

Waste Discharge Identification Number (WDID):

STORM WATER POLLUTION PREVENTION PLAN

for

Angora Trails Restoration

USDA Forest Service, Lake Tahoe Basin Management Unit

Legally Responsible Person (LRP)

**Nancy Gibson, Forest Supervisor
Lake Tahoe Basin Management Unit
530-543-2600**

Approved Signatory

**Jordan Burge, P.E.
Lake Tahoe Basin Management Unit
Office: 530-543-2670**

Jordan Burge, QSD

Date

SWPPP Date: April 2, 2013

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I. Introduction and Certifications

I.A. SWPPP Objectives

This SWPPP has been developed for the Angora Trails Restoration Project to comply with the requirements to implement BMPs to achieve compliance with effluent limits and receiving water objectives as directed by the Construction General Permit for the Lake Tahoe Hydrologic Unit (Board Order R6T-2011-0019, NPDES No. CAG616002). This SWPPP has been developed and will be amended, when necessary, to meet the following objectives:

1. Identify, construct, implement and maintain BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from construction sites.
2. Identify pollutant sources including sediment sources that may affect the quality of storm water discharges associated with construction activity.
3. Identify non-storm water discharges.
4. Identify all effluent discharge outfall locations, sampling and analysis strategy and protocols, and a sampling schedule for discharges from the identified outfalls from the project area.

I.B. SWPPP Implementation Schedule

Construction on Angora trails will commence as soon as site conditions allow and all permits are in place. The entire project will last approximately 14 weeks. The most important and effective BMP that will be utilized will be scheduling. Because trail construction is primarily linear, permanent BMPs will be installed and constructed daily. The crews will not disturb more soil than what can be permanently stabilized that day. This will include a compacted, outsloped trail surface with installed drainage features.

All ground disturbing activities in or near riparian zones will likely occur in August at the earliest, when groundwater levels are low. These activities will be completed by October 1, and all winterization and permanent stabilization BMPs will be implemented by October 15. See Section III.G, *Schedule for BMP Implementation*, for more information.

I.C. Permit Registration Documents

Required Permit Registration Documents (PRD) shall be submitted to the State Water Board via the Storm water Multi Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP), or authorized personnel (i.e., Approved Signatory) under the direction of the LRP. The project specific PRDs include:

- Notice of Intent (NOI);
- Site Maps;
- Annual Fee;
- Signed Certification Statement (LRP Certification is provided electronically with SMARTS PRD submittal); and
- SWPPP

Site Maps can be found on Figure 1, Figure 2, and Appendix H. A copy of all other submitted PRDs shall be kept in Appendix F, along with the Waste Discharge Identification (WDID) confirmation.

I.D. Certification and Training Requirements

The SWPPP must be prepared, signed and certified by a QSD. Additionally, the SWPPP must identify the QSP.

I.D.1. Qualified SWPPP Developer

The QSD shall certify and amend the SWPPP. Jordan Burge is the QSD and meets the certification requirement of Section VII.B.1 of the Construction General Permit based on:

- Registered Professional Civil Engineer, State of California # 78252
- Qualified SWPPP Developer (QSD) Registration # 01217

The QSD has received the following training:

- California Construction General Permit Training, June 2011

I.D.2. SWPPP Certification and Approval

Qualified SWPPP Developer

Project Name: Angora Trails Restoration

“This Stormwater Pollution Prevention Plan and Appendices were prepared under my direction to meet the requirements of the Construction General Permit for Storm Water discharge in the Lake Tahoe Hydrologic Unit (Board Order No R6T-2001-0019). I certify that I am a Qualified SWPPP Developer in good standing as of the data signed below.”

QSD Signature

Date

I.D.3. Qualified SWPPP Practitioner

The QSP shall meet the certification requirement of Section VII.B.3 of the Construction General Permit. John Hidy will be the project manager and QSP for this project. He is a certified CESSWI and has passed the required QSP exam. John Hidy's information:

- CASQA QSP Certificate Number: 22519
- California Construction General Permit Training, June 2011

The QSP shall have primary responsibility and significant authority for the implementation, maintenance, and inspection/monitoring of SWPPP requirements. The QSP will be available at all times throughout the duration of the project.

Duties of the QSP include but are not limited to:

- Ensuring full compliance with the SWPPP and the Construction General Permit
- Implementing all elements of the SWPPP, including but not limited to:
 - Ensuring all BMPs are implemented, inspected and properly maintained;
 - Preparing weekly, pre-storm, during storm, and post-storm BMP inspection reports;
 - Performing non-storm water visual observations and inspections;
 - Performing non-storm water sampling and analysis, as required;
 - Performing routine inspections and observations;
 - Implementing non-storm water management, and materials and waste management activities such as: monitoring discharges; general Site clean-up; vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than storm water are discharged in quantities which will have an adverse effect on receiving waters; etc.;
 - Conducting pre-storm inspections for qualifying storm events;
 - Conducting daily inspections during qualifying storm events;
 - Conducting post-storm inspections for qualifying storm events;
 - Monitoring weather forecasts for both likely precipitation events and qualifying rain events;
 - Preparing and implementing Rain Event Action Plans for likely precipitation events;
 - Submitting numeric effluent limitations (NELs) exceedence data, including storm water effluent limits and receiving water limits and reports to the QSD and Approved Signatory. Following receipt of QSD's and/or Approved Signatory's approval, QSP shall upload the NEL exceedence data or report to the SWRCB's SMARTS;
 - Ensuring elimination of all unauthorized discharges;

- Mobilizing crews in order to make immediate repairs to the control measures;
- Notifying the LRP or Authorized Signatory immediately of off-site discharges or other non-compliance events;
- Submitting Notices of Discharge and reports of Illicit Connections or Illegal Discharges;
- Preparing Annual Report summarizing corrective actions, sampling and analyses, and any corrective actions not implemented.

The QSP may delegate the inspections and activities to an appropriately trained employee, but shall ensure adequacy and adequate deployment.

The QSP shall also be responsible for providing training of project personnel on SWPPP implementation procedures. Before construction operations commence the QSP will conduct an on-site training with project personnel to review the SWPPP, construction operations and necessary BMPs. Additionally, trainings will be held as necessary on specific tasks as the project progresses and tasks change. Training logs (Appendix G) will be filled out for each training and kept with the SWPPP.

I.D.4. Legally Responsible Person

Approval and Certification of the Storm Water Pollution Prevention Plan

Project name: Angora Trails Restoration

“I certify that this document and all Appendices were prepared under my direction in accordance with a system designed to ensure that qualified personnel properly gather and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information.”

Nancy Gibson

Legally Responsible Person

Lake Tahoe Basin Management Unit

Organization

LRP Signature

Date

Forest Supervisor

Title

530-543-2600

Telephone Number

I.E. Contractor List

All construction covered under this SWPPP will be completed by internal Forest Service crews.

I.F. Emergency contact person and 24-hour phone number

Owner: US Forest Service, LTBMU
35 College Drive
South Lake Tahoe, CA 96150
530-543-2600

Project Manager: John Hidy, Trail Project Leader
QSP
Office: 530-543-2650
Cell: 760-920-2774

Alternate: Jordan Burge, P.E.
QSD
Office: 530-543-2670

Hazardous Spill: Genevieve Villemaire
Forest Spill Coordinator, LTBMU
530-543-2783

I.G. SWPPP Availability and Public Records Access

A copy of the SWPPP will be kept on the project site at all times. Additionally, the SWPPP will be available for view in the SMARTS database.

I.H. Required Changes

The SWPPP shall be maintained such that it reflects the actual site conditions for the duration of the project. This will require the QSD to amend the SWPPP whenever a qualifying change is made. The SWPPP shall be revised when:

- There is a change in construction, or operations, which may affect the discharge or pollutants to surface waters or ground waters as determined using the criteria outlined under section V.G.2. "Planned Changes;"
- There is an increase in the disturbed acreage;
- BMPs do not meet the objectives of reducing or eliminating pollutants in storm water discharges;

- There is a General Permit violation. If the LRWQCB determines that a Permit violation has occurred, the SWPPP shall be amended and implemented within 72 hours of notification, or as soon as additional materials can be obtained, if needed.
- When deemed necessary by the QSD or project engineer.

The following items shall be included in each amendment:

- Who requested the amendment;
- The location of proposed change;
- The reason for change;
- The original BMP proposed, if any;
- The new BMP proposed

Approved amendments shall be uploaded into the SMARTS database and inserted into the appropriate section of the SWPPP or Appendix and a SWPPP Amendment Certification shall be kept with the SWPPP. The SWPPP text shall be revised, replaced, and/or hand-annotated as necessary to properly convey the amendment. Additionally, LRWQCB staff will be notified by email of all SWPPP amendments once uploaded into SMARTS.

A blank copy of the SWPPP Amendment Certification and Approval form is in Appendix A. A SWPPP amendment log will be kept on-site with the SWPPP during construction operations. The SWPPP amendment log form can be found in Appendix A.

Table 1 displays the changes that have been designated by the QSD as “to be field determined” and constitute minor changes that the QSP may implement based on field conditions. The QSP shall document these change in the SWPPP amendment log and document the reason they don’t need QSD approval.

| Table 1. List of Changes to be Field Determined | |
|---|---|
| Candidate changes for field location or determination by QSD¹ | Changes that can be field located or field determined by QSP |
| Increase quantity of an Erosion or Sediment Control Measure | √ |
| Reduction in disturbed acres | √ |
| Relocate/Add stockpiles or stored materials in mapped area | √ |
| Locate and add camping locations and portable toilets | √ |
| Relocate storage and/or fueling locations within mapped area | √ |
| Relocate areas for waste storage | √ |
| Locate water drafting areas | √ |
| Minor changes to schedule or phases | √ |
| ¹ Any field changes not identified for field location or field determination by QSP must be approved by QSD. | |

II. Project Information

II.A. Project Description, site address and driving directions

II.A.1. Project Description

This project includes restoring the overall trail transportation system within the Angora burn area. It includes construction of native-surface trails (both on undisturbed ground and on existing prisms), decommissioning of classified¹ trails, and restoration of unclassified² trails. Decommissioning and restoration will include: recontouring, subsoiling, mulching, and installation of drainage features as needed (detailed descriptions in Table H1 in Appendix H).

A total of 16.7 miles of trail will be decommissioned/restored; 1.4 miles of classified road will be converted to classified trail; and 1.2 miles of unclassified trail will be adopted as classified trail. A total of 8.9 miles of classified trail will be constructed (including the 2.6 miles adopted as classified trail). Within the Angora burn area, there will be approximately 3,500 square feet of permanent trail located in SEZ and 15,130 square feet of trail restored in SEZ (see Table H1 in Appendix H for detailed calculations).

| | Classified | Unclassified |
|-----------------------|------------|--------------|
| Before Implementation | 5.4 | 16.7 |
| After Implementation | 10.4 | 0 |

*Totals come from the Environmental Assessment of the Angora Fire Restoration Project, Table 1-1 and Table 2-3.

Construction and decommissioning will be completed with hand tools or small mechanized equipment, such as a mini-excavator or trail dozer. Disturbance will be minimized through quality assurance. A superintendent will be on site at all times, and trail alignments will be flagged before any construction begins.

When practical, the trail alignment will always be located away from wet areas. When a trail alignment must be located in a wet area, a causeway (see Appendix C, Angora Trail drawings) will be constructed. Four inches of clean rock base will be placed within the travelway, and native material will be placed and compacted on top. Log or rock retainers will be placed on the alignment borders to contain the material. Causeways will be built in flat areas, where there is typically little or no surface flow. A rock face drainage break will be constructed where flow is impounded. The only exception to causeway construction in wet areas is when the trail crosses a defined channel, and in these situations, a ford or bridge will be used (see Figure 2 for specific locations).

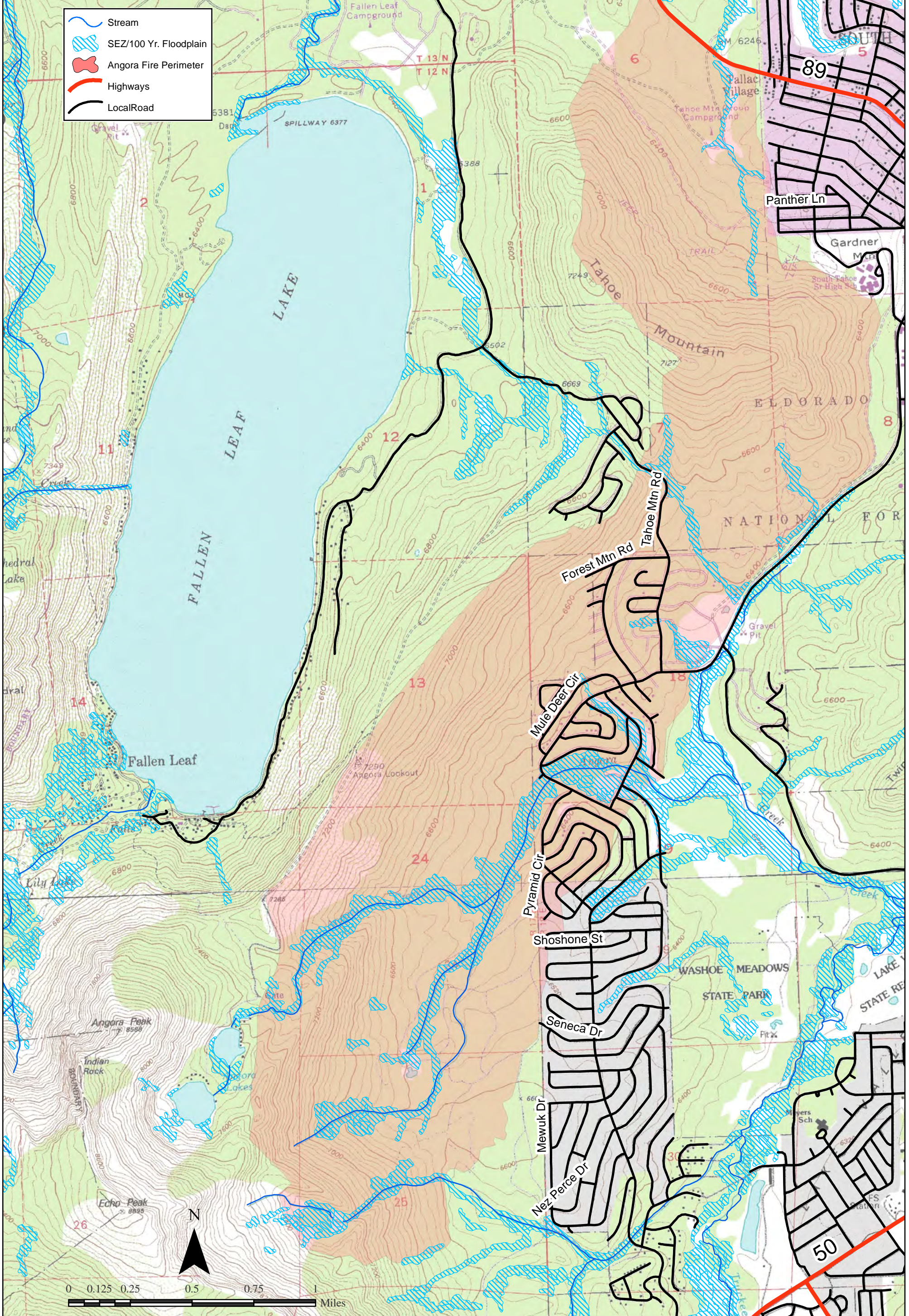
When a trail alignment crosses an intermittent or ephemeral channel, the channel will be stabilized and maintained to convey water across the trail. In most instances, large rocks

embedded into the banks will stabilize the crossing sufficiently. In instances where channel is more defined, or the flows are obviously higher, a rock ford will be constructed (see Appendix C, Angora Trail drawings). Rock ford construction has been identified near Tahoe Mountain Road and off of Pyramid Circle (see Figures 2, 4, and 5 for specific locations). These specific locations have well defined channels and have the potential for higher flows and more erosion, and ford construction will give them more stabilization. Native material will be used for all ford construction. Fords will be constructed when the channel is dry, and will be built with hand tools or a mini excavator. If the fords are constructed with a mini excavator, they will access the construction site from Forest Service Roads and up the constructed approach trail. Trails will also be obliterated in wet areas. If the trail has started to restore itself (i.e. vegetation has started to grow and the trail is stabilized) minimal disturbance will be made. Other trails will be recontoured, stabilized, and camouflaged with natural materials.

A trail bridge will be constructed across Angora Creek (see Figure 2 and Figure 3 for the specific location). Currently, there are large logs and debris within the streambed that have created ponding and modified the original alignment. This organic debris will be removed, and two large rock abutments will be placed with minimal disturbance to the creek. Approach and abutment construction will be the only disturbance within the creek, and is only expected to take 2 days. The bridge superstructure (deck, rail, and finish work) construction will not have any effect on the creek. There will be no concrete used in the construction of the bridge. All treated wood materials will follow the treatment requirements found in "Best Management Practices for the Use of Treated Wood in Aquatic Environments," published by the Western Wood Preservers Association. Native material or imported, clean material will be used for the approaches and stream banks. Stone will be used to build up the banks and allow for 24 inches of clearance from the creek bed. Native material and stone will be used to backfill and armor the abutments. The design has considered the floodplain, and the structure will not impact aquatic species. Construction will take place during low or no flow. The clear water diversion BMP has been identified (Appendix B, CASQA specifications) and will be utilized if there is flow during construction. See Section III.D. Dewatering and Diversion Plan Narrative for more diversion information.

In addition, gullies and headcuts in the Gardner Mountain Meadow associated with legacy user created trails will be stabilized to restore natural water retention and drainage patterns. This will primarily be accomplished through the decommissioning of user-created trails and properly installed drainage on newly constructed trail. However, headcuts will be stabilized with loose rock check dams, and gullies will be stabilized using a combination of loose rock check dams and biotechnical structures (willow stakes). These structures will be installed by hand, except for structures directly adjacent to areas where equipment is being utilized to construct or decommission trails. Locations on gullies and headcuts are shown on Figure 2A.1.

Figure 1 - Project Location Map. The 100-year floodplain boundaries and SEZ boundaries are approximately the same within the resolution of the map. Therefore, a single boundary representing both is shown. This boundary was created using the most updated Forest Service GIS layers.



II.A.2. Site Location

The Angora burn area is over 2700 acres, and has no single address. Generally, the project can be accessed from Lake Tahoe Boulevard, southwest of the intersection of Highway 89 and Highway 50 in South Lake Tahoe, CA. See Figure 1, the Site Location Map, to determine key areas within the project.

II.B. WDID

Once the WDID number is issued to the Forest Service for this project, it will be added as a SWPPP Amendment as specified in section I.H, Required Changes.

II.C. Construction Schedule

The estimated schedule for planned work is below. This schedule will be updated as needed throughout the project and used internally by LTBMU staff to plan project resources.

Trail decommissioning and restoration will be conducted as new trails are completed. This will reduce multiple trails being used and additional erosion occurring. Trail construction in SEZs will be scheduled when areas are as dry as possible, and construction/restoration will be completed as swiftly as possible to reduce the risk of additional erosion.

| Table 3. Construction Schedule | |
|---------------------------------------|--|
| Zone 1 (North) | Tahoe Mountain Road to northern boundary adjacent to Camp Richardson |
| Zone 2 (Central) | Tahoe Mountain Road to Pyramid drive along Angora Creek |
| Zone 3 (South) | Angora Creek to the southern project boundary adjacent Mewuk drive |
| May 12, 2013 – June 15, 2013 | Zone 1 Trail work will begin on Tahoe Mountain. This area is a south facing slope with limited vegetation and is snow free. This will allow lower elevation trails in wet soils to continue to dry out. Trail construction will then move to trails along Hwy 89 and Lake Tahoe Blvd. |
| June 16, 2013 – July 13, 2013 | Zone 3 Project work will be focused at the south end of Mewuk Drive and move north towards Angora Creek. This will allow wet areas near Seneca Pond to be as dry as possible before work takes place in that area. |
| July 14, 2013 – August 23, 2013 | Zone 2 Project work will be focused at the north end Forest Mountain Road and move south towards Angora Creek. This will allow flows in Angora Creek to be as low as possible before work takes place in that area. |

II.D. Potential Construction Site Pollutants of Concern and Sources

The following is a list of construction materials that will be used and that have the potential to contribute pollutants, other than sediment, to storm water runoff:

- Vehicle fluids, including oil, grease, petroleum and coolants;
- BMP materials (sandbags, geotextile fabrics); and
- General litter.

The following is a list of construction activities that have the potential to contribute sediment to storm water discharges:

- Clearing and grubbing operations;
- Bank stabilization; and
- Soil and rock import operations.

II.E. Site Location Map(s)

See Figure 1 for the Site Location Map.

Section IX.H.2 of Construction General Permit requires the following map information

- *Construction Limit Boundaries* – the boundary for this project is the Angora burn area perimeter (see Figures 1 and 2).
- *Equipment and material stockpile areas* – staging areas are shown on Figure 2, and will only be located on already disturbed areas (such as timber landings or Forest Service roads). The only materials that will be stored in staging areas will be construction material (rock, aggregate base, and fiber rolls) and equipment (mini excavator or trail dozer). In order to get fuel to this small equipment along the trail, small fuel containers will be transported (on foot or with an ATV) along Forest Service system roads and trails. Access for trail construction and restoration will be limited to these system roads and trails. All equipment will be cleaned before it reaches the project site. All equipment servicing will occur off the project site.
- *Existing vegetation to be preserved* – Riparian vegetation boundaries can be seen on Figures 3, 4, and 5. Excessive disturbance of existing vegetation will be controlled through quality assurance. A superintendent will be on site at all times, and trail alignments will be flagged prior to construction.
- *Surface water locations* – see Figures 2, 3, 4 and 5. Figure 2, the Disturbed Soil Area Map, specifically maps all defined waterways and riparian vegetation using the latest Forest Service GIS data.

- *BMP locations* – BMPs are not shown on attached maps because of the nature of trail construction. Loose soils will be stabilized daily. Permanent BMPs will be built into the trail tread, and there will be very little disturbance outside of the trail prism. Temporary BMPs will be specifically used for the construction of the trail bridge across Angora Creek. If there is enough water in Angora Creek, and dewatering is required for abutment construction, CASQA specifications NS-2, Dewatering Operations and NS-5, Clear Water Diversion will be used as construction specifications. Sandbags with 6mil plastic will be utilized, as well as with straw wattles between the creek and any stockpiled materials (although any stockpiled materials will be in place for a maximum of 1 week). If material is stockpiled in staging areas, they will be stabilized with straw wattles and/or plastic covers.
- *Disturbed Soil Areas* – see Figure 2, Disturbed Soil Area maps. Disturbance will be limited to the trail alignments shown on the maps. These maps will be kept updated to reflect site conditions.
- *Post-construction storm water structures and controls* – see Appendix C, Angora Trail Drawings.
- *Locations of designated storm water discharge sampling* – see Figure 3. See also V.C Water Quality Sampling and Analysis, for specific sampling requirements.

III. Best Management Practices

III.A. Site Management Narrative

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. Appropriate site management measures shall be implemented to control material pollution and manage waste by implementing effective handling, storage, use and disposal practices. Additionally, many non-storm water pollution control BMPs (below) are necessary for proper site management.

Waste management and materials pollution control BMPs shall be implemented to minimize storm water contact with construction materials, wastes and service areas and to prevent materials and wastes from being discharged off-site. The primary mechanisms for storm water contact that shall be addressed include:

- Direct contact with precipitation
- Contact with storm water run-on and runoff
- Wind dispersion of loose materials
- Direct discharge to the streams and watercourse through spills or dumping

The following Waste Management and Materials Pollution Control BMPs Table indicates the BMPs that shall be implemented to handle materials and control construction site wastes associated with these construction activities. See Appendix B for identified CASQA specifications.

| Table 4. CONSTRUCTION SITE MANAGEMENT WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs | | | | |
|--|----------------------------------|-----------------|-----------|------------------------------|
| CASQA Fact | BMP Name | BMP Used | | If Not Used, Why |
| | | YES | NO | |
| WM-1 | Material Delivery and Storage | √ | | |
| WM-2 | Material Use | √ | | |
| WM-3 | Stockpile Management | √ | | |
| WM-4 | Spill Prevention and Control | √ | | |
| WM-5 | Solid Waste Management | √ | | |
| WM-6 | Hazardous Waste Managemen | √ | | |
| WM-7 | Contaminated Soil Management | | √ | No contaminated soil on site |
| WM-8 | Concrete Waste Management | | √ | No concrete to be used |
| WM-9 | Sanitary/Septic Waste Management | √ | | |
| WM-10 | Liquid Waste Management | | √ | No liquid waste on site |

The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project. Where CASQA fact sheets contradict information contained in the Technical Specifications or the Drawings, the more stringent criteria (as determined by QSD) shall apply. Selection criteria will be documented in a SWPPP Amendment.

WM-1, WM-2 Materials Delivery, Storage and Use

In general, BMPs shall be implemented to help prevent discharges of construction materials during delivery, storage and use. The general material storage area shall be located in the staging areas as shown on Figure 2. The stockpiles are located to avoid run-on. A barrier shall be provided along the downslope edge of the staging areas to prevent runoff leaving the area. If QSP determines there is a risk of run-on, a barrier shall be provided along the upslope edge of the staging area.

