## <u>Visual Resources Technical Memorandum</u>

North Tahoe Shared-Use Trail – Segment 1 Project

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#### Introduction

The North Tahoe Shared-Use Trail Project is proposed on publicly- and privately-owned lands in Placer County. Pathway and drainage improvements are proposed within existing easements on private lands, the North Tahoe Public Utility District's (NTPUD) North Tahoe Regional Park (Park) boundary, and on National Forest System (NFS) lands managed by the USDA Forest Service Lake Tahoe Basin Management Unit (LTBMU). The project area encompasses approximately 2.7 miles of the proposed trail footprint, with an average width of 12 feet, starting at Carnelian Bay Avenue and ending in the NTPUD Park. The trail will serve as a connection point for linking future trail projects to the terminus of the Dollar Creek Trail (completed in 2018) in Tahoe City, CA. A site plan map and Class 1 bike trail (e.g., shared-use pathway) details are included in Attachment A.

Analysis of the scenic environment requires an evaluation of the project area and its ability to absorb the effects of both historic and ongoing human modification. Slope, natural vegetation types and patterns, topography, and viewing distance are important factors in this analysis. Within the project area, development has occurred at the two ends including public roadways, recreational trails and infrastructure at the Park (eastern end). Informal mountain bike trails have been created in the project area and cross the proposed trail alignment in numerous locations. With one exception, the project area is not readily visible from publicly accessible offsite locations. A portion of the western section of the proposed trail alignment crosses a lightly forested hillside area (Figures 1 and 2) that is visible from both State Route (SR) 28 and Lake Tahoe. For this analysis, the potential impacts to the scenic environment are considered in relation to existing views of this hillside.

### **Project Location**

The eastern end of the project area begins within and immediately to the north of the NTPUD Park, within the unincorporated Placer County area of Tahoe Vista. A majority of the project area crosses through undeveloped forested areas that surround low density residential neighborhoods. The eastern and western ends of the project area (totaling approximately 8,000 linear feet) are located within the General Conservation Management Area as defined in the LTBMU *Land Management Plan*<sup>1</sup>. This management area is comprised of NFS lands that do not have any other special designation that

<sup>&</sup>lt;sup>1</sup> U.S. Department of Agriculture, *Land Management Plan, Lake Tahoe Basin Management Unit, 2016* (South Lake Tahoe, CA, 2016), 77.

specifically defines their use; management is prescribed by Forest staff to attain forest-wide desired conditions. Active management is conducted for purposes of meeting a variety of social, economic, and ecological objectives. Management activities may have a strong influence on the composition, structure, and landscape patterns of the vegetation in the more intensively used areas, while succession, fire, insect attack, disease outbreak, floods, and other natural processes and disturbance events are the predominant drivers in the more remote parts of the management area.

Photographs of the project area from SR 28 are provided below in Figures 1 and 2. Figure 2 shows the trail alignment overlaid on a Google Earth topographic projection from a similar location as the photo viewpoint in Figure 1. Figure 3 includes a photo of the talus (rocky) field within the area of the lightly forested hillside on NFS lands.



Figure 1. View of Project Area from SR 28 (looking north)

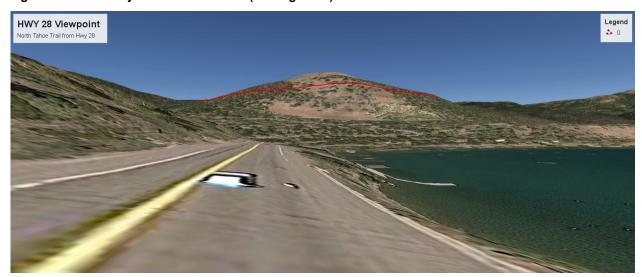


Figure 2. Google Earth Projection of Trail Alignment from SR 28 (looking north)



Figure 3. Western Section of the Project Area Near Steeply Sloped Talus Field

#### Indicators for Analysis of Effects

The TRPA established a baseline inventory of the scenic resources in the Lake Tahoe Basin (Wagstaff and Brady 1983, TRPA 1993). The Basin was divided up into separate roadway, shoreline, and recreation area scenic units, and each unit was given a scenic resource rating and threshold. Scenic resource thresholds were developed using an inventory of subcomponents for specific types of scenic resources within each roadway, shoreline, and recreation area unit. The TRPA prepared a Scenic Quality Improvement Program for the Lake Tahoe Basin (SQIP) to set forth a comprehensive threshold attainment program to improve the overall scenic quality of the built environment in the roadway and Lake Tahoe shoreline views that do not meet scenic quality thresholds (TRPA 1989). Recommendations in the SQIP that are applicable to the Trail project include revegetation of the rocky slide area at the eastern end of Roadway Unit 19 (Flick Point). Revegetation would provide visual cover for the barren slopes and existing development, and provide erosion control.

