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Hearing Date: 8/13/04
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-03-060

APPLICANTS: Santa Barbara County Flood Control District, The Santa Barbara Land Trust, and University of California, Natural Reserve System

AGENT: Karl Treiberg

PROJECT LOCATION: Carpinteria Salt Marsh, Santa Barbara County.

PROJECT DESCRIPTION: Implement flood control, marsh restoration, and public access projects: (1) construct berm and concrete floodwall to contain 100-year flood flows requiring approximately 6,500 cu. yds. (4,500 cu. yds. fill, 2,000 cu. yds. cut) of grading; (2) raise height of existing floodwall along Franklin Creek 2 feet; (3) construct permanent instream sedimentation basins on Franklin and Santa Monica Creeks to be dredged as-needed with a maximum 40,000 cu. yds. to be dredged in any one event; (4) modification of the mouth of the marsh by dredging a larger inlet channel to the Main Channel through berm removal, requiring approximately 10,125 cu .yds. of cut grading; (5) opening of marsh mouth as-needed; (6) one-time dredging of Basin 3 channels with a maximum of 17,300 cu. yds. of sediment removal; (7) new tidal connections and channels and wetland restoration in the South Marsh, requiring approximately 4,653 cu. yds. of cut grading; (8) new tidal connections and channels and wetland restoration in Basin 1, requiring approximately 12,234 cu. yds. of cut grading; (9) channel dredging in upper Basin 3 along Estero Way requiring approximately 900 cu. yds. of cut grading and replacement of six 36" culverts for tidal circulation between Basins 2 and 3; (10) lowering of berm in Basin 2 requiring 3,900 cu. yds. of cut grading; (11) dredging of maximum 6,200 cu. yds. from the Main Channel; (12) removal of four berms along the Main Channel requiring approximately 11,496 cu. yds. of cut grading; and (13) public access improvements including 1,200 ft. long path, bridge across Franklin Creek, interpretive stations, and signage.

MOTION AND RESOLUTION: Page 3.

SUMMARY OF STAFF RECOMMENDATION: The applicants have submitted a joint application within the Carpinteria Marsh for restoration, access, and flood control purposes. The flood control facilities would provide 100-year flood protection, including construction of a berm and floodwall primarily along existing berm and upland areas. A total of 0.09-acre of wetland fill would be required for flood control activities. Restoration activities include the construction of new tidal channels and inlets in the Basin 1 and

South Marsh areas, desiltation of the Main Channel and Basin 3, removal and/or reduction of berms, removal of exotic species and revegetation of saltmarsh wetland, transitional, and upland habitats. Public access improvements include a pedestrian bridge over Franklin Creek, a 1,200-foot path that connects with the Ash Avenue Nature Park trail, four interpretive stations, and signage.

Staff recommends **approval** of the proposed project with seventeen special conditions regarding: (1) revised plans, (2) timing of operations, (3) project responsibilities, (4) wetland mitigation, (5) flood control revegetation plan, (6) restoration planting plan, (7) sensitive species survey and monitoring, (8) herbicide, (9) erosion control, (10) disposal of excavated material and beach nourishment, (11) desilting/dredging plan, (12) plans conforming to geologic recommendations, (13) assumption of risk, (14) signage, (15) archaeological monitoring, (16) required approvals, and (17) permit expiration.

SUBSTANTIVE FILE DOCUMENTS: Draft Geotechnical Report, Carpinteria Salt Marsh Enhancement, Carpinteria, California (Fugro West, Inc., March 2004); Carpinteria Salt Marsh Enhancement Plan, Final EIR (Santa Barbara County, June 2003); Letter Report for Phase 1 Archaeological Survey, Carpinteria Salt Marsh Enhancement Plan (SAIC, December 22, 2003); Draft Report Carpinteria Salt Marsh Wetland Enhancement Plan for Basin 1 and the South Marsh (Moffatt & Nichol Engineers & SAIC, December 26, 2002); Investigation of Potential Borrow Material Basin 3, Carpinteria Marsh (GeoPentech, January 2002); Field Sampling and Geotechnical Evaluation, Channel Improvement and Wetland Enhancement Project, Carpinteria Salt Marsh, Carpinteria, California (Fugro West, Inc., October 1994);

APPROVALS: Santa Barbara County Conditional Use Permit Approval (Zoning Administrator, 9/15/03); Draft California Department of Fish and Game Streambed Alteration Agreement 5-2003-0052 (CDFG, 1/15/04);

EXHIBITS

Exhibit 1.	Vicinity Map
Exhibit 2.	Key Features of Carpinteria Marsh
Exhibit 3.	Ownership
Exhibit 4.	Flood Control Project Site Plans
Exhibit 5.	Restoration and Berm Removal Site Plans
Exhibit 6.	Public Access Improvement Plans
Exhibit 7.	Flood Wall Plans
Exhibit 8.	Berm Plan
Exhibit 9.	Floodwall Design
Exhibit 10.	Floodwall – Garden Area

I. STAFF RECOMMENDATION

MOTION: ***I move that the Commission approve Coastal Development Permit No. 4-03-060 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date. Other provisions affecting the permit term are set forth in **Special Condition Seventeen (17).**

3. **Interpretation.** Any questions of intent or interpretation of any term or condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Revised Plans/ Revised Project Description

A. Prior to issuance of the coastal development permit, the applicants shall submit, for the review and approval of the Executive Director, two (2) sets of final revised project plans. The revised final project plans and project description shall reflect the following:

1. Eliminate the pedestrian bridge proposed at the terminus of the Estero Way from berm "B2" to berm "B3" the project description and plans.
2. Revise *Flood Control Enhancement Plan* received February 5, 2004 to relocate the floodwall to the south to match the property line as shown in Exhibit 10 from approximately Stations 3+00 to 8+00.
3. The increased floodwall height along Franklin Creek shall be eliminated from the project plans, *Flood Control Enhancement Plan* received February 5, 2004, from the railroad (approx. Station 44+50) to the upstream terminus (Station 59+20), as this is not within the Commission's jurisdiction.
4. Revise *Flood Control Enhancement Plan* received February 5, 2004 to reflect the 12-foot berm width proposed in the *Flood Wall Plan*, received July 16, 2004.
5. Revise *Flood Control Enhancement Plan* received February 5, 2004 to eliminate the Franklin Creek Access & Stockpile Road area (from approx. Station 29+00 to 32+00) that overlaps the proposed Basin 1 tidal channel as shown on the *Land Trust Carpinteria Salt Marsh Enhancement Plan Basin 1 and The South Marsh* plans (page S-1).
6. Revise *Flood Control Enhancement Plan* received February 5, 2004 to eliminate the Franklin Creek Access & Stockpile Road area (from approx. Station 39+00 to 41+50) that overlaps the proposed Basin 1 restoration grading as shown on the *Land Trust Carpinteria Salt Marsh Enhancement Plan Basin 1 and The South Marsh* plans (page S-1).
7. Revise all project plans to show the final alignment of the Access and Stockpile Road Area for Franklin Creek and Santa Monica Creek. The applicants shall submit a more precise wetland delineation to verify that the proposed access roads do not require the removal of wetland vegetation. If this is not possible, the applicants must apply for an amendment to the CDP. The Access and Stockpile Road shall be a maximum of 50 feet wide, and where necessary, such as the terminus of the access roads, shall be of less width. Modify text on *Land Trust Carpinteria Salt Marsh Enhancement Plan Basin 1 and The South Marsh* as follows: Maintain 50' Wide (~~Min~~ Max) Structure for Flood Control Access.
8. Provide final project plans, including grading cross-sections, and specifications for the revised floodwall design (vinyl sheetpile).

9. Final bridge plans for the proposed pedestrian footbridge across Franklin Creek which shall verify that the span bridge would have no footings in or along the creek banks of the channel, nor require grading on the creek banks. The final plans shall be in substantial conformance with the preliminary plans as shown in the *Land Trust Carpinteria Salt Marsh Enhancement Plan Basin 1 and The South Marsh.*

10. The basalt column interpretive display shall be eliminated from the project plans as shown on the *Pathways, Materials, Layout and Grading Plan.*

11. The pathway shown on Sheet L1.1 on the *Pathways, Materials, Layout and Grading Plan* shall be relocated approximately 15-20 feet to the east along the existing disturbed flood control access and stockpile area.

B. All project development and operations shall be in compliance with the approved revised plans and all of the above provisions. No proposed changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. Timing of Operations

All project operations, including floodwall and berm construction, grading, dredging/desilting, vegetation eradication and removal, hauling, and annual maintenance shall occur between August 1 and February 28, to avoid impacts to the breeding birds, including Belding's savannah sparrow, light-footed clapper rail, and snowy plover.

3. Project Responsibilities

It shall be the applicants' responsibility to assure that the following occurs during project operations:

(a) The work area shall be flagged to identify limits of construction and identify natural areas off limits to construction traffic.

(b) No construction materials, debris, or waste shall be placed or stored where it may be subject to erosion and dispersion.

(c) Any and all debris resulting from construction activities shall be removed from the project area on a daily basis.

(d) No equipment shall be stored in the project area, including designated staging and/or stockpile areas, except during active project operations and consistent with sensitive resource timing constraints identified pursuant to **Special Condition Two (2)**.

(e) The temporary access bridge shall be removed immediately upon completion of the removal of berm "B1" as provided in the project description.

4. Wetland Mitigation

A. Prior to issuance of the coastal development permit, the applicants shall submit, for the review and approval of the Executive Director, a wetland habitat restoration plan subject to the following provisions. Said plan shall be prepared by a qualified biologist, ecologist, or resource specialist with experience in the field of restoration ecology, and with a background knowledge of the various habitats associated with the Carpinteria Marsh and the project site. The plan shall identify areas of disturbed or degraded wetland habitat of equivalent type and acreage sufficient to provide mitigation of the permanent wetland impacts at a ratio of 4:1 for the 0.09-acre of salt marsh habitat. The total area of created or restored saltmarsh required is 0.36-acres. The restoration plan shall include, at a minimum, the following information:

1. Clearly stated goals and objectives that provide for the establishment of functions and values at least equal to those occurring at the impact site.
2. Adequate baseline data regarding the biological and physical criteria for the restoration area.
3. Documentation that the project will continue to function as a viable restored wetland site, as applicable, over the long term.
4. Sufficient technical detail on the restoration design including, at a minimum, a planting program including removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the restoration base map, and maintenance techniques.
5. Documentation of performance standards, which provide a mechanism for making adjustments to the mitigation site when it is determined, through monitoring, or other means that the restoration techniques are not working.
6. Documentation of the necessary management and maintenance requirements, and provisions for timely remediation should the need arise.
7. A Monitoring Program to monitor the restoration. Said monitoring program shall set forth the guidelines, criteria and performance standards by which the success of the restoration shall be determined. The applicants shall submit, for the review and approval of the Executive Director, on an annual basis, for a period of five (5) years, a written monitoring report, prepared by a monitoring resource specialist indicating the progress and relative success or failure of the restoration on the site. This report shall also include further recommendations and requirements for additional restoration activities in order for the project to meet the criteria and performance standards. This report shall also include photographs taken from predesignated sites (annotated to a copy of the site plans) indicating the progress of recovery at each of the sites. At the end of the five year period, a final detailed report on the restoration shall be submitted for the review and approval of the Executive Director. If this report indicates that the restoration project has, in part, or in whole, been unsuccessful, based on the performance standards specified in the restoration plan, the applicants shall be required to submit a revised or supplemental program to compensate for those portions of the original program which were not successful. The revised

or supplemental program shall be processed as an amendment to this permit. During the five year monitoring period, all artificial inputs shall be removed except for the purposes of providing mid-course corrections or maintenance to insure the long term survival of the restoration site. If these inputs are required beyond the first two years, then the monitoring program shall be extended for every additional year that such inputs are required, so that the success and sustainability of the restoration is insured. The restoration site shall not be considered successful until it is able to survive without artificial inputs.

8. Documentation that the applicants have obtained all necessary rights from the property owner to access, use and maintain the mitigation site in compliance with all requirements of the restoration plan.

B. The above noted restoration plan shall be implemented by qualified biologists, ecologists, or resource specialists who are experienced in the field of restoration ecology as soon as practicable after the completion of construction of the floodwall and berm, taking into consideration the optimal timing for the planting of marsh. The monitoring plan shall be implemented immediately following the revegetation.

C. The Permittee shall undertake development in accordance with the final approved plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is required.

5. <u>Flood Control Revegetation Plan</u>

A. Prior to issuance of a coastal development permit, the applicants shall submit, for the review and approval of the Executive Director, two (2) sets of revegetation plans for all disturbed portions of the project area as a result of the construction of the floodwall and berm. Said plan shall be prepared by a qualified biologist, ecologist, or resource specialist with experience in the field of restoration ecology. The revegetation plan shall incorporate the following criteria:

1. The plan shall include detailed plans of the area of disturbance and identify the species, extent, location of all plant materials, and planting methods for all areas that will be temporarily impacted by construction activities.

2. All project areas, including both sides of the floodwall, shall be planted with locally native seeds or cuttings or native plants species endemic to the Carpinteria Marsh. Invasive, non-indigenous plant species, which tend to supplant native species shall not be used and invasive species shall be removed concurrent with periodic channel maintenance.

3. All graded and disturbed areas, including the Ash Avenue/Nature Park easement, and cut and fill slopes on the subject site shall be planted and maintained for erosion control purposes immediately upon completion of final grading for the floodwall and berm.

4. Plantings shall be maintained in good growing condition throughout the life of the project and, whenever necessary, shall be replaced with new plant materials to ensure continued compliance with applicable landscape requirements.

5. The plan shall specify the preferable time of year, consistent with the timing restriction described in **Special Condition Two (2)** above, to carry out the revegetation project and any potential time constraints. The monitoring program shall outline revegetation performance standards to ensure that such efforts are successful. The performance standards shall incorporate ground coverage and survival rates typical to similar habitats. The program shall be implemented to monitor the project for compliance with the specified guidelines and performance standards.

B. The applicants shall submit, on an annual basis for a period of five years beginning after the revegetation is completed, a written report prepared by a qualified resource specialist, evaluating the extent of the success or failure of the revegetation project. This report shall include further recommendations and requirements for additional revegetation activities in order for the project to meet the specified criteria and performance standards. These reports shall also include photographs taken from pre-designated sites (annotated to a copy of the site plans) indicating the progress of recovery at each of the sites.

C. The monitoring report shall be submitted annually to the Executive Director by August 1 of each year as well as to other public and federal, state, and local entities that wish to obtain such information.

D. At the end of a five year period, a final detailed report shall be submitted for the review and approval of the Executive Director. If this report indicates that the revegetation program has in part, or in whole, been unsuccessful, based on the approved performance standards, the applicants shall be required to submit a revised or supplemental program to compensate for those portions of the original program which were not successful. The Executive Director shall determine whether implementation of the revised or supplemental revegetation program will require an amendment to this permit.

E. The applicants shall implement and complete the revegetation immediately upon completion of final grading for the floodwall and berm. The Executive Director may grant additional time for good cause.

F. The Permittee shall undertake development in accordance with the final approved plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is required.

6. <u>Restoration Planting Plan and Specifications</u>

A. Prior to issuance of the coastal development permit, the applicants shall submit, for the review and approval of the Executive Director, two (2) sets of final planting plans and specifications in substantial conformance with the conceptual *Carpinteria Salt*

Marsh Wetland Enhancement for Basin 1 and the South Marsh report dated June 2004, including Appendix A *Examples from the Planting Specifications* and *Carpinteria Salt Marsh Wetland Enhancement Project Plans* received July 22, 2004. Said plans shall be prepared by a qualified biologist, ecologist, or resource specialist who is experienced in the field of restoration ecology, and who has a background knowledge of the various habitats associated with the Carpinteria Marsh and the project site. The plan shall be expanded to include restoration activities in Basins 2 and 3. The final plans shall include, at a minimum, the following information:

1. Sufficient technical detail on the restoration design including, at a minimum, a planting program including planting methods, weed control techniques, maintenance, and monitoring, removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the restoration base map, and maintenance techniques.
2. Documentation of the necessary management and maintenance requirements, and provisions for timely remediation, such as for erosion control, should the need arise.

B. The applicants shall implement the monitoring plan described in the *Carpinteria Salt Marsh Wetland Enhancement for Basin 1 and the South Marsh* report dated June 2004 and provide annual monitoring report. The applicants shall submit, for the review and approval of the Executive Director, on an annual basis, for a period of five (5) years, a written monitoring report, prepared by a monitoring resource specialist indicating the progress and relative success or failure of the restoration on the site. This report shall also include photographs taken from predesignated sites (annotated to a copy of the site plans) indicating the progress of recovery at each of the sites. At the end of the five year period, a final detailed report on the restoration shall be submitted for the review and approval of the Executive Director.

C. The restoration plans shall be implemented by qualified biologists, ecologists, or resource specialists who are experienced in the field of restoration ecology, taking into consideration the optimal timing for the planting of marsh. The monitoring plan shall be implemented immediately following the revegetation.

D. The Permittee shall undertake development in accordance with the final approved plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is required.

7. <u>Sensitive Species Surveys & Construction Monitoring</u>

The applicants shall retain the services of a qualified biologist(s) or environmental resource specialist(s) to conduct sensitive species surveys and monitor project operations. At least two (2) weeks prior to commencement of any project operations including any channel desilting event, the applicants shall submit the name and qualifications of the biologist or specialist, for the review and approval of the Executive Director. The biologist or specialist shall ensure that all project construction and operations shall be carried out consistent with the following:

1. The environmental resource specialist shall conduct a survey of the project site, to determine presence and behavior of sensitive species, prior to any project operations including floodwall and berm construction, grading, excavation, dredging/desilting, vegetation eradication and removal, hauling, and maintenance activities:

   (a) In the event that any sensitive wildlife species (including but not limited to tidewater goby, Belding's savannah sparrow, California least tern, western snowy plover, light-footed clapper rail) exhibit reproductive or nesting behavior, the environmental specialist shall require the applicants to cease work, and shall immediately notify the Executive Director and local resource agencies. Project activities shall resume only upon written approval of the Executive Director.

   (b) In the event that any sensitive wildlife species are present in the project area, which do not exhibit reproductive behavior and are not within the estimated breeding/reproductive cycle of the subject species, the environmental resource specialist shall either: (1) initiate a salvage and relocation program prior to any excavation/maintenance activities to move sensitive species by hand to safe locations elsewhere along the project reach or (2) as appropriate, implement a resource avoidance program with sufficient buffer areas to ensure adverse effects to such resources are avoided. The applicants shall also immediately notify the Executive Director of the presence of such species and which of the above actions are being taken. If the presence of any such sensitive species requires review by the United States Fish and Wildlife Service and/or the California Department of Fish and Game, then no development activities shall be allowed or continue until any such review and authorizations to proceed are received, subject to the approval of the Executive Director.

2. The environmental resource specialist shall be present during floodwall and berm construction, grading, excavation, dredging/desilting, vegetation eradication and removal, hauling, and maintenance activities. The environmental resource specialist shall require the applicants to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise. The environmental resource specialist(s) shall immediately notify the Executive Director if activities outside of the scope of Coastal Development Permit 4-03-060 occur. If significant impacts or damage occur to sensitive habitats or to wildlife species, the applicants shall be required to submit a revised, or supplemental program to adequately mitigate such impacts. Any native vegetation which is inadvertently contacted with herbicide or otherwise destroyed or damaged during implementation of the project shall be replaced in kind at a 3:1 or greater ratio. The revised, or supplemental, program shall be processed as an amendment to this coastal development permit.

8. Herbicide

Herbicides shall not be used within any portion of the stream channel as measured from toe of bank to toe of bank. Herbicide use shall be restricted to the use of Glyphosate Aquamaster™ (previously Rodeo™) herbicide for the elimination of non-native and invasive vegetation located within upland areas of the project site for purposes of habitat restoration only. The applicants shall remove non-native or invasive vegetation by hand (e.g., myoporum and castor bean shall be cut) and the stumps may be painted with Glyphosate Aquamaster™ herbicide. Herbicide application by means of spray shall not be utilized. No use of any herbicide shall occur during the rainy season (November 1 – March 31) unless otherwise allowed by the Executive Director for good cause. In no instance shall herbicide application occur if wind speeds on site are greater than 5 mph or 48 hours prior to predicted rain. In the event that rain does occur, herbicide application shall not resume again until 72 hours after rain.

9. Erosion Control Plan

A. Prior to issuance of a coastal development permit, the applicants shall submit, for the review and approval of the Executive Director, two (2) sets of erosion control plans to reduce erosion for all disturbed portions of the project area. The subject plan shall be prepared by a qualified engineer. The erosion control plan shall be reviewed and approved by the consulting engineering geologist to ensure that the plans are in conformance with the consultants' recommendations. The erosion control plan shall incorporate the following criteria:

1. The plan shall delineate the areas to be disturbed by grading or construction activities and shall include the areas disturbed during the construction of the floodwall and berm, the grading and excavation areas for restoration purposes, access roads, staging and stockpile areas. The natural areas on the site shall be clearly delineated on the project site with fencing or survey flags.

2. The plan shall specify that should grading take place during the rainy season (November 1 – March 31) the applicants shall install or construct temporary sediment basins (including debris basins, desilting basins or silt traps), temporary drains and swales, sand bag barriers, silt fencing, stabilize any stockpiled fill with geofabric covers or other appropriate cover, install geotextiles or mats on all cut or fill slopes and close and stabilize open trenches as soon as possible. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acre or less per 100 feet of fence. Silt fences should be inspected regularly and sediment removed when it reaches 1/3 the fence height. Silt fences shall never be placed on slopes. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.

3. Erosion control measures shall be required on the project site prior to or concurrent with the initial grading operations and maintained throughout the development process to minimize erosion and sediment from runoff waters during construction. All sediment should be retained on-site unless removed to an appropriate approved dumping location either outside the coastal zone or to a site within the coastal zone permitted to receive fill.

4. The plan shall also include temporary erosion control measures should grading or site preparation cease for a period of more than 30 days, including but not limited to: stabilization of all stockpiled fill, access roads, disturbed soils and cut and fill slopes with geotextiles and/or mats, sand bag barriers, silt fencing; temporary drains and swales and sediment basins. The plans shall also specify that all disturbed areas shall be seeded with native grass species and include the technical specifications for seeding the disturbed areas. These temporary erosion control measures shall be monitored and maintained until grading or construction operations resume.
5. All excavated material, including as-needed desilting, shall be contained within the designated access and stockpile sites. During dewatering, the site(s) shall be lined with silt fencing to prevent any silt from entering the creeks/channels/wetlands.
6. Minimize the area of bare soil exposed at one time (phased grading).
7. Clear only areas essential for construction.

B. The applicants shall undertake development in accordance with the final erosion control plans approved by the Executive Director. No proposed changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required. The applicants shall be fully responsible for advising construction personnel of the requirements of the Erosion Control Plan. Throughout the construction period, the applicants shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved Erosion Control Plan. The applicants shall repair or replace failed or inadequate BMPs expeditiously.

10. <u>Excavated Materials and Beach Replenishment Compatibility</u>

A. Chemical and physical (grain size) analyses shall be conducted of representative samples of **<u>all</u>** excavated material, including material from flood control projects, berm removal, and restoration grading, to determine its potential for use in beach replenishment. The source material shall be analyzed for consistency with the U.S. Environmental Protection Agency (EPA) and California Regional Water Quality Control Board (RWQCB) criteria for beach replenishment. The dredged material shall meet all applicable federal and state beach nourishment requirements and comply with the grain size requirements for the locations as cited below. Material meeting all applicable federal and state beach nourishment requirements shall be reserved for such use.

B. At least two (2) weeks prior to disposal of any excess excavated material, the applicants shall submit the results and supporting analysis of the chemical and physical properties of the source material, the location and method of disposal, and evidence that the location is an approved disposal location either outside the coastal zone or to a site within the coastal zone permitted to receive such fill.

C. Excavated material meeting EPA and Regional Water Quality Control Board criteria for beach replenishment may be deposited in the surfzone along the beach south of Del Mar Avenue in accordance with project plans shown in Exhibit 4. The applicants shall submit confirmation by the California Regional Water Quality Control Board that the material proposed for beach replenishment meets the minimum criteria necessary for placement on the sandy beach.

D. Excavated material that does not meet the physical or chemical standards for beach replenishment or spoil discharge shall not be discharged at the surfzone deposition site.

E. Permanent stockpiling of material on site shall not be allowed. Sediment shall be retained at the designated temporary stockpile areas for dewatering, up to three months, until removed to an appropriate approved disposal location either outside the coastal zone or to a site within the coastal zone permitted to receive such fill.

11. Desilting/Dredging Program

If the applicants present evidence to the Executive Director's satisfaction that the flood control capacities have been reduced by 20% or more due to sediment deposition, the Executive Director may authorize desiltation of Franklin Creek and/or Santa Monica Creek in subsequent years subject to all applicable conditions of this permit.

12. Plans Conforming to Geologic Recommendations

Prior to issuance of the coastal development permit, the applicants shall submit, for review and approval by the Executive Director, evidence of the consulting geotechnical engineer's review and approval indicated on two (2) sets of signed and stamped project plans for all flood control improvements, including floodwall and berm construction. The final plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission relative to foundations, construction, grading, and drainage and consistent with all recommendations contained in the submitted geologic reports, prepared by Fugro West, Inc.: Draft Geotechnical Report, Carpinteria Salt Marsh Enhancement, dated March 2004, and Field Sampling and Geotechnical Evaluation, Channel Improvement and Wetland Enhancement Project, dated October 1994, as well as in all reports referenced therein. Any substantial changes in the proposed development approved by the Commission that may be required by the consultant shall require an amendment to the permit or a new Coastal Development Permit.

13. Assumption of Risk, Waiver of Liability and Indemnity Agreement

A. By acceptance of this permit, the applicants acknowledge and agree to the following:

(a) The applicants acknowledge and agree that the site may be subject to hazards from liquefaction, storm waves, surges, erosion, flooding, and wildfire.

(b) The applicants acknowledge and agree to assume the risks to the applicants and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development.

(c) The applicants unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards.

(d) The applicants agree to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

B. Prior to issuance of the coastal development permit, the applicants shall submit a written agreement, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition. This written agreement shall not be modified without a Commission amendment to this coastal development permit.

14. Signage Program

Prior to the installation of the proposed interpretive and directional signage on site, the applicants shall submit, for the review and approval of the Executive Director, plans showing the location, size, design, and content of all signs to be installed.

15. Archaeological Resources and Monitoring

By acceptance of this permit, if project activities are undertaken within an area known to have archaeological resources, the applicants agree to have a qualified archaeologist(s) and appropriate Native American consultant(s) present on-site during all desilting/dredging, grading, or other ground-disturbing activities which occur within or adjacent to the archaeological site(s) in the project area. Specifically, if required as described above, the project operations on site shall be controlled and monitored by the archaeologist(s) with the purpose of locating, recording and collecting any archaeological materials. Alternately, under the direction of a qualified archaeologist and/or appropriate Native American consultant, the applicants may implement alternative techniques designed to temporarily protect such resources (e.g., placing temporary cap material in accordance with accepted protocols for archaeological resource protection). In the event that any significant archaeological resources, including Native American remains, are discovered during operations, all work in this area shall be halted and an appropriate data recovery strategy be developed, subject to review and approval of the Executive Director, by the applicants' archaeologist and the native American consultant consistent with CEQA guidelines.

16. Required Approvals

Prior to issuance of the coastal development permit, the applicants shall provide all necessary state and federal permits and/or approvals (including the National Marine Fisheries Service, California Department of Fish and Game, California State Lands Commission, Regional Water Quality Control Board), with the exception of Army Corps of Engineers as provided below, for all aspects of the project described in CDP 4-03-060 or evidence that no authorization is required, for the review and approval of the Executive Director. The submittal shall include a list of all required state or federal

discretionary permits and associated expiration dates for the development herein approved. The applicants shall submit copies of the permits and inform the Executive Director of any changes to the project required by such permits. Such changes shall not be incorporated into the project until the applicants obtain a Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

Within 60 days of the issuance of the Coastal Development Permit, the applicant shall provide the Executive Director of the Commission with a valid 404 Permit or other authorization if required, from the U.S. Army Corps of Engineers for the project. The Executive Director may extend this time for good cause.

