agencies in California) whose primary responsibility is controlling air pollution from stationary sources (California Air Resources Board, 2005).

California State Parks (CSP) has developed a "Cool Parks" initiative to address climate change within the State Park system. Cool Parks proposes that CSP itself as well as resources under its care adapt to the environmental changes resulting from climate change. In order to fulfill the Cool Parks initiative, CSP is dedicated to using alternative energy sources, low emission vehicles, recycling and reusing supplies and materials, and educating staff and visitors on climate change (CSP, 2008).

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Greenhouse Gas Emissions is based on criteria **VII** a-b, described in the environmental checklist above.

DISCUSSION

a) i) Greenhouse Gas Emissions

In 2002 the California legislature declared that global climate change was a matter of increasing concern for the state's public health and environment, and enacted laws requiring the state Air Resources Board (ARB) to control GHG emissions from motor vehicles (Health & Safety Code §32018.5 et seq.). CEQA Guidelines define greenhouse gases to include carbon dioxide (CO₂), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The California Global Warming Solutions Act of 2006 (Assembly Bill 32) definitively established the state's climate change policy and set GHG reduction targets (Health & Safety Code §38500 et seq.). The State set its target at reducing greenhouse gases to 1990 levels by 2020.

According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." (CEQA Guidelines §15064(i)(1) and §15130).

In 2011 the CEQA Guidelines, Section 15064.4 Appendix G were modified to include thresholds of significance for Greenhouse Gases. The project would have potential significant impacts if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Due to the nature of the proposed project (trail project), DPR has determined that it is appropriate to assess potential GHG impacts qualitatively – as allowed by CEQA Guidelines §15064.4(a)2.

The proposed project could produce GHGs during fuel combustion while the trail is being rehabilitated and accessible parking constructed. Project vehicles and heavy equipment consists of a concrete delivery truck with pump, a flatbed trailer with semi-truck, a rubber tire man-lift, a 9" micropile drill rig, a rubber tire skid steer, mini excavator, and a 30-ton crane.

Not all vehicles and equipment would operate simultaneously. Some equipment would only

be operating during certain stages of the project depending on the work being done. The proposed project would be under various stages of construction for approximately 420 days but the construction-related greenhouse gas emissions would be short-term. Therefore, the project construction phase would not significantly increase greenhouse emissions.

Standard Project Requirement AIR 1 – Air Quality as noted in Section III above, would require all construction related equipment engines to be maintained and properly tuned up (according to manufacturer’s specifications), and in compliance with all state and federal requirements. This requirement is designed to reduce project-related emissions of CO₂ and N₂O.

ii) Climate Change and Sea Level Rise

Because of the project’s location and nature of the project itself, the project will not contribute to sea level rise nor will it be susceptible to it. Therefore, No Impact.

- b. The State has not developed specific GHG thresholds of significance for use in preparing environmental analyses under CEQA, and the NSAQMD has not adopted GHG thresholds to determine significance. The Association of Environmental Professionals’ document *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, states that emissions for criteria pollutants tend to follow similar patterns as the emissions for GHG emissions” (AEP, 2007). Therefore, it is reasonable to assume that if all other pollutants from the project are determined to be less than significant, the CO₂ emissions will also be less than significant. The proposed project would not violate Alpine County’s air quality standards and would not result in a cumulatively considerable increase in emissions. Therefore, the proposed Project would not generate significant GHG emissions and would therefore not conflict with the current State and Alpine County guidelines or any applicable plans, policies or regulations concerning GHG emissions.

To reduce potential GHG emissions due to project activities, the project would implement **Standard Project Requirement AIR 1 – Air Quality** to limit impacts to air quality and reduce GHG emissions during project activities. Implementation of this project requirement would ensure that the project would have a less than significant impact.

VIII. HAZARDS AND HAZARDOUS MATERIALS.

ENVIRONMENTAL SETTING

Hazardous Materials

The nearest hazardous materials cleanup site listed by the California Department of Toxic Substance Control (DTSC) is located approximately one mile east of a closed garbage dump (California Department of Toxic Substances Control, 2007). The types of materials used and stored in GHSSP that could be hazardous include fluids such as motor vehicle and mechanical equipment fuels, oils, and other lubricants. DPR maintains storage facilities for fuels and lubricants within the park unit. No storage facilities, or other structures or industrial sites that could contain hazardous materials are located at the sites of the proposed project.

Airports

Alpine County has only one public-use airport which is located approximately 5 miles northeast of GHSSP (Google, 2017). The proposed project is not within an airport land use zone/plan, or within two miles of a public airport or private air strip.

Schools

The closest school, Diamond Valley Elementary School, is located approximately 5.3 miles north-northeast of GHSSP (Google, 2017).

Fire

GHSSP is designated as a State Responsibility Areas for fire protection. The California Department of Forestry and Fire Prevention (CalFire) describes the fire hazard severity for the park as very high (CalFire 2007). The nearest CalFire station is in the Hermit Springs Fire Station, approximately 3 hours from the project site. Markleeville has two volunteer fire departments and the closest fire station to the project sites is on Hot Springs Road, approximately 2 miles to the East.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

school?

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| d) Be located on a site which is included on a list of hazardous materials sites, compiled pursuant to Government Code §65962.5, and, as a result, create a significant hazard to the public or environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Be 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? If so, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be located in the vicinity of a private airstrip? If so, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the proposed action to Hazards and Hazardous Materials is based on criteria VIII a-h, described in the environmental checklist above.

DISCUSSION

- a) A hazardous waste study was conducted at the project site to identify potential hazardous waste materials. Test data from the bridge wood samples identified low level concentrations of wood preserving chemicals. However, none of the tested wood samples exhibited detectable concentrations of hazardous materials. With respect to the soil, soil samples exhibited relatively low lead concentrations, below DTSC screening level. Asbestos was not found in the tested materials. Implementation of specific conditions and minimization measures will ensure impacts from the project remain Less than Significant.
- b) Project construction would require the use of heavy equipment and vehicles that use diesel fuel, gasoline, oil, and hydraulic fluid. Hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials. The proposed project would not be located on a site that included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5. The project will have a Less than Significant Impact.
- c) The project is not located within one-quarter mile of any school and the creation of schools are not within the scope of this project. No Impact.
- d) As noted in the Environmental Settings above, a review of the DTSC EnviroStor database or hazardous waste substances sites and the State Water Resources Control Board's

GeoTracker database for leaking underground storage tank sites were utilized for this review. No occurrences of leaking underground storage tanks or hazardous waste substances sites were found pursuant to Government Code 65962.5. No Impact.

- e) As noted in the Environmental Settings above, the project site is not located within two miles of a public airport or within an airport land use plan. No Impact.
- f) As noted in the Environmental Setting above, the project is not located within close proximity of a private airstrip or within an airport land use plan. No Impact.
- g) All construction activities associated with the project would occur within the boundaries of SYRSP and work would not restrict access to or block any public road outside the immediate construction area. Construction work may require the use of existing service roads; however, minimum access requirements for emergency vehicles would be maintained at all times. No Impact.
- h) Heavy equipment can get very hot during the warmer part of the work season; this equipment is sometimes in close proximity to flammable vegetation. Improperly outfitted exhaust systems or friction between metal parts crushing concrete/rocks could generate sparks. Strict adherence to the project conditions and minimization measures bellow will ensure that impacts from fire will remain at a Less than Significant level.

IX. HYDROLOGY AND WATER QUALITY.

ENVIRONMENTAL SETTING

Grover Hot Springs State Parks lies within the Hot Springs Creek watershed on the east side of the Sierra Nevada. Hot Springs creek is a perennial stream and is a tributary to the larger Markleeville Creek, which in turn flows 4 miles to join the East Fork of the Carson River. The East Fork Carson River flows north/northeast into Nevada after joining the West Fork Carson River, passing through Carson City and into Lahontan Reservoir. The watershed area starts high in the Sierra Nevada Mountains and thus has strong influence from snowpack and snowmelt.

Hot springs creek has a watershed area of about 20 square miles at the park and the majority of the reach is bordered by a broad meadow. A foot bridge crosses the meadow at the upstream end of the park. The creek itself is moderate gradient with numerous glacial outwash boulders in the channel. Sections of the stream have steep eroding banks. Hot Springs Creek had 3 small tributaries in the park: Shay Creek, Buck Creek, and flow from the Grover Hot Springs itself. Buck Creek drains south facing hillslopes and flows into Hot Springs Creek on the north side of the meadow. It has been developed as the water source for the park. Shay Creek drains north facing slopes, flows under the access road to the hot springs and campground, and then across the south side of the meadow to Hot Springs Creek. There is an array of several small hot springs and seeps located on the north facing slope at the southwest end of the meadow. Part of the flow is diverted for use in the public hot springs pool. The hot springs water then flows out to the north spreading across the meadow and supporting a broad marshy area. The hot springs flow is approximately 100 gallons per minute and water temperature varies from 126 to 147 degrees Fahrenheit.

Water Quality of the public pool outflow and drinking water supplies are regulated under a WDR by the Lahontan Water Quality Control Board and the park regularly collects water samples.

Areas of wet meadow and mesic meadow are present in the broad alluvial valley. The hot springs outflow braids across the meadow on the south side of the valley, supporting wetland vegetation on its path to the confluence with Hot Springs Creek. Shay Creek is incised at the road crossing but is stable where it discharges into the southeastern part of the meadow where it supports dense willow along its path. Buck Creek is channelized for the park water supply and has hence altered the natural hydrology on the north side of the meadow, likely leading to some water table lowering and drying of the eastern portion of the meadow. It flows through a culvert and discharges through a ditch into the northwestern portion of the meadow. Multiple trails traverse both the north and south sides of the meadow. The nature trail is a loop on the north side of the meadow. This trail traverses both the mesic and wet portions of the meadow, but is locally incised and portions were eroded away by the creek. There are also multiple way trails on the south side of the meadow, many from campers trying to short cut across the meadow to the public pool. The trail encounters wet clayey and marshy areas, and the public is often seen wandering about trying to cross these areas.

The project will result in long-term improvements to water quality. Incised trails that are segments of the Nature Trail in the meadow will be removed and re-vegetated with native sod. The new section of trail that crosses the northeastern portion of the meadow will be boardwalk where it crosses the mesic part of the meadow. A new foot bridge will be constructed over the Buck Creek ditch to span the channel. Way trails on the south side of the meadow will also be removed and re-vegetated. The new trail will start closer to the campground and signage will direct people to the trail instead of the current pattern of trying to cut across the wet meadow on the south side of the creek. The sections of eroding bank along Hot Springs Creek by the old nature trail will be treated with biotechnical brush boxes and wattles to increase roughness, reduce erosion and encourage vegetation growth.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

injury, or death from flooding, including flooding resulting from the failure of a levee or dam?

- j) Result in inundation by seiche, tsunami, or mudflow?

Discussion

- a) The project will disturb less than 1 acre, so a NDPEs permit will not be required by the Lahontan Regional Water Quality Control Board for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The project will improve the alignment, profile, and drainage of trails in the park as discussed above and biotechnically treat eroding banks along Hot Springs Creek, resulting in long-term benefits to water quality. Short-term risk of water quality degradation during construction and until vegetation is re-established would be avoided by including temporary erosion/runoff best management control measures during construction. These temporary control measures would include implementing construction staging in a manner that minimizes the amount of area disturbed at any one time; secondary containment for storage of fuel and oil silt fence or wattles around stockpiles and when construction is near waterways, mulching, and re-vegetation, as appropriate. The brush boxes will be constructed during low flow when all work can be done in the dry streambed. When work commences on construction of new footbridge and apron will be installed below the alignment to catch any debris. These measures would be consistent with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities requirements, and would be included in a site specific Storm Water Pollution Prevention Plan (SWPPP). Less than Significant Impact.

SPR HYDRO 1 - EROSION AND SEDIMENTATION CONTROL

- **Limit disturbance area to the necessary extent as outlined in the project plans.**
 - **Design, install, and maintain temporary BMP's for the protection of disturbed areas that may be subjected to erosion or surface run-off with the potential to release sediment, nutrients, or hazardous materials to surface or ground water sources.**
 - **Use designated and established staging, re-fueling, and maintenance areas for equipment that has the required BMP's to prevent the potential for contamination of surface or ground water sources.**
 - **Any stockpiled material shall be properly BMP'd according to the permitting requirements to ensure that wind and water erosion potential is eliminated.**
 - **Schedule work in wet meadow and stream areas during the dry season. Use Silt fence or fiber rolls to prevent runoff in the vicinity of streams**
 - **Prevent damage to vegetation outside the project area.**
- b) The Project would not affect groundwater. No Impact.

- c) The project would restore natural drainage patterns in the meadow by removing incised trails that capture and divert runoff. The project would also stabilize eroding banks with biotechnical treatments using native vegetation, decreasing erosion (Please refer to Appendix B). Less than Significant Impact.
- d) The project would not affect flooding. No Impact.
- e) There are no stormwater facilities in the project area. No Impact.
- f) The project would improve water quality by reducing erosion. No Impact.
- g) There is no housing in the project area. No Impact.
- h) There are no structures in the project area. No Impact.
- i) There are no levees or dams in the project area. No Impact.
- j) The project is not in an area subject to these hazards. No Impact.

X. LAND USE AND PLANNING.

ENVIRONMENTAL SETTING

Alpine County General Plan

The project site is located within GHSSP, in a very rural area of Alpine County, CA. According to the Alpine County General Plan, Land Use in the project area is zoned as Open Space. The Open Space Element of Alpine County’s General Plan serves a variety of purposes, including recreation and the preservation of significant view corridors (County, 2017)

Grover Hot Springs State Park

The Park is wholly owned and operated by California State Parks. Improvements undertaken within State Parks shall be for the purpose of making the areas available for public enjoyment and education in a manner consistent with the preservation of natural, scenic, cultural, and ecological values for present and future generations. Improvements may be undertaken to provide for recreational activities including, but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, so long as such improvements involve no major modifications of lands, forests, or waters (PRC § 5001-5099.12, 2017).

Current use of parklands within the general vicinity of the project site include hiking, swimming, fishing, biking, etc.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a-c) Grover Hot Springs State Park is not located within an established community; it is located within the boundaries of an established state park and is not in conflict with any applicable land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Additionally, it is not located with a habitat conservation plan area or natural community conservation plan. No Impact.

XI. MINERAL RESOURCES.

ENVIRONMENTAL SETTING

Department of Parks and Recreation permits no mineral resource extraction on State Park property under the Resource Management Directives.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a-b) The proposed project consists of rehabilitating an existing nature trail and making it accessible for visitors with disabilities. It will not result in the loss of availability of a known mineral resource or in the availability of a locally important mineral resource delineated on a local general plan, specific plan, or other land use plan. No Impact.

XII. NOISE.

ENVIRONMENTAL SETTING

GHSSP is located in a rural, sparsely populated area of Alpine County approximately 3.5 miles west of Markleeville with relatively low levels of traffic and no industrial noise. The park unit is surrounded by steep mountains. There are noise sensitive land uses (residential) located approximately 2.5 miles east of the project site. However, all construction activities associated with the project would occur within the park boundaries. Vehicle traffic along Hot Springs Road is the primary source of noise for this property.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain activities.

Noise is commonly described in “Ldn,” that expresses average sound level over a 24-hour period in decibels (dB), the standard measure of pressure exerted by sound. Ldn includes a 10 dB penalty for sounds between 10 P.M. and 7 A.M., when background noise is lower and people are most sensitive to noise. Because decibels are logarithmic units of measure, a change of 3 decibels is hardly noticeable, while a change of 5 decibels is quite noticeable and an increase of 10 decibels is perceived as a doubling of the noise level. A change from 50dB to 60dB increases the percentage of the population that is highly annoyed at the noise source by about 7 percent, while an increase from 50 dB to 70 dB increases the annoyed population by about 25 percent. Sounds as faint as 10 decibels are barely audible, while noise over 120 decibels can be painful or damaging to hearing.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Generate or expose people to excessive groundborne vibrations or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- e) Be 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? If so, would the project expose people residing or working in the project area to excessive noise levels?
- f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?

DISCUSSION

a,c) <http://www.codepublishing.com/CA/AlpineCounty/> The proposed project consists of rehabilitating an existing nature trail and making it accessible for visitors with disabilities. Some of the proposed project work will utilize hand and pneumatic tools, which will produce noise levels up to 76DbA; however, the increased noise levels will be temporary and will be of a short duration. As proposed the project will not expose people to noise levels in excess of standards established by local noise ordinances; generate or expose people to excessive groundbourne vibrations or noise levels; create a substantial permanent increase in ambient noise levels. No Impact.

b,d) As stated above some of the proposed project work will utilize hand and pneumatic tools, generators and heavy equipment which will produce noise levels up to 76DbA along with groundbourne vibrations, however the increased noise levels will be temporary and will be of a short duration. Less than Significant impact.

e-f) GHSSP is not located within an airport land use plan, is not within two miles of a public airport or in the vicinity of a private airstrip. No Impact.

XIV. POPULATION AND HOUSING.

ENVIRONMENTAL SETTING

The communities surrounding GHSSP are small and mostly rural residential with the nearest businesses located approximately 4 miles away. Construction personnel and State Parks staff generally live in the surrounding small communities and as far away as the South Lake Tahoe area.

The project entails the rehabilitation and improvement of an existing trail alignment to provide greater access to persons of all abilities.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a-c) The project includes no component that would induce population growth in the area either directly or indirectly. It has no housing component and all work would take place within the confines of the park boundaries, with no additions or changes to the existing local infrastructure. It would neither modify nor displace any existing housing and would displace no one, either temporarily or permanently. Therefore, it would have No Impact on population growth or housing in the area.

XIV. PUBLIC SERVICES.

ENVIRONMENTAL SETTING

Public services include fire and police protection, schools, parks, and other public facilities. The project site is located on Hot Springs Road, approximately four miles West of Markleeville, CA. The project sites benefit from existing public services, such as fire and law enforcement protection

Fire Protection

The California Department of Fire and Forestry Protection (CalFire) has primary jurisdiction for fire suppression in State Responsibility Areas (SRA), including units of the State Park System (California Department of Forestry and Fire Protection, 2009). The nearest CalFire station is in the Hermit Springs Fire Station, approximately 3 hours from the project site. Markleeville has two volunteer fire departments and the project site is within the Alpine County EMS Response Area, which provides Advanced Life Support (ALS) Paramedics and an ambulance service (Mountain Valley Emergency Medical Services Agency, 2017). The closest fire station to the project sites is on Hot Springs Road, approximately 2 miles to the East.

Police Protection

CSP rangers assigned to SYRSP are Peace Officer Standards and Training (POST) certified law enforcement officers and provide year round law enforcement within park unit boundaries. The Alpine County Sheriff's Station is in Markleeville, about 4 miles east of GHSSP (Google, 2017). The Alpine County Sheriff would assist CSP with any emergency and law enforcement issues within the boundaries of the park. The California Highway Patrol (CHP) serves as the primary law enforcement presence on interstates, state routes, and county roads. The CHP staffs a station in South Lake Tahoe, approximately 35 miles northwest of the project site (Google, 2017). The CHP would provide assistance along public roadways near the park unit.

Schools

Diamond Valley Elementary School, located approximately 10 miles away, is the closest school. Alpine County Secondary School (high school), is located approximately 14 miles away in Mesa Vista. There are no schools within the project site.

Parks and Other Public Facilities

In addition to the park where this project is located, there are county parks and recreational facilities that serve local residents and visitors to Alpine County. Located within an approximately 5-mile radius of GHSSP are Turtle Rock Park campground, Indian Creek Campground, Turtle Rock County Park, and Markleeville Campground, all located off SR-89.

<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
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WOULD THE PROJECT:

- a) Result in significant environmental impacts from construction associated with the provision of new

or physically altered governmental facilities, or the need for new or physically altered governmental facilities, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a) Fire history in the area of GHSSP shows that the majority of fires have occurred naturally or accidentally, in the areas surrounding the park and nearby Town of Markleeville. No fire roads in the park will be closed to service and emergency vehicles, and all emergency access routes will be maintained in good traveling condition. The CalFire Station in Hermit Springs is approximately 16 miles from the project site, reducing response time in case of a fire. During the construction phase, CSP staff and/or contracting staff would have radios on site at all times to ensure immediate direct contact to CalFire dispatchers and crews. All heavy equipment and service vehicles would be required to carry a fire extinguisher and hand tools, which can be used to help fight fire. The project would have No Impact on fire protection.

State Park Rangers have full law enforcement authority and only require assistance from local police/sheriff as backup for unusual situations. Rangers and/or local police expect no additional demands because of this project. No Impact.

No schools exist within or adjacent to the project area. No changes would occur that would affect existing schools or require additional schools or school personnel. No Impact.

XV. RECREATION.

ENVIRONMENTAL SETTING

The proposed project is located entirely within the boundaries of GHSSP. The park consists of 553 acres in Alpine County, California. Forest/timber lands surround GHSSP, which is situated within the Humboldt-Toiyabe National Forest.

GHSSP Recreational Facilities

GHSSP is a day-use only and camping park unit. Current park facilities consist of formalized parking (paved and dirt lots), restrooms, hiking trails, picnic areas, approximately 75 overnight camping sites, and interpretive exhibits and programs (CDPR 2017).

Grover Hot Springs Park Facilities

- Hot Springs Pools
- Overnight Campsites
- Visitor Center
- Restrooms/Shower (accessible)
- Picnic Area
- Campfire Center
- Trails
 - **Burnside Lake Trail / Charity Valley Trail** begins on approximately ½ mile east of the park, outside the park boundaries, crossing the overflow parking-trailhead lot in the campground. The trail runs along the north side of Hot Springs Creek through meadow and forest and continues onto Forest Service Property. At approximately 3 miles the trail splits with the right fork trail continuing to climb to the north to Burnside Lake (another 2 miles), and the right fork splitting to the Charity Valley Trail which climbs 3 miles to the Southwest to meet the Blue Lakes road. Scenic river, meadow and waterfall views abound.
 - **Hot Springs Cutoff Trail** begins near the parking lot to the West of the Hot Springs pools, travels to the north through a meadow, crosses Hot Springs Creek, and connects with the Burnside Lake Trail. Hot Springs Trail features scenic views of both Hot Springs Creek and the meadow. The trail is approximately .3 miles.
 - **Waterfall Trail** is the same as the Burnside Lake Trail for the first mile. At approximately 1 mile from the campground, a spur takes off from the Burnside Lake trail to the South and continues another ½ mile on a slightly obscure trail to the waterfall.
 - **North Creek Overlook Trail** runs a short 1000 feet from the Campground road on the North side of Hot Springs Creek to overlook the meadow.
 - **South Creek Overlook Trail** is an approximately 530-foot route from the Campground Road on the South side of Hot Springs Creek.
 - **Hot Springs View Trail** is a short trail adjacent to the hot springs pool to a small hot spring and overlook.

