



**City of Santa Barbara**  
Planning Division

**Memorandum**

**DATE:** November 3, 2016

**TO:** Planning Commission

**FROM:** Steven Greer, Project Planner/Environmental Analyst 

**SUBJECT:** Substantial Conformance Determination Request  
El Estero Drain Remediation and Habitat Restoration Project  
520 East Yanonali Street (MST99-00507)

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This Level 4 substantial conformance determination is to allow the Planning Commission the opportunity to make recommendations to the Community Development Director regarding proposed modifications to the CDP approved by the Planning Commission in July 2000 for the Laguna Creek and El Estero Drain Restoration and Maintenance Project (Exhibit A, PC Resolution No. 029-00), and the associated El Estero Drain Wetland Restoration Plan approved by the Architectural Board of Review in May 2002 (Exhibit B, El Estero Drain Wetland Restoration Planting Plan).

**Executive Summary**

On July 6, 2000, the Planning Commission approved a Coastal Development Permit (CDP) to complete a habitat restoration project on a City owned property adjacent to the El Estero Wastewater Treatment Plant (EEWTP). The CDP addressed unpermitted grading and vegetation removal undertaken by the Public Works Department on the property (Exhibit C, PC staff report, dated July 6, 2000).

The current project description proposed is essentially unchanged from that originally approved with the exception of the following:

- Install a minimum five foot high fence (chain link or wrought iron) along northerly boundary instead of three foot wood fence.
- Exclude construction of meandering foot path within project area, replace with upland native vegetation.
- Deepening of westerly basking area by one to three feet instead of deepening entire channel one to two feet.
- Utilization of permeable pavers for access road surface instead of decomposed granite.
- Implementation of Remedial Action Plan to address unanticipated soil contamination on site.

Under consideration for substantial conformance are both the CDP approved by the Planning Commission on July 6, 2000 for the Laguna Creek and El Estero Drain Restoration and

Maintenance Project and the associated El Estero Drain Wetland Restoration Plan approved by the Architectural Board of Review on May 13, 2002.

### **History**

The Public Works Department, Wastewater Division, purchased the property from the Parker family in 1998 with the intention of utilizing the parcel for future expansions to the adjacent EEWTP. The property had been owned by UPRR prior to acquisition by the Parker family, and at one time a rail spur crossed the parcel, accessing properties to the west, currently owned by the Wright family.

The unpermitted grading (scraping) and vegetation clearing occurred in 1999 as part of a work effort to remove trash and other debris that had been dumped by trespassers and/or generated by homeless encampments located on the property. The majority of vegetation removed was ruderal, non-native plant species with the exception of cattails that were located in a portion of a drainage extending across the entire length of the parcel, parallel to the adjacent rail corridor.

After work had commenced, the Public Works Department was notified by the Community Development Department that a Coastal Development Permit was necessary for the vegetation removal and earth scraping within and along the drainage. The Public Works Department was also notified by the U.S. Army Corps of Engineers (USACE) that a determination had been made that approximately 2,600 square feet (.06 acres) of jurisdictional wetland had been impacted by the work within the drainage and corrective measures were required to remedy this as a violation. It was also determined by responsible agencies that the work had impacted Pacific pond turtle habitat.

### **Original Project Permitting and Approval**

On July 6, 2000 a CDP application was considered and approved by the Planning Commission to address the unpermitted work, including the USACE wetland violation. The El Estero Drain Wetland Restoration Plan was approved by the Architectural Board of Review on May 13, 2002. The Plan identified restoration of the impacted wetland at a 4:1 ratio (approximately 10,400 square feet), as well as enhancements to the remainder of the 1.19 acre parcel to create additional riparian and upland habitat suitable for the Pacific pond turtle.

In spring of 2002, after Public Works obtained the appropriate permits from the California Department of Fish and Game (CDFG), and the USACE, work began to restore and enlarge the wetland, and to enhance the remainder of the parcel. Activities included excavating a new alignment for the drainage, relocation of culvert to facilitate turtle passage, backfilling the existing drainage with the excavated soil, and re-grading the site.

### **Discovery of Contamination**

During late stages of excavation and contouring new alignment of drainage, approximately 400 cubic yards of excess soil were rejected as fill material by the County of Santa Barbara Landfill based on the discovery of black-stained material and glass debris. The initial analytical results of samples collected from the excess soil indicated elevated petroleum hydrocarbon and lead concentrations (URS, 2003). Restoration activities were then halted to allow for a full characterization of the site.

Analytical results of both soil investigations performed at the site (URS in 2002 and BBL in 2005) were evaluated to develop an understanding of the nature and extent of contamination at the site. Human health risk assessments were prepared and submitted to Santa Barbara County Fire Prevention Division - Hazardous Materials Unit (FPD)

In response to comments from the Santa Barbara County FPD, ARCADIS BBL (2007a) conducted a more detailed site-specific cumulative risk assessment of all detected constituents in soil/sediment media from 0 to 2 feet below ground surface (bgs) that included receptor-specific exposure parameter values for the maintenance worker.

Overall, the results of the updated site-specific human health risk assessment (2010) were similar to those reported by URS (2003), BBL (2006), and ARCADIS BBL (2007a), all of which concluded that the site soils would not likely pose an unacceptable risk to maintenance workers or industrial workers for soils at 0 to 2 feet bgs. Evaluation of soils at 0 to 5 feet bgs as requested by the FPD found little difference in the risks associated with soils at 0 to 2 feet bgs as compared to soils at 0 to 5 feet bgs. For any of these scenarios, the estimated risks (excluding arsenic) were almost entirely due to a single sample location.

In July 2013, after additional consultation with the Santa Barbara County Public Health Department, Environmental Health Services Division (EHS) - Site Mitigation (SMU), a revised Remedial Action Plan (RAP) was submitted for their review. In January 2014, the County Public Health Department, EHS – SMU approved the RAP with conditions.

### **Revised Permitting to Complete Restoration**

In October 2013, the Public Works Department submitted a CDP application to complete the restoration project and implement the RAP. The application included proposed modifications to the approved CDP and associated restoration plan.

In early 2014 a conceptual plan was submitted for City staff review by the Creeks Division for the Mission Lagoon - Laguna Channel Restoration Project. The Mission Lagoon project, as proposed, would remove most of the improvements constructed and installed by the El Estero Drain Restoration project. After discussions with Public Works staff, Planning staff, Creeks staff, and USACE staff, it was determined that a phased approach to the restoration should be considered to allow coordination with the Mission Lagoon project. It was also determined that because installation of the elliptical culvert and a majority of the grading, excavation, and contouring approved for the original restoration project had already occurred, the revised El Estero Drain Restoration project would qualify for a SCD request.

On April 26, 2015, the Public Works Department submitted a SCD request that included a phased approach to the restoration to allow coordination with the Mission Lagoon project. After the SCD request was submitted, the Creeks Division determined that the Mission Lagoon project would not be moving forward at this time and that the El Estero Drain project should be considered independently.

Planning staff reviewed the SCD request and provided recommendations toward support for a SCD. A second SCD request was submitted by Public Works to the Community Development Department on August 3, 2016. The submittal incorporated the recommendations that had been provided by Planning staff. This included the following:

- Creation of third basking area at westerly end of drainage in same location as original approval;
- Turtle ramp constructed of same design and in same location as original approval;
- Planting of native vegetation within UPRR easement in same location as original approval;
- and

- Increase restoration area from 0.78 acres as proposed in first SCD request to a minimum of 1.0 acre to allow more consistency with the original approval

The current project proposes to exclude the following improvements described in the original approval:

- Construction of a meandering walking path along northerly boundary of restoration area;
- Installation of 3 foot tall post and rail fence along northerly boundary of restoration area; and
- Deepening of entire length and width of realigned drainage by 1 - 2 feet

Since the time of the August 3rd SCD request submittal, Public Works and Planning Staff have met with Creeks Staff and representatives of the Environmental Defense Council and Urban Creeks Council. Based on these meetings, Public Works has agreed to incorporate additional features into their project proposal. These include the following:

- Deepening of basking area at westerly end of drainage by 1 - 3 feet;
- Increase restoration area from 0.78 acres to include entire 1.19 acre parcel to be consistent with original approval; and
- Utilization of permeable pavers instead of decomposed granite for access road surface in same location as originally approved.

### **Environmental Review**

A Mitigated Negative Declaration (MND) was adopted for the original project. Staff has determined based on substantial evidence in the record, pursuant to CEQA Guidelines Section 15162, that no substantial changes are proposed in the project and no substantial changes occur with respect to the circumstances under which the project is undertaken which will require revisions of the MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; therefore, no subsequent MND is required. Since the MND was adopted in 2000, some changes have been made to the analytic criteria for environmental review (i.e., greenhouse gases, traffic thresholds); however, the project as identified above would not result in significant environmental effects related to these areas. All previously identified conditions of approval and mitigation measures would continue to apply to the project, as specified in Planning Commission Resolution No. 029-00 (see Exhibit A).

Although not required for this discussion item, a notice was sent to all property owners within 300 feet of the project site and to all interested parties.

### **Recommendation/Request for Comment**

Staff is of the opinion that because the project as currently proposed meets the intent and objectives of the previously approved restoration project, the revised project could potentially be found in substantial conformance; however, staff would like more formal input from the Commission before making a final decision. The Planning Commission Guidelines allow for discussion with the Commission regarding a substantial conformance determination.

Staff requests that the Planning Commission provide input on the substantial conformance request for the revised restoration plan and remedial action plan and whether or not the proposed project is in substantial conformance with the CDP approved by the Planning Commission on July 6, 2000 for the Laguna Creek and El Estero Drain Restoration and Maintenance Project and the

associated El Estero Drain Wetland Restoration Plan approved by the Architectural Board of Review on May 13, 2002.

Environmental documents for the original approval can be found at the following location:

<http://www.santabarbaraca.gov/services/planning/erds/adopted/default.asp>

Exhibits:

- A. Planning Commission Resolution No. 029-00
- B. Approved El Estero Drain Wetland Restoration Plan
- C. PC Staff Report, dated July 6, 2000
- D. Applicant Letter, dated August 3, 2016
- E. Proposed Remedial Action Plan and Habitat Restoration Plan, dated October 2016
- F. Updated Project Description, dated August 3, 2016



**CITY OF SANTA BARBARA PLANNING COMMISSION**

**RESOLUTION NO. 029-00  
520 E. YANONALI STREET  
EL ESTERO DRAIN AND LAGUNA CREEK  
JULY 6, 2000**

**SUBJECT:**

APPLICATION OF BOB ROEBUCK, WATER RESOURCES MANAGER, AND ALISON WHITNEY, WATER CONSERVATION SPECIALIST, CITY OF SANTA BARBARA PUBLIC WORKS DEPARTMENT, AGENT FOR THE CITY OF SANTA BARBARA, 520 E. YANONALI STREET, APNs - LAGUNA CREEK: PARTS OF: 017-113-16; 017-540-01, -05 AND -06; 017-630-05, -13, -14 AND -16; EL ESTERO DRAIN: 017-113-019; OM-1, SD-3, OCEAN-ORIENTED MANUFACTURING AND COASTAL OVERLAY ZONES, GENERAL PLAN DESIGNATION: MAJOR PUBLIC AND INSTITUTIONAL/BUFFER; OCEAN-ORIENTED MANUFACTURING (MST99-00507)

This project consists of two parts: Restoration, mitigation and maintenance of Laguna Creek and restoration, enhancement and maintenance of El Estero Drain. The purpose of the Laguna Creek portion of the project is to provide for flood control maintenance of an existing habitat along Laguna Creek between U.S. Highway 101 and the Union Pacific Railroad Tracks. To mitigate loss of habitat resulting from the maintenance, a restoration and mitigation plan is proposed. The El Estero Drain portion of the project is focused primarily on the restoration, enhancement and maintenance of habitat for the Southwestern pond turtle, a State Species of Special Concern. A secondary goal of the El Estero Drain portion is to provide for flood flows, including additional on-site retention.

The project requires City approval of a Coastal Development Permit (SBMC §28.45.009) located in the appeal jurisdiction of the Coastal Zone and a Streambed Alteration Agreement from the California Department of Fish and Game (California Fish and Game Code).

The Planning Commission will consider approval of the Negative Declaration prepared for the project pursuant to the California Environmental Quality Act Guidelines Section 15074. (JH)

**WHEREAS**, the Planning Commission has held the required public hearing on the above application, and the Applicant was present.

**WHEREAS**, three persons appeared to speak in favor of the application, and no one appeared to speak in opposition thereto, and the following exhibits were presented for the record:

1. Staff Report with Attachments, June 30, 2000
2. Site Plan

**NOW, THEREFORE BE IT RESOLVED** that the City Planning Commission:

I. Approved the subject application making the following findings and determinations:

Environmental Review

- A. Find that the Planning Commission has read and considered the Final Mitigated Negative Declaration (MST99-00507) for the Laguna Creek and El Estero Drain Maintenance and Restoration Project together with comments received during the public review process; and that the MND is adequate and has been completed in compliance with the California Environmental Quality Act (CEQA) and Guidelines. Find that, in the Commission's independent judgement, there is no substantial evidence that the project with identified mitigation measures will have a significant effect on the environment. Find that the record of proceedings on which this decision is based is in the custody of the City of Santa Barbara Community Development Department located at 630 Garden Street, Santa Barbara, CA.
- B. Adopt the Mitigated Negative Declaration (MST99-00507) for the Laguna Creek and El Estero Drain Maintenance and Restoration Project, including the Mitigation Monitoring Program.
- C. Approve the Coastal Development Permit for the Laguna Creek and El Estero Drain Maintenance and Restoration Project, finding that the project is consistent with the policies of the California Coastal Act and is consistent with all applicable policies of the City's Coastal Plan, all applicable implementing guidelines, and all applicable provisions of the Code, as discussed in the Planning Commission Staff Report of July 6, 2000. The project consists of restoration and maintenance of Laguna Creek and El Estero Drain, including the expansion of environmentally sensitive wetland and riparian habitat for the southwestern pond turtle.

II. Said approval is subject to the following conditions:

Those conditions drawn from the mitigation measures in the Negative Declaration include the mitigation measure number in parentheses at the end of the condition.

- A. This Coastal Development Permit (CDP) shall be in effect for a period of ten (10) years from the date upon which the Planning Commission issues a Coastal Permit for this project unless construction does not commence within two (2) years of said date (see Notice at the end of the Conditions of Approval). At the conclusion of this permit, the Public Works Department may apply to renew the CDP for maintenance activities that do not qualify for a Coastal Exclusion for an additional five (5) years. Such renewal may be considered every five years from that time forward. During the ten (10) year period, Public Works Department staff shall keep a maintenance activity record, which tracks all maintenance that occurs within the project area. This record shall be submitted with the request for CDP renewal along with information regarding the existence of any new endangered, threatened or candidate species for such designation and any maintenance activities expected to occur during the next five-year period.

- B. Pursuant to Section 21089(b) of the California Public Resources Code and Section 711.4 et. seq. of the California Fish and Game Code, the approval of this permit/project shall not be considered final unless the specified Department of Fish and Game fees are paid and filed with the California Department of Fish and Game within five days of project approval. The fees required are \$850 for projects with Environmental Impact Reports and \$1250 for projects with Negative Declarations. Without the appropriate fee, the Notice of Determination (which the City is required to file within five days of project approval) can not be filed and the project approval is not operative, vested or final. The fee shall be delivered to the Planning Division immediately upon project approval in the form of a check payable to the California Department of Fish and Game.
- C. All conditions imposed by the U.S. Army Corps of Engineers, the California Department of Fish and Game and the Regional Water Quality Control Board are hereby incorporated by reference into these conditions. Where there are differences in conditions between this document and conditions imposed by other agencies, those most protective of the environment shall prevail. Evidence of permits and/or approvals from the above stated agencies shall be submitted to the Planning Division prior to issuance of building or public works permits.
- D. The development of the Real Property approved by the Planning Commission on July 6, 2000 is limited to the improvements shown on the Plan signed by the Chairman of the Planning Commission on said date and on file with the City of Santa Barbara and the improvements described in the Planning Commission staff report and attachments, dated July 6, 2000.
- E. The Owner or contractor shall submit the following or evidence of completion of the following to the Public Works Department prior to the issuance of a Building or Public Works Permit for the project:
  - 1. An engineered drainage and grading plan. Design grading plan for El Estero Drain to prevent changes in ponding on the adjacent property to the east of the subject parcel. Redesign the perimeter fence to eliminate the concrete footing and the wooden slats (Bio-2).
  - 2. A Storm Water Pollution Prevention Plan shall be prepared and implemented and shall include, but not be limited to, the following:
    - a. For Laguna Creek, all mechanized equipment shall operate from the top of the bank.

- b. To the extent feasible, limit grading activities in and around El Estero Drain to the non-rainy season, while avoiding turtle and bird breeding seasons. If construction during the rainy season is unavoidable, use silt fences, straw bales and other erosion control measures, as necessary, to control siltation of El Estero Drain and Laguna Creek during wet periods.
  - c. Cover stockpiled fill soils and other construction materials.
  - d. Seed and plant disturbed areas with native vegetation required by the restoration plan immediately following construction activities.
  - e. Provide dust control by wetting exposed soil surfaces.
  - f. Clean up equipment leaks, drips and spills immediately. Use dry cleaning methods wherever possible.
  - g. Any on-site equipment refueling shall be confined to one designated location, preferably in an existing paved area.
  - h. Apply any other Best Management Practices (BMPs) appropriate to the project to protect surface water quality (WR-1).
  - i. If necessary, use straw bales, jute mats or other BMPs on the new channel banks to reduce runoff velocity and erosion while the new vegetation is being established (WR-2).
3. Easements or other acceptable instruments described as follows, subject to approval by the Public Works Department and/or the Building & Safety Division:
    - a. Access to property not owned by the City along Laguna Creek, either through right-of-entry or other appropriate instrument.
    - c. Easement or other appropriate instrument to construct and maintain a culvert and turtle ramp from El Estero Drain to Laguna Creek on land presently owned by the Union Pacific Railroad.
  4. Submit a copy of the signed, binding contract with a City-approved archaeologist for monitoring during all ground disturbing activities associated with the project, including, but not limited to, demolition, grading, excavation, trenching, or vegetation removal and ground clearance in the El Estero Drain area. The contract shall establish a schedule for monitoring and a report to the City Environmental Analyst on the findings of the monitoring. Contract(s) shall

be subject to the review and approval by the City's Environmental Analyst (related to CR-1 – CR-3).

- F. The following is subject to the review and approval of the Architectural Board of Review (ABR):
1. Plant native vines appropriate to the habitat, propagated from the project site or as near as feasible, adjacent to the chain link fence in such a manner that the vines eventually hide the fence (Aes-1).
  2. Incorporate a pathway into the northerly buffer for the El Estero Drain area that is consistent with and does not detract from the intent of the buffer to protect habitat for the Southwestern pond turtle while providing an opportunity for wastewater treatment plant guests to understand and appreciate the benefits of habitat restoration and sensitive species protection. Access for maintenance may be incorporated into the pathway. Interpretive signing shall be provided, subject to approval by the Sign Committee. Language on the sign(s) must be reviewed and approved by a qualified biologist.
- G. The Owner shall complete the following prior to the issuance of building or public works permits:
1. The owner shall submit to the City's Environmental Analyst a monitoring program for the project's mitigation measures, as stated in the Negative Declaration, MST99-00507. Mitigation monitors responsible for permit compliance monitoring must be hired and paid for by the applicant. The mitigation monitoring program shall include, but not be limited to:
    - a. A list of the project's mitigation measures.
    - b. An indication of the frequency of the monitoring of these mitigation measures.
    - c. A schedule of the monitoring of the mitigation measures.
    - d. A list of reporting procedures.
    - e. A list of the mitigation monitors to be hired.
  2. For El Estero Drain grading only, the Owner shall complete a contract with a City-approved archaeologist prior to the issuance of building permits for monitoring during all ground disturbing activities associated with the project, including, but not limited to, grading, excavation, trenching, vegetation or paving removal and ground clearance in the El Estero Drain area. The contract shall establish a schedule for monitoring and submittal of a report to the City Environmental Analyst on the findings of the monitoring. Contract(s) shall be subject to the review and approval of the Environmental Analyst (CR-1).

3. For El Estero Drain only, a construction conference shall be scheduled by the General Contractor. The conference shall include representatives from the Public Works Department, Building Division, Planning Division, the Property Owner, the archaeologist and the Contractor. The following shall be finalized and specified in written form and submitted with the application for a building permit and shall be specified on the construction plans submitted for building permits:
  - a. If any archaeological artifacts, exotic rock (non-native) or unusual amounts of shell or bone are uncovered during any on-site grading, trenching or construction activities, all work must stop immediately in the area and a City-approved archaeologist retained to evaluate the deposit. The City of Santa Barbara Environmental Analyst must also be contacted for review of the archaeological find(s).

If the discovery consists of potentially human remains, the Santa Barbara County Coroner and the California Native American Heritage Commission must also be contacted. Work in the area may only proceed after the Environmental Analyst grants authorization (CR-2).
  - b. Schedule for the City-approved archaeologist/s presence during grading and/or construction activities that disturb the area described above. The archaeologist's monitoring shall include the following provisions. If cultural resources are encountered or suspected, work shall be halted immediately; the City Environmental Analyst shall be notified. The archaeologist shall assess the nature, extent and significance of any discoveries and develop appropriate management recommendations for archaeological resource treatment, including but not limited to redirection of grading and/or excavation activities. If the findings are potentially significant, a Phase 3 recovery program shall be prepared and accepted by the Environmental Analyst and the Historic Landmarks Commission. That portion of the Phase 3 program that requires work on-site shall be completed prior to continuing construction in the affected area. If prehistoric or other Native American remains are encountered, a Native American representative shall be contacted and shall remain present during all further subsurface disturbances in the area of the find (CR-2).
  - c. During site grading and transportation of fill materials, regular water sprinkling shall occur using reclaimed water. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust (AQ-1). Throughout construction, water trucks or sprinkler

systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph (AQ-1).

- d. After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:
    - (1) Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind;
    - (2) Completion of revegetation plan;
    - (3) Other methods approved in advance by the Air Pollution Control District (AQ-2).
  - e. Construction shall be prohibited on Saturday, Sunday, Holidays, and between the hours of 7:00 p.m. and 7:00 a.m. (Noise-1).
  - f. All construction equipment, including trucks, should be professionally maintained and fitted with standard manufacturers' muffler and silencing devices (Noise-2).
4. The culvert between El Estero Drain and Laguna Creek shall be designed such that its elevation and size will result in maintenance of moist conditions in El Estero Drain while still allowing high flows to drain into Laguna Creek in a manner similar to that occurring under the existing condition (WR-3).
- H. The following requirements shall be incorporated into, or submitted with the construction plans submitted to the Building & Safety Division with applications for building permits the Public Works Department for public works permits. All of these construction requirements must be completed prior to the issuance of a Certificate of Occupancy:
1. Plants used in the restoration plans for both Laguna Creek and El Estero Drain shall be propagated from the project site or as near as feasible within the Santa Barbara coastal area. Sycamore trees meeting these criteria shall be added to the plant mix for the El Estero Drain buffer areas. (Willow trees shall be added to the east bank of Laguna Creek and may be pruned as necessary to allow access for the crane-mounted clamshell bucket used for desiltation. It is preferable to use smaller propagules for establishment of habitat. Consider use of liners and cuttings rather than one- to five-gallon plants, where feasible (Bio-1).

2. The two-year maintenance period shall begin immediately after the contractor has completed the implementation of the restoration. To receive final acceptance of the restoration, the site shall be inspected and approved by a qualified restoration specialist/biologist involved in the design and/or implementation of the mitigation plan.

During the two year maintenance period following initial restoration:

- The contractor will conduct routine activities to maintain the plantings and seeded areas in a healthy condition and control erosion of the site.
- The site will be inspected by a qualified restoration specialist/biologist for necessary repair or remedial measures a minimum of four times a year.
- At the end of the maintenance period, the restoration specialist/biologist will conduct a final inspection. Any outstanding items will need to be completed prior to final approval and acceptance of the restoration.

Maintenance activities will include routine watering, replanting or reseeded, repair of damaged areas, weeding, remedial erosion control and removal of excess sediment from areas if the sediment has clearly eroded from the site.

Semi-annual reports in April and November on the status of the restoration work shall be submitted to the Environmental Analyst, including the following information:

- A quantitative analysis of attainment of annual performance standards and progress toward meeting final performance standards.
- A list of names, titles and affiliations of persons conducting the monitoring and preparing the report.
- A copy of the Corps and/or other agency permits, including special conditions and any letters of modification.
- Photographs taken at photo-documentation points.
- Relevant maps.
- Summary results of previous years' monitoring (Bio-3).

3. During the five year monitoring period that follows the two-year maintenance program, typical plant vegetation sampling methods shall be used. For example, plant species composition and percentages would be determined for the site by sampling throughout the site and recording relevant data, such as:
  - Species occurring within the area, the species wetland or riparian indicator status and whether the species is native or introduced.
  - Percent plant cover.

Qualitative information about weather and site conditions shall also be collected. There shall also be permanent photo-documentation points established. Color photographs shall be taken from the same point each year to assist in documentation of mitigation status. Based on the findings of the annual monitoring report, additional weeding could occur if necessary to meet the performance goals for plant cover and species diversity (Bio-4).

4. A report on the condition of site vegetation shall be prepared at the end of the two-year maintenance period. During the 5-year monitoring period, annual reports describing the results of mitigation monitoring shall be submitted to the California Department of Fish and Game (CDFG) and other interested agencies, as appropriate, and the Environmental Analyst before the end of each November.

The annual monitoring reports shall contain the following information:

- A quantitative analysis of attainment of annual performance standards and progress toward meeting final performance standards.
  - A list of names, titles and affiliations of persons conducting the monitoring and preparing the report.
  - A copy of the Corps and/or other agency permits, including special conditions and any letters of modification, as determined to be necessary.
  - Photographs taken at photo-documentation points.
  - Relevant maps.
  - Summary results of previous years' monitoring (Bio-5).
5. All Planning Commission Conditions of Approval shall be provided on a full size drawing sheet as part of the drawing sets. A statement shall also be placed on the above sheet as follows:

The undersigned have read and understand the above conditions, and agree to abide by any and all conditions which is their usual and customary responsibility to perform, and which are within their authority to perform.

Signed:

\_\_\_\_\_  
Property Owner Date

\_\_\_\_\_  
Contractor Date License No.

\_\_\_\_\_  
Architect Date License No.

\_\_\_\_\_  
Engineer Date License No.

6. The Final Restoration and Maintenance plans for Laguna Creek and El Estero Drain shall incorporate the following:
- a. Prior to desiltation or vegetation removal, a qualified biologist shall temporarily relocate any turtles found in or near the proposed work area (Bio-6).
  - b. Prior to desilting or removing debris or vegetation in either Laguna Creek or El Estero Drain in the future, the Public Works Department must demonstrate the need for such removal (e.g., the extent of capacity lost due to siltation). Desilting or debris and vegetation removal shall occur only during low flow periods after turtle and bird breeding seasons end and before the rainy season begins. Work in El Estero Drain shall be done by hand unless it is necessary to remove large obstructions or substantial sediment plugs (Bio-7).
  - c. To the extent feasible, vegetation shall be removed from the El Estero Drain area in a mosaic pattern that preserves enough vegetation to provide diverse habitats (Bio-8).
  - d. Use of herbicides shall be subject to approval by the restoration specialist/biologist. Hand spraying shall be used. No aerial spraying shall be allowed. All spraying shall take place when wind speeds are at or below five miles per hour and rain is not predicted within six hours. Herbicides shall be applied selectively, only to specific problem

vegetation. Spraying shall be confined to the immediate channel invert to provide habitat by allowing native riparian and understory vegetation to develop on stream banks. Invasive weeds shall be reduced by selective spraying and hand-removal of propagules. Trained personnel shall do all spraying. Sprayers shall be filled outside of riparian corridors (Bio-9).

- e. After desilting or vegetation removal, plants included in the initial restoration and revegetation plans shall be planted as necessary to assist in reestablishment of lost habitat, in consultation with a qualified restoration biologist (Bio-10).
  - f. The Public Works Department shall minimize applicator exposure to glyphosate. Workers mixing Rodeo™ shall wear eye protection and gloves to minimize exposure to face and hands. When pouring herbicides, workers shall keep containers below eye level (Haz-1).
7. The City Public Works Department shall inspect the headwalls for the two drains from El Estero Wastewater Treatment Plant into Laguna Creek. If necessary, these headwalls shall be replaced with structures that perform the same function and are more aesthetically pleasing.
- I. Prior to Final Inspection for the Public Works or Building Permit, the Owner of the Real Property shall complete the following:
- 1. Repair any damaged public improvements subject to the review and approval of the Public Works Department.
  - 2. The owner of El Estero Drain shall complete a final report on the results of the archaeological monitoring shall be submitted to the Environmental Analyst within 180 days of completion of the monitoring and prior to the issuance of the Certificate of Occupancy (Final Inspection), whichever is earlier (CR-3).

**NOTICE OF COASTAL DEVELOPMENT PERMIT TIME LIMITS:**

The Planning Commission's action approving the Coastal Development Permit shall expire two (2) years from the date of approval, per SBMC 28.45.009.q, unless:

- 1. Otherwise explicitly modified by conditions of approval of the development permit, or unless construction or use of the development has commenced.
- 2. A building permit for the work authorized by the coastal development permit is issued prior to the expiration date of the approval.

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3. A one (1) year time extension may be granted by the Planning Commission if the construction authorized by the permit is being diligently pursued to completion and issuance of a Certificate of Occupancy. Not more than three (3) extensions may be granted.

This motion was passed and adopted on the 6th day of July, 2000 by the Planning Commission of the City of Santa Barbara, by the following vote:

AYES: 6 NAYS: 0 ABSTAIN: 0 ABSENT: 1 (McGuire)

I hereby certify that this Resolution correctly reflects the action taken by the City of Santa Barbara Planning Commission at its meeting of the above date.

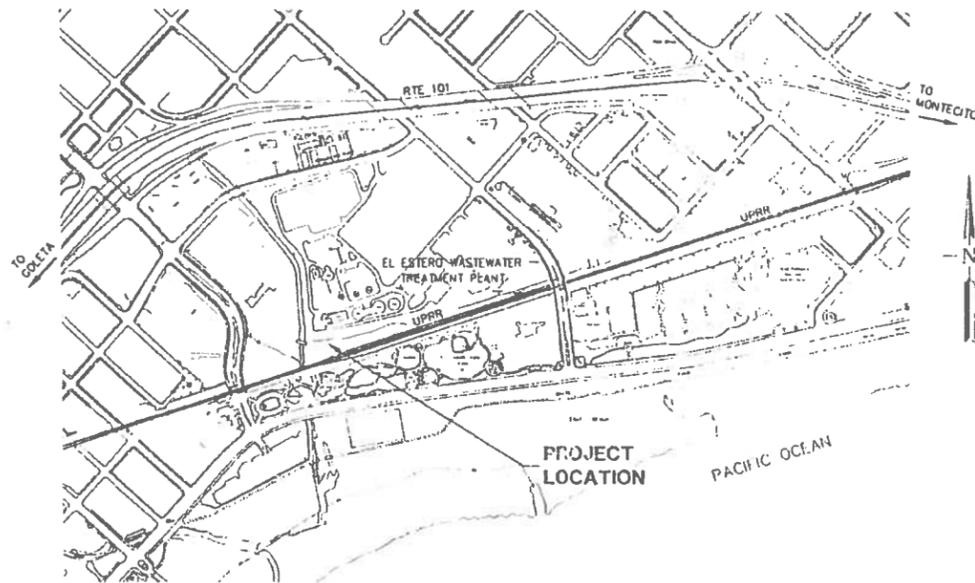
\_\_\_\_\_  
Anita L. Leski, Planning Commission Secretary

\_\_\_\_\_  
Date

THIS ACTION OF THE PLANNING COMMISSION CAN BE APPEALED TO THE CITY COUNCIL WITHIN TEN (10) DAYS AFTER THE DATE THE ACTION WAS TAKEN BY THE PLANNING COMMISSION.

# EL ESTERO DRAIN WETLAND RESTORATION PLAN

## IN THE CITY OF SANTA BARBARA, CALIFORNIA



**LOCATION MAP**  
NO SCALE

**LEGEND**

PROPOSED	DESCRIPTION	EXISTING
●	MANHOLE	
—	SEWER CLEAN CUT	
—	POWER POLE/JOINT POLE	
□	UTILITY VAULT	
○—○	POST FENCE	
—	FENCE	
1.4%	SLOPE & DIRECTION	

**NOTE:**  
SEE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS AND STANDARD SPECIFICATIONS, HEREBY INCORPORATED BY REFERENCE.

**IMPORTANT NOTICE**

ALL UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR IS TO NOTIFY UNDERGROUND SERVICE ALERT TWO WORKING DAYS PRIOR TO STARTING ANY EXCAVATION OR RESURFACING.

CALL TOLL FREE 1-800-422-4133

PROPERTY LINES  
ARE APPROXIMATE

SOME OF THE TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN WERE TAKEN FROM THE CITY'S 1995 DIGITAL TOPOGRAPHIC MAP. THE MAP WAS COMPILED FROM AERIAL PHOTOGRAPHY AT A SCALE OF 1"=100' IN CONFORMANCE WITH THE NATIONAL MAPPING ACCURACY STANDARDS. ANY ENLARGEMENT FROM THAT SCALE CANNOT BE CONSIDERED POSITIONALLY ACCURATE.

**SHEET INDEX**

NO.	ID	DESCRIPTION
1	C-1	COVER SHEET
2	K-1	CONTROL DIAGRAM
3-4	N-1 & N-2	CONDITIONS OF APPROVAL
5	P-1	PLAN & PROFILE
6-8	G1-G3	GRADING PLANS
9-14	L1-L6	LANDSCAPING PLANS

APPROVED: S.D.E. VANCE/DALE ST  
 JUNE 25, 2002  
 PREPARED BY: [Signature]  
 DATE: 07-13-02  
 INSPECTED BY: [Signature]  
 DATE:

City of Santa Barbara - Community Development Department  
**BUILDING & SAFETY DIVISION APPROVAL**  
 Any changes or alterations to these conditions will require approval from the Building & Safety Division.  
 Date: MAY 13 2002  
 [Signature]  
 This approval is for the plan, documents and project as submitted, and does not constitute an endorsement or approval of the work or performance of the contractor.

CPS

City of Santa Barbara - Community Development Department  
**PLANNING DIVISION APPROVAL**  
 ZONING: [Blank] DATE: 5/13/02 BY: [Signature]  
 DESIGN REVIEW: DATE: 5/13/02 BY: [Signature]  
 FINAL APPROVAL: DATE: 5/13/02 BY: [Signature]  
 Approved by: [Signature]  
 Vice Mayor/Landmarks Commission  
 This approval is for the site plan and project description submitted and does NOT have any requirement of other laws or ordinances of the City of Santa Barbara. (805) 884-5478

SUBMITTED BY: [Signature] DATE: 10/10/01  
 JORGE AGUIAR  
 REG. 48704  
 ENGINEER IN RESPONSIBLE CHARGE  
 URS CORPORATION

NO.	DESCRIPTION	DATE	APPROVED
REVISIONS			

**EL ESTERO  
DRAIN WETLAND  
COVER SHEET**



**URS**  
 ENGINEERING • PLANNING • SURVEYING  
 1380 LEAD HILL BLVD, SUITE 100  
 ROSEVILLE, CA 95661 (916) 784-3900

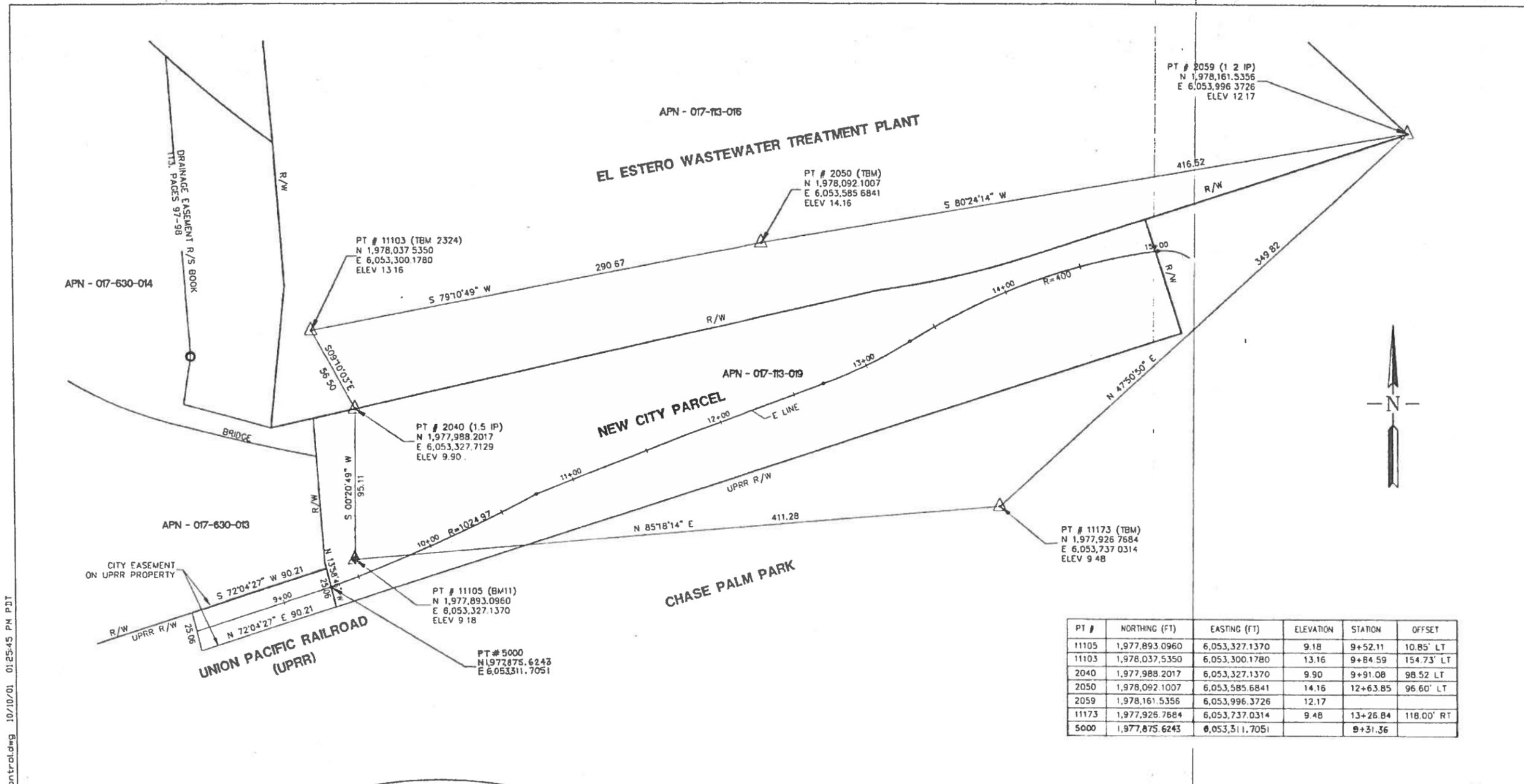
**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION  
 APPROVED: [Signature] DATE: 12/12/2001  
 CITY ENGINEER

SCALE:	VERT. NONE	PHD NO. 8377
	HOR. NONE	SHT. 1 OF 14 SHEETS
ARCH NO. 5207	DWG NO. C-1-4056	



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T:\SB-CITY\SB\CITY EL ESTERO\06-DWG\control.dwg 10/10/01 01:25:45 PM PDT



PT #	NORTHING (FT)	EASTING (FT)	ELEVATION	STATION	OFFSET
11105	1,977,893.0960	6,053,327.1370	9.18	9+52.11	10.85' LT
11103	1,978,037.5350	6,053,300.1780	13.16	9+84.59	154.73' LT
2040	1,977,988.2017	6,053,327.1370	9.90	9+91.08	98.52' LT
2050	1,978,092.1007	6,053,585.6841	14.16	12+63.85	96.60' LT
2059	1,978,161.5356	6,053,996.3726	12.17		
11173	1,977,926.7684	6,053,737.0314	9.48	13+26.84	118.00' RT
5000	1,977,875.6243	6,053,311.7051		9+31.36	

BM: SBCN PT #33, RS 147, PG 70-74,  
SANTA BARBARA COUNTY RECORDER  
ELEV: 11.34'  
DATUM: NAVD 88

BASIS OF BEARINGS RS 147, PG 70-74,  
SANTA BARBARA COUNTY RECORDER

PLOT OF ACQUIRED CITY LANDS BETWEEN  
EL ESTERO WASTEWATER TREATMENT PLANT AND  
THE UNION PACIFIC RAILROAD TRACKS

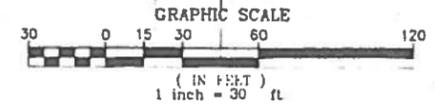
**IMPORTANT NOTICE**

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CONTRACTOR IS TO NOTIFY UNDERGROUND  
SERVICE ALERT TWO WORKING DAYS PRIOR  
TO STARTING ANY EXCAVATION OR RESUR-  
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CALL TOLL FREE 1-800-422-4133

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**APPROVED**  
BUILDING & SAFETY

**K-1**

NO	DESCRIPTION	DATE	APPROVED

DESIGN NGK/JA  
DRAWN NGK  
CHECKED JA  
BID NO 3334  
PAGE  
ATLAS

**EL ESTERO  
DRAIN WETLAND  
CONTROL DIAGRAM**



**URS**  
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1380 LEAD HILL BLVD, SUITE 100  
ROSEVILLE, CA 95681 (916) 784-3900

**CITY OF SANTA BARBARA**  
PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
APPROVED: *Pat Kelly*  
DATE: 11/20/01

SCALE: VERT. NONE HOR. 1"=30'	PROJ. NO. 8377
ARCH. NO. 5207	SHT. 2 OF 14 SHEETS DWG. NO. C-1-4056

CONDITIONS OF APPROVAL

CITY OF SANTA BARBARA PLANNING COMMISSION  
 RESOLUTION NO. 029-00  
 520 E. YANONALI STREET  
 EL ESTERO DRAIN PROJECT  
 JULY 6, 2000

These conditions drawn from the mitigation measures in the Negative Declaration include the mitigation measure number in parentheses at the end of the condition.

