

**Administrative Draft**  
**Environmental Assessment**  
**Bald Hills Road Improvement Project**  
**Mile Post 18.97 to Pine Creek Road**  
**(Mile Post Marker 22.19)**



Project Name: Bald Hills Road Improvement Project PM 18.97 - 22.19  
Date: August 2011  
Lead Federal Agency: Bureau of Indian Affairs  
Preparing Entity: Yurok Tribe Environmental Program

# Table of Contents

- Title Page..... 1
- 1. Purpose of and Need for Proposed Action ..... 4
  - 1.0 Introduction ..... 4
  - Background ..... 7
  - 1.1 Purpose and Need..... 7
  - 1.2 Project Description..... 11
- 2. Proposed Action..... 17
  - 2.1 Alternative One: No Action ..... 17
  - 2.2 Alternative Two: Proposed Action ..... 17
- 3. Description of the Affected Environment ..... 17
  - 3.1 Land Resources ..... 17
  - 3.2 Water Resources ..... 18
  - 3.3 Air Quality ..... 18
  - 3.4 Living Resources..... 19
  - 3.5 Cultural Resources ..... 20
  - 3.6 Land Use and Recreation ..... 21
  - 3.7 Transportation and Traffic ..... 21
  - 3.8 Visual..... 21
  - 3.9 Noise ..... 21
  - 3.10 Socioeconomic Considerations ..... 21
  - 3.11 Community Infrastructure ..... 22
- 4. Environmental Consequences ..... 23
  - 4.0 Methodology and Definitions of Significance ..... 23
  - 4.1 Effects on Land Resources ..... 25
  - 4.2 Effects on Water Resources..... 26
  - 4.3 Effects on Air Quality ..... 26
  - 4.4 Effects on Living Resources..... 27
  - 4.5 Effects on Cultural Resources ..... 28
  - 4.6 Effects on Land Use and Recreation ..... 28
  - 4.7 Effects on Transportation and Traffic ..... 28
  - 4.8 Effects on Visual Resources..... 28

4.9 Effects on Noise .....	29
4.10 Effects on Socioeconomic Conditions .....	29
4.11 Effects on Community Infrastructure .....	30
5. Cumulative Effects .....	30
Conclusion .....	31
6. Disproportionate Effects (Environmental Justice) .....	32
7. Mitigation Measures .....	32
8. Consultation and Coordination .....	33
9. References .....	33
10. List of Preparers .....	34

Figures:

Figure 1: Project Area Overview Map USGS 7.5' Topo Quad	5
Figure 2: Project Location Map USGS 7.5' Topo Quad	6

Appendix:

Project Area Maps Prepared by Trinity Valley Engineering (2011)

# 1. Purpose of and Need for Proposed Action

## 1.0 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 Lead Agency for the Project and NEPA and NHPA compliance is the Bureau of Indian Affairs (BIA). The Bald Hills Road is owned and managed by Humboldt County. The Yurok Tribe is the Project proponent, proposing that BIA funds under the Indian Reservation Roads (IRR) Program be approved to complete the Project.

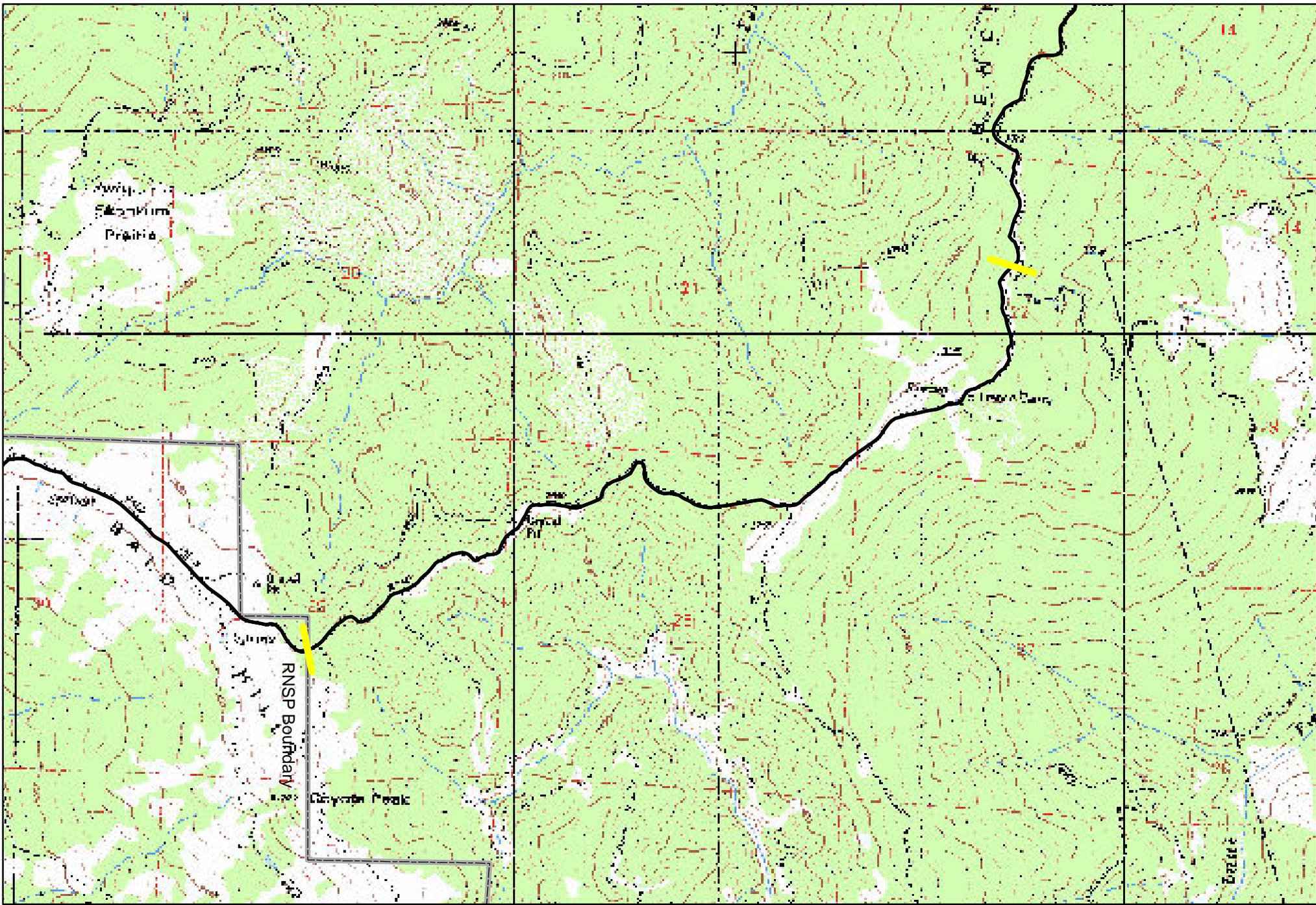
### ***Location***

The Legal Description of the Project Area is:

Township 9 N, Range 2 E Sections 21, 22, 28 and 29 of the USGS 7.5' French Camp, Humboldt County, California quadrangle. (See Figures 1 and 2)

The Proposed Project includes paving and improvements along 3.22 miles of existing road within Bald Hills Road.

