CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

August 5, 2008

Th 10c

SECOND ADDENDUM

TO: Commissioners and Interested Persons

FROM: South Coast District Staff

SUBJECT: Permit Application No. 5-08-061 (Huntington Beach Wetlands Conservancy), Item No. Th 10c, Scheduled for Hearing on Thursday, August 7, 2008 in Oceanside, CA.

The original restoration plan included construction of protection of Brookhurst Street and Magnolia Street with semi-levee type structures. However, subsequent studies revealed that water levels are not expected to rise to a level where such protection would be needed. Consequently, the applicant, the Huntington Beach Wetlands Conservancy, is not planning to include them in the restoration project. Commission staff was apprised of this prior to finalization of the staff report, but inadvertently left some of the road protection components in the detailed project description. Consequently, the following items should be deleted from the staff report.

On Page 8, delete bullet items 5 and 7, from the Brookhurst Marsh restoration description:

- ~~Construct a low concrete gravity wall to integrate into the future City project boundary along Magnolia Street to an elevation of +11.0 feet NAVD (the low retaining wall is to prevent soil from being eroded onto City property);~~

...

- ~~Install a storm drain with a flap gate on Magnolia Street to allow for stormwater flow to enter Magnolia Marsh. The flap gate will prevent backflow from the marsh going on to the road during floods or high water events (this work will be done in coordination with a City project along Magnolia Street to install curb, gutter and sidewalk along this reach of the street)~~

On Page 10, delete bullet items 4 and 5, from the Magnolia Marsh restoration description:

- ~~Construct a low concrete gravity wall to integrate into the future City project boundary along the existing west perimeter access road, adjacent to the AES plant to +11 feet NAVD (the low retaining wall is to prevent soil from being eroded onto City property);~~
- ~~Install a storm drain line with a flap gate on the marsh end to allow Magnolia Street to drain without receiving high waters from the marsh.~~

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July 28, 2008

Th 10c

ADDENDUM

TO: Commissioners and Interested Persons

FROM: South Coast District Staff

SUBJECT: Amendment No. 5-08-061 (Huntington Beach Wetlands Conservancy), Item No. Th 10c, Scheduled for Hearing on Thursday, August 7, 2008 in Oceanside, CA.

The following correction should be made to the staff report project description on page 1 and on page 11 (under the heading Overall Grading) [added language shown in bold underline]:

Page 1:

Restoration of Talbert Marsh, Brookhurst Marsh, Magnolia Marsh (not including upper Magnolia Marsh), and Talbert Ocean Channel. The total area to be restored includes 130 acres. Also proposed are certain maintenance actions such as periodic dredging of Talbert Marsh and Talbert Ocean Channel. The total volume of sediment proposed to be moved for construction is approximately 290,000 cubic yards. Beach and nearshore replenishment are proposed using excess cut material that meets replenishment standards (expected to be approximately 151,000 cubic yards) on adjacent Huntington State Beach. Approximately 18,000 cubic yards **or more** of dredge material will be re-used on site or disposed of on-site in a proposed pit within Talbert Marsh. A maximum of 121,000 cubic yards will be transported off-site.

Page 11:

Overall Grading

The total volume of sediment proposed to be moved for the entire project is approximately 290,000 cubic yards. The quality of the material to be excavated varies, but has been found to be beach sand within the ocean channel, mostly sandy at Talbert Marsh, mixed silt and sand within Brookhurst and Magnolia Marshes, and a mix of sand, silt and gravel at the flood control levees. Depending on the quality of the excavated material, approximately 151,000 cubic yards of dredged material is expected to be placed primarily in the nearshore areas, with some of the mostly sandy material placed on adjacent Huntington State Beach. Approximately 18,000 cubic yards **or more** of dredge material will be re-used on site or disposed of on-site in a proposed pit within

Talbert Marsh. A maximum of 121,000 cubic yards will be transported off-site. The location of the off-site disposal is not yet known. A special condition is imposed which requires that if the location of the disposal site is within the coastal zone, an amendment to the coastal development permit or a new coastal development permit may be necessary.

The above change is recommended to reflect the applicant's (HBWC) desire to retain the ability to put more dredge material into the Talbert pit so that less material would need to be hauled off-site, thus reducing the need for additional truck trips. The 121,000 cubic yards of material to be hauled off-site is the maximum amount expected to be hauled off-site (worst case scenario), and if that occurs that would mean 18,000 cubic yards would be disposed of on-site. However, the on-site disposal figure would be reduced if less than the 121,000 cubic yard figure is hauled off-site.

CALIFORNIA COASTAL COMMISSION

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Filed:	3/13/08
49th Day:	5/1/08
180th Day:	9/9/08
Staff:	Meg Vaughn-LB
Staff Report:	7/24/08
Hearing Date:	8/6-8/2008
Commission Action:	

Th 10c

STAFF REPORT: REGULAR CALENDAR

APPLICATION NUMBER: 5-08-061

APPLICANT: Huntington Beach Wetlands Conservancy
Gary Gorman

AGENT: Moffatt & Nichol
Kim Garvey & Chris Webb

PROJECT LOCATION: Huntington Beach Wetlands: Talbert Marsh, Brookhurst Marsh (and adjacent flood control channel), Magnolia Marsh (and adjacent flood control channel), and Talbert Ocean Channel, Huntington Beach, Orange County

PROJECT DESCRIPTION: Restoration of Talbert Marsh, Brookhurst Marsh, Magnolia Marsh (not including upper Magnolia Marsh), and Talbert Ocean Channel. The total area to be restored includes 130 acres. Also proposed are certain maintenance actions such as periodic dredging of Talbert Marsh and Talbert Ocean Channel. The total volume of sediment proposed to be moved for construction is approximately 290,000 cubic yards. Beach and nearshore replenishment are proposed using excess cut material that meets replenishment standards (expected to be approximately 151,000 cubic yards) on adjacent Huntington State Beach. Approximately 18,000 cubic yards of dredge material will be re-used on site or disposed of on-site in a proposed pit within Talbert Marsh. A maximum of 121,000 cubic yards will be transported off-site.

SUMMARY OF STAFF RECOMMENDATION:

Staff is recommending the Commission **approve** the proposed project subject to six special conditions which are necessary to assure that the project conforms with Section 30233 of the Coastal Act regarding wetland protection and with Section 30240 regarding protection of environmentally sensitive habitat areas. Special Condition No. 1 requires submittal of a revised monitoring plan that adds the requirement that benthic samples be identified to the lowest taxon possible; Special Condition No. 2 requires the applicant to carry out the proposed restoration project as conditioned; Special Condition No. 3 requires that annual CRAM (California Rapid Assessment Method) wetland surveys be conducted, when feasible, every other year for ten years following completion of the proposed restoration project for inclusion in the Southern California Wetland Recovery Project (SCWRP)/Southern California Coastal Wetland Research Project (SCCWRP); Special Condition No. 4 requires that applicant adhere to certain responsibilities regarding construction and debris removal; Special Condition No. 5 states that any future excavation and/or dredging requires a coastal development permit or amendment; and, Special Condition No. 6 states

that if disposal of excess material is to occur in the coastal zone it will require a coastal development permit or amendment.

LOCAL APPROVALS RECEIVED: City of Huntington Beach Approval in Concept, dated 3/12/08; City of Huntington Beach Conditional Use Permit No. 07-036; Mitigated Negative Declaration and Initial Study IP 07-585, County of Orange Flood Control District and Resources and Development Management Department; Orange County Flood Control District, letter dated 5/30/08 re approval of work within flood control channels.

SUBSTANTIVE FILE DOCUMENTS: Coastal Development Permit No. 5-87-432 (HBWC); Consistency Certification CC 23-86 (Caltrans); Huntington Beach Wetlands Conceptual Restoration Plan, prepared by Moffat & Nichol, dated January 21, 2005; Huntington Beach Wetlands Restoration Project, Biological Resources Report, prepared by Merkel & Associates, Inc., dated August 13, 2007; Huntington Beach Wetlands Habitats and Sensitive Species, prepared by Merkel & Associates, dated August 18, 2004; Huntington Beach Wetlands Restoration Project, Sediment Characterization Study, prepared by Merkel & Associates, Inc., dated July 2007; Huntington Beach Wetlands Preliminary and Engineering Design Hydrodynamic Studies, prepared by Moffatt & Nichol, dated August 1, 2007; Draft Geotechnical Study Huntington Beach Wetlands Restoration Plan, prepared by Kleinfelder, dated July 31, 2007; and Huntington Beach Channel (DO1) Levee Certification Study, Prepared by Tetra Tech, Inc., dated November 2007.

OTHER AGENCY REVIEW: California Department of Fish & Game Streambed Alteration Agreement No. 1600-2007-0401-R5; California Department of Fish & Game letter dated 5/27/08 re: Incidental Take Permit Determination (no permit needed); California Department of Parks & Recreation “Right of Entry” permit, dated 5/15/08; California State Lands Commission General Lease – Non-Commercial, File Reference W 26257/RA 11807 (allowing deposition of dredge material on the state beach), effective June 24, 2008; National Marine Fisheries letter dated 7/3/08 re eelgrass; United States Army Corps of Engineers Provisional Permit No. SPL-2007-367-YJC.

I. APPROVAL WITH CONDITIONS

STAFF RECOMMENDATION:

Staff recommends that the Commission **APPROVE** the permit application with special conditions.

MOTION:

I move that the Commission approve Coastal Development Permit No. 5-08-061 pursuant to the staff recommendation.

Staff recommends a **YES** vote. Passage of this motion will result in approval of all the permits included on the consent calendar. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION:

I. APPROVAL WITH CONDITIONS

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 this permit is reported to the Commission. 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.

3. Interpretation. Any questions of intent or interpretation of any 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 Monitoring Plan

A. **Prior to issuance of the coastal development permit**, the applicant shall submit for the review and approval of the Executive Director a revised Monitoring Plan that: 1) includes all requirements outlined in the "Pre- and Post-Restoration Monitoring Plan for the Huntington Beach Wetlands, prepared by Merkel & Associates, Inc., and dated April 2007, and, 2) adds the requirement to identify benthic samples to the lowest possible taxon.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No 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 legally required.

2. California Rapid Assessment Method for Wetlands

If feasible, the applicant shall perform CRAM (California Rapid Assessment Method) wetland surveys every other year (following completion of the proposed restoration project) through year 10; CRAM survey results shall be uploaded to "project tracker", the open-source, web-based database designed to provide wetland status and trend data to state and federal information systems.

3. Project to Occur as Proposed

The applicant shall conform to the proposed wetland and habitat restoration plan, as it applies to the proposed project, identified in the document dated January 31, 2005 and received in the Commission's office on March 1, 2007; and as reflected in the project plans dated 6/23/08 and received in the Commission's office on July 17, 2008; and as described in the application project description. Any proposed changes to the approved plan shall be reported to the Executive Director. No changes to the approved plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

4. Construction Responsibilities and Debris Removal

(a) No construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to wave, wind, or rain erosion and dispersion.
(b) Any and all construction material shall be removed from the site within 10 days of completion of construction.
(c) Machinery or construction materials not essential for project improvements shall not be allowed at any time in the intertidal zone.
(d) If turbid conditions are generated during construction a silt curtain shall be utilized to control turbidity.

(e) Floating booms shall be used to contain debris discharged into coastal waters and any debris discharged shall be removed as soon as possible but no later than the end of each day.
(f) Non-buoyant debris discharged into coastal waters shall be recovered by divers as soon as possible after loss.

5. Future Maintenance Excavation/Dredging

The project approved under this coastal development permit does not include future maintenance. Future dredging and/or excavation will require an amendment to this permit or a new coastal development permit, unless the Executive Director determines that no amendment or permit is legally required.

6. Disposal of Debris and Excess Material

Debris and excess material shall be disposed or recycled at a legal disposal/recycling site. If the disposal site is located in the coastal zone, a coastal development permit or an amendment to this permit shall be required before disposal can take place unless the Executive Director determines that no amendment or new permit is legally required. No debris or excess material shall be placed on or within habitat areas except as provided in the enhancement plan approved pursuant to this permit.

