

**CALIFORNIA COASTAL COMMISSION**

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**STAFF REPORT AND RECOMMENDATION****ON CONSISTENCY DETERMINATION**

Consistency Determination No.	CD-034-03
Staff:	JRR-SF
File Date:	4/17/2003
60th Day:	6/16/2003
75th Day:	7/1/2003
Commission Meeting:	6/13/2003

**FEDERAL AGENCY:** U.S. Army Corps of Engineers**DEVELOPMENT****LOCATION:**

San Lorenzo River Estuary, City of Santa Cruz (Exhibits 1 and 2)

**DEVELOPMENT****DESCRIPTION:**

Bank Stabilization along a 900-foot segment of the estuary (Exhibit 3-7)

**SUBSTANTIVE FILE DOCUMENTS:** (See Page 17)**EXECUTIVE SUMMARY:**

The Corps proposes to construct a bank-stabilization wall along 900 feet of severely eroded bank of the San Lorenzo River, within the City of Santa Cruz. The project site is along the west bank of the river between the Soquel Avenue bridge and the Riverside Avenue bridge. Laurel Street Extension, a narrow one-way road, is at the top of the bank and becomes Third Street before intersecting with Riverside Avenue. The Corps proposes to construct a soil-nail wall, at this location. The wall will also include aesthetic treatment and habitat enhancement components. At the base of the wall, the Corps will install habitat features such as log crib walls, root wad vanes, boulders, and in-stream vegetation. The main function of these features is to enhance the fish habitat.

The proposed project includes the placement of fill into the aquatic environment and requires the alteration of an existing river channel. This project is consistent with Sections 30233 and 30236 of the Coastal Act because it is an allowable stream alteration for flood-control purposes. Additionally, there are no alternatives to protect existing structures and the proposed project is the least damaging feasible alternative.

Finally, the project includes revegetation and habitat enhancements that will mitigate for any adverse impacts on stream resources. Therefore, the project is consistent with the wetland fill and stream alteration policies of the CCMP.

The San Lorenzo River provides habitat for both steelhead trout and coho salmon, federally listed threatened species in this river, and, therefore, the river is an environmentally sensitive habitat area (ESHA). The proposed project includes mitigation measures that will minimize the disturbance to these species from construction activities associated with this project. Additionally, the project includes habitat enhancement features that will improve the anadromous fish resources of this river. Therefore, the project is consistent with Section 30240 of the Coastal Act, the ESHA policy of the CCMP.

The proposed project involves the replacement of an existing road and storm drain system. The project will not increase the amount of impervious surfaces. The Corps proposed several construction related best management practices (BMPs) to avoid water quality effects from construction. Additionally, the Corps has modified its project to place filtering equipment in the storm drain to reduce any non-point source pollution discharged from the project site after construction. With these mitigation measures, the Corps' project will protect water quality resources. Therefore, the project is consistent with Section 30231 of the Coastal Act, the water quality policy of the CCMP.

The proposed project includes visual treatment of the wall and vegetation that will reduce the adverse visual affects from the project. Additionally, the Corps will design the proposed lighting system to reduce the visual effects during the night. Therefore, the project is consistent with Section 30251 of the Coastal Act, the visual policy of the CCMP. Finally, the project will interfere with pedestrian and bicycle access during construction. However, it will improve pedestrian and bicycle use from the existing levee accessway. Therefore, the project is consistent with Sections 30210 and 30223 of the Coastal Act, the recreation and access policies of the CCMP.

## **STAFF SUMMARY AND RECOMMENDATION:**

### **I. Project Description.**

The Corps proposes to construct a bank stabilization wall along 900 feet of severely eroded bank of the San Lorenzo River, within the City of Santa Cruz. The San Lorenzo River, an approximately 137-square mile watershed, drains to the Pacific Ocean at the north end of the Monterey Bay. The project site is along the west bank of the river at the bend of the river before reaching the ocean. This reach of the San Lorenzo River extends from the Soquel Avenue bridge to the Riverside Avenue bridge. The project area consists of an approximately 900-linear foot section of river that extends upstream from the Riverside Avenue bridge along a heavily scoured bank. Laurel Street Extension, a narrow one-way road, is at the top of the bank and becomes Third Street before intersecting with Riverside Avenue.

The Corps proposes to construct the wall away from the existing slope of the Purisima Shelf formation, set back far enough to allow establishment of a natural slope and

increase the area for in-channel vegetation. The height of the wall would range from approximately 9 feet to 20 feet. Specifically, the Corps proposes to construct a soil-nail wall, which is a wall that relies on mechanical anchors and shotcrete to provide the force required to retain the riverbank (Exhibit 8). Soil-nail walls consist of three main components: (1) a wall facing, (2) soil nails, and (3) shotcrete. The wall will also include the following elements: 1) weep holes through the face of the wall for drainage; 2) minor amounts of backfill; and 3) aesthetic treatment that will allow the wall to blend in with the natural environment and look similar to natural rock formations and nearby coastal bluffs. The Corps considers this design to be the most economically feasible design, given the limited construction time and excavation space required to install it.

The project also contains habitat enhancement components. At the base of the wall, the Corps will install habitat features such as log crib walls, root wad vanes, boulders, and in-stream vegetation (Exhibit 9-12). The main functions of these features are to enhance the formation of pools for fish habitat, provide high flow refuge for migrating fish, support soil substrate for planting, and provide suitable in-channel habitat. The Corps will install the following habitat enhancement features: 1) approximately 119 linear feet of a one-tiered log crib structure and 261 feet of a two-tiered log crib structure along the base of the bank protection wall; 2) 50 linear feet of footer logs; 3) 76 linear feet of root wads; 4) 90 feet of log vanes, which will deflect and reduce flow velocities during high flow events; and 5) approximately 24 cubic yards of boulders that will anchor the log vanes and provide substrate for plant establishment. The Corps will use about 450 tons of river stone and sandy loam material to fill in the voids of the log crib structure to establish in-channel vegetation. In-channel plantings include species native to the San Lorenzo River Watershed (most likely tree pole cuttings taken from within this river system and seedlings grown from local nurseries).

At the top of the wall, the Corps will construct an 8- to 10-foot-wide maintenance road for both maintenance and emergency vehicles to connect to a downstream river maintenance road. This maintenance road will parallel the Laurel Street Extension and continue along Third Street toward Riverside Avenue Bridge. The project includes the construction of an overlook at the intersection of Laurel Street Extension and Third Street, protective railings, and overhead street lighting. Adjacent to the maintenance access road, the Corps will install a continuous 3-foot-wide vegetated strip consisting of native trees and shrubs along the entire length of the project. The trees will provide shade cover for the river and divide the street from the maintenance road. The vegetation will also contribute as habitat refuge for local wildlife. Finally, the Corps will replace and improve the Laurel Street Extension and Third Street, maintaining Laurel Street Extension's 13-foot one-way direction and Third Street's two-way (12-foot wide) lane direction.

## **II. Status of Local Coastal Program.**

The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If an LCP that the Commission has certified and incorporated into the California Coastal Management Program (CCMP) provides development standards that are applicable to the project site, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If

the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information. The Commission has certified Santa Cruz's LCP but has not incorporated it into the CCMP.

### **III. Federal Agency's Consistency Determination.**

The Corps of Engineers has determined the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

### **IV. Staff Recommendation.**

The staff recommends that the Commission adopt the following motion:

**A. Motion.** I move that the Commission concur with consistency determination CD-034-03 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

**B. Staff Recommendation.** The staff recommends a **YES** vote on this motion. Passage of this motion will result in a concurrence with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

**C. Resolution to Concur with Consistency Determination.** The Commission hereby **concurs** with consistency determination CD-033-03 by the U.S. Army Corps of Engineers, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.

### **V. Findings and Declarations.**

The Commission finds and declares as follows:

**A. Stream Alteration.** Section 30236 of the Coastal Act provides as follows:

*Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*

Section 30233(a) of the Coastal Act provides, in part, that:

*(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation*

*measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

...

*(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

...

*(7) Restoration purposes.*

Section 30236 of the Coastal Act provides two tests for projects that result in stream alterations. First, the project must incorporate the best mitigation measures feasible, which is similar to mitigation requirement of Section 30233. The second test of Section 30236 is that the project must serve one of the identified purposes. Section 30233 of the Coastal Act includes a similar Allowable-use test. Finally, Section 30233 of the Coastal Act requires that the Commission find that the project is the least environmentally damaging feasible alternative. As described below, the Commission concludes that the project is consistent with all of the tests identified in these Sections, and, therefore, is consistent with these policies.

**1. Allowable Use.** Section 30233 of the Coastal Act identifies eight allowable uses for the dredging, diking, and filling of coastal waters. Section 30233(a) of the Coastal Act does not identify flood-control facilities as an allowable use. However, Section 30236 of the Coastal Act allows for alteration of streams for flood-control purposes, if it meets the other requirements of that section. Section 30236 clearly anticipates dredging, diking, and filling of coastal waters for flood-control purposes and is a more specific policy than Section 30233(a) and clearly shows legislative intent to allow alteration of streams for flood-control purposes.<sup>1</sup> In other words, Section 30236 of the Coastal Act requires the Commission to approve flood-control facilities in certain circumstances, even though such activities do not comply with the allowable-use test of Sections 30233(a) of the Coastal Act. Thus, the permissive language in Section 30236 provides evidence of legislative intent that, where necessary and properly designed, the Commission can authorize flood-control facilities under the Coastal Act.