WM-3 Stockpile Management

Stockpile Management shall be implemented to reduce or eliminate pollution of storm water from stockpiles of soil and rock materials. Any utilized stockpiles will be located in already disturbed and flat areas, typically old timber landings or a Forest Service system road. Stockpiles shall be surrounded with sediment controls. If a stockpile is inactive for 14 days it will be covered. No stockpiles will remain at the end of the construction season.

WM-4 Spill Prevention and Control

Spill Prevention and Control shall be implemented to contain and clean-up spills and prevent material discharges to the streams and waterways.

WM-5, WM-6 Solid and Hazardous Waste Management

Solid Waste Management and Hazardous Waste Management BMPs shall be implemented to minimize storm water contact with waste materials and prevent waste discharges. The only solid wastes in this project will be organics from grubbing and construction waste. All waste shall be disposed of offsite daily.

The only liquid hazardous waste in this project will be equipment fuel. Fuel will not be stored on site; it will be transported in small containers to equipment along the trail as needed.

WM-9 Sanitary and Septic Wastes

Portable toilets shall be located and maintained at the staging areas for the duration of the project. Specific locations will be determined in the field by the QSD. Weekly maintenance shall be provided and wastes shall be disposed offsite. The toilets shall be located away from concentrated flow paths. Toilet location shall not interfere with traffic flow.

III.B. Sediment and Erosion/Stabilization Control Narrative

III.B.1. Erosion Control

Erosion control is any source control practice that protects the soil surface and prevents soil particles from being detached by rainfall, flowing water or wind. Erosion control consists of using project scheduling and planning to reduce soil and/or vegetation disturbance, controlling drainage in disturbed areas and preparing and stabilizing disturbed soil areas.

This construction project will implement the following practices to provide effective temporary and final erosion control during construction:

- Preserve existing vegetation where required and when feasible;
- The area of soil disturbing operations shall be controlled such that either erosion control BMPs (Table 5) can be quickly and effectively implemented or the site can be permanently stabilized in that area;
- Non-active areas will be stabilized within 14 days of cessation of construction activities;
- Prior to the completion of construction, apply permanent stabilization to disturbed soil areas. This shall include outsloped, compacted trail surfaces with installed drainage features.

Sufficient erosion control materials shall be maintained onsite to allow implementation in conformance with this SWPPP. This includes implementation requirements for active and non-active areas that require deployment of BMPs before the onset of rain.

The following erosion control BMP selection table indicates the BMPs that shall be implemented to control erosion on during construction.

| CASQA Fact Sheet | BMP Name | BMP Used | | If Not Used, Why |
|---------------------------------|-------------------------------------|-----------------|-----------|-------------------------|
| | | YES | NO | |
| EC-1 | Scheduling | √ | | |
| EC-2 | Preservation of Existing Vegetation | √ | | |
| EC-3 | Hydraulic Mulch | | √ | Not necessary |
| EC-4 | Hydroseed | | √ | Not necessary |
| EC-5 | Soil Binders | | √ | Not necessary |
| EC-6 | Straw Mulch | | √ | Using wood mulch |
| EC-7 | Geotextiles and Mats | | √ | Not necessary |

| | | | | |
|-------|---------------------------------|---|---|---------------|
| EC-8 | Wood Mulching | √ | | |
| EC-9 | Earth Dikes and Drainage Swales | √ | | |
| EC-10 | Velocity Dissipation Devices | | √ | Not necessary |
| EC-11 | Slope Drains | | √ | Not necessary |
| EC-12 | Stream Bank Stabilization | √ | | |
| EC-14 | Compost Blankets | | √ | Not necessary |
| EC-15 | Soil Preparation- Roughening | √ | | |
| EC-16 | Non-Vegetated Stabilization | √ | | |
| WE-1 | Wind Erosion Control | √ | | |

The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project. Where CASQA fact sheets contradict information contained in the Technical Specifications or the Drawings, the more stringent criteria (as determined by the QSD) shall apply. Selection criteria will be documented in a SWPPP Amendment.

EC-1, EC-2 Scheduling and Preservation of Existing Vegetation

Scheduling is the most important BMP for this project. Generally, no more soil will be disturbed than what can be permanently stabilized at the end of each day. Surface disturbance activities will begin after May 1 and continue no later than October 15, depending on stream flow, ground water levels and weather conditions. Grading activities are scheduled to be completed by October 5 with winterization taking place from October 5 to October 15. A grading ordinance exemption may be requested from TRPA and LRWQCB if the QSD and Project Engineer deem it necessary and appropriate to work past October 15. When there is a 30 percent or greater chance of precipitation in the project area as predicted by the National Oceanographic and Atmospheric Administration (NOAA), further actions will be taken (see section IV.B. Rain Event Action Plan Narrative).

For the stream crossings on trails, work will be scheduled during periods of predicted clear weather. Additional work will only be started on crossings within the first two days of the work week (Monday or Tuesday) to allow for completion and/or stabilization of the crossings before weekends.

EC-8 Wood Mulching

Wood mulch will be used in combination with slash material as a long-term stabilization for disturbed areas of the project.

Wood mulch may be used to cover small exposed soil areas that have the potential to release sediment discharge to a live waterbody prior to a forecast storm event. If wood mulch is used in such an instance, it shall be applied to a depth that will protect soil and prevent movement of mulch (approximately 2"-4").

Additionally, wood mulch will be used in combination with wood slash material to stabilize and provide cover for disturbance areas along trail alignments and stockpile areas, once these areas are no longer needed. Wood mulch will be applied on disturbed areas outside of trail alignments prior to predicted precipitation, upon completion of an area, and as needed as determined by the QSP.

EC-9 Drainage Swales

Drainage features will be used as a permanent BMP and will be constructed on trails to convey water from the travel surface. See construction drawings in Appendix C for construction details and frequencies.

EC-12 Stream Bank Stabilization

Stream crossings on Angora Trails will be constructed to promote stream bank stability. See construction drawings in Appendix C for details.

EC-15 Soil Preparation / Roughening

Compacted areas to be decommissioned will be roughened to increase water infiltration capacity and prepare the surface for revegetation. This will be accomplished by ripping the soil to a depth of 6 to 12 inches with the teeth on an excavator bucket, a proper hand tool, or equivalent method.

Non-Vegetated Stabilization

Loose rock structures will be installed in the Gardner Mountain Meadow to stabilize headcuts and gullies. Rocks structures will be sized according to the size of the gully/head cut.

WE-1 Wind Erosion Control

Water may be applied to heavily disturbed staging areas to control dust, and the water will be applied using water trucks. Water application rates will be minimized as necessary to prevent runoff and ponding. Water equipment leaks will be repaired as soon as possible. During windy conditions (forecast or actual wind conditions of approximately 25 mph or greater), dust control will be applied to all non-stabilized areas to adequately control wind erosion.

III.B.2. Sediment Control

Sediment controls are structural measures that are intended to complement and enhance the selected erosion control measures and reduce sediment discharges from construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. Additional temporary sediment control materials will be maintained onsite throughout the duration of the project for implementation in the event of predicted rain, rapid response to failures, or emergencies, as described in the below. This includes implementation requirements for active areas and non-active areas before the onset of rain. The following sediment control BMP selection table (Table 6) indicates the BMPs that shall be implemented to control sediment on the construction site.

| Table 6. SEDIMENT CONTROL BMPs | | | | |
|---------------------------------------|---------------------------------------|-----------------|-----------|---------------------------------------|
| CASQA Fact Sheet | BMP Name | BMP Used | | If Not Used, Why |
| | | YES | NO | |
| SE-1 | Silt Fence | √ | | |
| SE-2 | Sediment Basin | | √ | Not necessary |
| SE-3 | Sediment Trap | | √ | Not necessary |
| SE-4 | Check Dam | √ | | |
| SE-5 | Fiber Rolls | √ | | |
| SE-6 | Gravel Bag Berm | | √ | Not necessary |
| SE-7 | Street Sweeping | | √ | Not necessary |
| SE-8 | Sandbag Barrier | | √ | Not necessary |
| SE-9 | Straw Bale Barrier | | √ | Not necessary |
| SE-10 | Temporary Drain Inlet Protection | | √ | Not necessary |
| SE-11 | ATS | | √ | Not necessary |
| SE-12 | Temporary Silt Dike | | √ | Not necessary |
| SE-13 | Compost Sock and Berm | | √ | Not necessary |
| SE-14 | Biofilter Bags | | √ | Using other methods |
| TC-1 | Stabilized Construction Entrance/Exit | | √ | No major equipment to enter/exit site |
| TC-2 | Stabilized Construction Roadway | | √ | Not necessary |
| TC-3 | Entrance Outlet Tire Wash | | √ | Not necessary |

The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project. Where CASQA fact sheets contradict information contained in the Technical

Specifications or the Drawings, the more stringent criteria (as determined by the QSD) shall apply. Selection criteria will be documented in a SWPPP Amendment.

SE-1 Silt Fence

Silt fence will be used as needed for the stream crossing construction. Sandbags and 6mil plastic will be the primary method for water diversion. Additional installations may be required at the direction of the QSD or QSP.

SE-4 Check Dam

Loose rock check dams will be installed in the Gardner Mountain Meadow to stabilized head cuts and gullies. Rocks will be sized according to the size of the gully/head cut.

SE-5 Fiber Rolls

Fiber rolls will be used to surround any stockpile area that is inactive for more than 14 days, or when there is predicted precipitation. Additional fiber rolls will be kept on-site to be deployed as needed.

III.C. Non-Storm water and Material Management Narrative

The selection of non-storm water BMPs is based on the list of construction activities with a potential for non-storm water discharges identified above. The following non-storm water control BMP selection table (Table 7) indicates the BMPs that shall be implemented to prevent non-storm water discharges at the construction Site.

| Table 7. NON-STORM WATER POLLUTION CONTROL BMPs | | | | |
|--|--|-----------------|-----------|----------------------------------|
| CASQA Fact Sheet | BMP Name | BMP Used | | If Not Used, Why |
| | | YES | NO | |
| NS-1 | Water Control and Conservation | √ | | |
| NS-2 | Dewatering Operations | √ | | |
| NS-3 | Paving & Grinding Ops | | √ | No paving or grinding in project |
| NS-4 | Temp Stream Crossing | | √ | Not necessary |
| NS-5 | Clear Water Diversion | √ | | |
| NS-6 | Illicit Connection & Illegal Discharge | √ | | |
| NS-7 | Potable Water/ Irrigation | | √ | Not necessary |
| NS-8 | Vehicle and Equipment Cleaning | √ | | |
| NS-9 | Vehicle and Equipment Fueling | √ | | |
| NS-10 | Vehicle and Equipment Maintenance | √ | | |

| | | | | |
|-------|---------------------------------------|--|---|-----------------------------------|
| NS-11 | Pile Driving Operations | | √ | No pile driving in project |
| NS-12 | Concrete Curing | | √ | No concrete operations in project |
| NS-13 | Concrete Finishing | | √ | No concrete operations in project |
| NS-14 | Material & Equipment Used Over Water | | √ | Not necessary |
| NS-15 | Demolition/ Removal Adjacent to Water | | √ | Not necessary |
| NS-16 | Temporary Batch Plants | | √ | Not necessary |

The following list and narrative of BMPs explain how the selected BMPs will be incorporated into the project. Where CASQA fact sheets contradict information contained in the Technical Specifications or the Drawings, the more stringent criteria (as determined by the QSD) shall apply. Selection criteria will be documented in a SWPPP Amendment.

NS-1 Water Control and Conservation

Water application rates will be minimized as necessary to prevent runoff and ponding. Water equipment leaks will be repaired immediately.

NS-2 Dewatering Operations

This BMP will only be utilized if a clear water diversion is ineffective for the bridge on Angora Creek and the rock ford near Tahoe Mountain Road. Dewatering will be accomplished by pumping (siphoning). Water pumped from the channel will be sprayed into the woods to fully infiltrate away from the stream.

NS-5 Clear Water Diversion

This BMP will be utilized for the bridge on Angora Creek and the rock ford near Tahoe Mountain Road (if there is any flow during construction). A coffer dam will be built, and water will be isolated to one side of the streambed when constructing sills or abutments. See III.D. Dewatering and Diversion Plan Narrative, for further description.

NS-6 Illicit Connection and Illegal Discharge Connection

The LTBMU will implement the Illicit Connection/Illegal Discharge Detection Reporting BMP throughout the duration of the project.

NS-8, NS-9, NS-10 Vehicle and Equipment Operations

Vehicle and Equipment Fueling (NS-9), and Vehicle and Equipment Maintenance BMPs (NS-10) will be utilized to prevent discharges of fuel and other vehicle fluids. Vehicle will be cleaned

and inspected (NS-8) prior to arrival on site. Vehicle cleaning will not be performed onsite, except as part of normal maintenance to remove excess dirt/mud from equipment. This type of cleaning will take place within the staging area (BMP area) and be performed such that excess runoff is not generated.

Fuel trucks, each equipped with absorbent spill clean-up materials, shall be used for all onsite fueling. All fueling will take place within the staging area. Drip pans or absorbent pads shall be used during all vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids. All vehicle maintenance shall be conducted at least 50 feet away from stream channels and on a level graded area. If mobile maintenance is necessary due to an equipment failure within the construction area that prevents the equipment from being moved to the staging area, drip pans and/or absorbent pads shall be used to prevent any contamination of the site.

III.D. Dewatering and Diversion Plan Narrative

See Figure 3 for specific diversion locations. The footbridge over Angora Creek (see Figure 3) will have a coffer dam in place during construction (if there is any flow at that time). A sandbag coffer dam, sealed with 6 millimeter plastic, will channel the flow to one side of the streambed while the rock abutment is placed. Any uncollected water will be pumped away from the creek, and all water will infiltrate in the adjacent upland area. NS-5, Clean Water Diversion from the CASQA fact sheets (Appendix B), will be the main guide during the abutment placement. Prior to the re-introduction of stream flow, the channel will be “seasoned” by slowly filling the diversion area and then pumping to remove fine sediment, until turbidity reaches background levels or no greater than a 10% increase above background levels. The coffer dams will then be completely removed.

III.E. Active Treatment System Plan Narrative

No active treatment system operations are planned as part of this project.

III.F. Post-Construction Storm Water Management Measures Narrative

All trails are designed to function during storms. All trail alignments will be compacted, and drainage dips will be spaced and built to effectively minimize erosion. The footbridge spanning Angora Creek will be designed to clear most storm water and allow for overtopping during major storms. The rock ford near Tahoe Mountain Road will be sufficiently armored to handle large storms. This project will be monitored post-construction to determine if the trails are functioning as designed. The sites will be visited and a visual survey of the project area will be completed in the following spring as soon as accessible (post-snowmelt). Additionally, the Angora Trails Restoration project will be part of the Forest level effectiveness monitoring (BMPEP).

III.G. Schedule for BMP Implementation

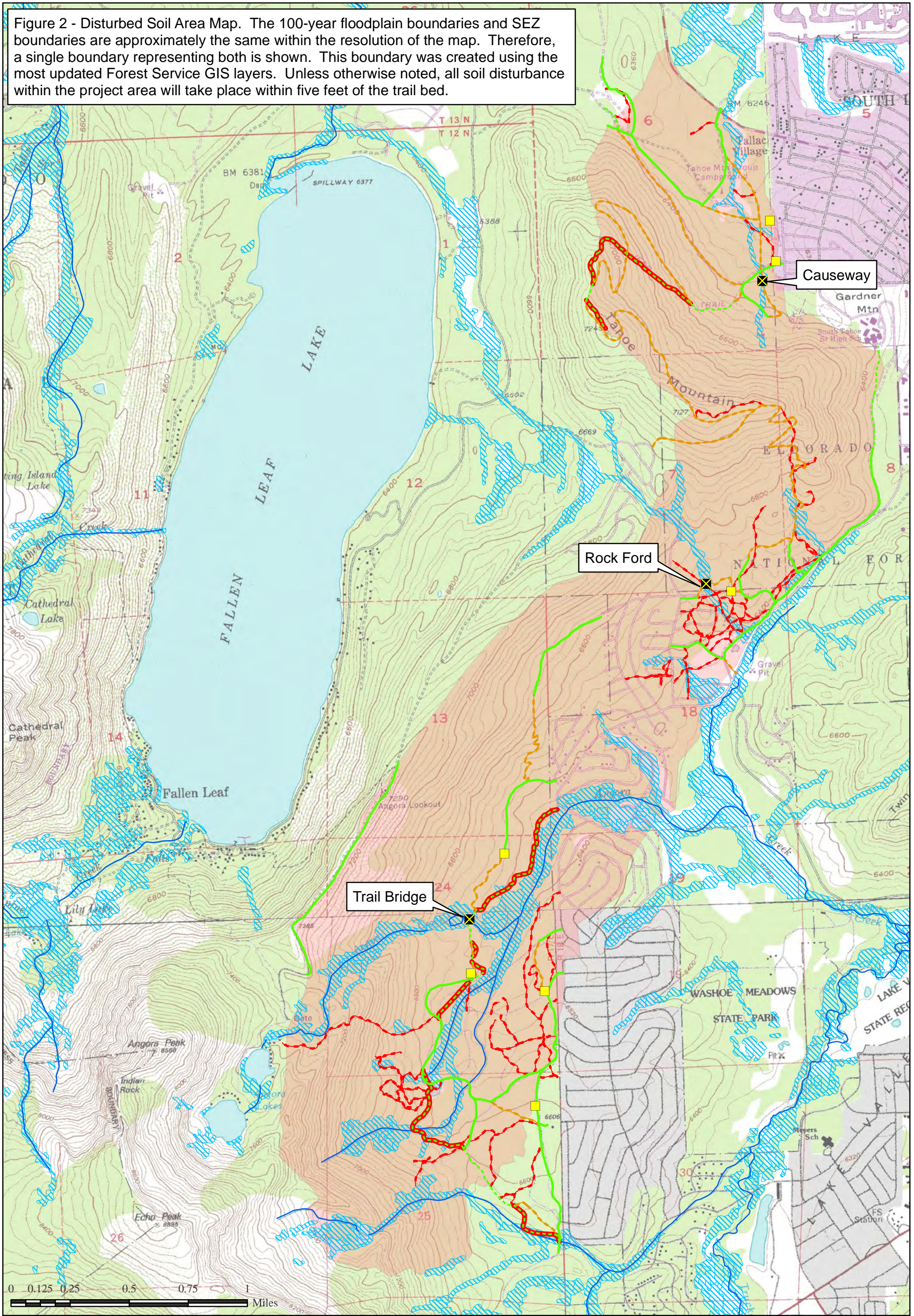
BMPs will be implemented, modified, and maintained appropriately for the site and weather conditions encountered during the project. If a staging area is utilized, it will be used for a

maximum of 1 week, and will be placed in its pre-existing condition before moving to another area. Fiber rolls will be placed at the base of all material stockpiles, and if precipitation is expected, the pile will be covered.











III.H. BMP and Disturbed Soil Area maps


Figure 2 shows the disturbed soil areas (DSAs), stream crossings, and staging area BMPs for this project. Due to the large area of construction, orange construction fence will only be installed to define the staging areas. Section IX. H. Mapping Requirements, of the R6T-2011-0019 requires that DSA maps be of a scale no smaller than 1 inch equals 50 feet (1:600). Figure 2 does not meet this requirement. Because of the large area of this project, only key areas are shown on maps to this scale (Figures 3, 4, and 5).

Figure 2 - Disturbed Soil Area Map. The 100-year floodplain boundaries and SEZ boundaries are approximately the same within the resolution of the map. Therefore, a single boundary representing both is shown. This boundary was created using the most updated Forest Service GIS layers. Unless otherwise noted, all soil disturbance within the project area will take place within five feet of the trail bed.



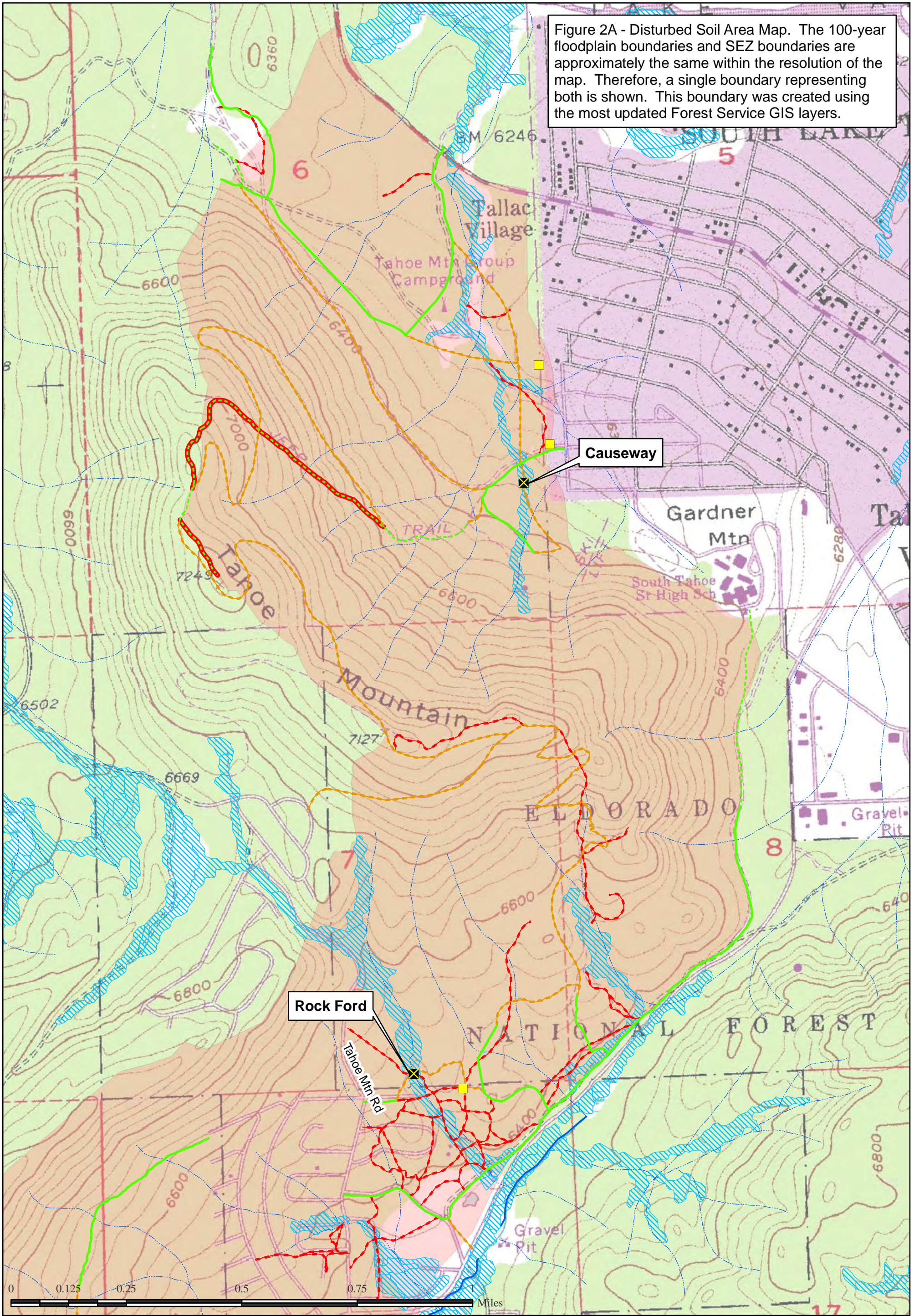
0 0.125 0.25 0.5 0.75 1 Miles












| | | | | |
|---|--|--|--|---|
|  Staging Areas |  SEZ/100 Yr. Floodplain |  Stream |  Existing Classified Road |  Decommission System Trail |
|  Crossings |  Angora Fire Perimeter |  New Classified Trail |  Existing Classified Trail |  Restore Non-System Trail |



N

Figure 2A - Disturbed Soil Area Map. The 100-year floodplain boundaries and SEZ boundaries are approximately the same within the resolution of the map. Therefore, a single boundary representing both is shown. This boundary was created using the most updated Forest Service GIS layers.



| | | | | | | | | | |
|---|---------------|---|------------------------|---|---------------------------|---|---------------------------|---|---------------------------|
|  | Staging Areas |  | SEZ/100 Yr. Floodplain |  | Perennial Stream |  | Existing Classified Road |  | Decommission System Trail |
|  | Crossings |  | Angora Fire Perimeter |  | Ephemeral / Interm Stream |  | Existing Classified Trail |  | Restore Non-System Trail |
| | | | | | |  | New Classified Trail | | |


