County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR
www.sccoplanning.com

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

NOTICE OF PUBLIC REVIEW AND COMMENT PERIOD

Pursuant to the California Environmental Quality Act, the following project has been reviewed by the County Environmental Coordinator to determine if it has a potential to create significant impacts to the environment and, if so, how such impacts could be solved. A Negative Declaration is prepared in cases where the project is determined not to have any significant environmental impacts. Either a Mitigated Negative Declaration or Environmental Impact Report (EIR) is prepared for projects that may result in a significant impact to the environment.

Public review periods are provided for these Environmental Determinations according to the requirements of the County Environmental Review Guidelines. The environmental document is available for review at the County Planning Department located at 701 Ocean Street, in Santa Cruz. You may also view the environmental document on the web at www.sccoplanning.com under the Planning Department menu. If you have questions or comments about this Notice of Intent, please contact Matt Johnston of the Environmental Review staff at (831) 454-3201

The County of Santa Cruz does not discriminate on the basis of disability, and no person shall, by reason of a disability, be denied the benefits of its services, programs or activities. If you require special assistance in order to review this information, please contact Bernice Romero at (831) 454-3137 (TDD number (831) 454-2123 or (831) 763-8123) to make arrangements.

PROJECT: Graham Hill Road Bridge Storm Damage Repair Project

APP #: N/A

APN(S): 071-201-43 and Public Right-of-Way

PROJECT DESCRIPTION: Santa Cruz County proposes to repair a wing wall on the Graham Hill Road Bridge (36C-0101) at the San Lorenzo River using funds from the federal ER Program. The proposed repairs are considered permanent restoration work under the federal Emergency Relief (ER) program. The project would also repair scour damage at a bridge pier using County funds.

PROJECT LOCATION: The proposed storm damage repairs are located on the north side of the Graham Hill Road Bridge located between Mt. Hermon Road to the east and Highway 9 on the west side of the San Lorenzo River. The project site is located within County right-of-way adjacent to assessor's parcel number (APN) 071-201-43 within the community of Felton in the unincorporated County of Santa Cruz.

EXISTING ZONE DISTRICT: RA-GH
APPLICANT: County of Santa Cruz, Department of Public Works
OWNER: County of Santa Cruz
PROJECT PLANNER: Todd Sexauer
EMAIL: Todd.Sexauer@santacruzcounty.us
ACTION: Negative Declaration with Mitigations
REVIEW PERIOD: February 10, 2014 through March 11, 2014
This project will be considered administratively by the Project Planner at the conclusion of the review period.

COUNTY OF SANTA CRUZ

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MITIGATED NEGATIVE DECLARATION

Project: Graham Hill Road Bridge Storm Damage Repair Project

APN(S): 071-201-43 and Public Right-of-Way

Project Description: Santa Cruz County proposes to repair a wing wall on the Graham Hill Road Bridge (36C-0101) at the San Lorenzo River using funds from the federal ER Program. The proposed repairs are considered permanent restoration work under the federal Emergency Relief (ER) program. The project would also repair scour damage at a bridge pier using County funds.

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Owner: County of Santa Cruz

Applicant: County of Santa Cruz, Department of Public Works

Staff Planner: Todd Sexauer, (831) 454-3511

Email: Todd.Sexauer@santacruzcounty.us

This project will be considered administratively by the Project Planner at the conclusion of the review period.

California Environmental Quality Act Mitigated Negative Declaration Findings:

Find, that this Mitigated Negative Declaration reflects the decision-making body's independent judgment and analysis, and; that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period; and, that revisions in the project plans or proposals made by or agreed to by the project applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and, on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project as revised will have a significant effect on the environment. The expected environmental impacts of the project are documented in the attached Initial Study on file with the County of Santa Cruz Clerk of the Board located at 701 Ocean Street, 5th Floor, Santa Cruz, California.

Review Period Ends: March 11, 2014

Note: This Document is considered Draft until it is Adopted by the Appropriate County of Santa Cruz Decision-Making Body

Date: 2/5/14

TODD SEXAUER, Environmental Coordinator
(831) 454-3511

County of Santa Cruz

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ENVIRONMENTAL REVIEW INITIAL STUDY

Date: February 3, 2014 **Application Number:** N/A
Staff Planner: Todd Sexauer Graham Hill Road Bridge Storm Damage Repair Project

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: County of Santa Cruz, Department of Public Works

APN(s): 071-201-43 and Public Right-of Way

OWNER: County of Santa Cruz

SUPERVISORAL DISTRICT: 5

PROJECT LOCATION: The proposed storm damage repairs are located on the north side of the Graham Hill Road Bridge located between Mt. Hermon Road to the east and Highway 9 on the west side of the San Lorenzo River. The project site is located within County right-of-way adjacent to assessor's assessor parcel number (APN) 071-201-43 within the community of Felton in the unincorporated County of Santa Cruz (Figure 1). The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

SUMMARY PROJECT DESCRIPTION:

Santa Cruz County proposes to repair a wing wall on the Graham Hill Road Bridge (36C-0101) at the San Lorenzo River using funds from the federal ER Program. The proposed repairs are considered permanent restoration work under the federal Emergency Relief (ER) program. The Project would also repair scour damage at a bridge pier using County funds (Figure 2).

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.

☒ Geology/Soils	☐ Noise
☒ Hydrology/Water Supply/Water Quality	☒ Air Quality
☒ Biological Resources	☐ Greenhouse Gas Emissions
☒ Agriculture and Forestry Resources	☐ Public Services
☐ Mineral Resources	☐ Recreation

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.

- ☐ Visual Resources & Aesthetics
- ☒ Cultural Resources
- ☒ Hazards & Hazardous Materials
- ☒ Transportation/Traffic
- ☐ Utilities & Service Systems
- ☐ Land Use and Planning
- ☐ Population and Housing
- ☐ Mandatory Findings of Significance

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- ☐ General Plan Amendment
- ☐ Land Division
- ☐ Rezoning
- ☐ Development Permit *(Amendment)*
- ☐ Sewer Connection Permit
- ☐ Coastal Development Permit
- ☐ Grading Permit
- ☒ Riparian Exception
- ☐ LAFCO Annexation
- ☐ Other:

NON-LOCAL APPROVALS:

Other agencies that must issue permits or authorizations: California Department of Fish and Wildlife; NOAA Fisheries; U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers; and Regional Water Quality Control Board

DETERMINATION: (To be completed by the lead agency)
On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Todd Sexauer
Environmental Coordinator

2/5/14
Date

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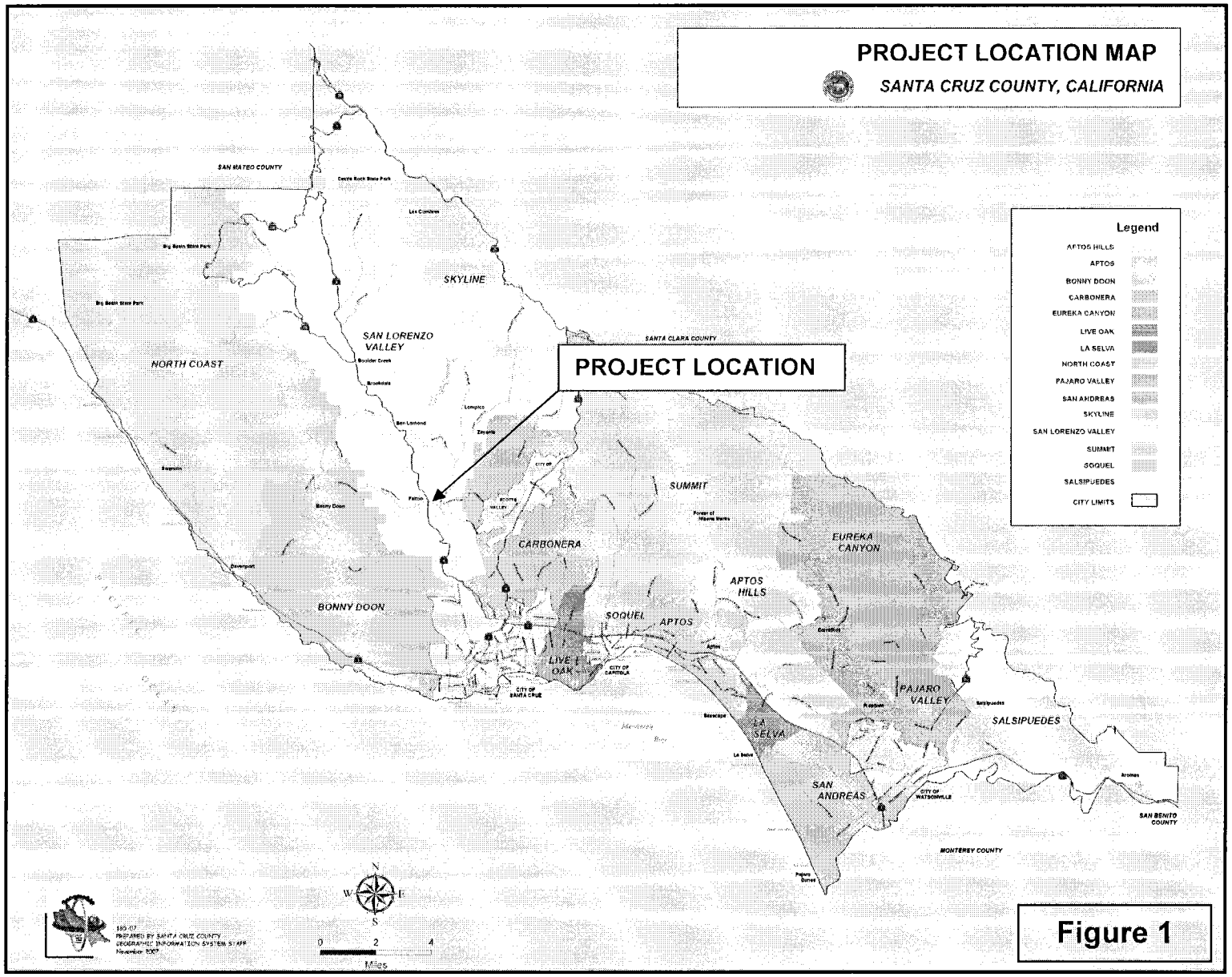
PROJECT LOCATION MAP
SANTA CRUZ COUNTY, CALIFORNIA
PROJECT LOCATION
Legend
APTOS HILLS
APTOS
BONNY DOON
CARBONERA
EUREKA CANYON
LIVE OAK
LA SELVA
NORTH COAST
PAJARO VALLEY
SAN ANDREAS
SKYLINE
SAN LORENZO VALLEY
SUMMIT
SOQUEL
SALSIPUEDES
CITY LIMITS
SAN MATEO COUNTY
SANTA CLARA COUNTY
MONTEREY COUNTY
SAN BENITO COUNTY
SKYLINE
SAN LORENZO VALLEY
NORTH COAST
SUMMIT
CARBONERA
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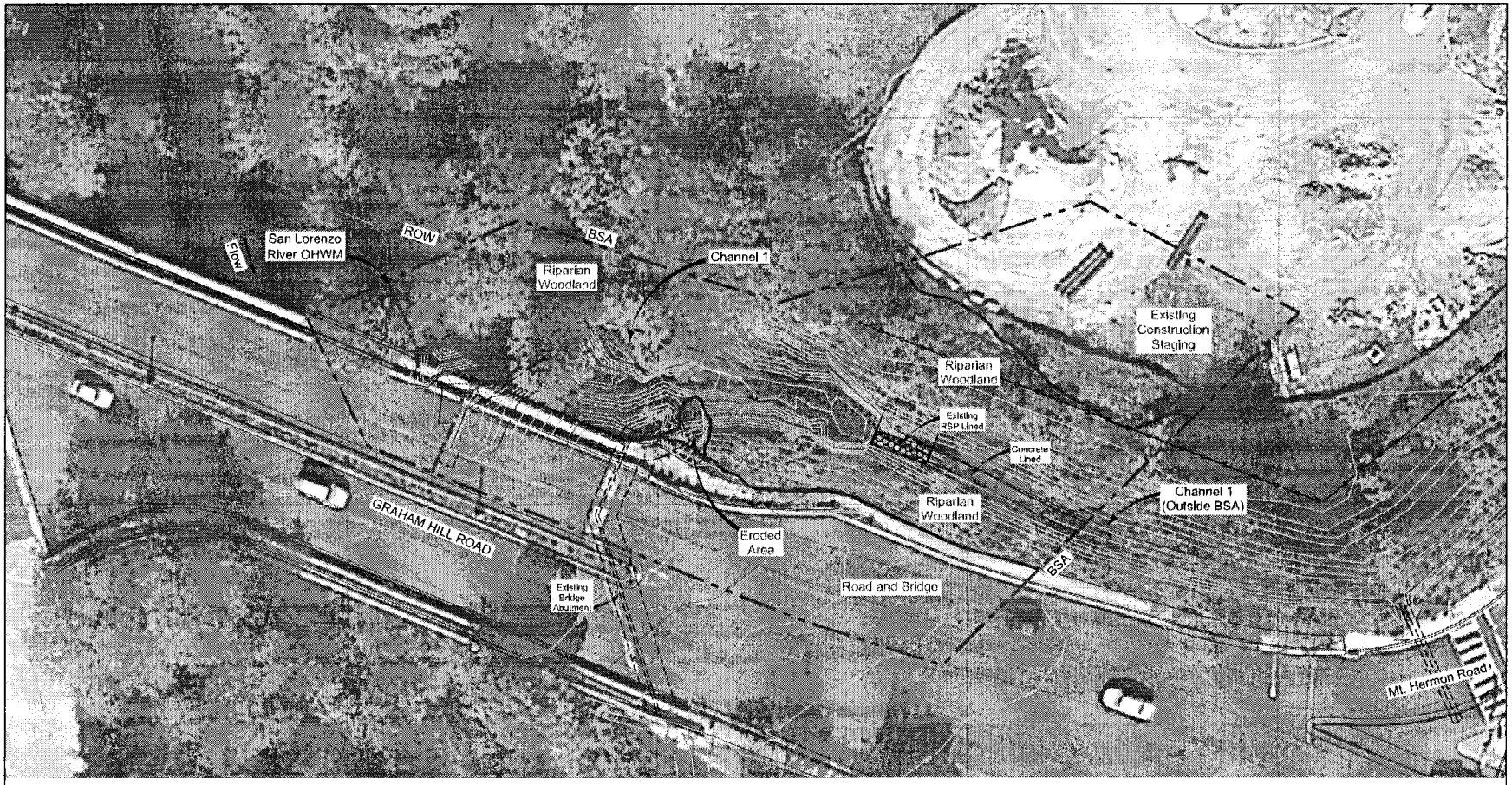

Graham Hill Road Bridge (36C-0101) at
San Lorenzo River Storm Damage Repair Project
Santa Cruz County, CA
5 September 2012

= Biological Study Area (BSA) (0.633 acres)
= Right-of-way (ROW) Boundary
= Ordinary High Water Mark (OHWM) of San Lorenzo River
= Channel 1 (In BSA)
= Natural Community Boundary

0 15 30 ft
Scale: 1" = 30'
N

Basemap: Graham Hill Bridge.dwg by County of Santa Cruz Dept. of Public Works (Revised 7/5 Jan. 2012); Aerial Photography: 1 November 2011 Digital Earth Pro Imagery

Figure 2

Project Study Area

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II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS:

Parcel Size (acres): N/A
Existing Land Use: Road right-of-way
Vegetation: Riparian
Slope in area affected by project: ☒ 0 - 30% ☒ 31 – 100% ☐ N/A
Nearby Watercourse: San Lorenzo River and Channel 1 (Ephemeral Stream)
Distance To: Bridge crosses San Lorenzo River.

ENVIRONMENTAL RESOURCES AND CONSTRAINTS:

Water Supply Watershed: Yes
Groundwater Recharge: Yes
Timber or Mineral: No
Agricultural Resource: Yes
Biologically Sensitive Habitat: Yes
Fire Hazard: No
Floodplain: Yes
Erosion: Yes
Landslide: No
Liquefaction: Yes
Fault Zone: No
Scenic Corridor: Yes
Historic: Yes
Archaeology: Yes
Noise Constraint: No
Electric Power Lines: No
Solar Access: N/A
Solar Orientation: N/A
Hazardous Materials: No
Other:

SERVICES:

Fire Protection: Felton Fire Protection Dist.
School District: San Lorenzo Valley USD
Sewage Disposal: CSA 12
Drainage District: Zone 8
Project Access: via Graham Hill Road
Water Supply: N/A

PLANNING POLICIES:

Zone District: RA-GH
General Plan: Mountain Residential (R-M)
Special Designation: None

Urban Services Line:	☐ Inside	☒ Outside
Coastal Zone:	☐ Inside	☒ Outside

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

Natural Environment

Santa Cruz County is uniquely situated along the northern end of Monterey Bay approximately 55 miles south of the City of San Francisco along the Central Coast. The Pacific Ocean and Monterey Bay to the west and south, the mountains inland, and the prime agricultural lands along both the northern and southern coast of the county create limitations on the style and amount of building that can take place. Simultaneously, these natural features create an environment that attracts both visitors and new residents every

year. The natural landscape provides the basic features that set Santa Cruz apart from the surrounding counties and require specific accommodations to ensure building is done in a safe, responsible and environmentally respectful manner.

The California Coastal Zone affects nearly one third of the land in the urbanized area of the unincorporated County with special restrictions, regulations, and processing procedures required for development within that area. Steep hillsides require extensive review and engineering to ensure that slopes remain stable, buildings are safe, and water quality is not impacted by increased erosion. The farmland in Santa Cruz County is among the best in the world, and the agriculture industry is a primary economic generator for the County. Preserving this industry in the face of population growth requires that soils best suited to commercial agriculture remain active in crop production rather than converting to other land uses.

PROJECT BACKGROUND:

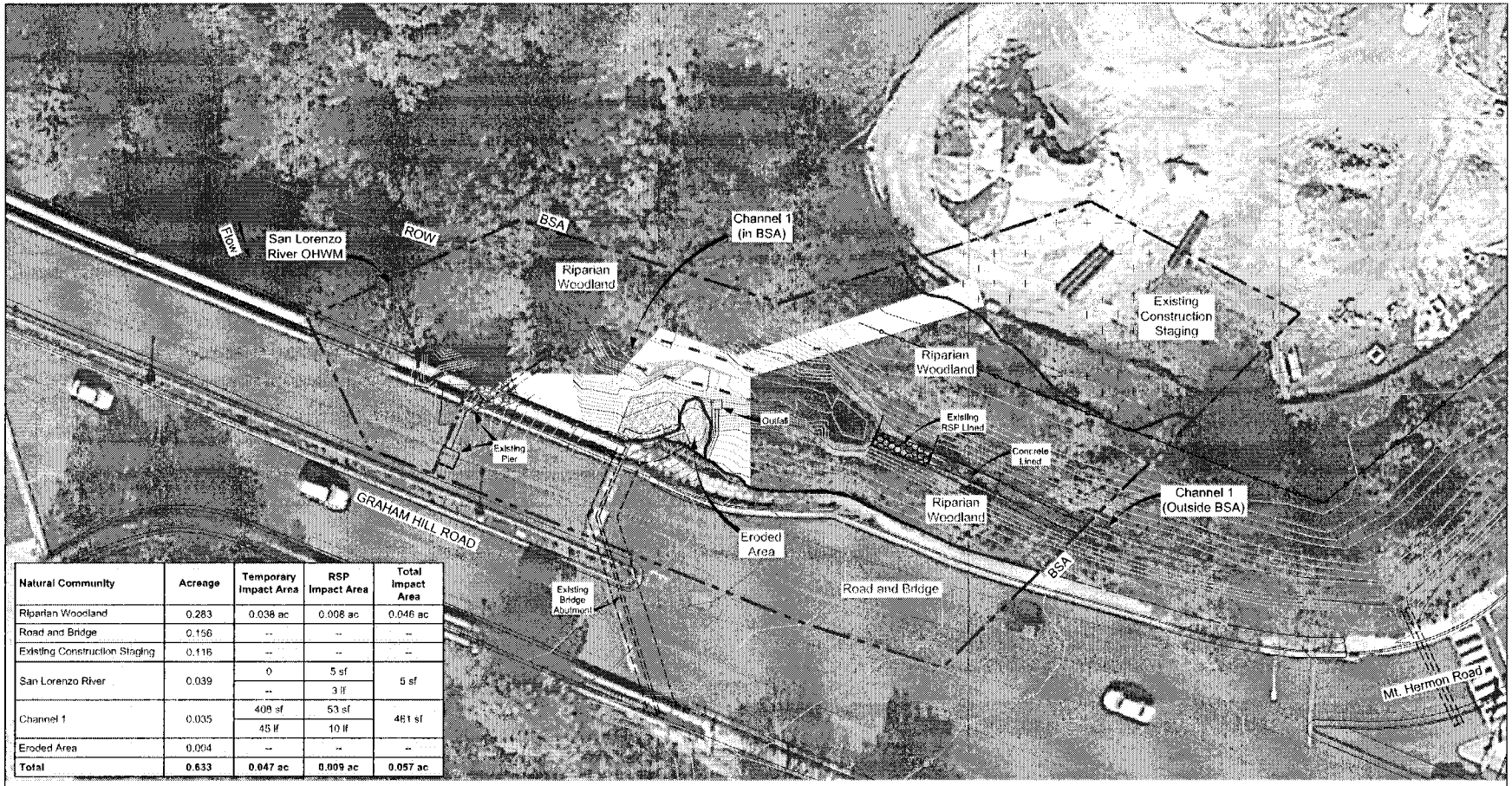
The County of Santa Cruz, in conjunction with the California Department of Transportation (Caltrans), proposes to repair a wing wall on the northeast corner of the Graham Hill Road Bridge (36C-0101) at San Lorenzo River. The wing wall was damaged during a large storm event in March 2011. Santa Cruz County proposes to complete the permanent repair using federal Emergency Relief Program (ER) funds.

DETAILED PROJECT DESCRIPTION:

Santa Cruz County proposes to repair a wing wall on the Graham Hill Road Bridge (36C-0101) at the San Lorenzo River using funds from the federal ER Program. The proposed repairs are considered permanent restoration work under the ER program. The Project would also repair scour damage at a bridge pier using County funds. The proposed project site is located in the community of Felton, CA (Figure 1).