Before the Commission can authorize a flood-control project, it must find that the activity meets all of the requirements of Section 30236. That section allows alterations of streams if they are for flood-control purposes, if there are no other feasible method for protecting existing structures in the floodplain, and if such protection is necessary for public safety or to protect existing development. According to the Corps, the proposed

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<sup>1</sup> Giving precedence to the more particular provisions of section 30236 over the more general provisions of sections 30233(a) and 30240(a) is in accord with generally applicable principles of California law. See, e.g., Civil Code § 3534 ("Particular expressions qualify those which are general.").

flood-control facility is necessary to protect existing development. In its environmental assessment, the Corps describes the need for the project as follows:

*Severe erosion and bank scouring are degrading the west bank of the San Lorenzo River upstream from Riverside Avenue Bridge. Along this 900-foot stretch of river, an estimated 16-17 feet of riverbank were lost over a period of 42 years. Aerial photographs of the San Lorenzo River dating back to 1957 (prior to the 1959 flood control project) were analyzed and compared to recent aerial photos taken over the site from 1999 and 2000. An Evaluation of Bank Erosion, San Lorenzo River at Santa Cruz, was prepared by URS Corp (2002b). This report estimated that an area just over 16,256 square feet was lost from the riverbank during the past 42 years. This represents an average erosion rate of about 862 square feet per year....*

*URS Corp. estimated that the minimum amount of discharge to cause significant bank erosion is 10,500 cfs [cubic feet per second], which is equivalent to a 2.5-year storm recurrence interval. A 2.5-year storm has a 40 percent chance of exceeding 10,500 cfs. This type of storm event is common and typical of the heavy storms in the San Lorenzo River Watershed. As a result of the severe erosion, the existing Laurel Street Extension and Third Street have been undercut and pose a safety hazard to the local community. The Laurel Street Extension was a two-lane road prior to 1982; however, the road collapsed during subsequent flood events, forcing the City to change it to a one-way street. Further erosion from heavy rains during 1986, 1995, and 1997 began to expose underground utility lines.<sup>2</sup>*

As described in the quote above, erosion of the bank caused by flooding events on the river threaten the existing Laurel Street Extension and Third Street. In addition, this erosion threatens existing utilities that are located under the road. The proposed flood facility will provide erosion control and protection for the existing roads and utilities. Therefore, the project is for flood-control purposes and protects existing development. Thus, the Commission finds that the project is an allowable alteration of the river.

**2. Alternatives.** Both Sections 30233 and 30236 require the Commission to consider alternatives to the proposed project. Specifically, Section 30233 requires the Commission to find that the project is the least environmentally damaging feasible alternative and Section 30236 requires the Commission to find that there is no other alternative for protecting existing structures. In this case, as described below, the proposed project meets both of these tests.

As described above, erosion caused by the River has resulted in impacts to the road and threatens underground utilities. According to the Corps, there is no way to protect the existing road without altering the river. However, the Corps could protect the existing utilities by relocating them. The Corps considered relocation of the utilities and

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<sup>2</sup> Draft environmental assessment, March 2003, p.3.

rerouting of traffic and concluded that those measures would be more expensive than the proposed project and could result in the elimination of vehicular, bicycle, and pedestrian access to the area. The bicycle and pedestrian access is the continuation of a walking and bike trail that is along the San Lorenzo River levees and the loss of this road would affect recreational and access resources of the coastal zone. Therefore, even though the Corps could reroute vehicular access, the no project alternative would result in a loss of the pedestrian and bicycle access along the river and would adversely affect those resources. Additionally, the proposed project would not adversely affect the river. The Corps proposes to spray concrete along the existing bank using soil nails to anchor the wall. The shotcrete walls will be sculptured and treated to mimic the natural formations. Additionally, the area is predominately vegetated with non-native vegetation, which the Corps will replace with native riparian vegetation. Finally, the Corps proposes in-channel habitat features including log crib walls, root wad vanes, boulders, and in-stream vegetation. These features will improve the habitat resources of the stream.

Other than the construction of a floodwall, the Corps did not provide analysis of other alternative flood-control projects. Despite this lack of analysis, the Commission believes that any other flood control project would likely cause more substantial alteration of the river, significant amount of fill into the aquatic habitat, and possibly adverse impacts to recreational use of the area. Therefore, the Commission finds that there is no alternative method to protect existing structures and that there is no less environmentally damaging feasible alternative.

**3. Mitigation.** Finally, both Sections 30233 and 30236 of the Coastal Act require that the Commission provided mitigation for adverse impacts from the project. In this case, the project has minor adverse effects on habitat resources and the Corps has included mitigation measures in its project for these impacts. Specifically, the project has the potential to affect stream habitat, wetland vegetation, and the riparian community. However, the Corps has designed the project to either avoid or mitigate for these effects.

As described more fully in the ESHA section below, the primary concern about the project's in-water effects is the impact on steelhead trout and coho salmon. If the proposed project significantly affected stream velocities, it would adversely affect the quality of the habitat for these federally listed threatened species. However, the Corps designed its project to avoid increasing stream velocities. In its environmental assessment, the Corps describes this issue as follows:

*Alternative 2 [the proposed project] consists of a restored slope and the addition of in-channel habitat features. This alternative demonstrates a significant reduction in local river velocities during the 2-year flood event. The reduced velocities near the restored bank would contribute in the formation of eddies or scour pools, and allow upstream migration to*



*continue during high flow events. Thus, the project would not result in permanent effects to steelhead migration.<sup>3</sup>*

In addition, the project includes in-stream features including log crib structures, root wad vanes, boulders, and aquatic vegetation. These project elements will slow river velocities, encourage the formation of aquatic pools, and promote the growth of aquatic vegetation. Thus, the project will benefit the stream habitat for steelhead trout and coho salmon.

In addition, during construction, the Corps will affect existing aquatic vegetation within the river channel. The Corps proposes to mitigate this impact by replanting the aquatic vegetation after the completion of the project. Exhibit 13 provides a list of aquatic plants that the Corps will use to re-vegetate the area. Finally, the project will affect existing riparian and upland vegetation on the slopes of the riverbank. In its environmental assessment, the Corps describes the vegetation communities at the project site as follows:

*Existing vegetation along the San Lorenzo River Project site consists mainly of nonnative plants and trees. Due to ongoing disturbance, a number of nonnative species have continued to colonize the slopes and steeper areas. A vegetation study conducted by Native Vegetation Network in 1999 recorded several nonnative species in Reach 3 (Haley, 1999). These species include pampas grass, weeping willow, fennel, yellow dock, Himalayan blackberry, mustard, ice plant, prickly lettuce, cocklebur, and ivy (see Attachment 1). Nonnative trees observed include ash, pittosporum, and tree-of-heaven.*

*A few native plant and tree species are found on top of the Purisima Shelf at the downstream end of the proposed project area. The few native species present include arroyo willow, alder, and poison oak. A few small patches of cattails and bulrushes grow along the Purisima Shelf next to the shoreline.<sup>4</sup>*

Urbanization has adversely affected the upland habitat along this reach of the stream and this area is not particularly sensitive. Therefore, the project's impacts to this area are not significant. However, the Corps proposes to replant native vegetation along the riverbank as part of this project. Exhibit 14 provides a list of plants that the Corps proposes to use. Considering the degraded state of the existing habitat, the proposed re-vegetation will improve the quality of the habitat in this reach of the river.

In conclusion, the project includes in-stream features that will improve the aquatic habitat for steelhead trout and coho salmon, mitigate for impacts to aquatic vegetation, and restore riparian habitat on the riverbanks. Therefore, the project includes mitigation for adverse impacts to resources of the stream.

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<sup>3</sup> Draft environmental assessment, March 2003, p. 25.

<sup>4</sup> Draft environmental assessment, March 2003, p.13.



4. **Conclusion.** The proposed project is consistent with Sections 30233 and 30236 of the Coastal Act. Specifically, the project is allowable use pursuant to 30236, is the least damaging feasible alternative, and includes feasible mitigation. Therefore, the Commission finds that the project is consistent with the stream alteration and wetland fill policies of the Coastal Act.

**B. Environmentally Sensitive Habitat Areas.** Section 30240 of the Coastal Act provides that:

*(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

*(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

As described above, the San Lorenzo River provides habitat for coho salmon and steelhead trout and the National Marine Fisheries Service has listed both species as threatened pursuant to the federal Endangered Species Act. In its environmental assessment, the Corps describes the habitat value of the river as follows:

*The San Lorenzo Watershed includes 80 miles of streams that support a mix of at least 25 species of freshwater and marine fishes. Freshwater game fishes are rainbow trout, bluegill, green sunfish, and largemouth bass. Some species common to the lower river and lagoon include coast range sculpin, prickly sculpin, staghorn sculpin, Sacramento sucker, California roach, starry flounder, shiner perch, topsmelt, and three-spine stickleback. During some years, the lagoon that forms at the mouth of the river in the summer months provides important spawning and rearing habitat for shiner perch and topsmelt. ...*

*Anadromous species present in the San Lorenzo River include Pacific lamprey, steelhead, and Coho salmon. The project area occurs within designated critical habitat for the Federally threatened Central California Coast ESU Coho salmon. When the lagoon is formed during the summer months, juvenile salmonids may delay their seaward migration and attain considerable size in the lagoon. A result of this delay would promote the use of the bank for shade, protection, and feeding area.*

....

*The San Lorenzo River has historically supported populations of the steelhead trout (*Oncorhynchus mykiss*) and Coho salmon (*Oncorhynchus kisutch*). Steelhead trout in the Central California Coast Evolutionary Significant Unit were designated as a Federally threatened species effective August 18, 1997. Coho salmon in the Central California Coast Evolutionary Significant Unit were Federally listed as a threatened species*

*in 1996. Steelhead south of San Francisco Bay is listed as a threatened species by the State of California under the California Endangered Species Act. The Federal listing applies only to naturally spawned populations of anadromous forms of O. mykiss residing below long-term naturally occurring or manmade impassable barriers. The San Lorenzo River is included as critical habitat for both Coho salmon and steelhead trout designated under the Federal listing for all accessible reaches, excluding reaches above Newell Dam (Loch Lomond). "Critical habitat" is defined as habitat key to the survival of threatened and endangered species, which may require special management considerations or protection.*

*The San Lorenzo River supports a winter steelhead run. Upstream spawning migration occurs from December through April. The downstream out-migration for juvenile steelhead begins in early April and is completed by the end of May. The lagoon at the lower river, from the mouth to Water Street Bridge, provides important summer rearing habitat for juvenile steelhead. Shallow pockets along the river bend area between Laurel St. Bridge and Riverside Avenue Bridge have been observed as resting pools for the fish.*

*The San Lorenzo River supported Coho salmon in relatively small numbers until the drought of 1987-92. Although Coho salmon historically inhabited most coastal streams in San Mateo and Santa Cruz Counties, presently they are only found south of San Francisco Bay in Waddell and Scott Creeks. Accessible reaches of the San Lorenzo River are included within the critical habitat designation for Central California Coast Coho salmon. The adult migration usually occurs between October and December with the peak in November. The migration upstream depends on increased flows associated with autumn rainfall. Coho salmon south of San Francisco Bay are also a State-listed endangered species.*

*The lower reach or lagoon portion of the river is a dynamic part of the river system and is a critical component for juvenile steelhead and salmon rearing. The size and water quality of the lagoon is influenced by the amount of freshwater inflows and the condition of the sandbar at the mouth of the river. During winter months, the sandbar is open, and the river is subject to tidal exchange. In the summer months, the combined effect of declining river flows and the creation of a sandbar by summer wave action can result in sandbar closure, thus eliminating tidal effects on the lagoon. During these conditions, the lagoon can convert to freshwater over time through inflow from the river. Juveniles unable to migrate out of the system because of decreasing streamflows and formation of the sandbar at the river mouth, as well as those unwilling to migrate due to immaturity, hold over in the lagoon during the summer and fall months. These holdover fish show significantly higher growth rates (up to 3 times) than rates measured in the tributaries and the main river. The juveniles are thus larger by the time they enter the ocean, and survival rates are*

