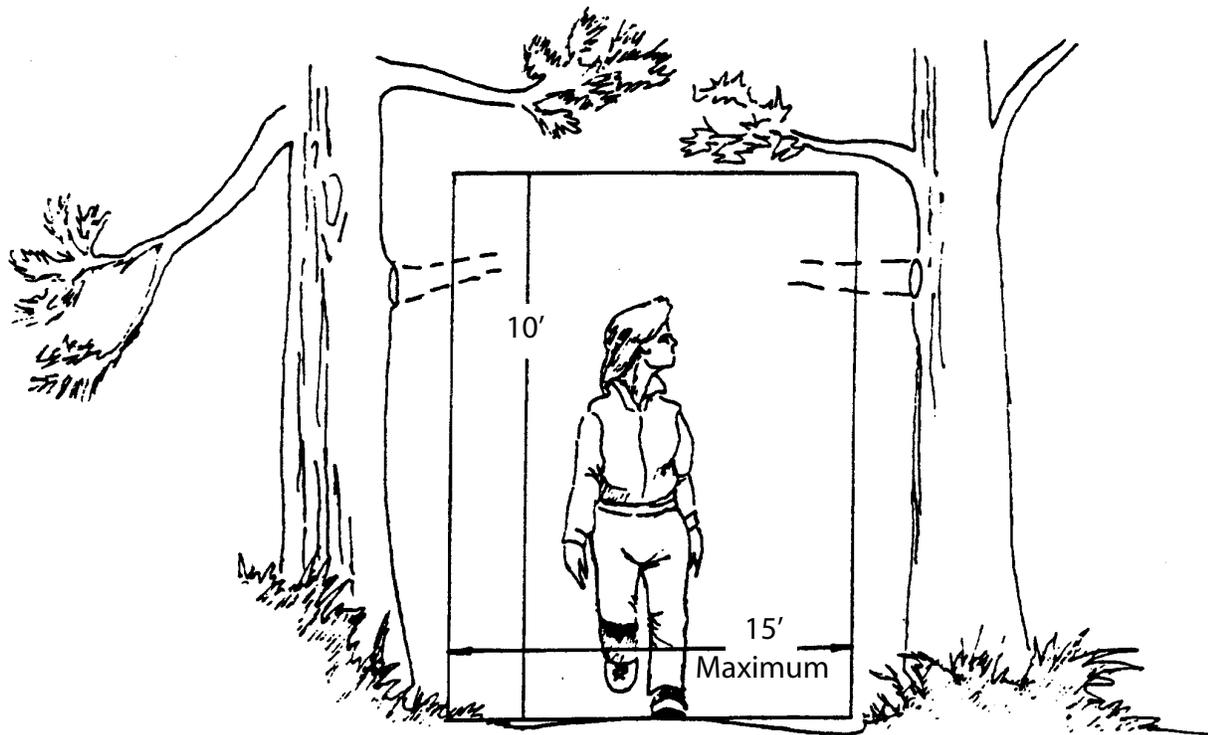


HORSE TRAILS



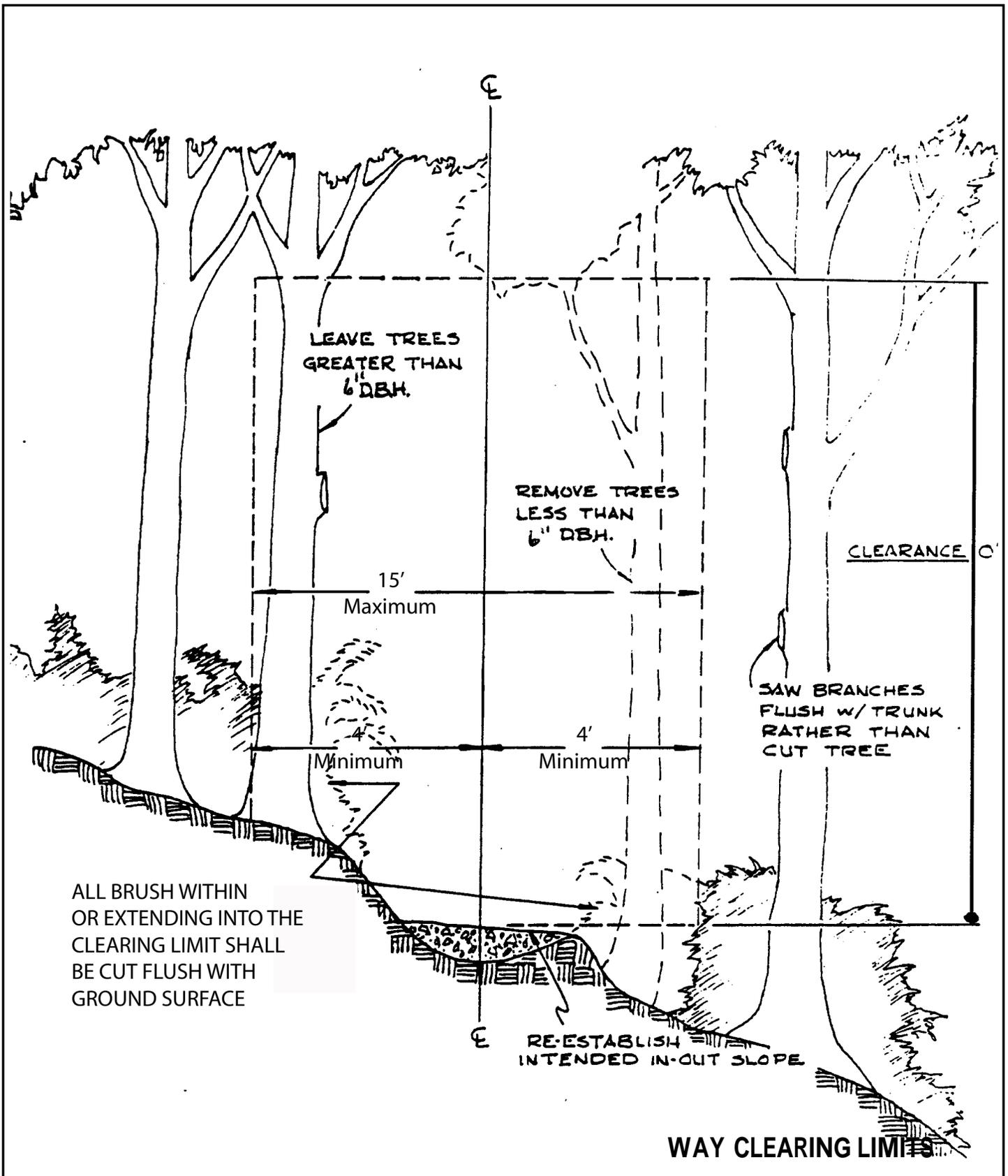
FOOT TRAILS

Figure 2



Source: *Trails Handbook*, California Department of Parks and Recreation

TRAVEL WAY CLEARING