TRPA Roadway Unit 19 (Flick Point) Description: The area beyond Tahoe Vista has developed forest area with occasional broken vistas of the Lake for about 0.5 km. Near the Agate Bay Sun and Beach Club more expansive views that include Agate Bay, developed shoreline areas to the west and long-distance views of mountain areas (including Mt. Rose and mountains to the south and southeast) are available. Beyond the panorama is developed forest area on both sides of the road for about 1.0 km.

The roadway becomes more developed toward the community of Carnelian Bay. There are natural-appearing forested areas along the travel route and most development has good setbacks with forest buffering. There are very few opportunities for lake vistas in this area.

Resource number 19-2 (views of Lake from Roadway) – wide panorama of shoreline areas of Agate Bay and long-distant views of Mt. Rose to the northeast, mid-distant views to Stateline Point and ridge-lines south of Mt. Rose. There is an interesting timber structure (Agate Bay Sun and Beach Club) in foreground.

TRPA Shoreline Unit 20 (Flick Point) Description: Resource number 20-3 (Background view) — Forested hills and low ridges are middle ground view, with some openings providing color contrast.

The USDA Forest Service also manages scenic quality on their lands. The goal of scenic resource management on all NFS lands is to manage for the highest possible visual quality, commensurate with other appropriate public uses, costs, and benefits. Since the mid-1970s, the Forest Service has operated under the guidance of the Visual Management System (VMS) for inventorying, evaluating, and managing scenic resources on NFS lands. More recently the Scenery Management System (SMS) has been used to evaluate changes in visual character from project activities. As stated in the *Land Management Plan*<sup>2</sup>, "Scenic integrity is a measure of the degree to which the valued scenic attributes are present within the landscape. The highest scenic integrity ratings are given to those landscapes which have little or no deviation from the character valued by constituents for its aesthetic appeal...."

The Land Management Plan includes minimum scenic integrity objectives for LTBMU lands (see Map 10 in Attachment B) - the minimally acceptable levels of scenic integrity for a given area. Project design and activity planning should meet or exceed minimum scenic integrity objectives for the project or activity area and should maintain or enhance scenic integrity. A Minimum Scenic Integrity Objective (MSIO) map identifies assigned MSIO levels to NFS lands. Scenic Class, which describes the relative "social value" of areas for their scenery was the starting point for determining MSIO levels. Factors that affect Scenic Class include the inherent attractiveness of the area and its visibility from key viewing areas and travel routes.

Portions of the project area outside of NFS lands fall under the jurisdiction of Placer County and the Tahoe Regional Planning Agency (TRPA). These portions of the project area fall within the Park boundary and the forested center section of the trail alignment and are not readily visible from offsite locations. The Park and central section of the trail alignment are not identified as sensitive scenic resources in either the *Tahoe Basin Area Plan*<sup>3</sup> or the TRPA *Regional Plan*<sup>4</sup>. As such, there are no additional scenic resource indicators that must be applied to this analysis for the County or TRPA.

NFS lands located north of the Park are assigned a "high" MSIO rating, which is defined as landscapes where the valued landscape character "appears" intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident. NFS lands located on the western end of the project area are assigned a "moderate" MSIO rating, which is defined as landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

<sup>&</sup>lt;sup>2</sup> Ibid. 90.

<sup>&</sup>lt;sup>3</sup> Placer County, *Tahoe Basin Area Plan*, 2017 (Auburn, CA).

<sup>&</sup>lt;sup>4</sup> Tahoe Regional Planning Agency, *Regional Plan Update, Threshold Standards and Regional Plan*, 2012 (Stateline, NV). 15.

The 2016 Forest Plan standards and guidelines for scenic resources includes the following:

**SG117.** Scenic resource and built environment guidelines are incorporated into management activities and into the design and development of agency facilities. All resource management and permitted activities shall meet or exceed the established scenery objectives shown on the MSIO map. Utilize techniques such as:

- a) Size areas cleared for management objectives to meet minimum requirements for operability and safety.
- b) With consideration for scenic objectives, maintain clumps of trees within cleared areas if they do not pose a safety or operational risk.
- c) Maintain understory vegetation within cleared corridors if they do not pose a safety or operational risk.

#### Analysis of Direct/Indirect Effects

Trail construction within the central section of the project area would not be noticeable off-site as no perceptible change would occur from off-site viewing locations as a result of constructing a shared-use trail within the forested setting. Likewise, sections of the trail located in the Park (eastern end of the project area) and near the connection to Carnelian Bay Avenue would not be visible from off-site locations. The trail connection within the Park would be visible to Park users, but would be consistent with existing recreational facilities, parking lots, roadways and therefore would not create a change to the landscape character. Therefore, the focus of this analysis is on a portion of the western section of the proposed trail alignment that crosses a lightly forested hillside area, visible from both SR 28 and Lake Tahoe.