IV. FINDINGS AND DECLARATIONS:

The Commission hereby finds and declares:

A. Project Description

The applicant proposes to restore Talbert Marsh, Brookhurst Marsh, Magnolia Marsh (not including upper Magnolia Marsh), and Talbert Ocean Channel (described in greater detail below). Collectively these marsh areas are known as the Huntington Beach Wetlands. The restoration work is proposed to include excavation and dredging within the marsh areas and ocean inlet, lowering of flood control levees adjacent to the restoration areas and creation of inlets within the levees. The total area to be restored encompasses 130 acres. The above named marshes are located just inland of Pacific Coast Highway and immediately upcoast of the Santa Ana River, in the City of Huntington Beach, Orange County. The Talbert Ocean channel portion of the project extends from Talbert Marsh, beneath Pacific Coast Highway, across Huntington State Beach and out to the ocean. The beach and near-shore sand disposal/replenishment is proposed to occur on Huntington State Beach. Also proposed in conjunction with this project is removal of a large area of non-native invasive plants along the southern boundary of the site along Pacific Coast Highway near Brookhurst Marsh. All of the proposed marsh restoration areas (listed above) are owned by the Huntington Beach Wetlands Conservancy. Newland Marsh is also part of the area known as the Huntington Beach Wetlands, but it is not included in the proposed project.

The specific objectives of the proposed project as outlined in the application are to:

- Restore tidal influence throughout the site and improve tidal circulation;
- Provide additional flood control volume for the Huntington Beach/Talbert channel drainage basin;
- Maximize saltmarsh/tidal habitats with no net harm to threatened and/or endangered species, such as Belding's savannah sparrow, that exist on the site;
- Increase saltwater-dependant ecosystem diversity and habitats for threatened and/or endangered species by:
    - increasing areas of cordgrass
    - reinvigorating existing areas of pickleweed
    - increasing areas of mudflat
- Rehabilitate the wetland/upland transition zone;
- Maintain restored dune habitat along Pacific Coast Highway;
- Maintain, and to the extent feasible, improve water quality in the existing hydraulic system, including capturing floating debris;
- Remove Talbert Marsh sandbar and minimize its reformation to the extent feasible;
- Minimize the costs and efforts for long-term wetland and ocean channel operation and maintenance by trapping sediment;
- Remediate or isolate any oil-related contaminants that may have ecological effects.

In addition, the proposed project strives not to aggravate existing conditions of: vectors, ocean and channel water quality, site contamination, scour effects on the bridges, and, flooding on adjacent properties. Ultimately, the applicant intends to include a public access component, but that is not currently proposed.

With regard to vegetation within the restored marshes, the project proposes to allow habitat to evolve from post-restoration conditions. The project is expected to result in significant improvements to habitat by increasing subtidal shallows, low, mid and high marsh habitats. All non-tidal wetlands will be converted to tidally influenced habitat, dominated by intertidal salt marsh. Uplands will be reduced by 30% and converted to tidal wetlands.

Construction Timing Limits

Construction is expected to take two years, with a no-construction period of one year in between to allow habitat establishment, for a total of three years from commencement to completion of the project. As proposed, construction will only occur from September through March, in order to avoid impacts to sensitive species. Limiting construction to September through March will also avoid impacts to grunion, which spawn between March 15 and August 31. Talbert Ocean Channel, Talbert Marsh, and Brookhurst Marsh are

proposed to be constructed in the first year, and Magnolia Marsh is proposed to be constructed in the final year. Magnolia Marsh is proposed to be delayed one year due to time constraints and to provide refuge habitat for displaced wetland birds during the Talbert/Brookhurst construction. The applicant anticipates that construction will occur for nine hours a day, five days a week. Tide levels, current flow rates, and current directions will affect the balance of land versus water based work and the timing of excavation/deposition of the material.

Talbert Marsh

Talbert Marsh, a 24 acre area, was previously restored by the applicant in the early 1990s. The earlier Talbert Marsh restoration established the Talbert Ocean Channel that allows seawater to propagate through the lower (downstream) mile of the Talbert flood control channel and through Talbert Marsh. That restoration effort succeeded in improving tidal flushing and circulation to the marsh, establishing sensitive salt marsh habitat, and improving flood control in the area. The proposed project would clear accumulated sediment from within the marsh and create contour elevations more conducive to maintaining the tidal prism. More specifically, the project proposes the following changes to Talbert Marsh: 1) creation of a sediment disposal area and trap just inside of the marsh; 2) removal of sand shoals within the marsh; 3) construction of an access ramp to facilitate construction/maintenance; and, 4) periodic maintenance dredging of the sand trap in the Marsh estimated to be at approximately 5 and 10 year intervals.

The main sediment trap is proposed to be located just inside the marsh to provide a disposal location for the finer sediments excavated from Brookhurst Marsh and potentially Magnolia Marsh and to provide a trap for ocean sand entering into the marsh via the Talbert Ocean Channel. The proposed main sediment trap is intended to maintain the tidal prism and reduce the sediment transported within the flood channels to the Brookhurst and Magnolia marshes. The design of the sediment trap is intended to be large enough to hold sufficient volume to allow deposition for five years or longer before requiring sediment removal under normal flow and sediment loading conditions. The existing elevation in the area of the main sediment trap varies from +2 to +6 feet NAVD. The trap is proposed to be excavated to an elevation of -20 feet NAVD with 5:1 (H:V) slopes. Approximately 105,000 cubic yards of material is expected to be dredged to construct the main sediment trap. The dredge material is proposed to be deposited in the nearshore and on the beach at Huntington State Beach, just upcoast of the Talbert Ocean Channel.

A smaller shoal removal area is proposed at the upstream end of Talbert Marsh just downstream from the Brookhurst Bridge to clear the flood control channel and maintain the tidal prism. The existing elevation in the shoal removal area is +2 to +3 feet NAVD. It is proposed to be dredged to an elevation of -2 feet NAVD. Approximately 17,000 cubic yards of material will be removed and is proposed to be deposited in the nearshore and on the beach at Huntington State Beach, just upcoast of the Talbert Ocean Channel.

As proposed, the restoration project would result in the same habitat types within Talbert Marsh as exist today. The exception would be greater subtidal area created at the

sediment trap location near the Pacific Coast Highway bridge. The subtidal basin will replace the active sand bars that presently exist at this location and restrict tidal circulation.

Talbert Ocean Channel

Talbert Ocean Channel covers a total of approximately 3 acres. Changes proposed to Talbert Ocean Channel include: 1) restore channel capacity to its original condition; 2) create a new sediment trap; and 3) maintain the constructed channel capacity through periodic maintenance dredging actions in the future, at approximately 5 and 10 year after completion of construction.

Creation of a second sediment trap is proposed within the Talbert Ocean Channel. The Talbert Ocean Channel sediment trap is proposed to be excavated to -6.5 feet NAVD. It is intended to catch sediment in the inlet channel before it reaches Talbert Marsh. Regular maintenance of the ocean channel sediment trap is expected to significantly reduce the frequency of maintenance sediment removal necessary within Talbert Marsh. The Talbert Ocean Channel is currently maintained by the County of Orange as part of its regular maintenance activities. Regular maintenance of the Talbert Ocean Channel is proposed to remain the responsibility of the County with the new contours that include the sediment trap.

Brookhurst Marsh

Brookhurst Marsh and adjacent flood control channel covers 67 acres. The proposed modifications to Brookhurst Marsh are to:

- Clear and slightly enlarge the relic main channel to an elevation of -1 feet NAVD through the marsh to create sub-tidal habitat;
- Lower a portion of the banks along the relic main channel within the marsh to between +3.6 and +0.8 feet NAVD to create mudflat habitat;
- Lower the existing flood control levee along the HB Channel down to an elevation range of between +4.6 to +6.0 feet NAVD to crate pickleweed habitat and supplement the tidal connection;
- Install an inlet through the flood levee down to -1.0 feet NAVD to connect the relic main channel to the Huntington Beach/Talbert Channel;
- Construct a low concrete gravity wall to integrate into the future City project boundary along Magnolia Street to an elevation of +11.0 feet NAVD (the low retaining wall is to prevent soil from being eroded onto City property);
- Repair and armor the remaining flood control levee from the Brookhurst bridge to the inlet;
- Install a storm drain with a flap gate on Magnolia Street to allow for stormwater flow to enter Magnolia Marsh. The flap gate will prevent backflow from the marsh going on to the road during floods or high water events (this work will be done in coordination with a City project along Magnolia Street to install curb, gutter and sidewalk along this reach of the street);

- Install an earthen dike around an oil seep area in the northeast corner near Brookhurst Street Bridge to contain the seep.

The inlet through the flood control levee is proposed at the confluence of the Talbert and Huntington Beach flood control channels. The inlet is proposed to be created by lowering the levee from its current elevation of +9 to +11 to the proposed elevation of -1 to +5 feet NAVD. The inlet is proposed to be created in the location where the relic main marsh channel abuts the levee. The inlet is proposed to be 55 feet wide. The 50 foot wide, relic main channel is proposed to be cleared, expanded, and utilized for restoration. The main channel's existing elevation of +4 to +5 is proposed to be excavated to elevation -1 to +4 NAVD. Four 25 foot wide tributary channels branch off the main channel. These four channels are proposed to be excavated and restored. The main channel's banks are proposed to be designed to create mudflat area in several locations along the center of the marsh. Excess cut material from the main channel excavation will be approximately 71,000 cubic yards and is expected to be hauled off-site to an inland disposal location. Excess cut material from lowering the levee and creating the inlet will be approximately 14,000 cubic yards and is proposed to be used for the Brookhurst levee repairs and disposed in the Talbert pit.

The existing, earthen Huntington Beach flood control channel levee (from the proposed inlet at the confluence of the flood control channels to the Magnolia Street) is proposed to be lowered to the proposed mid-marsh elevation of between +4.6 to +6 feet NAVD. This is the elevation that supports pickleweed growth. Only high tides are expected to crest the lowered levee and flow into the marsh plain.

The portion of the earthen and rip rap lined levee along Talbert flood control channel, between the flood control channel confluence and Brookhurst Street, is proposed to be retained, repaired and armored to protect the marsh from high storm flows, as well as to prevent undermining of the south abutment of the Brookhurst Bridge just downstream. The repaired and armored levee is expected to provide protection from high storm flows by isolating the marsh from the effective flow areas of the channel. This segment of the levee is proposed to be moved slightly south, toward the marsh, to align it with the channel bank under the Brookhurst Bridge. Proposed repair and armoring of this segment include replacing the face of the levee along the channel with rip rap which is intended to prevent erosion and to stabilize the levee. Construction access gates and staging area currently exist at the subject site, with access from both Brookhurst and Magnolia Streets.

Currently Brookhurst Marsh possesses a substantial cover of non-tidal pickleweed habitat that varies in extent and vigor depending on annual rainfall. Existing pickleweed is proposed to be retained in certain areas, and to revert to mudflat and cordgrass in other areas toward the west and east ends of the site as tidal influence is restored. The center of the site will be converted to subtidal, mudflat and low marsh (cordgrass) habitats.

Magnolia Marsh

Magnolia Marsh, a 40 acre area (including the Upper Marsh [not a part of this project] and the flood control channel), is proposed as the final phase of the proposed restoration. The proposed modifications to Magnolia Marsh are:

- Create one 20-foot wide main channel to an elevation of 0 feet NAVD through the marsh, following relic channels and low points wherever possible;
- Lower the flood control levee along the Huntington Beach flood control channel down to mudflat and mid-marsh elevations between +2 and +4 feet NAVD to supplement the tidal connection;
- Install a 100-foot wide inlet breach through the flood control levee at the main channel at elevation 0 feet NAVD to provide an unrestricted connection to the Huntington Beach flood control channel;
- Construct a low concrete gravity wall to integrate into the future City project boundary along the existing west perimeter access road, adjacent to the AES plant to +11 feet NAVD (the low retaining wall is to prevent soil from being eroded onto City property);
- Install a storm drain line with a flap gate on the marsh end to allow Magnolia Street to drain without receiving high waters from the marsh.

The existing surface is mainly non-tidal pickleweed and salt panne. Magnolia Marsh is proposed to be significantly converted to subtidal and low marsh habitat. Surface cover is proposed to consist of open water and mudflat at unvegetated areas, and primarily cordgrass at vegetated areas.

The 100 foot wide inlet from the Huntington Beach flood control channel is proposed to be created at 0 feet NAVD at the very northernmost end of the property where wetland elevations are lowest. One 20 foot wide meandering main channel is proposed to convey seawater through the system. Additional excavation is proposed to occur within and along the main channel and banks to lower the site further to create mudflat area. A moderate-sized (approximately 72,330 square feet/9,200 cubic yards) subtidal pool is proposed near the west end of the site to provide subtidal habitat and maintenance access. A maintenance and access road for use by HBWC is proposed at the site's western edge. The road is proposed to be earthen and will be constructed in an existing upland area.

