

Environmental Assessment
Bald Hills Road Improvement Project
Mile Post 13.46 to Mile Post 16.05
(± Williams Ridge Road)



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1. Purpose of and Need for Proposed Action

1.1 Introduction

The Proposed Bald Hills Road Improvement Project (Project) is a federal action subject to compliance with National Environmental Policy Act (NEPA) and a federal undertaking subject to compliance with the National Historic Preservation Act (NHPA). The National Park Service is the federal agency that owns and manages lands in Redwood National Park adjacent to and within the project area. The Lead Agency for the Project and NEPA and NHPA compliance is the Bureau of Indian Affairs (BIA). Humboldt County operates and manages Bald Hills Road and holds an easement from the National Park Service. One of the objectives of the Redwood National and State Parks (RNSP) General Plan is to “Work cooperatively with the agencies having primary jurisdiction on these U.S., state, and county roadways throughout the parks to promote public safety, to enhance visitor opportunities for travelers to enjoy scenic vistas and gain access to RNSP resources and facilities, and to protect RNSP resources that are adjacent to the roadways” (pg. 61). The Yurok Tribe is the Project proponent, proposing that BIA funds under the Tribal Transportation Program (TTP) be approved to complete the Project.

Location

The Legal Description of the Project Area is: Township 9 N, Range 2 E Sections 13, 14, and 24 HB&M on the Bald Hills USGS 7.5' quadrangle for Bald Hills, Humboldt County, California.

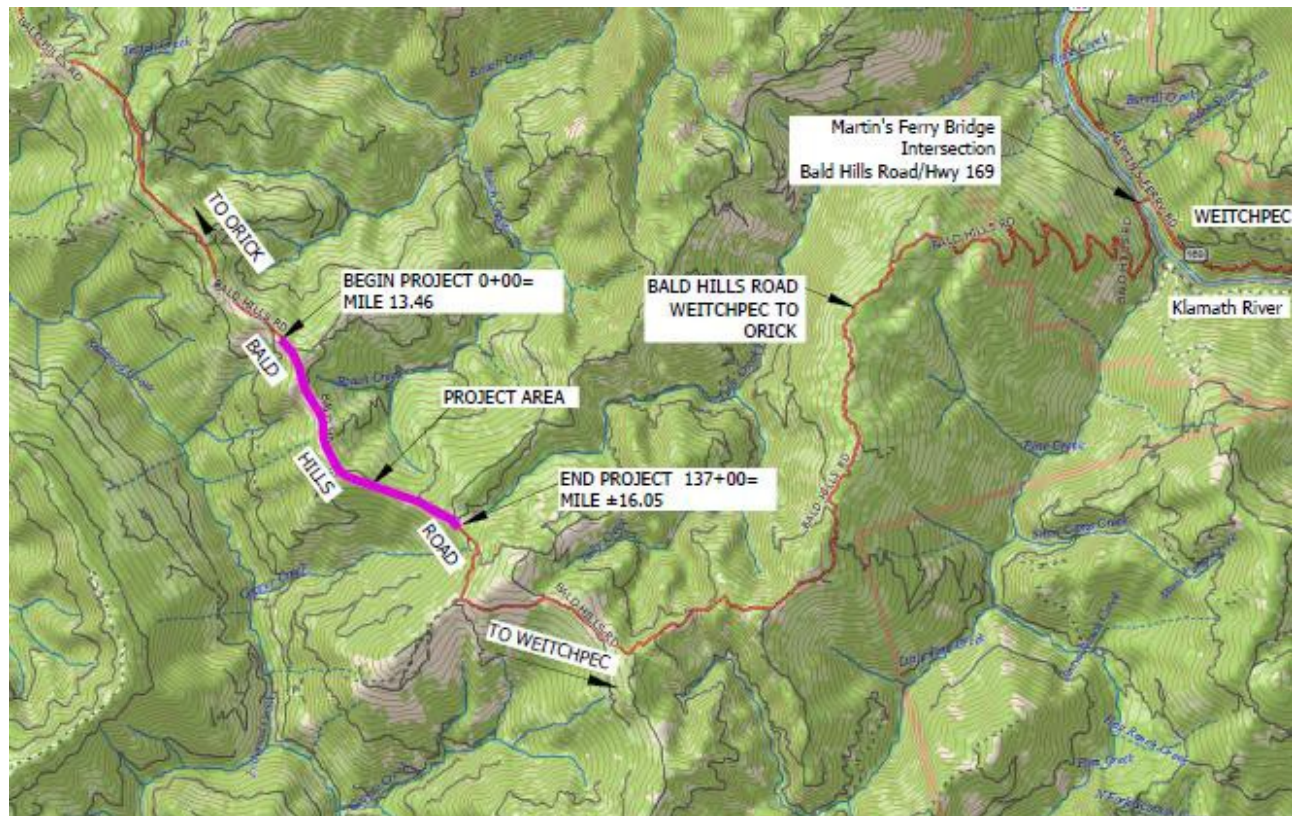
The Proposed Project includes paving and improvements along \pm 2.6 miles of existing road within Bald Hills Road.

The proposed project consists of paving and improvements that would occur along the existing rocky section of Bald Hills Road, which represents a major collector road in northern Humboldt County. Bald Hills Road extends 32.2 road miles from U.S. Highway 101 at Orick to State Highway 169 at Martins Ferry Bridge, passing through 9.2 miles of private property, 18.4 miles of the Redwood National Park, and 4.6 miles through the Yurok Reservation. The project area is situated within Redwood National Park along the ridge crest between the Redwood Creek and Klamath River watersheds, adjacent to Williams Ridge Road and Childs Hill Prairie. Elevations within the project area range from approximately 2,300 to 2,500 feet (NAVD88).

The project area extends from the southeast edge of Childs Hill Prairie (Post Mile 13.4) to the intersection of Williams Ridge Road (16.0), see figure 1. The initial design plans for the project (TVCE, 2013) included a project area from Post Mile 13.4 to Post Mile 16.1, or Station 0+00 to Station 137+00 on the design plans.



Figure 1 Project Area Map



Background

Bald Hills Road is the primary route connecting the upper and lower portions of the Yurok Reservation. The road is an extremely important route connecting residents of the reservation with job and educational opportunities and cultural-use areas, and improvements to Bald Hills Road are identified as the second highest priority project in the 2006 Yurok Tribe Transportation Plan. The entire length of road is listed on the Bureau of Indian Affairs (BIA) Indian Reservation Roads inventory. Bald Hills Road is the primary access road to the Bald Hills portion of Redwood National Park, and provides access to private property which includes residences and private timberland. The road also provides connectivity between the coast and inland communities such as Weitchpec, Orleans, and Hoopa. The measured average daily traffic (ADT) on Bald Hills Road using an electronic counting instrument near the intersection with Johnson Road (Post Mile 10.1) in May 2006 was 120.

In recent years, the Yurok Tribal Government has grown in response to increased activities and services provided by the tribe. As the main office for the Yurok Tribe is in Klamath,



California, the Bald Hills Road is the primary route between the main office and satellite offices in Weitchpec and Tulley Creek. Tribal staff is continually using this road in order to conduct business for the Tribe. Additionally, employees regularly use this road to commute to work, either to Klamath or Weitchpec.

Bald Hills Road begins at Highway 101 approximately 1.5 miles north of Orick, California (about 19 miles south of the mouth of the Klamath River) and runs for approximately 32-road-miles to Martin's Ferry Bridge that crosses the Klamath River near Weitchpec. The road is paved for the first 13.4 miles, then becomes a dirt and gravel road for the next approximately 5.5 miles. The road is paved from the Redwood National Park boundary (mile marker 19.04) to the reservation boundary (approximately mile marker 27). The final 4.6 miles are chip sealed.

The road passes through 9.2 miles of private property, 18.39 miles of the Redwood National Park, and 4.6 miles through the Yurok Reservation. Large portions of the 77,716-acre Redwood National Park are accessible only through Bald Hills Road, and the road serves as the primary access to and from the coast for the Hoopa Tribe and the Yurok Tribe.

Redwood National Park is managed by the National Park Service for perpetual stewardship of park resources and for the enjoyment, education, and inspiration of people forever. (National Park Service, 2016) The project area is associated with the Lyons Ranch Rural Historic Landscape District (NPS 2004) and the Bald Hills Archeological District (NPS 1982), which are both included in the National Register of Historic Places. As such, it is sensitive for archeological deposits and has special status as a protected cultural landscape.

The federal legislation (Public Law 95-250) passed in 1978 that expanded Redwood National Park states, "The Secretary shall permit, at existing levels and extent of access and use, continued access and use of acquired portions of the Bald Hills road by each current affected woods employer or its successor in title and interest: Provided further, That nothing in this sentence shall diminish the authority of the Secretary to otherwise regulate the use of the Bald Hills road" (92 Stat. 164).

Within the project area, Humboldt County holds deeded easements for the road right-of-way, which includes the entire existing road prism. Obtained in 1961 and 1962, the easements define a right-of-way for strips of land ranging from 50 to 60 feet in width along a specified centerline, along with additional width as may be necessary to construct and maintain the associated cut and fill slopes.

Using a five-tier Modified Overall Condition Index ranging from "failed" to "very good," Bald Hills Road as a whole is rated in failed condition (Winzler & Kelly, 2008). The Yurok Tribe, Bureau of Indian Affairs, and Humboldt County have a memorandum of agreement (Yurok Tribe et al, 2009) to work cooperatively on improvements for Bald Hills Road.





1.2 Purpose and Need

The BIA proposes to authorize grant funding to the Yurok Tribe to pave and improve this section of Bald Hills Road. All road work improvements would take place within the existing road prism or within the foot print of existing facilities to be replaced (e.g. culverts).

Currently, Bald Hills Road is in poor condition and does not meet the design criteria to handle the current road loads as described by American Association of State Highway and Transportation Officials (AASHTO). In its current condition, the road hinders economic development and employment/educational opportunities for the Yurok Tribe. As SR 169 is not connected, Bald Hills Road is the shortest route linking the northern and southern ends of the Yurok Reservation, and is therefore an extremely important route connecting residents of the reservation with jobs and educational opportunities.

Improvements to the Bald Hills Road are necessary for safety, conformance to standards, and ease of use. There has been an increase in the use of this road in recent years due to increased activities by the Yurok Tribe, specifically the need for a growing number of Tribal employees to travel back and forth between the main Tribal office in Klamath, and the upriver communities and offices in Weitchpec. The Yurok Tribe considers this route to be critical for residents of the upper Klamath area of the Yurok Reservation (Johnsons to Weitchpec) in that it forms a vital escape route in the event of an emergency. At times, State Route 169 and/or State Route 96 may be closed due to natural disasters such as a landslide, flooding, earthquake or forest fire. When this occurs, the Bald Hills Road becomes the only route for residents to get to safety and supplies.

Roadway improvements will improve the safety of the vehicles traveling on it. Resurfacing will help prevent tire skidding and slippage. The road surfacing activities would take place within the existing road prism width while culverts replaced during construction activities are limited to the area where existing inadequate or new culverts would be installed. By providing an improved running surface these changes would significantly help to increase the safety of the vehicles traveling on this route. Recently, the Martins Ferry Bridge was unusable, making Bald Hills Road one of the only routes for residents of the Tulley Creek area to access their homes. While recent repairs have been completed at the bridge, the bridge closure illustrates potential problems with access. [Trinity Valley Consulting Engineers, Project Study Report: Bald Hills Road, October 2009, pgs. 2-5]

The road within the project area is a dirt road with an aggregate surface deteriorated to differing degrees throughout the project area. The deteriorating roadway conditions within the project area are attributed to the settlement of embankment fills, erosion of embankment fills, road use, and landsliding. The observed settlements are attributed to failure of the fill prism along the contact between the fill and native soil, or failure along the headscarp of an active earthflow. A primary cause of erosion is the discharge of concentrated surface runoff to unprotected surfaces, resulting in gullyng of the fill slope and undermining of culverts. Work is needed to stabilize and



protect existing structural sections and improve drainage to prevent further deterioration. The existing road has 2 10-foot-wide travel lanes with minimum (2-foot-wide) gravel shoulders, to provide two way traffic flow throughout the project area. The proposed project would provide an adequate running surface for two lane traffic that would improve safety issues such as stopping distance and sliding.

The existing road within the current project area is composed completely of aggregate surfacing. Unpaved roads are a major source of dust, which has an impact on safety, aesthetics, health, vegetation, soils, and aquatic resources [Transportation Research Center, University of Alaska-Fairbanks, May 1992. Control of Dust Emissions from Unpaved Roads (Final Report). Report No. INE/TRC/QRP-92.05.]. The accident potential associated with unpaved roads increases due to loss of visibility, skidding and swaying of vehicles, less positive steering response, longer stopping distance, and broken windshields with flying aggregates [Transportation Research Center, University of Alaska-Fairbanks, May 1992. Control of Dust Emissions from Unpaved Roads (Final Report). Report No. INE/TRC/QRP-92.05.]. Paving the existing roadway within the project area is expected to improve safety due to improved visibility, improved tire traction, and fewer potholes.

Stormwater drainage conditions associated with the road in the project area are generally poor or completely nonfunctional. Several of the existing culverts have blocked and/or buried inlets and outlets, while others are deteriorated and need replacing. Relief ditches are in place at intervals that are generally in good shape, but could use some reshaping, and rocked armored outlets where cross-drains exist. One new culvert is proposed along the length of the project to better facilitate drainage.

Unpaved roads must be maintained (graded) annually with heavy equipment to maintain the desired shape, incorporate adequate fine materials for binding materials together and level of the roadway. Grading a road with intermittent paved and unpaved sections is operationally difficult. The proposed project will reduce the amount of annual maintenance needed by paving the entire project area and limiting the amount of annual grading that is necessary. Conversely, the road will require more extensive maintenance on a less frequent basis (15 to 30 years) to maintain the newly paved sections.