Pathway facility construction requires grading, rock retaining wall installation and the removal of trees along the corridor where they are located within the excavation limits for the pathway construction. Pathway construction would begin at the shared-use trails' intersection with Carnelian Bay Avenue, then travel east generally along hillside contours through an undisturbed forested area to a natural forest clearing visible from offsite locations (see Figures 1, 2, and 3). Figure 4 and Plan sheets (e.g., sheets 14 and 15) in Attachment A document the trail alignment, and the grading, 4- to 6-foot tall retaining wall design, and tree removal that would be required within lightly forested section of the shared-use trail corridor that is visible from off-site locations.

As previously discussed, a majority of trail construction would not be visible from off-site locations due to intervening topography and vegetation. Grading and the rock retaining wall structures on both the cut and fill slope sides of the pathway would be visible from a short stretch of SR 28 while traveling north (Figures 1 and 2) and from nearby Lake Tahoe viewpoints (Flick Point and Agate Bay).

Tree removal and construction of the pathway's 4- to 6-foot tall rock retaining walls documented in Attachment A will create a noticeable deviation to the existing landscape character of the lightly forested hillside area by modifying existing vegetation patterns, line, color and form; the linear pathway construction would stand out compared to the existing mostly unaltered landscape character of the forested hillside and would be evident but not dominant in degree of change. The visible components of the pathway (rock retaining walls and split rail fencing) would introduce man-made features to the lightly forested hillside that currently includes only naturally occurring forest openings. The change

would be consistent with the scenic integrity goals for the applicable NFS lands (moderate rating) because the existing landscape character "appears slightly altered." With the moderate MSIO rating, construction of the pathway can result in noticeable deviations as long as it remains visually subordinate to the slightly altered landscape character of the site. To ensure that deviations remain visually subordinate to the existing landscape character, and that TRPA travel route ratings are not therefore adversely affected, the design of the rock retaining walls and split rail fence shall utilize naturally occurring colors and patterns of the existing hillside.

Measures to be included in the design of the pathway rock retaining walls to reduce the amount of deviation to the landscape are demonstrated in Figure 5 and include low profile split rail fence design, natural appearing retaining wall materials and colors consistent with adjacent landscape. Use of a low-profile fence railing constructed from natural materials and colors to match existing soil/vegetation, and retention of existing boulders, groundcover and shrubs in the trail vicinity will ensure that the man-made linear trail would not be visually out of place with the adjacent landscape character. To comply with this requirement construction plan sheets shall be supplemented with additional details that demonstrate building materials are consistent with existing hillside ground cover, boulders and soils (as documented in Figure 3).