The earthen Huntington Beach flood control channel levee is proposed to be lowered to the elevation of mudflat (+4 to +2 feet NAVD from the existing elevation of +9 to +14 feet NAVD) along the entire marsh. The levee is proposed to be significantly lowered to allow unrestricted infilling of the marsh with seawater to further supplement tidal penetration in the main channel.

Elevation changes of the proposed project include lowering internal channels from existing elevations of between +4 to +5 feet NAVD to 0 feet NAVD. Channel banks are proposed to be lowered to between +4 feet and +2 feet NAVD. Storm drainage from Magnolia Street

presently flows over the surface of the street and out into the marsh through an opening in the K-rail road edge barrier. The proposed project will not change the drainage patterns from Magnolia Street, but drain lines with flap gates are proposed to be installed from the street through the earthen berm along the marsh perimeter to allow street drainage into the marsh. The flap gates will prevent flood waters from the marsh flowing back on to the road. Work affecting Magnolia Street drainage is proposed to be done in coordination with the City. The City will be installing curb, gutter and sidewalk along Magnolia Street pursuant to local coastal development permit 2006-005. Construction access and staging areas exist in the southwest corner of the site.

Overall Grading

The total volume of sediment proposed to be moved for the entire project is approximately 290,000 cubic yards. The quality of the material to be excavated varies, but has been found to be beach sand within the ocean channel, mostly sandy at Talbert Marsh, mixed silt and sand within Brookhurst and Magnolia Marshes, and a mix of sand, silt and gravel at the flood control levees. Depending on the quality of the excavated material, approximately 151,000 cubic yards of dredged material is expected to be placed primarily in the nearshore areas, with some of the mostly sandy material placed on adjacent Huntington State Beach. Approximately 18,000 cubic yards of dredge material will be re-used on site or disposed of on-site in a proposed pit within Talbert Marsh. A maximum of 121,000 cubic yards will be transported off-site. The location of the off-site disposal is not yet known. A special condition is imposed which requires that if the location of the disposal site is within the coastal zone, an amendment to the coastal development permit or a new coastal development permit may be necessary.

Excavation of the Brookhurst and Magnolia Marshes is proposed to be performed with typical land based excavation equipment (one front-end loader, one bulldozer, one backhoe, two excavators and one grader). Some of the excavated material is proposed to be re-used within the marshes to create new flood control levees, as existing levee support material, and other on-site uses if possible. Excess material is proposed to be: a) hauled via truck to the sediment trap at Talbert Marsh and capped; and b) transported off site using 20 cubic yard capacity dump trucks five days per week and outside of peak traffic hours. The location of the disposal site is not known definitely, but is expected to be an upland (outside the coastal zone) disposal site such as Olinda Alpha Landfill in Brea. If 20 cubic yard capacity dump trucks are not available, the applicant proposes a material staging/stockpiling area, away from any resource agency identified wildlife habitat, will be identified and utilized in order to continue with upland disposal within the environmental window of the bird breeding season. Under that scenario, smaller dump trucks (10 to 14 cubic yard capacity) would then carry material to the inland disposal site. Sediment deposited in the Talbert sediment trap is proposed to be capped with approximately three-foot thick layer of excavated sand from Talbert Marsh to keep it permanently sequestered.

B. Project Location & History

The Huntington Beach Wetlands are a relatively large area of relic salt marsh habitat associated with the Santa Ana River in south Huntington Beach, Orange County. The wetlands are bounded by Pacific Coast Highway and the Huntington Beach and Talbert Flood control channels and the AES generating station. Talbert Marsh and Brookhurst Marsh are separated by Brookhust Street. Brookhurst Marsh and Magnolia Marsh are separated by Magnolia Street. The total area of the Huntington Beach Wetlands is approximately 188 acres. Of that, 130 acres are proposed to be restored as part of the proposed project. The proposed project does not include Upper Magnolia Marsh or Newland Marsh. The Upper Magnolia Marsh is currently being restored as part of a mitigation project by the City of Huntington Beach pursuant to local coastal development permit 2008-005. Restoration of Newland Marsh is pending, and dependent on, Huntington Beach Wetlands Conservancy's acquisition of the property.

The wetlands function as a home to the state-endangered Belding's savannah sparrow. The federal and state-endangered California least tern nests at the mouth of the Santa Ana River channel and forages in the limited portions of the wetland that are presently tidal. The wetlands have suffered substantial degradation over time as a result of isolation from tidal influence, historic channelization and filling. Because of the presence of extensive historic marsh plains at or near desired elevations, wetland restoration at the site is expected to perform well.

The subject site is located in an area of the City that was formerly an area of deferred certification known as the Pacific Coast Highway Area of Deferred Certification (PCH ADC). The area was deferred certification due to then unresolved issues regarding the protection of wetlands. The deferral was based in part on a study prepared by the California Department of Fish and Game (Determination of the Status of the Huntington Beach Wetlands, February 4, 1983) which found that functioning as well as degraded but easily restorable wetlands were present in the subject area. In addition, the CDFG study found environmentally sensitive upland habitat to be present at the site as well.

In 1986, the Commission approved a Land Use Plan for the PCH ADC. In 1995, the Commission approved an Implementation Plan for the area. Although the area is now fully certified, because tidal areas remain, portions of the site are retained in the Commission's original permit jurisdiction. As described elsewhere in this staff report, the Commission is processing a single coastal development permit for the entire project.

In 1986, the Commission approved Consistency Certification No. CC-23-86 for the widening of Pacific Coast Highway from Newport Boulevard in Newport Beach to Goldenwest Street in Huntington Beach. The applicant for CC-23-86 was the California Department of Transportation (Caltrans). The highway widening project included impacts to Least Tern open water foraging area and to coastal dune habitat area. In order to mitigate loss of open water foraging area, Caltrans included as part of the highway widening project provisions to replace equivalent foraging habitat in the area between Brookhurst Avenue and the Santa Ana River (within the Talbert Marsh area). To mitigate

the loss of coastal dune habitat, Caltrans included 8.7 acres of dune restoration along the inland side of Pacific Coast Highway within the subject area.

In 1987, the Commission issued a permit (5-87-432) to the Huntington Beach Wetlands Conservancy for the restoration of Talbert Marsh. That project was implemented and Talbert Marsh has been functioning as a wetland since. Currently, seawater propagates through Talbert Channel and Talbert Marsh.

C. Standard of Review

The subject site is located within the coastal zone in the City of Huntington Beach. The City of Huntington Beach has a certified Local Coastal Program. Portions of the subject site are tidally influenced and thus, pursuant to Coastal Act Section 30519(b) of the Coastal Act, are in the Commission's retained permit jurisdiction. However, other portions of the site may not be tidally influenced and thus may fall under the City's jurisdiction. However, in such situations, Section 30601.3 of the Coastal Act allows the Commission to process and act upon a consolidated coastal development permit when the applicant, local government, and Commission agree to the permit consolidation. That is the case in this instance. When the Commission acts on such a consolidated permit, the standard of review, pursuant to Section 30601.3(b) is the Chapter 3 policies of the Coastal Act, with the certified LCP used as guidance. Therefore, the standard of review for the subject coastal development permit application is the Chapter 3 policies of the Coastal Act with the City's LCP as guidance.

D. Wetlands

Section 30233 of the Coastal Act states, in pertinent 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:

…

(6) Restoration purposes.

…

(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. …

The proposed development involves dredge and fill totaling 290,000 cubic yards within the Huntington Beach Wetlands. Thus, the project must be reviewed for conformance with Section 30233 of the Coastal Act. In order to be consistent with Section 30233, a project that involves filling or dredging in a wetland must meet the three-prong test. The use must be one of the uses specifically allowed, it must be the least environmentally damaging alternative, and it must provide adequate mitigation to offset any impacts created by the project.

1) Allowable Use

The goal of the proposed project is to enhance the Talbert Marsh and to restore the degraded Brookhurst and Magnolia Marshes so that all three will provide enhanced wetland and habitat function. The restoration project proposes to restore tidal flushing to Brookhurst and Magnolia Marshes, which had been cut off from tidal action due to historic channelization and filling. The applicant has indicated that the goal of the project is to preserve, enhance, and restore the fish and wildlife habitat of a tidally-influenced ecosystem, improve flood control, and provide for ancillary water quality improvements. Thus, the project constitutes a restoration project. The proposed development meets the Section 30233 allowable use requirement as a restoration project. Therefore, the proposed development is consistent with Section 30233 of the Coastal Act with regard to uses allowed within wetlands.

2) Alternatives

The proposed project is a compilation of the best components of the pool of working alternatives and suggestions of the Huntington Beach Wetlands Restoration Project Working Group. The Working Group is comprised of representatives from the Huntington Beach Wetlands Conservancy, U.S. Fish & Wildlife Service, NOAA Marine Fisheries, Coastal Conservancy, Southern California Wetlands Recovery Project, County of Orange Resources and Development Management Department, Orange County Flood Control District, and the City of Huntington Beach.

Among the primary concerns in considering project alternatives was the potential for impacts to the Belding's Savannah Sparrow (state endangered) and the California Least Tern (state and federal endangered). The relatively extensive use of the project site by Belding's Savannah Sparrows and least terns are important considerations relative to minimizing impacts, enhancing values of the restoration program, and planning restoration opportunities. Measures have been incorporated into the proposed project to minimize potential impacts to these species. For example, construction is proposed to be limited to occur only from September through March, outside the nesting season for the Belding's Savannah Sparrow. In addition, the proposed project includes phasing construction such that during the first year no construction will occur in Magnolia Marsh, in order to provide refuge habitat for displaced wetland birds during the Talbert/Brookhurst construction. In addition, after completion of Talbert/Brookhurst construction, construction of Magnolia Marsh will be delayed one year to allow for establishment of new areas prior to impacts to all existing areas.

The preferred alternative, the proposed project, achieves the primary project goals of: restoring all degraded wetland to functioning habitat, enhancing tidal flows, maintaining and, where feasible, improving water quality, and maintaining flood control integrity. The project proposes to restore tidal action in the Brookhurst and Magnolia Marshes by excavating the still visible remnant marsh channels within those areas and restoring interaction between those areas and the heretofore channelized stormflows. Thus, the proposed alternative mimics, to the extent that that is feasible, the historic marsh patterns. Furthermore, the site readily lends itself to restoration due to the presence of extensive historic marsh plains at or near desired elevations. The Commission's staff ecologist has reviewed the proposed project and states:

> *"The Huntington Beach Wetland Conservancy's proposed Huntington Beach Wetland Restoration Project is a valuable and well-designed project that I enthusiastically support."*

However, the project proposes to include future dredging/excavation as necessary to maintain the site's wetland and habitat functions. The frequency and extent of the maintenance dredging is not definitively known at this time, but is expected to be needed twice over the next ten years (once at five years, once at ten years). However, conditions that will exist in the future cannot be readily known at this time, and so impacts that may occur cannot be completely assessed. A finding of consistency with the Coastal Act for the future maintenance excavation/dredging cannot be made at this time. Thus, a special condition is imposed that requires that an amendment to this permit or a new coastal development permit is required for future excavation/dredging, unless the Executive Director determines that no amendment or permit is legally required.

The potential impacts arising from the project are largely temporary and in any case overall any potential impacts will be off set by the greater gains provided from establishment of more diverse and higher quality wetland habitat. However, although it is the applicant's intention to carry the project through to completion, if for some reason the project ceased prior to completion, the temporary impacts identified would become long term or possibly permanent impacts. In order to avoid this possibility, a special condition is imposed which requires the applicant to carry out the proposed development to completion. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Section 30233 of the Coastal Act because it is the least environmentally damaging alternative.

3) Mitigation

Section 30233 of the Coastal Act requires that wetland projects include feasible mitigation measures to minimize adverse environmental effects. As stated previously, the objective of the proposed project is restoration. As such, the question of adequate mitigation is somewhat different than with other projects that would result in a net loss of wetland without mitigation.

The proposed project is a restoration plan for improvement of the historic Huntington Beach Wetlands. The net effects of the project are beneficial and will result in improved water management and increased habitat diversity. The Talbert Marsh restoration completed in the early 1990s has resulted in improving tidal flushing and circulation to that marsh, establishment of sensitive salt marsh habitat, and improving flood control in the area. Similar success is expected to result from the proposed project.