North Fork American River Trail
 Placer County, California



ALL BRUSH WITHIN OR EXTENDING INTO THE CLEARING LIMIT SHALL BE CUT FLUSH WITH GROUND SURFACE

WAY CLEARING LIMITS

Figure 3

TRAILWAY CLEARING LIMITS

North Fork American River Trail
Placer County, California



Source: *Trails Handbook*, California Department of Parks and Recreation

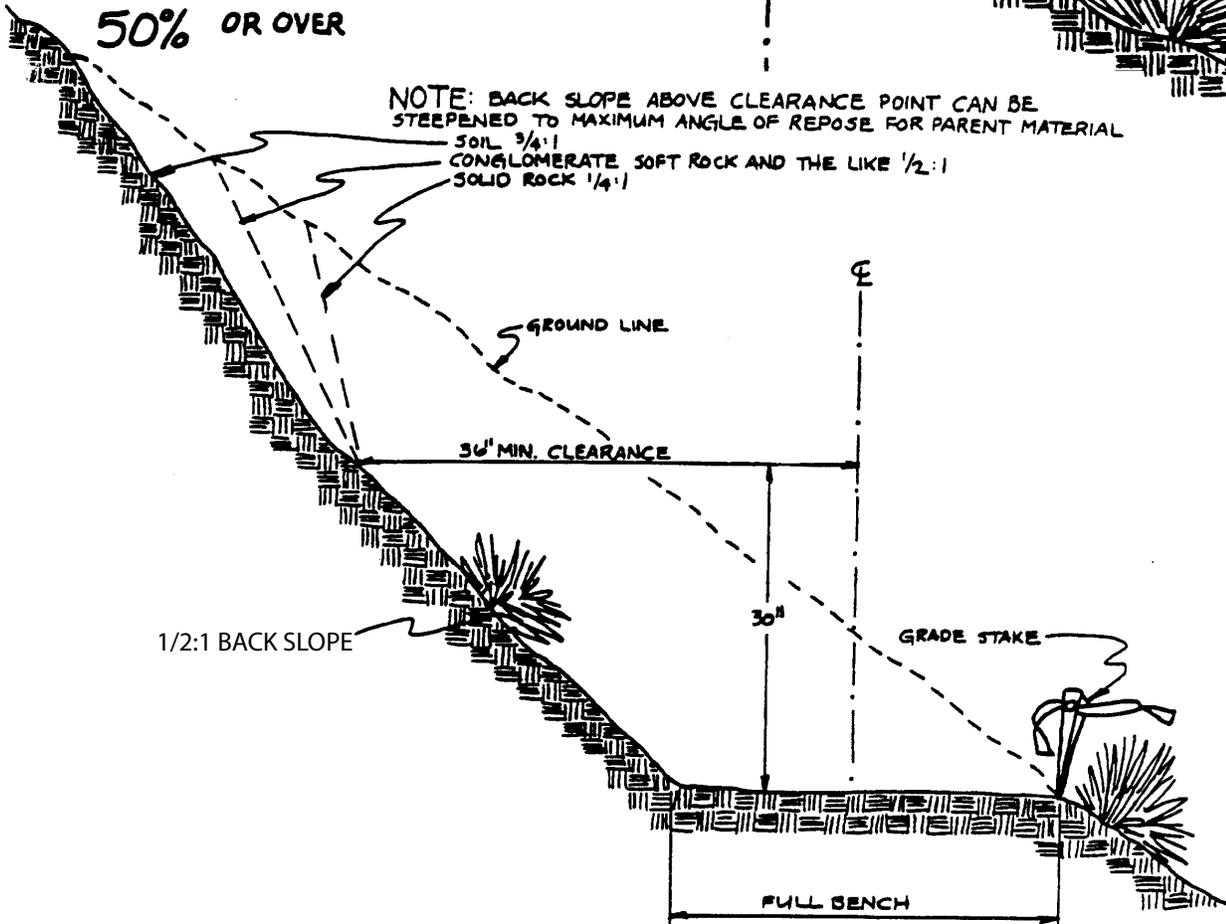
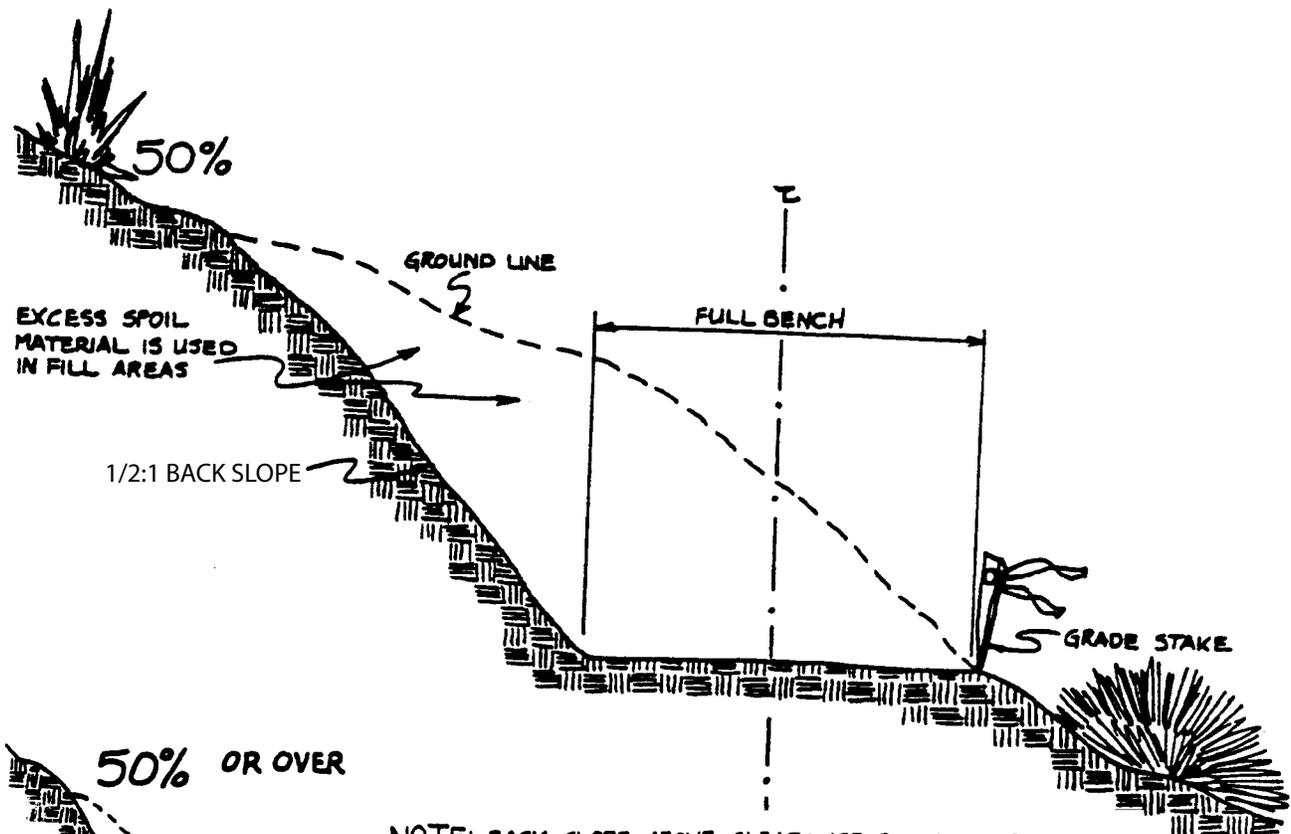
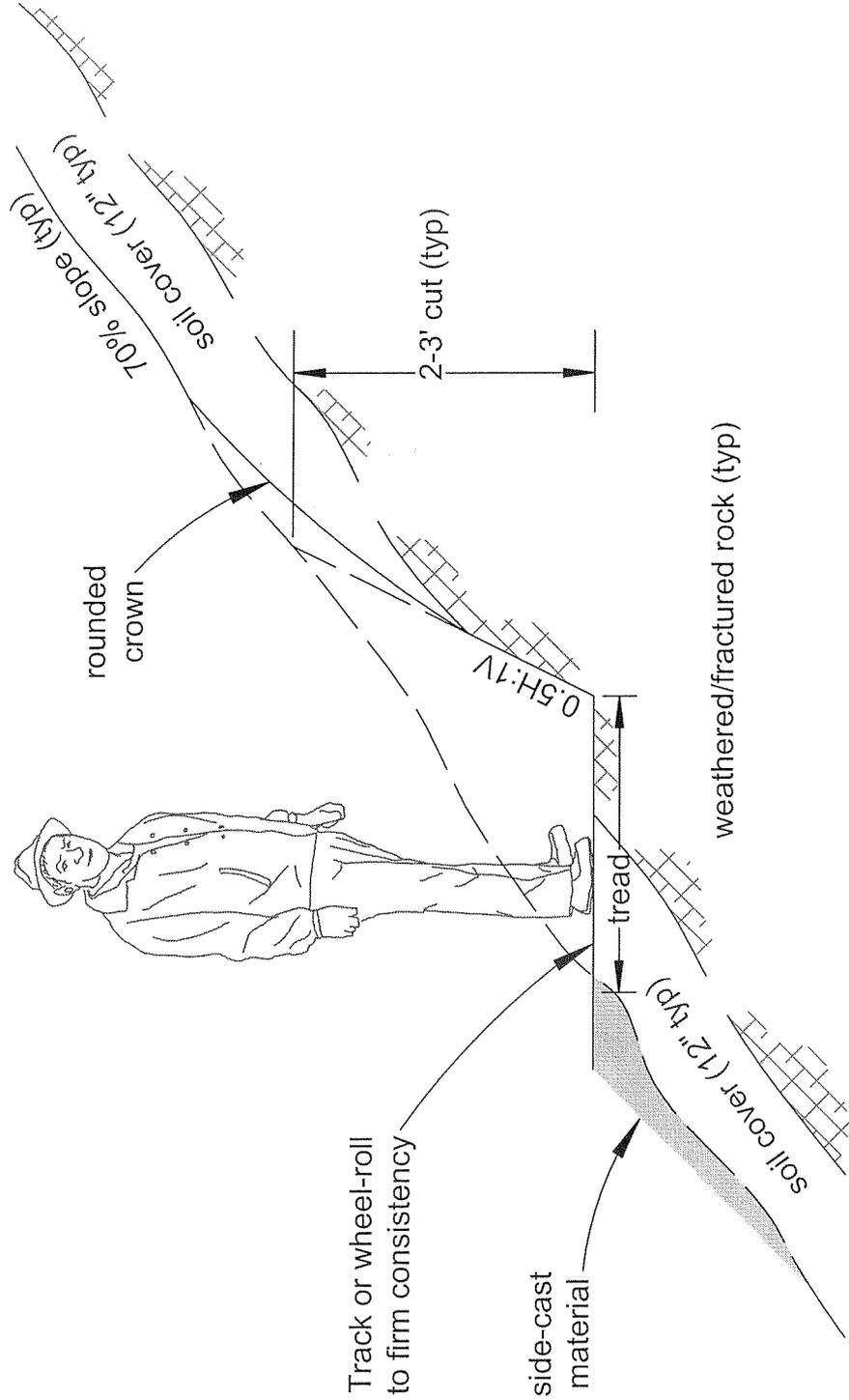