Figure 4. Aerial Map of Proposed Shared-Use Trail Corridor

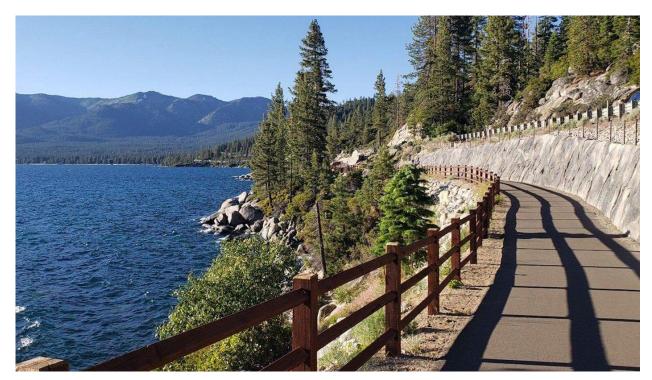
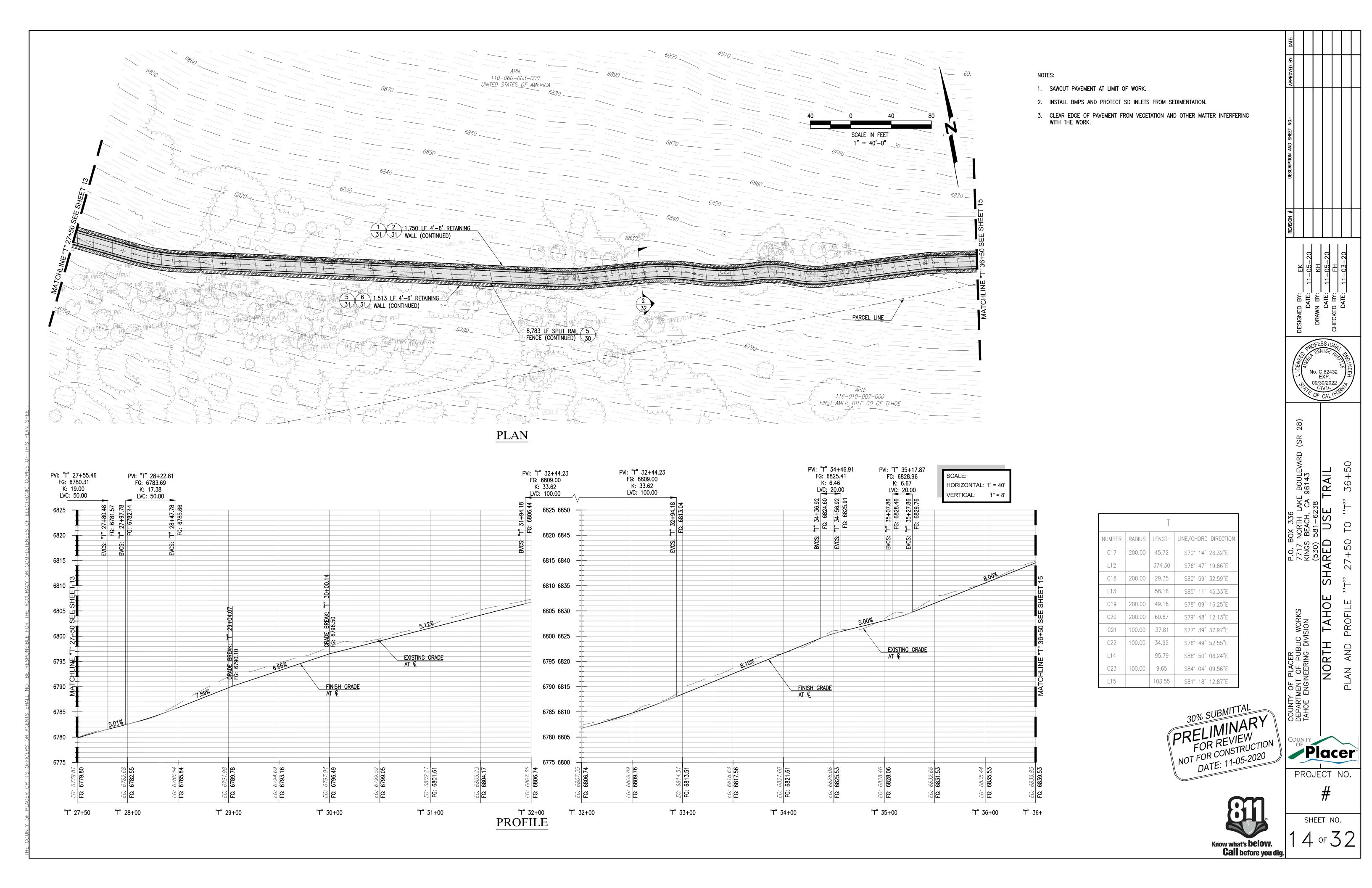


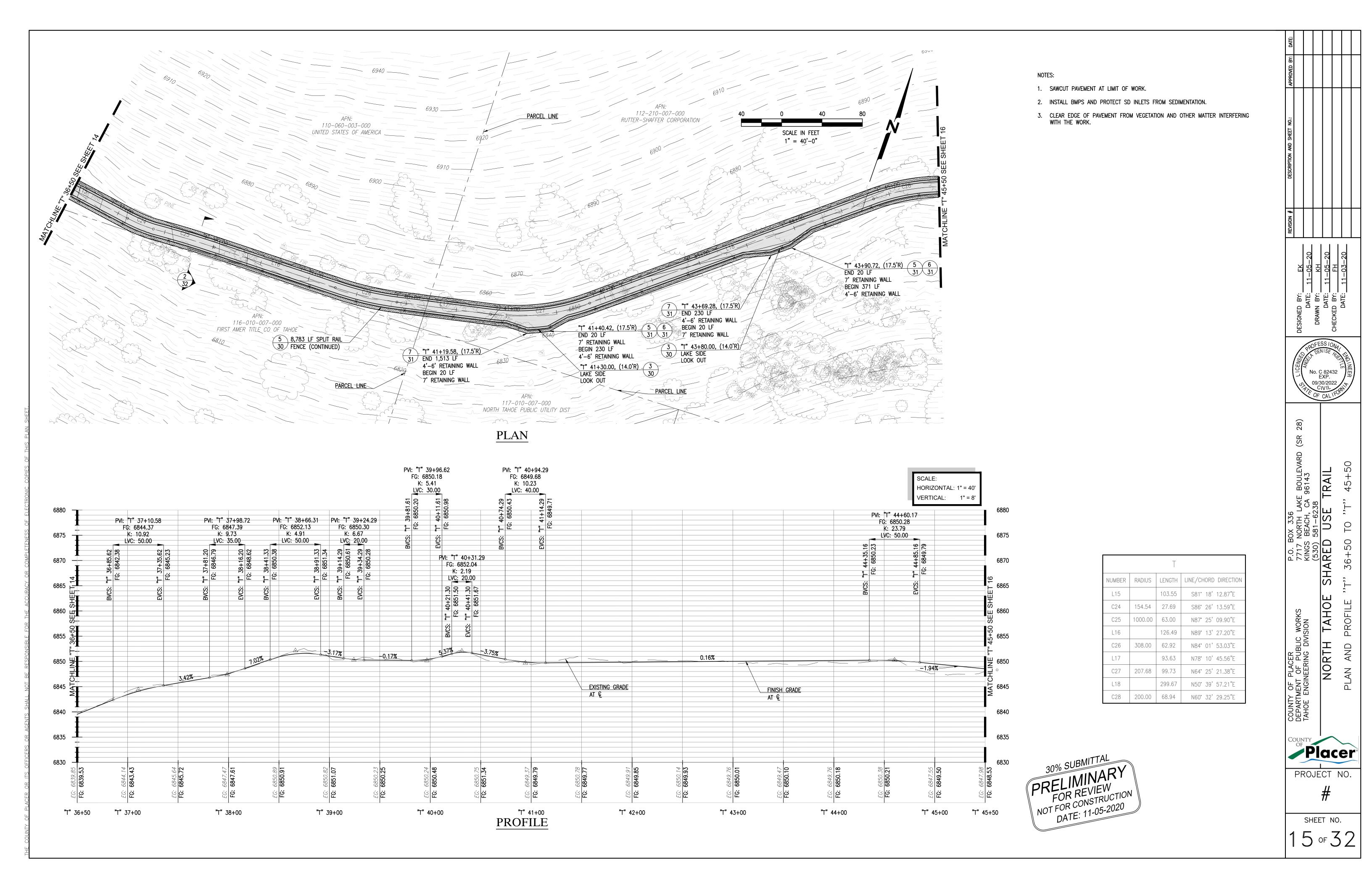
Figure 5. Example of Rock Retaining Wall Design