- **Sawmill Creek Trail** runs along the south side of Hot Springs creek for approximately 1 mile. This out and back trail starts in the Hot Springs west parking lot and traverses through meadow and forest along the creek.
- **Nature Trail** The existing Nature Trail is an approximately 0.7-mile trail originating near the hot springs pool and meandering through alkaline wet meadow areas along the Hot Springs Creek. The existing trail ends near the campground. The current trail includes the Hot Springs Cut off trail and North Creek Trails, but other segments are in the wet meadow. The accessibility improvements will relocate a significant section of the existing trail out of sensitive wetland areas and upgrade other existing sections. The project will bypass portions of the existing Nature Trail, which will be removed and restored as well as several user-created trails.

GHSSP Recreational Activities

Recreational activities at GHSSP consist of both passive (e.g. bird watching) and active pursuits. Interpretive programs enable visitors to more fully enjoy and appreciate the various natural and cultural features GHSSP offers. Some of these activities include (CDPR 2017, GHSSP 2017):

- Camping
- Swimming/Soaking
- Hiking
- Fishing
- Picnicking
- Cross-country skiing (in Winter)
- Snowshoeing (in Winter)
- Campfire, Junior Ranger and Interpretive programs

Public Lands and Parks in Alpine County (within 20-mile radius of Grover Hot Springs)

- Sorensen's Resort
- Crystal Springs Campground
- Hope Valley Campground
- Turtle Rock Park Campground
- Hope Valley Campground
- Indian Creek Campground
- Turtle Rock County Park
- Markleeville Campground
- Carson River Resort
- Kit Carson Campground

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
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WOULD THE PROJECT:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

DISCUSSION

a-b) Project proposes to improve an already existing trail and will not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facilities will occur or be accelerated. Project also will not include recreational facilities or require the construction or expansion of recreational facilities and will not have an adverse physical impact on the environment. No Impact.

XVI. TRANSPORTATION/TRAFFIC.

ENVIRONMENTAL SETTING

Three state routes (SRs) provide primary circulation in Alpine County: SR 4, SR 88, and SR 89. Predicted average daily traffic (ADT) for 2015 for each SR varies within Alpine County. SR 4 has a predicted ADT of 1,800–2,700; SR 88 has a predicted ADT of 3,600–3,800; and SR 89 has a predicted ADT of 1,300–3,800 (Alpine County 2009). Wolf Creek Road, the only crossroad to Dixon Mine Road, connects to SR 4 approximately 2.75 miles to the northwest of the project area, or 2 miles south of the intersection of SR 4 and SR 89.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially increase hazards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a-f) Project proposes re-routing and realignment of trails accessed by hikers and bikers only. The project does not include any proposed roadwork and will not result in conflicts with

traffic circulation system, air traffic patterns, emergency access, and existing parking or congestion management programs. No Impact.

- g) As proposed, the project will improve not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. No Impact

XVI. UTILITIES AND SERVICE SYSTEMS.

ENVIRONMENTAL SETTING

The project is located in a rural area of Alpine County, within GHSSP. The project consists of the re-routing a significant portion of the trail out of sensitive wetlands and upgrading other existing sections. No existing utilities occupy the areas along the trail segments that are within the project scope. Individual septic tanks and leach fields provide wastewater treatment for the area. Park staff perform refuse collection and disposal transporting it to a nearby licensed landfill.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Exceed wastewater treatment restrictions or standards of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the construction of these facilities cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the construction of these facilities cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination, by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations as they relate to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

a-g) As proposed the project does not include any component that could, or will, impact wastewater treatment facilities, water supplies or solid waste. No Impact

Chapter 4 Mandatory Findings of Significance

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
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, reduce the number or restrict the range of a rare or endangered plant or animal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have the potential to eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probably future projects?)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DISCUSSION

- a) The project consists of the re-routing a significant portion of the trail out of sensitive wetlands and upgrading other existing sections. With implementation of project requirements listed in Table 1 above, construction work would not: 1) degrade the quality of the environment; 2) substantially reduce the habitat of fish or wildlife species; 3) cause a fish or wildlife population to drop below self-sustaining levels; 4) threaten to eliminate plant or animal communities, or; 5) reduce the number or restrict the range of a rare or endangered plant or animal. Therefore, this would result in a Less than Significant Impact.
- b) As noted in Section 3-V. above, the project area does contain archaeological sites and historic archaeological features close to the proposed project area of direct impact. However, implementation of **Cultural SPR – 1 Previously Undocumented Resources, and Cultural SPR 2 - Archaeological Monitoring** will insure that the potential to eliminate important examples of California history or prehistory would be less than significant.
- c) As noted in Section 2.11 of this report, on-going general maintenance projects of the park facilities can routinely occur; however, the District identified no other past, current or probable future projects. Furthermore, Alpine County identified no such projects in the immediate vicinity outside the Park boundaries. No Impact.

- d) As indicated in the impact analyses Sections discussions in Chapter 3, the proposed project will have no environmental effects that will cause substantial adverse effects on humans, either directly or indirectly with incorporation of the project requirements listed in Table 1. The project consists of the re-routing a significant portion of the trail out of sensitive wetlands and upgrading other existing sections. No Impact.

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Noise

None cited.

Population and Housing

None cited.

Public Services

Cal Fire State Responsibility Area and Fire Protection

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Recreation

None cited.

Transportation/Traffic

None cited.

Utilities and Service Systems

None cited.

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Chapter 6 Report Preparation

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

Northern Service Center

Monica Aleman

Steve Hilton

Dan Kopp

Roy Martin

Brad Michalk

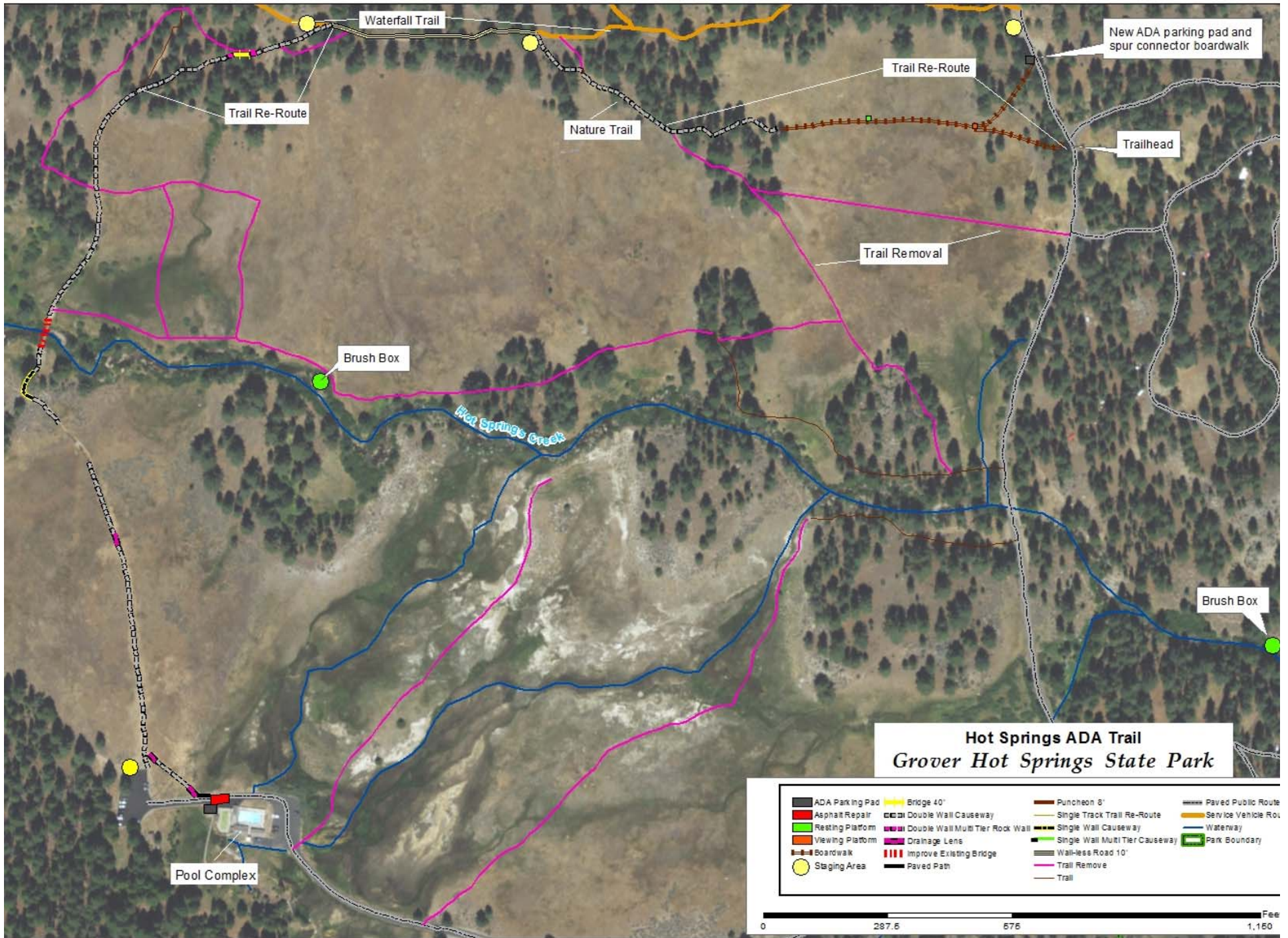
Sierra District

Cyndie Walck

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APPENDIX A

MAPS, TABLES, AND CHARTS



Hot Springs ADA Trail
Grover Hot Springs State Park

ADA Parking Pad	Bridge 40'	Punched 6'	Paved Public Route
Asphalt Repair	Double Wall Causeway	Single Track Trail Re-Route	Service Vehicle Road
Resting Platform	Double Wall Multi Tier Rock Wall	Single Wall Causeway	Waterway
Viewing Platform	Drainage Lens	Single Wall Multi Tier Causeway	Park Boundary
Boardwalk	Improve Existing Bridge	Wall-less Road 10'	
Staging Area	Paved Path	Trail Remove	
		Trail	

0 287.5 575 1,150 Feet

APPENDIX B

PROJECT DESIGN GRAPHICS



ACQUISITION & DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229

CALIFORNIA STATE FIRE MARSHAL-APPROVED
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CERTIFICATION # _____
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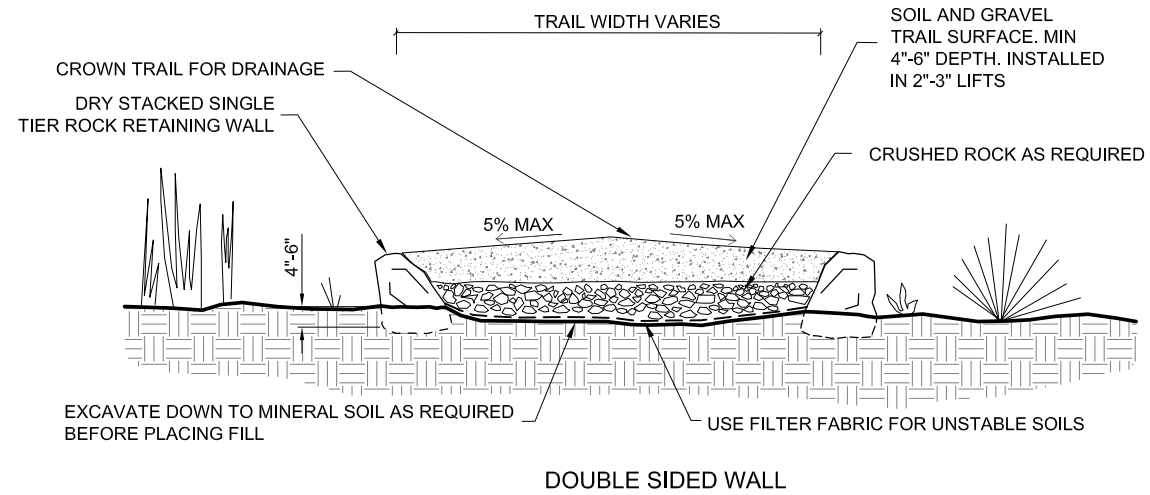
DESIGNED: J. SPANN
DRAWN: J. SPANN
CHECKED: XXXXXX
DATE: 1-19-10

REVISIONS	
NO.	DATE

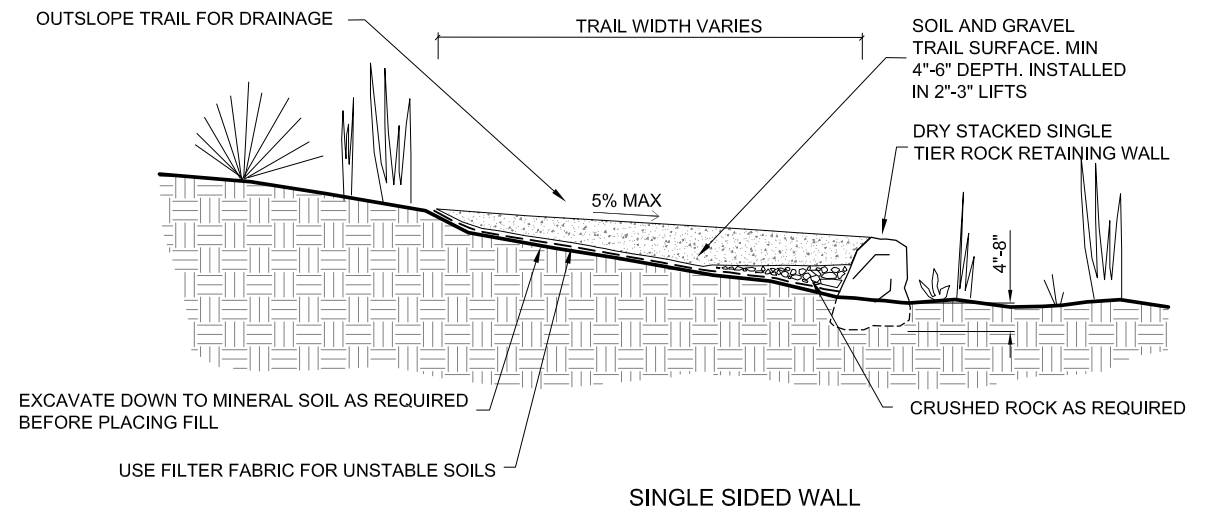
ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
SINGLE TIER CAUSEWAY

DRAWING NO.
XXXXX.XXX

SHEET NO.
D-1
X OF X

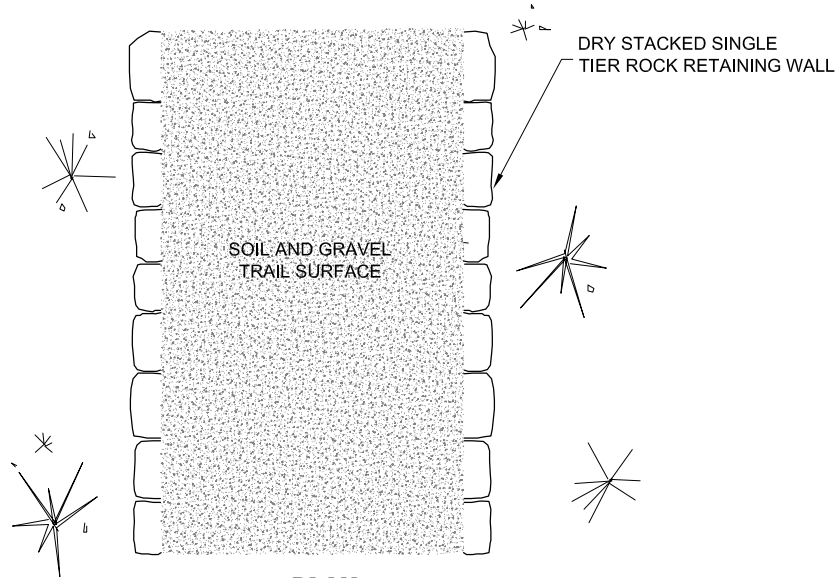


DOUBLE SIDED WALL



SINGLE SIDED WALL

SECTION



PLAN

CAUSEWAY TYPICAL



- ① EXCAVATE SINGLE TIER FOOTING
- ② INSTALL SINGLE TIER WALL
- ③ INSTALL CRUSHED ROCK AS REQUIRED

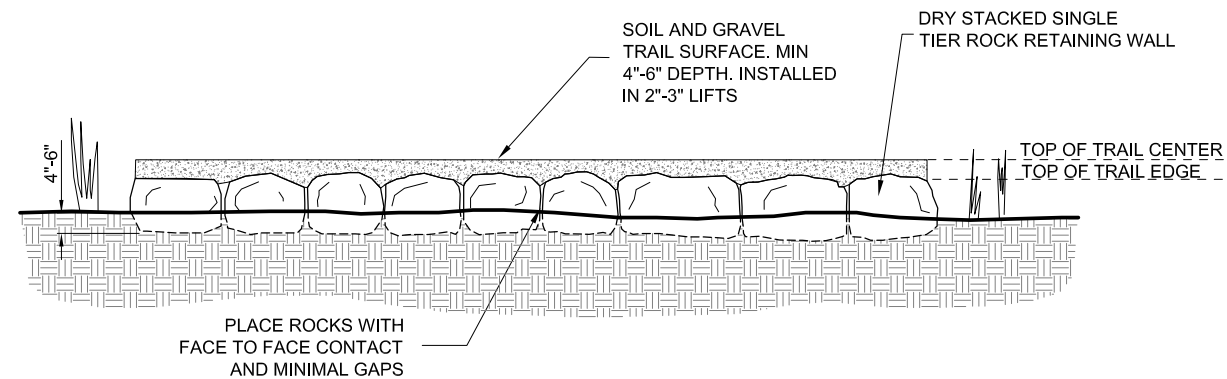


COMPLETED CAUSEWAY



- ④ INSTALL SURFACE MATERIAL AND COMPACT IN 2\"-3\" LIFTS.

DESCRIPTION:
A ROCK CAUSEWAY IS AN ELEVATED SECTION OF TRAIL CONTAINED BY ROCK USUALLY THROUGH PERMANENT OR SEASONALLY WET AREAS BUT MAY ALSO BE USED IN NONE WET AREAS TO CORRECT CROSS SLOPE AND PROVIDE AN EDGE TO KEEP SURFACE MATERIAL IN PLACE. A CAUSEWAY IS BUILT TO BE AS INCONSPICUOUS AS POSSIBLE. THE CAUSEWAY MUST BE BUILT CLOSE TO THE MINIMUM HEIGHT AND WIDTH NEEDED TO BRIDGE THE PROBLEM AREA. THE HEIGHT OF THE CAUSEWAY SHOULD BE DESIGNED FOR THE MAXIMUM FLOW EVENT OR AS CROSS SLOPE CORRECTION REQUIRES.
CAUSEWAY WALLS SHOULD BE LAID WITH A NEAR LEVEL AND UNIFORM SURFACE. LAY THE ROCK WITH A GOOD OUTSIDE FACE TO PRESENT AN AESTHETIC APPEARANCE AND ALLOW WATER TO EASILY FLOW ALONG THE OUTER FACE OF THE WALL. THE INSIDE FACE IS NOT AS IMPORTANT AS IT WILL BE BURIED WITH CRUSHED ROCK AND MINERAL SOIL.. REFER TO DPR TRAILS HANDBOOK FOR ADDITIONAL INFORMATION



PROFILE

NOT TO SCALE



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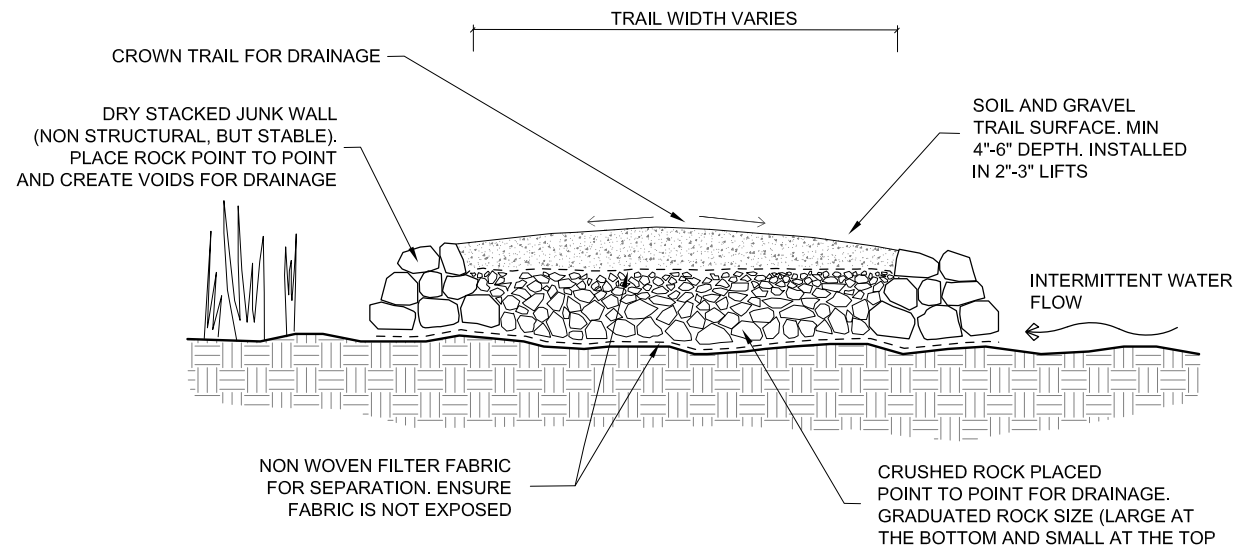
DESIGNED: J. SPANN
DRAWN: J. SPANN
CHECKED: XXXXXX
DATE: 10-17-09