17. Permit Expiration

Authorization for the operations granted pursuant to CDP 4-03-060 shall expire five years from the date of Commission action. Any dredging/desilting, marsh mouth opening, sediment transport, or maintenance activities after the expiration of this permit will require the issuance of a new coastal development permit.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. PROJECT DESCRIPTION

The project includes flood control activities, restoration and enhancement of Carpinteria Marsh, and some limited public access improvements in Basin 1 with various aspects of the project to be implemented by the Santa Barbara County Flood Control District, University of California or Land Trust for Santa Barbara County. All activities expected to occur in Carpinteria Marsh are addressed in the subject application regardless of the agency or group. While the primary changes are related to the flood control portion of the project, restoration/enhancement actions may or may not be part of the channel improvements funded by the District. A certain amount of restoration would be required as mitigation for project impacts related to flood control to biological resources.

1. Floodwalls and Berms

The flood control components are intended to increase the channel capacity of the Franklin and Main channels by constructing berms and floodwalls to contain 100-year flood flows. The creek channels through the Marsh would be modified into instream sedimentation basins to be desilted, as-needed, to complement channel widening and berm and floodwall construction. The applicants propose the construction of floodwalls and a berm along Franklin Creek as follows (see Exhibit 4):

FC1 Floodwalls would be constructed along the existing concrete-lined channel of Franklin Creek. The floodwall would be 1 ft. high at Carpinteria Avenue and would increase to 3 ft. high at 7th Street along both banks. The floodwall would be 3 ft. high from 7th Street to the UPRR bridge on both banks. The floodwall would be 2

ft. high from the UPRR bridge downstream approximately 350 ft. to the end of the concrete wall along the east bank only.

FC2 A berm would be constructed to an elevation of 10 ft. MSL from the end of the concrete channel along the east bank of Franklin creek to the Sandyland Cove Road Bridge, a distance of approximately 1,470 ft. The berm would be approximately 1-3 ft. higher than the existing grade with 2:1 slopes and a 12 ft. to 20-ft. wide earthen access road along the top. Approximately 4,300 cu. yds. of material would be used to construct the berm. This material would be obtained on-site from sediment found suitable for upland disposal.

FC3 A floodwall would be constructed to an elevation of 9 ft. MSL beginning on the west side of the Sandyland Cove Road from the bridge to Del Mar Avenue. It would be constructed to an elevation of 9 ft. MSL along the north side of Del Mar Avenue from Sandyland Cove Road to the existing rip-rap at the inlet. The floodwall would be vinyl sheetpile with redwood facing. The floodwall would be 3-5 ft. above the existing grade, would require approximately 2,000 cu. yds. of cut, and would be designed to accommodate interior drainage from the adjacent residential area. A 100-ft. long, 9 ft. MSL berm would be constructed at the terminus of the floodwall to allow pedestrian access. The berm would require about 200 cu. yds. of fill. This floodwall will serve to contain floodwaters from Franklin and Santa Monica Creeks draining into the Main Channel.

2. Mouth Modification and Opening

A Tidal Inlet Study was completed by Moffatt & Nichols Engineers (2000a) to assess existing conditions at the mouth of the marsh. The mouth is proposed to be modified as shown in Exhibit 5b by dredging out a new, larger inlet channel to the Main Channel through an existing material stockpile located at the west end of Del Mar Avenue (refer to the discussion of B4 below). The new channel would lie approximately where the relic main channel from the east portion of the marsh was located between 1929 and 1967.

In addition, the mouth of the marsh may be opened as deemed appropriate by CDFG, USFWS, NRCS, and the Flood Control District. Depending on the conditions, this would typically be done with dozer/loader. The mouth of the marsh has not closed for any length of time for several years. The applicants assert that the proposed mouth modification would increase the tidal prism in the marsh and would probably help keep the mouth open naturally.

3. Creek Dredging & Instream Sedimentation Basins

The County proposes to construct two instream sedimentation basins to be dredged on an as-needed basis, requesting CDP duration for at least 10 years (see Exhibit 4):

Franklin Creek

D1 On an annual or as-needed basis (typically every 3 to 5 years), sediment would be removed from the end of the concrete channel downstream approximately 1,500 ft., with a width ranging 30 to 65 feet, to establish an instream sedimentation basin. The target elevation is approximately -4 MSL, or 3 ft. lower

than the concrete channel immediately upstream. Sediment volumes to be removed range from approximately 3,000 cu. yds. to 20,000 cu. yds. Sediment would be temporarily stockpiled on the access road for dewatering. Silt fencing would be placed along the access road to contain the recently removed sediment.

Santa Monica Creek

D2 On an as-needed basis (typically every 3 to 5 years), sediment would be removed from the UPRR bridge downstream approximately 1,500 ft., with a width ranging 40-60 feet, and typical width of approximately 45 ft., to establish an instream sediment trap. This would be done with a crane rigged with a dragline. The target elevation is -4 MSL, or approximately 4 ft. lower than the concrete channel immediately upstream. Sediment volumes to be removed range from approximately 3,000 cu. yds. to 20,000 cu. yds. Sediment would be temporarily stockpiled on the access road for dewatering. Silt fencing would be placed along the access road to contain the recently removed sediment.

Access Roads

There is a dirt access road on an existing berm along the west side of Santa Monica Creek. There is also a dirt access road along the west side of Franklin Creek. The applicants propose to utilize these access roads to a standard width of 50 feet in order to stockpile material and accommodate Flood Control District access for dredging. No grading is proposed.

4. <u>Berm Removal</u>

Several berms along the creeks within Carpinteria Marsh are at elevations that do not support salt marsh plants/habitat. Many of the berms were created by leftover spoils associated with channel desilting and improvements prior to the Coastal Act. Some of these berms can be lowered to elevations conducive to supporting salt marsh plants/habitat. Berm spoils would be hauled to suitable upland disposal sites or to the beach if they were compatible with the receiving beach sediments. The applicants propose modification of five berms as follows (see Exhibit 5):

B1 This berm is located at the south side of Basin 3 immediately west of the Estero Way terminus at approximately station 5+00 to 7+00. The current elevation is approximately 7 ft. MSL and the berm would be lowered to 3 ft. MSL. Access would be taken from the terminus of Estero Way across a temporary bridge (likely an old rail car). Approximately 650 cu. yds. would be removed and hauled to a suitable disposal site.

B2 The southern end of the Estero Way terminus would be lowered to an elevation of approximately 0 ft. MSL to create intertidal/pickleweed habitat. The area to be lowered is approximately 250 ft. L x 100 ft. W x 6 ft. H. Approximately 5,500 cu. yds. would be generated and hauled away to a suitable disposal site. Access would be taken from Estero Way.

In addition, a bridge is proposed to link the terminus of Estero Way with the berm along the south side of Basin 2 in order to allow pedestrian access for research. The approach to the bridge would be at approximately 7 ft. MSL at both the Estero Way terminus and at the berm. An old rail car would likely be used to bridge the 50-ft. span across the channel.

B3 This berm is located at the south side of Basin 2 immediately east of the Estero Way terminus at approximately station 10+50 to 19+00. The current elevation is approximately 7 ft. MSL and the berm would be lowered to 5 ft. MSL. Access would be taken along the existing berm on the west side Santa Monica Creek. Approximately 2,100 cu. yds. would be removed and hauled to a suitable disposal site.

B4 This is an area of old spoils located at the west end of Del Mar Avenue. The spoils would be removed as part of the mouth modification described above, and the area would be restored consistent with recommendations made for the Basin 1 Plan. The area to be restored is approximately 240 ft. L x 120 ft. W and would extend from the old material stockpile to the garden currently located in the South Marsh. Access would be from Del Mar Avenue. Approximately 10,125 cu. yds. of material would be generated; a portion of the dredged material would be used for dune construction, and the remainder would be pumped to the beach.

B5 This berm is located at the south side of the Main Channel at approximately station 15+00 to 24+00. The current elevation is approximately 7 ft. MSL and the berm would be lowered to 4.5 ft. MSL. Access would be taken from Sandyland Cove along this same berm. Approximately 3,246 cu. yds. would be removed and hauled to a suitable disposal site.

All of the berms to be modified would be restored consistent with recommendations in the *Carpinteria Salt Marsh Wetland Enhancement for Basin 1 and the South Marsh* and the accompanying *Planting Plans*.

5. Restoration

Restoration and enhancement activities include the construction of new tidal channels and inlets in the Basin 1 and South Marsh areas, desiltation of the Main Channel and Basin 3, removal of exotic species and revegetation of saltmarsh wetland, transitional, and upland habitats. Public access improvements include a pedestrian bridge over Franklin Creek, a 1,200-foot path that connects with the Ash Avenue Nature Park trail, four interpretive stations, and signage. Restoration details are provided below (see Exhibits 5-6):

R1 Basin 1 is a 21.9-acre portion of the marsh bounded by Franklin Creek to the east and south, Santa Monica Creek to the west, and the UPRR to the north. The basin is divided by Sandyland Cove Road, which separates approximately 4 acres of the western marsh adjacent to Santa Monica Creek from the remaining 17 acres. Basin 1 is partially degraded due to past fill activities and lack of tidal circulation. The average elevation is 4.5 feet for the majority of the basin, with

slightly higher elevations along the northern boundary. Pickleweed (*Salicornia virginica*) is present along the southern portion of the basin and some marsh/upland transitional vegetation is in the middle portion of the basin. Although some native vegetation exists, non-natives such as iceplant (*Carpobrotus edulus*) and miscellaneous weeds are also present.

Planned improvements to Basin 1 consist of increasing wetland habitat area in Basin 1, providing new tidal connections to Franklin and Santa Monica creeks, removing exotic vegetation, and improving the quality of upland habitat. Two new tidal connections would be made to Franklin Creek east of Sandyland Road. The connection closest to the Sandyland Cove Road bridge would be an open channel constructed by enlarging an existing small remnant channel, and the second connection would be a new culvert under the west Franklin Creek levee across from the upstream culvert to the Nature Park. Two new tidal channels would traverse Basin 1 between the new tidal connections. A third channel with two new connections would be constructed west of Sandyland Cove Road. This is an existing relic channel that would be maintained, cleared of vegetation, deepened, and widened. The surface of Basin 1 between and adjacent to the new tidal channels would be left ungraded to preserve existing marsh vegetation. New wetland habitat would be created at the southwest tip of Basin 1 by lowering the ground to create elevations suitable for pickleweed. These restoration actions would require the removal of approximately 12,234 cu. yds. of material. Flood control access and working areas along and adjacent to the west Franklin Creek levee will remain.

The toe of the east Franklin Creek flood control levee will be improved by removing soil that sloughed off of the levee to its toes, and placing it back on the levee. The cleared toe area will be planted with pickleweed to be incorporated into the Nature Park Marsh. The levee crest and side slopes will be cleared of weeds and planted with native vegetation for stabilization and habitat enhancement.

The Land Trust proposes to implement several site improvements in a portion of Basin 1 to provide passive recreational and educational opportunities in a manner consistent with protecting the site's value as wildlife habitat. These improvements feature a pedestrian footbridge crossing Franklin Creek from the Nature Park, an approximately 1,200-foot long, 3-foot wide decomposed granite or gravel path, and four interpretive stations featuring the salt marsh, fresh water marsh, upland environments, and their inhabitants. The project also includes limited signs and fencing to discourage public crossing of the railroad tracks and trespass on adjacent private roads and residential areas.

The footbridge would connect the proposed trail system with existing pathways in the Nature Park. It would be pre-manufactured, with a wood decking and a locking gate to eliminate public access when necessary (i.e., during severe flood conditions), and it would be designed to be removed by crane during flood

control operations. It would require no footings in or along the banks of the channel.

The 1,200-foot long path would be located and designed to avoid impacts to sensitive wetland and upland vegetation and to avoid impacts from heavy equipment used during sediment removal and berm maintenance activities. It would be located in the already-disturbed area at the edge of the flood control berm along Franklin Creek and along the edge of the flood control access road that parallels the railroad tracks.

At key locations, barrier plantings of native vegetation, signs, and low fencing may be used to channel visitors away from areas not intended for public use. Signs and fencing would be kept to a minimum and no lighting will be installed. Temporary fencing would be required in restoration areas adjacent to the path until the plantings are established. A sign at the western end of the path, as it veers from the flood control access road, would warn visitors that the trail ends there and public access is prohibited beyond that point. A gate would be installed at the junction of the flood control road and Sandyland Cove Road to prevent unauthorized vehicle access to Basin 1. A 6-foot-high chain link fence would be installed along the railroad right-of-way to discourage people from crossing to or from Basin 1.

Four wildlife and plant viewing areas, with low profile interpretive signs and features, would be created so that the public can have non-intrusive access to representative middle salt marsh, fresh water marsh and upland habitats that occur in this part of the Carpinteria Salt Marsh. This area is representative of what existed around the historic, much larger estuary edge before it was developed. Low profile interpretive signs and features would be designed for locations near the periphery of Basin 1.

A Habitat Management Plan has been prepared to enhance the habitats of Basin 1 and South Marsh (see R3) and increase their ecological functions. The plan includes measures to enhance salt marsh, upland, transitional, and brackish/freshwater marsh habitats; remove non-native species; and control weeds. Establishment of rare species is an optional task. A Monitoring Plan for the Basin 1 and South Marsh (R3) restoration actions has been proposed and includes maintenance-related inspections and performance monitoring.

R2 Excessive sedimentation in the main channels within Basin 3 has severely restricted tidal circulation. The sediment consists primarily of ocean-derived sands that are transported into Basin 3 during flood tides and high waves. There is not adequate energy associated with ebb tides to suspend and transport this sediment back to the ocean. Therefore, the applicants are proposes to remove some of this sediment to ensure proper tidal circulation within Basin 3.

A hydraulic dredge can be used to excavate the main channels within Basin 3 to an elevation of approximately -2 ft. MSL. The excavation would occur from the existing cobble bar near the mouth of the marsh and continue upstream until the elevation of the intertidal channel is matched at approximately -2 ft. MSL. It is estimated that approximately 17,300 cubic yards of sediment would be removed and used for beach nourishment.

R3 The area south of the Main Channel and west of Sandyland Cove Road is known as South Marsh. This is somewhat degraded wetland and upland habitat. The area is bordered by Del Mar Avenue along its south edge, while the tidal inlet to Carpinteria Marsh borders its west end. Improvements consist of increasing wetland habitat area, providing new tidal connections and channels, removing exotic vegetation, and improving the quality of upland habitat. These actions would require approximately 4,653 cu. yds. of cut.

R4 The Estero Way Extension and the adjacent channels currently require some restoration. The channel located to the west and north of Estero Way has reduced capacity due to sedimentation. Using a Gradall, approximately 2 ft. of sediment would be removed from the channel inlet immediately downstream of the railroad tracks to the inlet along the west side of Estero Way. Approximately 50 ft. of the channel at the bend would not be desilted to maintain habitat for fiddler crabs. It is believed that the invert of the channel at the bend would adjust with the lowered channel upstream and downstream but would provide a refuge for fiddler crabs during desilting. Approximately 1,200 ft. of the channel would be desilted, which would generate 900 cu. yds. of material that would be deposited at a suitable disposal site.

The 36-inch CMP culverts under the Estero Way Extension would be replaced with the same diameter plastic pipe. Of the six culverts, one or two already have been replaced. The current pipes are very degraded and are likely to fail completely in the near future. The pipes are necessary for tidal circulation between Basins 2 and 3.

R5 The easterly edge of Basin 2 adjacent to the berm along the west side of Santa Monica Creek is approximately 1.5 ft. higher than the remainder of the basin. The edge of the basin would be lowered to an elevation consistent with the rest of the basin. Approximately 3,900 cu. yds. of material would be generated and the material would be deposited at a suitable disposal site.

R6 This section of the Main Channel has ocean-derived sediments in it. Using a hydraulic dredge, the material would be removed to an elevation of approximately -2 ft. MSL in the vicinity of station 7+00 to 13+00. Approximately 6,200 cu. yds. of material would be removed and discharged into the surfzone. This would be done concurrent with Basin 3 desilting.

Most of the exotic vegetation present in areas to be restored would be removed by mechanical methods. It is possible, however, that spot application of herbicides may be used on a very limited basis, both during initial restoration activities and during maintenance. Crews using a spray nozzle and a backpack unit would apply herbicides. Plants would be sprayed with a hand-held spray wand. Only vegetative material would be sprayed; herbicide would not be applied to open water. All state and federal requirements to ensure public safety and environmental protection would be observed, as well as the District's Standard Maintenance Practices related to herbicide treatment. Aquamaster™ would be used when there is open water in proximity to the plants to be treated. Aquamaster™ is registered for use on aquatic plants in open water conditions and in aquatic settings (EPA Registration No. 524-343; see also EPA's Material Safety Data Sheet for the product). This substance is non-toxic to fish and aquatic organisms at recommended application rates.

6. General

Sediment Disposal

All sediment would be disposed of in conformance with regulatory standards. Although a preliminary geotechnical report (Fugro West, Inc. 1994) indicated that the material in Santa Monica and Franklin creeks would not be suitable for discharge in the surf zone because it is too fine, the Flood Control District would take additional sediment samples of the material within the creeks after significant sediment deposition and at the surfzone, including offshore samples, to better evaluate the creek material for discharge into the surfzone. If the material is deemed suitable for surf zone disposal, then a hydraulic dredge would be used to conduct the channel desilting. Basin 3 sediments are considered suitable for beach nourishment, although chemical compatibility analyses would be performed in compliance with regulatory standards prior to dredging. The applicants propose to determine land-based disposal options at the time of sediment removal and most likely would include use by local farmers. Sediment would not be disposed of at the Tajiguas Landfill unless it was needed as cover material.

Sediment determined to be appropriate for beach nourishment would be deposited at a site along Del Mar Avenue. Access would be obtained on top of the rip-rap along the east side of the mouth of the marsh.

Construction Timing

Several variables must be considered when scheduling channel improvements. Scheduling channel desilting to minimize impacts to benthic fauna and fish is desirable. According to researchers at the University of California, Santa Barbara's (UCSB) Marine Science Institute, the most desirable time to conduct desilting would be in February and March. This would precede or slightly coincide with the arrival of certain fishes as well as invertebrates in their larval stage. In addition, this would allow removal of sediments that arrive during the winter rains.

Note, **Special Condition One (1)** requires the elimination of a portion of the proposed flood control improvements provided in the project description (see Project Description "FC1") and on the project plans which are not located within the Commission's

jurisdiction. Therefore the increased floodwall height along Franklin Creek shall be eliminated from the project plans, *Flood Control Enhancement Plan* received February 5, 2004, from the railroad (approx. Station 44+50) to the upstream terminus (Station 59+20).

B. PROJECT LOCATION AND BACKGROUND

Carpinteria Salt Marsh is a 230-acre estuary located in Santa Barbara County adjacent to the City of Carpinteria (Exhibit 1-2). Santa Monica and Franklin Creeks are located in the eastern portion of the Carpinteria Salt Marsh. The Marsh is undeveloped with the exception of Sandyland Cove Road and berms that have been placed along the banks of the creeks. The area between Franklin and Santa Monica creeks is bisected by north-south trending Sandyland Cove Road, a paved, two-lane road that provides access to the residences along Del Mar Avenue. Of the 230 acres, 120 acres belongs to the University of California Natural Reserve System, 34 acres are owned by the Land Trust, and the Flood Control District owns a 1.5-acre parcel located west of Sandyland Cove Road and a linear strip along the east side of Basin 1 (Exhibit 3). The remainder is owned privately by various entities, such as a 38-acre parcel owned by the Sandyland Protective Association.

Land uses to the north of Carpinteria Marsh include the Union Pacific Railroad tracks and U.S. Highway 101, condominiums, and Aliso School. Single family residences lie to the south and west; a mobile home park and the Carpinteria Salt Marsh Nature Park lie to the east, and open space is west of the Marsh.

There was significant flooding in the Carpinteria Valley in the 1960s due to a combination of large winter storms, fires in the upper watershed, sediment-laden streams, and poor channel capacity in the estuary. As a result, the Carpinteria Valley Watershed Protection Program (CVWPP) was developed in 1968 by the Soil Conservation Service and its local sponsors, the Flood Control District and City of Carpinteria. The CVWP has been completed except for the proposed flood control projects proposed in this application. The completed CVWP work includes 5.7 miles of concrete-lined channels on Franklin and Santa Monica creeks. Debris basins were also constructed on each creek.

The project site has been subject to past Commission action. On May 15, 1998, the California Coastal Commission granted to the County of Santa Barbara Flood Control District, Coastal Development Permit 4-98-022 to Remove 30,000 cu. yds. of sediment from Franklin and Santa Monica Creeks within the Carpinteria Salt Marsh, to follow up emergency actions. Staff concluded that "the proposed project is within the previously modified (realigned, shaped, and dredged) lower portions of Franklin and Santa Monica Creek, is necessary for public safety and to protect existing development, and provides significant protection for the larger Carpinteria Salt Marsh." The approval was subject to 4 conditions regarding waiver of liability and evidence of a U.S. Army Corps of Engineers permit, California Department of Fish and Game Streambed Alteration Agreement, and State Lands Commission authorization.

Other past actions include approval of exotic vegetation and revegetation projects (4-02-123-X, 4-98-113-X, and 4-02-256) within the Marsh. Similarly, the Commission approved Coastal Development Permit 4-96-111 for the adjacent Carpinteria Salt Marsh Restoration Plan, Ash Avenue Properties Implementation Plan to remove about 24,000 cubic yards of fill, enhance tidal circulation, create a range of salt marsh and upland habitat, create new tidal channel, construct two tide gates, restore coastal dune habitat, construct an interpretative center, amphitheater, overlook area, and trails.

There is a history of desilting activity in Carpinteria, as summarized by the Flood Control District in its March 9, 2004 correspondence:

> ***The most recent desilting occurred in 1998. Cranes working from the top of the east bank of both Franklin and Santa Monica Creeks removed recently deposited sediment using a dragline. The material was stockpiled between silt fencing in the areas identified as "access & stockpile" areas on the plans already provided to you. The material was allowed to dewater (typically 2-3 weeks but could be longer if rains) and then hauled to an upland disposal site. Approximately 15,000 cu. yds. were removed from each creek.***
>
> ***Some desilting occurred after the 1995 floods but I do not have the details of that work. Major desilting occurred after the 1983 floods and also after major flooding in 1978 and probably 1969. There are no accurate records of those desilting events currently available.***

Additionally, the Final EIR for the subject project reports that there is a high stockpile of sandy dredge spoils is located immediately adjacent to and east of the tidal inlet. The stockpile was formed in 1983 as a result of dredging of marsh channel sediments, subsequent to excessive El Nino winter stormwater runoff (Final EIR citing Moffatt & Nichol Engineers and SAIC 2001).

There is no evidence in the Commission's records to indicate that the 1983 or 1995 flood control activities were undertaken with the benefit of a coastal development permit. Further, there is no meaningful information available to staff in order to discern whether those activities contributed to the expansion of existing berms or created new areas within the marsh, because such changes are not visible from aerial photos.

Additionally, staff noted the presence of a parking area at the intersection of Sandyland Cove and the existing Franklin Creek berm, which is not evident in the Commission's 1974 aerial photographs. Though a portion could be attributed to the existing berm, it appears that the parking lot would have required additional fill of wetlands or transitional wetland habitat. The parking area is also a proposed staging location (shown on Exhibit 4c) for the proposed project activities. Though this project would approve this staging area, it is not intended to validate the underlying parking lot.

C. ENVIRONMENTALLY SENSITIVE HABITAT, WETLANDS AND STREAM ALTERATION

Section 30230 of the Coastal Act states:

> ***Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.***

Section 30231 of the Coastal Act states that:

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

Section 30236 of the Coastal Act states:

> ***Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) 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.***

Coastal Act Section 30240 affords protection of environmentally sensitive habitat areas as follows:

> ***(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.***
>
> ***(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.***

Sections 30230 and 30231 of the Coastal Act mandate that marine resources and coastal water quality shall be maintained and where feasible restored, protection shall be given to areas and species of special significance, and that uses of the marine environment shall be carried out in a manner that will sustain biological productivity of coastal waters. Section 30236 allows for alterations to streambeds when required for flood control projects where no other less damaging alternative is feasible and when necessary to protect public safety or existing development. In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas shall be protected and that development within or adjacent to such areas must be designed to prevent impacts which could degrade those resources.

The Carpinteria Salt Marsh (everything north of Sand Point and Del Mar Roads and south of the railroad right-of-way) is designated as Environmentally Sensitive Habitat (ESH) under Santa Barbara's certified Local Coastal Plan. The Marsh is zoned as Resource Management (RES), minimum 100 acres. The purpose of the RES zone district is to ensure protection of lands that are unsuited for intensive development.

The Commission notes that some level of flood control activities are necessary within the Marsh. In addition, the Commission notes that alteration of streambeds, as proposed, is consistent with Section 30236 of the Coastal Act when required for flood control projects and when necessary to protect public safety or existing development. However, the Commission further notes that Section 30236 also requires that such projects shall incorporate the best mitigation measures feasible. In addition, Section 30240 of the Coastal Act requires that all development within environmentally sensitive habitat areas must be carried out in a manner designed to minimize or prevent potential adverse effects to those resources. As such, the Commission notes that flood control activities on the subject site should be carried out in the least environmentally damaging manner.

As proposed, there is an area of the flood control alignment north of Del Mar Avenue, from approximately Stations 3+00 to 8+00 (see Exhibit 10), which sites the wall farther from the road and closer to the Carpinteria Marsh to avoid an area of non-native plantings and informal parking area. The Commission finds that such a placement is not the best alternative to protect resources consistent with Sections 30236 and 30240 of the Coastal Act. Therefore, the Commission requires **Special Condition One (1)** to revise the *Flood Control Enhancement Plan* received February 5, 2004 to setback the floodwall further from the wetland in alignment with the property boundary as shown in Exhibit 10 from approximately Stations 3+00 to 8+00.

Although the project requires disruption of a small area of wetlands (which constitute ESHA), this wetland disruption is necessary for flood control and is authorized under Section 30236 of the Coastal Act. The provisions of Section 30236 of the Coastal Act apply to the flood control portions of this project, rather than the provisions of Section 30240(a). See details in Section D, Diking, Filling, Dredging of Coastal Waters.

1. Carpinteria Salt Marsh

Historically, Carpinteria Salt Marsh extended beyond its current boundaries, but agriculture and urban development, including historic filling of wetlands and flood control activities, have reduced the extent of the wetlands by approximately one half. The Marsh covers approximately 230 acres and includes intertidal estuarine wetlands, adjacent palustrine wetlands and some subtidal deep water habitat in natural and artificial channels.

The Carpinteria Marsh is an environmentally sensitive habitat area (ESHA). It is important habitat for migratory waterfowl as well as several endangered species, including the salt marsh bird's beak, Belding's savannah sparrow, and light-footed clapper rail. It is also an important nursery for marine and estuarine fish.

The estuary is subdivided into three large "basins" separated by artificial channels lined with earthen berms (Exhibit 2). Basin 1 is the eastern portion of the marsh and is bordered by Franklin Creek on the east and south and Santa Monica Creek on the west. Basin 2 is the central portion of the marsh and extends from Santa Monica Creek to Estero Way, an exploratory oil and gas road constructed in the marsh in 1945. The northern boundary of Basin 2 is adjacent to the railroad right-of-way and the Main Channel delimits the southern boundary. Basin 3 extends from Estero Way to the western boundaries of the estuary. It is bordered on the north by the railroad and on the south by Santa Claus Lane and residences. In addition, a small portion of the marsh, known as South Marsh, borders the residences along Del Mar Avenue on the south side of Franklin Creek as it curves around the southern boundary of Basin 1 and the Main Channel south of Basin 2.

The watershed of the Marsh is confined to the drainages of Franklin and Santa Monica creeks and a smaller unnamed drainage west of Santa Monica Creek. Santa Monica Creek extends about 5 miles southward from the crest of the watershed to the Marsh, where it joins Franklin Creek to for the Main Channel, which extends to the mouth of the estuary. Franklin Creek extends about 4 miles southward from the foothills of the Santa Ynez Mountains to the confluence of the tidal portion of the creeks.

Wetland vegetation in the salt marsh is divided into vegetation "zones" that typically correspond to elevation gradients and hydrologic regime. These zones are classified as low, middle, and high marsh.