Damage occurred around a wing wall on the northeastern corner of the bridge. The damage resulted not from the San Lorenzo River, but from an unnamed tributary (Channel 1) that flows past the wing wall before emptying into the River. Saturated soil conditions and slumping may have contributed to the damage. Soil behind the wing wall, and underneath the sidewalk, failed and slid down the slope into Channel 1, and was washed away. There is a crack in the bridge abutment near the wing wall. Channel 1 is flowing into and causing scour around a pier that supports the bridge.

The repair work would consist of removing the existing wing wall and pouring a new concrete wing wall in the same location (Figure 3). The new wing wall would be doweled into the face of the existing bridge abutment to help provide bearing support for the bridge. Rock slope protection (RSP) would be installed around the new wing wall. A drain would be installed at the edge of the sidewalk, leading to a culvert along the edge of the new RSP, with an outfall at the bottom of the RSP. The portion of the sidewalk that has been undercut



Natural Community	Acreage	Temporary Impact Area	RSP Impact Area	Total Impact Area
Riparian Woodland	0.283	0.038 ac	0.008 ac	0.046 ac
Road and Bridge	0.156	--	--	--
Existing Construction Staging	0.116	--	--	--
San Lorenzo River	0.039	0	5 sf	5 sf
		--	3 lf	
Channel 1	0.035	408 sf	53 sf	461 sf
		45 lf	10 lf	
Eroded Area	0.004	--	--	--
Total	**0.633**	**0.047 ac**	**0.009 ac**	**0.057 ac**

Graham Hill Road Bridge (36C-0101) at
San Lorenzo River Storm Damage Repair Project
Santa Cruz County, CA
5 September 2012

= Biological Study Area (BSA) (0.633 acres)
= Right-of-way (ROW) Boundary
= Ordinary High Water Mark (OHWM) of San Lorenzo River
= Natural Community Boundary
= Channel 1 (In BSA)

= Permanent Impact
= Temporary Impact
= Existing Sidewalk to be Removed and Replaced
= Proposed Rock Slope Protection (RSP)

Basemap: Graham Hill Bridge.shp by County of Santa Cruz Dept. of Public Works (Received 25 Jan. 2012)
Aerial Photograph: 1 November 2011 Google Earth Pro Imagery

Figure 3 **Project Area Impacts**

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would be replaced. The County would also install RSP at the base of the pier in the channel to prevent further scour.

General construction equipment such as excavators, backhoes, and dump trucks would be used. Equipment may access the site from an existing construction staging yard on the north side of Channel 1. Prior to construction, a path would be cleared across the riparian woodland and Channel 1 wide enough to allow equipment access to the wing wall. Vegetation clearing is a pre-construction activity that may occur prior to the commencement of construction.

No in-water work is proposed. Approximately 2 cubic yards of RSP would be installed below the ordinary high water mark (OHWM) of the San Lorenzo River, and approximately 3 cubic yards of RSP in Channel 1 to protect the bridge pier from scour. Additional temporary impacts would occur in Channel 1 due to equipment access and the proximity of construction. Erosion control materials would be installed on any bare soil areas, and areas of vegetation removal would be replanted with native vegetation suitable for the riparian woodland (see Attachment 4).

Staging Areas

Construction staging would occur at within the northeast portion of the project area within an existing staging area located on the adjacent parcel (APN 071-201-43). This area would be used for equipment with fuels/liquids and potentially hazardous materials.

Project Schedule

Construction would occur in the summer and is expected to last no more than four weeks. Any tree trimming or removal would occur outside nesting season (between September 1 to January 31) to avoid nesting birds. Any in-water or bank work would be completed during the dry season (between June 15 and October 15) when flow within the River is near the annual minimum, unless appropriate resource agencies provide approval of work outside that period.

III. ENVIRONMENTAL REVIEW CHECKLIST

A. GEOLOGY AND SOILS

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1.	*Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*				
	A. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*	☐	☐	☒	☐
	B. *Strong seismic ground shaking?*	☐	☐	☒	☐
	C. *Seismic-related ground failure, including liquefaction?*	☐	☐	☒	☐
	D. *Landslides?*	☐	☐	☐	☒

Discussion (A through D): The project site is located outside of the limits of the State Alquist-Priolo Special Studies Zone (County of Santa Cruz GIS Mapping, California Division of Mines and Geology, 2001). Although no faults are shown on published mapping that pass through the project site, the Ben Lomond fault is located approximately 1,000 feet to the east of the project area (see Attachment 1). The project site is located approximately 9 miles southwest of the San Andreas fault zone (Santa Cruz Mountains Section), approximately 10 miles northeast of the San Gregorio fault zone (San Gregorio section), approximately 10 miles northeast of the Monterey Bay-Tularcitos (Monterey Bay section), approximately 13 miles northeast of the San Gregorio fault zone (sur Region section-Sur fault), and approximately 10 miles west of the Zayante–Vergales fault zone.

While the San Andreas fault is larger and considered more active, each fault is capable of generating moderate to severe ground shaking from a major earthquake. Consequently, large earthquakes can be expected in the future. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) was the second largest earthquake in central California history.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

According to the County of Santa Cruz GIS mapping, the entire project area is prone to liquefaction and contains Elder sandy loam 0 to 2 percent slopes. No landslides are known to occur within or near the project area.

With implementation of the proposed project design, impacts associated with earthquakes, seismic shaking and liquefaction are considered to be less than significant.

2.	*Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*	☐	☐	☒	☐

Discussion: See response to A-1 above.

3.	*Develop land with a slope exceeding 30%?*	☐	☐	☒	☐

Discussion: The bridge repair project is intended to repair a wing wall that would encroach into Channel 1 adjacent to the San Lorenzo River channel. The wing wall would be constructed within the moderately sloped areas to protect and support the existing bridge structure. The replacement wing wall and associated components would be built to current AASHTO and County standards. Impacts would be considered less than significant.

4.	*Result in substantial soil erosion or the loss of topsoil?*	☐	☐	☒	☐

Discussion: See discussion under A-1 above. Best management practices would be implemented during construction. Any in-water or bank work would be completed during the dry season (between June 1 and October 15). Impacts from soil erosion or loss of topsoil would be considered less than significant.

5.	*Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?*	☐	☐	☐	☒

Discussion: No expansive soils are known to occur within the project area. Therefore, no impact is anticipated.

6.	*Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

septic tanks, leach fields, or alternative waste water disposal systems where sewers are not available?

Discussion: No sewage would be generated by the proposed bridge repair project. No impact is anticipated.

7. *Result in coastal cliff erosion?* ☐ ☐ ☐ ☒

Discussion: The proposed bridge repair project is not located on or near coastal bluff areas; and therefore, no impacts would occur to coastal cliffs or bluffs. No impact is anticipated.

B. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

Would the project:

1. *Place development within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?* ☐ ☐ ☒ ☐

Discussion: The results from the hydraulic analysis of the existing and proposed conditions indicated that the proposed bridge repair project would not significantly increase the design 100-year water surface elevation (WSE) of the San Lorenzo River in the Project vicinity (see Attachment 2, Draft Location Hydraulic Study Report). As a result, impacts would be less than significant.

2. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?* ☐ ☐ ☒ ☐

Discussion: See discussion under B-1 above. The proposed bridge replacement project would be designed to not impede or redirect flood flows within a 100-year flood hazard area. Therefore, impacts would be less than significant.

3. *Be inundated by a seiche, tsunami, or mudflow?* ☐ ☐ ☐ ☒

Discussion:

There are two primary types of tsunami vulnerability in Santa Cruz County. The first is a teletsunami or distant source tsunami from elsewhere in the Pacific Ocean. This type of tsunami is capable of causing significant destruction in Santa Cruz County. However, this type of tsunami would usually allow time for the Tsunami Warning System for the Pacific Ocean to warn threatened coastal areas in time for evacuation (County of Santa Cruz 2010).

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

The more vulnerable risk to the County of Santa Cruz is a tsunami generated as the result of an earthquake along one of the many earthquake faults in the region. Even a moderate earthquake could cause a local source tsunami from submarine landsliding in Monterey Bay. A local source tsunami generated by an earthquake on any of the faults affecting Santa Cruz County would arrive just minutes after the initial shock. The lack of warning time from such a nearby event would result in higher causalities than if it were a distant tsunami (County of Santa Cruz 2010).

The project site is located approximately 7 miles inland, approximately five to six miles beyond the effects of a tsunami. In addition, no impact from a seiche or mudflow is anticipated. No impact would occur.

4. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*	☐	☐	☐	☒

Discussion: The proposed bridge repair project would only require small amounts of water during construction. No groundwater or water supply would be required during the operational phase of the project. Therefore, no impact to groundwater resources would occur from project implementation.

5. *Substantially degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).*	☐	☐	☒	☐

Discussion: The County and/or their construction contractor would include the following water quality protection and erosion and sediment control best management practices (BMPs), based on standard County/Caltrans requirements, to minimize construction-related contaminants and mobilization of sediment to the San Lorenzo River and Channel 1 in the project area.

The BMPs will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable and are subject to review and approval

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

by the County. The County will perform routine inspections of the construction area to verify the BMPs are properly implemented and maintained. The County will notify contractors immediately if there is a noncompliance issue and will require compliance.

The BMPs will include, but are not limited to, the following.

- All earthwork or foundation activities involving the river, ephemeral drainages, culverts, and the bridge will occur in the dry season (generally between June 1 and October 15).
- Implement a netting and tarp system at the bridge site to prevent and minimize debris from entering the river during demolition and construction activities.
- Equipment used in and around drainages and wetlands will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance will be performed at least 300 feet from all drainages and wetlands. Any necessary equipment washing will be carried out where the water cannot flow into drainages or wetlands.
- Develop a hazardous material spill prevention control and countermeasure plan before construction begins that will minimize the potential for and the effects of hazardous or toxic substances spills during construction. The plan will include storage and containment procedures to prevent and respond to spills and will identify the parties responsible for monitoring the spill response. During construction, any spills will be cleaned up immediately according to the spill prevention and countermeasure plan. The County will review and approve the contractors' toxic materials spill prevention control and countermeasure plan before allowing construction to begin. Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete; solvents and adhesives; thinners; paints; fuels; sawdust; dirt; gasoline; asphalt and concrete saw slurry; heavily chlorinated water.
- Measure baseline turbidity, pH, specific conductance, and temperatures in the San Lorenzo River channel and Channel 1 when flow is present. As required by the RWQCB, avoid exceeding water quality standards specified in the Basin Plan standards over the natural in-situ conditions. If dewatering activities are required, water samples would be taken periodically during construction.
- Any surplus concrete rubble, asphalt, or other rubble from construction will be taken to a local landfill.
- An erosion and sediment control plan will be prepared and implemented for the proposed project. It will include the following provisions and protocols. The SWPPP for the project will detail the applications and type of measures and the allowable

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

exposure of unprotected soils.

- Discharge from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the RWQCB.
- Temporary erosion control measures, such as sandbagged silt fences, will be applied throughout construction of the proposed project and will be removed after the working area is stabilized or as directed by the engineer. Soil exposure will be minimized through use of temporary BMPs, groundcover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid producing runoff. Paved streets will be swept daily following construction activities.
- The contractor will conduct periodic maintenance of erosion and sediment control measures.
- An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction.
- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. All stockpile areas will be surrounded by a filter fabric fence and interceptor dike.
- Contain soil and filter runoff from disturbed areas by berms, vegetated filters, silt fencing, straw wattle, plastic sheeting, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area.
- Use other temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary re-vegetation or other ground cover) to control erosion from disturbed areas as necessary.
- Avoid earth or organic material from being deposited or placed where it may be directly carried into the channel.

Implementation of the above BMPs would ensure that water quality impacts to the San Lorenzo River and its tributaries are less than significant.

6. *Degrade septic system functioning?* ☐ ☐ ☐ ☒

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: The proposed bridge repair project does not propose any septic systems or any modifications that would impact existing septic systems. No impacts are anticipated.

7.	*Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, on- or off-site?*	☐	☐	☒	☐

Discussion: CFR 23, Section 650, defines significant encroachments and risks for the base floodplain. An encroachment is any work done within the limits of the base floodplain. A significant encroachment is one that could have a significant potential for interruption or termination of a transportation facility, which is needed for emergency vehicles or provides a community's only evacuation route, has an adverse impact on natural and beneficial floodplain values, or creates a significant risk. Risks are consequences associated with the probability of flooding attributable to an encroachment which could cause property loss or hazard to life.

The existing bridge presents a floodplain encroachment on the San Lorenzo River. The proposed project would increase the encroachment upon the river, but would not be considered a significant encroachment per the definition (see Attachment 2, Draft Location Hydraulic Study Report). As a result, impacts would be less than significant.

8.	*Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff?*	☐	☐	☒	☐

Discussion: See discussions under B-5 and B-7 above. Impacts would be considered less than significant.

9.	*Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*	☐	☐	☐	☒

Discussion: The proposed project would not increase the risk of flooding and would not lead to the failure of a levee or dam. No impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
10. Otherwise substantially degrade water quality?	☐	☐	☒	☐

Discussion: Please see discussion under B-5 above. Impacts would be considered less than significant with the implementation of BMPs.

C. BIOLOGICAL RESOURCES

Would the project:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Discussion: The Biological Study Area (BSA) for the proposed project comprises 0.633 acres. Sensitive natural communities in the BSA consist of the San Lorenzo River, Channel 1, and riparian woodland. The proposed project would permanently impact 0.008 acre of riparian woodland, 5 feet of the San Lorenzo River, and 53 feet of Channel 1 due to the placement of rock slope protection (RSP). Construction disturbance would temporarily impact 0.038 acre of riparian woodland and 0.01 acre of Channel 1. The proposed project would not involve in-water work. Construction would occur when flows in the San Lorenzo River are low.

It is estimated that one native tree (a California bay) and several nonnative trees (silver wattles and a privet), would be removed by the Project. Temporary impact areas would be revegetated with native species.

There are no Santa Cruz Sandhills soils or natural communities in the BSA. The BSA does not provide habitat for any of the special-status species endemic to the Santa Cruz Sandhills.

The San Lorenzo River in the BSA provides habitat for federal-listed coho salmon (*Oncorhynchus kisutch*; central California coast ESU) and steelhead (*Oncorhynchus mykiss irideus*; central California coast DPS). The San Lorenzo River is designated critical habitat for these species and designated essential fish habitat (EFH) for Coho salmon. The Project is not likely to adversely affect Coho salmon or steelhead, their critical habitat, or EFH (see Attachment 6).

The BSA provides habitat for federal-threatened California red-legged frog (CRLF). The BSA is in Recovery Unit 5 for CRLF. The Project is not likely to adversely affect CRLF.

The BSA provides potential habitat for foothill yellow-legged frog (*Rana boylii*), western

pond turtle (*Emys marmorata*), burrowing owl (*Athene cunicularia*), pallid bat (*Antrozous pallidus*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). These species are species of special concern to the California Department of Fish and Wildlife (DFW). Mitigation measures are described for these species. No special-status wildlife or plant species were observed in the BSA during surveys conducted by a qualified biologist and botanist.

Construction would occur in the FEMA mapped 100 year floodplain. Permits and authorizations required for this Project include a Section 404 Permit from the U.S. Army Corps of Engineers (Corps), a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a 1602 Streambed Alteration Agreement from the California Department of Fish and Game (DFG). A Jurisdictional Delineation Report is contained in Appendix F of Attachment 3.

A total of 13 invasive plant species observed within the BSA. English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), and French broom (*Genista monspessulana*) are rated "high" in terms of the ecological impact by Cal-IPC. The spread of invasive species in the BSA would be reduced by revegetating disturbed areas in the BSA with native or sterile nonnative species. The limited scope of this Project precludes effective eradication of these invasive species from the BSA.

The Project would have a positive effect on water quality in Channel 1 and the San Lorenzo River. The Project would reduce the amount of sediment that enters these waters from the slope failure associated with the damaged wing wall and from erosion occurring around the bridge pier.

Mitigation measures are included for the San Lorenzo River, riparian woodland, Channel 1, anadromous fish, CA red-legged frog, and several State species of special concern. The Project includes replanting of riparian vegetation in temporarily affected areas and planting of willows in installed RSP.

California Red-legged Frog

CRLF was listed as a federal-threatened species on 23 May 1996 (FR 61:25813-25833). CRLF inhabits quiet pools of streams, marshes, and occasionally ponds (Zeiner et al. 1988). CRLF habitat is characterized by dense, shrubby riparian vegetation associated with deep (>2 ft), still, or slow-moving water (Jennings and Hayes, 1994).

There are 59 records of CRLF in the eight-quad area surrounding the BSA. The closest CNDDB record for CRLF is located approximately 0.7 miles southwest of the BSA in Bull Creek, a tributary to the San Lorenzo River. One adult was observed in April 2004. The closest CNDDB record of potential breeding habitat is located approximately 6.5 miles southwest of the BSA near Highway 1. This record is for seven adults that were observed at

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

a stock pond in 1999.

Impacts

No CRLF were observed in the BSA during the general biological survey in February 2012. CRLF has the potential to occur in the BSA. In addition, the project area does not provide suitable breeding habitat for CRLF. Channel 1 in the project area was dry during the survey and does not contain pools. The small portion of the San Lorenzo River in the project area does not contain emergent vegetation and is subject to strong winter and spring flows due to the presence of a concrete wall between bridge piers. Suitable breeding habitat likely occurs elsewhere in waters hydrologically connected to the project area (i.e., the headwaters of the San Lorenzo River or its tributaries).

The San Lorenzo River in the project area is a perennial river that provides aquatic habitat year-round for CRLF. As a result, CRLF could occur in or adjacent to the San Lorenzo River at any time of the year. However, the project area provides only marginal aestivation and upland dispersal habitat for CRLF. CRLF dispersal and aestivation is often associated with the drying and disappearance of aquatic habitat. During the summer, upland habitat in the project area is hot and dry. If CRLF were present in the San Lorenzo River, they would be unlikely to forage or disperse far from this aquatic habitat due to the potential risk of desiccation. Since the San Lorenzo River in the project area is a perennial stream, CRLF are unlikely to disperse into or aestivate in the upland habitat in the project area.

Mitigation Measures

The USFWS has issued a programmatic biological opinion for Caltrans projects that are both likely and not likely to adversely affect CRLF (Appendix I of Attachment 3). The "measures to avoid adverse effects" identified in the programmatic biological opinion for projects not likely to adversely affect CRLF will be followed by the proposed project:

BIO-1: USFWS has issued a programmatic biological opinion for Caltrans projects that are both likely and not likely to adversely affect CRLF (Appendix I of Attachment 3). The "measures to avoid adverse effects" identified in the programmatic biological opinion for projects not likely to adversely affect CRLF will be followed by the Project:

- A biologist with experience in the identification of all life stages of the CRLF, and its critical habitat (75 FR 12816), will survey the project site no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is detected the Service will be notified prior to the start of construction. If Caltrans and the Service determine that adverse effects to the CRLF or its critical habitat cannot be avoided, the proposed project will not commence until the Caltrans completes the appropriate level of consultation with the Service.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

- Work activities will take place during the dry season, between April 1 and November 1, when water levels are typically are at their lowest, and California red-legged frogs are likely to be more detectable. Should activities need to be conducted outside of this period, Caltrans may conduct or authorize such activities after obtaining the Service's written approval.
- Before work begins on any proposed project, a biologist with experience in the ecology of the California red-legged frog, as well as the identification of all its life stages, will conduct a training session for all construction personnel, which will include a description of the California red-legged frog, its critical habitat, and specific measures that are being implemented to avoid adverse effects to the subspecies during the proposed project.
- If any life stage of the California red-legged frog is detected in the project area during construction, work will cease immediately and the resident engineer, authorized biologist, or biological monitor will notify the Ventura Fish and Wildlife Office via telephone or electronic mail. If Caltrans and the Service determine that adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation.
- During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
- Prior to the onset of work, Caltrans will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to implement should a spill occur.
- All refueling, maintenance; and staging of equipment and vehicles will occur at least 60 feet from aquatic or riparian habitat and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of aquatic or riparian habitat does not occur during such operations by implementing the spill response plan described above.
- Plants used in re-vegetation will consist of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or practical.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

- Habitat contours will be returned to their original configuration at the end of project activities in all areas that have been temporarily disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or modification of original contours would benefit the California red-legged frog.
- The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to habitat for the California red-legged frog; this goal includes locating access routes and construction areas outside of aquatic habitat and riparian areas to the maximum extent practicable.
- To control sedimentation during and after project implementation, Caltrans will implement best management practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, Caltrans will attempt to remedy the situation immediately, in coordination with the Service.
- If a work site is to be temporarily dewatered by pumping, the intake will be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected from entering the pump system. If California red-legged frogs are detected during dewatering, and adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation.
- Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the creek bed will be minimized to the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project.
- Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.
- A qualified biologist will permanently remove any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.
- To ensure that diseases are not conveyed between work sites by the Service approved biologist, the enclosed fieldwork code of practice developed by the

Declining Amphibian Populations Task Force will be followed at all times.

Foothill Yellow-legged Frog

Foothill yellow-legged frog (FYLF) is a California species of special concern (DFG 2011b). FYLF occurs in woodland and forest areas near streams and rivers, especially near riffles where there are rocks (Stebbins 2003). FYLF are highly aquatic and spend most or all of their life in or near streams (Ashton et al. 1998; Jennings and Hayes 1994). FYLF require permanent streams in which to reside (Verner and Boss 1980).

Adult FYLF are primarily diurnal with high site fidelity and small home ranges. FYLF may be active all year in the warm localities, but may become inactive or hibernate in colder areas. Eggs are laid in low velocity stream margins, generally attached to cobble and pebble, but may also be attached to aquatic vegetation, woody debris, and gravel (Ashton et al.1998). Egg deposition generally occurs from late March to early June (Jennings and Hayes 1994). Tadpoles require water for at least 3 or 4 months while completing their aquatic development (Zeiner et al. 1988). FYLF are infrequent or absent in habitats where introduced predators (i.e., various fishes, bullfrogs) are present (Jennings and Hayes 1994).