Although overall the project will be beneficial, some adverse impacts are unavoidable. The project will include temporary impacts during construction, but as described above in the alternatives section, these have been minimized. Other potential impacts could result to biology as the conversion of certain vegetated areas to other vegetation types will very likely reduce the overall area of pickleweed. However, conversion to these other vegetated and unvegetated surface conditions is anticipated to be a positive impact overall.

However, monitoring of the proposed project is important to assure that habitat benefits occur as expected, or if not, to assure a plan is in place for remediation. A monitoring plan is included in the project proposal. The applicant has already begun monitoring the site to establish pre-project conditions as a base line value. The monitoring plan (Pre- and Post-Restoration Monitoring Plan for the Huntington Beach Wetlands Restoration Project, prepared by Merkel & Associates, Inc., dated April 2007) states:

> *"The primary goal of this monitoring program is to document the ecological and physical status of the Wetlands prior to the restoration work, for comparison to the conditions that develop as a result of the restoration. Through this process, the value of restoring some of the natural physical processes at the site to a variety of biological communities should become apparent. Monitoring of the pre-restoration condition has already begun and is anticipated to span approximately one and a half years before the commencement of construction projected to begin in Fall 2008. In order to detect and document the long-term development processes following wetland restoration, biological and physical monitoring will continue for 10 years after restoration. During that time, monitoring events will be intended not only for observation but also to support adaptive management activities. Analysis of post-restoration data may illuminate problems or management strategies that could be implemented to aid the process of the wetland development."*

The proposed monitoring plan incorporates the following components: bathymetric surveys (twice prior to restoration, immediately following restoration, and annually thereafter for the first 5 years, and at years 7 and 10); tidal monitoring (quarterly pre-restoration, during restoration when possible, and through the first 5 years following restoration, and at years 7 and 10); and water quality (quarterly through the 5th year post-restoration and at years 7 and 10). Surveys of the abundance, distribution, and habitat usage of avian species will be assessed in quarterly surveys of the wetlands prior to and following the restoration (first five years and at years 7 and 10). Focused surveys for Belding's Savannah sparrow was performed during the 2008 breeding season in April. Following restoration, the surveys will continue on a yearly basis. Quarterly fish sampling

events to collect fish community data will take place during pre-restoration monitoring. Vegetation monitoring will be conducted via aerial photos taken during years 1 through 10. In addition, vegetation will be monitored on the ground via transects established at eight locations. Botanists will record the location and extent of each plant species along each transect. Transects will be surveyed once annually in September. During the post-restoration monitoring, vegetation monitoring will be conducted in years 1 through 5, 7, and 10. Benthic infaunal monitoring is also proposed to occur twice per year. Post-restoration, infaunal monitoring will be conducted in years 1 through 5, 7, 10.

The Commission's staff ecologist has reviewed the proposed monitoring plan and had the following comment:

> *"The monitoring plan rightly focuses on understanding and following water quality, vegetation, and macro-faunal dynamics through time. However, I think including benthic sampling is an important component and I am pleased to see it included in the sampling program. Benthic samples can aid in understanding fish and bird prey availability as well as tracking overall restoration success. Presently the plan is to identify benthic samples to the phylum level. I recommend making the extra effort to identify samples to the lowest possible taxon. This would enable a finer analysis of guild relationships which in turn allows for a finer interpretation of ecosystem patterns and responses to restoration."*

Overall the proposed monitoring plan is good and will provide important data and assessments of the restoration project's success. However, as reflected in the Commission's staff ecologist's statement, one relatively minor change will significantly add to the overall understanding of the restoration project. In order to receive maximum benefit and understanding from the monitoring of the restoration plan, a condition is imposed which requires that the proposed monitoring plan be modified to include identification of benthic samples to the lowest possible taxon.

In addition, the Huntington Beach Wetlands were serendipitously identified for inclusion in the Southern California Wetland Recovery/Southern California Coastal Wetland Research Project summer 2008 Southern California wetlands status assessment. This assessment consists of performing the California Rapid Assessment Method (CRAM) wetland survey to get a generalized or overall wetland "health" status score. Performing CRAM at the Huntington Beach Wetlands this summer (2008) will provide a pre-wetland restoration CRAM score. Performing subsequent CRAM assessments during the same season that the pre-restoration CRAM takes place, every other year, for a minimum of ten years following the completion of the restoration project, will contribute to state and federal efforts to track the extent and condition of California wetlands and to evaluate the success of restoration projects. Therefore, in order to further maximize the benefit and understanding derived from the proposed restoration project, a special condition is imposed that requires CRAM assessments of the proposed restoration project, when feasible, every other year for ten years following completion of the project.

4. Section 30233(d)

Section 30233(d) states:

> *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.*

The proposed project is a wetland restoration project, but will also include a flood control component. Moreover, a significant amount of marsh material is proposed to be excavated/dredged (290,000 cubic yards), which, if suitable, would be useful for beach replenishment.

A Sediment Characterization Study was prepared for the proposed project by Merkel & Associates, Inc., dated July 2007. The sample collection and analyses followed a Sampling and Analysis Plan (SAP) that was reviewed and approved by the USEPA and USACE. The quality of material to be excavated from the site varies, but is documented to be beach sand within Talbert Ocean Channel, mostly sandy at Talbert Marsh, mixed silt and sand within Brookhurst and Magnolia Marshes, and a mix of sand, silt and gravel at the flood control levees. Approximately 151,000 cubic yards of dredged/excavated material will be placed primarily in the nearshore area, with some of the mostly sandy material placed on the adjacent Huntington State Beach.

The proposed re-use in the nearshore and beach area is based on results of soil sampling and testing done consistent with the SAP approved by the USEPA for all areas to be excavated/dredged on all marshes, and has been reviewed and accepted by U.S. Army Corps of Engineers and Regional Water Quality Control Board staff. In addition, the proposal has been reviewed and found to be appropriate by the Commission's staff engineer. In addition, this aspect of the proposed project has received approvals from the State Department of Parks and Recreation and the State Lands Commission.

The remainder of the dredged/excavated material is proposed for re-use within the marshes or to be hauled off site to an inland disposal site. The off-site disposal location has not yet been finalized. It is expected to be located at an inland disposal site such as the Olinda Alpha Landfill in Brea. However, if the excess material is disposed of within the coastal zone, an amendment to this permit, or a separate coastal development permit will be required unless the Executive Director determines that no amendment or permit is legally required. A special condition reflecting this has been imposed.

Conclusion

The Commission finds the proposed project, as conditioned, to be consistent with Section 30233 of the Coastal Act with regard to protection of wetlands and beach replenishment.

D. Environmentally Sensitive Habitat Areas

Section 30240 of the Coastal Act states:

> *(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.*

Section 30240 of the Coastal Act limits the amount and types of development that may occur within and adjacent to environmentally sensitive habitat areas (ESHA). The Coastal Act defines environmentally sensitive area as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

A Biological Resources report was prepared for the proposed project by Merkel & Associates, Inc. dated August 13, 2007. In addition, a Huntington Beach Wetlands Habitats and Sensitive Species report was prepared by Merkel & Associates, Inc., dated August 18, 2004. The biological assessments of the subject site conclude that the Huntington Beach Wetlands is a sensitive habitat area that has degraded over time due to isolation from tides, neglect, encroachment, unauthorized access, and historic oil exploration and filling. Sensitive birds nest over large areas of pickleweed and salt panne at the site. Talbert Marsh was successfully restored in 1990, providing suitable habitat for fish, birds and invertebrates. The remaining wetlands, as yet unrestored, are comprised of large parcels of undeveloped relic marshland well-suited for restoration without significant alteration. Habitat assessment indicates that the project would create significant improvements to habitat by increasing diversity in the form of subtidal, low, mid, and high marsh habitats.

The project as proposed will limit work such that it occurs only from September through March. This will avoid impacts to least terns, which are present in the area only between mid-April through mid-September. The time limit on construction will also avoid impacts to grunion. Grunion spawn from mid-March through August. The proposed beach and near shore dredge deposition will occur in areas that may be used by grunion for spawning. However, as construction is proposed only outside this time frame, it will not adversely impact spawning grunion.

The subject site supports significant types and amounts of sensitive plant and animal species and habitat that is rare and especially valuable because of their special nature or role in an ecosystem and which can be easily disturbed or degraded by human activities and developments. Thus, the site meets the Coastal Act definition of an environmentally sensitive habitat area (ESHA). As such, any development within the ESHA must conform with Section 30240 of the Coastal Act. Section 30240 of the Coastal Act requires that ESHA be protected against any significant disruption of habitat value and that only uses dependent on the ESHA resource are allowed within the ESHA. The proposed development is a restoration project that is intended to restore the site to its previous condition of higher functioning tidal marsh and, thus, to increase the biodiversity at the site. Impacts have been minimized to the maximum extent feasible, and only that grading necessary to restore habitat is proposed. The impacts to existing sensitive habitats would result in habitat enhancement, and so will not result in a significant disruption of habitat values. Thus no long term adverse impacts to ESHA are anticipated from the proposed project. In fact, the ESHA will be enhanced in the long term by the proposed project. However, if the restoration project is not carried out to completion, some of the adverse impacts could become significant. Therefore, a condition is imposed that requires the applicant to carry out the proposed restoration project, as conditioned. Therefore, as conditioned, the Commission finds that the proposed project is consistent with Section 30240 of the Coastal Act.

E. Water Quality

Section 30231 of the Coastal Act states:

> *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 30231 of the Coastal Act requires that the biological productivity of wetlands, such as the subject site, be maintained, and where feasible, restored. The restored wetlands would filter potential storm drainage constituents, including bacteria, oils, and grease, and floating debris, from entering the ocean. With proposed increased tidal flushing, build-up of nutrients or other associated water quality problems are not expected.

The proposed wetland restoration project is expected to improve the quality of the water emitted from the Talbert Marsh to the ocean during storm flows. Presently, moderate-quality water is conveyed from the watershed to the ocean through the flood control channels during storms. It is expected that the marsh will retain a portion of these storm flows prior to their conveyance to the sea. During retention, certain constituents in the

water column can potentially be filtered out of the flow by the wetland plants, soils, and biota, and be diluted throughout the wetland tidal prism. Retention over time in shallow waters may also result in solarization, or mortality by sunlight, of bacteria in the runoff. Effects of flood retention by the marsh should be to reduce the quantity and improve the quality of storm flow effluent to the sea. Daily low flows are diverted from the Huntington Beach and Talbert flood control channels and conveyed to the Orange County Sanitation District ocean outfall and would have no impact on local quality during the dry season.

Project construction may potentially introduce debris or other contaminants to the water system within the wetland complex and primarily would be associated with discharge from construction equipment. The applicant proposes to incorporate Best Management Practices (BMPs) in a Storm Water Pollution Prevention Plan (SWPPP) as required in the County of Orange Order No. R8-2002-0010, General National Pollutant Discharge Elimination System (NDPES) Permit No. CAS618030 for Construction Activities. The proposed project incorporates the BMPs outlined in the General Permit for construction activities. The proposed project includes the placement of turbidity screens during dredging of Talbert Marsh to control release of fine-grained particles to the ocean. Also, only sandy material deposits that do not contain bacteria are expected to be removed and affected during dredge operations. Fine grained materials to be removed are proposed to be excavated in the dry and placed in a truck for upland disposal and so are not expected to enter the water column. In addition, the Commission imposes a special condition outlining the applicant's construction and debris removal responsibilities.

The Orange County Sanitation District currently conducts water quality testing along beaches in Newport Beach and Huntington Beach. This testing will continue during project construction and would serve as an indicator of potential project impacts. The applicant proposes that if any project related impacts are determined, stricter turbidity controls on dredging will be implemented to eliminate impacts. If contaminated sediments are encountered during excavation/dredging, the applicant has proposed to bury and cap them in the Talbert Marsh pit. It may also be appropriate to place and cap them in the proposed levee and/or berm areas.

In addition, the applicant proposes to sample water quality at the outlet channel where it meets the beach on a regular basis, and the samples will be analyzed in the local lab of the Orange County Health Care Agency where County water samples are presently tested. Samples are proposed to be tested and analyzed primarily for bacteria. Sampling will be done in August and September 2008 and after construction for up to one year to identify potential impacts. The applicant is currently monitoring water quality within the tidal channels and Talbert Marsh to set the baseline for existing conditions.