REVISIONS	
NO.	DATE

ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
DRAIN LENS

DRAWING NO.
XXXXX.XXX

SHEET NO.
D-1
X OF X



SECTION



- ⑤ INSTALL SOIL/GRAVEL PLACE AND COMPACT IN 2"-3" LIFTS.
- ④ INSTALL 2ND LAYER FILTER FABRIC

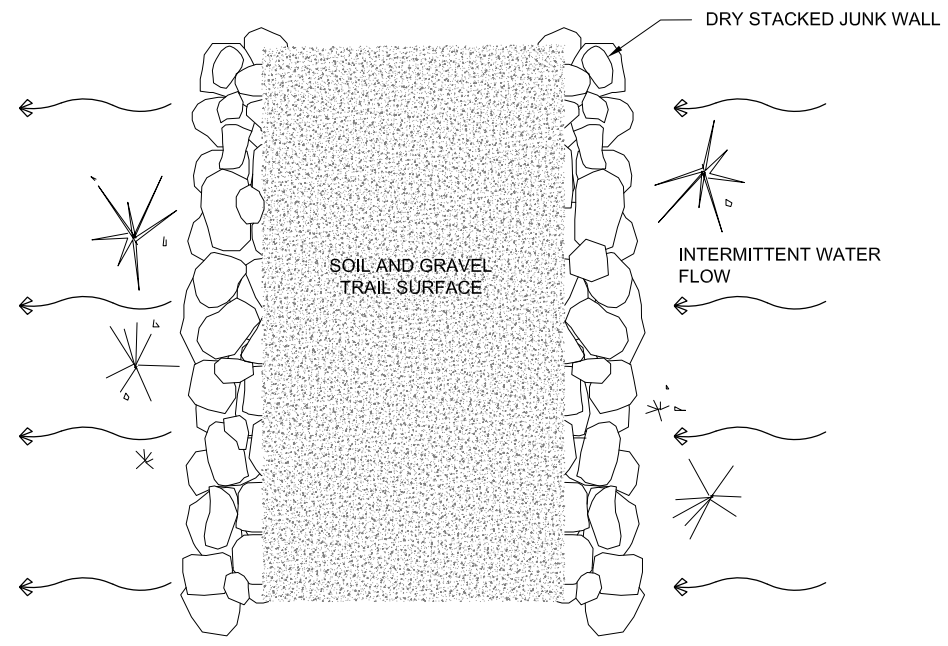


COMPLETED DRAIN LENS

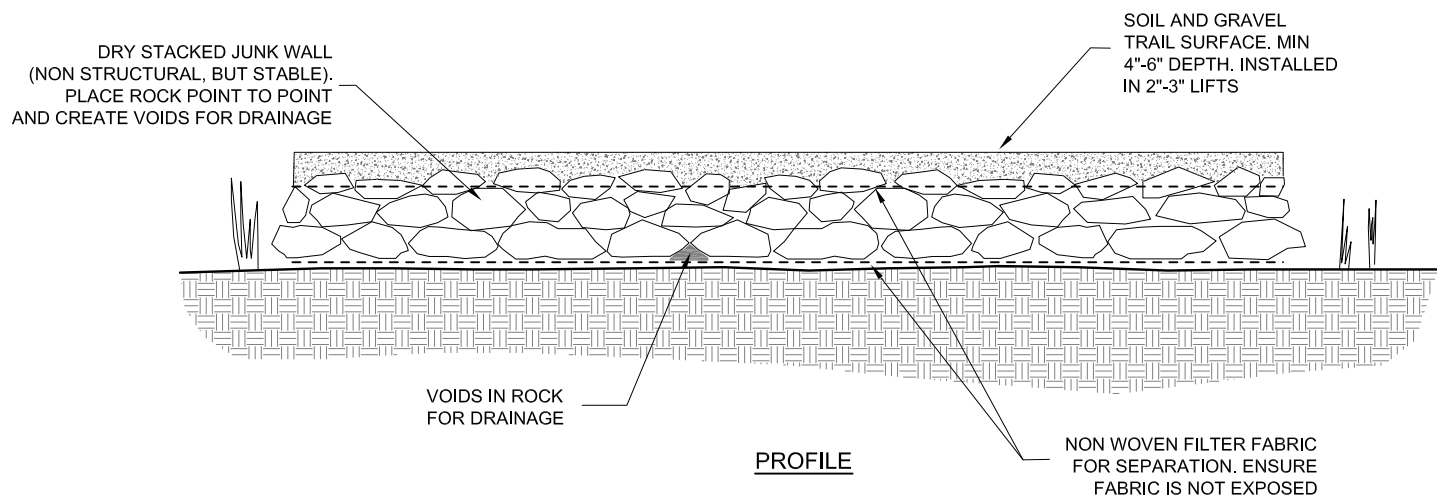


- ENERGY DISSIPATER AS REQUIRED
- ③ INSTALL CRUSHED ROCK. POINT TO POINT ROCK CONTACT
- ② INSTALL JUNK ROCK WALL. POINT TO POINT ROCK CONTACT
- ① INSTALL FILTER FABRIC

DESCRIPTION:
OCCASIONALLY A TRAIL WILL BE BIASECTED BY AN EPHEMERAL DRAINAGE OR SEEP. THESE LOW VOLUME FLOWS SATURATE THE BASE SOILS CREATING A MUDDY UNSTABLE AND UNSUSTAINABLE TRAIL BED WHICH OFTEN LEADS TO SOIL EROSION AND ASSOCIATED IMPACTS TO NATURAL RESOURCES. A DRAIN LENS CAN BE USED TO ADDRESS THIS SITUATION BY ELEVATING THE TRAIL SURFACE AND ALLOWING WATER TO FLOW UNDERNEATH. DRAINS LENS SHOULD NOT BE USED IN LOCATIONS WITH HIGH FLOWS AS THEY WILL CLOG WITH SEDIMENT OR BE OBLITERATED BY HIGH WATER VELOCITY.



PLAN



PROFILE

DRAIN LENS TYPICAL

NOT TO SCALE

File: G:\Accessibility\Trail Design\Trail DWG\SUUpdated ADA Trail DWG's\Drain Lens.dwg Layout: D-2 Detail Sheet Date: October 21 2009 - 11:24 am User: jspann



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Reviewed by XXXXXXXX Date 6-26-07
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DESIGNED: S. NAWRATH
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CHECKED: XXXX
DATE: 6-16-2015

REVISIONS	
NO.	DATE

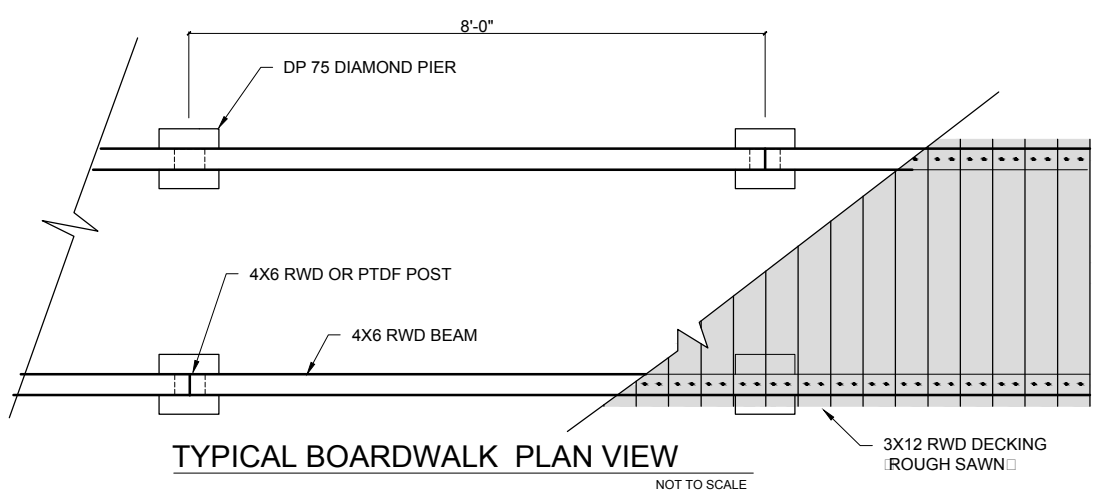
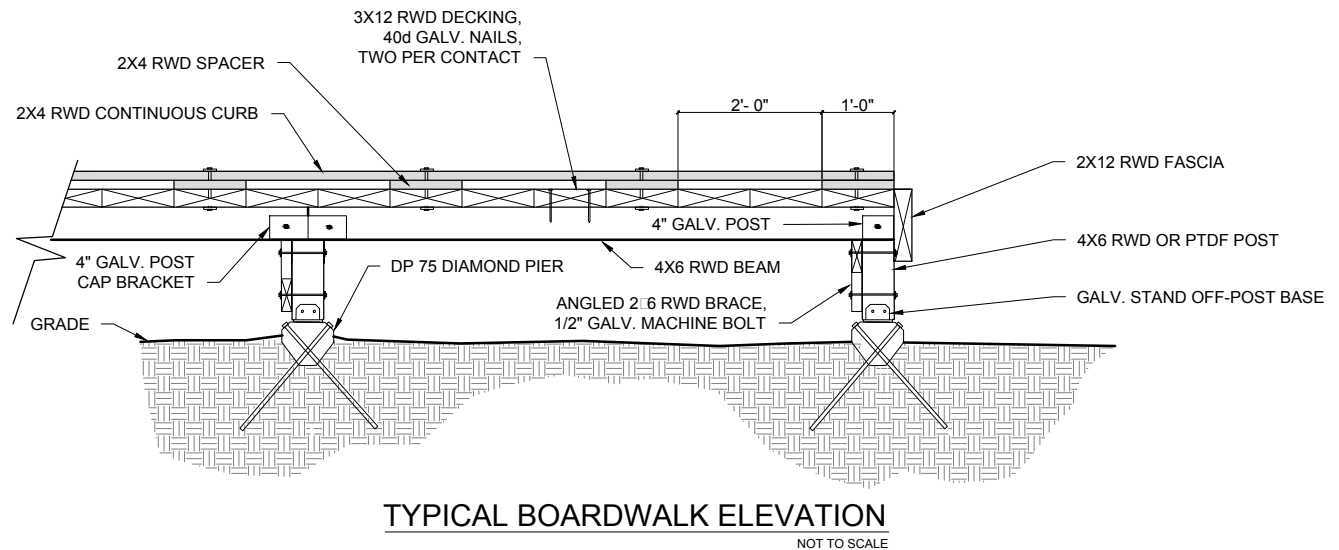
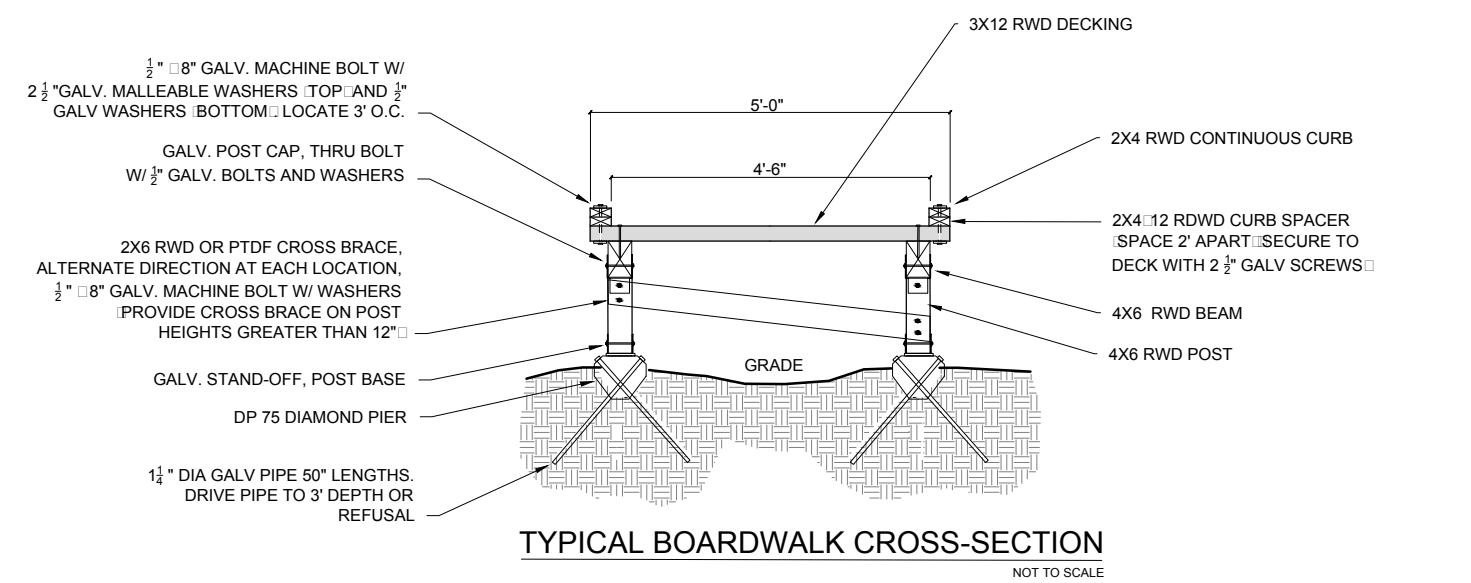
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TRAIL DETAILS
DETAILS

DRAWING NO.
XXXXX XXX

SHEET NO.
D-1
X OF X



DIAMOND PIER BOARDWALK INSTALLATION



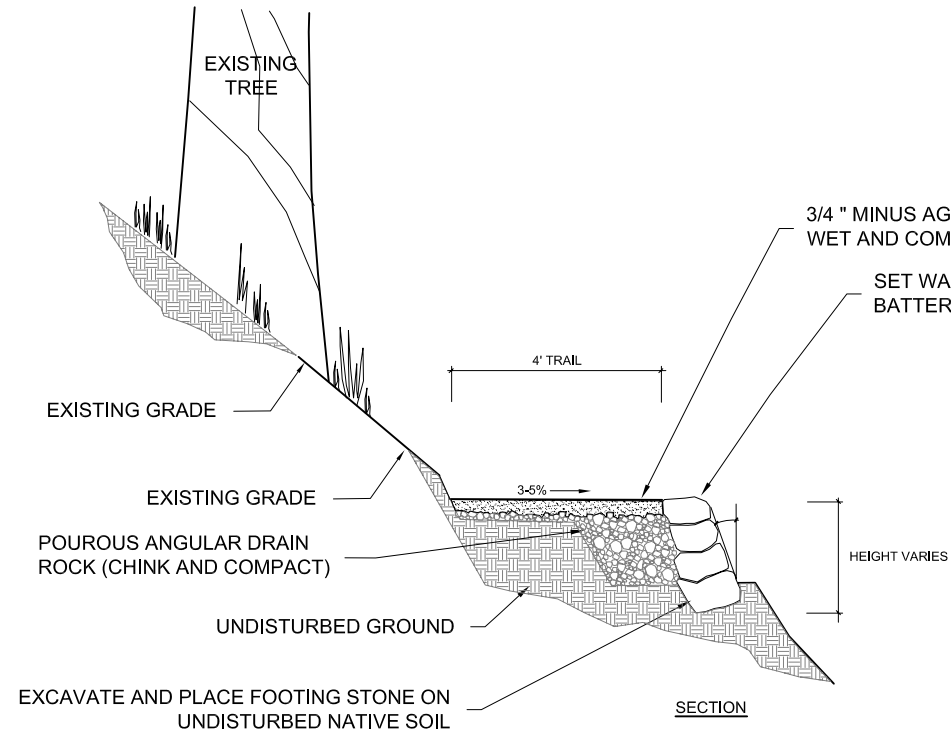
- NOTES:
- HARDWARE & FASTENERS: SUBMIT PROPOSED HARDWARE AND FASTENERS TO STATES REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION
 - BOARDWALK SLOPE REQUIREMENTS:
5% FOR ANY DISTANCE.
8.33% WITH RESTING INTERVALS PROVIDED EVERY 200'.
10% WITH RESTING INTERVALS PROVIDED EVERY 30'.
12.5% WITH RESTING INTERVALS PROVIDED EVERY 10'.
 - WHERE WIDTH OF BOARDWALK IS LESS THAN 60", PASSING SPACES MEASURING 60" X 60" SHALL BE PROVIDED AT INTERVALS OF 1000'.
 - SPACES BETWEEN DECKING SHALL BE NO WIDER THAN 1/2"
 - CROSS SLOPES SHALL NOT EXCEED 1.5%

DIAMOND PIER BOARDWALK WITH CURBING TYPICAL
NOT TO SCALE

File: G:\Accessibility\Trail\Design\Trail Details\Current details\Boardwalk - REVISED 2015 DIAMOND PIER REDWOOD BOARDWALK 5' WIDE WITH CURBING.dwg Layout: Details Date: June 18 2015 10:46 am User: snawrath

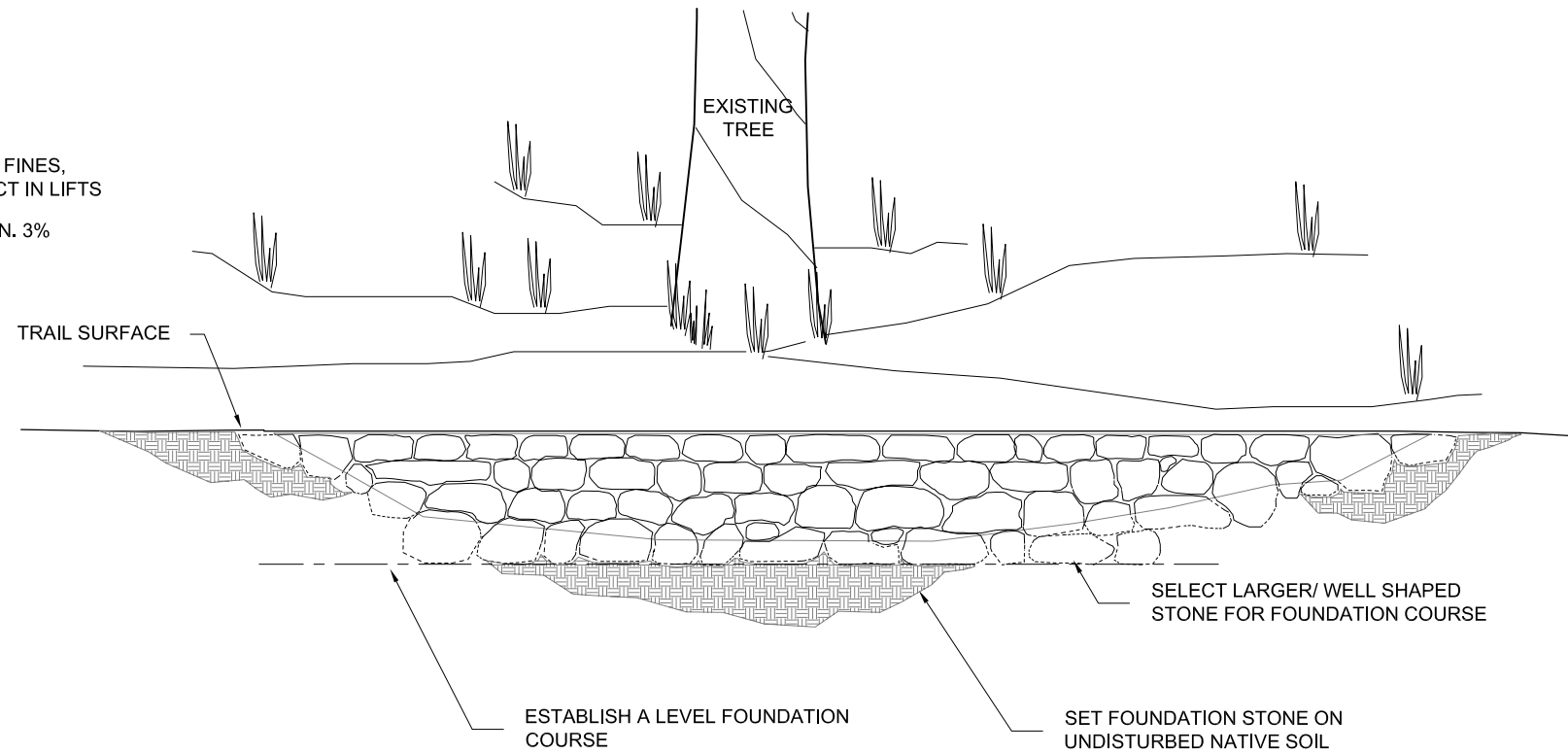


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DRY STACK ROCK RETAINING WALL- TYPICAL

NOT TO SCALE



ROCK RETAINING WALL- TYPICAL

NOT TO SCALE

BASE COURSE



PARTIALLY CONSTRUCTED WALL



FINISHED WALL



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CERTIFICATION # _____
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DATE: 07-13-2007

REVISIONS	
DATE	

TRAIL CONSTRUCTION DETAILS
DRYSTACK ROCK WALL
DETAIL SHEET

DRAWING NO.
XXXXX.XXX

SHEET NO.
D-3
5 OF 7

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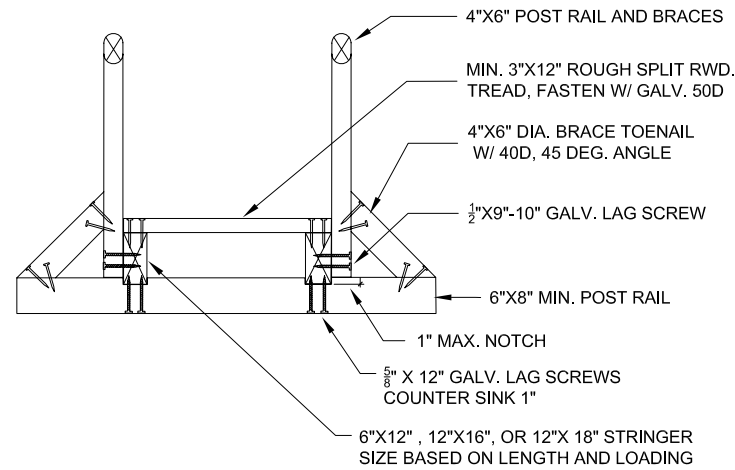
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CHECKED: XXXXXX
DATE: 04-18-2008