*increased due to improved predator avoidance capabilities. This benefits the entire cycle because survival rates for juveniles during their first year of ocean residency are highly correlated with the number of adults successfully returning to spawn in the river. Localized resting pools below the Purisima Shelf formation provide shelter and resting areas from these migrating fish. The pools become important resting spots, especially for rearing juveniles, during the summer months when the lagoon is full.*

*A deep, properly functioning, freshwater lagoon is important to steelhead and Coho salmon as it provides an area where they can make the transition from freshwater to saltwater, provides adequate food resources to grow quickly, and allows fish to escape from predators by maintaining refuge habitat. In addition to the physical and biological factors that limit juvenile steelhead and Coho salmon production in the lagoon, chemical factors also play a role in their survival. These factors include water quality parameters necessary for juvenile survival and optimal rearing. Parameters such as pH, dissolved oxygen, water temperature, and salinity all influence the viability of the lagoon as habitat for juvenile salmonids, and water quality issues are currently being studied.<sup>5</sup>*

Since the river provides habitat for both coho salmon and steelhead trout and is designated critical habitat for both species, it is an ESHA. Since the proposed project requires construction within the stream channel, it must be analyzed for consistency with Section 30240 of the Coastal Act. That section requires that the Commission find that the proposed project is dependent on the sensitive resources and avoids significant disruption to the habitat.

The first test of Section 30240 of the Coastal Act is whether the project is dependent on the sensitive resources. In this case, the primary purpose of the proposed project is not to serve the threatened species (although it may have some benefits). The Corps would propose this project whether or not the river supported these fish. Therefore, the project is not dependent on these resources. However, Section 30236 of the Coastal Act clearly envisions the construction of projects that alter streams and rivers. Since, in many cases, streams and rivers are, or support, ESHAs, the Coastal Act provides for a situation that allows stream alterations consistent with 30236 to occur in an ESHA, despite the potential inconsistency with Section 30240. The relationship between these two policies is similar to that of the relationship between Sections 30233 and 30236 of the Coastal Act, as described above. (See the discussion on Allowable Use on page 5.) The Commission can reach the same conclusion as it did above, which is that Section 30236 requires the Commission to approve flood-control facilities in certain circumstances, even though such activities do not comply with the resource-dependency test of Section 30240 of the Coastal Act. Thus, the permissive language in Section 30236 provides evidence of legislative intent that, where necessary and properly designed, the Commission can authorize flood-control facilities in coastal streams and rivers.

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<sup>5</sup> Draft environmental assessment, March 2003, pp. 22-24.

The second test of Section 30240 requires the Commission to find that the proposed project avoids significant disruption to the ESHA. Since this project will not result in a loss of habitat, includes construction measures to minimize impacts on anadromous fish, and includes elements to enhance the habitat values of the river, it will not significantly disrupt the sensitive habitat. Therefore, the project is consistent with this requirement. Specifically, the Corps proposes to use shotcrete (sprayed on concrete) with soil nails to anchor the wall to the bluff. The Corps will spray the shotcrete along the existing contours of the bluff and will expand the bluff by an additional 16 inches and the wall will not extend into the water. The project, however, includes some in-water features. The purpose of this portion of the project is to enhance the stream's habitat value. The Corps describes these components as follows:

*At the base of the wall, in-channel habitat restoration features such as log crib walls, root wad vanes, boulders, and in-stream vegetation would be installed (see Plate 12 [Exhibit 9]). The main functions of these features include enhancing the formation of pools for fish habitat, providing high flow refuge for migrating fish, supporting soil substrate for planting, and providing suitable SRA. These features are anticipated to restore degraded habitat used by fish, birds, mammals, amphibians, and invertebrates. Approximately 119 linear feet of a one-tiered log crib structure and 261 feet of a two-tiered log crib structure would be installed along the base of the bank protection wall (see Plate 7 [Exhibit 10]). In addition, 50 linear feet of footer logs, 76 linear feet of root wads, and 90 feet of log vanes would also be installed along the base of the wall to deflect and reduce flow velocities during high flow events. The logs and root wad vanes would most likely come from the San Lorenzo River Watershed. Approximately 24 cubic yards of boulders would be used to anchor the log vanes and provide substrate for plant establishment. River stone and sandy loam material, about 450 tons, would be used to fill in the voids of the log crib structure to establish in-channel vegetation. In-channel plantings would include species native to the San Lorenzo River Watershed (most likely tree pole cuttings taken from within this river system and seedlings grown from local nurseries). More plantings are proposed for Alternative 2 [proposed project] than for Alternative 1 to enhance wildlife habitat (see Plate 13 [Exhibits 11 and 12]).<sup>6</sup>*

In its environmental assessment, the Corps concludes that the project's features will provide habitat improvements. Specifically, the Corps believes that these features will contribute to the formation of eddies, scour holes, and large pools. Additionally, the Corps proposes the planting of in-stream and bank vegetation, which will also benefit habitat by increasing nutrient input into and shading of the stream. Finally, the Corps believes that the existing bank erosion is adversely affecting the fish habitat by increasing sedimentation into the river. The proposed project will eliminate this sedimentation and improve the fish habitat. The Commission agrees that the proposed project will benefit fish resources. However, construction of the project will require

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<sup>6</sup> Draft environmental assessment, March 2003, p. 8-9.

dewatering portions of the stream to provide room for the Corps to operate its construction equipment. Specifically, the Corps proposes to dewater a 20- to 30-foot swath of channel extending along approximately 1,000 feet. The Corps proposes to use a portable frame diversion system (Exhibit 15). Once the diversion system is in place, the Corps will remove the water from area adjacent to the project. The Corps proposes mitigation measures to minimize impacts to sensitive fish species trapped inside the dam. The Corps describes these measures as follows:

*The installation and initial removal of water would be done with incremental drawdowns and relocation of all trapped fish by a qualified fisheries biologist. During this time a qualified fisheries biologist would immediately remove any fish trapped during the dewatering process. The fisheries biologist would be onsite during placement of the dam and dewatering activities to monitor the site for the presence of steelhead or Coho salmon and to implement translocation of fish to another location of the river not affected by construction activities, if needed. Pumps used to draw water out of the secured area would be installed with fish screens. The installation of the diversion structure and construction activities in the river channel would be limited to the summer low-flow period (generally between May and October), which is outside the steelhead migration period. The installation and removal of the Portadam/diversion structure would be controlled to minimize turbidity in the water. The use of best management practices (BMPs) would be implemented to reduce the probability of sediment and/or contaminated material from entering the river.<sup>7</sup>*

With these measures, it is unlikely that the project will significantly disrupt the sensitive habitat resources. Therefore, the Commission finds that the project will not adversely affect steelhead trout and coho salmon habitat. In conclusion, the Commission finds that although the project is not resource dependent, it is an allowable flood-control project consistent with 30236 of the Coastal Act and it will not significantly disrupt habitat resources. Therefore, the Commission finds that the project is consistent with Section 30240 of the Coastal Act.

**C. Water Quality.** Section 30231 of the Coastal Act provides that:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

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<sup>7</sup> Draft environmental assessment, March 2003, p. 27.

The proposed project includes the replacement of Laurel Street Extension and Third Street and the construction of a new maintenance/pedestrian/bicycle road. The Corps proposes to replace the existing streets in manner that maintains their size and current use (neither street is a major road). The project also includes the replacement of the existing storm drains.

The project's environmental assessment indicates that the quality of water within the San Lorenzo River is poor. Specifically, the environmental assessment states that:

*The estuarine reach where the project site is located includes 10 storm drains within its vicinity. Water quality in this area generally exceeds State requirements for safe body contact for fecal coliform. There are also several factors that may influence water quality in this reach, including tidal action, congregations of waterfowl on sandbars that are intermittently exposed and flooded, and influence of higher ground water. County sampling found presence of fecal coliform, E. coli, total coliform, and enterococcus in both wet and dry samples in this reach. The 1995-1997 County study also included toxicity testing for common urban runoff contaminants (heavy metals, pesticides and PCB's, and oil and grease) (Ricker, 2001). This study used resident freshwater clams and transplanted freshwater clams for a bioaccumulation study. The lower portion of the river had a site at Soquel Avenue that was analyzed for heavy metals. The results of the study did not show any unusually high concentrations of trace metals. Metals that were found include zinc and copper. Lead and nickel were found, but in trace amounts significantly lower than in the upper river.<sup>8</sup>*

The Corps has designed the proposed project to minimize construction related impacts to water quality. Specifically, the Corps proposes the following construction related best management practices (BMPs) to minimize water quality related impacts. These measures are as follows:

- Control of site runoff through diversion ditches or berms to prevent erosion and control sedimentation during construction.
- Installation of temporary erosion and sedimentation control devices.
- Location of equipment and spoils in designated staging areas.
- Control of dewatering process to limit turbidity.
- Revegetation, including erosion control seeding, upon completion of project construction.
- Preparation of a Stormwater Pollution Prevention Plan that further details measures for erosion, sediment, and water quality control.

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<sup>8</sup> Draft environmental assessment, March 2003, p. 28.

- All fill material would be clean material that would meet applicable water quality standards.
- All construction materials and fill be stored and contained in a designated area that is located away from the river channel areas to prevent inadvertent transport of materials into the adjacent stream channel.
- Prohibit fueling, cleaning, or maintenance of equipment except in designated areas located as far from the river as possible.
- Maintenance of adequate materials onsite for containment and clean up of any spills.

In addition, the Corps has modified its project to address the potential discharge of polluted runoff from the proposed roads through the storm drains. Specifically, the Corps proposes the following BMP:

- The water quality compliance will involve modifications to the Laurel Street Extension storm drain through the addition of a type of oil and grease and sediment filter.

With these measures and the fact that the project would not significantly increase the amount of impervious surface, the project will not adversely affect water quality resources. Therefore, the Commission finds that the project is consistent with Section 30230 of the Coastal Act.

**D. Visual Resources.** Section 30251 of the Coastal Act provides that:

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

This portion of the San Lorenzo River includes a combination of native and nonnative vegetation. In addition, part of an older concrete floodwall is visible. The project will convert a vegetated slope into a hardened structure and add lighting to the area. The height of the wall would range between 9 and 20 feet. However, the Corps has designed the wall to blend in with the natural environment and look similar to natural rock formations and coastal bluffs nearby. The Corps proposes the following measures to minimize the visual effects of the project: 1) sculpting and staining the shotcrete walls to mimic natural formations; and 2) placement of a log-crib wall in front of the shotcrete wall to provide areas for planting riparian vegetation.