The proposed wetland restoration project is expected to improve the quality of the water emitted from the Talbert Marsh to the ocean during storm flows. The Commission's water quality staff have reviewed the proposed project and found it to be acceptable. Therefore, the proposed project is consistent with Section 30231 of the Coastal Act with regard to maintaining and enhancing the biological productivity and the quality of wetlands.

F. Public Access and Recreation

Section 30210 of the Coastal Act states:

> *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.*

Currently at the subject site public access is available along a public trail that extends from the Santa Ana River trail, along the inland side of Talbert Marsh, to Brookhurst Street. In addition, the marsh areas can be viewed from the sidewalks along Brookhurst and Magnolia Streets, and from vehicles on Pacific Coast Highway. The ultimate plan for the entire Huntington Beach Wetlands Restoration, as reflected in the Huntington Beach Wetlands Conceptual Restoration Plan prepared by Moffat and Nichol, dated January 31, 2005, envisions the incorporation of significantly more public access, including trails and overlook/nodes. Future public access at the site is described in the Huntington Beach Wetlands Conceptual Restoration Plan as follows:

> *"The Huntington Beach Wetlands public access plan is envisioned as a series of linked educational and recreational trail "events" that can be constructed over time as the restoration of the component marshes is completed. The wetlands complex is located within an urban context, and as such provides an excellent opportunity to serve its community with educational and passive recreational programs and access. It will also serve the broader community interest by exposing large numbers of people to a critical ecosystem type, and to teach conservation principles in the best possible way, by immersing them in the living breathing wetland. The opportunity to create the next generation of conservationists is enhanced by the close proximity of a number of schools, existing recreational areas, the Orange Coast River Park, the public beach, and adjacent resort hotels."*

The Commission strongly endorses the future public access plan. It is not proposed as part of this application however. It is expected to be accomplished in future phases of the overall project. In any case, public access is currently available. The proposed project will not adversely impact the existing public access opportunities. Therefore, the Commission finds that the proposed project is consistent with the public access policies of the Coastal Act.

In addition, Section 30220 of the Coastal Act addresses public recreation:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Currently surfing opportunities exist on the beaches in the project vicinity. Surfing is a

water-oriented recreational activity that cannot readily be provided at inland water areas. Section 30202 of the Coastal Act requires that such activities be protected. The proposed restoration project will increase the tidal prism within the wetlands area. This should increase the ebb tidal delta and likely improve surfing in the area – or at least not reduce surf quality. Thus, impacts to surfing are not expected from the proposed project. Therefore, the project is consistent with Section 30220 of the Coastal Act regarding protection of water oriented recreational. However, because the actual impacts to surfing are not known, the applicant proposes to monitor surfing at the beach adjacent to the outlet. The proposed monitoring will include:

- Documenting the number of surfers at the site and their locations;
- Observing and videotaping surfing conditions;
- Providing an on-line survey for surfers linked to the Surfline and Surfrider websites to solicit opinions and experiences before and after the project;
- Measuring beach profiles adjacent to the outlet before and after the project;
- Surfing the site and noting observations and experiences; and,
- Analyzing surfing conditions at the site before and after the project in light of actual wave data provided by Surfline.com

Furthermore, the applicant proposes to measure tidal flow velocities in the outlet channel to understand if they will differ from existing currents. Changes to tidal currents could potentially modify sand bar deposition at the mouth of the inlet which in turn could modify surfing. Modeling done by the applicant's consultants does not indicate that the project will result in changes to inlet dynamics, but the monitoring is proposed to confirm the modeling.

The proposed additional step to include monitoring potential impacts to surfing will provide extensive data on potential impacts. However, impacts are not anticipated and, as stated above, the Commission finds the proposed project is consistent with the public access and recreation policies of the Coastal Act.

G. California Environmental Quality Act

Section 13096 of the Commission's regulations requires Commission approval of Coastal Development Permit applications 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 County of Orange Resources and Development Management Department prepared Mitigated Negative Declaration and Initial Study IP 07-585 (MND) assessing the proposed project. The MND was approved by the county. Measures included in the County's

approval to mitigate potential adverse impacts the project may have on the environment include: 1) survey performed by a qualified biologist prior to start of any construction or maintenance activities on beach or marsh habitat, if sensitive birds are foraging in the area activities shall avoid vicinity of the foraging birds until the birds have left; 2) conducting an on-site eelgrass transplant program consistent with the Southern California Eelgrass Mitigation Policy (NMFS 1991); and, 3) procedures to follow if paleontological resources or human bone is discovered.

The proposed project, as conditioned, has been found consistent with the wetland and ESHA protection, water quality, and public access and recreation policies of the Coastal Act. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project can be found consistent with the requirements of the Coastal Act to conform to CEQA.

Regional Map

COASTAL COMMISSION
5-08-061
EXHIBIT # A
PAGE 1 OF 1

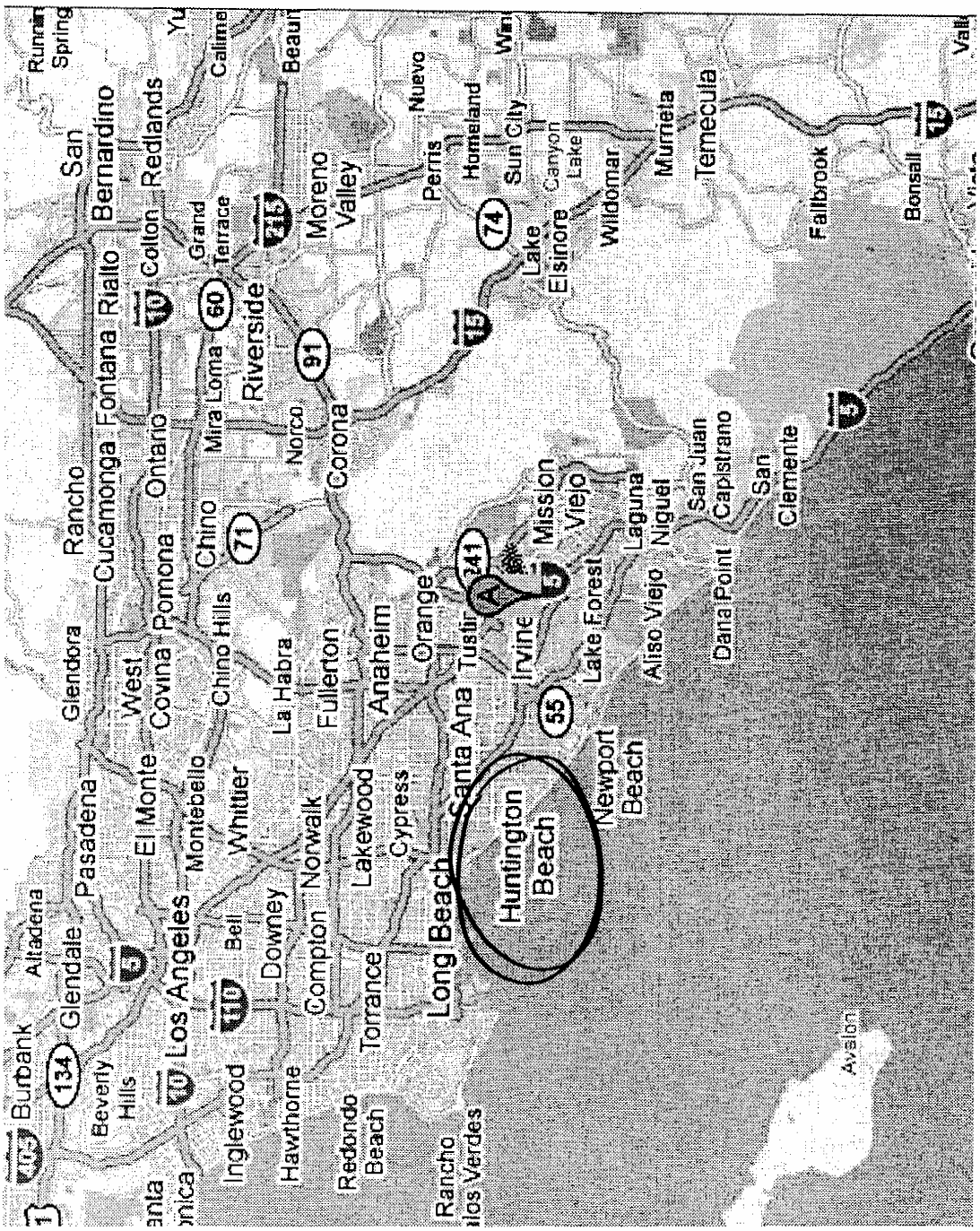
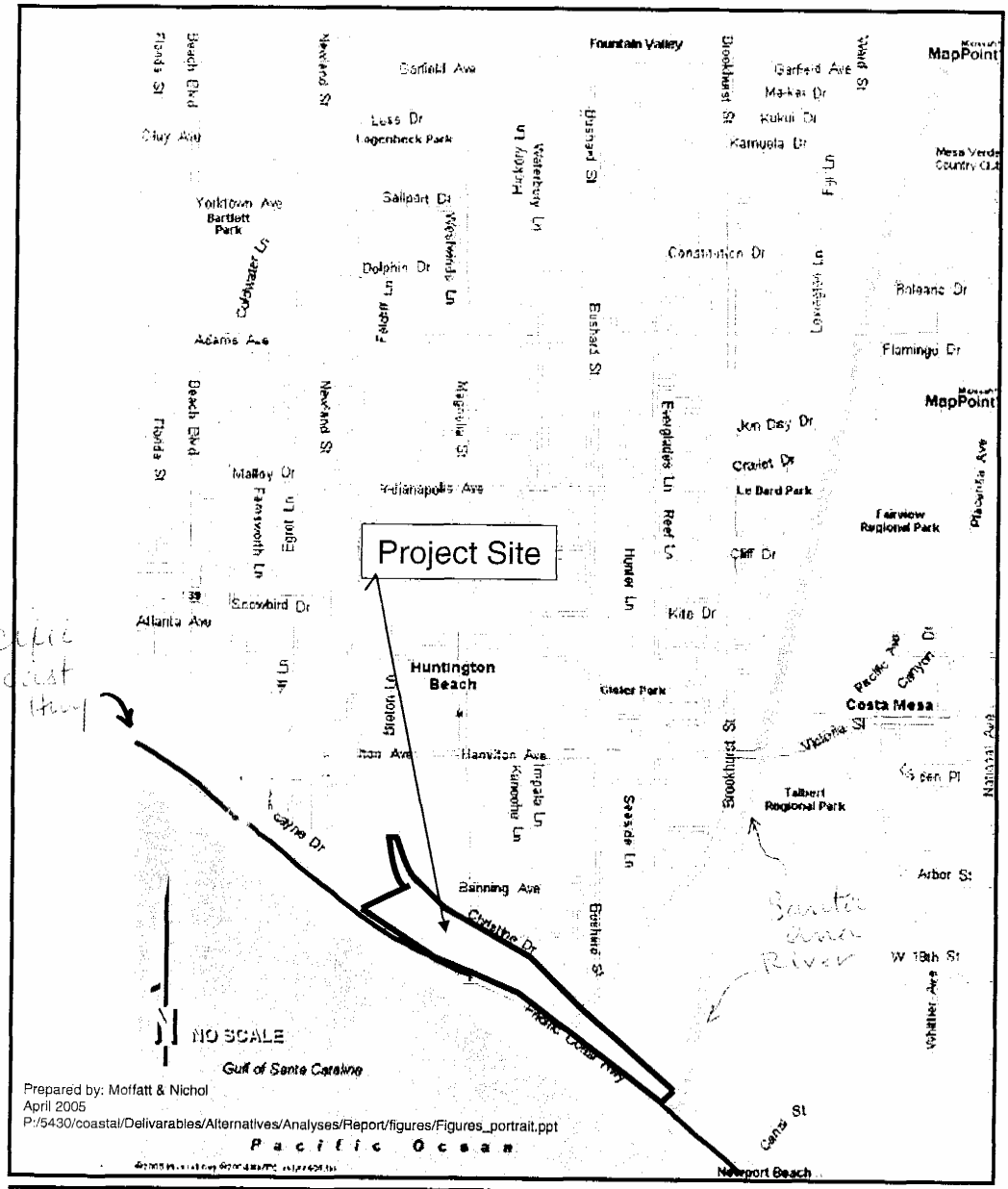