The proposed project consists of paving and improvements to an existing dirt section of an approximately 3.22-mile-long stretch of Bald Hills Road, a rural major collector road in northern Humboldt County. Bald Hills Road extends 32.2 road miles from State 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 beyond the boundary of Redwood National Park (approximately Post Mile 18.97) and continues along the unpaved section of Bald Hills Road to where it meets the recently paved section that commences at the junction with Pine Creek Road (approximately Post Mile 22.19).



**Yurok Tribe**  
 Yurok Land Management  
 GIS Division  
 March 25, 2011

**Bald Hills Road - Project II**  
 MP 18.97 to MP 22.19

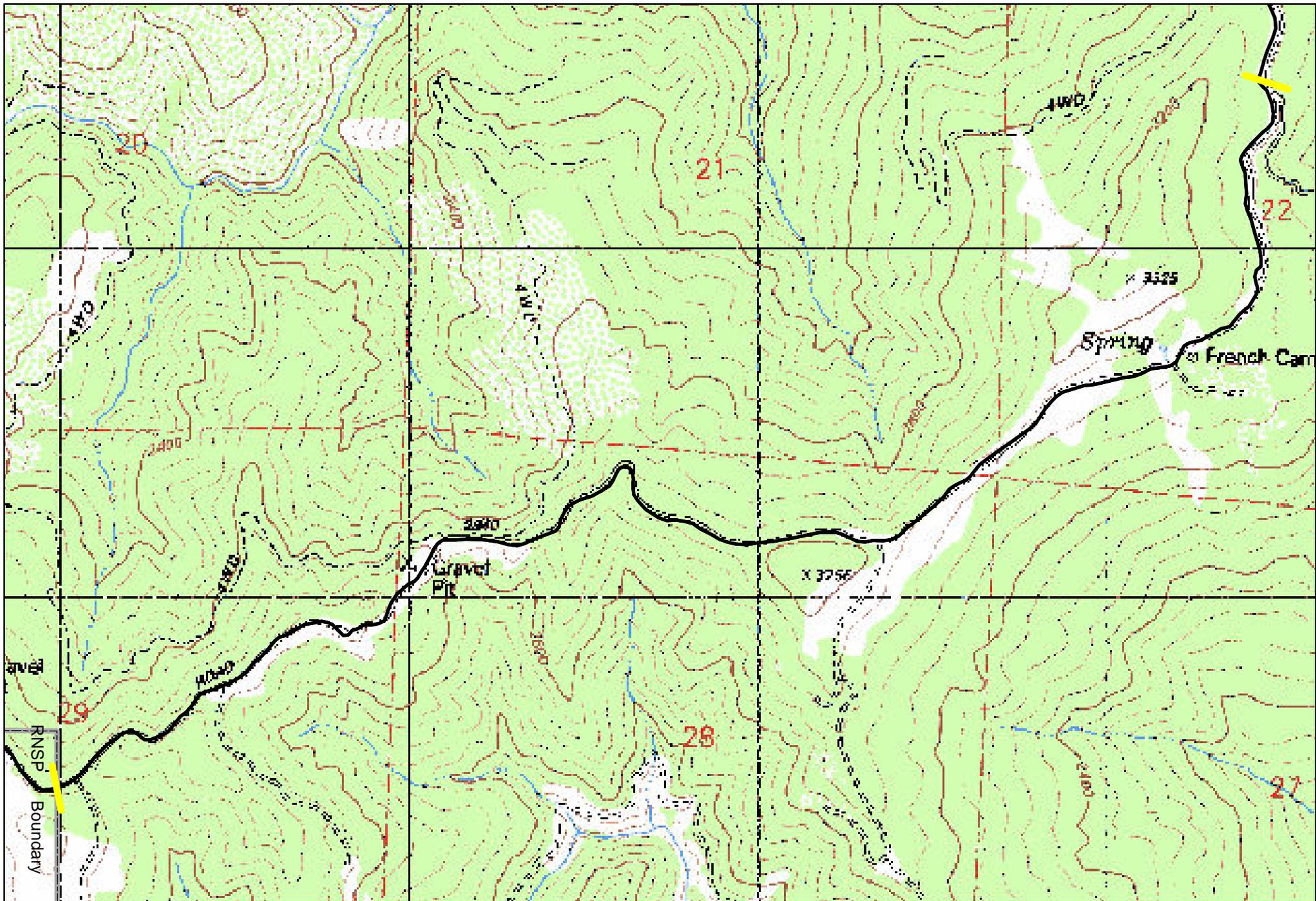
 Project Area

 Bald Hills Road

 RNSP\_Boundary

Coordinate System: NAD 1927 UTM Zone 10N  
 Projection: Transverse Mercator  
 Datum: North American 1927

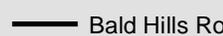
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Yurok Tribe  
 Yurok Land Management  
 GIS Division  
 March 25, 2011

### Bald Hills Road - Project II

MP 18.97 to MP 22.19

 Project Area  
 Bald Hills Road

 RNSP\_Boundary

Coordinate System: NAD 1927 UTM Zone 10N  
 Projection: Transverse Mercator  
 Datum: North American 1927

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## 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 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 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.

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.

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.

### 1.1 Purpose and Need

The BIA proposes to authorize grant funding to the Yurok Tribe to pave and improve as section of Bald Hills Road.

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 10 miles, then becomes intermittently paved and then becomes a dirt and gravel road for the next approximately 10 miles. The road is paved from Pine Creek Road (mile marker 22.19) 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 58,000-acre Redwood National Park are accessible only through Bald Hills Road, and the road serves as the primary access for the Hoopa Tribe and upriver Yurok Tribe to the park.

Currently, Bald Hills Road is in poor condition and does not meet the design criteria to handle the current road loads as described by AASHTO standards. 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. This route is 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, Highway 169 or 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 widening of narrow areas will allow traffic in both directions at once. Roadside clearing will increase site distance. Other improvements may include roadway realignment, widening, protective barriers, and signage. Any or all of 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. [Trinity Valley Consulting Engineers, Project Study Report: Bald Hills Road, October 2009, pgs. 2-5]

The road within the project area is a partially-paved, two-lane road in fair to failed condition. The deteriorating roadway conditions within the project area are associated with the settlement of embankment fills, erosion of embankment fills, and landsliding (LACO Associates, 2009). 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 gulying 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 10-foot-wide travel lanes with minimal (0- to 2-foot-wide) gravel shoulders, with some isolated areas narrowing down to one twelve foot lane. These narrow portions of the roadway are only able to accommodate one-way, one-lane traffic at one time. The absence of shoulders and narrow portions of the roadway results in insufficient space for motorists to adjust to emergency situations and for bicyclists and pedestrians to travel adjacent to the vehicle travel lanes. Work is needed to provide additional space for driver adjustment and non-motorized use, and to provide two-way traffic throughout the project area.

The existing road within the current project area is composed completely of gravel 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, 1992). 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, 1992). 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 regrading. Several of the existing roadside ditches traverse a long length of roadway without an outlet or relief. This can lead to ditch scour and erosion due to increased flows in these areas. As such, five new culverts are proposed along the length of the project.

Unpaved roads must be maintained (graded) annually with heavy equipment to maintain the desired shape 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 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.