According to the Corps, the wall will be highly visible for 1 to 3 years until the bank vegetation matures, which will reduce the visual effects of the proposed wall. In addition, the Corps proposes to treat the wall to replicate natural stone, which will also reduce the visual effects of the project. Thus, while the proposed wall would introduce a new visual element along the river, the project's features will minimize its visual effects.

The proposed project also includes placement of lighting fixtures to increase security on the maintenance road. The Corps proposes to place the lights at 60-foot intervals. To minimize any visual effects from these lights, the Corps proposes to orient the lights toward the maintenance road and street, away from the river, with shields to prevent direct illumination into the river. Although the project would introduce lighting along an area of the river that is mostly dark, the project is within the City of Santa Cruz and the new lighting is generally consistent with existing lighting within the City. The addition of these new lights will blend in with other streetlights and exterior lighting in the area.

In conclusion, the proposed project will not significantly affect visual resources of the coastal zone, because the project includes planting of vegetation, visual treatment of the wall, and mitigation measures for lighting. Additionally, the project is consistent with the urban nature of the area. Therefore, the Commission finds that the proposed project is consistent with the visual policies of the CCMP.

**E. Recreational Resources.** Section 30210 of the Coastal Act provides that:

*In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30223 of the Coastal Act provides that:

*Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

The primary purpose of the proposed project is to protect the Laurel Street Extension, which is a narrow one-way road adjacent to the project site. Before 1992, this road included a pedestrian pathway. However, that part of the road segment collapsed during flood events in 1992. Currently, concrete railings separate the side of the road nearest the river from road traffic to allow pedestrian use of this area. Bicyclists and automobiles share the remaining part of the roadway. Additionally, the road provides a continuation of bicycle and pedestrian access from the levee accessway upstream of the proposed project. The Corps built these accessways as part of its levee improvement projects, which the Commission previously approved (see CD-020-94 and CD-013-96).

During construction, the Corps proposes to close the Laurel Street Extension, which would temporarily interfere with existing pedestrian and bicycle access. However, the Corps proposes to minimize this impact by allowing pedestrian and bicycle access at

the outer edge of the roadway during construction. Upon completion of the project, the Corps would allow pedestrian and bicycle access on the proposed maintenance road, which will extend the pedestrian and bicycle access from the levees to this area. Thus, in the short-term, the project will have temporary effects on public access and recreational uses of the area. However, the project will result in a long-term improvement to these resources. Therefore, the Commission finds that the proposed project is consistent with the access and recreational policies of the CCMP.

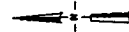
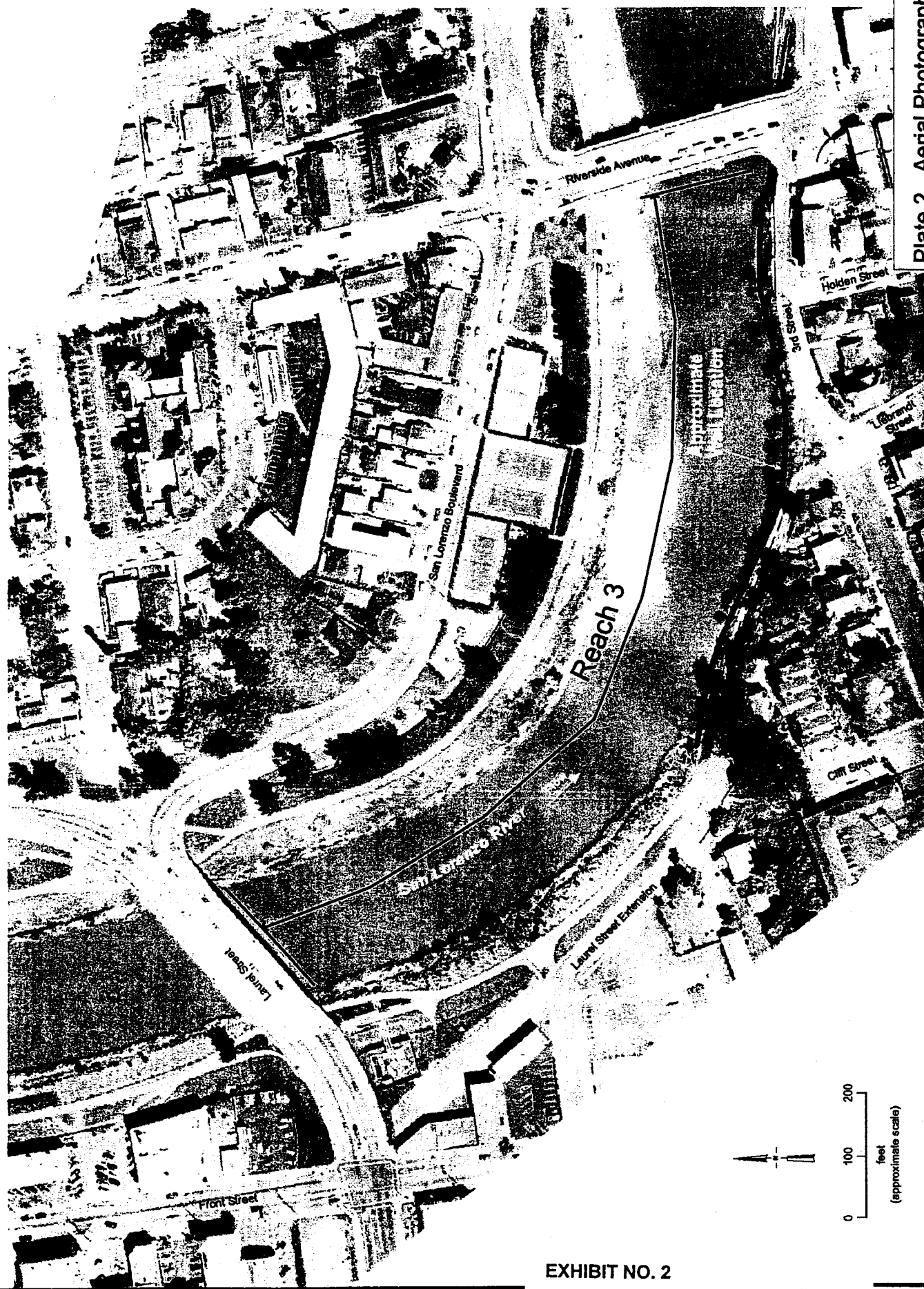
**VI. Substantive File Document.**

1. Consistency Determinations CD-036-90, CD-020-94, and CD-013-96 for flood-control facilities on the San Lorenzo River, City of Santa Cruz
2. Negative Determination, ND-067-01 for modifications to previously approved flood-control project.
3. Draft Environmental Assessment, San Lorenzo River Bank Stabilization Project, City of Santa Cruz, Santa Cruz County, California, March 2003.
4. Alternatives Analysis Report, San Lorenzo River, Contract 3, June 28, 2002.
5. Specifications, 60% Submittal, San Lorenzo River, Contract 3, September 23, 2002.





Plate 2. Aerial Photograph  
of the Project Site



0 100 200  
feet  
(approximate scale)

EXHIBIT NO. 2

APPLICATION NO. CD-034-03

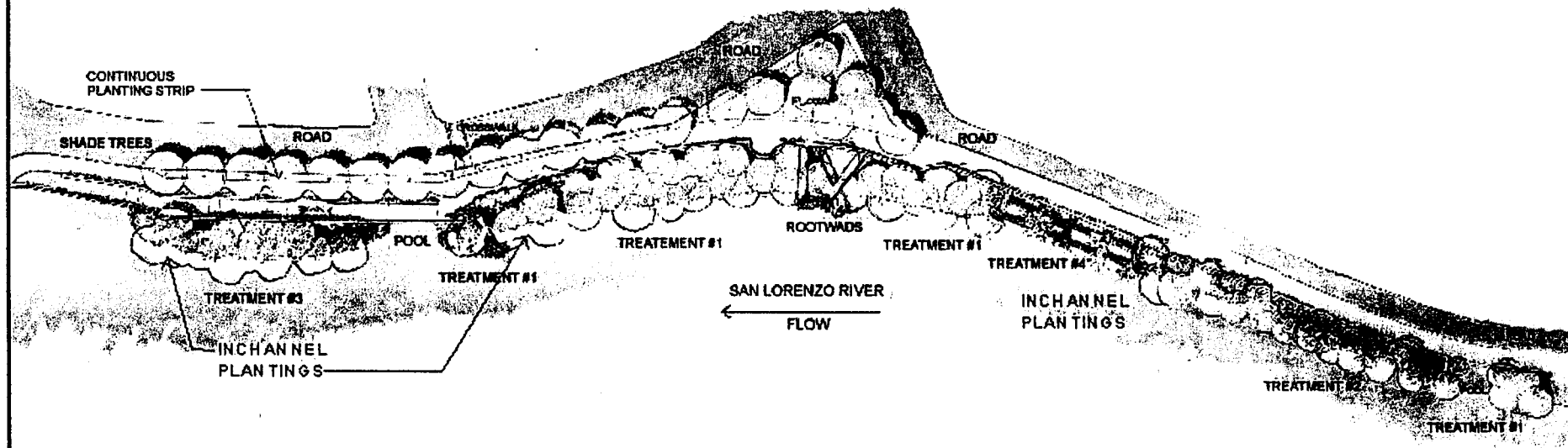


EXHIBIT NO. 3  
APPLICATION NO. CD-034-03

 California Coastal Commission

Plate 8. Alternative 2 Plan View  
(Not to Scale)