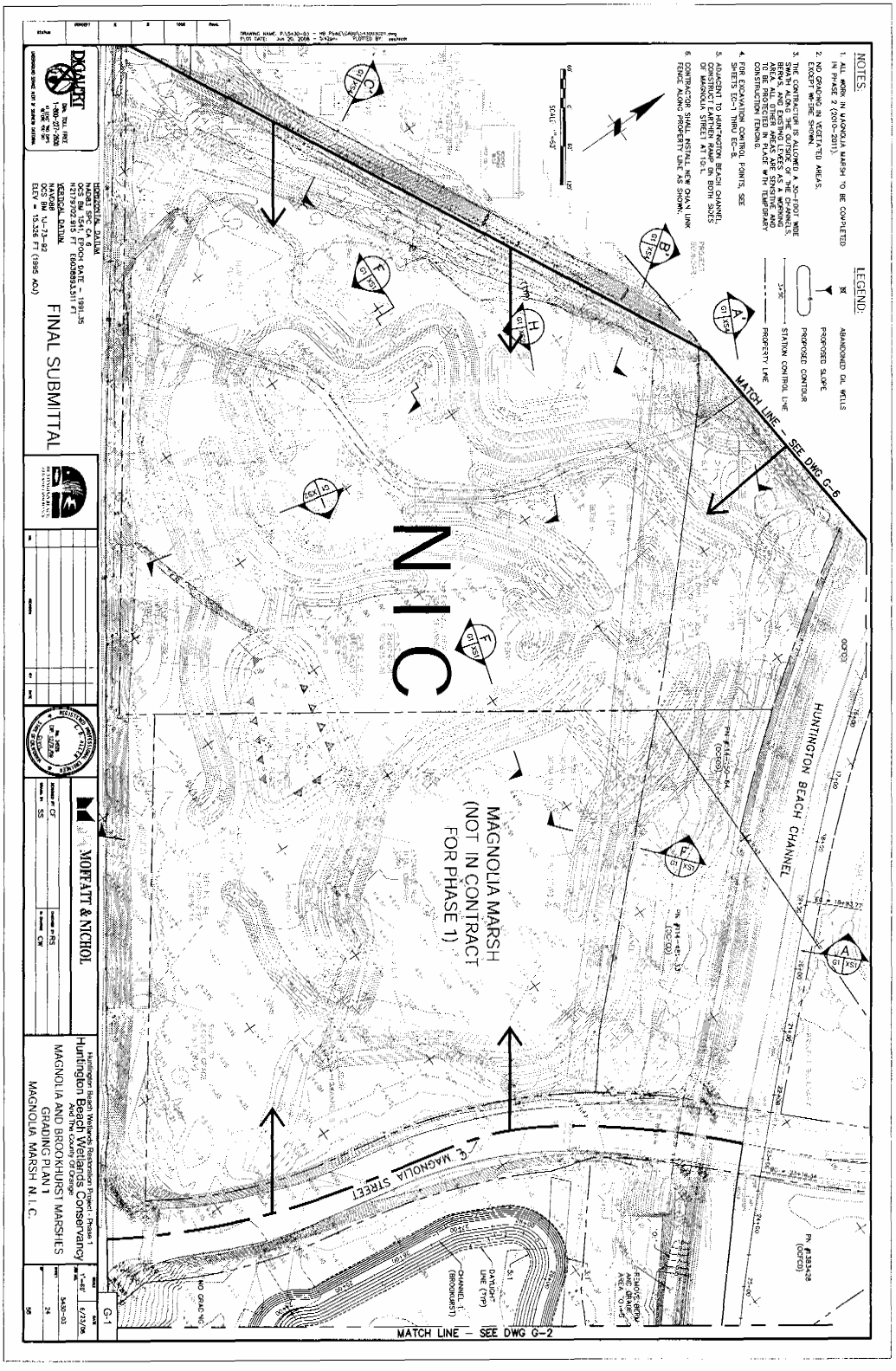
Figure 1 – Project Location Map

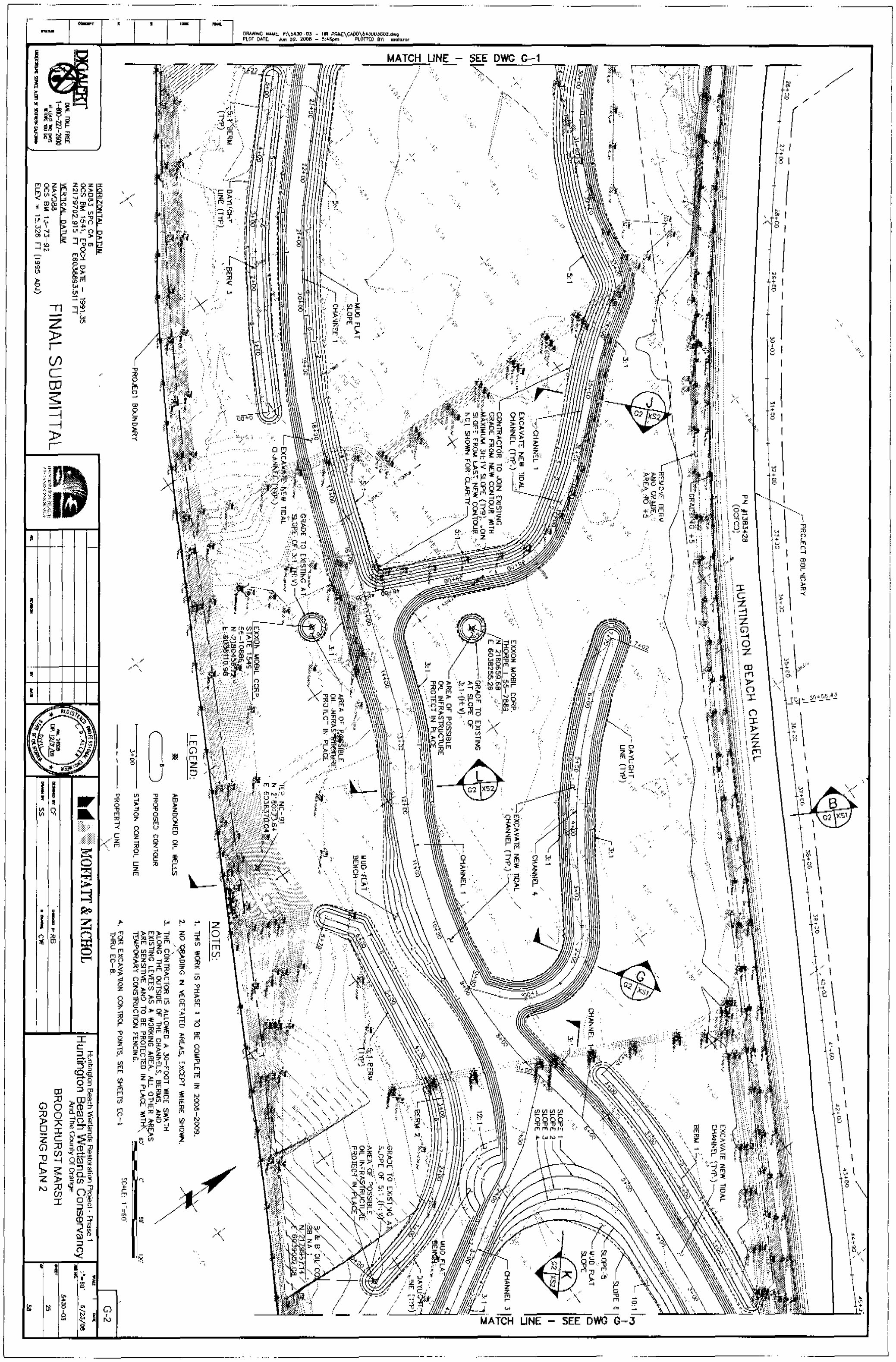


Huntington Beach Wetlands Conceptual Restoration Plan – Final Report	Project Location Map	Figure 1