- A. This Coastal Development Permit (CDP) shall be in effect for a period of ten (10) years from the date upon which the Planning Commission issues a Coastal Permit for this project unless construction does not commence within two (2) years of said date (see Notice at the end of the Conditions of Approval). At the conclusion of this permit, the Public Works Department may apply to renew the CDP for maintenance activities that do not qualify for a Coastal Extension for an additional five (5) years. Such renewal may be considered every five years from that time forward. During the ten (10) year period, Public Works Department staff shall keep a maintenance activity record, which tracks all maintenance that occurs within the project area. This record shall be submitted with the request for CDP renewal along with information regarding the existence of any new endangered, threatened or candidate species for such designation and any maintenance activities expected to occur during the next five-year period.
- B. Pursuant to Section 21089(b) of the California Public Resources Code and Section 711.4 et. seq. of the California Fish and Game Code, the approval of this permit/project shall not be considered final unless the specified Department of Fish and Game fees are paid and filed with the California Department of Fish and Game within five days of project approval. The fees required are \$850 for projects with Environmental Impact Reports and \$1250 for projects with Negative Declarations. Without the appropriate fee, the Notice of Determination (which the City is required to file within five days of project approval) can not be filed and the project approval is not operative, vested or final. The fee shall be delivered to the Planning Division immediately upon project approval in the form of a check payable to the California Department of Fish and Game.
- C. All conditions imposed by the U.S. Army Corps of Engineers, the California Department of Fish and Game and the Regional Water Quality Control Board are hereby incorporated by reference into these conditions. Where there are differences in conditions between this document and conditions imposed by other agencies, those most protective of the environment shall prevail. Evidence of permits and/or approvals from the above stated agencies shall be submitted to the Planning Division prior to issuance of building or public works permits.
- D. The development of the Real Property approved by the Planning Commission on July 6, 2000 is limited to the improvements shown on the Plan signed by the Chairman of the Planning Commission on said date and on file with the City of Santa Barbara and the improvements described in the Planning Commission staff report and attachments, dated July 6, 2000.
- E. The Owner or contractor shall submit the following or evidence of completion of the following to the Public Works Department prior to the issuance of a Building or Public Works Permit for the project:
  - 1. An engineered drainage and grading plan. Design grading plan for El Estero Drain to prevent changes in ponding on the adjacent property to the east of the subject parcel. Redesign the perimeter fence to eliminate the concrete footing and the wooden slats (Bio-2).
  - 2. A Storm Water Pollution Prevention Plan shall be prepared and implemented and shall include, but not be limited to, the following:
    - a. For Laguna Creek, all mechanized equipment shall operate from the top of the bank.
    - b. To the extent feasible, limit grading activities in and around El Estero Drain to the non-rainy season, while avoiding turtle and bird breeding seasons. If construction during the rainy season is unavoidable, use silt fences, straw bales and other erosion control measures, as necessary, to control siltation of El Estero Drain and Laguna Creek during wet periods.
    - c. Cover stockpiled fill soils and other construction materials.
    - d. Seed and plant disturbed areas with native vegetation required by the restoration plan immediately following construction activities.
    - e. Provide dust control by wetting exposed soil surfaces.
    - f. Clean up equipment leaks, drips and spills immediately. Use dry cleaning methods wherever possible.
    - g. Any on-site equipment refueling shall be confined to one designated location, preferably in an existing paved area.
    - h. Apply any other Best Management Practices (BMPs) appropriate to the project to protect surface water quality (WR-1).
    - i. If necessary, use straw bales, jute mats or other BMPs on the new channel banks to reduce runoff velocity and erosion while the new vegetation is being established (WR-2).
  - 3. Easements or other acceptable instruments described as follows, subject to approval by the Public Works Department and/or the Building & Safety Division:
    - a. Access to property not owned by the City along Laguna Creek, either through right-of-entry or other appropriate instrument.
    - c. Easement or other appropriate instrument to construct and maintain a culvert and turtle ramp from El Estero Drain to Laguna Creek on land presently owned by the Union Pacific Railroad.
  - 4. Submit a copy of the signed, binding contract with a City-approved archaeologist for monitoring during all ground disturbing activities associated with the project, including, but not limited to, demolition, grading, excavation, trenching, or vegetation removal and ground clearance in the El Estero Drain area. The contract shall establish a schedule for monitoring and a report to the City Environmental Analyst on the findings of the monitoring. Contract(s) shall be subject to the review and approval by the City's Environmental Analyst (related to CR-1 - CR-3).
- F. The following is subject to the review and approval of the Architectural Board of Review (ABR):
  - 1. Plant native vines appropriate to the habitat, propagated from the project site or as near as feasible, adjacent to the chain link fence in such a manner that the vines eventually hide the fence (Aes-1).
  - 2. Incorporate a pathway into the northerly buffer for the El Estero Drain area that is consistent with and does not detract from the intent of the buffer to protect habitat for the Southwestern pond turtle while providing an opportunity for wastewater treatment plant guests to understand and appreciate the benefits of habitat restoration and sensitive species protection. Access for maintenance may be incorporated into the pathway. Interpretive signing shall be provided, subject to approval by the Sign Committee. Language on the sign(s) must be reviewed and approved by a qualified biologist.

- G. The Owner shall complete the following prior to the issuance of building or public works permits:
  - 1. The owner shall submit to the City's Environmental Analyst a monitoring program for the project's mitigation measures, as stated in the Negative Declaration, MST99-00507. Mitigation monitors responsible for permit compliance monitoring must be hired and paid for by the applicant. The mitigation monitoring program shall include, but not be limited to:
    - a. A list of the project's mitigation measures.
    - b. An indication of the frequency of the monitoring of these mitigation measures.
    - c. A schedule of the monitoring of the mitigation measures.
    - d. A list of reporting procedures.
    - e. A list of the mitigation monitors to be hired.
  - 2. For El Estero Drain grading only the Owner shall complete a contract with a City-approved archaeologist prior to the issuance of building permits for monitoring during all ground disturbing activities associated with the project, including, but not limited to, grading, excavation, trenching, vegetation or paving removal and ground clearance in the El Estero Drain area. The contract shall establish a schedule for monitoring and submission of a report to the City Environmental Analyst on the findings of the monitoring. Contract(s) shall be subject to the review and approval of the Environmental Analyst (CR-1).
  - 3. For El Estero Drain only, a construction conference shall be scheduled by the General Contractor. The conference shall include representatives from the Public Works Department, Building Division, Planning Division, the Property Owner, the archaeologist and the Contractor. The following shall be finalized and specified in written form and submitted with the application for a building permit and shall be specified on the construction plans submitted for building permits:
    - a. If any archaeological artifacts (exotic rock (non-native) or unusual amounts of shell or bone are uncovered during any on-site grading, trenching or construction activities, all work must stop immediately in the area and a City-approved archaeologist retained to evaluate the deposit. The City of Santa Barbara Environmental Analyst must also be contacted for review of the archaeological find(s). If the discovery consists of potentially human remains, the Santa Barbara County Coroner and the California Native American Heritage Commission must also be contacted. Work in the area may only proceed after the Environmental Analyst grants authorization (CR-2).
    - b. Schedule for the City-approved archaeologist's presence during grading and/or construction activities that disturb the area described above. The archaeologist's monitoring shall include the following provisions: If cultural resources are encountered or suspected, work shall be halted immediately; the City Environmental Analyst shall be notified. The archaeologist shall assess the nature, extent and significance of any discoveries and develop appropriate management recommendations for archaeological resource treatment, including but not limited to redirection of grading and/or excavation activities. If the findings are potentially significant, a Phase 3 recovery program shall be prepared and accepted by the Environmental Analyst and the Historic Landmarks Commission. That portion of the Phase 3 program that requires work on-site shall be completed prior to continuing construction in the affected area. If prehistoric or other Native American remains are encountered, a Native American representative shall be contacted and shall remain present during all further subsurface disturbances in the area of the find (CR-2).
    - c. During site grading and transportation of fill materials, regular water sprinkling shall occur using reclaimed water. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust (AQ-1). Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased wetting frequency will be required whenever the wind speed exceeds 15 mph (AQ-1).
    - d. After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:
      - (1) Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind.
      - (2) Completion of revegetation plan.
      - (3) Other methods approved in advance by the Air Pollution Control District (AQ-2).
    - e. Construction shall be prohibited on Saturday, Sunday, Holidays and between the hours of 7:00 p.m. and 7:00 a.m. (Noise-1).
    - f. All construction equipment, including trucks should be professionally maintained and fitted with standard manufacturers' muffler and silencing devices (Noise-2).
  - 4. The culvert between El Estero Drain and Laguna Creek shall be designed such that its elevation and size will result in maintenance of moist conditions in El Estero Drain while still allowing high flows to drain into Laguna Creek in a manner similar to that occurring under the existing condition (WR-3).
- H. The following requirements shall be incorporated into, or submitted with the construction plans submitted to the Building & Safety Division with applications for building permits the Public Works Department for public works permits. All of these construction requirements must be completed prior to the issuance of a Certificate of Occupancy:
  - 1. Plants used in the restoration plans for both Laguna Creek and El Estero Drain shall be propagated from the project site or as near as feasible within the Santa Barbara coastal area. Sycamore trees meeting these criteria shall be added to the plant mix for the El Estero Drain buffer areas. Willow trees shall be added to the east bank of Laguna Creek and may be pruned as necessary to allow access for the crane-mounted clamshell bucket used for desiltation. It is preferable to use smaller propagules for establishment of habitat. Consider use of liners and cuttings rather than one-to-five-gallon plants, where feasible (Bio-1).



APPROVED  
 BUILDING & SAFETY  
 N-1

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NO.	DESCRIPTION	DATE	APPROVED

**EL ESTERO  
 DRAIN WETLAND  
 CONDITIONS OF APPROVAL**

**URS**  
 ENGINEERING • PLANNING • SURVEYING  
 1380 LEAD HILL BLVD, SUITE 100  
 ROSEVILLE, CA 95661 (916) 784-3900

**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
 APPROVED: *[Signature]* DATE: 12/02/2001

SCALE VERT. NONE	PROJ. NO. 8377
HOR. NONE	SHT. 3 OF 14 SHTS.
ARCH. NO. 5207	DWG. NO. C-1-4056

CONDITIONS OF APPROVAL (cont.)

2. The two-year maintenance period shall begin immediately after the contractor has completed the implementation of the restoration. To receive final acceptance of the restoration, the site shall be inspected and approved by a qualified restoration specialist/biologist involved in the design and/or implementation of the mitigation plan.

During the two year maintenance period following initial restoration:

- The contractor will conduct routine activities to maintain the plantings and seeded areas in a healthy condition and control erosion of the site.
- The site will be inspected by a qualified restoration specialist/biologist for necessary repair or remedial measures a minimum of four times a year.
- At the end of the maintenance period, the restoration specialist/biologist will conduct a final inspection. Any outstanding items will need to be completed prior to final approval and acceptance of the restoration.

Maintenance activities will include routine watering, replanting or reseeding, repair of damaged areas, weeding, remedial erosion control and removal of excess sediment from areas if the sediment has clearly eroded from the site.

Semi-annual reports in April and November on the status of the restoration work shall be submitted to the Environmental Analyst, including the following information:

- A quantitative analysis of attainment of annual performance standards and progress toward meeting final performance standards.
- A list of names, titles and affiliations of persons conducting the monitoring and preparing the report.
- A copy of the Corps and/or other agency permits, including special conditions and any letters of modification.
- Photographs taken at photo-documentation points.
- Relevant maps.
- Summary results of previous years' monitoring (Bo-3).

3. During the five year monitoring period that follows the two-year maintenance program, typical plant vegetation sampling methods shall be used. For example, plant species composition and percentages would be determined for the site by sampling throughout the site and recording relevant data, such as:

- Species occurring within the area, the species wetland or riparian indicator status and whether the species is native or introduced.
- Percent plant cover.

Qualitative information about weather and site conditions shall also be collected. There shall also be permanent photo-documentation points established. Color photographs shall be taken from the same point each year to assist in documentation of mitigation status. Based on the findings of the annual monitoring report, additional weeding could occur if necessary to meet the performance goals for plant cover and species diversity (Bo-4).

4. A report on the condition of site vegetation shall be prepared at the end of the two-year maintenance period. During the 5-year monitoring period, annual reports describing the results of mitigation monitoring shall be submitted to the California Department of Fish and Game (CDFG) and other interested agencies, as appropriate, and the Environmental Analyst before the end of each November.

The annual monitoring reports shall contain the following information:

- A quantitative analysis of attainment of annual performance standards and progress toward meeting final performance standards.
- A list of names, titles and affiliations of persons conducting the monitoring and preparing the report.
- A copy of the Corps and/or other agency permits, including special conditions and any letters of modification, as determined to be necessary.
- Photographs taken at photo-documentation points.
- Relevant maps.
- Summary results of previous years' monitoring (Bo-5).

5. All Planning Commission Conditions of Approval shall be provided on a full size drawing sheet as part of the drawing sets. A statement shall also be placed on the above sheet as follows:

The undersigned have read and understand the above conditions, and agree to abide by any and all conditions which is their usual and customary responsibility to perform, and which are within their authority to perform.

Signed:

Property Owner \_\_\_\_\_ Date \_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_ License No. \_\_\_\_\_

6. The Final Restoration and Maintenance plans for Laguna Creek and El Estero Drain shall incorporate the following:

- Prior to desilting or vegetation removal, a qualified biologist shall temporarily relocate any turtles found in or near the proposed work area (Bo-6).
- Prior to desilting or removing debris or vegetation in either Laguna Creek or El Estero Drain in the future, the Public Works Department must demonstrate the need for such removal (e.g., the extent of capacity lost due to siltation). Desilting or debris and vegetation removal shall occur only during low flow periods after turtle and bird breeding seasons end and before the rainy season begins. Work in El Estero Drain shall be done by hand unless it is necessary to remove large obstructions or substantial sediment plugs (Bo-7).
- To the extent feasible, vegetation shall be removed from the El Estero Drain area in a mosaic pattern that preserves enough vegetation to provide diverse habitats (Bo-8).
- Use of herbicides shall be subject to approval by the restoration specialist/biologist. Hand spraying shall be used. No aerial spraying shall be allowed. All spraying shall take place when wind speeds are at or below five miles per hour and rain is not predicted within six hours. Herbicides shall be applied selectively, only to specific problem vegetation. Spraying shall be confined to the immediate channel invert to provide habitat by allowing native riparian and understory vegetation to develop on stream banks. Invasive weeds shall be reduced by selective spraying and hand-removal of propagules. Trained personnel shall do all spraying. Sprayers shall be filled outside of riparian corridors (Bo-9).
- After desilting or vegetation removal, plants included in the initial restoration and revegetation plans shall be planted as necessary to assist in reestablishment of lost habitat, in consultation with a qualified restoration biologist (Bo-10).
- The Public Works Department shall minimize applicator exposure to glyphosate. Workers mixing Rodeo™ shall wear eye protection and gloves to minimize exposure to face and hands. When pouring herbicides, workers shall keep containers below eye level (Iax-1).

7. Prior to Final Inspection for the Public Works or Building Permit, the Owner of the Real Property shall complete the following:

- Repair any damaged public improvements subject to the review and approval of the Public Works Department.
- The owner of El Estero Drain shall complete a final report on the results of the archaeological monitoring shall be submitted to the Environmental Analyst within 180 days of completion of the monitoring and prior to the issuance of the Certificate of Occupancy (Final Inspection), whichever is earlier (CR-3).

NOTICE OF COASTAL DEVELOPMENT PERMIT TIME LIMITS:  
The Planning Commission's action approving the Coastal Development Permit shall expire two (2) years from the date of approval, per SBMC 28.45.009, unless:

- Otherwise explicitly modified by conditions of approval of the development permit, or unless construction or use of the development has commenced.
- A building permit for the work authorized by the coastal development permit is issued prior to the expiration date of the approval.
- A one (1) year time extension may be granted by the Planning Commission if the construction authorized by the permit is being diligently pursued to completion and issuance of a Certificate of Occupancy. Not more than three (3) extensions may be granted.

T:\SB-City\SBCTy EL ESTERO\06-DWC\PLANNING.dwg 10/10/01 04:02:05 PM PDT



APPROVED  
BUILDING & SAFETY  
N-2

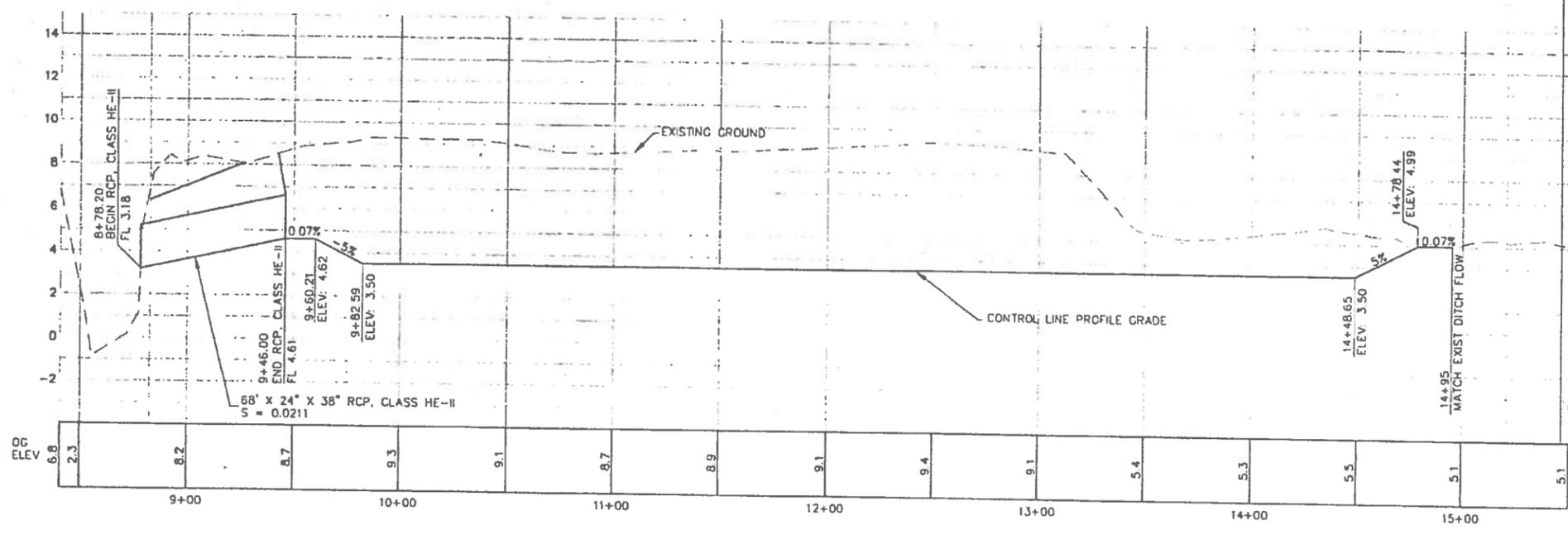
DESIGN	J GRAY, PhD
DRAWN	NICK
CHECKED	J GRAY, PhD
DATE	09/20/01
PAGE	3 OF 4
ATLAS	

EL ESTERO  
DRAIN WETLAND  
CONDITIONS OF APPROVAL

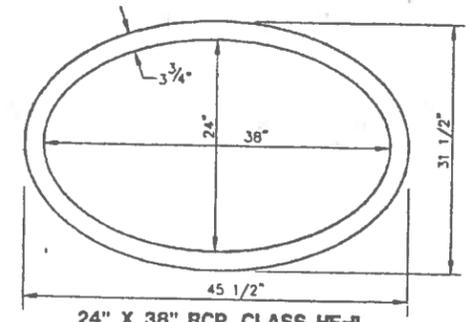
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1380 LEAD HILL BLVD, SUITE 100  
ROSEVILLE, CA 95661 (916) 784-3900

CITY OF SANTA BARBARA  
PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
APPROVED: [Signature]  
DATE: 12/20/01  
CITY ENGINEER

SCALE:	VERT. NONE	PROJ NO. 8377
	HOR. NONE	SHT. 4 OF 14 SHTS
ARCH NO. 5207	DWG NO. C-1-4056	



"E" LINE PROFILE



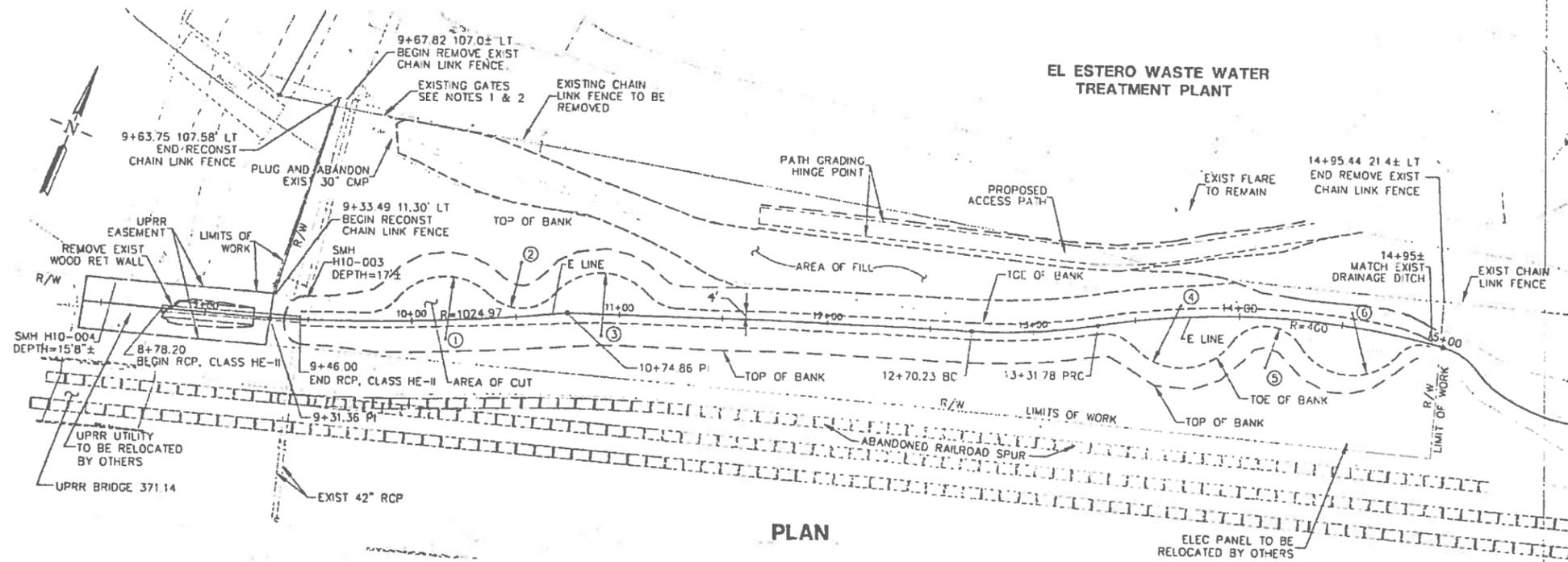
24" X 38" RCP, CLASS HE-II  
NTS  
(EQUIVALENT TO 30" DIA. PIPE)

NOTES :

1. CONSTRUCTION ACCESS THROUGH EXISTING GATES FROM WASTEWATER TREATMENT PLANT
2. CONSTRUCTION STAGING AND WORK LIMITS TO BE CONFINED TO CITY PROPERTY LIMITS OF APN 017-113-019. SEE SHEET K-1
3. GRADING EARTHWORK VOLUME ESTIMATED TO BE 2,400 CUBIC YARDS
4. GRADING AS SHOWN OR AS DIRECTED BY THE ENGINEER. CHANNEL SIDE SLOPES TO BE GRADED AT 2:1 (H.V). TYPICAL

GRADING RADI CONTROL TABLE

PT	RADIUS	STA	OFFSET
①	30'	10+16	9' RT
②	22'	10+55	26' LT
③	30'	10+92	10' RT
④	30'	13+72	6' LT
⑤	20'	14+14	24' RT
⑥	30'	14+54	7' RT



PLAN

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PROPERTY LINES ARE APPROXIMATE



APPROVED BUILDING & SAFETY

**IMPORTANT NOTICE**  
ALL UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR IS TO NOTIFY UNDERGROUND SERVICE ALERT TWO WORKING DAYS PRIOR TO STARTING ANY EXCAVATION OR RESURFACING.  
CALL TOLL FREE 1-800-422-4133

P-1

NO.	DESCRIPTION	DATE	APPROVED

EL ESTERO DRAIN WETLAND  
PLAN AND PROFILE FROM 8+78 TO 14+95



**URS**  
ENGINEERING • PLANNING • SURVEYING  
1380 LEAD HILL BLVD, SUITE 100  
ROSEVILLE, CA 95661 (916) 784-3900

CITY OF SANTA BARBARA  
PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION

APPROVED: *[Signature]* DATE: 1/24/01

SCALE: VERT. 1" = 3'	PROJ. NO. 8377
HOR. 1" = 30'	SHT 5 OF 14 SH15
ARCH. NO. 5207	DWG. NO. C-1-4056

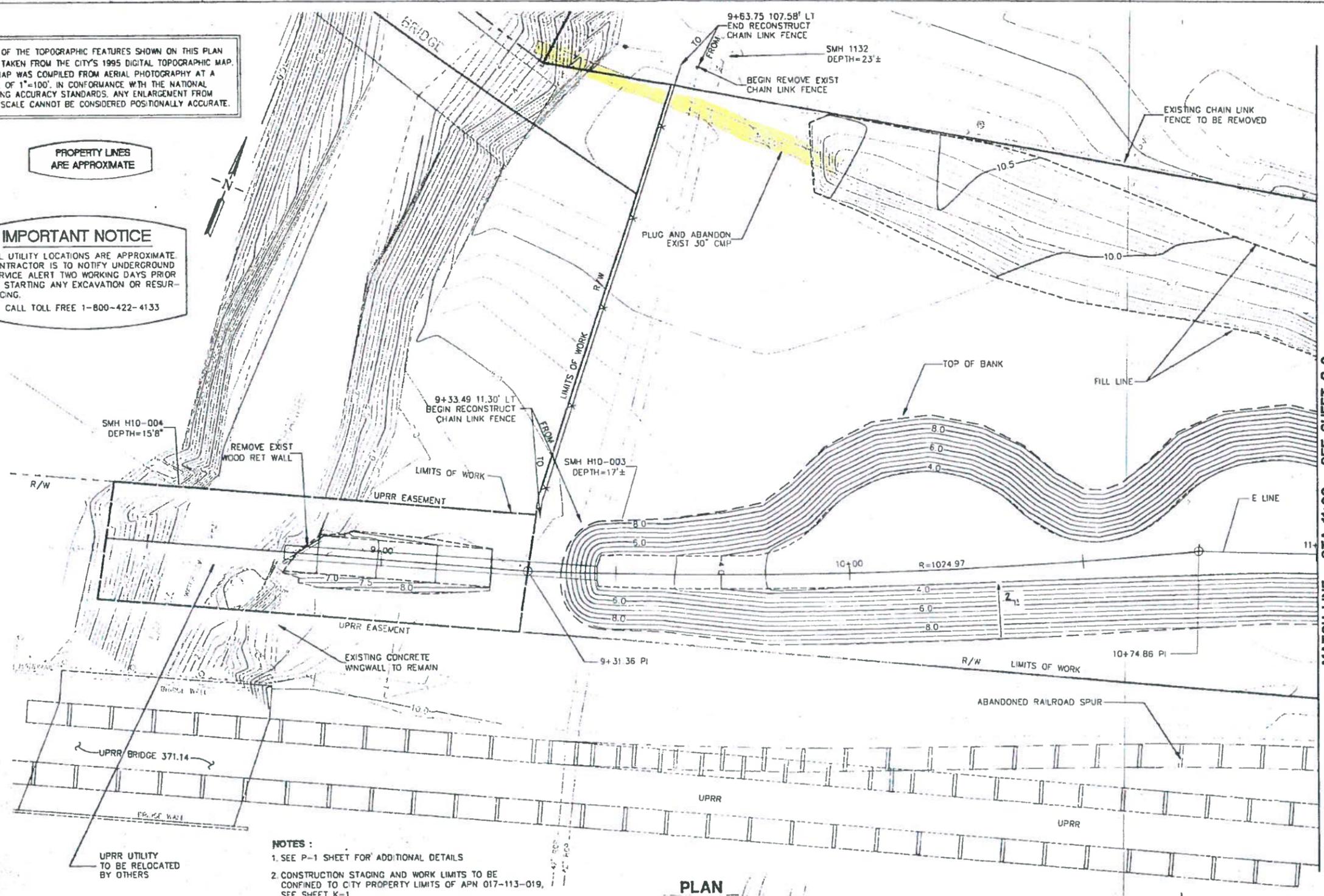
T:\SB-City\SB\City EL ESTERO\06-DWG\basemp2.dwg 11/26/2001 03:20:20 PM PST

SOME OF THE TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN WERE TAKEN FROM THE CITY'S 1995 DIGITAL TOPOGRAPHIC MAP. THE MAP WAS COMPILED FROM AERIAL PHOTOGRAPHY AT A SCALE OF 1"=100'. IN CONFORMANCE WITH THE NATIONAL MAPPING ACCURACY STANDARDS, ANY ENLARGEMENT FROM THAT SCALE CANNOT BE CONSIDERED POSITIONALLY ACCURATE.

PROPERTY LINES ARE APPROXIMATE

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- NOTES :**
1. SEE P-1 SHEET FOR ADDITIONAL DETAILS
  2. CONSTRUCTION STAGING AND WORK LIMITS TO BE CONFINED TO CITY PROPERTY LIMITS OF APN 017-113-019, SEE SHEET K-1

PLAN

MATCH LINE STA 11+00 SEE SHEET G-2



APPROVED  
 BUILDING & SAFETY  
 G-1

NO	DESCRIPTION	DATE	APPROVED

**EL ESTERO  
 DRAIN WETLAND  
 GRADING PLAN**

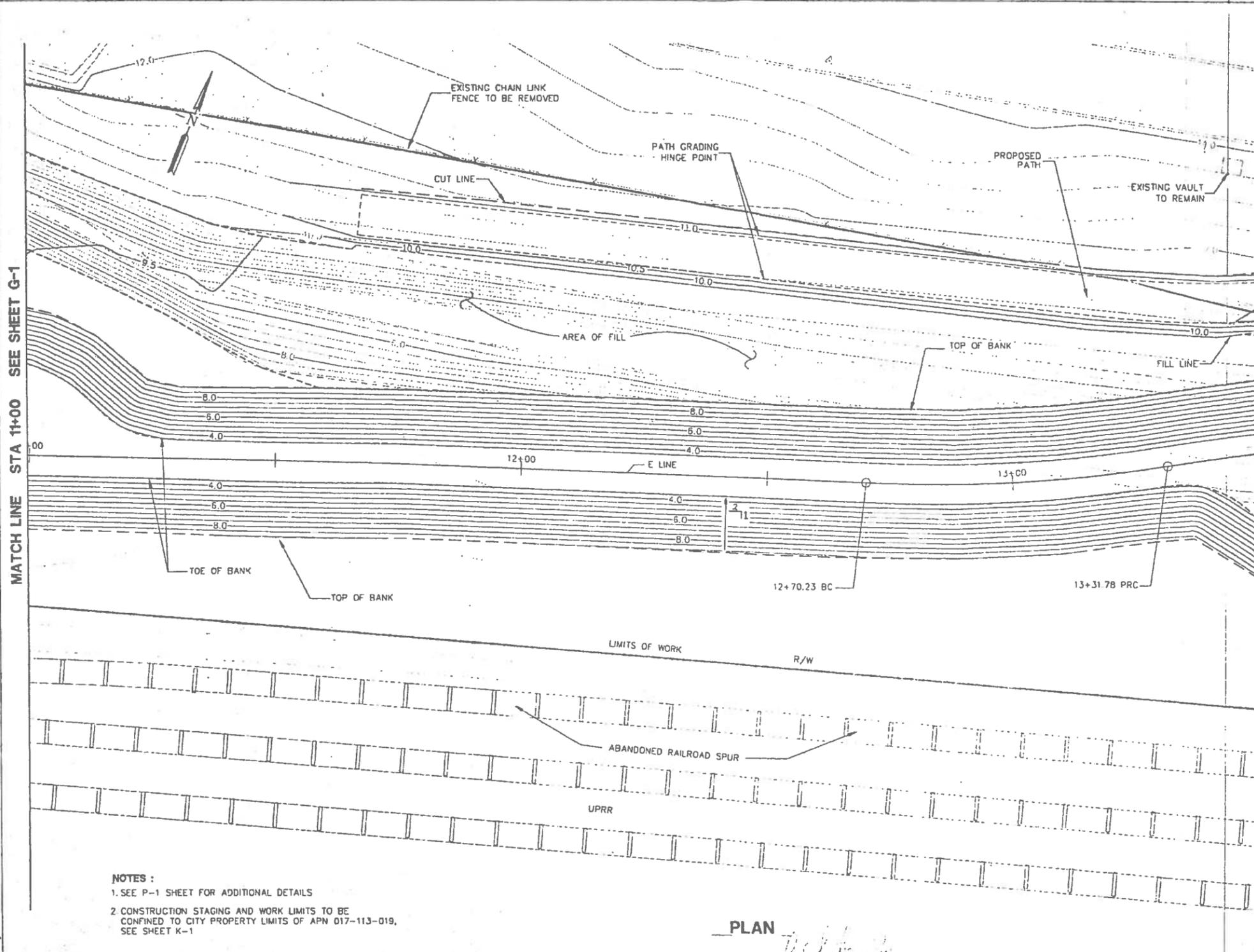


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**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
 APPROVED: *[Signature]* DATE: 12/21/01

SCALE:	VERT. NONE	PROJ NO	8377
	HOR. 1"=10'	SHT.	6 OF 14 SHS
ARCH. NO	5207	DWG NO	C-1-4056

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SOME OF THE TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN WERE TAKEN FROM THE CITY'S 1995 DIGITAL TOPOGRAPHIC MAP. THE MAP WAS COMPILED FROM AERIAL PHOTOGRAPHY AT A SCALE OF 1"=100'. IN CONFORMANCE WITH THE NATIONAL MAPPING ACCURACY STANDARDS, ANY ENLARGEMENT FROM THAT SCALE CANNOT BE CONSIDERED POSITIONALLY ACCURATE.

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 CALL TOLL FREE 1-800-422-4133

MATCH LINE STA 11+00 SEE SHEET G-1

MATCH LINE STA 13+50 SEE SHEET G-3

- NOTES :**
- SEE P-1 SHEET FOR ADDITIONAL DETAILS
  - CONSTRUCTION STAGING AND WORK LIMITS TO BE CONFINED TO CITY PROPERTY LIMITS OF APN 017-113-019, SEE SHEET K-1

PLAN



APPROVED BUILDING & SAFETY G-2

NO	DESCRIPTION	DATE	APPROVED

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DRAWN	NGK
CHECKED	JA
BID NO	33214
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**EL ESTERO DRAIN WETLAND GRADING PLAN**

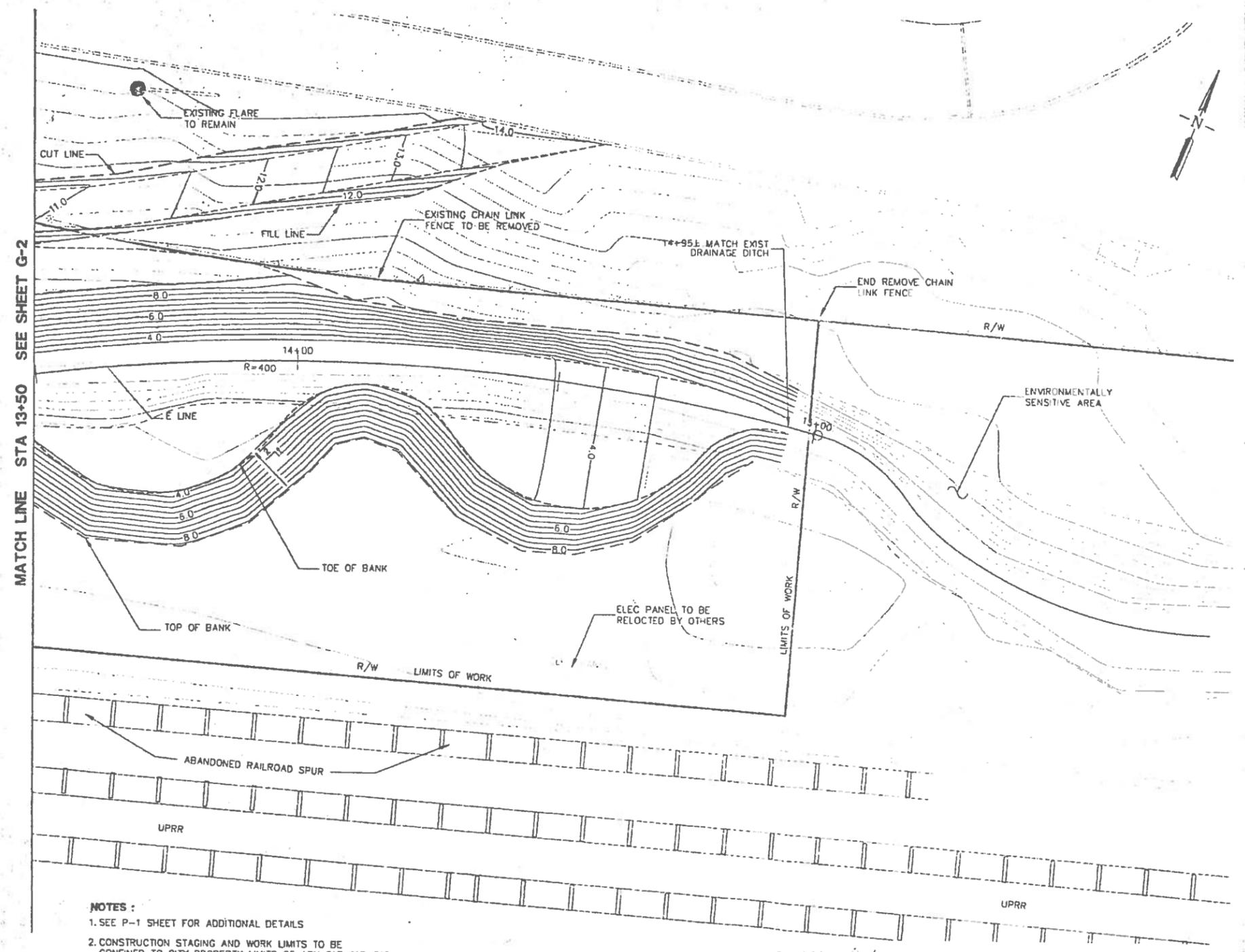


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 ROSEVILLE, CA 95661 (916) 784-3900

**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
 APPROVED: *Pat Kelly*  
 CITY ENGINEER DATE: 10/20/01

SCALE	VERT. NONE	PRJ. NO	8377
HOR.	1" = 10'	SHT.	7 OF 14 SHTS
ARCH. NO	5207	DWG. NO	C-1-4056

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**NOTES :**  
 1. SEE P-1 SHEET FOR ADDITIONAL DETAILS  
 2. CONSTRUCTION STAGING AND WORK LIMITS TO BE CONFINED TO CITY PROPERTY LIMITS OF APN D17-113-019. SEE SHEET K-1

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PLAN



APPROVED BUILDING & SAFETY

G-3

NO.	DESCRIPTION	DATE	APPROVED	REVISIONS

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CHECKED	JA
BID NO	3334
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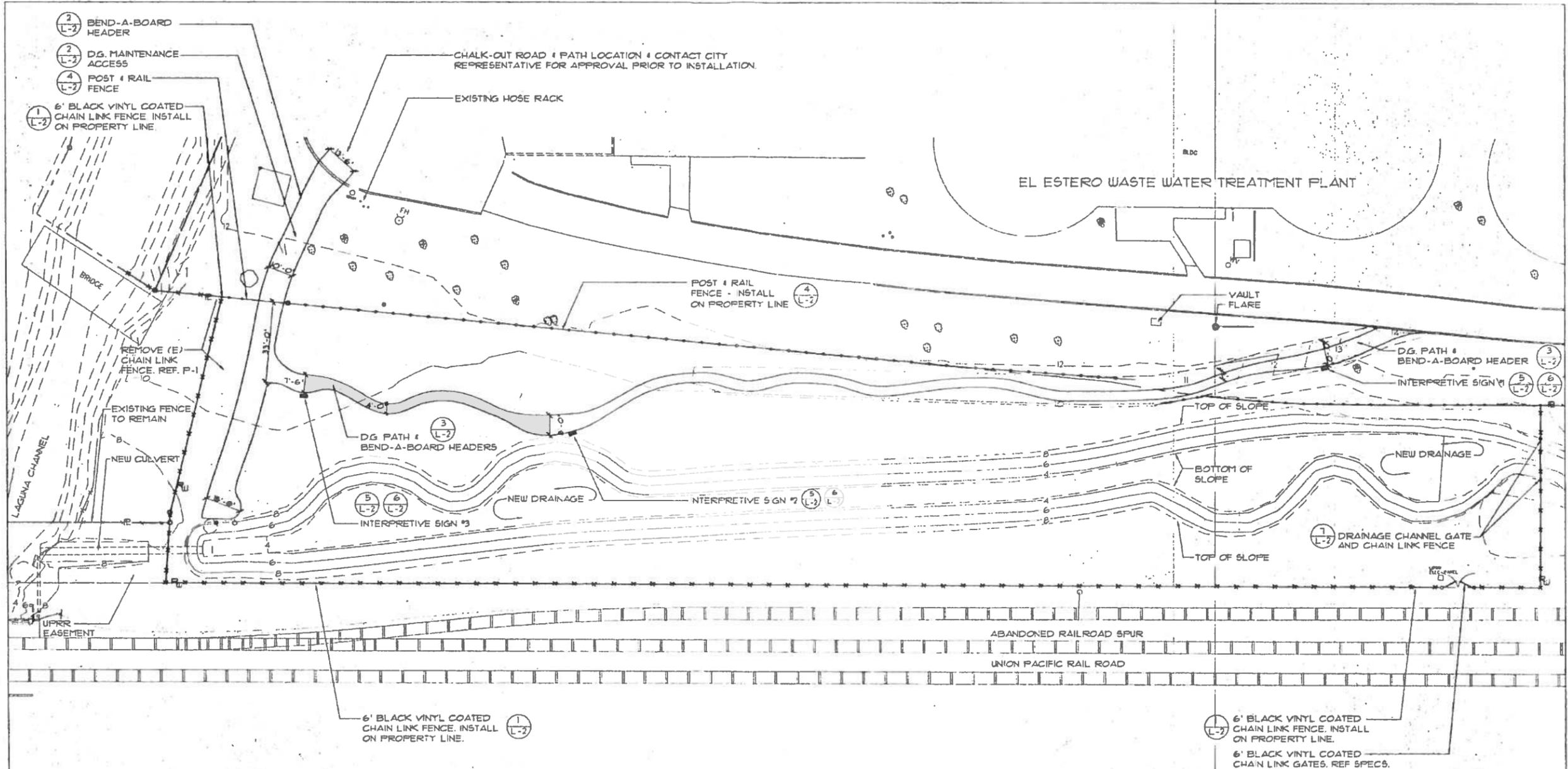
**EL ESTERO DRAIN WETLAND GRADING PLAN**



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 ROSEVILLE, CA 95661 (916) 784-3900

**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
 APPROVED: *[Signature]* DATE: 1/21/01  
 CITY ENGINEER

SCALE:	VERT: NONE	PROJ. NO:	8377
	HOR: 1" = 10'	SHT.:	8 OF 14 SHITS
ARCH. NO.:	5207	DWG. NO.:	C-1-4056



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PROPERTY LINES ARE APPROXIMATE