Source: URS - RHAA

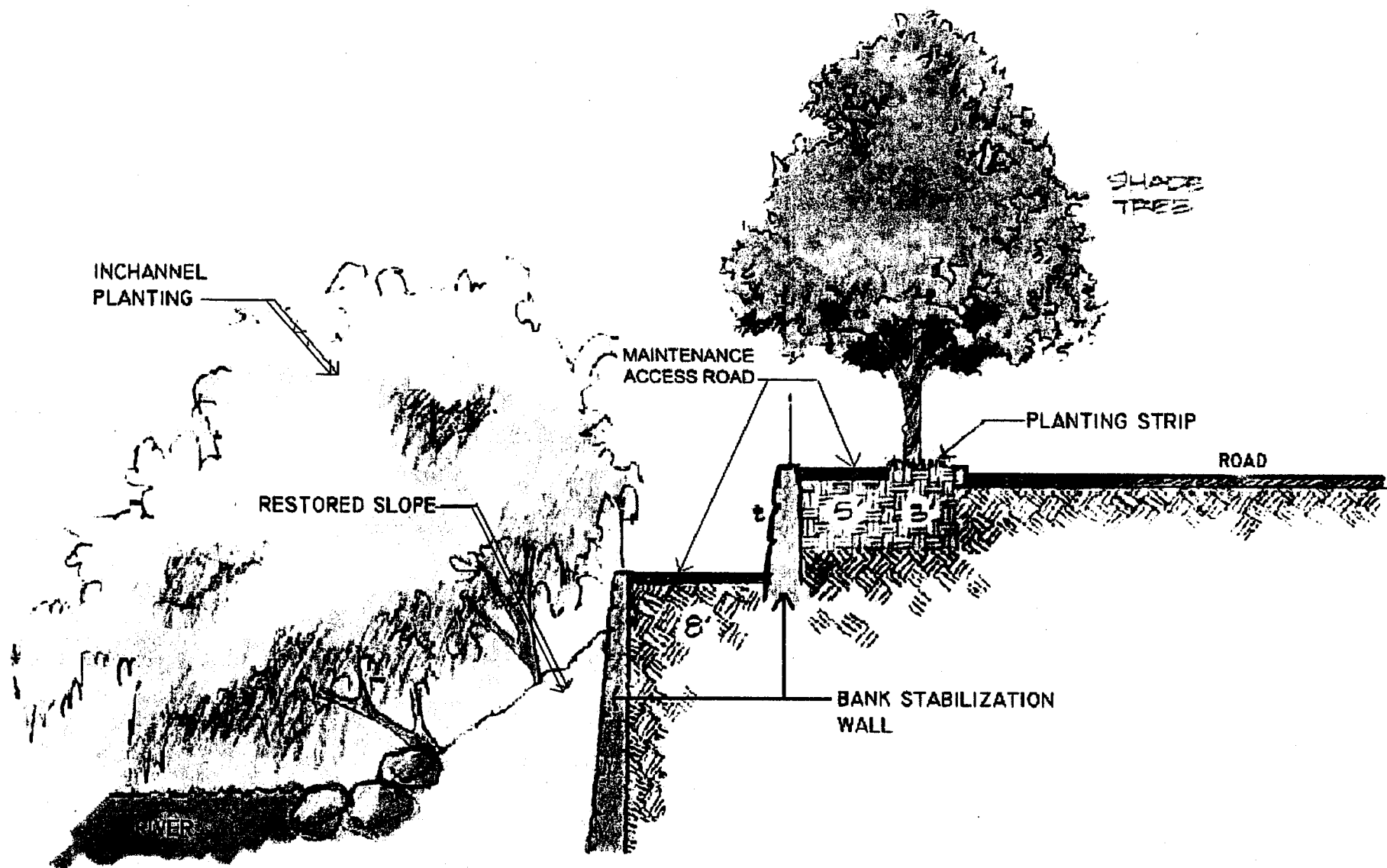


EXHIBIT NO. 4  
APPLICATION NO. CD-034-03

 California Coastal Commission

Plate 10. Cross Section Sketch of Alternative 2  
(Not to Scale)

Source: URS - RHAA



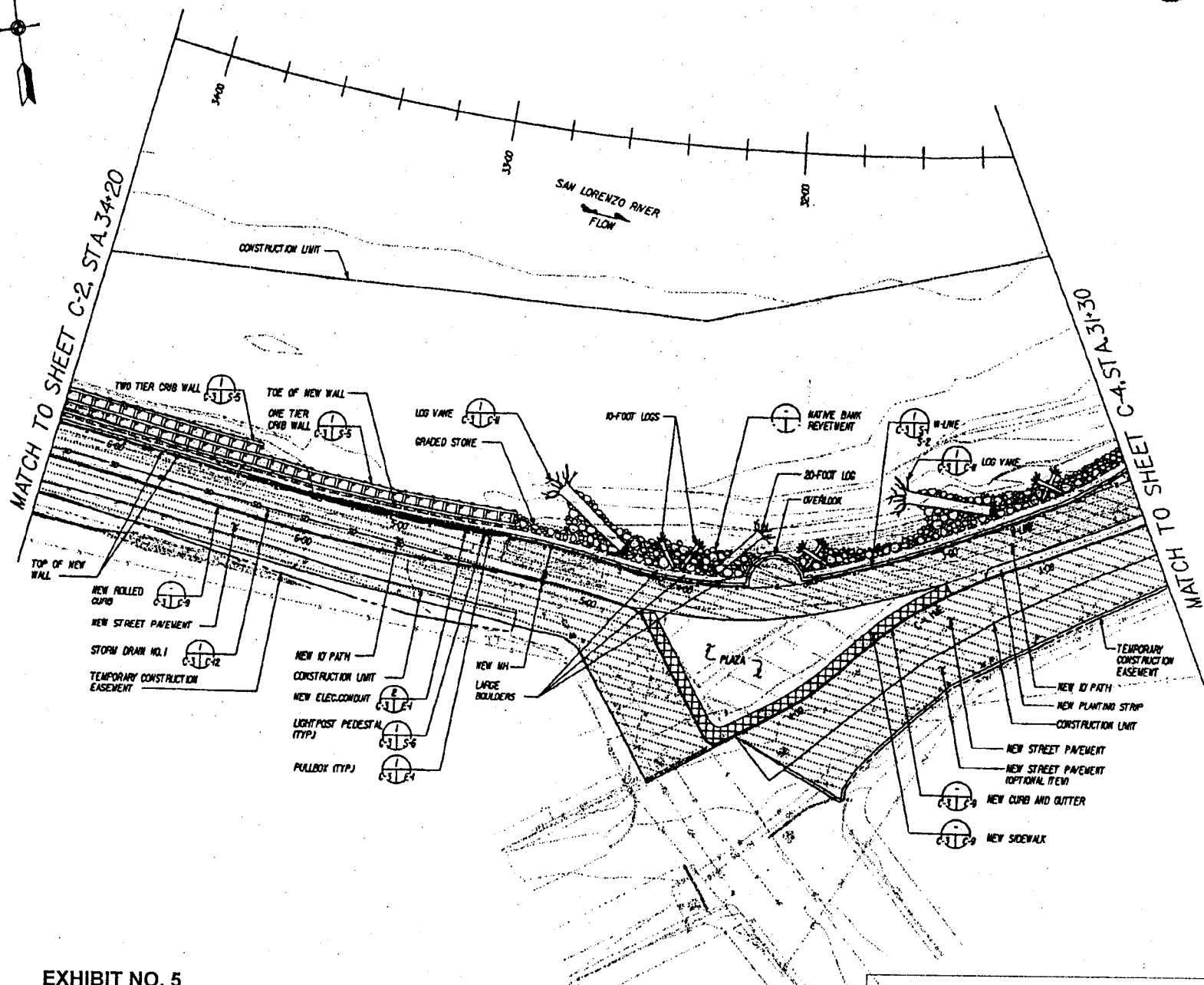


EXHIBIT NO. 5


APPLICATION NO. CD-034-03

 California Coastal Commission

SCALE: 1"=20'-0"  
0 10 20 40 60  
CONTOUR INTERVAL: 1'