The General Management Plan / General Plan / Environmental Impact Statement / Environmental Impact Report for Redwood National and State Parks (RNSP General Plan) specifies eight management zones (Redwood National and State Parks, 1998). The project area is situated within a Transportation Zone (low-standard sub-zone) and adjacent to the Bald Hills Zone. The preferred alternative in the RNSP General Plan encourages Humboldt County to “maintain this road as a low-speed rural gateway to an area of diverse natural and cultural landscapes” (pg. 61).

The purpose of the proposed project is to stabilize and protect the roadway; create safer road conditions; reduce road maintenance needs; and reduce dust generation, erosion, and sediment runoff; and to better serve a rural, underserved, economically disadvantaged and minority population.



1.3 Project Description

Design Approach

The design approach is intended to improve the roadway surface and maintain compliance with American Association of State Highway and Transportation Officials design standards [American Association of State Highway and Transportation Officials (AASHTO), 2004. A Policy on Geometric Design of Highways and Streets. Fifth Edition] to the extent feasible, while limiting the project to work within the existing road right-of-way and minimizing ground disturbance. The focus of the project is to stabilize the roadway foundation and provide a continuous asphalt overlay on the road surface. Additional project features include applying shoulder backing (up to two feet), drainage improvements, and road striping. The overall approach for drainage is to maintain dispersed surface runoff to the greatest extent feasible, rather than concentrating runoff. Where maintaining dispersed runoff is not feasible, the runoff is collected in road-side ditches and conveyed to upgraded culverts and drainage features. The project does not involve road realignment outside the existing road prism.

Specific design considerations include the following:

- New road grades were required to match the existing road grades due to maintenance reconstruction to maintain construction limits within existing road beds as significant realignment to change the roadway geometry is not feasible.
- Shoulder widths were designed to meet the minimum AASHTO requirements of two feet.
- Construction outside of the established roadway prism is not deemed necessary. The project concept is limited to reconstruction and safety improvements only.

The proposed project is not intended to accommodate increased vehicle speeds. Enabling increased vehicle speeds within the project area would require realignment in several sections, which is not proposed, as well as additional widening to the traveled-way and shoulders. Maintaining the existing width of the traveled-way at 10 feet and including new traffic stripes to delineate the edges of the traveled-way will help discourage increased vehicle speeds.

During the course of consultation with NPS during the pre-planning stages of the project design, consultants evaluated the potential to utilize colored asphalt in order to provide an enhanced aesthetic appeal for the traveled road surface. However, after further research and dialogue this alternative was dismissed due to several reasons, both physical detriments related to appearance and maintenance as well as financial feasibility.



General Construction Information

Construction activities include, drainage system replacement, new drainage system installation, roadway grading, aggregate base rock installation, asphalt concrete paving, shoulder backing, and striping. Drainage improvements include replacement of existing culverts, installation of one new culvert, installation of RSP at cross-drain locations, and grading of ditches and drainage reliefs. Ancillary activities include, equipment staging, erosion control features, and material stockpiling. Typical heavy equipment is expected to include a dump trucks, backhoe, excavator, loader, compactor, tack truck, and paving machine. Construction will be restricted to daylight hours, primarily on weekdays. Project completion is expected to require up to 35 working days.

Traffic Control and Detour

Temporary closure of traffic lanes will be necessary during construction activities. Transit will be limited to one-way, flag-controlled traffic. No road bypasses will need to be constructed. Accommodations will be made for fire crews.

Staging/Stockpiling

Identified areas for staging of equipment, stockpiling of material, and equipment fueling/maintenance are shown on Table 1.

Table 1: Staging/Stockpile Sites (Site design plans for stockpile info).

Site No.	Post Mile	Station	Approx. Size	Description
1	13.76	17+10	3000 sq. ft	North side of road @ wide area

Culverts

Culvert deficiencies will be addressed as listed on Table 2. Replacement culverts will be made of metal (not plastic) for the contingency of prescribed burns or wild fires.



Table 2: Culvert Improvements (use design plans for CMP information).

Post Mile	Station	Culvert Diameter	Depth to Invert		Proposed Work
			Inlet	Outlet	
13.73	14+46	<P> 18-in	<P> 3.5 ft	<P> ? ft	Install new 18" diameter culvert (Replacement)
14.26	42+66	<P> 18-in	<P> 3.5 ft	<P> ? ft	Install new 18" diameter culvert (Replacement)
14.33	46+18.7	<P> 18-in	<P> 3.5 ft	<P> ? ft	Install new 18" diameter culvert (Replacement)
14.49	54+42	<P> 18-in	<P> 11.4 ft	<P> ? ft	Install new 18" diameter culvert (Replacement)
14.62	61+00	<P> 18-in	<P> 2.5 ft	<P> 7 ft	Install new 18" diameter culvert
14.67	63+80	<P> 18-in	<P> ? ft	<P> ? ft	Install new 18" diameter culvert (Replacement)
15.55	110+35	<P> 18-in	<P> ? ft	<P> ? ft	Install new 18" diameter culvert (Replacement)
15.68	117+04	<P> 24-in	<P> ? ft	<P> ? ft	Install new 24" diameter culvert (Replacement)
15.78	122+59	<P> 24-in	<P> ? ft	<P> ? ft	Install new 24" diameter culvert (Replacement)
15.83	125+20	<P> 18-in	<P> ? ft	<P> ? ft	Install new 24" diameter culvert (Replacement)
15.90	129+05	<P> 24-in	<P> ? ft	<P> ? ft	Install new 24" diameter culvert (Replacement)
15.97	132+57	<P> 18-in	<P> ? ft	<P> ? ft	Install new 24" diameter culvert (Replacement)

RSP = rock-slope protection

ND = not determined

<E> = existing

<P> = proposed

Relief Ditches

The existing roadway includes a series of relief ditches for dispersion of water flow from drainage of the existing roadside ditches. These ditches drain water away from the roadway to areas where the flows will not impact the roadway. Due to the ridgetop construction of this portion of the roadway, relief ditches are a viable alternative to culverts in some locations for drainage relief. Relief ditch locations are listed on Table 3.

*Table 3: Relief Ditches.*

Post Mile	Station	Description
13.52	3+20 LT	Relief ditch on existing roadside, clean out as required
13.70	14+46 LT	Relief ditch on existing roadside, clean out as required
13.99	28+25 RT	Relief ditch on existing roadside, clean out as required
14.02	29+37 LT	Relief ditch on existing roadside, clean out as required
14.86	74+13 RT	Relief ditch on existing roadside, clean out as required
14.99	81+03 RT	Relief ditch on existing roadside, clean out as required
15.10	86+70 LT	Relief ditch on existing roadside, clean out as required

Paved Driveways

A number of private driveways enter the roadway in this section. It is proposed that each access driveway have a paved apron for entrance onto the roadway. Locations of the driveways listed on Table 4.

Table 4: Paved Driveways.

Post Mile		Station		Description
Begin	End	Begin	End	
14.27	14.27	42+70 LT	43+10 LT	Driveway Apron
14.62	14.62	61+35 RT	61+48 RT	Driveway Apron
14.64	14.66	62+30 LT	63+20 LT	Driveway Apron
15.02	15.02	82+55 LT	82+70 LT	Driveway Apron
15.5	15.51	107+70 LT	108+50 LT	Driveway Apron
16.03	16.04	135+80 LT	136+50 LT	Paved Entrance at Williams Ridge Road
21	21	82+55 LT	82+70 LT	Driveway Apron
21.7	21.7	107+70 LT	108+50 LT	Driveway Apron

Best Management Practices (BMPs) & Erosion/Sediment Control Measures

To minimize erosion and control sediment movement, best management practices, including all standard measures will be instituted, as required Mitigations of this project. See Section 7.

Mitigation Measures.

2. Alternatives

2.1 Alternative One: Proposed Action

Under the Proposed Action Alternative, the BIA will award grant funding that will allow the Yurok Tribe to conduct the proposed project, including paving and making improvements to this section of Bald Hills Road, as described in the Project Description above.

2.2 Alternative Two: Chip-sealing Overlay

Alternative Two involves simply chip-sealing the existing road with no improvements to the roadbed and/or drainage. This Alternative does not include any cut and fill activities, culvert improvements, or vegetation removal beyond the existing road prism. Rather, the project would simply “overlay” asphalt and aggregate on the existing 2.6 mile road prism.

2.3 Alternative Three: No Action Alternative

Alternative Three would be to take no action and leave the existing road and corridor in its current state. This would require the ongoing road replacing (re-grading) that dirt surfaced roads require, with its associated maintenance costs and ground disturbance. No improvements to drainage would be made with associated dust and potential sediment flow to downstream waters.

3. Description of the Affected Environment

3.1 Land Resources

3.1.1 Topography and Geography

Bald Hills Road in the project area lies along the trending ridge after having ascended out of the Klamath River basin. The project runs along the major trending ridge through Childs Hill Prairie between Williams Ridge and Cagle Ridge. By paralleling the ridge line elevation remains fairly consistent throughout the project (~2400 – 2250). The project area extends along the ridge between the Lower Klamath River and Redwood Creek watersheds. In general, this is an area with relatively gentle topography along the ridge top (see project plan maps). Predominant vegetative cover in these watersheds consists of fir forest, oak woodlands, chaparral, and redwood forest. [Humboldt County Community Development Services, Humboldt 2005 General Plan Update, Natural Resources and Hazards, Vol. II: Detailed Watershed Characteristics and Regulatory Framework Analysis, (Eureka: September, 2002), p. 35].



3.1.2 Soils

The most common soils in the project area primarily fall within the Mooncreek-Noisy- Tossup complex (462) and the Burroin-Bagaul (474) complex soil series according to the most recent soil survey by the Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service). Other soil complexes found on portions of the project area include: the Mooncreek-Tossup-Noisy complex; the Sidehill-Oakside- Darkwoods complex; and the Kinseyridge-Titlow complex. Other soil complexes found in the project area make up less than 1% of the total area. These soils are composed of colluvium and residuum derived from schist, sandstone, mudstone, and siltstone. They are all well drained to somewhat excessively drained, with low available water capacity. The depth to water table is typically more than 80 inches and the depth to restrictive feature varying from 10 inches to more than 80 inches. Slopes range from 2% to nearly 100%. [NRCS, Custom Soil Resource Report for Humboldt and Del Norte Area, California and Redwood National and State Parks, California, June 2011, pg. 10].

3.1.3 Geologic Setting

The project area is underlain by metamorphic and sedimentary rocks of the Franciscan assemblage of Late Jurassic and Cretaceous age of the California Coast Ranges. The Franciscan assemblage is composed of two sandstone and mudstone sequences termed “coherent unit of Lacks Creek” and “incoherent unit of Coyote Creek,” along the project. Deep seated landslides and debris slide slopes are mapped along the southern extent of the project area. [Falls, J.N., McGuire, D.J., Dell’Osso, D.r., 2000].

3.2 Water Resources

The proposed project area lies on the trending ridge just after Bald Hills Road has ascended out of the Lower Klamath River Watershed. Annual average precipitation in the area is approximately 44 inches per year. Rain falls primarily from October through April, with little or no rainfall in July and August [ref: <http://www.worldweatheronline.com/city-guide/United-States-of-America/2395340/Weitchpec/2410693/info.aspx>]. But fog is common throughout the year. This results in moist habitats with relatively abundant hydrological resources. Numerous smaller drainages and creek headwaters begin on either side of the project area as it moves along the top of the ridge. There is a Freshwater Emergent wetland associated with the uphill spring mapped by the National Wetlands Inventory, as is the Freshwater Pond on the south side of the road [U.S. Fish and Wildlife, National Wetlands Inventory, FWS Wetlands Mapper, <http://137.227.242.85/wetland/>, accessed June 2011]. There are no areas designated sole source aquifers within the proposed project area. [U.S. Environmental Protection Agency, Source Water Protection, Designated Sole Source Aquifers in EPA Region IX, <http://www.epa.gov/region09/water/groundwater/ssa.html>, (May 2007)] The project area is not in the Coastal Zone.[California Coastal Act, 20 Pub. Res. Code §30103(a).].



3.3 Air Quality

The project site is classified as a Class I air shed. Class I areas are defined as national parks larger than 6,000 acres, and national wilderness areas larger than 5,000 acres which existed on August 7, 1977. This class provides the most protection to pristine lands by severely limiting the amount of additional air pollution that can be added to these areas. The site is in the North Coast Air Basin, as regulated by the North Coast Unified Air Quality Management District, under the California Air Resources Board. Air quality is monitored in the nearby Redwood National Park, on the Yurok Reservation, and in Eureka and Crescent City. The area is designated as either in attainment or as unclassified for all National and State Air Quality standards, with the exception of the State PM₁₀ standard. Only 3 counties in the State of California are classed as in attainment for the State PM₁₀ standard.

In addition to the State monitoring of air quality, the Yurok Tribe Environmental Program has two air quality monitoring stations on the Reservation [Yurok Tribe Environmental Program, *Real-Time Environmental Monitoring Stations*, Accessed from: <http://exchange.yuroktribe.nsn.us/lrgsclient/stations/stations.html>, ongoing]. One is located in Weitchpec, which is the closer of the two (about 4 linear miles away), and the other is located in Klamath Glen, which is approximately 30 linear miles from the proposed project. Data collected from the Environmental Beta Attenuation Monitor (EBAM) at the Weitchpec Weather Station determined that the 24-hour average for air quality in this area has never exceeded federal PM₁₀ requirements (150 µg/m³) or the established federal and state 24-hour average for PM_{2.5} (65 µg/m³) since the installation of the EBAM Yurok Tribe Environmental Program, *Real-Time Environmental Monitoring Stations*, Accessed from: <http://exchange.yuroktribe.nsn.us/lrgsclient/stations/stations.html>, ongoing]. Air quality in the general area is considered good to excellent because of the low population, scarcity of pollutant sources, and prevailing westerly winds, blowing inland from the ocean where there are few sources of air pollution. A major source of dust in the project area is the dust produced by traffic on unpaved dirt roads.

3.4 Living Resources

3.4.1 Vegetation

The project area itself is predominantly within a large prairie referred to as “Childs Hill Prairie” where native and non-native grassland species occur. Given the corrals depicted along the ridge top on the Bald Hills 7.5' Quadrangle and the historical grazing that has occurred within the area numerous non-native and weedy species are likely to occur.