APPROVED  
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 L-1

NO.	DESCRIPTION	DATE	APPROVED
	REVISIONS		

DESIGN: KJT  
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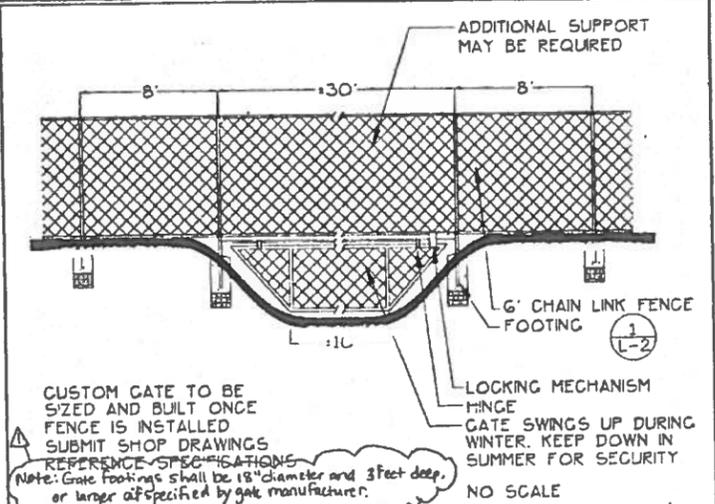
**EL ESTERO  
 DRAIN WETLAND  
 LAYOUT PLAN**

Castleberg Associates  
 Landscape Architecture - Planning  
 430 East Camillo, Santa Barbara, CA 93101  
 Ph 805-965-3063 Fax 805-965-8636

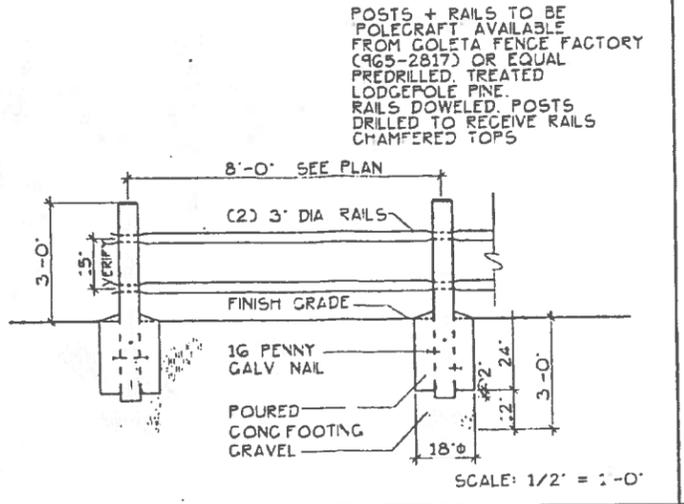


**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
 APPROVED: [Signature] DATE: 11/10/01

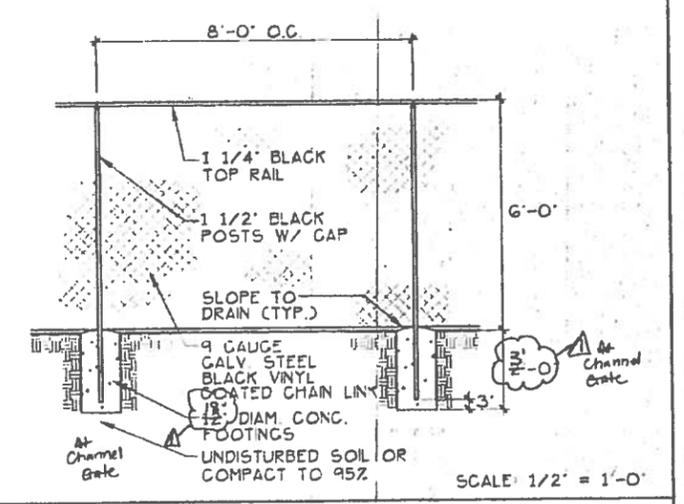
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 VERT. 1" = 20'  
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 PROJ. NO. 8377  
 SHT. 9 of 14 SHTS  
 ARCH. NO. 5207  
 DWG. NO. C-1-4056



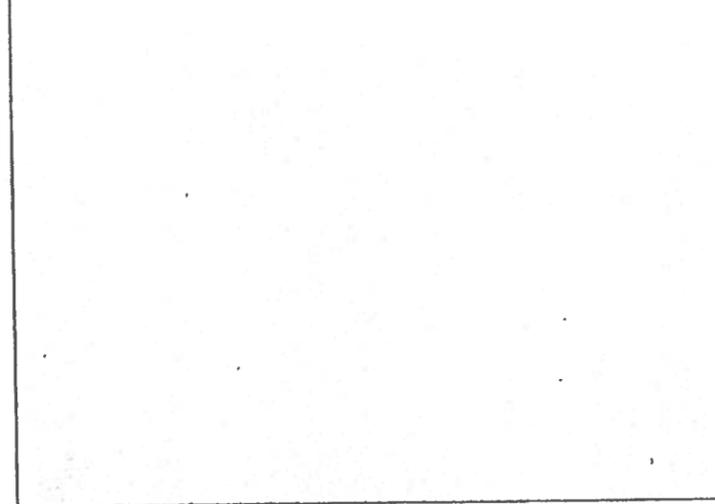
**7 CHANNEL GATE DETAIL**



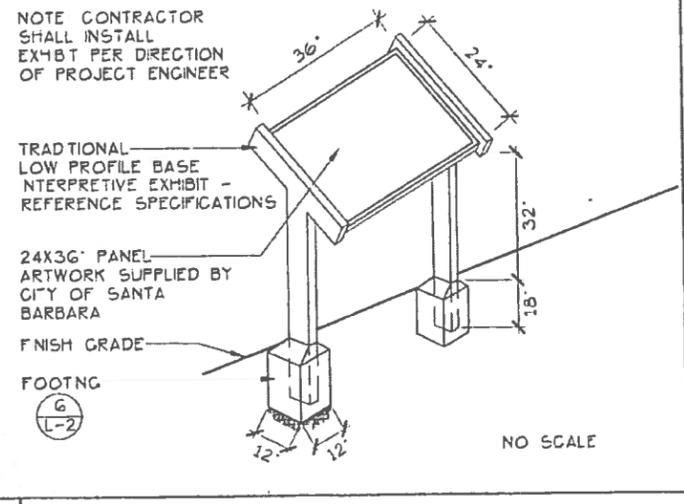
**4 RAIL FENCE**



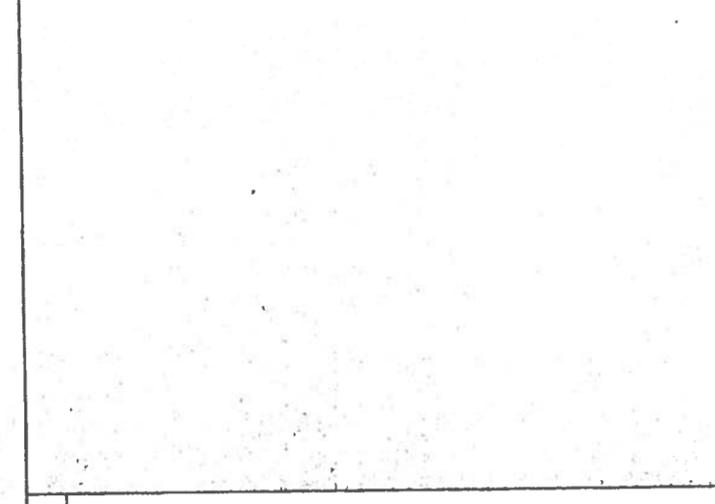
**1 CHAIN LINK FENCE**



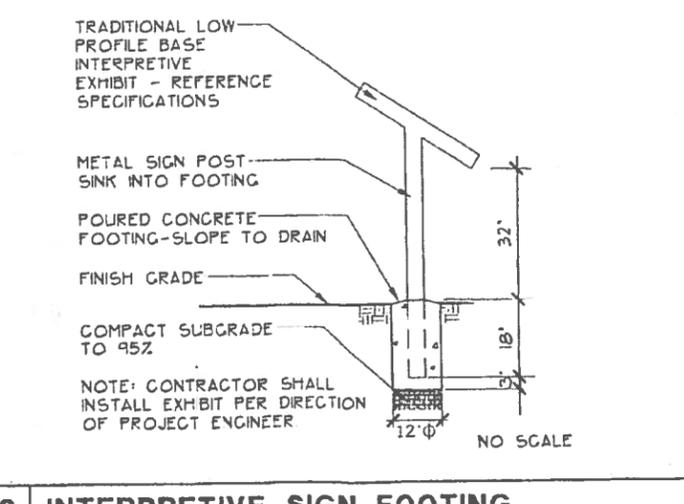
**5 INTERPRETIVE SIGN**



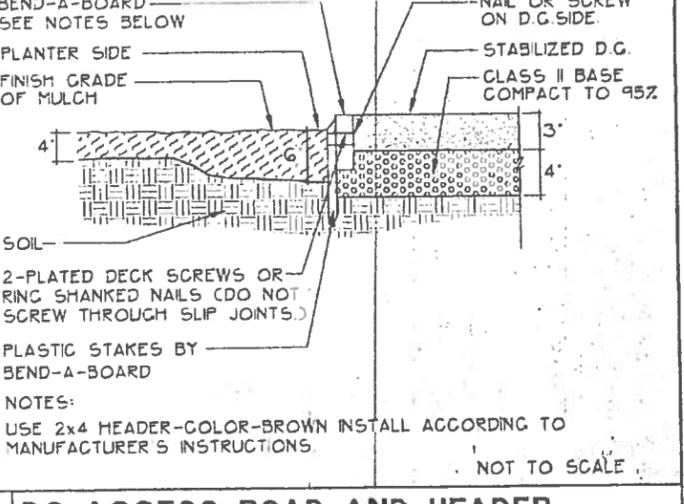
**2 DG ACCESS ROAD AND HEADER**



**6 INTERPRETIVE SIGN FOOTING**



**3 DG PATH WITH BEND-A-BOARD HEADER**



**7 DG PATH WITH BEND-A-BOARD HEADER**



APPROVED BUILDING & SAFETY L-2

NO.	DESCRIPTION	DATE	APPROVED

DESIGN	KJT
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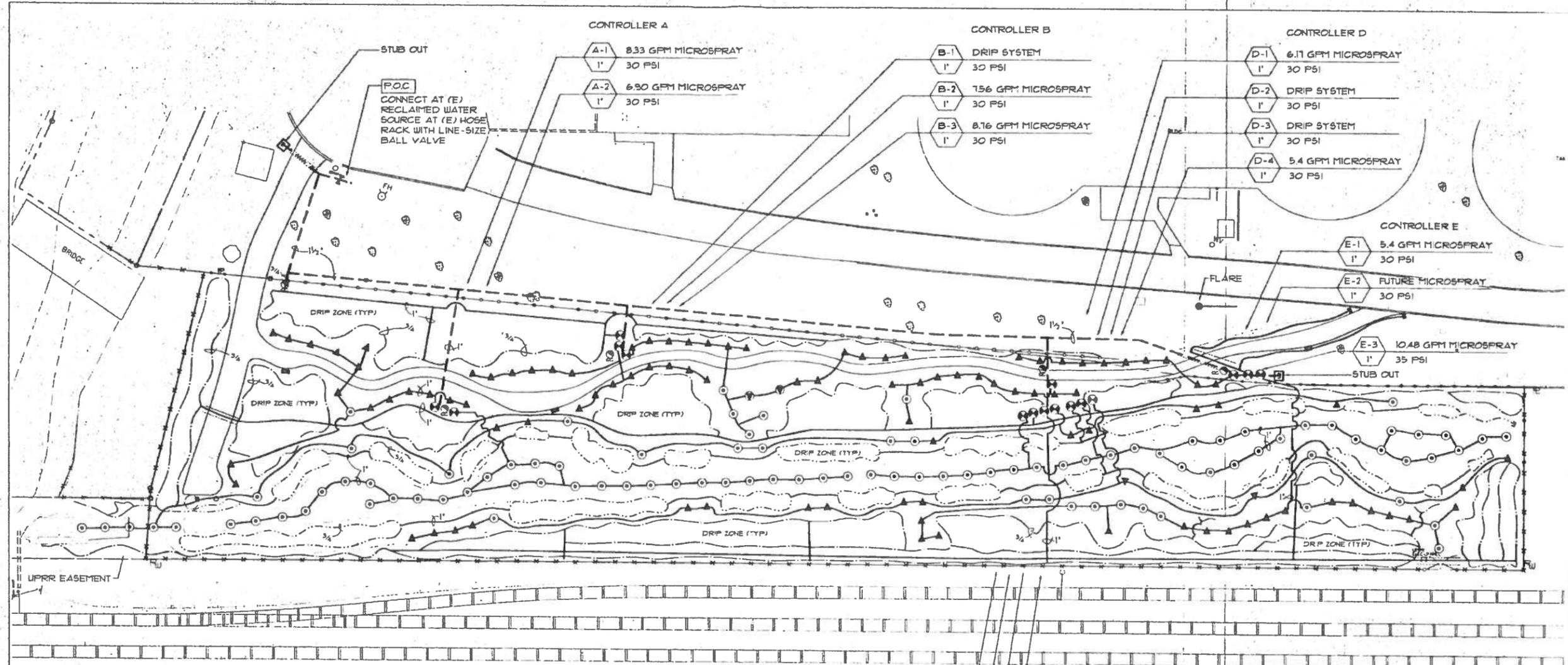
**EL ESTERO DRAIN WETLAND CONSTRUCTION DETAILS**

Castleberg Associates  
Landscape Architecture - Planning  
430 East Canino, Santa Barbara, CA 93101  
Ph 805-965-3063 Fax 805-965-8636



**CITY OF SANTA BARBARA**  
PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
APPROVED: [Signature] DATE 12/10/2001

SCALE VERT	1" = 20'	PROJ NO	8377
HOR.	1" = 20'	SHT	10 of 14 SHES
ARCH NO	5207	DWG NO	C-1-4056



**SYSTEM NOTES:**

- CONTROLLER A:**  
 A-1 : MIX D MICROSPRAY SYSTEM  
 A-2 : MIX A CHANNEL BOTTOM MICROSPRAY SYSTEM
- CONTROLLER B:**  
 B-1 : MIX E DRIP SYSTEM  
 B-2 : MIX D MICROSPRAY SYSTEM  
 B-3 : MIX D MICROSPRAY SYSTEM
- CONTROLLER C:**  
 C-1 : MIX A CHANNEL BOTTOM MICROSPRAY SYSTEM  
 C-2 : MIX E DRIP SYSTEM  
 C-3 : MIX E DRIP SYSTEM, UPRR SIDE  
 C-4 : MIX C MICROSPRAY, PLACE HEADS NEAR TOP OF BANK
- CONTROLLER D:**  
 D-1 : MIX D MICROSPRAY SYSTEM  
 D-2 : MIX B DRIP SYSTEM ON BANK  
 D-3 : MIX B DRIP SYSTEM ON BANK, UPRR SIDE  
 D-4 : MIX C MICROSPRAY, HEADS NEAR TOP OF BANK, UPRR SIDE
- CONTROLLER E:**  
 E-1 : MIX D MICROSPRAY SYSTEM  
 E-2 : MIX E MICROSPRAY SYSTEM, ENSURE COVERAGE OF SEED MIX IN GRADED AREA ADJACENT TO ENTRY PATH  
 E-3 : MIX E MICROSPRAY SYSTEM, UPRR SIDE

- CONTROLLER C**
- C-1 7.59 GPM MICROSPRAY  
1" 30 PSI
  - C-2 DRIP SYSTEM  
1" 30 PSI
  - C-3 DRIP SYSTEM  
1" 30 PSI
  - C-4 8.22 GPM MICROSPRAY SYSTEM  
1" 30 PSI

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**NOTES**

1. DIAGRAMMATIC. LOCATE VALVES IN SHRUB AREAS.
2. DRIP ZONES: ENSURE COVERAGE OF ALL PLANT MATERIALS. REFERENCE DETAILS.
3. MICROSPRAY ZONES: USE PLANS AS A GUIDE- ENSURE PROPER COVERAGE OF HYDROSEEDED/SEEDED AREAS TO PROMOTE GERMINATION AND GROWTH OF SEEDLINGS. SYSTEMS ARE SIZED TO ALLOW SOME ADDITIONAL HEADS TO BE ADDED IF NECESSARY.

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APPROVED  
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 L-3

NO.	DESCRIPTION	DATE	APPROVED	DESIGN	DRAWN	CHECKED	FLD.BK NO.	PAGE	ATLAS
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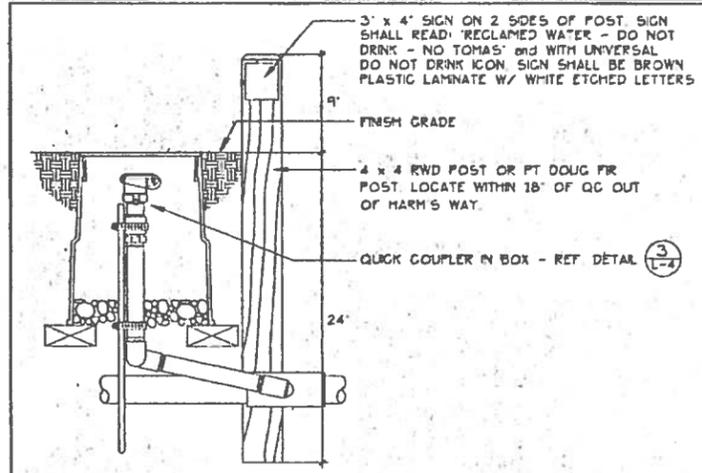
**EL ESTERO DRAIN WETLAND IRRIGATION PLAN**

**Castleberg Associates**  
 Landscape Architecture - Planning  
 430 East Comilla, Santa Barbara, CA 93101  
 Ph 805-965-3063 Fax 805-965-8636

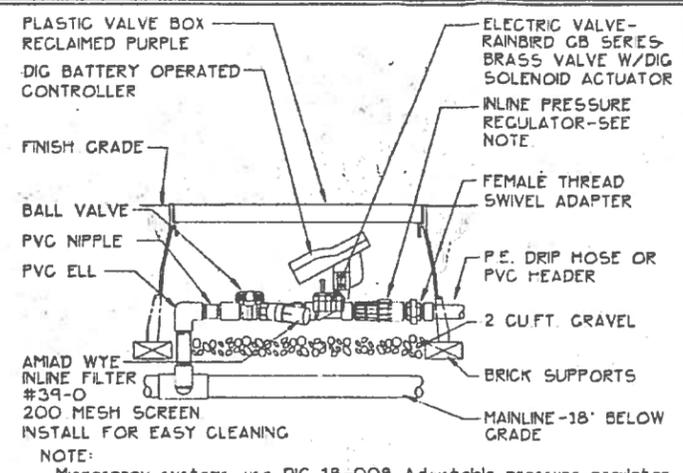


**CITY OF SANTA BARBARA**  
 PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION  
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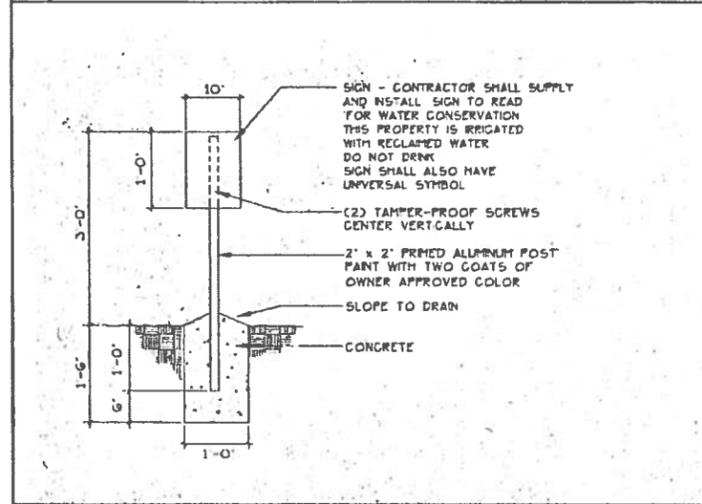
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ARCH NO.	5207	DWG NO.	C-1-4056



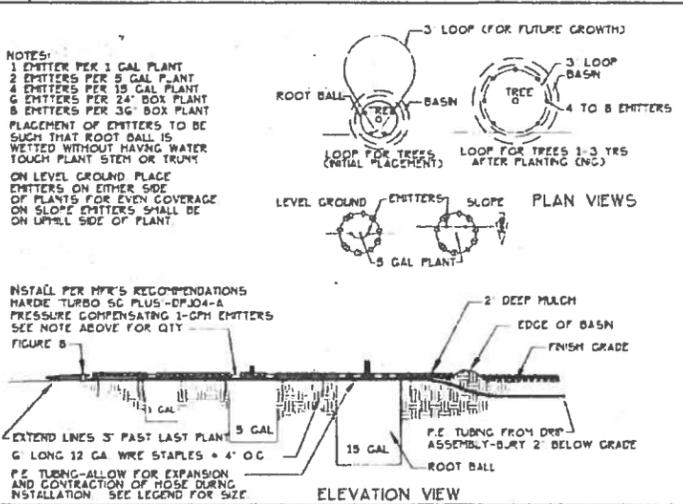
**4 QUICK COUPLER SIGN**



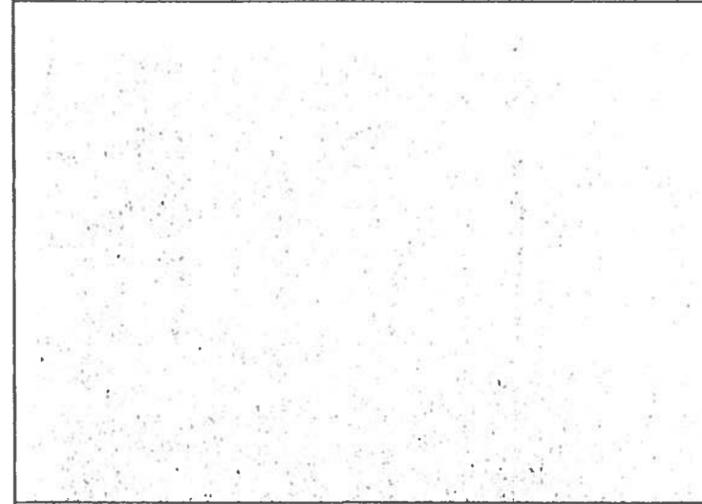
**1 DRIP ASSEMBLY**



**5 RECLAIMED WATER SIGNS**



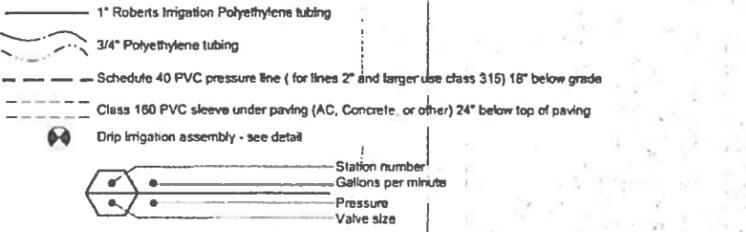
**2 EMITTER**



**3 QUICK COUPLER - IN VALVE BOX**

**IRRIGATION LEGEND**

SYMBOL	MANUFACTURER & NO	DESCRIPTION	PSI	GPM	RADIUS
▼	DIG Series 700 Microsprinkler Assembly 52-700-32 50-156-24 50-430-0 with extension assembly 50-308-0 52-135-0 52-140-0	16" Agricultural microsprinkler 16" Red spray head 24" microtube, barb & adaptor Press fit spike 8" flex riser Female compression plunger (5/32") 700 nipple	30	0.54	8'
○	DIG Series 800 Mini Compact Microsprinkler Assembly 52-861-13 50-156-24 50-430-0 with extension assembly 50-308-0 52-135-0 52-140-0	20" Agricultural microsprinkler 20" Violet minicompact sprinkler head 24" microtube, barb & adaptor Press fit spike 8" flex riser Female compression plunger (5/32") 700 nipple	30	0.23	10'
●	DIG Series 800 Mini Compact Microsprinkler Assembly 52-861-24 50-156-24 50-430-0 with extension assembly 50-308-0 52-135-0 52-140-0	24" Agricultural microsprinkler 24" Green Minicompact sprinkler head 24" microtube, barb & adaptor Press fit spike 8" flex riser Female compression plunger (5/32") 700 nipple	30	0.41	12'
▶	WILKINS	Brass ball valve - like size			
□	Stub out	1 1/2" irrigation line stub out. Cap line. Locate in valve box.			
	DIG 540-000W	4 station controller. Mount on valve per detail. Provide batteries.			
	DIG P00997	Solehold actuator for Rainbird brass valves. Provide one per valve.			
○	CHAMPION QCV-075VL	3/4" quick coupler with locking vinyl cover, reclaimed purple.			



- IRRIGATION NOTES**
- System design based on the following:
    - A. 60 PSI static pressure according to Victor Acostar
    - B. 1 1/2" Galv Steel line, reclaimed
    - C. Available GPM = 30
    - D. Maximum available through 1" poly tube: 12 GPM
  - Location of lines and valves is diagrammatic only. Locate in planting areas wherever possible.
  - Verify dimensions and make adjustments in system as required to provide head to head coverage.
  - Contractor shall adjust area and radii of all heads for proper coverage.
  - Controller - Mount on valve. Install and wire per manufacturer's specifications. Provide batteries 4 stations per controller maximum.
  - Contractor shall verify point of connection with owner.
  - Connect into existing service line with line size ball valve.
  - Refer to written specifications accompanying these plans.
  - Heads shown on legend function only as key to plans. Refer to plans for actual installation requirements.
  - Hand trench under drip line of existing trees if to remain.
  - All pipe (pressure and non pressure lines) under paving (asphalt, AC, concrete etc.) shall be installed minimum of 24" below top of paving in class 180 PVC sleeves.

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L-4

NO	DESCRIPTION	DATE	APPROVED
	REVISIONS		

DESIGN: KJI  
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ATLAS:

**EL ESTERO  
DRAIN WETLAND  
IRRIGATION LEGEND + DETAILS**

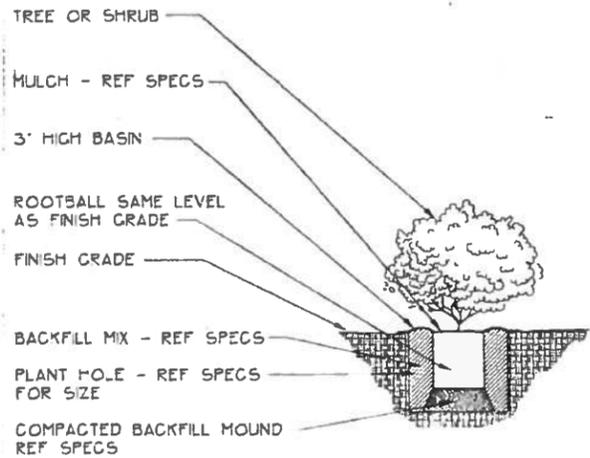
Castleberg Associates  
Landscape Architecture - Planning  
430 East Camino, Santa Barbara, CA 93101  
Ph 805-965-3063 Fax 805-965-8636



**CITY OF SANTA BARBARA**  
PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION  
APPROVED: [Signature]  
DATE: 11/10/01

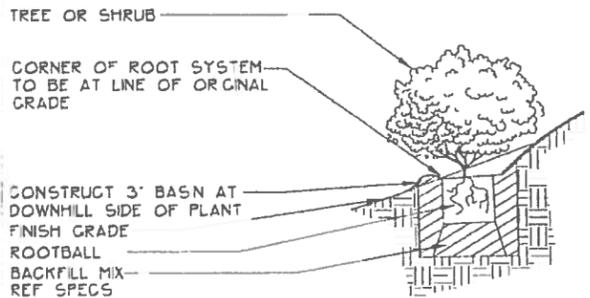
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ARCH. NO. 5207	DWG. NO. C-1-4056



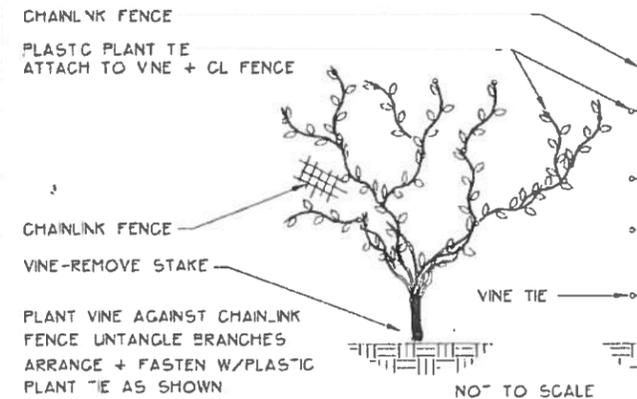


**2 TREE OR SHRUB PLANTING**

NOTE:  
PLANT ALL SHRUBS AND TREES ON SLOPES  
STEEPER THAN 4:1 WITH METHOD INDICATED



**3 HILLSIDE TREE OR SHRUB PLANTING**



**4 VINE TIE TO CHAINLINK FENCE**

**PLANT LEGEND**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
<b>PLANT MIX A - EMERGENT WETLAND PLANTS IN CHANNEL BOTTOM</b>				
JUN PAT	JUNCUS PATENS	COMMON RUSH	1 GAL	4' O.C.
SCI ROB	SCIRPUS ROBUSTUS	BULRUSH	1 GAL	5' O.C.
TYP LAT	TYPHA LATIFOLIA	CATTAIL	1 GAL	5' O.C.
<b>PLANT MIX B - RIPARIAN PLANTS ON BANKS</b>				
ART DOU	ARTEMISIA DOUGLASSIANA	MUGWORT	1 GAL	6' O.C.
CYP ERA	CYPERUS ERAGROSTIS	UMBRELLA SEDGE	1 GAL	6' O.C.
ELY CON	ELYMUS CONDENSATUS	GIANT RYEGRASS	1 GAL	6' O.C.
<b>PLANT MIX C - SALTGRASS COVER ON BANKS</b>				
DIS SPI	DISTICHLIS SPICATA	SALTGRASS	SEEDS	COMPLETE COVERAGE
MEL IMP	MELICA IMPERFECTA	SMALL FLOWERED MELIC	SEEDS	COMPLETE COVERAGE
<b>PLANT MIX D - UPLAND GRASSES IN BUFFER ZONES</b>				
BRO CAR	BROMUS CARINATUS	CALIFORNIA BROME	SEEDS	COMPLETE COVERAGE
<b>PLANT MIX E - UPLAND SHRUBS IN THE BUFFER ZONES</b>				
MIM AUR	MIMULUS AURANTIACUS	STICKY MONKEY FLOWER	1 GAL	4' O.C.
RHA CRO	RAMNUS CROCEA	REDBERRY	1 GAL	6' O.C.
ROS CAL	ROSA CALIFORNICA	CALIFORNIA ROSE	1 GAL	8' O.C.
SAM MEX	SAMBUCUS MEXICANA	ELDERBERRY	1 GAL	16' O.C.
<b>VINES</b>				
CAL MAC	CALYSTEGIA MACROSTEGIA	CREEK CLEMAT	1 GAL	ATTACH PER DETAIL
CLE LIG	CLEMATIS LIGUSTICIFOLIA	CREEK CLEMAT	1 GAL	ATTACH PER DETAIL
<b>TREES ON NORTH BANK</b>				
POP FRE	POPULUS FREMONTII	FREMONT COTTONWOOD	1 GAL	
SAL LAS	SALIX LASIOLEPIS	ARROYO WILLOW	1 GAL	
PLA RAC	PLATANUS RACEMOSA	WESTERN SYCAMORE	1 GAL	



MIX A PLANTING GUIDELINE FOR DRAINAGE BANKS

JUNCUS PATENS CHANNEL EDGES OUT OF PERMANENTLY STANDING WATER WHEN POSSIBLE PLANT IN NARROW AREAS AND AT MOUTH OF DRAIN TUNNEL AS SHOWN  
TYPHA LATIFOLIA - CHANNEL BOTTOM IN WETTEST AREAS  
SCIRPUS ROBUSTUS - CHANNEL BOTTOM IN WETTEST AREAS  
KEEP CHANNEL CENTER OPEN AS SHOWN IN PLANTING PLAN

MIX B PLANTING GUIDELINE FOR DRAINAGE BANKS

ELYMUS CONDENSATUS MID-SLOPE TO TOP  
ARTEMISIA DOUGLASSIANA - ENTIRE SLOPE  
CYPERUS ERAGROSTIS - CLOSEST TO DRAINAGE BOTTOM (TYP)

**1 DRAINAGE SECTION & PLANTING GUIDELINE**

NOT TO SCALE

APPROVED  
BUILDING & SAFETY  
L-6

NO.	DESCRIPTION	DATE	APPROVED

**EL ESTERO  
DRAIN WETLAND  
PLANT LEGEND + DETAILS**



Castleberg Associates  
Landscape Architecture - Planning  
430 East Carrillo, Santa Barbara, CA 93101  
Ph 805 965-3063 Fax 805 965-8636



**CITY OF SANTA BARBARA**  
PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION  
APPROVED: *Hot Kelly* DATE: 11/20/01  
CITY ENGINEER

SCALE: VERT. 1" = 20'	PROJ. NO. 8377
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ARCH. NO. 5207	DWG. NO. C-1-4056



City of Santa Barbara  
California

PLANNING COMMISSION  
STAFF REPORT

**REPORT DATE:** June 30, 2000  
**AGENDA DATE:** July 6, 2000  
**PROJECT ADDRESS:** Southeast of Garden and Yanonali Streets/Laguna Creek and El Estero Drain (MST99-00507)  
**TO:** Planning Commission  
**FROM:** Planning Division, (805) 564-5470  
Bettie Hennon, Senior Planner II  
Jan Hubbell, Project Planner *JH*

**I. SUBJECT**

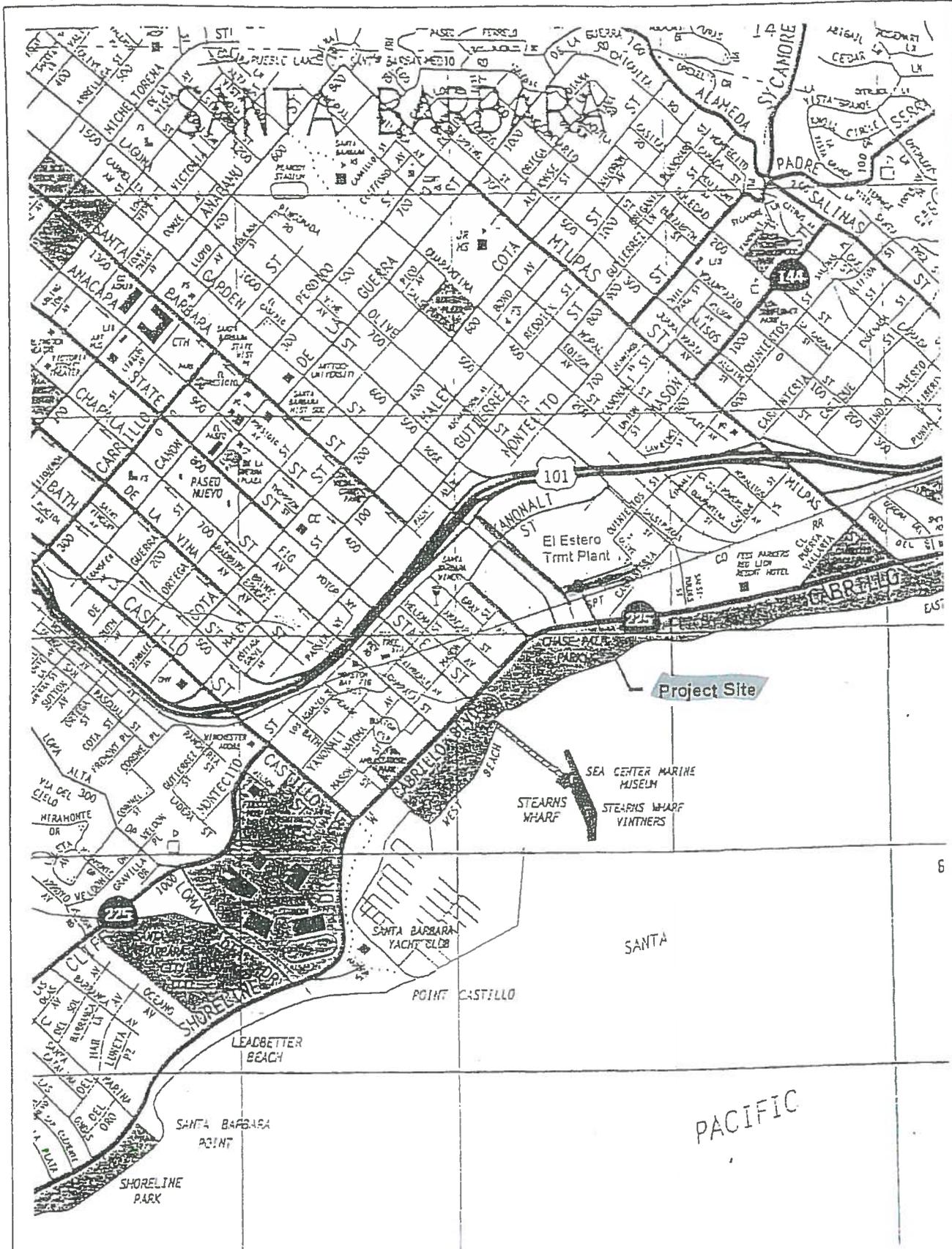
Project: The City of Santa Barbara Public Works Department proposes Laguna Creek and El Estero Drain maintenance and restoration. Project objectives include habitat restoration and periodic flood control maintenance for both Laguna Creek and the City-owned portion of El Estero Drain.

Permit: The project is within the appealable jurisdiction of the California Coastal Commission and requires a Coastal Development Permit (CDP) from the City of Santa Barbara, as specified in the Santa Barbara Municipal Code §28.45.009. The Planning Commission's decision is appealable to the City Council and the California Coastal Commission. The City is the Lead Agency for environmental review of the project under California Environmental Quality Act (CEQA) provisions, and City adoption of a final environmental document is required. The project is also subject to review and approval by the City Architectural Board of Review.

**II. EXECUTIVE SUMMARY**

Project approval requires that the Planning Commission find the project consistent with the California Coastal Act and the City's Local Coastal Program (SBMC §28.87.009). Issues relate to effects on environmental sensitive habitat and wetlands and on the Southwestern pond turtle. In addition, herbicide use and water quality are considerations.

Given that the project results in restoration of wetland and enhancement of habitat for the Southwestern pond turtle, will improve the aesthetics of the area, it would be possible to make the necessary consistency findings. Staff recommends that the Planning Commission approve the project subject to conditions of approval.



**III. SITE DESCRIPTION**

Applicant: Laguna Creek: Alison Whitney, Water Conservation Specialist, City Public Works Dept.  
 El Estero Drain: Bob Roebuck, Water Resources Manager, and Cathy Taylor, Project Engineer II

Property Owner: City of Santa Barbara

Project Address: Southeast of Garden and Yanonali Streets/Laguna Creek and El Estero Drain

Parcel Number: Laguna Creek: Parts of: 017-113-16; 017-540-01, -05 and -06; 017-630-05, -13, -14 and -16  
 El Estero Drain: 017-113-019

General Plan: Major Public and Institutional/Buffer; Ocean-Oriented Manufacturing

Zoning: OM-1, S-D-3, Ocean-Oriented Manufacturing and Coastal Overlay Zone

Environmental Assessment: Negative Declaration (Exhibit D)

Existing Use: Laguna Creek: Degraded stream  
 El Estero Drain: Vacant with degraded wetland and riparian habitat

Proposed Use: Laguna Creek: Stream and restored riparian wetland and riparian buffer habitat  
 El Estero Drain: Restored and enlarged wetland habitat and riparian buffer

Topography: Generally flat

Access: El Estero Wastewater Treatment Plant

Adjacent Land Uses:

	<u>Laguna Creek</u>	<u>El Estero Drain</u>
North:	U.S. Highway 101	El Estero Wastewater Treatment Plant
South:	Union Pacific Railroad Tracks, Chase Palm Park	Union Pacific Railroad Tracks, Chase Palm Park
East:	El Estero Wastewater Treatment Plant	Vacant, disturbed wetland and environmentally sensitive habitat area
West:	Outside storage and open yard uses	Outside storage, Laguna Creek

#### IV. SITE STATISTICS

LOT AREA:	<u>Laguna Creek</u>	<u>El Estero Drain</u>
	1.56 acres	1.19 acres
	1,250 feet in length	520 feet in length
	40 to 75 feet in width	75 to 115 feet in width

#### V. PROJECT DESCRIPTION

This project consists of two parts: flood control maintenance, restoration and mitigation of Laguna Creek; and maintenance, restoration and enhancement of El Estero Drain. Descriptions of each part are included below.

##### A. **Laguna Creek (See Site Plan)**

During the heavy rains and high tides of 1995, Laguna Creek's capacity was exceeded, causing flooding in the surrounding commercial and industrial area. Subsequent study by Penfield & Smith for the City of Santa Barbara in 1995 and 1996 determined that there are several elements that limit capacity in Laguna Creek, including "the flatness of the grade (slope), the depth and width of the channel, the outlet capacity of beach tidal gates, the pumping capacity of the Central Storm Water Pumping Station (also located at the beach), constrictions of the flow path by bridges and channel roughness. Channel roughness includes the presence of nonnative invasive vegetation that reduces the creek's carrying capacity. The vegetation causing the greatest problems is water hyacinth, although castor bean and fennel also contribute. The study recommendations include carrying out the channel maintenance program approved by the California Department of Fish and Game (CDFG), as well as increasing capacity at some of the bridges. Most of the bridges have been replaced. Deepening and/or widening the channel is expensive and has substantial environmental implications. The City will be reviewing the possibility of redesigning or expanding the tide gates in the future, as well as the pumping capacity of the pumping station.

Rodeo™, which is a herbicide, has been used to kill the water hyacinth and other vegetation. Rodeo™ was used every two to three months when water hyacinth started to cover the streambed. It was applied by broadcast methods. However, frequency has been reduced to every six months. It has been six months since it was last applied. Water hyacinth is an extremely invasive plant that easily overwhelms native habitats. In October 1995, vegetation, silt and debris were removed. The debris was tested and found to be contaminated with lead. On that basis, the debris was taken to the Kettleman City hazardous waste facility and properly disposed of. This continues to occur periodically to maintain the stream flow and capacity. This removal is done with a crane-mounted clamshell bucket. The crane clears silt, vegetation and debris by swinging the clamshell bucket in an arc around a series of points along the top of the east bank. This avoids impacting vegetation on the channel banks, although it does limit the height of vegetation on the east bank. A total of 1.56 acres of habitat within the banks, bed and channel of

the stream have been disturbed by this work. As a result, the streambed alteration agreement also required that a mitigation and restoration plan be prepared, submitted and implemented for this project. The restoration plan was prepared and submitted to CDFG for review, but not implemented. See the memo from Public Works Department Staff for additional information (See ND, Exhibit D 4).