Low salt marsh habitats are inundated by tidal action at least daily and include estuarine intertidal mudflats and tidal channels. In other salt marsh habitats in central and southern California, the tidal estuarine flats and tidal channels may support Pacific cordgrass (*Spartina foliosa*), but this species is absent from Carpinteria Salt Marsh as well as other local coastal estuaries in Santa Barbara County. The tidal mudflats are flooded and exposed daily. These habitats do not support vegetation but provide an abundance of invertebrates and are considered important foraging habitat for birds that frequent the salt marsh. Tidal mudflats in the Carpinteria Salt Marsh typically occur between 2.2 to 2.6 feet above MSL.

Middle coastal salt marsh is regularly inundated during high tides and is dominated by monotypic stands of pickleweed (*Salicornia virginica,* WIS=OBL). This is the dominant habitat type in the Carpinteria Salt Marsh and typically occurs above 2.6 feet MSL.

High salt marsh is found in association with the middle coastal salt marsh but at slightly higher elevations and is inundated only during extreme high tide events. Pickleweed (OBL) is still present with alkali heath (*Frankenia salina*, FACW+) and fleshy jaumea (*Jaumea carnosa*, OBL) codominant. Parish's glasswort (*Salicornia [= Arthrocnemum] subterminalis*, OBL) often replaces pickleweed in the higher elevations of the coastal salt marsh. In the Carpinteria Salt Marsh, high salt marsh habitat typically occurs at the fringes of the middle marsh, often within the same elevation range, but the topography

and hydrology prevent these areas from being inundated except during extreme high tide events (monthly or seasonally). Salt pans or unvegetated saline flats that are above the reach of most or all lunar tides are interspersed with the vegetation within the high salt marsh habitats. Spearscale (*Atriplex triangularis*, FACW), an annual species commonly found in salt marshes or alkali flats, is also present in patches, especially around the upper margins of the high salt marsh areas.
In addition to the salt marsh vegetation, areas in the marsh have a freshwater influence and support brackish and/or freshwater marsh plant species such as alkali bulrush (*Scirpus maritimus,* OBL). These areas include low spots that are isolated from tidal influence where runoff or rainwater collects and areas within the channels where the freshwater influx is stronger than the tidal backflow.

In addition, a unique assemblage of plant species may occupy areas that are transitional from wetland to upland plant communities. Transition areas may include narrow bands along the banks of channel berms or occupy wide, flat areas just above the elevation of the highest high tide. Transition habitats typically include a mixture of common upland and salt marsh species. Other plant species such as western goldenrod (*Euthamia occidentalis*, OBL), salt grass (*Distichlis spicata*, FACW), quail bush (*Atriplex lentiformis*, FAC), and coast goldenbush (*Isocoma menziesii*, no WIS) are common components of transition habitats in the Carpinteria Salt Marsh. Transition areas are typically not saturated for prolonged periods of time. However, western goldenrod is an obligate wetland plant that is found in scattered locations along the fringes of the salt marsh in transition habitats, which may indicate that some transition areas are periodically saturated for sufficient time to support wetland vegetation. All areas where salt marsh or other wetland species are dominant would meet the criterion for wetland vegetation.

Portions of Carpinteria Marsh are presently considered degraded wetlands due to hign sedimentation rates, inflow of nutrient-rich water from upstream areas, past dredging/filling activities, poor tidal flushing, and occasional closure of the estuary mouth. In addition to this degradation, the high sediment loading has reduced channel capacity in the estuary and increased the flooding hazard for nearby residential areas.

2. Sensitive Species and Habitats

Past studies of Carpinteria Salt Marsh have identified 190 species of birds, 37 species of fish, 11 species of mammals, 5 species of reptiles and amphibians, and over 100 species of invertebrates in the marsh (Ferren et al. 1997). All of the fish, most of the invertebrates, and many of the birds are associated with the creek channels in the marsh or the mouth of the estuary. Water channels are present in South Marsh, but these are narrow and primarily conduct run-off from the residences to Franklin Creek. Both Basin 1 and South Marsh support a much smaller number of animal species than Basins 2 and 3, which contain open water channels. The recently restored CSMNP has several channels that are connected to the Main Channel, and this portion of the marsh already provides resources for numerous invertebrates, fish and avian species.

In addition to providing habitat for aquatic and upland bird species, the Marsh provides upland and transition areas which serve as important habitat for raptors. Several raptors are regularly observed foraging in the area including American kestrel, red-shouldered hawk, red-tailed hawk, white-tailed kite, and northern harrier. In addition, the area supports several loggerhead shrikes (California species of special concern). White-tailed kites are frequently observed foraging over all of the Carpinteria Salt Marsh. During past SAIC surveys, it appeared that kite foraging focused more on the disturbed upland habitats and outer edges of the wetland habitat including the salt pans within Basin 2. However, kites have been observed on several occasions to hover over the larger sections of pickleweed-dominated habitat. Osprey are also known to frequent the marsh and have been observed there as recently as February 2002.

It is expected that rodents are more commonly found in the higher elevations because these areas do not flood during rain events. After the rainy season, rodents are expected to move out into the lower elevations. The presence of healthy populations of harvest mice, house mice, gophers, and ground squirrels provide an important prey base for raptor species such as barn owl, northern harrier, white-tailed kite, red-tailed hawk and red-shouldered hawk.

The regularly flooded salt marsh habitats do not support many mammal or reptile species. However, the upland vegetation along the berms supports a few common species of reptiles, such as western fence lizard and side-blotched lizard. Mammal species include raccoon, opossum, gopher, and house mouse. Other mammals that use the salt marsh include feral or pet cats and dogs.

The stream channels in the areas to be desilted have soft sediment beds composed primarily of sand and silt. These sediments provide habitat for a variety of invertebrates (e.g., polychaete worms, crabs, snails, and clams) that live in or on them. Density and species composition vary seasonally and with the rate of sediment deposition/scour during the rainy season. The California oyster is present in rocky areas near the mouth of the estuary. Ghost shrimp, blue mud shrimp, and jackknife clams are also present, and mussels are attached to the exposed portions of the metal culverts under Estero Way. Other invertebrates have been observed in the marsh channel as well, particularly in Basin 3. The fiddler crab is known to be present in the bend of the channel in the northeast corner of Basin 3.

Several fish species are resident in the estuarine waters, such as long-jawed mudsucker, California killifish, arrow goby, and cheekspot goby. Other species are visitors that use the estuary as a nursery [e.g., California halibut, diamond turbot, and starry flounder] or for feeding at high tide. In Basin 3 and the southwest corner of Basin 2 (Final EIR citing Brooks 1999), the dominant species were the California killifish, arrow goby, and topsmelt. Other common species were staghorn sculpin, long-jawed mudsucker, diamond turbot, cheekspot goby, speckled midshipman, and California halibut. Abundance of most fish species was found to increase in late spring and decline in fall.

The proposed project involves dredging of coastal waters and deposition of dredged sediment at an adjacent beach. The Commission notes that dredging and disposal in and near areas identified as providing habitat for sensitive wildlife species has the potential to adversely impact those species. Several sensitive species are present in the project area, some only seasonally, including plant species such as salt marsh bird's beak, Coulter's goldfields. Sensitive wildlife species which are known residents or visitors include Belding's savannah sparrow, light-footed clapper rail, California brown pelican, American peregrine falcon, osprey, white-tailed kite, northern harrier, merlin, long-billed curlew, steelhead, and tidewater goby.

Belding's savannah sparrows have been consistently observed at Carpinteria Marsh. Fifty-two territories were recorded throughout the entire marsh in 1991 (USFWS 1991). Most of the breeding pairs were located in Basin 2 of the marsh. These results were comparable to those of 1986 surveys, suggesting a stable population. Holmgren (personal communication, 2002) reports observing at least ninety pairs in 1995, 69 individual adults in 1996, and 98 individual adults in 1997. Several pairs of Belding's savannah sparrows were observed during the SAIC surveys for this species conducted in Basins 1 and 2 during the spring of 2000, but none were observed in South Marsh. Although suitable nesting and foraging habitat is potentially present in the Carpinteria Salt Marsh Nature Park, this species was not observed during the SAIC March 2002 site visit.

Marsh habitat appears to be essential for both nesting and foraging for the light-footed clapper rail. Food items include fish, clams, crabs, snails, insects, and other invertebrates. Clapper rail nesting occurs from mid-March to July with most egg laying occurring from early April to early May.

California brown pelicans are regularly observed along the coastline near the Carpinteria Salt Marsh, and occasionally, low numbers of pelicans can be seen roosting and bathing in the channels within the marsh (SAIC, unpublished field notes). California brown pelicans are expected to be present in the channels adjacent to Basins 1 and 2 on an infrequent basis. Along the Santa Barbara County coast, numbers of California brown pelicans are highest in July and lowest in late winter and early spring (Lehman 1994).

Steelhead historically passed through the estuary to spawn in Santa Monica Creek (Ferren et al. 1997), but flood control modifications (concrete lining on steep slopes) to that creek upstream of the estuary now preclude use by steelhead (SAIC personal observation). Franklin Creek is lined with concrete for over one mile upstream of the marsh (with no steep slopes) and is unlikely to support steelhead in the remainder of the creek. Steelhead could be transitory visitors to the estuary during winter when runoff is sufficient to allow migration into coastal streams. Since access to suitable spawning habitat in Santa Monica Creek is blocked by the concrete channel and Franklin Creek has essentially no suitable spawning and rearing habitat, few if any steelhead are likely to pass through the estuary.

Tidewater gobies were reported in El Estero (Carpinteria Salt Marsh) in 1923 (Swift et al. 1989) and in 1984 (CNDDB 2003); however, surveys of the marsh in 1993-1995 found the species to be absent (Ambrose 1995). Tidewater gobies are known to inhabit Carpinteria Creek, the next drainage to the east, and recolonization of the marsh could occur.

The Final EIR for the subject project recognizes that construction-related disturbance or impacts may temporarily reduce the foraging habitat area for some species, including Belding's savannah sparrow and California least tern. To mitigate impacts to habitat, the applicants propose to revegetate the areas of disturbance with appropriate native plant materials. To ensure that the areas are revegetated, the Commission imposes **Special Condition Five (5)** which require the applicants to replant all areas disturbed as a result of flood control activities with seeds and cuttings of native species found in the Carpinteria Marsh watershed. Special Condition 5 requires the applicants to prepare a revegetation and monitoring program, including performance standards to assess the success of the revegetation plan. Additionally Special Condition 5 requires the revegetation program to be implemented and completed immediately upon completion of final grading for the floodwall and berm.

Construction related disturbance to upland and marsh habitat may reduce the foraging habitat for year-around residents, including the Belding's savannah sparrow, which nest in the Marsh. Construction activities including human presence, lighting, and noise may cause wildlife movement, foraging, and nesting to decline. The ability to forage and obtain food is particularly important during the breeding cycle. To ensure that the impact to breeding birds is minimized, **Special Condition Two (2)** prohibits all project construction activity, with the exception of dredging/desilting activities, in the project area during the recognized breeding/nesting season, from March 1 to July 31. In addition, to ensure that no breeding activity is present in the vicinity, **Special Condition Seven (7)** requires that a survey be conducted for breeding activity prior to construction and that a biological monitor be present during all floodwall and berm construction, grading, excavation, dredging/desilting, vegetation eradication and removal, hauling, and maintenance activities. In the event that any sensitive wildlife species (including but not limited to tidewater goby, Belding's savannah sparrow, California least tern, western snowy plover, light-footed clapper rail) exhibit reproductive or nesting behavior or are within the estimated breeding/reproductive cycle of the subject species, the environmental specialist shall require the applicants to cease work, and shall immediately notify the Executive Director and local resource agencies. Project activities shall resume only upon written approval of the Executive Director.

Additionally, the biological monitor shall have the responsibility and authority to require the applicants to cease work should any breach in the scope of work occur, or if any unforeseen sensitive habitat issues arise. The environmental resource specialist(s) shall immediately notify the Executive Director if activities outside of the scope of Coastal Development Permit 4-03-060 occur. If significant impacts or damage occur to sensitive habitats or to wildlife species, the applicants shall be required to submit a revised, or supplemental program to adequately mitigate such impacts. Any native

vegetation which is inadvertently contacted with herbicide or otherwise destroyed or damaged during implementation of the project shall be replaced in kind at a 3:1 or greater ratio. The revised, or supplemental, program shall be processed as an amendment to this coastal development permit.

Marsh habitat and species may further be impacted by construction-related debris and if construction is not contained within the designated accessways and staging areas. **Special Condition Three (3)** requires the applicants to flag and identify the limits of the construction area in and around the marsh and stream areas. Special Condition 3 further outlines the applicants responsibilities to properly store and dispose of construction materials, debris, or waste to ensure that debris is not dispersed into the surrounding environment. The applicants shall not leave equipment or materials in the project area, including designated staging and/or stockpile areas, except during active project operations consistent with the provisions of this permit and sensitive resource timing constraints.

Some aspects of the project have not been fully defined. To ensure protection of the Marsh habitat and species, **Special Condition One (1)** requires the pedestrian bridge proposed for University research access (non-public) be eliminated from the project description (see Project Description "B2") and plans until detailed bridge plans are developed. The effects of the project on sensitive species and habitat cannot be fully evaluated until a final design is chosen. Presently, the applicants have only stated that it would likely be a railroad car bridge. Although Special Condition 1 will deny the pedestrian bridge, the applicants may submit an amendment to this permit once they have identified a specific design.

Additionally, the applicants have recently modified the design of the floodwall from a concrete floodwall to vinyl sheetpile. The applicants have stated that this type of wall will adequately serve the protective purpose of the project and also reduce corridor of disturbance and time necessary for installation. The applicants provided manufacturer specifications and have indicated that the chosen design would have a 15" width and would be faced with redwood planking on both sides of the wall. To ensure final wall design is in conformance with the applicants' revised proposal, **Special Condition One (1)** requires the applicants to provide final project plans, including grading cross-sections, and specifications for the revised floodwall design.

Restoration and enhancement activities include the construction of new tidal channels and inlets in the Basin 1 and South Marsh areas, desiltation of the Main Channel and Basin 3, removal of exotic species and revegetation of saltmarsh wetland, transitional, and upland habitats. Public access improvements include a pedestrian bridge over Franklin Creek, a 1,200-foot path that connects with the Ash Avenue Nature Park trail, four interpretive stations, and signage.

The applicants are proposing, in large part, the restoration of habitats in Basins 1,2, 3 and the South Marsh. The applicants have submitted the *Final Report: Carpinteria Salt Marsh Wetland Enhancement Plan for Basin 1 and the South Marsh* and the applicants have submitted a conceptual planting plan. The applicants have stated that Planting

Plans and Specifications are being developed for this project that include details on planting methods, weed control techniques, maintenance, monitoring, and other information related to project implementation. The plan will include measures to enhance salt marsh, upland, transitional, and brackish/freshwater marsh habitats; remove non-native species; and control weeds. Establishment of rare species is an optional task. To ensure that restoration is implemented in a manner most protective of species and habitat and in substantial conformance with the submitted plans, **Special Condition Six (6)** requires the applicants to submit, for the review and approval of the Executive Director, two (2) sets of final planting plans and specifications in substantial conformance with the conceptual *Carpinteria Salt Marsh Wetland Enhancement for Basin 1 and the South Marsh* report dated June 2004, including Appendix A *Examples from the Planting Specifications* and *Carpinteria Salt Marsh Wetland Enhancement Project Plans* received July 22, 2004. The plan shall be expanded to include restoration activities in Basins 2 and 3. The plan shall include sufficient technical detail on the restoration design including, at a minimum, a planting program including planting methods, weed control techniques, maintenance, and monitoring, removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the restoration base map, and maintenance techniques. The plan shall further include documentation of the necessary management and maintenance requirements, and provisions for timely remediation, such as for erosion control, should the need arise. Special Condition 6 also requires the applicants to implement the monitoring plan described in the *Carpinteria Salt Marsh Wetland Enhancement for Basin 1 and the South Marsh* report dated June 2004 and provide annual monitoring report, for the review and approval of the Executive Director, on an annual basis, for a period of five (5) years.

Additionally, the Commission recognizes that discrepancies among the project description and project plans will cause confusion and obstruct proper implementation of the proposed restoration activities. There are two discrepancies amongst the flood control project plans and the proposed restoration plans which show an overlap of the Franklin Creek access road and tidal channel improvements and restoration grading. To remedy this discrepancy, **Special Condition One (1)** requires the applicants to revise the *Flood Control Enhancement Plan* received February 5, 2004 to eliminate the Franklin Creek Access & Stockpile Road area that overlaps the proposed Basin 1 tidal channel (from approx. Station 29+00 to 32+00) and the proposed Basin 1 restoration grading (from approx. Station 39+00 to 41+50) as shown on the *Land Trust Carpinteria Salt Marsh Enhancement Plan Basin 1 and The South Marsh* plans.

The applicants have included public access improvements as part of the restoration activities. The applicants have submitted preliminary plans for the public pedestrian bridge over Franklin Creek, however, the applicants have indicated that the design is not final. As submitted in the project description, the bridge shall not have footings in or along the creek banks. Therefore, to ensure that the final design meets these requirements, **Special Condition One (1)** requires final bridge plans for the proposed pedestrian footbridge across Franklin Creek which shall verify that the span bridge would have no footings in or along the creek banks of the channel, nor require grading

on the creek banks. The final plans shall be in substantial conformance with the preliminary plans as shown in the *Land Trust Carpinteria Salt Marsh Enhancement Plan Basin 1 and The South Marsh.*

The applicants have proposed (see Project Description "R1") that the public path would be located and designed to avoid impacts to sensitive wetland and upland vegetation by locating the path in the already-disturbed area at the edge of the flood control berm along Franklin Creek and along the edge of the flood control access road that parallels the railroad tracks. However, there are two discrepancies in the project plans which indicate that the improvements would not be in the existing disturbed area: the alignment along the Franklin Creek flood control access road appears to traverse along the scirpus marsh and the basalt column interpretive display would be in the newly created tidal channel, presently an area of high salt marsh. To remedy this discrepancy and protect the marsh and willow habitat, **Special Condition One (1)** requires the pathway shown on Sheet L1.1 on the *Pathways, Materials, Layout and Grading Plan* (see Exhibit 6a) to be relocated approximately 15-20 feet to the east along the existing disturbed flood control access and stockpile area. Furthermore, Special Condition 1 requires the basalt column interpretive display to be eliminated from the project plans as shown on the *Pathways, Materials, Layout and Grading Plan.*

The proposed development will require other regulatory approvals such as the California Regional Water Quality Control Board, Army Corps of Engineers, and California Department of Fish and Game (CDFG). The applicants have applied for permits from these entities. A draft Streambed Alteration was submitted with the subject application but has not been finalized to date. **Special Condition Sixteen (16)** requires the applicants to provide all necessary state and federal permits and/or approvals (including the National Marine Fisheries Service, California Department of Fish and Game, California State Lands Commission, Regional Water Quality Control Board, and the U.S. Army Corps of Engineers) for all aspects of the project described in CDP 4-03-060 or evidence that no authorization is required, for the review and approval of the Executive Director. The submittal shall include a list of all required state or federal discretionary permits and associated expiration dates for the development herein approved. The applicants shall submit copies of the permits and inform the Executive Director of any changes to the project required by such permits. Such changes shall not be incorporated into the project until the applicants obtain a Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

3. Excess Material and Beach Nourishment

The project area spans more than one hundred acres and includes various project components including dredging/desilting, berm removal, and restoration activities which will result in excess excavated material from both upland and interior channel sources. The characteristics of the excess material will vary as a result of the source. There have been various geotechnical studies and field boring throughout the marsh and upland

areas. The following summarizes the anticipated sediment disposal options estimated from the available data:

Dredging. Sampling and analysis of soils within proposed sediment removal areas of the upper portion of Franklin Creek and Santa Monica Creek indicate the presence of generally fine-grained sediments, which are not suitable for nearby beach or surfzone disposal.

Berm Removal. Existing berms are mostly spoil piles resulting from sediment removal from the adjacent Main Channel. Therefore, these sediments are likely similar to those present in the Main Channel, which are generally fine to silty fine sands, with an average of only 3 percent of the sediments passing the No. 200 sieve. Grain size analyses indicate that the beach sediments are fine-grained sands with virtually no fines (an average of only 2 percent passing the No. 200 sieve). However, sediments analyzed from Berm 3, located along the north side of the Main Channel, have a highly variable silt content of 15 to 48 percent.

Restoration Action R1. Laboratory results indicate that sediments within Basin 1 are predominantly silty clay and clayey silt, with varying amounts of fine sand and organic material.

Restoration Action R2. Grain size analyses of sediments to be dredged from the main channel of Basin 3 indicate that samples are dominantly fine-grained sand, with some medium to coarse-grained sand and varying amounts of silt and clay. Most of this sediment likely would be suitable for beach or surfzone disposal, which is considered a beneficial use.

Restoration Action R3. Sediment sampling has not been completed in the South Marsh area. However, sediments are likely similar to other non-channel basin areas, such as Basin 1, where sediments are predominantly silty clay and clayey silt, with varying amounts of fine sand and organic material. Additional testing of temporarily stockpiled sediments would be completed to determine if the sediments are suitable for beach or surfzone disposal.

Restoration Action R4. Sediment sampling has not been completed in the Estero Way channel.

Receiving Beach. Fugro West, Inc. (1994) collected four near-surface samples within the low tide zone, or about –0.7 feet below mean sea level. These samples were collected approximately 200 to 250 feet seaward of the toe of the rock slope or from the toe of the dunes. Grain size analyses indicate that the beach sediments are fine-grained sands with virtually no fines. An average of only 2 percent of the sediments passed the No. 200 sieve.

As proposed, there will be an estimated 64,308 cu. yds. of excess excavated material from the restoration and flood control projects, over the course of implementation (68,808 cu. yds. cut, 4,500 cu. yds. fill). This estimate does not include the excavated

material that would be dredged from Santa Monica and Franklin Creek instream sedimentation basins on an as-needed basis, with an annual maximum of approximately 40,000 cu. yds. of material. The above information indicates that some of this material will be suitable for beach disposal at the identified receiving site. The applicants are proposing to test chemical and grain size of excavated material and to dispose of any material meeting beach nourishment criteria at a beach nourishment site downcoast of the Carpinteria Marsh mouth opening.

To ensure that excess excavated material is physically and chemically compatible with the proposed deposition site, the Commission finds it necessary to require **Special Condition Ten (10)** which requires the applicants to test the physical and chemical characteristics of representative samples of all source materials and to submit the results for the review and approval of the Executive Director. Special Condition 10 requires the applicants to analyze the chemical and physical qualities of sediment, consistent with EPA and Regional Water Quality Control Board requirements to determine suitability for beach replenishment. Material meeting all applicable federal and state beach nourishment requirements shall be reserved for such use. At least two (2) weeks prior to disposal of any excess excavated material, the applicants shall submit the results and supporting analysis of the chemical and physical properties of the source material, the location and method of disposal, and evidence that the location is an approved disposal location either outside the coastal zone or to a site within the coastal zone permitted to receive such fill.

Special Condition Sixteen (16) requires that the applicants submit current evidence to the Executive Director that all State and Federal permits necessary for the proposed project including the U.S. Army Corps of Engineers, the California State Lands Commission, and the California Regional Water Quality Control Board have been obtained.

Those materials that do not meet state and federal requirements for surf zone deposition shall be disposed of at an approved disposal location either outside the coastal zone or to a site within the coastal zone permitted to receive such fill and evidence shall be submitted to the Executive Director for approval prior to disposal as provided in Special Condition 10. The Commission finds Special Conditions 10 and 16 are necessary to ensure proper disposal of solid debris and excavated material unsuitable for placement into the marine environment.

4. Herbicide

As provided by the applicants, most of the exotic vegetation present in areas to be restored would be removed by mechanical methods. However, the applicants have requested the application of herbicides on limited basis, both during initial restoration activities and during maintenance. Crews using a spray nozzle and a backpack unit would apply herbicides. Plants would be sprayed with a hand-held spray wand. Only vegetative material would be sprayed; herbicide would not be applied to open water. All state and federal requirements to ensure public safety and environmental protection

would be observed, as well as the District's Standard Maintenance Practices related to herbicide treatment. Aquamaster™ would be used when there is open water in proximity to the plants to be treated. Aquamaster™ is registered for use on aquatic plants in open water conditions and in aquatic settings (EPA Registration No. 524-343; see also EPA's Material Safety Data Sheet for the product). This substance is non-toxic to fish and aquatic organisms at recommended application rates.

As proposed, herbicide would be applied to both non-native and native wetland vegetation. The active ingredient in *Aquamaster*™ (formerly Rodeo™ or Round-up™) is glyphosate. *Aquamaster*™ is applied with a surfactant to enhance its effectiveness by spreading and retaining the herbicide on plant surfaces, and by promoting absorption. Surfactants are blends of petroleum-based oils that reduce surface tension on the leaf surface. Glyphosate herbicide is currently registered by the United States Environmental Protection Agency (EPA) as a non-selective herbicide of relatively low toxicity suitable for use in wetland and riparian areas. The Glyphosate Environmental Assessment Report by the EPA dated September 1993 states:

> ***Glyphosate is of relatively low oral and dermal acute toxicity. It has been placed in Toxicity Category III for these effects (Toxicity Category I indicates the highest degree of acute toxicity, and Category IV the lowest)...Based on current data, EPA, has determined that the effects of glyphosate on birds, mammals, fish, and invertebrates are minimal....Glyphosate adsorbs strongly to soil and is not expected to move vertically below the six inch soil layer...Glyphosate is readily degraded by soil microbes...However, glyphosate does have the potential to contaminate surface waters due to its aquatic use patterns...If glyphosate reached surface water, it would not be broken down readily by water or sunlight.***

The County recognizes the potential hazards of Glyphosate application as described in the Routine Maintenance Program EIR (November 2001) for Flood Control practices throughout Santa Barbara County. The EIR reports the following regarding Glyphosate:

> ***1. Since glyphosate is a non-selective herbicide capable of controlling a variety of species of plant life, it can impact plants that are considered to be rare or of regional significance. Non-target plants located in and around flowing channels subject to Aquamaster TM treatment would be especially vulnerable.***
>
> ***2. Glyphosate application can result in ecological upset for avian species that have considerable interaction with creek channel environments.***
>
> ***3. A low potential exists for bioconcentration of glyphosate in aquatic organisms.***
>
> ***...12. Non-target plants outside the intended spray area may also be affected due to herbicide drift from aerial application.***

The Routine Maintenance Program EIR (November 2001) further states:

> ***The primary water quality impact is the potential for elevated levels of herbicide (and its active ingredient, glyphosate) in the water of a drainage. Herbicides can only be introduced to the drainage water by three mechanisms: (1) overspray that deposits herbicide directly into open water; (2) overspray that deposits herbicide on dry substrates where it may be dissolved by flowing water at a later time; and (3) herbicide dripping from a plant leaf onto water below due to excessive application.***

In addition, the Final Supplement to Environmental Impact Report (94-EIR-1) by URS Corporation dated September 2000 indicates that the "slightly toxic" threshold for Glyphosate herbicide requires concentrations in water between 10 and 100 mg/L for rainbow trout and oyster larvae. Acute toxicity in trout was only observed with 96-hour dosages of over 1,000 mg/L. The Supplemental EIR also indicates that there is only a very low potential for the compound to build up in the tissues of aquatic invertebrates or other aquatic organisms. The half-life of Glyphosate herbicide in water varies from 35 to 65 days.

In previous permit actions, the Commission has allowed for the use of Glyphosate herbicide (*Aquamaster*™) within sensitive wetland and riparian when it was found that use of an herbicide was necessary for habitat restoration and that there were no feasible alternatives that would result in fewer adverse effects to the habitat value of the site. However, the Commission notes Glyphosate herbicide, although determined by the EPA to be low in toxicity, is still toxic and will still result in some adverse effects to wildlife when used in sensitive habitat areas such as the subject site as a result of overspray or potentially downstream migration.