In general, the lands around the project area have been heavily logged. The lands surrounding the project area are a mixture of private ownership and ownership by the Green Diamond Resource Company which continues to manage those lands for timber production. Commercial logging has left a patchwork of old growth, second growth, and third growth stands in and



around the area. Second-growth forests are typically dominated by Douglas-fir. Redwood sprouting is typically common, with hemlock, and grand-fir lesser associates in the tree overstory. The forest understory includes common plant species such as salmonberry, huckleberry, blackberry, maidenhair fern, sword fern, wild iris, Oregon grape, wild parsnip, wild celery, coltsfoot, and rhododendron.

3.4.2 Wildlife and Special Status Species

The site is overwhelmingly composed of grasslands contiguous with the surrounding forest communities. As such, it is expected to support a diversity of native wildlife, including bear, mountain lion, bobcat, deer, opossum, raccoon, skunk, squirrel, and other similar species. The proximity of the road limits its usefulness as a breeding or foraging ground for most larger species. The species that are likely to breed and forage exclusively near the project area are likely to be small animals with abundant populations throughout the surrounding area.

The Arcata Office of the U.S. Fish and Wildlife Service lists several Special Status Species that are generally found within the area of the Bald Hills U.S. Geological Survey Topographic Map Quadrangle in which the site is found. Of these species, 4 are aquatic dependent fish and 3 are aquatic associated birds (see appendix 2, Species List). No aquatic habitat of sufficient size to support a breeding population of birds occurs on or near the project area.

There are no federally listed threatened or endangered species in the project area. Vegetation adjacent to the road contains habitat for nesting birds protected under the Migratory Bird Treaty Act.

3.5 Cultural Resources

The National Historic Preservation Act (NHPA) recognizes certain properties and places to be of local, state or national significance in terms of history, architecture, archeology, engineering and/or culture. Properties that meet certain criteria can be listed on the National Register of Historic Places (NRHP). Federal agencies proposing or funding an action that could potentially affect properties listed on, or eligible for listing on, the National Register are required to consider the effects of their proposed action on those properties. Section 106 of the NHPA requires agencies to consult with the State Historic Preservation Officer (SHPO) and, if applicable, the Tribal Heritage Preservation Officer (THPO), to gain concurrence with their determinations under the NHPA. Certain determinations must also be reviewed by the Advisory Council on Historic Preservation.

3.5.1 Area of Potential Effect

Section 106 of the NHPA requires that each undertaking define the area in which project activities have the potential to affect historic or cultural resources. For the purposes of complying



with this section, the Area of Potential Effect (APE) for this undertaking is defined horizontally as the existing roadway, including travel lanes and shoulders and adjacent drainage ditches, and identified staging and storage areas as well as view shed areas.

The Lyons Ranch Historic District and the Bald Hills Archeological District are located within the APE. The Bald Hills Road is a key contributing resource of the Lyons Ranches Historic District and retains its integrity as a rural road that serves as a vital regional connection to the Bald Hills.

3.6 Land Use and Recreation

The Bald Hills Road in the project area passes through Redwood National Park. The road serves as a rural gateway to an area of diverse natural and cultural landscapes. It provides opportunities for visitors to observe and appreciate a variety of natural and cultural resource management projects, and is a unique alternative route to the scenic Klamath and Trinity River corridors. (National Park Service 1999). The site has been previously used for livestock and timber production (main haul route). Surrounding lands are designated for timber production by the current Humboldt County General Plan [Humboldt County Web GIS Map, Humboldt County Online Mapping, <http://gis.go.humboldt.ca.us>, accessed January 13, 2011]. This area may be used for traditional foraging, picnicking or sightseeing, and other recreational uses typical of a remote, rural and forested area. In particular, the meadows in and around the area have traditionally been used as a picnicking spot, and the spring is in continuous use.

3.7 Transportation and Traffic

Bald Hills Road is a rural major collector road, integral to the road system in Humboldt County that currently carries an average daily traffic volume of 120 trips [Humboldt County Public Works, 2006, traffic count near the intersection with Johnson Road (Post Mile 10.1)].

Bald Hills Road is a significant transportation corridor for the Yurok Reservation carrying daily traffic from the settlements and Tribal offices in the Upper Reservation to the coast, and the Lower portion of the Yurok Reservation where there is additional settlement and the Main Tribal Office. Many personnel employed by the Yurok Tribe and Hoopa Tribe members travel regularly between the two Tribal offices or to other portions of the Reservation as part of the regular performance of their duties.

3.8 Visual

The site currently presents an unbroken visual experience of forests contiguous with and integrated with the surrounding forest. This is primarily visible to motorists traveling on Bald Hills Road. There are no other vantage points from which the site is visible. There are no residences in or near the site from which the visual appearance of the site would be apparent. A Bald Hills Road Visual Assessment (Appendix X) was prepared by the NPS and recommendations made throughout the report have been taken into consideration throughout the projects proposal.



3.9 Noise

Prolonged or excessive noise can be a hazard to sensitive populations and sites within the park. Populations most sensitive to noise include wildlife populations during the nesting or breeding season; residential uses; and some recreational uses. Sensitive wildlife populations are discussed in Living Resources above. There are no residences in the area surrounding the site. Park-related recreational opportunities in the project area primarily involve viewing scenery or wildlife while driving along the road.

3.10 Socioeconomic Considerations

Employment and Income

There are no homes within the proposed project area and only a scattering of residences in the immediate surrounding area so discussion of employment, income, and other demographic information will be discussed in the context of the Yurok Reservation and surrounding communities because these are the people and the area that will most benefit and/or be affected by the proposed project.

The Yurok Reservation is an area with little development and sparse economic opportunities. The largest employer in the immediate area is the Yurok Tribe with over 200 employees. The closest Tribal office to the proposed location is approximately 7 linear miles away (approximately 12 miles by road), however, the main office, where most employees work is approximately 50 miles away.

In 2000, the rate of unemployment for all people 16 years and over residing within the Yurok Reservation (836) was 48%. This high rate of unemployment is compounded by the fact that 31% of households on the Reservation (413) were making less than \$10,000 a year in 1999. The next highest percentage of people (17.9%) make between \$15,000 and \$24,999. Moreover, median household income that same year was \$20,592. Conditions on the Hoopa Reservation and in the surrounding area are similar. [U.S. Census Bureau, Profile of General Demographic Characteristics, Yurok Reservation, CA, 2000, Summary File 1, <http://factfinder.census.gov>, (October 2005)].

Demographic Trends

According to the 2000 U.S. Census, the Yurok Reservation has a total population of 1,103 persons, of which, approximately one-half designated themselves as American Indian and/or Alaska Native. The median age is 40.1 years old, with the highest percentage of residents (16.4%) being between 45 and 54 years old.





Living conditions within the Reservations vary some by the community in which one resides. A large segment of the Upper Yurok Reservation is without electrical and telephone services. Additionally, there are only community/public water systems in certain communities, all other households are on private wells, springs, or surface water sources.

There are 441 total households on the Yurok Reservation and the average household size is 2.46, compared to the average family size, which is 3. Of those total households, 32% have individuals under 18 and 28% have individuals 65 years and over. Thirty-five percent of residents have a high school degree and 68% have a high school degree or higher. Of the civilian population 18 years and over, 20.4% are veterans.

3.11 Community Infrastructure

As previously stated, the immediate surrounding area is not developed and is very sparsely populated. All access to the proposed project area is conducted by individual vehicles, as no public transit is available in the area. Access to surrounding communities is similar. The following is a description of services in the four closest local communities, as well as driving distances to each community.

Tulley Creek/Martin's Ferry: The project is approximately 6 miles from Tulley Creek/Martins Ferry. There are only residents, a transfer station, and a privately owned nursery in this community. A fire station is currently being constructed at Tulley Creek for the local volunteer fire department. There are no community water or wastewater systems, however, there are electrical and telephone services in the area.

Weitchpec: The proposed project is approximately 8 miles from Weitchpec. In this community there is a Yurok Tribal Office, which holds offices, community room, a branch of the Tribal Police, headquarters for the Tribe's Search and Rescue Crew, limited social services, and a branch of the United Indian Health Services, which provides limited non-emergency healthcare services. Also in Weitchpec there is a local store, gas station, church, and the Yurok Magnet Program, a K-3rd grade magnet school. There is a community water system that supplies some of this community and telephone and electrical services are also available.

Wautec: The proposed project is approximately 6 miles from the community of Wautec, which includes churches, residents, a firehouse for the volunteer fire department, and Jack Norton, a K-8th grade elementary school. There are no electrical and telephone infrastructure in this community, however, there is a community water system.

Hoopa: This larger community is approximately 20 miles from the proposed project area and has all basic services. Hoopa includes an emergency hospital with ambulatory response services; however, many emergency victims are taken to Mad River Hospital, located in Arcata approximately 52 miles away. Hoopa also has a grocery store, hotel, Post Office, several stores, Hoopa Tribal Police Department, Humboldt County Sheriff sub-station, social services,





gas station, locations to access public bus transportation to the coast, Hoopa Elementary School (K-8th), Hoopa High School, and Jack Norton Continuation School.

4. Environmental Consequences

4.1 Effects on Land Resources

Alternative One

Alternative One would involve regrading of the existing dirt roadway surface and resurfacing with new pavement. Re-grading will be performed where necessary to establish a roadway of sufficient width to accommodate traffic in both directions and adequate shoulders. Effort has been made to design the widened roadway such that it uses the existing alignment and traveled widths throughout the project area. As such, the project will avoid vegetative resources along the road way. This ground disturbance would have a negligible effect on Land Resources. All improvements will be engineered to meet current standards and will, therefore, be an improvement to roadway and ground stability in the project area. Therefore, there would be less-than-significant effects on Land Resources from this alternative.

Alternative Two

Alternative Two involves simply chip-sealing the existing road with no improvements to the roadbed and/or drainage. This Alternative does not include any cut and fill activities, culvert improvements, or vegetation removal beyond the existing road prism. Rather, the project would simply “overlay” asphalt and aggregate on the existing 2.6 mile road prism.

Alternative Three

Alternative Three is the no action alternative. This alternative would have no effect on Land Resources.

4.2 Effects on Water Resources

Alternative One

In general, the proposed project will re-grade and resurface the existing roadway with impervious pavement. This will reduce the potential erosion and sediment flow that may occur from the existing dirt and gravel roadbed. In addition, the project proposes to improve existing drainage structures in the project area, and replace failed culverts where they occur. All project drainage improvements will include energy dissipaters where needed, thus reducing the potential for an erosive effect to downstream watercourses. This would improve the impacts from the existing roadway to surrounding drainages and creeks. Alternative One would reduce the deleterious effects on water quality from dust.



Alternative Two

Alternative Two involves re-grading portions of the existing roadway surface and applying chip-seal to the existing road surface with no improvements to the drainage. This Alternative does not include any cut and fill activities, culvert improvements, or vegetation removal beyond the existing road prism. Rather, the project would simply re-grade and provide the application of chip seal along the existing 2.6 mile road prism. By not improving culverts it would have a deleterious effect on water quality.

Alternative Three

Alternative Three is the no action alternative. This alternative would have no effect on water resources. By not improving culverts it would have a deleterious effect on water quality.

4.3 Effects on Air Quality

Air Quality impacts come from two main sources in the project area: emissions from vehicles moving through the area, and dust raised by their passage on dirt roads. Both alternatives would have similar impacts from the presence of moving vehicles on Bald Hills Road, as the project is not expected to significantly increase traffic levels.

Alternative One

Alternative One would involve removal of the existing dirt roadway surface and resurfacing with new pavement. Re-grading will be performed where necessary. This would create short-term construction impacts from dust which would be minimized with the standard BMPs already incorporated into the project. Over the long-term the project improvements would incrementally reduce impacts to the area from dust, thus, reducing the adverse effects on air quality and air quality related values in a Class 1 air shed. There would be a less-than-significant short-term impact, and long-term locally beneficial impact to local air resources from this alternative.

Alternative Two

Alternative Two involves re-grading portions of the existing roadway surface and applying chip-seal to the existing road surface with no improvements to the drainage. Re-grading will be performed where necessary. This would create short-term construction impacts from dust which would be minimized with the standard BMPs already incorporated into the project. Over the long-term the project improvements would incrementally reduce impacts to the area from dust, thus, being a beneficial effect on air quality and air quality related values in a Class 1 air shed. There would be a less-than-significant short-term impact, and long-term moderately beneficial impacts to local air resources from this alternative.



Alternative Three

The No Action Alternative would not provide the benefit of reducing the dust generated by traffic on the road. There would continue to be short- and long-term moderate impacts to local air quality and air quality related values in a Class 1 air shed from this alternative.

4.4 Effects on Living Resources and Special Status Species

Alternative One

Short-term impacts

Construction noise, dust and ground disturbance would have a short-term, detrimental effect on plant and animal resources in the project vicinity. Vegetation would be removed where ever the ground is disturbed. There is potential for the disturbed ground to be re-colonized by invasive, exotic species that have the potential to out-compete local species and thus gain or expand a foothold in the area. The BMPs already incorporated into the project description would minimize or eliminate this possibility.

All project work would occur within the existing disturbed road corridor. Tree removal would be avoided. Any impacts to listed fish would be negligible because the few headwater streams found in the project area are very distant from fish bearing reaches, and the best management practices described in Section 7 would minimize or avoid sedimentation of the streams from runoff from the project area. There would be no impacts from noise or disturbance because the Bald Hills Road has a high ambient noise level from existing vehicle use. Therefore, short-term impacts to living resources would be less-than-significant.

Given the nature of failed culverts within the project vicinity, the preferred alternative would yield beneficial effects to water quality.

Long-term impacts

The improvements to project drainage would have a minimal, beneficial long-term effect on aquatic resources in the downstream watercourses. Improvements to the road bed and drainage facilities in the project area reduce the potential for site drainage to increase the sediment load to habitats for those species that live in the downstream creeks and tributaries to Redwood Creek.