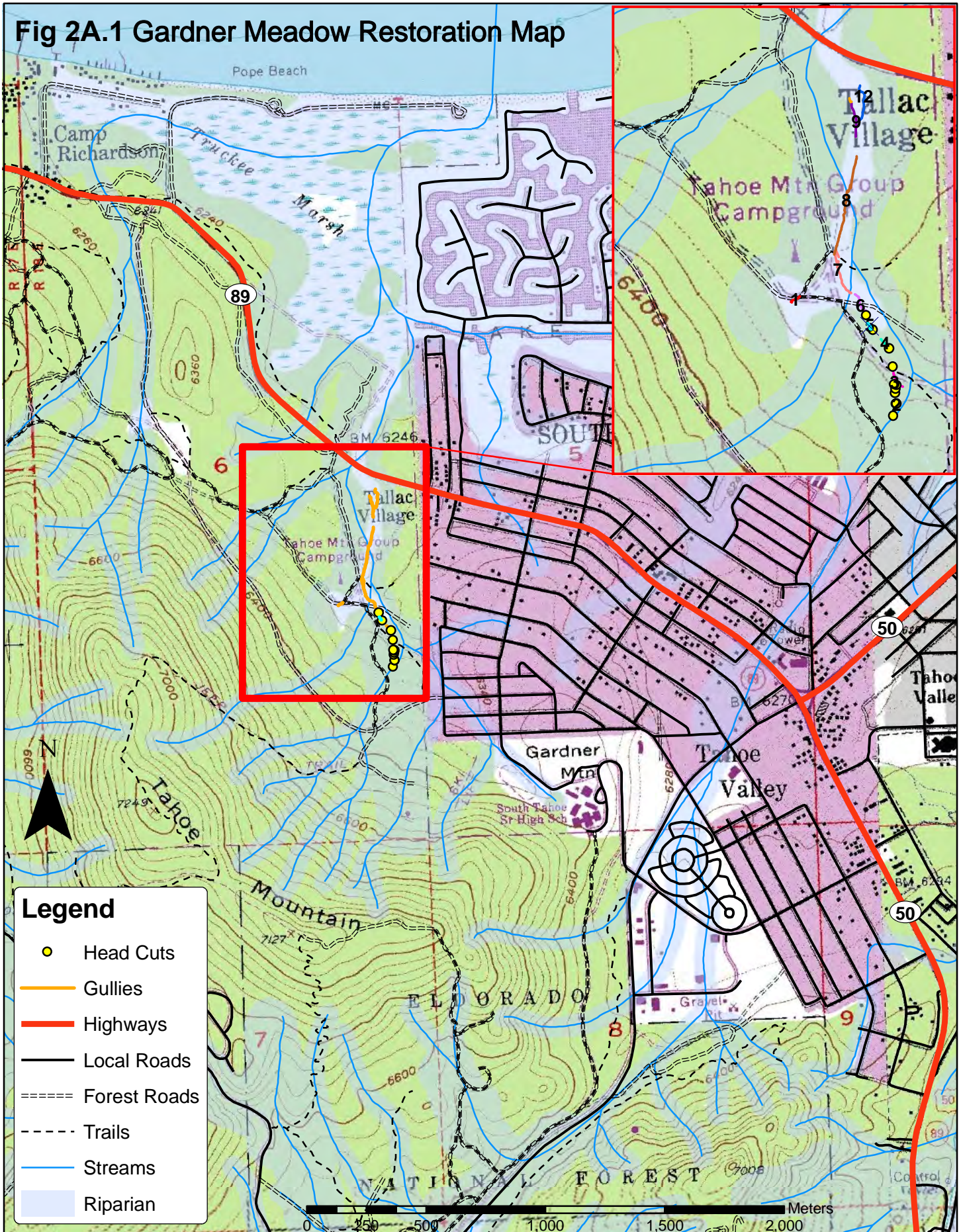


Fig 2A.1 Gardner Meadow Restoration Map

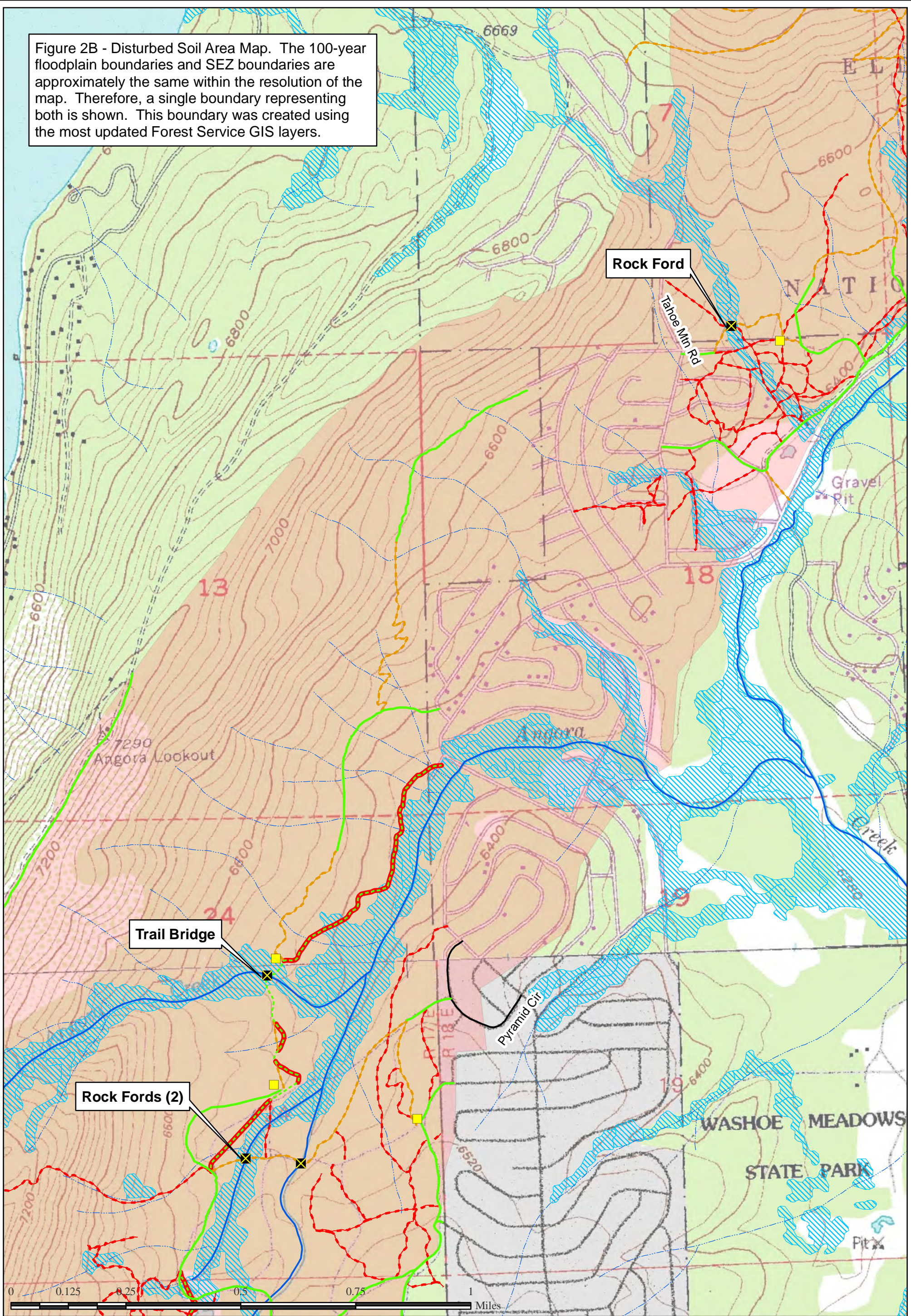


Legend

- Head Cuts
- Gullies
- Highways
- Local Roads
- - - - Forest Roads
- - - - Trails
- Streams
- Riparian

0 250 500 1,000 1,500 2,000 Meters

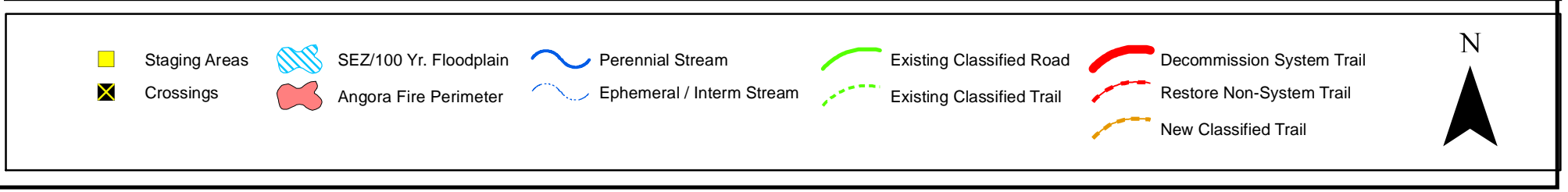
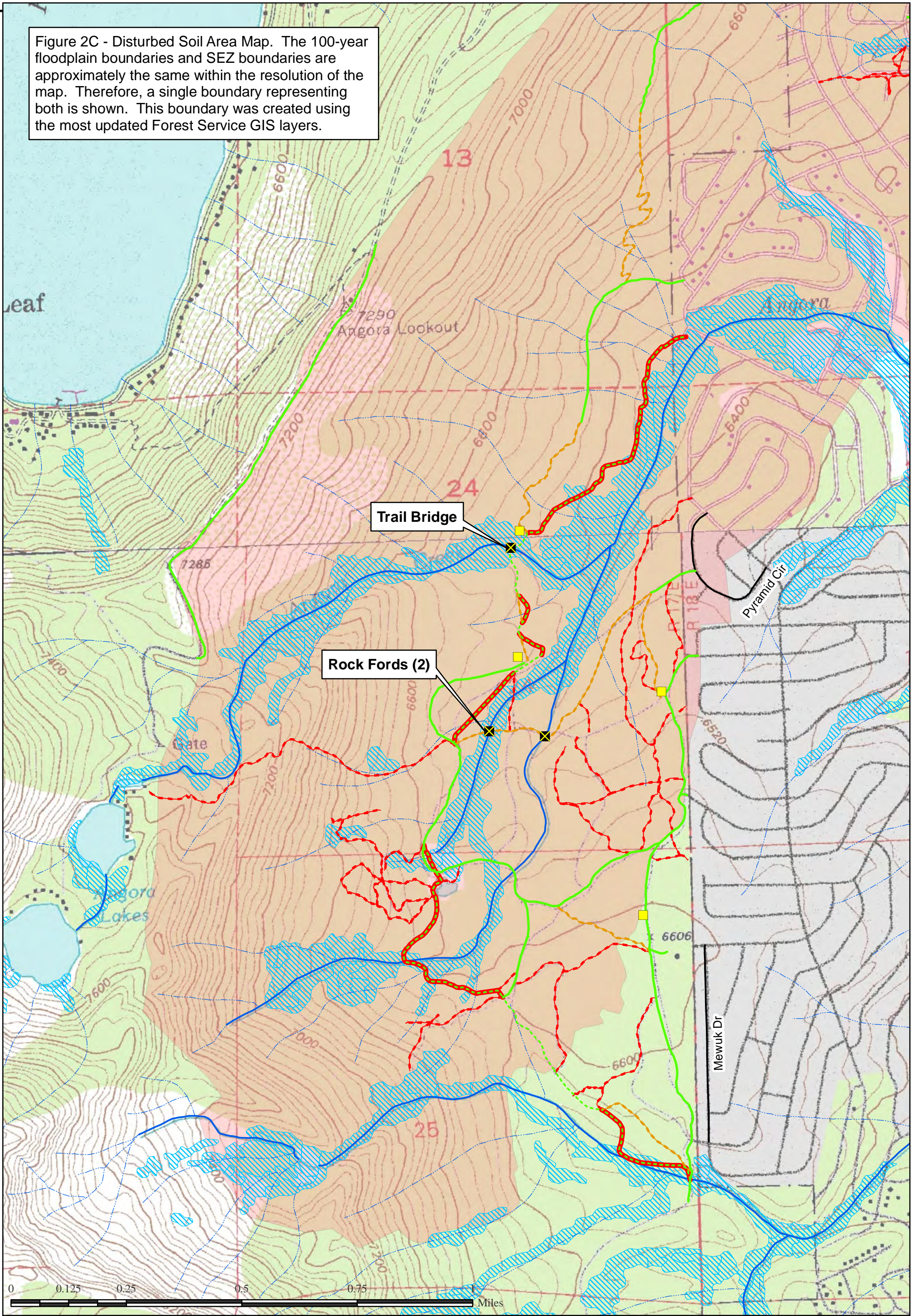
Figure 2B - Disturbed Soil Area Map. The 100-year floodplain boundaries and SEZ boundaries are approximately the same within the resolution of the map. Therefore, a single boundary representing both is shown. This boundary was created using the most updated Forest Service GIS layers.

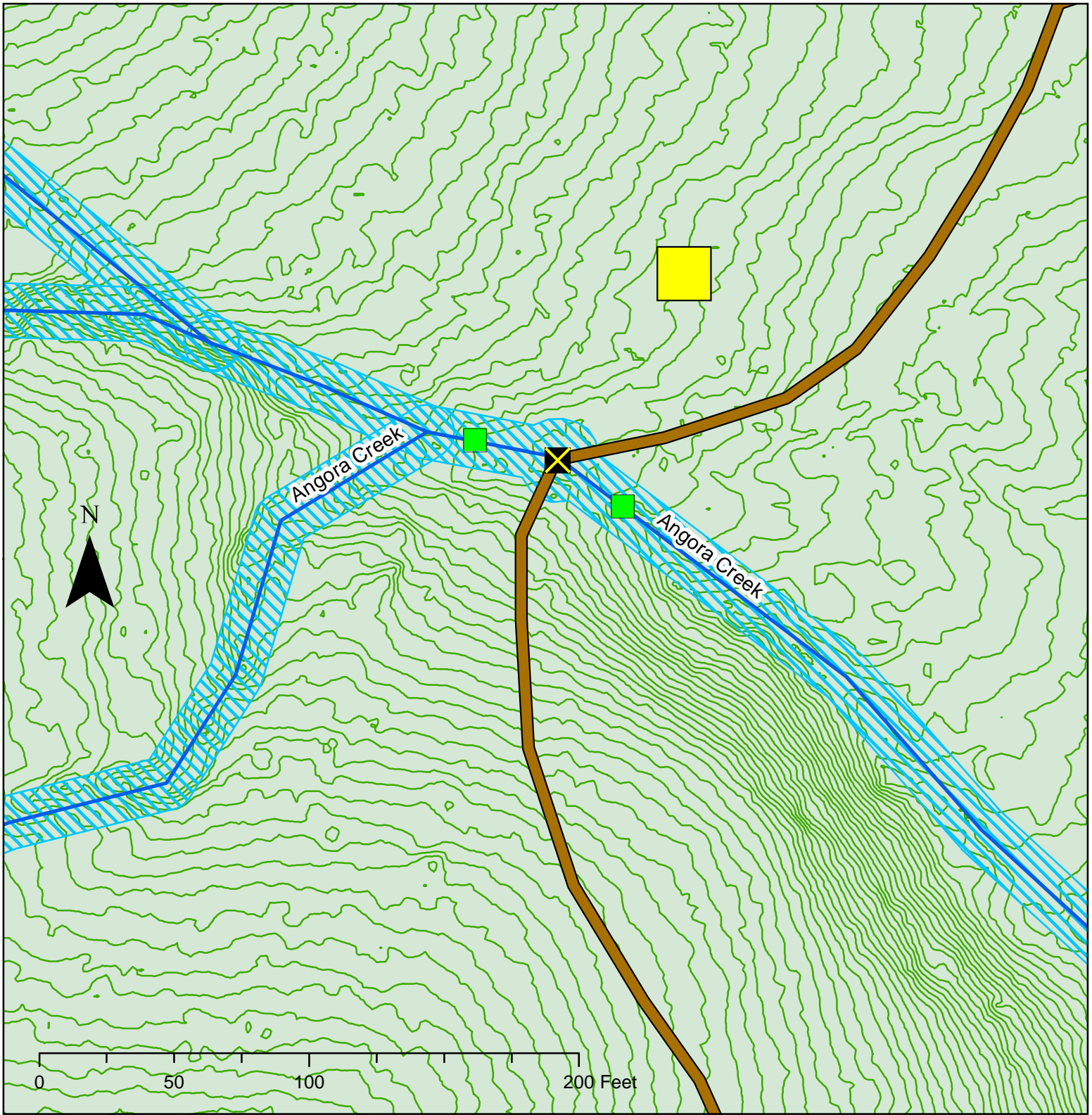


- | | | | | |
|---------------|------------------------|---------------------------|---------------------------|---------------------------|
| Staging Areas | SEZ/100 Yr. Floodplain | Perennial Stream | Existing Classified Road | Decommission System Trail |
| Crossings | Angora Fire Perimeter | Ephemeral / Interm Stream | Existing Classified Trail | Restore Non-System Trail |
| | | | New Classified Trail | |



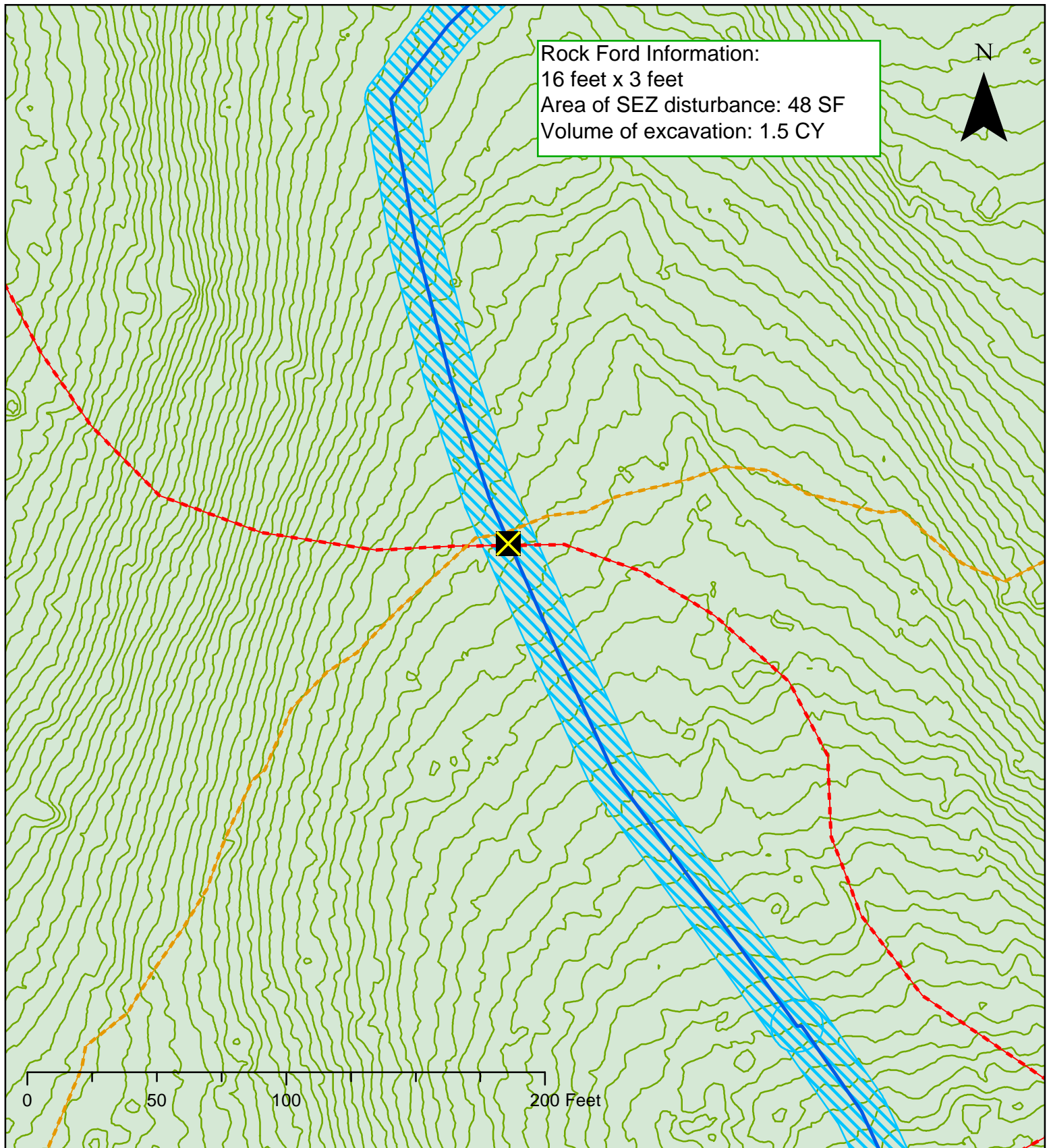
Figure 2C - Disturbed Soil Area Map. The 100-year floodplain boundaries and SEZ boundaries are approximately the same within the resolution of the map. Therefore, a single boundary representing both is shown. This boundary was created using the most updated Forest Service GIS layers.





-  SEZ
-  Stream
-  Existing Trail
-  Staging Area
-  Foot Bridge
-  Sample Locations

Figure 3: Foot Bridge Location (1:600 Scale) - The foot bridge will measure 4 feet by 20 feet. Construction materials will be stocked in the designated 20' x 20' staging area. Elevation contours are in one foot increments and were obtained using LIDAR data.







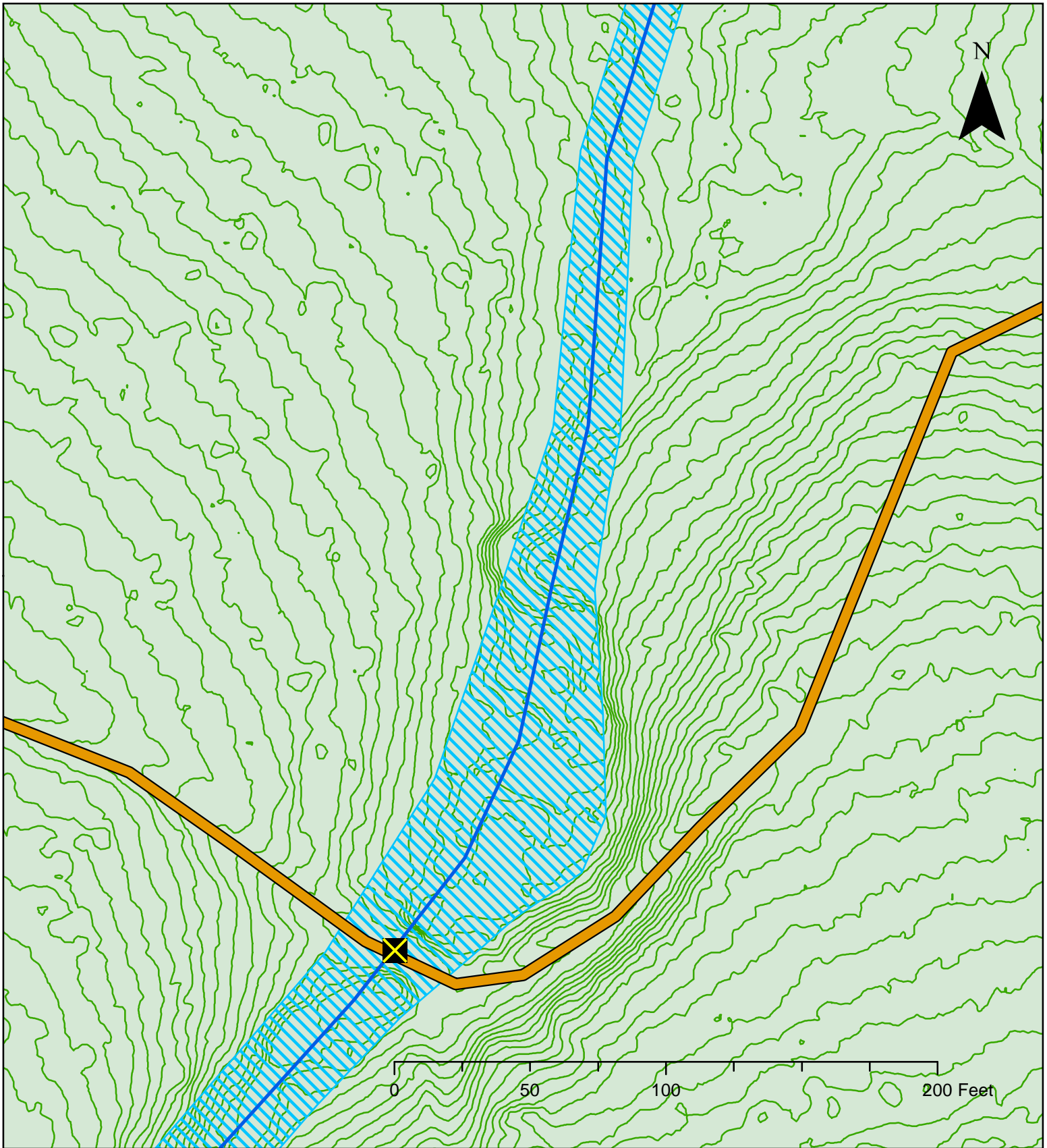
-  SEZ
-  Stream
-  Rock Ford
-  New Classified Trail
-  Restore Non-System Trail

Figure 4: Rock Ford Location (1:600 Scale) - The stream shown is ephemeral and will be dry during construction. Elevation contours are in one foot increments and were obtained using LIDAR data.



-  SEZ
-  Stream
-  Rock Ford
-  New Classified Trail

Figure 5: Rock Ford Location (1:600 Scale) - The stream shown is ephemeral and will be dry during construction. Elevation contours are in one foot increments and were obtained using LIDAR data.

IV. BMP Inspection, maintenance and Rain Event Action Plans

IV.A. BMP Inspection and Maintenance Narrative

The General Permit requires that an inspection of the construction site be made at the end of each work day and before, during and after qualifying rain events. Additionally, during the winter or inactive periods, inspections must be conducted at least once per month during daylight hours. Because all projects are located at high elevation, it is expected that the entire area will be covered in snow from approximately December through April. Therefore, monthly inspections will not occur during these months. Monthly inspections will continue through the spring following final construction to ensure permanent soil stabilization measures function through spring runoff.