Impacts

No FYLF were observed in the BSA during the general biological survey. The bed of the San Lorenzo River in the BSA is composed almost entirely of mud and does not provide suitable substrate for FYLF egg attachment. The San Lorenzo River in the BSA provides aquatic habitat for FYLF and may be hydrologically connected to waters where egg laying occurs. Channel 1 does not provide breeding or aquatic habitat for FYLF due to a lack of permanent water. FYLF are unlikely to occur in the upland areas in the BSA.

Mitigation Measures

Mitigation measures described for the CRLF (BIO-1) are applicable to FYLF.

Western Pond Turtle

Western pond turtle (WPT) is a California species of special concern (CDFG, 2011). WPT are associated with permanent or nearly permanent water in a wide variety of habitats, such as permanent ponds, reservoirs, lakes, rivers, streams, irrigation ditches, permanent and ephemeral shallow wetlands, permanent pools along intermittent streams, abandoned gravel pits, stock ponds, and sewage treatment lagoons. Pools are the preferred habitat when found in streams. The presence of adequate emergent basking sites, emergent vegetation, and suitable refugia is also preferred. Basking sites include partially submerged logs, rocks, mats of floating vegetation, or open mud banks. In colder areas, hibernation occurs underwater in bottom mud. WPT are omnivorous and are known to feed on aquatic plant material, small insects, aquatic invertebrates, fish, frogs, snakes, and carrion (CWHR 2011; BLM 2006).

Impacts

WPT were not observed during general biological surveys in the BSA. However, the San Lorenzo River in the BSA provides suitable habitat for WPT. As a result, impacts to the WPT are potentially significant.

Mitigation Measures

The mitigation measures described for CRLF (Mitigation Measure BIO-1) are applicable to WPT. With implementation of the specified mitigation measure, the proposed project would not significantly impact WPT.

Migratory Bird Treaty Act

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). All migratory bird species are protected by the MBTA. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law.

Impacts

The project area provides potential nesting habitat for birds of prey and birds listed by the Migratory Bird Treaty Act (MBTA). No nests or evidence of past nests were observed beneath Graham Hill Road Bridge or elsewhere in the BSA during the general biological survey conducted on 10 February 2012. Nests could become established in the riparian woodland or on the bridge structure before construction begins.

Mitigation Measures

BIO-2: Under the MBTA, nests that contain eggs or unfledged young are not to be disturbed during the breeding season. The nesting season for migratory birds and birds of prey is generally 1 February through 31 August. Implementation of the following measures will avoid potential impacts.

- If construction begins outside the 1 February to 31 August breeding season, there will be no need to conduct a preconstruction survey for active nests.
- If construction is scheduled to begin between 1 February and 31 August then a qualified biologist shall conduct a preconstruction survey for active nests. The survey will include a 250 foot radius from the work area for nesting birds of prey and a 50 foot radius from the work area for other nesting MBTA protected birds. The survey will be conducted from publicly accessible areas within one

two weeks prior to construction. If no active nest of a bird of prey or MBTA bird is found, then no further mitigation measures are necessary.

- If an active nest of a bird of prey or MBTA bird is found, then the biologist shall determine a buffer suitable to protect the nest until fledging. The size of suitable buffers depends on the species of bird, the location of the nest relative to the Project, Project activities during the time the nest is active, and other Project specific conditions.
- No construction activity shall be allowed in the buffer until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller buffer will protect the active nest. The buffer may be reduced if the biologist monitors the construction activities and determines that no disturbance to the active nest is occurring.
- If an active nest is identified in or adjacent to the construction zone after construction has started, the above measures will be implemented to ensure construction is not causing disturbance to the nest.

Burrowing Owl

Fish and Game Code 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. Other DFG codes protecting birds and their nests are 3503, 3513, and 3800.

BIO-3: Measures included in MM BIO-2 for migratory birds and birds of prey will also protect burrowing owl. If an active burrow of a burrowing owl is found in the construction zone during the nesting season, passive relocation may be conducted by a qualified biologist in accordance with the DFG (1995) guidelines after the qualified biologist has determined that the chicks have fledged or has determined through non-invasive means that the owls have not begun egg laying or the nesting attempt was unsuccessful.

White-tailed kite

White-tailed kite is a DFG fully protected species (DFG 2011); no take of fully protected species is allowed. White-tailed kites nest and roost in substantial groves of dense, broad-leafed deciduous trees. They also roost in saltgrass and Bermuda grass in southern California. Roosting sites can be communal during nonbreeding seasons.

White tailed kites use undisturbed, open grasslands, meadows, farmlands, and emergent wetlands. They prey mostly on voles and other small, diurnal mammals, and occasionally on birds, insects, reptiles, and amphibians. White tailed kites forage in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Impacts

No white-tailed kites were observed in the BSA during the surveys. However, potential nesting and foraging habitat for white-tailed kite occurs within the BSA.

Mitigation Measures

Mitigation measures described for the migratory birds and birds of prey (Mitigation measure BIO-2) will also protect white-tailed kite. With implementation of the specified mitigation measures, the Project would not impact the white-tailed kite.

San Francisco Dusky-footed Woodrat

The San Francisco dusky-footed woodrat (SFDFW) occurs in hardwood forests and shrublands throughout the San Francisco Bay area south to Monterey Bay and through the Inner Coast Ranges (Matocq 2002). The San Francisco subspecies is one of 11 subspecies of dusky-footed woodrat. Dusky-footed woodrats are nocturnal herbivores with a primarily arboreal habit. They are known to feed on acorns as well as the leaves, flowers, nuts, and berries of many plants including coffeeberry and poison oak (Jameson 2004). Despite their arboreal nature, dusky footed woodrats live in colonies of large houses (up to 2 meters tall and wide, usually constructed on the ground) consisting of sticks, bark, leaves, and other plant material. Each house is usually inhabited by just one individual (Kelly 1990). Woodrats typically breed from February or March until July or August with most females producing one or two litters per season, although breeding behavior can be highly dependent on environmental conditions (Kelly 1990). This species requires a year round source of water and dense brushy habitat (DFG 1998).

Impacts

The margins of the active staging area provides marginal nesting habitat for burrowing owl. Burrowing owl and potential burrowing owl dens were not observed in the project area during the general biological survey conducted on 10 February 2012. Burrows or other potential dens could become established and occupied by burrowing owls in the BSA prior to construction.

Mitigation Measures

BIO-4: A preconstruction survey for SFDFW houses in the BSA will be conducted by a qualified biologist within 2 weeks prior to construction. If no houses are found, no further action is necessary.

If houses are found within the area to be disturbed in the riparian woodland, the alignment of the temporary impact to the riparian woodland will be shifted to avoid impacting houses. The edges of temporary construction impact within the riparian woodland will be fenced to avoid disturbing riparian woodland unnecessarily. This will also protect any avoided SFDFW houses.

Pallid bat and Townsend's big-eared bat

Pallid Bat

Pallid bat is a California species of special concern (CDFG, 2011). The Pallid bat is a large, light-colored bat with prominent ears that inhabits rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forests, often in xeric ecosystems. Foraging occurs over open shrub-steppe grasslands, oak savannah grasslands, open Ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Pallid bats are opportunistic generalists that eat a variety of insects captured on the ground and on the wing. Rarely, they eat geckos, lizards, skinks, and small rodents. Diet and foraging style tend to vary within and between populations (WBWG 2005).

Townsend's big-eared bat

Townsend's big-eared bat (TBEB) occurs in a wide variety of habitats including coniferous forests, mixed mesic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitats (WBWG 2005). It prefers mesic areas (CWHR 2011) and forages along habitat edges of streams, as well as adjacent to and within a variety of wooded habitats (WBWG 2005). The primary source of food for big-eared bats is small moths; they also feed on beetles and a variety of soft-bodied insects. Big-eared bat is known to forage with other species (Bradley et al. 2006; CWHR 2011).

Impacts

Pallid Bat

The Pallid bat was not observed during general biological surveys in the BSA. No bat guano or bat vocalizations were detected under the Graham Hill Road Bridge. People were observed camping under the Graham Hill Road Bridge in the BSA. This human presence may deter bats from roosting, and especially from establishing maternal roosts under the bridge. There are no other potential maternal roost locations in the BSA. Pallid bats could use the bridge as a day or night roost.

Townsend's big-eared bat

TBEB was not observed during general biological surveys in the BSA. No bat vocalizations or bat guano was detected under the Graham Hill Road Bridge. People were observed living under the Graham Hill Road Bridge in the BSA. The human presence may deter bats from roosting, and especially from establishing maternal roosts under the bridge. TBEB could use the bridge as a day or night roost.

Mitigation Measures

BIO-5: Demolition of the existing wing wall and attachment of the new wing wall to the bridge has the potential to disturb bats. However, the placement of RSP is not likely to disturb bats. The small size and limited scope of the Project restrict potential impacts to bats. A preconstruction survey for bats will be conducted by a

qualified biologist two weeks prior to the commencement of construction activities. If roosting bats are detected under the bridge, exclusion of these bats shall take place prior to construction. Exclusion need only be employed around the portion of the bridge where wing wall demolition and wing wall attachment to the bridge will occur. If a maternal roost is detected or exclusion measures are unsuccessful, the County will contact DFG for additional guidance on bat avoidance and impact minimization during proposed work.

With implementation of the specified mitigation measure, the proposed Project would not significantly impact either the pallid bat or TBEB.

Central California Coast Coho Salmon Evolutionarily Significant Unit

The central California coast Coho salmon evolutionarily significant unit (ESU) was listed as a federal endangered species on 28 June 2005 (FR 70:37160, 76:50447) and as a California state endangered species on 30 March 2005 (CDFG, 2011). This ESU includes Coho salmon (*Oncorhynchus mykiss irideus*) that spawn and rear in coastal watersheds from Punta Gorda south to Soquel Creek in Santa Cruz County (NMFS 2010).

The life history of Coho salmon is similar to other anadromous salmonids: fish hatch and rear in freshwater, migrate downstream, grow to adults in the ocean, and return to natal freshwater to spawn and die (Moyle 2002; NMFS 2010). Coho typically return to freshwater for spawning between November and January following the breach of sand bars at the mouths of natal streams and rivers. Spawning typically begins a few days to a few weeks after entry into fresh water, and takes place in coastal streams or tributaries to larger coastal rivers. Spawning can occur as late as March in the southern portion of the ESU. Coho die shortly after spawning. The lifespan is generally three years (Moyle 2002).

NMFS designated critical habitat for Central California Coast Coho on 4 June 1999 (64 FR 24049). In this rule, critical habitat for the Central California Coast ESU is defined as accessible reaches of all rivers (including estuarine areas and tributaries) between Punta Gorda and the San Lorenzo River (inclusive) in California, including two streams entering San Francisco Bay: Arroyo Corte Madera Del Presidio and Corte Madera Creek (NMFS 1999).

Impacts

The San Lorenzo River in the BSA provides habitat for Coho salmon. The San Lorenzo River in the BSA is accessible to Coho salmon and is designated critical habitat (64 FR 24049; pers. comm., J. Heublein). The San Lorenzo River in the BSA is essential fish habitat (EFH) under the Magnuson-Stevens Act. Channel 1 does not provide habitat for Coho salmon and is not designated critical habitat.

Despite suitable habitat in the San Lorenzo River, no naturally-spawning Coho are known to persist; naturally-spawning Coho were likely extirpated from the San Lorenzo River in

1978 (NMFS 2010). The River was repeatedly stocked with hatchery-reared fish originating from other river systems between 1906 and 1998 (NMFS 2005, 2010), and the current hatchery-maintained (out-of-basin origin) population in the San Lorenzo River is estimated to be between 75 and 125 adults (CDFG, 2011).

Mitigation Measures

The proposed project would not involve in-water work. Construction would occur between 15 June and 15 October, the limited operating period recommended by NMFS (pers. comm., J. Heublein). Mitigation measures (BIO-6 through BIO-8) for riparian woodland and the San Lorenzo River will also minimize impacts to Coho salmon.

Central California Coast Steelhead Distinct Population Segment

The central California coast steelhead Distinct Population Segment (DPS) (hereafter CCC steelhead) was listed as federal-threatened on 18 August 1997 (FR 62:43937-43954; FR 71:834-862). This DPS includes coastal populations of winter steelhead from the Russian River south to Aptos Creek in Santa Cruz County (Moyle 2002).

The life history of steelhead is similar to most anadromous salmonids in that they hatch in freshwater, migrate to the ocean, and return to freshwater to spawn. Steelhead require one to three years of freshwater rearing before emigrating to the ocean, and typically remain at sea for one to four growing seasons before returning to freshwater to spawn. Steelhead are iteroparous and may spawn more than once (McEwan 1996; NMFS 2007). All CCC steelhead are winter-run steelhead that generally migrate from the ocean into coastal streams in late fall and winter (NMFS 2005); fish may wait at the mouth of a stream for an opening in the sandbar (McEwan 1996). Spawning usually occurs from January to March (McEwan 1996), and requires pools of cool water and suitably sized gravel (Moyle 2002). Steelhead typically spawn in small tributaries rather than large, mainstem rivers (NMFS 2005). Females excavate a redd and deposit eggs where there is good inter-gravel water flow (McEwan 1996). Eggs typically hatch in 30 days. Fry initially move to shallow protected areas along the stream margin, then move to other areas of the stream and establish feeding locations in riffles with slightly larger cobble.

NMFS designated critical habitat for 7 ESUs of Pacific salmon and steelhead in California in September 2005 (70 FR 52630; NMFS 2005). In this rule, the San Lorenzo Hydrologic sub area, including the San Lorenzo River and its tributaries, was designated critical habitat in Santa Cruz County.

Impacts

The San Lorenzo River in the BSA provides habitat for CCC steelhead. CCC Steelhead are known to occur in the San Lorenzo River, including the portion in the BSA. The San Lorenzo River in the BSA is designated critical habitat for CCC steelhead. Channel 1 is a

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

small channel that does not provide habitat for CCC steelhead and is not critical habitat.

Mitigation Measures

The proposed project would not involve in-water work. Construction would occur between 15 June and 15 October, the limited operating period recommended by NMFS (pers. comm., J. Heublein). Mitigation measures for riparian woodland (BIO-6 and BIO-7) and the San Lorenzo River (BIO-8) would also minimize impacts to CCC steelhead.

With implementation of the specified mitigation measures, the proposed project would not adversely affect CCC steelhead.

2. *Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*	☐	☒	☐	☐

Discussion: The following natural communities would be impacted by the proposed project.

Riparian Woodland

A riparian woodland occurs along the banks of the San Lorenzo River and Channel 1 in the BSA. The woodland is dominated by western sycamore (*Platanus racemosa*), invasive silver wattle (*Acacia dealbata*), California bay (*Umbellularia californica*), willow (*Salix* sp.), and a few coast live oaks (*Quercus agrifolia*) along the higher edge of the banks. The shrub layer is dominated by California blackberry (*Rubus ursinus*), invasive Himalayan blackberry (*Rubus armeniacus*), coyote brush (*Baccharis pilularis*), and invasive French broom (*Genista monspessulana*). The herb layer is poorly developed in most of the riparian woodland due to shading from the tree and shrub layers, as well as the bridge. The tree canopy is not closed in the BSA, and most of the areas where work will occur are covered primarily by shrubs. Riparian woodland is considered a sensitive natural community by DFG, and is regulated under CA Fish and Game Code Section 1600 regarding lake and streambed alteration agreements. The riparian woodland in the BSA is part of the DFG stream zone, which extends laterally to the outer edge of riparian vegetation.

Impacts

The proposed project would permanently impact 0.008 acre (348 square feet) of riparian woodland and 0.0011 acre (10 square feet) of streambed due to the placement of RSP. Construction disturbance would temporarily impact 0.038 acre (1,655 square feet) of

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

riparian woodland and 0.01 acre (45 square feet) of streambed. The proposed project would not involve in-water work. Construction would occur when flows in the San Lorenzo River are low and Channel 1 is dry.

It is estimated that one native tree (a California bay) and several nonnative trees (silver wattles and a privet), would be removed by the proposed project. Temporary impact areas would be revegetated with native species.

Mitigation Measures

The following mitigation measures would reduce significant impacts to a less than significant level.

BIO-6: Riparian woodland cannot be avoided during construction. The removal of riparian woodland and native trees will be minimized with the following environmental commitments:

- Prior to construction, the Project Engineer and the Project Biologist will identify the limits of construction so as to maximize native tree and shrub retention. Temporary fencing will be placed along the limits of construction to avoid unnecessary disturbance to riparian woodland.
- Where possible, native vegetation that cannot be avoided will be cut at ground level rather than removed by the roots.

BIO-7: The Project shall restore disturbed riparian woodland with native riparian vegetation. Willows shall be planted in the RSP using Sona-Tubes. Revegetation shall follow the requirements contained as Attachment 4. In addition, native species contained in the Revegetation Planting and Erosion Control Specifications (see Attachment 4) shall be used in erosion control efforts.

San Lorenzo River

The San Lorenzo River flows southeast through the western edge of the BSA. Approximately 0.039 acres of the San Lorenzo River are mapped in the BSA. The San Lorenzo River is identified on the National Wetlands Inventory (NWI) map as riverine, upper perennial, unconsolidated bottom, permanently flooded (USFWS 2012).

The San Lorenzo River is mapped in the CNDDB as North Central Coast Drainage Sacramento Sucker/Roach River, a sensitive natural community of concern to DFG. The San Lorenzo River in the BSA may also be North Central Coast California Roach/ Stickleback/ Steelhead Stream, and North Central Coast Short-Run Coho Stream.

Impacts

No in-water work is proposed. Approximately 2 cubic yards of RSP will be placed in the San Lorenzo River to protect the bridge pier from scour. The proposed project would

permanently impact 5 square feet and 3 linear feet of the San Lorenzo River due to placement of RSP around the bridge pier. The area where RSP would be placed around the bridge pier is eroded and unvegetated except for a few stems of invasive Himalayan blackberry that hang down from higher on the banks.

The proposed project is expected to decrease the amount of sediment delivered to the San Lorenzo River by Channel 1. Under current conditions, soil is eroding into the River from both the bank failure next to the wing wall and the scour that is occurring around the bridge pier. Installation of the RSP would reduce the amount of sediment delivered from Channel 1 to the River.

Mitigation Measures

The following mitigation measure would reduce significant impacts to a less than significant level.

BIO-8: No in-water work is proposed. The work that will occur in the San Lorenzo River will be placement of RSP adjacent to a bridge pier. During construction, water quality will be protected by implementation of best management practices (BMPs) of the California Stormwater Quality Association (2003) to minimize the potential for siltation and downstream sedimentation in the San Lorenzo River. The base of the bridge pier was above the water level of the River on 10 February 2012 during fieldwork. Water levels are generally high in February but the 2011-2012 winter was drier than normal. Based on the conditions in February 2012, it is expected that proposed work around the base of the bridge pier will be above the water level when construction occurs during the summer.

Minimization efforts will include marking the limits of construction with temporary fencing to prevent affecting the San Lorenzo River unnecessarily. Impacts will be minimized by conducting work during the period of June 15 to October 15, when flow within the River is near the annual minimum, unless appropriate resource agencies provide approval of work outside that period. Mitigation measures for the riparian woodland will protect the riparian corridor of the San Lorenzo River.

Channel 1

Channel 1 is a tributary to the San Lorenzo River that drains a hillside to the northeast of the BSA and urban runoff from Graham Hill Road and Mt. Hermon Road. Channel 1 in the BSA flows from east to west along the north side of Graham Hill Road. It appears to have been realigned in the past as part of road construction, and the slope between Graham Hill Road and Channel 1 is very steep. The BSA contains approximately 0.035 acres of Channel 1. Approximately 53 linear feet of Channel 1 is lined with concrete in the BSA; at least several hundred feet of Channel 1 is lined with concrete upstream of the BSA. RSP has

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

been placed along approximately 19 feet of Channel 1 just downstream of the concrete-lined portion in the BSA. The wing wall on the northeast corner of the bridge was damaged by water in Channel 1 during a large storm event in March 2011. Exposed and eroding soil was observed at the existing bridge wing wall.

The channel does not have continuous flow during the wet season and has insufficient hydrology to support a well-developed riparian community on its own. Channel 1 does not contain pools or provide spawning habitat for salmonids, or breeding habitat for amphibians. The riparian community in the BSA is a result of the proximity of the San Lorenzo River. The influence of the River ends near the Graham Hill/Mt. Hermon road intersection where the riparian woodland transitions into a coast live oak woodland.

Impacts

Approximately 3 cubic yards of RSP would be placed in Channel 1 to protect the bridge pier from scour. This placement of RSP would result in 53 square feet of permanent impact to 10 linear feet of Channel 1. A path would be cleared across Channel 1 wide enough to allow equipment to access the wing wall and pier. Equipment access would result in 408 square feet and 45 linear feet of temporary impact to Channel 1.

Mitigation Measures

The following mitigation measure would reduce significant impacts to a less than significant level.

BIO-9: During construction, water quality will be protected by implementation of BMPs to minimize the potential for siltation and downstream sedimentation in Channel 1. Minimization efforts will include marking the limits of construction with temporary fencing to prevent affecting Channel 1 unnecessarily. Impacts will be minimized by conducting in-channel work between 15 April and 15 October. The mitigation measures for riparian woodland will also protect Channel 1.

3.	*Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?*	☐	☒	☐	☐

Discussion: See discussion C-1 above. Impacts from project implementation would be mitigated to a less than significant level.

4.	*Produce nighttime lighting that would substantially illuminate wildlife*	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

habitats?

Discussion: All construction would be completed during daylight hours. Impacts from project implementation would be less than significant.

5.	*Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*	☐	☐	☒	☐

Discussion: A Jurisdictional Delineation Report for the BSA was prepared and is contained in Appendix F of Attachment 3. A total of 5 square feet (3 linear feet) of the San Lorenzo River, a waters of the U.S., would be filled by during construction of the proposed project. A total of 53 square feet (10 linear feet) of Channel 1 would be filled during project construction. A total of 408 square feet (45 linear feet) of Channel 1 would be temporarily affected by project construction. There are no temporary impacts to the San Lorenzo River. Channel 1 is a waters of the state and may or may not be a waters of the U.S. The Project would require a Section 404 Permit from the U.S. Army Corps of Engineers, a 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife, and a Section 401 Water Quality Certification from the Regional Water Quality Control Board. There are no wetlands in the BSA. Impacts to wetlands would be less than significant.