Figure 4



Source: *Trails Handbook*, California
Department of Parks and Recreation

TRAILWAY EXCAVATIONS
North Fork American River Trail
Placer County, California



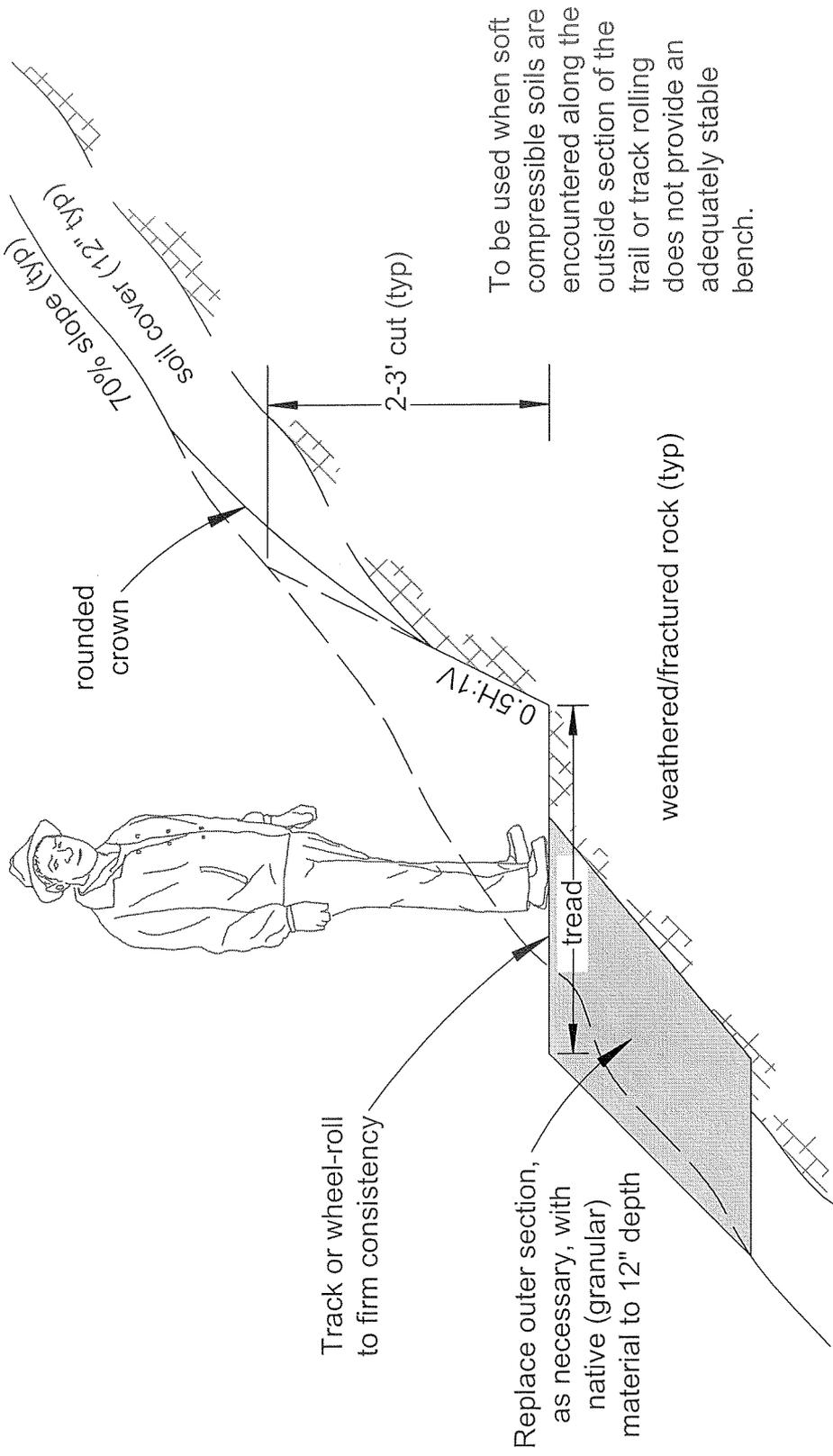
NOT TO SCALE

File No. 767.1
July 2006
Section A

Typical Schematic Section North Fork American River Trail

11521 Blocker Drive
 Suite 110