The purpose of the inspections is to discover potential water quality problems so that corrective measures can be implemented immediately. A BMP inspection checklist will be filled out for each inspection and maintained on-site with the SWPPP. A blank inspection checklist can be found in Appendix D. Completed checklists shall be kept with the SWPPP. Inspections of BMPs are conducted to identify and record:

- BMPs that are properly installed;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or
- BMPs that could fail to operate as intended.

IV.B. Rain Event Action Plan Narrative

The Rain Event Action Plan (REAP) is a document designed to be used as a planning tool by the QSP to protect exposed portions of the project sites during precipitation events and to ensure that the discharger has adequate materials, staff and time to implement erosion and sediment control measures. These measures are intended to reduce the amount of sediment and other pollutants that could be generated during a rain event. It is the responsibility of the QSP to be aware of precipitation forecasts and to obtain and keep copies of forecasted precipitation from NOAA's National Weather Service Forecast Office (<http://srh.noaa.gov/forecast>).

The SWPPP includes REAP templates, but the QSP will need to customize them for each rain event, to reflect site conditions related to current phase of construction. A site-specific REAP template can be found in Appendix E. Completed REAPs shall be maintained on-site with the SWPPP.

The QSP will develop an event-specific REAP no later than the calendar day 24 hours prior to any anticipated precipitation event. An anticipated precipitation event is any weather pattern that is forecast to have a 30 percent or greater chance of producing precipitation as rainfall in

the project area as predicted by the National Oceanographic and Atmospheric Administration (<http://www.srh.noaa.gov/>). During periods when thunderstorm activity is anticipated, weather conditions shall be monitored during the course of the day. Because the construction site is in a remote location without computer access, a LTBMU employee, not working on the site, with internet access will be designated to monitor NOAA forecasts during work days. In the event that the forecast changes during the regular work day, that designated employee will contact the QSP by phone or radio. If the chance of thunderstorms becomes 30 percent or greater, or when visual observations indicate imminent precipitation, the QSP shall prepare and implement a REAP.

The REAP will be onsite and implemented no later than 24-hours in advance of a predicted precipitation event or if predicted less than 24-hours in advance, as soon as possible. At a minimum the REAP shall include the following site and phase-specific information:

- QSP name and contact number;
- The date(s) rain is predicted to occur, and predicted chance of rain;
- A description of all DSAs, material storage areas, stockpiles, vehicle and equipment storage and maintenance areas, and waste management areas. These areas must be cross-referenced to BMP plans or DSA maps by sheet or page number;
- For each area described above, list specific items to review and actions to perform prior to the rain event;
- A certification by the QSP that the REAP will be carried out as required by the General Permit; and
- A printout of the NOAA weather forecast

The REAP must be checked and updated daily for storms expected to last over a period of several days.

V. Construction Site Monitoring and Reporting Plan (CSMRP)

V.A. Purpose

This Construction Site Monitoring Plan was developed to address the following objectives:

- Demonstrate that the site is in compliance with the discharge prohibitions and applicable effluent limitations;
- Determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedence of water quality objectives;
- Determine whether immediate corrective actions, additional BMPs, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges;
- Determine whether BMPs included in the SWPPP/REAP are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges; and
- Demonstrate that appropriate sample collection, handling and analysis procedures are implemented.

V.B. Visual Monitoring

During the active construction season, an inspection of the construction site shall be made at the end of each work day. Additionally, during the inactive period, inspections must be conducted at least once per month during daylight hours. Monthly inspections may not occur during winter months if site is covered in snow.

During both active and inactive periods, a construction site inspection shall also be performed within the 24-hour period prior to an anticipated rain event (chance of precipitation is forecasted at 30 percent or greater) and within 24 hours after actual storm events. This requirement does not apply during snow events. Inspections shall be documented on the BMP Inspection Checklist (Appendix D) and kept with the monitoring records with the SWPPP. If inspections cannot be completed within the specified time frames, the reason for the delay shall be recorded in writing and maintained with the next inspection report.

Visual observations must be made at all designated effluent outfalls and locations where storm water may discharge from the project boundary. Two focus areas for these visual observations will take place just downstream of the footbridge on Angora Creek, and just downstream of the rock ford near Tahoe Mountain Road.

In addition to visual monitoring, long-term photo points will be installed in area of SEZ restoration/disturbance. Photos will be taken before, immediately after construction and repeated at least once in the year following project completion.

V.C. Water Quality Sampling and Analysis

Storm water runoff generated from the project area which is discharged to surface waters must not contain constituents in excess of the following numeric effluent limitations (NELs):

| Parameter | Units | Maximum Daily Effluent Limitation for Discharge |
|----------------------|--------------|--|
| Total Nitrogen (N) | mg/L | 0.5 |
| Total Phosphorus (P) | mg/L | 0.1 |
| Total Iron | mg/L | 0.5 |
| Turbidity | NTU | 20 |
| Grease and Oil | mg/L | 2 |

Total Nitrogen, Total Phosphorus, Total Iron, and Grease and Oil will only be sampled if there is reason to believe it is present in excess amount as a result of project activities, or there are visual indicators (Grease and Oil) that a substance is present in the storm water runoff.

Additionally, waters generated within the project area that are discharged to surface waters must not contain the following:

- Substances in concentrations that are toxic to, or produce detrimental physiological responses in human, plant or animal life; and
- Coliform organisms attributable to human wastes.

Samples will not take place for these substances unless there is reason to believe they are present.

For protection of receiving waters the pH of effluent samples should not fall outside of the range of 6.0 to 9.0. Because no activity of the project is expected to affect pH, samples will not be taken unless there is reason to believe that pH levels are adversely impacted.

Before construction starts, one background grab sample will be collected above and below the footbridge site over Angora Creek and the rock ford site near Tahoe Mountain Road (if there is flow).

During construction, an above/below sampling strategy will be used to monitor Angora Creek at the footbridge crossing. Samples will be collected from Angora Creek above and below the crossing 4 times each day during bridge construction to ensure there is not a 10% or greater increase in turbidity.

In addition, storm water runoff samples will be taken from visible surface water discharge locations. Water samples will be collected by the Forest Service during the first two hours of discharge from rain events or as soon as staff are able to get to the site if rain event occurs

outside of normal construction time. A minimum of three samples will be collected for each day storm water is discharged off site to receiving waters. These water samples will document BMP effectiveness and ensure ambient water quality is not degraded. Water samples will be collected during daylight hours (sunrise to sunset) during the event and cease when turbidity falls to background levels. Water samples will not be collected if unsafe conditions exist.

V.D. Watershed Monitoring Option

This project consists of simple native trail construction and does not require additional monitoring of the watershed.

V.E. Quality Assurance and Quality Control

For initial verification of field analysis, duplicate samples shall be collected at a rate of 10 percent or one minimum duplicate per sampling event for the first three days of the project or whenever there is an addition of a sampler. The duplicate samples shall be collected, handled and analyzed using the same protocols as primary samples. A duplicate sample shall be collected at each location immediately after the primary sample has been collected. Duplicate samples shall not influence any evaluations or conclusions; however, they will be used as a check on quality assurance.

V.F. Reporting Requirements and Records Retention

V.F.1. Record Keeping

The following shall be retained for a minimum of three years:

- Approved SWPPP document and amendments;
- Site Inspection Reports;
- Site Inspection Report Corrections Summary;
- Rain Event Action Plans;
- Notice of Discharge reports;
- Numeric Effluent Limit (NEL) Exceedence Reports;
- Sampling records and analysis reports;
- Annual Compliance Certifications; and
- Copies of all applicable permits.

V.G. Non-Compliance Reporting

V.G.1. 24-Hour Reporting

Any noncompliance that may endanger health or the environment shall be reported.

Information shall be provided orally to LRWQCB within 24 hours from the time the QSD, QSP, or Project Manager becomes aware of the circumstances. A written submission shall also be provided within five days of the time the QSD, QSP, or Project Manager becomes aware of the

circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance with exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The QSP shall be responsible for making the verbal and written notifications.

The following shall be included as part of the oral notification that must be reported within 24 hours:

- Any unanticipated exceedence any effluent limitation
- Any upset that exceeds any effluent limitation. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

The LRWQCB may waive the required written report on a case-by-case basis if an oral report has been received within 24 hours.

V.G.2. Planned Changes

The LTBMU shall notify the LRWQCB of planned changes, as well as upload SWPPP Amendments into SMARTS. This will include any planned physical alterations or additions to the permitted project. Notice is required when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitation under this permit (40 CFR 122.41 (I)(1)(ii)).

V.G.3. Anticipated Noncompliance

The LTBMU shall give advance notice to the LRWQCB and upload a SWPPP Amendment describing planned changes in the permitted facility of activity that may result in noncompliance.

V.H. Annual Report

On or before November 30 of each year, an Annual Report shall be prepared and electronically submitted through SMARTS. The Annual Report shall cover the time period from Oct 16 of the previous year through October 15 of the current year. The SMARTS reporting module requests the following information:

- The project name and location
- Any significant problem(s) that occurred during project construction and remedial measures planned or implemented.

- A summary and evaluation of all sampling and analysis results, including copies of laboratory reports and rain gauge measurements, from monitoring activities conducted.
- A certified statement indicating whether or not the site has been winterized in accordance with BMPs for erosion prevention and sediment control.
- Documentation of required QSP certifications and personnel training.
- A certified statement, signed by the QSD, indicating whether or not the project site is in compliance with the conditions of the general permit and the SWPPP.

V.I. Final Report

Following completion of the project, the LTBMU shall prepare and electronically submit through SMARTS a final report containing the information required under the Annual Report as well as the following information:

- Details of any modification to the construction plans for the proposed restoration work.
- Details on any change in the amount of impervious coverage for the project site.
- Records of all inspections (including the inspection log book), compliance certificates, monitoring reports and noncompliance reporting must be maintained by the LTBMU for a period of at least three years.

The final monitoring report shall be certified by the LRP, or the approved signatory of the LRP, and submitted within 30 days of project completion.

Appendices

Appendix A – SWPPP Amendment Forms

SWPPP Amendment Certification and Approval

SWPPP Amendment #

Project Name: Angora Trails Restoration

WDID #:

Change requested by:

Description of and reason for change:

Location of change:

Original BMP, if any:

New BMP:

SWPPP Amendment Certification and Approval

SWPPP Amendment

Qualified SWPPP Developer's Certification of the Storm water Pollution Prevention Plan Amendment

"This Storm water Pollution Prevention Plan and attachments were prepared under my direction to meet the requirements of the California Construction General Permit (Order No R6T-2011-0019). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."

QSD's Signature

Date

QSD Name

QSD Certification Number

Title

Telephone

Appendix B – CASQA BMP Standard Specifications

Index of CASQA Fact Sheets*

- WM-1 Material Delivery and Storage
- WM-2 Material Use
- WM-3 Stockpile Management
- WM-4 Spill Prevention and Control
- WM-5 Solid Waste Management
- WM-6 Hazardous Waste Management
- WM-9 Sanitary/Septic Waste Management
- EC-1 Scheduling
- EC-2 Preservation of Existing Vegetation
- EC-8 Wood Mulching
- EC-9 Earth Dikes and Drainage Swales
- EC-12 Stream Bank Stabilization
- EC-15 Soil Preparation-Roughening
- EC-16 Non-Vegetative Stabilization
- WE-1 Wind Erosion Control
- SE-1 Silt Fence
- SE-5 Check Dams
- SE-5 Fiber Rolls
- NS-1 Water Control and Conservation
- NS-2 Dewatering Operations
- NS-5 Clear Water Diversion
- NS-6 Illicit Connection and Illegal Discharge
- NS-8 Vehicle and Equipment Cleaning
- NS-9 Vehicle Equipment Fueling
- NS-10 Vehicle and Equipment Maintenance

*The CASQA fact sheets referenced above are not included in this document, but they will be available on site during construction.

Appendix C – Engineering Plans and Specifications (EPS)

Index of sheets:

- T1: Typical Trail Cross Sections
- T2: Trailbed and Slope Finish
- T3: Clearing Limits
- T4: Rolling Dip
- T5: Rock Ford
- T6: Causeway
- T7: Check Dams
- T8: Switchback
- T9: Rock Retaining Wall
- T10: Trail Obliteration
- T11: Road to Trail Conversion
- T12: Bridge Drawings A
- T13: Bridge Drawings B

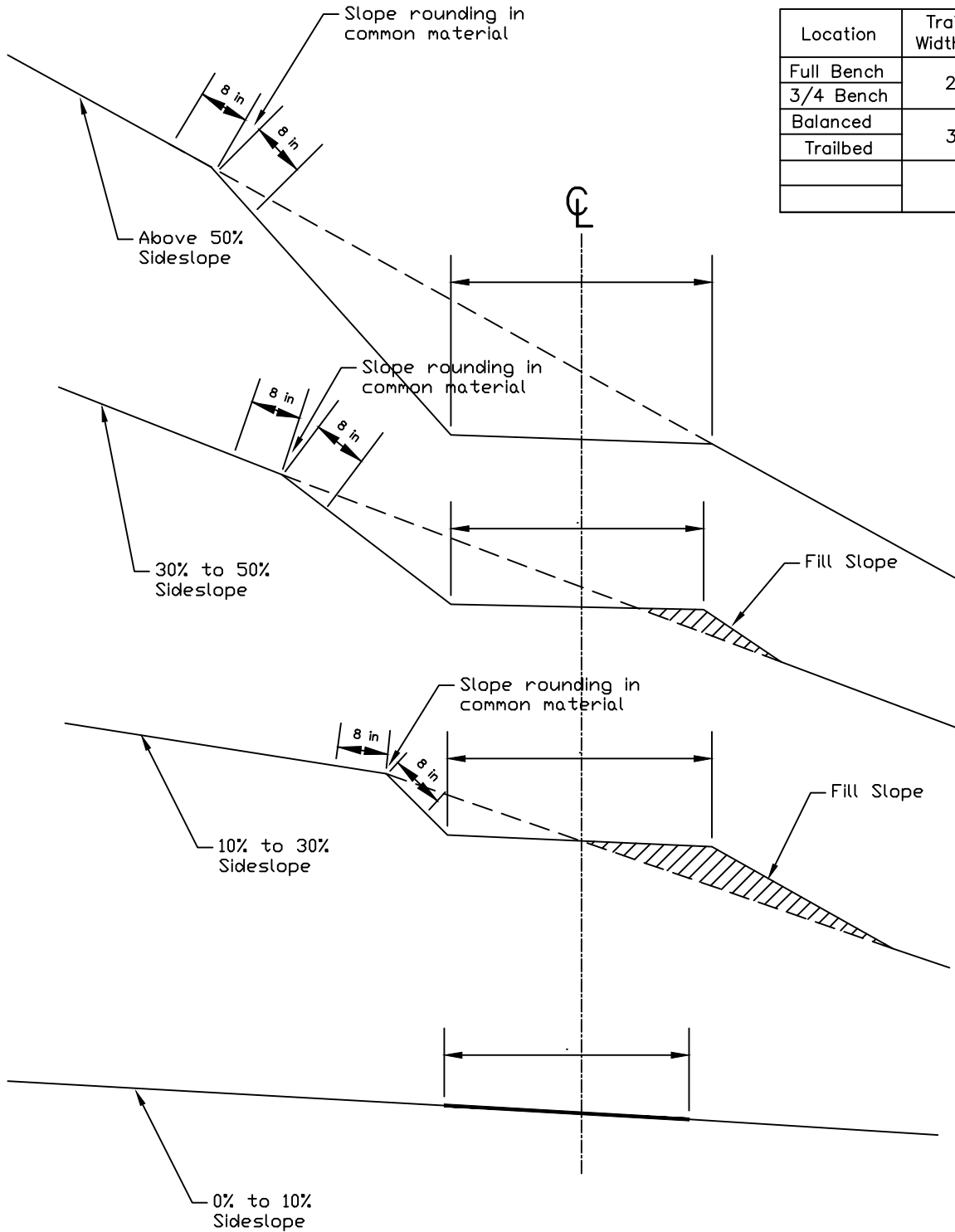
TYPICAL TRAIL CROSS SECTIONS

NOT TO SCALE

Amount of bench varies with % of sideslope. Outslope trailbed 6-10%

Trailbed Width

| Location | Trailbed Width (in) |
|-------------------|---------------------|
| Full Bench | 24 |
| 3/4 Bench | |
| Balanced Trailbed | 36 |
| | |
| | |
| | |



TRAILBED AND SLOPE FINISH

NOT TO SCALE

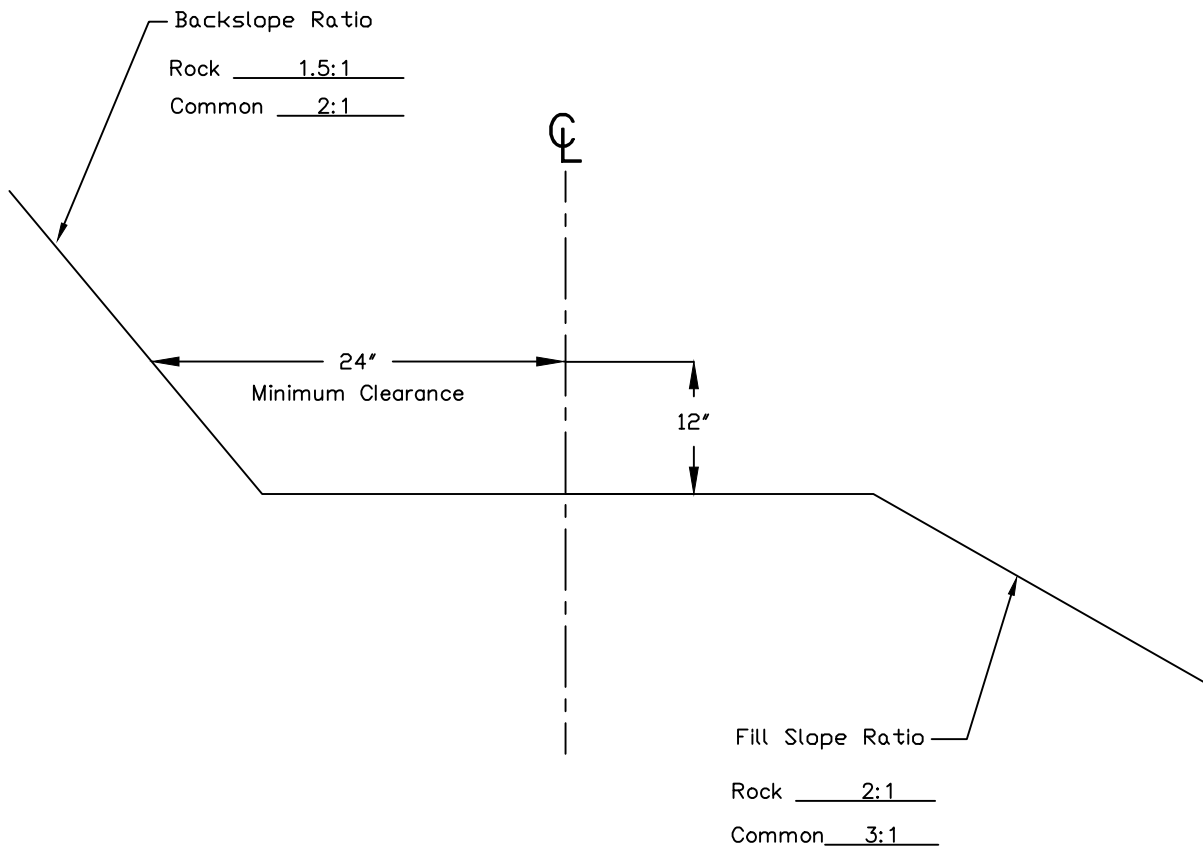
Slope Finish

Remove roots over 1" in diameter that protrude from the backslope.

Trailbed Finish

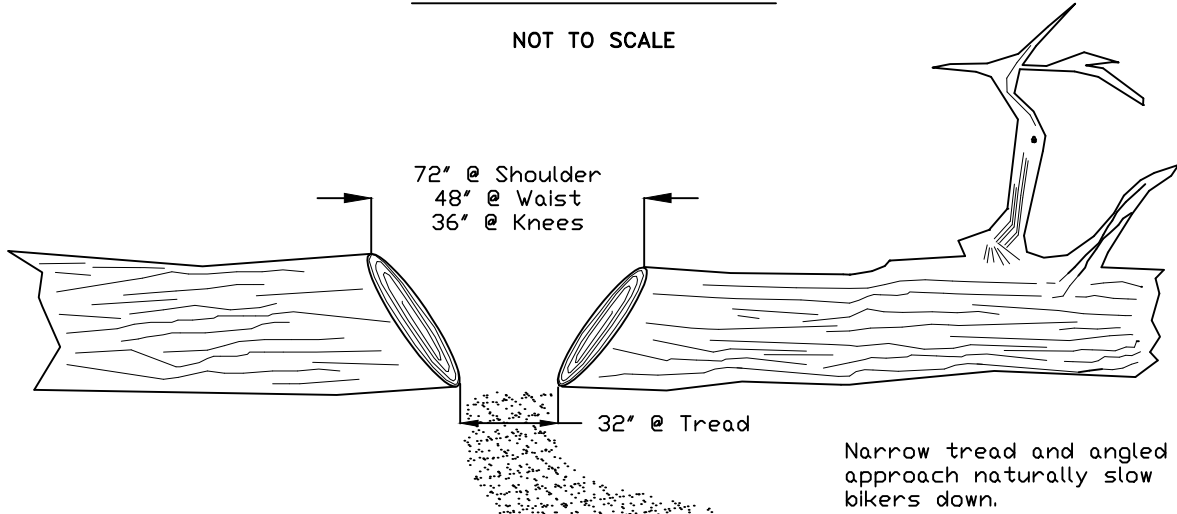
Remove protrusions on the trailbed surface over 3" in the smallest dimension.

Remove or reduce embedded obstacles that protrude more than 6" above the trailbed.



CLEARING LIMITS

NOT TO SCALE



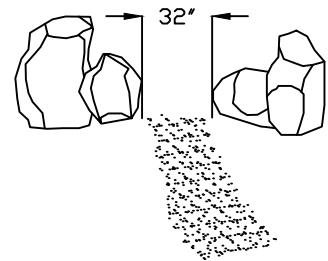
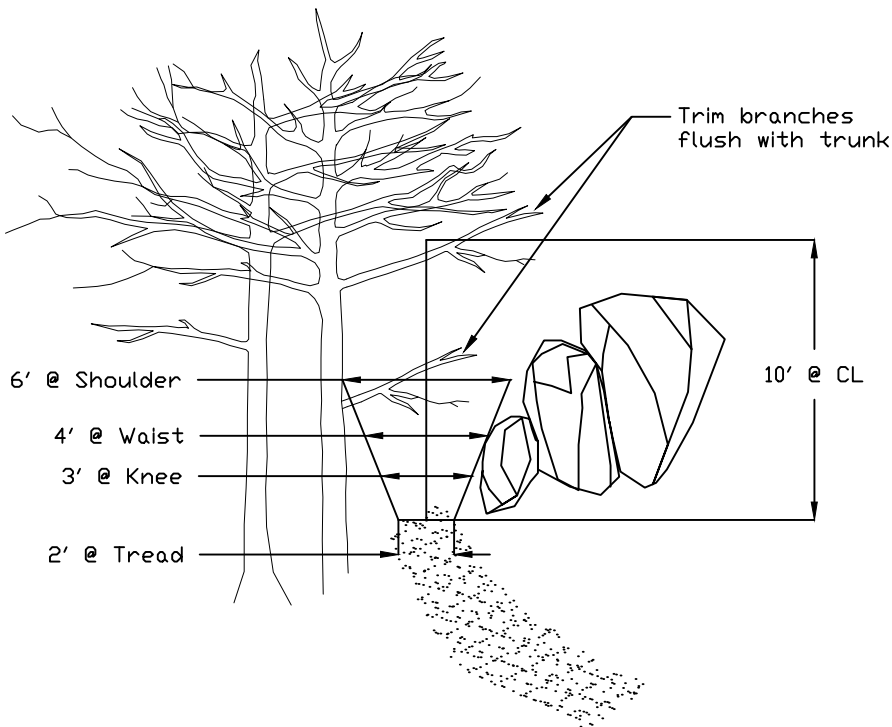
"V" CUT FOR DOWNED LOGS

Dimensions apply to all obstacles

Remove all trees 10 inches or less in diameter if they are within 3 feet of centerline unless they are an imminent threat and is approved by the CD.

Bucking of downed logs shall be included in the "Clearing and Grubbing" line of the Schedule of Items.

Do not remove trees over 6 inches in diameter if they are over 3 feet from the centerline.