The Commission notes that some level of flood control maintenance is necessary within the Marsh. In addition, the Commission notes that alteration of streambeds, as proposed by this project, is consistent with Section 30236 of the Coastal Act when required for flood control projects and when necessary to protect public safety or existing development. However, the Commission further notes that Section 30236 also requires that such projects shall incorporate the best mitigation measures feasible. In addition, Section 30240 of the Coastal Act requires that all development within environmentally sensitive habitat areas must be carried out in a manner designed to minimize or prevent potential adverse effects to those resources. As such, the Commission notes that flood control activities on the subject site should be carried out in the least environmentally damaging manner. In this case, an alternative method of herbicide application and removal could potentially reduce adverse effects to wetland habitat on site, such as mechanical or hand removal of vegetation within the stream channel instead of utilizing herbicide.

Staff notes that there is a certain amount of overspray that will result from the application of the herbicide that cannot be avoided even with the proper application. There is a potential for the herbicide to be introduced to the aquatic environment and there is a potential for other non-targeted vegetation to receive overspray. Given that this is designated environmentally sensitive wetland habitat and that other methods of removal may be implemented, the Commission requires **Special Condition Three (3)** and **Special Condition Eight (8)** to minimize adverse effects to habitat from the implementation of the flood control and restoration activities. Special Condition Eight (8) restricts the application of herbicide within any portion of the stream channel as measured from toe of bank to toe of bank. Herbicide use in upland areas outside of the stream channel shall be restricted to the use of Glyphosate (Roundup™) herbicide for the elimination of non-native and invasive vegetation for purposes of habitat restoration only, and conducted according to the specified guidelines as described in Special

Condition 3, Project Responsibilities. Native vegetation shall be clearly delineated on the project site with fencing or survey flags and protected.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30230, 30231, 30236, and 30240 of the Coastal Act.

D. DIKING, FILLING, DREDGING OF COASTAL WATERS

Section 30233 of the Coastal Act states, in part:

(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:

(l) 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 service facilities, 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 cabies 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. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the l9 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of

California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

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

Section 30236 of the Coastal Act states:

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

Section 30233 of the Coastal Act states that diking, filling, and dredging of coastal waters may be permitted for coastal-dependent industries, and for maintaining or restoring previously dredged depths where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects. Section 30233 of the Coastal Act also mandates that dredging and disposal operations shall be carried-out to avoid disruption of marine and wildlife habitats, and that suitable dredge sediments shall be deposited for beach replenishment. Section 30233(a) of the Coastal Act imposes a three-part test on dredging and filling projects (1) the allowable use test; (2) an alternatives test; and (3) a mitigation test. Section 30236 allows for alterations to streambeds when required for flood control projects where no other less damaging alternative is feasible and when necessary to protect public safety or existing development.

There are two elements of flood control activities, the construction of the berm and construction of the floodwall, that would require wetland fill. The flood control activities also include dredging of two creeks in the Carpinteria Salt Marsh, Franklin and Santa Monica Creeks. These activities constitute stream alteration for flood control purposes, and therefore are authorized under Section 30236 of the Coastal Act. The authorization for flood control activities under Section 30236 governs this project, rather than the provisions of Section 30233(a) regarding allowable purposes for diking, filling or dredging of open coastal waters, wetlands, estuaries and lakes. The project also includes dredging for purposes of habitat restoration, specifically the construction of new tidal channels and inlets in the Basin 1 and South Marsh areas and desiltation of the Main Channel and Basin 3. Dredging associated with these restoration activities is authorized under Section 30233(a)(7) of the Coastal Act.

The project EIR considered several alternative configurations to provide similar or lesser levels of flood protection. Alternatives considered included various configurations of channel widening to accommodate higher flood flows, various heights of the floodwall and berm, construction of a berm along Del Mar Avenue instead of a floodwall, construction of a berm along the south side of the Main Channel, and a floodwall along the nature park instead of the proposed berm. The proposed project was determined to have the least damaging impact to biological resources and still provide flood protection.

As originally proposed in the subject CDP application, the project would result in 0.26-acre of wetland fill for the berm and floodwall construction. In areas where the existing berm is narrow, the toe of the berm would need to be widened, resulting in the permanent loss of salt marsh vegetation present at the base of the existing berm. The lower portions of the berm bank that are adjacent to the salt marsh (i.e., Carpinteria Nature Park) will be revegetated with the appropriate salt marsh species, but, as stated above, there will be a permanent removal of existing salt marsh habitat in areas where the base of the berm is wider than the existing berm. Additionally, the floodwall alignment is located downslope on the existing fill material to accommodate interior drainage of the residences. As a result of the constraints of the turning radius of the floodwall material and the necessity of being located on the downslope for drainage purposes, the development of the floodwall will result in the fill of wetland.

During staff review, the applicants and their consulting biologist field-checked the amount of wetland fill as a result of the revised project description for the berm and the floodwall and determined the extent of wetland fill to be 2,079 sq. ft. for the floodwall and 1,698 sq. ft. for the flood control berm. The amount of fill was reduced by revising the with of the access road on top of the berm to 12 feet wide, in the area that was contributing to wetland fill (approximately Station 3 to Station 11 on the berm plan attached as Exhibit 3). As a result the total wetland fill has been reduced from 0.26-acre to 0.09-acre. Additionally, the proposed berm would be a constructed 1:1 geoenforced slopes to reduce the fill to the maximum extent. **Special Condition One (1)** requires the applicant to update all final project plans to reflect the proposed reduction in width from 20-ft to 12-ft, in conformance with the Berm plan received at the Commission office July 22, 2004.

No other areas of wetland fill are proposed for flood control projects. However, the flood control plans which show the alignment of the Access and Stockpile Road Area for Franklin Creek and Santa Monica Creek appear to have a road width that could result in overlap with wetland vegetation. Given that the flood control plans grading plans do not indicate that any grading will be necessary to widen the roads and no wetland vegetation removal is proposed, the Commission finds it necessary, pursuant to **Special Condition One (1)**, to require project plans which indicate that the 50-foot width is a *maximum* width, not a uniform width; that no grading shall occur to establish the alignment; and that the final plans will verify that no wetlands will be disturbed by providing a more precise wetland delineation in relation to the access roads.

Therefore as revised pursuant to the special conditions described above, the project avoids wetland fill to the maximum extent feasible and is the least damaging alternative. The final step in the Section 30233 analysis requires mitigation for the fill of wetland. Any new development that includes dike or fill development in wetlands for a use permitted under the Coastal Act shall include mitigation for unavoidable impacts to wetland habitat. Wetland impact mitigation shall include, at a minimum, creation or substantial restoration of wetlands of the same type as the affected wetland or similar type. The proposed project will impact saltmarsh habitat. In areas such as these, the Commission has required a ration of 4:1 mitigation (4 acres of mitigation habitat created or enhanced to each acre of existing habitat filled).

In this case, 0.09-acre of saltmarsh will be filled by the construction of the floodwall and berm. In order to provide the required mitigation, the applicants must create or enhance 0.36-acre of saltmarsh habitat. The final EIR indicates that there is 1.5 acres of area available for mitigation as follows: 0.75-acre "R1," 0.35-acre "R3," and 0.4-acre "B1." As a result, **Special Condition Four (4)** requires the applicants to identify areas of disturbed or degraded wetland habitat of equivalent type and acreage sufficient to provide mitigation of the permanent wetland impacts at a ratio of 4:1 for the 0.09-acre of salt marsh habitat. The wetland mitigation/restoration plan shall include Clearly stated goals and objectives that provide for the establishment of functions and values at least equal to those occurring at the impact site and sufficient technical detail on the restoration design including, at a minimum, a planting program including removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the restoration base map, and maintenance techniques. Further, the project shall be monitored with written annual monitoring reports submitted to the Executive Director for a period of five years to indicate the relative success or failure of the restoration.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30233 and 30236 of the Coastal Act.

E. HAZARDS

Section 30253 of the Coastal Act states, in part, that new development shall:

> ***(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.***
>
> ***(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.***

Section 30253 of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property. Carpinteria Marsh is generally a coastal floodplain, located at the base of coastal streams derived from the nearby Santa Ynez Mountains. Marsh and upland areas lie adjacent to channels. The marsh is an approximately level floodplain incised by tidal channels. The marsh is filled with sediments from the upland watershed and from the ocean. Channel side slopes gradients are generally shallow in submerged areas; however, the upper 4 to 5 feet of

exposed slope is generally steep (steeper than 2:1). These slopes were likely an even 2:1 gradient when constructed, but have degraded over time.

The proposed flood control activities in the marsh are intended to increase flood flow for Franklin and Santa Monica Creeks above and through the marsh, as well as provide sediment management. Without the project, sediments would be desposited in the marsh and the lined sections of the creeks above the marsh, increasing the flood hazard in large areas of residential and commercial development in the City of Carpinteria. The purpose of the proposed desiltation program is to maintain the floodwater carrying capacity in Franklin and Santa Monica Creeks to reduce the likelihood of flood damage to adjacent residential areas.

Approximately 64,308 cu. yds. of excess material are estimated to require disposal over the course of project implementation, not including the as-needed dredging of Franklin and Santa Monica Creeks. Additionally, sediment will have to be disposed of after each dredging event, up to 20,000 cu. yds. for Franklin Creek and up to 20,000 cu. yds. of sediment from Santa Monica Creek. The applicants and their consulting engineers have determined that the flood control improvements would provide a 100-year level of protection for neighboring development.

The applicants have stated that the excess excavated material and debris shall be removed to a suitable disposal site, and such site(s) have not been determined. Staff notes that a suitable site is one that has all the necessary federal, state, and local approvals to receive such material. Additionally, due to the extensive nature of excavation for flood control and restoration purposes, the extent of available sediment suitable for use as beach nourishment is not fully established. The applicants propose to test all excess excavated material for chemical and grain-size suitability for beach replenishment. To ensure that this is fully implemented and properly disposed, **Special Condition Ten (10)** requires that prior to disposal of excess excavated material, the applicants shall provide evidence to the Executive Director of the location and method of disposal to an approved disposal location either outside the coastal zone or to a site within the coastal zone permitted to receive such fill. The applicants shall submit a determination of the suitability of the sediment for beach/surfzone disposal, including a determination by the U.S. Army Corps of Engineers as to whether the excavated material meets the minimum criteria necessary for placement within the surf zone. Material meeting all applicable federal and state beach nourishment or dredge spoil discharge requirements shall be reserved for such use.

The proposed project includes desilting/dredging activities to be implemented on an as-necessary basis. The applicants have indicated that excavation/dredging is currently necessary in Franklin and Santa Monica creeks to establish the instream sedimentation basins to capture sediment. Additionally, dredging of the subject 1,500-foot long reach of Franklin Creek or 1,500-foot long reach of Santa Monica Creek may be necessary at an undetermined future point in time in the event that the channel becomes overly sedimented. Future dredging activities are expected to result in the removal of no more than 20,000 cu. yds. of material for each of the instream sedimentation basins per year.

If the material is suitable for surf zone disposal, then a hydraulic dredge would be used to conduct the channel desilting. Otherwise, desilting/dredging activities will occur by use of a crane rigged with a clamshell bucket that is operated from the adjacent stream bank. All dredged material will be stockpiled in designated areas adjacent to the creek where it is allowed to dewater. The sediment will be allowed to dewater for several weeks until it is hauled to a suitable disposal site. The County estimates desilting is typically necessary in the project reach every 3 to 5 years. However, the proposed desilting would occur on as-needed basis because high sediment laden flows can result in sedimentation that requires desilting. The applicants are requesting ten years of desilting on an as-needed basis.

As stated above, all dredged material will be stockpiled in designated areas adjacent to the creek for dewatering. However, the Commission notes that excavated materials that are placed in stockpiles are subject to increased erosion and potential adverse effects to adjacent streams and wetland areas from resedimentation and increased turbidity. The Commission also notes that additional landform alteration would result if the excavated material were to be retained on site. Therefore, in order to ensure that dredged material will not be permanently stockpiled on site and that erosion and resedimentation of the streams on site are minimized during any temporary stockpiling activities, **Special Condition Nine (9)** requires that temporary erosion control measures (such as sand bag barriers, silt fencing; swales, etc.) shall be implemented in the event that temporary stockpiling of material is required. These temporary erosion control measures shall be monitored and maintained until all stockpiled fill has been removed from the project site. Specifically, Special Condition 9 calls for the applicants to submit two sets of erosion control plans, prepared by an engineer, which delineates all areas to be disturbed by grading or construction with all natural areas flagged or fenced. If project activities take place during the rainy season the applicants shall install and monitor temporary erosion control measures. The applicants shall undertake development to minimize the area of bare soil exposed at any one time and clear only the areas essential for construction. Further, **Special Condition Ten (10)** prohibits permanent stockpiling of material on site.

The applicants estimate that desilting activities are only necessary every 3 to 5 years, or potentially during severe flood seasons. To allow further evaluation of the adequacy of the flood control activities and allow controlled evaluation of the success of the implementation of the mitigation measures, the Commission finds it necessary to restrict the subject permit to five years of desiltation activities as described under **Special Condition Seventeen (17)**, and where subject to review and approval by the Executive Director a showing is made that severe storm events have decreased the channel capacity by 20%, as described in **Special Condition Eleven (11)**.

Additionally, given the nature and location of the proposed project in a marsh and along streams, the proposed development will be subject to hazards, particularly flooding and debris flows. High flood flows and debris could impact the floodwall, berm, bridge and other restoration components of the project, damaging the development. The Coastal Act recognizes that certain types of development, such as the proposed project, may

involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to determine who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use his property. As such, the Commission finds that due to the unforeseen possibility of erosion and flooding, the applicants shall assume these risks as a condition of approval. Therefore, **Special Condition Thirteen (13)** requires the applicants to waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development. The applicants' assumption of risk, will show that the applicants are aware of and appreciate the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

To ensure that the recommendations of the geologic and geotechnical engineering consultants are incorporated into all new development, **Special Condition Twelve (12)** requires the applicants to submit project plans certified by the consulting geologist and geotechnical engineer as conforming to all geologic and geotechnical recommendations, as well as any new or additional recommendations by the consulting geologist and geotechnical engineer to ensure structural and site stability. The final plans approved by the consultants shall be in substantial conformance with the plans approved by the Commission relative to construction, foundations, grading, and drainage. Any substantial changes to the proposed development approved by the Commission that may be recommended by the consultants shall require an amendment to the permit or a new coastal development permit.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Coastal Act Section 30253.

F. PUBLIC ACCESS AND VISUAL RESOURCES

Coastal Act Sections 30210 through 30214 and 30221 specifically protect public access and recreation, as follows:

> ***Section 30210: In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.***
>
> ***Section 30211: Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.***
>
> ***Section 30212 (a): Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects....***

> ***Section 30213: Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.***
>
> ***Section 30214 (a): The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case....***
>
> ***Section 30221: Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.***

Likewise, Coastal Act Section 30240 (b) also requires that development not interfere with recreational areas and states:

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

In addition, Section 30251 of the Coastal Act states that:

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

Coastal Act Sections 30210, 30211, and 30212 mandate that maximum public access and recreational opportunities be provided to allow use of dry sand and rocky coastal beaches and that development not interfere with the public's right to access the sea, consistent with the need to protect public safety, private property and natural resources. In addition, Coastal Act Section 30251 requires that visual qualities of coastal areas shall be considered and protected, landform alteration shall be minimized, and where feasible, degraded areas shall be enhanced and restored.

Carpinteria Marsh is one of only a few coastal estuaries of substantial size left in Santa Barbara County, and it is considered a visually sensitive resource. Most of the 230-acre Marsh has a natural appearance, although some obvious modifications have occurred, including two roads, buildout of residential development and associated coastal armouring of both the upcoast and downcoast sandspits, berms and flood control access roads and staging areas.

The Marsh is largely surrounded by development, although the recently completed Nature Park lies just east of Franklin Creek and includes approximately 14 acres of salt marsh and upland habitats, along with trails, a small amphitheater, low walls and benches, and interpretive signs. The trails are located on the eastern and northern upland areas of the park and are open to the general public. A mobile home park adjoins the Nature Park on the north. U.S. Highway 101 and Union Pacific Railroad

tracks lie to the north of the Marsh, as do condominiums, commercial development, and Aliso school. Residential developments present south of the Marsh. Commercial and residential development near Santa Claus Lane border the Marsh on the west.

The Marsh is visible from several public vantage points, including U.S. Highway 101, the UPRR tracks, and the Nature Park. From northbound U.S. Highway 101, the Marsh, primarily the westerly portion of Basin 3, is visible for about 10 seconds. From the southbound lanes, this area is visible for about 8 seconds. The remainder of the Marsh is either largely or completely hidden from the highway by vegetation growing along the edge of the Marsh or buildings. U.S. Highway 101 is not currently designated as a scenic highway, although the California Streets and Highways Code identifies it as eligible for such a designation (City of Carpinteria 2003). There are no other designated scenic highways in Carpinteria. The Marsh is more highly visible to passengers on trains since the tracks border the Marsh and seats are elevated. Views of the Marsh are available from the Nature Park, although the lower areas of the Marsh (within the three basins) are largely obscured by the existing berms and Sandyland Cove Road and intervening vegetation. The Marsh is not visible from the Santa Claus Lane due to screening vegetation. Only very limited and sporadic views are possible from Carpinteria Avenue due to the buildings lining the south side of the street.

Flood control project components would modify public views. The raising of the flood control berm 1 to 3 feet above existing grade with a 12-ft to 20 ft. access road on top. Raising the berm is not anticipated to perceptibly change the long-term views of the Marsh. Further, the berm would be revegetated with plants typical of salt marsh, transition and upland habitats, as proposed by the applicants. Additionally, the floodwall along Del Mar Avenue would be constructed 3 to 5 feet above existing grade. The proposed floodwall design is 15" wide vinyl sheet pile with redwood facing on both sides of the wall. Both sides of the wall would be revegetated and vegetation would be planted to screen the wall from view. To ensure that the revegetation is implemented according to the project description and protect public views consistent with Section 30251, the Commission requires **Special Condition Five (5)** which requires a revegetation plan for all flood control projects, including the berm. Special Condition 5 requires detailed plans of the area of disturbance and identify the species, extent, location of all plant materials, and planting methods for all areas that will be temporarily impacted by construction activities. The revegetation program shall restrict all plantings to locally native species and maintained in good growing condition throughout the life of the project. The revegetation of disturbed areas shall occur immediately upon completion of final grading for the floodwall and berm.

The project includes as-need desilting of Franklin and Santa Monica Creeks. Temporary stockpiles would be expected to remain on site for a few months until all material has been adequately dewatered and removed to a suitable disposal site. Stockpiled materials, which would be visible from public viewing areas including the Nature Park adjacent to the site, would result in some adverse temporary impacts to public views. The Commission notes that excavated materials that are placed in stockpiles are subject to increased erosion and that additional landform alteration would

result if the excavated material were to be permanently retained on site. The resulting landform alteration and increased erosion on site would adversely impact public views from then Nature Park. Therefore, in order to ensure that the adverse impacts to public views are minimized **Special Condition Ten (10)** requires that stockpile sites be temporary, and only as long as necessary for the dewatering process to be complete. The stockpile material shall be removed to an appropriate approved disposal location either outside the coastal zone or to a site within the coastal zone permitted to receive such fill.

Presently, public access to the Marsh is restricted. No public access is available from Estero Way, and Sandyland Cove Road is private and only provides access to the residences along Del Mar Avenue. However, there is public access in the Nature Park immediately adjacent to east Carpinteria Marsh.

As sated previously, the proposed project includes public access improvements and would open up a portion of Basin 1 to public use. Public access improvements include a pedestrian footbridge crossing Franklin Creek from the Nature Park, an approximately 1,200-foot long, 3-foot wide decomposed granite or gravel path, and four interpretive stations featuring the salt marsh, fresh water marsh, upland environments, and their inhabitants. The project also includes limited signs and fencing to discourage public crossing of the railroad tracks and trespass on adjacent private roads and residential areas (Exhibit 6).

The footbridge would connect the proposed trail system with existing pathways in the Nature Park. The 1,200-foot long path would be located and designed to avoid impacts to sensitive wetland and upland vegetation and to avoid impacts from heavy equipment used during sediment removal and berm maintenance activities. It would be located in the already-disturbed area at the edge of the flood control berm along Franklin Creek and along the edge of the flood control access road that parallels the railroad tracks. Four wildlife and plant viewing areas, with low profile interpretive signs and features, would be created so that the public can have non-intrusive access to representative middle salt marsh, fresh water marsh and upland habitats that occur in this part of the Carpinteria Salt Marsh.

Temporary fencing would be required in restoration areas adjacent to the path until the plantings are established. A sign at the western end of the path, as it veers from the flood control access road, would warn visitors that the trail ends there and public access is prohibited beyond that point. A gate would be installed at the junction of the flood control road and Sandyland Cove Road to prevent unauthorized vehicle access to Basin 1. A 6-foot-high chain link fence would be installed along the railroad right-of-way to discourage people from crossing to or from Basin 1.

As discussed above, the project represents a net benefit to the available public access. The proposed project includes the placement of signage on the site to inform the public about the sensitive nature of the habitat and to discourage public crossing of the railroad tracks and trespass on adjacent private roads and residential areas. The

Commission finds that adequate noticing of the restricted area is essential to protect environmentally sensitive resources and to inform the public of appropriate use and access. Such signs are typically beneficial in nature by providing adequate notification prior to implementing enforcement actions and by discouraging uses incompatible with the environmentally sensitive habitat areas. However, in this case, final information regarding the location, size, design, and language to be used has not been submitted as part of this application. Therefore, in order to ensure that the proposed signage is consistent not only with habitat protection, but also with the proposed provision of public access, **Special Condition Fourteen (14)** requires that prior to the installation of signage, that the applicants submit, for the review and approval of the Executive Director, plans adequate to show the location, design, and language to be used for all signs to be installed.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30210, 30211, and 30251 of the Coastal Act.

G. ARCHAEOLOGICAL RESOURCES

Coastal Act Section 30244 of the Coastal Act states that:

> ***Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.***

Archaeological resources are significant to an understanding of cultural, environmental, biological, and geological history. The Coastal Act requires the protection of such resources to reduce the potential adverse impacts through the use of reasonable mitigation measures. Degradation of archaeological resources can occur if a project is not properly monitored and managed during earth moving activities and construction. Site preparation can disturb and/or obliterate archaeological materials to such an extent that the information that could have been derived would be permanently lost. In the past, numerous archaeological sites have been destroyed or damaged as a result of development. As a result, the remaining sites, even though often less rich in materials, have become increasingly valuable as a resource. Further, because archaeological sites, if studied collectively, may provide information on subsistence and settlement patterns, the loss of individual sites can reduce the scientific value of the sites which remain intact.

The Final EIR for the subject project reports that the project area is located within the body of the ancestral Carpinteria Marsh, within the Santa Barbara Channel cultural area, which includes evidence of human occupation dating to over 9,500 years ago. The majority of the excavation associated with the proposed project, including excavation within Franklin Creek, the Main Channel, Santa Monica Creek, and Basin 3 would occur within the body of Carpinteria Marsh; prehistoric occupation would be expected only on estuary margins, and not within the marsh, similar to that found at other prominent estuaries along he South Coast and Southern California, including the Goleta Slough. Because existing berms were created by leftover spoils associated with channel desilting and improvements, no disturbance to native soils would occur during

berm removal. However, construction of the floodwall along the north side of Del Mar Avenue could result in the disturbance of unknown potentially significant sub-surface cultural resources.

The Commission notes that potential adverse effects to cultural resources may occur due to inadvertent disturbance during project activities. To ensure that impacts to archaeological resources are minimized consistent with Coastal Act Section 30244, **Special Condition Fifteen (15)** requires that if project activities are undertaken within an area known to have archaeological resources, the applicants agree to have a qualified archaeologist(s) and appropriate Native American consultant(s) present on-site during all project which occur within or adjacent to the identified site(s) in the project area. Specifically, if required as described above, the project operations on site shall be controlled and monitored by the archaeologist(s) with the purpose of locating, recording and collecting any archaeological materials. Alternately, under the direction of a qualified archaeologist and/or appropriate Native American consultant, the applicants may implement alternative techniques designed to temporarily protect such resources (e.g., placing temporary cap material in accordance with accepted protocols for archaeological resource protection). In the event that any significant archaeological resources are discovered during operations, all work in this area shall be halted and an appropriate data recovery strategy be developed, subject to review and approval of the Executive Director, by the applicants' archaeologist and the native American consultant consistent with CEQA guidelines.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30244 of the Coastal Act.

H. LOCAL COASTAL PROGRAM

The proposed project area lies within the unincorporated area of County of Santa Barbara, but falls within the Commission's area of retained original permit jurisdiction as shown on the Carpinteria Post LCP Certification Permit and Appeal Jurisdiction map. The Commission has certified the Local Coastal Program for the County of Santa Barbara (Land Use Plan and Implementation Ordinances) which contains policies for regulating development and protection of coastal resources, including the protection of environmentally sensitive habitats, recreational and visitor serving facilities, coastal hazards, and public access.

I. CEQA

Section 13096(a) of the Commission's administrative regulations requires Commission approval of Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The Commission finds that, the proposed project, as conditioned will not have significant adverse effects on the environment, within the meaning of the California Environmental Quality Act of 1970. Therefore, the proposed project, as conditioned, has been adequately mitigated and is determined to be consistent with CEQA and the policies of the Coastal Act.