## **Design Approach**

The design approach is intended to bring the roadway into compliance with American Association of State Highway and Transportation Officials design standards (AASHTO, 2004) 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 widen the roadway so as to allow two-way traffic throughout the project area, and to stabilize the

roadway foundation and provide a continuous asphalt overlay on the road surface. Additional project features include localized shoulder widening (up to two feet), retaining wall installation for roadway widening, excavation for roadway widening, 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:

- Narrow portions of the roadway were analyzed in order to determine the best method for roadway widening while at the same time determining the design method that produces the least amount of impact.
- 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 at this time.
- Existing road drainage was improved by implementing up to a maximum of 4% cross slope of the road surface.
- Shoulder widths were designed to meet the minimum AASHTO requirements of two feet.
- Due to the widths of the existing road prism and the existing 18-20-foot width of the traveled-way, and the design constraints associated with working within the existing right-of-way, the minimum traveled-way width of 22 feet required by AASHTO was not attained. The designed traveled-way width of 18-20 feet is in compliance with Humboldt County Road Design Standards for a Category 4 road.
- Construction outside of the established roadway prism is not possible without additional right-of-way acquisition. Acquisition of additional right-of-way is not considered feasible at this time due to funding and other constraints. The project concept is limited to reconstruction and safety improvements only.

Delineators (retroreflective, paddle-like posts mounted adjacent to the road shoulder) will be placed as guidance devices in accordance with the California Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD specifies that delineators should be spaced 530 feet apart on mainline tangent sections and more frequently on horizontal curves.

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.

## 1.2 Project Description

### General Construction Information

Construction activities include retaining wall construction, drainage system replacement, new drainage system installation, roadway grading, aggregate base rock installation, asphalt concrete paving, shoulder backing, guardrail, and striping. Drainage improvements include replacement of existing culverts, new drop inlet installation, installation of five new culverts, installation of underdrains in two locations, and grading of ditches and drainage reliefs. Ancillary activities include selected tree removal, 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 40 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*

<b>Site No.</b>	<b>Post Mile</b>	<b>Station</b>	<b>Approx. Size</b>	<b>Description</b>
1	19.3	651+00	1,800 sq. ft	North side of road @ wide area
2	19.47	661+00	12,500 sq. ft	South side of road in wide area next to private driveway
3	19.9	682+50	6,500 sq. ft	Wide area on north side of the road adjacent to rock pit
4	20.16	696+00	2500 sq. ft	Potential area to the south of roadway – subject to approval
4	21.07	745+50	1,500 sq. ft	Wide area on north side of roadway adjacent to existing relief ditch
5	21.95	792	3,400 sq. ft	Wide area adjacent to roadway on south side

### 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

Post Mile	Station	Culvert Diameter	Depth to Invert		Proposed Work
			Inlet	Outlet	
19.02	637+50	<P> 18-in	<P> 3.5 ft	<P> 8 ft	Install new 18" diameter culvert with 10' downdrain & Tee
Post Mile	Station		Description		
19.16	646+80	<P> 18-in	<P> 2.5 ft	<P> 4 ft	Driveway culvert @ right side
19.4	655+60	<P> 18-in	<P> 3.5 ft	<P> 8 ft	Add overside drain and RSP to outlet
20.2	699+52	<P> 18-in	<P> 4 ft	<P> 7.5 ft	Install new 18" diameter culvert with 10' downdrain & Tee
20.3	706+80	<P> 18-in	<P> 3.5 ft	<P> 7.5 ft	Install new 18" diameter culvert with 10' downdrain & Tee
20.87	737+00	<P> 18-in	<P> 3.5 ft	<P> 4 ft	Driveway culvert @ right side
21.5	770+49.3	<E> 18-in <P> 24-in	<P> 3 ft	<P> 7.5 ft	Replace existing culvert with new 24" CMP
21.7	780+32	<E> 18-in <P> 18-in	<P> 3 ft	<P> 3.5 ft	Driveway culvert @ left side
21.9	789+77.8	<E> 18-in <P> 24-in	<P> 6 ft	<P> 14 ft	Replace existing culvert with new 24" CMP, Add new 30" CMP Drop inlet
22	793+75	<E> 18-in <P> 24-in	<P> 5 ft	<P> 12 ft	Replace existing culvert with new 24" CMP

RSP = rock-slope protection  
 ND = not determined  
 <E> = existing  
 <P> = proposed

Tree Removal

Tree removal will be required at certain locations to restore site distance and/or provide access for construction activities. Tree removal locations are listed on Table 3:

Table 3: Tree Removal Locations

End	Begin	End	
21.2	751+00	752+90	Remove (4)existing trees to allow cutting at new road widening on LT. side

### 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 4:

*Table 4: Relief Ditches*

Post Mile	Station	Description
19.2	644+20	Relief ditch on existing roadside, clean out as required
19.6	667+15	Relief ditch on existing roadside, clean out as required
19.7	671+20	Relief ditch on existing roadside, clean out as required
19.8	676+90	Relief ditch on existing roadside, clean out as required

### Underdrains

Underdrains are proposed to be installed in areas where groundwater was observed within the roadway prism. These underdrains will drain groundwater away from the roadway substructure which will assist in the long-term longevity of the roadway. Underdrain locations are listed on Table 5:

*Table 5: Underdrains*

Post Mile	Station	Description
21.5	768+10	Install min. (2)12" underground drains near existing "spring"
21.5	768+58	Install min. (1)12" Perf Pipe near existing "spring"

### Retaining Walls

Retaining walls are proposed at four locations along the length of this project. These walls were necessary in order to allow for roadway widening sufficient for two-way traffic. The proposed retaining walls are mechanically stabilized earth (MSE) walls that have a maximum height of twelve feet. Retaining wall locations are listed on Table 6:

*Table 6: Retaining Walls*

Post Mile		Station		Description
Begin	End	Begin	End	
19.3	19.3	652+90	653+70	Mechanically Stabilized Earth Wall
21.2	21.2	750+50	752+10	Mechanically Stabilized Earth Wall
21.2	21.2	755+36	754+44	Mechanically Stabilized Earth Wall
21.3	21.3	756+43	757+91	Mechanically Stabilized Earth Wall

Guardrails

Guardrails are proposed to be installed along the top of the retaining walls in order to protect motorists from the vertical drop off created by the construction of the wall. Guardrails come complete with end sections for safety at the ends of the rail. Guardrail locations are listed on Table 7:

*Table 7: Retaining Walls*

Post Mile		Station		Description
Begin	End	Begin	End	
19.3	19.3	652+81	654+02	Guardrail @ Retaining Wall
21.2	21.2	750+50	752+49	Guardrail @ Retaining Wall
21.2	21.2	755+36	754+44	Guardrail @ Retaining Wall
21.3	21.3	756+43	757+91	Guardrail @ Retaining Wall

Dikes

Dikes are often used for channeling of stormwater runoff and aesthetic considerations. Dikes (Type A) will be constructed along the edge of the road shoulder beneath the guardrail as shown on Table 8:

*Table 8: Dikes*

Post Mile		Station		Description
End	Begin	End	Begin	
19.3	652+81	654+02		Guardrail @ Retaining Wall
21.2	750+50	752+49		Guardrail @ Retaining Wall
21.2	755+36	754+44		Guardrail @ Retaining Wall
21.3	756+43	757+91		Guardrail @ Retaining Wall