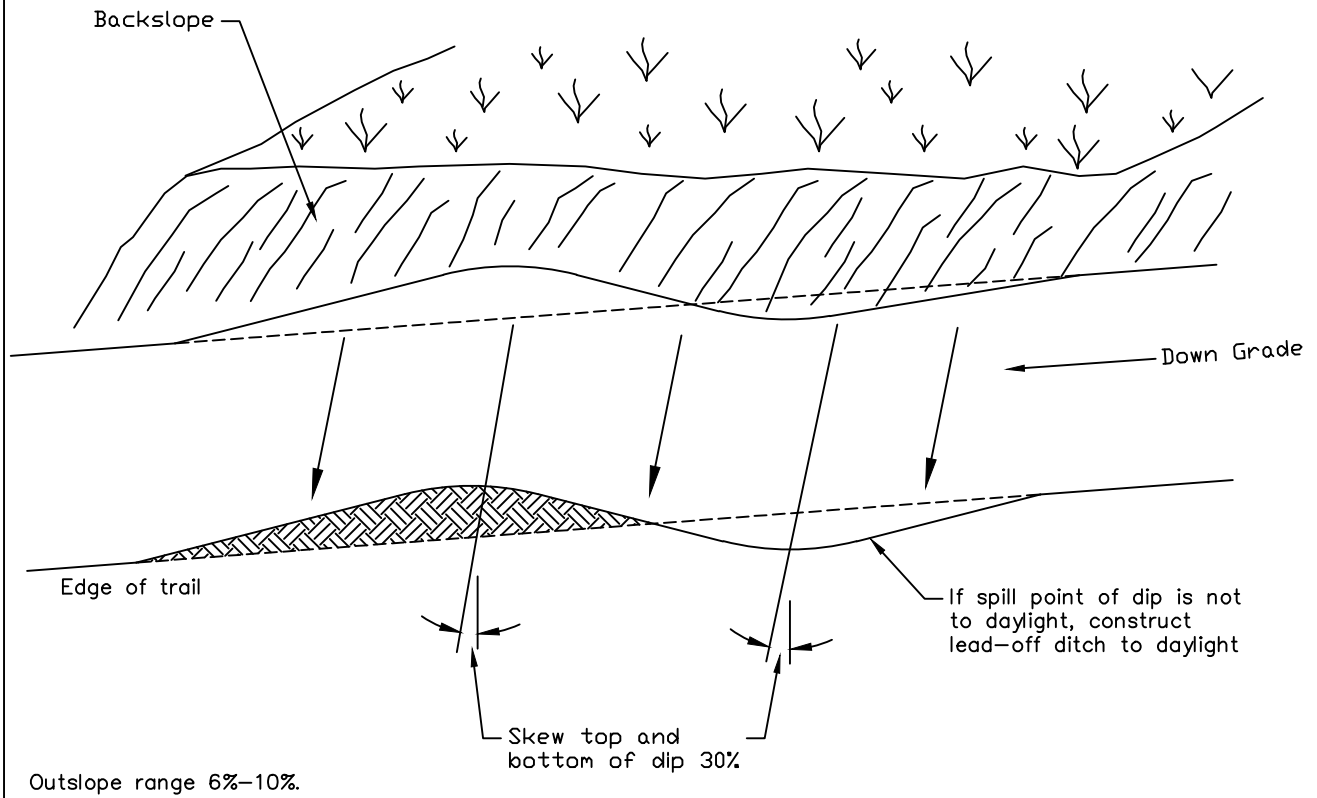


BACKCOUNTRY ADA CLEARANCE

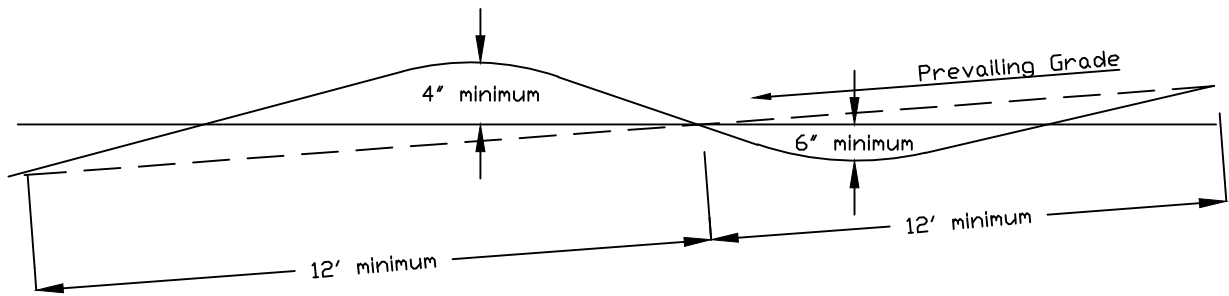
PACK AND SADDLE CLEARANCE

ROLLING DIP

NOT TO SCALE



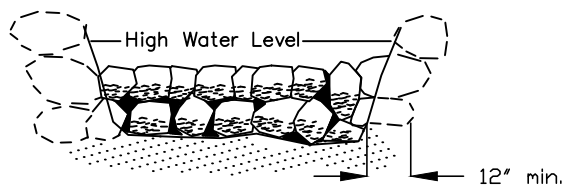
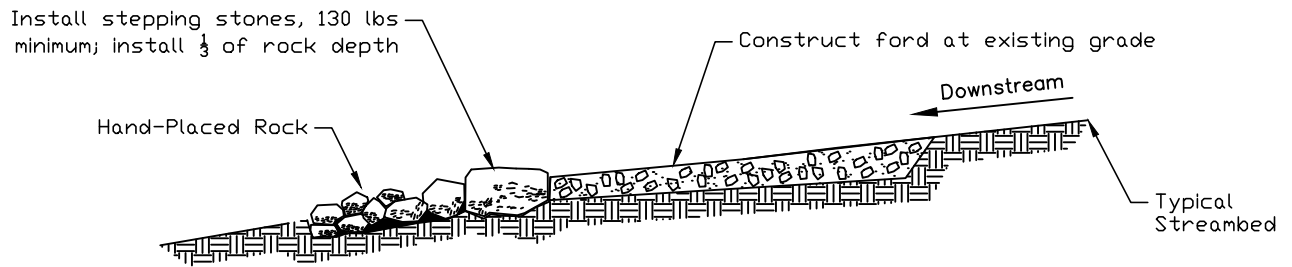
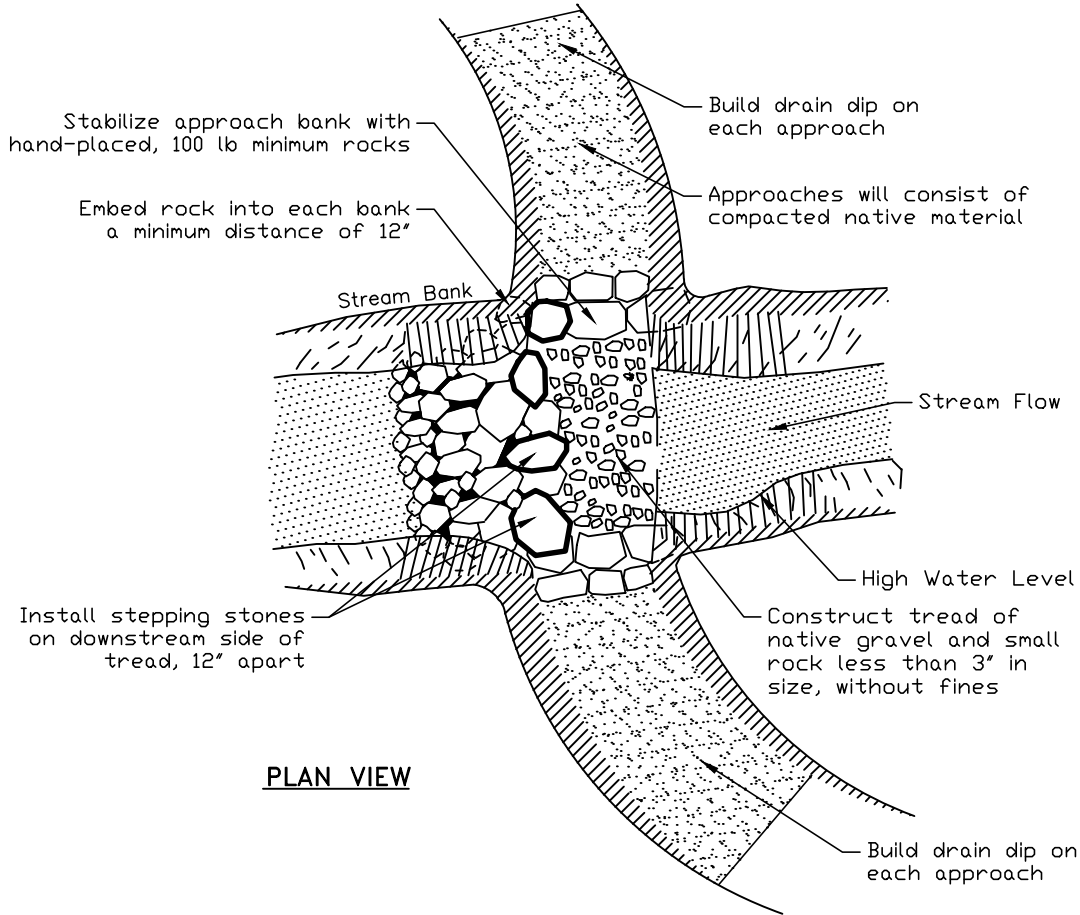
PLAN VIEW



PROFILE

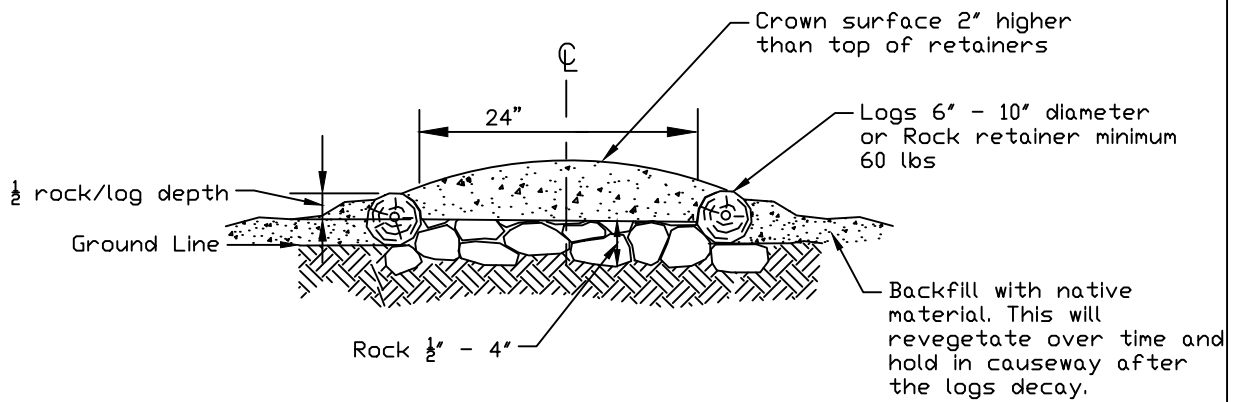
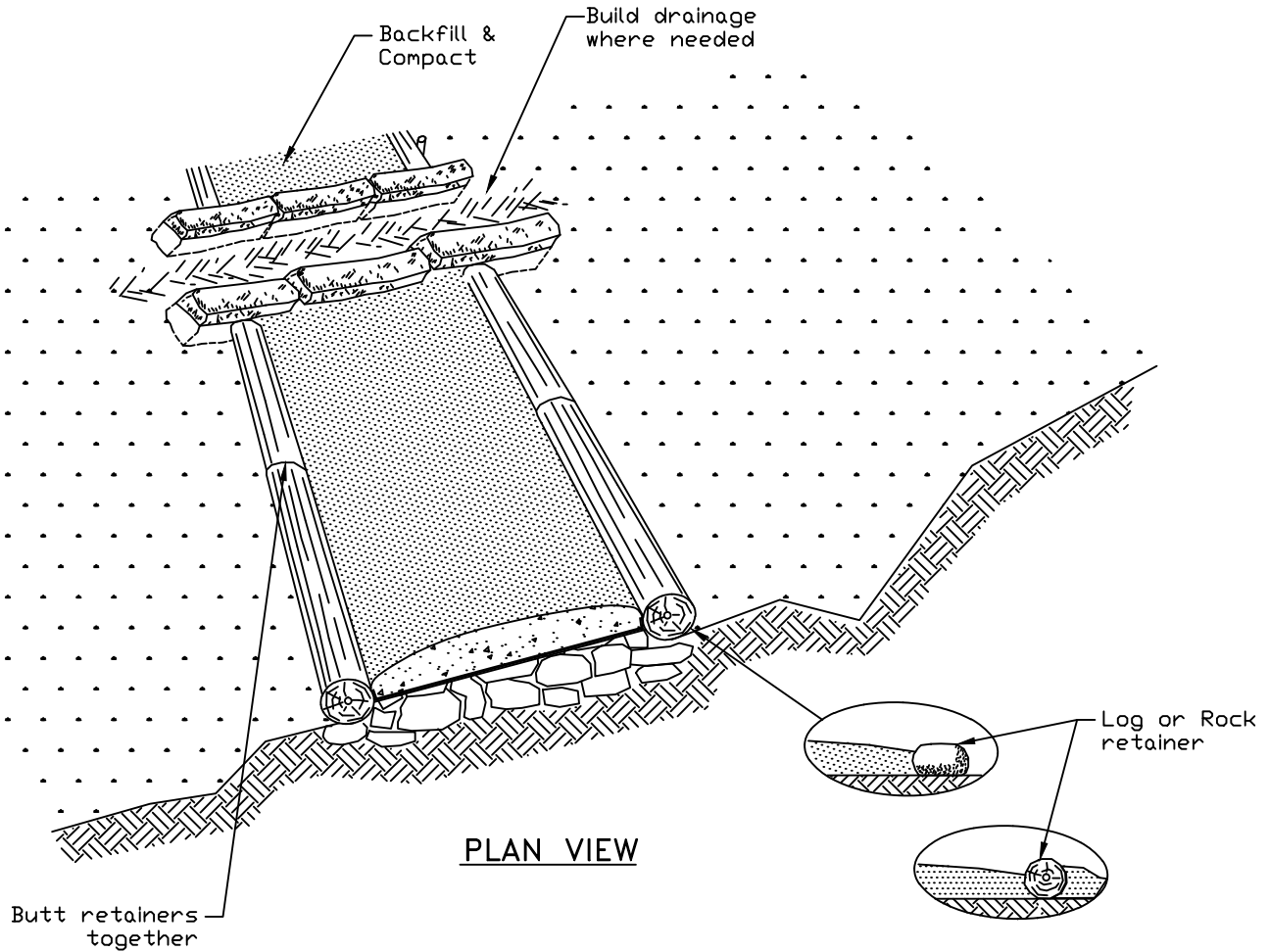
ROCK FORD

NOT TO SCALE



CAUSEWAY

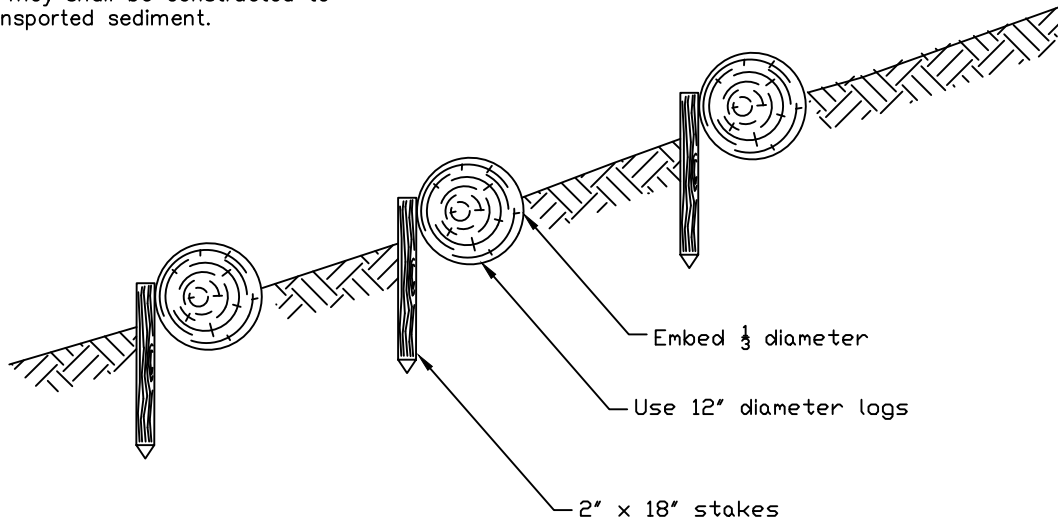
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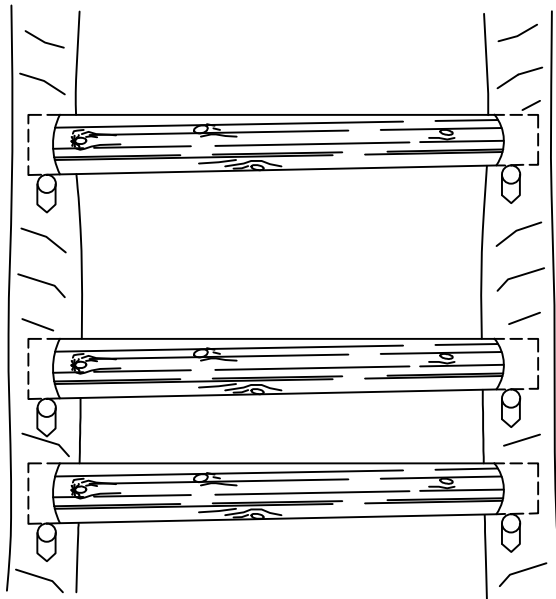
CHECK DAMS

NOT TO SCALE

Note: check dams will be utilized for trail restoration where the trail is incised. They shall be constructed to trap transported sediment.



SECTION



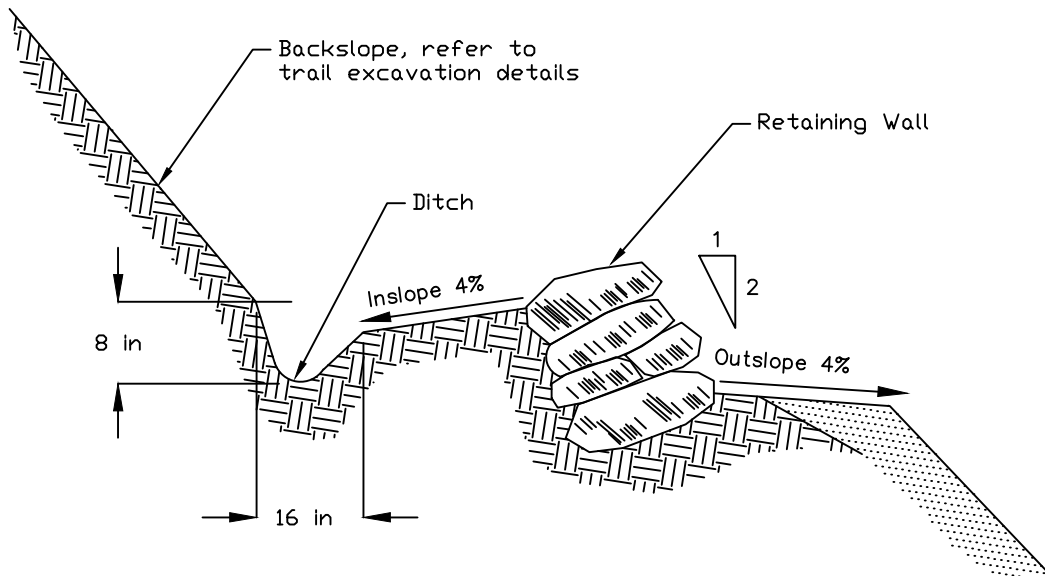
Embed logs a minimum of 8 inches into undisturbed bank.

Space check dams as specified in the trail log at a frequency to prevent rilling and promote deposition.

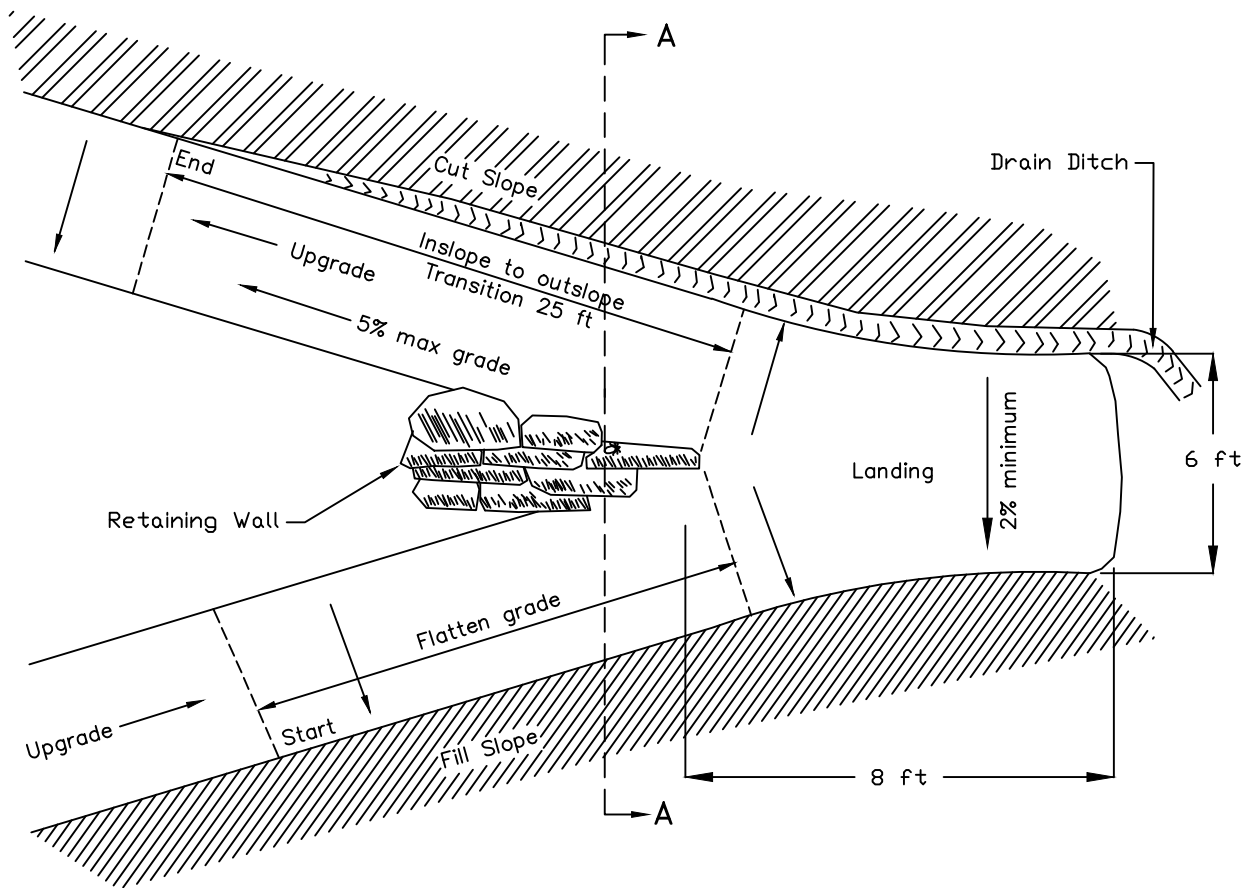
PLAN VIEW

SWITCHBACK – TYPE III

NOT TO SCALE



SECTION A-A

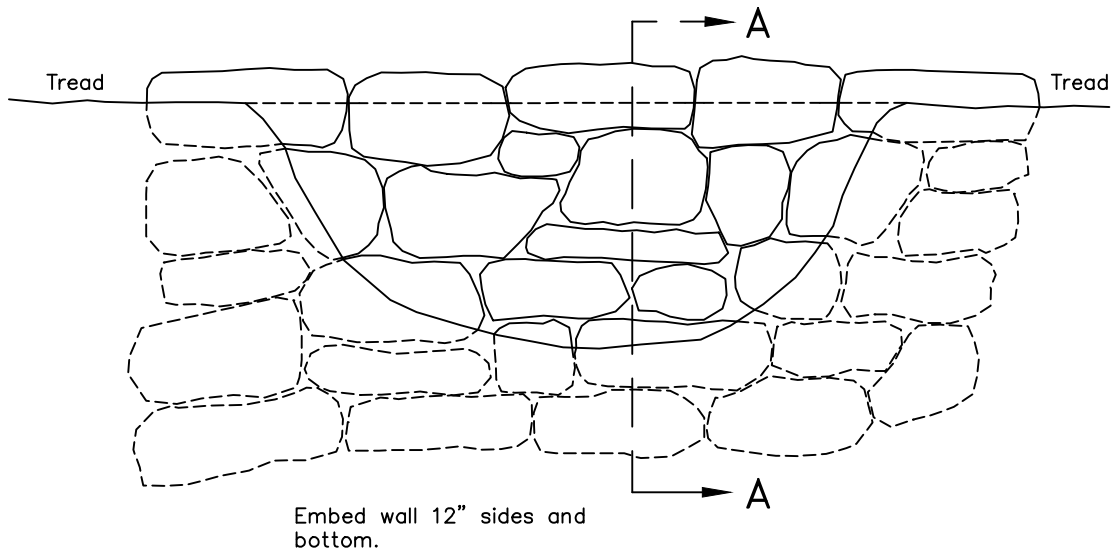


PLAN VIEW

T-8

ROCK RETAINING WALL

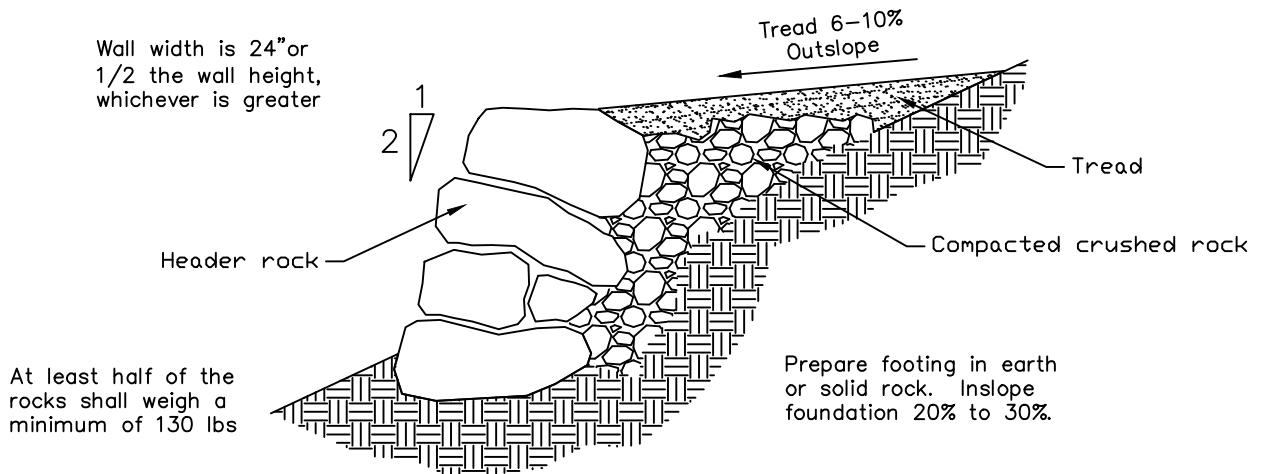
NOT TO SCALE



FRONT VIEW

Notes:

1. Construct wall with high contact in all individual rocks.
2. Alternate header stones each layer.
3. Compact crushed rock behind each layer as each layer is built.
4. Chock voids to maintain tight fitting face.
5. All rock shall fit tightly and not move by downward body weight.
6. Some chipping and splitting is necessary for construction.