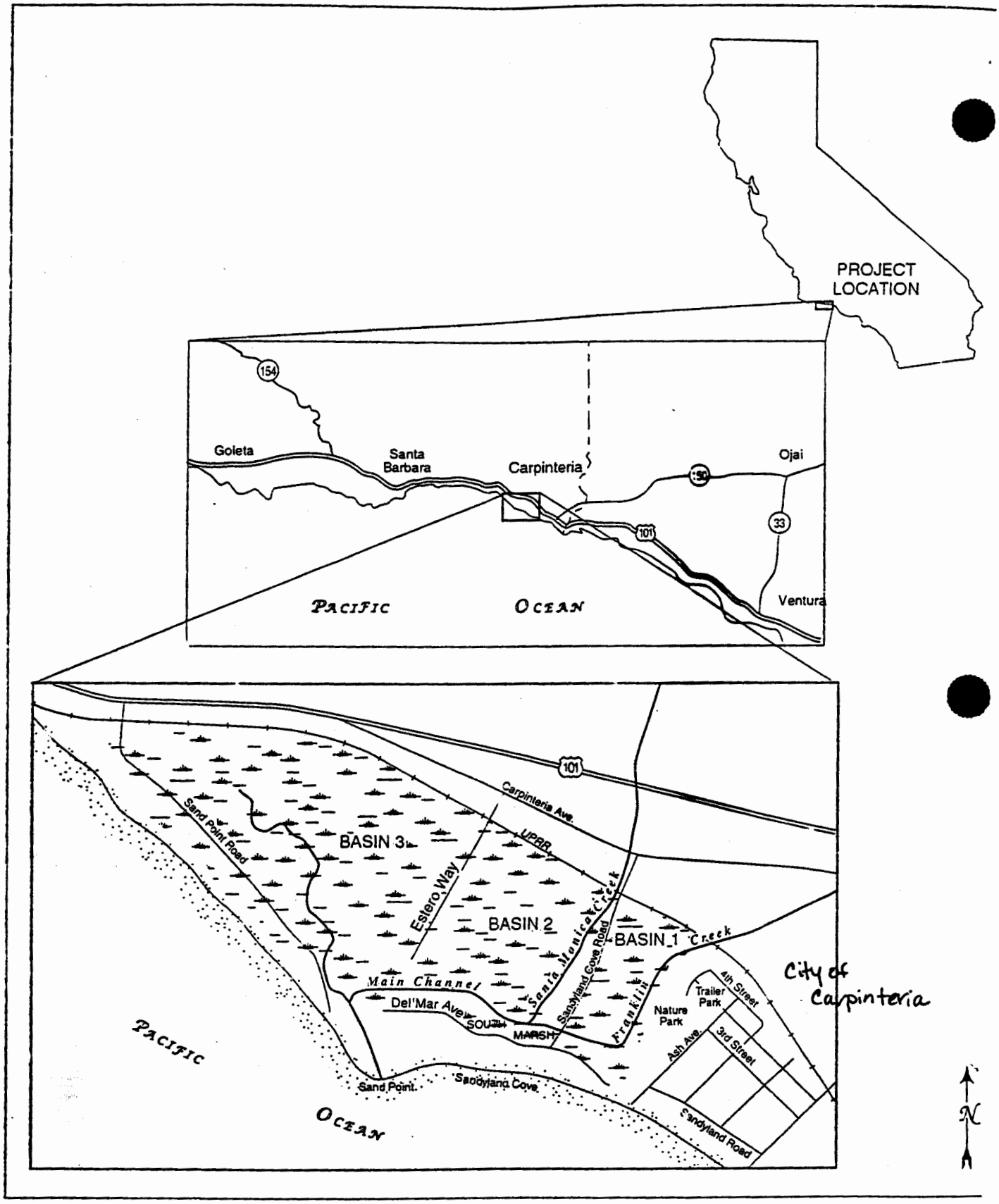
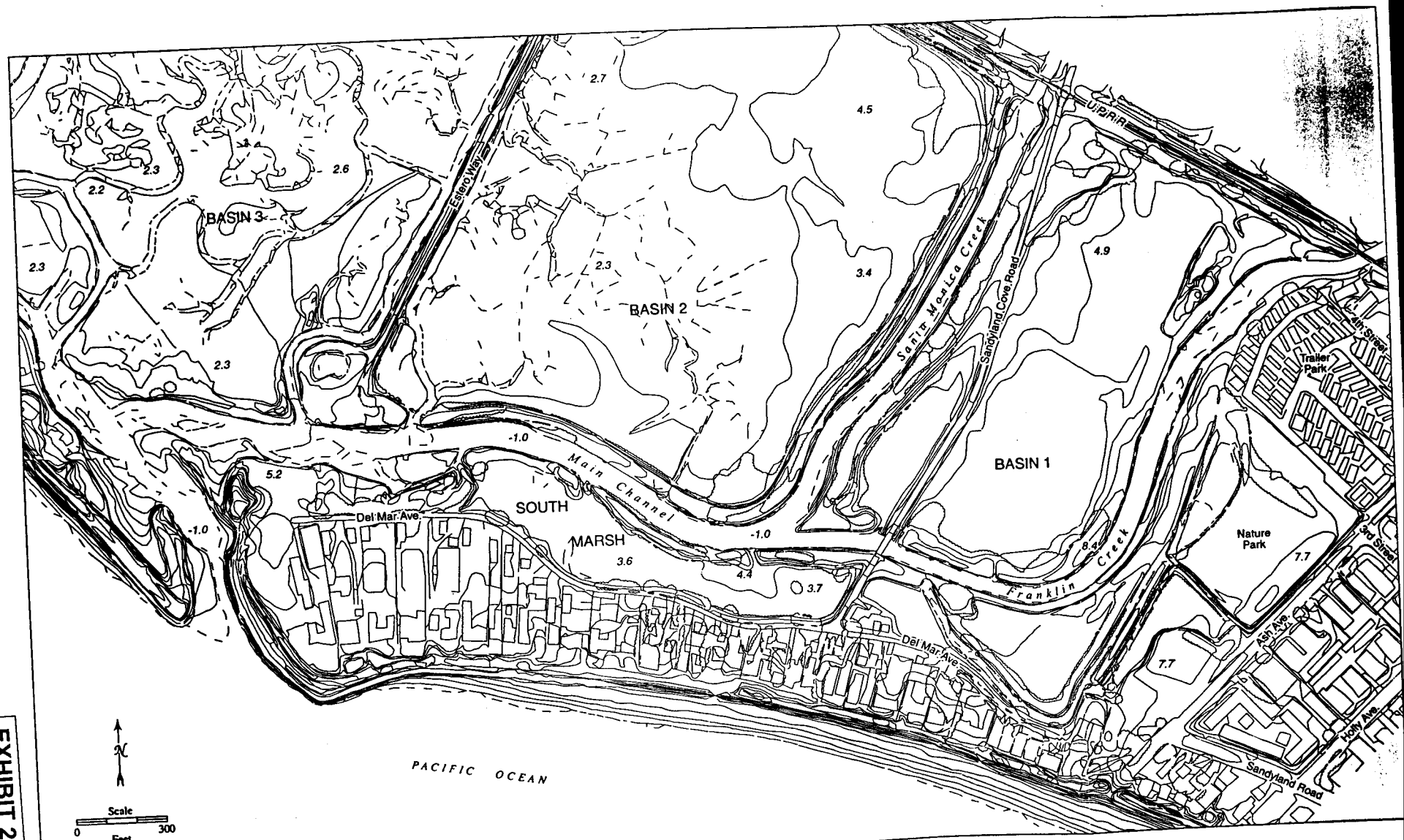


Figure 1-1. Regional Location Map

EXHIBIT 1
4-03-060
Vicinity Map



Source: Moffatt & Nichol Engineers and SAIC 2001

Figure 1-3. Key Features of Carpinteria Marsh and Adjacent Areas

EXHIBIT 2
4-03-060
Key Features of Carpinteria Marsh

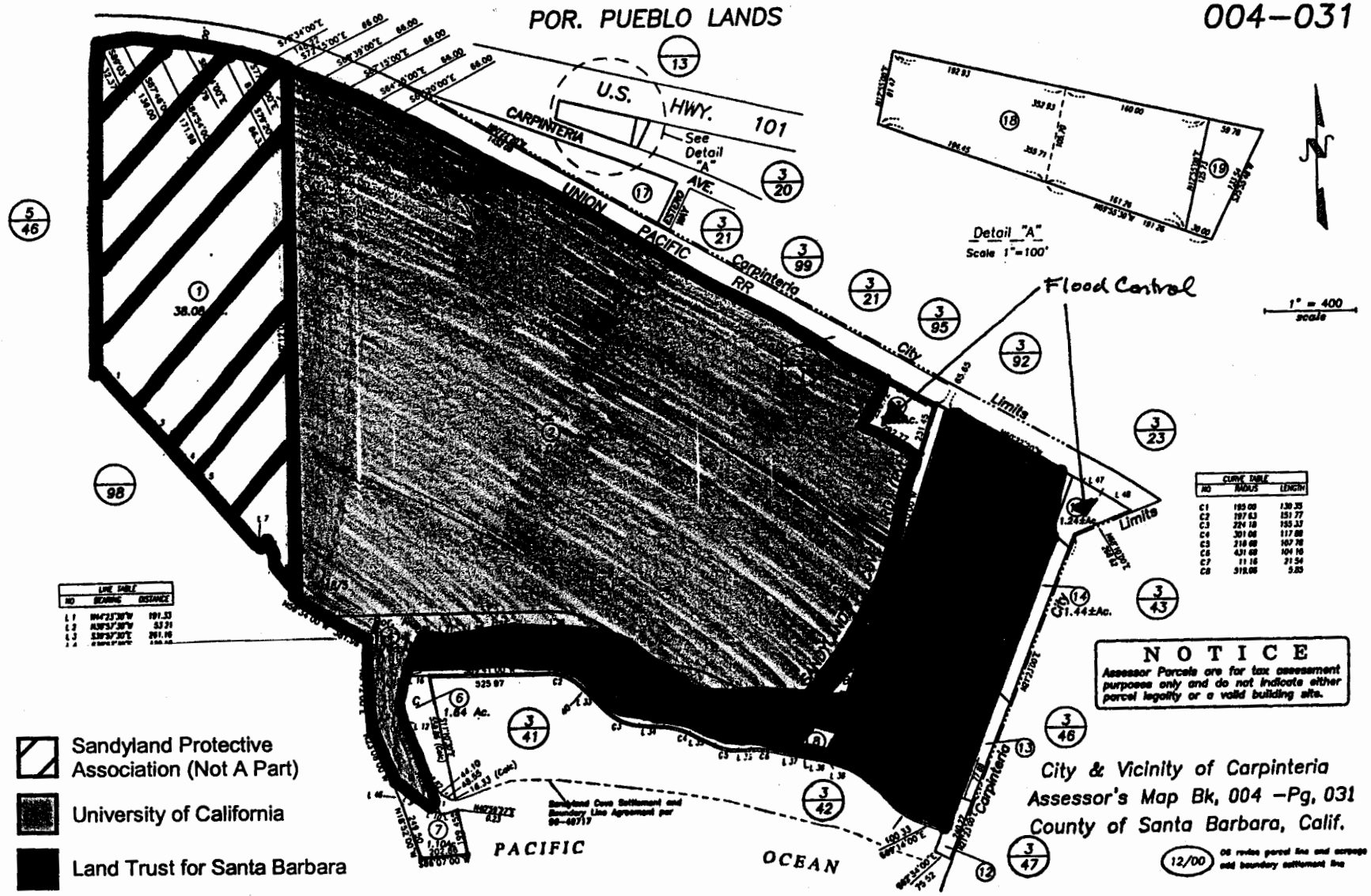


EXHIBIT 3
4-03-060
Ownership

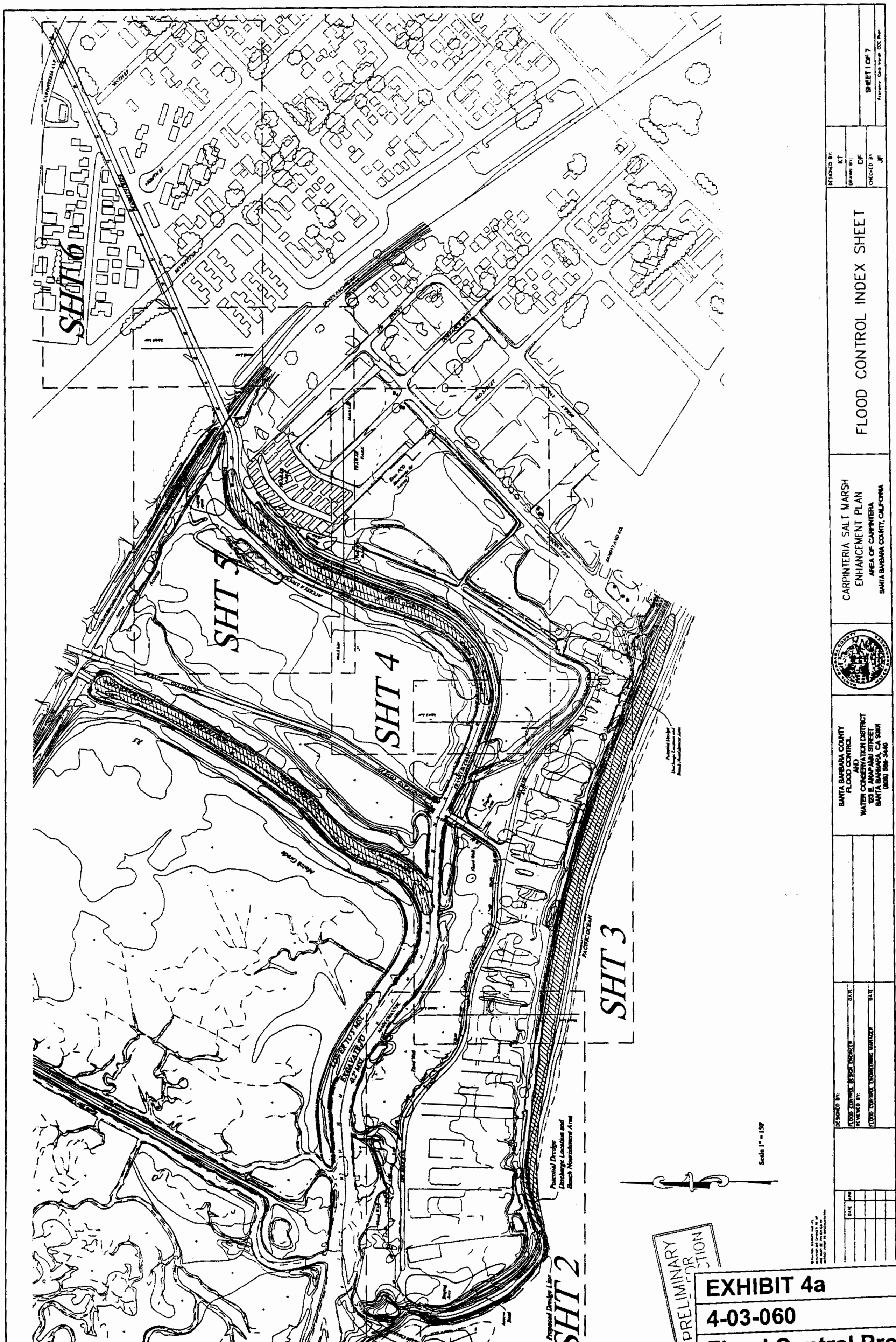


EXHIBIT 4a

4-03-060

Flood Control Project Site Plan Index

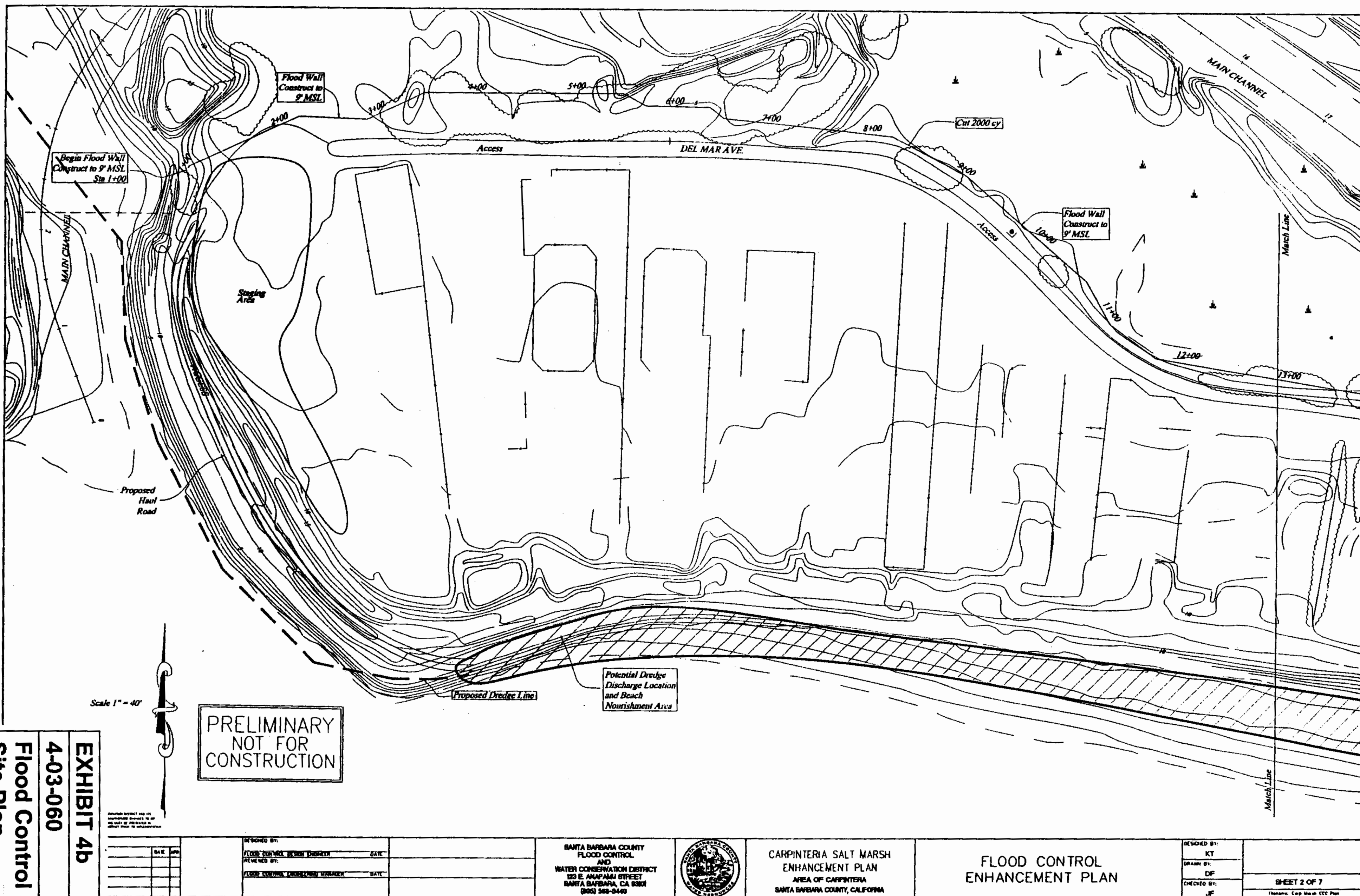
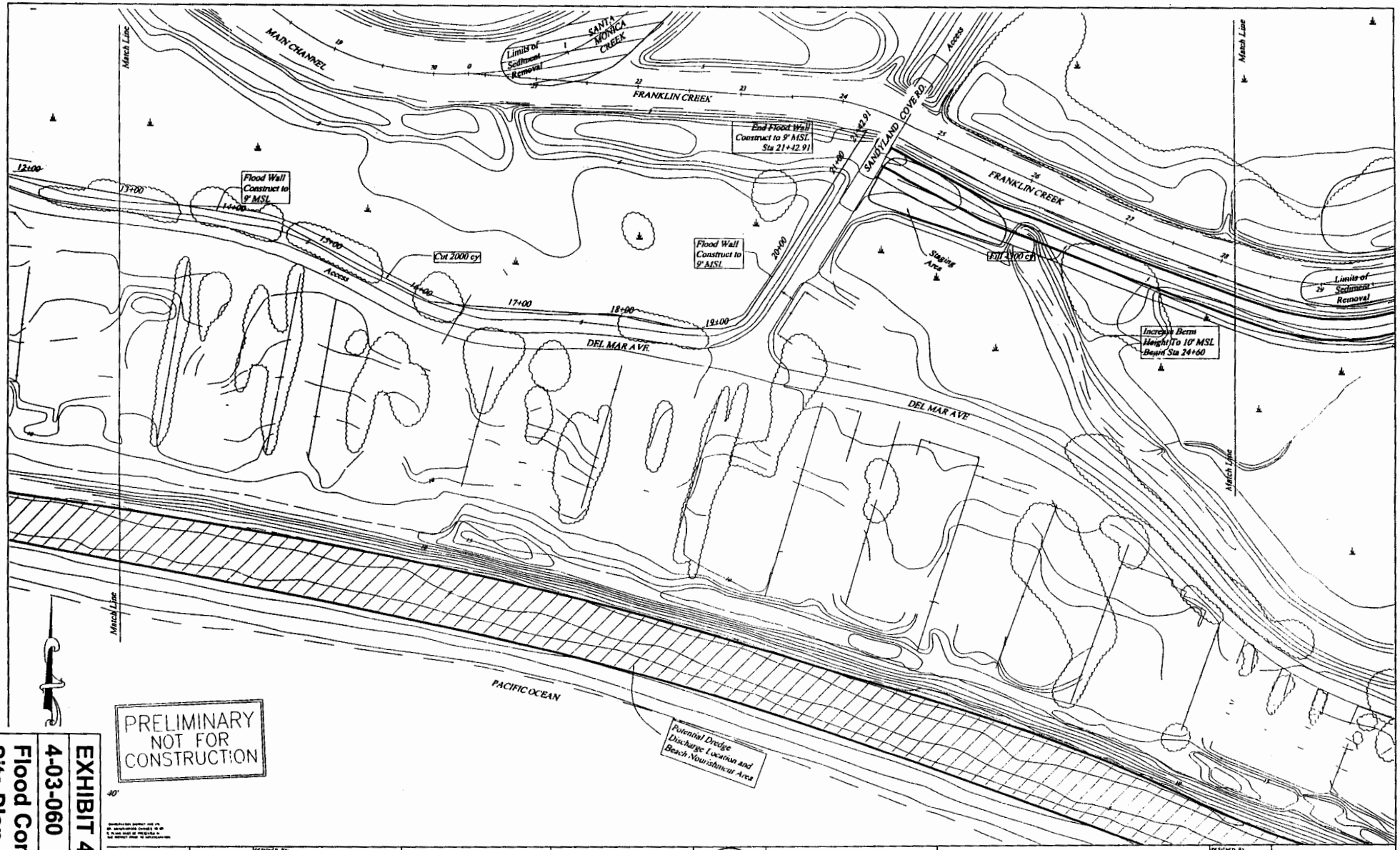


EXHIBIT 4b
4-03-060
Flood Control Project
Site Plan



DESIGNED BY: FLOOD CONTROL DESIGN ENGINEER DATE; REVIEWED BY: FLOOD CONTROL ENGINEERING MANAGER DATE	SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT 123 E. ANAPAMU STREET SANTA BARBARA, CA 93101 (805) 568-3440		CARPINTERIA SALT MARSH ENHANCEMENT PLAN AREA OF CARPINTERIA SANTA BARBARA COUNTY, CALIFORNIA	FLOOD CONTROL ENHANCEMENT PLAN	DESIGNED BY: KT DRAWN BY: DF CHECKED BY: JF	SHEET 3 OF 7

EXHIBIT 4c
4-03-060
Flood Control Project Site Plan

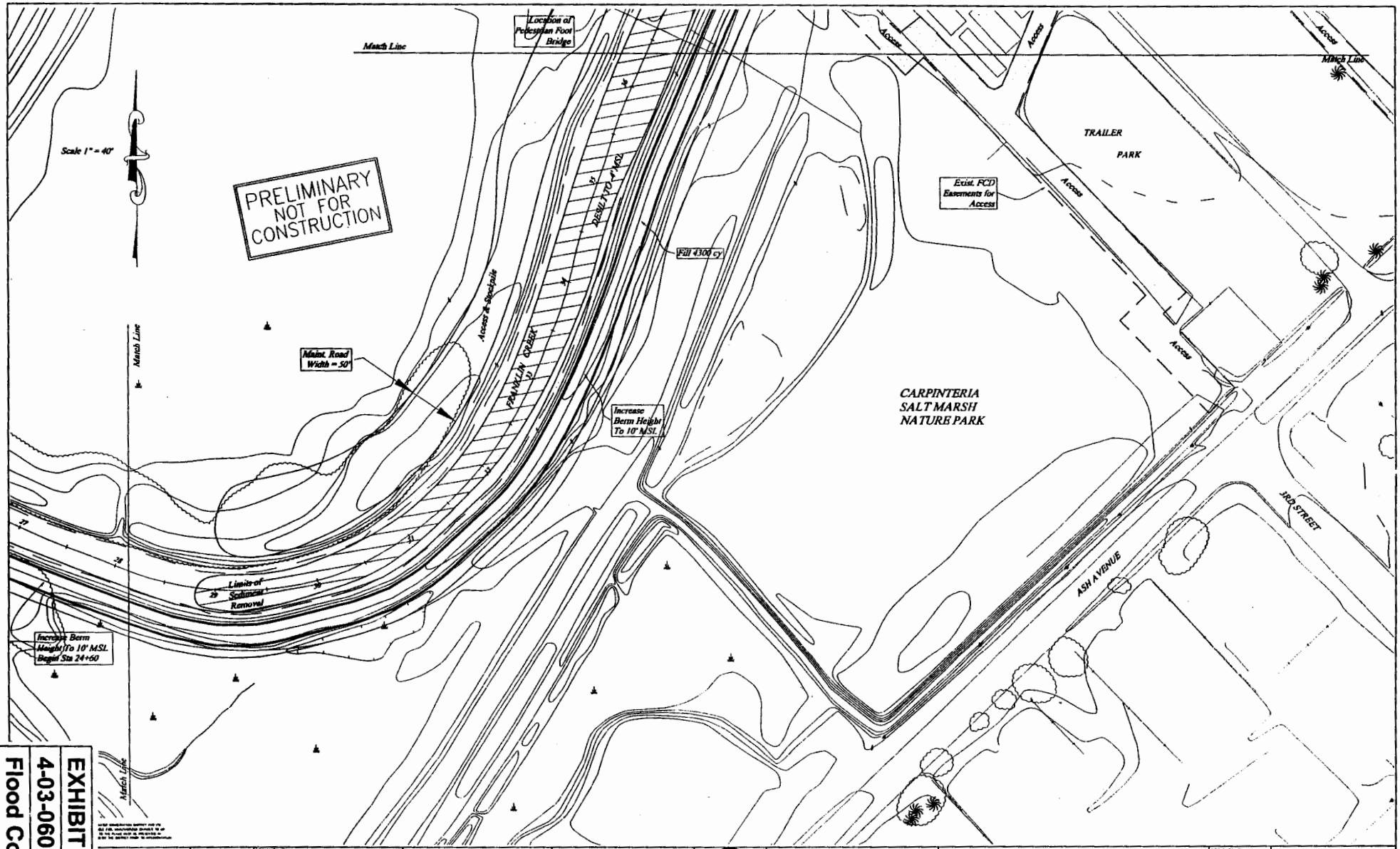


EXHIBIT 4d
4-03-060
Flood Control Project
Site Plan

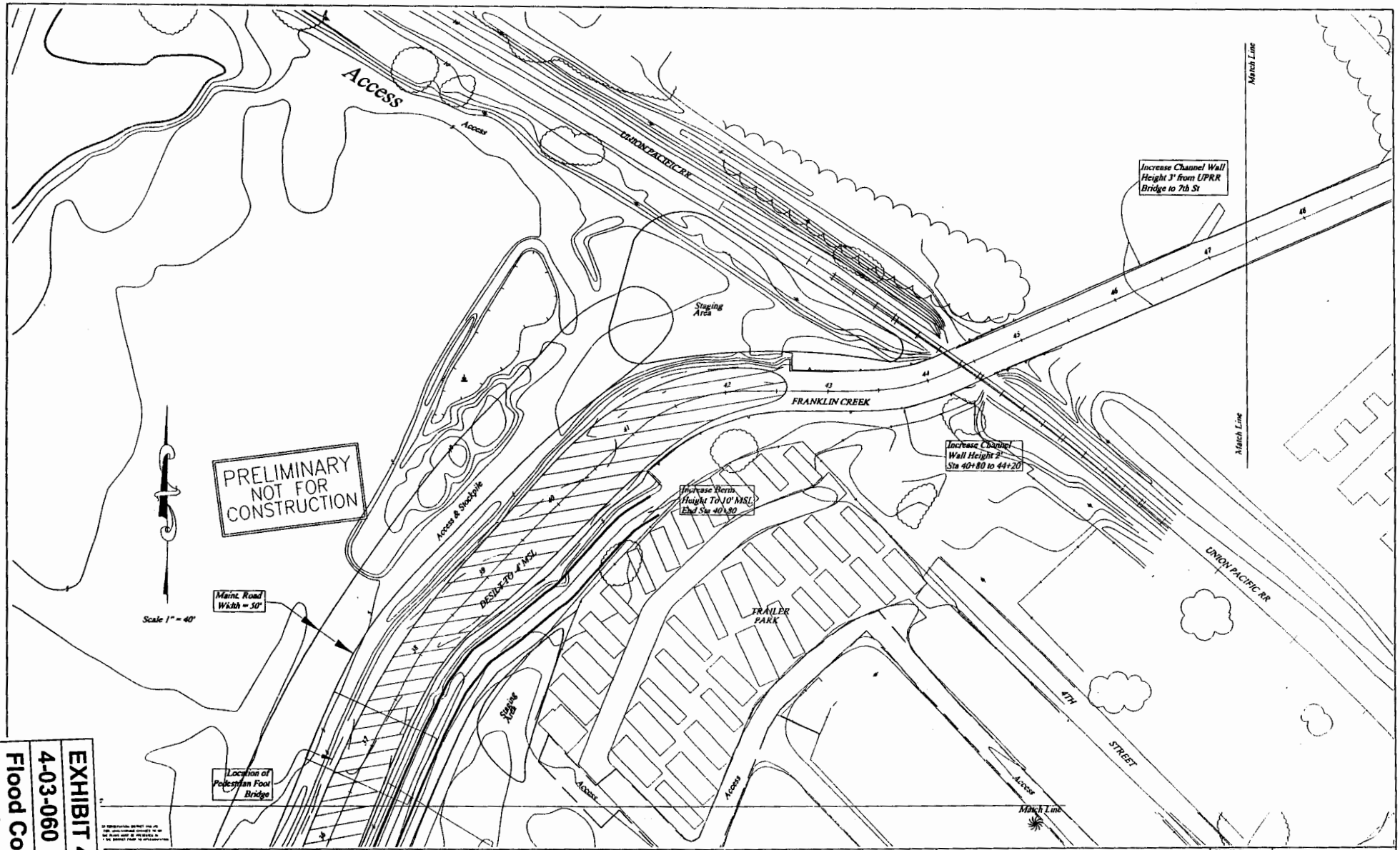
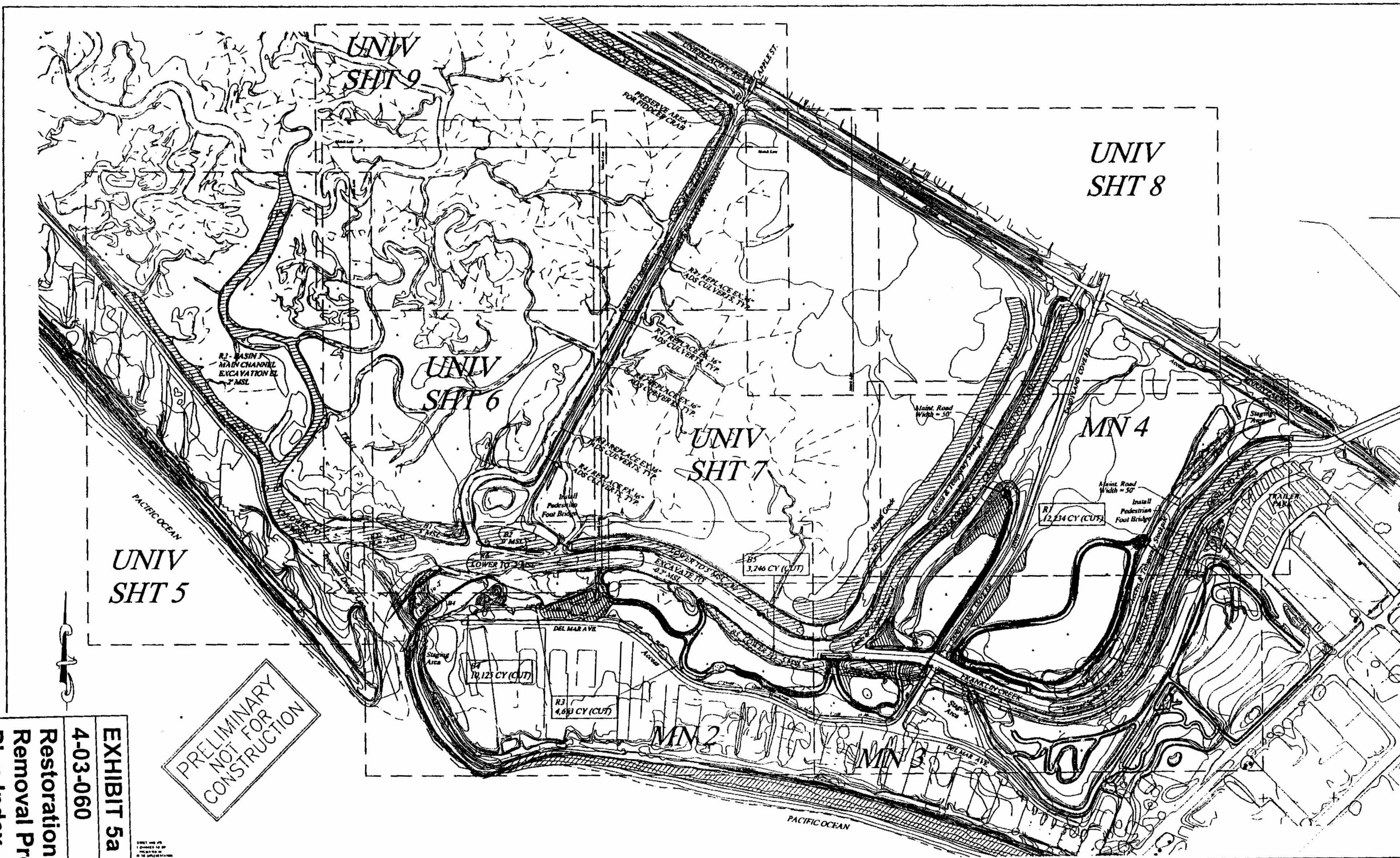