Built-Up Roadway

One section of the roadway is proposed to have a built up section. The reason for this is to help better facilitate drainage , and to remove the need of having to make improvements to the roadside ditch. Additionally, there is evidence that groundwater is high in this area, which further necessitates the need to have a built up roadway. The roadway elevation in this are will be raised by three to six inches by the addition of crushed rock. Locations of the built up section is as listed on Table 9:

*Table 9: Built Up Roadway Section*

Post Mile		Section		Description
Begin	End	Begin	End	
21.5	21.5	769+90	770+50	Road build up w/12" crushed rock

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 10:

*Table 10: Paved Driveways*

Post Mile		Station		Description
Begin	End	Begin	End	
19.1	19.1	643+30	643+70	Overlay 20'Wx10'L asphalt on existing driveway
19.2	19.2	646+50	646+90	Overlay 20'Wx10'L asphalt on existing driveway
19.5	19.5	660+50	661+40	Overlay 20'Wx10'L asphalt on existing driveway
21	21	737+00	737+40	Overlay 20'Wx10'L asphalt on existing driveway
21.7	21.7	780+30	780+30	Overlay 20'Wx10'L asphalt on existing driveway

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.

## **2. Proposed Action**

### **2.1 Alternative One: No Action**

Under the No Action Alternative, the BIA will not authorize grant funding for this project; therefore construction will not likely happen.

### **2.2 Alternative Two: 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.

## **3. Description of the Affected Environment**

### **3.1 Land Resources**

#### ***3.1.1 Topography and Geography***

Bald Hills Road in the project area is climbing out of the Klamath River basin, generally following the ridge between the Pine Creek and the Tully Creek drainages. The project area ends approximately where this ridge joins with the ridge between the the Lower Klamath River and Redwood Creek watersheds. In general, this is an area with largely rugged and steep forestlands. Predominant vegetative cover in these watersheds consists of fir forest, oak woodlands, chaparral, and redwood forest. Geologically, the Humboldt County portion of the watershed is included in the North Coast Ranges province where landslips and soil slips are common due to the combination of sheared rocks, shallow soil profile development, steep slopes, and heavy seasonal precipitation. [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-Oaksides-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 corridor is underlain by Franciscan Complex bedrock composed primarily of coherent sandstone, mudstone, and schist. Humboldt County is a very seismically active area of California. The South Fork Mountain fault crosses the project area just west of Pine Creek Road. Seismicity in the northern Coast Ranges is moderate and is concentrated along the southern part of the South Fork Mountain fault zone, becoming relatively sparse further north near Weitchpec [Ayers Associates, Geomorphic and Sediment Evaluation of the Klamath River, California, Below Iron Gate Dam, (Fort Collins, CO: 1999) p. 4.21].

## **3.2 Water Resources**

The proposed project area is on the slope that climbs out of the Lower Klamath River, generally on the ridge between the Pine Creek and Tully Creek watersheds. 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. One of these watercourses crosses the project area near French Camp. A perennial spring is found on the north side of Bald Hills Road. It flows under the existing roadway in a culvert and feeds a small, open pond adjacent to the south side of the road. At some point in the past, gold fish were introduced to the pond, which supports a population of this non-native fish. The pond is approximately 10 feet in diameter. 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 II air shed. Class II status allows moderate deterioration that might accompany well-planned growth. 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, 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  $\mu\text{g}/\text{m}^3$ ) or the established federal and state 24-hour average for PM2.5 (65  $\mu\text{g}/\text{m}^3$ ) since the installation of the EBAM (Yurok Tribe Environmental Program, 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**

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.

In general, the site is well vegetated with a predominantly Douglas fir (*Pseudotsuga menziesii*) dominant community with some mature trees, scattered tan oak (*Lithocarpus densiflorus*), madrone (*Arbutus menziesii*), hairy manzanita (*Arctostaphylos columbiana*) and a couple golden chinquapin (*Chrysolepis chrysophylla*) typically found. In the area around French Camp, incense cedars (*Calocedrus decurrens*) dominate the open meadow and its edges. Also found in this area is the wetland vegetation associated with the spring and pond found on either side of the roadway. After French Camp, and particularly in the western half of the project area, the vegetative community shifts slightly, and was possibly predominantly oak savannah upon which Douglas fir has encroached since the cessation of prescribed burning. No special status or protected plant species were observed or are expected to occur on the site or in the

general area. [Site visit January 27, 2011, by Suzanne Fluharty, Ph.D., Environmental Specialist, Yurok Tribe Environmental Program]

### **3.4.2 Wildlife**

The site is forested and 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 French Camp Ridge 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. No aquatic habitat of sufficient size to support a breeding population of birds occurs on or near the project area.

The remaining Special Status species found in the general area are the Northern Spotted Owl (*Strix occidentalis caurina*) which is listed as Threatened under the Endangered Species Act and the Pacific Fisher (*Martes pennanti*) which is a Candidate for listing under the Endangered Species Act. The Northern Spotted Owl requires old growth habitat. No such habitat occurs on or near the project site. The Pacific Fisher may traverse the site when passing through the area, but is unlikely to breed or remain in the area for a long time, because of the proximity of the roadway and its attendant noise and disturbance.

## **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 has been defined [add from report].

### 3.6 Land Use and Recreation

The site has been previously used for timber production. 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]. The area might be used for traditional foraging, picnicking or sightseeing, and other recreational uses typical of a remote, rural and forested area. In particular, the meadows around French Camp 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 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 residential in or near the site from which the visual appearance of the site would be apparent. The project area is outside the area viewable from the nearby Redwood National Park.

### 3.9 Noise

Prolonged or excessive noise can be a hazard to sensitive populations and sites. 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 residential or recreational sites in the area surrounding the site.

### 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**

### **4.0 Methodology and Definitions of Significance**

#### ***4.0.1 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.

#### **4.0.2 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.

## 4.1 Effects on Land Resources

### ***Alternative One***

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

### ***Alternative Two***

Alternative Two would involve removal 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 engineered walls and fill to create the new roadway width with a minimal need to cut into existing banks. Where cuts have been used, they were chosen to avoid natural features that were potentially valuable, such as very old or large trees, in areas where the uphill slopes had no resources of cultural or natural value. 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.

## 4.2 Effects on Water Resources

### ***Alternative One***

Alternative One is the no action alternative. This alternative would have no effect on Water Resources.

### ***Alternative Two***

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.

## 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***

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 from this alternative.

### ***Alternative Two***

Alternative Two 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, being a beneficial effect on Air Quality. There would be a less-than-significant short-term impact, and long-term moderately beneficial impacts to local air resources from this alternative.

## 4.4 Effects on Living Resources

### ***Alternative One***

Alternative One 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 impact is negligible. Therefore, there would be no impacts to Living Resources from this impact.

### ***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 5 below 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 the Klamath River.

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.

#### 4.5 Effects on Cultural Resources

The Yurok Tribe Environmental Program completed a compliance study per 36CFR800 of the National Historic Preservation Act in May 2011. The study recommended that the BIA make a determination that the Project will have *No Adverse Effect* to historic properties (Clayburn and Sloan, 2011).

#### 4.6 Effects on Land Use and Recreation

##### ***Alternative One***

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

##### ***Alternative Two***

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 should not have any impact on resource use patterns.