REVISIONS	
DATE	

ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
STRINGER BRIDGE

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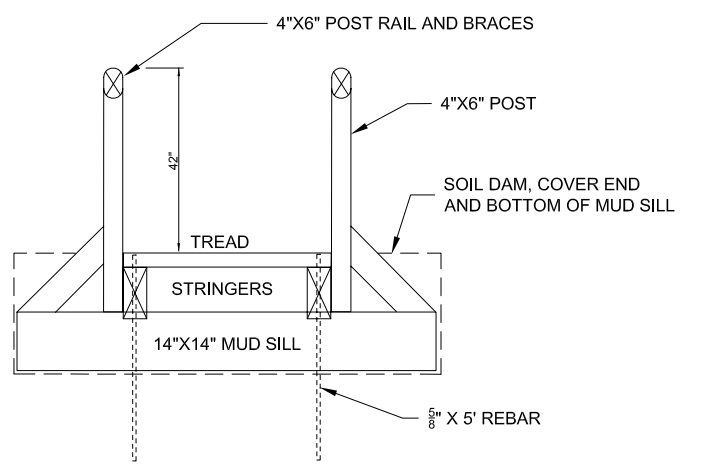
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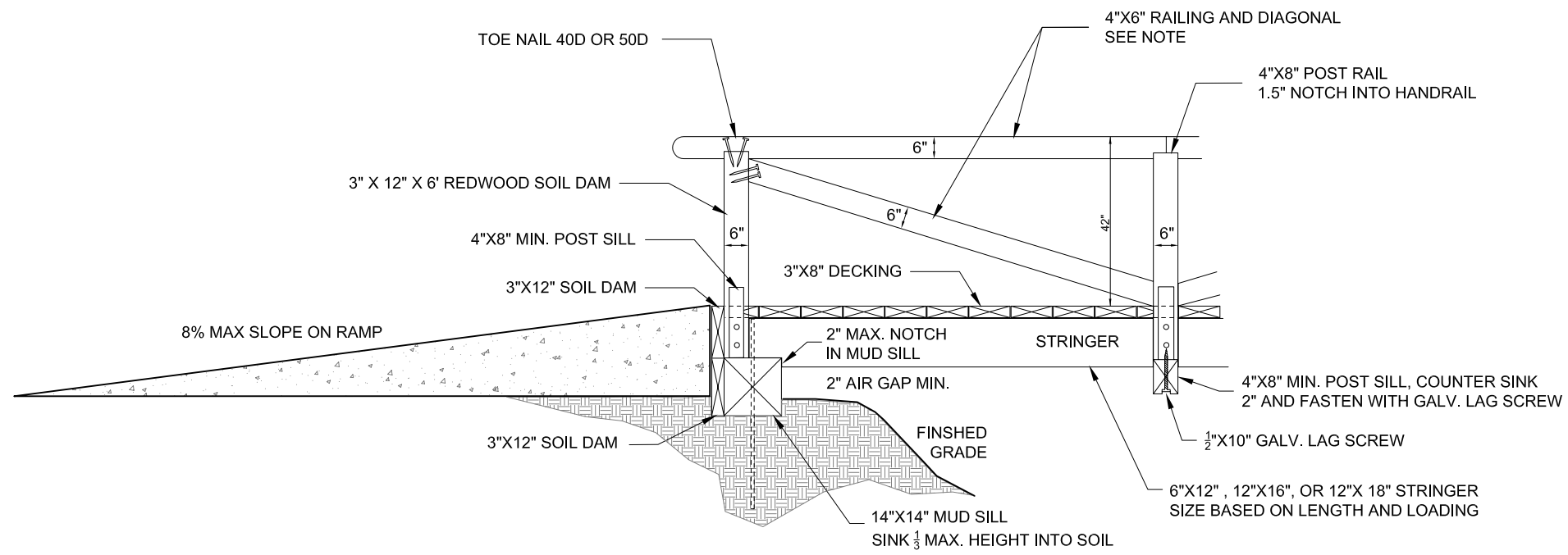
POST SILL ASSEMBLY DETAIL- TYPICAL
NOT TO SCALE



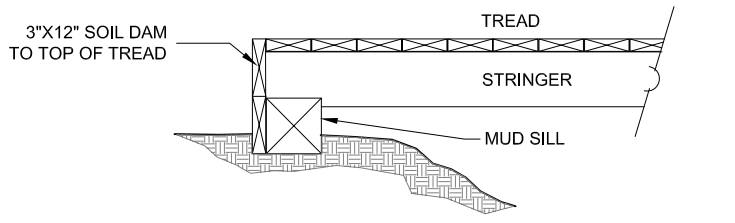
BRIDGE PHOTOS



MUD SILL DETAIL- TYPICAL
NOT TO SCALE



SECTION



SOIL DETAIL- TYPICAL
NOT TO SCALE

- NOTES:**
- ALL POSTS, HANDRAILS, DIAGONALS, BRACES TO BE 4"X6" REDWOOD MINIMUM.
 - ALL BARK AND SAPWOOD TO BE REMOVED FROM STRINGERS, SILLS, POST AND BRACINGS
 - ALL HARDWARE TO BE GALVANIZED
 - MAX. SPAN CENTER TO CENTER OF HANDRAIL POSTS TO BE 10'
 - ALL MATERIALS TO BE ROUGH SPLIT OR FULL DIMENSION LUMBER
 - DRAW KNIFE HANDRAILS, POSTS POST BRACES AND EXPOSED PORTIONS OF POST SILLS
 - SEE DEPARTMENT OF PARKS AND RECREATION "TRAILS HANDBOOK" FOR ADDITION SPECIFICATIONS

STRINGER BRIDGE- TYPICAL
NOT TO SCALE

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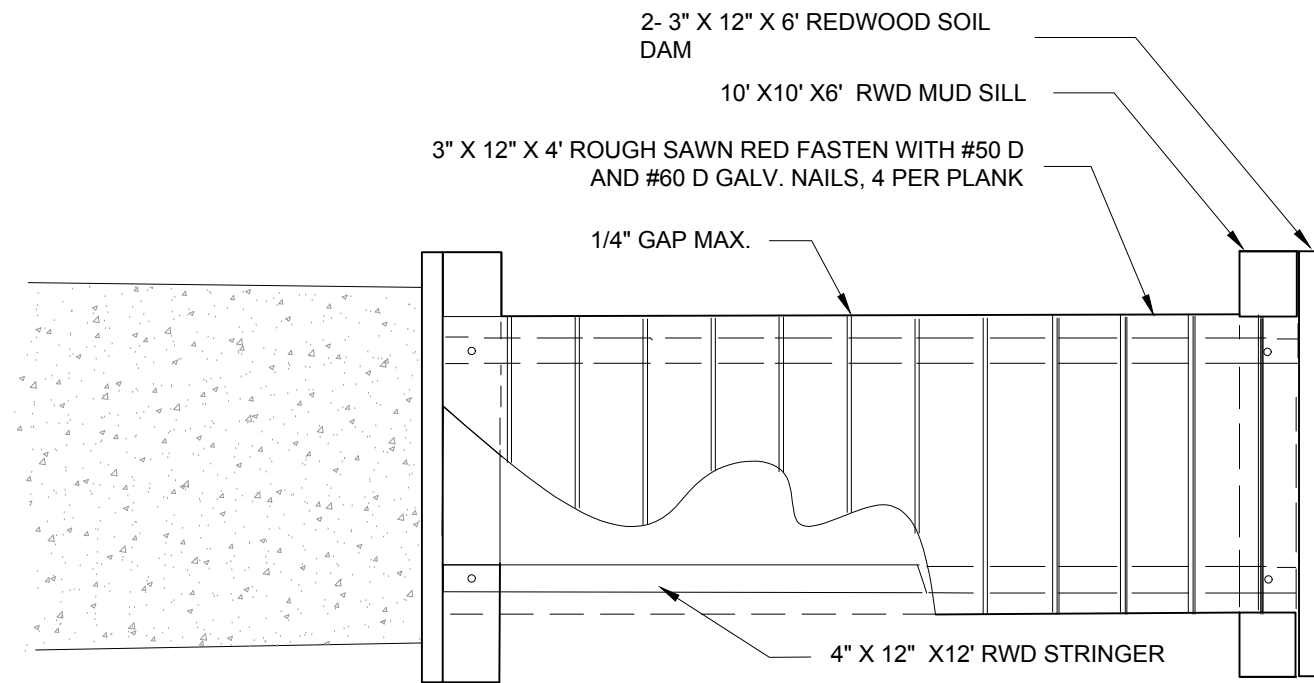


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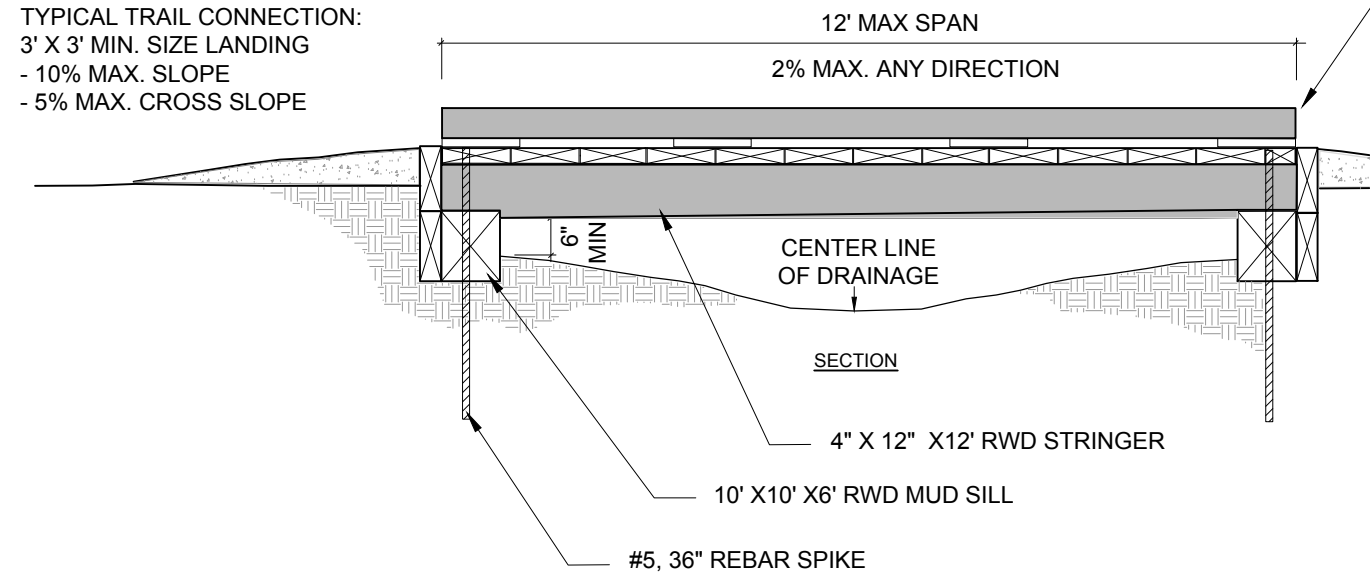
NOTES:

1. CLEAR BRUSH AND DEBRIS 2-3 FT FROM PERIMETER OF PUNCHEON STRUCTURE
2. INSTALL HANDRAILS WHERE DECKING IS > 30" ABOVE CENTER LINE OF DRAINAGE



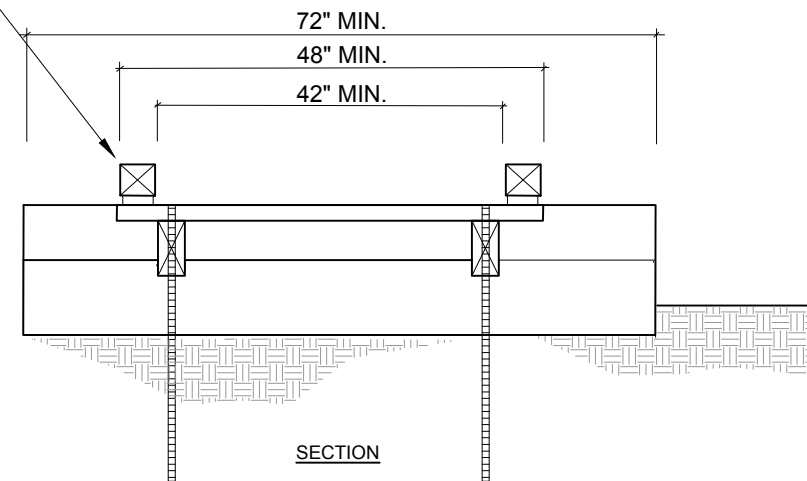
PLAN

TYPICAL TRAIL CONNECTION:
3' X 3' MIN. SIZE LANDING
- 10% MAX. SLOPE
- 5% MAX. CROSS SLOPE



SECTION

4" X 4" RWD RAIL,
MOUNT ON 2"X4"X12"
BLOCK SPACERS @ 4' O.C.



PUNCHEON-TYPICAL

NOT TO SCALE

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CERTIFICATION # _____

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DATE: 07-13-2007

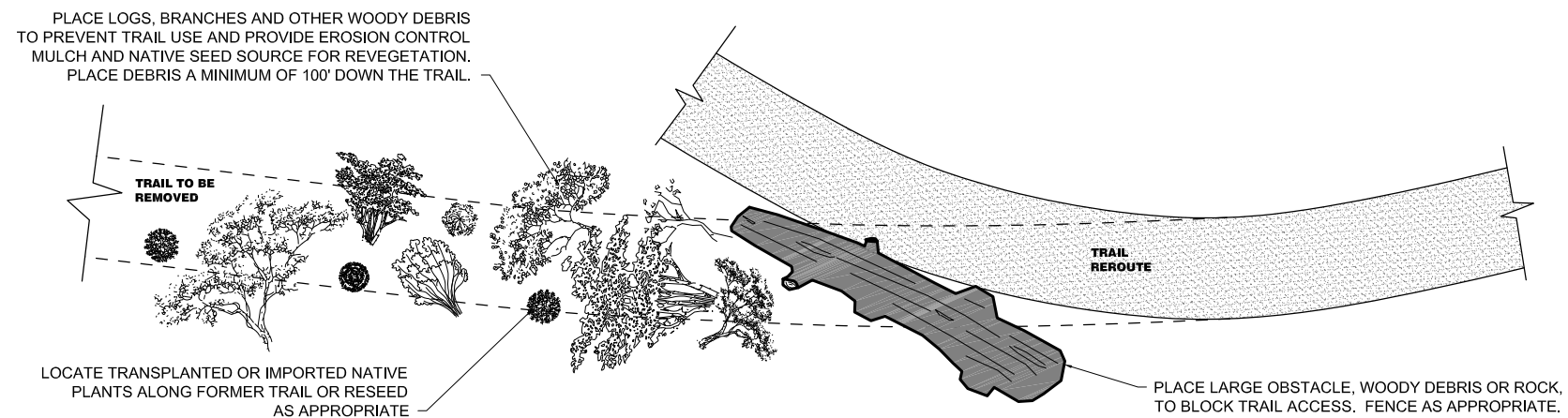
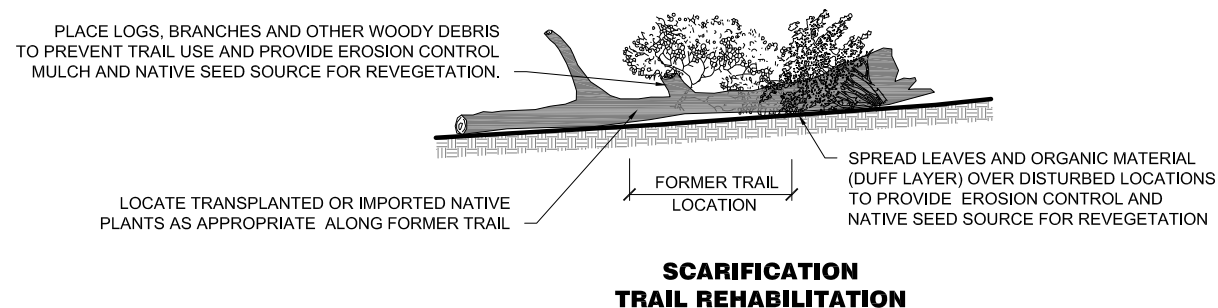
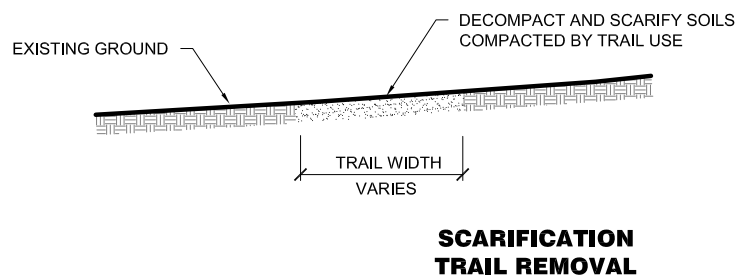
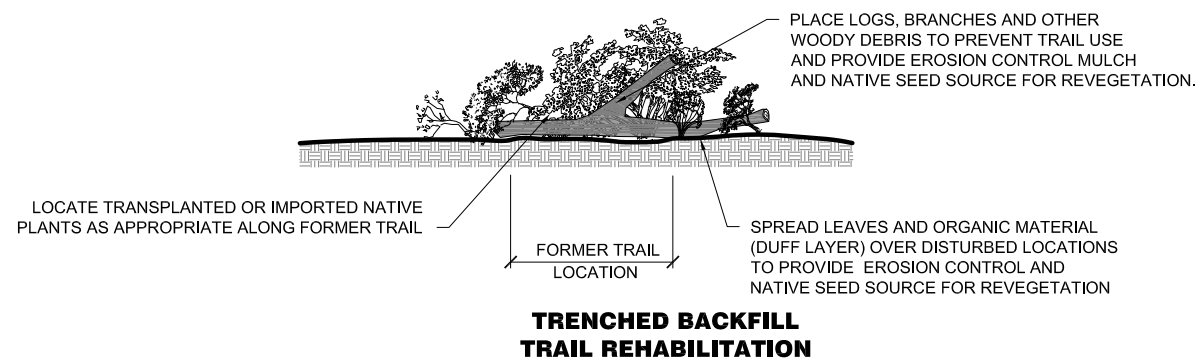
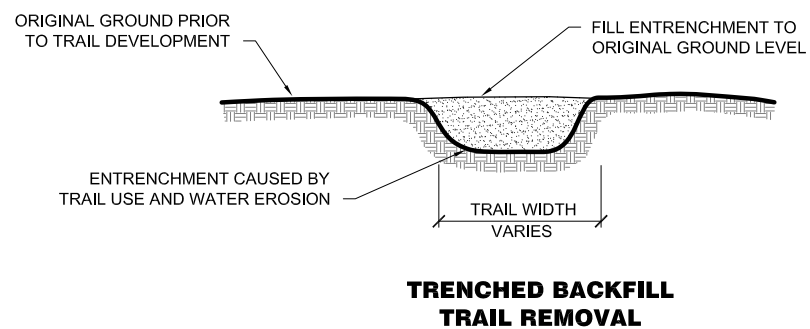
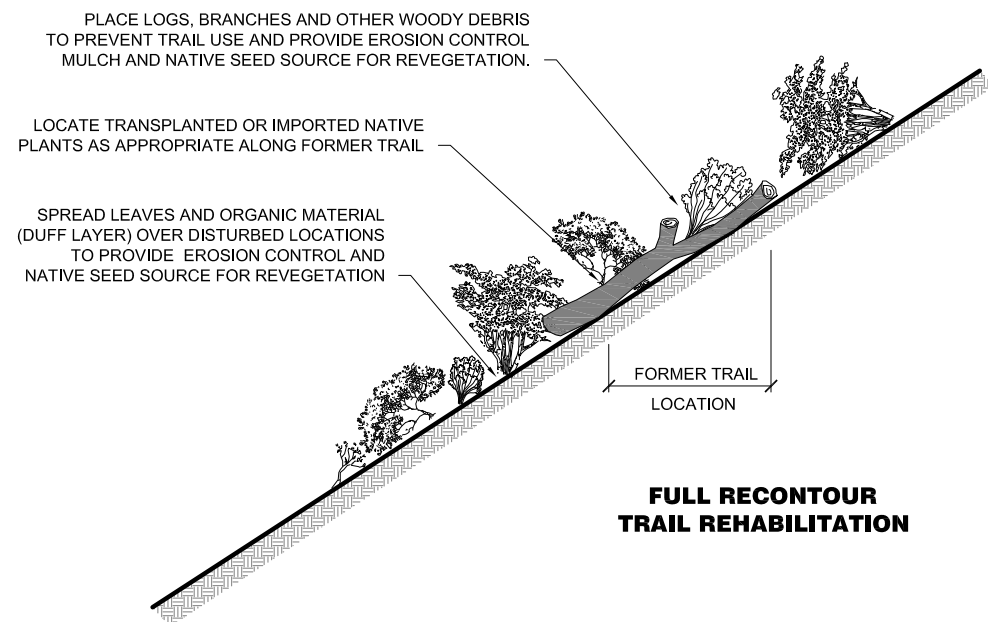
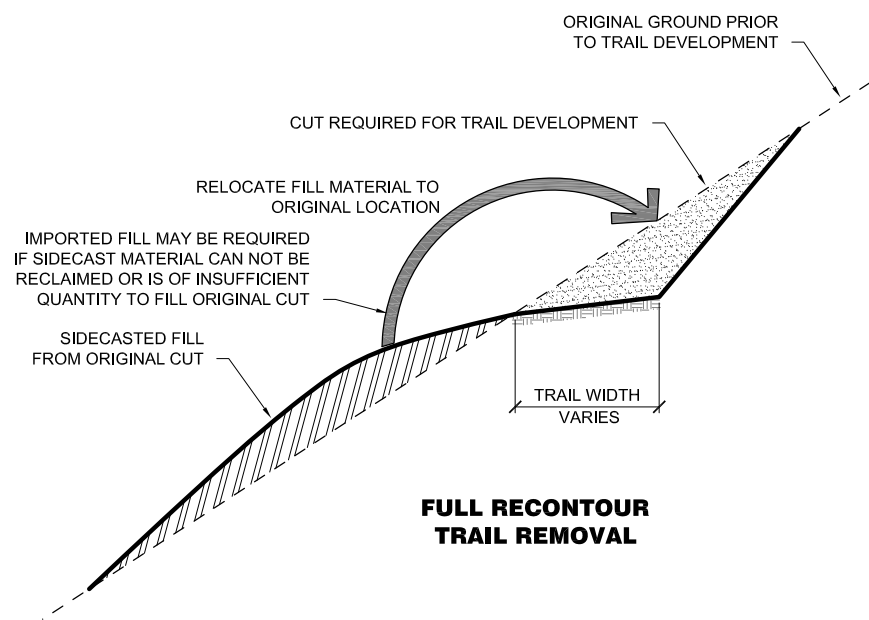
REVISIONS	
NO.	DATE

ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
PUNCHEON

DRAWING NO.
XXXXX XXX

SHEET NO.
D-1
X OF X

File: C:\Accessibility\Trails\Trail Design\Trail Details\Current details\Detail\Trail Removal and Rehabilitation.dwg Layout: D-1 DETAIL Date: October 11 2010 - 4:29 pm User: jspann