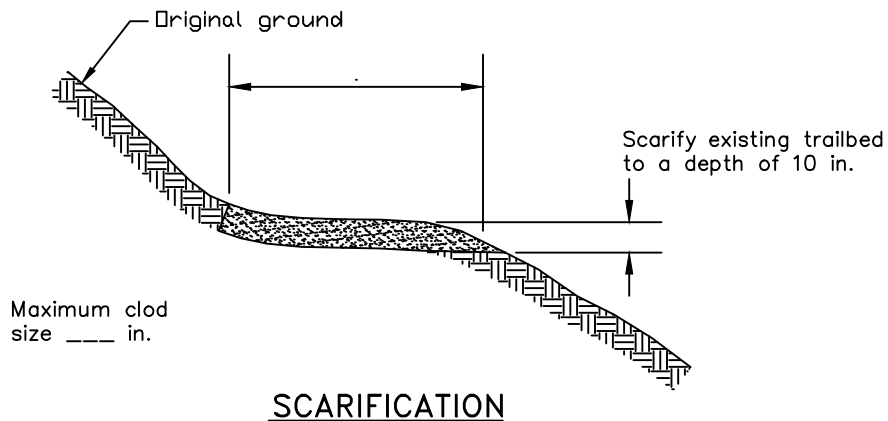
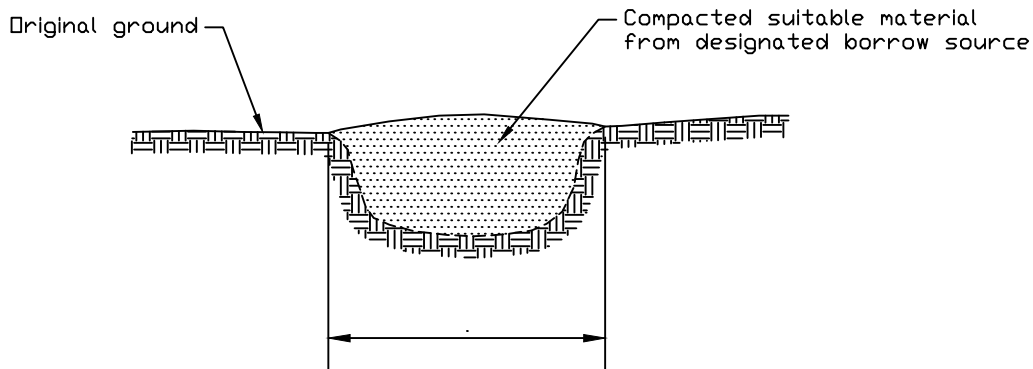
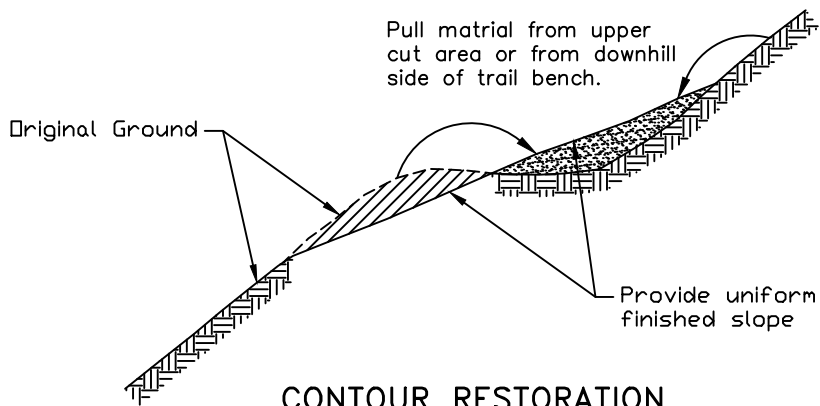


SECTION A-A

TRAIL OBLITERATION

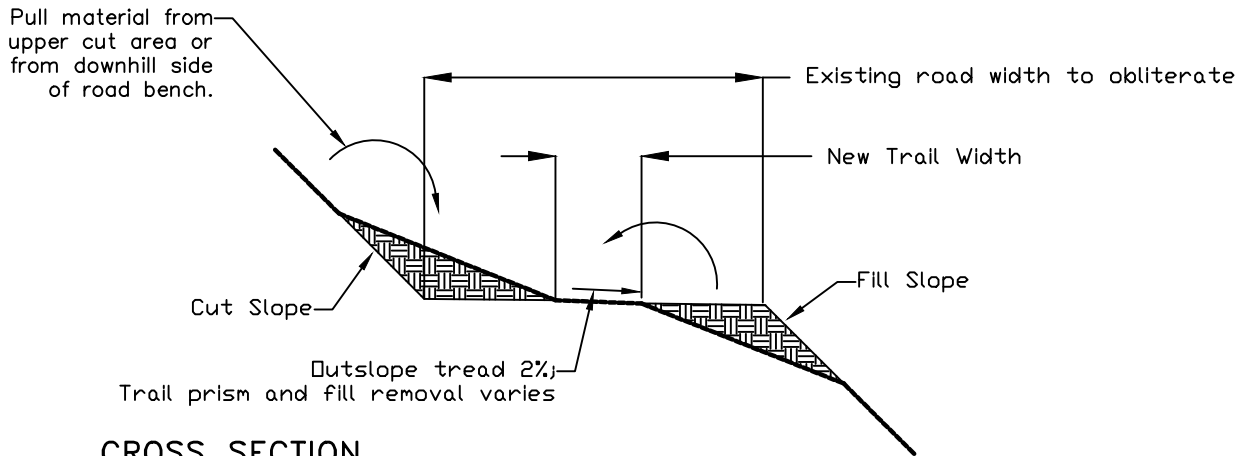
NOT TO SCALE

Note:
See BMP page for
restoration details

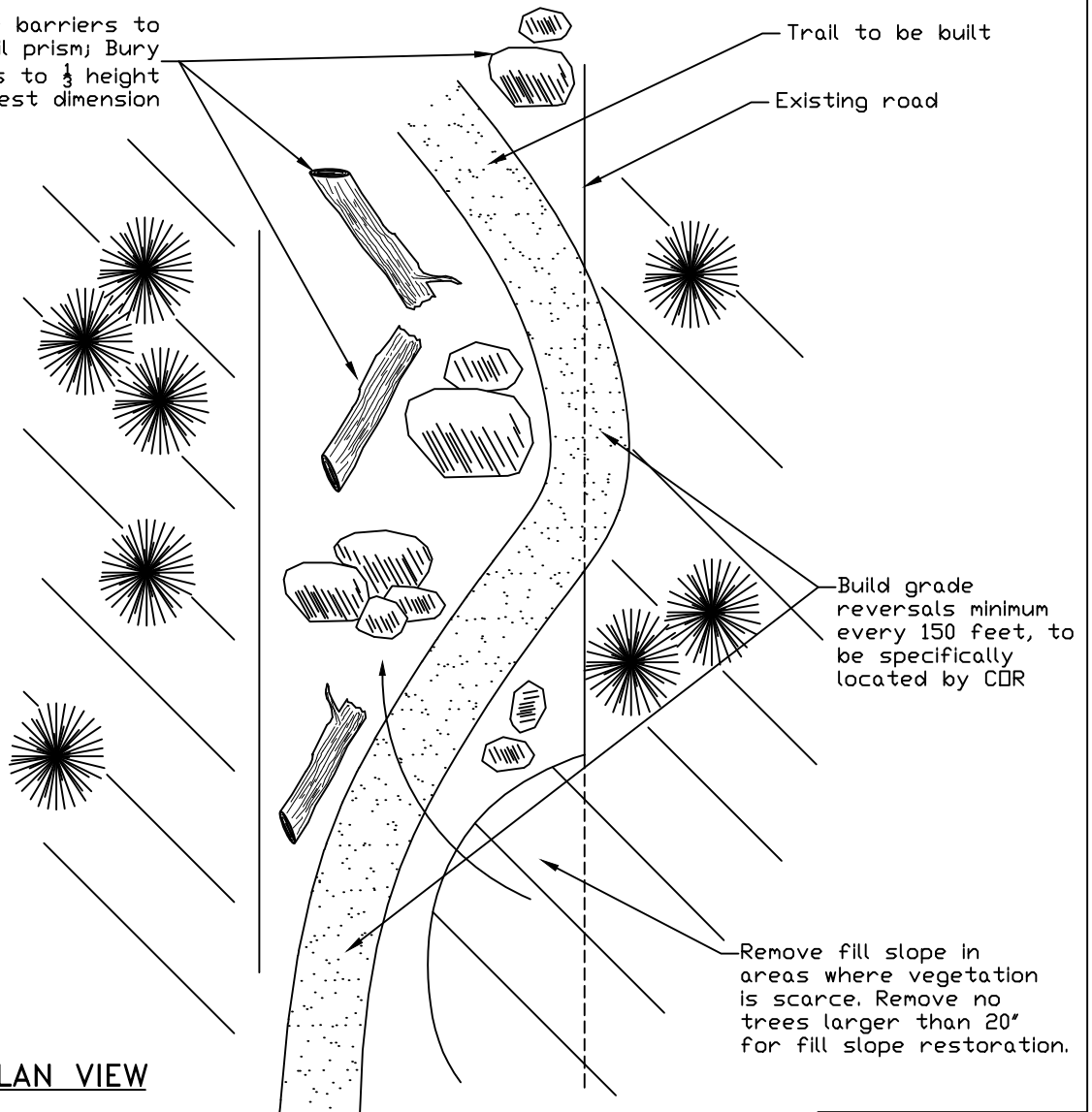


ROAD TO TRAIL CONVERSION

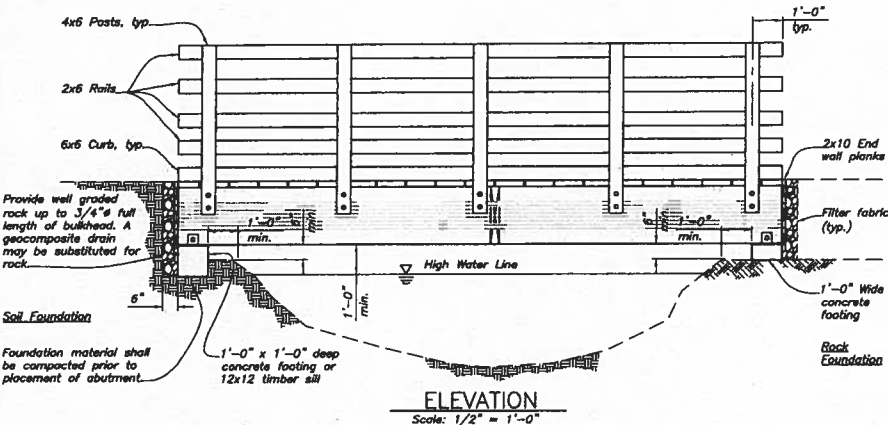
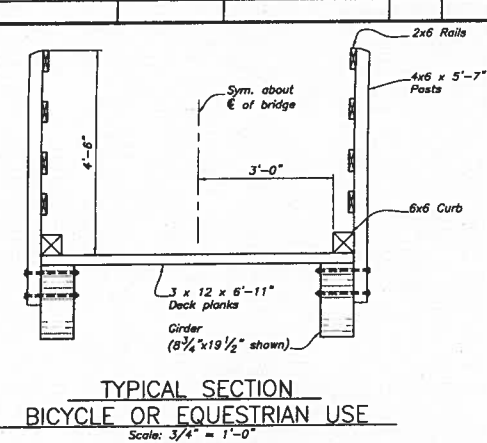
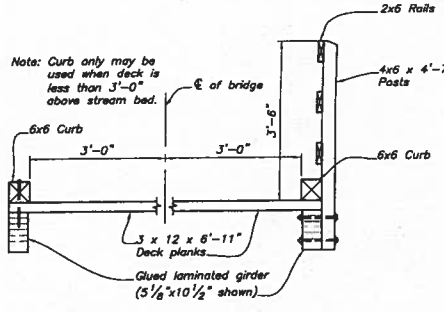
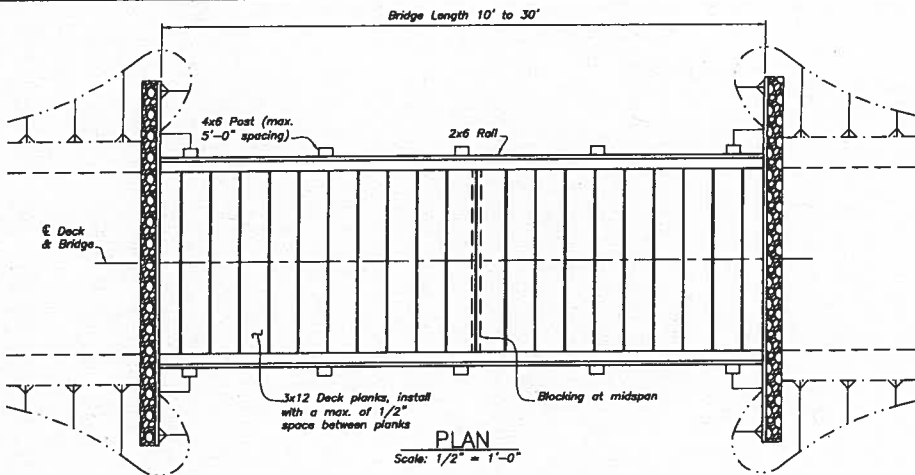
NOT TO SCALE



Place barriers to define trail prism; Bury obstacles to $\frac{1}{3}$ height or widest dimension



| STATE | FOREST | PROJECT NO. | PROJECT NAME | SHEET | TOTAL SHEETS |
|-------|--------|-------------|--------------|-------|--------------|
| CA | | | | | |



GENERAL NOTES:

The Forest Engineer shall determine the following: the high water line; scour depth; deck height; bridge length; girder size; snow load; that soil conditions are adequate to support the bridge; and shall approve final inspection. The Regional Bridge Engineer shall be notified of each trail bridge prior to installation.

SPECIFICATIONS: DESIGN: AASHTO Standard Specifications for Highway Bridges, 1996, with current interims. CONSTRUCTION: Forest Service Specifications for Construction of Roads and Bridges.

DESIGN LOADS: Dead Loads: Concrete = 150 PCF; Timber = 50 PCF. Live load up to 250 PSF.

TIMBER: Deck, curb, and posts shall be Douglas Fir-Larch No. 1 or better S4S. Sills and end wall planks shall be Douglas Fir-Larch No. 2 or better, rough. Girders shall be glued laminated Douglas-Fir, combination symbol 24F-V4 DF/DF. Rails shall be either glued laminated California Redwood combination symbol B-16F V1 CR/CR, glued laminated Alaska Yellow Cedar combination symbol 20F-V12 AC/AC, solid sawn Alaska Yellow Cedar (Western Cedars), No. 1 S4S, or solid sawn California Redwood, No. 1 or better, S4S.

All timber except rails shall be pressure treated with copper naphthenate in heavy oil. Minimum net retention shall be 0.05 pcf as copper and shall not exceed 0.07 pcf as copper in accordance with AASHTO M133; AWPA Standards, C1, C2, C2B, P8, P9, M1, and M2. Members shall not be over-treated and shall be delivered to the site in a dry condition. All wood members shall be cut and drilled before treatment. All field drilled holes and cuts shall be field treated with copper naphthenate in accordance with AWPA standard M4, Standard for the Care of Pressure-Treated Wood Products. Load holes are required for all bolts, screws and spikes. Driving of lag bolts and screws will not be permitted. Glued laminated girders shall be fabricated with a 1000 foot radius.

CONCRETE: Cast in place concrete shall meet the Specification for Minor Concrete (602) Method C, with a 28 day compressive strength of 3,000 psi. Chamfer all exposed edges 3/4". Exposed surfaces shall have a class 2 - rubbed finish. Additives containing calcium chloride shall not be used.

REINFORCING STEEL: Reinforcing steel shall conform to the requirements of AASHTO M31 (ASTM A615), Grade 60. Unless otherwise shown, minimum covering to face of steel shall be 2".

BEARING STRESS: The minimum allowable foundation bearing pressure shall be 4000 psf.

MISCELLANEOUS STEEL: All plates and shapes shall conform to AASHTO M270 (ASTM A709) Grade 36. Bolts shall conform to ASTM A307. All steel shall be hot dipped galvanized per AASHTO M111 (ASTM A123) or AASHTO 232 (ASTM A153) after fabrication. Stainless steel plates, shapes, and bolts may be used in lieu of hot dipped galvanized steel. Stainless steel bolts shall conform to ASTM A193. Stainless steel plates shall conform to ASTM A480.

ELASTOMERIC BEARING: Bearing pads shall have a Durometer Hardness of 60. Design method A, grade 3.

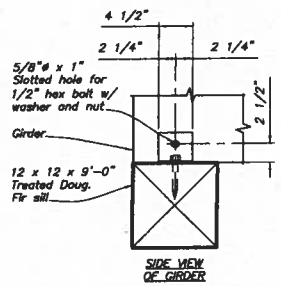
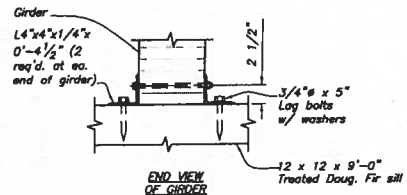
CONSTRUCTION NOTES: Abutment fill shall not be placed until superstructure is in place. Fill shall be brought up to grade equally at both abutments.

FABRICATION: Submit shop drawings for all bridge components. Show all dimensions and fabrication details for all cut or bored timber.

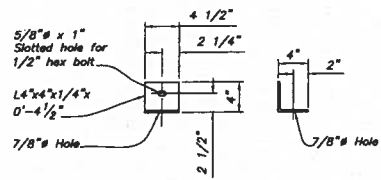
| GIRDER SIZES | | | | | | | | | |
|------------------------------|-------------------------|--------|--------------|-------------------------|--------|--------------|-------------------------|--------|--------------|
| Glued Laminated 24F-V4 DF/DF | | | | | | | | | |
| GIRDER LENGTH (ft) | Live Load up to 150 psf | | | Live Load up to 200 psf | | | Live Load up to 250 psf | | |
| | Girder Width | | Girder Width | Girder Width | | Girder Width | Girder Width | | Girder Width |
| | 5 1/8 | 6 3/4 | 8 3/4 | 5 1/8 | 6 3/4 | 8 3/4 | 5 1/8 | 6 3/4 | 8 3/4 |
| | Girder Depth | | Girder Depth | Girder Depth | | Girder Depth | Girder Depth | | Girder Depth |
| 10 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 |
| 15 | 10 1/2 | 10 1/2 | 10 1/2 | 12 | 10 1/2 | 10 1/2 | 13 1/2 | 12 | 10 1/2 |
| 20 | 15 | 13 1/2 | 12 | 16 1/2 | 13 1/2 | 13 1/2 | 18 | 15 | 13 1/2 |
| 25 | 18 | 16 1/2 | 15 | X | 19 1/2 | 16 1/2 | X | 19 1/2 | 18 |
| 30 | X | 19 1/2 | 18 | X | X | X | X | X | X |

| | |
|--|--|
| DESIGNED: <u>R5 Structures GR</u> DATE: <u>2/17/04</u> | U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE REGION FIVE |
| DRAWN: <u>Zachary Hilliard</u> DATE: <u>2/17/04</u> | STANDARD 6'-0" FOOT BRIDGE |
| CHECKED: <u>N. Tipton</u> DATE: <u>2/17/04</u> | |
| RECOMMENDED: <u>N. Tipton</u> DATE: <u>2/17/04</u> | 10' TO 30' SPANS |
| APPROVED: <u>R. Sutton</u> DATE: <u>2/20/04</u> | PLAN AND ELEVATION |
| SCALE: <u>As Noted</u> | BRIDGE SHEET: <u>1</u> OF <u>2</u> |
| DRAWING NUMBER: <u>R-1541-01</u> | |

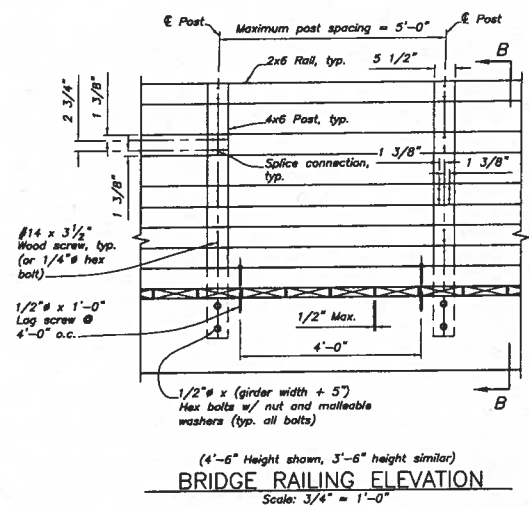
| STATE | FOREST | PROJECT NO. | PROJECT NAME | SHEET | TOTAL SHEETS |
|-------|--------|-------------|--------------|-------|--------------|
| CA | | | | | |



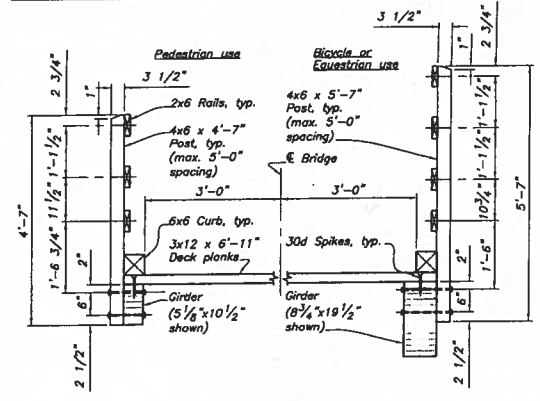
GIRDER TO SILL CONNECTION DETAIL
Scale: 1 1/2" = 1'-0"



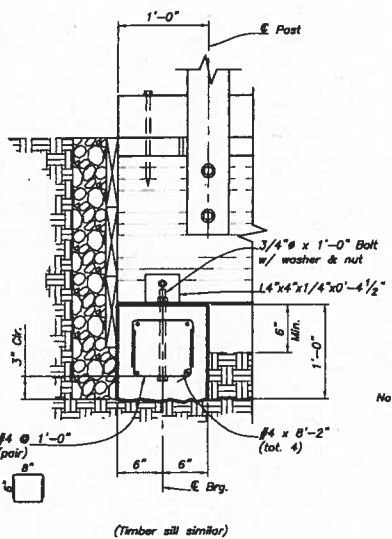
GIRDER BRACKET
Scale: 1 1/2" = 1'-0"



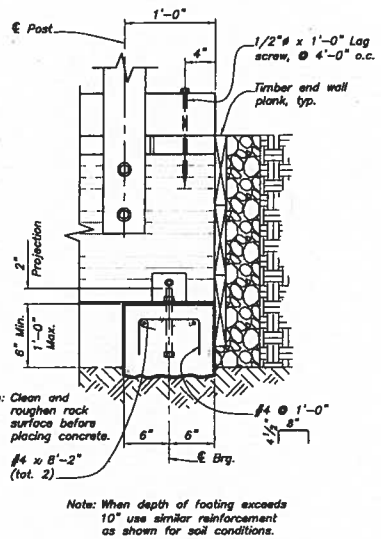
BRIDGE RAILING ELEVATION
Scale: 3/4" = 1'-0"