 Auburn, CA 95603
 Phone (530) 887-1494
 Fax (530) 887-1495
 E-Mail: bcistaff@blackburnconsulting.com





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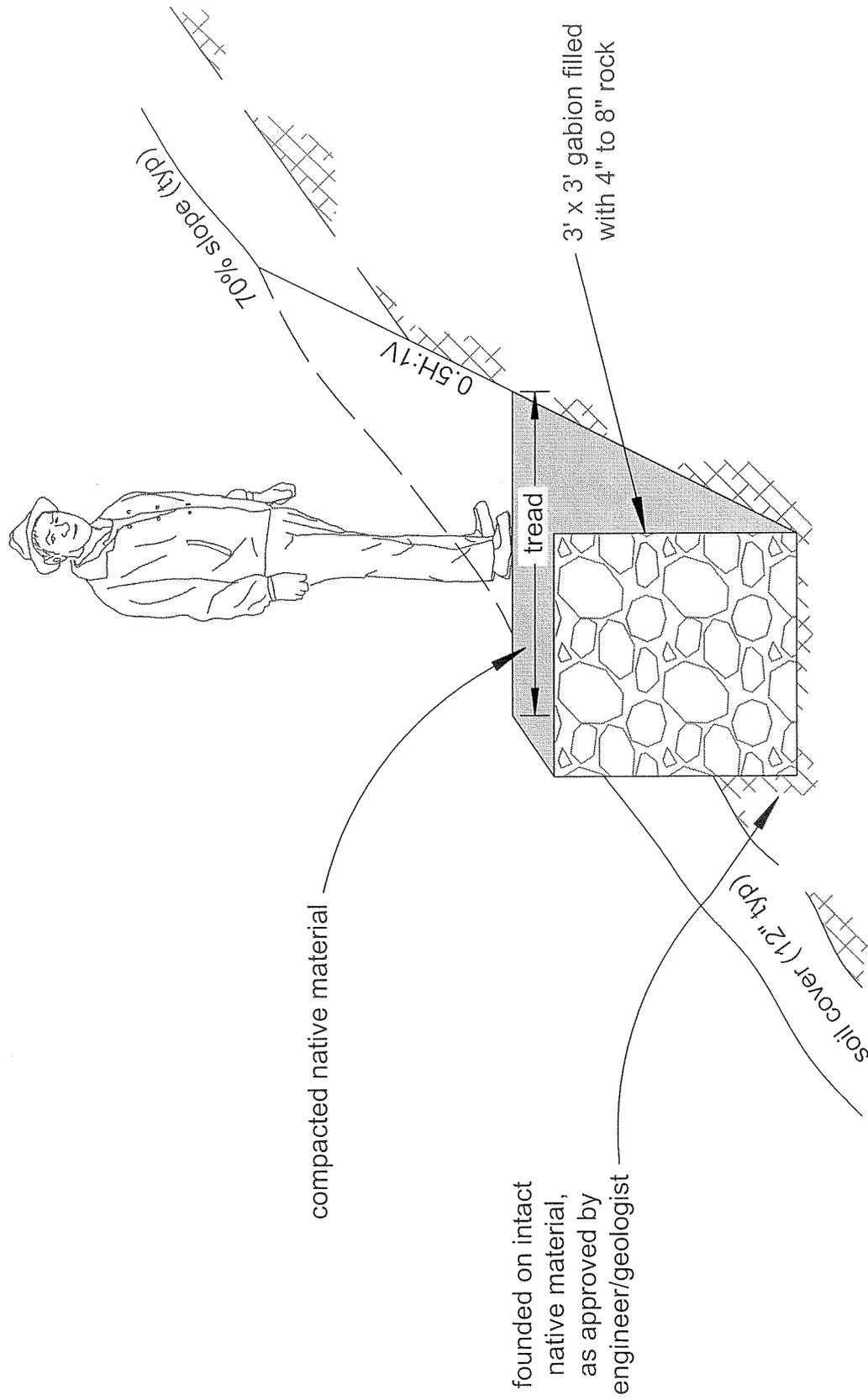
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Section B

Schematic Section - Cut/Fill with Limited Replacement North Fork American River Trail