The only two special status species likely to be found on or near the site are the Northern Spotted Owl and the Pacific Fisher. Neither of these species is likely to breed on the site, or use it for more than passage to habitats used more extensively by these species, and this rarely, because of the noise and activity already associated with traffic on Bald Hills Road. Therefore, the project should have no effect on special status species.



Should improvements to Bald Hills Road cause traffic to travel at higher speeds or at increased volumes, there is a potential for an incremental increase to road kills of local wildlife. This would not be expected to have a significant effect on any local wildlife population. Long-term negative and beneficial impacts to living resources would therefore be less-than-significant.

Alternative Two

Short-term impacts

Construction noise, dust and ground disturbance would have a short-term, detrimental effect on plant and animal resources in the project vicinity. Vegetation would be removed where ever the ground is disturbed. There is potential for the disturbed ground to be re-colonized by invasive, exotic species that have the potential to out-compete local species and thus gain or expand a foothold in the area. The BMPs already incorporated into the project description would minimize or eliminate this possibility.

All project work would occur within the existing disturbed road corridor. Tree removal would be minimal. Any impacts to listed fish would be negligible because the few headwater streams found in the project area are very distant from fish bearing reaches, and the best management practices described in Section 7 would minimize or avoid sedimentation of the streams from runoff from the project area. There would be no impacts from noise or disturbance because the Bald Hills Road has a high ambient noise level from existing vehicle use. Therefore, short-term impacts to living resources would be less-than-significant.

Long-term impacts

The improvements to project drainage would have a minimal, beneficial long-term effect on aquatic resources in the downstream watercourses. Improvements to the road bed and drainage facilities in the project area reduce the potential for site drainage to increase the sediment load to habitats for those species that live in the downstream creeks and tributaries to Redwood Creek.

The only two special status species likely to be found on or near the site are the Northern Spotted Owl and the Pacific Fisher. Neither of these species is likely to breed on the site, or use it for more than passage to habitats used more extensively by these species, and this rarely, because of the noise and activity already associated with traffic on Bald Hills Road. Therefore, the project should have no effect on special status species.

Should improvements to Bald Hills Road cause traffic to travel at higher speeds or at increased volumes, there is a potential for an incremental increase to road kills of local wildlife. This would not be expected to have a significant effect on any local wildlife population. Long-term negative and beneficial impacts to living resources would therefore be less-than-significant.



Alternative Three

Short-term impacts

Alternative Three is the no project alternative. This Alternative would not provide the benefit of reducing the sediment generated by the road. However, the effect of this alternative is negligible. Therefore, there would be no impacts to Living Resources from this alternative.

Long-term impacts

Alternative Three is the no project alternative. This Alternative would not provide the benefit of reducing the sediment generated by the road. However, the effect of this alternative is negligible. Therefore, there would be no impacts to Living Resources from this alternative.

4.5 Effects on Cultural Resources

Alternative One: Proposed Action

A separate Cultural Resources Inventory Report was prepared by the Yurok Tribe Cultural Resources Program (confidential appendix 3).

The NPS also prepared a Bald Hills Road Visual Assessment (NPS 2014) to evaluate potential impacts to visual resources and the Lyons Ranch Historic District from the proposed project. The California State Historic Preservation Office concurs with the Bureau of Indian Affairs determination of **“No Adverse Effect”** per 36 CFR 800 for *the Yurok Tribe Bald Hills Road Improvement 13.46 to 16.05* with protection measures that ensure road improvements are a compatible alteration to the Bald Hills Road as a contributing feature to the Lyons Ranch Historic District.

Table 5. Summary of Effects to Lyons Ranch Historic Property, Specifically Bald Hills Road as Key Contributing Resource from Alternative One, Proposed Action (from NPS 2014).

Character-defining Features (identified in the Cultural Landscape Inventory)	Impact Level/Assessment of Effect
Natural System and Features	
Geomorphology/Geology	Negligible Effects
Hydrology	Negligible effects to Minor Adverse Effects
Vegetation	Negligible effects to Minor Adverse Effects
Spatial Organization	
Alignment	Negligible Adverse Effects
Width	Negligible Adverse Effects
Shoulders and Turnouts	Negligible Effects
Historic Fence Lines	Minor Adverse Effects





Topography	
Grade	Negligible to Minor Adverse Effects
Cross-Section	Negligible to Minor Adverse Effects
Cuts	Negligible Effects
Fill	Negligible Effects
Views and Vistas	Minor to moderate Adverse Effects

Alternative Two: Chip-sealing Overlay

Alternative Two involves simply chip-sealing the existing road with no improvements to the roadbed and/or drainage. This Alternative does not include any cut and fill activities, culvert improvements, or vegetation removal beyond the existing road prism. Rather, the project would simply “overlay” asphalt and aggregate on the existing 2.6 mile road prism. This alternative could have negative impacts to Cultural Resources by not addressing the drainage issues along this section of Bald Hills Road. Chip-sealing could also impact the visual and noise levels associated with the Bald Hills Landscape and Traditional Cultural Property.

Table 6. Summary of Effects to Lyons Ranch Historic Property, Specifically Bald Hills Road as Key Contributing Resource from Alternative Two, Chip Seal (from NPS 2014).

Character-defining Features (identified in the Cultural Landscape Inventory)	Impact Level/Assessment of Effect
Natural System and Features	
Geomorphology/Geology	Negligible effects
Hydrology	Negligible effects to Moderate Adverse Effects
Vegetation	Negligible effects to Minor Adverse Effects
Spatial Organization	
Alignment	Negligible effects to minor adverse effects
Undulating Grade	Minor to Moderate Adverse Effects
Width	Minor Adverse Effects
Shoulders and Turnouts	Minor Adverse Effects
Historic Fencelines	Minor Adverse Effects
Topography	
Grade	Negligible Effects
Cross-Section	Negligible Effects
Cuts	Negligible Effects
Fill	Negligible Effects
Views and Vistas	Minor Adverse Effects



Alternative Three: No Action Alternative

This is the no action alternative. The no action alternative would have negligible effects to the Lyons Ranches Historic District. There would be no change to the existing historic character of the Bald Hills Road. Negligible effects would be from the continued road maintenance operations such as grading that results in earthen and gravel berms along the road shoulders.

4.6 Effects on Land Use and Recreation

Alternative One

The proposed project would repave a short section of Bald Hills Road. This would incrementally improve the safety and comfort of travel, but is unlikely to significantly change any factors that affect resource use patterns. It would be an incrementally beneficial effect on the transportation network. This alternative would not have any impact on resource use patterns, however should provide additional protection for water quality within the watershed.

Alternative Two

The proposed project would provide for the application of chip seal along a short section of Bald Hills Road. This would incrementally improve the safety and comfort of travel, but is unlikely to significantly change any factors that affect resource use patterns. It would be an incrementally beneficial effect on the transportation network. This alternative should not have any impact on resource use patterns.

Alternative Three

This is the no action alternative. This alternative should not have an impact on resource use patterns.

4.7 Effects on Transportation and Traffic

Alternative One

The proposed project would repave a short section of Bald Hills Road. This would incrementally improve the safety and comfort of travel. It would therefore have an incrementally beneficial effect on transportation and traffic.

Alternative Two

Alternative Two involves re-grading portions of the existing roadway surface and applying chip-seal to the existing road surface with no improvements to the drainage. This would



incrementally improve the safety and comfort of travel. It would therefore have an incrementally beneficial effect on transportation and traffic.

Alternative Three

This is the no action alternative. This alternative will not improve road conditions and therefore not have the beneficial impact on transportation and traffic that the proposed project alternative would have.

4.8 Effects on Visual Resources

Alternative One

The primary visual impact of the project would be to convert the existing dirt and gravel road surface to a paved travelway. In narrow stretches, the project will also add shoulders on either side of the road. There will be no change, however, in the unbroken visual experience of forests integrated with the surrounding forest. This change in road surface would make the appearance of the road more consistent with traveler's experience of roads that are typically paved, and would be unlikely to be noticed by most travelers. This section of road is not visible from any other vantage or sensitive uses and will, therefore, have a less-than-significant impact to visual resources.

Alternative Two

The primary visual impact of the project would be to convert the existing dirt and gravel road surface to a travelway with chip seal application. In narrow stretches, the project will also add shoulders on either side of the road. There will be no change, however, in the unbroken visual experience of forests integrated with the surrounding forest. This change in appearance would make the appearance of the road more consistent with traveler's experience of roads that are typically paved, and would be unlikely to be noticed by most travelers. This section of road is not visible from any other vantage or sensitive uses and will, therefore, have a less-than-significant impact to visual resources.

Alternative Three

This is the no action alternative. This alternative should not have an impact on visual resources.

4.9 Effects on Noise

Alternative One

Short-term impacts

There will be short-term, localized increases to noise levels from construction of this project. There are no residences, hospitals or other resources in the local area sensitive to noise impacts, with the possible exception of certain breeding animals, and they are not likely to be found in the immediate project vicinity due to the ongoing noise and disturbance of the existing roadway traffic (as discussed in Section 3.4 above). Therefore, the project would have a less-than-significant short-term impact to noise levels.

Long-term impacts

In the long-term, the paving of this section of roadway would potentially reduce the noise made by passing vehicles as the smoother pavement reduces the noise generated by impacts with potholes and rocks. Therefore, the project would have a potentially beneficial effect on long-term noise impacts.

Alternative Two

Short-term impacts

There will be short-term, localized increases to noise levels from construction of this project. There are no residences, hospitals or other resources in the local area sensitive to noise impacts, with the possible exception of certain breeding animals, and they are not likely to be found in the immediate project vicinity due to the ongoing noise and disturbance of the existing roadway traffic (as discussed in Section 3.4 above). Therefore, the project would have a less-than-significant short-term impact to noise levels.

Long-term impacts

In the long-term, the application of chip seal along this section of roadway would potentially reduce the noise made by passing vehicles as the smoother pavement reduces the noise generated by impacts with potholes and rocks. Therefore, the project would have a potentially beneficial effect on long-term noise impacts.

Alternative Three

Alternative Three is the no project alternative. There will be no change in noise levels from this alternative.

4.10 Effects on Socioeconomic Conditions

Alternative One

The proposed project would pave a short section of Bald Hills Road. This would incrementally improve the safety and comfort of travel, but is unlikely to significantly change any factors

that affect socioeconomic conditions. It would be an incrementally beneficial effect on community infrastructure. This alternative would have a beneficial impact on socioeconomic conditions.

Alternative Two

The proposed project would provide for the application of chip seal along a short section of Bald Hills Road. This would incrementally improve the safety and comfort of travel, but is unlikely to significantly change any factors that affect socioeconomic conditions. It would be an incrementally beneficial effect on community infrastructure. This alternative would have a beneficial impact on socioeconomic conditions.

Alternative Three

Alternative Three is the no action alternative. This alternative should not have an impact on socioeconomic conditions.

4.11 Effects on Community Infrastructure

Alternative One

Short-term

There would be short-term construction impacts involving delays and obstructions to traffic. These impacts should be mitigated to less-than-significant levels by standard practices already incorporated into the project. This alternative should have a less-than-significant short-term impact on Community Infrastructure.

Long-term

There should be an incremental long-term beneficial effect on Community Infrastructure due to the improvement in conditions on Bald Hills Road.

Potential culvert failure would be significantly reduced given this alternative and therefore potential road failure and road closure would be reduced as well.

Alternative Two

Short-term

There would be short-term construction impacts involving delays and obstructions to traffic. These impacts should be mitigated to less-than-significant levels by standard practices already incorporated into the project. This alternative should have a less-than-significant

short-term impact on Community Infrastructure.

Long-term

There should be an incremental long-term beneficial effect on Community Infrastructure due to the improvement in conditions on Bald Hills Road.

Alternative Three

Alternative Three is the no action alternative. Under this alternative, the existing sub- standard road conditions would not be mitigated by proposed project actions. Thus, the existing road would continue to be in fair to poor condition, not meeting AASHTO standards, and would continue to fall short of public safety goals. This alternative could have a long-term moderate to significant impact to Community Infrastructure.

4.12 Methodology and Definitions of Significance

4.12.1 Methodology

Effects on each resource are evaluated based on observations and quantifications of the effects of similar projects, previously adopted environmental documents, relevant scientific research and publications, and best professional judgment of environmental, engineering, geotechnical and other resource staff and consultants involved In or consulted as part of the project development process. Evaluations made based on best professional judgment are derived from the technical expertise of staff and consultants, based on several factors:

- (1) their years of experience observing and analyzing the effects of past projects similar to this one,
- (2) monitoring of the effects of past and current projects similar to this one,
- (3) consultation with knowledgeable local and regional ecologists, geologists, hydrologists, geomorphologists, botanists, wildlife and fish biologists, archeologists, and environmental specialists, and
- (4) relevant reports and studies prepared by academic, industry, and government agency personnel on the effects of similar projects.

4.12.2 Definitions of Significance

The Council of Environmental Quality (CEQ) NEPA Handbook lists several factors to consider in determining if a proposed action will have a significant impact of the quality of the human environment. The Handbook lists several factors to consider:

- * Impacts may be both beneficial and adverse; a significant impact may exist even if the Federal agency believes that on balance the impacts will be beneficial.

- * Degree to which public health or safety is affected.
- * Unique characteristics of the geographical area.
- * Degree to which impacts on the human environment are likely to be highly controversial.
- * Degree to which impacts are highly uncertain or involve unique or unknown risks.
- * Degree to which the action establishes a precedent for future actions with significant impacts or represents a decision in principle about a future consideration.
- * Individually insignificant but cumulatively significant impacts.
- * Degree to which action adversely affects entities listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historic resources.
- * Degree to which endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973, are adversely affected.
- * Whether a violation of Federal, state or local law for environmental protection is threatened.
- * Whether a Federal action may result in the introduction or spread of a non-indigenous species.

Types of impacts: direct, indirect, cumulative and disproportionate. NEPA considers both the context and the intensity of each effect to determine the significance of its impact. Context includes the location, population and resources affected as well as the duration of the impacts. Intensity takes into account the severity of the impact.