#### 4.7 Effects on Transportation and Traffic

##### ***Alternative One***

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 project alternative would have.

##### ***Alternative Two***

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.

#### 4.8 Effects on Visual Resources

##### ***Alternative One***

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

### ***Alternative Two***

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 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.

## **4.9 Effects on Noise**

### ***Alternative One***

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

### ***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 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.

## **4.10 Effects on Socioeconomic Conditions**

### ***Alternative One***

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

### ***Alternative Two***

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.

#### 4.11 Effects on Community Infrastructure

##### ***Alternative One***

Alternative One 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.

##### ***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.

#### **5. Cumulative Effects**

This project proposes the paving of a portion of the Bald Hills Road that is currently unpaved. 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 Counts Hill Prairie, MP 10.1 to MP 13.4: A project to repave this section of Bald Hills Road has been designed and is currently undergoing environmental review. If successful, this project should be under construction in 2012.

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 Contes Hill Prairie to just beyond the park boundary, where this project begins. 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. It is purely speculative whether this very culturally sensitive section of Bald Hills Road would ever be approved for improvement or paving.

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 switch routes and use the shorter, more direct route instead. 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=podgis4>, 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. 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 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)**

### **Alternatives One**

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.

### **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 undeserved 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.

## **7. Mitigation Measures**

Mitigation measures have already been incorporated into the project design and standard Best Management Practices (BMPs). No further mitigations to this project are required to reduce impacts to less-than-significant levels.

## **8. Consultation and Coordination**

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

Ken Hoffman, Fish and Wildlife Biologist

Kathleen Brubaker, Endangered Species Program Lead, Arcata Fish and Wildlife Office

Humboldt County Dept. of Public Works:

Hank Seemann, Environmental Director

Bureau of Indian Affairs:

Larry Blevins, Kanu Patel, Dan Hall

Yurok Tribe:

Joeseeph James, Transportation Manager

Kate Sloan, Yurok Tribe Environmental Program Director

Rosie Clayburn, Cultural Resources Specialist, Environmental Program

Robert McConnell, Tribal Heritage Preservation Officer

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Yurok Tribe, Bureau of Indian Affairs, and Humboldt County, 2009. Memorandum of Agreement for Roadway Improvements to Bald Hills Road.

## **10. List of Preparers**

Robin Blythe, NEPA Compliance Specialist, Yurok Tribe Environmental Program, Yurok Tribe, Klamath, CA.

APPENDIX:

DETAILED PROJECT MAPS AND PLANS  
PREPARED BY TRINITY VALLEY ENGINEERING













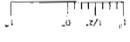
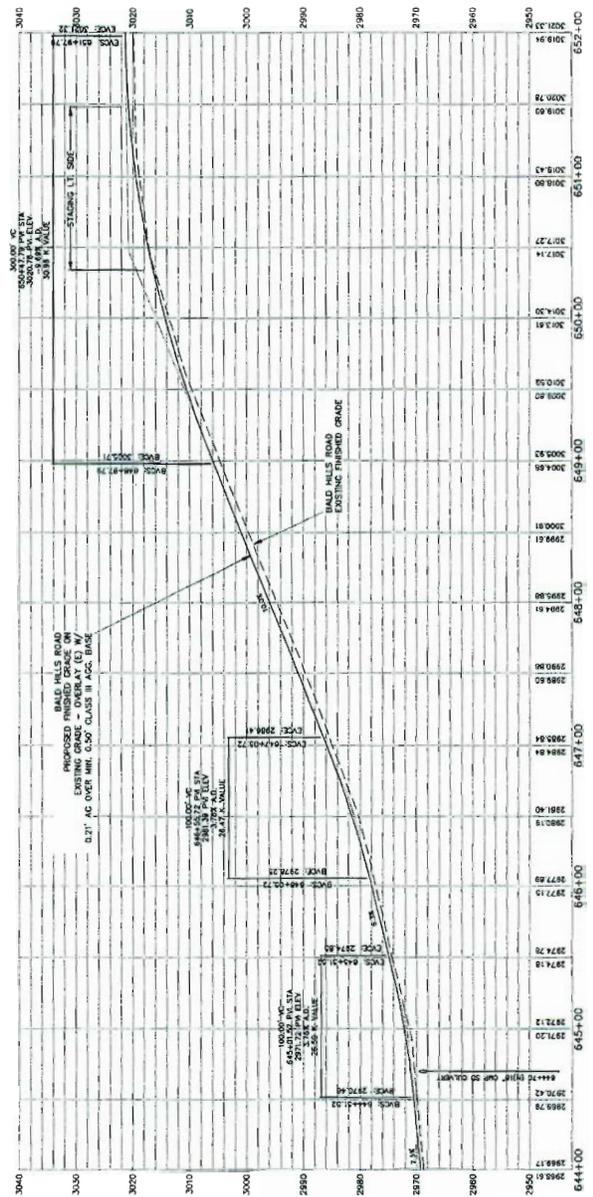
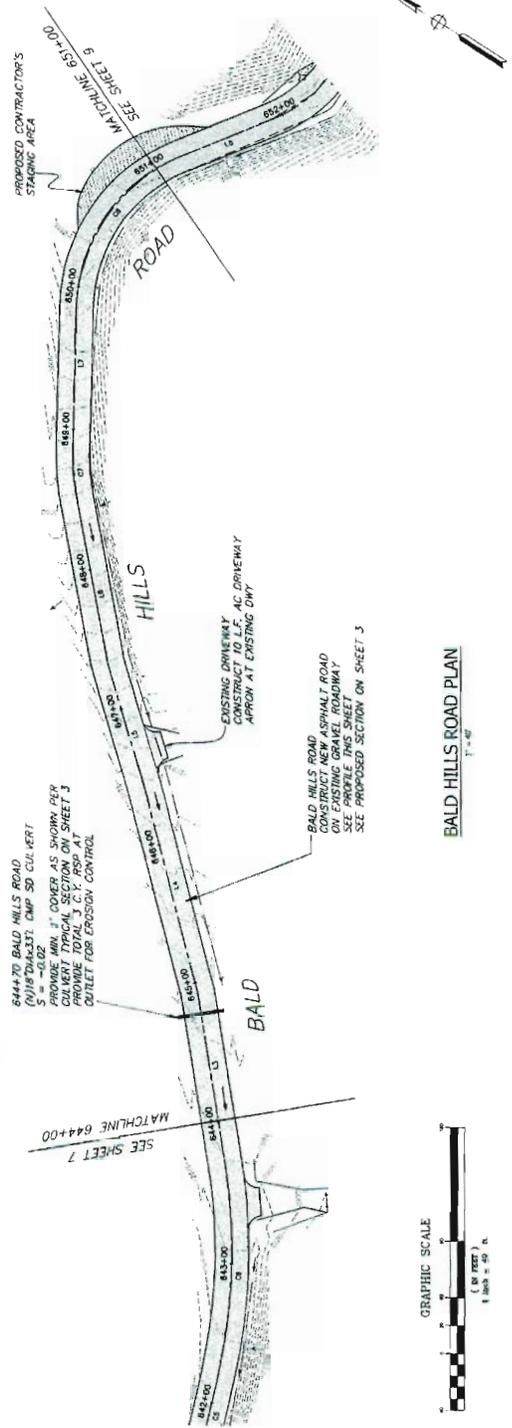