EXAMPLE OF TRAIL REMOVAL / REHABILITATION



EXAMPLE OF TRAIL REMOVAL / REHABILITATION



EXAMPLE OF TRAIL REMOVAL / REHABILITATION



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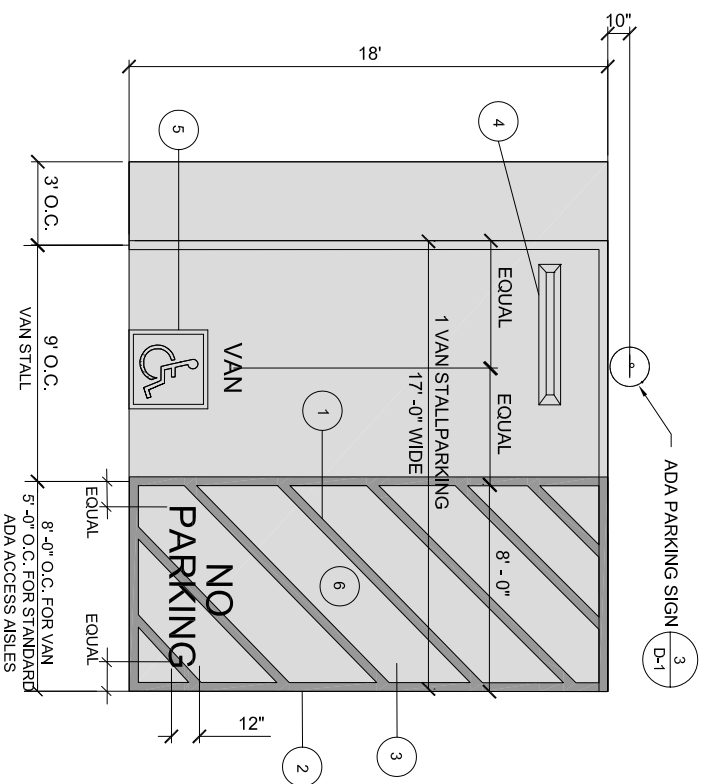
DESIGNED: J SPANN
DRAWN: J SPANN
CHECKED: SOLLENBERGER
DATE: 06-02-2010



REVISIONS	DATE

ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
TRAIL REMOVAL AND REHABILITATION

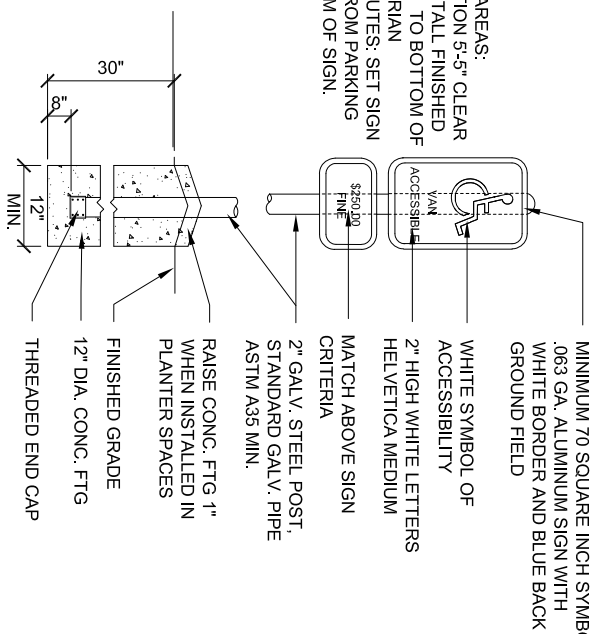
DRAWING NO. XXXXXX

SHEET NO. D-1
X OF X



- NOTES:
- ① 4" WIDE PAINTED WHITE LINES, TYPICAL. 45 DEGREE LINES SHALL BE 36" ON CENTER. "NO PARKING" TEXT SHALL BE HELVETICA NARROW FONT STYLE. WHITE LETTERING AT 12" TALL CENTER TEXT AS DIAGRAMMED
 - ② PERIMETER OF ACCESS AISLE TO BE BLUE 4" WIDE LINE.
 - ③ ADA PARKING PAD TO BE 4" CONCRETE SLAB
 - ④ INSTALL WHEEL STOPS PER DETAIL 
 - ⑤ INSTALL ADA SYMBOL PER DETAIL 
 - ⑥ ACCESSIBLE PARKING STALLS AND AISLEWAY NOT TO EXCEED 1.5% SLOPE IN ANY DIRECTION

IN LANDSCAPED AREAS:
SET SIGN ELEVATION 5'-5" CLEAR FROM PARKING STALL FINISHED SURFACE GRADE TO BOTTOM OF SIGN. IN PEDESTRIAN CIRCULATION ROUTES: SET SIGN ELEVATION 85" FROM PARKING STALL TO BOTTOM OF SIGN.

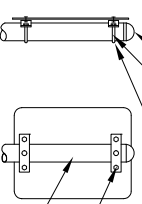


MINIMUM 70 SQUARE INCH SYMBOL, .063 GA. ALUMINUM SIGN WITH WHITE BORDER AND BLUE BACK GROUND FIELD

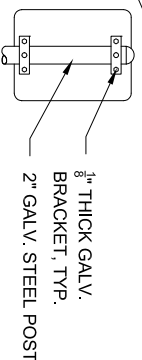
WHITE SYMBOL OF ACCESSIBILITY
2" HIGH WHITE LETTERS HELVETICA MEDIUM
MATCH ABOVE SIGN CRITERIA
2" GALV. STEEL POST, STANDARD GALV. PIPE ASTM A35 MIN.

RAISE CONC. FTG. 1" WHEN INSTALLED IN PLANTER SPACES
FINISHED GRADE
12" DIA. CONC. FTG
THREADED END CAP

SIDE VIEW



BACK VIEW

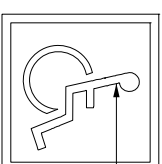


GALV. END CAP
ATTACH SIGN WITH $\frac{3}{8}$ " DIA. THREADED BOLT, NUT AND WASHER, GALV.
 $\frac{1}{4}$ " DIAMETER "U" BOLT WITH GALV. NUT AND WASHER
 $\frac{1}{2}$ " THICK GALV. BRACKET, TYP.
2" GALV. STEEL POST

- NOTE:
1. "VAN ACCESSIBLE" SIGN OCCURS AT LOCATION SHOWN ON PLANS. ALL OTHER SIGNS TO BE TYPICAL ACCESSIBLE PARKING SIGNS.
 2. CENTER SIGNS ON PARKING STALLS.
 3. VERIFY SIGN LOCATION PRIOR TO INSTALLATION WITH THE STATES REPRESENTATIVE
 4. BORDER SYMBOLS AND LETTERING TO BE REFLECTIVE.

3 ACCESSIBLE PARKING SIGN

SYMBOL SIZE
1.5'x1.5' PEDESTRIAN AREAS
3'x3' PARKING STALL.



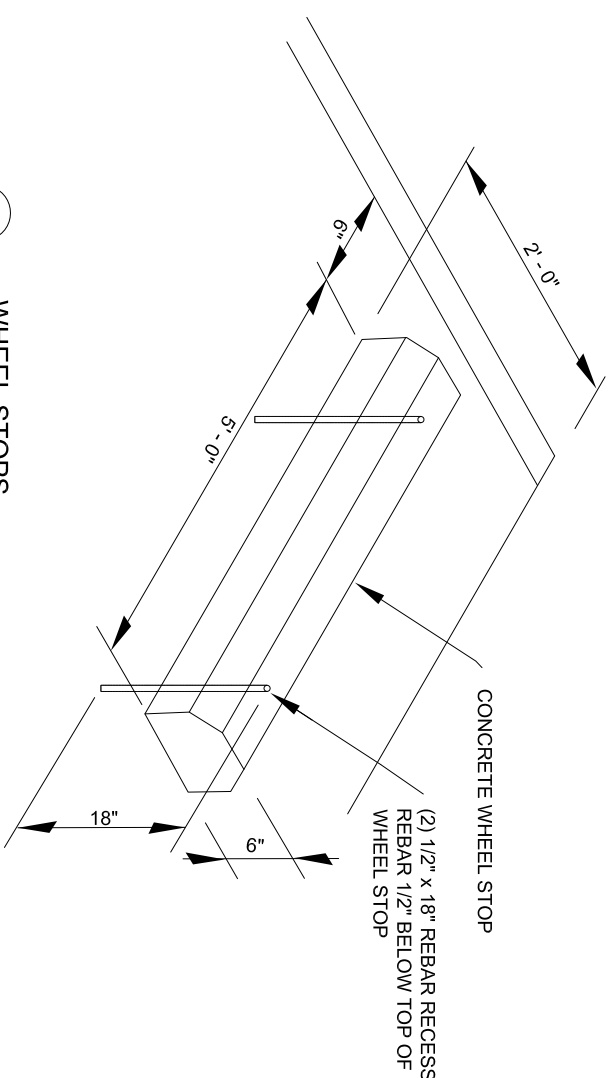
WHITE SYMBOL OF ACCESSIBILITY
WHITE BORDER WITH BLUE BACKGROUND

- NOTE:
LOCATE SYMBOL AT REAR LIMIT OF PARKING STALL

2 ADA SYMBOL

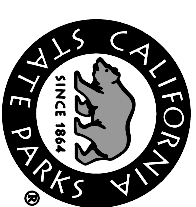


EXAMPLE OF SINGLE STALL ACCESSIBLE PARKING



CONCRETE WHEEL STOP
(2) 1/2" x 18" REBAR RECESS REBAR 1/2" BELOW TOP OF WHEEL STOP

4 WHEEL STOPS



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One Capitol Mall
Sacramento, CA
95814-3229

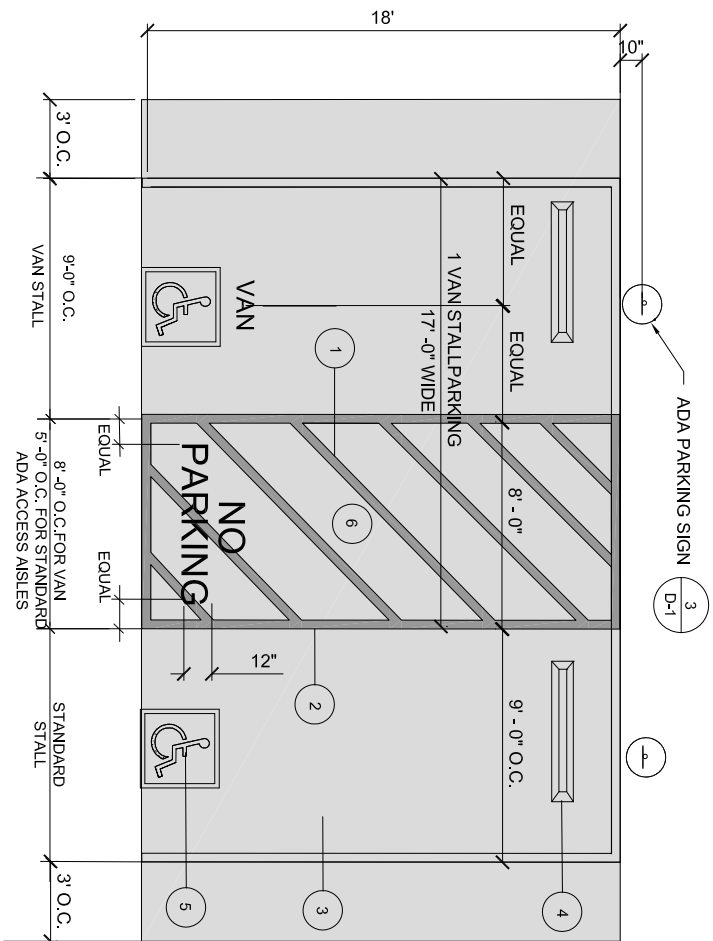
CALIFORNIA STATE FIRE MARSHAL, APPROVED
Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is required by the State Fire Marshal. Approved plans shall be available on the project site at all times.
Reviewed by: _____ Date: _____
DPR ACCESS COMPLIANCE REVIEW CERTIFICATION SECTION
Reviewed by: _____ Date: _____

DESIGNED: T. SEGBART
DRAWN: T. SEGBART
CHECKED: XXXXXX
DATE: 03-05-14

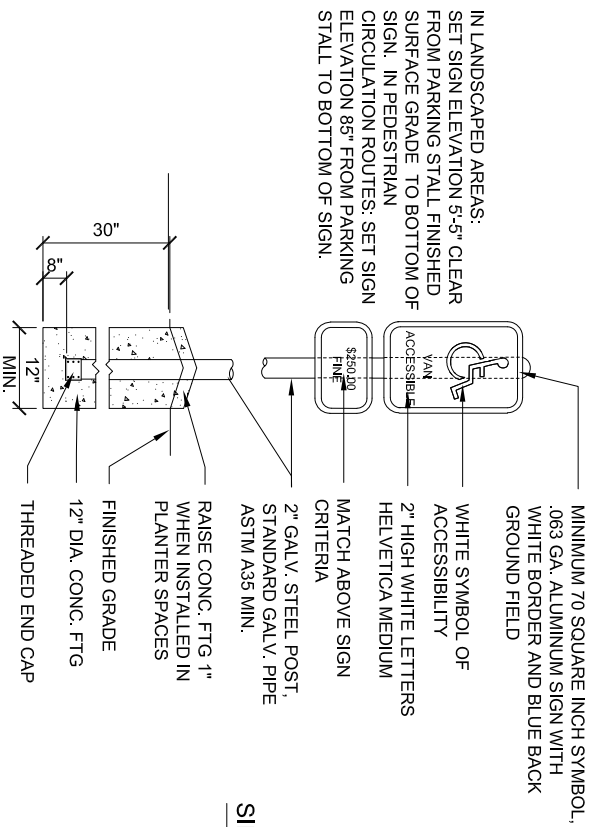
REVISIONS	DATE

ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
**ACCESSIBLE PARKING
SINGLE CONCRETE STALL**

DRAWING NO. XXXXX.XXX
SHEET NO. D-1
X OF X



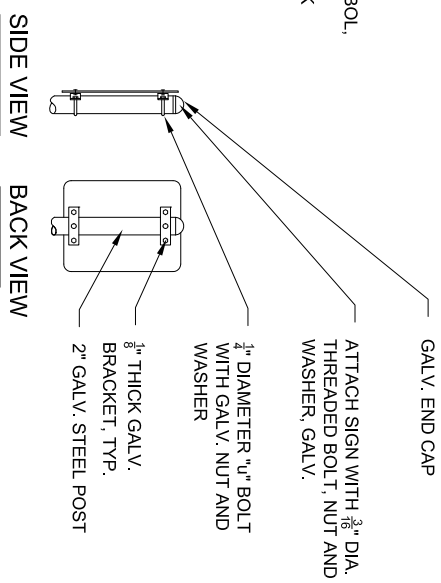
1 ACCESSIBLE PARKING DOUBLE STALL



IN LANDSCAPED AREAS:
SET SIGN ELEVATION 5'-5" CLEAR FROM PARKING STALL FINISHED SURFACE GRADE TO BOTTOM OF SIGN. IN PEDESTRIAN CIRCULATION ROUTES: SET SIGN ELEVATION 85" FROM PARKING STALL TO BOTTOM OF SIGN.

MINIMUM 70 SQUARE INCH SYMBOL, .063 GA. ALUMINUM SIGN WITH WHITE BORDER AND BLUE BACK GROUND FIELD
WHITE SYMBOL OF ACCESSIBILITY
2" HIGH WHITE LETTERS HELVETICA MEDIUM
MATCH ABOVE SIGN CRITERIA
2" GALV. STEEL POST, STANDARD GALV. PIPE ASTM A53 MIN.
RAISE CONC. FTG 1" WHEN INSTALLED IN PLANTER SPACES
FINISHED GRADE
12" DIA. CONC. FTG
THREADED END CAP



3 ACCESSIBLE PARKING SIGN



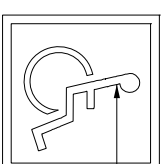
NOTE:
1. "VAN ACCESSIBLE" SIGN OCCURS AT LOCATION SHOWN ON PLANS. ALL OTHER SIGNS TO BE TYPICAL ACCESSIBLE PARKING SIGNS.
2. CENTER SIGNS ON PARKING STALLS.
3. VERIFY SIGN LOCATION PRIOR TO INSTALLATION WITH THE STATES REPRESENTATIVE.
4. BORDER SYMBOLS AND LETTERING TO BE REFLECTIVE.

SIDE VIEW

BACK VIEW

- NOTES:
- ① 4" WIDE PAINTED WHITE LINES. TYPICAL. 45 DEGREE LINES SHALL BE 36" ON CENTER. "NO PARKING" TEXT SHALL BE HELVETICA NARROW FONT STYLE. WHITE LETTERING AT 12" TALL. CENTER TEXT AS DIAGRAMMED
 - ② PERIMETER OF ACCESS AISLE TO BE BLUE 4" WIDE LINE.
 - ③ ADA PARKING PAD TO BE 4" CONCRETE SLAB
 - ④ INSTALL WHEEL STOPS PER DETAIL 
 - ⑤ INSTALL ADA SYMBOL PER DETAIL 
 - ⑥ ACCESSIBLE PARKING STALLS AND AISLEWAY NOT EXCEED 1.5% SLOPE IN ANY DIRECTION

SYMBOL SIZE
1.5'x1.5' PEDESTRIAN AREAS
3'x3' PARKING STALL.



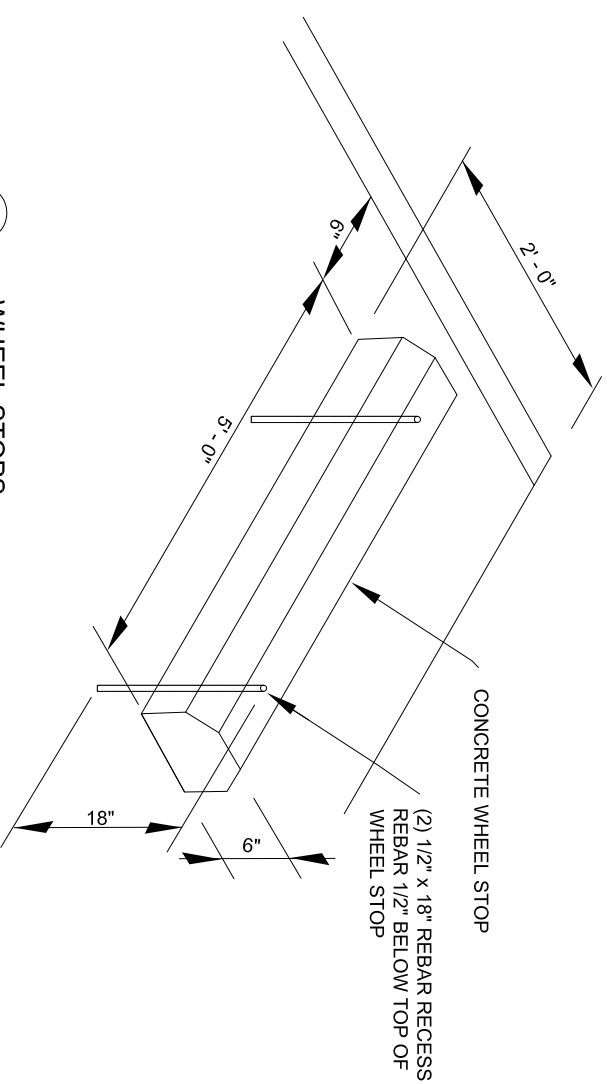
WHITE SYMBOL OF ACCESSIBILITY
WHITE BORDER WITH BLUE BACKGROUND

NOTE:
LOCATE SYMBOL AT REAR LIMIT OF PARKING STALL

2 ADA SYMBOL



EXAMPLE OF DOUBLE STALL ACCESSIBLE PARKING



4 WHEEL STOPS



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One Capitol Mall
Sacramento, CA
95814-3229

CALIFORNIA STATE FIRE MARSHAL, APPROVED
Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to the approval of the State Fire Marshal. Approved plans shall be available on the project site at all times.
Reviewed by _____ Date _____

DPR ACCESS COMPLIANCE REVIEW
CERTIFICATION # _____
Reviewed by _____ Date _____

ACCESSIBILITY COMPLIANCE AND STATE FIRE MARSHAL SIGNED ORDINANCES ARE ON FILE AT THE NORTHERN SERVICE CENTER

DESIGNED: J. SPANN
DRAWN: J. SPANN
CHECKED: XXXXXX
DATE: 1-19-10

REVISIONS	DATE

ACCESSIBILITY SECTION
TRAIL CONSTRUCTION DETAILS
**ACCESSIBLE PARKING
DOUBLE CONCRETE STALL**

DRAWING NO.
XXXXXX.XXX

SHEET NO.
D-1

X OF X



ACQUISITION & DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229

CALIFORNIA STATE FIRE MARSHAL-APPROVED
Approval of this plan does not authorize or approve any omission of deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.
Reviewed by _____ Date _____
DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION
CERTIFICATION # _____
Reviewed by _____ Date _____
ACCESSIBILITY COMPLIANCE AND STATE FIRE MARSHAL SIGNED ORIGINALS ARE ON FILE AT THE DEPARTMENT OF PARKS AND RECREATION, NORTHERN SERVICE CENTER