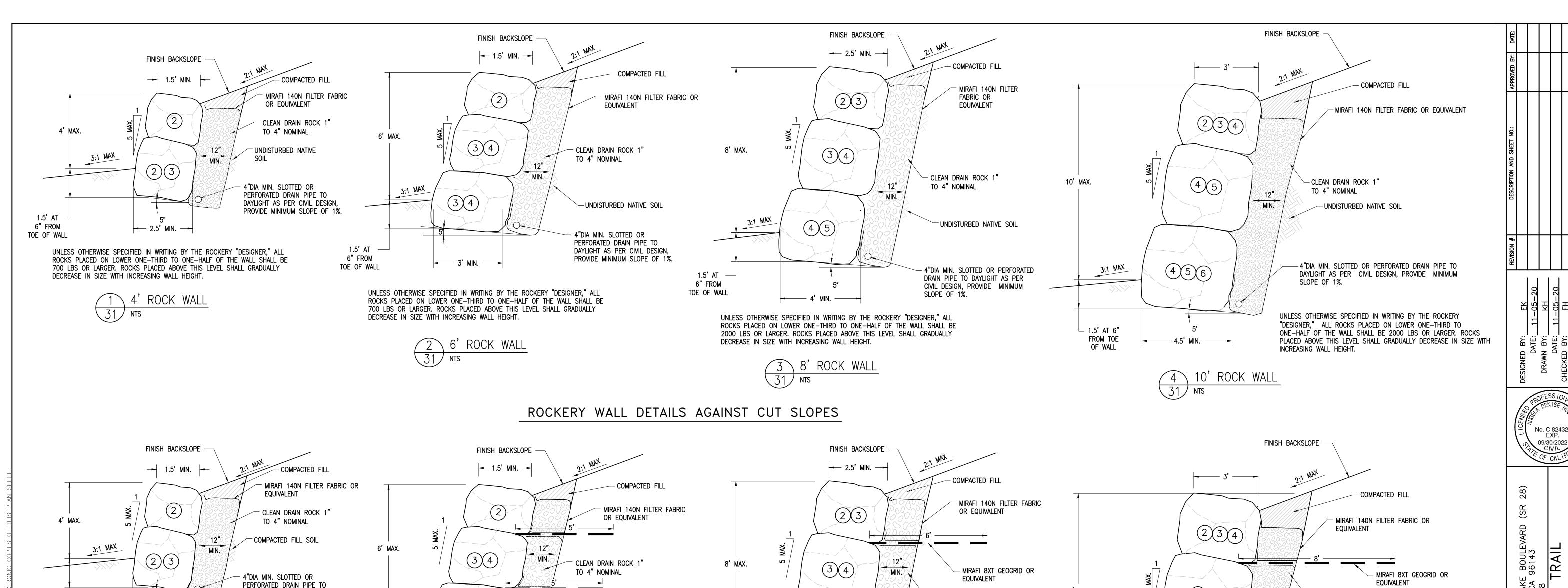
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ATTACHMENT A – SITE PLAN AND DETAIL SHEETS