6.	*Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?*	☐	☒	☐	☐

Discussion: See discussions and mitigation measures specified under C-1 and C-2 above. No wetlands would be impacted by the proposed project. The project would be consistent with the County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance with a Riparian Exception (Section 16.30.060 of the County Code). The following findings would need to be made.

1. *That there are special circumstances or conditions affecting the property;*

   The existing Graham Hill Road bridge was originally constructed in 1938 with widening completed in 1989. Impacts to the adjacent riparian habitat would be required to implement the repair project. The purpose of the wing wall is to protect

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

the bridge abutments from scouring. Now that the wing wall is failing, the bridge abutment is vulnerable and could be undermined by scouring. No alternative exists to the proposed project that would avoid impacting the adjacent riparian habitat while protecting the bridge abutments from scour.

2. *That the exception is necessary for the proper design and function of some permitted or existing activity on the property;*

   The existing bridge abutment is threatened by scouring due to the failure of the existing wing wall. Repair of the wing wall is necessary to maintain the existing structure to allow its use into the future.

3. *That the granting of the exception will not be detrimental to the public welfare or injurious to other property downstream or in the area in which the project is located;*

   Not granting the exception would not allow the repair of the wing wall to take place, thereby placing the existing bridge structure in jeopardy.

4. *That the granting of this exception, in the Coastal Zone, will not reduce or adversely impact the riparian corridor, and there is no feasible less environmentally damaging alternative; and*

   The proposed bridge repair project is not located in the Coastal Zone. However, no less environmentally damaging alternative exists.

5. *That the granting of the exception is in accordance with the purpose of this chapter, and with the objectives of the General Plan and elements thereof, and the Local Coastal Program Land Use Plan.*

   The granting of the exception would be consistent with the General Plan. Minimal impacts to the riparian zone would occur. The site would be revegetated with native vegetation following project construction (See discussion and mitigation under C-2).

Impacts from project implementation would be less than significant with mitigation incorporated.

7.	*Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*	☐	☐	☐	☒

Discussion: The proposed project would not conflict with the provisions of any adopted Habitat Conservation Plan Natural Community Conservation Plan, or other approved local,

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

regional, or state habitat conservation plan. Therefore, no impact would occur.

D. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

1.	*Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*	☐	☐	☒	☐

Discussion: The project site contains Elder sandy loam, 0 to 2 percent slopes, designated as a Prime Farmland (California Department of Conservation, 1980). No Unique Farmland or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency are located within the project area. The area containing Prime Farmland, which is zoned Residential Agriculture, would be temporarily impacted during construction as a construction staging area. No permanent impacts would occur. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide or Farmland of Local Importance would be converted to a non-agricultural use. As a result, impacts from project implementation would be considered less than significant.

2.	*Conflict with existing zoning for agricultural use, or a Williamson Act contract?*	☐	☐	☐	☒

Discussion: See discussion for D-1 above. The adjacent parcel (APN 071-201-43) where staging would occur is not zoned for Commercial Agriculture and no Williamson Act contract is in place No impact is anticipated.

3.	*Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Discussion: The proposed bridge repair project would not conflict with existing zoning for forest land. Therefore, no timber resources would be impacted by the proposed projects. No impacts would occur.

4.	*Result in the loss of forest land or conversion of forest land to non-forest use?*	☐	☐	☐	☒

Discussion: See discussion under D-3 above. No impact is anticipated.

5.	*Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*	☐	☐	☐	☒

Discussion: See discussion under D-3 above. No impact is anticipated.

E. MINERAL RESOURCES

Would the project:

1.	*Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*	☐	☐	☐	☒

Discussion: The site does not contain any known mineral resources that would be of value to the region and the residents of the state. Therefore, no impact is anticipated from project implementation.

2.	*Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*	☐	☐	☐	☒

Discussion: The project site is designated as road right-of-way, which is not considered to be an Extractive Use Zone (M-3) nor does the site have a Land Use Designation with a Quarry Designation Overlay (Q) (County of Santa Cruz 1994). Therefore, no potentially significant loss of availability of a known mineral resource of locally important mineral

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

resource recovery (extraction) site delineated on a local general plan, specific plan or other land use plan would occur as a result of proposed future development. No impact is anticipated.

F. VISUAL RESOURCES AND AESTHETICS

Would the project:

1.	*Have an adverse effect on a scenic vista?*	☐	☐	☒	☐

Discussion: The General Plan designates Graham Hill Road as a scenic road from Lockwood Lane to Route 9. The General Plan states that public vistas from the designated scenic roadways shall be afforded the highest level of protection (County of Santa Cruz, 1994). The proposed bridge repair project proposes to replace a wing wall that is not visible from the roadway on Graham Hill Road. A few small riparian trees would be removed for construction, but would be revegetated with native trees once construction is complete. Because the new wing wall would not be visible to vehicles traveling on Graham Hill Road, no adverse impacts to the viewshed would occur. Existing mature trees within the project area would remain that would line the structure. Therefore, impacts would be considered less than significant.

2.	*Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*	☐	☐	☒	☐

Discussion: Please see discussion for F-1 above. Impacts would be considered less than significant.

3.	*Substantially degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridgeline?*	☐	☐	☒	☐

Discussion: Please see discussion for F-1 above. Impacts would be considered less than significant.

4.	*Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*	☐	☐	☒	☐

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: The project would not product light or glare. All construction would be performed during daylight. No construction lighting or street lights are proposed. Impacts are expected to be less than significant.

G. CULTURAL RESOURCES

Would the project:

1.	*Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?*	☐	☐	☒	☐

Discussion: The Graham Hill Road bridge (36C-0101) was originally constructed in 1938 with widening conducted in 1989 (Caltrans, 1986). The 1986 Caltrans Historic Bridge Inventory (updated in 2006 for bridge constructed prior to 1960) classifies the bridge as a Category 5, which is "Not Eligible for Listing in the National Register." As a result, impacts would be considered less than significant.

2.	*Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?*	☐	☐	☒	☐

Discussion: An Archaeological Survey Report (ASR) was prepared for the San Lorenzo Way Bridge Replacement Project (36C-0085) located less than one-half mile north of the project site (ICF, 2013). The staging area identified for the San Lorenzo Way Bridge project is located approximately 300 feet north of the project site on the adjacent parcel (APN 071-201-43). The ASR prepared for the San Lorenzo Way Bridge Replacement project found no archaeological resources within a one-half mile radius of the project site. In addition, all ground disturbance is expected to occur within the previously disturbed construction envelope of the existing structure. As a result, no archaeological resources are expected to be impacted as a result of the proposed project.

Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

Impacts are expected to be less than significant.

3.	*Disturb any human remains, including those interred outside of formal*	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

cemeteries?

Discussion: See response to G-2 above. Impacts are expected to be less than significant.

Pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

4.	*Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*	☐	☐	☐	☒

Discussion: No unique paleontological resources or unique geologic features are known to occur in the vicinity of the proposed project. No impacts are anticipated.

H. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

1.	*Create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials?*	☐	☐	☒	☐

Discussion: The proposed bridge repair project would not create a significant hazard to the public or the environment. No routine transport or disposal of hazardous materials is proposed. However, during construction, fuel would be used at the project site. In addition, fueling may occur within the limits of the staging area proposed to be located on the adjacent undeveloped parcel to the north (APN 071-201-43). Best management practices would be used to ensure that no impacts would occur. Impacts are expected to be less than significant.

2.	*Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*	☐	☐	☒	☐

Discussion: Please see discussion under H-4 below. Project impacts would be considered

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

less than significant with the incorporation of mitigation.

3.	*Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*	☐	☐	☐	☒

Discussion: The St. Lawrence Academy is located 6184 Highway 9, approximately 600 feet to the south-southwest of the project site. Although fueling of equipment is likely to occur within the staging area, best management practices would be implemented. No impacts are anticipated.

4.	*Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*	☐	☐	☒	☐

Discussion: The following discussion summarizes a limited Environmental Initial Site Assessment (ISA) performed by Taber Consultants for the proposed project dated March 15, 2012 (Attachment 1). The ISA was prepared to identify, the presence or likely presence of hazardous substances or petroleum products within the project area.

The ISA concluded that no direct or indirect evidence that hazardous substances or petroleum products occur on the study site or properties immediately adjacent to the proposed project site.

Construction material samples were collected from concrete below the bridge deck in the abutment area and from bridge pad material. The samples were analyzed for presence of asbestos fibers; however no asbestos fibers were detected. The potential for the proposed construction to encounter asbestos fibers in bridge construction materials is considered to be low. During the course of the study no recognized environmental condition (REC) with respect to asbestos were identified below the bridge in the repair area.

Paint samples were obtained for lead content analysis from below the bridge where graffiti had been painted over. During the course of the study, no REC with respect to lead in paint was identified below the bridge in the repair area.

Based on ISA, the potential for the proposed construction to encounter additional hazardous materials within the project corridor is generally low. As a result, impacts are expected to be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*	☐	☐	☐	☒

Discussion: The project is not located within two miles of an airport. No impact is anticipated.

6. *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*	☐	☐	☐	☒

Discussion: The project is not located within two miles of a private airstrip. The nearest private airstrip (Bonny Doon Village Airport) is located in Bonny Doon approximately 3 miles to the northeast. No impact is anticipated.

7. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*	☐	☐	☒	☐

Discussion: See discussion under I-4. Impacts to an adopted emergency response plan or evacuation Plan would be less than significant.

8. *Expose people to electro-magnetic fields associated with electrical transmission lines?*	☐	☐	☐	☒

Discussion: No new electrical transmission lines are proposed as part of the project. An existing power pole would not need to be replaced or relocated as part of the project. No impacts are anticipated.

9. *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*	☐	☐	☐	☒

Discussion: No adverse impact is anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

I. TRANSPORTATION/TRAFFIC

Would the project:

1.	*Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*	☐	☐	☐	☒

Discussion: The first Transportation System Goal of the County of Santa Cruz General Plan is, "Provide a convenient, safe, and economical transportation system for the movement of people and goods, promoting the wise use of resources, particularly energy and clean air, and the health and comfort of residents." The proposed project would facilitate the maintenance of an existing transportation facility. No impact would occur.

2.	*Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*	☐	☐	☐	☒

Discussion: No change in air traffic patterns would result from project implementation. Therefore, no impact is anticipated.

3.	*Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*	☐	☐	☐	☒

Discussion: The proposed project would not affect traffic on the Graham Hill Road Bridge at the San Lorenzo River. No adverse impacts would occur.

4.	*Result in inadequate emergency access?*	☐	☐	☐	☒

Discussion: A temporary lane closure may be required for short periods of time during project construction. A traffic control plan will be prepared. However, the proposed project would not restrict emergency access for police, fire, or other emergency vehicles.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

No impact would occur.

5.	*Cause an increase in parking demand which cannot be accommodated by existing parking facilities?*	☐	☐	☐	☒

Discussion: Implementation of the proposed bridge project would not increase parking demand. Impacts from project implementation would not be considered significant.

6.	*Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*	☐	☐	☐	☒

Discussion: The proposed bridge design would comply with current road requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians. No impact would occur.

7.	*Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the County General Plan for designated intersections, roads or highways?*	☐	☐	☐	☒

Discussion: See response I-1 above. No impact is anticipated.

J. NOISE

Would the project result in:

1.	*A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*	☐	☐	☒	☐

Discussion: The proposed bridge repair project would not result in a permanent increase in the ambient noise level. The main source of ambient noise in the in the project area is traffic noise along Graham Hill Road and Highway 9. No permanent increase in traffic trips are anticipated as a result of the bridge replacement project.

The project would create temporary construction impacts that are considered to be less than significant (see discussion under J-3). Impacts are expected to be less than significant.

2.	*Exposure of persons to or generation*	☐	☒	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

of excessive groundborne vibration or groundborne noise levels?

Discussion: The use of construction equipment would potentially generate vibration in the project area. The nearest residential property is located at approximately 500 feet to the south of the project site across Graham Hill Road. Due to this distance, none of the area residences would experience significant noise levels during construction activities associated with the proposed project with the implementation of mitigation measures outlined in J-3. Therefore, Impacts would be considered less than significant with the implementation of the proposed mitigation measures.

3. *Exposure of persons to or generation of noise levels in excess of standards established in the General Plan or noise ordinance, or applicable standards of other agencies?*	☐	☒	☐	☐

Discussion:

County of Santa Cruz General Plan

The Santa Cruz County General Plan (County of Santa Cruz 1994) contains the following table, which specifies the maximum allowable noise exposure for stationary noise sources (Table 1). The County of Santa Cruz has not adopted noise thresholds for construction noise.

The following applicable noise related policy is found in the Public Safety and Noise Element of the Santa Cruz County General Plan (Santa Cruz County 1994).

- Policy 6.9.7 Construction Noise. Require mitigation of construction noise as a condition of future project approvals.

Table 1: Maximum Allowable Noise Exposure for Stationary Noise Sources[1]

	Daytime[5] (7:00 pm to 10:00 pm)	Nighttime[2,5] (7:00 pm to 10:00 pm)
Hourly Leq average hourly noise level, dB[3]	50	45
Maximum Level, dB[3]	70	65
Maximum Level, dB – Impulsive Noise[4]	65	60

Notes:
1 As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied to the receptor side of noise barriers or other property line noise mitigation measures.
2 Applies only where the receiving land use operates or is occupied during nighttime hours
3 Sound level measurements shall be made with "slow" meter response.
4 Sound level measurements shall be made with "fast" meter response
5 Allowable levels shall be raised to the ambient noise levels where the ambient levels exceed the allowable levels. Allowable levels shall be reduced to 5 dB if the ambient hourly Leq is at least 10 dB lower than the allowable level.
Source: County of Santa Cruz 1994

County of Santa Cruz Code

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

There are no County of Santa Cruz ordinances that specifically regulate construction noise levels; however, the following code regulates offensive noise.

Section 8.30.010 (Curfew—Offensive noise) of the Santa Cruz County Code contains the following language regarding noise impacts:

A. No persons shall, between the hours of ten p.m. and eight a.m., make, cause, suffer, or permit to be made any offensive noise:

   1. Which is made within one hundred feet of any building or place regularly used for sleeping purposes; or

   2. Which disturbs any person of ordinary sensitivities within his or her place of residence.

B. "Offensive noise" means any noise which is loud, boisterous, irritating, penetrating, or unusual, or that is unreasonably distracting in any other manner such that it is likely to disturb people of ordinary sensitivities in the vicinity of such noise, and includes, but is not limited to, noise made by an individual alone or by a group of people engaged in any business, meeting, gathering, game, dance, or amusement, or by any appliance, contrivance, device, structure, construction, ride, machine, implement, instrument or vehicle. (Ord. 4001 § 1 (part), 1989).

Sensitive Receptors

Some land uses are generally regarded as being more sensitive to noise than others due to the type of population groups or activities involved. Sensitive population groups generally include children and the elderly. Noise sensitive land uses typically include all residential uses (single- and multi-family, mobile homes, dormitories, and similar uses), hospitals, nursing homes, schools, and parks.

Table 2: Typical Noise Levels for Common Construction Equipment (at 50 feet)

Equipment	L_{max} (dBA)
Air Compressor	81
Backhoe	80
Cement Mixer Truck	85
Cement Pump Truck	82
Chain Saw	85
Compactor	82
Crane	83
Concrete Saw	90
Dozer	85
Excavator	85
Dump Truck	84
Flat Bed Truck	84
Front End Loader	80
Fork Lift	75
Generator	81
Grader	85
Hoe-rams	90
jackhammers	88
Paver	85
Pick-up Truck	55
Pneumatic Tools	85
Rollers	74
Tree Chipper	87

Source: Federal Transit Authority, 2006.

The use of construction equipment to accomplish the proposed project would result in noise in the project area, i.e., construction zone. Table 2 shows typical noise levels for common construction equipment. The sources noise that levels are normally measured at 50 feet, are used to determine the noise levels at nearby sensitive receptors by attenuating 6 dB for each doubling of distance for point sources of noise such as operating construction equipment. Noise levels at the nearest sensitive receptors for each

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

site were analyzed on a worst-case basis, using the equipment with the highest noise level expected to be used.

The nearest sensitive receptors are located approximately 500 feet to the south of the construction area.

Impacts

Although construction activities would likely occur during daytime hours, noise may be audible to nearby residents. However, periods of noise exposure would be temporary. Noise from construction activity may vary substantially on a day-to-day basis.

Potential Temporary Construction Noise Impacts

Construction activity would be expected to use equipment listed in Table 2. Based on the activities proposed for the proposed project, the equipment with the loudest operating noise level that would be used often during activity would be a jackhammer, which would produce noise levels of 88 dBA at a distance of 50 feet. The nearest sensitive receptor is located approximately 500 feet from the construction site. At that distance, the decibel level is reduced by approximately 20 to 68 decibels. However, these impacts would also be temporary.

The County of Santa Cruz has not adopted significance thresholds for construction noise. However, •Policy 6.9.7 of the General Plan requires mitigation of construction noise as a condition of future project approvals.

The following mitigation measures will be required to assist in the reduction of temporary construction noise impacts. With the implementation of those measures, no adverse noise impacts are expected occur during construction activities.

Mitigation Measures

NOI-1 Limit construction activity to between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, 9:00 a.m. to 5:00 p.m. Saturday in order to avoid noise during more sensitive nighttime hours. Prohibit construction activity on Sundays.

NOI-2 Require that all construction and maintenance equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.

NOI-3 Prohibit gasoline or diesel engines from having unmuffled exhaust.

NOI-4 Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.

4. A substantial temporary or periodic	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

increase in ambient noise levels in the project vicinity above levels existing without the project?

Discussion: See discussion under J-3 above. Noise generated during project construction would increase the ambient noise levels in adjacent areas. Construction would be temporary, however, and given the limited duration of this impact it is considered to be less than significant with the incorporation of mitigation measures.

5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*	☐	☐	☐	☒

Discussion: The proposed project is not within two miles of a public airport. No impact is anticipated.

6. *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*	☐	☐	☐	☒

Discussion: The proposed project is not within two miles of a private airstrip. No impact is anticipated.

K. AIR QUALITY

Where available, the significance criteria established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) may be relied upon to make the following determinations. Would the project:

1. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*	☐	☒	☐	☐

Discussion: The North Central Coast Air Basin (NCCAB) does not meet state standards for ozone and particulate matter (PM_{10}) (MBUAPCD, 2013). These pollutants are both emitted during construction activities. However, emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Table 3 summarizes the threshold of significance for construction activities.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Table 3: Construction Activity with Potentially Significant Impacts from Pollutant PM_{10}	
Activity	**Potential Threshold***
Construction site with minimal earthmoving	8.1 acres per day
Construction site with earthmoving (grading, excavation)	2.2 acres per day

*Based on Midwest Research Institute, Improvement of Specific Emission Factors (1995). Assumes 21.75 working weekdays per month and daily watering of site.

Note: Construction projects below the screening level thresholds shown above are assumed to be below the **82 lb/day threshold of significance**, while projects with activity levels higher than those above may have a significant impact on air quality. Additional mitigation and analysis of the project impact may be necessary for those construction activities.

Source: Monterey Bay Unified Air Pollution Control District, 2008.

Impacts

As required by the Monterey Bay Unified Air Pollution Control District (MBUAPCD), construction activities (e.g., excavation, grading, on-site vehicles) which directly generate 82 pounds per day or more of PM_{10} would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors such as the community of Felton (Table 4). Construction projects below the screening level thresholds shown in Table 4 are assumed to be below the 82 lb/day threshold of significance, while projects with activity levels higher than those thresholds may have a significant impact on air quality. The proposed bridge repair project would require minimal grading for access to the wing wall and excavation. Although the project would produce PM_{10}, it would be far below the 82 pounds per day threshold. This would result in less than significant impacts on air quality from the generation of PM_{10}.

Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone [i.e., volatile organic compounds (VOC) or oxides of nitrogen (NOx)], are accommodated in the emission inventories of state- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS (MBUAPCD 2008).

Although not a mitigation measure per se (i.e., required by law), California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight will be used in all diesel-powered equipment, which minimizes sulfur dioxide and particulate matter.

Mitigation Measures

The project impacts would be reduced to a less than significant level with implementation of the required MBUAPCD emission control measures, i.e., diesel engine and fugitive dust controls.

AQ-1 Contracted Diesel Control Measures: In addition to the use of Tiered engines and California ultralow sulfur diesel fuel, the following requirements will be incorporated into contract specifications:

- To minimize potential diesel odor impacts on nearby receptors (pursuant to

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

MBUAPCD Rule 402, Nuisances), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area. A written log of required tune-ups will be maintained and a copy of the log will be submitted to the County of Santa Cruz Department of Public Works (DPW) Planning Director for review every 2,000 service hours.

- Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) will be electrically powered unless the contractor submits documentation and receives written approval from the County of Santa Cruz DPW that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultralow sulfur diesel fuel with maximum sulfur content of 15 ppm by weight (ppmw S), or an approved alternative fuel, will be used for on-site fixed equipment not using line power.
- To minimize diesel emission impacts, construction contracts will require off-road compression ignition equipment operators to reduce unnecessary idling with a 2-minute time limit, subject to monitoring and written documentation.
- On-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer than 2 minutes, subject to monitoring and written documentation.
- Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible.
- Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible.

Feasibility will be determined consistent with Best Available Control Technology (BACT) general criteria: 1) achieved in practice; 2) contained in adopted control measures; 3) technologically feasible; and 4) cost-effective.

AQ-2 Diesel Particulate Matter Emissions Control Measures: In addition, the project will implement the following measures to reduce particulate matter emissions from diesel exhaust:

- Grid power will be used instead of diesel generators where it is feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility).
- The project specifications will include 13 CCR Sections 2480 and 2485, which

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines will be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting.