DESIGNED: XXXXXX
DRAWN: XXXXXX
CHECKED: XXXXXX
DATE: 07-13-2007

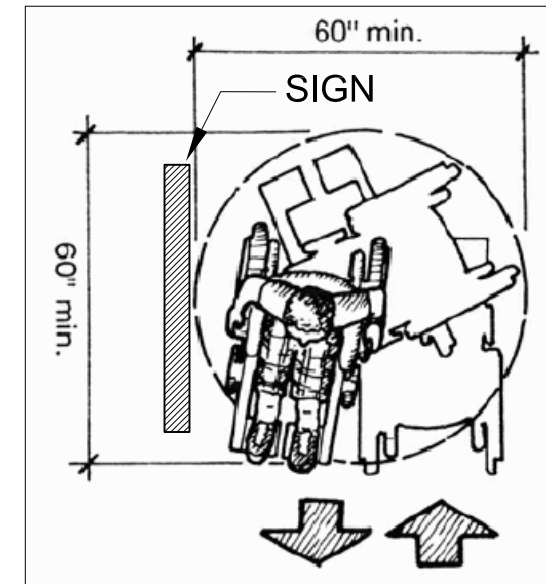
REVISIONS	
NO.	DATE

ACCESSIBILITY SECTION
SIGN INSTALLATION
DETAIL SHEET

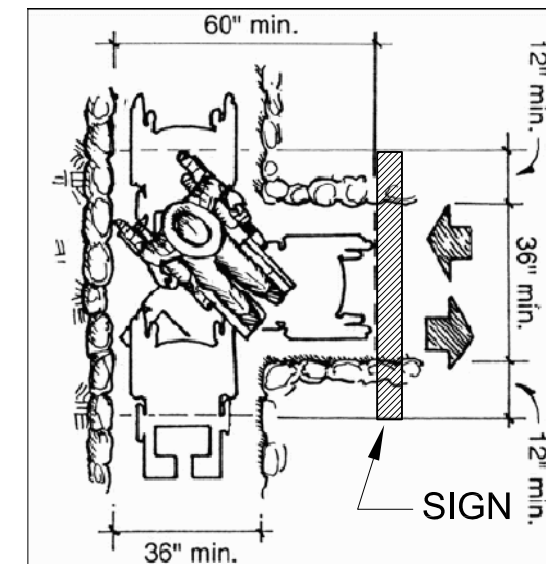
DRAWING NO.
XXXXX.XXX

SHEET NO.
D-1
1 OF 1

CLEARANCE REQUIREMENTS IN FRONT OF SIGN



60"x60" CLEARANCE IN OPEN AREAS



36"x60" CLEARANCE ON TRAIL

GALV. BOLT (X4)



PLAN



EDGE OF SIGN NOT TO PROTRUDE INTO TRAIL OR WALKWAY

4"X4" POST, PT DF OR RWD

4"X4" CANE DETECTIBLE BARRIER

PROVIDE FIRM AND STABLE SURFACE, 2% MAX. SLOPE IN ANY DIRECTION

54"

6"

SECTION

NOTE: FOR SIGNS MOUNTED ON KIOSK STRUCTURE W/ OVERHEAD, ALLOW 80" MIN. CLEARANCE FOR OVERHANG. (REF SECTION 18, FIG. 18-4, CA STATE PARKS- ACCESSIBILITY GUIDELINES 2009)

ACCESSIBLE TRAILHEAD SIGN INSTALLATION TYPICAL

NOT TO SCALE



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 DEVELOPMENT
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 Sacramento, CA
 95814-3229

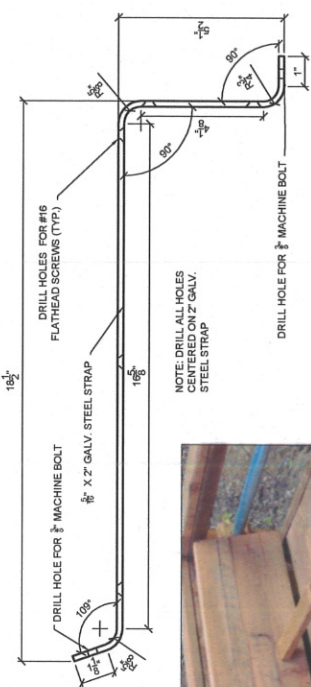
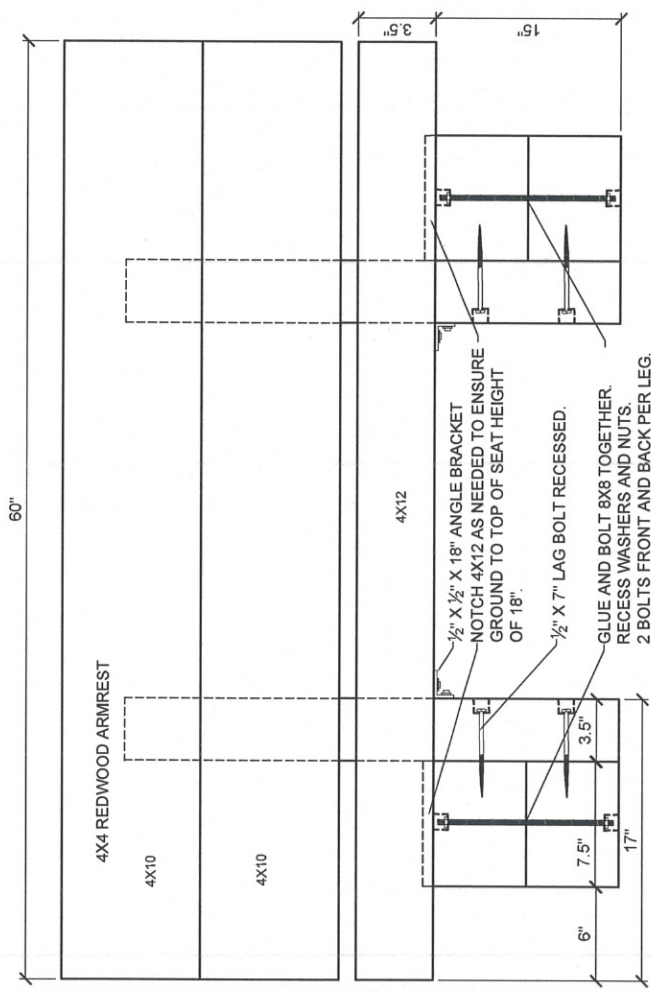


DESIGNED: STEVE M.	DATE: 12/1/06
DRAWN: JASON S.	CHECKED: SUPERVISOR
DATE: 12/1/06	REVISIONS
DATE	DATE

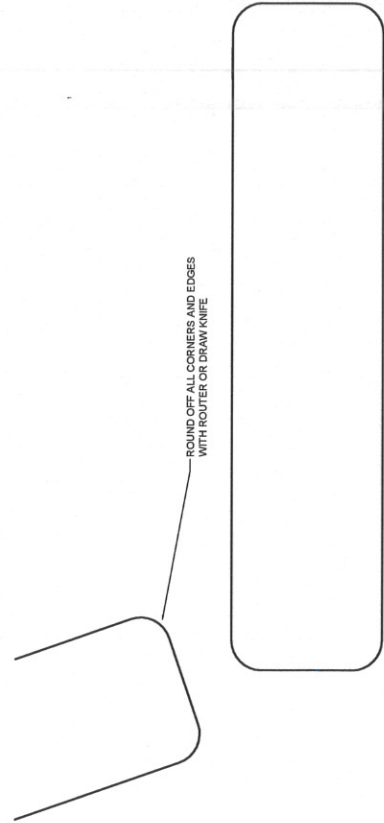
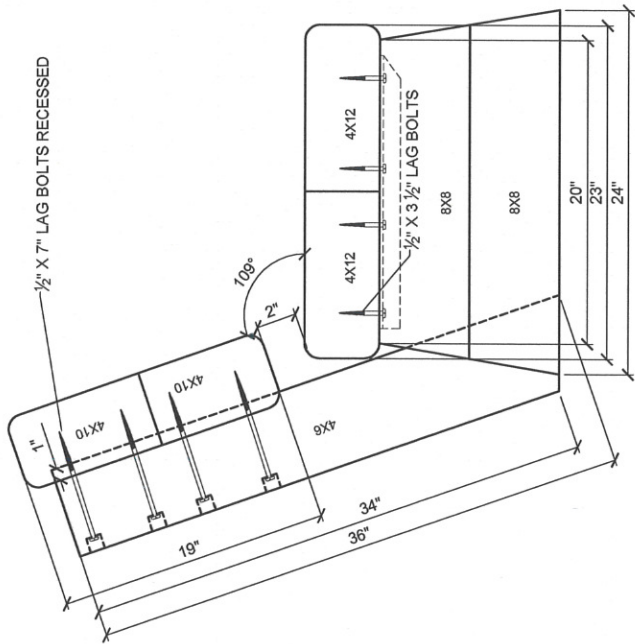
ACCESSIBLE REDWOOD BENCH (DIMENSIONAL LUMBER)
 CALIFORNIA STATE PARKS

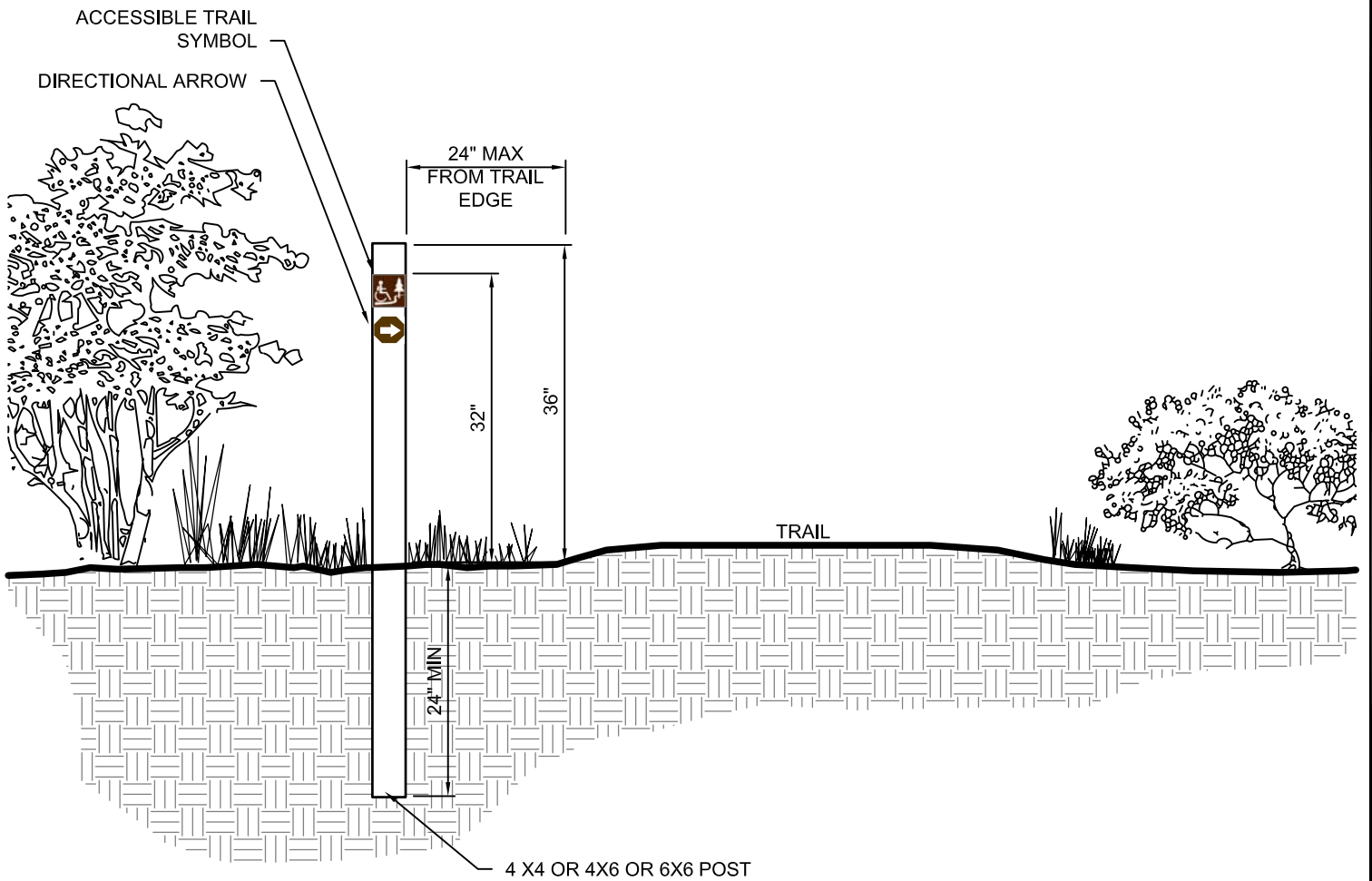
DRAWING NO. XXX.001
 SHEET NO. ##### OF XX

TRAIL DETAILS



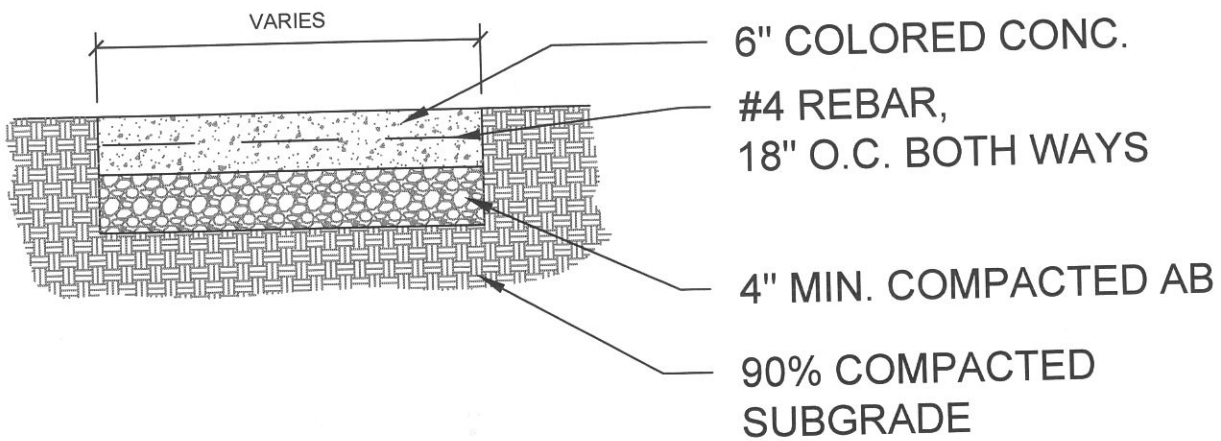
EXAMPLE OF COMPLETED BENCH





TRAIL DETAILS
 ACCESSIBLE TRAIL
 DIRECTIONAL SIGNS
 CALIFORNIA STATE PARKS

DESIGNED:	J SPANN
DRAWN:	J SPANN
CHECKED:	SUPERVISOR
DATE:	2-22-10



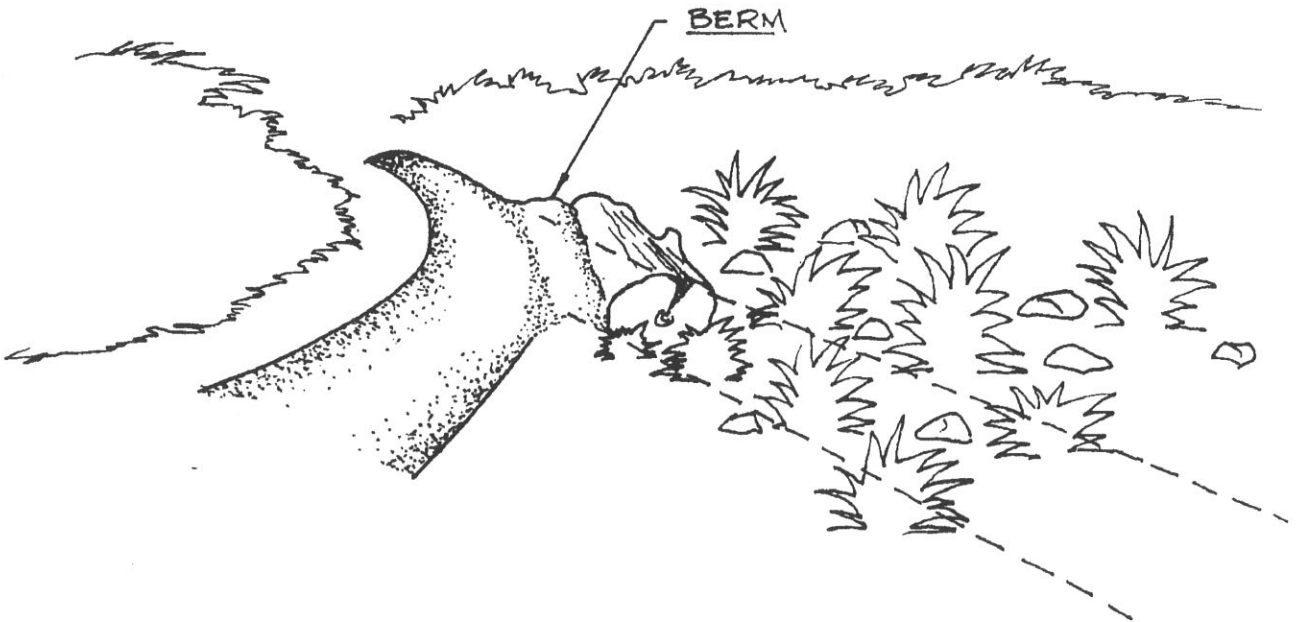
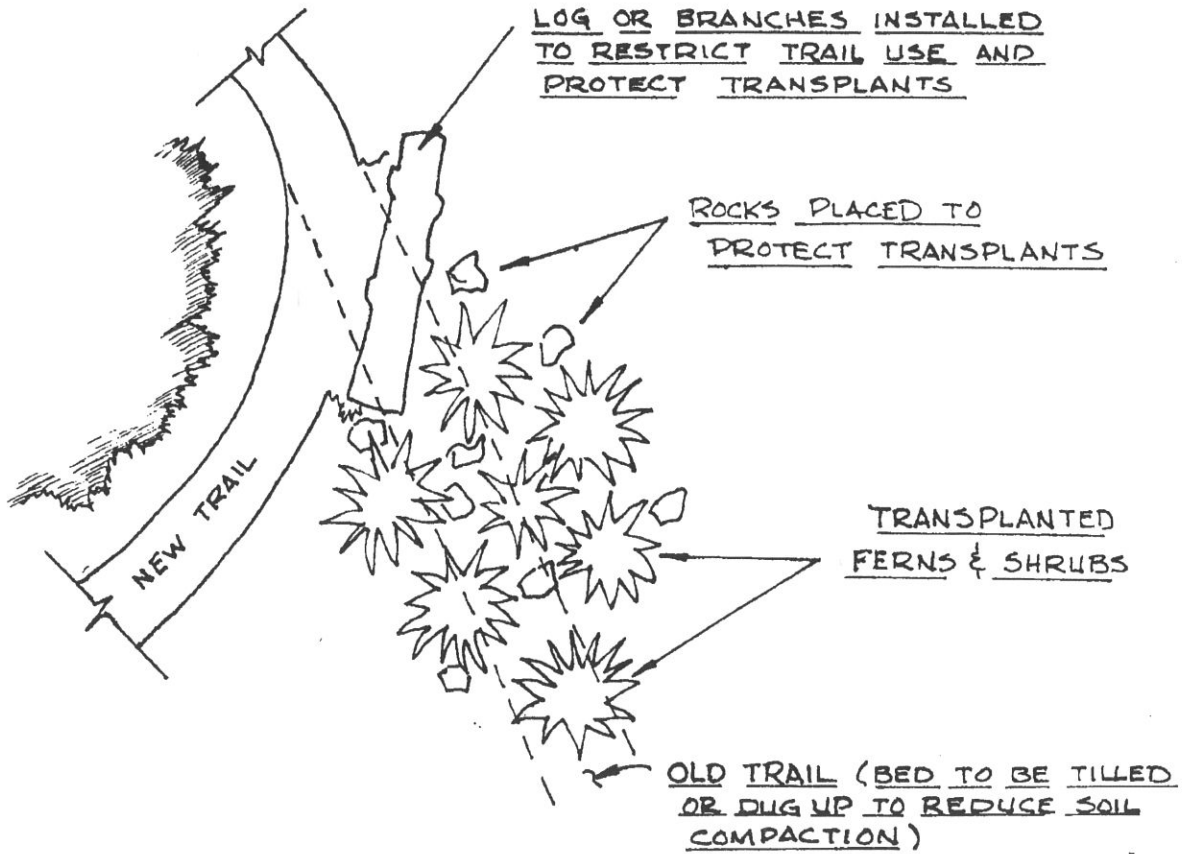
VEHICULAR PAVING SECTION (TYPICAL)

NOT TO SCALE



TRAIL DETAILS
 CONCRETE PAVING
 SECTION
 CALIFORNIA STATE PARKS

DESIGNED:	T. SEGEBART
DRAWN:	T. SEGEBART
CHECKED:	SUPERVISOR
DATE:	1-7-2014



TYP. REHAB FOR TRAIL RE-ROUTE

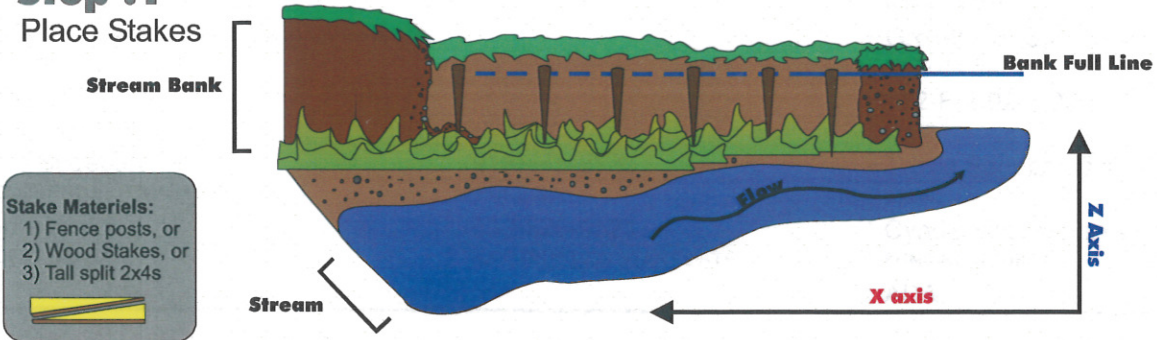
Brush Box Along Stream Bank

These brush boxes are used to protect an eroding stream bank, and deflect flow energy away from the bank. The boxes provide roughness, slow velocity and may induce deposition.

The boxes are constructed up against and parallel to the bank. They need to be keyed in at the upstream and downstream ends. The top of the boxes should be at approximately the "bank full" flow elevation.