The function of the EA is to determine if the impacts of the proposed action would or may significantly affect the quality of the human environment. For the purposes of this EA a significant effect on the quality of the environment would be deemed to occur if:

- * The effect is deleterious, noticeable and results in a permanent change to the resource over a large area;
- * The resource is changed completely or the change is irreversible;
- * Long-term or permanent changes to the resource that exceed levels found due to natural variability in the resource;
- * An action that results in jeopardy to a wildlife species listed as Threatened or Endangered by the US Fish and Wildlife Service (FWS).

For the purposes of this EA a less-than-significant effect on the quality of the environment would be deemed to occur if:

- * The action will have no effect on the resource;
- * The effect is barely noticeable or measurable;
- * The action will not result in any change to the resource;
- * The action will affect so few individuals that the effect cannot be distinguished from natural variability in the resource;
- * The changes are detectable but there is no long-term or permanent alteration of the



- resource and the change is within the range of natural variability;
- * The effects may be noticeable but result in only a slight change or occur in a small area without changing its function;
 - * Noticeable effects that result in some change to a resource or its function that occur in several areas or a larger single area would still be considered less-than-significant if they fall short of changing the resource completely and the change is not irreversible.
 - * If only a few individuals are affected or the number of individuals affected are within the natural level of variability for a population or resource the impact would be considered less-than-significant.
 - * No, negligible, minimal, minor and moderate impacts are all less-than-significant. Beneficial impacts include those effects of the project that improve, restore, enhance or contribute to the natural functioning of a resource or environmental quality.

5. Cumulative Effects

This project proposes the paving of a portion of the Bald Hills Road that is currently unpaved. The cumulative effects of this project will have beneficial impacts to land, water, air, land use, transportation, socioeconomic conditions and public health and safety. Impacts to other environmental resources will be less-than-significant.

The Tribe's Transportation Program intends to pursue future federal funding to repave the entire length of Bald Hills Road from US Highway 101 to Martin's Ferry Bridge. Therefore, the reasonable cumulative project is the repaving and/or chip-sealing of the entire length of Bald Hills Road.

A summary of work performed in recent years is as follows:

- Yurok Reservation Boundary to Martins Ferry Bridge, MP 26.65 to 32.0: Work in this section of the roadway occurred in the last three year as a result of close coordination between the Yurok Tribe and the County of Humboldt. The purpose of this work was to improve roadway conditions in this section of the road, which climbs steeply from the Klamath River and has multiple switchbacks. The Yurok Tribe performed field topographic surveys for this section of the roadway. The County of Humboldt then resurfaced this entire length of road with a chip seal material. Chip sealing work was performed by the County of Humboldt maintenance crew. An ongoing project to realign the switchbacks in this section of the roadway to improve sight lines and travel safety is currently in the design phase.
- Pine Creek Road Turnout to Yurok Reservation Boundary, MP 22.1 to MP 26.65: This section of Bald Hills Road was recently paved in coordination between the Yurok Tribe and Humboldt County.





- Elk Camp to Childs Hill Prairie, MP 10.1 to MP 13.4: A project to repave this section of Bald Hills Road has been designed and has been implemented as part of the improvements along Bald Hills Road.
- National Park Boundary to Pine Creek Road Turnoff. MP 19.04 to MP 22.1: This section of the roadway was recently widened and paved in coordination between the County of Humboldt and the Yurok Tribe.

If this project proposed here and all the above projects are successful, the entire length of Bald Hills Road will be paved with the exception of and approximately 6 mile section remaining unpaved in Redwood National Park. This is the section from Childs Hill Prairie to just beyond the park boundary, where this project ends. This remaining 6 mile section of Bald Hills Road traverses the Lyons Ranch Historic Rural Landscape, which has been determined eligible for listing on the National Register of Historic Places, as well as traveling through areas of special significance to local Tribes.

If the Bald Hills Road were to be paved for its entire length, however, travel conditions on the road would be significantly improved. A portion of the commute and other traffic between the upper and lower portions of the Yurok Reservation currently travels the long way around because of the uncertain and/or uncomfortable conditions that currently exist on Bald Hills Road. Were these conditions to be improved, this traffic might utilize Bald Hills Road rather than State Route 96 and State Route 299. The number of vehicle trips per day that would increase would be minimal, however, because the Tribe only employs 200 people. Only a small portion of them regularly commute using the long route between Weitchpec and Klamath. This would potentially result in an increase of fewer than 10 trips per day.

There is also the possibility that the improvements to Bald Hills Road would cause more people to choose to live in the upper reservation communities and/or along Bald Hills Road between the Park and the Reservation. This is unlikely to result in significant increased development, however, because the areas involved will still be remote, rural areas, requiring significant travel times to obtain even the most basic community services. Additionally, the county zoning in the area precludes significant development, reserving the area for timber and agricultural production [Humboldt County General Plan Map site, <http://gis.co.humboldt.ca.us/Freeance/Client/PublicAccess1/index.html?appconfig=podg> last accessed May 2011]. Therefore, this potential cumulative effect of the project is expected to be minimal.

Conclusion

The cumulative impacts of paving and/or chip-sealing the entire length of Bald Hills Road would be both beneficial and negative. Beneficial impacts would occur to land, water, air, socioeconomic conditions, resource use patterns and public health and safety. Repaving the entire length of Bald Hills Road would be a significant improvement to the safety and comfort



and duration of the travel times for those journeying to or from the Upriver Yurok or Hoopa Reservations. Additionally, improving stream crossing facilities and drainage facilities would lead to a significant reduction in potential sediment to watercourses and aquatic habitats, thereby, achieving improvements to the beneficial uses as defined. All other environmental impacts would be less-than-significant, making the overall cumulative impact of this project to the human environment, with the exception of impacts to Cultural or Historic Resources, to be less-than-significant. The impacts to Cultural or Historic Resources in the 2.6 mile stretch of Bald Hills Road in Redwood National Park that appears to have never been paved, however, are potentially significant. The specific significance of these impacts would have to be evaluated if and when a project is proposed to improve or pave that section of Bald Hills Road. Any attempt to evaluate them more specifically here would be speculative.

6. Disproportionate Effects (Environmental Justice)

Alternative One

The project is proposed to serve the Yurok Reservation and Tribal government and surrounding communities. These are low income, minority communities and populations. Paving and/or chip-sealing the Bald Hills Road would significantly improve safety, transportation, access and living conditions for these underdeveloped communities. These Alternatives would have a beneficial effect on this community, particularly the cumulative alternative of paving the entire length of Bald Hills Road and specifically upgrading water course crossing that could potentially fail and result in road closure during significant rainfall events. These Alternatives would have a beneficial effect on Environmental Justice.

Alternative Two and Cumulative Alternative

The project is proposed to serve the Yurok Reservation and Tribal government and surrounding communities. These are low income, minority communities and populations. Paving and/or chip-sealing the Bald Hills Road would significantly improve safety, transportation, access and living conditions for these underdeveloped communities. These Alternatives would have a beneficial effect on this community, particularly the cumulative alternative of paving the entire length of Bald Hills Road. These Alternatives would have a beneficial effect on Environmental Justice.

Alternative Three

The no project alternative would continue the existing substandard and cumbersome conditions that hinder access to upriver and Hoopa valley communities and pose a barrier for Yurok Tribal government activities. This represents a significant, adverse environmental effect to those low-income and minority communities. This alternative represents a significant negative effect on Environmental Justice.



7. Mitigation Measures

The Cultural Resources Report included the following recommended mitigations which shall be made part of the project:

- Installation of Environmentally Sensitive Area (ESA) fencing prior to construction activities.
- Construction Equipment should be limited to the Project APE and stay within the Road Prism and planned staging areas. No subsurface activities are to be conducted outside of the project APE.
- Protocol for Inadvertent Discovery should be followed at all times during Project implementation.
- A Cultural Monitor required to be present during construction. Due to the high frequency of archaeological sites in proximity to the APE there is potential for ground disturbing work to encounter buried deposits. As such, and as recommended in the SHPO's letter of concurrence, ground disturbing work should be monitored by a qualified archaeologist.
- Staging or Turn around area will not be designated at Williams Ridge Road Intersection.

In addition, other mitigation measures have already been incorporated into the project design and standard Best Management Practices (BMPs). These are listed below. Best Management Practices (BMPs) & Erosion/Sediment Control Measures. To minimize erosion and control sediment movement, best management practices such as the following standard measures will be instituted, as applicable:

- Construction will be performed during the dry season (May 1 through October 15) when the chance of precipitation is lowest.
- Construction equipment will be cleaned and inspected prior to use. Equipment maintenance and fueling will be performed at designated staging areas. Equipment will be monitored regularly for leaks. In the event of an identified leak, the leak will be contained and the equipment will be taken off site for repair. Spilled material will be managed appropriately.
- Soil exposure will be minimized through the use of temporary BMPs, ground cover, and stabilization measures. If on-site stockpiles are used, they will be isolated with silt fence, filter fabric, and/or straw bales/fiber rolls. If needed, silt fence or fiber rolls will be placed along the down-slope perimeter of the project area to contain loose rolling rocks and sediment during the project, and sediment caught by the fence or rolls will be removed before the fence/rolls are pulled.
- Exposed dust-producing surfaces will be swept and/or watered regularly.
- Special care will be taken while working near waterways, drainage ditches, or inlets to stormwater conveyances in order to prevent inappropriate discharges.
- Upon completion of construction, disturbed areas that are left unpaved will be seeded



and mulched with fast-growing native grasses and sterile hybrids and mulched.

- Debris and surplus material will be taken off site for appropriate disposal.
- The site will be monitored during the wet season and evidence of substantial erosion (rilling, gullies, etc.) will be repaired immediately. Areas where revegetation is not successful will be reseeded and remulched to ensure vegetative ground cover.
- The selected contractor will be required to develop and implement a site-specific stormwater pollution prevention plan (SWPPP) for all areas of ground disturbance.
- Dust control measures will consist of watering the construction area as needed with a water truck.

8. Consultation and Coordination

US Fish and Wildlife Service, Arcata Fish and Wildlife Office:

Kathleen Brubaker, Fish and Wildlife Biologist
Endangered Species Program Lead

Humboldt County Dept. of Public Works:

Hank Seemann, Environmental Director

Bureau of Indian Affairs:

Larry Blevins, Consortium Environmental Protection Specialist
Dan Hall, Regional Archeologist
Steve Wilkie, Regional Roads Engineer

Yurok Tribe:

Joseph James, Transportation Manager
Kate Sloan, Director, Yurok Tribe Environmental Program
Rosie Clayburn, Cultural Resource Specialist, Yurok Tribe Environmental Program
Robert McConnell, Tribal Heritage Preservation Officer

Redwood National Park Service:

Karin Grantham, Joint Chief Resource Management and Science
Dave Roemer, Deputy Superintendent



9. General References

American Association of State Highway and Transportation Officials (AASHTO), 2004. A Policy on Geometric Design of Highways and Streets. Fifth Edition.

Clayburn, Rosie and Sloan, Kathleen. 2011. Cultural Resources Inventory for the Bald Hills Road Improvement Project Mile Post 18.97 to Pine Creek Road (Mile Post Marker 22.19), Bald Hills, Yurok Reservation, Humboldt County, CA. Report on file at the North Coastal Information Center, Klamath, CA.

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-APPENDIX 1- PROJECT PLANS



VEHICLE MAINTENANCE AREA NOTES:

1. EQUIPMENT AND VEHICLES TRAVELING ON-SITE SHALL BE INSPECTED REGULARLY FOR LEAKS OF OIL, FUEL, HYDRAULIC FLUID, AND ANTIFREEZE. ALL LEAKS SHALL BE REPAIRED IMMEDIATELY. VEHICLES AND EQUIPMENT CLEAN (DO NOT ALLOW EXCESSIVE BUILDUP OF OIL AND GREASE).
 2. OFF-SITE REPAIR SHOPS WHENEVER POSSIBLE, IF ON-SITE REPAIRS ARE NECESSARY, USE THE DESIGNATED AREA SURROUNDED BY EARTH BERMS. THE CONTRACTOR SHALL INSPECT THIS AREA WEEKLY AND AFTER EACH RAINSTORM EVENT TO ENSURE THAT THE BERM REMAINS IN PLACE AND FUNCTIONING PROPERLY. ANY NON-FUNCTIONING BERM SHALL BE REPAIRED IMMEDIATELY.
 3. USE DRY CLEAN-UP METHODS FOR SPILLS AS MUCH AS POSSIBLE; USE ABSORBENT MATERIALS FOR SMALL SPILLS AND DISPOSE OF PROPERLY. USE A SECONDARY CONTAINMENT DURING FLUID CHANGES AND REPAIRS TO CATCH SPILLS.
 4. SEWAGE AND RECYCLE WASTES (INCLUDING BUT NOT LIMITED TO, USED OIL, AND OIL FILLED BATTERIES) SHALL BE KEPT SEPARATE FROM HAZARDOUS WASTES (HAZARDOUS WASTES, AFTER REPAIRS, ETC. PROHIBITARY TRANSFER USED FLUIDS AND WASTES TO OTHER PROPER CONTAINMENT AREAS AND CONTAINERS).
- ### DITCHES AND CATCH BASINS:
1. DITCH BLOCKS, EARTHEN DICES, AND DITCHES MAY BE ADDED AT LOCATIONS DESIGNATED BY THE OWNER OR AS SHOWN ON THESE PLANS. ALL FILLROW DITCHES AND DRAINAGE DICES SHALL BE SLOPED AND GRADED TO DRAIN TO THE LIMITS OF THE RIGHT OF WAY. DITCH BLOCKS, EARTHEN DICES, AND FILLROW DITCHES SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK AS SHOWN IN THE BID SCHEDULE.
- ### SAW CUTTING & PAVEMENT REMOVAL:
1. SAW CUT EXISTING ASPHALT PAVEMENT WHERE OLD ASPHALT IS TO BE INTO NEW ASPHALT. PAPER NEW AC SURFACING TO MATCH THE EXISTING PAVEMENT OR CHIP SEAL. THE SAW CUT SHALL BE MADE AT AN ANGLE OF 90 DEGREES FOR A SMOOTH TRANSITION. THIS WORK SHALL BE INCIDENTAL TO AC PAVING.
 2. REMOVE AND DISPOSE OF REMOVED ASPHALT OR CHIP SEAL AT THE BEGINNING OF THE PROJECT AND IN STRICT ACCORDANCE WITH APPLICABLE RULES AND REGULATIONS FOR SUCH REMOVAL, TRANSPORT, AND DISPOSAL. WORK SHALL BE INCIDENTAL TO AC PAVING.
- ### QUANTITIES:
1. QUANTITIES AND LENGTHS OF ITEMS PROVIDED WITHIN THIS PLAN SET ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL QUANTITIES OF COMPONENTS REQUIRED FOR THE SUCCESSFUL AND SATISFACTORY COMPLETION OF THE PROJECT.
- ### CULTURALLY SENSITIVE AREAS:
1. AREAS WITHIN THE PROJECT PERIMETER THAT ARE CULTURALLY SENSITIVE SHALL BE PROTECTED AGAINST DAMAGE FROM CONSTRUCTION ACTIVITIES, AT NO TIME SHALL SUCH CULTURALLY SENSITIVE AREAS BE ENTERED, PARKED UPON, STOCK PILED UPON, OR