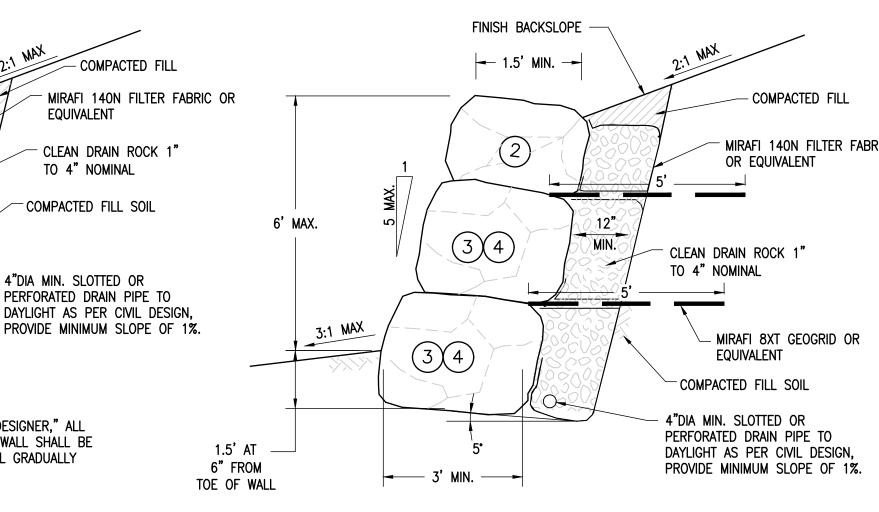


6" FROM **→** 2.5' MIN. → TOE OF WALL UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ROCKERY "DESIGNER," ALL ROCKS PLACED ON LOWER ONE-THIRD TO ONE-HALF OF THE WALL SHALL BE 700 LBS OR LARGER. ROCKS PLACED ABOVE THIS LEVEL SHALL GRADUALLY DECREASE IN SIZE WITH INCREASING WALL HEIGHT.

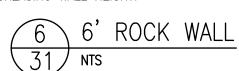


1.5' AT -

- 1. ROCKS SHALL BE PLACED IN SUCH A MANNER SO AS TO AVOID CONTINUOUS JOINT PLANES IN EITHER VERTICAL OR LATERAL DIRECTIONS.
- 2. HORIZONTAL BOULDER CONTACT SURFACES SHOULD SLOPE TOWARD THE SLOPE BEING SUPPORTED.
- 3. EACH ROCK SHALL BEAR ON TWO OR MORE ROCKS BELOW IT, WITH AT LEAST THREE POINT, COMPETENT AND STABLE CONTACTS.
- 4. THE ROCKS USED SHALL BE OF NON-FRACTURED COMPETENT BEDROCK, SUCH AS BASALT AND GRANITE, AND ANGULAR TO SUB-ROUNDED IN SHAPE. ROUNDED BOULDERS MAY BE RESHAPED BY SPLITTING. BOULDERS WITH VISIBLE CRACKS SHALL NOT BE USED. ALL BOULDERS SHALL HAVE A MINIMUM SPECIFIC GRAVITY OF 2.5.
- 5. PLACE LONG DIMENSION OF ROCK PERPENDICULAR TO FACE OF WALL TO PROVIDE MAXIMUM STABILITY.
- 6. THE SLOPES ABOVE AND BEHIND THE ROCKERY WALLS MAY VARY BUT SHALL HAVE A MAXIMUM INCLINATION OF 2H:1V.
- 7. DRAINAGE MATERIALS SHOULD CONSIST OF CLEAN, ANGULAR, WELL-GRADED CRUSHED STONE OR QUARRY SPALLS (MAX. 4" DIAM.) OR OTHER MATERIAL APPROVED BY THE SOILS ENGINEER.
- 8. THE BATTER ON THE FACE OF THE WALL SHALL BE 1:5 (HORIZONTAL: VERTICAL) OR FLATTER.
- 9. FILL SHALL BE MOISTURE CONDITIONED AND COMPACTED TO 90% RELATIVE COMPACTION ACCORDING TO ASTM TEST METHOD D-1557-91. DRAIN ROCK SHALL BE PLACED IN LIFTS OF 12 INCHES OR LESS, SPREAD AND COMPACTED WITH THE EXCAVATOR BUCKET OR GRAPPLE TO MINIMIZE VOIDS.