The Mitigation and Restoration Plan (See ND, Exhibit D-5) calls for revegetation of City-owned creek banks in the project area with native riparian species. The City will also control invasive non-native plants throughout the length of the channel. Plantings on the east bank of the creek north of Yanonali Street are constrained by the need for access for channel clearing. In order to maintain clearance for equipment operation this area, tree and shrub plantings must be limited. Most proposed plants are low growing perennials with some groupings of willows. Denser tree plantings are planned for the west bank and the remainder of the east bank, where access constraints are minimal. Trees would be planted to shade the streambed, which would ultimately inhibit growth of aquatic and emergent plants, reducing the need for streambed clearing in the future and improving the existing habitat for wildlife. At the time this project was originally proposed, it was not envisioned that the City would complete planting on the west bank of the creek unless a major project proposed by the property owner, Mr. Wright, did not proceed. The parts of the Wright property project that would have been adjacent to Laguna Creek have been withdrawn. As a result, the City has approached Mr. Wright with a request for a Right of Entry to complete the revegetation on his property. The negotiations with Mr. Wright are proceeding positively as this time. Therefore, it is expected that Phase I (east bank) and Phase II (west bank) of the restoration plan would be completed concurrently due to the withdrawal of Mr. Wright's project from City review.

The project also includes ongoing creek maintenance in order to maintain the capacity of Laguna Creek and prevent pump intakes at the tide gates from clogging. Maintenance would include periodic desilting of Laguna Creek using a clamshell bucket mounted on a crane or similar equipment that is not put into the creek. The crane would be placed behind the top of the creek bank in order to prevent damage to creek bank vegetation. It may also be necessary to prune or remove in-stream vegetation (e.g., cattails) to maintain creek capacity. Desilting and removal or pruning of native vegetation would only occur when it can be shown that creek capacity has been reduced. . Water hyacinth will be sprayed periodically with the herbicide, Rodeo™ using a backpack application. Water hyacinth removal would occur up to three to four times each year.

In summary, the project description for Laguna Creek includes:

- Past and future removal of water hyacinth and other emergent vegetation, debris and silt, as necessary to maintain flood capacity and keep water hyacinth under control;
- Past and future debris removal as necessary to maintain flood capacity; and
- Implementation of a Mitigation and Restoration Plan for past and future practices.

**B. El Estero Drain (See Site Plan)**

The City of Santa Barbara (Water Fund) purchased a portion of a property owned by the Parker Family Trust in 1998. The property had previously been owned and maintained by the Southern Pacific Railroad, including periodic clearance of the drainage on the property. In March and April 1999, the portion of El Estero Drain on the City's property was cleared of vegetation and debris and a 20-foot long extension was added to the existing culvert for drainage improvements and to allow vehicular access to the south side of the drain. Only minor scraping of the ground surface by earthmoving equipment was involved in removing the vegetation and clearing the area for the culvert extension. On April 30, 1999, the City of Santa Barbara Planning Division informed the City Public Works Department that a Coastal Development Permit is required for the vegetation clearing, and that it would be necessary to restore the site with native vegetation. In addition, a site visit by representatives of the U.S. Army Corps of Engineers (USACOE) and the U.S. Fish and Wildlife Service (USFWS) determined that the Southwestern pond turtle, a State Species of Special Concern, was present and most likely breeding on the site. The Public Works Department hired Dr. John Gray of URS Greiner Woodward-Clyde (URS), who prepared a restoration plan, titled: "Wetland Restoration Project Along the El Estero Drainage Ditch." The first draft of the plan was completed in early summer 1999. City Planning Staff met with the applicant and representatives of the USACOE, USFWS, the California Department of Fish and Game (CDFG) and the California Coastal Commission (CCC). Based on comments made by the agency representatives, a second draft was completed in August 1999 (See ND, Exhibit D-6). All of the agency representatives agreed that the Public Works Department could continue with weed control and removal so that there would be less delay in starting actual restoration after permits were granted.

The primary project objectives are to maintain drainage and to restore the wetlands on the City-owned portion of El Estero Drain. The primary elements of the project are to:

- Restore and enhance the drainage to facilitate ponding of water and to create islands for turtle basking, and, if possible, create a more direct connection for turtle movement between El Estero Drain and Laguna Creek.
- Revegetate the drainage with native wetland and riparian plants and remove all weeds.
- ~~Create a buffer on each side of the drain and revegetate with native riparian plants.~~
- Protect the drainage from human entry and place the land in protected status.
- Maintain the drainage for flood control and water retention purposes on a periodic basis.

Presently, the only consistently impounded water in this drain occurs offsite (upstream) on the property to the east. The channel would be modified to impound shallow water along most of the length of this parcel to create more and better quality turtle habitat. The channel bottom would be lowered 1 to 2 feet. The channel bottom would also be widened from about 5 feet to 8 feet to increase the wetland area and create more emergent wetlands. The overall channel width would be increased from about 20 feet to about 26 feet. Small islands would be created at several locations to create refuges for turtles. To create a more direct access for turtles between El Estero Drain and Laguna Creek, the existing steel culvert would be closed off and the

channel relocated to the south. The new channel location would cross property owned by Union Pacific Railroad (UPRR). An easement would be required from UPRR. At this time, UPRR has indicated general agreement with allowing this easement or similar legal agreement to allow the City access and use in perpetuity. The new channel would be designed to include a gentle ramp from El Estero Drain to Laguna Creek. A rectangular concrete culvert would be installed at the end of the drain to allow turtles to move freely between the two waterways. The concrete culvert would be installed at the same elevation as the existing pipe culvert in order to retain the same flood flow and capacity. The new culvert would also provide the same capacity as the existing pipe culvert in order to assure that flow into Laguna Creek does not increase. Between 1,200 and 1,500 cubic yards of material would be excavated to create the new topography. If possible, material would be balanced on-site. However, there is some possibility that up to 30 cubic yards of material would need to be imported from off-site. The environmental analysis is based on this assumption.

Wetlands would be restored along the entire length of the drain on the subject property. This would increase the wetland area from 1,000 square feet, including vegetated areas and/or areas with wet soil and the area of the culvert extension, to 4,160 square feet. Wetland plants would also be established on the two 10-foot wide banks, an additional 10,400 square feet of area. The remainder of the 1.19-acre parcel would become a buffer and would be planted with riparian groundcover, shrubs and trees. The total buffer area would be about 0.79 acre. The overall planting scheme is shown in the Negative Declaration, Exhibit D-6, Figure 5. The design would establish a semi-natural configuration of native plants. The design would allow for open water and open areas between plants where turtles can bask and create nesting areas. A mix of woody upland and riparian shrubs would be planted to provide a physical barrier. Also, several clumps of willow and cottonwood trees would be planted. A restoration schedule is also included in the Negative Declaration, Exhibit D-6. Weeding of invasive non-native plants (including fennel and castor bean) is ongoing and planting is proposed to occur in the fall of 2001. The restoration plan also includes a monitoring schedule to assure the success of the restoration. Over the long term, the modified channel would maintain a water regime in the drain to sustain plant growth and maintain the wetland habitat. Periodically, plants that encroach into the open water area and excess sedimentation would also be removed, preferably by hand crews. A temporary irrigation system would be installed until the success of the restoration is shown. Finally, the existing chainlink fence between the subject property and El Estero Wastewater Treatment Plant would be removed and replaced with a wooden split rail fence about three feet high. The other three property lines would be fenced with a six-foot high chainlink fence with wooden slats and barbed wire at the top to prevent unauthorized access to the property. This fence would be placed on a concrete or block base to prevent burrowing animals from accessing the area and preying on the wildlife within the area.

Ongoing maintenance of this habitat and flood retention area is also proposed as part of this plan. To maintain open water areas essential for the turtle, it will be necessary to prune or remove plants that encroach into these open areas and to periodically remove buildup of sediment and debris in the channel bottom. Prior to any work in the channel, the City would retain a biologist to temporarily move turtles from the work area if they are present. According to the

restoration plan, the work in the channel would be performed by hand crews or, if necessary, by mechanized equipment working from the banks. All such work would be carried out from August through March to avoid turtle and bird breeding seasons. The City will also inspect the fence on a regular basis and make repairs as necessary to prevent human and predator entry.

For flood control purposes, the City would remove vegetation and sediments from the channel bottom that appear to seriously impede flows and which may cause flooding on-site during high winter flows. While the frequency is unknown, it is estimated that such clearance would only occur every three to five years. The same maintenance techniques and timing as indicated for habitat maintenance would be used.

In summary, the project description for El Estero Drain includes:

- Past removal of vegetation and extension of the existing culvert;
- Implementation of a habitat restoration plan; and
- Future maintenance of the habitat and flood control capacity in the drain through periodic pruning of excessive growth intruding into the drain and into open areas and necessary desiltation.

#### C. Length of Permit

As the City has done with other projects that involve habitat restoration and maintenance, this permit is proposed to be effective for ten (10) years from the date of approval by the Planning Commission. This approach allows the greatest time to complete the initial project and related monitoring, and allows for ongoing maintenance activities to begin. After the 10-year period ends, any future maintenance activities would require further coastal review. Some activities would be subject to Coastal Exclusions. Some, more significant, activities would require a new Coastal Development Permit.

## VI. OTHER COMMITTEE REVIEW

### ARCHITECTURAL BOARD OF REVIEW (ABR)

The ABR reviewed this project on April 17, 2000. The ABR had the following comments:

- 1) The Board appreciates the restoration and enhancement proposed in this project.
- 2) The proposed landscaping for the El Estero Drain should be similar to the landscaping proposed for the Laguna Creek portion of this project.
- 3) The Laguna Creek landscape plan is acceptable as presented.
- 4) Consider providing a plaque containing information regarding the protected status of the habitat.
- 5) Study pedestrian access through the sites where feasible and nondisruptive to the sensitive habitat.

## VII. ISSUES

### A. PLANS AND POLICY CONSISTENCY (See Exhibit C for a list of policies related to this project.)

#### 1. General Plan

##### Conservation Element

There are several Conservation Element policies that apply to this project. They are in the areas of Cultural Resources, Visual Resources, Biological Resources and Drainage and Flood Control.

Under Cultural Resources, the goal and policies require the protection of significant archaeological, historic and architectural resources.

Archaeological studies and monitoring reports have been prepared on properties adjacent to the project area. Most of this area is filled estuary (estero) and the relics found here are no longer in their historic context. No significant sites are expected to be found. The only grading proposed would be at the El Estero Drain site. The site will be monitored during grading and if archaeological materials are found, they will be assessed for significance by a qualified archaeologist, and subject to the standard process for further study or mitigation, as appropriate. Therefore, it is staff's position that the project is **consistent** with the Cultural Resources goal and policies.

Under Visual Resources, the goals and policies require the protection of important scenic resources and open space in the City. A particular area of concern is protection of creek-side environments.

Because these projects would result in improvements to habitat and other improvements and are subject to approval by the Architectural Board of Review, it is staff's position that they would be **consistent** with the Visual Resources goal and policies.

Under Biological Resources, the goals, subgoals and policies require that the City's critical ecological resources be enhanced and protected, with special emphasis on protection and enhancement of the habitats of threatened and endangered species and maintenance of the area's biotic community.

Both El Estero Drain and Laguna Creek are known to have populations of the Southwestern pond turtle, a State Species of Special Concern. Improvements that preserve and protect the turtle and that result in a productive urban biotic community would be consistent with Biological Resources goals and policies. There will be a substantial net increase in wetland and habitat area, including buffers from both the drain and the channel. Measures to protect

the turtles during work in the streams have also been included. It is staff's position that this project is **consistent** with the Biological Resources goals and policies.

Under Drainage and Flood Control, the goals require that the City ensure that human habitation in floodplains does not adversely affect public health, safety and welfare. Recreation, conservation and open spaces uses are also encouraged in floodplains. Natural approaches to flood control are also encouraged.

~~This project is entirely in the floodplain.~~ Creek drainage maintenance activities would provide for improved drainage and flood control. The new El Estero Drain design would slightly increase flood capacity and retention because there would be a wider channel. Both El Estero Drain restoration and enhancement and Laguna Creek revegetation would result in a more natural riparian and wetland habitat in this area. No new structures will be added to the stream channels. An enclosed connection between the drain and the creek, using a steel corrugated pipe, would be replaced with an open connection that would encourage movement of animal species between the two channels. This would result in a more varied habitat. For these reasons, it is staff's position that the project would be **consistent** with these Drainage and Flood Control goals.

#### **Seismic Safety/Safety Element**

The Seismic Safety/Safety Element contains Flooding policies that pertain to this project. These policies call for the establishment of creek setbacks and buffer zones to protect new development from flood and erosion hazards and encourage light intensity uses in the floodway and floodway fringe that do not impair stream capacity.

There are no locally required setbacks along Laguna Creek or El Estero Drain. However, the El Estero Drain restoration and enhancement project has been designed to maximize buffers from both the railroad and the wastewater treatment plant. El Estero Drain would be further buffered by constructing a fence around the City-owned parcel to minimize disturbance of the parcel and to discourage turtles from wandering onto the railroad tracks. The Laguna Creek revegetation would include establishing vegetation on the banks to provide a better buffer from the adjacent roadway and facilities to the east and from the industrial uses to the west. No uses are allowed in the floodway. On the east bank, there is an existing buffer between the top of the bank and the Wastewater Treatment Plant's access road. This buffer will remain. On the west bank, there is no existing buffer between the top of the bank and adjacent uses. If new development is considered in the future, a setback will likely be required. It is staff's position that this project would be **consistent** with these Flooding policies.

## 2. Local Coastal Plan

LCP Water and Marine Environments Policies 6.1 and 6.8 require, where feasible, the protection, restoration and enhancement of biotic communities in the Coastal Zone through a variety of means, including maintenance of good water quality and the use of setbacks to buffer such resources from development. Policy 6.11 only allows alterations of streams that incorporate the best mitigation measures. The purposes of such alterations are limited to necessary water supply projects, flood control projects under certain conditions and projects with the primary purpose of improving fish and wildlife habitat.

There would be a net improvement to the wetland and riparian habitats, including greater functions and values, and providing improved and expanded habitat for the Southwestern pond turtle. As discussed above, under Seismic Safety/Safety Element Flooding policies, there would be improved buffers for both channels. Although there are no locally required buffers, except on Mission Creek, the City's Creek Guidelines require establishment of buffers on a case-by-case review. The Coastal Commission Interpretive Guidelines call for buffers of 100 feet, with reductions possible on a case-by-case basis. El Estero Drain relocation will result in buffers varying between 25 and 40 feet on the south side, except where the drain enters Laguna Creek. On the north side, the buffer from the property line would vary between 40 and 90 feet, except at the easterly end where it continues onto the adjacent property. Overall, the buffers from developed areas would be improved over the existing condition. The existing buffers along Laguna Creek will not be changed at this time. They are defined by existing roadways and facilities on the east and existing uses on the west. This project does not decrease existing buffers along Laguna Creek and improves the vegetation within the banks. In effect, the existing buffer situation is "legally nonconforming." Only when development adjacent to the creek is proposed will there be an opportunity to improve creek buffers. This project would result in some alteration of these two streams. However, the purposes include maintenance of an existing channel used for flood control (Laguna Creek) and restoration and improvement of wildlife habitat. Therefore, it is staff's position that this project would be **consistent** with these policies.

Land Use Policy 12.2 requires that new developments in the Waterfront Area be evaluated as to the project's impacts on the area's openness, lack of congestion, naturalness and rhythm. The LCP defines each of these terms and how they should be considered in reviewing projects. "Openness" refers to minimizing visual impacts in terms of building density, scale, mass and height. "Lack of Congestion" refers to protecting and maintaining Cabrillo Boulevard as a scenic drive by minimizing vehicle access onto the boulevard and focusing pedestrian activities to the south of the boulevard. "Naturalness" refers to protection of views to the foothills, mountains and ocean within the existing view corridors along Cabrillo Boulevard keeping in mind motorists and other users of Cabrillo Boulevard, Chase

Palm Park users and users of adjacent beach areas and other public facilities (such as the bikeway). "Rhythm" refers to "protecting, maintaining, and enhancing rhythm and patterns of the waterfront."

This project's visual impacts would not relate to building density, mass, scale or height in the Waterfront Area nor would the project result in a loss of a general sense of openness. The proposed project would not result in effects on congestion in the area. The project area is not visible from Cabrillo Boulevard and is only minimally visible from Chase Palm Park or Garden and Yanonali Streets. The relocation of an existing fence around the El Estero Drain property would be minimally visible, except by passengers on trains. The view from trains would be generally improved from the existing condition because unattractive invasive non-native plants would be replaced with native plants, trash would be better controlled and periodic maintenance would be scheduled. Because this project is not visible to most of the Waterfront, it would have no effect on Waterfront patterns and rhythms. It is staff's position that this project would be **consistent** with this policy.

### 3. California Coastal Act

Protection, restoration and enhancement of coastal wetlands and streams are major cornerstones of the California Coastal Act. There are a variety of Coastal Act policies that apply to this project.

Policy 30231 (Marine Environment) requires that the biological productivity and quality of streams, wetlands and estuaries be preserved in order to maintain optimum populations of marine organisms and to protect public health. The policy also calls for restoration, where feasible, of these habitats through a variety of methods.

It is staff's position that the proposed project would be **consistent** with this policy in that it would meet all water quality standards required by local, State and Federal regulations, especially those of the Regional Water Quality Control Board. In addition, it would improve biological productivity in both parts of the project area. In Laguna Creek, non-native plants would be replaced with native plants that would improve biological productivity. In El Estero Drain, the habitat would be substantially expanded from the existing acreage as part of its restoration. It would also include a buffer as discussed above in other policies. The enhancements to El Estero Drain will improve the quality of stormwater that is conveyed by the drain to Laguna Creek for two reasons. First, the creation of shallow impounded water for turtle habitat would also allow pollutants to settle in the channel where they can be degraded through microbial action, a biofiltration process that cannot occur without retaining water in the bottom of the channel. Second, the addition of native emergent wetland plants in the channel bottom would enhance pollutant capture and degradation rates compared to

current conditions. Based on these considerations, the project restores the quality of the stream.

Policy 30232 (Marine Environment) requires that the marine environment be protected against spillage of petroleum products and other hazardous substances and procedures for cleaning up accidental spills be provided.

Except for grading in the El Estero Drain area and the use of a crane with a clam-shell bucket on the banks of Laguna Creek, very little heavy equipment would be used to carry out the project. However, because of the acreage involved, a Storm Water Pollution Prevention Plan will be required to minimize storm water contamination during and after construction completion. With the inclusion of the Storm Water Pollution Prevention Plan, it is staff's position that the proposed project would be **consistent** with this policy.

Policy 30233 (Marine Environment) prohibits the diking, filling or dredging of wetlands unless "there is no feasible less environmentally damaging alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects." Subsection (a) of this policy indicates that the uses that are allowed under these conditions are very limited and include maintenance for drainage and flood control and restoration purposes. Subsection (b) of this policy also requires that dredging and spoils dispersal be planned and carried out to avoid significant disruption of wildlife habitats and water circulation. Subsection (c) further requires that any diking or filling that occurs in existing wetlands be carried out in such a way as to maintain or enhance the functional capacity of the affected wetland.

The primary wetland involved here is along the El Estero Drain. The primary purpose of this part of the project is to restore and enhance the habitat, with a secondary purpose being to maintain flood and drainage capacity. The purpose of the Laguna Creek portion of the project is to maintain flood capacity. Therefore, it is staff's position that the project would be **consistent** with this policy.

Policy 30236 (Marine Environment) requires that substantial alterations of streams incorporate the best mitigation measures feasible. The policy also says that such alterations are limited to certain types of projects including flood control projects when there are no other methods for protecting existing structures in the floodplain and projects where the primary purpose is to improve fish and wildlife habitat.

This project would result in some alteration of these two streams. However, the purposes include maintenance of an existing channel used for flood control (Laguna Creek) and restoration and improvement of wildlife habitat (Laguna Creek and El Estero Drain). Therefore, it is staff's position that this project would be **consistent** with Policy 30236.

Policy 30240 (Land Resources) requires that environmentally sensitive habitat areas be protected against significant disruption of habitat values and that only uses dependent upon these resources are allowed. It also requires that development adjacent to such areas be sited and designed to prevent impacts that would degrade these areas and, in fact, be designed to allow for the continuance of the habitat.

Because of the presence of the Southwestern pond turtle, this project site qualifies as an environmentally sensitive habitat area. Improvements that preserve and protect the turtle and that result in a productive urban biotic community would be consistent with this policy. There would be a substantial net increase in wetland and habitat area, including buffers from both the drain and the channel. It is staff's position that this project would be **consistent** with Policy 30240.

Policy 30253 (Development) requires that new development minimize risks to life and property in areas of high geologic, flood and fire hazard and that said development does not contribute to such hazards.

It is staff's position that the proposed project would be **consistent** with the applicable portion of this policy because it would minimize flood risks to life and property in this area.

#### **B. ENVIRONMENTAL REVIEW**

The Draft Negative Declaration (ND) was released for public comment on May 5, 2000. The public comment period closed on June 5, 2000. A total of three comment letters were received, two from the Environmental Defense Center and one from the Urban Creek Council. The comments received focused on the following: 1) complete project description and accurate, pre-action baseline for impact evaluation; 2) planting mix, source, design and timing; 3) fence design to accommodate predators; 4) appropriate maintenance; 5) impacts on the Tidewater goby; 6) impacts on the Southwestern pond turtle and its habitat, particularly upstream from project site; 7) herbicide use; and 8) timing of grading. A summary list of the comments received has been incorporated into the proposed Final ND. Comments that relate to the environmental impacts of the project have been responded to in the body of the ND, are shown in ~~strikeout~~ and underline, and are summarized below.

The ND included responses to the issues outlined above. The project description and baseline were complete. However, they have been further clarified and a summary of each part of the project has been added. Additional information regarding the planting mix, sources, design and timing were added, including adjustments to some of the mitigation measures. A mitigation measure was amended to change the design of the fence to accommodate predators (measure Bio-2). Maintenance mitigation measures were amended to be more sensitive to the habitat and to be better timed to the seasons. It was clarified that there would be no impacts on the Tide-

water goby as a result of the project. Any potential impacts on the Southwestern pond turtle would be mitigated as part of the project. A mitigation measure has been added to assure that the El Estero Drain portion of the project will not result in impacts to existing habitat upstream of the project area (Bio-2). The proposed Final ND has included substantial discussion of Rodeo™, the herbicide that will be used in the project area. After review of the literature and discussions with Dr. John Gray, biologist, and hazardous materials specialists, it has been determined that the potential effects of Rodeo™ are less than significant. In addition, there are no less hazardous herbicides available for use. Finally, mitigation measure WR-1 has been clarified to make sure that grading will be completed prior to the rainy season. If it cannot be, erosion control is also included as part of the Stormwater Pollution Prevention Plan outlined in mitigation measure WR-1.

There were several comments made that did not directly relate to the environmental effects caused by this project. They were focused on four main areas: 1) creek setbacks; 2) tide gates; 3) access; and water quality. These four issues are discussed in more detail in the following sections.

### C. CREEK SETBACKS

Several people, including members of the Planning Commission, expressed concerns about the adequacy of setbacks along Laguna Creek. As discussed above under Plans and Policies, ~~there are no locally required setbacks along Laguna Creek, unlike along Mission Creek.~~ There is no existing setback from the west bank of Laguna Creek. There is fencing at the bank top with outdoor storage immediately behind the fence in most places. The closest building is about 12 to 15 feet from the top of the bank. ~~The existing setback along the east bank is a minimum of 20 feet from either the Wastewater Treatment Plant access road south of Yanonali Street or the paved area for the City Corporation Yard north of Yanonali Street.~~ In some places, the existing setback exceeds 50 feet. ~~The California Coastal Commission's Interpretive Guidelines recommend a minimum buffer of 100 feet from the top of the bank for channelized streams.~~ However, most of these uses have been existence for more than 20 years. The Wastewater Treatment Plant received permits in the early 1970s for a major plant expansion, which was completed in 1979. Projects that were vested before the 1976 Coastal Act, as this one was, are considered to be legal as they exist. This would also apply to most other uses that were legally in place prior to the Coastal Act.

Given the layout of the Wastewater Treatment Plant, there are few opportunities to expand the buffer along Laguna Creek. However, it is likely that, in the future, property on the west bank will be redeveloped. At that time, buffers will be incorporated into the project design.

#### **D. TIDE GATES**

Both the Environmental Defense Center and the Urban Creek Council, along with the Planning Commission, expressed a desire to know more about the tide gates at the mouth of Laguna Creek, whether the gates are necessary and if they should be removed. According to the Public Works Department staff, tide gates have existed in some form since the 1920s, with the most recent changes occurring in the 1960s. The review of tide gate removal or other changes is part of a larger, more comprehensive review of the watershed. However, there are good reasons for their presence. The bottom of Laguna Creek drops no more than about seven inches (7") between U.S. Highway 101 and the ocean and is actually about three feet below sea level at the tide gates. They are intended to prevent tidal flooding. Even normal high tides, when combined with storm surge and/or high creek flows, could result in flooding of City streets north of the freeway. Because of these limitations, it is likely that there will always be tide gates at the mouth of Laguna Creek.

Even when tidal and rain-related flooding problems are set aside, there are other issues related to the removal of the tide gates. The most significant concern would be the loss of habitat for the Southwestern pond turtle, a State Species of Special Concern, which has recently been found in Laguna Creek. The loss of fresh water wetland would need to be mitigated and new habitat found for the turtle. Removal of the tide gates would also likely make more properties susceptible to flooding during events with ocean storm surge.

The City is proposing to do a study of the Laguna Pump Station and tide gates in the next year. The potential for different operating schemes are proposed to be considered as part of this analysis.

#### **E. ACCESS**

The Planning Commission suggested that the Public Works Department consider public access along both El Estero Drain and Laguna Creek. Commissioners were particularly interested in putting pedestrian access along the Union Pacific Railroad (UPRR)-right-of-way. The most important concern from the standpoint of the Public Works Department, is the security of the Wastewater Treatment Plant. This plant is a secured industrial facility that uses equipment and substances that can be dangerous to those untrained to use them. As a matter of public safety and liability concerns, unmonitored access is not acceptable to the Public Works Department. However, staff at the treatment plant gives frequent tours and is willing to consider a pathway in the northerly buffer for El Estero Drain, along with appropriate interpretive signage. A condition of approval has been included to require this walkway and signage.

Access along the railroad tracks is not feasible because of the narrowness of the railroad bridge across Laguna Creek. This puts a potential path too close to the tracks for safety. The one existing pathway just west of Garden Street and parallel to the tracks is an access to parking at the southerly end of Santa Barbara Street and is 50 feet from the railroad tracks. This is 25 to 30 feet farther from the tracks than is available in the stretch between Garden Street and Calle Cesar Chavez.

#### **F. WATER QUALITY**

Several questions were raised about adding sediment and pollution control to inlets that enter Laguna Creek. The appropriate water quality improvements are being considered as part of the City's Clean Water and Creek Restoration Program. These are comprehensive approaches that will determine the best way to handle non-point source pollution in the City. There are several options for handling such pollution, including street sweeping, filtration and traps at the point where unwanted materials enter the storm drain system, similar equipment where materials exit the storm drain system, requiring the "first flush" from storms to be piped to the Wastewater Treatment Plant and others. Trapping sediment and pollutants as they enter Laguna Channel or El Estero Drain may not be the most cost-effective manner of improving water quality in this area. Public Works Department water quality staff has suggested that it would be better to wait until the comprehensive planning effort is completed to determine how best to improve water quality on Laguna Creek and El Estero Drain.

### **VIII. RECOMMENDATION/FINDINGS**

Based on the staff report analysis, staff recommends the following Planning Commission findings and actions:

#### **Environmental Review**

- A. Find that the Planning Commission has read and considered the Final Mitigated Negative Declaration (MST99-00507) for the Laguna Creek and El Estero Drain Maintenance and Restoration Project together with comments received during the public review process; and that the MND is adequate and has been completed in compliance with the California Environmental Quality Act (CEQA) and Guidelines. Find that, in the Commission's independent judgement, there is no substantial evidence that the project with identified mitigation measures will have a significant effect on the environment. Find that the record of proceedings on which this decision is based is in the custody of the City of Santa Barbara Community Development Department, located at 630 Garden Street, Santa Barbara, CA.
- B. Adopt the Mitigated Negative Declaration (MST99-00507) for the Laguna Creek and El Estero Drain Maintenance and Restoration Project, including the Mitigation Monitoring Program.

- C. Approve the Coastal Development Permit for the Laguna Creek and El Estero Drain Maintenance and Restoration Project, finding that the project is consistent with the policies of the California Coastal Act and is consistent with all applicable policies of the City's Coastal Plan, all applicable implementing guidelines, and all applicable provisions of the Code, as discussed in the Planning Commission Staff Report of July 6, 2000. The project consists of restoration and maintenance of Laguna Creek and El Estero Drain, including the expansion of environmentally sensitive wetland and riparian habitat for the southwestern pond turtle.

Exhibits:

- A. Conditions of Approval
- B. Site Plan
- C. Project-Related Policies
- D. Negative Declaration

PLANNING COMMISSION CONDITIONS OF APPROVAL

SOUTHEAST OF GARDEN AND YANONALI STREETS/ LAGUNA CREEK AND EL ESTERO DRAIN  
JULY 6, 2000

Those conditions drawn from the mitigation measures in the Negative Declaration include the mitigation measure number in parentheses at the end of the condition.

- A. This Coastal Development Permit (CDP) shall be in effect for a period of ten (10) years from the date upon which the Planning Commission issues a Coastal Permit for this project unless construction does not commence within two (2) years of said date (see Notice at the end of the Conditions of Approval). At the conclusion of this permit, the Public Works Department may apply to renew the CDP for maintenance activities that do not qualify for a Coastal Exclusion for an additional five (5) years. Such renewal may be considered every five years from that time forward. During the ten (10) year period, Public Works Department staff shall keep a maintenance activity record which tracks all maintenance that occurs within the project area. This record shall be submitted with the request for CDP renewal along with information regarding the existence of any new endangered, threatened or candidate species for such designation and any maintenance activities expected to occur during the next five year period.
- B. Pursuant to Section 21089(b) of the California Public Resources Code and Section 711.4 et. seq. of the California Fish and Game Code, the approval of this permit/project shall not be considered final unless the specified Department of Fish and Game fees are paid and filed with the California Department of Fish and Game within five days of project approval. The fees required are \$850 for projects with Environmental Impact Reports and \$1250 for projects with Negative Declarations. Without the appropriate fee, the Notice of Determination (which the City is required to file within five days of project approval) can not be filed and the project approval is not operative, vested or final. The fee shall be delivered to the Planning Division immediately upon project approval in the form of a check payable to the California Department of Fish and Game.
- C. All conditions imposed by the U.S. Army Corps of Engineers, the California Department of Fish and Game and the Regional Water Quality Control Board are hereby incorporated by reference into these conditions. Where there are differences in conditions between this document and conditions imposed by other agencies, those most protective of the environment shall prevail. Evidence of permits and/or approvals from the above stated agencies shall be submitted to the Planning Division prior to issuance of building or public works permits.
- D. The development of the Real Property approved by the Planning Commission on \_\_\_\_\_, is limited to the improvements shown on the Plan signed by the Chairman of the Planning Commission on said date and on file with the City of Santa Barbara and the improvements described in the Planning Commission staff report and attachments, dated July 6, 2000.
- E. The Owner or contractor shall submit the following or evidence of completion of the following to the Public Works Department prior to the issuance of a Building or Public Works Permit for the project:

**EXHIBIT A**

1. An engineered drainage and grading plan. Design grading plan for El Estero Drain to prevent changes in ponding on the adjacent property to the east of the subject parcel. Re-design the perimeter fence to eliminate the concrete footing and the wooden slats (Bio-2).
2. A Storm Water Pollution Prevention Plan shall be prepared and implemented and shall include, but not be limited to, the following:
  - a. For Laguna Creek, all mechanized equipment shall operate from the top of the bank.
  - b. To the extent feasible, limit grading activities in and around El Estero Drain to the non-rainy season, while avoiding turtle and bird breeding seasons. If construction during the rainy season is unavoidable, use silt fences, straw bales and other erosion control measures, as necessary, to control siltation of El Estero Drain and Laguna Creek during wet periods.
  - c. Cover stockpiled fill soils and other construction materials.
  - d. Seed and plant disturbed areas with native vegetation required by the restoration plan immediately following construction activities.
  - e. Provide dust control by wetting exposed soil surfaces.
  - f. Clean up equipment leaks, drips and spills immediately. Use dry cleaning methods wherever possible.
  - g. Any on-site equipment refueling shall be confined to one designated location, preferably in an existing paved area.
  - h. Apply any other Best Management Practices (BMPs) appropriate to the project to protect surface water quality (WR-1).
  - i. If necessary, use straw bales, jute mats or other BMPs on the new channel banks to reduce runoff velocity and erosion while the new vegetation is being established (WR-2).
3. Easements or other acceptable instruments described as follows, subject to approval by the Public Works Department and/or the Building & Safety Division:
  - a. Access to property not owned by the City along Laguna Creek, either through right-of-entry or other appropriate instrument.
  - b. Easement or other appropriate instrument to construct and maintain a culvert and turtle ramp from El Estero Drain to Laguna Creek on land presently owned by the Union Pacific Railroad.
4. Submit a copy of the signed, binding contract with a City-approved archaeologist for monitoring during all ground disturbing activities associated with the project, including,

but not limited to, demolition, grading, excavation, trenching, or vegetation removal and ground clearance in the El Estero Drain area. The contract shall establish a schedule for monitoring and a report to the City Environmental Analyst on the findings of the monitoring. Contract(s) shall be subject to the review and approval by the City's Environmental Analyst (related to CR-1 – CR-3).

F. The following is subject to the review and approval of the Architectural Board of Review (ABR):

1. Plant native vines appropriate to the habitat, propagated from the project site or as near as feasible, adjacent to the chain link fence in such a manner that the vines eventually hide the fence (Aes-1).
2. Incorporate a pathway into the northerly buffer for the El Estero Drain area that is consistent with and does not detract from the intent of the buffer to protect habitat for the Southwestern pond turtle while providing an opportunity for wastewater treatment plant guests to understand and appreciate the benefits of habitat restoration and sensitive species protection. Access for maintenance may be incorporated into the pathway. Interpretive signing shall be provided, subject to approval by the Sign Committee. Language on the sign(s) must be reviewed and approved by a qualified biologist.

G. The Owner shall complete the following prior to the issuance of building or public works permits:

1. The owner shall submit to the City's Environmental Analyst a monitoring program for the project's mitigation measures, as stated in the Negative Declaration, MST99-00507. Mitigation monitors responsible for permit compliance monitoring must be hired and paid for by the applicant. The mitigation monitoring program shall include, but not be limited to:
  - a. A list of the project's mitigation measures.
  - b. An indication of the frequency of the monitoring of these mitigation measures.
  - c. A schedule of the monitoring of the mitigation measures.
  - d. A list of reporting procedures.
  - e. A list of the mitigation monitors to be hired.
2. For El Estero Drain grading only, the Owner shall complete a contract with a City-approved archaeologist prior to the issuance of building permits for monitoring during all ground disturbing activities associated with the project, including, but not limited to, grading, excavation, trenching, vegetation or paving removal and ground clearance in the El Estero Drain area. The contract shall establish a schedule for monitoring and submittal of a report to the City Environmental Analyst on the findings of the monitoring. Contract(s) shall be subject to the review and approval of the Environmental Analyst (CR-1).
3. For El Estero Drain only, a construction conference shall be scheduled by the General Contractor. The conference shall include representatives from the Public Works Department, Building Division, Planning Division, the Property Owner, the archaeologist and the Contractor. The following shall be finalized and specified in written form and sub-

mitted with the application for a building permit and shall be specified on the construction plans submitted for building permits:

- a. If any archaeological artifacts, exotic rock (non-native) or unusual amounts of shell or bone are uncovered during any on-site grading, trenching or construction activities, all work must stop immediately in the area and a City-approved archaeologist retained to evaluate the deposit. The City of Santa Barbara Environmental Analyst must also be contacted for review of the archaeological find(s).

If the discovery consists of potentially human remains, the Santa Barbara County Coroner and the California Native American Heritage Commission must also be contacted. Work in the area may only proceed after the Environmental Analyst grants authorization (CR-2).

- b. Schedule for the City-approved archaeologist/s presence during grading and/or construction activities that disturb the area described above. The archaeologist's monitoring shall include the following provisions. If cultural resources are encountered or suspected, work shall be halted immediately; the City Environmental Analyst shall be notified. The archaeologist shall assess the nature, extent and significance of any discoveries and develop appropriate management recommendations for archaeological resource treatment, including but not limited to redirection of grading and/or excavation activities. If the findings are potentially significant, a Phase 3 recovery program shall be prepared and accepted by the Environmental Analyst and the Historic Landmarks Commission. That portion of the Phase 3 program that requires work on-site shall be completed prior to continuing construction in the affected area. If prehistoric or other Native American remains are encountered, a Native American representative shall be contacted and shall remain present during all further subsurface disturbances in the area of the find (CR-2).
- c. During site grading and transportation of fill materials, regular water sprinkling shall occur using reclaimed water. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust (AQ-1). Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph (AQ-1).
- d. After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:

- (1) Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind;
    - (2) Completion of revegetation plan;
    - (3) Other methods approved in advance by the Air Pollution Control District (AQ-2).
  - f. Construction shall be prohibited on Saturday, Sunday, Holidays, and between the hours of 7:00 p.m. and 7:00 a.m. (Noise-1).
  - g. All construction equipment, including trucks, should be professionally maintained and fitted with standard manufacturers' muffler and silencing devices (Noise-2).
  5. The culvert between El Estero Drain and Laguna Creek shall be designed such that its elevation and size will result in maintenance of moist conditions in El Estero Drain while still allowing high flows to drain into Laguna Creek in a manner similar to that occurring under the existing condition (WR-3).
- H. The following requirements shall be incorporated into, or submitted with the construction plans submitted to the Building & Safety Division with applications for building permits the Public Works Department for public works permits. All of these construction requirements must be completed prior to the issuance of a Certificate of Occupancy:
1. Plants used in the restoration plans for both Laguna Creek and El Estero Drain shall be propagated from the project site or as near as feasible within the Santa Barbara coastal area. Sycamore trees meeting these criteria shall be added to the plant mix for the El Estero Drain buffer areas. (Willow trees shall be added to the east bank of Laguna Creek and may be pruned as necessary to allow access for the crane-mounted clamshell bucket used for desiltation. It is preferable to use smaller propagules for establishment of habitat. Consider use of liners and cuttings rather than one- to five-gallon plants, where feasible (Bio-1).
  2. The two-year maintenance period shall begin immediately after the contractor has completed the implementation of the restoration. To receive final acceptance of the restoration, the site shall be inspected and approved by a qualified restoration specialist/biologist involved in the design and/or implementation of the mitigation plan.
- During the two year maintenance period following initial restoration:
- The contractor will conduct routine activities to maintain the plantings and seeded areas in a healthy condition and control erosion of the site.
  - The site will be inspected by a qualified restoration specialist/biologist for necessary repair or remedial measures a minimum of four times a year.

- At the end of the maintenance period, the restoration specialist/biologist will conduct a final inspection. Any outstanding items will need to be completed prior to final approval and acceptance of the restoration.

Maintenance activities will include routine watering, replanting or reseeded, repair of damaged areas, weeding, remedial erosion control and removal of excess sediment from areas if the sediment has clearly eroded from the site.

Semi-annual reports in April and November on the status of the restoration work shall be submitted to the Environmental Analyst, including the following information:

- A quantitative analysis of attainment of annual performance standards and progress toward meeting final performance standards.
  - A list of names, titles and affiliations of persons conducting the monitoring and preparing the report.
  - A copy of the Corps and/or other agency permits, including special conditions and any letters of modification.
  - Photographs taken at photo-documentation points.
  - Relevant maps.
  - Summary results of previous years' monitoring (Bio-3).
3. During the five year monitoring period that follows the two-year maintenance program, typical plant vegetation sampling methods shall be used. For example, plant species composition and percentages would be determined for the site by sampling throughout the site and recording relevant data, such as:
- Species occurring within the area, the species wetland or riparian indicator status and whether the species is native or introduced.
  - Percent plant cover.

Qualitative information about weather and site conditions shall also be collected. There shall also be permanent photo-documentation points established. Color photographs shall be taken from the same point each year to assist in documentation of mitigation status. Based on the findings of the annual monitoring report, additional weeding could occur if necessary to meet the performance goals for plant cover and species diversity (Bio-4).

4. A report on the condition of site vegetation shall be prepared at the end of the two year maintenance period. During the 5-year monitoring period, annual reports describing the results of mitigation monitoring shall be submitted to the California Department of Fish and Game (CDFG) and other interested agencies, as appropriate, and the Environmental Analyst before the end of each November.

The annual monitoring reports shall contain the following information:

- A quantitative analysis of attainment of annual performance standards and progress toward meeting final performance standards.
  - A list of names, titles and affiliations of persons conducting the monitoring and preparing the report.
  - A copy of the Corps and/or other agency permits, including special conditions and any letters of modification, as determined to be necessary.
  - Photographs taken at photo-documentation points.
  - Relevant maps.
  - Summary results of previous years' monitoring (Bio-5).
5. All Planning Commission Conditions of Approval shall be provided on a full size drawing sheet as part of the drawing sets. A statement shall also be placed on the above sheet as follows: The undersigned have read and understand the above conditions, and agree to abide by any and all conditions which is their usual and customary responsibility to perform, and which are within their authority to perform.

Signed:

Property Owner		Date
Contractor	Date	License No.
Architect	Date	License No.
Engineer	Date	License No.

6. The Final Restoration and Maintenance plans for Laguna Creek and El Estero Drain shall incorporate the following:
- a. Prior to desiltation or vegetation removal, a qualified biologist shall temporarily relocate any turtles found in or near the proposed work area (Bio-6).