Plate 9a. Alternative 2 Site Drawing

Source: URS



California Coastal Commission

**Source:** URS

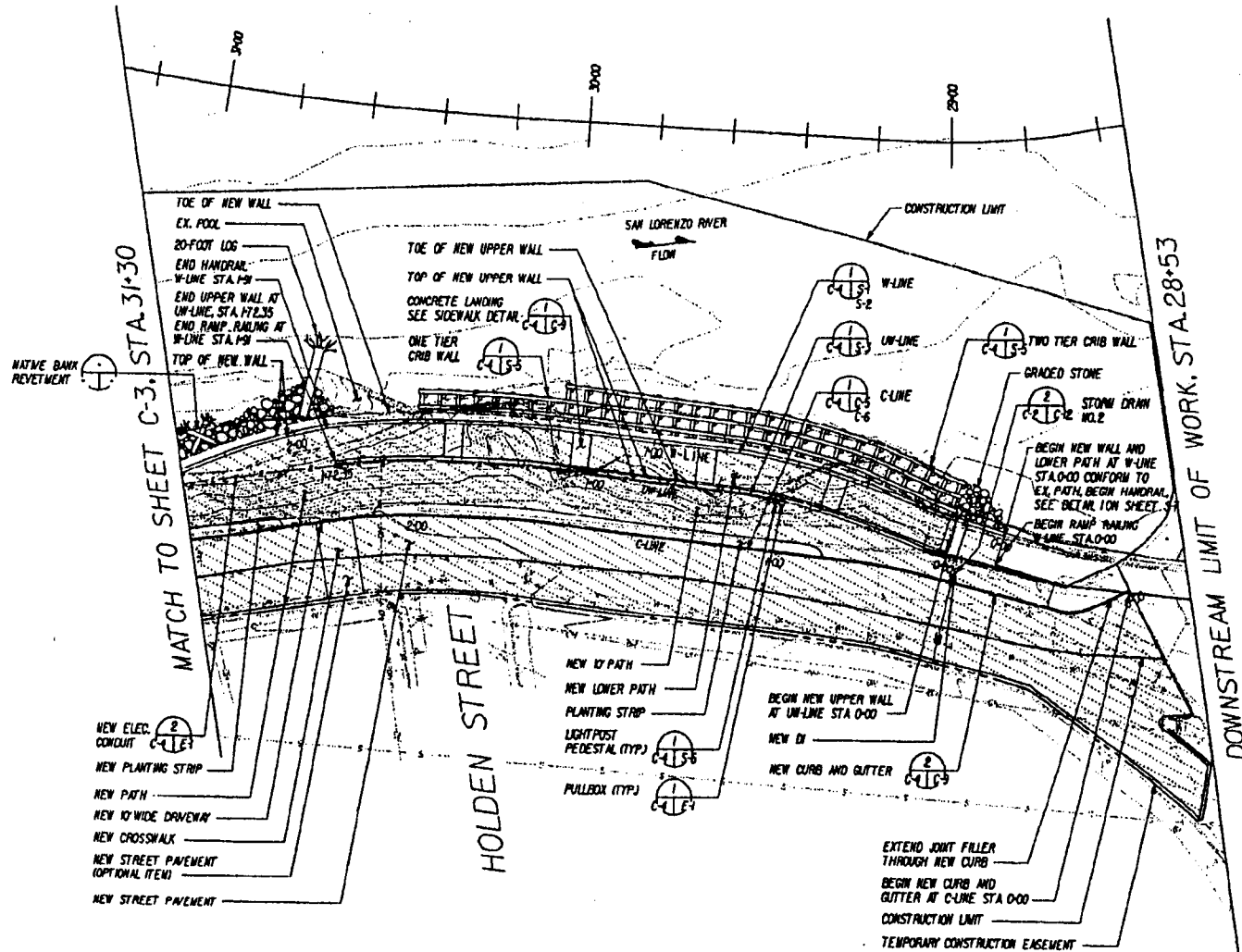



EXHIBIT NO. 7

APPLICATION NO. CD-034-03

 California Coastal Commission

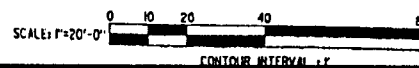
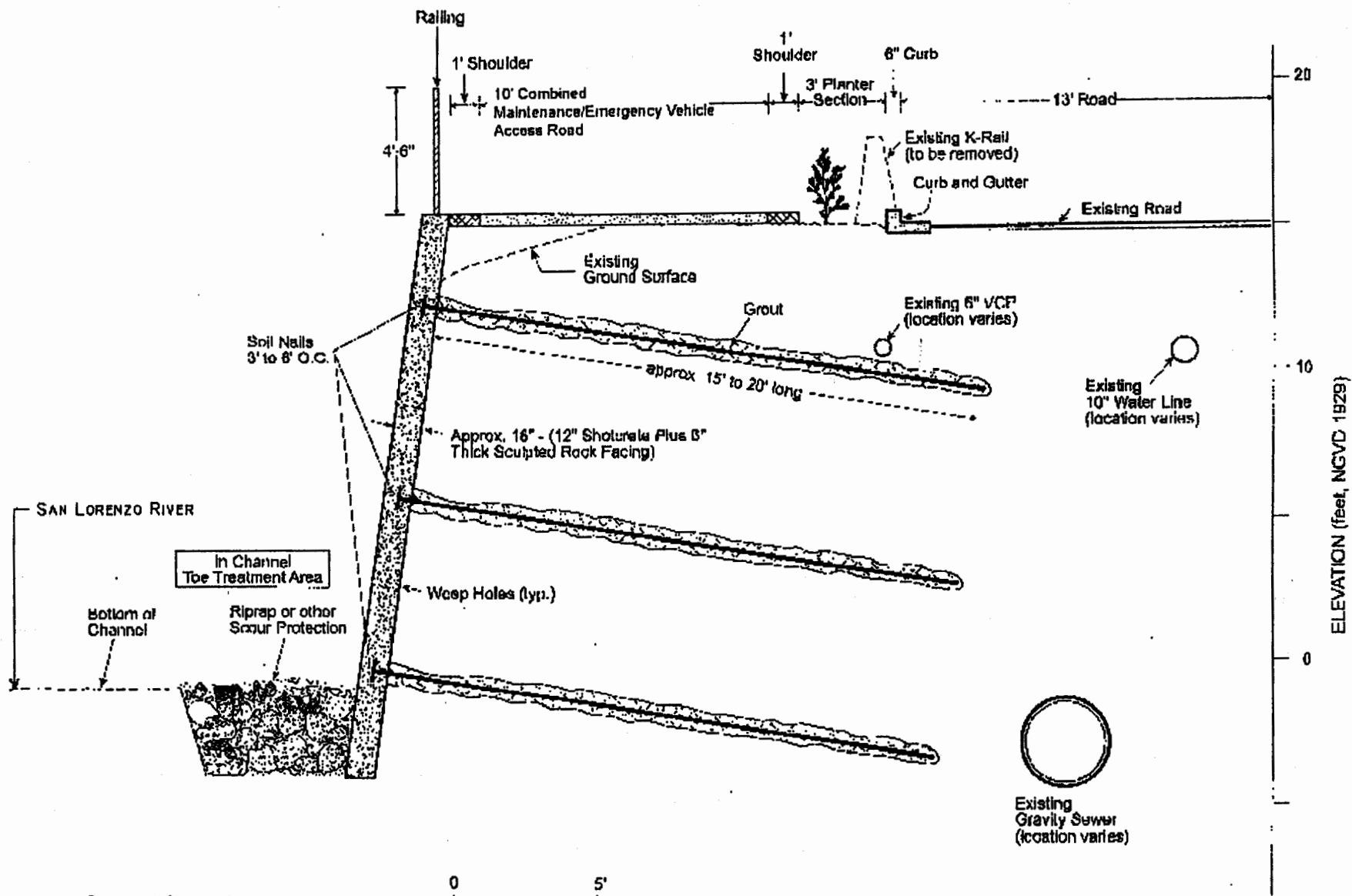