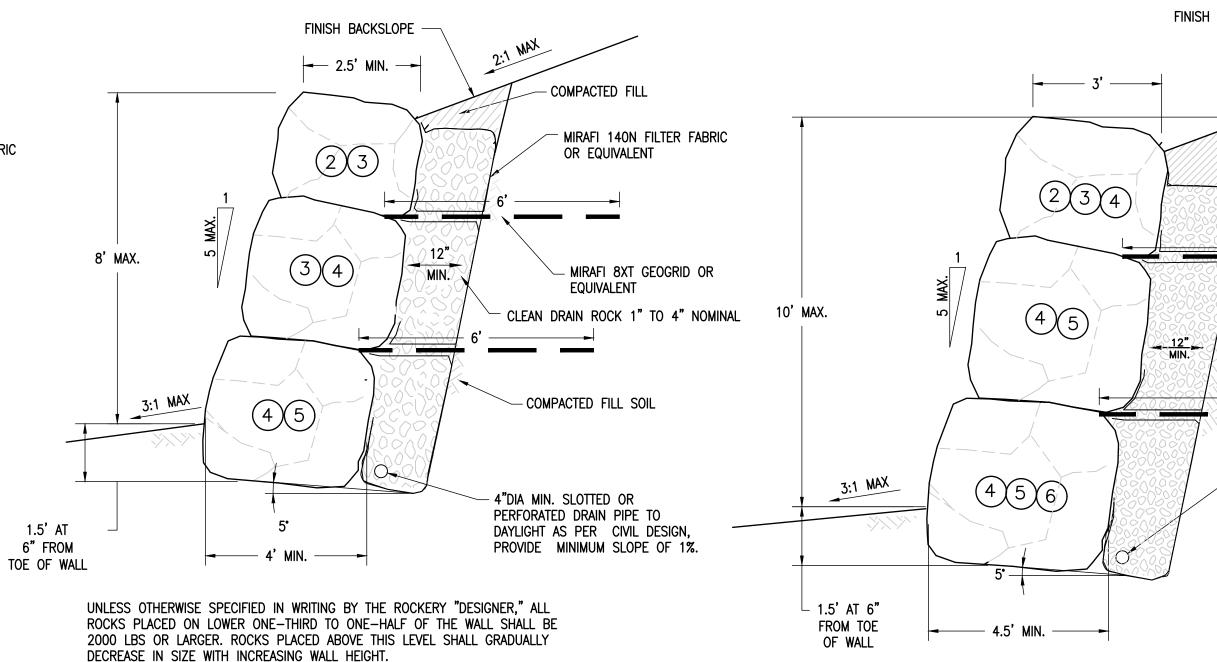


UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ROCKERY "DESIGNER," ALL ROCKS PLACED ON LOWER ONE-THIRD TO ONE-HALF OF THE WALL SHALL BE 700 LBS OR LARGER. ROCKS PLACED ABOVE THIS LEVEL SHALL GRADUALLY DECREASE IN SIZE WITH INCREASING WALL HEIGHT.



## NOTES: (CONTINUED)

- 10. DETAILS ARE SCHEMATIC AND REPRESENT TYPICAL BLOCK SIZES AT VARIOUS INTERVAL. THE NOTE BELOW THE DETAILS SHALL ADHERE TO THE MAXIMUM EXTENT POSSIBLE.
- 11. THE ROCK SIZES CAN VARY WITHIN THE RANGES INDICATED SO LONG AS THE OTHER CONSTRUCTION NOTES ADHERED TO.
- 12. VOIDS BETWEEN THE STONES SHALL BE MINIMIZED.
- 13. AT LEAST 25 PERCENT OF THE STONES SHALL EXTEND TO THE ENTIRE WIDTH OF THE THE WALL.
- 14. MIRAFI 8XT GEOGRID OR EQUIVALENT SHALL BE PLACED AT THE LOCATIONS SPECIFIED IN THE WALL DETAILS.
- 15. FILL PLACED ON SLOPES STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL SHALL BE KEYED AND BENCHED INTO FIRM, NATIVE SOILS OR ROCK. IN GENERAL, KEYWAYS SHALL EXTEND INTO FIRM, UNDISTURBED SOIL AND/OR ROCK, BE A MINIMUM OF 8 FEET WIDE, 2 TO 4 FEET DEEP, AND EXTEND THE FULL LENGTH OF THE SLOPE. BENCHING CAN BE CONDUCTED SIMULTANEOUSLY WITH PLACEMENT OF FILL. BENCHING METHODS AND DETAILS PRESENTED IN INTERNATIONAL BUILDING CODE (2003), APPENDIX J, FIGURE J107.3, SHALL BE IMPLEMENTED. THE SOILS ENGINEER SHALL CHECK THE METHOD AND EXTENT OF BENCHING.