- b. Prior to desilting or removing debris or vegetation in either Laguna Creek or El Estero Drain in the future, the Public Works Department must demonstrate the need for such removal (e.g., the extent of capacity lost due to siltation). Desilting or debris and vegetation removal shall occur only during low flow periods after turtle and bird breeding seasons end and before the rainy season begins. Work in El Estero Drain shall be done by hand unless it is necessary to remove large obstructions or substantial sediment plugs (Bio-7).
  - c. To the extent feasible, vegetation shall be removed from the El Estero Drain area in a mosaic pattern that preserves enough vegetation to provide diverse habitats (Bio-8).
  - d. Use of herbicides shall be subject to approval by the restoration specialist/biologist. Hand spraying shall be used. No aerial spraying shall be allowed. All spraying shall take place when wind speeds are at or below five miles per hour and rain is not predicted within six hours. Herbicides shall be applied selectively, only to specific problem vegetation. Spraying shall be confined to the immediate channel invert to provide habitat by allowing native riparian and understory vegetation to develop on stream banks. Invasive weeds shall be reduced by selective spraying and hand-removal of propagules. Trained personnel shall do all spraying. Sprayers shall be filled outside of riparian corridors (Bio-9).
  - e. After desilting or vegetation removal, plants included in the initial restoration and revegetation plans shall be planted as necessary to assist in reestablishment of lost habitat, in consultation with a qualified restoration biologist (Bio-10).
  - f. The Public Works Department shall minimize applicator exposure to glyphosate. Workers mixing Rodeo™ shall wear eye protection and gloves to minimize exposure to face and hands. When pouring herbicides, workers shall keep containers below eye level (Haz-1).
- I. Prior to Final Inspection for the Public Works or Building Permit, the Owner of the Real Property shall complete the following:
1. Repair any damaged public improvements subject to the review and approval of the Public Works Department.
  2. The owner of El Estero Drain shall complete a final report on the results of the archaeological monitoring shall be submitted to the Environmental Analyst within 180 days of completion of the monitoring and prior to the issuance of the Certificate of Occupancy (Final Inspection), whichever is earlier (CR-3).

**NOTICE OF COASTAL DEVELOPMENT PERMIT**

**TIME LIMITS:**

The Planning Commission's action approving the Coastal Development Permit shall expire two (2) years from the date of approval, per SBMC 28.45.009.q, unless:

1. Otherwise explicitly modified by conditions of approval of the development permit, or unless construction or use of the development has commenced.
2. A building permit for the work authorized by the coastal development permit is issued prior to the expiration date of the approval.
3. A one (1) year time extension may be granted by the Planning Commission if the construction authorized by the permit is being diligently pursued to completion and issuance of a Certificate of Occupancy. Not more than three (3) extensions may be granted.



development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

#### **PRC Section 30236 - Marine Environment**

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.

#### **PRC Section 30240 - Land Resources**

- (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only such uses dependent on such resources shall be allowed within such 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 such areas, and shall be compatible with the continuance of such habitat areas.

#### **PRC Section 30253 - Development**

New development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. . . .



### **PRC Section 30232 - Marine Environment**

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

### **PRC Section 30233 - Marine Environment**

(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:

- (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
- (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
- (3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support services, shall not exceed 25 percent of the degraded wetland.
- (4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
- (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.
- (6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
- (7) Restoration purposes.
- (8) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. . . .

(d) Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal

- 1.2 Where policies within the land use plan overlap, the policy which is the most protective of resources, i.e. land, water, air, etc., shall take precedence.
- 1.3 Where there are conflicts between the policies set forth in the land use plan and those set forth in any other element of the City's existing General Plan or existing regulations, the policies of the land use plan take precedence.

#### **Water and Marine Environments Policies:**

- 6.1 The City through ordinance, resolutions, and development controls shall protect, preserve, and where feasible restore the biotic communities designated in the City's Conservation Element of the General Plan and any future annexations to the City, consistent with PRC Section 30240.
- 6.8 The riparian resources, biological productivity, and water quality of the City's coastal zone creeks shall be maintained, preserved, enhanced, and where feasible, restored.
- 6.11 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 flood plain 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.

#### **Land Use Policies**

- 12.2 New developments within the City's Waterfront Area shall be evaluated as to a project's impact upon the area's:
  - (1) Openness;
  - (2) Lack of Congestion;
  - (3) Naturalness; and
  - (4) Rhythm.

#### **CALIFORNIA COASTAL ACT**

##### **PRC Section 30231 - Marine Environment**

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.

## **Biological Resources Policies**

- 1.0 A set of land-use suitability guidelines shall be developed for use in land planning and the environmental review process.
- 4.0 The habitats of rare and endangered species shall be preserved.
- 10.0 Programs shall be developed to maintain a productive urban biotic community.

## **Drainage and Flood Control Goals and Policy**

Insure that human habitation of the City's floodplains does not adversely affect public health, safety, and welfare.

Encourage recreation, conservation and open space uses in floodplains.

- 4.0 Goals and policies of this element are interrelated with those of the Safety and Open Space Elements and shall be considered together in land use planning decisions.
  - 4.1 Encourage the use of natural building materials for flood control channels such as stone, heavy timber, erosion control, shrubs, and wire revetment with plantings of native or naturalized flora wherever they provide a comparable degree of flood protection.
  - 4.2 Creeks and their banks constitute a scenic open space resource within the City in their natural state; thus, the Open Space Element also recognizes the importance of keeping structures out of the stream channels for preservation of City resources.
  - 4.3 The Safety Element recognizes the hazard to lives and property of encroachment of structures into stream channels and on stream banks; thus, it also supports the findings of this Element on the basis of hazard reduction.

## **Seismic Safety/Safety Element**

### **Flooding Policies**

1. Establish and enforce adequate creek setbacks or buffer zones to protect new development from flood and erosion hazards.
4. Encourage light intensity use in the floodway or floodway fringe with the requirement that such uses shall not impair the flood-carrying capacity of the stream.

## **LOCAL COASTAL PLAN**

Three general policies guide the LCP, as follows:

- 1.1 The City adopts the policies of the Coastal Act (Public Resources Code Sections 30210 through 30263) as the guiding policies of the land use plan.
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**PLANS AND POLICIES  
RELATED TO LAGUNA CHANNEL AND EL ESTERO DRAIN**

**GENERAL PLAN**

**Land Use Element**

Principle #8:

"It is essential to protect the historic, architectural, and natural qualities of Santa Barbara's environment and to preserve the ecological balance of all life systems with which we coexist."

Goal #5:

"Maintain the unique desirability of Santa Barbara as a place to live, work and visit."

**Conservation Element**

**Cultural and Historical Resources Goal**

Sites of significant archaeological, historic, or architectural resources will be preserved and protected wherever feasible in order that historic and prehistoric resources will be preserved.

**Cultural and Historic Resources Policies**

- 1.0 Activities and development which could damage or destroy archaeological, historic, or architectural resources are to be avoided.

**Visual Resources Goals**

Restore where feasible, maintain, enhance and manage the creekside environments within the City as visual amenities, where consistent with sound flood control management and soil conservation techniques.

**Visual Resources Policy**

- 1.0 Development adjacent to creeks shall not degrade the creeks or their riparian environments.

**Biological Resources Goal**

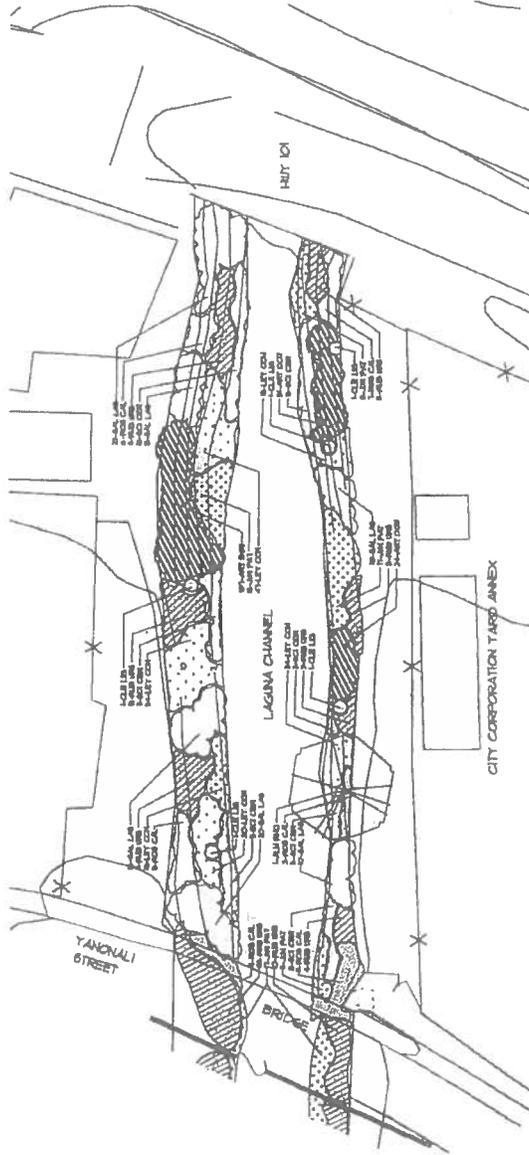
Enhance and preserve the City's critical ecological resources in order to provide a high quality environment necessary to sustain the City's ecosystem.





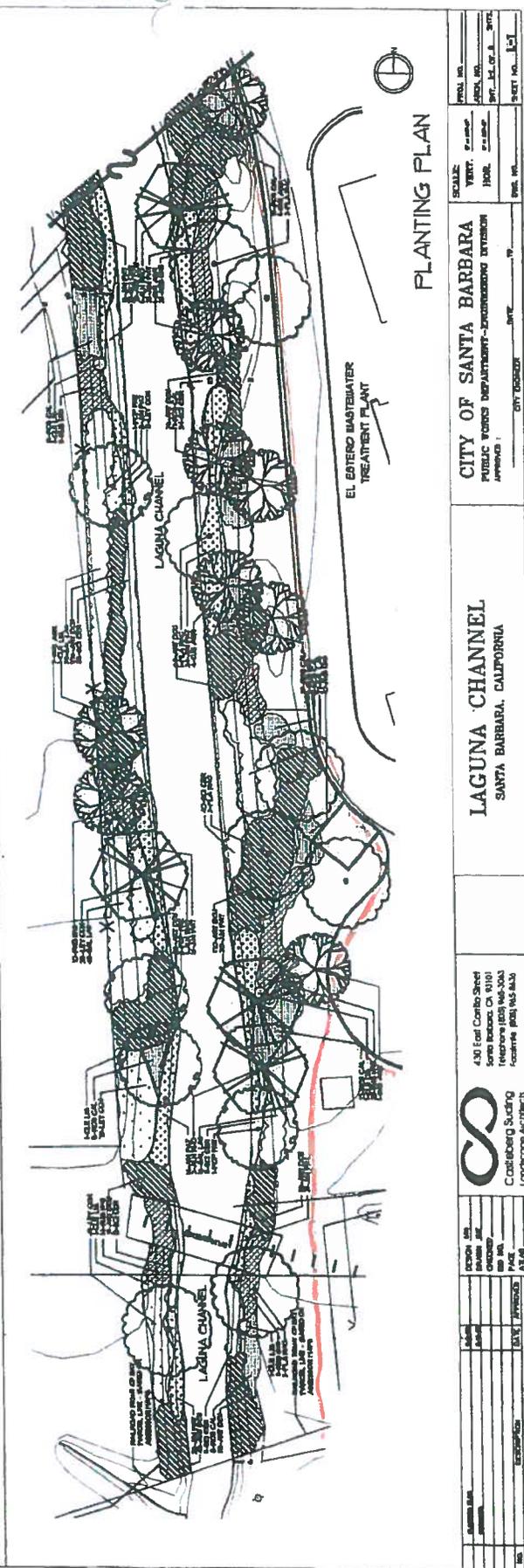
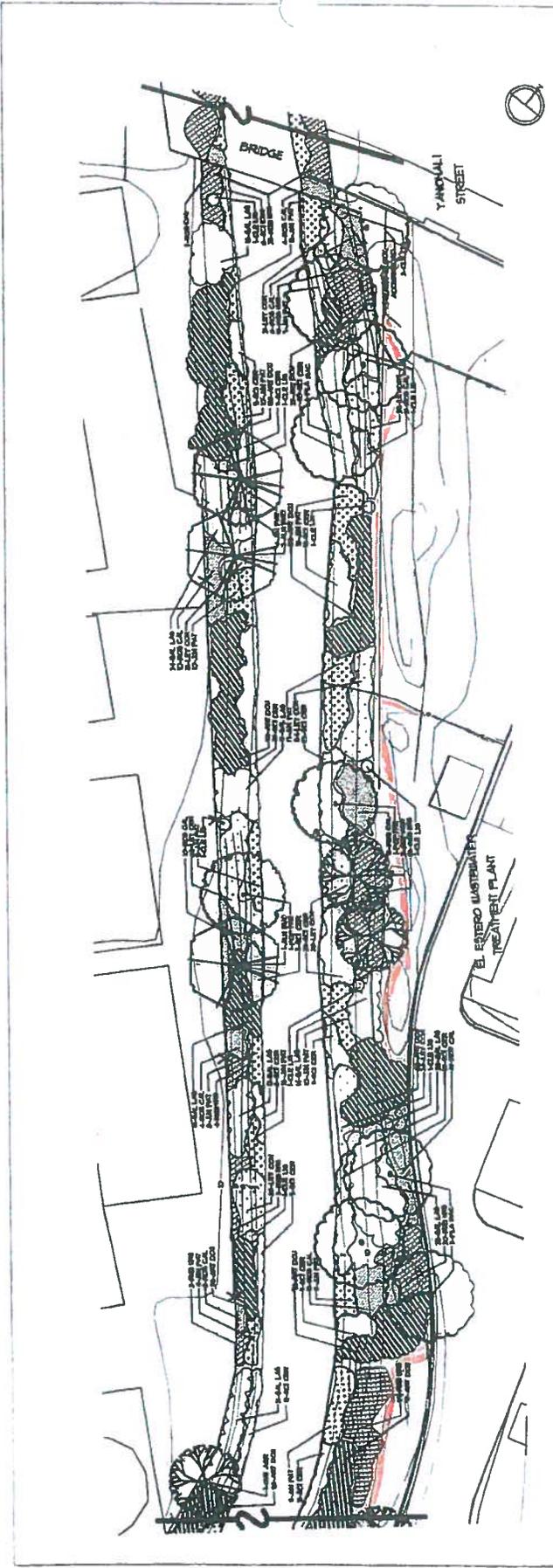
PLANT LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
ALU RHO	<i>Alnus rhomboides</i>	White Alder	5 gal	
ART DDU	<i>Artemisia douglasiana</i>	Murweed	1 gal 3'-0" o.c.	
CLE LUG	<i>Clematis ligularifolia</i>	Creek Clematis	1 gal	
JUN PAT	<i>Juncus pedunc</i>	Common Rush	1 gal 3'-0" o.c.	
LEY CON	<i>Leymus condensatus</i>	Giant Rye Grass	1 gal 3'-0" o.c.	
PLA RAC	<i>Platanus racemosa</i>	California Sycamore	1 gal & 5 gal Use 5 gal if available	
POP FRE	<i>Populus fremontii</i>	Western Cottonwood	5 gal	
QUE AGR	<i>Quercus agrifolia</i>	Coast Live Oak	1 gal & 5 gal Use 5 gal if available	
RQS CAL	<i>Quercus californica</i>	California Wild Olive	1 gal 5'-0" o.c.	
RUE US	<i>Rhus typhina</i>	Staghorn Sumac	1 gal 5'-0" o.c.	
SAL FLS	<i>Salix lasiolepis</i>	Arroyo Willow	1 gal 5'-0" o.c.	
SCI CER	<i>Scirpus setosus</i>	Low sabb-wash	1 gal 4'-0" o.c.	



PLANTING PLAN

430 EAST COVINO STREET SANTA ANA, CA 92701 Telephone (714) 944-3000 Facsimile (714) 944-5446	CITY OF SANTA BARBARA PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION APPROVED: _____ DATE: _____		SCALE: _____ VERT. CURVE: _____ HOE: _____	SHEET NO. 108 TOTAL SHEETS 110
	LAGUNA CHANNEL SANTA BARBARA, CALIFORNIA		CITY ENGINEER: _____	SHEET NO. 108



PLANTING PLAN

SHEET NO. _____ DATE _____ DRAWN BY _____ CHECKED BY _____ APPR'D BY _____ TITLE _____	SCALE: _____ VERT. _____ HOR. _____ CITY DESIGN _____	CITY OF SANTA BARBARA PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION APPROVED _____ DATE _____	LAGUNA CHANNEL SANTA BARBARA, CALIFORNIA	430 East Corbin Street Santa Barbara, CA 93101 Telephone (805) 964-3003 Facsimile (805) 964-3030	 Corbridge Siding LANDSCAPE ARCHITECTS	SECTION NO. _____ SHEET NO. _____ DATE _____ DRAWN BY _____ CHECKED BY _____ APPR'D BY _____ TITLE _____
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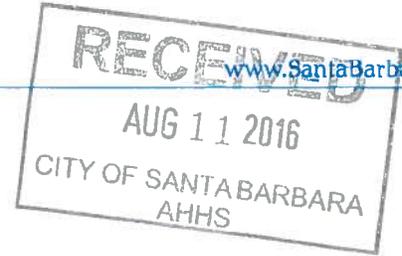
EXHIBIT B



# City of Santa Barbara

## Public Works Department

August 3, 2016



[www.SantaBarbaraCA.gov](http://www.SantaBarbaraCA.gov)

### Main Office

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Mr. George Buell  
Community Development Director  
Community Development Department  
City of Santa Barbara  
630 Garden Street  
Santa Barbara, CA 93101

TRANSMITTED VIA ELECTRONIC MAIL

SUBJECT: 520 East Yanonali Street (El Estero Drain), MST No. 99-00507,  
Planning Commission Resolution No. 029-00, APN: 017-113-019

Dear Mr. Buell:

The Public Works Department (Public Works) is submitting this letter as a second request for a substantial conformance determination in reference to the Coastal Development Permit (CDP) approved in 2000, per Planning Commission Resolution Number 029-00. As you recall, we submitted a first substantial conformance determination request to you on April 26, 2015. Your response on February 5, 2016 outlined several adjustments and modifications to be incorporated into our design, in order for you to determine substantial conformance, with input from the Planning Commission (attached).

In response to your suggested project modifications, we have asked our consultant (Arcadis), to redesign the Remedial Action Plan (RAP) and Habitat Restoration Plan (HRP) to include:

- 1) An additional turtle basking site at CSB-14;
- 2) The turtle access route relocation to the south to extend through the existing culvert, incorporating a ramp, as first described in the 2000 CDP;
- 3) Removal of the proposed phasing from the plan. The total proposed restoration is now 0.95 acres and will be installed in one phase, as described in the attached HRP.

The attached RAP/HRP includes each of the modifications and adjustments, as presented in your February 5, 2016 letter.

**EXHIBIT D**

520 East Yanonali Street (El Estero Drain), MST No. 99-00507, Planning Commission  
Resolution No. 029-00, APN: 017-113-019  
August 3, 2016  
Page 2

Please feel free to contact me with any questions or concerns at (805) 564-5378.

Sincerely,

  
Rebecca J. Bjork  
Public Works Director

SI/mh

Attachments:

- 1) Letter from George Buell to Rebecca Bjork, dated February 5, 2016.
- 2) Remedial Action Plan Habitat Restoration Plan (Arcadis, July 2016)
- 3) Updated Project Description (August, 2016)

cc: Jill Zachary, Parks and Recreation Director  
Cameron Benson, Creeks Manager  
Renee Brooke, City Planner  
Steven Greer, Environmental Analyst/Project Planner  
Brian D'Amour, Assistant Public Works Director/City Engineer  
Joshua Haggmark, Water Resources Manager  
Lisa Arroyo, Wastewater System Manager  
Linda Sumansky, Principal Civil Engineer  
Greg McGowan, ARCADIS, 101 Creekside Ridge Court, STE 200, Roseville, CA  
95678



City of Santa Barbara

Remedial Action Plan and

Habitat Restoration Plan

El Estero Drain Project

October 2016



---

Greg McGowan  
Principal Ecologist



---

Allen C. Just, PE  
Principal Engineer



---

Maher M. Zein, PhD, PE  
Project Environmental Engineer



---

Mary Carroll  
Senior Ecologist

## Remedial Action Plan/Habitat Restoration Plan

El Estero Drain Project

Prepared for:  
City of Santa Barbara

Prepared by:  
ARCADIS U.S., Inc.  
735 Tank Farm Road  
Suite 150  
San Luis Obispo  
California 93401  
Tel 714 730 9052  
Fax 714 730 9345

Our Ref.:  
SM010272.0001

Date:  
May 2013  
Revised December 2014  
Revised March 2015  
Revised July 2016  
Revised October 2016

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**Acronyms and Abbreviations**

ACOE	U.S. Army Corps of Engineers
ARARs	Applicable or relevant and appropriate requirements
Arcadis	Arcadis U.S., Inc.
AWQC	ambient water quality criteria
BA	biological assessment
BaP	benzo(a)pyrene
BBL	Blasland, Bouck & Lee, Inc.
Bgs	below ground surface
Cal/EPA	California Environmental Protection Agency
CAM	California Assessment Manual
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CHHSL	California Human Health Screening Level
City	City of Santa Barbara
COC	constituent of concern
COPC	constituent of potential concern
COPEC	constituents of potential ecological concern
CPC	City of Santa Barbara Planning Commission

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CPWD	City of Santa Barbara Public Works Department
DI-WET	waste extraction test using de-ionized water
DRO	diesel-range organics
DTSC	Department of Toxic Substance Control
EFH	extractable fuel hydrocarbons
ESHA	Environmentally Sensitive Habitat Area
FPD	Santa Barbara County Fire Prevention Division – Hazardous Materials Unit
Ha	Hectare
HASP	health and safety plan
HHRA	human health risk assessment
HRP	habitat restoration plan
MCL	maximum contaminant level
µg/dl	microgram(s)/deciliter
mg/kg	milligram(s) per kilogram
µg/kg	microgram(s) per kilogram
mg/L	milligram(s) per liter
OEHHA	California Office of Environmental Health Hazard Assessment
ORO	oil-range organics

OSHA	Occupational Safety and Health Administration
PAH	polyaromatic hydrocarbon
PCE	tetrachloroethylene
PRG	preliminary remediation goal
Public Works	City of Santa Barbara Public Works Department
QA/QC	quality assurance/ quality control
RAA	remedial action alternative
RAO	remedial action objective
RAP	remedial action plan
RCRA	Resource Conservation and Recovery Act
RSL	regional screening level
SLERA	screening-level ecological risk assessment
SMP	soil management plan
STLC	soluble threshold limit concentration
SVOC	semi-volatile organic compound
SMPPP	storm water pollution prevention plan
TCLP	Toxicity Characteristic Leaching Procedure
TPH	total petroleum hydrocarbons
Treatment Plant	City of Santa Barbara Wastewater Treatment Plant

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TSDf	treatment, storage, and disposal facility
TTLC	total threshold limit concentration
UCL	upper confidence limit
URS	URS Corporation
USEPA	United States Environmental Protection Agency
UTL	upper threshold limit
VOC	volatile organic compound
WET	waste extraction test using acid extraction

## **1. Introduction**

Arcadis U.S., Inc. (Arcadis) has prepared this Remedial Action Plan (RAP) and Habitat Restoration Plan (HRP) for the City of Santa Barbara (City) for the El Estero Drain Site (hereinafter referred to as the Site, Figure 1) located within the City of Santa Barbara, California. The Site occurs on the south end of the City's Wastewater Treatment Plant (Treatment Plant) and adjacent to the Laguna Channel (Figure 2). The RAP was developed to address isolated areas at the Site where elevated concentrations of site-related constituents of concern (COCs) were detected during previous soil investigations. The HRP was developed to provide suitable seasonally ponded wetland habitat for the Pacific pond turtle (formerly known as the southwestern pond turtle), a California species of special concern that has been observed in the Laguna Channel, and to restore native habitats on Site.

## **2. Remedial Action Plan**

The overall purpose of the RAP is to apply a risk-based approach to address impacted soils at the Site. This RAP describes the selected remedial alternative which would meet the overall remedial action objectives (RAOs). Implementation of the preferred remedy will minimize risks to human health and the environment associated with the isolated areas at the Site with elevated COC concentrations.

### **2.1 Document Organization**

This combined RAP and HRP is organized with the RAP in the first six sections and with the supporting tables and figures. The HRP follows through the subsequent sections also with supporting tables and figures.

## **3. Site Description and Background**

### **3.1 Site Description**

The Site is located in the City of Santa Barbara, Santa Barbara County, California. The property is situated immediately south of the Santa Barbara El Estero Wastewater Treatment Plant (Figure 1). The Site covers 1.19 acres (0.5 hectares [ha]) and will be fenced. Approximately 1.25 acres (0.5 ha) is proposed for habitat restoration, including the entire Site and a small additional area between the Site and El Estero Creek (see Section 9).

### 3.2 Site Background

The City purchased the property from the Parker Family Trust in 1998. It had been previously owned and maintained by the Southern Pacific Railroad. In 1999, the City cleared the vegetation and debris from the El Estero drain. The City Planning Division informed the City Public Works Department (Public Works) that a Coastal Development Permit was required for vegetation clearing, and it would be necessary to restore a portion of the Site with open drainage and native vegetation.

Public Works agreed to restore and enhance the drainage and create a wetland habitat at the Site (URS, 1999). Public Works obtained the appropriate permits from City Planning, California Department of Fish and Game (CDFG), and U.S. Army Corps of Engineers (USACE) and the wetland restoration work began in the spring of 2002. Activities included excavating a new drainage, backfilling the existing drainage with the excavated soil, and re-grading the Site. Approximately 400 cubic yards of excess soil were rejected as fill material by the County of Santa Barbara based on the discovery of black-stained material and glass debris. The initial analytical results of samples collected from the excess soil indicated elevated petroleum hydrocarbon and lead concentrations (URS, 2003). Restoration activities were then halted to allow for a full characterization of the Site.

In a review of the history of the Site, it was concluded that the disposal of uncertified fill at the Site was more likely associated with the commercial/industrial redevelopment of the El Estero Racetrack than with the operation of the Old Santa Barbara Landfill (URS, 2003). The Old Landfill was to the west of the Laguna Channel, while the Site is to the east of Laguna Channel. Based on their evaluation, URS Corporation (URS) concluded that the Site was more appropriately categorized as an unclassified fill containing building debris and abundant glass than as a burn dump.

### 3.3 Environmental Setting

Details on the geology, hydrogeology, and surface water drainage at the Site were obtained from previous site documents (URS, 2003) and other regional reports (e.g., Questa, 2005).

#### 3.3.1 Geology

The Site is situated within the Santa Barbara coastal plain that was formerly part of the El Estero Slough. The geologic map (T.W. Dibblee, 1986) indicates that Holocene age

alluvium deposits consisting of unconsolidated flood-plain silt, sand, and gravel underlie the Site (URS, 2003). Generally, these units are overlain by artificial fill in those areas of former marshes and wetlands (Questa, 2005).

As described by URS (2003), the coastal plain is bounded by the Mesa fault to the south and west, Mission Ridge fault to the north, and an offshore fault to the south-southeast. At least four strong earthquakes (equal to or greater than magnitude 6.0) have struck Santa Barbara since 1900, with the most notable being the 1925 Santa Barbara earthquake that resulted in major damage to the downtown section of the City (Questa, 2005).

### 3.3.2 Hydrogeology

As described by URS (2003), the principal aquifer in this area is the Santa Barbara formation. In this formation, groundwater is generally confined by a zone of low permeability in its upper part that ranges in thickness from a few feet to more than 100 feet. In places where the low permeability is missing, groundwater is unconfined. Shallow groundwater in the vicinity of the Site occurs in unconsolidated sand deposits between 5 and 15 feet below ground surface (bgs). The general groundwater gradient in the upper portion of the younger alluvium corresponds with the topographic relief towards the ocean.

### 3.3.3 Surface Hydrology

The Site is within the Laguna Creek Watershed (Questa, 2005). Historically, a man-made drainage ditch collected runoff in areas east and north of Calle Cesar Chavez which emptied into a buried culvert that drained into the Laguna Channel (URS, 2003). The drainage in this watershed is composed mostly of storm water runoff. The watershed is approximately 1,500 acres and is bounded to the north by the foothills, to the east by Quarantina Street, to the west by State Street, and to the south by the Pacific Ocean (Questa, 2005). The majority of the watershed consists of underground piped watercourses. The open channel of the Laguna Channel occurs south of California Highway 101 to the ocean. It is this open channel portion of Laguna Channel that is adjacent to the El Estero Swale and the Site.

## 4. Site History

A summary of the findings of previous soil and groundwater investigation activities and regulatory history is presented in the following subsections.

#### 4.1 Soil Investigations

In July 2002, URS conducted a site investigation to characterize the nature and extent of environmental impacts at the Site (URS, 2003). Field activities included the advancement of 13 soil borings and six potholes and the collection of a total of 64 soil samples. During these activities, uncertified fill was observed within the top 4 to 6 feet bgs, with the exception of the western portion of the Site. This fill consisted of a loose silty to gravelly sand matrix mixed with glass waste and building debris. At the western portion of the Site, gravel backfill was encountered. Underlying the uncertified fill was a moist, stiff, silty to sandy clay layer, approximately 2 to 3 feet thick and occurring at depths ranging between approximately 4 and 8 feet bgs. Fine sand 2 to 3 feet thick underlies the clay layer. Underlying the sand interval are interbedded layers of clay and sand. Saturated conditions were observed at approximately 7 to 8 feet bgs in the central and southern portions of the Site and at approximately 9 to 10 feet bgs in the northern portion of the Site. A number of different analyses was performed as part of this investigation. These included analyses for: California Assessment Manual (CAM) metals, total lead, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), soluble metals – lead (waste extraction test [WET] using acid extraction), soluble metals - lead (waste extraction test [DI-WET] using de-ionized water). The results are discussed in more detail in the following subsections.

Based on the results of the URS site characterization study, it was concluded that limited additional characterization of the Site and evaluation of potential risks was warranted. The objective of the additional soil sampling was to further assess the nature and extent of impacts along the bottom and banks of the drain at locations that would be exposed post-restoration. Data were needed in these locations to evaluate potential exposure to human and ecological receptors after site restoration. Additionally, some upland samples were co-located where elevated concentrations of lead and/ or arsenic were detected by URS to confirm the presence of potential hot spots and to better characterize shallow surface soils. These included the following sampling pairs:

- GP-4 (URS) and CSB-23 (BBL) at 2 feet bgs
- GP-5 (URS) and CSB-24 (BBL) at 2 feet bgs
- GP-6 (URS) and CSB-25 (BBL) at 3 feet bgs
- GP-13 (URS) and CSB-26 (BBL) at 6 feet bgs

Additional site investigation activities performed by Blasland, Bouck & Lee, Inc., (BBL) included the collection of shallow soil samples at the Site. Figure 2 illustrates the location of the historic URS sampling and the BBL 2005 sampling results. A summary of the

results of the preliminary site investigation performed by URS in 2002 is included in the following subsections, and the findings of the additional soil sampling conducted by BBL are discussed in this section. A summary of metal concentrations detected in the site soil as compared to ambient concentrations, total threshold limit concentrations (TTLC), and soluble threshold limit concentrations (STLC) is included in Table 1.

#### 4.1.1 Inorganic Constituents

URS indicated that the concentrations of metals in soils were generally within the range of metal concentrations in the surrounding area, with the exception of lead and arsenic. Lead concentrations were highly variable both within and between sampling locations. Total lead concentrations ranged from a laboratory reporting limit of 1 milligram per kilogram (mg/kg) to 960 mg/kg, with the highest concentration detected in soil sample GP-4-2' collected from the northern portion of the Site. Lead concentrations at soil boring GP-4 decreased to 300 mg/kg at 5.5 feet bgs and to 5.6 mg/kg at 9 feet bgs. Elevated lead concentrations were generally detected in the uncertified fill and clay layer between 2 and 5 feet bgs.

Arsenic concentrations ranged from a laboratory reporting limit of 1 mg/kg to 120 mg/kg, with the highest concentration detected in soil sample GP-13-6' collected from a location adjacent to the railroad tracks. The elevated arsenic concentration detected in sample GP-13-6' appeared to be isolated at that depth since samples above and below (4 and 8 feet bgs) contained much lower arsenic concentrations (6.5 and 5.9 mg/kg, respectively). Elevated arsenic concentrations were generally detected along the southern portion of the Site near the railroad right of way.

Samples that exceeded 50 mg/kg of total lead were also analyzed for soluble lead using the WET acid extraction method. Eight of the 17 samples were reported above the STLC of 5 milligrams per liter (mg/L). To provide a characterization of the leaching potential under normal (non-acidic) environmental conditions, these eight samples were also analyzed for soluble lead using the DI-WET test. While seven of the eight samples contained detectable concentrations of lead, none exceeded the 5 mg/L STLC limit.

#### 4.1.2 Organic Constituents

Petroleum hydrocarbon concentrations in selected soil samples were quantified for the following carbon-chain ranges: C8 to C4, C4 to C12, and C16 to C36. Eleven of the 26 analyzed samples contained detectable concentrations of petroleum hydrocarbons. The hydrocarbon concentrations for these carbon-chain ranges were between a reporting

limit of 0.5 mg/kg and 2,800 mg/kg. Elevated concentrations of hydrocarbons were spotty, with the highest hydrocarbon concentration (C16 to C36 range) detected in soil sample GP-4-5.5'. Soil boring GP-4 was advanced in the northern portion of the Site. The elevated hydrocarbon concentration detected in sample GP-4-5.5' appeared to be isolated based on the 2- and 9-foot sample results, which showed hydrocarbon concentrations of 150 and 21 mg/kg, respectively. The second highest hydrocarbon concentration (540 mg/kg) was detected in soil sample GP-13-6', located in the southern portion of the Site adjacent to the railroad tracks.

VOCs were analyzed for in only one sample (GP-6-3') and were not detected. SVOCs (polyaromatic hydrocarbons [PAHs]) were detected at low concentrations in eight of 11 analyzed samples.

#### **4.2 Groundwater Evaluation**

Three groundwater samples were collected and analyzed for CAM metals (total), dissolved lead, total petroleum hydrocarbons (TPH), VOCs, and SVOCs (PAHs). No detectable concentrations of TPH, VOCs, or PAHs were measured, with the exception of a low concentration of tetrachloroethylene (PCE) in a groundwater sample collected at the perimeter of the Site. Total metal concentrations were observed to be at or above ambient water quality criteria (AWQC) or maximum contaminant levels (MCLs). However, dissolved concentrations of lead in filtered samples did not exceed these criteria. Since it is the soluble form of metals that is bioavailable to aquatic organisms, these data show that lead and other metals are not likely present at concentrations that would pose a risk to aquatic organisms. Similarly, groundwater is usually filtered prior to use as drinking water. Therefore, if groundwater were to be used as a drinking water source in the future it is reasonable to assume that it would be filtered, and; therefore, would not pose a risk to human health. Furthermore, it is unlikely that groundwater has been impacted by metals in site soils since their detected concentrations were generally comparable to the California background levels. URS (2003) concluded that the groundwater analytical results from three locations confirm that groundwater has not been affected by the COCs identified in the site soil (uncertified fill and clay layer). The high clay content that separates the uncertified fill and the underlying native sands apparently blocks contaminant migration. Given these subsurface conditions, the potential threat to groundwater quality is expected to be low. The detection of PCE in the eastern perimeter groundwater sample suggests than a potential off-site PCE source exists. In summary, the groundwater analytical data for the Site suggest that metal concentrations are likely representative of regional groundwater background

concentrations and/or related to regional urban activities and not directly related to the Site.

#### 4.3 Nature and Extent

Analytical results of both soil investigations performed at the Site (URS in 2002 and BBL in 2005) were evaluated to develop an understanding of the nature and extent of contamination at the Site. Additional information regarding local and regional conditions was also used to provide context to the results. Figure 2 illustrates the location of detected concentrations of selected metals and hydrocarbons from the 2002 and 2005 soil investigations.

##### 4.3.1 Nature and Extent of Inorganic Compounds

As described in Section 5.1, soil samples were analyzed for CAM Metals by URS and for selected metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) by BBL, based on URS results. To evaluate nature and extent, the range of site concentrations is discussed in the context of ambient conditions for the State of California and specifically for the City of Santa Barbara when possible. In addition, site concentrations were evaluated in the context of whether they may be considered hazardous waste according to Title 22 of the California Code of Regulations (CCR). This evaluation includes a comparison of soil concentrations to TTLCs and STLCs, used to determine hazardous waste classifications. These criteria are not directly applicable to assessing potential risk to human receptors at the Site but rather provide an indication of the leaching potential of a chemical under acidic conditions likely to be encountered at a landfill. Soil concentrations (mg/kg wet weight) are appropriately compared to the TTLC value (mg/kg wet weight), but soil concentrations (mg/kg dry weight) can also be conservatively compared to the TTLC value (mg/kg wet weight). For the comparison to the STLC value, soil samples are subjected to a leaching test. The WET provides an estimate of leaching potential under acidic conditions (e.g., such as in a landfill). The DI-WET using deionized water rather than acidified water provides an estimate of leaching potential under non-acidic conditions (e.g., such as at the Site); however, this test cannot be used to determine hazardous waste classifications except for evaluating hexavalent chromium (Cal/EPA, 2004). The DI-WET can be used as an estimate of the ceiling value for surface water concentrations, but the DI-WET results should not be compared directly to surface water quality criteria without accounting for various environmental factors that affect soil leachability (dilution, flow rate, residence time of surface water, presence of acid-volatile sulfide, soil type, organic carbon content, etc.).

When the measured wet weight concentration exceeds the TTLC or the WET concentration exceeds the STLC, then the soil is considered hazardous waste for disposal purposes. A soil concentration (in mg/kg) can also be compared directly to the STLC value (in mg/L) and when it is less than 10 times the STLC, it is considered nonhazardous (CV-RWQCB, 1989). When a measured soil concentration exceeds 10 times the STLC and is below the TTLC, it is uncertain whether it is considered hazardous and a WET test may be required. The nature and extent of contamination at the Site is discussed in more detail below.

A summary of metal concentrations detected in the site soil as compared to ambient, TTLC, and STLC concentrations is included in the table below:

TABLE 1 - METAL CONCENTRATIONS IN SOIL

Metal	Detected Concentration (mg/kg)	Ambient Concentration (mg/kg)	TTLC (mg/kg)	STLC (mg/L)
Arsenic	<1 – 120	0.6 – 11	500	5
Barium	8.4 – 370	133 – 1,400	10,000	100
Beryllium	0.5 – 1.1	0.25 – 2.7	75	7.5
Cadmium	0.5 – 16	0.05 – 1.7	100	1
Chromium	1 – 40	23 – 1,579	2,500	5
Cobalt	1 – 19	2.7 – 47	8,000	80
Copper	1.1 – 230	9.1 – 96.4	2,500	25
Lead	1 – 1,200	12.4 – 97.1	1,000	50
Mercury	0.02 – 2.3	0.1 – 0.9	20	0.2
Molybdenum	<1 – 13	0.1 – 9.6	3,500	350

Metal	Detected Concentration (mg/kg)	Ambient Concentration (mg/kg)	TTLC (mg/kg)	STLC (mg/L)
Nickel	1.4 – 57	9 – 509	2,000	20
Silver	<1 – 3.9	0.1 – 8.3	500	5
Vanadium	1.6 – 110	39 – 288	2,400	24
Zinc	5.1 – 940	88 – 236	5,000	250

As shown in the table above; all barium, beryllium, chromium, cobalt, nickel, silver, and vanadium concentrations in the soil samples collected at the Site were within the range of the respective ambient concentration in the State of California and below TTLC and ten times the STLC values. These constituents were excluded from further evaluation because they are not attributable to site releases. Although arsenic, cadmium, copper, mercury, molybdenum, and zinc were detected at concentrations exceeding their respective ambient levels in a few soil samples, none of the observed concentrations exceeded the respective TTLC value. Although lead was detected in several on-site locations above the range of ambient concentrations, only 1 of 87 samples (CSB-25) had a concentration (1,044 mg/kg wet weight) that exceeded the TTLC of 1,000 mg/kg. While this sample potentially exhibits the characteristics of hazardous waste as defined in CCR Title 22, the exceedance of the TTLC is minimal and was observed only in a single sample at 3 feet bgs. In general, elevated concentrations of metals tended to be patchy in distribution and limited to a few areas such as CSB- 25/GP-6, CSB-23/GP-4 CSB26/GP-13 and CSB-8. These areas are either in the shallow soils of the upland riparian buffer zone, or in the banks of the channel. Concentrations within the channel itself tended to be lower.

#### 4.3.2 Nature and Extent of Organic Compounds

Soil samples collected at the Site were analyzed for TPH and PAHs. Figure 2 illustrates the distribution of these compounds. These constituents are discussed in more detail below.

#### 4.3.2.1 *Petroleum Hydrocarbons*

The petroleum hydrocarbons detected in the soil samples were quantified in the BBL 2005 sampling as diesel-range organics (DRO), oil-range organics (ORO), and extractable fuel hydrocarbons (EFH). The carbon-chain ranges for DRO, ORO, and EFH are C8 to C24, C8 to C40, and C25 to C40, respectively. For the URS sampling, TPH was measured as TPH C8-C40, TPH C4-C12 and TPH C16-C36. The TPH C8-C40 data reported by URS (2003) were combined with the EFH data reported by BBL (2006), and are referred to as EFH below. For the purposes of this discussion, the focus will be on the C8-C40, or the EFH range.

The DRO concentrations ranged from less than the reporting limit of 5 mg/kg (or 10 or 20 mg/kg for some samples requiring dilution) to 150 mg/kg. The ORO concentrations ranged from less than the reporting limit of 10 mg/kg to 400 mg/kg. The EFH concentrations ranged from less than the reporting limit of 10 mg/kg to 550 mg/kg. TPH (C4- C12) was not detected on-site above the reporting limit of 0.5 mg/kg. TPH (C16-36) was detected at concentrations ranging from 18 mg/kg to 2,800 mg/kg (GP-4-5.5'). The highest DRO, ORO, and EFH concentrations were detected in soil sample CSB-8, which was collected at an approximate depth of 1 foot bgs from the southern bank of the drainage ditch. Two soil samples (CSB-7 and CSB-9) collected in the same area as sample CSB-8 and within the drainage ditch indicated nominal hydrocarbon concentrations. Sample G-9-3', collected by URS, contained 190 mg/kg TPH in the C16-C36 range, but C8-C40 hydrocarbons were not detected in G-9-7.5'. Therefore, the lateral extent of the hydrocarbon impacts around sample CSB-8 appears to be limited. In general, the soil sample analytical results from both the URS and BBL sampling events do not indicate significant hydrocarbon impacts in the shallow soil.

#### 4.3.2.2 *PAHs*

In general, PAHs were detected infrequently and at low concentrations, with the possible exception of benzo(a)pyrene (BaP). BaP concentrations ranged from less than 6.6 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) to 570  $\mu\text{g}/\text{kg}$ . The highest BaP concentration was detected in soil sample CSB-14, which was collected at an approximate depth of 1 foot bgs from the northern bank of the drainage ditch. The closest samples to CSB-14 are CSB-15 and GP-8. The BaP concentrations at sample location CSB-15 were 73 and 18  $\mu\text{g}/\text{kg}$ ; PAHs were not analyzed at GP-8. Therefore, the lateral extent of the BaP impact at CSB-14 appears to be limited.