Step .1

Place Stakes



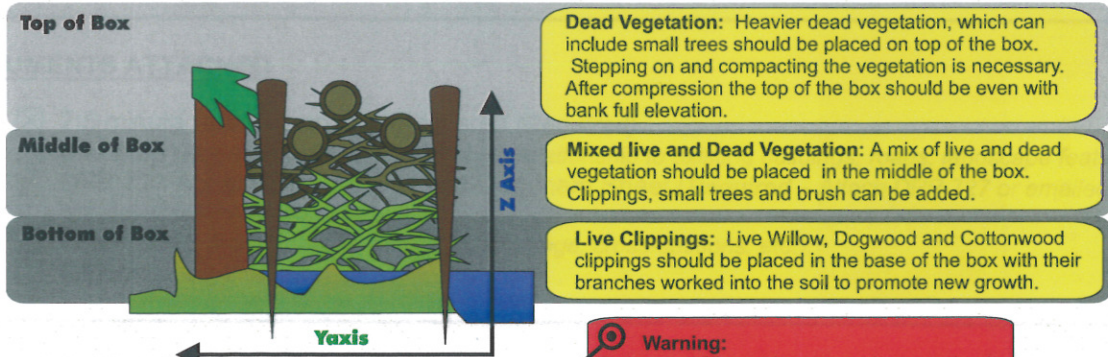
On the X Axis or length of row:
Stakes should be placed 2 ft to 4 ft apart along the channel bank. Length depends on the area of bank to be treated but a single box span shouldn't exceed 15 ft.

On the Y Axis or width of row:
The first row of stakes should be placed flush with the bank. The second parallel row should be placed 2 ft to 4 ft from the bank.

On the Z Axis or height of the stakes:
Stakes can be between 3 ft and 6 ft tall depending on bank height. However stakes must be driven at least 12" into the ground. The top of the stake must be above the bank-full line. Allow 6" for tie down.

Step .2

Add Fill Material



Dead Vegetation: Heavier dead vegetation, which can include small trees should be placed on top of the box. Stepping on and compacting the vegetation is necessary. After compression the top of the box should be even with bank full elevation.

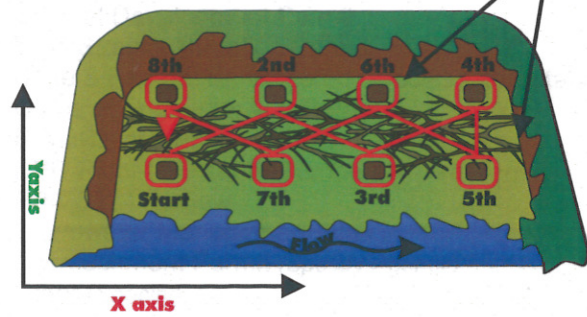
Mixed live and Dead Vegetation: A mix of live and dead vegetation should be placed in the middle of the box. Clippings, small trees and brush can be added.

Live Clippings: Live Willow, Dogwood and Cottonwood clippings should be placed in the base of the box with their branches worked into the soil to promote new growth.

Warning:
Stakes and fill must be snug with stream bank, or risk blowout! Tie in with existing vegetation, or features at the ends.

Step .3

Tie Down Box



Tying down and Compressing Brush boxes:
Begin at the starting point and tie the bailing wire around the first stake. Then cross box to the second diagonal stake and wrap wire again. Next head to the third stake and continue with the pattern.

Once wire is secured in a crisscross pattern, then start tapping down the stakes. Start with the first stake, hammer it down an inch or two. Then move to the second stake. Cycle through the pattern until all the stakes have been driven down 6 or more inches. This will evenly compress the pile securing it against heavier stream discharges.

By: Walck and Fryer

APPENDIX C
PROJECT PHOTOS

Grover Hot Springs State Park
Nature Trail



Replace and Add Parking Stalls/Replace Road Section



Spur to Hot Springs Pool & Accessible Parking



Rock Causeway/Drain Lense (Typical)



Proposed Boardwalk



Reconstruct Portions of Existing Retaining Wall



Replace Bridge Deck Planks



Proposed Raised Rock Causeway (typical)



Reroute (typical)



Proposed Bridge Crossing



Proposed Puncheon



Proposed Retaining Wall



Proposed Meadow Boardwalks (typical)



Proposed Overlook



Proposed Trailhead & Parking

APPENDIX D
TRAIL LOG

Trail: Nature TrailDate: Grover Hot Springs SPSegment Pool Parking Lot to Campground EntranceLand Unit: Grover Hot Springs SP

Begin Feet	End Feet	Action	Feature	Feature Attribute	Tread Width	Mechanized	Accessible	Wood / Plastic	Size/Qty			Units	Comment	Total
									L/each	H	W			
0													Start of trail at northeast corner of parking lot	
0	3950	Brush	Trail Brushing Construction	Medium					3950.0			lin ft		3950.0
0	3950	Remove	Trail Obliteration	Level Ground					3950.0			lin ft	Rehab 2 on Each Side	3950.0
0	36	Excavate	Soil	soil medium					72.0	0.5	1.0	cu ft	Double Sided	36.0
0	36	Construct	Causeway	Distance <300'					72.0	1.0	1.0	cu ft	Double Sided	72.0
0	36	Import	Rock Wall Rock	Distance <300'					72.0	1.0	1.0	cu ft	Double Sided	72.0
0	36	Import	Rock Crush Fill	Distance <300'					36.0	0.2	5.0	cu ft		36.0
0	36	Install	Accessible Surface						36.0	5.0		sq ft		180.0
0	36	Import	Trail Hardening Aggregate Surfacing	Distance <300'					36.0	0.5	5.0	cu ft		90.0
36													Trailhead (Intersection of Pool Spur)	
36		Excavate	Soil	soil medium					24.0	0.5	1.0	cu ft	Trailhead (Intersection of Pool Spur)	12.0
36		Construct	Causeway	Distance <300'					24.0	1.0	1.0	cu ft	Trailhead (Intersection of Pool Spur)	24.0
36		Import	Rock Wall Rock	Distance <300'					24.0	1.0	1.0	cu ft	Trailhead (Intersection of Pool Spur)	24.0
36		Import	Rock Crush Fill	Distance <300'					6.0	0.2	6.0	cu ft		7.2
36		Install	Accessible Surface						6.0	6.0		sq ft		36.0
36		Import	Trail Hardening Aggregate Surfacing	Distance <300'					6.0	0.5	6.0	cu ft		18.0
36		Excavate	Soil	soil medium					1.0	3.0	1.0	cu ft	2 post holes	3.0
36		Install	Sign Trail						1.0			ea	Trailhead Sign	1.0
36	514	Excavate	Soil	soil medium					956.0	0.5	1.0	cu ft	Double Sided	478.0
36	514	Construct	Causeway	Distance >300'<800'					956.0	1.0	1.0	cu ft	Double Sided	956.0
36	514	Import	Rock Wall Rock	Distance >300'<800'					956.0	1.0	1.0	cu ft	Double Sided	956.0
36	514	Import	Rock Crush Fill	Distance >300'<800'					478.0	0.2	5.0	cu ft		478.0
36	514	Install	Accessible Surface						478.0	5.0		sq ft		2390.0
36	514	Import	Trail Hardening Aggregate Surfacing	Distance >300'<800'					478.0	0.5	5.0	cu ft		1195.0
514	542	Construct	Drainage Lense						28.0	3.0	8.0	cu ft		672.0
514	542	Import	Rock Fracture Shapes 6 to 8 inch	Distance >300'<800'					28.0	1.5	8.0	cu ft		336.0
514	542	Import	Rock Crush Fill	Distance >300'<800'					28.0	1.5	5.0	cu ft		210.0
514	542	Install	Accessible Surfacing						28.0	5.0		sq ft		140.0
514	542	Import	Trail Hardening Aggregate Surfacing	Distance >300'<800'					28.0	0.5	5.0	cu ft		70.0
542	717	Excavate	Soil	soil medium					350.0	0.5	1.0	cu ft	Double Sided	175.0
542	717	Construct	Causeway	Distance >300'<800'					350.0	1.0	1.0	cu ft	Double Sided	350.0
542	717	Import	Rock Wall Rock	Distance >300'<800'					350.0	1.0	1.0	cu ft	Double Sided	350.0

Begin Feet	End Feet	Action	Feature	Feature Attribute	Tread Width	Mechinized	Accessible	Wood / Plastic	Size/Qty			Units	Comment	Total
									L/each	H	W			
542	717	Import	Rock Crush Fill	Distance >300'<800'					175.0	0.2	5.0	cu ft		175.0
542	717	Install	Accessible Surface						175.0	5.0		sq ft		875.0
542	717	Import	Trail Hardening Aggregate Surfacing	Distance >300'<800'					175.0	0.5	5.0	cu ft		437.5
717	829	Excavate	Soil	soil medium					112.0	0.5	0.1	cu ft	Boardwalk Footings	7.0
717	829	Construct	Boardwalk	Diamond Pier					112.0			lin. Ft		112.0
717	829	Import	Boardwalk	Diamond Pier					20.0			hrs		20.0
749	790	Excavate	Soil	soil medium					41.0	1.0	15.0	cu ft	Removal of Fill Material	615.0
749	790	Export	Fill Material	Distance <300'					41.0	1.0	15.0	cu ft		615.0
829	912	Excavate	Soil	soil medium					166.0	0.5	1.0	cu ft	Double Sided	83.0
829	912	Construct	Causeway	Distance >800'<1300'					166.0	1.0	1.0	cu ft	Double Sided	166.0
829	912	Import	Rock Wall Rock	Distance >800'<1300'					166.0	1.0	1.0	cu ft	Double Sided	166.0
829	912	Import	Rock Crush Fill	Distance >800'<1300'					83.0	0.2	4.0	cu ft		66.4
829	912	Install	Accessible Surface						83.0	4.0		sq ft		332.0
829	912	Import	Trail Hardening Aggregate Surfacing	Distance >800'<1300'					83.0	0.5	4.0	cu ft		166.0
912	992	Excavate	Soil	soil medium					80.0	0.5	1.0	cu ft	Single Sided	40.0
912	992	Construct	Causeway	Distance >800'<1300'					80.0	1.0	1.0	cu ft	Single Sided	80.0
912	992	Import	Rock Wall Rock	Distance >800'<1300'					80.0	1.0	1.0	cu ft	Single Sided	80.0
912	992	Import	Rock Crush Fill	Distance >800'<1300'					80.0	0.2	4.0	cu ft		64.0
912	992	Install	Accessible Surface						80.0	4.0		sq ft		320.0
912	992	Import	Trail Hardening Aggregate Surfacing	Distance >800'<1300'					80.0	0.5	4.0	cu ft		160.0
992	1047	Excavate	Soil	soil medium					110.0	0.5	1.0	cu ft	Double Sided	55.0
992	1047	Construct	Causeway	Distance >800'<1300'					110.0	1.0	1.0	cu ft	Double Sided	110.0
992	1047	Import	Rock Wall Rock	Distance >800'<1300'					110.0	1.0	1.0	cu ft	Double Sided	110.0
992	1047	Import	Rock Crush Fill	Distance >800'<1300'					55.0	0.2	4.0	cu ft		44.0
992	1047	Install	Accessible Surface						55.0	4.0		sq ft		220.0
992	1047	Import	Trail Hardening Aggregate Surfacing	Distance >800'<1300'					55.0	0.5	4.0	cu ft		110.0
992	1047	Construct	Retaining Wall Rock Non Structural junk wall	Junk wall large rock					110.0	5.0	1.0	cu ft	Double Sided	550.0
992	1047	Import	Rock Wall Rock	Distance >800'<1300'					110.0	5.0	1.0	cu ft	Double Sided	550.0
1047	1116	Construct	Boardwalk	0					69.0			lin. Ft	Replace Bridge Decking	69.0

Begin Feet	End Feet	Action	Feature	Feature Attribute	Tread Width	Mechinized	Accessible	Wood / Plastic	Size/Qty			Units	Comment	Total
									L/each	H	W			
1047	1116	Import	Boardwalk	0					15.0			hrs	Replace Bridge Decking	15.0
1047	1116	Export	Boardwalk	0					15.0			hrs	Replace Bridge Decking	15.0
1116	1171	Construct	Retaining Wall Rock Non Structural junk wall	Junk wall large rock					110.0	5.0	1.0	cu ft	Double Sided	550.0
1116	1171	Import	Rock Wall Rock	Distance >300'<800'					110.0	5.0	1.0	cu ft	Double Sided	550.0
1116	1716	Excavate	Soil	soil medium					1200.0	0.5	1.0	cu ft	Double Sided	600.0
1116	1716	Construct	Causeway	Distance >800'<1300'					1200.0	1.0	1.0	cu ft	Double Sided	1200.0
1116	1716	Import	Rock Wall Rock	Distance >800'<1300'					1200.0	0.5	1.0	cu ft	Double Sided	600.0
1116	1716	Import	Rock Crush Fill	Distance >800'<1300'					600.0	0.2	4.0	cu ft		480.0
1116	1716	Install	Accessible Surface						600.0	4.0		sq ft		2400.0
1116	1716	Import	Trail Hardening Aggregate Surfacing	Distance >800'<1300'					600.0	0.5	4.0	cu ft		1200.0
1716													Begin Reroute	
1716	1936	Perform	Trail Construction	Hillslope <20%					220.0			lin ft		220.0
1716	1908	Excavate	Soil	soil medium					1200.0	0.5	1.0	cu ft	Double Sided	600.0
1716	1908	Construct	Causeway	Distance >800'<1300'					1200.0	1.0	1.0	cu ft	Double Sided	1200.0
1716	1908	Import	Rock Wall Rock	Distance >800'<1300'					1200.0	1.0	1.0	cu ft	Double Sided	1200.0
1716	1908	Import	Rock Crush Fill	Distance >800'<1300'					192.0	0.2	4.0	cu ft		153.6
1716	1908	Install	Accessible Surface						192.0	4.0		sq ft		768.0
1716	1908	Import	Trail Hardening Aggregate Surfacing	Distance >800'<1300'					192.0	0.5	4.0	cu ft		384.0
1716		Excavate	Soil	soil medium					1.0	3.0	1.0	cu ft	1 post hole	3.0
1716		Install	Sign Trail						1.0			ea	Directional Sign	1.0
1908	1936	Excavate	Soil	soil medium					56.0	0.8	1.0	cu ft	Double Sided	44.8
1908	1936	Construct	Retaining Wall Rock Multi Tier	Distance >800'<1300'					56.0	3.0	1.0	cu ft	Double Sided	168.0
1908	1936	Import	Rock Wall Rock	Distance >800'<1300'					56.0	3.0	1.0	cu ft	Double Sided	168.0
1908	1936	Import	Rock Crush Fill	Distance >800'<1300'					28.0	2.0	4.0	cu ft		224.0
1908	1936	Install	Accessible Surface						28.0	4.0		sq ft		112.0
1908	1936	Import	Trail Hardening Aggregate Surfacing	Distance >800'<1300'					28.0	0.5	4.0	cu ft		56.0
1936	1976	Construct	Bridge	Milled Wood					40.0			lin ft		40.0
1936	1976	Construct	Hand Railings	Hand Railing with diagonal					40.0			lin ft		40.0
1936	1976	Import	Bridge						10.0			hrs		10.0
1976	2136	Perform	Trail Construction	Hillslope <20%					160.0			lin ft		160.0

Begin Feet	End Feet	Action	Feature	Feature Attribute	Tread Width	Mechanized	Accessible	Wood / Plastic	Size/Qty			Units	Comment	Total
									L/each	H	W			
1976	2000	Excavate	Soil	soil medium					48.0	0.8	1.0	cu ft	Double Sided	38.4
1976	2000	Construct	Retaining Wall Rock Multi Tier	Distance <300'					48.0	3.0	1.0	cu ft	Double Sided	144.0
1976	2000	Import	Rock Wall Rock	Distance <300'					48.0	3.0	1.0	cu ft	Double Sided	144.0
1976	2000	Import	Rock Crush Fill	Distance <300'					24.0	2.0	4.0	cu ft		192.0
1976	2000	Install	Accessible Surface						24.0	4.0		sq ft		96.0
1976	2000	Import	Trail Hardening Aggregate Surfacing	Distance <300'					24.0	0.5	4.0	cu ft		48.0
2000	2136	Excavate	Soil	soil medium					1200.0	0.5	1.0	cu ft	Double Sided	600.0
2000	2136	Construct	Causeway	Distance <300'					1200.0	1.0	1.0	cu ft	Double Sided	1200.0
2000	2136	Import	Rock Wall Rock	Distance <300'					1200.0	1.0	1.0	cu ft	Double Sided	1200.0
2000	2136	Import	Rock Crush Fill	Distance <300'					136.0	0.2	4.0	cu ft		108.8
2000	2136	Install	Accessible Surface						136.0	4.0		sq ft		544.0
2000	2136	Import	Trail Hardening Aggregate Surfacing	Distance <300'					136.0	0.5	4.0	cu ft		272.0
2000		Excavate	Soil	soil medium					1.0	3.0	1.0	cu ft	1 post hole	3.0
2000		Install	Sign Trail						1.0			ea	Directional Sign	1.0
2136	2643	Install	Accessible Surface						507.0	8.0		sq ft	Mechanized Installation	4056.0
2160	2180	Excavate	Soil	soil medium					20.0	0.5	8.0	cu ft	Mechanized	80.0
2295	2309	Excavate	Soil	soil medium					14.0	0.5	8.0	cu ft	Mechanized	56.0
2425	2448	Excavate	Soil	soil medium					23.0	0.5	8.0	cu ft	Mechanized	92.0
2592	2605	Excavate	Soil	soil medium					13.0	1.0	8.0	cu ft	Mechanized	104.0
2592		Excavate	Soil	soil medium					1.0	3.0	1.0	cu ft	1 post hole	3.0
2592		Install	Sign Trail						1.0			ea	Directional Sign	1.0
2643	3445	Perform	Trail Construction	Hillslope <20%					802.0			lin ft		802.0
2643	2776	Excavate	Soil	soil medium					266.0	0.5	1.0	cu ft	Double Sided	133.0
2643	2776	Construct	Causeway	Distance <300'					266.0	1.0	1.0	cu ft	Double Sided	266.0
2643	2776	Import	Rock Wall Rock	Distance <300'					266.0	1.0	1.0	cu ft	Double Sided	266.0
2643	2776	Import	Rock Crush Fill	Distance <300'					133.0	0.2	4.0	cu ft		106.4
2643	2776	Install	Accessible Surface						133.0	4.0		sq ft		532.0
2643	2776	Import	Trail Hardening Aggregate Surfacing	Distance <300'					133.0	0.5	4.0	cu ft		266.0
2776	2784	Construct	Puncheon	Pedestrain					8.0			lin ft		8.0
2776	2784	Import	Puncheon	Pedestrain					5.0			hrs		5.0
2784	3306	Excavate	Soil	soil medium					1044.0	0.5	1.0	cu ft	Double Sided	522.0
2784	3306	Construct	Causeway	Distance >300'<800'					1044.0	1.0	1.0	cu ft	Double Sided	1044.0
2784	3306	Import	Rock Wall Rock	Distance >300'<800'					1044.0	1.0	1.0	cu ft	Double Sided	1044.0
2784	3306	Import	Rock Crush Fill	Distance >300'<800'					522.0	0.2	4.0	cu ft		417.6
2784	3306	Install	Accessible Surface						522.0	4.0		sq ft		2088.0
2784	3306	Import	Trail Hardening Aggregate Surfacing	Distance >300'<800'					522.0	0.5	4.0	cu ft		1044.0
3274	3298	Remove	Down Tree Removal Chain Saw	Tree dia. 4'-6'					4.0			ea		4.0
3306	3527	Excavate	Soil	soil medium					221.0	0.7	0.3	cu ft	Boardwalk Footings	46.4

APPENDIX E
SENSITIVE SPECIES LIST

Family Name	Status	Genus	Specific Epithet	Rank	Infraspecific E	Common Name	Jepson Manual Revision Taxonomic Changes
Apiaceae	N	Osmorhiza	chilensis			sweet Cicely	Osmorhiza berteroi
Apiaceae	N	Perideridia	lemmonii			Lemmon's yampah	
Apiaceae	N	Sphenosciadium	capitellatum			ranger's button	
Apocynaceae	N	Apocynum	androsaemifolium			spreading dogbane	
Apocynaceae	N	Apocynum	cannabinum			dogbane	
Asclepiadaceae	N	Asclepias	speciosa			showy milkweed	Family name change: Apocynaceae
Asteraceae	N	Achillea	millefolium			yarrow	
Asteraceae	N	Agoseris	glauca	var.	glauca	pale dandelion	
Asteraceae	N	Agoseris	grandiflora	var.	grandiflora	California dandelion	
Asteraceae	N	Agoseris	x dasycarpa			none found	
Asteraceae	N	Anaphalis	margaritacea			pearly everlasting	
Asteraceae	N	Antennaria	rosea	ssp.	rosea	rosy pussytoes	
Asteraceae	N	Arnica	chamissonis	ssp.	foliosa	meadow arnica	
Asteraceae	N	Artemisia	douglasiana			mugwort	
Asteraceae	N	Artemisia	dracunculus			wild tarragon	
Asteraceae	N	Artemisia	tridentata			sagebrush	
Asteraceae	N	Aster	ascendens			long leaved aster	Symphotrichum ascendens
Asteraceae	N	Aster	campestris			meadow aster	Symphotrichum campestre
Asteraceae	N	Aster	foliaceus			leafy aster	Symphotrichum foliaceum
Asteraceae	N	Aster	lanceolatus	ssp.	hesperius	white panicle aster	Symphotrichum lanceolatum var. hesperium
Asteraceae	N	Aster	occidentalis	var.	occidentalis	western mountain aster	Symphotrichum spatulatum var. spatulatum
Asteraceae	N	Brickellia	grandiflora			large flowered bricklebrush	
Asteraceae	N	Chaenactis	douglasii	var.	douglasii	Douglas's dustymaidens	
Asteraceae	N	Chrysothamnus	nauseosus			rubber rabbitbrush	Ericameria nauseosa
Asteraceae	N	Chrysothamnus	viscidiflorus	ssp.	viscidiflorus	green rabbitbrush	
Asteraceae	NN	Cirsium	arvense			Canada thistle	
Asteraceae	N	Cirsium	occidentale			western thistle	
Asteraceae	N	Cirsium	scariosum			elk thistle	
Asteraceae	NN	Cirsium	vulgare			bull thistle	
Asteraceae	N	Conyza	canadensis			horseweed	Erigeron canadensis
Asteraceae	N	Crepis	acuminata			long leaved hawkbeard	
Asteraceae	N, 2, 1, F	Crepis	runcinata	ssp.	hallii	Hall's meadow hawkbeard	
Asteraceae	N	Erigeron	breweri	var.	breweri	Brewer's Fleabane	
Asteraceae	N	Erigeron	coulteri			Coulter's fleabane	
Asteraceae	N	Erigeron	divergens			spreading fleabane	
Asteraceae	N	Eriophyllum	lanatum	var.	croceum	common woolly sunflower	
Asteraceae	?	Gnaphalium				cudweed	
Asteraceae	NN	Lactuca	serriola			prickly lettuce	
Asteraceae	N	Machaeranthera	canescens	var.	canescens	hoary-aster	Dieteria canescens var. canescens
Asteraceae	N, R	Pyrrocoma	lanceolata	var.	lanceolata	lance-leaved goldenweed	
Asteraceae	N	Senecio	integerrimus	var.	major	lambstongue ragwort	
Asteraceae	N	Senecio	serra			tall ragwort	
Asteraceae	N	Senecio	streptanthifolius			Rocky Mountain groundsel	Packera streptanthifolia
Asteraceae	N	Solidago	canadensis	ssp.	elongata	Canada goldenrod	
Asteraceae	NN	Sonchus	asper			spiny sowthistle	
Asteraceae	N	Stephanomeria	paniculata			tufted wirelettuce	
Asteraceae	NN	Taraxacum	officinale			common dandelion	
Asteraceae	NN	Tragopogon	dubius			yellow salsify	
Asteraceae	N, R	Trimorpha	lonchophylla			shortray fleabane	Erigeron lonchophyllus
Asteraceae	N	Wyethia	mollis			woolly mule ears	
Betulaceae	N	Alnus	incana	ssp.	tenuifolia	mountain alder	
Boraginaceae	N	Cryptantha	affinis			quill cryptantha	
Boraginaceae	N	Cryptantha	echinella			prickly cryptantha	
Boraginaceae	N	Cryptantha	simulans			pinewoods cryptantha	
Boraginaceae	N	Cryptantha	torreyana			Torrey's cryptantha	
Boraginaceae	NN, R	Myosotis	discolor			forget me not	
Boraginaceae	N	Plagiobothrys	cognatus			popcorn flower	
Boraginaceae	N	Plagiobothrys	hispidulus			harsh popcorn flower	
Boraginaceae	N	Plagiobothrys	torreyi			Torrey's popcorn flower	
Brassicaceae	N	Arabis	glabra	var.	glabra	tower mustard	Turritis glabra