REV	DATE	DESCRIPTION

BALD HILLS ROAD  
 PLAN & PROFILE  
 644+00 - 651+00

DRAWN BY:	
CHECKED BY:	
DATE OF ISSUE:	
SCALE:	
PROJECT NO.:	



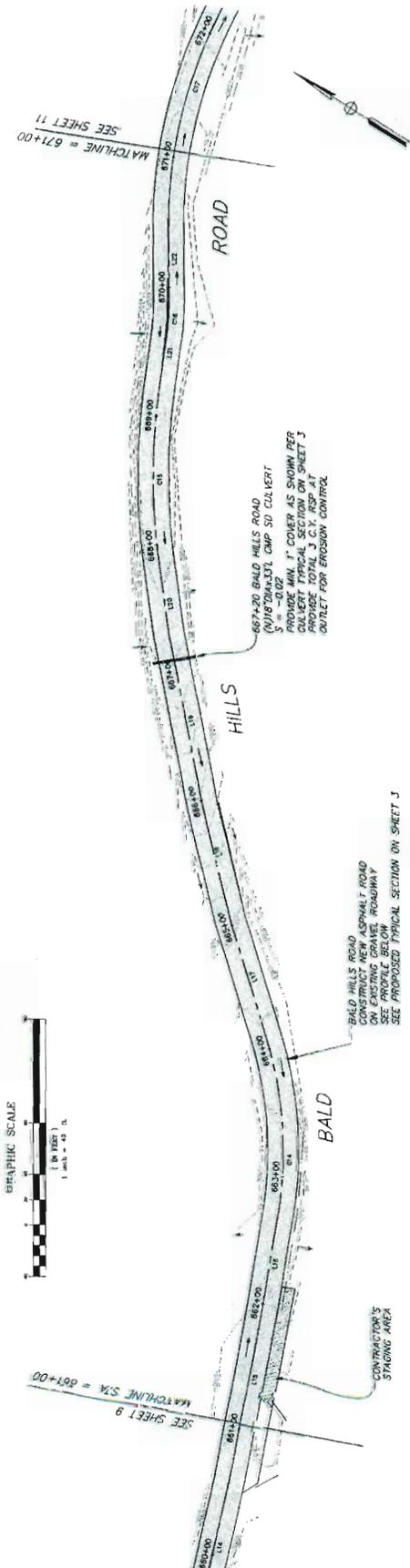




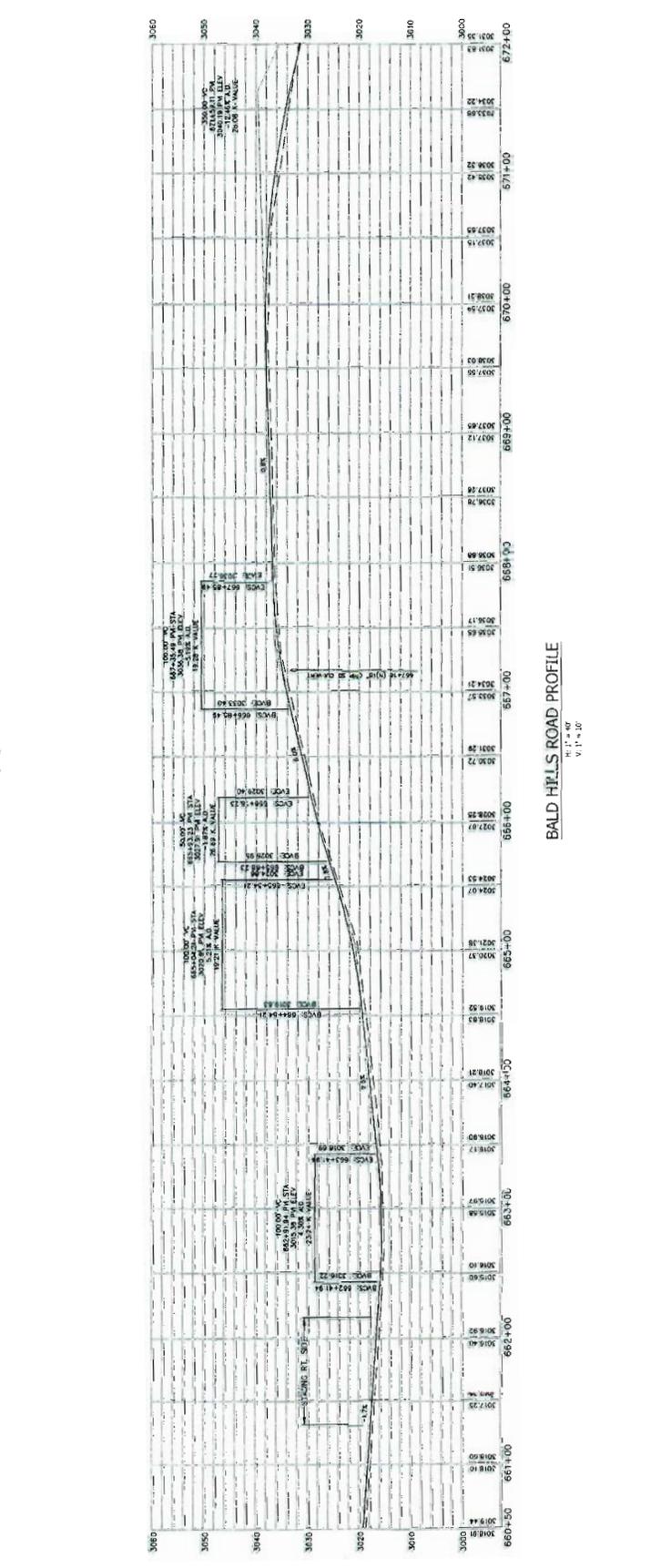
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**BALD HILLS ROAD  
 PLAN & PROFILE  
 661+00 - 671+00**

DESIGN NO.	10
PROJECT NO.	
SHEET NO.	
DATE OF ISSUE	APR 15, 2011
DESIGNED BY	
CHECKED BY	
SCALE	1" = 40'