EXHIBIT 4e
4-03-060
Flood Control Project
Site Plan

EXHIBIT 4f
4-03-060
Flood Control Project
Site Plan



DESIGNED BY: FLOOD CONTROL DESIGN ENGINEER — DATE	REVIEWED BY: FLOOD CONTROL ENGINEERING MANAGER — DATE

SANTA BARBARA COUNTY
FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
123 E. ANAPAMU STREET
SANTA BARBARA, CA 93101
(805) 568-3440

CARPINTERIA SALT MARSH
ENHANCEMENT PLAN
AREA OF CARPINTERIA
SANTA BARBARA COUNTY, CALIFORNIA

RESTORATION ENHANCEMENT
INDEX SHEET

DESIGNED BY:
DRAWN BY:
CHECKED BY:
SHEET 1 OF 9

EXHIBIT 5a
4-03-060
Restoration and Berm Removal Project Site Plan Index

LEGEND

- 5 — EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- EXISTING WATER SURFACE
- -2- PROPOSED CONTOURS
- DAYLIGHT LINE/LIMITS OF GRADING
- EXISTING VEGETATION
- EXISTING WETLANDS
- 2:1 SLOPE GRADE (2 FEET HORIZ. FOR EVERY 1 FOOT VERT.)
- (1) NOTE REFERENCE

CONSTRUCTION NOTE

(1) CONSTRUCT ALL NORTH, SOUTH AND WEST FACING DUNE SLOPES WITH 5:1 SLOPES. ALL EAST FACING SLOPES SHALL BE CONSTRUCTED WITH 2:1 SLOPES. IF THE CONTRACTOR DEEMS THESE DUNE SLOPES TO BE INFEASIBLE FOR THE MATERIAL, THEN, THE CONTRACTOR SHALL NOT CHANGE THE SLOPES WITHOUT FIRST ATTAINING THE PERMISSION FROM THE ENGINEER.

(2) TIE PROPOSED CHANNEL CONTOURS INTO THE EXISTING THALWEG OF ENTRANCE CHANNEL.

NOTES

1. CONTRACTOR TO COORDINATE WITH THE LAND TRUST OF SANTA BARBARA COUNTY FOR LOCATION OF WORK STORAGE.
2. CONTRACTOR TO PROTECT IN PLACE AND FIELD VERIFY THE LOCATION OF AN EXISTING PIPE IN THE OCEAN ENTRANCE CHANNEL.

Graphic Scale
0 50 100 150
1"=50'

G-1

EXHIBIT 5b
4-03-060
Restoration and Berm Removal Site Plan

...s and substructures shown from the best available ...umed to be accurate and ...he information was obtained ...e of Moffatt & Nichol ...l guarantee said information ...d complete. It shall be the ...ponsibility to verify, locate ...e and substructures shown

UNAUTHORIZED CHANGES AND USES

CAUTION: The engineer preparing these plans will not be responsible for or liable for unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

DESIGNED BY:	DRAWN BY:	CHECKED BY:
C. Lim	C. Frampton	C. Webb

REGISTERED PROFESSIONAL ENGINEER — RUSSELL H. BOUDREAU — No. C56888 — EXP. 3/31/04 — CIVIL — STATE OF CALIFORNIA

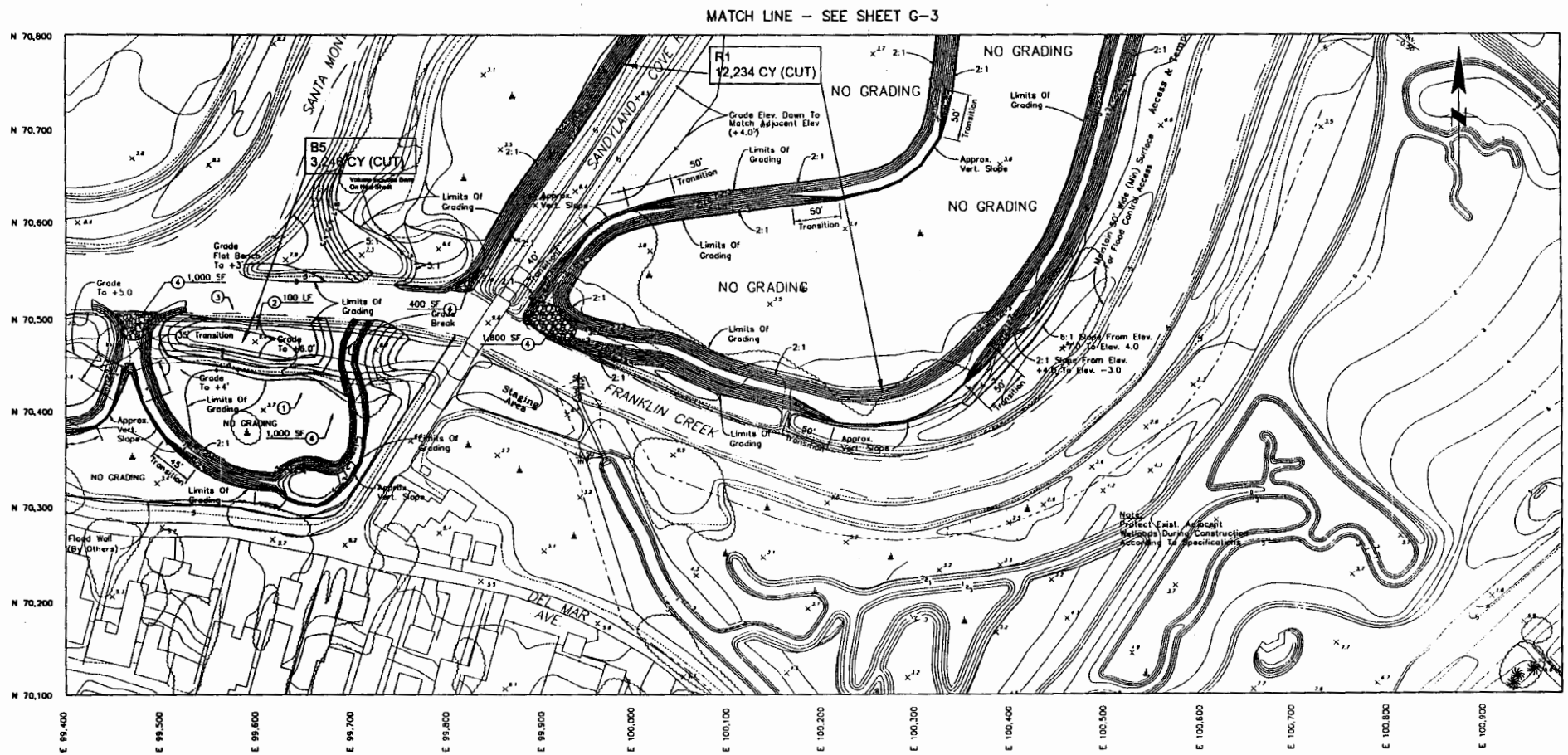
PREPARED BY:
MOFFATT & NICHOL ENGINEERS
Russell H. Boudreau RCE NO. 41818 EXP. 3/04

REVISED	
DATE	DESCRIPTION

THE LAND TRUST FOR SANTA BARBARA COUNTY
CARPINTERIA SALT MARSH
WETLANDS ENHANCEMENT PLAN
BASIN 1 AND THE SOUTH MARSH

MARSH GRADING PLAN 1

SHEET 2 OF 9 SHEETS



LEGEND

- 5 — EXISTING CONTOURS
- 57 — EXISTING SPOT ELEVATION
- EXISTING WATER SURFACE
- 2 — PROPOSED CONTOURS
- DAYLIGHT LINE/LIMITS OF GRADING
- EXISTING VEGETATION
- EXISTING WETLANDS
- 2:1 — SLOPE GRADE (2 FEET HORIZ. FOR EVERY 1 FOOT VERT.)
- ① — NOTE REFERENCE
- RIVER RUN

CONSTRUCTION NOTES

① CONSTRUCT HEADWALL PER DETAIL 1/G2/G5

② CONSTRUCT 48" DIA. HDPE HANCOR® H-O PIPE (SMOOTH INTERIOR) OR APPROVED EQUAL

③ CONSTRUCT METAL FLARED END SECTION PER CALTRANS STD PLAN D94A 1992 MANUFACTURED BY CONTECH® OR APPROVED EQUAL WITH TOE PLACE EXTENSION. SEE DETAIL 3/G2/G6

④ CONSTRUCT 1' THICK OF 4"–12" DIAMETER COBBLE ROCK, COBBLE ROCK SCOUR BED

Graphic Scale
0 50 100 150
1"=50'

G-2

utilities and substructures shown ained from the best available n presumed to be accurate and nce the information was obtained office of Moffatt & Nichol annot guarantee said information te and complete. It shall be the responsibility to verify, locate utilities and substructures shown

UNAUTHORIZED CHANGES AND USES

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DESIGNED BY: G. Lim | DRAWN BY: C. Frampton | CHECKED BY: C. Webb

REGISTERED PROFESSIONAL ENGINEER RUSSELL H. BOUDREAU No. CIVIL EXP. 3/31/04 STATE OF CALIFORNIA

PREPARED BY: MOFFATT & NICHOL ENGINEERS
Russell H. Boudreau RCE NO. 41810 EXP. 3/04

REVISED	
DATE	DESCRIPTION

THE LAND TRUST FOR SANTA BARBARA COUNTY

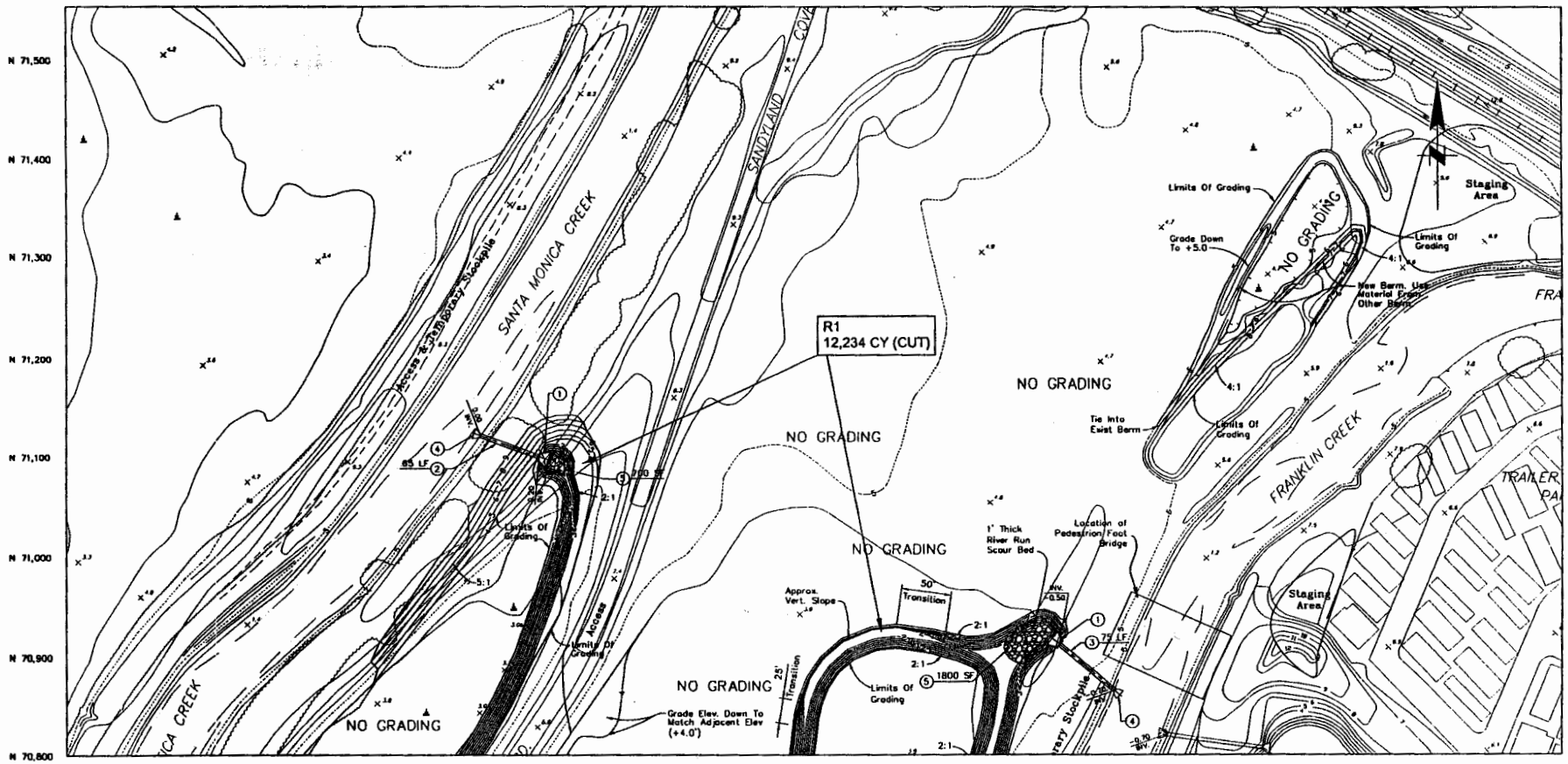
CARPINTERIA SALT MARSH WETLANDS ENHANCEMENT PLAN

BASIN 1 AND THE SOUTH MARSH

MARSH GRADING PLAN 2

SHEET 3 OF 9 SHEETS

EXHIBIT 5c
4-03-060
Restoration and Berm Removal Site Plan



LEGEND

- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- EXISTING WATER SURFACE
- PROPOSED CONTOURS
- DAYLIGHT LINE/LIMITS OF GRADING
- EXISTING VEGETATION
- EXISTING WETLANDS
- SLOPE GRADE (2 FEET HORIZ. FOR EVERY 1 FOOT VERT.)
- NOTE REFERENCE
- RIVER RUN

CONSTRUCTION NOTES

1. CONSTRUCT HEADWALL PER DETAIL 1/G3|G5
2. CONSTRUCT 48" DIA. HDPE HANCOR® H-Q PIPE (SMOOTH INTERIOR) OR APPROVED EQUAL
3. CONSTRUCT 36" DIA. HDPE HANCOR® H-Q PIPE (SMOOTH INTERIOR) OR APPROVED EQUAL
4. CONSTRUCT METAL FLARED END SECTION PER CALTRANS STD PLAN D94A 1992 MANUFACTURED BY CONTECH® OR APPROVED EQUAL WITH TOE PLACE EXTENSION. SEE DETAIL 3/G2|G6
5. CONSTRUCT 1' THICK OF 4"–12" DIAMETER COBBLE ROCK, COBBLE ROCK SCOUR BED

Graphic Scale 0 50 100 150 1"=50'

G-3

Maps and substructures shown are from the best available resumed to be accurate and s the information was obtained ffice of Moffatt & Nichol not guarantee said information and complete. It shall be the sponsibility to verify, locate ities and substructures shown

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CAUTION: The engineer preparing these plans will not be responsible for or liable for unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

DESIGNED BY:	DRAWN BY:	CHECKED BY:
G. Lim	C. Frampton	C. Wolz

PREPARED BY:

MOFFATT & NICHOL ENGINEERS

Russell H. Boudreau RCE NO. 41810 EXP. 3/04

REVISED	
DATE	DESCRIPTION

THE LAND TRUST FOR SANTA BARBARA COUNTY

CARPINTERIA SALT MARSH WETLANDS ENHANCEMENT PLAN

BASIN 1 AND THE SOUTH MARSH

MARSH GRADING PLAN 3

SHEET 4 OF 9 SHEETS

EXHIBIT 5d

4-03-060

Restoration and Berm Removal Site Plan

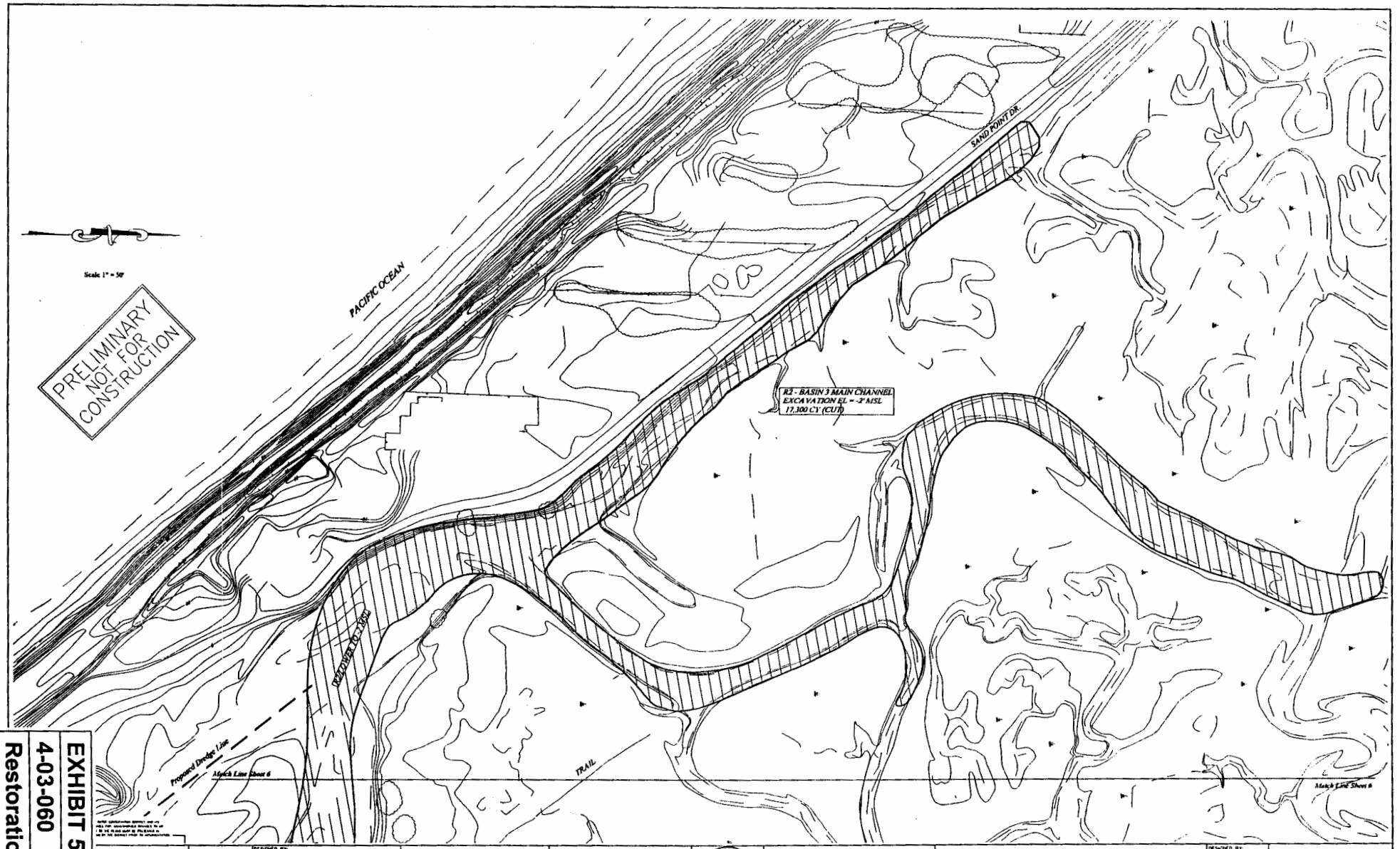


EXHIBIT 5e
4-03-060
Restoration and Berm Removal Site Plan

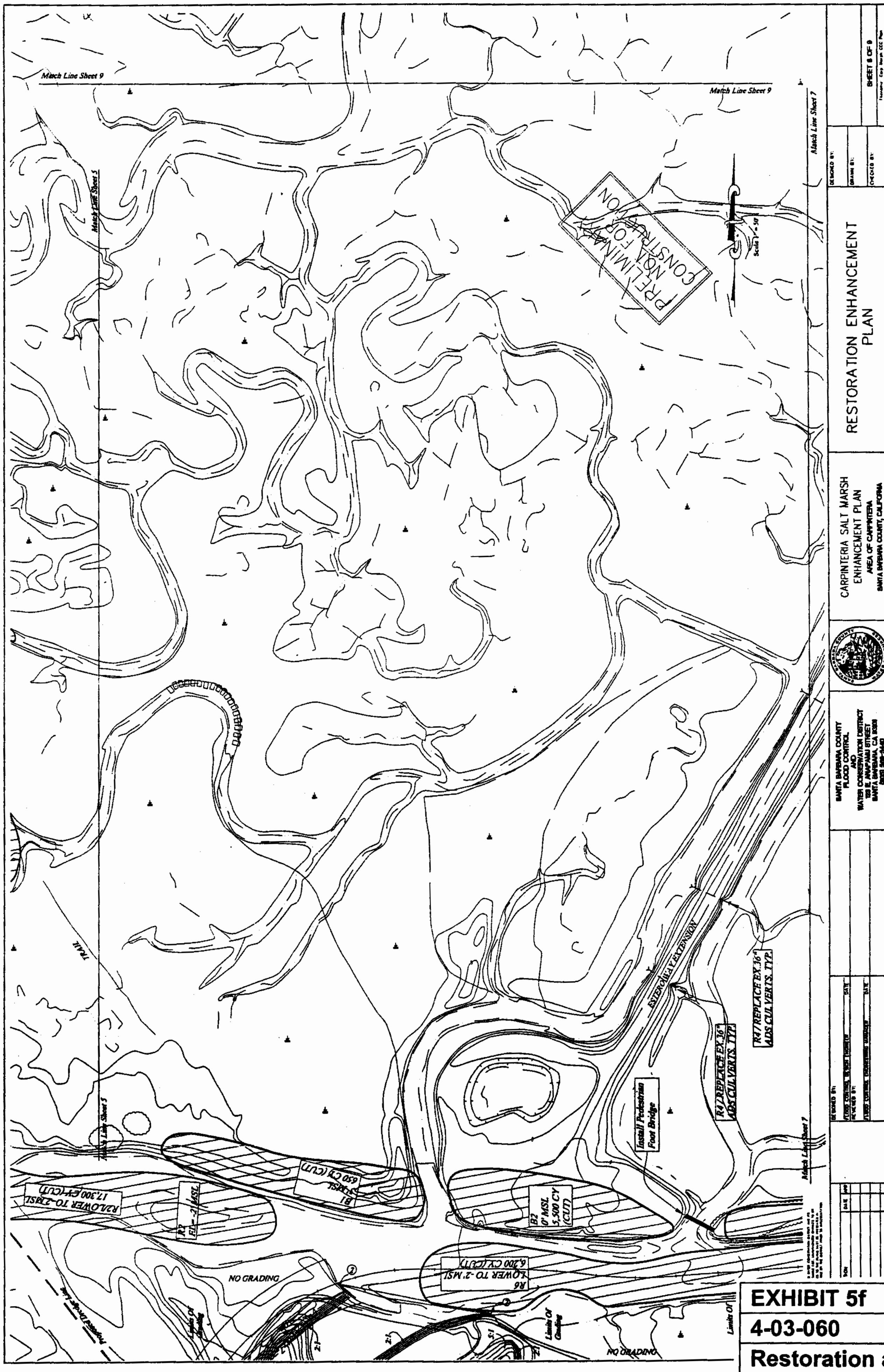


EXHIBIT 5f

4-03-060

Restoration and Berm Removal Site Plan

DESIGNED BY: FLOOD CONTROL DESIGN ENGINEER DATE REVIEWED BY: FLOOD CONTROL ENGINEERING MANAGER DATE	SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT 123 E. ANAPAMU STREET SANTA BARBARA, CA 93101 (805) 568-3440	CARPINTERIA SALT MARSH ENHANCEMENT PLAN AREA OF CARPINTERIA SANTA BARBARA COUNTY, CALIFORNIA
RESTORATION ENHANCEMENT PLAN	DESIGNED BY: DRAWN BY: CHECKED BY:	SHEET 7 OF 9