Family Name	Status	Genus	Specific Epithet	Rank	Infraspecific	Common Name	Jepson Manual Revision Taxonomic Changes
Brassicaceae	N	Arabis	holboellii	var.	retrofracta	Holboell's rockcress	Boechera pinetorum
Brassicaceae	N	Barbarea	orthoceras			American wintercress	
Brassicaceae	N	Cardamine	breweri			Brewer's bittercress	
Brassicaceae	N	Descurainia	californica			Sierra tansymustard	
Brassicaceae	N	Draba	vena			whitlow grass	
Brassicaceae	NN	Lepidium	campestre			field pepperweed	
Brassicaceae	NN, R	Lepidium	latifolium			perennial pepperweed	
Brassicaceae	N	Lepidium	virginicum			Virginia pepperweed	
Brassicaceae	N	Rorippa	curvisiliqua			western yellowcress	
Brassicaceae	NN	Sisymbrium	altissimum			tumble mustard	
Brassicaceae	N, R	Thelypodium	crispum			wavy leaved thelypodium	
Brassicaceae	NN	Thlaspi	arvense			field pennycress	
Brassicaceae	N	Thysanocarpus	curvipes			fringe pod	
Caprifoliaceae	N	Sambucus	mexicana			blue elderberry	Sambucus nigra ssp. caerulea
Caprifoliaceae	N	Symphoricarpos	mollis			snowberry	
Caryophyllaceae	NN	Cerastium	fontanum	ssp.	vulgare	mouseear chickweed	
Caryophyllaceae	N	Pseudostellaria	jamesiana			sticky starwort	
Caryophyllaceae	N, R	Sagina	procumbens			arctic pearlwort	
Caryophyllaceae	N, R	Silene	menziesii			Menzies' campion	
Caryophyllaceae	N	Silene	verecunda	ssp.	platyota	San Francisco campion	Silene verecunda
Caryophyllaceae	N	Stellaria	longipes			longstalk starwort	
Chenopodiaceae	NN	Chenopodium	album			lamb's quarters	
Chenopodiaceae	NN	Salsola	tragus			Russian thistle	
Cornaceae	N	Cornus	sericea	ssp.	sericea	American dogwood	
Cupressaceae	N	Juniperus	occidentalis			western juniper	
Cyperaceae	N	Carex	amplifolia			bigleaf sedge	
Cyperaceae	N	Carex	athrostachya			slender beak sedge	
Cyperaceae	N	Carex	douglasii			Douglas' sedge	
Cyperaceae	N	Carex	filifolia			threadleaf sedge	
Cyperaceae	N	Carex	fracta			fragile sheath sedge	
Cyperaceae	N, R	Carex	deweyana	ssp.	leptopoda	slender-footed sedge	Carex leptopoda
Cyperaceae	N	Carex	nebrascensis			Nebraska sedge	
Cyperaceae	N	Carex	pachystachya			chamisso sedge	
Cyperaceae	N	Carex	praegracilis			clustered field sedge	
Cyperaceae	N	Carex	rossii			Ross' sedge	
Cyperaceae	N	Carex	subfusca			brown sedge	
Cyperaceae	N	Carex	utriculata			beaked sedge	
Cyperaceae	N	Eleocharis	macrostachya			common spikerush	
Cyperaceae	N	Eleocharis	pauciflora			fewflower spikerush	Eleocharis quinqueflora
Cyperaceae	N	Eleocharis	rostellata			beaked spikerush	
Cyperaceae	N	Scirpus	americanus			chairmaker's bulrush	Schoenoplectus americanus
Cyperaceae	N	Scirpus	microcarpus			panicked bulrush	
Dennstaedtiaceae	N	Pteridium	aquilinum			bracken fern	
Dryopteridaceae	N	Cystopteris	fragilis			fragile fern	
Equisetaceae	N	Equisetum	arvense			common horsetail	
Equisetaceae	N	Equisetum	laevigatum			smooth horsetail	
Ericaceae	N	Arctostaphylos	patula			greenleaf manzanita	
Fabaceae	N	Astragalus	purshii	var.	tinctus	Pursh's milkvetch	
Fabaceae	N	Lotus	crassifolius	var.	crassifolius	buck lotus	Hosackia crassifolia var. crassifolia
Fabaceae	N	Lotus	nevadensis	var.	nevadensis	Sierra Nevada lotus	Acmispon nevadensis
Fabaceae	N	Lotus	oblongifolius			streambank lotus	Hosackia oblongifolia
Fabaceae	N	Lotus	purshianus			American lotus	Acmispon americanus, Lotus unifoliatus
Fabaceae	N	Lupinus	albicaulis			sicklekeel lupine	
Fabaceae	N	Lupinus	argenteus	var.	heteranthus	silvery lupine	
Fabaceae	N	Lupinus	lepidus	var.	confertus	clustered tidy lupine	
Fabaceae	NN	Medicago	lupulina			black medic	
Fabaceae	NN	Mellilotus	albus			white sweet clover	
Fabaceae	N	Trifolium	cyathiferum			bowl clover	
Fabaceae	N	Trifolium	longipes			long stalk clover	
Fabaceae	NN	Trifolium	repens			white clover	

Family Name	Status	Genus	Specific Epithet	Rank	Infraspecific	Common Name	Jepson Manual Revision Taxonomic Changes
Fabaceae	N	Trifolium	variegatum			white tipped clover	
Fabaceae	N	Trifolium	wormskoldii			cow clover	
Fabaceae	N	Vicia	americana	var.	americana	American vetch	
Fagaceae	N	Quercus	vaccinifolia			huckleberry oak	
Gentianaceae	N, R	Gentiana	affinis			pleated gentian	
Geraniaceae	NN	Erodium	cicutarium			redstem filaree	
Grossulariaceae	N	Ribes	nevadense			mountain currant	
Grossulariaceae	N	Ribes	velutinum			desert gooseberry	
Hydrophyllaceae	N	Nemophila	pedunculata			meadow nemophila	Family changed to Boraginaceae
Hydrophyllaceae	N	Phacelia	heterophylla	ssp.	virgata	varleaf phacelia	Family changed to Boraginaceae
Hypericaceae	N	Hypericum	formosum	var.	scouleri	Scouler's St. John's wort	Hypericum scouleri
Iridaceae	N	Iris	missouriensis			western blue flag	
Iridaceae	N	Sisyrinchium	idahoense	var.	occidentale	Idaho blue-eyed grass	
Juncaceae	N	Juncus	balticus			baltic rush	Juncus balticus ssp. ater
Juncaceae	N	Juncus	ensifolius			three stamened rush	
Juncaceae	N	Juncus	nevadensis			Sierran rush	Juncus nevadensis var. nevadensis
Juncaceae	N	Juncus	orthophyllus			straightleaf rush	
Juncaginaceae	N, R	Triglochin	maritima			common arrow grass	
Lamiaceae	N	Agastache	urticifolia			horse mint	
Lamiaceae	N	Mentha	arvensis			field mint	Mentha canadensis
Lamiaceae	N	Monardella	lanceolata			mustang mint	Monardella breweri ssp. lanceolata
Lamiaceae	NN, R	Nepeta	cataria			catmint	
Lamiaceae	N	Stachys	ajugoides			hedge nettle	Stachys ajugoides - we used the new key to identify this plant
Lemnaceae	N, R	Lemna	turionifera			turion duckweed	Family changed to Araceae
Liliaceae	N	Allium	bisceptrum	var.	bisceptrum	twincrest onion	Family changed to Alliaceae; Allium bisceptrum (no variety)
Liliaceae	N	Allium	campanulatum			Sierra onion	Family changed to Alliaceae
Liliaceae	N	Allium	validum			swamp onion	Family changed to Alliaceae
Liliaceae	N	Calochortus	leichtlinii			Leichtlin's mariposa lily	
Liliaceae	N	Lilium	parvum			Sierra tiger lily	
Liliaceae	N	Smilacina	stellata			panicked false Solomon's seal	Family changed to Ruscaceae; Maianthemum stellatum
Liliaceae	N	Triteleia	hyacinthina			wild hyacinth	Family changed to Themidaceae
Liliaceae	N	Veratrum	californicum	var.	californicum	California false hellebore	Family changed to Melanthiaceae
Liliaceae	NN	Zigadenus	paniculatus			panicked death camas	Family changed to Melanthiaceae; Toxicoscordion paniculatus
Linaceae	NN	Linum	biene			narrow leaved flax	
Loasaceae	N, R	Mentzelia	congesta			clustered blazing star	
Malvaceae	N	Malva	neglecta			common mallow	
Malvaceae	N	Sidalcea	glaucescens			waxy checkerbloom	
Malvaceae	N	Sidalcea	oregana	ssp.	spicata	Oregon checkerbloom	
Onagraceae	N	Circaea	alpina	ssp.	pacifica	enchanter's nightshade	
Onagraceae	N	Epilobium	brachycarpum			panicked willowherb	
Onagraceae	N	Epilobium	ciliatum	ssp.	ciliatum	slender willowherb	
Onagraceae	N	Epilobium	densiflorum			dense boiseduvalia	
Onagraceae	N	Epilobium	glaberrimum	ssp.	glaberrimum	glaucous willowherb	
Onagraceae	N	Gayophytum	diffusum	ssp.	parviflorum	spreading groundsmoke	
Onagraceae	N	Gayophytum	heterozygum			zigzag groundsmoke	
Onagraceae	N	Oenothera	elata	ssp.	hirsutissima	hairy evening primrose	
Orchidaceae	N	Platanthera	leucostachys			white-flowered bog orchid	Platanthera dilatata var. leucostachys
Pinaceae	N	Abies	concolor			white fir	
Pinaceae	N	Calocedrus	decurrens			incense cedar	
Pinaceae	N	Pinus	contorta	ssp.	murrayana	lodgepole pine	
Pinaceae	N	Pinus	jeffreyi			Jeffrey pine	
Plantaginaceae	NN	Plantago	lanceolata			English plantain	
Plantaginaceae	NN	Plantago	major			common plantain	
Poaceae	N	Achnatherum	hymenoides			sand grass	Stipa hymenoides
Poaceae	N	Achnatherum	nelsonii	ssp.	dorei	mountain needlegrass	Stipa nelsonii ssp. dorei
Poaceae	NN	Agrostis	gigantea			giant bentgrass	
Poaceae	N	Agrostis	pallens			leafy bentgrass	
Poaceae	N	Agrostis	scabra			rough bentgrass	
Poaceae	NN	Agrostis	stolonifera			creeping bent	
Poaceae	N	Alopecurus	aequalis			short awn foxtail	Alopecurus aequalis var. aequalis

Family Name	Status	Genus	Specific Epithet	Rank	Infraspecific	Common Name	Jepson Manual Revision Taxonomic Changes
Poaceae	N	Bromus	carinatus			California brome	Bromus carinatus var. carinatus
Poaceae	NN	Bromus	japonicus			Japanese brome	
Poaceae	NN	Bromus	tectorum			cheat grass	
Poaceae	NN	Dactylis	glomerata			orchard grass	
Poaceae	N	Deschampsia	danthonioides			annual hair grass	
Poaceae	N, R	Distichlis	spicata			salt grass	
Poaceae	N	Elymus	elymoides			squirreltail	
Poaceae	N	Elymus	glaucus	ssp.	glaucus	blue wild rye	
Poaceae	NN	Elymus	repens			quack grass	
Poaceae	N	Elymus	trachycaulus			slender wheat grass	
Poaceae	N	Festuca	rubra			red fescue	
Poaceae	N	Glyceria	elata			fowl manna grass	
Poaceae	NN	Hesperostipa	comata			needle and thread	Stipa comata
Poaceae	NN	Holcus	lanatus			velvet grass	
Poaceae	N	Hordeum	brachyantherum			meadow barley	
Poaceae	N	Hordeum	jubatum			foxtail barley	Hordeum jubatum ssp. jubatum
Poaceae	NN	Hordeum	marinum	ssp.	gussoneanum	Mediterranean barley	
Poaceae	N	Leymus	cinereus			Great Basin wild rye	
Poaceae	N	Muhlenbergia	asperifolia			scratch grass	
Poaceae	N	Muhlenbergia	richardsonis			mat muhly	
Poaceae	NN	Phleum	pratense			cultivated timothy	
Poaceae	NN	Poa	bulbosa			bulbous bluegrass	Poa bulbosa ssp. vivipara
Poaceae	NN	Poa	pratensis	ssp.	pratensis	Kentucky bluegrass	
Poaceae	N	Poa	secunda	ssp.	juncifolia	rush blue grass	
Poaceae	NN	Poa	secunda x pratensis			no common name	
Poaceae	NN	Polygogon	monspeliensis			rabbit foot grass	
Poaceae	NN	Thinopyrum	intermedium			intermediate wheatgrass	Elymus hispidus
Poaceae	N	Trisetum	canescens			nodding oatgrass	
Poaceae	NN	Vulpia	myuros	var.	hirsuta	rattail fescue	Festuca myuros
Polemoniaceae	N	Collomia	grandiflora			large flowered collomia	
Polemoniaceae	N	Collomia	linearis			narrow-leaf mountain trumpet	
Polemoniaceae	N	Linanthus	ciliatus			whisker brush	Leptosiphon ciliatus
Polemoniaceae	N	Navarretia	intertexta	ssp.	propinqua	needle leaf navarretia	
Polemoniaceae	N	Phlox	diffusa			spreading phlox	
Polemoniaceae	N	Phlox	gracilis			annual phlox	Microsteris gracilis
Polemoniaceae	N	Polemonium	occidentale			western sky pilot	Polemonium occidentale ssp. occidentale
Polygonaceae	N	Eriogonum	baileyi	ssp.	baileyi	Bailey's buckwheat	
Polygonaceae	N	Eriogonum	elatum	var.	villosum	woolly buckwheat	
Polygonaceae	N	Eriogonum	nudum	var.	deductum	naked buckwheat	
Polygonaceae	N	Eriogonum	wrightii	var.	subscaposum	Wright's buckwheat	
Polygonaceae	N	Polygonum	bistortoides			American bistort	Bistorta bistortoides
Polygonaceae	N	Polygonum	douglasii	ssp.	douglasii	Douglas' knotweed	Polygonum douglasii (no variety)
Polygonaceae	NN	Rumex	acetosella			sheep sorrel	
Polygonaceae	NN, R	Rumex	crispus			curly dock	
Polygonaceae	N	Rumex	salicifolius	var.	salicifolius	willow dock	
Portulacaceae	N	Calyptidium	monospermum			one-seeded pussy paws	
Portulacaceae	N	Claytonia	perfoliata			miner's lettuce	
Portulacaceae	N	Claytonia	rubra	ssp.	rubra	redstem spring beauty	
Portulacaceae	N	Montia	chamissoi			toad lily	
Portulacaceae	N	Montia	linearis			narrow leaf miner's lettuce	
Pyrolaceae	N	Pterospora	andromeda			pine drops	
Pyrolaceae	N	Pyrola	minor			lesser wintergreen	
Pyrolaceae	N	Sarcodes	sanguinea			snow plant	
Ranunculaceae	N	Actaea	rubra			baneberry	
Ranunculaceae	N	Aquilegia	formosa			crimson columbine	
Ranunculaceae	N	Ranunculus	aquatilis			whitewater crowfoot	
Ranunculaceae	N, R	Ranunculus	cymbalaria			alkali buttercup	
Ranunculaceae	N	Ranunculus	uncinatus			woodland buttercup	
Ranunculaceae	N	Thalictrum	fendleri	var.	fendleri	Fendler's meadowrue	
Rhamnaceae	N	Ceanothus	cordulatus			mountain whitethorn	

Family Name	Status	Genus	Specific Epithet	Rank	Infraspecific	Common Name	Jepson Manual Revision Taxonomic Changes
Rhamnaceae	N	Ceanothus	prostratus			mahala mat	Ceanothus prostratus var. prostratus
Rhamnaceae	N	Rhamnus	rubra			red buckthorn	Frangula rubra
Rosaceae	N	Amelanchier	utahensis			Utah serviceberry	
Rosaceae	N	Cercocarpus	betuloides	var.	betuloides	mountain mahogany	
Rosaceae	N	Geum	macrophyllum			large leaved avens	
Rosaceae	N, R	Potentilla	biennis			biennial cinquefoil	
Rosaceae	N	Potentilla	glandulosa	ssp.	nevadensis	sticky cinquefoil	Drymocallis lactea var. austiniae
Rosaceae	N	Potentilla	gracilis	var.	fastigiata	slender cinquefoil	
Rosaceae	N	Potentilla	gracilis	var.	elmeri	slender cinquefoil	
Rosaceae	N	Prunus	virginiana	var.	demissa	western choke cherry	
Rosaceae	N	Purshia	tridentata			bitterbrush	
Rosaceae	N	Rosa	woodsii	var.	ultramontana	interior rose	
Rubiaceae	N	Galium	aparine			common bedstraw	
Rubiaceae	N	Galium	trifidum	var.	pusillum	three petal bedstraw	
Rubiaceae	N	Galium	triflorum			sweet scented bedstraw	
Salicaceae	N	Populus	balsamifera	ssp.	trichocarpa	black cottonwood	Populus trichocarpa
Salicaceae	N	Populus	tremuloides			quaking aspen	
Salicaceae	N	Salix	geyeriana			Geyer's willow	
Salicaceae	N	Salix	lucida	ssp.	lasiandra	Pacific willow	Salix lasiandra var. lasiandra
Salicaceae	N	Salix	lutea			yellow willow	
Salicaceae	N	Salix	scouleriana			Scouler's willow	
Scrophulariaceae	N	Castilleja	aplegatei	ssp.	pinetorum	wavy leaved Indian paintbrush	Change family to Orobanchaceae
Scrophulariaceae	N	Castilleja	miniata	ssp.	miniata	scarlet Indian paintbrush	Change family to Orobanchaceae
Scrophulariaceae	N	Castilleja	tenuis			hairy owl's clover	Change family to Orobanchaceae
Scrophulariaceae	N	Collinsia	parviflora			blue eyed Mary	Change family to Plantaginaceae
Scrophulariaceae	N	Keckiella	breviflora	var.	glabrisepala	hairless gaping keckiella	Change family to Plantaginaceae
Scrophulariaceae	N	Mimulus	cardinalis			scarlet monkey flower	Change family to Phrymaceae
Scrophulariaceae	N	Mimulus	floribundus			many flowered monkeyflower	Change family to Phrymaceae
Scrophulariaceae	N	Mimulus	guttatus			seep monkeyflower	Change family to Phrymaceae
Scrophulariaceae	N	Mimulus	moschatus			musk monkeyflower	Change family to Phrymaceae
Scrophulariaceae	N	Penstemon	rydbergii	var.	oreocharis	meadow beardtongue	Change family to Plantaginaceae
Scrophulariaceae	NN	Verbascum	thapsus			woolly mullein	
Scrophulariaceae	N	Veronica	americana			American speedwell	Change family to Plantaginaceae
Scrophulariaceae	N	Veronica	peregrina	ssp.	xalapensis	purslane speedwell	Change family to Plantaginaceae
Urticaceae	N	Urtica	dioica	ssp.	holosericea	stinging nettle	
Violaceae	N, R	Viola	sororia	ssp.	affinis	LeConte violet	Viola nephrophylla
Viscaceae	N	Arceuthobium	campylopodum			pine mistletoe	

APPENDIX F
ACRONYMS

ADA – A Federal law that prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and governmental activities.

Boardwalk - a constructed pedestrian walkway along or overlooking beaches, usually built with wood boards; or as walking paths and trails over wetlands and above fragile ecosystems.

Drain Lens – A trail construction method through a wet area that consists of a progressively smaller layering of rocks that enables water to seep beneath the tread.

Lahontan Region – The Regional Water Quality Control Board division responsible for regulation of, and issuance of Water Quality Certifications for the project site.

MSL — a standardized geodetic reference point that is used, for example, as a chart datum in cartography as the standard sea level at which atmospheric pressure is measured in order to calibrate altitude.

Negative Declaration – A written statement briefly describing the reasons that a proposed project will not have a significant effect on the environment and does not require the preparation of an Environmental Impact Report.

Puncheon - A log or timber structure built close to the ground (3 feet or less) with or without hand railings. It may be used to cross small drainages, wet areas or other places where turnpikes or causeways are not effective. It usually consists of mudsills, stringers and wood decking.

Rock Causeway - An elevated section of trail contained by rock usually through permanent or seasonally wet areas. Causeways can also be used to consolidate areas of multiple ruts into one trail and allow revegetation to take hold after the area has been rehabilitated.

Great Basin Unified Air Pollution Control District (GBUAPCD)