- The project specifications will include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements; emission standards for operation of any stationary, diesel-fueled, compression-ignition engines; and operation restrictions within 500 feet of school grounds when school is in session.
- A schedule of low-emissions tune-ups will be developed and such tune-ups will be performed on all equipment, particularly for haul and delivery trucks.
- Low-sulfur (≤ 15 ppmw S) fuels will be used in all stationary and mobile equipment.

AQ-3 Dust Control Measures: The following controls will be implemented at the construction and staging sites as applicable:

- Water all active construction areas at least twice daily as necessary and indicated by soil and air conditions.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, will be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities will be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

- When materials are transported off site, all material will be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day will prevent carryout and trackout.
- Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
- Install wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 20 miles per hour.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

Implementation of the above mitigation measures would reduce the impact from diesel particulate matter (DPM) and fugitive dust emissions to less than significant.

2.	*Conflict with or obstruct*	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

implementation of the applicable air quality plan?

Discussion: The project would not conflict with or obstruct any long-range air quality plans of the MBUAPCD. Because general construction activity related emissions (i.e., temporary sources) are accounted for in the emission inventories included in the plans, impacts to air quality plan objectives are less than significant. See K-1 above.

General estimated basin-wide construction-related emissions are included in the MBUAPCD emission inventory (which, in part, form the basis for the air quality plans cited above) and are not expected to prevent long-term attainment or maintenance of the ozone and particulate matter standards within the NCCAB. Therefore, temporary construction impacts related to air quality plans for these pollutants from the proposed project would be less than significant, and no mitigation would be required, since they are presently estimated and accounted for in the District's emission inventory, as described above. No stationary sources would be constructed that would be long-term permanent sources of emissions.

3. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*	☐	☐	☒	☐

Discussion: Project construction would have a limited and temporary potential to contribute to existing violations of California air quality standards for ozone and PM_{10} primarily through diesel engine exhaust and fugitive dust. However, the Santa Cruz monitoring station has not had any recent violations of federal or state air quality standards mainly through dispersion of construction-related emission sources. Mitigation measures described above under K-1 would reduce emissions to below a level of significance. Therefore, the proposed project would not result in a cumulatively considerable net increase in criteria pollutants. The impact on ambient air quality would be less than significant.

4. *Expose sensitive receptors to substantial pollutant concentrations?*	☐	☒	☐	☐

Discussion: Diesel exhaust contains substances (DPM, toxic air contaminants [TACs], mobile source air toxics [MSATs]) that are suspected carcinogens, along with pulmonary irritants and hazardous compounds, which may affect sensitive receptors such as young children, senior citizens, or those susceptible to respiratory disease. Where construction

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

activity occurs in proximity to long-term sensitive receptors, a potential could exist for unhealthful exposure of those receptors to diesel exhaust, including residential receptors.

Impacts

The bridge replacement project is located in the community of Felton and sensitive receptors would be as close as 500 feet from the project area. Since construction is anticipated to occur over a four week period, the sensitive receptors would be affected for a maximum of four weeks, which is less than one percent of the 70-year maximum exposed individual (MEI) criteria used for assessing public health risk due to emissions of certain air pollutants (MBUAPCD 2008).

Due to the intermittent and short-term temporary nature of construction activities (i.e., four weeks), emissions of DPM, TACs, or MSATs would not be sufficient to pose a significant risk to sensitive receptors from construction equipment operations during the course of the project with implementation of the following mitigation measures.

Mitigation Measures

MBUAPCD control measures for diesel exhaust would be implemented as described in Mitigation Measures AQ-1 and AQ-2. The project would not be expected to expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant with mitigation.

Implementation of the above mitigation measures would reduce the impact on sensitive receptors to less than significant.

5.	*Create objectionable odors affecting a substantial number of people?*	☐	☐	☒	☐

Discussion: California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight will be used in all diesel-powered equipment, which minimizes emissions of sulfurous gases (sulfur dioxide, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). Therefore, no objectionable odors are anticipated from construction activities associated with the proposed project, and no mitigation measures would be required. The proposed project would not create objectionable odors affecting a substantial number of people; therefore, impacts are expected to be less than significant.

L. GREENHOUSE GAS EMISSIONS

Would the project:

1.	*Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*	☐	☐	☒	☐

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion:

Impacts

Greenhouse gas (GHG) emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Measures integrated into the project that help limit/minimize construction-related GHG emissions include reducing traffic delays by developing a Transportation Management Plan.

While construction would result in a slight increase in greenhouse gas emissions during construction, no operational increase in GHG emissions associated with this proposed project is anticipated. However, in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination on the project's direct impact and its contribution on the cumulative scale to climate change. Nonetheless, the County has strategies to help reduce greenhouse gas emissions and energy consumption. These measures included in the *County of Santa Cruz Climate Action Strategy* (County of Santa Cruz, 2013) are outlined below.

Strategies for the Reduction of Greenhouse Gases from Transportation

- Reduce vehicle miles traveled (VMT) through County and regional long range planning efforts.
- Increase bicycle ridership and walking through incentive programs and investment in bicycle and pedestrian infrastructure and safety programs.
- Provide infrastructure to support zero and low emissions vehicles (plug in, hybrid plug-in vehicles).
- Increase employee use of alternative commute modes: bus transit, walking, bicycling, carpooling, etc.
- Reduce County fleet emissions.

Strategies for the Reduction of Greenhouse Gases from Energy Use

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

- Develop a Community Choice Aggregation (CCA) Program, if feasible.
- Increase energy efficiency in new and existing buildings and facilities.
- Enhance and expand the Green Business Program.
- Increase local renewable energy generation.
- Public education about climate change and impacts of individual actions.
- Continue to improve the Green Building Program by exceeding the minimum standards of the state green building code (Cal Green).
- Form partnerships and cooperative agreements among local governments, educational institutions, nongovernmental organizations, and private businesses as a cost-effective way to facilitate mitigation and adaptation.
- Reduce energy use for water supply through water conservation strategies.

Impacts are expected to be less than significant.

2.	*Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*	☐	☐	☐	☒

Discussion: See the discussion under L-1 above. No impacts are anticipated.

M. PUBLIC SERVICES

Would the project:

1.	*Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*				
	a. *Fire protection?*	☐	☐	☒	☐
	b. *Police protection?*	☐	☐	☒	☐
	c. *Schools?*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d. Parks or other recreational activities?	☐	☐	☒	☐
e. Other public facilities; including the maintenance of roads?	☐	☐	☒	☐

Discussion (a through e): The Graham Hill Road bridge would remain open to through traffic during construction. Construction is expected to be completed within a four week period. A lane closure may be required for short periods of time during construction.

The proposed bridge project would not result in impacts to schools or parks, and would not adversely impact Felton Fire and Sheriff response times. As a result, impacts would be considered less than significant.

N. RECREATION

Would the project:

1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

Discussion: The repair of the existing Graham Hill Road bridge would not increase the use of existing neighborhood and regional parks or other recreational facilities. No impact would occur.

2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion: The proposed project does not propose the expansion or construction of additional recreational facilities. No impact would occur.

O. UTILITIES AND SERVICE SYSTEMS

Would the project:

1. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Discussion: No additional drainage facilities would be required for the proposed project.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

No impacts are expected to occur from the proposed project.

2.	*Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*	☐	☐	☐	☒

Discussion: The proposed bridge repair project would not require the construction of new water or wastewater treatment facilities, or the expansion of such facilities. No impacts are expected to occur.

3.	*Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*	☐	☐	☐	☒

Discussion: The proposed project would not generate wastewater. No impacts are anticipated.

4.	*Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*	☐	☐	☐	☒

Discussion: The proposed bridge project would only use small amounts of water during construction for dewatering and concrete work. No water use would be required during the operational phase of the project. No impacts are expected to occur from project implementation.

5.	*Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*	☐	☐	☐	☒

Discussion: Please see discussion under O-2 above. No impact is anticipated.

6.	*Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

needs?

Discussion: The proposed bridge project would not generate waste during the operational phase of the project. However, construction debris would be generated during demolition and construction, much of which would be recycled. No significant impacts are anticipated.

7.	*Comply with federal, state, and local statutes and regulations related to solid waste?*	☐	☐	☐	☒

Discussion: Please see discussion under O-6 above. No impact would occur.

P. LAND USE AND PLANNING

Would the project:

1.	*Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*	☐	☐	☐	☒

Discussion: The proposed bridge project would not conflict with any applicable land use plan, policy, or regulation. No impacts are anticipated.

2.	*Conflict with any applicable habitat conservation plan or natural community conservation plan?*	☐	☐	☐	☒

Discussion: The proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan. No impact would occur.

3.	*Physically divide an established community?*	☐	☐	☐	☒

Discussion: The project would not include any element that would physically divide an established community. No impact would occur.

Q. POPULATION AND HOUSING

Would the project:

1.	*Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

infrastructure)?

Discussion: The proposed project would not induce substantial population growth in an area because the project does not propose any physical or regulatory change that would remove a restriction to or encourage population growth in an area. The project proposes only to replace an existing substandard structure and would not induce population growth. No impact would occur.

2.	*Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*	☐	☐	☐	☒

Discussion: The proposed project would not displace any existing housing. No impact would occur.

3.	*Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*	☐	☐	☐	☒

Discussion: The proposed project would not displace a substantial number of people since the project is only intended to replace an existing substandard bridge with a standard bridge. No impact would occur.

R. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
1. *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*	☐	☒	☐	☐

Discussion: The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III of this Initial Study. Resources that have been evaluated as significant would be potentially impacted by the project, particularly riparian woodland, the San Lorenzo River, and special-status wildlife species resources. However, mitigation has been included that clearly reduces these effects to a level below significance. This mitigation includes revegetation, measures to protect water quality, and avoidance and minimization efforts. As a result of this evaluation, there is no substantial evidence that, after mitigation, significant effects associated with this project would result. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
2. *Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*	☐	☒	☐	☐

Discussion: In addition to project specific impacts, this evaluation considered the projects potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there were determined to be potentially significant cumulative effects related to biological resources, cultural resources, hazards and hazardous materials, noise, and air quality. However, mitigation has been included that clearly reduces these cumulative effects to a level below significance. This mitigation includes measures to reduce these impacts to a less than significant level. As a result of this evaluation, there is no substantial evidence that there are cumulative effects associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
3. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*	☐	☒	☐	☐

Discussion: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III. As a result of this evaluation, there were determined to be potentially significant effects to human beings related to the following: air quality, noise, and hazardous material. However, mitigation has been included that clearly reduces these effects to a level below significance. As a result of this evaluation, there is no substantial evidence that, after mitigation, there are adverse effects to human beings associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

V. REFERENCES USED IN THE COMPLETION OF THIS ENVIRONMENTAL REVIEW INITIAL STUDY

Ashton, D. T., Lind, A. J., and K. E. Schlick, 1998
Foothill yellow-legged frog (Rana boylii) natural history. USDA Forest Service, Pacific Southwest Research Station, Arcata, CA. 18 pp.

Bureau of Land Management (BLM), March 2006.
Species accounts for the West Mojave plan – Amendment to the California desert conservation area plan. Record of Decision. California Desert District, Moreno Valley, CA. <http://www.blm.gov/ca/st/en/fo/cdd/speciesaccounts.html>

California Department of Conservation. 1980
Farmland Mapping and Monitoring Program Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance Santa Cruz County U.S. Department of Agriculture, Natural Resources Conservation Service, soil surveys for Santa Cruz County, California, August 1980.

California Department of Transportation, 1986
Caltrans Historic Bridges Inventory, Local Agency Bridges. Updated in 2006.

County of Santa Cruz, 2013
County of Santa Cruz Climate Action Strategy. Approved by the Board of Supervisors on February 26, 2013.

County of Santa Cruz, 2010
County of Santa Cruz Local Hazard Mitigation Plan 2010-2015. Prepared by the County of Santa Cruz Office of Emergency Services.

California Department of Fish and Game (CDFG), 2011
CNDDB animal and plant information, including the following lists: State and federally listed endangered and threatened animals of California; Special animals (Jan 2011); Special vascular plants, bryophytes, and lichens list; and State and federally listed endangered, threatened, and rare plants of California (April 2011). Biogeographic Data Branch, CNDDB, Sacramento, CA.
<http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp>

County of Santa Cruz, 1994
1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

CWHR, 2011
California Wildlife Habitat Relationships (CWHR) Program. Accessed January 2011 to March 2012 (2012). (Updated from Zeiner, D.C. et al 1988-1990). California wildlife

habitat relationships system, life history account and range map. CWHR Program, California Department of Fish and Game, Sacramento, CA. <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx> Chambers, K. L. 2006. Stebbinsoseris. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 12+ vols. New York and Oxford. Vol. 19.

ICF, 2013

Archaeological Survey Report for the San Lorenzo Way Bridge Replacement Project (36C-0085), prepared by ICF International, San Francisco, dated March 2013.

Jameson, E. W. Jr. and H. J. Peeters, 2004

Mammals of California. Revised Edition. University of California Press, Berkeley, CA.

Jennings, M. R. and M. P. Hayes, 1994

Amphibian and reptile species of special concern in California. California Department of Fish and Game, Rancho Cordova, CA. Kelly, P. A. 1990. Population ecology and social organization of dusky-footed woodrats, Neotoma fuscipes. Ph.D. dissertation. University of California, Berkeley, CA. Matocq, M. D. 2002. Morphological and molecular analysis of a contact zone in the Neotoma fuscipes species complex. Journal of Mammalogy 83(3):866–883.

Kelly, P. A., 1990

Population ecology and social organization of dusky-footed woodrats, *Neotoma fuscipes.* Ph.D. dissertation. University of California, Berkeley, CA.

Matocq, M. D., 2002

Morphological and molecular analysis of a contact zone in the *Neotoma fuscipes* species complex. Journal of Mammalogy 83(3):866–883.

MBUAPCD, 2008

Monterey Bay Unified Air Pollution Control District (MBUAPCD), CEQA Air Quality Guidelines. Prepared by the MBUAPCD, Adopted October 1995, Revised: February 1997, August 1998, December 1999, September 2000, September 2002, June 2004 and February 2008.

MBUAPCD, 2013

Monterey Bay Unified Air Pollution Control District, NCCAB (NCCAB) Area Designations and Attainment Status – January 2013. Available online at http://www.mbuapcd.org/mbuapcd/pdf/Planning/Attainment_Status_January_2013_2.pdf

McEwan, D. and T. A. Jackson, February 1996

Steelhead restoration and management plan of California. Inland Fisheries Division, Department of Fish and Game, Sacramento, CA. McGinnis, S. M. 1984. Freshwater fishes of California. University of California Press, Berkeley, CA.

Moyle, P. B. 2002.

Inland fishes of California. University of California Press, Berkeley, CA.

National Marine Fisheries Service (NMFS), March 2010
Public draft recovery plan for central California coast coho salmon (Oncorhynchus kisutch) evolutionarily significant unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, CA.

National Marine Fisheries Service (NMFS), May 2007
Federal recovery outline for the distinct population segment of the central California coast steelhead. Prepared by NMFS Southwest Regional Office, Long Beach, CA.

National Marine Fisheries Service (NMFS), 28 June 2005
Endangered and threatened species; endangered status for Central California Coast Coho salmon Evolutionarily Significant Unit (ESU); Final rule; Federal Register 70(123):37160-37204; 50 CFR Parts 223 and 224.

National Marine Fisheries Service (NMFS), 5 May 1999
Designated critical habitat; central California coast coho salmon evolutionarily significant unit (ESU); Final Rule; Federal Register 64(86):24049-24062; 40 CFR Part 60.

Stebbins, R.C., 2003
A field Guide to Western Reptiles and Amphibians. Houghton Mifflin Co., Boston, CA 533pp.

Verner, J. and A. Boss, 1980
California wildlife and their habitats: Western Sierra Nevada. General Technical Report PSW-37. Pacific Southwest Forest and Range Exp. Station, Forest Service, USDA, Berkeley, CA.

Western Bat Working Group (WBWG), Updated 2005
Species accounts. Rapid City, SD.
http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html

Zeiner, D. C., W. Laudenslayer, Jr., and K. Mayer, eds, 1988
California's Wildlife, Volume I, Amphibians and Reptiles. California Department of Fish and Game, Sacramento, CA.

Personal Communications

Mr. Joe Heublein, 8 March 2012
Phone call and email regarding NMFS technical assistance for anadromous salmonids potentially occurring in the Project area, Coho critical habitat, and need for informal consultation/concurrence. NMFS Natural Resource Management Specialist. Southwest Regional Field Office, Santa Rosa, CA.

Attachment 1

Preliminary Draft Initial Site Assessment

for the

Bridge Storm Damage Repair Project

Santa Cruz County, California

March 15, 2012

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Attachment 2

Location Hydraulic Study

for the

Graham Hill Road at San Lorenzo River Bridge

Storm Damage Repair Project

Federal ID Number: ER-20E0 (013)

June 2012

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Attachment 3

Natural Environment Study
and
Jurisdictional Delineation Report

for the

Graham Hill Road Bridge (36C-0101) at San Lorenzo River
Storm Damage Repair Project
Santa Cruz County, CA

Federal ID Number: ER-20E0 (013)

September 2012

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Attachment 4

Erosion Control & Revegetation Plan

for the

Graham Hill Road Bridge (36C-0101) at San Lorenzo River

Storm Damage Repair Project

Santa Cruz County, CA

January 29, 2014

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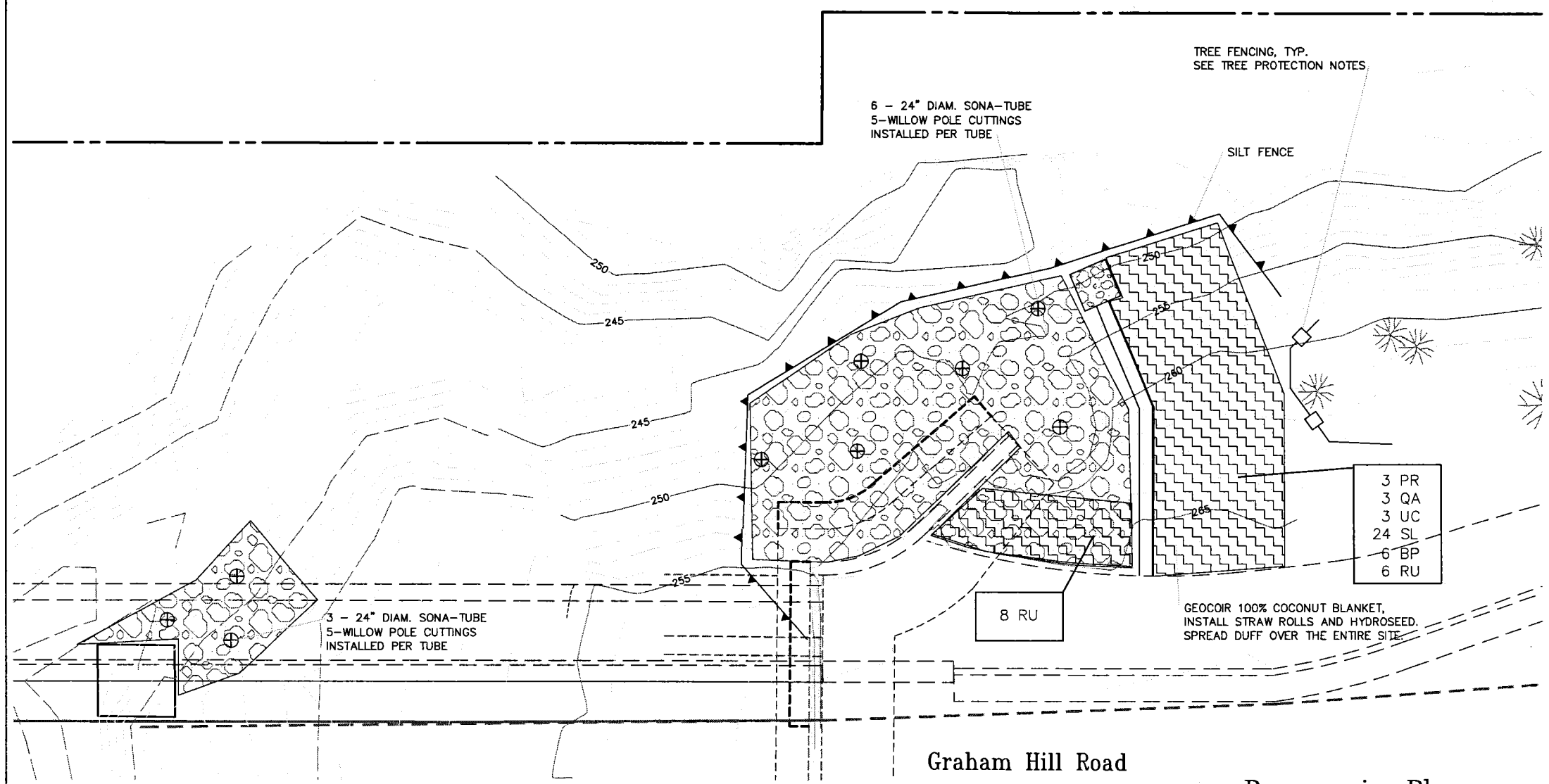
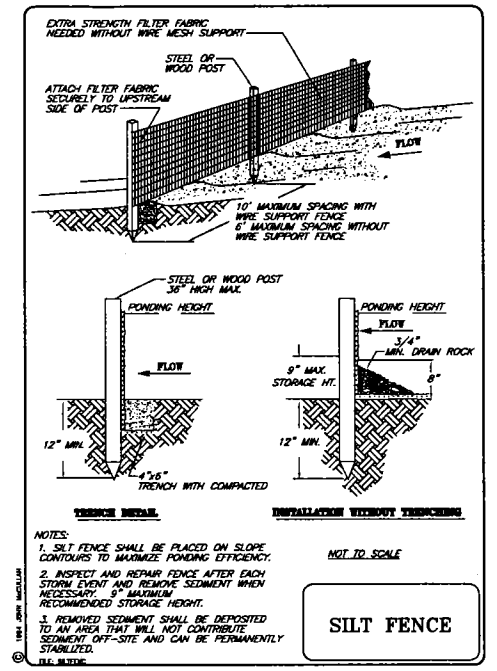
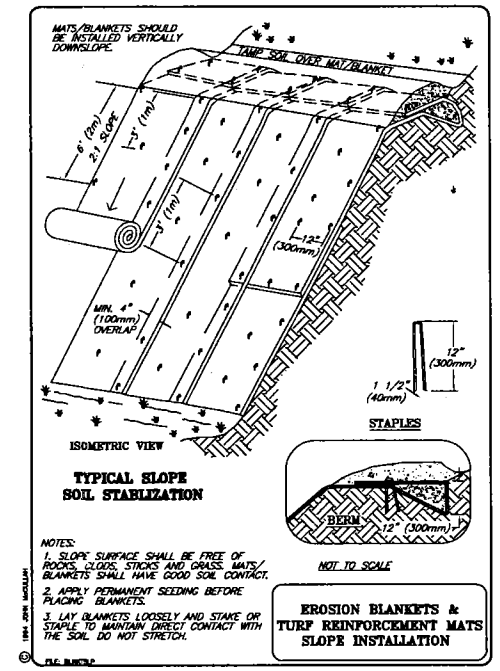


Revegetation Plan

Scale: 1" = 5'-0"





PLANT LEGEND

All areas disturbed by proposed improvements shall be hydroseeded & planted as follows:
(Bare slopes over 3:1 will be covered with blanket & straw rolls)

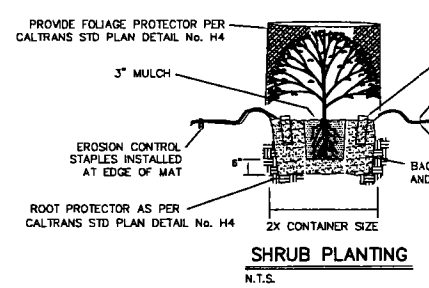
CONTAINER PLANTS
Install 6" of topsoil in the top upper reaches along RSP
Install willow stake cuttings in the straw rolls
All plants will have root & foliage protection except cuttings & blackberry

SYMBOL	(QUANITY)	SIZE	BOTANICAL NAME – COMMON NAME / SPACING
PR	(3)	1 Gallon	Platanus racemosa – Western Sycamore / 18' o.c.
QA	(3)	1 Gallon	Quercus agrifolia – Coast Live Oak / 16' o.c.
UC	(3)	1 Gallon	Umbellularia californica – California Bay / 12' o.c.
PC	(45)	Pole Cuttings	Salix Lasiolepis – Arroyo Willow (Sona–Tubes)
SL	(24)	Stake Cuttings	Salix Lasiolepis – Arroyo Willow / 6' O.C.
BP	(8)	1 Gallon	Baccharis pilularis – Coyote brush / 6' O.C.
RU	(14)	1 Gallon	Rubus Ursinus – California Blackberry / 6' o.c.