**BALD HILLS ROAD PLAN**  
 1" = 40'



**BALD HILLS ROAD PROFILE**  
 H, V, 1" = 40'













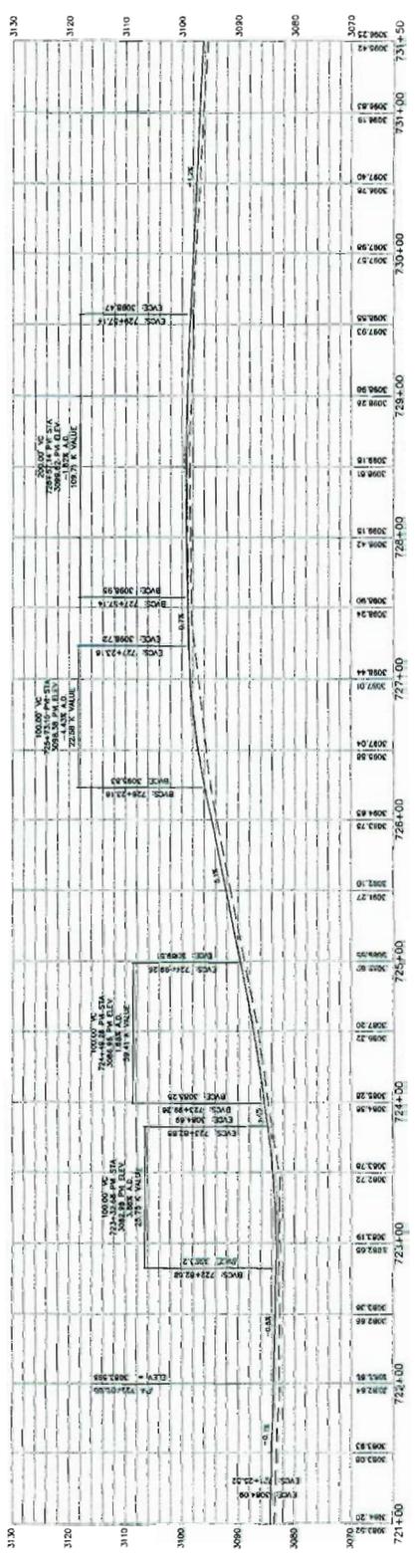
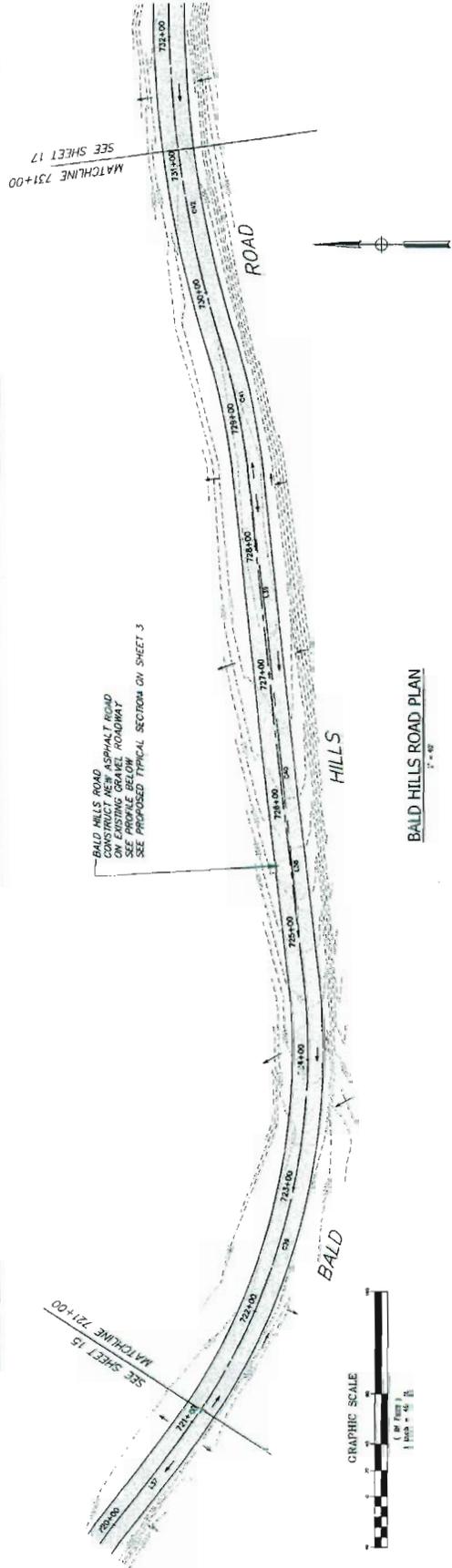


**TYCE**  
 12345 MAIN ST.  
 SUITE 100  
 RIVERSIDE, CA 92503  
 PHONE (951) 514-2000  
 FAX (951) 514-2011

REV	DATE	DESCRIPTION

**BALD HILLS ROAD  
 PLAN & PROFILE  
 721+00 - 731+00**

DRAWN BY: SSE	DATE OF ISSUE: APRIL 15, 2011
CHECKED BY: JAN	SCALE: H. 1" = 40'
PROJECT NO.:	SHEET NO.:
SHEET NO. 16	



**BALD HILLS ROAD PROFILE**  
 1" V. = 40'

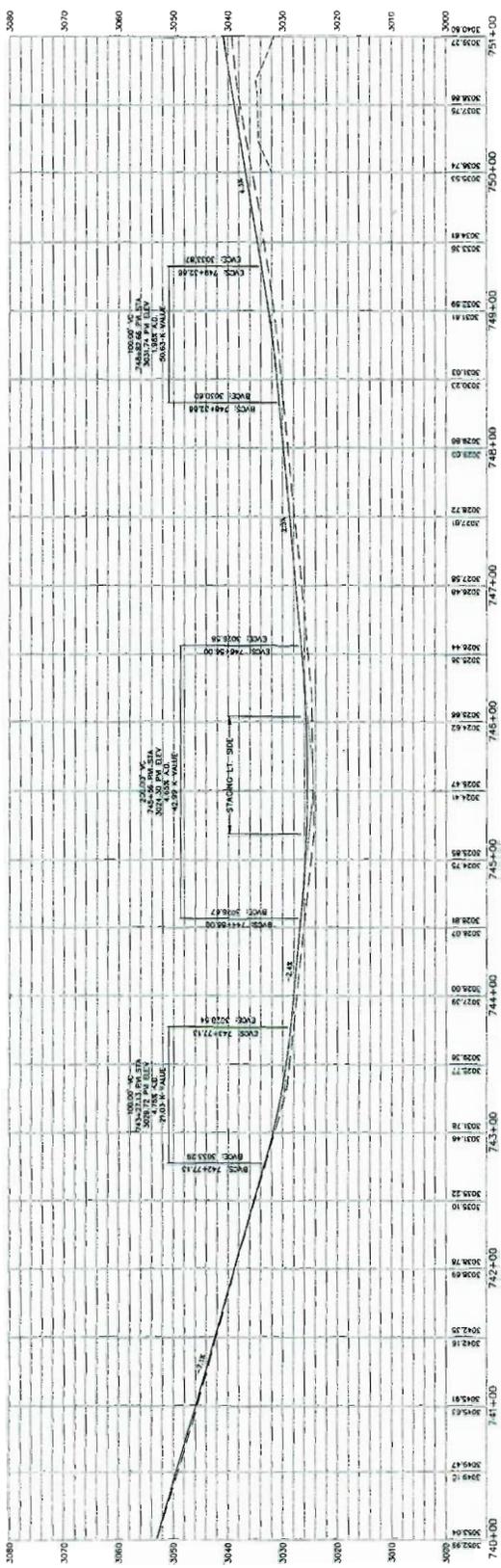
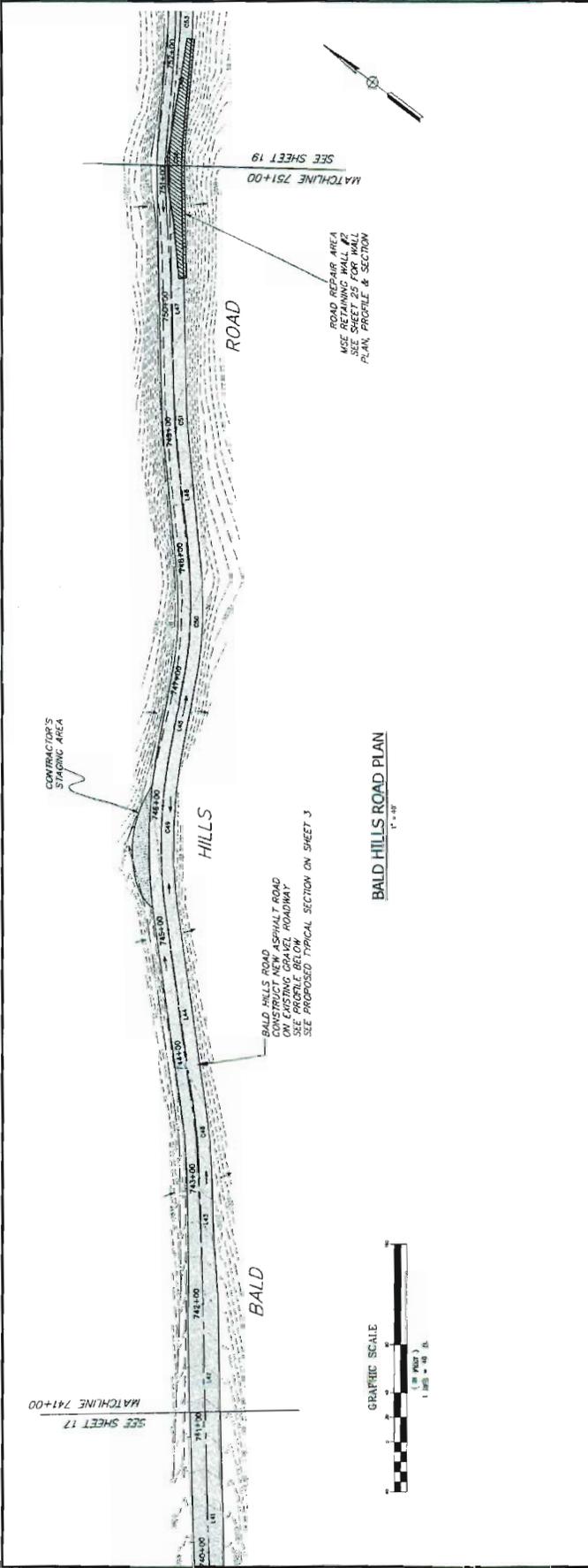