EXHIBIT 5g
4-03-060
Restoration and Berm Removal Site Plan

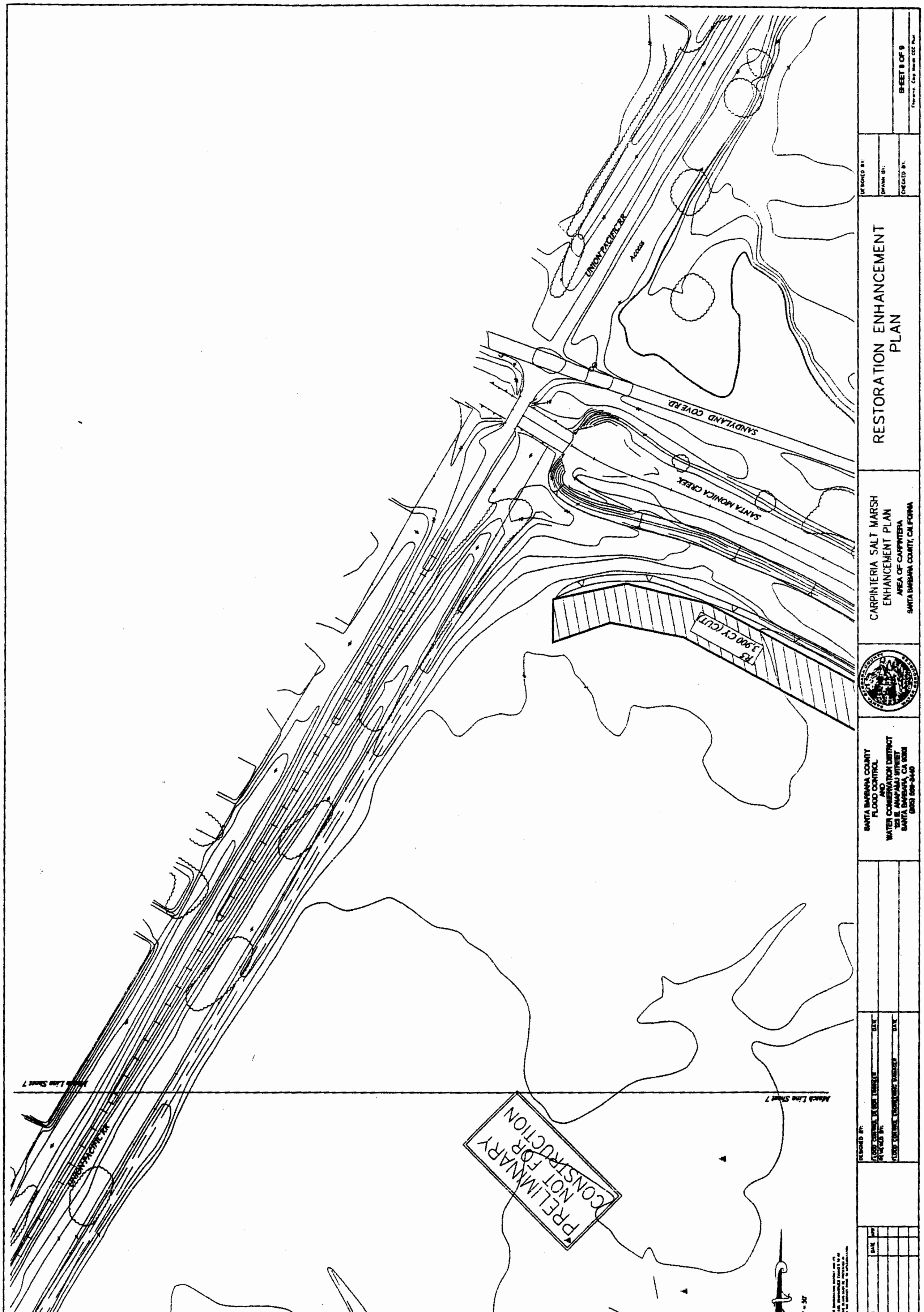


EXHIBIT 5h

4-03-060

Restoration and Berm Removal Site Plan

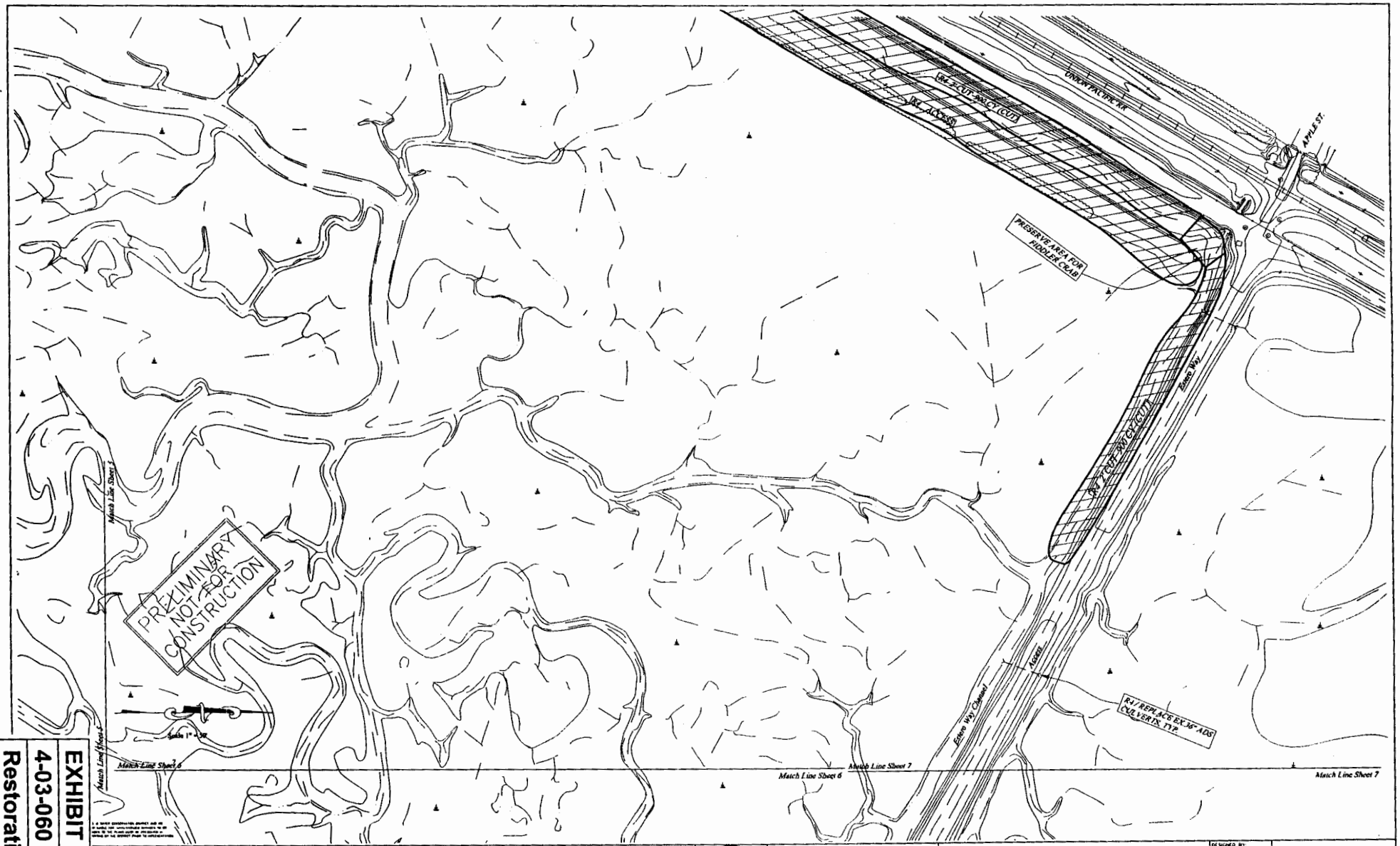


EXHIBIT 5i
4-03-060
Restoration and Berm Removal Site Plan

SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
123 E. ANAPAMU STREET
SANTA BARBARA, CA 93101
(805) 568-3440

CARPINTERIA SALT MARSH ENHANCEMENT PLAN
AREA OF CARPINTERIA
SANTA BARBARA COUNTY, CALIFORNIA

RESTORATION ENHANCEMENT PLAN

SHEET 9 OF 9

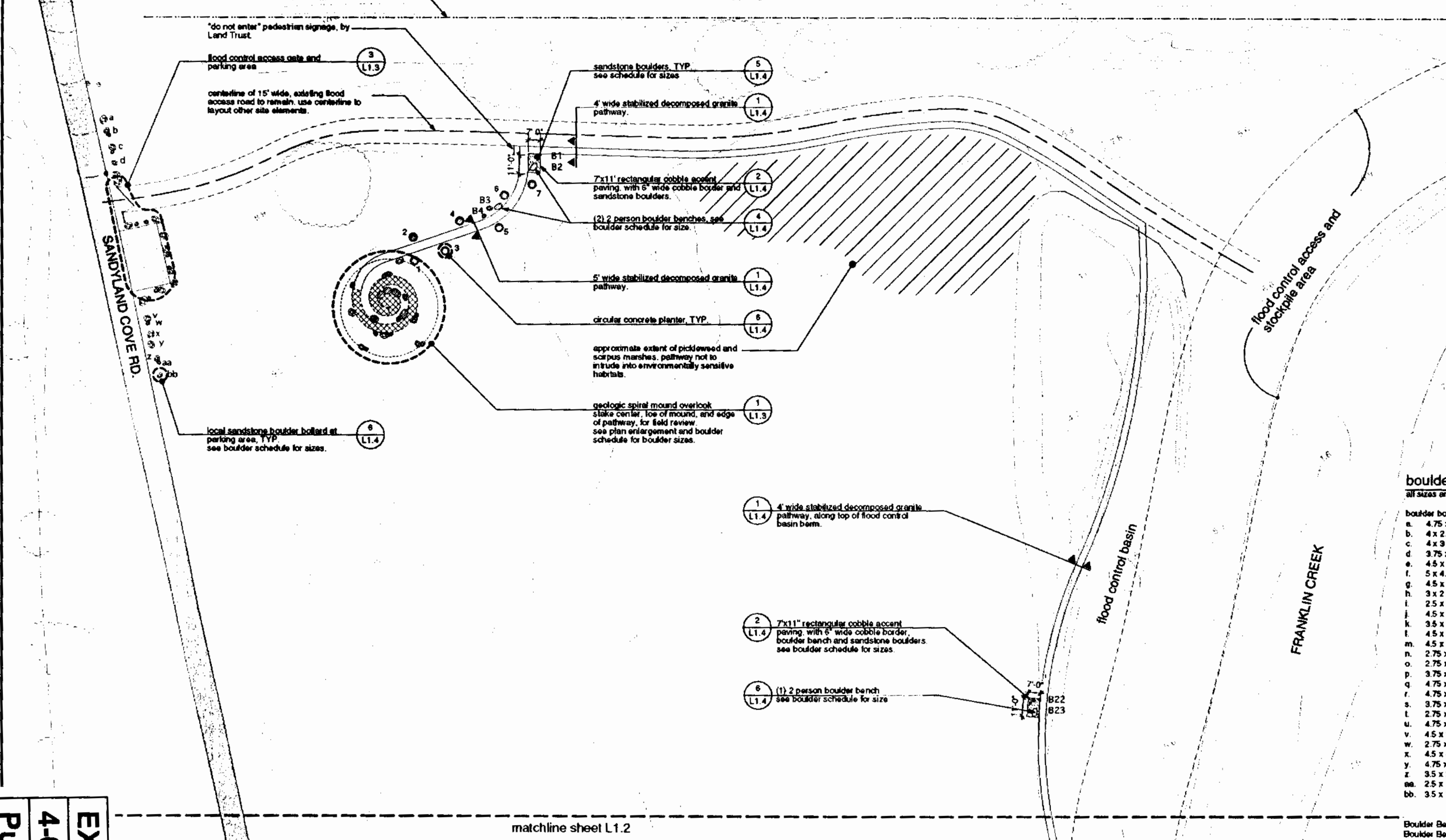
planter schedule

Plant Material and Installation is Not Included in Contract

Planter #	Planting Type	Scientific Name	Common Name	Qty.	Size
1	upland	*Malacothamnus fasciculatus var. nuttalii*	Chaparral Mallow	1	1 gal
2	upland	*Solanum xanti var. xanti*	Blue Nightshade	3	1 gal
3	upland/strand transition	*Encelia californica*	Coastal Encelia	3	1 gal
4	upland/strand transition	*Atriplex leucophylla*	Saltbush	14" O.C.	1 gal
5	upland/strand transition	*Grindelia camporum var. camporum*	Gum Plant	12" O.C.	1 gal
6	wetland edge	*Juncus textilis*	Indian Rush	12" O.C.	1 gal
7	wetland edge	*Anemopsis californica*	Yerba Mansa	12" O.C.	1 gal

hardscape legend

- Flagstone paving spiral
- Compacted crushed shale parking area and double track road
- Cobble accent paving
- Stabilized decomposed granite
- boulders, varying sizes, see boulder schedule
- boulder bench
- composite lumber header



materials and layout notes

1. Due to unforeseen circumstances that occur as projects undergo construction, site conditions will change. Therefore, if a proposed built element, grade change, planting or irrigation seems problematic and it is evident that it is not realistic due to new site conditions, please call us to coordinate this issue prior to construction.

2. Prior to construction, stake locations of all elements to be installed, including but not limited to, pathways, accent paving, spiral mound, centerline of existing maintenance road, access gate, and parking area. Contact Landscape Architect, to arrange a meeting on site where all staking can be reviewed by, or adjusted in the field at the direction of, the Landscape Architect. All staking shall be completed prior to this meeting.

Do not proceed with installation without the Landscape Architect's approval of all elements as required by the drawings.

3. Cobble accent paving nodes have a 6" wide cobble border as shown. Verify width and layout in the field with Landscape Architect.

4. Contractor shall confirm all field dimensions and conditions prior to the start of work. Any discrepencies with plans shall be reported to the Land Trust's Representative.

5. Contractor shall make modifications to material or method of installation as required by local code and conditions of approval, and shall notify the Land Trust's Representative of such changes.

6. It is the intention that the existing grades be maintained where ever possible. All pathways shall be considered accessible routes, and shall have a slope of less than 5%. Contact Landscape Architect and the Land Trust's Representative if it is determined that this condition can not be met.

7. All constructed surfaces will be sloped to drain, with a cross slope of 2% MIN.

general notes

1. Due to unforeseen circumstances that occur as projects undergo construction, site conditions will change. Therefore, if a proposed built element, grade change, planting or irrigation seems problematic and it is evident that it is not realistic due to new site conditions, please call us to coordinate this issue prior to construction.

2. Contractor shall read and understand the specifications prior to bidding. Failure to adhere to the specifications may result in a delay of the project at the contractor's expense. Contractor is responsible for any loss due to his/her decision to alter the design or layout of this project in any way.

3. Contractor shall confirm all field dimensions and conditions prior to the start of work. Any discrepencies with plans shall be reported to the Land Trust's Representative.

4. Contractor shall make modifications to material or method of installation as required by local code and conditions of approval, and shall notify the Land Trust's Representative of such changes.

boulder schedule

all sizes are in feet, length x width x height

boulder bollards		boulders	
a.	4.75 x 4 x 3	B1	2 x 1.5 x 4
b.	4 x 2.75 x 2.75	B2	2 x 2 x 2
c.	4 x 3 x 3	B3	2.5 x 2 x 2
d.	3.75 x 3 x 3.5	B4	2.75 x 2 x 3.5
e.	4.5 x 3.5 x 3	B5	3 x 4 x 3.5
f.	5 x 4.5 x 3.5	B6	4 x 2.5 x 3
g.	4.5 x 3 x 2	B7	3 x 2.5 x 4
h.	3 x 2 x 2	B8	3 x 4 x 3.5
i.	2.5 x 2 x 2	B9	3 x 2.5 x 3
j.	4.5 x 3.5 x 3	B10	4 x 3 x 3.5
k.	3.5 x 3 x 4	B11	2 x 1.5 x 1.5
l.	4.5 x 3.5 x 2.5	B12	3 x 2.5 x 3
m.	4.5 x 3 x 2.5	B13	4 x 3.5 x 2.5
n.	2.75 x 2 x 3.5	B14	3 x 2 x 3
o.	2.75 x 2 x 1.5	B15	3 x 3.5 x 3
p.	3.75 x 3 x 2.5	B16	3 x 2.5 x 2.5
q.	4.75 x 3.75 x 3	B17	3.5 x 3 x 3
r.	4.75 x 3.5 x 2.75	B18	3 x 2 x 2
s.	3.75 x 3 x 4	B19	3 x 2 x 2.5
t.	2.75 x 2 x 2	B20	3 x 2 x 3.5
u.	4.75 x 3.75 x 3	B21	3 x 2.5 x 2
v.	4.5 x 3.75 x 3	B22	3.5 x 3 x 2.5
w.	2.75 x 2 x 3.5	B23	2 x 2 x 3.5
x.	4.5 x 4 x 3	B24	3.25 x 3 x 2.25
y.	4.75 x 3.25 x 2.75	B25	2.25 x 2 x 4
z.	3.5 x 2.5 x 2.25	B26	2.5 x 1.75 x 1.5
aa.	2.5 x 1.5 x 1.25	B27	2 x 2.5 x 2.25
bb.	3.5 x 2.5 x 1.75	B28	3 x 2.25 x 2.25
		B29	3.75 x 3 x 3

Boulder Bench (2 person) 4.5 x 2.5 x 1.8 exposed (seat height) Qty. 6
Boulder Bench (1 person) 3 x 2.25 x 1.8 exposed (seat height) Qty. 4

0 30 60 90 FT

...l substructures shown hereon ...t available sources and are ...nd complete, but since the ...m others, the Van Atta ...rantee said information as being ...shall be the contractors sole ...te and protect all utilities and ...shown.

DESIGNED BY: JK/BC | DRAWN BY: JK/BC | CHECKED BY: MS

LICENSED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA

PREPARED BY:
Van Atta Associates, Inc.
Landscape Architecture • Planning

PROJECT #: 01-14

REVISED
DATE | DESCRIPTION

THE LAND TRUST FOR SANTA BARBARA COUNTY
CARPINTERIA SALT MARSH
WETLANDS ENHANCEMENT PROJECT
BASIN 1

Pathways Materials, Layout, and Grading Plan

DATE: 21 May 2004 | SHEET: L1.1
SCALE: 1" = 30'-0" | SHEET 2 OF 12 SHEETS

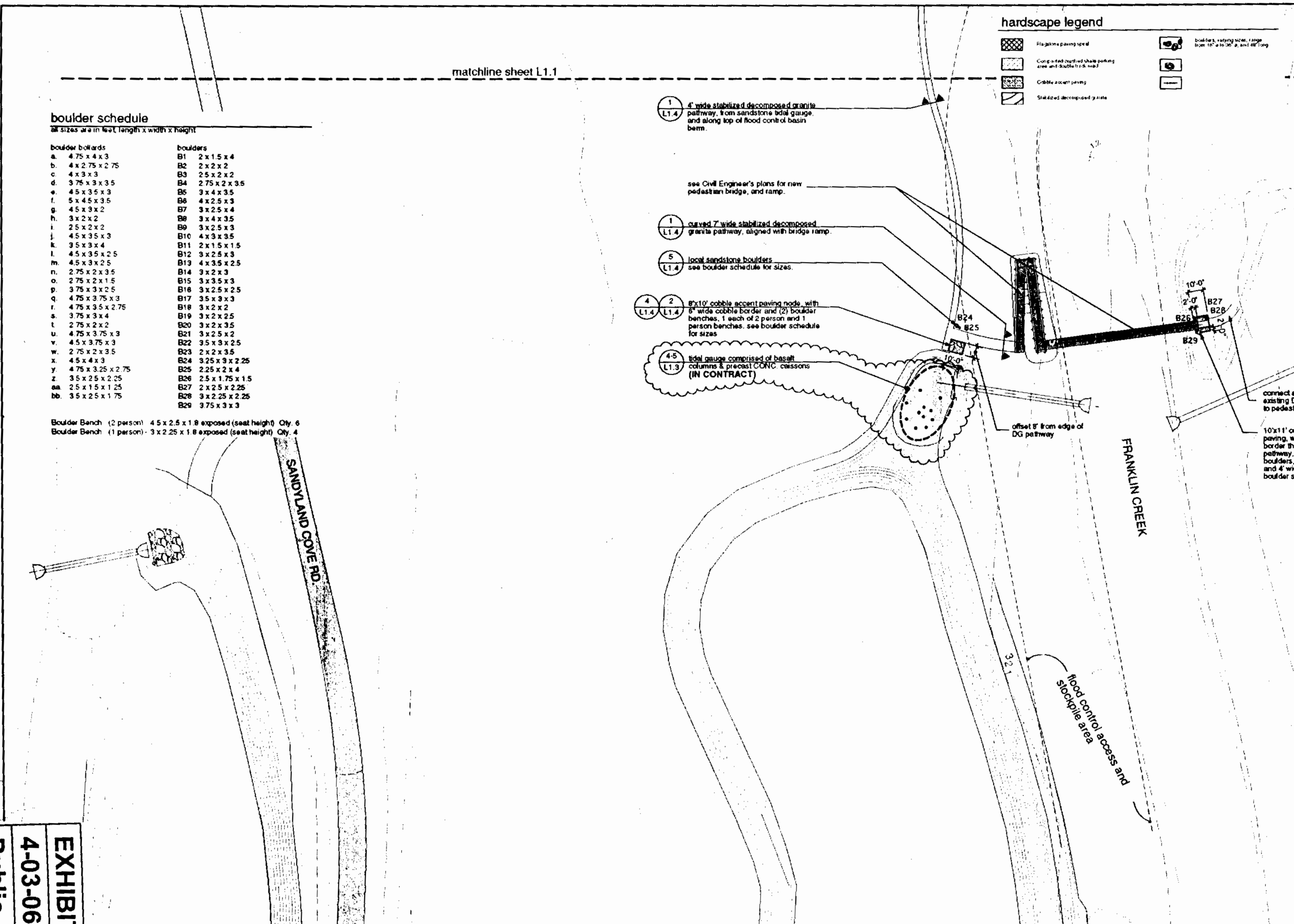
EXHIBIT 6a
4-03-060
Public Access Improvement Plan

boulder schedule

all sizes are in feet, length x width x height

boulder bollards		boulders	
a.	4.75 x 4 x 3	B1	2 x 1.5 x 4
b.	4 x 2.75 x 2.75	B2	2 x 2 x 2
c.	4 x 3 x 3	B3	2.5 x 2 x 2
d.	3.75 x 3 x 3.5	B4	2.75 x 2 x 3.5
e.	4.5 x 3.5 x 3	B5	3 x 4 x 3.5
f.	5 x 4.5 x 3.5	B6	4 x 2.5 x 3
g.	4.5 x 3 x 2	B7	3 x 2.5 x 4
h.	3 x 2 x 2	B8	3 x 4 x 3.5
i.	2.5 x 2 x 2	B9	3 x 2.5 x 3
j.	4.5 x 3.5 x 3	B10	4 x 3 x 3.5
k.	3.5 x 3 x 4	B11	2 x 1.5 x 1.5
l.	4.5 x 3.5 x 2.5	B12	3 x 2.5 x 3
m.	4.5 x 3 x 2.5	B13	4 x 3.5 x 2.5
n.	2.75 x 2 x 3.5	B14	3 x 2 x 3
o.	2.75 x 2 x 1.5	B15	3 x 3.5 x 3
p.	3.75 x 3 x 2.5	B16	3 x 2.5 x 2.5
q.	4.75 x 3.75 x 3	B17	3.5 x 3 x 3
r.	4.75 x 3.5 x 2.75	B18	3 x 2 x 2
s.	3.75 x 3 x 4	B19	3 x 2 x 2.5
t.	2.75 x 2 x 2	B20	3 x 2 x 3.5
u.	4.75 x 3.75 x 3	B21	3 x 2.5 x 2
v.	4.5 x 3.75 x 3	B22	3.5 x 3 x 2.5
w.	2.75 x 2 x 3.5	B23	2 x 2 x 3.5
x.	4.5 x 4 x 3	B24	3.25 x 3 x 2.25
y.	4.75 x 3.25 x 2.75	B25	2.25 x 2 x 4
z.	3.5 x 2.5 x 2.25	B26	2.5 x 1.75 x 1.5
aa.	2.5 x 1.5 x 1.25	B27	2 x 2.5 x 2.25
bb.	3.5 x 2.5 x 1.75	B28	3 x 2.25 x 2.25
		B29	3.75 x 3 x 3

Boulder Bench (2 person) 4.5 x 2.5 x 1.8 exposed (seat height) Qty. 6
Boulder Bench (1 person) - 3 x 2.25 x 1.8 exposed (seat height) Qty. 4



hardscape legend

- Flagstone paving spiral
- Compacted crushed shale parking area and double track road
- Cobble accent paving
- Stabilized decomposed granite
- boulders, varying sizes, range from 18" ø to 36" ø, and 48" long

materials and layout notes

1. Due to unforeseen circumstances that occur as projects undergo construction, site conditions will change. Therefore, if a proposed built element, grade change, planting or irrigation seems problematic and it is evident that it is not realistic due to new site conditions, please call us to coordinate this issue prior to construction.

2. Prior to construction, stake locations of all elements to be installed, including but not limited to, pathways, accent paving, spiral mound, centerline of existing maintenance road, access gate, and parking area. Contact Landscape Architect, to arrange a meeting on site where all staking can be reviewed by, or adjusted in the field at the direction of, the Landscape Architect. All staking shall be completed prior to this meeting.

Do not proceed with installation without the Landscape Architect's approval of all elements as required by the drawings.

3. Cobble accent paving nodes have a 6" wide cobble border as shown. Verify width and layout in the field with Landscape Architect.

4. Contractor shall confirm all field dimensions and conditions prior to the start of work. Any discrepencies with plans shall be reported to the Land Trust's Representative.

5. Contractor shall make modifications to material or method of installation as required by local code and conditions of approval, and shall notify the Land Trust's Representative of such changes.

6. It is the intention that the existing grades be maintained where ever possible. All pathways shall be considered accessible routes, and shall have a slope of less than 5%. Contact Landscape Architect and the Land Trust's Representative if it is determined that this condition can not be met.

7. All constructed surfaces will be sloped to drain, with a cross slope of 2% MIN.

general notes

1. Due to unforeseen circumstances that occur as projects undergo construction, site conditions will change. Therefore, if a proposed built element, grade change, planting or irrigation seems problematic and it is evident that it is not realistic due to new site conditions, please call us to coordinate this issue prior to construction.

2. Contractor shall read and understand the specifications prior to bidding. Failure to adhere to the specifications may result in a delay of the project at the contractor's expense. Contractor is responsible for any loss due to his/her decision to alter the design or layout of this project in any way.

3. Contractor shall confirm all field dimensions and conditions prior to the start of work. Any discrepencies with plans shall be reported to the Land Trust's Representative.

4. Contractor shall make modifications to material or method of installation as required by local code and conditions of approval, and shall notify the Land Trust's Representative of such changes.

; and substructures shown hereon best available sources and are te and complete, but since the ed rom others, the Van Atta guarantee said information as being ft shall be the contractors sole locale and protect all utilities and not shown.