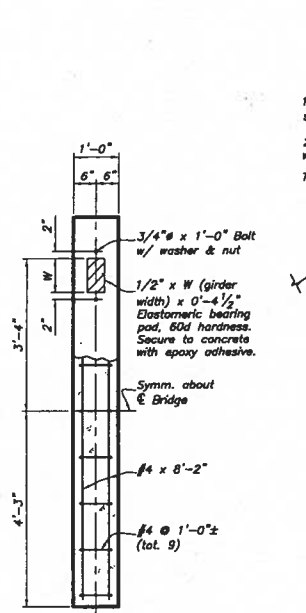
SECTION B-B
Scale: 3/4" = 1'-0"



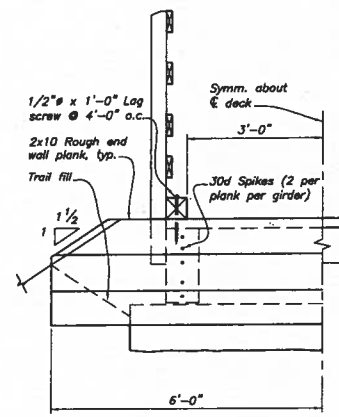
ABUT. ELEVATION ON SOIL
Scale: 1 1/2" = 1'-0"



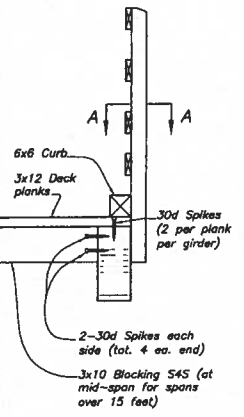
ABUT. ELEVATION ON ROCK
Scale: 1 1/2" = 1'-0"



CONCRETE ABUTMENT PLAN VIEW
Scale: 3/4" = 1'-0"

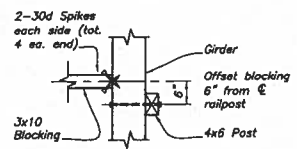


HALF SECTION AT ABUTMENT
Scale: 3/4" = 1'-0"



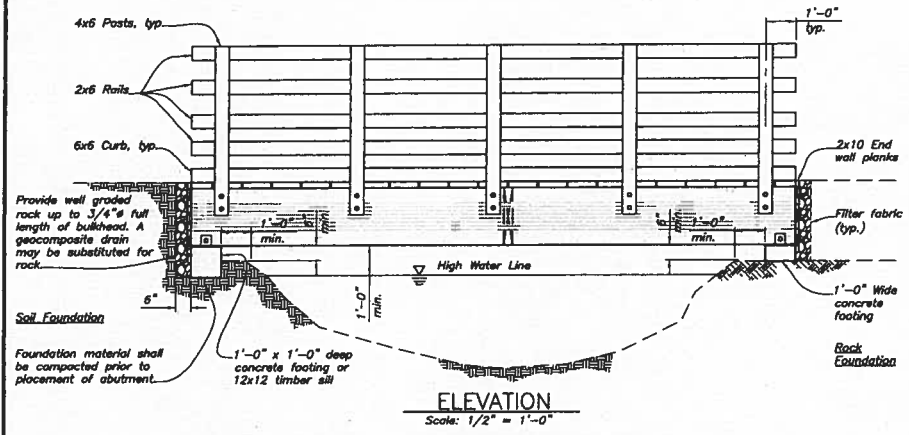
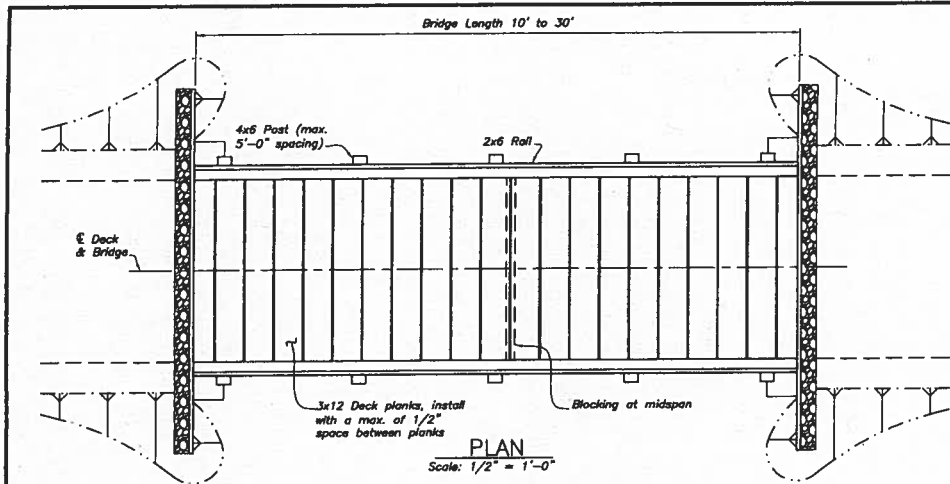
HALF SECTION AT MIDSPAN
Scale: 3/4" = 1'-0"

- RAILING NOTES:**
1. Posts shall be vertical
 2. Rails shall be parallel to grade and continuous over 2 or more posts.
 3. Only one rail splice per post.
 4. Posts shall fit tightly against girders.

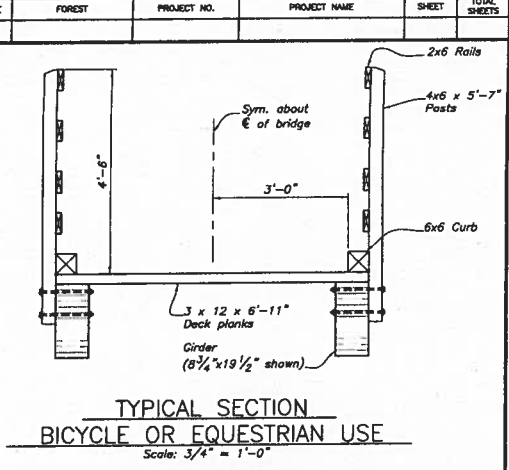
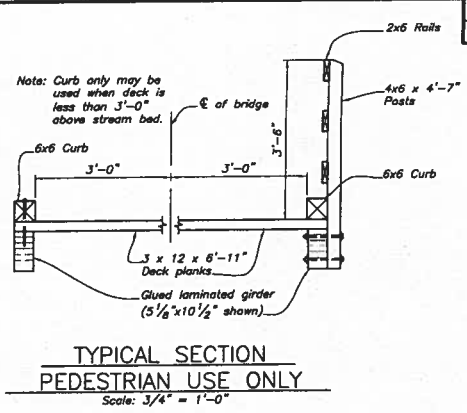


SECTION A-A
Scale: 3/4" = 1'-0"

| | |
|---|--|
| DESIGNED: <i>R5 Structures Gr.</i> DATE: <i>2/17/04</i> | U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE REGION FIVE |
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| RECOMMENDED: <i>N. Tipton</i> DATE: <i>2/17/04</i> | ABUTMENT AND RAILING DETAILS |
| APPROVED: <i>R. Sutton</i> DATE: <i>2/20/04</i> | SCALE: <i>As Noted</i> |
| BRIDGE SHEET: <i>2</i> OF <i>2</i> | DRAWING NUMBER: <i>R-1541-02</i> |



| GIRDER SIZES | | | | | | | | | |
|--------------------|------------------------------|--------|--------|-------------------------|--------|--------|-------------------------|--------|--------|
| GIRDER LENGTH (ft) | Glued Laminated 24F-V4 DF/DF | | | | | | | | |
| | Live Load up to 150 psf | | | Live Load up to 200 psf | | | Live Load up to 250 psf | | |
| | Girder Width | | | Girder Width | | | Girder Width | | |
| | 5 1/8 | 6 3/4 | 8 1/2 | 5 1/8 | 6 3/4 | 8 1/2 | 5 1/8 | 6 3/4 | 8 1/2 |
| | Girder Depth | | | Girder Depth | | | Girder Depth | | |
| 10 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 | 10 1/2 |
| 15 | 10 1/2 | 10 1/2 | 10 1/2 | 12 | 10 1/2 | 10 1/2 | 13 1/2 | 12 | 10 1/2 |
| 20 | 15 | 13 1/2 | 12 | 16 1/2 | 13 1/2 | 13 1/2 | 18 | 15 | 13 1/2 |
| 25 | 18 | 16 1/2 | 15 | X | 19 1/2 | 16 1/2 | X | 19 1/2 | 18 |
| 30 | X | 19 1/2 | 18 | X | X | X | X | X | X |



GENERAL NOTES:

The Forest Engineer shall determine the following: the high water line; scour depth; deck height; bridge length; girder size; snow load; that soil conditions are adequate to support the bridge; and shall approve final inspection. The Regional Bridge Engineer shall be notified of each trail bridge prior to installation.

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TIMBER: Deck, curb, and posts shall be Douglas Fir-Larch No. 1 or better S4S. Sills and end wall planks shall be Douglas Fir-Larch No. 2 or better, rough. Girders shall be glued laminated Douglas-Fir, combination symbol 24F-V4 DF/DF. Rails shall be either glued laminated California Redwood combination symbol B-16F V1 CR/CR, glued laminated Alaska Yellow Cedar combination symbol 20F-V12 AC/AC, solid sawn Alaska Yellow Cedar (Western Cedars), No. 1 S4S, or solid sawn California Redwood, No. 1 or better, S4S.

All timber except rails shall be pressure treated with copper naphthenate in heavy oil. Minimum net retention shall be 0.05 pcf as copper and shall not exceed 0.07 pcf as copper in accordance with AASHTO M133; AWWA Standards, C1, C2, C28, P8, P9, M1, and M2. Members shall not be over-treated and shall be delivered to the site in a dry condition. All wood members shall be cut and drilled before treatment. All field drilled holes and cuts shall be field treated with copper naphthenate in accordance with AWWA standard M4, Standard for the Care of Pressure-Treated Wood Products. Lead holes are required for all bolts, screws and spikes. Driving of lag bolts and screws will not be permitted. Glued laminated girders shall be fabricated with a 1000 foot radius.

CONCRETE: Cast in place concrete shall meet the Specification for Minor Concrete (602) Method C, with a 28 day compressive strength of 3,000 psi. Chamfer all exposed edges 3/4". Exposed surfaces shall have a class 2 - rubbed finish. Additives containing calcium chloride shall not be used.

REINFORCING STEEL: Reinforcing steel shall conform to the requirements of AASHTO M31 (ASTM A615), Grade 60. Unless otherwise shown, minimum covering to face of steel shall be 2".

BEARING STRESS: The minimum allowable foundation bearing pressure shall be 4000 psf.

MISCELLANEOUS STEEL: All plates and shapes shall conform to AASHTO M270 (ASTM A709) Grade 36. Bolts shall conform to ASTM A 307. All steel shall be hot dipped galvanized per AASHTO M111 (ASTM A123) or AASHTO 232 (ASTM A153) after fabrication. Stainless steel plates, shapes, and bolts may be used in lieu of hot dipped galvanized steel. Stainless steel bolts shall conform to ASTM A193. Stainless steel plates shall conform to ASTM A480.

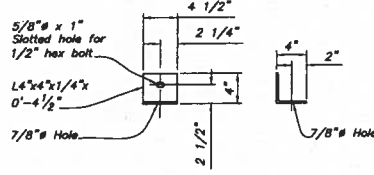
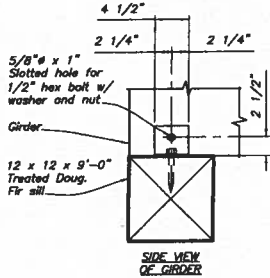
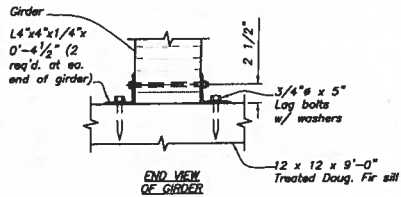
ELASTOMERIC BEARING: Bearing pads shall have a Durometer Hardness of 60. Design method A, grade 3.

CONSTRUCTION NOTES: Abutment fill shall not be placed until superstructure is in place. Fill shall be brought up to grade equally at both abutments.

FABRICATION: Submit shop drawings for all bridge components. Show all dimensions and fabrication details for all cut or bored timber.

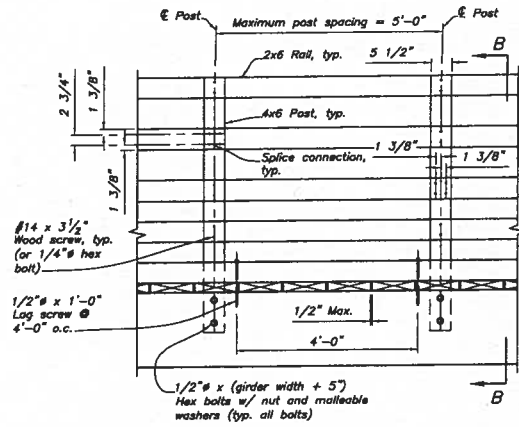
| | |
|--|--|
| DESIGNED: R5 Structures Gr. DATE 2/12/04 | U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE REGION FIVE |
| DRAWN: Zachary Hilliard DATE 2/12/04 | STANDARD 6'-0" FOOT BRIDGE |
| CHECKED: N. Tipton DATE 2/12/04 | |
| RECOMMENDED BY: N. Tipton DATE 2/12/04 | 10' TO 30' SPANS |
| APPROVED BY: R. Sutton DATE 2/20/04 | PLAN AND ELEVATION |
| SCALE: As Noted | BRIDGE SHEET 1 OF 2 |
| DRAWING NUMBER | R-1541-01 |

| STATE | FOREST | PROJECT NO. | PROJECT NAME | SHEET | TOTAL SHEETS |
|-------|--------|-------------|--------------|-------|--------------|
| CA | | | | | |

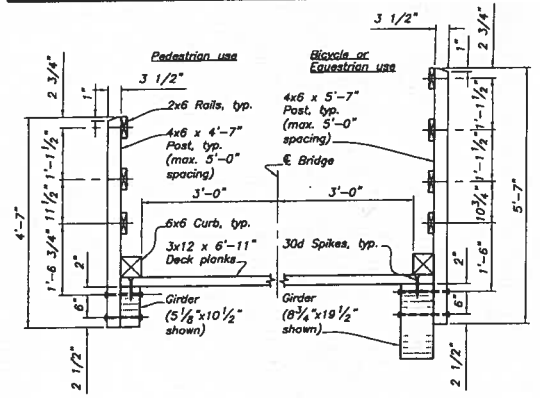


GIRDER TO SILL CONNECTION DETAIL
Scale: 1 1/2" = 1'-0"

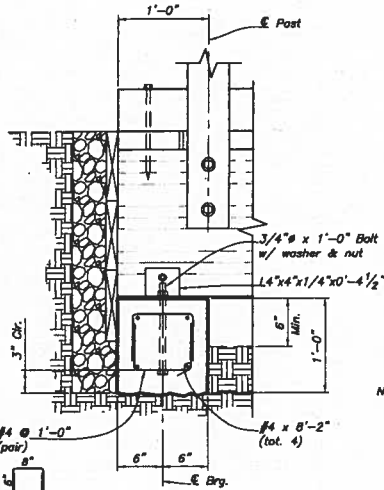
GIRDER BRACKET
Scale: 1 1/2" = 1'-0"



(4'-6" Height shown, 3'-6" height similar)
BRIDGE RAILING ELEVATION
Scale: 3/4" = 1'-0"

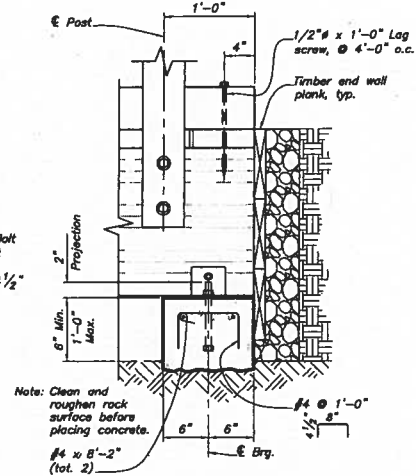


SECTION B-B
Scale: 3/4" = 1'-0"



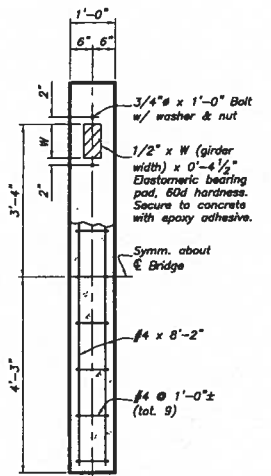
(Timber sill similar)

ABUT. ELEVATION ON SOIL
Scale: 1 1/2" = 1'-0"

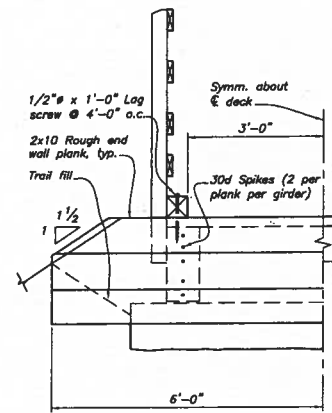


Note: When depth of footing exceeds 10" use similar reinforcement as shown for soil conditions.

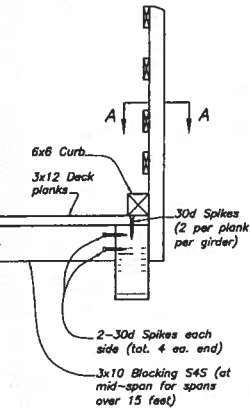
ABUT. ELEVATION ON ROCK
Scale: 1 1/2" = 1'-0"



CONCRETE ABUTMENT PLAN VIEW
Scale: 3/4" = 1'-0"

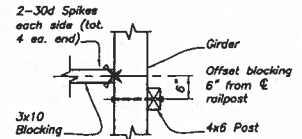


HALF SECTION AT ABUTMENT
Scale: 3/4" = 1'-0"



HALF SECTION AT MIDSPAN
Scale: 3/4" = 1'-0"

- RAILING NOTES:**
1. Posts shall be vertical
 2. Rails shall be parallel to grade and continuous over 2 or more posts.
 3. Only one rail splice per post.
 4. Posts shall fit tightly against girders.



Note: Curb and Railing not shown.
SECTION A-A
Scale: 3/4" = 1'-0"

| | |
|--|--|
| DESIGNED: <i>R5 Structures GL</i> DATE: <i>2/12/04</i> | U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE REGION FIVE |
| DRAWN: <i>Zachary Hilliard</i> DATE: <i>2/12/04</i> | STANDARD 6'-0" FOOT BRIDGE |
| CHECKED: <i>N. Tipton</i> DATE: <i>2/12/04</i> | |
| RECOMMENDED: <i>N. Tipton</i> DATE: <i>2/12/04</i> | 10' TO 30' SPANS |
| APPROVED: <i>R. Sutton</i> DATE: <i>2/20/04</i> | ABUTMENT AND RAILING DETAILS |
| SCALE: <i>As Noted</i> | BRIDGE SHEET: <i>2</i> OF <i>2</i> |
| DRAWING NUMBER | R-1541-02 |

Appendix D - Visual Monitoring/BMP Inspection Form

Visual Monitoring/BMP Inspection Form

| FEATURE INSPECTED | DISCREPANCY DETECTED (YES/NO) |
|---|-------------------------------|
| DAMAGE TO CONTAINMENT MEASURES OR EROSION CONTROL FENCING | |
| IMPROPERLY INSTALLED OR INEFFECTIVE EROSION CONTROL FENCING / BOUNDARY FENCE TAMPERING | |
| UNAUTHORIZED VEHICLE ACCESS OR VEHICLE ACCESS INTO A "NO DISTURBANCE AREA | |
| DISTURBED AREAS WITH INADEQUATE EROSION PREVENTION AND SEDIMENT CONTROL PROTECTION | |
| EVIDENCE OF ANY SEDIMENT LEAKAGE THROUGH EROSION CONTROL FENCING OR CONTAINMENT DIKES / APPROXIMATE % OF SEDIMENT BASIN CAPACITY FILLED IF WATER IS PRESENT | |
| SEDIMENT PILES LEFT UNPROTECTED OR LOCATED IN A DRAINAGE WAY. | |
| SPILLED OR IMPROPERLY STORED HAZARDOUS MATERIALS | |
| ANY EVIDENCE OF SEDIMENT TRACKING FROM CONSTRUCTION EQUIPMENT | |
| ANY SIGNS OF SOIL EROSION OR DEPOSITION DOWNGRADIENT FROM RUNOFF DISCHARGES | |
| SEDIMENT ACCUMULATION WITHIN ONSITE WATER DRAINAGE CONTROL STRUCTURES. | |
| ANY EVIDENCE OF ILLICIT, NOT AUTHORIZED, OR AUTHORIZED NON-STORM WATER DISCHARGES. | |
| ANY OBSERVED IMPACTS TO A RECEIVING WATER | |

A YES ANSWER TO ANY OF THESE QUESTIONS WILL BE FOLLOWED BY A DOCUMENTED EXPLANATION AND DESCRIPTION OF REMEDIAL ACTION TAKEN.

Date:

Time:

Observer:

BMP Feature Inspected:

Discrepancy Detected (yes / no)

Description:

Weather Conditions:

BMP location and photo of incident:

Remedial Action(s):

Appendix E - Rain Event Action Plan Template

Rain Event Action Plan (REAP)

Angora Trails Restoration

Site Information: El Dorado County, CA T12N, R17E sections 6, 7, 13, and 24

QSP (name and emergency contact): John Hidy, 760-920-2774

Storm water sampler:

Date of REAP:

WDID No:

Date Rain Predicted to Occur:

Predicted % chance of rain:

Predicted Rain Event Triggered Actions

Below is a list of suggested actions and items to review for this project. All material storage areas, stockpiles, waste management areas, vehicle and equipment storage and maintenance, areas of active soil disturbance, and areas of active work shall be checked to ensure the proper implementation of BMPs. Project-wide BMPs should be checked and cross referenced to the appropriate map, EPS sheet and/or BMP Fact sheet.

| Activity | Suggested action(s) to perform / items to review |
|--------------------------|--|
| Information & Scheduling | <input type="checkbox"/> Inform project personnel of predicted rain <input type="checkbox"/> Check scheduled activities and reschedule as needed <input type="checkbox"/> Alert sample collection staff <input type="checkbox"/> Schedule staff for extended rain inspections (including weekends & holidays) <input type="checkbox"/> Check Erosion and Sediment Control (ESC) material stock <input type="checkbox"/> Port-a-potty closed and maintained <input type="checkbox"/> Other: <input type="checkbox"/> <input type="checkbox"/> |
| Material Storage Areas | <input type="checkbox"/> Material under cover or in storage container <input type="checkbox"/> Perimeter control around stockpiles <input type="checkbox"/> Other: <input type="checkbox"/> <input type="checkbox"/> |

| | |
|------------|---|
| Operations | <input type="checkbox"/> Materials and equipment (ex. Tools) properly stored and covered) <input type="checkbox"/> Wasted and debris removed from site <input type="checkbox"/> Excavations protected <input type="checkbox"/> Perimeter controls around disturbed areas |
|------------|---|

| | |
|--|--|
| | <input type="checkbox"/> Other: <input type="checkbox"/> <input type="checkbox"/> |
| Site ESC BMPs | <input type="checkbox"/> Site perimeter controls in place <input type="checkbox"/> Temporary erosion controls deployed <input type="checkbox"/> Temporary perimeter controls deployed around disturbed areas and stockpiles <input type="checkbox"/> Other: <input type="checkbox"/> <input type="checkbox"/> |
| Spills & Drips | <input type="checkbox"/> All incident spills and drips contained and cleaned <input type="checkbox"/> Drip pans emptied <input type="checkbox"/> Other: <input type="checkbox"/> <input type="checkbox"/> |
| Other/ Discussion/ Diagrams | |
| Attach a printout of the weather forecast from the NOAA website to the REAP | |
| I certify under penalty of law that this Rain Event Action Plan (REAP) will be performed in accordance with the General Permit by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. | |
| | |
| Qualified SWPPP Practitioner (QSP) Date: | |

Appendix F – Permit Documents



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

November 1, 2011

Regulatory Division SPK-2011-01051

Jordan Burge
USDA Forest Service
35 College Drive
South Lake Tahoe, California 96150

Dear Mr. Burge:

This concerns your proposed High Meadows and Angora Low Water Crossings projects in tributaries of Cold and Angora Creeks, Section 18, Township 12 North, Range 19 East, Mount Diablo Meridian, Latitude 38.9°, Longitude -119.9°, near South Lake Tahoe, El Dorado County, California.

Based on the information you have provided, we have determined that the proposed work is exempt from Section 404 of the Clean Water Act and does not involve work in navigable waters of the United States (see enclosed *Road Exemption Summary*). Therefore, a Department of the Army Permit is not required for this work. Measures should be taken to prevent construction materials and/or activities from entering any waters of the United States. Appropriate soil erosion and sediment controls should be implemented onsite to achieve this end.