SIZE	MIN. WT. (LBS)	MIN. DIA. (INCH)
2	200	18
3	700	30
4	2000	36

4000

6000

8' ROCK WALL

48

ROCKERY WALL DETAILS AGAINST FILL SLOPES

UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ROCKERY "DESIGNER," ALL ROCKS PLACED ON LOWER ONE-THIRD TO ONE-HALF OF THE WALL SHALL BE 2000 LBS OR LARGER. ROCKS PLACED ABOVE THIS LEVEL SHALL GRADUALLY DECREASE IN SIZE WITH INCREASING WALL HEIGHT.

CLEAN DRAIN ROCK 1"

-COMPACTED FILL SOIL

4"DIA MIN. SLOTTED OR PERFORATED

DRAIN PIPE TO DAYLIGHT AS PER

CIVIL DESIGN, PROVIDE MINIMUM

SLOPE OF 1%.

TO 4" NOMINAL









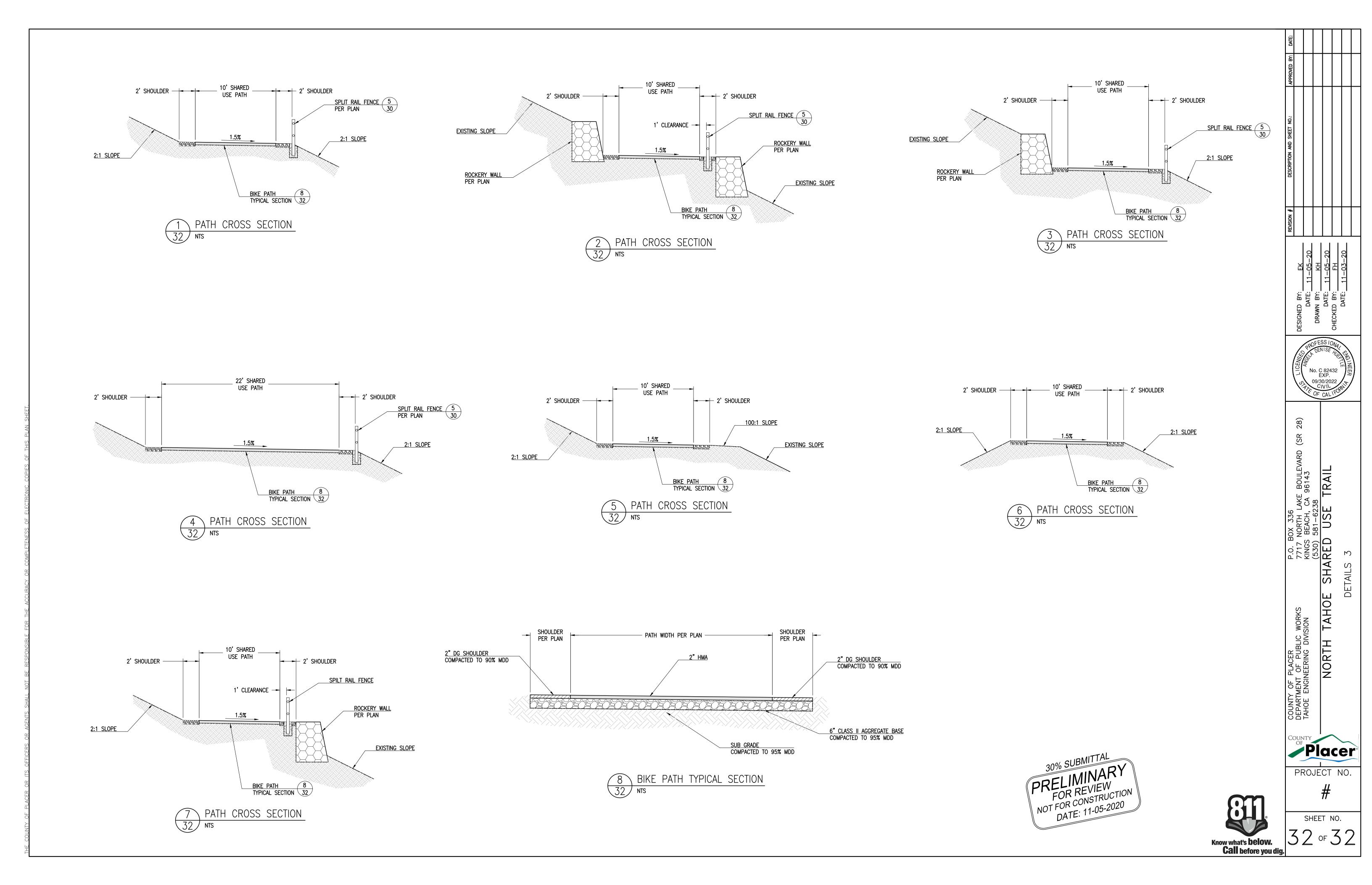
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SHEET NO.

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# Visual Resources Technical Memorandum

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ATTACHMENT B – Forest Plan Map 10 (Minimum Scenic Integrity)