11521 Blocker Drive
Suite 110
Auburn, CA 95603
Phone (530) 887-1494
Fax (530) 887-1495
E-Mail: bcstaff@blackburnconsulting.com





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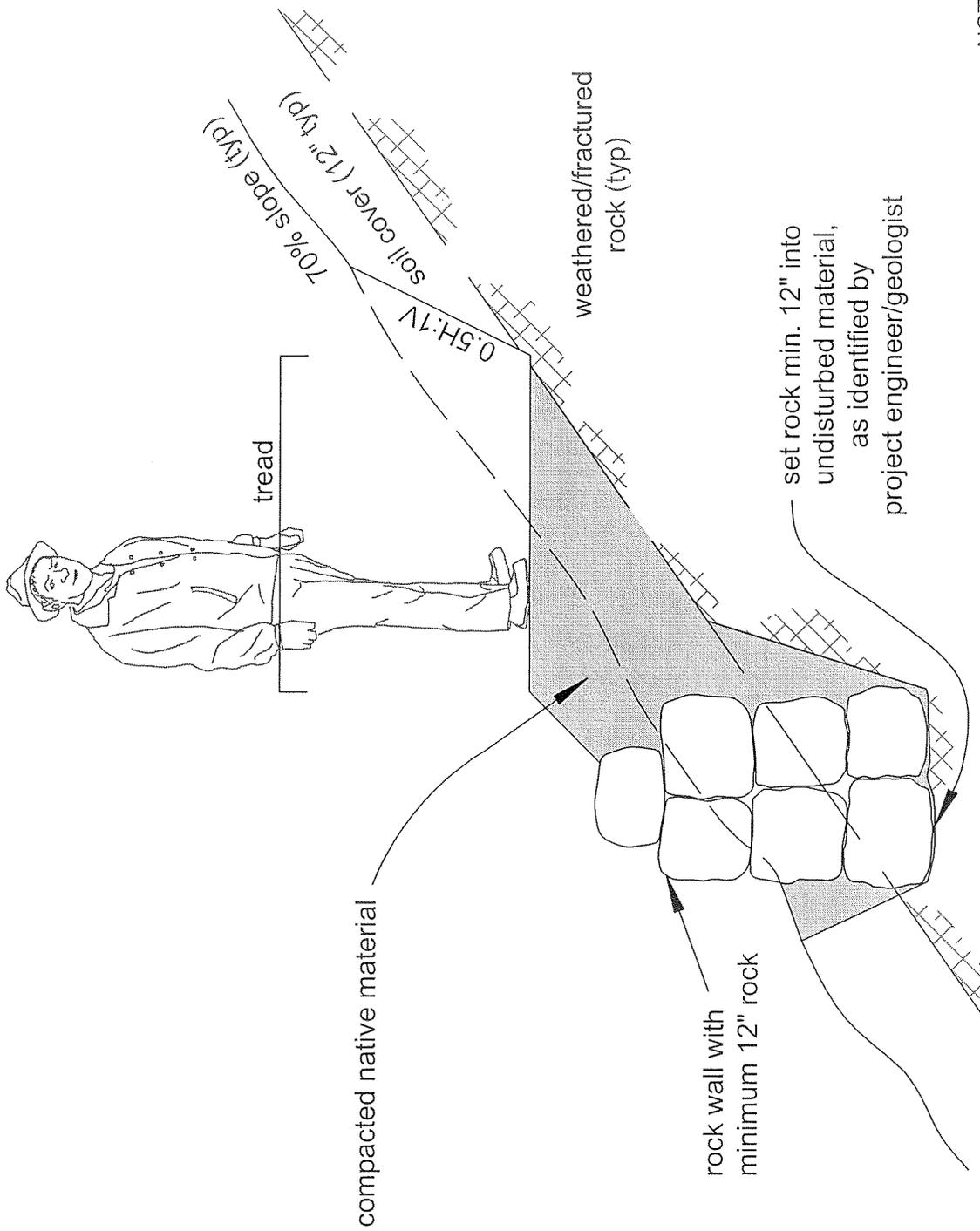
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Section C

Schematic Section - Gabion Wall North Fork American River Trail

11521 Blocker Drive
Suite 110
Auburn, CA 95603
Phone (530) 887-1494
Fax (530) 887-1495
E-Mail: bcstaff@blackburnconsulting.com

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consulting**



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11521 Blocker Drive
 Suite 110
 Auburn, CA 95603
 Phone (530) 887-1494
 Fax (530) 887-1495
 E-Mail: beistaif@blackburnconsulting.com