Plate 9c. Alternative 2 Site Drawing

Source: URS



Conceptual Sketch - Not for Construction

Notes

1. Structural dimensions are estimated.
2. All dimensions may vary.
3. In channel planting not shown.

EXHIBIT NO. 8

APPLICATION NO. CD-034-03

California Coastal Commission

Plate 5. Soil Nail Wall

Source: URS

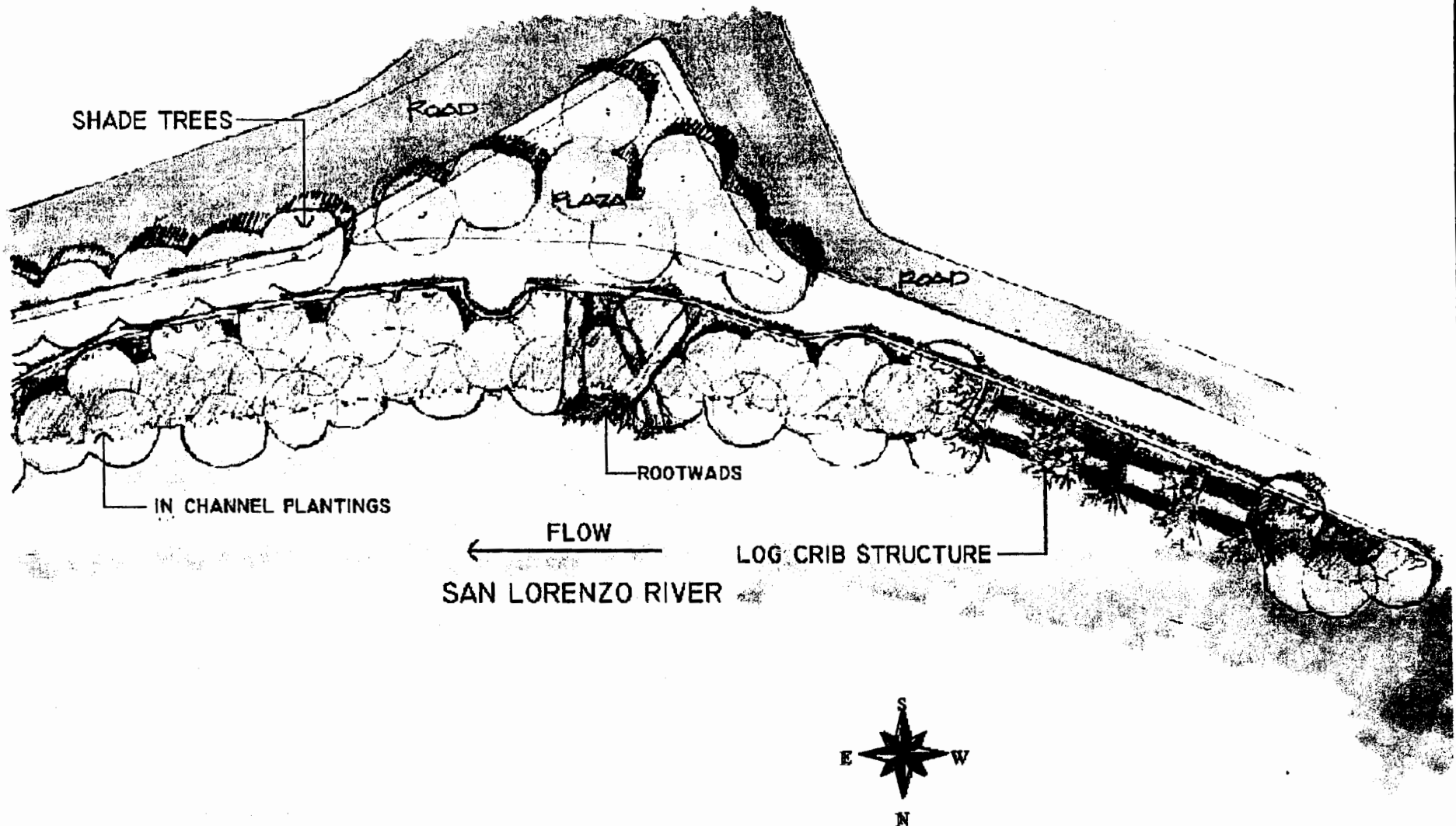


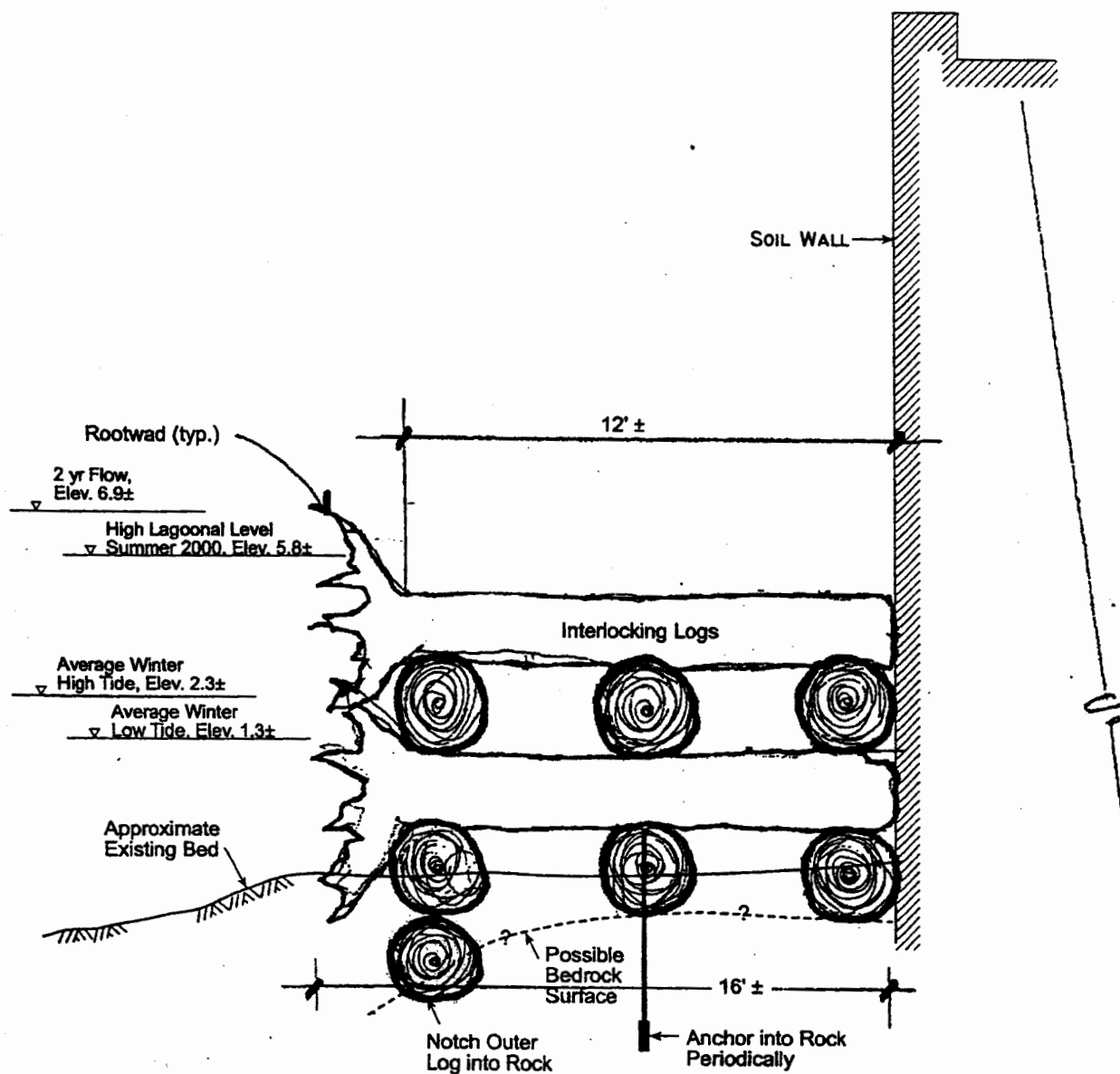
EXHIBIT NO. 9

APPLICATION NO. CD-034-03

 California Coastal Commission

Plate 12. In Channel Habitat Restoration Features  
Alternative 2 (Preferred Alternative)  
(Not to Scale)

Source: URS - RHAA



(Not to Scale)

Conceptual Sketch  
All dimensions are approximate.  
Elevation and size of cribwall will  
be developed during final design.  
Elevations are NGVD

Source: Phillip Williams & Associates,  
Memorandum to URS,  
dated May 3, 2002  
Revised by URS, June 2002

High lagoon level is based on  
Lower San Lorenzo River and  
Lagoon Management Plan by  
Swanson, 2002.

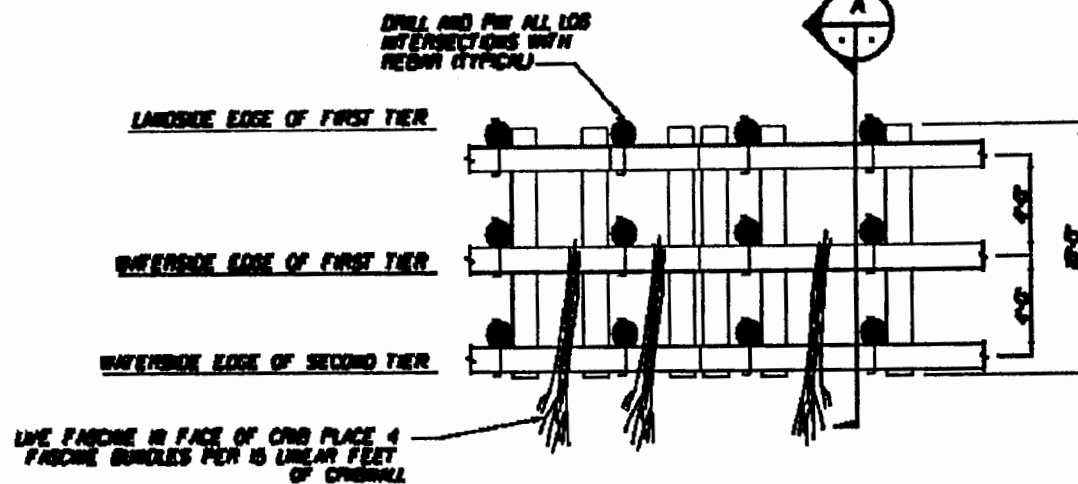
Two year flow and tidal water  
surface elevations are based on  
Hydraulic Modeling.

EXHIBIT NO. 10  
APPLICATION NO. CD-034-03

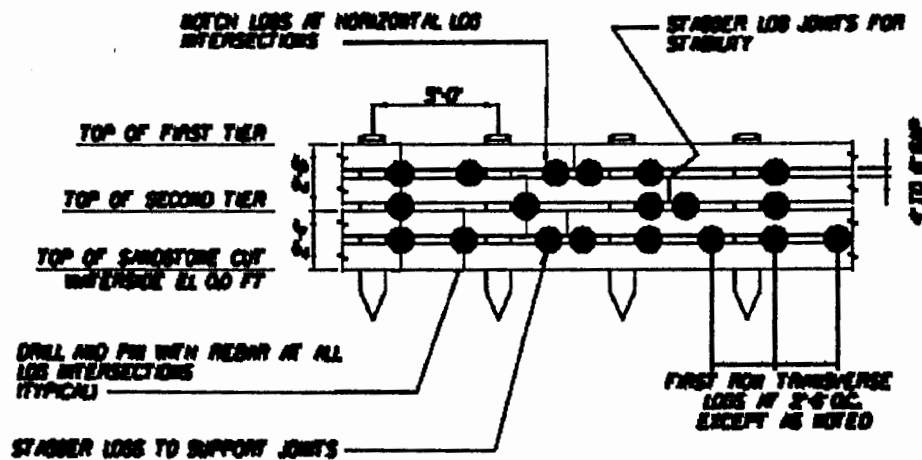
 California Coastal Commission

Plate 7. Typical Log Crib Wall  
Structure  
(Not to Scale)

Source: URS



PLAN



ELEVATION

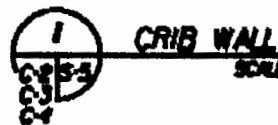


EXHIBIT NO. 11

APPLICATION NO. CD-034-03

California Coastal Commission

Plate 13a. Crib Wall Details

Source: URS



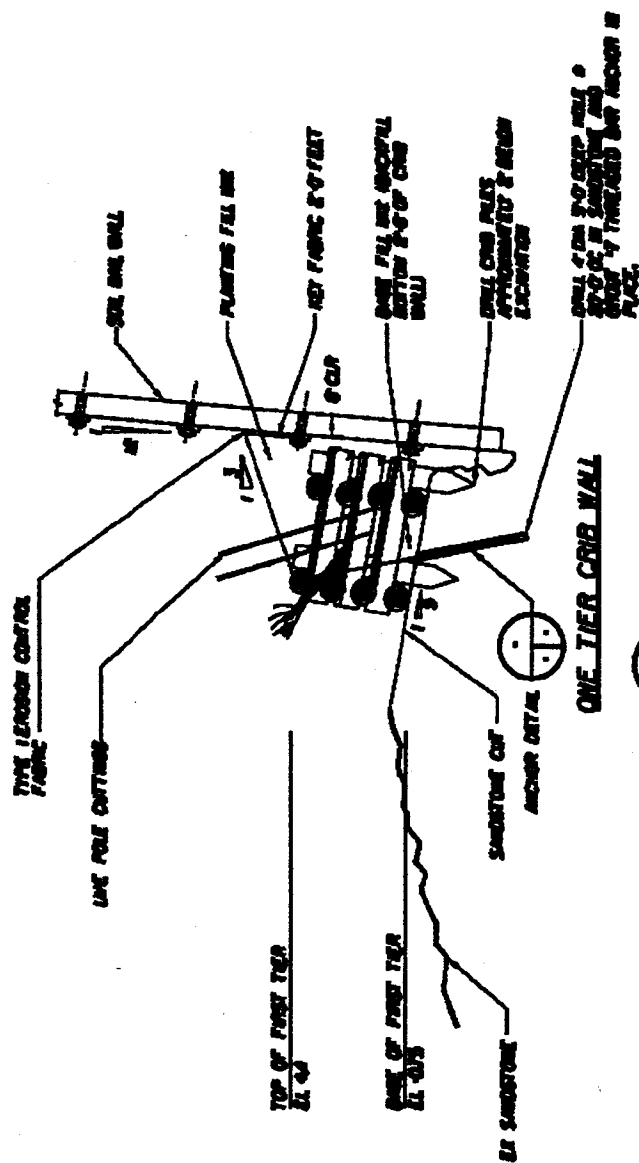
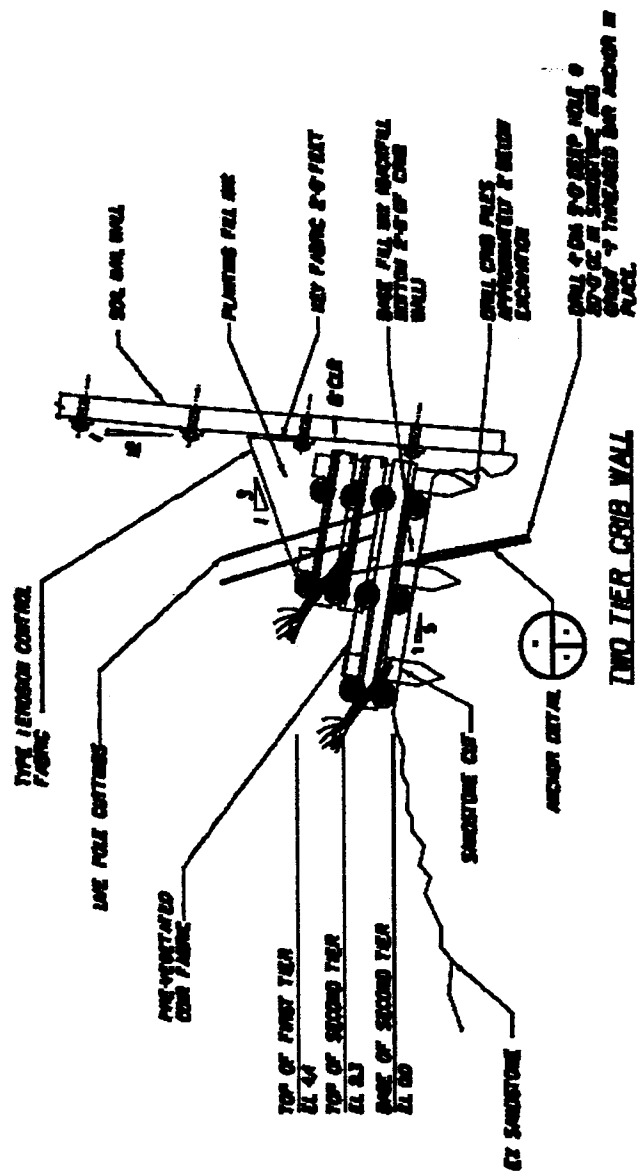