⊕ SONA–TUBE IN ROCK SLOPE PROTECTION (RSP)
Install 24" Diameter Sona–Tubes in RSP and install willow pole
Install cuttings in soil slurry or auger/drill holes in packed soil.
Salix Lasiolepis – Arroyo Willow Pole Cuttings
9 – Sona–Tubes / 5 cuttings per Sona–Tube

EROSION CONTROL SEED MIXTURE (lbs./acre)

30 lbs. Bromus carinatus cucamonga – Cucamonga Brome
6 lbs. Vulpia microstachys – Three Weeks Fescue
4 lbs. Trifolium wildenovii –Tomcat Clover
25 lbs. Serile Hybrid Wheatgrass/ or Barley (Nov.–Feb. installation)



SHRUB PLANTING
N.T.S.

NOTE: LOCATIONS FOR REVEGETATION & EROSION CONTROL INSTALLATIONS ARE APPROXIMATE AND SHOULD BE ADJUSTED IN FIELD AS NESSECARY AND APPROVED BY ENGINEER

EROSION CONTROL NOTES

1. ALL OPERATIONS SHALL CONFORM TO REQUIREMENTS OF THE COUNTY EROSION CONTROL ORDINANCE. THE DESIRED END RESULT OF THE PROPOSED MEASURE IS TO CONTROL SITE EROSION AND TO PREVENT SEDIMENT TRANSPORT OFF THE SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO SEE THAT ANY ADDITIONAL MEASURES TO MEET THIS GOAL ARE BEING MET. SILT FENCES AND SAND BAGS SHALL BE USED TO PREVENT SILT RUNOFF.
2. DISTURBANCE TO NATURAL VEGETATION SHALL BE MINIMIZED WITHIN AREA OF CONSTRUCTION.
3. BETWEEN OCTOBER 15 AND APRIL 15, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION SUCH PROTECTION SHALL CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF PROJECT ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.
4. SLOPE STABILIZATION SHALL CONSIST OF:
   1) REMOVAL OF ALL VEGETATIVE DEBRIS FROM SLOPE.
   2) HANDRAKING TO SMOOTH OUT THE DIRT SURFACE OF THE SLOPE.
   3) SEEDING THE ENTIRE SLOPE WITH AN APPROVED GRASS SEED MIXTURE.
   4) PLACING EROSION CONTROL BLANKET OVER THE SEEDED AREA. ALL BLANKET SHALL BE SECURED WITH HEAVY GAUGE WIRE STAPLES.
5. ANY EXCESS MATERIAL SHALL BE DISPOSED OF OFF–SITE OR STOCKPILED IN A MANNER TO AVOID RUNOFF ONTO ADJOINING PROPERTIES.
6. ANY MATERIAL STOCKPILED DURING CONSTRUCTION SHALL BE COVERED WITH PLASTIC.
7. CONTRACTOR SHALL NOTIFY COUNTY OF SANTA CRUZ EROSION CONTROL/GRADING DIVISION, (454–3168) AT LEAST 48 HOURS BEFORE ANY EARTHWORK IS BEGUN.
8. EARTHWORK BETWEEN OCTOBER 15 AND APRIL 15 IS PROHIBITED UNLESS WINTER GRADING APPROVAL HAS BEEN ISSUED BY ENVIRONMENTAL PLANNING.

NOTE:
TEMPORARY STOCK PILING OF SUITABLE MATERIAL FROM EXCAVATION MAY OCCUR IN THE STAGGING AREA AS DIRECTED BY ENGINEER. ALL UNSUITABLE EXCAVATED MATERIAL SHALL BE DISPOSED OF ON A DAILY BASIS AS DIRECTED BY THE ENGINEER.

TREE PROTECTION NOTES

1. PROTECT ROOT COLLAR FROM DAMAGE BY GRADING EQUIPMENT OR BUILDING MATERIALS TO BE STACKED OR STORED UNDER DRIP LINE OF TREES.
2. PLACE PROTECTIVE (CONSTRUCTION) FENCING AROUND TREE, UNDER THE DRIP LINE OR ON THE OUTERMOST EDGE OF THE PROJECT CONSTRUCTION LIMITS. FENCING SHOULD BE INSTALLED PRIOR TO CONSTRUCTION AND THE LOCATION APPROVED BY THE ENGINEER. INSTALL STRAW BALES AROUND THE TREE. THE PROTECTIVE FENCING SHOULD BE INSTALLED IN SUCH A MANNER THAT IT WILL BE STURDY ENOUGH TO LAST THROUGH THE ANTICIPATED SCHEDULE OF CONSTRUCTION.
3. GRADING UNDER TREE CANOPY IS TO BE LIMITED. ANY TRENCHING OR DIGGING UNDER THE DRIP LINE OF THE TREE SHALL BE DONE BY HAND OR CAREFUL USE OF BACKHOE IN ORDER TO PREVENT THE FRACTURING OF ROOTS.
4. ABOVE GROUND RUNOFF SHALL BE CONTROLLED IN SUCH A WAY THAT IT IS NOT DIVERTED UNDER TREE'S CANOPY.
5. THE CONTRACTOR SHALL, ON AN ON GOING BASIS, VISUALLY INSPECT ALL TREES. IF AT ANY TIME THE TREES APPEAR TO BE UNDER STRESS, IT SHALL BE REPORTED TO THE ENGINEER FOR ACTION.
6. ANY DAMAGE TO EXISTING TREE CROWNS OR ROOT SYSTEMS SHALL BE REPAIRED IMMEDIATELY BY A CERTIFIED ARBORIST. ROOTS EXPOSED/DAMAGED DURING GRADING OPERATIONS SHALL IMMEDIATELY BE CUT OFF CLEANLY INSIDE THE EXPOSED OR DAMAGED AREA AND HAVE TOPSOIL SPREAD OVER THE EXPOSED AREA.
7. THE CONTRACTOR SHALL EMPLOY (AND SO STATE WITHIN THE LIST OF SUBCONTRACTORS) A CERTIFIED ARBORIST TO BE RESPONSIBLE FOR THE ABOVE WORK AND ACT AS THE CONTACT PERSON FOR ALL MITIGATION DONE BY THE CONTRACTOR FOR THIS PROJECT.
8. ALL TREES REMOVED AT THIS PROJECT SITE SHALL BE REPLACED BY THREE 15 GALLON SPECIMENS OR AS DIRECTED BY ENGINEER.

EROSION CONTROL & REVEGETATION PLAN

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES 0 1 2 3

DRAWING NAME: Topo.dwg

BY	DATE	REVISION

REGISTERED PROFESSIONAL ENGINEER TIMOTHY A. BAILEY No. 57176 Exp. 9/30/11 STATE OF CALIFORNIA

PROJECT ENGINEER
T. BAILEY

COUNTY OF SANTA CRUZ – DEPARTMENT OF PUBLIC WORKS

GRAHAM HILL ROAD BRIDGE REPAIR
REVEGETATION

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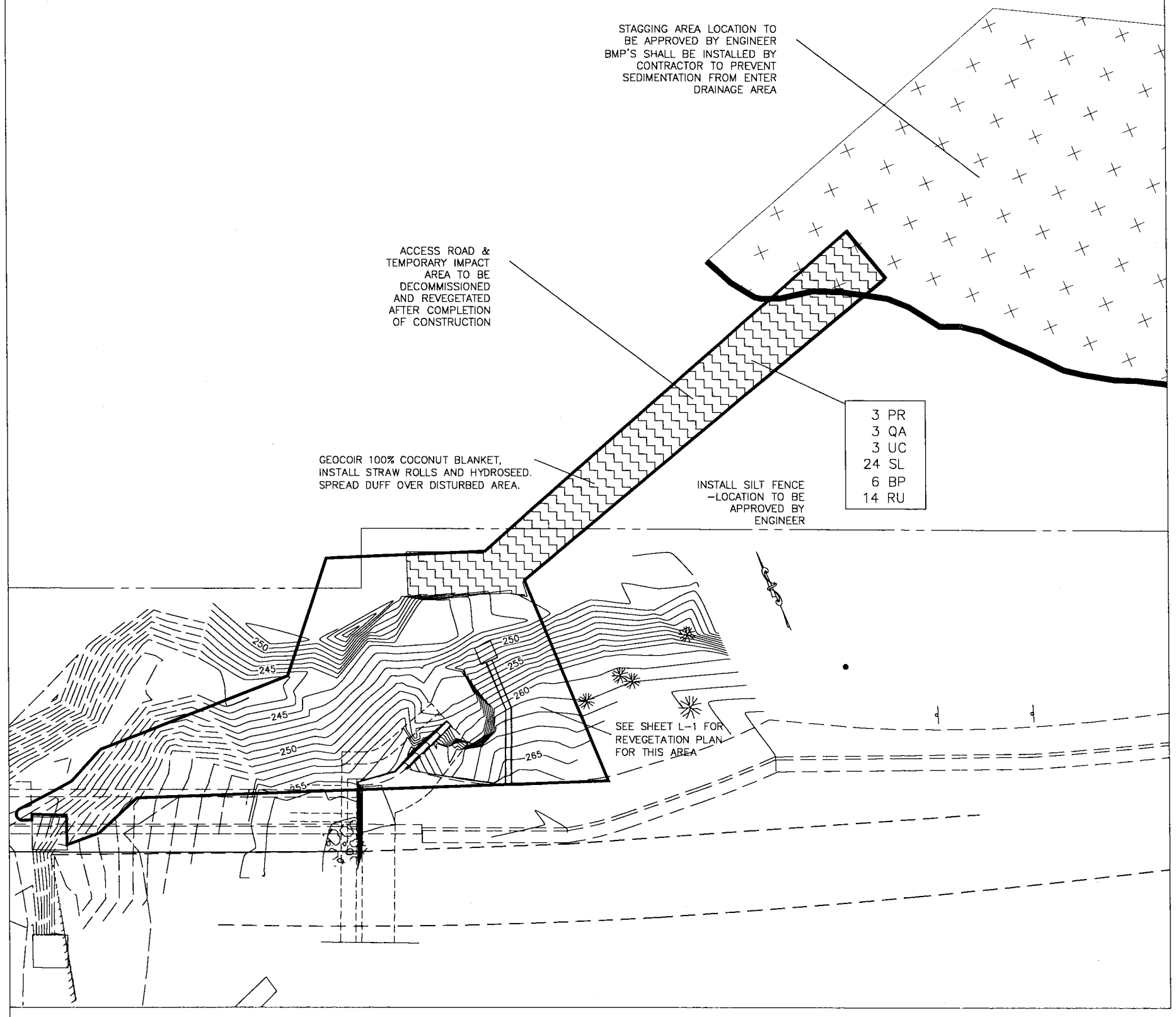

NOTE: LOCATIONS FOR REVEGETATION & EROSION CONTROL INSTALLATIONS ARE APPROXIMATE AND SHOULD BE ADJUSTED IN FIELD AS NESSECARY AND APPROVED BY ENGINEER

Revegetation Plan

Scale: 1" = 10'-0"

PLANT LEGEND

All areas disturbed by proposed improvements shall be hydroseeded & planted as follows:
(Bare slopes over 3:1 will be covered with blanket & straw rolls)

CONTAINER PLANTS
Install willow stake cuttings in the straw rolls
All plants will have root & foliage protection except cuttings & blackberry

SYMBOL	(QUANITY)	SIZE	BOTANICAL NAME – COMMON NAME / SPACING
PR	(3)	1 Gallon	Platanus racemosa – Western Sycamore / 18' o.c.
QA	(3)	1 Gallon	Quercus agrifolia – Coast Live Oak / 16' o.c.
UC	(3)	1 Gallon	Umbellularia californica – California Bay / 12' o.c.
SL	(24)	Stake Cuttings	Salix Lasiolepis – Arroyo Willow / 6' O.C.
BP	(6)	1 Gallon	Baccharis pilularis – Coyote brush / 6' O.C.
RU	(14)	1 Gallon	Rubus Ursinus – California Blackberry / 6' o.c.

EROSION CONTROL SEED MIXTURE (lbs./acre)

30 lbs. Bromus carinatus cucamonga – Cucamonga Brome
6 lbs. Vulpia microstachys – Three Weeks Fescue
4 lbs. Trifolium wildenovii –Tomcat Clover
25 lbs. Serile Barley (Nov.–Feb. installation)

SILT FENCE INSTALLATION

- THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES. STORAGE HEIGHT AND PONDING HEIGHT SHALL NEVER EXCEED 18 INCHES.
- THE FENCE LINE SHALL FOLLOW THE CONTOUR AS CLOSELY AS POSSIBLE.
- IF POSSIBLE, THE FILTER FABRIC SHLL BE CUT FROM A CONTINUOUS ROLL TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
- POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA–STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.
- TURN THE ENDS OF THE FENCE UPHILL.
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- WHEN STANDARD–STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE STANDARD–STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 6 INCHES OF THE FABRIC SHA LL EXTEND INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLEDTO EXISTING TREES.
- WHEN EXTRA–STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS.
- THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE TOE OF THE FILTER FABRIC.
- SILT FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 6 FEET FROM THE TOE IN ORDER TO INCREASE PONDING VOLUME.
- SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABLIZED AND ANY SEDIMENT STORED BEHIND THE SILT FENCE HAS BEEN REMOVED.

INSPECTION AND MAINTENANCE

- SILT FENCES AND FILTER FABRIC BARRIERS SHALL BE INSPECTED WEEKLY AFTER EACH SIGNIFICANT STORM (1 INCH IN 24 HOURS). ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- SEDIMENT SHOULD BE REMOVED WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
- THE REMOVED SEDIMENT SHALL CONFORM WITH THE EXISTING GRADE AND BE VEGETATED OR OTHERWISE STABILIZED.

EROSION CONTROL NOTES:

1. ALL OPERATIONS SHALL CONFORM TO REQUIREMENTS OF THE COUNTY EROSION CONTROL ORDINANCE. THE DISIRED END RESULT OF THE PROPOSED MEASURE IS TO CONTROL SITE EROSION AND TO PREVENT SEDIMENT TRASPORT OFF THE SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO SEE THAT ANY ADDITIONAL MEASURES TO MEET THIS GOAL ARE BEING MET. SILT FENCES AND SAN BAGS SHALL BE USED TO PREVENT SILT RUNOFF.
2. DISTURBANCE TO NATURAL VEGETATION SHALL BE MINIMIZED WITHIN AREA OF CONSTRUCTION.
3. BETWEEN OCTOBER 15 AND APRIL 15, ALL DISTURBED EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONTRUCTION SUCH PROTECTION SHLL CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF PROJECT ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.
4. ANY EXCESS MATERIAL SHALL BE DISPOSED OF OFF–SITE OR STOCKPILED IN A MANNER TO AVOID RUNOFF ON ADJOINING PROPERTIES.
5. ANY MATERIAL STOCKPILED DURING CONSTRUCTION SHALL BE COVERED WITH PLASTIC.
6. CONTRACTOR SHALL NOTIFY COUNTY OF SANTA CRUZ EROSION CONTROL/GRADING DIVISION, (831–454–3168) AT LEAST 48 HOURS BEFORE ANY EARTHWORK IS BEGUN.
7. EARTHWORK BETWEEN OCTOBER 15 AND APRIL 15 IS PROHIBITED UNLESS WINTER GRADING APPROVAL HAS BEEN ISSUED BY ENVIRONMENTAL PLANNING.
8. TEMPORARY STOCK PILING OF SUITABLE MATERAL FROM EXCAVATION MAY OCCUR IN THE ROADWAY RIGHT–OF–WAY AREA. ALL UNSUITABLE EXCAVATED MATERIAL SHALL BE DISPOSED OF ON A DAILY BASIS AS DIRECTED AND APPROVED BY THE ENGINEER.

EROSION CONTROL & REVEGETATION PLAN

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES 0 1 2 3

DRAWING NAME: Topo.dwg

BY	REVISION	DATE

REGISTERED PROFESSIONAL ENGINEER THOMAS J. BAILEY No. Exp. CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER T. BAILEY

COUNTY OF SANTA CRUZ – DEPARTMENT OF PUBLIC WORKS

GRAHAM HILL ROAD BRIDGE REPAIR

LAYOUT

DRAWN: CS
CHECKED:
DATE:
SCALE: 1"=10'
JOB NO. 79095
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PLANTING NOTES

A. GENERAL PLANTING INFORMATION

1. THESE NOTES ARE FOR GENERAL REFERENCE, IN CONJUNCTION WITH, AND AS A SUPPLEMENT TO, THE WRITTEN SPECIFICATION ASSOCIATED WITH THE CONTRACT DOCUMENTS.
2. PRIOR TO PLANT MATERIAL INSTALLATION, LOCATIONS SHALL BE COORDINATED WITH LAYOUT OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE FAMILIAR WITH THE LOCATIONS OF EXISTING AND FUTURE UNDERGROUND SERVICES AND IMPROVEMENTS THAT MAY CONFLICT WITH THE WORK TO BE DONE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SHOULD CONFLICTS ARISE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SITE IN A SAFE AND CLEAN CONDITION. AT THE END OF EACH DAY THE SITE SHALL BE CLEANED UP AND LEFT IN A CONDITION THAT IS SAFE.

B. NATIVE TOPSOIL

1. SELECT A LOCATION FOR A STABILIZED TEMPORARY STOCKPILE SITE THAT WILL NOT ERODE, BLOCK DRAINAGE, OR INTERFERE WITH WORK WITHIN THE DESIGNATED STAGING AREA.
2. STRIP TOPSOIL ONLY FROM THOSE AREAS THAT WILL BE DISRUPTED BY EXCAVATION, FILLING, ROAD BUILDING, OR COMPACTING BY EQUIPMENT. A 4–6" STRIPPING DEPTH IS COMMON, BUT DEPTH VARIES DEPENDING ON THE SITE. STORE AT STOCKPILE SITE.
3. PROTECT TOPSOIL STOCKPILES BY TEMPORARILY COVERING WITH PLASTIC AS SOON AS POSSIBLE TO ASSURE THE STORED MATERIAL IS NOT EXPOSED AND ALLOWED TO ERODE. INSTALL SILT FENCE AROUND STOCKPILES TO CONTROL SEDIMENTATION INTO THE STREAM.
4. WHEN THE CONSTRUCTION PROJECT IS COMPLETED AND BEFORE PLANTING OPERATIONS AND SEEDING BEGIN, SCARIFY THE SUBSOIL TO A MINIMUM DEPTH OF 3". UNIFORMLY DISTRIBUTE TOPSOIL TO A MINIMUM, LIGHTLY COMPACTED DEPTH OF 4" ON 1V:3H (3:1) SLOPES AND 6" ON FLATTER SLOPES.
5. DO NOT SPREAD TOPSOIL WHILE IT IS FROZEN OR MUDDY OR WHEN THE SUBGRADE IS WET OR FROZEN. CORRECT ANY IRREGULARITIES IN THE SURFACE THAT RESULT FROM TOPSOILING OR OTHER OPERATIONS TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT AVOID EXCESSIVE COMPACTING, AS IT INCREASES RUNOFF AND INHIBITS SEED GERMINATION.