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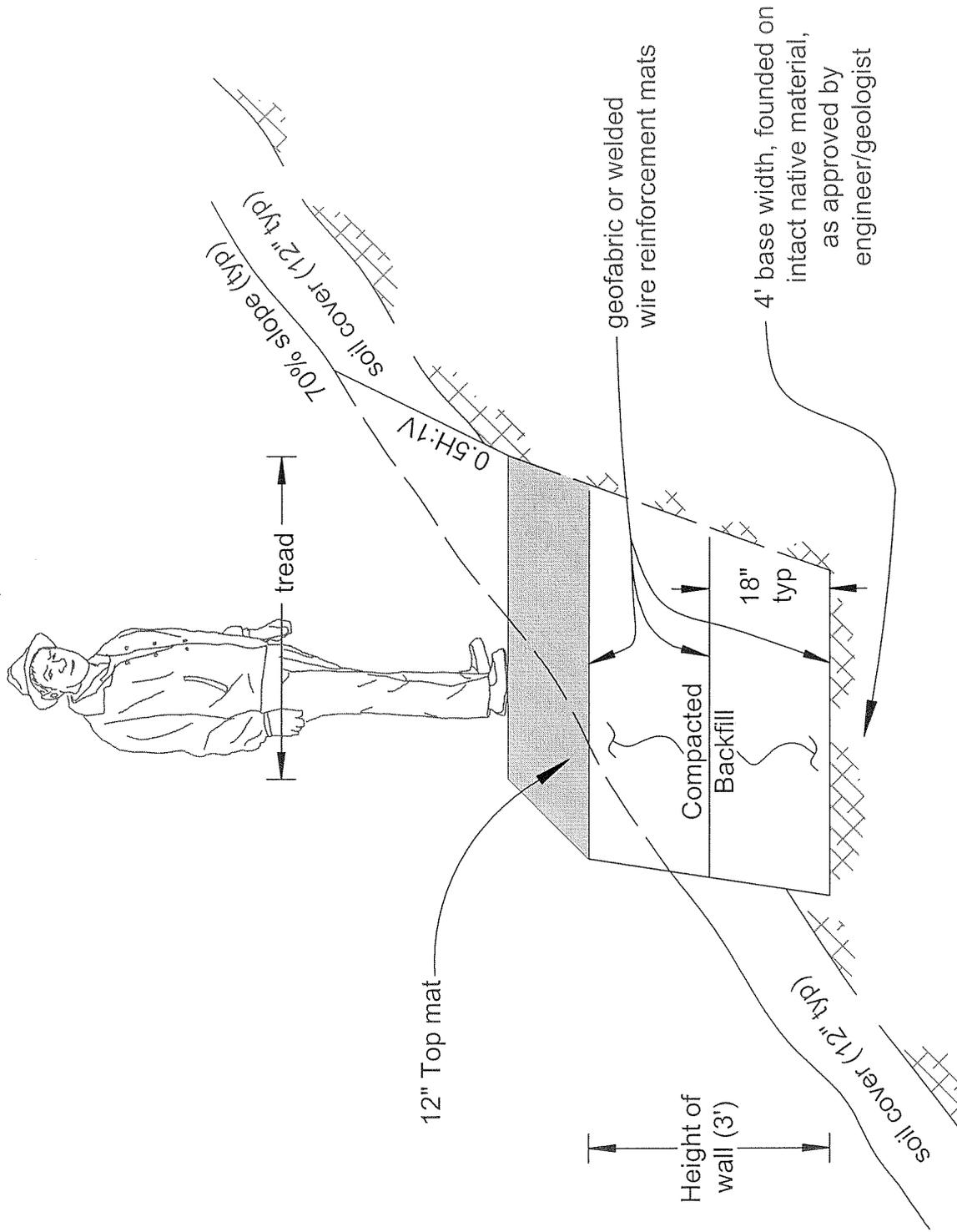
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Section D

Schematic Section - Rock Wall

North Fork American River Trail





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Schematic Section - MSE Wall North Fork American River Trail

11521 Blocker Drive
Suite 110
Auburn, CA 95603
Phone (530) 887-1494
Fax (530) 887-1495
E-Mail: beistaff@blackburnconsulting.com

File No. 767.1

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Section E

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5. Stream Crossings and Drainage Features

Along the 14.2-mile trail route, there are 46 ephemeral streams that need to be crossed. Three of those crossings will require construction of bridges. Two key factors in bridge construction are the seasonal levels of water in the particular drainage, and the configuration of the banks of the stream. Generally, bridges and other structures should be avoided because of their high cost of construction and maintenance. Where possible, natural stream crossings or fords are desirable.

To support the additional weight of horses, bridges will be designed with three (3) stringers. Decking surfaces must have a minimum thickness of 4 inches and a minimum tread width of 72 inches with 66 inches between handrails or bull rails. When handrails are required, they will be 32 inches to the top of the rail as measured from the top of the bridge decking. Handrail and post dimensions will be 6 inches by 6 inches rough con heart redwood. No mid-rail diagonal brace will be used. (See Figure 5)

Rock-lined stream crossings will be used on the remaining creeks. The trail will drop into the drainage, rocks will be placed in the streambed to provide a somewhat level surface and to armor the stream banks, and the trail will ascend from the streambed. At the creek fords, the approaching trail grade must be higher than the stream grade to prevent water from escaping the streambed and running down the trail. All rocks needed for the stream crossings will be gathered on-site. (See Figures 6, 7, and 8)

In a situation where the volume of surface water runoff exceeds that which a normal outslope design can accommodate, a drain dip may be required. Drain dips are exaggerated outslopes that terminate in a shallow trough and should be located where they will be most effective. Features such as natural contours, side slope, and trail grade must be studied closely to determine where the largest volume of water can be intercepted and diverted from the trail. Soil readability, vegetative cover, and downstream steepness must be considered when selecting the drain point or trough outflow location. Ideally, drain dips should be located where natural swales or drainages bisect the trail. To function properly, drain dips must be maintained. Sediment and debris that build up in the trough must be removed and the trail surfaces reworked to restore their shape and outslope. (See Figure 9)