REV	DATE	DESCRIPTION

**BALD HILLS ROAD  
 PLAN & PROFILE  
 741+00 - 751+00**

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DRAWING NO: 18
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CHECKED BY: [Blank]
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SCALE: [Blank]
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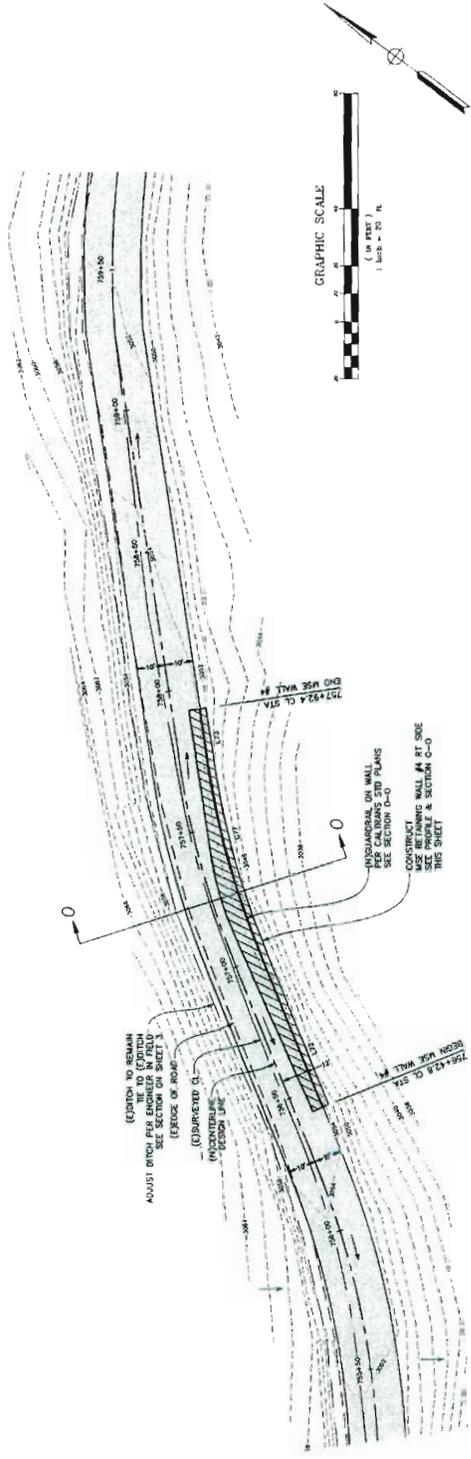




REV	DATE	DESCRIPTION

**BALD HILLS ROAD  
 REPAIR AREAS  
 PLAN & PROFILE**

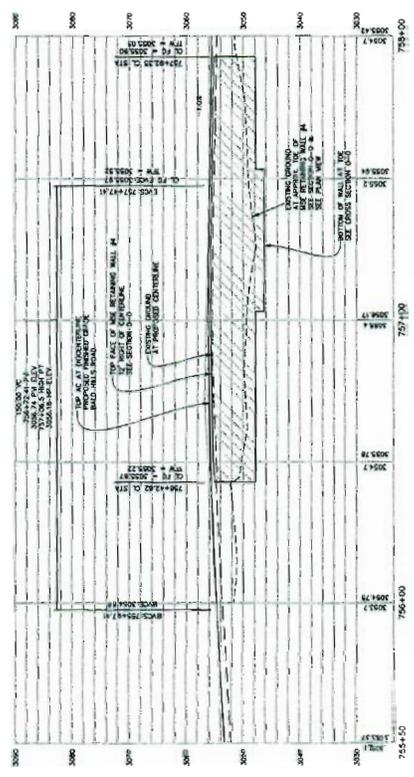
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DATE OF ISSUE:	FEBRUARY 26, 2011
SCALE:	1" = 40'
PROJECT NO.:	
DRAWING NO.:	



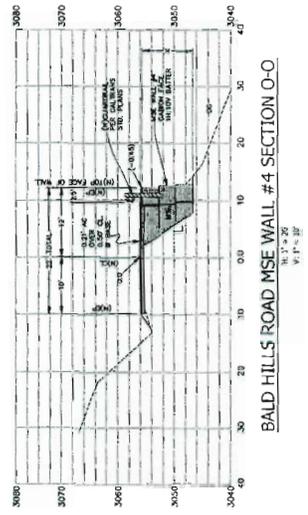
**BALD HILLS ROAD - MSE WALL #4 PLAN**  
 1" = 40'

**TOP FACE OF WALL ALIGNMENT**

Line #/Curve #	Length	Direction/Chord Bearing	START (N. I.)	END (N. I.)
169	73.121	S89°33'44"W	1207073.77, 605868.71	1207073.21, 605827.52
175	43.510	0°02'37.0"	380.000, 1207073.20, 605827.52	1207073.45, 605827.98
183	73.175	S57°50'14"W	1207073.45, 605827.98	1208894.72, 605884.27



**BALD HILLS ROAD MSE WALL #4 PROFILE**  
 1" = 40'



**BALD HILLS ROAD MSE WALL #4 SECTION O-O**  
 1" = 40'