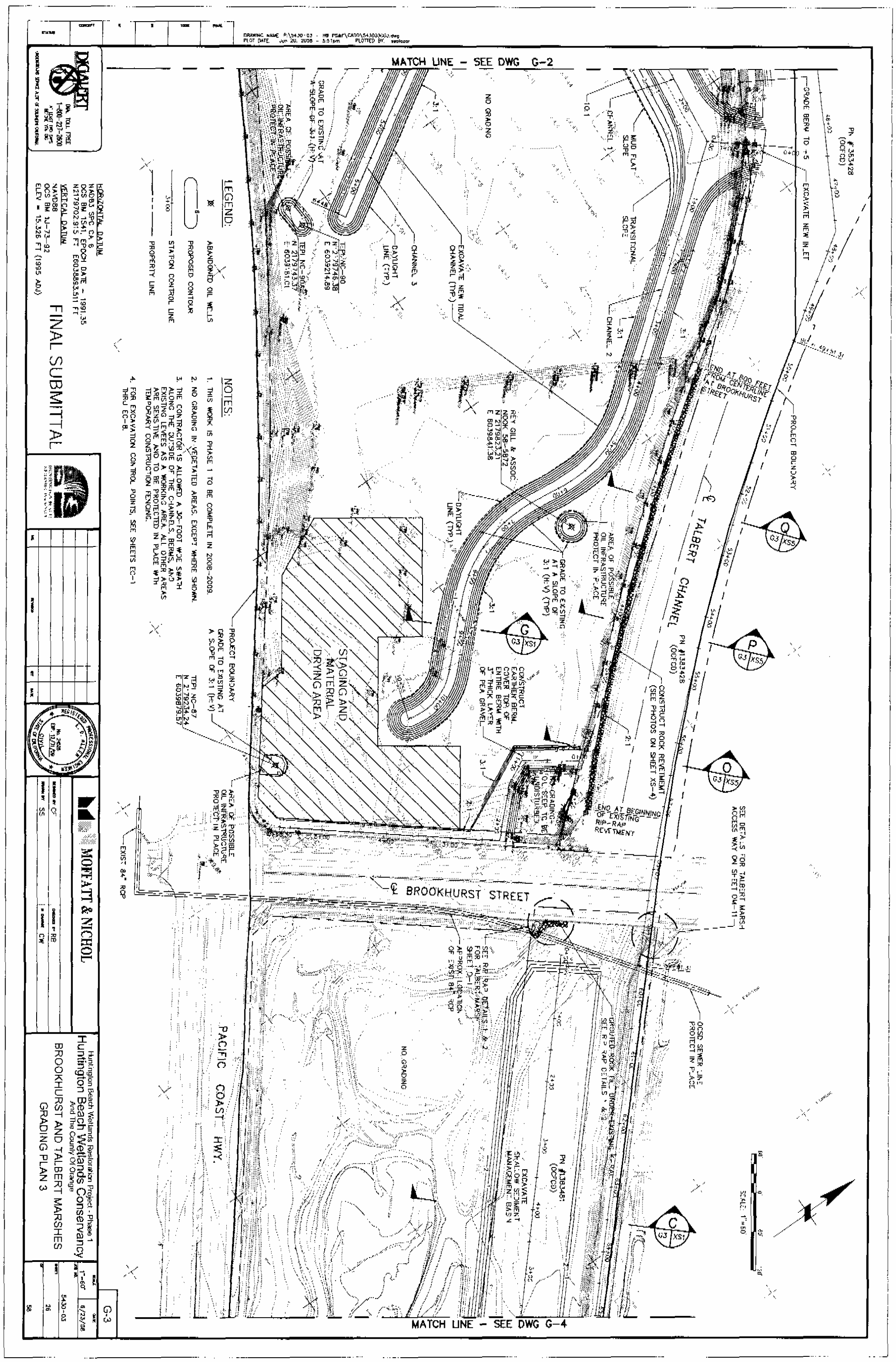
5-08-061 Vicinity Map Exhibit B

5-08-061 Project Plans Exhibit C 1/12

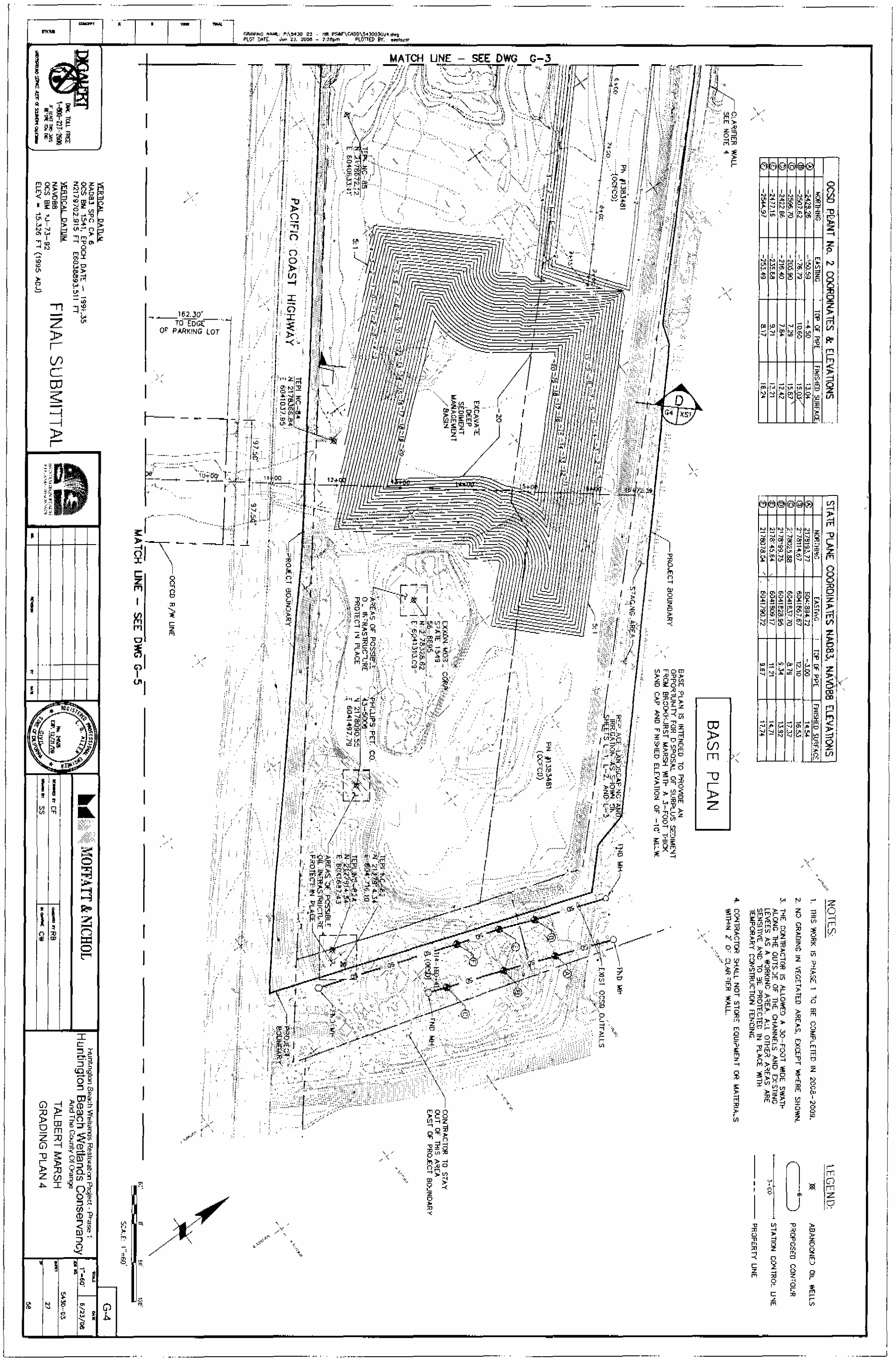



MATCH LINE – SEE DWG G-1
HUNTINGTON BEACH CHANNEL
FINAL SUBMITTAL
LEGEND:
NOTES:
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
BROOKHURST MARSH
GRADING PLAN 2
G-2
MATCH LINE – SEE DWG G-3

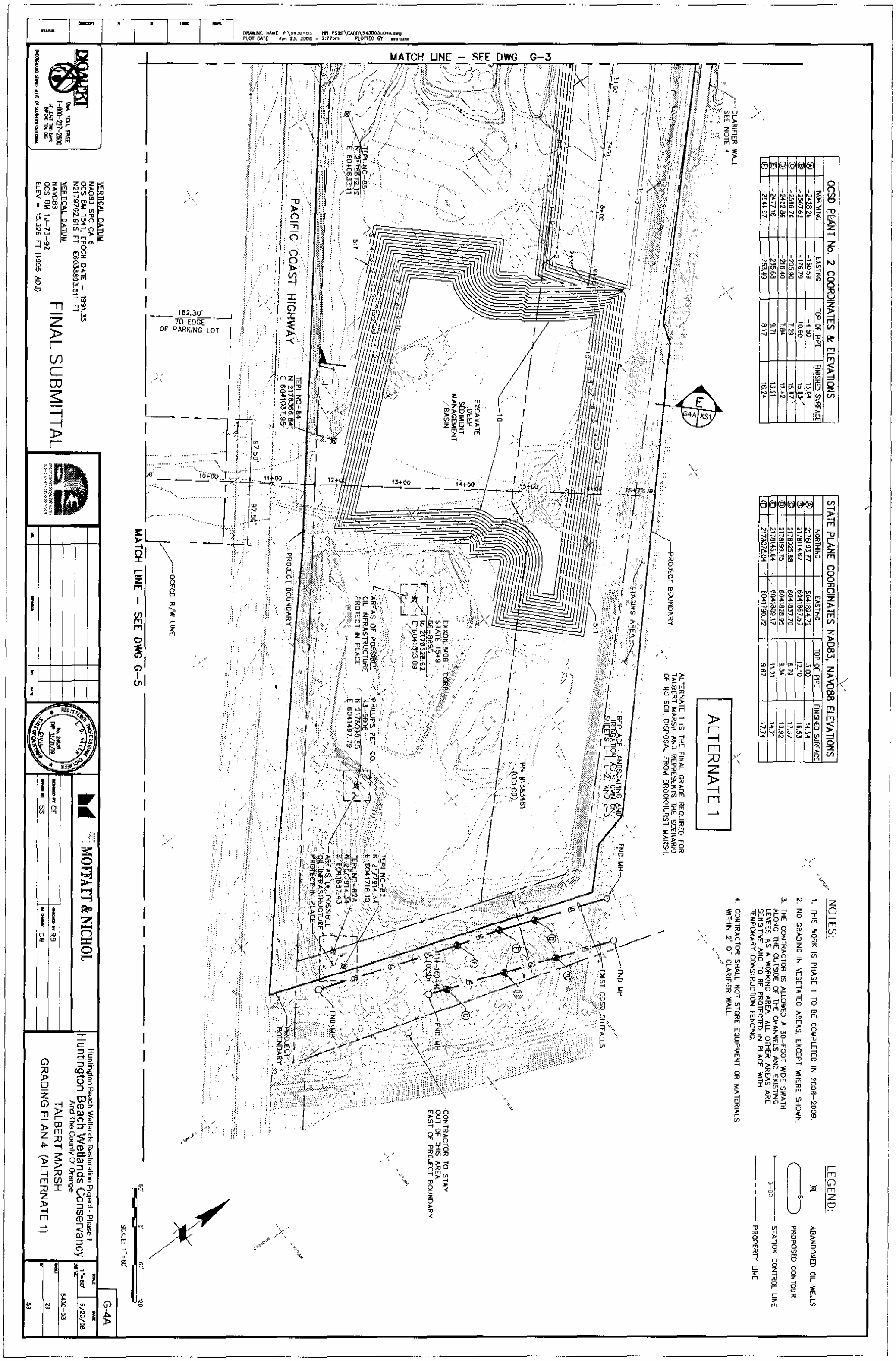
C2


MATCH LINE – SEE DWG G-2
TALBERT CHANNEL
STAGING AND MATERIAL DRYING AREA
BROOKHURST STREET
PACIFIC COAST HWY.
NO GRADING
LEGEND:
ABANDONED OIL WELLS
PROPOSED CONTOUR
STATION CONTROL LINE
PROPERTY LINE
NOTES:
1. THIS WORK IS PHASE 1 TO BE COMPLETE IN 2008-2009.
2. NO GRADING IN VEGETATED AREAS, EXCEPT WHERE SHOWN.
FINAL SUBMITTAL
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
BROOKHURST AND TALBERT MARSHES
GRADING PLAN 3
G-3
MATCH LINE – SEE DWG G-4

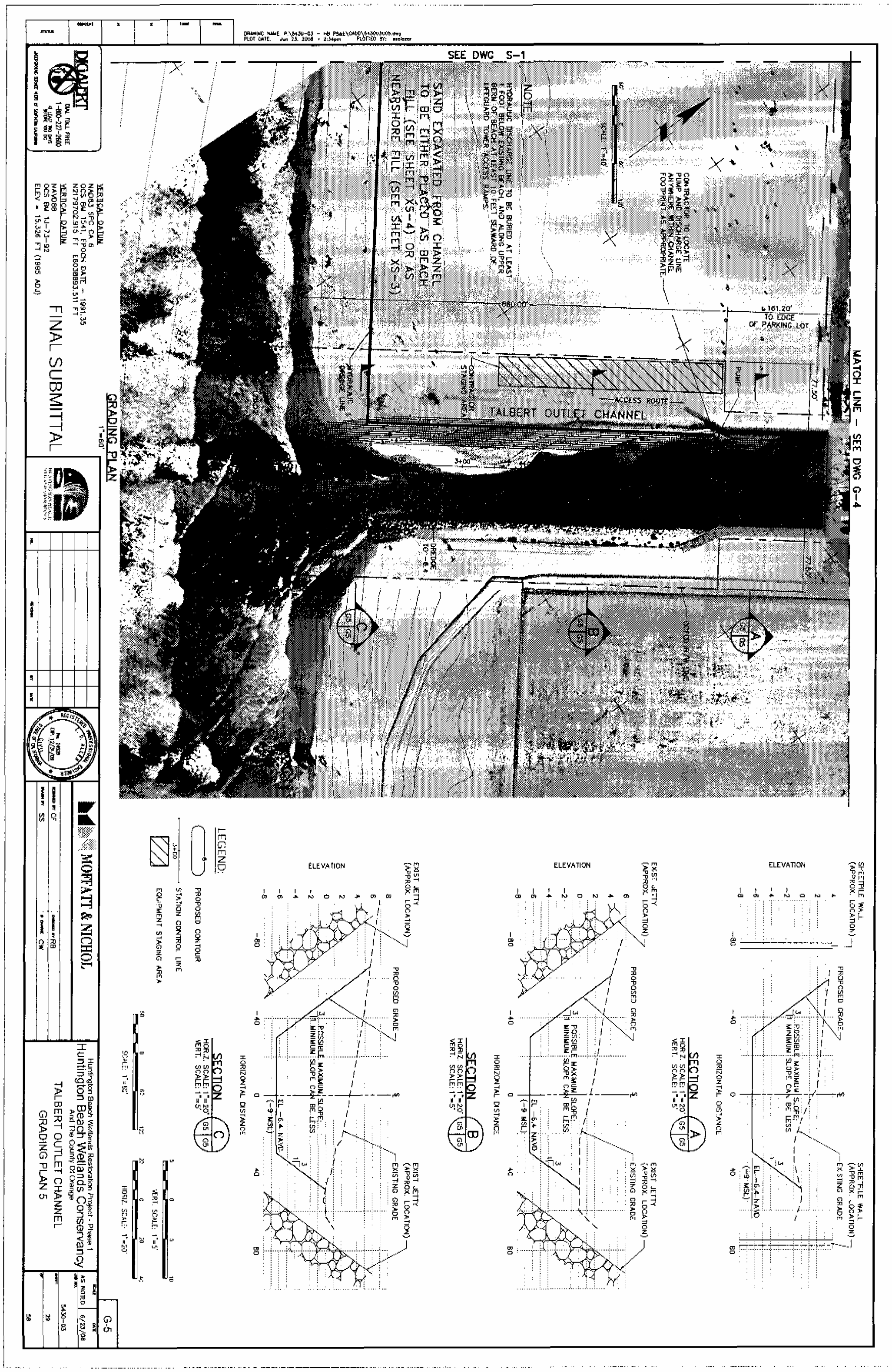
C3


MATCH LINE – SEE DWG G-3
PACIFIC COAST HIGHWAY
BASE PLAN
MATCH LINE – SEE DWG G-5
FINAL SUBMITTAL
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
TALBERT MARSH
GRADING PLAN 4
G-4