DESIGNED BY: JK/BC | DRAWN BY: JK/BC | CHECKED BY: MS

PREPARED BY: Van Atta Associates, Inc. Landscape Architecture • Planning

PROJECT #: 01-14

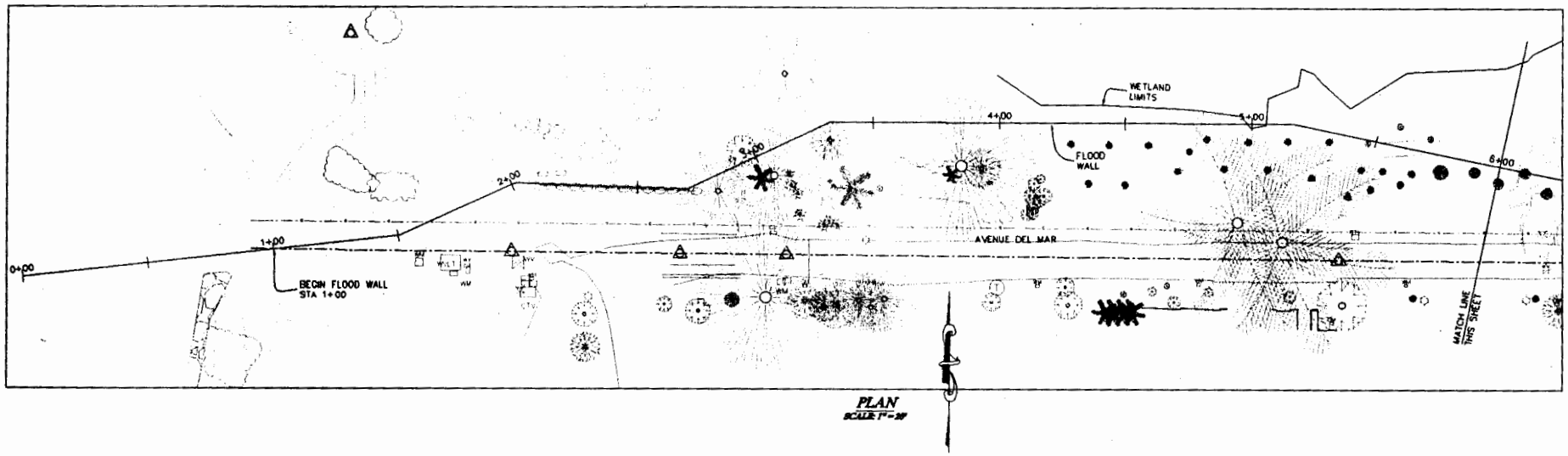
REVISED	
DATE	DESCRIPTION
07/08/04	tidal gauge
07/19/04	tidal gauge

THE LAND TRUST FOR SANTA BARBARA COUNTY
CARPINTERIA SALT MARSH
WETLANDS ENHANCEMENT PROJECT
BASIN 1

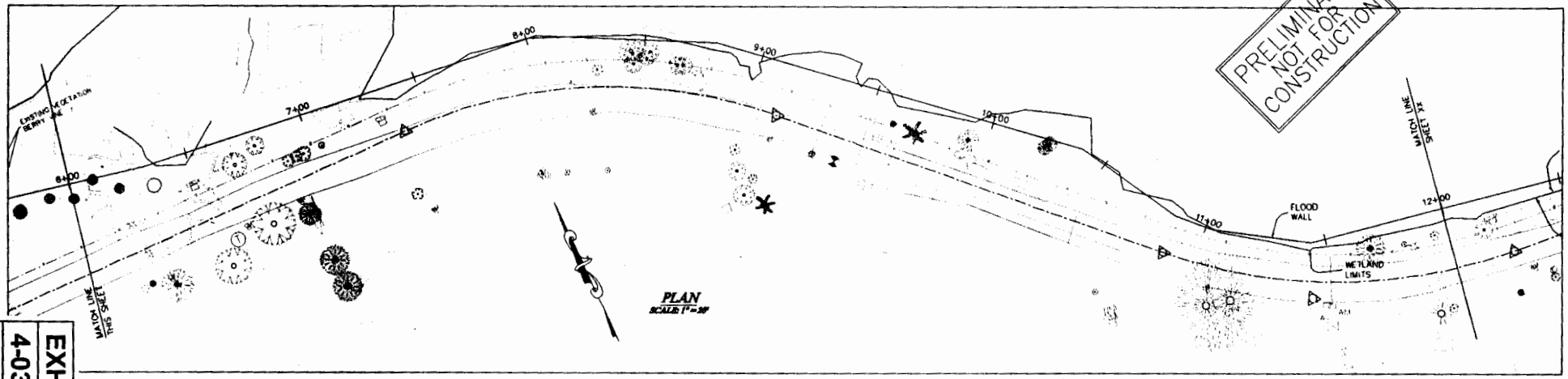
Pathways Materials, Layout, and Grading Plan

DATE: 21 May 2004 | SHEET: L1.2
SCALE: 1" = 30'-0" | SHEET 3 OF 12 SHEETS

EXHIBIT 6b
4-03-060
Public Access Improvement Plan



PLAN
SCALE 1"=30'



PRELIMINARY NOT FOR CONSTRUCTION

PLAN
SCALE 1"=30'

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

NO	DATE	APP

DESIGNED BY:
FLOOD CONTROL DESIGN ENGINEER DATE

SANTA BARBARA COUNTY
FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
123 E. ANAPAMU STREET
SANTA BARBARA, CA 93101
(805) 568-3440

CARPINTERIA SALT MARSH
ENHANCEMENT PLAN
AREA OF CARPINTERIA
SANTA BARBARA COUNTY, CALIFORNIA

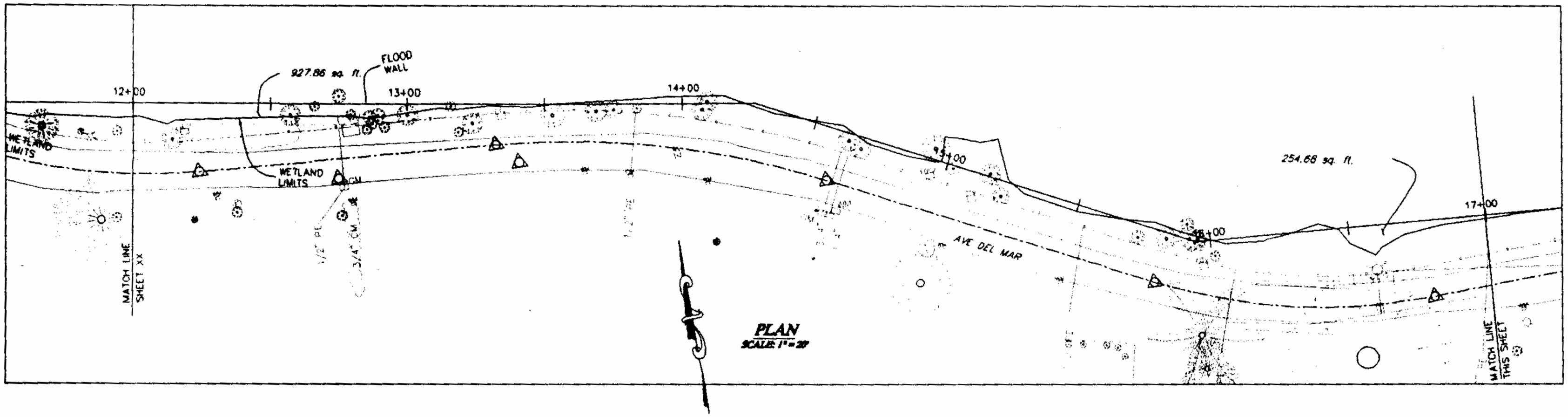
Flood Wall Plan

DESIGNED BY:	KT
DRAWN BY:	DF
CHECKED BY:	JF

SHEET FCXX OF XX

Filename: SCB012_CARP_SALTMARSH_9405.DWG

EXHIBIT 7a
4-03-060
Flood Wall Plan



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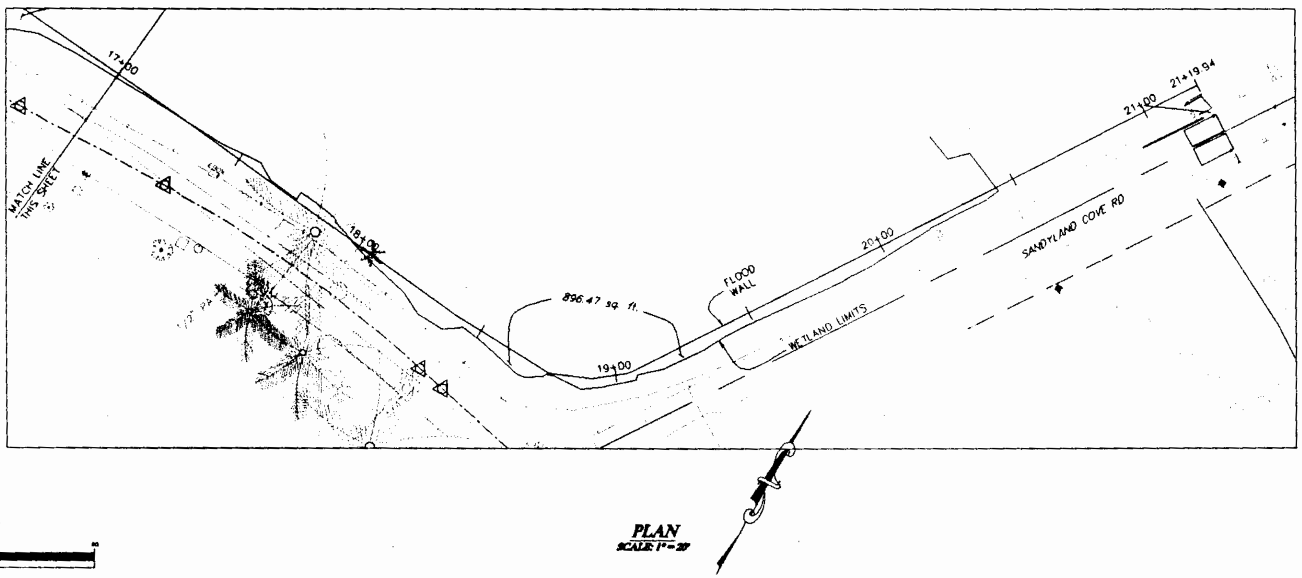


PLAN
SCALE: 1" = 20'

PRELIMINARY NOT FOR CONSTRUCTION

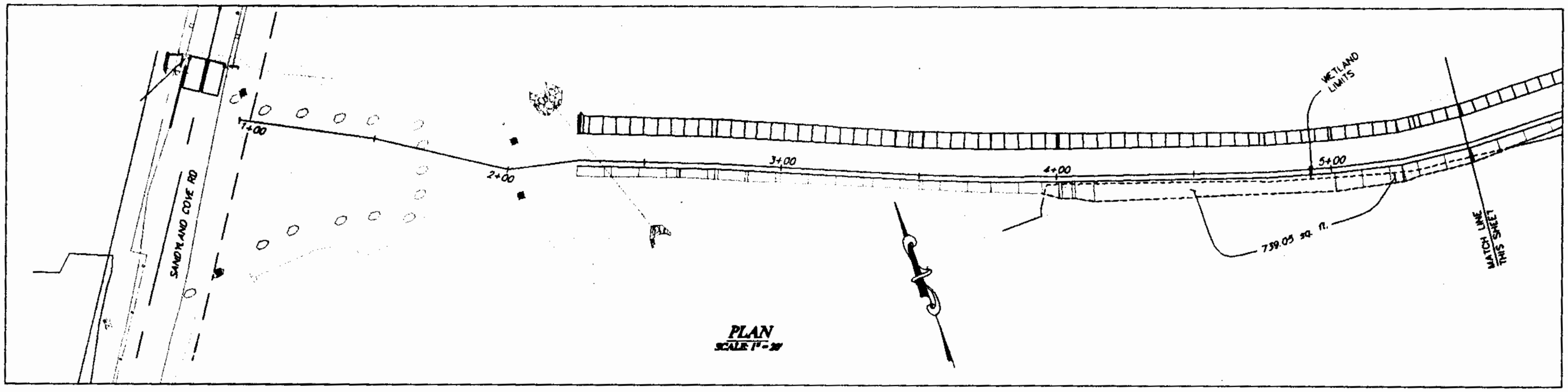
GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

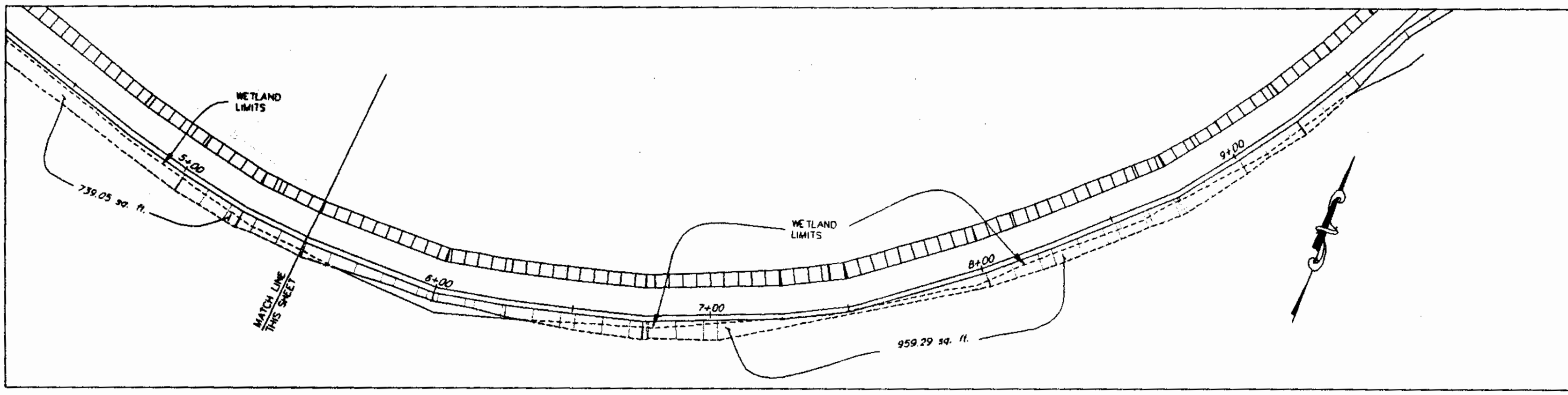
DESIGNED BY: FLOOD CONTROL DESIGN ENGINEER DATE	SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT 123 E. ANAPAMU STREET SANTA BARBARA, CA 93101 (805) 568-3440	CARPINTERIA SALT MARSH ENHANCEMENT PLAN AREA OF CARPINTERIA SANTA BARBARA COUNTY, CALIFORNIA

Flood Wall Plan

DESIGNED BY: KT
DRAWN BY: DF
CHECKED BY:
SHEET FCXX OF XX

EXHIBIT 7b
4-03-060
Flood Wall Plan





PLAN
SCALE: 1" = 20'

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

PRELIMINARY NOT FOR CONSTRUCTION

EXHIBIT 8
4-03-060
Berm Plan

DESIGNED BY:	FLOOD CONTROL DESIGN ENGINEER	DATE

SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
123 E. ANAPAMU STREET
SANTA BARBARA, CA 93101
(805) 568-3440

CARPINTERIA SALT MARSH ENHANCEMENT PLAN
AREA OF CARPINTERIA
SANTA BARBARA COUNTY, CALIFORNIA

Berm Plan

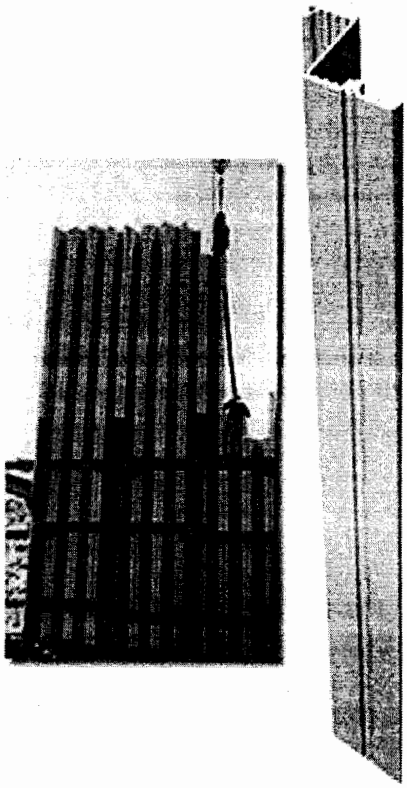
DESIGNED BY: KT
DRAWN BY: DF
CHECKED BY: JF

SHEET FCXX OF XX

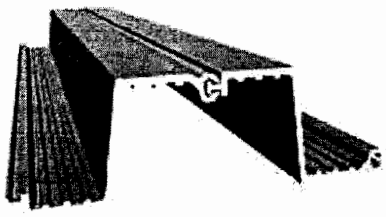
Sheet Piling

Shore Guard C-LOC® High Performance Vinyl Sheet Piling

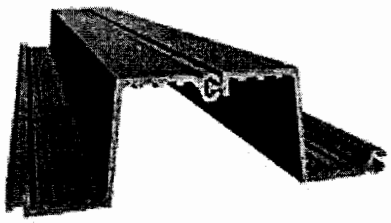
GeoGuard® Ultra Composite™ Sheet Piling



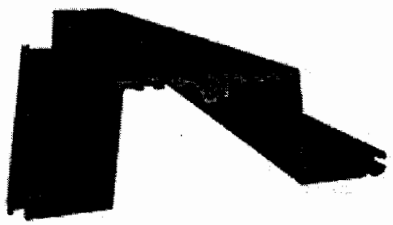
After years of proven performance of millions of feet installed around the globe, our patented sheet piling have become the standard due to their unbeatable value and long-term performance. From lightweight residential, to massive industrial strength sheet piling, Crane Materials International currently offers fifteen different designs in several colors to allow you to choose the most attractive, cost effective solution to meet your needs. Click here for additional engineering and installation information.



Grey



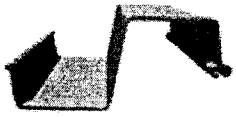
Clay



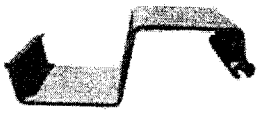
Brown

ShoreGuard and C-Loc Sheet Piling

EXHIBIT 9
4-03-060
Floodwall Design



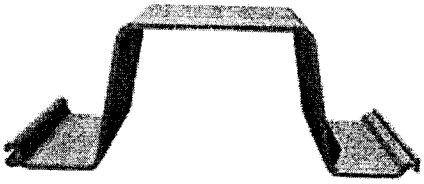
C-Loc 2500



C-Loc 4500

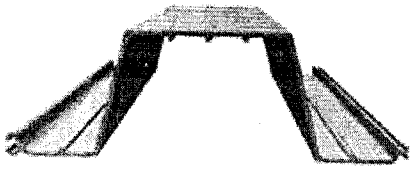
ShoreGuard 22

ShoreGuard 300

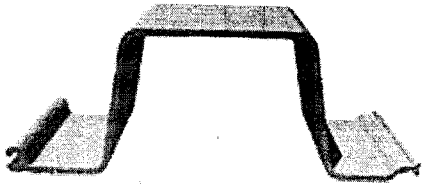


C-Loc 9000

ShoreGuard 40



ShoreGuard 425



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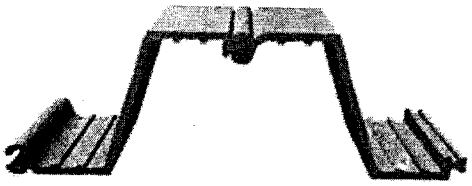
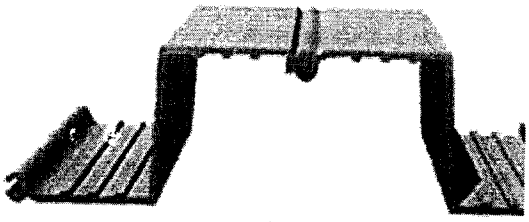


ShoreGuard 550



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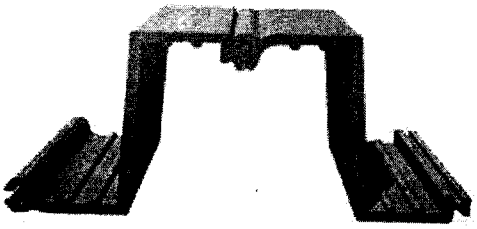

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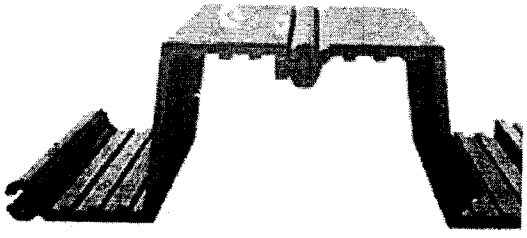

ShoreGuard 950

GeoGuard Sheet Piling

General Configuration

Fiberglass reinforced polymer sheet piling shall be a "Z" section with ball and socket or "T" shaped interlock. The polymer resins shall be polyester, vinyl ester, or polyurethane containing stabilizers to provide long term resistance to ultraviolet light degradation. The piling shall be reinforced with a glass fiber matrix to produce a section that meets or exceeds the requirements set out in the tables below. The interlocks of the sheet pilings shall be free-sliding, allowing a swing angle of not less than 8 degrees when threaded, and maintain continuous interlocking when installed. Sheet piling color shall be gray.

Fiberglass Reinforced Polymer Sheeting Mechanical Properties (minimum)

Property	ASTM Test	Value
Ultimate Longitudinal Tensile Strength	ASTM D 638	60,000 psi
Ultimate Transverse Tensile Strength	ASTM D 638	10,000 psi
Longitudinal Modulus of Elasticity	ASTM D 638	4.0 x 10^6 psi
Transverse Modulus of Elasticity	ASTM D 638	1.0 x 10^6 psi
Longitudinal IZOD Impact	ASTM D 256	50 ft-lbs/in
Transverse IZOD Impact	ASTM D 256	15 ft-lbs/in

Fiberglass Reinforced Polymer Sheeting Dimensions and Weight (minimum)

Specification	Value
Width (inches)	18.00
Depth (inches)	8.00
Thickness (inches)	0.25
Weight (lbs/ SQFT)	4.0
Section Modulus (in^3/ft)	12.5

Sealant to be used for sheet piling interlocks shall conform to, and be placed in accordance with, the sheet piling manufacturer's recommendations and as approved by the Engineer.

PLACEMENT

Vibratory hammers (variable moment vibration systems) shall be used for the installation of sheet piling.Sheet piling shown on the plans shall remain in place at the completion of all contract work and shall become the property of the District.

Piles damaged in handling shall be replaced at the Contractors expense.

Difficult pile installation is anticipated due to the presence of cobbles.

Driven sheet piles for flood wall shall be driven to obtain the specified penetration; bearing value will not be determined in conformance with the provisions in Section 49-1.08, "Bearing Value and Penetration," of the Standard Specifications, nor by the provisions specified in these special provisions.

At the option of the Contractor and at no additional cost to the Flood Control District the area of installation may be predrilled if approved by the Engineer.

Splicing of sheet piling will not be permitted except by written permission of the Engineer.

Any excavation required within the area where sheet pilings are to be installed shall be completed prior to placing sheet pilings. Pilings shall be picked up and completely threaded to demonstrate that they slide freely in interlock. Pilings shall be carefully located as shown. Pilings shall be placed plumb with out-of-plumbness not exceeding 1/8 inch per foot of length and true to line. Temporary bracing, templates, current deflectors or guide structures shall be provided to insure that the pilings are placed and driven to the correct alignment. Pilings properly placed and driven shall be interlocked throughout their length with adjacent pilings to form a continuous diaphragm throughout the length or run of flood wall.

All piles shall be driven to the indicated elevations. Should piles encounter difficulty or refusal above the indicated elevations, the Contractor shall employ whatever means necessary to drive the piles to the indicated elevation. Pilings driven to final elevation which are extending above the required top elevation in excess of the specified tolerance shall be cut off to the required elevation at no additional cost to the District. Piling cut-offs shall become the property of the contractor and shall be removed from the site. The tops of all fiberglass reinforced polymer piles that are cut off shall be sealed with a material as recommended by the pile manufacturer.

The Contractor shall cut holes in pilings for bolts, rods, and drains as shown or as directed. All cutting shall be done in a neat and workmanlike manner. Bolt holes in piling shall be drilled and reamed by approved methods which will not damage the surrounding material. Holes other than bolt holes shall be reasonably smooth and the proper size for rods and other items to be inserted. Holes shall be of the minimum size that will allow the bolts, rods, and drains to be installed. Oversized holes will not be permitted.

The Contractor shall inspect the interlocked joints of driven pilings extending above ground. Pilings found to be out of interlock shall be removed and replaced at the Contractor's expense.

In the pulling and re-driving of piles as directed, the Contractor shall pull selected pilings after driving to determine the condition of the underground portions of pilings. Any piling so pulled and found to be damaged to the extent that its usefulness in the structure is impaired shall be removed and replaced at the Contractor's expense. Pilings pulled and found to be in satisfactory condition shall be re-driven when directed. Piles whose ends have been damaged shall be trimmed before re-driving in order to reduce the likelihood of cracks propagating up the sheets. Total trimming shall not exceed two inches so as not to reduce the effective length of the piles.

Crushing or shearing of sheets and the interlocks in any area due to excessive clamp pressure or driving equipment shall be unacceptable. Cracks propagating through the sheet piles as well as hairline cracks longer than 1 inch in any area of the sheet piling shall be unacceptable.

The Contractor may elect, at its own cost, to supply sheet piles longer than those identified in the contract documents in order to avoid the total rejection of sheet piles due to damage which may occur locally at the top or bottom few inches of the piles. All costs associated with this additional length, cut-off of damaged areas, cut-off to obtain final elevation, additional driving, and disposal shall be included in the Contractor's original bid and shall be at no cost to the District.

MEASUREMENT

Sheet piling will be measured by the square foot as designated in the Engineers Estimate.

Quantities of sheet piling to be paid for by the square foot will be determined from the dimensions shown on the plans or the dimensions directed by the Engineer and sheet piling placed in excess of these dimensions will not be paid for. The quantity to be measured and paid for will be the projected area of the

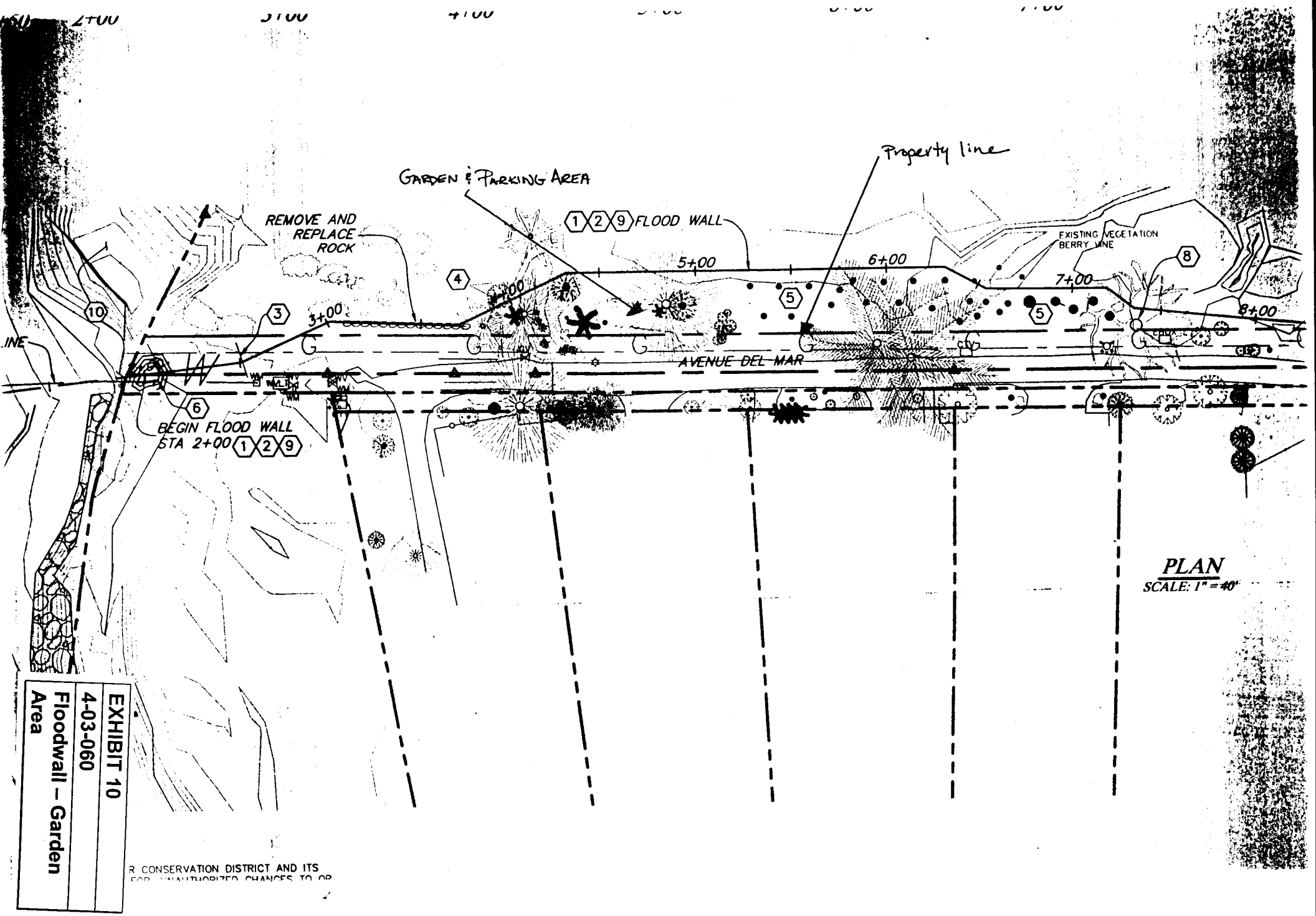

EXHIBIT 10
4-03-060
Floodwall – Garden Area

R CONSERVATION DISTRICT AND ITS
FOR UNAUTHORIZED CHANGES TO OR