C. PLANTING OPERATIONS

1. PLANTING OPERATIONS SHALL BE COMPLETED IN STRICT ACCORDANCE WITH SPECIFICATIONS AND DETAILS FOR SITE PREPARATION AND PLANTING.
2. THE LOCATIONS OF REVEGETATION ELEMENTS ARE FOR PLANNING PURPOSES ONLY AND MAY BE ADJUSTED IN THE FIELD AT THE DIRECTION OF THE ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL TAKE CARE TO LOCATE PLANT MATERIALS TO OPTIMUM GROWTH CONDITIONS AND MAXIMUM AESTHETICS. PLANT MATERIAL SHALL NOT BE INSTALLED SO AS TO OBSTRUCT DRAINAGE PATTERNS OR HARM EXISTING PLANT MATERIAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SHOULD CONFLICTS OCCUR.
3. PRIOR TO SITE WORK FOR THE INSTALLATION OF THE CONTAINER STOCK, THE CONTRACTOR SHALL LAYOUT PLANT MATERIALS, WHILE STILL IN CONTAINERS OR AS FLAGGED LOCATIONS IN THE FIELD. THE ENGINEER SHALL REVIEW AND APPROVE ALL PLANTING LOCATIONS PRIOR TO SITE WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING PLANTS OF THE SPECIES AND SIZE SPECIFIED AND DELIVERY OF THE PLANT MATERIAL TO THE SITE. THE ENGINEER SHALL REVIEW AND APPROVE ALL PLANT MATERIALS, PRIOR TO THEIR INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPLACEMENT OF PLANT MATERIAL IF SAID MATERIAL IS IN POOR CONDITION AND REJECTED BY THE ENGINEER.
5. THE CONTRACTOR SHALL ENSURE THAT ALL PLANTS ARE TRUE TO NAME, WITH ONE PLANT IN EACH BUNDLE OR LOT TAGGED WITH THE BOTANICAL NAME AND PLANT SIZE, IN ACCORDANCE TO THE STANDARDS OF PRACTICE RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
6. ALL PLANTS SHALL BE THE GENUS AND SPECIES AND SIZES SHOWN ON THE PLANS. UNDER NO CONDITIONS WILL THERE BE ANY SUBSTITUTION OF PLANTS OR SIZES, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF THE ENGINEER.
7. EXISTING VEGETATION THAT IS NOT WITHIN THE LIMITS OF THE PROJECT AREA SHALL NOT BE CUT, REMOVED OR OTHERWISE DISTUBED, EXCEPT FOR OCCURRENCES OF INVASIVE, NON–NATIVE PLANT SPECIES.
8. LIVE CUTTINGS SHALL BE INSTALLED AS SHOWN ON PLANTING PLAN AND SHALL BE ADJUSTED IN THE FIELD AS NECESSARY. LIVE CUTTINGS TO BE INSTALLED DURING ROCK SLOPE PROTECTION PLACEMENT SHALL FOLLOW POLE CUTTINGS FOR INSTALLATION IN RSP METHODS. LIVE CUTTINGS TO BE INSTALLED AFTER THE PROJECT IS FINISHED SHALL FOLLOW LIVE STAKING IN SOIL INSTALLATION METHODS (INSTALLATION BETWEEN DECEMBER–FEBRUARY OR AS DIRECTED BY THE ENGINEER).

D. SEEDING NOTES

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPLICATION OF SEED ON ALL DISTURBED SOIL AREAS (SEE PLANTING PLAN FOR SEED MIX). SUBMIT 4–OUNCE SAMPLE OF SEED MIX TO ENGINEER WITH CERTIFICATION. SEED CAN BE OBTAINED FROM PACIFIC COAST SEED, LIVERMORE, CA (510) 373–4417, OR APPROVED EQUAL.
2. SEEDING OPERATIONS SHALL BE APPLIED BY HYDROSEEDING AND COMPLETED IN STRICT ACCORDANCE WITH SPECIFICATIONS AND DETAILS FOR SITE PREPARATION AND SEEDING.
3. THE LOCATIONS OF THE SEEDING AREAS ARE FOR PLANNING PURPOSES ONLY AND MAY BE ADJUSTED IN THE FIELD AT THE DIRECTION OF THE ENGINEER PRIOR TO INSTALLATION. THE GENERAL CONTRACTOR SHALL TAKE CARE TO INSTALL SEED AND RELATED MATERIALS TO PROVIDE OPTIMUM GROWTH CONDITIONS AND MAXIMUM AESTHETICS. SEEDED MATERIAL SHALL NOT BE INSTALLED SO AS TO OBSTRUCT DRAINAGE PATTERNS OR HARM EXISTING PLANT MATERIAL. THE GENERAL CONTRACTOR SHALL NOTIFY THE ENGINEER SHOULD CONFLICT OCCUR.
4. PRIOR TO SITE WORK, THE GENERAL CONTRACTOR SHALL FLAG THE BOUNDARIES OF THE SEEDING AREAS, DEMARCATING THE APPLICATION AREA FOR THE SPECIFIED SEED MIXES. THE ENGINEER SHALL REVIEW AND APPROVE ALL SEEDING LOCATIONS PRIOR TO SITE WORK.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL MATERIALS FOR THE SEED APPLICATION, AS SPECIFIED, AND DELIVERY OF THE MATERIALS TO THE SITE. THE ENGINEER SHALL REVIEW AND APPROVE ALL MATERIALS, PRIOR TO THEIR INSTALLATION. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF ANY MATERIAL IF SAID MATERIAL IS NOT AS SPECIFIED AND IS REJECTED BY THE ENGINEER.
6. GENERAL CONTRACTOR SHALL ENSURE THAT ALL SEED ARE TRUE TO NAME, WITH SEED MIXES IDENTIFIED WITH THE BOTANICAL NAME, APPLICATION RATE, PURITY AND GERM, AND THAT THE SEED AND/OR SEED MIX CONTAINS NO NOXIOUS WEEDS.
7. ALL SEEDS SHALL BE THE GENUS AND SPECIES SHOWN ON THE PLANS. UNDER NO CONDITIONS WILL THERE BE ANY SUBSTITUTION OF SPECIES, EXCEPT WITH THE EXPRESS WRITTEN CONSENT OF THE ENGINEER.
8. SEEDING SHALL OCCUR FOLLOWING ALL SITE WORK AND AFTER NATIVE TOPSOIL HAS BEEN SPREAD AND THE SEEDBED HAS BEEN PREPARED.

E. MAINTENANCE NOTES

1. WORK SHALL INCLUDE, BUT IS NOT LIMITED TO, MAINTENANCE OF PLANT MATERIALS, PLANT BASINS, WATERING AND WEEDING NECESSARY TO KEEP THE PLANT MATERIAL IN A HEALTHY, GROWING CONDITION AND KEEP THE PLANTING AREAS NEAT THROUGHOUT THE THIRTY (30) DAY MAINTENANCE PERIOD.
2. ALL WEEDS SHALL BE REMOVED FROM THE CONTAINER STOCK PLANTING BASINS THROUGHOUT THE THIRTY (30) DAY MAINTENANCE PERIOD. THE WEEDS WILL BE REMOVED IN ORDER TO REDUCE COMPETITION FOR AVAILABLE NUTRIENTS, MOISTURE, AND SUNLIGHT. WEEDS SHALL BE HAND–PULLED. ALL WEED CONTROL SHALL BE DONE IN A MANNER THAT PROTECTS THE INSTALLED PLANTS. WEEDS THAT GROW WITHIN THE PLANTING BASINS SHALL BE CONTROLLED WHEN THEY REACH A HEIGHT OF 4" COVER 20% OF THE PLANTING BASIN. WEEDING SHALL CONSIST OF BAGGING AND REMOVAL OF WEED PLANTS FROM THE PROJECT SITE. NO PRE–EMERGENT HERBICIDES SHALL BE ALLOWED.
3. IF INVASIVE, NON–NATIVE PLANT SPECIES ESTABLISH WITHIN THE REVEGETATION AREAS, CONTROLS SHALL BE IMPLEMENTED TO PREVENT THE INFESTATIONS FROM DEVELOPING AND TO FURTHER ENHANCE SURVIVAL OF THE PLANTED SPECIES. HAND REMOVAL SHALL BE UTILIZED TO REMOVE AND CONTROL THE OCCURRENCE OF THESE SPECIES FROM THE PROJECT WORK AREA. INVASIVE, NON–NATIVE SPECIES SHALL BE REMOVED THROUGH HAND HOEING AND HAND PULLING, WITH ALL PLANT MATERIAL BAGGED AND REMOVED FROM THE SITE. HAND HOEING SHALL SEVER THE ROOT A MINIMUM OF 4" INCHES BELOW THE GROUND SURFACE. HAND PULLING SHALL REMOVE THE ROOT OF THE PLANT. THE GOAL OF THE MAINTENANCE ACTIONS WILL BE TO REMOVE ALL INVASIVE PLANT SPECIES FROM THE PROJECT AREA PRIOR TO THEIR DEVELOPMENT OF FLOWERING HEADS AND/OR SPREADING INTO THE REVEGETATION AREA.
3. SUPPLEMENTAL WATERING SHALL BE IMPLEMENTED FOR THE CONTAINER STOCK AND LIVE CUTTINGS. PLANTS SHALL BE HAND–WATERED NO LESS THAN TWICE A WEEK DURING THE THIRTY (30) DAY MAINTENANCE PERIOD. APPROXIMATELY 1 GALLON OF WATER SHALL BE APPLIED TO EACH PLANT AT EACH WATERING EVENT. EACH WATERING SHALL BE OF SUCH A QUANTITY AS TO PROVIDE OPTIMUM GROWTH CONDITIONS. THIS WORK SHALL INCLUDE WATERING BY HAND FROM WATER TRUCK. THIS SUPPLEMENTAL IRRIGATION SHALL BE CONTINUED UNTIL NATURAL RAINFALL LEVELS REPLENISH SOIL MOISTURE OF THE GROUND.
5. EROSION CONTROL:

   ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

   PERIODIC INSPECTION REPAIR AND MAINTENANCE OF THE EROSION CONTROL MEASURES WILL BE REQUIRED DURING THE THIRTY (30) DAY MAINTENANCE PERIOD.

POLE CUTTINGS

HARVESTING:

LIVE WILLOW POLE CUTTINGS SHALL BE INSTALLED IN SONA–TUBES AND IN CONJUNCTION WITH THE CONSTRUCTION OF THE ROCK SLOPE PROTECTION (RSP). THIS WORK SHALL BE COORDINATED WITH THE REVEGETATION SUBCONTRACTOR.

LIVE CUTTINGS SHALL BE HARVESTED AND SUBMERSED IN WATER IMMEDIATELY. CUTTINGS SHALL BE SOAKED IN WATER A MINIMUM OF 24 HOURS.

MAKE CLEAN CUTS WITH UNSPLIT ENDS. TRIM BRANCHES FROM CUTTING AS CLOSE AS POSSIBLE. THE BUTT END OF THE CUTTING SHALL BE POINTED OR ANGLED AND THE TOP END SHALL BE CUT SQUARE.

DIAMETER:
POLE CUTTINGS SHALL BE 2–3.5 INCHES IN DIAMETER.

LENGTH:
POLE CUTTINGS SHALL BE 8–10 FEET IN LENGTH.

POLES SHALL BE CUT SO THAT A TERMINAL BUD SCAR IS WITHIN 1–4 INCHES OF THE TOP. AT LEAST 2 BUDS AND/OR BUD SCARS SHALL BE ABOVE THE RSP AFTER PLANTING.

INSTALLATION:

WHEN THE LIVE CUTTINGS ARE REMOVED FROM SOAKING IN WATER, THEY SHOULD BE IMMEDIATELY TRANSPORTED TO THE SITE. DO NOT LEAVE THEM EXPOSED TO DIRECT SUNLIGHT. CUTTINGS MUST BE KEPT MOIST AND COVERED WITH WET BURLAP SACKS DURING TRANSPORT. AT THE CONSTRUCTION SITE CUTTINGS SHALL BE IMMEDIATELY STORED WITH THE BUTT–END IN WATER AND PLACED IN A COOL, HUMID, DARK PLACE UNTIL READY TO PLANT.

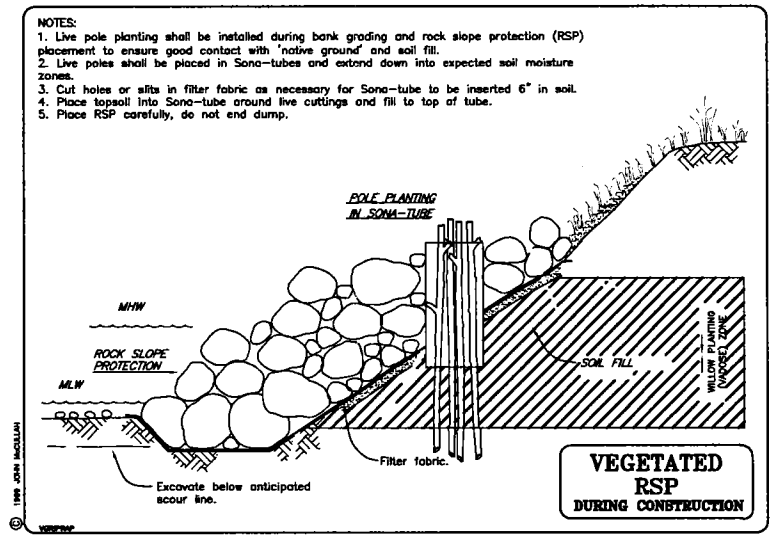
PLANT LIVE CUTTINGS AS SHOWN IN DETAILS AND ON PLANTING PLAN.

INSTALL THE LIVE CUTTINGS IN SONA–TUBES AND DURING THE RSP PLACEMENT SUCH THAT THE CUTTINGS ARE DEEPLY INSERTED INTO NATIVE SOIL AND EXTEND UPWARD THROUGH THE RSP. CUTTINGS MUST BE PLANTED WITH BUTT–ENDS INTO THE GROUND. LEAF BUD SCARS OR EMERGING BUDS SHOULD ALWAYS POINT UP. DO NOT DAMAGE THE BUDS, STRIP THE BARK OR SPLIT THE CUTTING DURING INSTALLATION. ALTHOUGH SOME DAMAGE IS TO BE EXPECTED, SPLIT OR EXTREMLY DAMAGED POLES SHALL BE REMOVED AND REPLACED.

CUTTINGS THAT ARE INSTALLED BEFORE THE RAIN HAS MOISTENED THE GROUND TO A MINIMUM DEPTH OF 14" MUST BE WATERED IMMEDIATELY. FILL THE PLANTING HOLE WITH WATER FROM A WATERING TRUCK, 2 GALLONS PER CUTTING. ALLOW WATER TO SOAK IN BEFORE INSERTING CUTTINGS.

CUTTINGS SHALL BE LONG ENOUGH TO REACH INTO THE MIDSUMMER GROUND WATER TABLE, OR A MINIMUM OF 12 INCHES INTO NATIVE SOIL.

IT IS ESSENTIAL TO HAVE GOOD CONTACT BETWEEN THE CUTTING AND SOIL FOR ROOTS TO SPROUT. TAMP THE SOIL AROUND THE CUTTING.

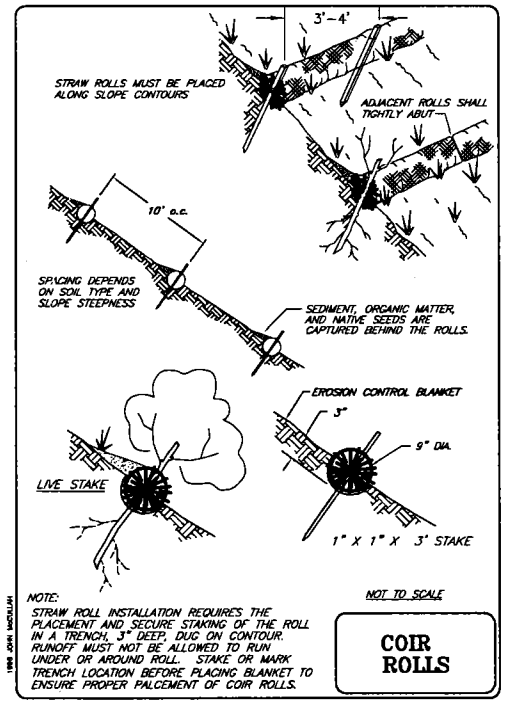


COIR ROLLS

INSTALL PER MANUFACTURES SPECIFICATIONS.
THIS INCLUDES THE FOLLOWING: PREPARE THE SLOPE BEFORE THE INSTALLATION PROCEDURE IS STARTED. DIG 3–INCH DEEP TRENCHES ACROSS THE SLOPE ON CONTOUR TO PLACE THE ROLLS IN. START BUILDING TRENCHES FROM THE BOTTOM OF THE SLOPE AND WORK UP. CONSTRUCT TRENCHES AT CONTOUR INTERVALS OF 10–15 FEET APART DEPENDING ON STEEPNESS OF SLOPE.

MARK TRENCH LOCATION PRIOR TO HYDROSEEDING AND INSTALLATION OF EROSION CONTROL BLANKET (SEE HYDROSEEDING AND EROSION CONTROL BLANKET NOTES AND DETAIL FOR INSTALLATION METHODS).

INSTALL COIR ROLL AFTER EROSION CONTROL BLANKET IS INSTALLED AND BEFORE HYDROSEEDING. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL, EROSION CONTROL BLANKET AND THE STRAW WATTLE. USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE WATTLE AND INTO THE SOIL FOR THE POLE CUTTING OR WOODEN STAKES. DRIVE THE STAKE THROUGH PREPARED HOLE INTO THE SOIL. LEAVE ONLY 1–2 INCHES OF STAKE EXPOSED ABOVE ROLL. INSTALL STAKES AT LEAST EVERY 3 FEET APART. ALTERNATE STRAIGHT LIVE POLE WILLOW CUTTING STAKES, ¾ INCH DIAMETER; ALTERNATE WITH WOODEN STAKES



LIVE STAKING

Construction Specifications:
Harvesting:
– Stakes shall be harvested and planted when the willows, or other chosen species, are dormant. This period is generally from late fall to early spring, or before the buds start to break.
– When harvesting cuttings, select healthy, live wood that is reasonably straight.
– Use live wood at least 1 year old or older. Avoid suckers of current years growth as they lack sufficient stored energy reserves to sprout consistently. The best wood is 2–5 years old with smooth bark that is not deeply furrowed.
– Make clean cuts with unsplit ends. Trim branches from cutting as close as possible. The butt end of the cutting shall be pointed or angled and the top end shall be cut square.
– Identification of the top and bottom of cutting as accomplished by angle cutting the butt end. The top, square cut, can be pointed and sealed by dipping the top 1–2 inches into a 50–50 mix of light colored latex paint and water. Sealing the top of stake will reduce the possibility of desiccation and disease caused mortality, assure the stakes are planted with the top up, and makes the stakes more visible for subsequent planting evaluations.
Diameter:
– Cuttings should generally be 3/4 inch or larger depending on the species. Highest survival rates are obtained from using cuttings 2–3 inches in diameter. Larger diameter cuttings are needed for planting into rock riprap.
Length:
– Cuttings of small diameter (up to 1–1/2 inches) shall be 18 inches long minimum. Thicker cuttings should be longer. Cuttings should be long enough to reach into the midsummer water table, if possible.
– No less than 1/2 total length must be into the ground. – Stakes should be cut so that a terminal bud scar is within 1–4 inches of the top. At least 2 buds and/or bud scars shall be above the ground after planting.
Installation:
– Stakes must be planted with butt–ends into the ground. Leaf bud scars or emerging buds should always point up.
– Stakes must not be allowed to dry out. All cuttings should be soaked in water for a minimum of 24 hours. Soaking significantly increases the survival rate of the cuttings, however they may be planted the same day they are harvested.
– Plant stakes 3 feet on center.
– Set the stake as deep as possible into the soil, preferably with 80 percent of its length into the soil and in contact with midsummer water table.
– It is essential to have good contact between the stake and soil for roots to sprout. Tamp the soil around the cutting.
– Do not damage the buds, strip the bark or split the stake during installation.
– Split or damaged stakes shall be removed and replaced. Inspection and Maintenance:
– Periodic inspection repair and maintenance will be required during the first two years or until the vegetation is established.

NOTES & DETAILS FOR REVEGETATION PLAN

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES 0 1 2 3

DRAWING NAME: Topo.dwg

BY	REVISION	DATE

PROFESSIONAL ENGINEER — TIMOTHY J. BAILEY — No. 52788 — Exp. 6/30/11 — CIVIL — STATE OF CALIFORNIA

PROJECT ENGINEER
T. BAILEY

COUNTY OF SANTA CRUZ – DEPARTMENT OF PUBLIC WORKS

GRAHAM HILL ROAD BRIDGE REPAIR
REVEGETATION

DRAWN: TJB
CHECKED:
DATE:
SCALE: 1"=5'
JOB NO. 79095
SHEET L2 OF

Attachment 5

Mitigation Monitoring and Reporting Program

for the

Graham Hill Road Bridge (36C-0101) at San Lorenzo River

Storm Damage Repair Project

Santa Cruz County, CA

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County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

MITIGATION MONITORING AND REPORTING PROGRAM for the GRAHAM HILL ROAD BRIDGE STORM DAMAGE REPAIR PROJECT

Application No. N/A, January 3, 2014

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
Biological Resources					
BIO-1	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?	USFWS has issued a programmatic biological opinion for Caltrans projects that are both likely and not likely to adversely affect CRLF (see Appendix I of Attachment 3 of the Initial Study). The "measures to avoid adverse effects" identified in the programmatic biological opinion for projects not likely to adversely affect CRLF will be followed by the Project: • A biologist with experience in the identification of all life stages of the CRLF, and its critical habitat (75 FR 12816), will survey the project site no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is detected the Service will be notified prior to the start of construction. If Caltrans and the Service determine that adverse effects to the CRLF or its critical habitat cannot be avoided, the proposed project will not commence until the Caltrans completes the appropriate level of consultation with the Service. • Work activities will take place during the dry season, between April 1 and November 1, when water levels are typically are at their lowest, and California red-legged frogs are likely to be more detectable. Should activities need to be conducted outside of this period, Caltrans may conduct or authorize such activities after obtaining the Service's written approval. • Before work begins on any proposed project, a biologist with experience in the ecology of the California red-legged frog, as well as the identification of all its life stages, will conduct a training session for all construction personnel, which will include a description of the California red-legged frog, its critical habitat, and specific measures that are being implemented to avoid adverse effects to the subspecies during the proposed project. • If any life stage of the California red-legged frog is detected in the project area during construction, work will cease immediately and the resident engineer, authorized biologist, or biological monitor will notify the Ventura Fish and Wildlife Office via telephone or electronic mail. If Caltrans and the Service determine that adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation. • During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be	Santa Cruz County DPW and Contractor	All measures are to be carried out under the direction of a biologist with experience in the ecology of the California red-legged frog	To be completed prior to ground disturbance.