PAH concentrations were also compared to regional ambient concentrations based on BaP equivalents, which are a means of estimating exposure to a mixture of PAHs based on their toxicity relative to BaP. Other studies that have evaluated ambient concentrations of PAHs in Southern California have found ambient concentrations of BaP equivalent concentrations (defined as the upper threshold limit [UTL]) of 900 µg/kg (Environ, 2002). BaP equivalent concentrations were calculated for the BBL soil samples and ranged from not detected to 770 µg/kg. Therefore, PAHs measured at the Site are likely within the range of ambient for Southern California.

## **5. Risk Assessment**

To evaluate human and ecological risks, BBL (2006) conducted a screening-level human health risk assessment and a screening level ecological risk assessment. The primary objectives were to determine whether chemical constituents are present in soil and sediments on the banks and channel of El Estero Swale at levels that may pose unacceptable risk to human and/or ecological receptors under relevant exposure scenarios at the Site post-restoration. The screening level human health and ecological risk assessments were conducted using soil chemistry data previously collected by URS in 2002 and by BBL in 2005 that were relevant and usable to the exposure scenarios of interest. Previous data were considered relevant to the risk screening if they were collected from locations and depths that may be available to receptors under post-restoration conditions.

The BBL (2006) screening-level human health risk assessment included the selection of constituents of potential concern (COPCs), the identification of future receptors and complete exposure pathways, comparison of site concentrations to conservative screening values (e.g., preliminary remediation goals [PRGs]), and additional evaluation of risk from lead using the California Department of Toxic Substance Control (DTSC; 2003) LeadSpread model. The primary receptor of concern identified by BBL (2006) was the maintenance worker that may perform weeding and other landscaping activities in the bank/upland areas and the channel, generally to a soil depth of 2 feet bgs. Arsenic, lead, and BaP were identified as COPCs based on a conservative screening of the maximum detected concentrations of detected constituents against the 2004 United States Environmental Protection Agency (USEPA) industrial PRGs. Exposure point concentrations for arsenic, lead, and BaP were estimated as the arithmetic mean and the 95 percent upper confidence limit on the mean (95% UCL) concentrations which were compared to their respective USEPA (2004) industrial PRGs. The mean and 95% UCL concentrations for lead and BaP were below the USEPA (2004) industrial PRGs. For arsenic, the mean and 95% UCL concentrations exceeded the USEPA (2004)

industrial preliminary remediation goals; however, most arsenic concentrations were within the range of ambient arsenic concentrations in California (Bradford et al., 1996). A few elevated arsenic concentrations were detected at depths below those contacted by the hypothetical maintenance worker. Therefore, BBL (2006) concluded that the site did not pose an unacceptable risk to future maintenance workers.

In response to comments from the Santa Barbara County Fire Prevention Division – Hazardous Materials Unit (FPD), Arcadis BBL (2007a) conducted a more detailed site-specific cumulative risk assessment of all detected constituents in soil/ sediment media from 0 to 2 feet bgs that included receptor-specific exposure parameter values for the maintenance worker. Note that in the BBL (2006) assessment, risks were evaluated by comparison to USEPA (2004) industrial PRGs which explicitly and conservatively utilized exposure parameter values for the industrial worker. For site-wide baseline risks specific to the maintenance worker, Arcadis BBL (2007a) reported an estimated cumulative cancer risk of  $1 \times 10^{-5}$  and a cumulative noncancer hazard index of 0.02. The estimated cancer risk was driven almost entirely by arsenic. According to BBL (2006) and ARCADIS BBL (2007a) average background arsenic concentrations in Santa Barbara County are around 8 mg/kg based on a personal communication with P. McCaw, Santa Barbara County. Arcadis BBL (2007a) reported that the estimated cancer risk associated with 8 mg/kg arsenic in soil was also  $1 \times 10^{-5}$  meaning that the risk associated with background arsenic exposure was no different than the risk associated with arsenic on the Site. Using the DTSC (2003) LeadSpread model, ARCADIS BBL (2007a) estimated a 99<sup>th</sup> percentile blood lead concentration of 7.3 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ) for baseline conditions (referred to by Arcadis BBL [2007a] as Scenario 1) which is below the California Environmental Protection Agency (Cal/EPA, 1999) 10  $\mu\text{g}/\text{dL}$  threshold level of concern.

Both the BBL (2006) and the Arcadis BBL (2007a) human health risk assessments (HHRAs) concluded that site-wide soils from 0 to 2 feet bgs would not pose an unacceptable risk to human health for the maintenance worker scenario.

### **5.1 Revised Human Health Risk Assessment**

The BBL (2006) screening-level human health risk assessment, which was based on DTSC (1992) risk assessment guidance and comparison to USEPA (2004) PRGs, was updated in 2010 (Arcadis, 2010). In this revised risk assessment, Arcadis followed the same cumulative risk assessment approach as Arcadis BBL (2007a), except the depth interval of 0 to 5 feet bgs was also evaluated and toxicity values were updated based on changes to toxicity values established by the California Office of Environmental Health

Hazard Assessment (OEHHA) or USEPA that have occurred since 2006. In addition, for the initial screening, USEPA (2010a) Regional Screening Levels (RSLs) were used for comparison to maximum detected concentrations, as USEPA (2004) regional PRGs were rescinded by USEPA headquarters and replaced with RSLs. Lead was re-evaluated using the most current DTSC LeadSpread model (version 7, updated January 2009). In addition to the maintenance worker, human health risks were also estimated for an industrial site worker.

Results of the revised risk assessment for baseline conditions indicate estimated cumulative cancer risks of  $4 \times 10^{-6}$  for the maintenance worker for both the 0 to 2 feet bgs and the 0 to 5 feet bgs depth intervals and cumulative noncancer hazard indices of 0.07 and 0.12, respectively. For reference, remedial decisions based on estimated cancer risks are generally made within the range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$  whereby risk estimates less than  $1 \times 10^{-6}$  are generally considered acceptable for unrestricted land use and risk estimates within the range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$  may be considered acceptable depending on land use considerations (Cal/EPA, 1999; USEPA, 1991a, b). In contrast, noncancer hazard estimates are based on the assumption of a threshold such that exceedance of a hazard index of 1 implies exceedance of the threshold. Therefore, a hazard index of 1 is generally considered the benchmark upon which remedial decisions are made when it is exceeded (USEPA, 1991a).

Similar to the Arcadis BBL (2007a) risk assessment, these risk estimates are driven primarily by arsenic and there is little difference between the risks associated with background arsenic exposures and exposure to arsenic at the Site. The decrease in risk estimates from the Arcadis BBL (2007a) risk assessment compared to this risk assessment is primarily due to the decrease in OEHHA's oral cancer slope factor for arsenic from  $9.5 \text{ (mg/kg-day)}^{-1}$  to  $1.5 \text{ (mg/kg-day)}^{-1}$ . Excluding arsenic from the baseline risk assessment results in estimated cumulative cancer risks for soils at 0 to 2 feet bgs and 0 to 5 feet bgs of  $2 \times 10^{-6}$  and  $1 \times 10^{-6}$ , respectively. The estimated excess risk following the removal of arsenic from the risk calculations is almost entirely due to the concentration of BaP (570  $\mu\text{g/kg}$ ) in a single sample (CSB-14) collected at 1 foot bgs. The estimated cumulative hazard indices for soils at 0 to 2 feet bgs and 0 to 5 feet bgs were 0.05 and 0.09, respectively, when arsenic is excluded from the assessment. Using the DTSC (2009) Leadsread model, 99<sup>th</sup> percentile blood lead concentrations associated with soil at 0 to 2 feet bgs and soil at 0 to 5 feet bgs were estimated to be 3.6 and 3.5  $\mu\text{g/dL}$ , well below the Cal/EPA (1999) target threshold of 10  $\mu\text{g/dL}$ . For the baseline assessment, lead concentrations were also compared to the OEHHA (2009) California Human Health Screening Level (CHHSL) of 320  $\text{mg/kg}$  protective of the fetus of pregnant female workers. The 95% UCL lead concentrations for soils at 0 to 2 feet

bgs and 0 to 5 bgs are 274 mg/kg and 209 mg/kg, respectively, well below the CHHSL and the USEPA (2010a) industrial soil RSL of 800 mg/kg.

For the industrial site worker, estimated cumulative cancer risks were  $6 \times 10^{-6}$  for both the 0 to 2 feet bgs and the 0 to 5 feet bgs depth intervals and cumulative noncancer hazard indices were 0.05 and 0.10, respectively. Similar to the maintenance worker, the cancer risk estimates are driven primarily by arsenic. Excluding arsenic from the baseline risk assessment results in estimated cumulative cancer risks of  $2 \times 10^{-6}$  for soils at 0 to 2 feet bgs and soils at 0 to 5 feet bgs. The estimated cumulative hazard indices for soils at 0 to 2 feet bgs and 0 to 5 feet bgs were 0.03 and 0.07, respectively. Using the DTSC (2009) Leadsread model, the 99<sup>th</sup> percentile blood lead concentrations associated with soil at 0 to 2 feet bgs and soil at 0 to 5 feet bgs were estimated to be 3.8 and 3.7  $\mu\text{g}/\text{dL}$ , well below the Cal/EPA (1999) target threshold of 10  $\mu\text{g}/\text{dL}$ . As noted above, the 95% UCL lead concentrations for soils at 0 to 2 feet bgs and 0 to 5 bgs are 274 mg/kg and 209 mg/kg, respectively, well below the CHHSL of 320 mg/kg protective of the fetus of pregnant female workers and also below the USEPA (2010a) industrial soil RSL of 800 mg/kg.

The results of the revised human health risk assessment indicated that concentrations of constituents detected at the El Estero Swale in soil from 0 to 5 feet bgs do not pose an unacceptable risk to future maintenance workers who may perform minimally invasive landscaping tasks or for industrial site workers that may hypothetically utilize the Site. Estimated cancer risks are at most  $2 \times 10^{-6}$ , which marginally exceeds the benchmark of  $1 \times 10^{-6}$ , assuming that on site arsenic exposure is similar to background arsenic exposure in California. This estimated cancer risk is at the low end of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$  cancer risk range where remedial decisions are typically made and would not be viewed as posing an unacceptable risk for future workers. The arsenic concentrations detected onsite exceed risk-based screening values for soil but average concentrations are generally consistent with the range of arsenic concentrations found in soil in California and in Santa Barbara County. Therefore, the risks associated with arsenic in site soils are no different than those associated with background soils. An important finding of this baseline human health risk assessment is that there is little difference in the estimated risk to either future maintenance workers or industrial site workers associated with soils in the 0 to 2 feet bgs interval and those in the 0 to 5 feet bgs interval. The conclusions of this risk assessment are consistent with the conclusions of previous screening-level risk assessments conducted by URS (2003), BBL (2006), and Arcadis BBL (2007a).

## 5.2 Evaluation of Lead as Potentially Exhibiting Hazardous Waste Characteristics

In response to the FPD's request to expand the discussion of worker health and safety as it relates to hazardous waste characteristics associated with lead, Arcadis re-evaluated the total lead results reported by URS (2003) and BBL (2006) and discussed by Arcadis BBL (2007a). As discussed earlier, only a single sample (CSB-25 collected at 3 feet bgs) exceeded the TTLC for lead of 1,000 mg/kg and would; therefore, be classified as hazardous waste if it should be excavated and require off-site disposal. As this soil sample is located upland from the swale, no soil movement is currently planned near this sample. Based on the revised HHRA described above, lead exposure at the Site, including exposure to soil at CSB-25, does not pose a human health risk to maintenance workers or industrial site workers and no lead excavations are recommended. However, the excavation of lead-impacted soil at boring CSB-25 location is included in this RAP as an optional task.

Although some URS (2003) samples exceeded the CCR Title 22 STLC when the WET test (using acid extraction) was conducted, this test is meant to simulate metal leaching under acidic landfill conditions. It is only applicable for determining if soils would be classified as hazardous waste for disposal purposes. As the swale is not a potentially acidic environment and because the soil itself is not capable of generating acid, the standard WET test is not applicable for making water quality determinations in the drain. URS (2003) and Arcadis BBL (2007a) reported that no samples exceeded the STLC when the DI-WET protocol was used. The DI-WET procedure simulates potential leaching under non-acidic conditions, and most likely mimics the conditions at the Site. STLCs are set at levels protective of beneficial water uses, such as MCLs and AWQC, taking into account natural attenuation processes (CV-RWQCB, 1989). Therefore, these results demonstrate that lead concentrations present in site soils would not pose a risk to downstream or downgradient users of surface water or groundwater, respectively, or aquatic organisms in surface water.

Overall, it was concluded that the lead concentrations in site soils do not exhibit hazardous waste characteristics, as these site soils are not being considered for remediation and landfill disposal, and for several reasons do not require special soil management requirements to protect future workers. Only a single sample marginally exceeded regulatory criteria (e.g., the TTLC for CSB-25) and that sample was collected at a depth of 3 feet bgs; neither maintenance workers nor industrial workers would likely be exposed to soil at 3 feet bgs and soil movement is unlikely in this upland area of the

Site. The results of lead modeling for both these receptors found that average lead concentrations in site soils do not pose an unacceptable risk. 95% UCL lead concentrations are well below the California human health screening level of 320 mg/kg, which is protective of the fetus of a pregnant female industrial worker (Cal/EPA, 2009), and considered to be a highly conservative screening value for the maintenance worker and industrial site worker likely to utilize the Site. Finally, the TTLC and STLC criteria are intended to be used for classifying soils for disposal purposes and not for the purpose of assessing whether they would pose a risk under site-specific conditions. Nevertheless, all DI-WET lead results were below the STLC for lead indicating that leaching of lead would not pose a human health or ecological risk from exposure to groundwater and surface water, and blood lead modeling results show that direct contact with soils would not pose a risk to future maintenance workers or industrial site workers. Based on the results of this revised HHRA, off-site soil disposal is not recommended as part of the Habitat Restoration Plan. However, should the County require soil excavations, those soils would need to be stockpiled and evaluated for hazardous waste classification according to CCR Title 22 criteria.

### 5.3 Ecological Risk Assessment

The screening level ecological risk assessment was conducted following USEPA (1998) and DTSC (1996) ecological risk assessment guidance. It included a problem formulation to identify the assessment endpoint or the ecological value that requires protection at the Site, measurement endpoints or metrics for quantitatively evaluating the assessment endpoint, and the constituents of potential ecological concern (COPECs) to which the assessment endpoint might be exposed. Based on the stated management goals of the restoration project, the assessment endpoint identified for the Site was survival, growth, and reproduction of individual Pacific pond turtles. Because direct measurements of potential impacts to the Pacific pond turtle were not possible due to a lack of toxicity data for this species, the measurement endpoints that were selected for this assessment endpoint were more indirect measures of potential impacts and include: 1) sufficient populations of soil invertebrates in the riparian buffer zone to support foraging turtles; and 2) sufficient populations of sediment invertebrates in the channel wetland to support foraging turtles. In addition to the problem formulation, the screening level ecological risk assessment included an exposure assessment to estimate potential exposure to the pond turtle and an effects assessment to identify appropriate ecological benchmarks for evaluating potential risk. The exposure estimates for the identified measurement endpoints included both the mean and 95% UCL concentrations for COPECs in bank and riparian soil from depths at or less than 6 feet bgs (for soil invertebrates) and of channel sediments from depths less than or equal to 2 feet (for

sediment invertebrates). Both low and high effects benchmarks were selected from available toxicological effects data (e.g., the USEPA's ecological soil screening levels, sediment Threshold Effect Concentrations, and Probably Effect Concentrations from MacDonald et al. [2000]). Risk was then characterized using a hazard quotient approach that compared exposure estimates to effects benchmarks.

The results of the BBL (2006) screening-level ecological risk assessment (SLERA) identified only mercury and zinc in the riparian buffer zone as exceeding high benchmarks. The high benchmark hazard quotients for mercury and zinc were 3.6 and 1.3, respectively. No constituents exceeded high benchmarks in the channel area. The magnitude of the hazard quotients for both COPECs was low indicating that there is unlikely to be significant impacts to populations of prey species (e.g., invertebrates) utilized by the Pacific pond turtle. Because the Pacific pond turtle could not be evaluated directly due to a lack of toxicity data for this species, there is some uncertainty in the assessment of potential risk to this species.

Although BBL (2006) did not draw strong conclusions that the metals in the buffer zone or channel posed a risk to the Pacific pond turtle, ARCADIS BBL (2007b) suggested that, because of the uncertainty associated with ecological risk assessment results presented in BBL (2006), one remedial option may be the mitigation of one elevated soil mercury concentration of 2.3 mg/kg (CSB-8 at 1 foot bgs), which was driving the elevated mercury hazard quotient of 3.6. Because the hazard quotient of 1.3 for zinc is essentially no different than 1, no recommendation was made for mitigation of zinc.

#### **5.4 Risk Assessment Conclusions**

Assessment of potential health risks associated with soils at 0 to 2 feet and 0 to 5 feet for the future maintenance worker and industrial worker found that when site arsenic exposures are considered to be similar to background arsenic exposures and are excluded from the site-specific risk assessment, risk estimates range from  $1 \times 10^{-6}$  to  $2 \times 10^{-6}$  and are almost entirely due to a BaP concentration of 570  $\mu\text{g}/\text{kg}$  in soil sample CSB-14 at 1 foot bgs. Removal of this one sample from the risk calculations results in risk estimates below  $1 \times 10^{-6}$  for both receptors and for both soil depth scenarios. Under all scenarios, the noncancer hazard indices were well below the target hazard index of 1 meaning that the site would not pose a noncancer hazard to future maintenance or industrial site workers exposed to soils in either depth interval.

Although lead was not shown to pose a risk to either future maintenance workers or industrial workers in either 0 to 2 feet bgs or 0 to 5 feet bgs soils, one sample (CSB-25)

collected at 3 feet bgs with a wet weight concentration of 1,044 mg/kg slightly exceeded the TTLC criteria of 1,000 mg/kg. This exceedance does not suggest that lead poses a health risk but suggests that lead may require special handling or disposal requirements under CCR Title 22 should such handling and disposal be deemed necessary (i.e., if soil in that location was excavated for offsite disposal).

Overall, the results of the updated site-specific human health risk assessment (2010) are similar to those reported by URS (2003), BBL (2006), and ARCADIS BBL (2007a), all of which concluded that the Site would not likely pose an unacceptable risk to maintenance workers for soils at 0 to 2 feet bgs. Evaluation of soils at 0 to 5 feet bgs as requested by the FPD found little difference in the risks associated with soils at 0 to 2 feet bgs as compared to soils at 0 to 5 feet bgs. For any of these scenarios, the estimated risks (excluding arsenic) were almost entirely due to BaP in a single sample location (CSB-14 at 1 foot bgs).

Based on the results of the BBL (2006) SLERA, Arcadis BBL (2007b) suggested that a possible remedial option may be the mitigation of the mercury concentration of 2.3 mg/kg in soil sample CSB-8 at 1 foot bgs to ensure protection of invertebrate populations that serve as a food source for the Pacific pond turtle.

This site-specific risk assessment found that estimated risks to future maintenance workers and industrial workers are acceptable under existing baseline and possible future restoration scenarios. While not required to close the Site under the maintenance worker or industrial uses scenarios, if the City wished to achieve the benchmark cancer risk of  $1 \times 10^{-6}$  they could consider conducting a limited soil removal to mitigate BaP at CSB-14 to a depth of 1 foot bgs. It is important to note that the risk reduction achieved by this possible removal action for BaP is not large in magnitude. As the primary objective of the El Estero Swale project is for restoration of Pacific pond turtle habitat, any additional excavation that would disturb existing habitat may be deemed unnecessary and overly disruptive. The City may also consider as a precautionary measure the removal of mercury at CSB-8 to a depth of 1 foot bgs. This removal would not achieve measurable human health risk reductions, but given the propensity for mercury to bioaccumulate, removal of the high levels of mercury at CSB-8 may be beneficial for ecological purposes. Additionally, it is recommended that lead at CSB-25 remain in place, as lead concentrations do not pose a risk to human or ecological receptors at the Site.

## 6. Remedial Action Goals and Objectives

Site characterization and risk assessment efforts have revealed the presence of elevated concentrations of three COCs in soil at three localized areas: mercury concentrations at soil boring CSB-8; BaP concentrations at soil boring CSB-14; and lead concentrations at soil boring CSB-25. As mentioned in Section 6, the lead concentrations detected at the Site do not pose a significant risk to human or ecological receptors and will not be expected to require remediation. However, the excavation of lead-impacted soil at boring CSB-25 location is included in this RAP as an optional task. RAOs have been developed for the Site based on current environmental conditions and anticipated future use of the Site (as detailed in the following subsections). Based on the RAO, removal goals that establish specific concentrations of chemicals in soil that are protective of both human health and the environment were developed. The site-specific removal goals have been developed based on historical compliance activities, including HHRA and ecological risk assessment findings and decisions based on current and proposed future use of the Site. Information used to develop these removal goals included laboratory analytical results, hydrogeologic data, soil analysis, and site specific risk evaluations. The RAOs and remedial goals developed for the Site are discussed below.

### 6.1 Remedial Action Objectives

Remedial Action Objectives (RAOs) are guidelines used in the development of potential Remedial Action Alternatives (RAAs) and selection of a proposed remedial action. As mentioned earlier, the RAOs have been developed based on the current environmental conditions and anticipated future uses of the Site and are as follows:

- To provide a remedy that will reduce long-term risks to acceptable levels and protect human receptors, including conservative scenarios such as the on-site maintenance worker and industrial worker.
- To provide a remedy that will reduce long-term risks to acceptable levels and protect ecological receptors under the anticipated restoration scenario.

Each remedial action alternative considered will be assessed based on its ability to meet these RAOs.

### 6.2 Remedial Goals

Remedial goals are site-specific cleanup objectives established for protecting human health and the environment which are then used to develop potential RAAs. Based on

the site-specific risk assessment (Arcadis, 2011), the following constituents are considered COCs with one location each driving potentially unacceptable risks or other factors that could warrant a removal action:

- Mercury concentration at 1 foot bgs at boring CSB-8 location exceeding the high ecological benchmark of 0.5 mg/kg by more than 4-fold.
- BaP concentration at 1 foot bgs at boring CSB-14 location exceeding the industrial screening value of 210 mg/kg by more than 2-fold.

1. Acceptable post-remedial risks for human and ecological receptors were also considered in developing remedial goals. The remedial goals can be described as follows:

- Cumulative cancer risk less than one in one million ( $1 \times 10^{-6}$ ) and cumulative noncancer hazards less than 1 for human receptors based on residual (i.e., post-remedial) concentrations.
- Low magnitude hazard quotients (i.e., at or approaching 1 for high benchmarks for aquatic invertebrates), for ecological receptors based residual (i.e., post-remedial) concentrations.
- Consideration of future management of soils with lead over the TTLC.

### **6.3 Applicable or Relevant and Appropriate Requirements**

Applicable or relevant and appropriate requirements (ARARs) are federal and state environmental statutes, regulations, and standards that apply or potentially apply to the project. Potential ARARs are summarized in Table 2. Applicable requirements are federal or state laws or regulations that specifically address a hazardous substance, pollutant, contaminant, removal action, or location. Relevant and appropriate requirements, while not “applicable,” address problems or situations sufficiently similar to those encountered that their use is well suited to the particular site. State requirements are ARARs only if they are more stringent than federal requirements.

## **7. Removal Action Alternative Evaluation**

The objective of this Section of the RAP is to identify, develop, and screen possible RAAs that may effectively achieve the RAOs discussed in Section 6. The developed RAAs were evaluated in accordance to three criteria: effectiveness, implementability, and cost.

## 7.1 Identification and Analysis of Removal Action Alternatives

To address elevated COC concentrations in soil at the Site, two RAAs are proposed:

- Alternative 1 – No Further Action
- Alternative 2 – Soil Excavation/ Off-Site Disposal

### 7.1.1 Alternative 1 – No Further Action

The No Further Action alternative has been included to provide a baseline for comparisons among other removal alternatives. The No Further Action alternative would not require implementing any measures at the Site; therefore, no costs would be incurred. This RAA does not include any institutional controls or soil remediation.

### 7.1.2 Alternative 2 – Soil Excavation/ Off-Site Disposal

Alternative 2 consists of removing and transporting impacted soils to an appropriate, permitted off-site facility for disposal. Excavation activities will require the use of loaders, backhoes, and/or other appropriate equipment. Dust suppressant, water spray, and other forms of dust control may be required during excavation to mitigate dust emissions, and workers may be required to use personal protective equipment to reduce exposure to site-related COCs. Sloping excavation sidewalls may result in increased volume of soil requiring excavation. Excavation will include limited on-site soil temporary stockpiling prior to off-site disposal. Confirmation soil sampling and analysis will be performed to ensure that cleanup criteria were met at the excavation bottom and walls. To achieve the RAOs, an area of approximately 10 feet x 10 feet of impacted soil at and in the vicinity of borings CSB-8 and CSB-14 (and possibly at CSB-25) will be excavated down to a maximum depth of 3 feet bgs.

## 7.2 Evaluation Criteria

Each RAA was evaluated with regards to its effectiveness, implementability, and cost of implementation. The three evaluation criteria are described in the following subsections.

### 7.2.1 Effectiveness

As part of the effectiveness evaluation, the following criteria were considered:

- *Overall Protection of Human Health and the Environment* – This criterion evaluates whether the RAA provides adequate protection to human health and the environment and is able to meet the site RAOs.
- *Compliance with ARARs* – This criterion evaluates the ability of the removal alternative to comply with ARARs.
- *Short-Term Effectiveness* – This criterion evaluates the effect of the RAA during the construction and implementation phase until removal objectives are met. It accounts for the protection of workers and the community during removal activities and environmental impacts from implementing the RAA.
- *Long-Term Effectiveness and Permanence* – This criterion addresses issues related to the management of residual risk remaining on Site after a removal action has been performed and has achieved its objectives. The primary focus is on the controls that may be required to manage risk posed by treatment residuals and/or untreated wastes.
- *Reduction of Toxicity, Mobility, or Volume* – This criterion evaluates whether the RAA employed results in significant reduction in toxicity, mobility, or volume of the site-related COCs.

#### 7.2.2 Implementability

This criterion evaluates the technical and administrative feasibility of implementing the RAA, as well as the availability of the necessary equipment and services. This includes the ability to design and perform the RAA, ability to obtain services and equipment, ability to monitor the performance and effectiveness of selected technologies, and the ability to obtain necessary permits and approvals from agencies, and acceptance by the regulatory agencies and the community.

#### 7.2.3 Cost

This criterion assesses the relative cost of each RAA based on estimated fixed capital for construction or initial implementation and ongoing operation and maintenance costs. The actual costs will depend on true labor and material cost, competitive market conditions, final project scope, and the implementation schedule.

### 7.3 Analysis of Remedial Action Alternatives

The evaluation results of each RAA are discussed in the following subsections.

### 7.3.1 Alternative 1 – No Further Action

#### 7.3.1.1 Effectiveness

As mentioned above, the No Further Action alternative has been included to provide a baseline for comparisons among other RAAs. It does not include activities that would disturb site soil, and therefore, no short-term risks to site workers or the community as a result of implementing this alternative are anticipated. However, under the No Further Action alternative, the impacts due to the presence of site-related COCs in soil would not be addressed and there would be no reduction in the potential risks. This RAA, therefore, does not meet the effectiveness criterion. As a result, acceptance by the regulatory agencies and the community would be unobtainable.

#### 7.3.1.2 Implementability

The No Further Action alternative would not require performing any activities at the Site and is, therefore, implementable.

#### 7.3.1.3 Cost

This RAA would not require implementing any measures at the Site and does not include any institutional controls or soil remediation; therefore, no costs would be associated with the No Further Action alternative implementation.

### 7.3.2 Alternative 2 – Soil Excavation/ Off-Site Disposal

#### 7.3.2.1 Effectiveness

Excavation and off-site disposal of site-related, COC-impacted soil will achieve site RAO and will be protective of human health and the environment. Potential short-term risks to on-site workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil handling activities. These risks could be mitigated using personal protective equipment for on-site workers and engineering controls; such as dust suppression and additional traffic and equipment operation safety procedures; to protect the surrounding community and to meet all ARARs. Excavation and off-site disposal will achieve COC removal from the Site, and therefore, will eliminate long-term risks and accomplish the site RAOs. Although COC-impacted soil will be removed from the Site, excavation and off-site disposal does not result in the reduction of toxicity or volume of the COCs. By transporting the impacted soil to a suitable disposal

facility, the mobility of the COCs will be reduced. Accordingly, Alternative 2 will be an effective alternative for addressing soil impacts at the Site.

#### *7.3.2.2 Implementability*

Excavation/ off-site disposal techniques are well-proven, readily implementable and constitute a commonly used method for cleaning up contaminated sites. This approach will be implementable on Site, especially because the areas of excavation are relatively small (approximately 10 feet x 10 feet each) and shallow (no more than 3 feet bgs). The equipment and labor required to implement this alternative are simple and readily available. Regulatory approval and community acceptance of this RAA is anticipated since it is a proven and permanent alternative.

#### *7.3.2.3 Cost*

Based upon current knowledge, data, and our assumptions, we anticipate that approximately 150-200 tons of non-hazardous soil will be excavated and backfilled with clean fill at each location (CSB-8 and CSB-14, and possibly at CSB-25). In addition, cost estimate includes the cost for excavation, transportation, and off-site disposal of the impacted soils at an approved off-site facility. Total cost is not anticipated to exceed \$70,000 (\$90,000 if the CSB-25 location is excavated). Note that if delineation activities result in new data that require a higher volume of excavation, the estimated cost will increase.

### **7.4 Comparative Analysis of Removal Action Alternatives**

A comparative analysis was conducted to identify the advantages and disadvantages of each RAA. This analysis was performed to address the evaluation criteria listed in Section 8.2.

#### *7.4.1 Effectiveness*

Under No Further Action (Alternative 1), the impacts associated with the site-related COCs would not be addressed. Consequently, there would be no reduction in the potential risks and the RAOs would not be achieved. The soil excavation/ off-site disposal alternative (Alternative 2) will require excavating, handling, and transporting the impacted soil, resulting in higher short-term exposure risks. However, it is anticipated that these risks can be sufficiently mitigated through site control measures. In addition,

the soil excavation/ off-site disposal alternative would remove the COCs from the Site; therefore, further on-site management of the COC-impacted soil will not be necessary.

Based on this evaluation criterion, Alternative 2 is more favorable.

#### 7.4.2 Implementability

No activities will be implemented at the Site as part of the No Further Action alternative. The soil excavation/ off-site disposal alternative is a well-proven, readily implementable approach. If needed, a land use covenant is a well-proven administrative approach for mitigating future impacts. Only Alternative 2 (soil excavation/ off-site disposal) is expected to achieve the approval and acceptance of both the regulatory agencies and the community. Accordingly, Alternative 2 is favored by this evaluation criterion.

#### 7.5 Recommended Remedial Action Alternative

Based on the comparative analysis described in Section 8.4, Alternative 2 (Soil Excavation / Off-Site Disposal) is the preferred and recommended RAA for addressing impacted soil at the Site. This RAA was selected because it is effective, implementable, cost-effective, and is most likely to achieve the support and approval of the regulatory agencies and the community.

### 8. Remedy Implementation

Implementation of the selected RAA will consist of several tasks. The main tasks and the associated activities are discussed in the following sections: Health and Safety (Section 9.1), Delineating Excavation Areas (Section 9.2), Permitting and Site Preparation (Section 9.3), Excavation Methodology (Section 9.4), Control Measures (Section 9.5), Air Monitoring (Section 9.6), Field Variances (Section 9.7), Soil Management Plan (Section 9.8), Sampling and Analysis Plan (Section 9.9), and Record Keeping (Section 9.10).

#### 8.1 Health and Safety

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (CCR Title 8, Section 5192; 29 CFR 1910.120). On-site personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General

Industry and Construction Safety Orders (CCR Title 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements. In addition, California OSHA's Construction Safety Orders (especially CCR Title 8, sections 1539 and 1541) will be followed as appropriate.

The site-specific health and safety plan (HASP) will be developed to address hazards associated with the proposed excavation activities in accordance with current health and safety standards as specified by the federal and California OSHA prior to initiation of any field work. The provisions of the HASP are mandatory for all personnel and subcontractors working at the Site.

## **8.2 Delineating Excavation Areas**

According to the HHRA and ecological risk assessment results and recommendations, impacted soils at soil borings CSB-8 and CSB-14 (Figure 2) indicate elevated concentrations of mercury and BaP, respectively. Removal of these soils would remove possible risk and; therefore; result in an acceptable level of potential risk. Additionally, excavation of impacted soils at boring CSB-25, where elevated concentrations of lead were detected, was retained in this RAP as an optional task, though the risk assessments did not identify a need to implement this option. Prior to commencement of excavation activities, limited soil sampling will be performed in the general vicinity of each soil boring location to delineate the lateral and vertical extent of the areas with elevated COC levels.

Soil sampling will be sequenced based on results of laboratory data. For example, the first soil sample will be taken where it is believed to have the highest chance of elevated risk followed by laboratory analysis. Assuming this is correct, samples surrounding this location, at a 5-foot interval radius to the north, south, east, and west will be taken. Should these samples be found to be clean, then the area of excavation will be delineated at this extent. However, should these samples be found to contain elevated levels of mercury, BaP, or lead; then an additional step-out will occur. This process will be repeated and conducted until the excavation area has been properly delineated. It is anticipated that there will not be a need to conduct step-outs that exceed a 20-foot x 20-foot area with 5-foot intervals.

Soil samples will be collected using a hand auger at approximate 1-foot intervals down to a maximum depth of 3 feet bgs at selected locations to determine the vertical extent of COC impacts. Soil samples will be analyzed for metals and mercury by USEPA

Method 6010B/7470A or PAHs by USEPA Method 8270C, depending on the investigated area. Based on analytical results of the limited soil sampling, the excavation areas will be identified. The areas of excavation are anticipated to be approximately 10 feet x 10 feet and down to a maximum depth of approximately 3 feet bgs. Following excavation, confirmation soil samples will be collected from the walls and bottom of the excavation to verify that all impacted soil has been removed.

If elevated concentrations of site-related COCs are detected within an area that exceeds the anticipated maximum 20-foot x 20-foot estimate, or conversely if the area with elevated concentrations is not located successfully, then an amendment to the RAP will be prepared in consultation with the City.

### **8.3 Permitting and Site Preparation**

Once the RAP goes through the public comment process and all comments (if any) are addressed and regulatory approval is obtained, Arcadis will notify the City of all planned soil investigation and excavation activities. Since the areas of excavation are relatively small, a storm water pollution prevention plan (SWPPP) will not be required to conduct the proposed work, although the project may be subject to the City's Storm Water Management Plan.

### **8.4 Excavation Methodology**

Based on assessment results and adequate delineation, the exact volume and location of the excavations will be determined. However, based on current knowledge and data, we anticipate two small areas of excavation to be necessary in addition to the optional lead-impacted area. It is approximated that an area of 10-foot x 10-foot will be demarcated and surveyed in preparation for excavation activities at each location. After excavation is completed down to 3 feet bgs, five samples (from the four walls and the bottom of the excavated area) will be collected and analyzed for mercury, or BaP, or lead (if applicable) to confirm that soils containing elevated concentrations of the corresponding COC have been removed. Excavated soil will be temporarily staged on Site pending waste characterization and disposal facility selection. Clean soil obtained from non-impacted portions of the Site will be used to backfill the excavation. The proposed work is anticipated to take approximately two weeks to be completed.

### 8.5 Control Measures

Several measures will be implemented at the Site to control hazards and exposure of workers and the public to site-related COCs during implementation of the proposed excavation activities. The Site is already secured by a gated perimeter fence; hence, no further fencing around the excavation area at soil boring locations CSB-8 and CSB-14, (or CSB-25, if excavated) is warranted. Traffic will be minimal and will be limited to excavation equipment and support vehicles. Dust control measures (e.g., water spraying) will be implemented during excavation to minimize exposure of the workers to soil particulates. As mentioned earlier, a SWPPP will not be needed because of the relatively small excavation areas. Excavated soil will not be stockpiled on-site but will be temporarily stored in covered containers, so no sediment controls will be required.

### 8.6 Air Monitoring

Air and meteorological monitoring strategies and methodologies will be implemented during field activities to:

- Identify and measure air contaminants generated during the soil removal and decontamination activities to assign the appropriate personal protective equipment and safety measures specified for those activities.
- Provide feedback to site personnel regarding potential hazards from exposure to hazardous air contaminants generated during excavation activities.
- Identify and measure air contaminants at points outside of the soil removal and decontamination exclusion zones. Air monitoring will be conducted during work activities to measure potential exposure of sensitive receptors to site COCs, as a result of removal activities and to monitor the effectiveness of the dust control measures implemented.

### 8.7 Field Variances

Variances from the RAP will be discussed with the City prior to implementation with the exception of for emergencies when an immediate response is required. The City will be notified if an emergency response occurs. All field variances will be documented in the Remedial Action Completion Report prepared for the project following the conclusion of field activities.

## 8.8 Soil Management Plan

Prior to initiating the initiation of any soil generating activities at the site; including but not limited to the native vegetation restoration of remedial excavation activities, plantings for erosion control, removal of debris from former plastic sheeting and sandbags used for erosion; a soil management plan (SMP) will be reviewed by all on-site subcontractors. The SMP will be prepared to address excavation, handing, staging, and reuse or transportation of off-site disposal of the generated soil (Appendix A). An onsite location will be selected to stage the excavated soil. The selected staging area will be secured in order limit potential exposure. The excavated soil will either be placed directly into a covered roll-off bin, or on plastic sheeting and covered pending waste characterization and disposal facility selection. Soils deemed "clean" (i.e., containing COCs at concentrations below the respective site-specific screening levels) will be spread on-site or used for final grading of the Site. Other task sometimes considered as part of a soil management plan including waste characterization and disposal facility selection as well as sampling and record keeping are discussed separately in the sections that follow.

## 8.9 Sampling and Analysis Plan

The proposed removal action will require the collection and analysis of soil samples to delineate the proposed excavation areas, confirm the removal of all impacted soils, and to determine the proper waste classification of excavated soils prior to disposal. All sampling will be conducted in accordance with applicable standard operating procedures and quality assurance/ quality control (QA/QC) protocols. In the following subsections, confirmation sampling and waste disposal classification sampling are discussed.

### 8.9.1 Confirmation Sampling of Excavated Areas

Based on results of the limited soil sampling efforts at the general vicinity of borings CSB-8 and CSB-14 (and SCB-25 if excavated); two to three approximately 10-foot x 10-foot areas will be demarcated in preparation for excavation activities. Following excavation, five samples (from the four walls and the bottom of each excavated area) will be collected and analyzed for metals for the excavations around soil sample location CSB-8 (and CSB-25 if excavated) and for PAHs for the excavations around soil sample location CSB-14 samples to confirm that soils containing elevated concentrations of site-related COCs have been adequately removed.

If analytical results of any of the confirmation soil samples show that elevated COC concentrations still persist, additional excavation will be conducted in the direction of

concern. This will be followed by additional confirmation sampling to ensure that all impacted soil has been removed.

#### 8.9.2 Waste Classification and Disposal Facility Selection

All stockpiled soil should be sampled in accordance with the methodology set forth in the most recently promulgated edition of "Test Methods for Evaluation Solid Waste, Physical / Chemical Methods, SW-846" developed by the USEPA. After determining the number of samples to achieve an appropriate level of confidence, composite samples will be collected from the waste containers and submitted to a California Department of Public Health-accredited environmental laboratory for the analysis of PAHs by USEPA Method 8270C, metals by USEPA Method 6010B/7470A, and any additional analyses that may be required by the treatment, storage, and disposal facility (TSDF). Standard industry practices (10x- and 20x-Rules of Thumb) will be utilized to determine whether the waste characterization sample should be re-analyzed following sample preparation in accordance with STLC and/or toxicity characteristic leaching procedure (TCLP) methods. The excavated soil is expected to be characterized as a non-California and non-Resource Conservation and Recovery Act (RCRA) hazardous waste. The appropriate disposal facility will be selected based on the results of the waste characterization sampling and the waste acceptance criteria for the disposal facility.

#### 8.10 Record Keeping

The remedial action contractor will be responsible for maintaining a field logbook, which will serve to document observations, personnel on-site, equipment arrival and departure times, and other important project information. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. Logbooks will be bound, with consecutively numbered pages and each page will indicate the date and time of the entry. All entries will be legible, written in black or blue ink, and signed by the author. Language will be factual and objective. If an error is made, corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed. Because some portion of the excavated soil will likely be profiled as hazardous waste under California or USEPA regulations, the Uniform Hazardous Waste Manifest (hazardous waste manifest) form will be used to track the movement of soil from the point of generation to the point of ultimate disposition. The hazardous waste manifests will include the following information:

- Name and address of the generator, transporter, and the destination facility
- DOT description of the waste being transported and any associated hazards

- Waste quantity
- Name and phone number of a contact in case of an emergency
- USEPA Hazardous Waste Generator Number
- Other information required either by the USEPA and/or the City.

Any soil that is profiled as non-hazardous and sent offsite for disposal will be documented using a Non-Hazardous Waste Manifest or Bill-of-Lading form. At a minimum, this form will include the following information:

- Generator name and address
- Transportation company
- Accepting facility name and address
- Waste shipping name and description
- Quantity shipped.

Prior to transporting the excavated soil off-site, an authorized representative of the City will sign each hazardous and/or non-hazardous waste manifest. The removal action site manager will maintain one copy of all hazardous and/or non-hazardous waste manifests on Site.

## **9. Habitat Restoration Plan**

This Habitat Restoration Plan (HRP) has been written to address completion of tasks associated with the previously suspended habitat restoration of the El Estero drain.

Section 9.1 summarizes the proposed project.

Section 9.2 summarizes previous restoration plans and implementation efforts.

Section 9.3 details current information on site conditions.

Section 9.4 provides an overview of Pacific pond turtle life history characteristics.

Section 9.5 addresses restoration goals.

Sections 9.6 to 9.19 provide details of the overall restoration approach encompassed in this HRP.

Public Works will complete the Site remediation objectives and address the restoration requirement from the U.S. Army Corps of Engineers. The following includes a brief overview of the proposed restoration elements of the Public Works project:

### **9.1 Remediation and Wetland Restoration**

The remediation project will be implemented by Public Works and includes removing and transporting contaminated soils to an appropriate off-site facility as described above in this Remedial Action Plan (Figure 2). The Public Works project also includes implementation of the Habitat Restoration Plan to restore 3,400 sf of wetland habitat and enhance and maintain habitat for the Pacific pond turtle. The total area of restoration also includes approximately riparian, transitional, and upland habitat, totaling approximately 1.25 acre (0.5 ha). Elements of the HRP are identified below and the implementation details are provided in the following sections.