EXHIBIT NO. 12

APPLICATION NO. CD-034-03

Plate 13b. Crib Wall Details

Source: URS

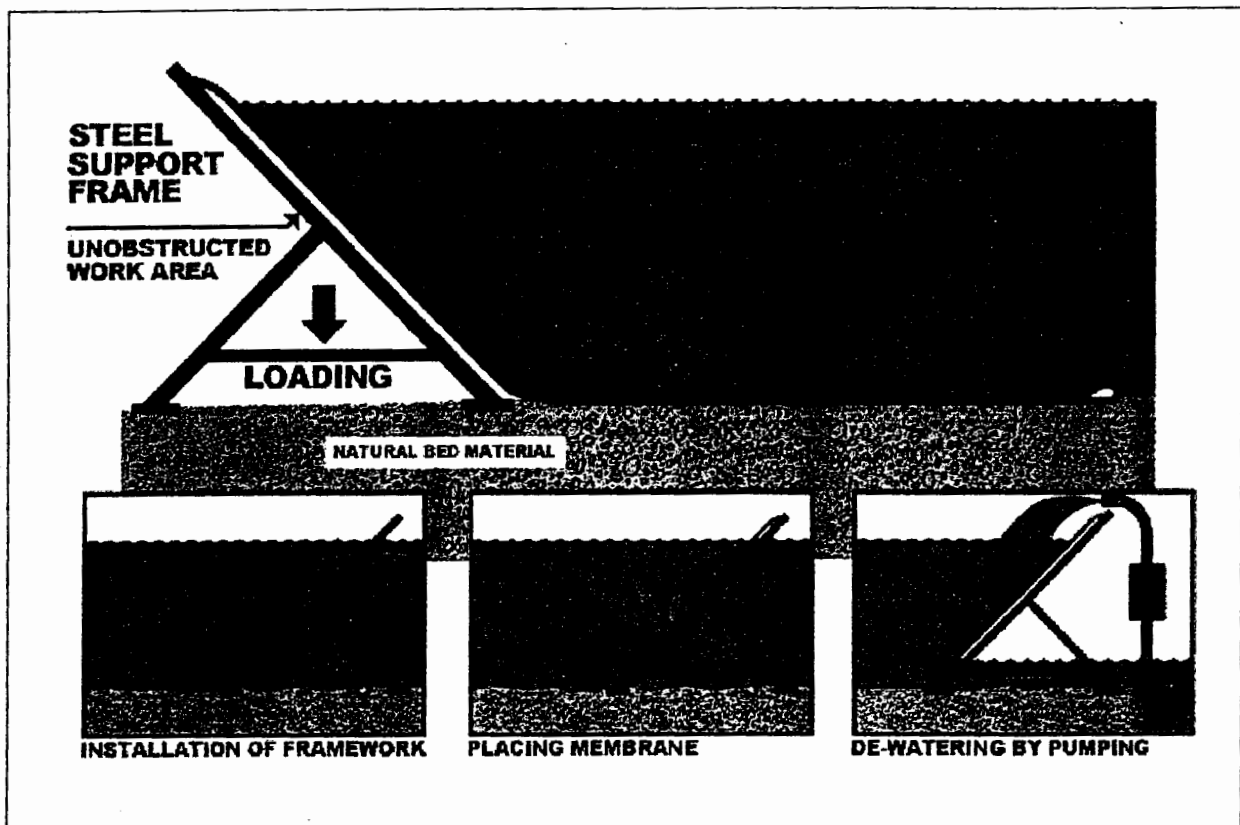
**Table 2. In-channel Planting List for San Lorenzo River Bank Stabilization Project**

Type	Common Name	Botanical Name	Propagation Method	Collection Period
Woody shrub/tree	Arroyo willow	<i>Salix lasiolepis</i>	Poles cuttings	Mid-winter
Woody tree	Red willow	<i>Salix laevigata</i>	Poles cuttings	Mid-winter
Woody tree	Yellow willow	<i>Salix lucida ssp. lasiandra</i>	Poles cuttings	Mid-winter
Woody tree	White or red alder	<i>Alnus rhombifolia/ Alnus rubra</i>	Seed/cuttings	Fall/Winter
Woody tree	Box elder	<i>Acer negundo</i>	Seed	Fall
Woody tree	Cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>	Poles cuttings	Mid-winter
Woody shrub	Coyote bush	<i>Baccharis pilularis</i>	Seed/cuttings	Fall
Woody vine	California rose	<i>Rosa californica</i>	Seed/cuttings	Fall/winter
Woody vine	California blackberry	<i>Rubus ursinus</i>	Seed/cuttings	Fall/winter
Woody shrub	Coffeeberry	<i>Rhamnus californica</i>	Seed/cuttings	Fall/winter
Woody shrub	Elderberry	<i>Sambucus mexicana</i>	Seed/cuttings	Fall/winter
Woody shrub	Pacific grindelia	<i>Grindelia stricta var. platyphylla</i>	Seed	Fall/winter
Herbaceous	Creeping wild-rye	<i>Leymus triticoides</i>	Division	
Herbaceous	Marsh baccharis	<i>Baccharis douglasii</i>	Seed	Fall
Herbaceous	Yarrow	<i>Achillea borealis</i>	Seed	Summer/fall
Herbaceous	California poppy	<i>Eschscholzia californica</i>	Seed	Spring
Herbaceous	Red fescue	<i>Festuca rubra</i>	Seed	Spring/summer
Herbaceous	California oat grass	<i>Danthonia californica</i>	Seed	Spring/summer
Herbaceous	Miniature lupine	<i>Lupinus bicolor</i>	Seed	Spring/summer
Herbaceous	Common California aster	<i>Aster chilensis</i>	Seed	Fall/winter
Herbaceous	Dense sedge	<i>Carex densa</i>	Division or seed	Winter/fall
Herbaceous	Red-rooted cyperus	<i>Cyperus erythrorhizos</i> or <i>Cyperus esculentus</i>	Division or seed	Winter/fall
Herbaceous	Yellow nutgrass			
Herbaceous	Pale spikerush	<i>Eleocharis macrostachya</i>	Division or seed	Winter/fall
Emergent	Bog rush	<i>Juncus effusus var. brunneus</i>	Division or seed	Winter/fall
Emergent	California tule	<i>Scirpus californicus</i>	Division	Winter
Emergent	Common tule	<i>Scirpus acutus</i>	Division	Winter
Emergent	Three-square bulrush	<i>Scirpus americanus</i>	Division	Winter
Emergent	Broad-leaved cattail or Narrow-leaved cattail	<i>Typha latifolia</i> or <i>Typha angustifolia</i>	Division	Winter

**Table 3. Planting List for Top of Bank, San Lorenzo River Bank Stabilization Project**

Botanical Name	Common Name	Remarks
<b>Trees – Possible Street/Plaza Trees</b>		
<i>Alnus [oregona] rubra</i>	Red alder	Preferred selection for tolerance to bores
<i>Alnus rhombifolia</i>	White alder	Subject to bores in other adjacent areas, but better as street tree
<i>Populus balsamifera</i> ssp. <i>Trichocarpa</i>	Black cottonwood	Used in contract 1
<i>Quercus agrifolia</i>	Coast live oak	Used in contract 1
<i>Acer negundo</i>	Box elder	High water demand
<i>Acer macrophyllum</i>	Big-leaf maple	
<i>Umbellularia californica</i>	California bay	Slow growing plant, large container
<b>Small Tree Accents along Maintenance Road and in Plaza Area</b>		
<i>Cornus sericea</i> ssp. <i>Occidentalis</i>	Creek dogwood	Used in contract 1
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	Red flowering	Current Shade Deciduous, 4 to 12 feet high. Showy flowers late winter
<i>Sambucus mexicana</i>	Blue elderberry	Used in contract 1
<i>Heteromeles arbutifolia</i>	Toyon zlow	Slow growing, but highly desirable for habitat value, fairly drought resistant, prune up to standard form for visibility
<i>Salix lasiolepis</i>	Arroyo willow	With irrigation can be a nice tree
<b>Small Shrubs/Perennials 2 Feet</b>		
<i>Achillea millefolium</i>	Common yarrow sun	
<i>Aster chilensis</i>	California aster	Deciduous perennial beneficial for butterfly habitat
<i>Baccharis pilularis</i>	Coyote brush sun	
<i>Iris douglasiana</i>	Coast iris sun	
<i>Rosa californica</i>	California wild rose sun	Used in contract 1
<i>Salvia mellifera</i>	Black sage brittle	Not for use in planting strips, use only on hot south facing leeward slopes with little irrigation
<i>Epilobium canum</i> ssp. <i>Canum</i>	California fuschia sun	Used in contract 1
<i>Arctostaphylos edmundsii</i>	Little Sur manzanita	Small groundcover, typically less than 2 feet
<i>Arctostaphylos hookeri</i>	Monterey manzanita	Small groundcover, typically less than 2 feet
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick bearberry	Small groundcover typically less than 2 feet
<i>Ceanothus griseus</i> var. <i>horizontalis</i>	Yankee Point ceanothus	18 to 24 inches high, carpet like, fast growing
<b>Native Grasses</b>		
<i>Festuca rubra</i>	Molate red fescue	
<i>Juncus patens</i>	California grey rush	
<i>Bromus carinatus</i>	California brome	
<i>Nassella pulchra</i>	Purple needle-grass	
<b>Vines</b>		
<i>Lonicera hispidula</i> var. <i>vacillans</i>	Hairy honeysuckle	
<i>Clematis lasiantha</i>	Pipe stems	For upland dry sunny locations (chaparral plant)
<i>Clematis ligusticifolia</i>	Virgin's bower yerba de chiva	For wetland and riparian edges (needs some shade and wet soil)
<i>Vitis californica</i>	California wild grape	Good native vigorous vine, birds like the berries
<i>Rubus ursinus</i>	California blackberry	Thorny

**Plate 14. Typical Cross Section of the "PortaDam" Structure**



Source: PortaDam, Inc. ([www.PortaDam.com](http://www.PortaDam.com))

EXHIBIT NO. 15

APPLICATION NO. CD-034-03