TO PROTECT ALL SUCH AREAS DURING ANY AND
CONSTRUCTION OF THIS PROJECT

- ## STREETS & DRIVEWAYS

COMPILED IN ACCORDANCE

3. STRIPING AND SIGNING SHALL CONFORM TO CALTRANS SPECIFICATIONS.

INCIDENTAL TO THE
THEREFORE NO

- | | |
|---------------------------------------------------------------|-------|
| SURVEY NOTE | |
| TOPOGRAPHY SURVEY DONE NOVEMBER 2009 BY TRINITY VALLEY CONSUL | |
| UTILITIES | |
| WATER | - N/A |
| POWER | - N/A |
| GAS | - N/A |
| PHONE | - N/A |

SURVEY NOTE

UTILITIES

WATER	-	N/A
POWER	-	N/A
GAS	-	N/A
PHONE	-	N/A

DITCHES AND CATCH BASINS:

1. DITCH BLOCKS, EARTHEN DIKES, AND DITCHES MAY BE ADDED AT LOCATIONS DESIGNATED BY THE OWNER OR AS SHOWN ON THESE PLANS. ALL FURROW DITCHES AND DRAINAGE DITCHES SHALL BE STAKED AND GRADED TO DRAIN TO THE LIMITS OF THE RIGHT OF WAY. DITCH BLOCKS, EARTHEN DIKES, AND FURROW DITCHES SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK AS SHOWN IN THE BID SCHEDULE.

SAW CUTTING & PAVEMENT REMOVAL:

1. SAW CUT EXISTING ASPHALT PAVEMENT WHERE OLD ASPHALT IS TO BE IN TO NEW ASPHALT. TAPE NEW AC SURFACING TO MATCH THE EXISTING PAVEMENT OR CHIP SEAL SURFACE SECTION AT THE POINT OF THE IN TO PROVIDE FOR A SMOOTH TRANSITION. THIS WORK SHALL BE INCIDENTAL TO AC PAVING.
2. REMOVE AND DISPOSE OF REMOVED ASPHALT OR CHIP SEAL AT THE BEGINNING OF THE PROJECT AND IN STRICT ACCORDANCE WITH APPLICABLE RULES AND REGULATIONS FOR SUCH REMOVAL, TRANSPORT, AND DISPOSAL. WORK SHALL BE INCIDENTAL TO AC PAVING.

QUANTITIES:

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CULTURALLY SENSITIVE AREAS:

1. AREAS WITH THE PROJECT PERIMETER THAT ARE CULTURALLY SENSITIVE SHALL BE PROTECTED AGAINST DAMAGE FROM CONSTRUCTION ACTIVITIES. AT NO TIME SHALL SUCH CULTURALLY SENSITIVE AREAS BE ENTERED, PARKED UPON, STOCK PILED UPON, OR HAVE ANY OTHER ACTIVITY ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT IN ANY WAY UNACCEPTABLE, UNPREDICTABLE, DESTROY, OR RENDER TO A STATE OR CONDITION UNACCEPTABLE ANY CULTURALLY SENSITIVE AREA. THE CONTRACTOR AGREES TO PROTECT ALL SUCH AREAS DURING ANY AND ALL ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT.

STREETS & DRIVEWAYS

1. AGGREGATE BASE SHALL BE CLASS 2 AND SHALL CONFORM TO THE CALTRANS STANDARD SPECIFICATIONS. THE AGGREGATE BASE SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH CALTRANS SPECIFICATIONS.
2. ASPHALT CONCRETE SHALL CONFORM TO TYPE A, 1 1/2" MINIMUM, MEDIUM GRADE, DRY MIXED, HOT MIX ASPHALT CONCRETE SHALL BE PLACED TO APPROVAL BY THE ENGINEER. THE ASPHALT CONCRETE SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATIONS.
3. STRIPING AND SIGNING SHALL CONFORM TO CALTRANS SPECIFICATIONS.

STORM DRAINS

1. EXCAVATION AND BACKFILL OF STORM DRAINS, WILL BE CONSIDERED INCIDENTAL TO INSTALLATION OF THE STORM DRAIN. THEREFORE, NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.

TOPOGRAPHY SURVEY DONE NOVEMBER 2009 BY TRINITY VALLEY CONSULTING ENGINEERS, INC.

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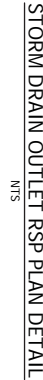
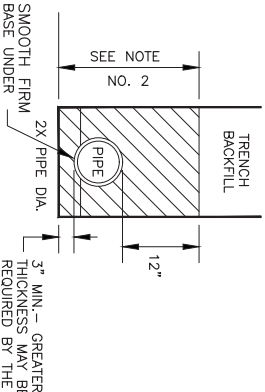
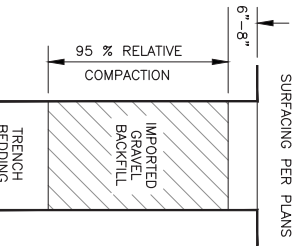
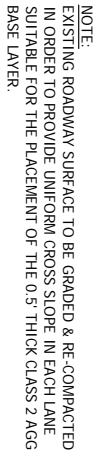
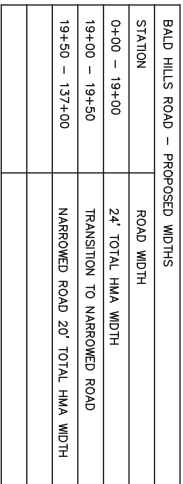
SUMMARY OF QUANTITIES

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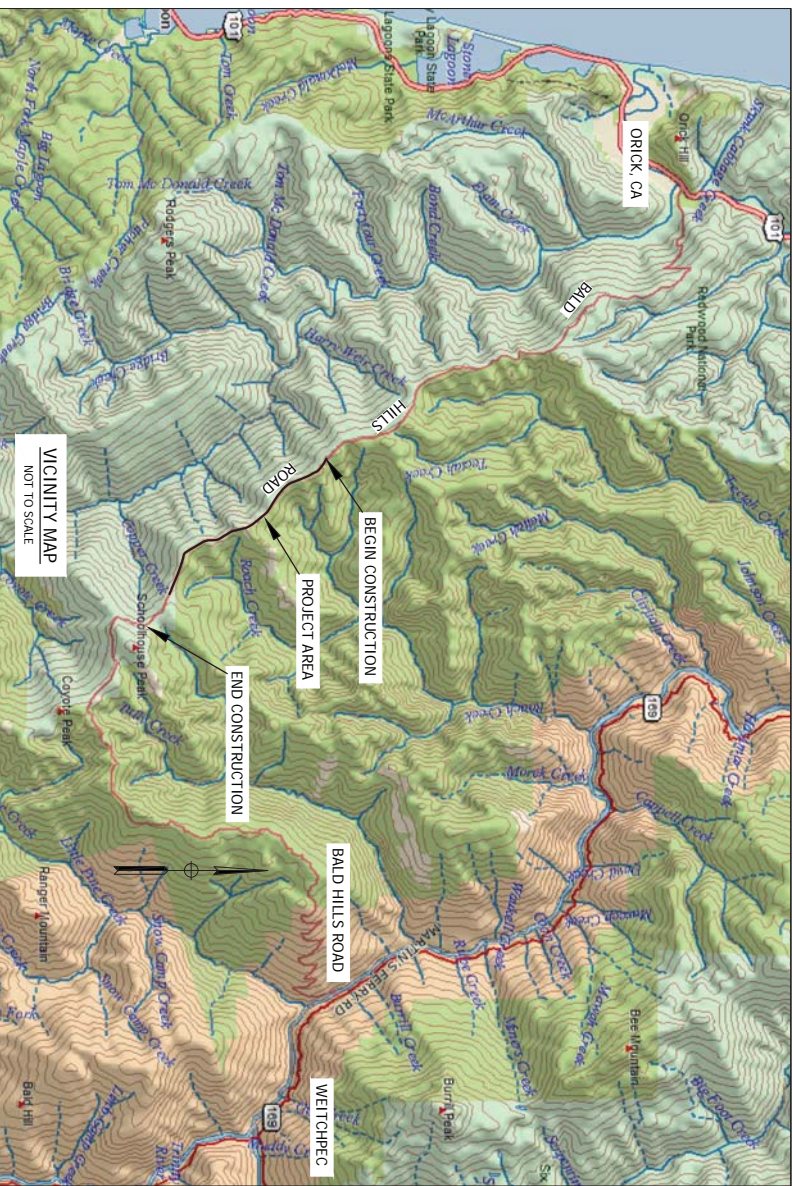
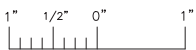
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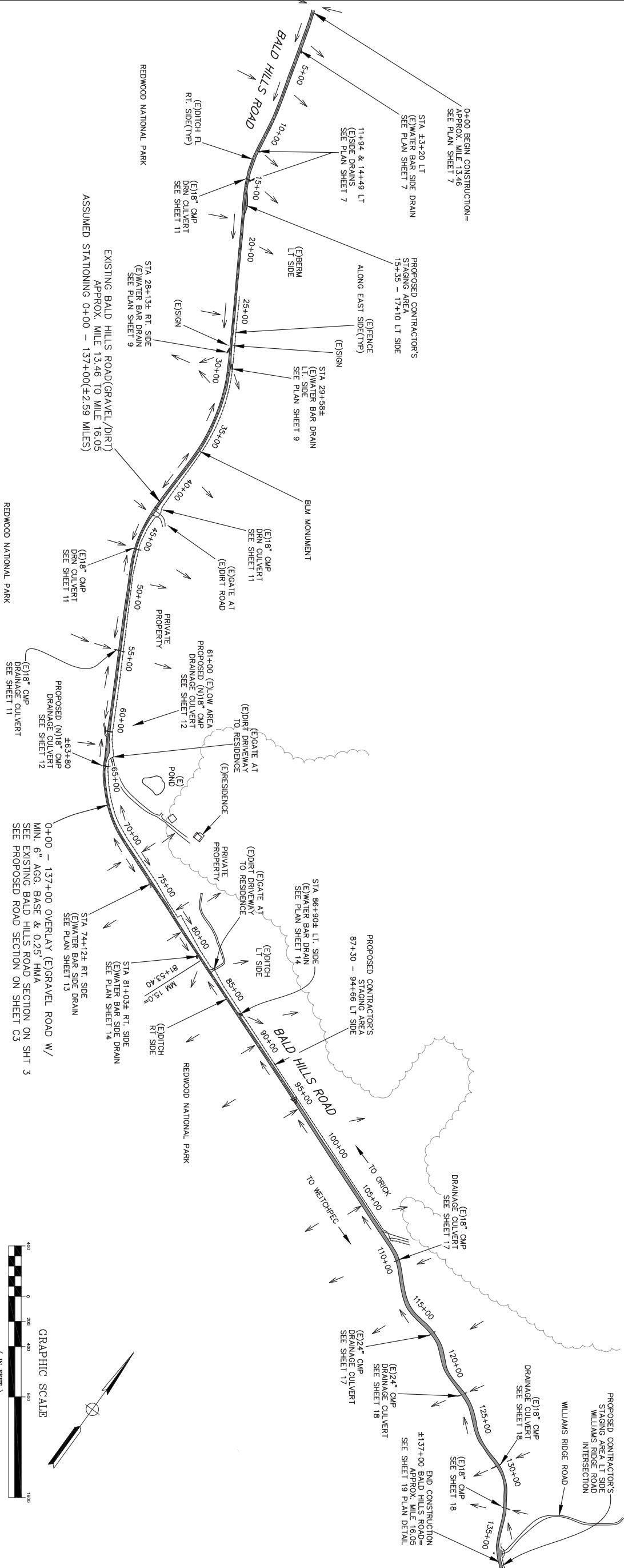
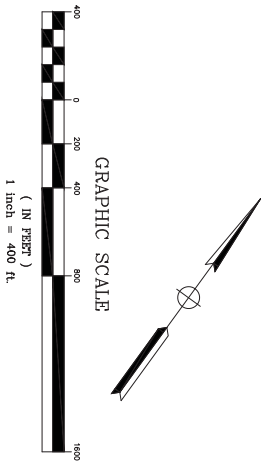
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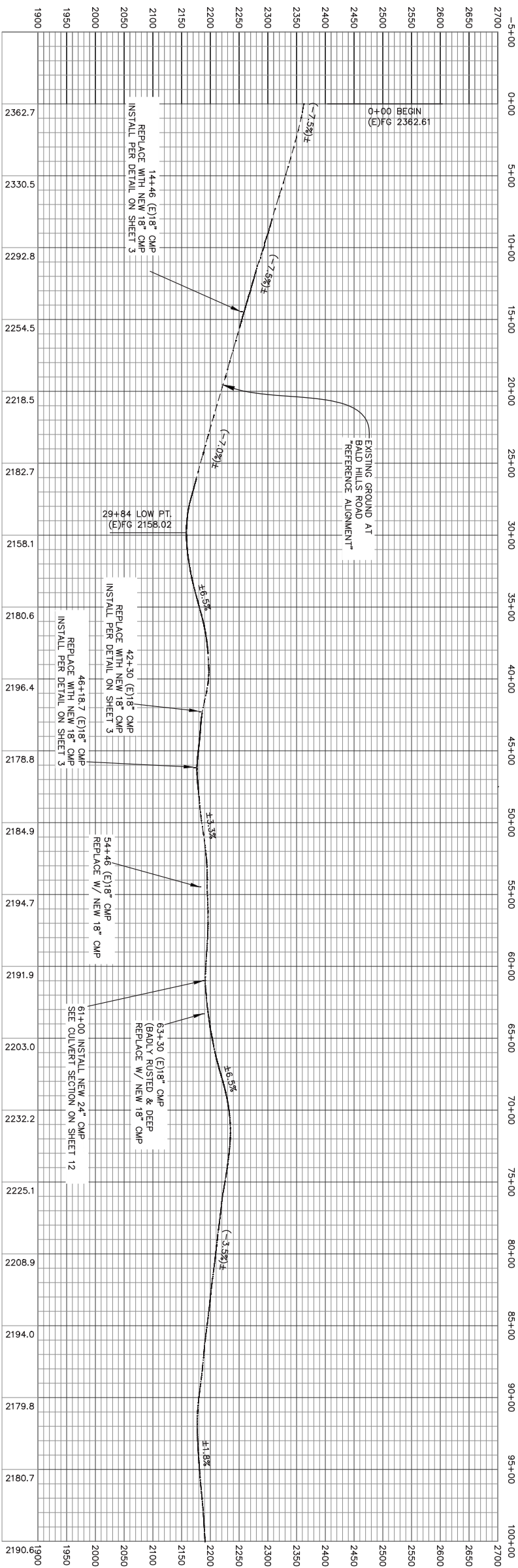