Our disclaimer of jurisdiction is only for this activity as it pertains to Section 404 of the Federal Clean Water Act and does not refer to, nor affect jurisdiction over any waters present on site. Other Federal, State, and local laws may apply to your activities. Therefore, in addition to contacting other Federal and local agencies, you should also contact state regulatory authorities to determine whether your activities may require other authorizations or permits.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2011-01051 in any correspondence concerning this project. If you have any questions, please contact me at our Reno Regulatory Field Office, 300 Booth Street, Room 3060, Reno, Nevada 89509, email Kristine.S.Hansen@usace.army.mil, or telephone 775-784-5307. For more information regarding our program, please visit our website at www.spk.usace.army.mil/regulatory.html.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kristine S. Hansen".

Kristine S. Hansen
Senior Project Manager, Reno Field Office
Sacramento District

Enclosure

From: [Blackford, Jordan SPK](#)
To: [Burge, Jordan -FS](#)
Subject: RE: 404 Exemption, ID number SPK-2011-01051
Date: Wednesday, January 23, 2013 11:03:58 AM

Jordan,

I have reviewed the information you submitted to Kristine Hansen regarding the change in the scope of work for this project. It appears this work is still exempt from Section 404 of the Clean Water Act under the Road Exemption for forest roads. As long as the flow and circulation of the stream channel is not altered, this work does not require a permit.

Thank you,

Jordon Blackford
SCEP, Student Trainee (Biology)
US Army Corps of Engineers, Sacramento District
Reno Regulatory Field Office
300 Booth Street, Room 3050
Reno, NV 89509-1361
(775) 784-5305 fax: (775) 784-5306
Jordon.R.Blackford@usace.army.mil

We want to hear from you! Submit a customer service survey form.
<http://per2.nwp.usace.army.mil/survey.html>

Need information on the Regulatory Program?
www.spk.usace.army.mil/missions/regulatory.aspx

Appendix G – Training Logs

Personnel Training Log

Storm water Management Training Log and Documentation

Project Name: _____

WDID #: _____

Storm water Management Topic: (circle as appropriate)

Erosion Control Sediment Control Wind Erosion Control Storm water Sampling

Non-Storm water Management Waste Management and Materials Pollution Control

Storm water Sampling

Specific Training Objective: _____

Location: _____ Date: _____

Instructor: _____ Telephone: _____

Course Length (hrs): _____

Attendee Roster

| Name of Personnel | Name of Personnel | Name of Personnel |
|-------------------|-------------------|-------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

As needed, add proof of external training.

Appendix H – Prohibition Exemption Information

From Attachment F, Waste Discharge Prohibition Information for Activities in Stream Environment Zones and Floodplains of the Lake Tahoe Hydrologic Unit, of the Tahoe Construction Permit R6T-2011-0019

Chapter 5, section 5.7 of the Basin Plan provides that exemptions may be granted in floodplains under certain categories. The Angora Trail Restoration Project fits most appropriately under the following category:

1. Public outdoor recreational facilities if: (a) the project is a necessary part of a public agency's long range plans for public outdoor recreation; (b) the project, by its very nature, must be sited in a floodplain; (c) there is no feasible alternative that would reduce the extent of encroachment in a floodplain; and (d) the impacts on the floodplain are minimized.

Chapter 5, section 5.8 of the Basin Plan provides that exemptions may be granted in SEZs under certain categories. The Angora Trail Restoration Projects fits most appropriately under the following category:

1. Public Outdoor Recreation facilities, when all of the following findings can be made: (a) the project, by its very nature, must be sited in an SEZ; (b) there is no feasible alternative that would reduce the extent of SEZ encroachment; (c) impacts are fully mitigated; and (d) SEZs are restored in an amount 1.5 times the area of SEZ disturbed or developed for the project.

The following answers Section 5.8 of the Basin Plan, which includes all necessary information to answer Section 5.7 of the Basin Plan.

1. (a) the project, by its very nature, must be sited in an SEZ

The entire transportation system within the Angora burn area was extensively analyzed within the Environmental Assessment for the Angora Fire Restoration Project (Angora EA). Each trail alignment was located in the best capable lands possible. Currently, there are approximately 18,630 square feet of unclassified trails located within SEZs. This project will relocate and eliminate over 15,130 square feet of those located within SEZs (see Table H1 for calculations). Only the necessary alignments were kept within SEZs to connect the entire transportation system, including the trail bridge crossing over Angora Creek. This specific crossing location will have the least impact along Angora Creek.

1. (b) there is no feasible alternative that would reduce the extent of SEZ encroachment

Alternatives were extensively analyzed within the Angora EA. All trail work was examined, and was determined to minimize SEZ coverage by decommissioning unneeded routes and locating needed routes in areas of high capability soils. New alignments were generally chosen on existing disturbance whenever resources could be sufficiently protected. Trail alignments were generally located away from sensitive areas to minimize impacts to stream courses. When construction or improvement of trails in wet areas cannot be avoided, proper Best Management Practices (BMPs) have been identified and will be utilized to mitigate impacts.

The trail bridge crossing over Angora Creek is an identified area where the alignment will travel through SEZ. This particular location was chosen for several reasons: it will have the least impact to SEZ, the creek is narrow and unbraided (unlike most nearby upstream and downstream locations), and minimal approach work will be required. A short span bridge, less than 20 feet in length, has been selected for the crossing. This relatively short span is an economical solution for a small crossing. Although the abutments will not span outside all riparian vegetation, its small size and simple construction will minimize disturbance and fully meet recreational needs. While a larger bridge may pass 100-year storm flows, it would cause far more disturbance (larger area of excavation, imported fill and riprap armoring, larger equipment for installation, and larger approaches, resulting in more fill and impervious area), and would be much more expensive. A small bridge was also chosen over a ford. Angora Creek can carry high flows, and a ford may be dangerous in these conditions. And as is common in similar locations, users may cause more damage near the crossing to get across the creek (i.e. crossing logs and debris that plug the channel, create ponding, and erode the banks).

1. (c) impacts are fully mitigated

Mitigation measures for this project include Angora EA BMPs, as well as with other permanent BMPs. Temporary and permanent BMPs are described in Appendix A of the Angora EA and in the engineering drawings (Appendix C). Each applicable BMP is described below.

BMPs from Appendix A of the Angora EA (these BMPs were developed specifically for road construction, but will apply to trail construction as well):

BMP 2-1 General Guidelines for the Location and Design of Roads

BMP 2-2 Erosion Control Plan

BMP 2-3 Timing of Construction Activities
BMP 2-4 Stabilization of Road Slope Surfaces
BMP 2-5 Road Slope Stabilization Construction Practices
BMP 2-6 Dispersion of Subsurface Drainage from Cut and Fill Slopes
BMP 2-7 Control of Road Drainage
BMP 2-9 Timely Erosion Control Measures on Incomplete Roads & Stream Crossings
BMP 2-10 Construction of Stable Embankments
BMP 2-11 Control of sidecast material during construction and maintenance
BMP 2-12 Servicing and refueling equipment
BMP 2-13 Control of Construction and Maintenance activities adjacent to SMZs
BMP 2-14 Controlling in-channel excavation
BMP 2-15 Diversion of flows around construction sites
BMP 2-16 Stream crossings on temporary roads
BMP 2-19 Disposal of right-of-way and roadside debris
BMP 2-21 Water source development consistent with water quality protection
BMP 2-22 Maintenance of Roads
BMP 2-26 Decommissioning of Roads

Permanent BMPs within engineering plans (Appendix C):

T4: Rolling Dip
T5: Rock Ford
T6: Causeway
T7: Check Dams
T8: Switchback
T9: Rock Retaining Wall
T10: Trail Obliteration
T11: Road to Trail Conversion

Temporary BMPs are discussed extensively in Section III of this SWPPP, and all identified CASQA specifications are listed in Appendix B.

1. (d) SEZs are restored in an amount 1.5 times the area of SEZ disturbed or developed for the project

See Table H1 for calculations and extensive information regarding each trail to be constructed and restored. There will be minimal SEZ disturbance for this project. Most new trails located within SEZs were existing non-system, user-created routes. The LTBMU will adopt these sections of trail and build them specifically for wet areas. When construction is complete, there will be approximately 3500 square feet of trails located within SEZs. This project will eliminate over 15,130 square feet of trails located within SEZs.

The information above answers questions specific to Attachment F of the Tahoe Construction Permit. The information below specifically describes trail construction within wet areas.

When practical, the trail alignment will always be located away from wet areas. When a trail alignment must be located in a wet area, a causeway (see Appendix C, Angora Trail drawings) will be constructed. Four inches of clean rock base will be placed within the travelway, and native material will be placed and compacted on top. Log or rock retainers will be placed on the alignment borders to contain the material. Causeways will be built in flat areas, where there is typically little or no surface flow. A rock face drainage break will be constructed where flow is impounded. The only exception to causeway construction in wet areas is when the trail crosses a defined channel, and in these situations, a ford or bridge will be used (see Figure 2 for specific locations).

When a trail alignment crosses an intermittent or ephemeral channel, the channel will be stabilized and maintained to convey water across the trail. In most instances, large rocks embedded into the banks will stabilize the crossing sufficiently. In instances where channel is more defined, or the flows are obviously higher, a rock ford will be constructed (see Appendix C, Angora Trail drawings). Rock ford construction has been identified near Tahoe Mountain Road and off of Pyramid Circle (see Figures 2, 4, and 5 for specific locations). These specific locations have well defined channels and have the potential for higher flows and more erosion, and ford construction will give them more stabilization. Native material will be used for all ford construction. Fords will be constructed when the channel is dry, and will be built with hand tools or a mini excavator. If the fords are constructed with a mini excavator, they will access the construction site from Forest Service Roads and up the constructed approach trail. Trails will also be obliterated in wet areas. If the trail has started to restore itself (i.e. vegetation has started to grow and the trail is stabilized) minimal

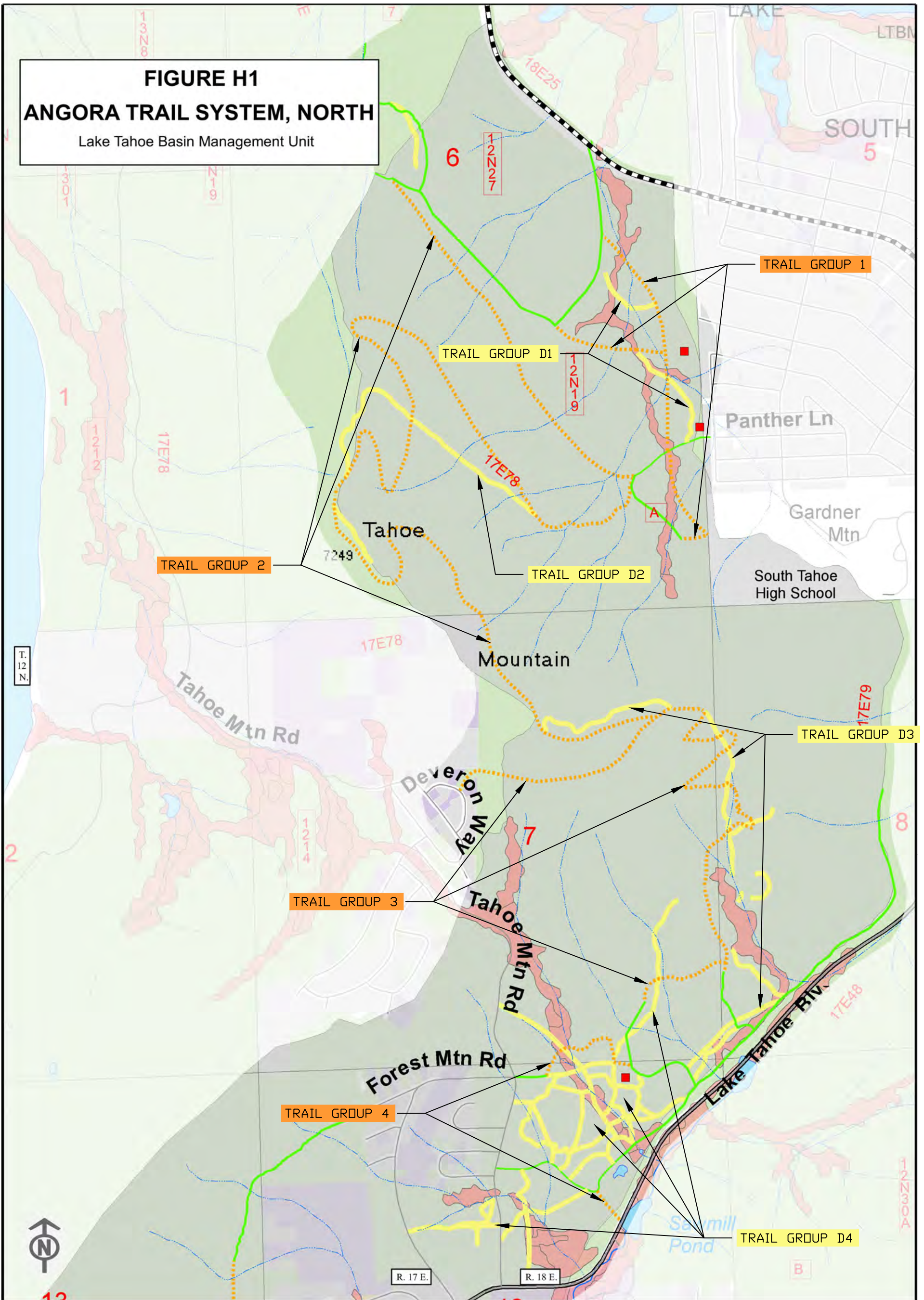
disturbance will be made. Other trails will be recontoured, stabilized, and camouflaged with natural materials.

A trail bridge will be constructed across Angora Creek (see Figure 2 and Figure 3 for the specific location). Currently, there are large logs and debris within the streambed that have created ponding and modified the original alignment. This organic debris will be removed, and two large rock abutments will be placed with minimal disturbance to the creek. Approach and abutment construction will be the only disturbance within the creek, and is only expected to take 2 days. The bridge superstructure (deck, rail, and finish work) construction will not have any effect on the creek. There will be no concrete used in the construction of the bridge. All treated wood materials will follow the treatment requirements found in "Best Management Practices for the Use of Treated Wood in Aquatic Environments," published by the Western Wood Preservers Association. Native material or imported, clean material will be used for the approaches and stream banks. Stone will be used to build up the banks and allow for 24 inches of clearance from the creek bed. Native material and stone will be used to backfill and armor the abutments. The design has considered the floodplain, and the structure will not impact aquatic species. Construction will take place during low or no flow. The clear water diversion BMP has been identified (Appendix B, CASQA specifications) and will be utilized if there is flow during construction. See Section III.D. Dewatering and Diversion Plan Narrative for more diversion information.

Additional trail bridge information:

- Volume of excavation: 10 CY
- Area of SEZ disturbance: 150 SF
- The rock abutments will be approximately 3 feet wide, and will be installed 12 inches below grade. They will be held in place by a check wall (pinned by boulders on each side).
- The bridge will be pinned to the abutments
- The bridge is not designed to clear a 100-year storm. During a large storm, the bridge will lift and wash downstream, leaving the abutments in place. This simplistic and economical bridge construction method will allow the superstructure to be rebuilt on top of the abutments after a large storm event.
- The bridge will be constructed using hand tools and a mini excavator.
- Equipment will not cross the creek. The excavator will access the site on Forest Service system roads and trails.

FIGURE H1
ANGORA TRAIL SYSTEM, NORTH
 Lake Tahoe Basin Management Unit



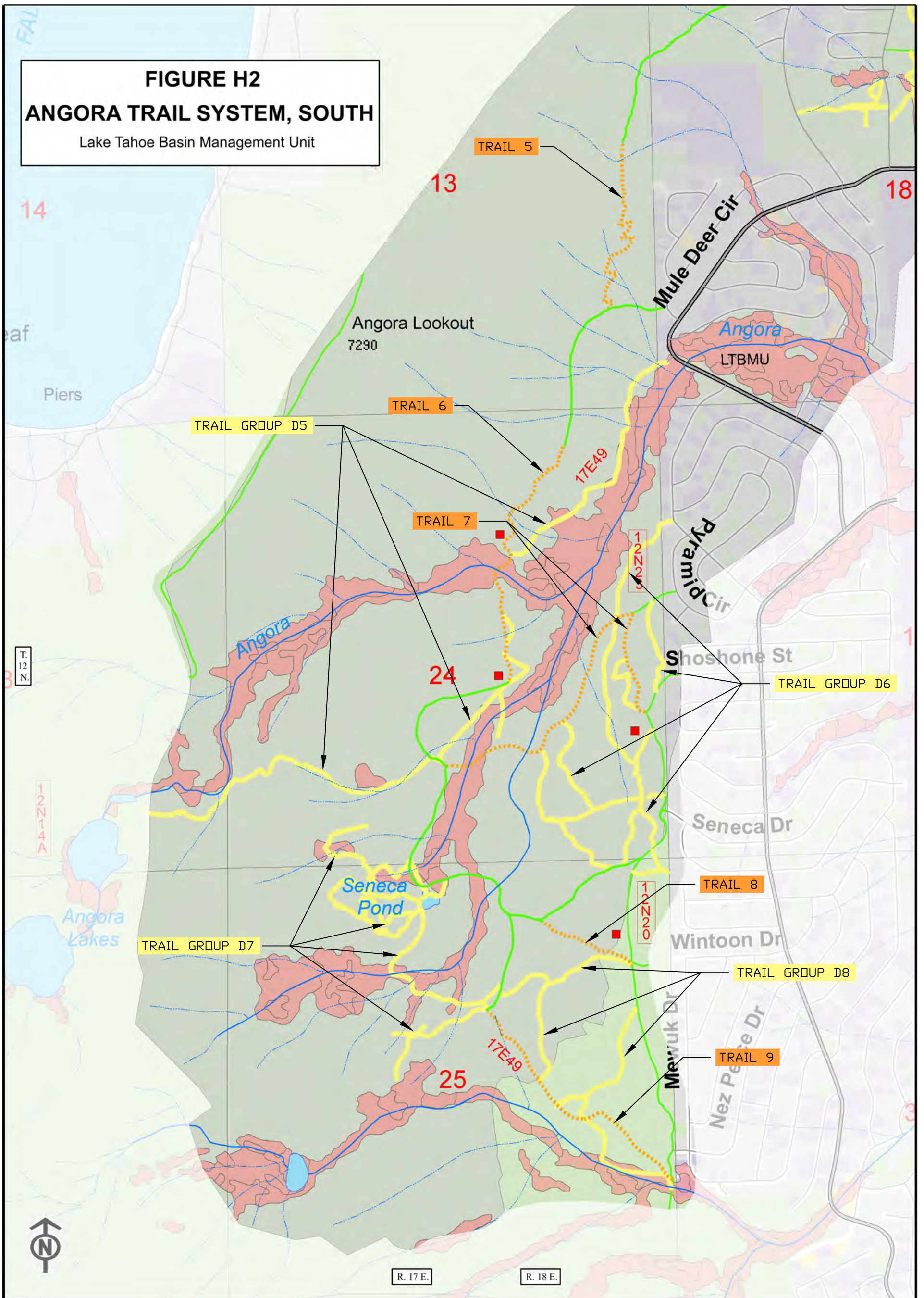
| Legend | | Transportation System | | Transportation System - Other | |
|-------------------------|--------------------------|------------------------------|----------------|-------------------------------|-------------|
| Basic Ownership | Angora Fire Perimeter | System Road | Highway | Arterial Local | Local Road |
| National Forest - LTBMU | Perennial Stream | Trail To Be Constructed | Arterial Local | Local Road | Local Trail |
| OTHER FED AGENCY | Ephemeral/Interm Channel | Trail Decommission / Restore | Local Road | Local Road | Local Trail |
| State | Riparian Vegetation | | Local Road | Local Road | Local Trail |
| County | Staging Area | | Local Road | Local Road | Local Trail |
| Private | | | Local Road | Local Road | Local Trail |

0 0.25 0.5 Miles
 Landlines are Approximate

For more information, contact: Lake Tahoe Basin Management Unit
 35 College Drive, South Lake Tahoe, CA 96150
 (530) 543-2600 (530) 541-4036 TTY

USDA U.S. Forest Service

FIGURE H2
ANGORA TRAIL SYSTEM, SOUTH
 Lake Tahoe Basin Management Unit



| | | | | | |
|--|--|---|--|--|--|
| Legend Basic Ownership National Forest - LTBMU OTHER FED AGENCY State County Private | | Transportation System System Road Trail To Be Constructed Trail Decommission / Restore | | Transportation System - Other Highway Arterial Local Local Road Local Trail | |
| Angora Fire Perimeter Perennial Stream Ephemeral/Interim Channel Riparian Vegetation Staging Area | | 0 0.25 0.5 Miles Landlines are Approximate For more information, contact: Lake Tahoe Basin Management Unit 35 College Drive, South Lake Tahoe, CA 96150 (530) 543-2600 (530) 541-4036 TTY | | | |



TABLE H1

All numbers were obtained using the most up-to-date Forest Service GIS information

New System Trail Construction

| Trail Group | Pre-Existing Condition | Existing SEZ Disturbance (SF) | SEZ Restoration (SF) | Permanent SEZ Disturbance (SF) | New System Trails, Total Area (SF) ¹ | Permanent BMPs | Comments |
|-------------|--|-------------------------------|----------------------|--------------------------------|---|---|--|
| 1 | Partially existing unclassified trail, partially undisturbed | 1920 | 0 | 1920 | 11182 | Drainage dips, causeway | |
| 2 | Partially existing classified trail, mostly undisturbed | 0 | 0 | 0 | 40416 | Drainage dips | Excessively steep trail to be re-routed |
| 3 | Partially existing unclassified trail, mostly undisturbed | 120 | 0 | 120 | 20342 | Drainage dips, causeway | Excessively steep trail to be re-routed |
| 4 | Partially existing unclassified trail, partially undisturbed | 300 | 0 | 300 | 3912 | Drainage dips, rock ford | Small rock ford to be constructed on trail stemming from Tahoe Mountain Road |
| 5 | undisturbed | 0 | 0 | 0 | 5754 | Drainage dips | |
| 6 | Partially existing classified trail, partially undisturbed | 720 | 0 | 720 | 6726 | Drainage dips, armored banks on Angora Creek crossing | Trailbridge to be constructed over Angora Creek, some trail to be re-routed out of SEZ |
| 7 | Partially existing unclassified trail | 440 | 0 | 440 | 10500 | Drainage dips, rock fords | Trail re-route, rock fords to be constructed across tributaries of Angora Creek |
| 8 | Existing unclassified trail | 0 | 0 | 0 | 2454 | Drainage dips | |
| 9 | Partially existing classified trail, partially undisturbed | 0 | 0 | 0 | 6366 | Drainage dips | Trail to be re-routed away from SEZ |

¹ This is the total area of Forest Service system trails in the Angora area

| | | | | |
|--------------------------|-------------|----------|-------------|---------------|
| New System Totals | 3500 | 0 | 3500 | 107652 |
|--------------------------|-------------|----------|-------------|---------------|

TABLE H1 (cont.)

Decommission / Restoration

| Trail Group | Pre-Existing Condition | Existing SEZ Disturbance (SF) | SEZ Restoration (SF) | Permanent SEZ Disturbance (SF) | Total Trail Decommissioning Area (SF) ¹ | Permanent BMPs | Comments |
|-------------|--|-------------------------------|----------------------|--------------------------------|--|---|---|
| D1 | Existing unclassified trail | 1160 | 1160 | 0 | 6634 | Camouflage with natural barriers, slash, partial decompaction | |
| D2 | Existing classified trail | 0 | 0 | 0 | 8794 | Camouflage with natural barriers, slash | |
| D3 | Existing unclassified trail | 1060 | 1060 | 0 | 16720 | Camouflage with natural barriers, slash, partial decompaction | |
| D4 | Existing unclassified trail | 5120 | 5120 | 0 | 40028 | Camouflage with natural barriers, slash, partial decompaction | Some trails have started to self-restore, further disturbance will not occur if determined unnecessary by Forest staff, and approved by Forest Supervisor |
| D5 | Existing classified and unclassified trail | 2650 | 2650 | 0 | 20704 | Camouflage with natural barriers, slash, partial decompaction | |
| D6 | Existing unclassified trail | 0 | 0 | 0 | 27402 | Camouflage with natural barriers, slash, partial decompaction | Some trails have started to self-restore, further disturbance will not occur if determined unnecessary by Forest staff, and approved by Forest Supervisor |
| D7 | Existing classified and unclassified trail | 3100 | 3100 | 0 | 25952 | Camouflage with natural barriers, slash, partial decompaction | Some trails have started to self-restore, further disturbance will not occur if determined unnecessary by Forest staff, and approved by Forest Supervisor |
| D8 | Existing classified and unclassified trail | 2040 | 2040 | 0 | 13662 | Camouflage with natural barriers, slash, partial decompaction | |

¹ This is the total area to be restored/decommissioned

| | | | | |
|-----------------------------|--------------|--------------|----------|---------------|
| Decom/Restore Totals | 15130 | 15130 | 0 | 159896 |
|-----------------------------|--------------|--------------|----------|---------------|

| | | | |
|------------------------|--------------|--------------|-------------|
| Complete Totals | 18630 | 15130 | 3500 |
|------------------------|--------------|--------------|-------------|