- Installation of an access road across the western end of the restoration area (Figure 4);
- Relocation of the existing fence to delineate the habitat restoration area as protected;
- Manual removal of the existing plastic liner on site;
- Modification to the existing gate at the east end of the site for turtle access (Figure 3);
- Addition of a turtle ramp at the west end to connect to the existing culvert route into the created wetland (Figures 4, 4a, 4b);
- Modification to the bank along Laguna Creek at the turtle route access point to provide a more gradual slope for turtle accessibility;
- Excavation of a deeper pool associated with a turtle basking area that will be approximately 1,000 square feet in size and approximately three feet deeper than the modified channel bottom (Figure 4);
- Installation of four turtle basking areas that include large flat rocks and trunks with rootwads placed strategically for turtle usage;
- Removal of invasive plants and maintenance of the site for native species;
- Installation of approximately 1,270 native plants in appropriate restoration zones;
- Installation of a temporary irrigation system to support initial plant establishment;
- Development of an adequate weed abatement program and maintenance plan to support turtle basking and egg-laying habitat, as well as flood control and water retention.

## 9.2 El Estero Drain Habitat Restoration Background

As described in Section 4.2, unpermitted vegetation clearing in the drainage ditch on the City's property in 1999 resulted in regulatory requirements that the City restore 0.3 acres (0.12 ha) of wetland habitat (ACOE, 1999) and that a coastal development permit be obtained to restore the site with native vegetation (City of Santa Barbara, 2000). In total, habitat restoration activities described in this HRP will restore approximately 1.25 acre (0.5 ha) of native vegetation (Figure 4).

A review by URS (1999) identified the entire El Estero drain as an environmentally sensitive habitat area (or ESHA) under the Coastal Act, as it contains scattered wetland patches and supports a locally sensitive species, the Pacific pond turtle. While the portion of the drain on the City's parcel may not have met criteria for an ESHA, the fact that it is contiguous to other ESHAs (the eastern portion of the drain and Laguna Channel) resulted in it being considered part of a larger ESHA by URS. As such, restoration management goals that focused on the enhancement of habitat in the drain for the Pacific pond turtle were developed.

A habitat restoration plan was developed by URS for the CPWD in 1999 (URS 1999). The 1999 plan proposed modifications to the El Estero drain in order to create habitat for the Pacific pond turtle on site. These modifications included lowering the channel bottom by one to two feet to impound water except during winter flows, as well as channel widening from five feet to eight feet at the bottom in order to expand available area for created wetland habitat. The overall width of the channel, from top of bank to top of bank, would be about 26 feet, compared to 20 feet previously, and small earthen islands would be created at several locations along the channel to provide refugia for turtles. An additional project objective was to create a more direct connection for turtle movement between the side drainage and Laguna Channel. Proposed habitat restoration plantings included emergent wetland vegetation in the channel bottom, saltgrass and riparian plantings on the banks, and an upland buffer area comprise of native grasses and shrubs.

Based on the results of the Final Mitigated Negative Declaration issued by the City (MST99-00507), the Coastal Development Permit (SBMC 28.45.009) was issued on July 6, 2000 (Planning Commission Resolution No. 029-00) and amended with a minor revision documented in the Substantial Conformance Determination (CPC, 2002) for the implementation of the wetland restoration project developed by URS for the CPWD (URS, 1999). A streambed alteration permit was also issued by the CDFG (2001) to

address potential impacts to fish and wildlife resources that might result from implementation of the project.

Wetland restoration work began in the spring of 2002. The specific elements of the restoration project are listed below. As discussed above, the discovery of black-stained material and glass debris in excavated material removed during the restoration activity prompted chemical analysis of soil samples from this material and the restoration work ceased. The description below indicates which elements of the URS plan were completed prior to cessation of work and which ones have not been completed.

- Channel Grading:
  - Move the location of the channel more to the center of the parcel (completed in 2002).
  - Lower the bottom elevation of the channel by 1 to 2 feet (not completed; no further grading warranted).
  - Create two seasonal pooling areas near the inlet (completed in 2002).
  - Create two pooling areas near the outlet (not completed; no further grading warranted).
  - Reshape remainder of channel to increase wetted area by making it trapezoidal in shape (completed in 2002).
- Restoration Plantings:
  - Install approximately 1300 native plants in appropriate restoration zones (to be completed).
- Irrigation System:
  - Install temporary irrigation system for plants (to be completed).
- Turtle Basking & Refugia:
  - Place three large flat rocks in pooling areas (Figure 4).
  - Place three to five trunks with rootwads (if rootwads are possible) from downed trees across the channel and along banks (to be completed).
  - Excavate a deeper pool area approximately 1,000 square feet in size and approximately three feet deeper than the bottom of the existing channel bottom (Figure 4). This area will allow for continued ponding when the water level within the channel decreases. The excavated soil will be sampled and properly characterized. If the soil is determined to be relatively "clean" with respect to background conditions, Arcadis will attempt to reuse the soil as part of the restoration activities. If the soil is not acceptable for reuse, the soil will be transported offsite for disposal.
- Turtle Access Route:

- The existing culvert and proposed turtle ramp alternative for turtle access to El Estero and adjacent habitats provides the most direct route (Figures 4, 4a, 4b).
- Install turtle gate at inlet gate (eastern end of channel) for seasonal access (completed in 2002). Modify gate to include four 48-inch long x 14-inch wide cement culverts situated side by side under the existing chain link fence to facilitate access by Pacific pond turtles (to be completed; see Figure 3).
- Site Security and Maintenance:
  - Install 5-foot chain-link fence around east, south, and west perimeter of site to prevent human entry (completed in 2002).
  - Construct maintenance road across the restoration area to allow access to the manhole work area (Figure 4). The access road will be approximately 8 feet wide and approximately 100 feet long. The access road will be constructed using pre-cast, permeable concrete pavers. Prior to placement the pavers, the route will be leveled and compacted. Following placement, the pavers will partially covered with a combination of top soil and sand. The completed access road will provide a stable surface for maintenance truck passage, but should visually blend in the surroundings.
- Aesthetic Improvements:
  - Install a nature path to meander along north side of channel (no longer planned because no public access is allowed).
  - Install a post-and-rail fence line along northern perimeter of site with a wire mesh liner along the bottom and interpretative signage at three locations (no longer planned because no public access is allowed, but a new fence is proposed to delineate the restoration area).

In summary, the approved restoration project was partially implemented in 2002 prior to the discovery of contamination on Site. The elements that were previously completed include movement of the channel to the center of the parcel to create a more direct connection for turtle movement between the Site and Laguna Channel, the creation of two seasonal pooling areas near the inlet, reshaping of the remainder of the channel to increase wetted area by making it trapezoidal in shape, creating turtle access routes by installing a 24-inch x 38-inch (61 x 97 cm) elliptical concrete culvert at the drainage outlet to Laguna Channel, installing a turtle gate at the inlet (eastern end of channel) for seasonal access, and improving site security by installing a 5-foot (1.5-m) chain-link fence around the east, south, and west perimeter of site to prevent human entry.

Because security issues have become a greater concern to the City since the completion of this work in 2002, the turtle gate installed on the east end of the Site will need to be

replaced with a more secure structure to ensure that the site is protected from human entry at this location.

Four remediation/restoration options were presented to the City in 2007 (ARCADIS BBL 2007). Each is summarized below along with comments on the current merits of each option.

Option 1 – Implement Approved Restoration Project: This option includes the implementation of the entire approved Restoration Project (Figure 4) with minor revisions to the proposed planting plan and a revised culvert at the inlet on the east end of the channel. As originally proposed, this option included regrading (i.e., lowering the channel bottom 1-2 feet [0.3 to 0.6 m] and adding two bank cut outs on the west end of the channel), installation of a system of four small culverts at the inlet to facilitate turtle movement without allowing human entry to the site, restoring native vegetative communities throughout the Site, creating areas for turtle basking and refugia, and public outreach.

This HRP is based on Option 1. The current project consists of implementation of the original URS restoration plan, with minor modifications, minus those elements completed in 2002. Unlike the URS plan, this HRP does not propose additional grading, interpretive signage, or post and rail fencing. This option as described herein does encompass installation of a ramp to provide turtle access to the existing outlet culvert between Laguna Channel and the drain, habitat restoration of native wetland and riparian buffer communities at the Site, and creation of four areas for turtle basking and refugia approved by the California Department of Fish and Wildlife.

Option 2 – URS Project with Liner: This option includes all of the elements of Option 1 plus the addition of a geotextile liner to areas of the channel bank with elevated lead concentrations. The liner would be installed to address uncertainties associated with potential risk to the southwestern pond turtle from elevated metal concentrations at the Site.

This option is not recommended. A plastic liner was previously installed at the Site. This liner is now disintegrating and shedding plastic into the swale. This option is undesirable since the liner does not persist indefinitely and eventually degrades.

Option 3 – Selective Habitat Restoration: This option includes restoration of wetland and enhancement of turtle habitat using the current channel configuration and a targeted planting design to minimize potential turtle exposure to elevated metals concentrations

in soil or sediment. The plantings are designed to provide desirable habitat in areas where metals are not elevated and less desirable or undesirable habitat in areas of elevated or unknown metals concentrations.

This option is not recommended since habitat composition and location will change through time as a result of native plant recruitment and natural conditions. Consequently, the effectiveness of the exclusion measures may be compromised in the future resulting in increased exposure risk.

Option 4 – Offsite Alternative: This option includes the restoration of a wetland area offsite to mitigate for project impacts. Five off-site locations were evaluated for potential restoration and one was determined to be the most viable option based on the needs of the City's required restoration (i.e., 0.06 acre).

This option is not recommended since it would not protect the Pacific pond turtles and other species at the existing Site.

### **9.3 Existing Site Conditions**

The Site was visited by ARCADIS biologists in May 2012 to assess current conditions and challenges related to resuming habitat restoration activities on Site and providing access to the Site for the Pacific pond turtle from the Laguna Channel. Arcadis has continued to visit the site on a regular basis through 2016.

The Laguna Channel immediately west of the Site consists of a human-modified drainage extending from Highway 101 to the Pacific Ocean between Garden Street and South Calle Caesar Chavez within the City of Santa Barbara. This channel represents the remnants of Laguna Creek and drains the 2,020-acre (817 ha) Laguna Creek watershed, which extends from the Santa Barbara Riviera to the north and south to the Pacific Ocean between State Street on the west and Quarantina Street on the east (Questa 2005). Laguna Creek originally drained into a large estuary east of the Santa Barbara downtown area, in the vicinity of Salinas Street. The channel is earthen from Highway 101 to Cabrillo Boulevard and completely lined in concrete downstream of Cabrillo Boulevard to the beach. During fall and winter rains, Laguna Channel flows directly into the ocean. In the summer, sand deposition on the beach creates a natural berm that blocks water in the creek from reaching the ocean (creating a terminal lagoon). During this time, the Laguna Channel lagoon often merges with the lagoon of Mission Creek.

A total of four habitat types were identified at the Site during the May 2012 ARCADIS survey. These include two upland communities, ruderal/grassland vegetation and non-native tree plantings, as well as two wetland vegetation types, ruderal wetland vegetation and freshwater marsh remnant. Immediately west of the Site is a third wetland type, arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance), also referenced herein as riparian. A total of 66 species of plants were observed at the Site by Arcadis in May 2012; these encompass 14 species of native plants and 52 species of non-native plants. The restoration area was dominated almost exclusively by weedy non-native species. The plastic liner that had previously been placed along the channel is disintegrating and should be removed.

#### 9.4 Overview of Pacific Pond Turtle Life History Characteristics

A primary focus of the El Estero Drain restoration project is to provide suitable habitat for Pacific pond turtles, which are known to have used the site historically and which are believed to persist in the Laguna Channel located immediately adjacent to the Site. While Pacific pond turtles are found in differing aquatic habitat types, they generally require at least seasonally persistent surface water of adequate depth; cover in the form of in-stream rocks/boulders, emergent aquatic and upland vegetation (live and dead), thatch, fallen logs, etc.; accessible basking areas providing exposure to direct sunlight; a stable prey base (invertebrates, fish, carrion); and access to friable soils with exposure to the sun for egg-laying. The provision of these habitat conditions and protection of the Site from unsupervised human activity will greatly increase the chances for re-occupation of the El Estero Drain by the Pacific pond turtle.

The proposed restoration will provide seasonally ponded areas with basking sites to support the pond turtle in a manner mimicking natural adjacent wetland and pond features that occur historically along the creeks of Santa Barbara County.

The Pacific pond turtle (*Actinemys marmorata*) is California's only native freshwater turtle and is listed as a California "Species of Special Concern." Pacific pond turtles inhabit a variety of aquatic habitats, and are found in rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. They primarily use aquatic habitats for foraging, avoidance of predators, and breeding. Aquatic habitats with access to areas of deep slow water with underwater refugia and emergent basking sites (i.e. rocks, logs, or emergent vegetation) are favored. Basking sites are a critical habitat feature within or proximate to these aquatic habitats, and Pacific pond turtle have been observed to avoid sites lacking these features. Younger juvenile turtles appear to have more specialized aquatic habitat requirements than adult turtles. Hatchlings are relatively poor swimmers

and tend to seek areas with slow, shallow, warmer water, often with emergent vegetation.

Mating, which commonly occurs in late April to early May, generally occurs underwater. Generally, females oviposit every other year during May and June. Nesting sites are commonly several hundred meters from water, usually outside of the floodplain, in habitats characterized by low lying vegetation (i.e., annual grasses and herbs), low slope angle (i.e., less than 15%), and well drained clay/silt soils. Spinks et al. (2003) notes that nesting sites often lack shrubs and trees and have good exposure to the sun.

Adult turtles are known to commonly leave the aquatic site to aestivate, and/or to overwinter. In lentic (lake-like) environments, turtles often over-winter underwater, buried in mud; however in lotic (flowing) environments, they will burrow shallowly in duff and/or soil (Reese, 1996; Goodman, 1997). Thus in lotic environments, turtles may spend upwards of half of the year on land.

Pacific pond turtles are omnivorous feeders, opportunistic predators, and occasional scavengers. Their diet consists of crustaceans and other aquatic invertebrates, but pond turtles also feed on small mammals, birds, reptiles, amphibians, fish carrion, and plant matter. Holland (1994) observed that post-partum females ingest large amounts of tule (*Schoenoplectus* species) and/or cattail roots (*Typha* species). Prey items are ingested in the water as it appears the turtle is unable to swallow in air (Holland, 1994).

Spinks et al. (2003) observed that the major challenge to the Pacific pond turtle in urban waterways is access to adequate basking sites. Consequently, turtles are forced to bask at sub-optimal sites, or at a few prime sites where competition is magnified. Thus, Spinks' key elements to urban restoration of turtle habitat include: (1) basking logs, and (2) appropriate nesting habitat that is protected from humans and other species. For the latter, they suggest non-irrigated land adjacent to waterways. Low, non-obtrusive fencing could be used to encourage nesting only in appropriate areas and exclude egg and turtle predators.

Based on the available information on foraging and nesting habits (as described above) and Site conditions (small size of the upland area at the Site bounded on one side by the railroad, and the relatively short period of time during the year that the channel will contain ponded water), turtle usage of the Site may be seasonal. However, because the Pacific pond turtle is a relatively long-lived species (a reported lifespan of 50 to 70 years), the effects associated with long-term chronic exposures to contaminants are ameliorated by the seasonal usage.

The previously approved URS project (1999), as modified in the Coastal Development Permit, provides features that will encourage basking and provide refugia for the turtles. Accommodations for the Pacific pond turtle associated with the current restoration plan for the El Estero Swale include the following:

- Installation of a culvert system under the east boundary fence that will allow access by pond turtles while preventing entry into the Site by people. The existing gate will be replaced by a combination of four short 4-foot (1.2 m) sections of concrete culvert (14-inch × 14-inch [36 x 36 cm] square) laid side-by-side along the bottom of the channel. This proposed culvert system is designed to allow for turtle passage based on literature values for maximum turtle size (Ashton, 1997; Hays, 1999) and to preclude human trespass, while maintaining the existing hydrologic flow conditions (See Figure 3).
- Creation of seasonally ponded wetland habitat with placement of large rocks/boulders within the pooling areas and tree stumps at select locations along the banks of the swale to provide additional cover and at least three basking locations for turtles. The actual placement locations will be determined in the field based on the direction of the project biologist.
- While the entire restoration Site will be planted with appropriate native plant species; select upland locations will be planted with native grasses and smaller, carefully spaced native shrubs. Planting plans provide for access by gravid female turtles in search of suitable open areas and friable substrate with exposure to the sun for egg laying.
- In order to provide year-round access for turtles, a new turtle ramp will be added from the channel to provide access to the existing culvert at the west end of the created wetland (see Figure 4 for approximate route). Although the restoration project only includes minor recontouring, the inclusion of the remaining provisions listed above as part of the El Estero Drain restoration plan will insure that the Site is accessible to and provide habitat suitable for turtles dispersing from the Laguna Channel and will serve to help prolong the long term viability of this unique, potentially isolated population of Pacific pond turtles surviving within the City of Santa Barbara.

#### **9.5 Habitat Restoration Goals**

This Habitat Restoration Plan (HRP) has been written to address completion of tasks associated with the previously suspended habitat restoration of the El Estero Drain (see Section 10.1 above). HRP requirements are based on impacts from grading and associated mitigation: 0.06 acres (0.024 ha) of impacts to a highly degraded

jurisdictional freshwater marsh wetland designated as Environmentally Sensitive Habitat Area (ESHA); and impacts to 0.18 acres (0.07 ha) of potential riparian habitat, also designated as ESHA. The restoration area totals approximately 1.25 acre (0.5 ha) of wetland and associated riparian and upland buffer habitat including the required jurisdictional wetland replacement.

The primary project goals for habitat restoration are to restore, enhance, and maintain habitat for the Pacific pond turtle, as well as to enhance flood control and wetland functions at the Site. Specific project objectives include:

- Establishment of native (jurisdictional) wetland habitat and associated riparian and upland buffer vegetation to create healthy self-sustaining plant communities with the physical and biological characteristics of natural habitat, allowing for biotic flows and exchange
- Enhancement of native habitat for Pacific pond turtle in the onsite drainage by installation of basking sites along the edge of the seasonally ponded drainage and creation of more direct connections for turtle movement between the onsite drainage and Laguna Creek
- Enhancement of the quality of native habitats on the Site through the reduction or elimination of the most serious invasive weeds
- Maintenance of the drainage for flood control and water retention purposes on a periodic basis
- Restriction of human entry
- Placement of the restoration Site in protected status.
- Establishment of a 8-ft x 8-ft work area around an existing sewer manhole.

These goals guide the approach to restoring the Site. Specific objectives and techniques to meet these goals, success criteria, monitoring requirements, and contingency plans are provided in the following sections and are also provided in Tables 5 and 6.

Many of the sections that follow are comprised simply of bulleted lists for clarity and simplicity during implementation of the scope of work described in this HRP.

The major restoration-related tasks covered within this Restoration Plan to be carried out by a designated Project Restoration Manager include:

- Establishment of restoration planting zones on Site
- Identification of photopoints for monitoring in each restoration area
- Conduct initial reference site and restoration area monitoring

- Staking/marketing of weed treatment areas prior to initiation of weed control efforts
- Oversight of all restoration activities conducted by Landscape Contractor
- Regular restoration monitoring and associated reporting
- Planning for ongoing restoration work as needed

Other tasks may be overseen by the Restoration Manager but implemented by a Landscape Contractor or by a City Work Crew. The major restoration-related tasks covered within this Restoration Plan to be carried out by the Landscape Contractor and/or Work Crew with oversight by the Manager include the following:

- Initial and ongoing weed removal in restoration areas
- Seeding and planting in targeted areas according to specifications included in this Restoration Plan
- Irrigation installation
- Ongoing maintenance of restoration areas

#### **9.6 Impact Avoidance and Minimization Measures**

The following measures should be addressed prior to project initiation in order to protect ecological resources on Site during project implementation, including potential soil remediation activities.

- Limit disturbance of upland habitat – To the extent feasible, the disturbance areas should be minimized; this measure has already been incorporated into the project.
- Limit disturbance of riparian and other wetland habitats (Laguna Channel). This measure has already been incorporated into the project.

In addition, the following recommendations are presented for avoidance of potential impacts during future maintenance of the El Estero Swale.

- Avoid impacts to nesting birds – Any disturbance activities in shrub and tree dominated areas should avoid the bird breeding season and potential migratory visits by listed species such as the willow flycatcher in the spring and fall (March 1 to August 15). If maintenance or other activities are proposed during this period, pre-construction nesting bird surveys of the Site should be conducted two weeks prior to the start of the proposed activity. Construction activities that involve disturbances within 500 feet of an active raptor nest and/or 100 feet of

an active passerine nest should be avoided or further evaluated to determine if the proposed activity may affect breeding behavior. Maintenance personnel should be aware of the importance of staying out of the Laguna Channel and the restored El Estero riparian areas as they represent sensitive resource areas potentially used for nesting purposes by many bird species.

- Avoid impacts to aquatic species – If storm drains or other similar infrastructure are trenched in, the work should occur while the El Estero drain is dry; typically between August 16 and November 1 to minimize the likelihood of silt run-off entering Laguna Channel and impacting tidewater goby, Pacific pond turtle, and other species dependent upon the downstream aquatic environment, and avoiding potential nesting bird issues. If project activities in or near the restored drainage are required during this period and if there is flowing or standing water, a qualified biologist should monitor vegetation removal and construction within 100 feet of the native riparian habitat.
- Creek protection measures – Any construction activities near the Laguna Channel should cease during rainy weather when fish may enter the watershed and amphibian species are more likely to be encountered during dispersal near aquatic habitats. Protective fencing coupled with other erosion control measures such as wattles, straw bales, and silt fences should be installed prior to and/or during project activities to prevent the migration of soil and stormwater. This is particularly important adjacent to the west end of the El Estero drain. The fencing can also help prevent some reptiles and amphibians from entering the work area and delineate the work area for construction personnel.
- Restricted lighting – In recognition of the continued long-term use of the open space areas by wildlife, restrictions should require screening of lights to prevent glare into natural areas. Motion sensor lights should only cover areas immediately adjacent to structures and should also be shielded from shining into open space areas.
- Landscaping - Landscaping near native habitat areas should be restricted to native species.
- Invasive weeds - Invasive weeds (as listed in the most current California Invasive Plant Inventory) should be removed from surrounding ruderal areas to avoid spread onto the Site.

### 9.7 Weed Abatement

Invasive weeds are recognized as threatening biological diversity on a worldwide basis, second only to habitat fragmentation and loss (Sala et al. 2000). Impacts by weeds on native ecosystems in the coastal California are far-reaching and complex. Weeds reduce

the biological functions of native ecosystems, interfering with the growth and reproduction of many native species. They can out-compete and exclude native species and alter nutrient cycles, hydrology, and wildfire frequency. Some hybridize with native plants, altering specialized genetic features that enable the native plant to survive in a given environment (Bossard et al. 2000).

Non-native and invasive plant species shall be removed from the Site; these areas shall be maintained for the duration of the monitoring period (five years). It is highly recommended that as many grow and kill cycles (treating all weeds, allowing them to germinate again, and treating them again) should be completed as possible prior to seeding and planting.

Of the invasive weeds at the Site, fennel (*Foeniculum vulgare*) has the highest threat rating by the California Invasive Plant Council and poses the greatest threat to natural ecosystems along the south coast of Santa Barbara County; pampas grass (*Cortaderia jubata*), if encountered in this drainage, also has a high threat ranking. Other weed species that are problematic at the Site include summer mustard (*Hirschfeldia incana*); Bermuda grass (*Cynodon dactylon*), which is widespread on the banks and in the channel and may have been previously mistakenly reported as the native saltgrass (*Distichlis spicata*); tocalote (*Centaurea melitensis*); Cretan mallow (*Pseudolavatera cretica*); and many non-native grasses and forbs.

Weed treatments shall be done on foot by the Landscape Contractor and/or Work Crew (called Landscape Contractor henceforth for simplicity), in consultation with the Restoration Manager. Most other weedy species at the Site are herbaceous species with enlarged taproots. Manual removal is effective if it precedes seed set, with the entire plant being pulled out by the roots. Chemical control with glyphosphate is also effective and will be used as necessary, especially for rhizomatous species such as Bermuda grass.

### **Weed Removal Guidelines**

The Contractor selected to perform initial and ongoing weed removal must have prior experience in identifying native and non-native plants, and must be able to distinguish between these two categories of plants at the Site. Weed treatment activities can potentially result in undesirable disturbance to native vegetation. All access must be on foot and weed treatment crews should adhere to previously disturbed corridors. Prior to weed treatment activities, the weed treatment contractor must receive approval from the Restoration Manager for all proposed access routes to weed treatment areas.

A brief written weed removal plan will be submitted by the Landscape Contractor in charge of weed eradication for review by the Restoration Manager. This plan will provide concurrence with all details herein or will identify recommended measures to modify the plan for improved success.

It is expected that weed removal will be accomplished primarily by application of herbicides as described above and augmented by hand-pulling and mechanical means where appropriate. The following guidelines shall be followed by the Contractor for the duration of the project (five years):

- The Landscape Contractor shall provide the Restoration Manager with a description of all herbicides to be used at the Site, including application rates and dilution; manufacturer's name; application equipment and methods, and a Safety Data Sheet (SDS) for each herbicide intended for use; measures to protect the public, including signs, barriers, notifications, etc; measures to avoid spraying native plants; measures to avoid discharge into creek water; statement that the herbicide(s) is approved by state and federal agencies in the environment at the project site.
- For all potential weed removal treatments, the Landscape Contractor must be able to remove weeds in a precise and environmentally sensitive manner so as not to affect adjacent native species (through over-spray, herbicide drift, etc.). The Landscape Contractor must avoid use of excessive amounts of herbicides that could be transported to adjacent plants, nearby surface water, or cause accidental spills and releases. Herbicides used near drainages need to be approved by the Restoration Manager as appropriate for use near water sources and must be applied during the dry season (April 15-November 1).
- The Landscape Contractor must provide written copies verifying that the applicator is licensed to apply the herbicide(s) in question.
- Herbicides shall not be sprayed when winds exceed 15 miles per hour. Herbicide application may employ backpack units with a narrow spray to minimize drift and accidental spraying of native species. As an alternative, a drip or wick application technique may be used to treat the weeds, since this technique largely avoids spraying of non-target plants because drift and overspray of the herbicide rarely occurs. Drip or wick application may be employed in windy conditions since this technique does not result in drift of material.
  - A dye shall be included in all applied herbicide to facilitate tracking.

- Non-targeted plants shall not be mechanically removed or sprayed or receive drift from nearby spraying. If necessary, plastic shields should be used to avoid overspray.

### 9.8 Site Preparation

The primary tasks associated with Site preparation include removal of plastic liner along channel, installation of turtle basking rocks and logs, installation of erosion control measures on drain banks, and staking/marketing of the restoration areas for weed control and planting.

### 9.9 Erosion Control

Sloped channel areas cleared of non-native vegetation will require slope stabilizing measures. These may include erosion control blankets, as well as wattles, sand fences, or other measures, as needed following grading and vegetation clearance.

Use of erosion control blankets on channel slopes is recommended and is a temporary stabilizing measure. Erosion control blankets are biodegradable and will be left in place.

The erosion control blanket will be installed and maintained by the Landscape Contractor, who should have prior experience in installing such materials. Installation procedures include:

- Erosion control blankets shall be placed on the channel slopes at the Site within 3 to 5 days of completion of weed removal work. The erosion control blankets shall be installed prior to plant installation.
- The slope surface should be smooth and free of debris or vegetation that might prevent contact of the mat with the soil in all locations. The netting shall be installed in such a manner that they will not be dislodged or damaged from flowing water.
- Erosion control blankets shall be rolled down the banks, from the top of the banks to the toe of the slope, or to the top of fiber rolls, when present.
- Erosion control blankets shall be secured properly (see manufacturer's recommendations) on upper and lower ends of the mat, secured with staples at 1-foot (0.3 m) centers, and have a minimum of 1.5 feet (0.5 m) overlap.

- Maintenance of erosion control blankets shall occur for the duration of the Maintenance Period.
- Erosion control blankets shall be guaranteed for one year against failure resulting from defects in installation.
- The installed blanket shall be inspected by the Restoration Manager for approval.
- Erosion control blankets shall consist of 100% biodegradable coconut fiber mesh, such as North American Green SC-150BN or related product.
- Staples shall be made of steel wire (preferably biodegradable) for anchoring, bent U-shaped with a throat width of 1 to 2 inches, with an effective driving depth of no less than 6 inches. Other anchoring devices may be submitted for review and acceptance.

#### 9.10 Plantings

The objective of the design is to restore jurisdictional wetland habitat and a mosaic of native riparian trees, shrubs, and herbaceous species to the El Estero Site that will support the Pacific pond turtle and restore riparian vegetation to a portion of a tributary of the Laguna Channel.

A portion of the site will be planted with riparian trees, shrubs, and perennial herbs to form palustrine riparian forest (see Figure 4); proposed riparian forest areas will occur along the channel. These forested areas will create shade and shelter for the Pacific pond turtle. Additional areas are proposed for riparian shrubs and associated perennials to form riparian shrub scrub wetlands. Emergent wetland vegetation will be planted in the channel to provide a food source for the turtle (and their prey base) and habitat for other riparian biota. Upland areas will be planted with riparian buffer species and intervening open grassland areas to support turtle nesting. Tables 3 and 4 provide planting specifications for both container plantings and seeded areas.

#### 9.11 Container Plantings

Container plantings are recommended for most restoration areas on Site since container plantings tend to be more successful in competing with invasive weeds than native seeds, especially in sites that have an almost exclusively weedy seed bank exhibiting little to no native plant recruitment.

Recommendations for container plantings for restoration areas at the Site are summarized in Table 3. Approximately 1,300 container plantings are proposed for the restoration on Site, including 400 one-gallon plantings and 870 plugs at approximately 8 feet (2.4 m) on center. All container plantings shall be obtained from a local restoration nursery from propagules collected in the Santa Barbara area. Guidelines for container plantings include the following:

Container planting guidelines:

- Container species shall be planted in fall/early winter under the supervision of the Project Biologist so that appropriate placement spacing, and clustering of each species enhances the chance of survival.
- The Restoration Manager shall spot the plants in appropriate positions for planting. The planting layout will be subject to field design by the Restoration Manager. The Restoration Manager reserves the right to make adjustments to the plant layout provided in the drawings.
- The Contractor shall ensure that the plantings adhere to the layout determined by the Restoration Manager. Shrubs and trees shall be clumped in patches with openings for native herbs, grasses, and sub-shrubs to be seeded or installed at a later date. Spaces between patches will be kept weed-free by the Contractor.
- On the first day of planting, the Restoration Manager shall meet with the Contractor to review planting procedures and to provide planting training prior to installation. At least one of the trained crew members shall be present at all times during installation to supervise the restoration planting.
- All planting holes shall be the same depth as the container and twice the width of the container.
- If soil is not damp at the time of planting, planting holes shall be filled with water and allowed to percolate into the subsoil. The plant should be set plumb and braced in position until the backfill has been tamped solidly around the root ball. The planting holes should be backfilled with the native soil from the hole so that the plant is level with adjacent ground.
- Plants shall be watered thoroughly immediately after installation. Each plant shall be checked after watering to ensure that it received adequate water and to correct any soil settling during and after planting.
- Mulch shall be applied around all planted container material. At a minimum, mulch should be applied three to four inches (7 to 10 cm) deep and three feet (1 m) in diameter around all container material. Mulch should be placed at least three inches away from the plant stem to avoid the risk of moisture and fungus on the plant. Mulch is very effective at retarding weed growth if applied deeply

enough, and also retains moisture and gradually decomposes to nourish plantings. In general, chipped material is suitable as long as it does not contain Eucalyptus bark, which is toxic to some native seedlings.

- Container plants shall receive deep waterings, as needed, timed to coincide with the rainy season during the establishment period, and then watering frequency can be tapered off to deep watering once per month for the first year.

#### **9.12 Seed Application**

Upland areas will be hydroseeded in fall and also receive some container plantings. If possible, planting should take place first, with plastic bags over each container plant, to be followed immediately by hydroseeding. Plastic bags would then be promptly removed.

Seeding will be accomplished by either hydroseed application or by broadcast seeding. The seed mix includes a combination of native shrubs, subshrubs, perennial grasses, and an annual (Table 4). Leguminous species included in the seed mix that require pretreatment in order to germinate shall be provided with that pretreatment.

The hydroseeding process should be applied in two steps (as described below or as modified with the approval of the Restoration Manager) to improve seed/soil contact and protect seed from bird predation. The Restoration Manager may also elect to hand broadcast-seed some targeted areas to ensure plant establishment.

First Step: Apply seed mix with 500 pounds per acre of flexible growth medium (FlexTerra), 1000 pounds per acre of compost, 500 pounds per acre of slow-release organic fertilizer (Biosol 7-2-3), and 60 pounds per acre of mycorrhizal fungi (AM-120). Legumes shall be inoculated with appropriate inoculant at 2 pounds inoculant per 100 pounds of seed.

Second Step: Apply second top-coating (without seed) of 2000 pounds per acre of flexible growth medium (FlexTerra) and 500 pounds per acre of compost. The second application shall provide consistent, uniform coverage of approximately 1/8 inch over the entire area, especially the tops and toes of any slopes.

The hydroseed work shall be conducted by a reputable hydroseed contractor, who will be required to hydroseed using the seed mix and application rate specified above. Mechanical agitation of hydroseed equipment is required in order to properly mix ingredients.

Hydroseeding shall be carried out in two passes in conjunction with recommendations by the hydroseed contractor. Unless otherwise specified and agreed by the Restoration Manager, a hose should be used for the first pass, working across the area by hand. For the second pass, a cannon may be aimed straight at the restoration seeding area. Because the first pass is by hand, it can be perpendicular to the cannon so that there is both a vertical and horizontal pass to increase coverage.

To avoid inadvertent introduction of weeds, the hydroseed contractor shall rinse the tank, all hoses, and all nozzles prior to arrival at the Site. The Restoration Manager must be present during hydroseeding, and shall check seed bag tags to verify that the appropriate seed mix is used and inspect the hydroseed tank (if possible) both prior to seeding and at the end of the day. The hydroseed contractor shall provide the Restoration Manager with the seed list from the contractor's prior job in case unusual species are noted on the slope during germination that may have been left in a poorly cleaned tank or other application equipment.

Hand broadcast of seed may also be used as a seeding technique to improve the diversity of native herbaceous species on the Site. Hand seeding shall be performed by the Restoration Manager. Seed shall be hand cast and raked into soil; if needed, seed may be covered with a light mulch. Seeding shall occur prior to rain events to increase seed germination success.

### **9.13 Cuttings**

Willow and cottonwood cuttings shall be placed in the El Estero Drain in fall as part of the planting effort to restore riparian vegetation at the Site. Cuttings shall be collected from nearby source plants at the Site and placed every two feet (0.6 m) in designated areas, as directed by the Restoration Manager. Willow and cottonwood cuttings shall be a minimum of 18 inches long (46 cm) and 0.5 – 2 inches (1 – 5 inches) in diameter at the thick end. At the thick (lower) end, the branch should be cut flat and the upper end can be cut at a slight angle. Cuttings shall be pruned of branches and foliage. The total number of stems to be collected shall be determined in the field with the Restoration Manager. Cuttings shall be cut within 24 hours of placement. Cuttings shall be soaked in water with rooting hormone for a minimum of 12 hours prior to placement. Cuttings shall extend at least 14 inches (36 cm) into the soil; each cutting shall be driven into the ground, leaving approximately one fourth of the cutting in the air.

#### 9.14 Irrigation

A temporary irrigation system may be used during the first and second years to ensure successful germination and plant establishment. The system configuration will be based on the available water supply location(s) and at the discretion of the contractor with approval of the Restoration manager. There are numerous acceptable designs to deliver water. The approach described below will ensure efficient irrigation for different planting zones to promote germination and growth of seedlings.

The frequency and duration of irrigation will be determined by the Restoration Manager. Restoration plantings shall be irrigated by infrequent deep watering, as directed by the Restoration Manager. After the second year, the Restoration Manager will decide if supplemental watering is necessary.

To maximize the efficiency of the maintenance program, the system should utilize a programmable irrigation controller with flow sensor to detect leaks (e.g., Hunter iCorps or equivalent). The headers for the temporary irrigation system are anticipated to be 2-inch diameter PVC or sized as needed to ensure that adequate pressure is maintained based on the number of irrigation zones used and that deliver the prescribed spray coverage. It is anticipated that the header will enter the restoration area at the northeast corner and will follow the fence line across the El Estero Drain attached to the fence posts for support.

The grassland habitat will be irrigated using an overhead system with three-foot risers with shrubhead adaptors on 10-foot centers. The rotors should have at least a 10-foot spray radius. The system should utilize high efficiency rotors (e.g., Hunter MP rotator or equivalent). It is anticipated that most or all of the grassland area can be irrigated from a single line through the middle with full-circle rotors.

The emergent wetland habitat will be irrigated using an overhead system along one bank with three-foot risers with shrubhead adaptors on 15-foot centers. The rotors should have at least a 15-foot spray radius. The system should utilize high efficiency half-circle rotors (e.g., Hunter MP rotator or equivalent).

The palustrine forest and palustrine shrub scrub habitats will be irrigated either through an overhead system comparable to those described above, or using a drip system as described below. If an overhead system is used, it will employ three-foot risers with shrubhead adaptors on 30-foot centers. The rotors should have at least a 30-foot spray radius. The system should utilize high efficiency rotors (e.g., Hunter MP rotator or

equivalent). Full-circle rotors would be used in the middle areas and half-circle rotors would be used along the edges. If a drip system is preferred, the system will employ drip tubing (e.g., netafim techline cv or equivalent) in 12-inch grids under the mulch throughout the planted area.

#### **9.15 Site Maintenance**

The restoration area shall be maintained in optimal condition for promoting the long-term viability and vigor of all restoration plantings and recolonization by native species. The Maintenance Period is five years in duration, beginning immediately after initial weed control and seeding, and continuing for five years thereafter.

The Landscape Contractor selected for the project shall have prior experience in maintaining restoration sites, including maintaining native vegetation in southern California. The Landscape Contractor must have successfully completed at least five other projects involving native plant restoration. The Landscape Contractor must use maintenance techniques and practices appropriate for native plants and provide the appropriate level of effort needed to maintain all restoration areas under optimal conditions in a timely manner. The Landscape Contractor must be able to distinguish between native and non-native plants as mature plants and also as seedlings.

##### **9.15.1 Site Maintenance Description**

The Contractor shall ensure that plantings, weeding, and erosion control performance standards are met through Site maintenance activities during the maintenance period. These activities include weed eradication; replanting, if needed; irrigation; repairs and maintenance of erosion control materials and other materials, if needed; general Site housekeeping and cleanup; and the general care and nurturing of seedlings, cuttings, and native plants within the restoration areas.

Restoration areas that are bare or found to be unhealthy because of poor maintenance practices will be replaced according to the Restoration Manager's direction. All replacements shall be in strict conformance to the directives of the Restoration Manager. Guidelines for the Landscape Contractor include:

- The Landscape Contractor shall provide a single point of contact to the Restoration Manager for Site maintenance.
- The Landscape Contractor shall provide a crew and foreman that are available to respond to requests of the Restoration Manager within 72 hours.

- Throughout the maintenance period, the Landscape Contractor shall keep the Site, areas adjacent to the Site, and any pathways in a neat and orderly condition and free and clear from debris and discarded materials.

No off-road vehicles (including mules/gators/ATVs) will be permitted in the restoration area unless approved by the Restoration Manager. Wheelbarrows or equivalent will be used to transport tools and other supplies within the restoration area.

Native plants (shrubs, sub-shrubs, and herbaceous species) already exist in the restoration areas. Care must be taken to avoid these plants when working.

#### 9.15.2 Site Maintenance Watering

The Landscape Contractor may be responsible for watering planted areas as directed by the Restoration Manager. The need, frequency, and duration of watering shall depend on current weather patterns and Site-specific soil moisture conditions.

- Watering shall provide an adequate supply of moisture to the entire root zone of each plant during the normal growth period of the plant. Irrigation for plantings shall be supplied as infrequent, deep waterings, as determined by the Restoration Manager.
- The Landscape Contractor shall be responsible for receiving approval from the Restoration Manager for modifications to any watering schedule and planned application rates.
- At no time shall water be applied in a manner that causes erosion, damage to plants, runoff, or damage to existing or colonizing vegetation.

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#### 9.15.3 Site Maintenance Weed Control

The Landscape Contractor is responsible for keeping all designated weed-treatment restoration areas free of weeds for the duration of the Maintenance Period according to these specifications and as described in Section 10.6.

- Throughout the Maintenance Period, weeds shall be removed before reaching 4 inches (10 cm) in height or forming flower heads.
- The Landscape Contractor shall be responsible for replacing native plants that are errantly killed during weed control efforts (if any).

- Dead weed material shall be bagged and removed from the Site during each weeding event.

#### **9.16 Restoration Monitoring and Reporting**

A long-term maintenance and monitoring program is required to assess progress on completion of tasks, to ensure quality control, and to hasten implementation of corrective actions as needed. A robust maintenance and monitoring program greatly increases the overall success and cost effectiveness of a restoration project. The Restoration Manager or their designee will carry out the monitoring and oversee the maintenance.

The monitoring program includes pre-project monitoring and post-implementation monitoring. Monitoring will address the progress of the project and the various categories of established success criteria.

A detailed monitoring log must be maintained for each visit that includes the specific task, date, observer(s), and monitoring details. Monitoring of weed control efforts and techniques, seeding, and germination and establishment of seeded native species all require monitoring. The log and/or related memoranda will include comparisons of collected data to the success criteria; discussions of all problems encountered and probable reasons why success criteria might not be attained; discussions of all activities conducted to remediate planting areas which failed to meet targeted levels; and recommendations to minimize future mortality, excessive weeds, slow plant growth, and unanticipated impacts to the restoration area.

Weed treatment areas will be monitored for cover by weeds and native species, as well as recruitment by natives as weed density diminishes. Presence of any new invasive weeds also requires careful documentation and immediate action.

Areas that are seeded will have two phases of monitoring, conducted during and after seeding. The Restoration Manager is responsible for documentation of seed germination rates and composition, indications of animal damage, weed establishment and control efforts, and potential erosion problems. Data gathered should be analyzed and recorded by the Restoration Manager and corrective measures identified if needed.

Photographs will be taken from established photo-points during the project and once a year, in spring. Photograph locations will be noted on Site plans submitted with the report.

At the end of the first restoration season, a report will be prepared to document all activities accomplished during the year. Subsequent annual reports will summarize monitoring data collected each succeeding year and compare results against the performance criteria to evaluate restoration success. The annual reports will include recommended maintenance activities and corrective measures, if needed, and specify when such measures will be implemented. Annual reports will be due to the City of Santa Barbara by December 31 each year. Any additional recommended maintenance activities and corrective measures, if needed, are subject to approval by the City.