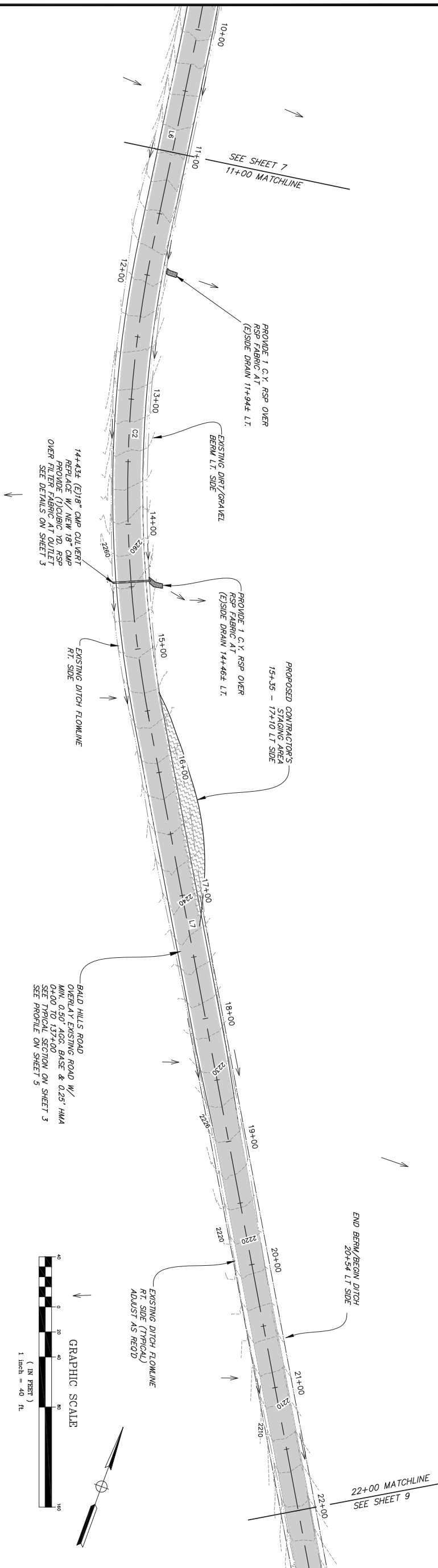
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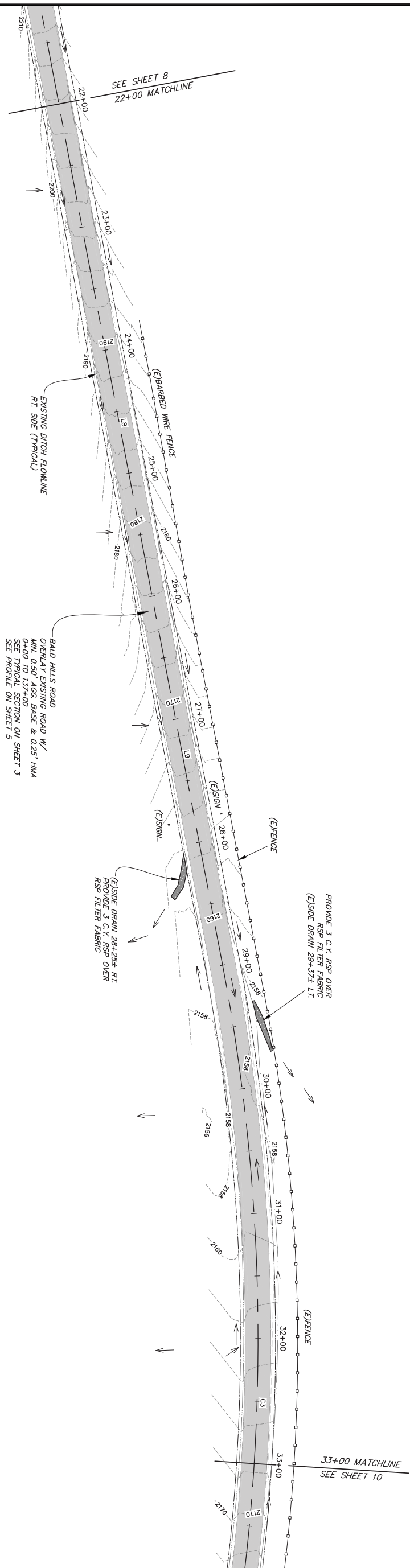


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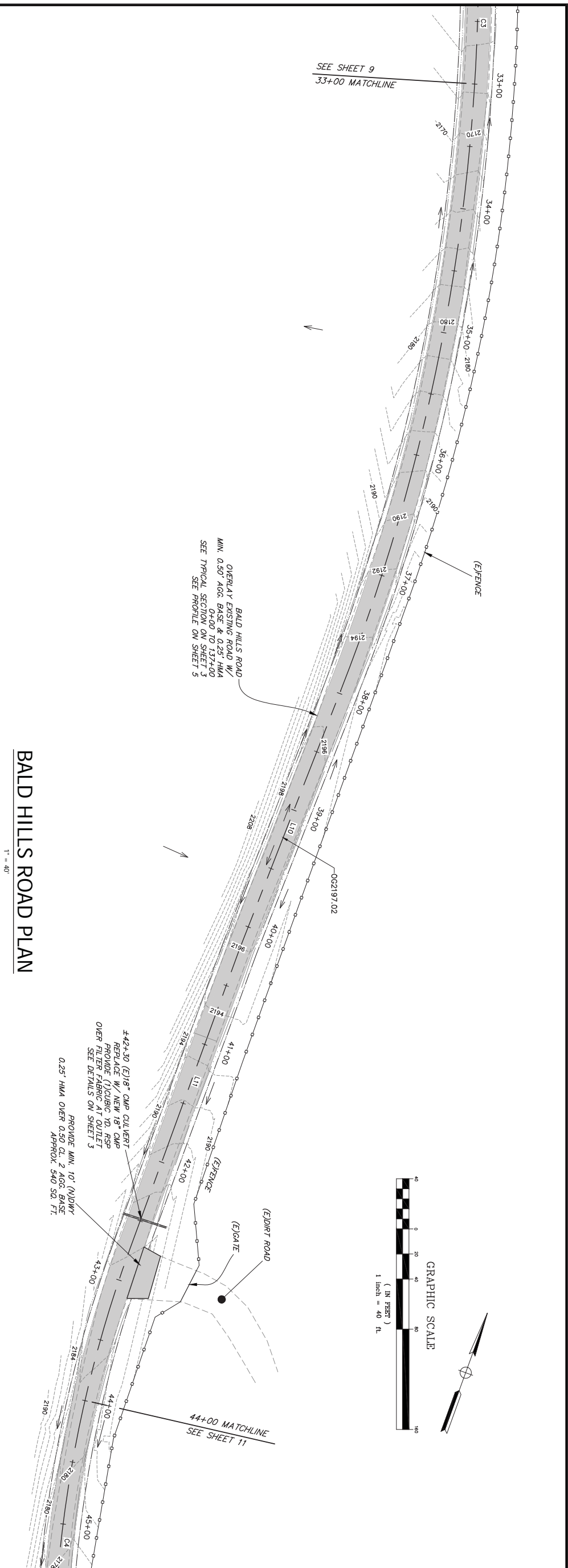
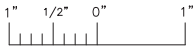
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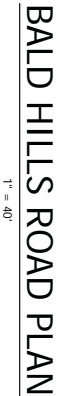
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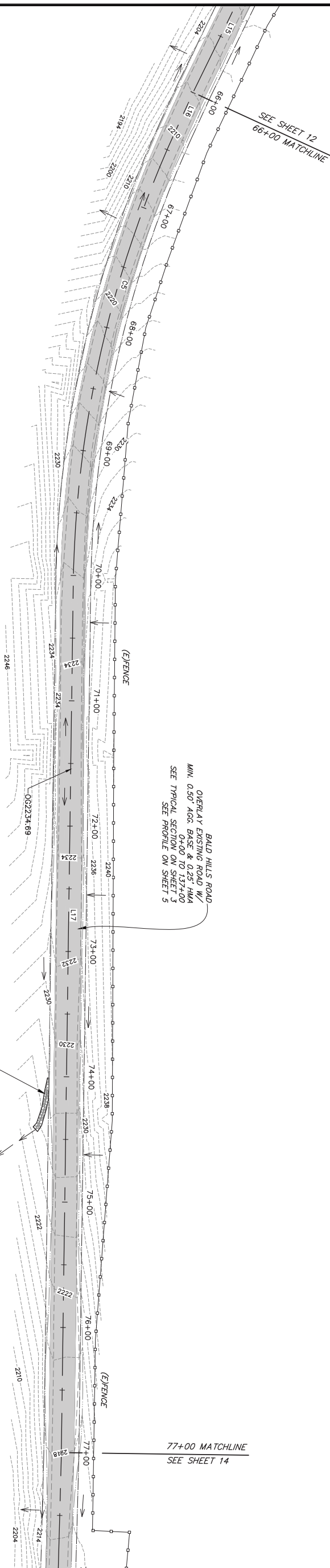
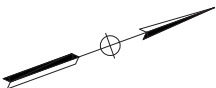
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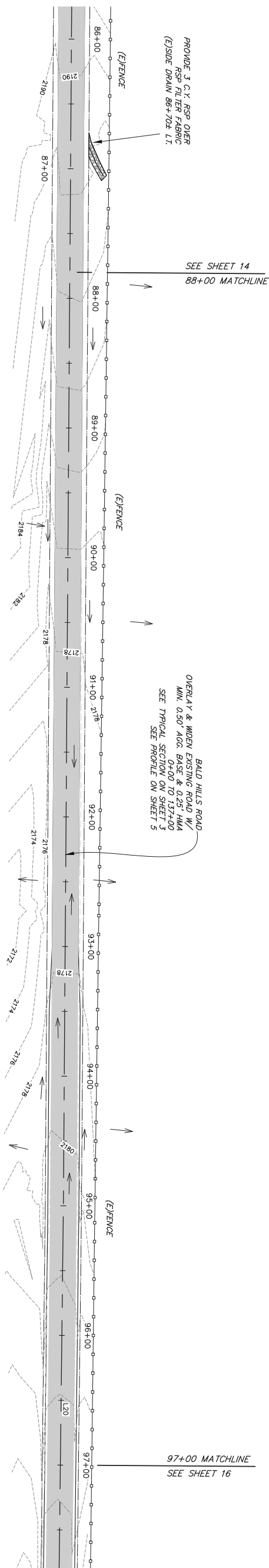
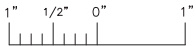
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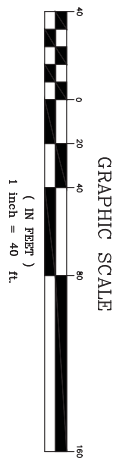
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BALD HILLS ROAD PLAN