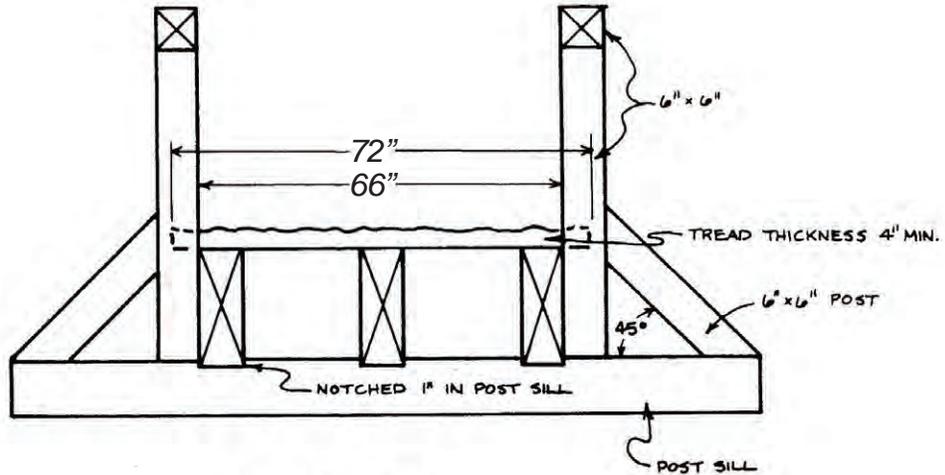
6. Rock Retaining Walls

Rock retaining walls may be employed along the trail route. Retaining walls constructed of rock provide an aesthetically pleasing, very durable solution that will withstand extreme weather conditions and trail use. However, dry rock walls (rock laid without mortar) take time, experience, and are very labor intensive. Planning rock wall construction must consider the natural features of the work site. Existing rocks and bedrock can be used as anchors and keystones. As much as possible, all materials will be gathered on-site.

Selected rock and stones will be sound, durable, and have at least one or more good uniform surface. The rock shape should allow the rock to be laid with the majority of the rock's weight set back into the wall. Fifty percent of the stones in the wall should be greater than one cubic foot. Look for rocks that are reasonable in size. It's not worth the time or energy to move huge rocks. The same result can be achieved with two or more carefully selected and placed smaller rocks.

HORSE BRIDGE

SCALE: 1/2" = 1'-0"



END VIEW

SIDE VIEW

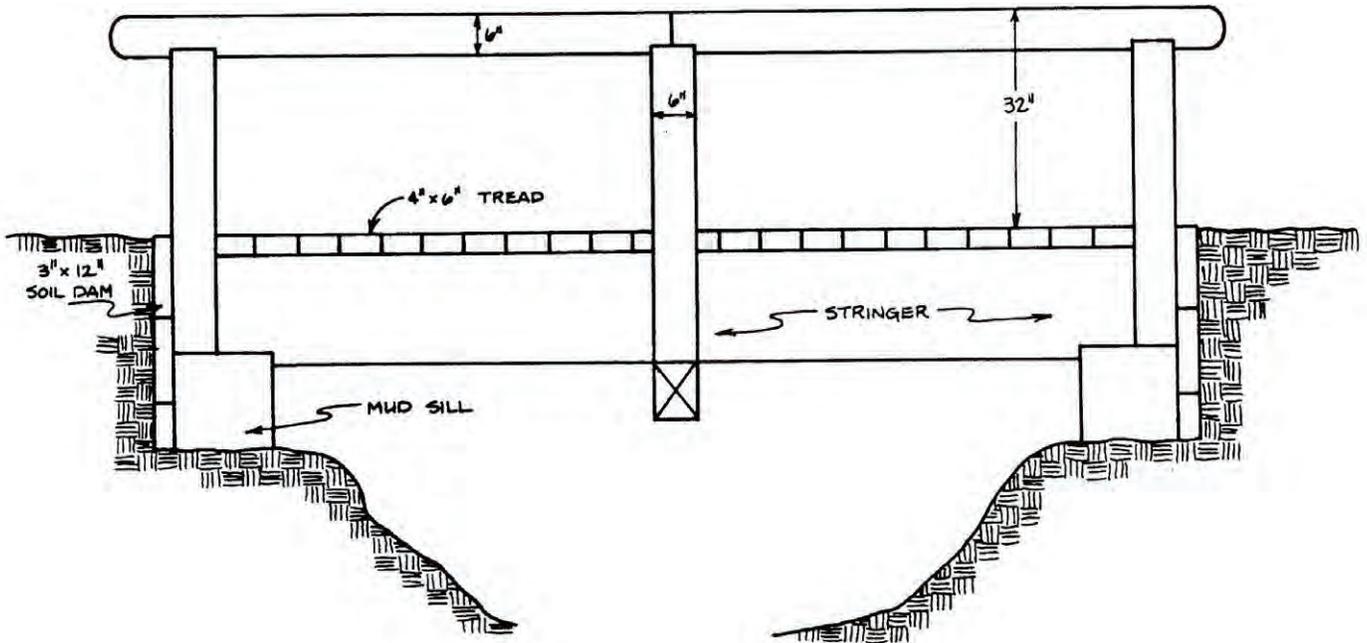


Figure 5

HORSE BRIDGE

North Fork American River Trail
Placer County, California



Scale 1 inch = 2 feet

Source: *Trails Handbook*, California
Department of Parks and Recreation