The four primary monitoring and reporting requirements are described below:

1. **Monitoring During Site Preparation, Weed Control Efforts, and Other Initial Phases:** The Restoration Manager will visit the Site as needed throughout the initial active Site preparation phases of the restoration project to ensure that the steps outlined above are implemented correctly. Weed abatement activities should be implemented as soon as this Restoration Plan is approved, as described above.
2. **Monitoring During Planting:** The Site will be inspected prior to seeding to flag the restoration areas and document vegetation cover as well as during planting to locate planting areas, to document planting procedures, and to evaluate establishment of planting.
3. **Monitoring After Planting and Weed Control Treatments:** Site visits will be conducted every two weeks during the first month following initial weed control and planting efforts, with monthly visits for the remaining eleven months of the first year. The weed treatment and planting areas will be carefully monitored for survival of invasive weeds, as well as survival or mortality of nearby natives, and recruitment of new native and/or weed species. This monitoring is critical for adaptive management, a process in which the findings from direct monitoring provide the evidence and basis for rapid management change or support as needed. Monitoring will guide possible implementation of contingency measures if necessary such as wind protection, erosion control, additional planting, and/or additional weed control. At the discretion of the Restoration Manager, monitoring frequency will be reduced to quarterly visits in subsequent years.
4. **Annual Reporting.** An annual report describing the work completed to date and the monitoring results will be presented to the City of Santa Barbara by December 31 for each year of the project (five annual reports).
5. **Final Report.** The final report, submitted at the end of the five-year monitoring period, will document restoration success relative to the performance standards defined in this Restoration Plan. If an aspect of the restoration has been

unsuccessful, a revised or supplemental restoration program will be submitted within 90 days to address any restoration deficiencies.

#### 9.16.1 Restoration Monitoring Requirements

The restoration areas will be monitored for the following criteria, utilizing the performance targets outlined in Table 5, where relevant:

- Exotic species management
- Inventory of the flora
- Percent of bare ground (annual quantitative monitoring)
- Percent vegetative cover (annual quantitative monitoring)
- Plant density (annual quantitative monitoring)
- Plant health (qualitative)
- Plant size (qualitative)
- Evidence of erosion or burying of plants
- Evidence of wildlife usage
- Hydrology (qualitative)

If onsite conditions fail to meet performance targets, the Restoration Manager will take corrective steps. Where needed, the Restoration Manager may broadcast additional seed, place additional plantings and/or cuttings, and/or direct the Landscape Contractor to conduct additional weed eradication or install remedial erosion control measures. If unforeseen problems are encountered or there are significant deviations from performance targets, the Restoration Manager will consult with agencies having regulatory oversight for a discussion of contingency measures.

Monitoring will also include reference areas. Reference areas provide useful comparative information on seasonal growth patterns, weed infestations, and species diversity. The reference areas will not be monitored as frequently as the restoration areas, but will be monitored at project initiation and in Year 3. They will be more thoroughly surveyed if it appears that a region-wide issue is affecting the restoration success. Regional issues or phenomena negatively affecting restoration success that cannot be feasibly controlled by the restoration team shall not constitute failure to meet restoration objectives and may result in modified performance standards to reflect reasonable goals consistent with conditions in the reference areas.

Monitoring will continue for five years. If performance criteria have not been met by five years, monitoring, maintenance, and remedial actions as determined necessary for

attainment of performance criteria shall be continued. Contingency measures are described in Section 10.17.

#### **9.17 Performance Criteria and Reference Site Data Collection**

The general goal of the Restoration Plan is to provide functional habitat value for native plants and animals within the restoration area and with weed constituents significantly lower than current levels. Performance criteria are provided to measure progress toward this goal. Performance criteria and measurement methods are provided in Tables 5 and 6.

These performance criteria will be periodically measured by the Restoration Manager during the monitoring period to determine if progress towards the final standards is being made. Failure to meet the annual performance standards will result in an assessment of causative factors and potential remedial solutions. The Restoration Manager will specify the activities necessary to achieve the performance standards, which may include additional seeding, Site and plant protection, increased weed control, or erosion control efforts. Contingency measures for failure to meet performance standards are provided in Section 10.17.

At the time of plant installation, a reference area in the vicinity of the restoration areas shall be established for monitoring of intact Venturan coastal sage scrub and riparian habitat in order to make comparisons with the restoration area. The reference area shall be similar to the restoration areas in elevation, slope, aspect, size, and soil type. Photo documentation will be made at the time of baseline data collection from permanently established photopoints. The reference site will be sampled in the same manner described in Table 6 or as needed for comparison at the discretion of the Restoration Manager.

Data collected from the reference site will be compared to performance criteria developed for the restoration sites in Table 5 and 6. This will ensure that the performance criteria are appropriate and reasonable, and that yearly targets are attainable. Performance targets may be modified by the Restoration Manager with approval of the City of Santa Barbara.

#### **9.18 Contingency Measures**

As with any restoration project, it is difficult to anticipate all potentially negative influences on restoration success. However, several issues are commonly problematic for

restoration projects, and contingency measures have been developed to address these issues should they come up. These measures are intended to address issues specifically associated with the Restoration Plan for the project and not to address regional issues that impact all plants in the area (e.g., major pest infestation, extreme heat, etc.). Potential contingencies include:

**Predation by Animals:**

Gophers/Ground Squirrels/Rabbits – No new protection of the restoration area is currently proposed to prevent predation by gophers, ground squirrels, rabbits, deer, or other herbivores. If animal damage is a significant problem, an active control program may be developed. Implementation would require approval of the City of Santa Barbara.

**Predation by Insects:**

Insects – No protection of restoration areas is currently proposed from predation by insects. If insect damage is a significant problem, an active treatment program may be developed. Implementation would require approval of the City of Santa Barbara.

**Weeds:**

Aggressive monitoring and maintenance – If continued weed infestation is occurring and or new weed species are invading the area, the frequency and type of weed maintenance will be increased or modified. Weed problems will be addressed through removal and or treatment of weeds depending on the species and the location.

**Erosion:**

Erosion – If yearly targets set for erosion in the restoration area are not met, the eroded areas shall be repaired and re-seeded as necessary. Erosion control measures may include installation of erosion control blankets, wattles, straw bales, or other measures.

### **9.19 Implementation Schedule**

Phase 1 will be implemented upon approval by the City of Santa Barbara. Plant propagation (e.g., seed collection, identification of cutting donor sites, container plant contracting) and site-wide weed abatement will be implemented first. Reference sites will be selected and assessed to provide baseline background data. Permanent photo-points will be established.

Upon issuance of state and federal permits for the work within jurisdictional waters of the U.S. and waters of the State, where the turtle access route ties into Laguna Creek, preparations for fieldwork will commence. The work areas will be delineated and surveyed in the field. It is anticipated that earthwork will occur in late summer or fall to avoid the nesting bird season and to facilitate work in the Laguna Creek channel when water levels are lowest and the risk of rain is minimized. Plant installation will occur in late fall/early winter to capitalize on natural rain, though a temporary irrigation system will also be installed.

Monitoring and reporting will occur throughout restoration until the performance criteria have been met. Contingency actions and remedial measures are not specified in the schedule since they would occur at different times, and only on an as-needed basis. If performance criteria are not met by the end of five years from the date of planting, monitoring shall continue until attainment of performance criteria. The timing of all monitoring and maintenance activities may vary from year to year depending on seasonal and environmental conditions. Annual monitoring reports will be prepared and submitted by December 31 of each year for the duration of the project.

#### 9.20 Cost

The cost breakdown provided in the table below corresponds to the scope of work the RAP/HRP. The following cost analysis includes capital costs, labor and installation costs, and operation and maintenance costs required to complete the restoration.

#### Proposed Elements and Associated Costs for this RAP/HRP including 5 years of Restoration Maintenance, Monitoring, and Reporting

Proposed Elements	Total Cost	Year 1 Cost
1. Channel End Modifications	\$50,740	\$50,740
2. Access Road Construction	\$16,000	\$16,000
3. Soil Sampling and Characterization	\$20,000	\$10,000
4. Soil Disposal	\$55,100	\$55,100
5. Planting (labor and plant costs)	\$97,500	\$97,500
6. Irrigation System	\$44,000	\$44,000
7. Turtle Ramp	\$45,000	\$45,000

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8. Turtle Pond	\$15,000	\$15,000
9. Restoration Maintenance (weed abatement)	\$84,000	\$28,000
10. Monitoring, Reporting, and Management	\$65,000	\$28,000
Subtotal	\$492,340	\$389,340
10% Contingency	\$49,234	\$38,934
Total for Option 1 (w/ contingency)	\$541,574	\$428,274
OPTIONAL Task 3A – CSB-25 Removal & Disposal	\$20,000	\$20,000

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**Table 2. Potential Applicable or Relevant and Appropriate Requirements  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Standard, Requirement, Criteria, or Limitation Considered	Citation	Description
<b>Chemical-Specific ARARs</b>		
Clean Water Act (CWA)	33 USC 1251-1387 Chapter 26	The primary purpose of the Clean Water Act, also known as the Federal Water Pollution Control Act, is to restore and maintain the quality of surface waters by restricting discharges of all designated pollutants, which include 126 "priority toxic pollutants," various "conventional pollutants," and certain "non-conventional pollutants."
National Pollutant Discharge Elimination System (NPDES)	CWA 402 40 CFR 122 and 125	Regulates the discharge of treated effluent and storm water runoff to waters of the United States. Potentially applicable substantive NPDES standards include technology-based pollutant controls, or effluent standards, governing surface water discharges.
Safe Drinking Water Act	40 CFR 141-149	Substantive Safe Drinking Water Act requirements that may be applicable or relevant and appropriate at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites include: drinking water standards, restrictions on the underground injection of wastes, and groundwater protection programs.
National Primary Drinking Water Standards	40 CFR 141	Establish health-based standards (maximum contaminant levels or MCLs) for public drinking water systems.
National Secondary Drinking Water Regulations	40 CFR 143	Establish welfare-based standards for public water systems (secondary MCLs).
Federal Water Quality Criteria	40 CFR 131	Set standards for surface water to protect aquatic organisms and human health.
Resource Conservation and Recovery Act (RCRA) - Lists of Hazardous Wastes	40 CFR 261	Defines wastes which are subject to regulation as hazardous wastes.
RCRA	40 CFR 268	The temporary or permanent placement of restricted hazardous wastes on land at a CERCLA site may trigger RCRA land disposal restrictions (LDR) treatment standards as applicable requirements. LDR treatment standards, which vary depending on the type of hazardous waste being treated, are concentration- and technology-based standards designed to reduce the mobility and toxicity of hazardous constituents present in hazardous wastes. In order for LDR treatment standards to apply, placement of restricted hazardous wastes must occur.
Toxic Substance Control Act (TSCA)	15 USC s/s 2601 et seq. (1976)	Creates a broad range of chemical control measures including information gathering, chemical testing, labeling, inspection, storage, and disposal requirements. Chemicals regulated under the TSCA include asbestos, chlorofluorocarbons (CFCs) used as aerosol propellants, hexavalent chromium, and polychlorinated biphenyls (PCBs). The TSCA governs many aspects of PCB management, including the cleanup of spills, storage, and disposal.
Clean Air Act (CAA)	42 USC 7401	Only Titles I and III of the CAA are likely to directly affect a remedial action (found within Title V of the CAA).
National Ambient Air Quality Standards (NAAQSs)	42 USC 7401	Title I of the CAA requires the United States Environmental Protection Agency (EPA) to publish NAAQSs, or acceptable environmental levels, for "criteria pollutants." To carry out this mandate, the EPA requires each State to identify areas that have attained NAAQSs for criteria pollutants (classified as "attainment areas") and those that have not (classified as "non-attainment areas"). The EPA also requires each State to submit a State Implementation Plan (SIP) showing how NAAQSs will eventually be achieved in non-attainment areas or will be maintained in attainment areas.
New Source Performance Standards (NSPS)	42 USC 7401	NSPSs, promulgated pursuant to Title I of the CAA, only apply to certain major new sources and major modifications of existing sources that emit "designated pollutants" (which are different than criteria pollutants). The particular source categories governed by the NSPS are generally not found at sites such as the one addressed in this remedy document, and are therefore not applicable requirements. They may, however, be relevant and appropriate if the pollutants emitted or technologies employed during a response action are sufficiently similar to an NSPS designated pollutant or source category.
National Primary and Secondary Ambient Air Quality Standards	40 CFR 50	Set standards on ambient concentrations of carbon monoxide, lead, nitrogen dioxide, PM10, ozone, and sulfur oxides.
National Emission Standards for Hazardous Air Pollutants	40 CFR 61	Regulate emission of hazardous chemicals to the atmosphere from stationary sources.

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Standard, Requirement, Criteria, or Limitation Considered	Citation	Description
<b>Location-Specific ARARs</b>		
National Historic Preservation Act (NHPA)	16 USC 470 et seq. A portion of 40 CFR 6.301 (b), 36 CFR 63 and 800	Requires Federal agencies to take into account the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object that is included in, or eligible for, inclusion in the National Register of Historic Places. Regulates inventory, assessment, and consultation on project effects and protection measures for cultural properties on Federal lands.
Native American Graves Protection and Repatriation Act (NAGPRA)	25 USC 3001-3013 43 CFR Part 10	Regulations that pertain to the identification, protection, and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony.
The Historic and Archaeological Preservation Act of 1974	16 USC 469 40 CFR 6.301(c)	Establishes procedures to provide for preservation of significant scientific, prehistoric, historic, and archeological data, which might be destroyed through alteration of terrain as a result of a Federal construction project or a federally licensed activity or program.
Historic Sites, Buildings, and Antiquities Act	16 USC 461 through 467; 40 CFR 6.301(a)	Requires Federal agencies to consider the existence and location of landmarks on the National Registry of Natural Landmarks to avoid undesirable impacts on such landmarks
The Archaeological Resources Protection Act of 1979	43 CFR 7	Regulates requirements for authorized removal of archeological resources from public or tribal lands.
Federal Land Policy and Management Act of 1976 (FLPMA)	43 USC 1701	Provides for multiple use and inventory, protection, and planning for cultural resources on public lands.
Executive Order No. 11990 - Protection of Wetlands	40 CFR 6.302(a)	Requires Federal agencies conducting certain activities to avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands if a practicable alternative exists.
Executive Order No. 11988 - Floodplain Management	40 CFR 6.302(b)	Requires Federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid, to the extent possible, adverse effects associated with direct and indirect development of a floodplain.
Section 404, Clean Water Act (CWA)	33 CFR 330	Regulates discharge of dredge or fill materials into waters of the United States.
Fish and Wildlife Coordination Act	40 CFR 6.302(g)	Requires coordination with Federal and State agencies to provide adequate protection of fish and wildlife resources. Specifically, consultation is required when any modification or any stream or other water body is considered as part of the action.
Endangered Species Act (ESA)	16 USC 1531(h) through 1543; 50 CFR 17, 402, and 40 CFR 6.302(b)	Regulates the protection of threatened or endangered species and critical habitat. Requires action to conserve endangered species within critical habitat upon which species depend. Activity may not jeopardize continued existence of endangered species or destroy or adversely modify a critical habitat. Includes consultation with the Department of the Interior.
RCRA	40 CFR 264	Specifies requirements for locating hazardous waste facilities.
Wild and Scenic Rivers Act	16 USC 1271-1287, Public Law 90-542	Establishes a National Wild and Scenic Rivers System for the protection of rivers with important scenic, recreational, fish and wildlife, and other values. Rivers are classified as wild, scenic, or recreational. The Act designates specific rivers for inclusion in the System and prescribes the methods and standards by which additional rivers may be added. The Act contains procedures and limitations for control of lands in federally administered components of the System and for disposition of lands and minerals under Federal ownership.

**Table 2. Potential Applicable or Relevant and Appropriate Requirements  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Standard, Requirement, Criteria, or Limitation Considered	Citation	Description
<b>Action-Specific ARARs</b>		
Hazardous Materials Transportation Act - Standards Applicable to Transport of Hazardous Materials	49 USC 1801-1813 40 CFR 107, 171-177	Regulates the transportation of hazardous waste.
Criteria for Classification of Solid Waste Disposal Facilities and Practices	40 CFR 257	Establish criteria for determining which solid waste disposal practices pose a reasonable probability of adverse effects on health or the environment and, thereby, constitute prohibited open dumps.
Criteria for Municipal Solid Waste Landfills	40 CFR 258	Establishes criteria for municipal solid waste landfills.
Standards Applicable to Generation of Hazardous Waste	40 CFR 262	Establish standards for the generation of hazardous waste. Exempt through 40 CFR 261.4(b)(7)
Standards Applicable to Transporters of Hazardous Waste	40 CFR 263	Regulate the transportation of hazardous waste. Establish standards which apply to persons transporting hazardous waste within the United States if the transportation requires a manifest under 40 CFR 262.
RCRA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities Design and Operating Requirements	40 CFR 264, pursuant to 42 USC 6924, 6925	Among the potentially applicable substantive RCRA standards are design and operating specifications for hazardous waste treatment, storage, and disposal units used at Superfund sites. For example, RCRA hazardous waste incinerator performance standards (Part 264, Subpart O), such as destruction and removal efficiency and limits on hydrogen chloride and particulate matter emissions, are applicable to hazardous waste incinerators used during remedial actions. RCRA design and operating standards are also applicable to containers and tanks used to store hazardous wastes at remedial sites (Part 264, Subparts I and J). RCRA land disposal unit design and operating standards, known collectively as minimum technological requirements, apply when permanent on-site disposal of hazardous wastes in landfills, waste piles, surface impoundments, or land treatment units is part of the remedy (Part 264, Subpart N).
RCRA Groundwater Monitoring	40 CFR 264, Subpart F	Additional RCRA standards may be applicable to hazardous waste land disposal units at remedial sites. RCRA groundwater monitoring standards, which involve the use of monitoring wells to detect the presence of contaminants in underlying aquifers, are applicable when a Superfund response involves the creation of a new land disposal unit or the remediation of an existing land disposal unit.
Clean Water Act National Pollutant Discharge Elimination System	33 USC 1342 40 CFR 122	Requires permits for the discharge of pollutants from any point source into waters of the United States.

**NOTES:**

ARARs - applicable or relevant and appropriate requirements

CFR - Code of Federal Regulations

USC - United States Code

**Table 3. Proposed Container Plantings for El Estero Wetland Restoration  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Scientific Name	Common Name	Quantity	Container Size	Vegetation Type
<b>TREES</b>				
<i>Platanus racemosa</i>	western sycamore	30	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<i>Populus fremontii</i>	Fremont cottonwood	15	1 gallon	Palustrine Forest
<i>Quercus agrifolia</i>	coast live oak	10	1 gallon	Palustrine Forest in upland areas
<i>Salix lasiolepis</i>	arroyo willow	30	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<b>SHRUBS</b>				
<i>Baccharis pilularis</i> subsp. <i>consanguinea</i>	coyote bush	50	1 gallon	Palustrine Shrub Scrub Wetlands
<i>Baccharis salicifolia</i>	mulefat	15	1 gallon	Palustrine Shrub Scrub Wetlands
<i>Frangula californica</i>	California coffeeberry	20	1 gallon	Palustrine Shrub Scrub Wetlands
<i>Heteromeles arbutifolia</i>	toyon	20	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<i>Mimulus aurantiacus</i>	bush monkeyflower	20	1 gallon	Palustrine Shrub Scrub Wetlands
<i>Rosa californica</i>	California wild rose	30	1 gallon	Palustrine Shrub Scrub Wetlands
<i>Rubus ursinus</i>	California blackberry	30	1 gallon	Palustrine Shrub Scrub Wetlands
<i>Sambucus nigra</i> subsp. <i>caerulea</i>	blue elderberry	20	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<b>HERBACEOUS PERENNIALS</b>				
<i>Artemisia douglasiana</i>	mugwort	50	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<i>Bolboschoenus maritimus</i> subsp. <i>paludosus</i>	saltmarsh bulrush	100	plug/tube	Emergent Wetlands
<i>Calystegia macrostegia</i> subsp. <i>cyclostegia</i>	chaparral morning-glory	30	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<i>Clematis ligusticifolia</i>	creek clematis	30	1 gallon	Palustrine Forest and Shrub Scrub Wetlands
<i>Distichlis spicata</i>	salt grass	140	plug/tube	Emergent Wetlands and Grassland
<i>Elymus triticoides</i>	alkali rye	140	plug/tube	Emergent Wetlands and Grassland
<i>Juncus patens</i>	common rush	100	plug/tube	Emergent Wetlands
<i>Juncus textilis</i>	Indian rush	40	plug/tube	Emergent Wetlands
<i>Scirpus microcarpus</i>	small-fruited bulrush	100	plug/tube	Emergent Wetlands
<i>Schoenoplectus californicus</i>	California bulrush	200	plug/tube	Emergent Wetlands
<i>Typha domingensis</i>	southern cattail	50	plug/tube	Emergent Wetlands
Subtotal - 1 gallon container plants		400		
Subtotal - tubes or plugs		870		
<b>Total container plantings</b>		<b>1270</b>		

**Table 4. Proposed Seed Mix for Upland Grassland Areas  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Scientific Name	Common Name	Habit	Proportions	Pounds per acre
<i>Acemisson glaber [Lotus scoparius]</i>	deerweed	subshrub	9%	3
<i>Artemisia californica</i>	California sagebrush	shrub	9%	3
<i>Asclepias fascicularis</i>	narrow-leaf milkweed	perennial forb	5%	3
<i>Baccharis pilularis</i> subsp. <i>consanguinea</i>	coyote bush	shrub	9%	3
<i>Bromus carinatus</i>	California brome	perennial grass	15%	5
<i>Distichlis spicata</i>	salt grass	perennial grass	10%	5
<i>Elymus triticoides</i>	alkali rye	perennial grass	5%	2
<i>Isocoma menziesii</i> var. <i>menziesii</i>	coastal goldenbush	subshrub	5%	2
<i>Lupinus succulentus</i>	succulent lupine	annual forb	9%	3
<i>Stipa [Nassella] lepida</i>	foothill needlegrass	perennial grass	24%	8
<i>Stipa [Nassella] pulchra</i>	purple needlegrass	perennial grass		
<b>Total</b>			<b>100%</b>	<b>37</b>

**Table 5. Performance Criteria  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Tasks	Performance Criteria	Monitoring Frequency	Monitoring Findings	Actions
Invasive weed control in restoration areas	Weed cover in restoration areas shall remain less than 10% at all times. After five years, targeted invasive weed cover shall be zero.	Monthly in first year, quarterly in Years 2-5	Non-native weed cover less than or equal to 10%. Targeted invasive weed cover by highly invasive species (Cal-IPC ratings) is zero after weed eradication events.  Non-native weed cover greater than or equal to 10%. Targeted invasive weed cover by highly invasive species (Cal-IPC ratings) is more than zero after weed eradication events.	Continue monitoring; note any target weeds or new weed infestations encountered and inform weed crew.  Conduct additional weed eradication.
Erosion control and soil stabilization.	Substrate stable, no sedimentation into created wetlands.	At regularly scheduled monitoring events or at the discretion of the Restoration Manager.	Criteria met.  Destabilization of soils; sedimentation into created wetlands	Continue monitoring.  Repair or provide additional erosion control measures as needed.
Native plant cover in revegetation/restoration areas.	Native plant coverage will steadily increase, attaining 20% cover by Year 2, 25% cover of native species by Year 3, 50% cover of native species by Year 4, and 75% cover of native species by Year 5.	Annual quantitative monitoring.	Coverage by native species exceeds 20% by Year 2, 25% by Year 3, 50% by Year 4, and 75% by Year 5.  Coverage by native species is less than 20% by Year 2, 25% by Year 3, 50% by Year 4, and 75% by Year 5.	Continue monitoring.  Reseed and/or replant if establishment of native species and survival fall below expectations. For seeded areas, seed mix may be altered to facilitate success with agency approval. Plant cuttings and/or container plants in suitable locations.
Wetland species diversity	Comparisons will be made with reference sites for suitable native species diversity (within 60% of total native species observed in relevant reference sites by Year 3). At least three native species shall be present in restoration area by Year 3.	Year 1, 3 and 5	Native plant species diversity equals 60% of reference sites and includes at least three native species  Native plant species diversity is less than 60% of reference sites and includes fewer than three native species	Continue monitoring.  Plant appropriate native wetland plants that are not currently present in restoration areas.

<sup>1</sup>California Invasive Plant Council (Cal-IPC): California Invasive Plant Inventory, 2006.

**Table 6. Performance Criteria Measuring Methods  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Criteria	Measurement Methods
Reference Sites	<p>Intact vegetation corresponding to the habitats being restored (palustrine forests, shrub scrub wetlands and emergent wetlands) shall be sampled prior to initiation of restoration activities and in Year 5 using the following methods: two releves per habitat following CNPS protocol (2009) in which estimates of % cover and # individuals of all species is recorded along with bare ground. Photographs will also be taken of each site from the perimeter at each cardinal compass direction. Permanent stakes will be placed to mark the photomonitoring points.</p>
Restoration Area	<p>Each restoration area shall be sampled in Years 0 (prior to restoration), 3, and 5 using the following methods: two releves per individual restoration area following CNPS protocol (2009) in which estimates of % cover and # individuals of all species is recorded along with bare ground. Details on planted specimens, seeding, volunteers, and bare ground will be documented. Photographs will also be taken of each site from the perimeter at each cardinal compass direction. Permanent stakes will be placed to mark the photomonitoring points.</p>
Erosion	<p>Any area with the potential for sedimentation will be monitored using photo points, at the discretion of the Restoration Manager, both before and subsequent to remedial action.</p>
Weeds	<p>Vegetation sampling as described above will document weed cover. Record and map areas actually treated by various methods in each weed treatment area.</p>

**Table 7. Restoration Implementation and Monitoring Schedule  
Remedial Action Plan and Restoration Plan - El Estero Drain Project  
City of Santa Barbara, California**

Restoration Tasks	Year 1		Year 2		Year 3		Year 4		Year 5	
	F	W S Su								
Contour channel for wetland creation										
Install all modifications to support ongoing presence of Pacific pond turtle (culverts, ramps, rocks, basking logs, etc)										
Install erosion control measures										
Contract with native plant nursery for container grown plants										
Contract with seed collection company to obtain seed for restoration										
Identify areas to be restored by planting polygon and inventory all species present										
Flag all areas to be weeded and/or planted										
Weed eradication grow and kill										
Ongoing weeding										
Plant cuttings and/or container plantings in restoration areas										
Hydroseed grassland restoration areas										
Sample reference sites and restoration sites for background data										
Establish permanent photo points										
Photomonitoring										
Monitor: Qualitative Assessment ("Spot Check")										
Monitor: Comprehensive Quantitative Annual Survey										
Submit Annual Monitoring Report										

W = Winter; S = Spring; Su = Summer; F = Fall

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Legend

 Restoration Area

CITY OF SANTA BARBARA  
PUBLIC WORKS DEPARTMENT  
EL ESTERO DRAINAGE SWALE

SITE VICINITY MAP

 **ARCADIS** Design & Consultancy  
for natural and built assets

FIGURE  
**1**

Path: C:\Client\_Files\S-U\Santa Barbara City\El Estero\RAP Restoration\Plan\Figures\GIS\Projects\Fig 1 Site Map.mxd Date Saved: 12/17/2012 3:46:43 PM Doug Fischer



Legend

 Restoration Area

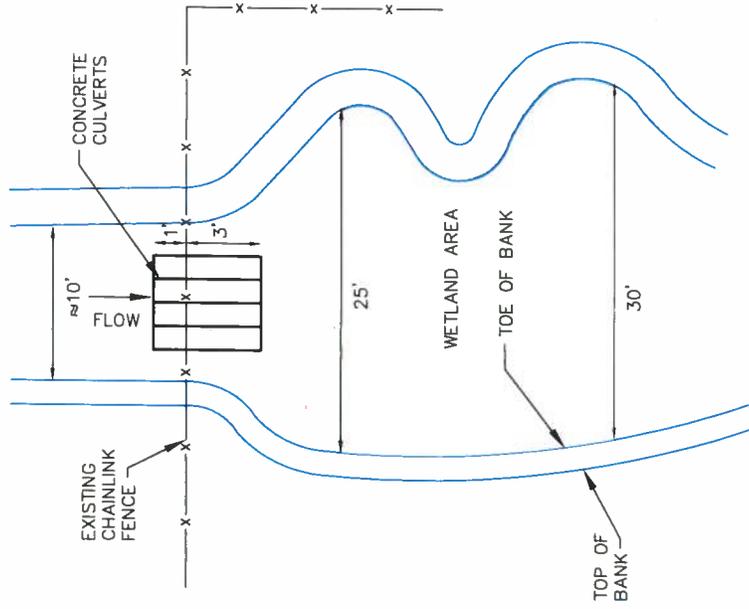
CITY OF SANTA BARBARA  
PUBLIC WORKS DEPARTMENT  
EL ESTERO DRAINAGE SWALE

SITE VICINITY MAP

 **ARCADIS** Design & Consultancy  
for natural and built assets

FIGURE  
**1**





**PLAN VIEW**

NOT TO SCALE

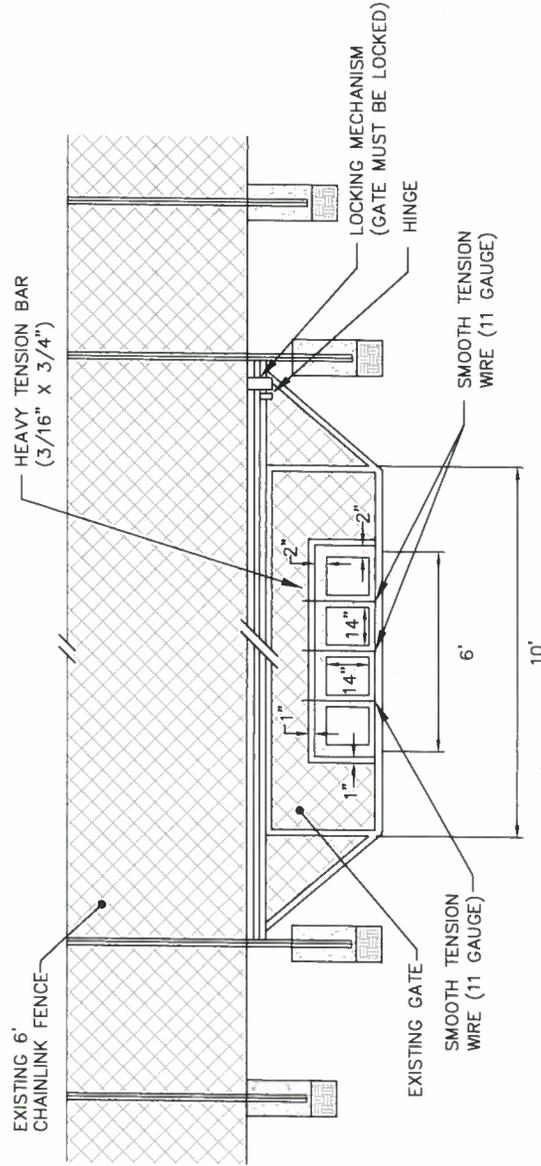
CITY OF SANTA BARBARA  
 PUBLIC WORKS DEPARTMENT  
 EL ESTERO DRAINAGE SWALE

MODIFICATIONS TO EASTERN  
 END OF CHANNEL

FIGURE



3



**CROSS SECTION**



**Legend**

- Access Road (Approx. 8 ft X 100 ft)
- Existing culvert
- Turtle ramp
- Approximate Lot Lines
- Existing Fence
- Existing manhole
- Proposed auto-sampler
- El Estero WWTP Outfall Line
- Sewer
- Estimated sewer position
- Estimated abandoned sewer
- Emergent Wetland
- Grassland
- Palustrine Forest
- Palustrine Scrub Shrub and Upland Transitional Scrub
- Coast Live Oak Tree (screening)
- Approximate Turtle Basking Area
- Deeper Turtle Pond Area

**Notes:**  
 All infrastructure locations are approximate and are not to be relied upon.  
 Aerial photograph: Google Earth, 8 February, 2016.



CITY OF SANTA BARBARA  
 PUBLIC WORKS DEPARTMENT  
 EL ESTERO DRAINAGE SWALE

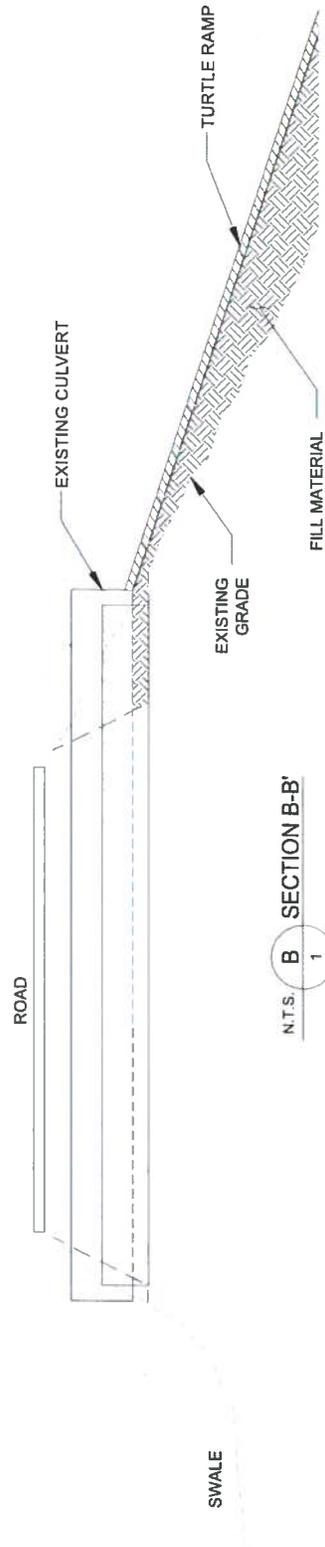
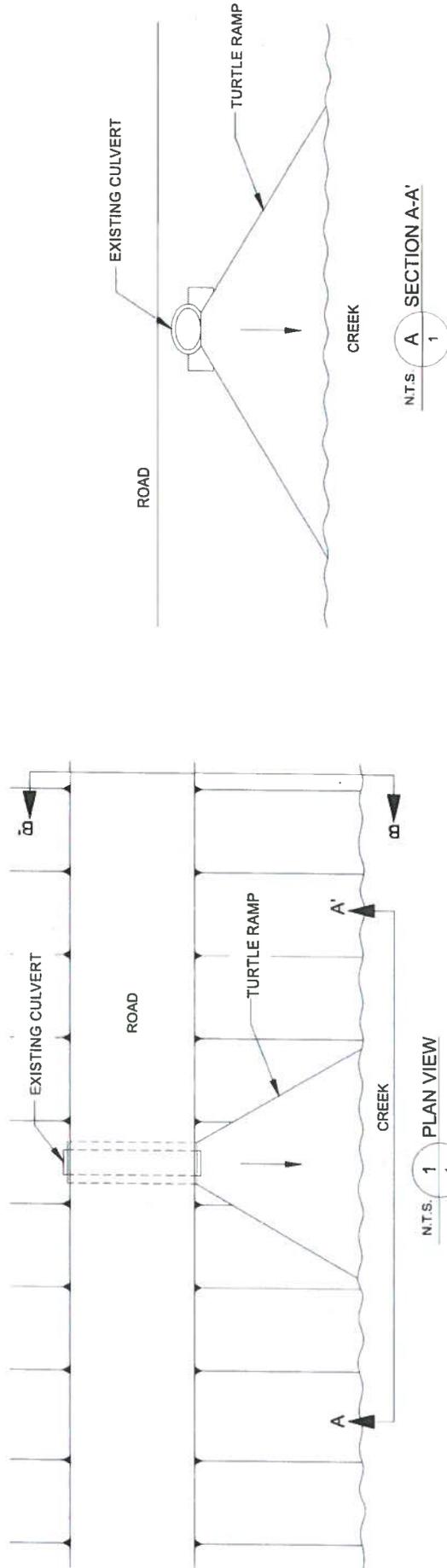
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RESTORATION PLANTING PLAN

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ARCADIS | 4

FIGURE

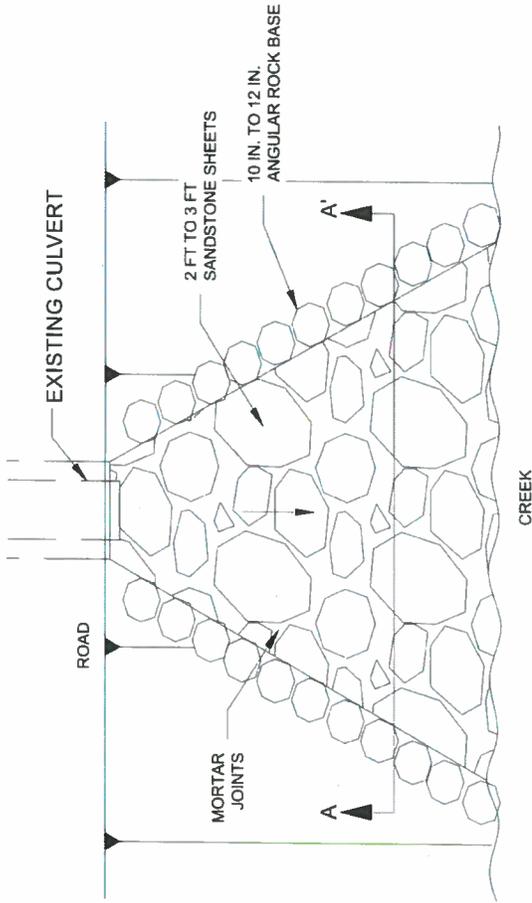


CITY OF SANTA BARBARA  
 PUBLIC WORKS DEPARTMENT  
**EL ESTERO DRAIN**

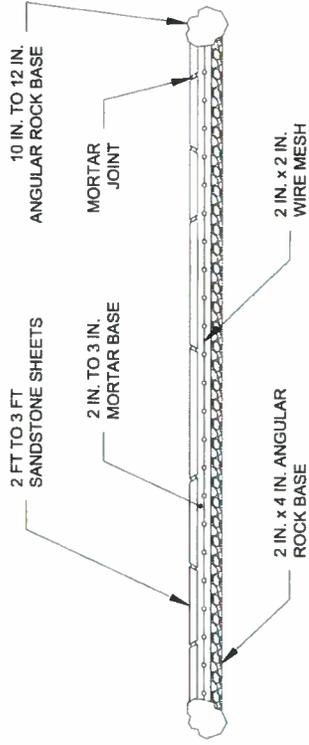
**TURTLE RAMP**

FIGURE  
**4a**





N.T.S. 1 PLAN VIEW  
2



N.T.S. A SECTION A-A'  
2

CITY OF SANTA BARBARA  
 PUBLIC WORKS DEPARTMENT  
 EL ESTERO DRAIN

TURTLE RAMP



FIGURE 4b

**El Estero Drain Substantial Conformance Determination Request:**  
***Updated Project Description***  
August 3, 2016

**Background**

In 2000, Coastal Development Permit MST99-00507 (CDP) was approved by the Planning Commission, per Resolution Number 029-00 at the El Estero Drain Project area, south of the El Estero Wastewater Treatment Plant (EEWWTP). The El Estero Drain Restoration Project (Project), the associated CDP, and the associated Mitigated Negative Declaration (MND) were approved to remedy impacts related to grading at the El Estero Drain, which included unpermitted work within a small area of emergent wetland and the Southwestern Pond Turtle (now referred to as the Pacific Pond Turtle) habitat. The original CDP specifically included restoring 0.06 acres (approximately 2,600 square feet) of emergent wetland habitat, which was a requirement of the United States Army Corps of Engineers (USACOE) due to the previously unpermitted grading at the site.

The Project included an increase of wetland area from 1,000 square feet to 4,160 square feet, and planting of wetland plants on the two 10-foot wide banks to create an additional 10,400 square feet of wetland area. The remainder of the 1.19 acre parcel was planned to become a buffer to be planted with riparian habitat. The Project included improved turtle access via a ramp from the new culvert to Laguna Channel, one to two feet of channel excavation to impound shallow water and create better quality turtle habitat, and channel widening to increase the total wetland area.

Implementation of the El Estero Drain Restoration Plan began on May 14, 2002, within two years of the original CDP approval date of July 6, 2000. Activities accomplished during the initial implementation included relocating the drainage area to the south of the parcel, backfilling the existing drainage with excavated soil, and re-grading the site. Approximately 400 cubic yards of excess soil were rejected as fill material by the County of Santa Barbara, based on the discovery of black-stained material and glass debris. As a result, the restoration work was halted, and a full site investigation to characterize the nature and extent of the contamination was initiated. The site was winterized with black plastic sheeting.

A Site Characterization Study was prepared by URS Corporation in 2003; however, the County Fire Protection Division required additional work to be done to evaluate the risk to human health and the environment. As a result, BBL/ARCADIS (ARCADIS) prepared a Final Site Characterization and Screening-Level Assessment and a Final Remediation/Restoration Technical Memorandum. It was determined that additional studies were required and, ultimately, a Revised Site Characterization and Risk Assessment report was approved by the County Fire Prevention Division on February 7, 2011.

Due to the discovery of contaminated soil at the site, the Public Works Department (Public Works) contracted ARCADIS to develop a Remedial Action Plan (RAP) based on the findings of the Revised Site Characterization and Risk Assessment Report. The RAP was submitted to County Fire Department, Fire Prevention Division (now County

Public Health Department), Hazardous Materials Unit, and Environmental Health Services on August 5, 2013, and the approval of this plan was received on January 7, 2014. This approval was set to expire on January 7, 2015; however, a one- year extension was granted. The approved plan includes removing soil from three hotspots and transporting it to an appropriate off-site facility. In order to limit exposure of additional subsurface contamination, the approved RAP includes leaving the remaining soil in place onsite.

In addition to the RAP, ARCADIS developed a Habitat Restoration Plan (HRP) to address completion of the tasks associated with the previously suspended habitat restoration under the original Project. The HRP includes creating emergent wetland and riparian habitat suitable for the Pacific Pond Turtle and is outlined in more detail throughout the following sections.

### **Current Proposed Project**

Previously, our request included project phasing to include future plans for restoration by the City's Creeks Division. Currently, the entire proposed plan in the attached RAP/HRP is proposed to occur in one singular Phase, as proposed in your SCD request response dated February 5, 2016.

The updated approach achieves the original purpose and intent of the previously approved CDP, with some minor modifications, as suggested in your February 5, 2016 letter. These modifications include: one additional turtle basking area at CSB-14, a southern turtle route through the existing culvert with a ramp, and .95 acres of total restoration to occur in one phase.

As described in your letter, Community Development staff found that the elevations as they currently exist can be found in substantial conformance as staff has determined that the required depth has already been accomplished, after reviewing as-built conditions and recent site surveys. Therefore, Public Works has made no changes in design to the depth of proposed excavation.

Community Development staff also determined that the proposed four rectangular culverts at the east boundary of the project site facilitate turtle passage while preventing trespassing and are therefore consistent with the original CDP.

Community Development staff also found that the proposed five foot tall chain link fence along the northerly boundary of the proposed restoration area could meet the intent of the approved project and could be in substantial conformance with the approved restoration plan.

### **Conclusion**

Public Works is requesting a determination of substantial conformance to proceed with the proposed phased version of the Project under the previously approved CDP from

2000. The original Project has been slightly modified, as described above, but continues to meet the remedial and ecological objectives, is protective of human and ecological health.