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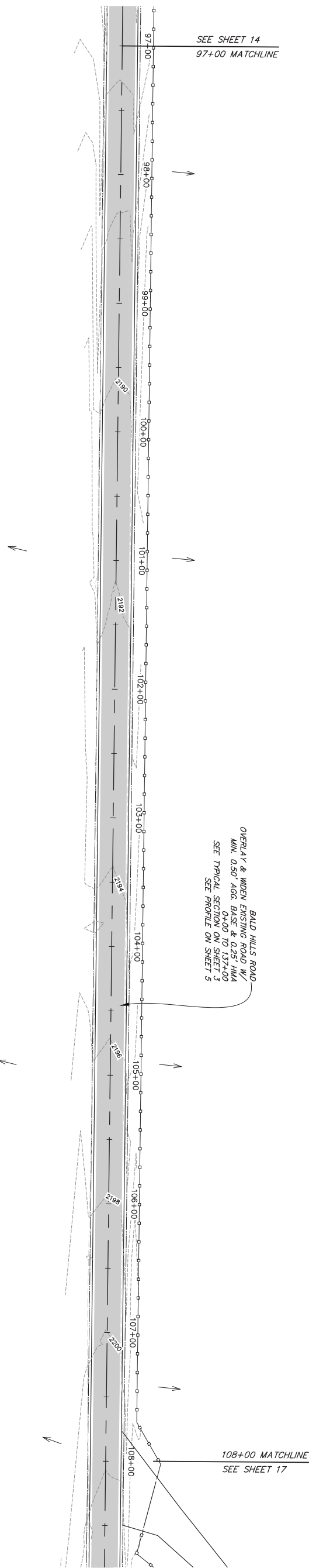
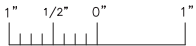
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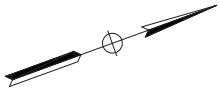
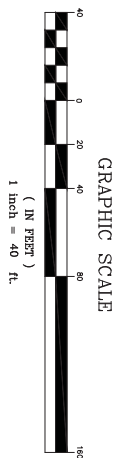
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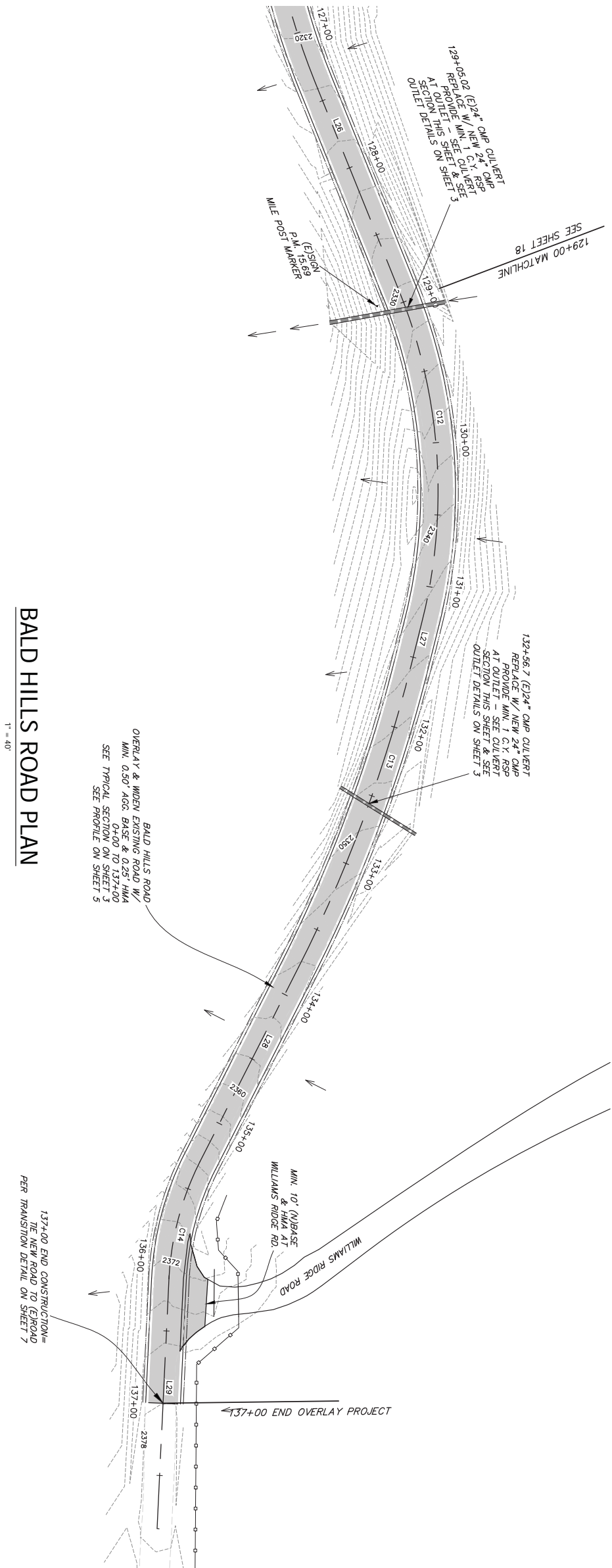
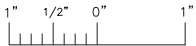
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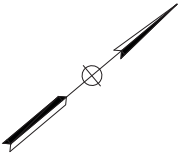
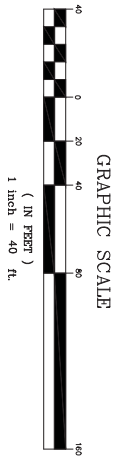
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BALD HILLS ROAD
PLAN DETAIL
97+00 - 108+00

DRAWN BY:	STG
DESIGN BY:	TYCE
CHECKED BY:	JLM
DATE OF ISSUE:	AUGUST 1, 2013
SCALE:	H: 1" = 40'
PROJECT NO:	#



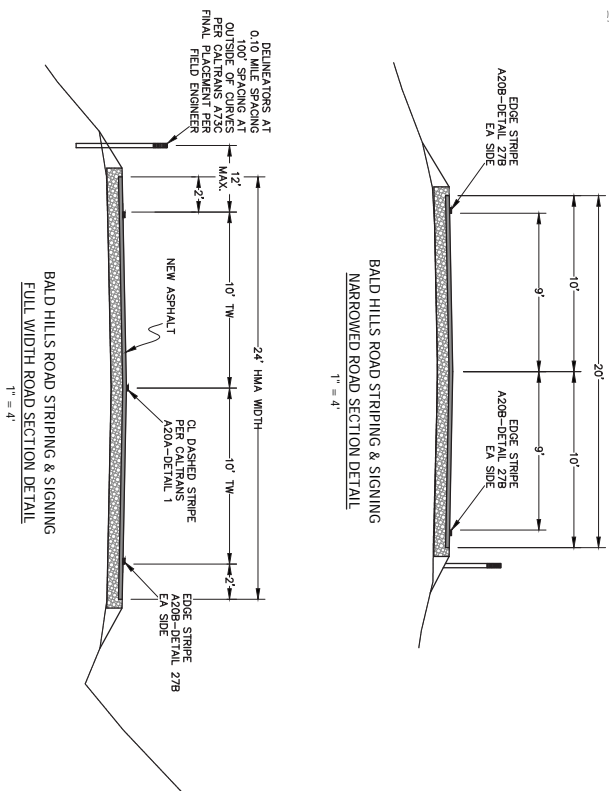
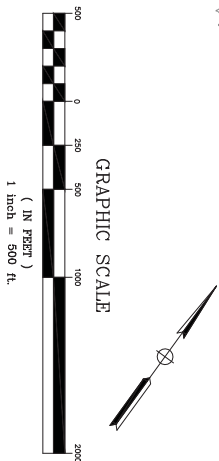
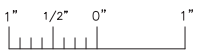
BALD HILLS ROAD PLAN

 $\Gamma'' = 40^\circ$ [illegible]

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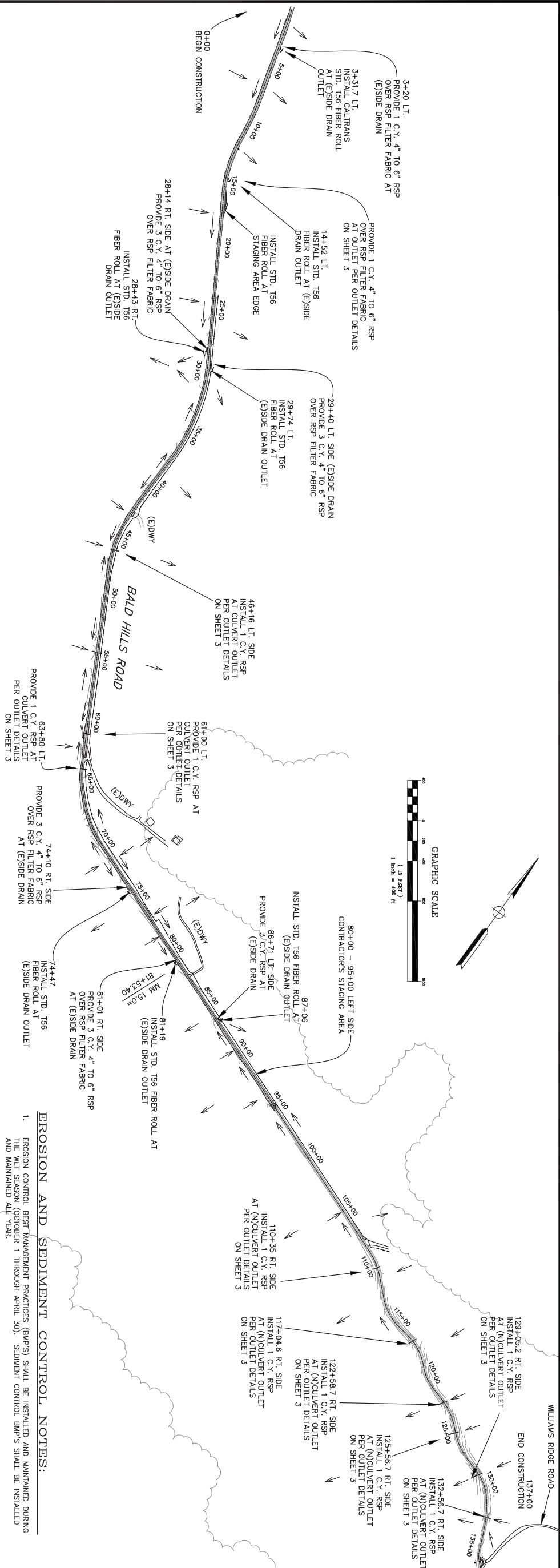
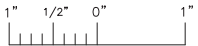
BALD HILLS ROAD
PLAN DETAIL
129+00 - 137+00

DRAWN BY:	STC
DESIGN BY:	TYPE
CHECKED BY:	JUN
DATE OF ISSUE:	AUGUST 1, 2013
SCALE:	H: 1" = 40'
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REV	DATE					DWN BY	DES BY	CHK BY	APP BY

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EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMP'S SHALL BE INSTALLED AND MAINTAINED ALL YEAR.
2. ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREA AND WITHIN THE WORK AREA SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND.
3. STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
4. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
5. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SENSITIVE AREAS SHALL BE INSTALLED WHERE AREAS ARE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
6. SEDIMENT CONTROL BMP'S SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED YEAR-ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
7. ALL SLOPES GREATER THAN 10:1 SHALL RECEIVE HYDROSEEDING OR OTHER EROSION CONTROL.
8. ALL FENCING AND EROSION CONTROL METHODS SHALL BE MAINTAINED THROUGHOUT ALL ON-SITE CONSTRUCTION ACTIVITIES.
9. ALL BMP'S SHALL BE INSTALLED AND FUNCTIONING PRIOR TO ANY ANTICIPATED STORM EVENT.

VEHICLE/EQUIPMENT WASH AREA NOTES:

1. ALL ONSITE CONCRETE WASHOUT, VEHICLE AND EQUIPMENT WASHING SHALL TAKE PLACE IN A DESIGNATED AND APPROVED AREA. THE AREA SHALL BE BERNED WITH EARTH DIKES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND MAINTAIN THIS AREA WEEKLY TO PREVENT WASH WATER CONTACT WITH STORM WATER, CREEKS, RIVERS, AND OTHER WATER BODIES.
2. IF THE CONCRETE WASHOUT AND VEHICLE/EQUIPMENT WASHING IS TO TAKE PLACE OFFSITE, THE LOCATION MUST BE CHOSEN BY THE CONTRACTOR AND APPROVED BY THE OWNER PRIOR TO CONSTRUCTION BEGINNING.
3. USE PHOSPHATE-FREE, BIODEGRADABLE SOAPS AND AS LITTLE WATER AS POSSIBLE.
4. EDUCATE EMPLOYEES AND SUBCONTRACTORS ON POLLUTION PREVENTION MEASURES.
5. NO STEAM-CLEANING IS PERMITTED ONSITE.

BMP MAINTENANCE NOTES:

1. ALL OF THE IMPLEMENTED BMPs SHALL BE INSPECTED AND CORRECTED AS NEEDED PRIOR TO DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT, OR WHENEVER PRACTICAL.

EROSION CONTROL CONSTRUCTION NOTES:

1. ALL ON-SITE INLET STRUCTURES AND EXISTING INLET STRUCTURES ALONG ADJACENT DEVELOPMENTS SHALL BE PROTECTED. ALL NEW INLET STRUCTURES TO BE STAMPED "NO DUMPING - FLOWS TO STREAM".
2. INSTALL STRAW FIBER ROLLS.

NOTE: ALL EROSION CONTROL FEATURES TO BE PER CALTRANS 2010 STANDARD PLANS



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BALD HILLS ROAD EROSION CONTROL PLAN

DRAWN BY:
STC

DESIGN BY:
TWCE

CHECKED BY
JTM

DATE OF ISSUE:
AUGUST 1, 2013SCALE:
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-APPENDIX 2-

SPECIES LIST



**Listed/Proposed Threatened and Endangered Species for
the BALD HILLS Quad (Candidates Included)**

November 14, 2013

Document Number: 627703454-94917

TYPE	SCIENTIFIC NAME	COMMON NAME	CATEGORY	CRITICAL HABITAT
Fish				
*	<i>Acipenser medirostris</i>	green sturgeon	T	Y
	<i>Eucyclogobius newberryi</i>	tidewater goby	E	Y
*	<i>Oncorhynchus kisutch</i>	S. OR/N. CA coho salmon	T	Y
*	<i>Oncorhynchus mykiss</i>	Northern California steelhead	T	Y
*	<i>Oncorhynchus tshawytscha</i>	CA coastal chinook salmon	T	Y
Birds				
	<i>Brachyramphus marmoratus</i>	marbled murrelet	T	Y
	<i>Coccyzus americanus</i>	Western yellow-billed cuckoo	C	N
	<i>Strix occidentalis caurina</i>	northern spotted owl	T	Y
Mammals				
	<i>Martes pennanti</i>	fisher, West Coast DPS	C	N

KEY:	(PE) Proposed Endangered	Proposed in the Federal Register as being in danger of extinction
	(PT) Proposed Threatened	Proposed as likely to become endangered within the foreseeable future
	(E) Endangered	Listed in the Federal Register as being in danger of extinction
	(T) Threatened	Listed as likely to become endangered within the foreseeable future
	(C) Candidate	Candidate which may become a proposed species
	Critical Habitat	Y = Designated, P = Proposed, N = None Designated
	*	Denotes a species Listed by the National Marine Fisheries Service

<http://www.fws.gov/Arcata/specieslist/speciesreport.asp>