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		removed from work areas. • Prior to the onset of work, Caltrans will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to implement should a spill occur. • All refueling, maintenance; and staging of equipment and vehicles will occur at least 60 feet from aquatic or riparian habitat and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of aquatic or riparian habitat does not occur during such operations by implementing the spill response plan described above. • Plants used in re-vegetation will consist of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or practical. • Habitat contours will be returned to their original configuration at the end of project activities in all areas that have been temporarily disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or modification of original contours would benefit the California red-legged frog. • The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to habitat for the California red-legged frog; this goal includes locating access routes and construction areas outside of aquatic habitat and riparian areas to the maximum extent practicable. • To control sedimentation during and after project implementation, Caltrans will implement best management practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, Caltrans will attempt to remedy the situation immediately, in coordination with the Service. • If a work site is to be temporarily dewatered by pumping, the intake will be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected from entering the pump system. If California red-legged frogs are detected during dewatering, and adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation. • Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with			

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		the least disturbance to the substrate. Alteration of the creek bed will be minimized to the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project. • Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs. • A qualified biologist will permanently remove any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code. • To ensure that diseases are not conveyed between work sites by the Service approved biologist, the enclosed fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.			
BIO-2		Under the MBTA, nests that contain eggs or unfledged young are not to be disturbed during the breeding season. The nesting season for migratory birds and birds of prey is generally 1 February through 31 August. Implementation of the following measures will avoid potential impacts. • If construction begins outside the 1 February to 31 August breeding season, there will be no need to conduct a preconstruction survey for active nests. • If construction is scheduled to begin between 1 February and 31 August then a qualified biologist shall conduct a preconstruction survey for active nests. The survey will include a 250 foot radius from the work area for nesting birds of prey and a 50 foot radius from the work area for other nesting MBTA protected birds. The survey will be conducted from publicly accessible areas within one two weeks prior to construction. If no active nest of a bird of prey or MBTA bird is found, then no further mitigation measures are necessary. • If an active nest of a bird of prey or MBTA bird is found, then the biologist shall determine a buffer suitable to protect the nest until fledging. The size of suitable buffers depends on the species of bird, the location of the nest relative to the Project, Project activities during the time the nest is active, and other Project specific conditions. • No construction activity shall be allowed in the buffer until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller buffer will protect the active nest. The buffer may be reduced if the biologist monitors the construction activities and determines that no disturbance to the active nest is occurring. • If an active nest is identified in or adjacent to the construction zone after construction has started, the above measures will be implemented to ensure construction is not causing disturbance to the nest.	County of Santa Cruz DPW and Contractor	All measures are to be carried out under the direction of a qualified biologist for all construction beginning during the nesting season.	To be completed prior to ground disturbance.
BIO-3		Measures included in MM BIO-2 for migratory birds and birds of prey will also protect burrowing owl. If an active burrow of a burrowing owl is found	County of Santa Cruz DPW and	All measures are to be carried out under	Prior to ground disturbance.

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		in the construction zone during the nesting season, passive relocation may be conducted by a qualified biologist in accordance with the DFG (1995) guidelines after the qualified biologist has determined that the chicks have fledged or has determined through non-invasive means that the owls have not begun egg laying or the nesting attempt was unsuccessful.	Contractor	the direction of a qualified biologist for all construction beginning during the nesting season.	
BIO-4		A preconstruction survey for SFDFW houses in the BSA will be conducted by a qualified biologist within 2 weeks prior to construction. If no houses are found, no further action is necessary. If houses are found within the area to be disturbed in the riparian woodland, the alignment of the temporary impact to the riparian woodland will be shifted to avoid impacting houses. The edges of temporary construction impact within the riparian woodland will be fenced to avoid disturbing riparian woodland unnecessarily. This will also protect any avoided SFDFW houses.	County of Santa Cruz DPW and Contractor	All measures are to be carried out under the direction of a qualified biologist.	Prior to ground disturbance.
BIO-5		Demolition of the existing wing wall and attachment of the new wing wall to the bridge has the potential to disturb bats. However, the placement of RSP is not likely to disturb bats. The small size and limited scope of the Project restrict potential impacts to bats. A preconstruction survey for bats will be conducted by a qualified biologist two weeks prior to the commencement of construction activities. If roosting bats are detected under the bridge, exclusion of these bats shall take place prior to construction. Exclusion need only be employed around the portion of the bridge where wing wall demolition and wing wall attachment to the bridge will occur. If a maternal roost is detected or exclusion measures are unsuccessful, the County will contact DFG for additional guidance on bat avoidance and impact minimization during proposed work.	County of Santa Cruz DPW and Contractor	All measures are to be carried out under the direction of a qualified biologist.	Prior to ground disturbance.
BIO-6	Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Riparian woodland cannot be avoided during construction. The removal of riparian woodland and native trees will be minimized with the following environmental commitments: • Prior to construction, the Project Engineer and the Project Biologist will identify the limits of construction so as to maximize native tree and shrub retention. Temporary fencing will be placed along the limits of construction to avoid unnecessary disturbance to riparian woodland. • Where possible, native vegetation that cannot be avoided will be cut at ground level rather than removed by the roots.	County of Santa Cruz DPW and Contractor	A qualified biologist will assist in reducing the number of trees impacted by project construction.	To be completed prior to and during construction
BIO-7		The Project shall restore disturbed riparian woodland with native riparian vegetation. Willows shall be planted in the RSP using Sona-Tubes. Revegetation shall follow the requirements contained as Appendix H of Attachment 3 in the Initial Study. In addition, native species contained in the Revegetation Planting and Erosion Control Specifications (see Appendix G of Attachment 3 in the Initial Study) shall be used in erosion control efforts.	County of Santa Cruz DPW and Contractor	A qualified revegetation specialist will ensure compliance.	To be completed following project construction.
BIO-8		No in-water work is proposed. The work that will occur in the San Lorenzo River will be placement of RSP adjacent to a bridge pier. During	County of Santa Cruz DPW and	To be monitored by the County DPW and	To be implemented during project

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		construction, water quality will be protected by implementation of best management practices (BMPs) of the California Stormwater Quality Association (2003) to minimize the potential for siltation and downstream sedimentation in the San Lorenzo River. The base of the bridge pier was above the water level of the River on 10 February 2012 during fieldwork. Water levels are generally high in February but the 2011-2012 winter was drier than normal. Based on the conditions in February 2012, it is expected that proposed work around the base of the bridge pier will be above the water level when construction occurs during the summer. Minimization efforts will include marking the limits of construction with temporary fencing to prevent affecting the San Lorenzo River unnecessarily. Impacts will be minimized by conducting work during the period of June 15 to October 15, when flow within the River is near the annual minimum, unless appropriate resource agencies provide approval of work outside that period. Mitigation measures for the riparian woodland will protect the riparian corridor of the San Lorenzo River.	Contractor	the Contractor.	construction.
BIO-9		During construction, water quality will be protected by implementation of BMPs to minimize the potential for siltation and downstream sedimentation in Channel 1. Minimization efforts will include marking the limits of construction with temporary fencing to prevent affecting Channel 1 unnecessarily. Impacts will be minimized by conducting in-channel work between 15 April and 15 October. The mitigation measures for riparian woodland will also protect Channel 1.	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.
Noise					
NOI-1	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? Exposure of persons to or generation of noise levels in excess of standards established in the General Plan or noise ordinance, or applicable standards of other agencies?	Limit construction activity to between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, 9:00 a.m. to 5:00 p.m. Saturday in order to avoid noise during more sensitive nighttime hours. Prohibit construction activity on Sundays.	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.
NOI-2		Require that all construction and maintenance equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.
NOI-3		Prohibit gasoline or diesel engines from having unmuffled exhaust.	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.
NOI-4		Use noise-reducing enclosures around stationary noise-generating equipment capable of 6 dB attenuation.	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.
Air Quality					
AQ-1	Violate any air quality standard or contribute	Contracted Diesel Control Measures: In addition to the use of Tiered engines and California ultralow sulfur diesel fuel, the following requirements	County of Santa Cruz DPW and	To be monitored by the County DPW and	To be implemented during project

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
	substantially to an existing or projected air quality violation?	will be incorporated into contract specifications: • To minimize potential diesel odor impacts on nearby receptors (pursuant to MBUAPCD Rule 402, Nuisances), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area. A written log of required tune-ups will be maintained and a copy of the log will be submitted to the County of Santa Cruz Department of Public Works (DPW) Planning Director for review every 2,000 service hours. • Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) will be electrically powered unless the contractor submits documentation and receives written approval from the County of Santa Cruz DPW that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultralow sulfur diesel fuel with maximum sulfur content of 15 ppm by weight (ppmw S), or an approved alternative fuel, will be used for on-site fixed equipment not using line power. • To minimize diesel emission impacts, construction contracts will require off-road compression ignition equipment operators to reduce unnecessary idling with a 2-minute time limit, subject to monitoring and written documentation. • On-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer than 2 minutes, subject to monitoring and written documentation. • Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible. • Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible. Feasibility will be determined consistent with Best Available Control Technology (BACT) general criteria: 1) achieved in practice; 2) contained in adopted control measures; 3) technologically feasible; and 4) cost-effective.	Contractor	the Contractor.	construction.
AQ-2		Diesel Particulate Matter Emissions Control Measures: In addition, the project will implement the following measures to reduce particulate matter emissions from diesel exhaust: • Grid power will be used instead of diesel generators where it is feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility). • The project specifications will include 13 CCR Sections 2480 and 2485, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines will be limited to 5 minutes when within 100 feet of homes or schools while the driver is	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		resting. • The project specifications will include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements; emission standards for operation of any stationary, diesel-fueled, compression-ignition engines; and operation restrictions within 500 feet of school grounds when school is in session. • A schedule of low-emissions tune-ups will be developed and such tune-ups will be performed on all equipment, particularly for haul and delivery trucks. • Low-sulfur (≤ 15 ppmw S) fuels will be used in all stationary and mobile equipment.			
AQ-3		Dust Control Measures: The following controls will be implemented at the construction and staging sites as applicable: • Water all active construction areas at least twice daily as necessary and indicated by soil and air conditions. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard. • Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. • Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites. • Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, will be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities will be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • When materials are transported off site, all material will be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained. • All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		• Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • Any site with 150 or more vehicle trips per day will prevent carryout and trackout. • Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more). • Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.). • Limit traffic speeds on unpaved roads to 15 miles per hour. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent. • Replant vegetation in disturbed areas as quickly as possible. • Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. • Install wind breaks at windward side(s) of construction areas. • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 20 miles per hour. • Limit the area subject to excavation, grading, and other construction activity at any one time.			
AQ-1	Expose sensitive receptors to substantial pollutant concentrations?	Contracted Diesel Control Measures: In addition to the use of Tiered engines and California ultralow sulfur diesel fuel, the following requirements will be incorporated into contract specifications: • To minimize potential diesel odor impacts on nearby receptors (pursuant to MBUAPCD Rule 402, Nuisances), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area. A written log of required tune-ups will be maintained and a copy of the log will be submitted to the County of Santa Cruz Department of Public Works (DPW) Planning Director for review every 2,000 service hours. • Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) will be electrically powered unless the contractor submits documentation and receives written approval from the County of Santa Cruz DPW that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultralow sulfur diesel fuel with maximum sulfur content of 15 ppm by weight (ppmw S), or an approved alternative fuel, will be used for on-site fixed equipment not using line power. • To minimize diesel emission impacts, construction contracts will require	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
		off-road compression ignition equipment operators to reduce unnecessary idling with a 2-minute time limit, subject to monitoring and written documentation. • On-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer than 2 minutes, subject to monitoring and written documentation. • Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible. • Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible. Feasibility will be determined consistent with Best Available Control Technology (BACT) general criteria: 1) achieved in practice; 2) contained in adopted control measures; 3) technologically feasible; and 4) cost-effective.			
AQ-2		Diesel Particulate Matter Emissions Control Measures: In addition, the project will implement the following measures to reduce particulate matter emissions from diesel exhaust: • Grid power will be used instead of diesel generators where it is feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility). • The project specifications will include 13 CCR Sections 2480 and 2485, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines will be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting. • The project specifications will include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements; emission standards for operation of any stationary, diesel-fueled, compression-ignition engines; and operation restrictions within 500 feet of school grounds when school is in session. • A schedule of low-emissions tune-ups will be developed and such tune-ups will be performed on all equipment, particularly for haul and delivery trucks. Low-sulfur (≤ 15 ppmw S) fuels will be used in all stationary and mobile equipment.	County of Santa Cruz DPW and Contractor	To be monitored by the County DPW and the Contractor.	To be implemented during project construction.

Attachment 6

National Marine Fisheries Letter to Caltrans Ending Informal Consultation under the Endangered Species Act for Coho Salmon and Steelhead

for the

Graham Hill Road Bridge (36C-0101) at San Lorenzo River

Storm Damage Repair Project

Santa Cruz County, CA

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

September 20, 2013

In response refer to:
2013-9786

Cathy Stettler
Acting Branch Chief
California Department of Transportation
Caltrans District 5, Environmental Stewardship Branch
50 Higuera Street
San Luis Obispo, California 93401-5415

Dear Ms. Stettler:

Thank you for your letter of August 9, 2013, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective October 1, 2012, the California Department of Transportation (Caltrans) will be acting as the lead agency as per the Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21). This law allows the Secretary of Transportation to assign, and Caltrans to assume, responsibility for the environmental review, consultation, or other actions required under any environmental law with respect to one or more highway projects within the state of California. The MOU is an extension of previous agreements between FHWA and Caltrans in 2007 and 2010, under a similar law. Therefore, Caltrans is considered the federal action agency for ESA consultations with NMFS for federally funded projects. This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA). These consultations pertain to Caltrans' proposed Graham Hill Road Bridge Storm Damage Repair Project in Santa Cruz County, California.

Graham Hill Road Bridge crosses the San Lorenzo River in Felton, an unincorporated area in Santa Cruz County, California. The San Lorenzo River originates in the Santa Cruz Mountains and flows south to meet the Monterey Bay approximately 10 miles downstream of the project site. Caltrans and the County of Santa Cruz (County) propose to use Federal funds to replace a damaged wing wall and repair scour protection on the Graham Hill Road Bridge. Proposed project activities include removal and construction of an approximately 15 foot long concrete wing wall at the existing location (along the roadway on the northeast corner of the bridge), and

replacement of rock slope protection (RSP) around the eastern bridge pier and base of the new wing wall. Below the ordinary high water mark (OHWM) of the San Lorenzo River, construction will be limited to the installation of approximately two cubic yards of RSP at the eastern bridge pier. No in-water work is proposed and construction is estimated to last approximately four weeks between July 15 and October 15.

Construction access will occur from the roadway and 'Channel 1', a concrete and rock-lined channel that runs along the roadway on the northeastern side of the bridge. Standard best management practices for construction site, erosion, and sediment and stormwater runoff control will be utilized on this project. This will include installation of erosion control materials on any bare soils, and replanting cleared areas with native vegetation.

Caltrans has determined the potential impacts related to the Graham Hill Road Bridge Storm Damage Repair Project are not likely to adversely affect listed species or designated critical habitat, and has asked NMFS for concurrence with this determination.

Endangered Species Act

In your August 9, 2013, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect Central California Coast (CCC) steelhead *(Oncorhynchus mykiss)*, and CCC coho salmon *(O. kisutch)*. Available information indicates the following listed species (Distinct Population Segments [DPS] or Evolutionarily Significant Units [ESU]) or designated critical habitat may occur in the project area.

Central California Coast steelhead DPS
Threatened (71 FR 834; January 5, 2006)
Critical Habitat (70 FR 52488; September 2, 2005); and
Central California Coast coho salmon ESU
Endangered (70 FR 37160; June 28, 2005)
Critical Habitat (64 FR 24049; May 5, 1999).

The life history of CCC coho salmon is summarized by Shapovalov and Taft (1954) and Hassler (1987), and the life history of CCC steelhead is summarized by Busby *et al.* (1996). Coho salmon have become extremely uncommon in the San Lorenzo River, although spawning was confirmed in 2013 (one coho redd and three adults) (Jankovitz 2013). The San Lorenzo River Watershed continues to support a run of CCC steelhead and is designated as critical habitat for CCC coho salmon and steelhead (64 FR 24049; 70 FR 52488).

In 2012 and 2013, most steelhead (90 percent) and all coho salmon spawning was observed downstream of the project site (Jankovitz 2013). In September 2011, 74 juvenile steelhead were recorded in the 580 foot long reach of the San Lorenzo River adjacent to the bridge (DWAA 2011). Therefore, waters of the San Lorenzo River adjacent to the project area are used primarily as rearing and migration habitat for juvenile salmonids. CCC steelhead and coho salmon adults typically migrate into the San Lorenzo River Watershed from the Monterey Bay between December and April; whereas, juvenile steelhead and coho salmon smolts emigrate from the watershed between March and June (DLAA 2011; Jankovitz 2013). Steelhead rearing

habitat in Channel 1, where the majority of the construction access will take place, is considered poor because it is lined primarily with concrete and dry during summer months.

All proposed activities will occur on dry land, and only two cubic yards of RSP scour protection (around the eastern bridge pier) will be installed below the OHWM. It is unlikely that this nominal amount of RSP will affect the value of riparian habitat in the area. Adjacent to the project site, the San Lorenzo River functions primarily as rearing and migratory habitat for steelhead, and in some years, coho salmon. Because all work will take place on dry land and during summer months, rearing juvenile salmonids are not likely to be affected by construction activities. Following construction and the onset of winter flows, water quality could be temporarily affected through increased levels of turbidity. However, temporarily disturbed areas will be restored and re-vegetated, and impacts to water quality are expected to be temporary, minor, localized and insignificant. Overall, the project is not expected to result in a net change to existing habitat values or adversely affect essential physical or biological features associated with designated critical habitat for the CCC steelhead or CCC coho salmon.

Based on the best available information, NMFS concurs with Caltran's determination that CCC steelhead and CCC coho salmon are not likely to be adversely affected by the Graham Hill Road Bridge Storm Damage Repair Project. Regarding designated critical habitat, NMFS has determined the proposed project is not likely to adversely modify designated CCC steelhead or CCC coho salmon critical habitat. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed Graham Hill Road Bridge Storm Damage Repair Project in Santa Cruz County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. EFH includes all associated physical, chemical and biological properties of aquatic habitat that are used by fish. The project is located within an area identified as EFH for coho salmon, a species managed by the Pacific Salmon Fishery Management Plan (FMP) under the MSA.

NMFS has evaluated the proposed project for potential adverse effects to EFH pursuant to Section 305(b)(2) of the MSA. Under the EFH implementing regulations [50 C.F.R. 600.810(a)], the term "adverse effect" is defined as any impact that reduces quality and/or quantity of EFH and may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce quantity and/or quality of EFH. Based on information provided in the EFH assessment and developed during consultation, the proposed action may result in temporary increases in turbidity, and therefore NMFS has determined that the proposed action would adversely affect EFH for coho salmon. However, the

proposed actions contain adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,

for William W. Stelle, Jr.
Acting Regional Administrator

cc: Kelda Wilson, Caltrans District 5
Tim Bailey, County of Santa Cruz
Chad Mitcham, USFWS, Ventura
Suzanne DeLeon, CDFW, Yountville
Copy to File ARN: 151422SWR2013SR00256

	ROUTE DATA	COPY	ATT.
1	DIRECTOR	✓	
	ASST. DIR. SPEC. SVCS.		
	RECYCLING/SOLID WASTE		
	LANDFILL OPERATIONS		
	WATER CON/FLOOD CONT.		
	STORM WATER MANG.		
	CONSTRUCTION ENG.		
	SANITATION ENG.		
	WATER & WASTEWATER		
7	ASST. DIR. TRANSPORT.	✓	
	ROAD OPS. ENG.		
	PERMITS / ENCROACH.		
	DRAINAGE OPERATIONS		
	RD. MAINT. OPERATIONS		
	RDA ENG.		
3	ROAD DESIGN ENG.	✓	✓
	SURVEY / DEVELOPMENT.		
	TRANSP / RD. PLANNING		
	ASST. DIR. ADMIN. SVCS.		
	REAL PROPERTY / FLEET		
	CSA / PRGM ADMIN.		
	SAFETY OFFICER / LIVE OAK P.		
	PERSONNEL / MIS		

Literature Cited

Busby, P.J., T.C. Wainwright, G.J. Bryant, L. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27. United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington. August, 1996.

DWAA (D. W. Alley & Associates). 2011. Comparison of Juvenile Steelhead Densities, 1997-2001, 2003-2005, and 2011 in the Middle and Upper San Lorenzo River and 5 Tributaries, Santa Cruz County, California; Appendix B. detailed analysis of 2011 steelhead monitoring in the San Lorenzo, Soquel, Aptos and Corralitos watersheds. 216 p.

Jankovitz, J.D. 2013. 2012-2013 Escapement Estimates for Central California Coast Coho Salmon *(Oncorhynchus kisutch)* and Steelhead *(Oncorhynchus mykiss)* South of the Golden Gate. Pacific States Marine Fisheries Commission. 33 p.

Hassler, T.J. 1987. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest) - coho salmon. USFWS Biological Report 82(11.70):1-19. United States Fish and Wildlife Service.

Shapovalov, L., and A. C. Taft. 1954. The life histories of the steelhead rainbow trout (*Salmo gairdneri gairdneri*) and silver salmon (*Oncorhynchus kisutch*) with special reference to Waddell Creek, California, and recommendations regarding their management. California Department of Fish and Game Fish Bulletin 98: 375 p.

64 FR 24049. May 5, 1999. Final Rule and Correction: Designated Critical Habitat for Central California Coast Coho and Southern Oregon/Northern California Coast Coho Salmon. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 64 Pages 24049-24062.

70 FR 52488. September 2, 2005. Final Rule: Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 70 Pages 52487-52627.