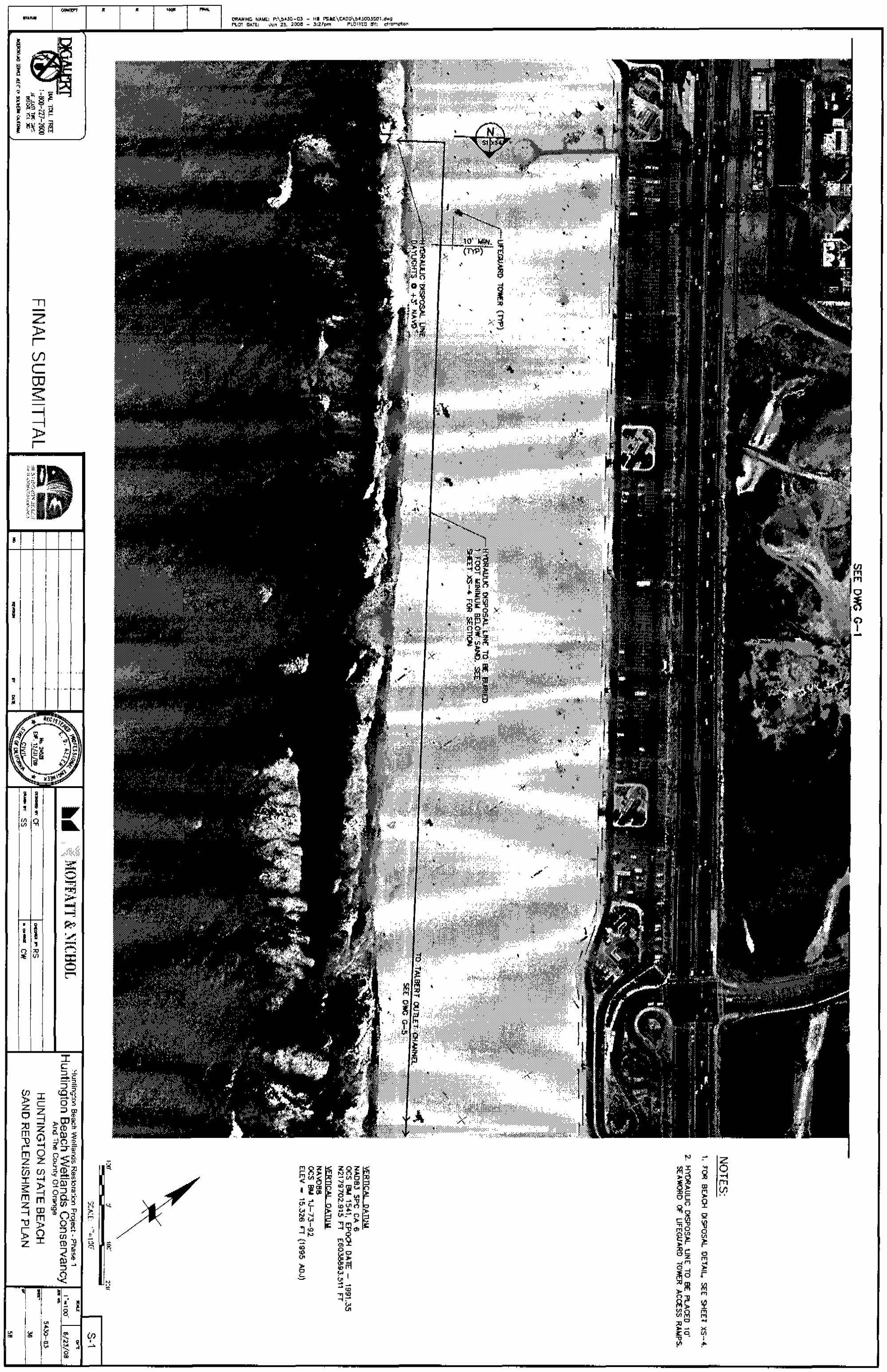
C4


MATCH LINE – SEE DWG G-3
MATCH LINE – SEE DWG G-5
PACIFIC COAST HIGHWAY
EXCAVATE DEEP SEDIMENT MANAGEMENT BASIN
STAGING AREA
PROJECT BOUNDARY
ALTERNATE 1
OCSD PLANT No. 2 COORDINATES & ELEVATIONS
STATE PLANE COORDINATES NAD83, NAVD88 ELEVATIONS
NOTES:
LEGEND:
FINAL SUBMITTAL
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
TALBERT MARSH
GRADING PLAN 4 (ALTERNATE 1)
G-4A

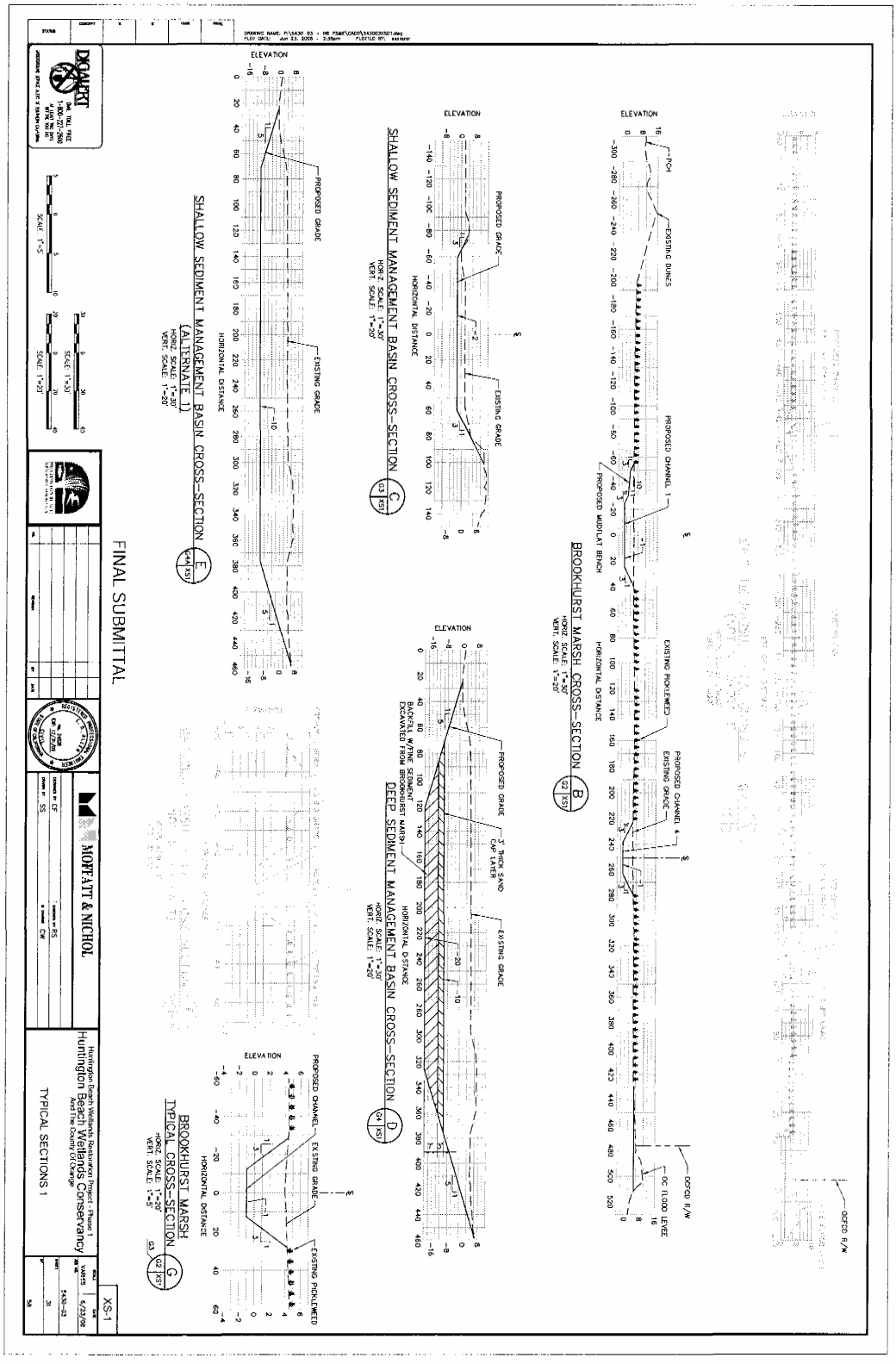
C5


SEE DWG S-1
MATCH LINE - SEE DWG G-4
NOTE:
SAND EXCAVATED FROM CHANNEL TO BE EITHER PLACED AS BEACH FILL (SEE SHEET XS-4) OR AS NEARSHORE FILL (SEE SHEET XS-3)
TALBERT OUTLET CHANNEL
ACCESS ROUTE
GRADING PLAN
FINAL SUBMITTAL
LEGEND:
PROPOSED CONTOUR
STATION CONTROL LINE
EQUIPMENT STAGING AREA
SECTION A
SECTION B
SECTION C
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
TALBERT OUTLET CHANNEL
GRADING PLAN 5
G-5

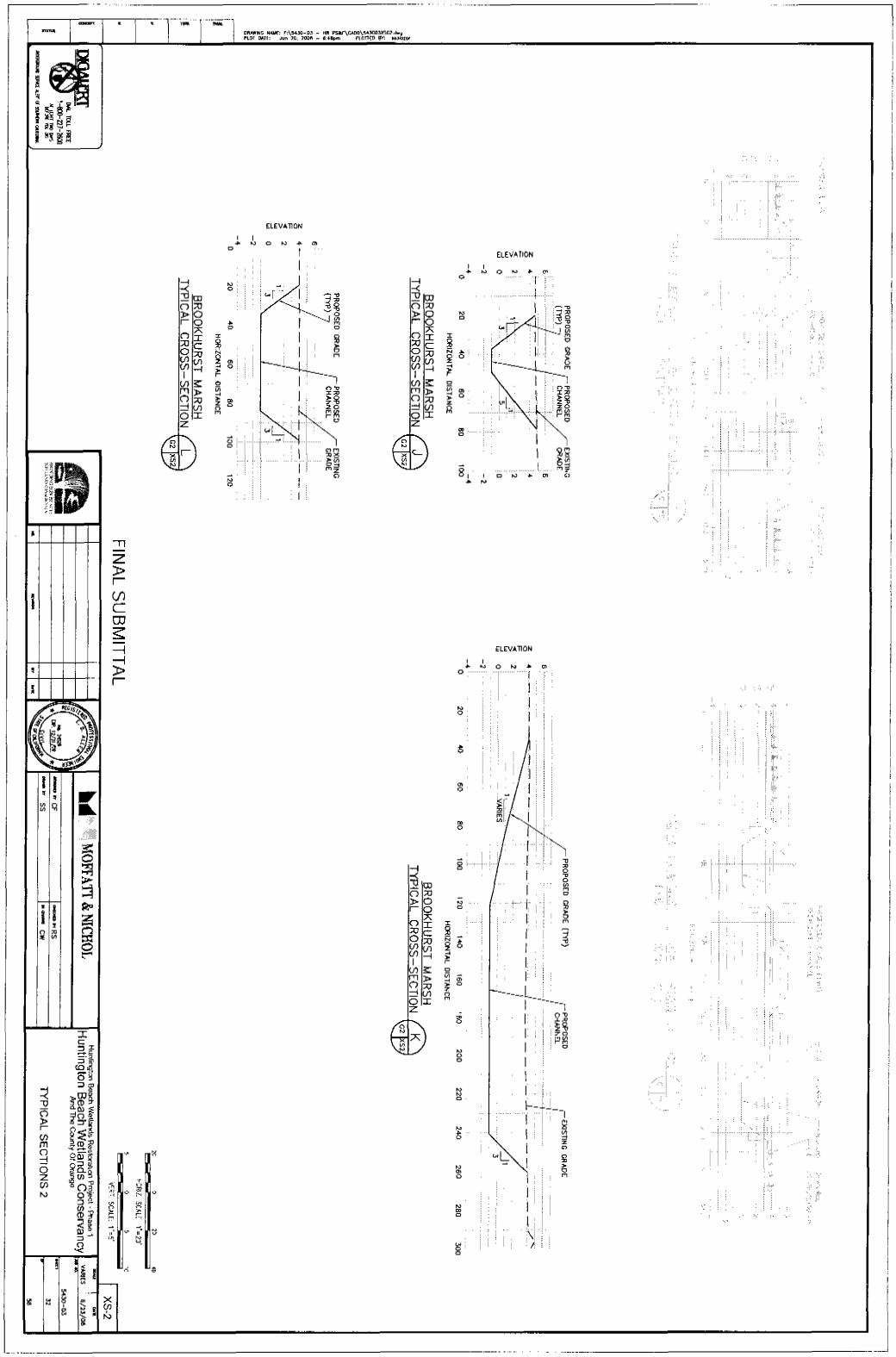
C6

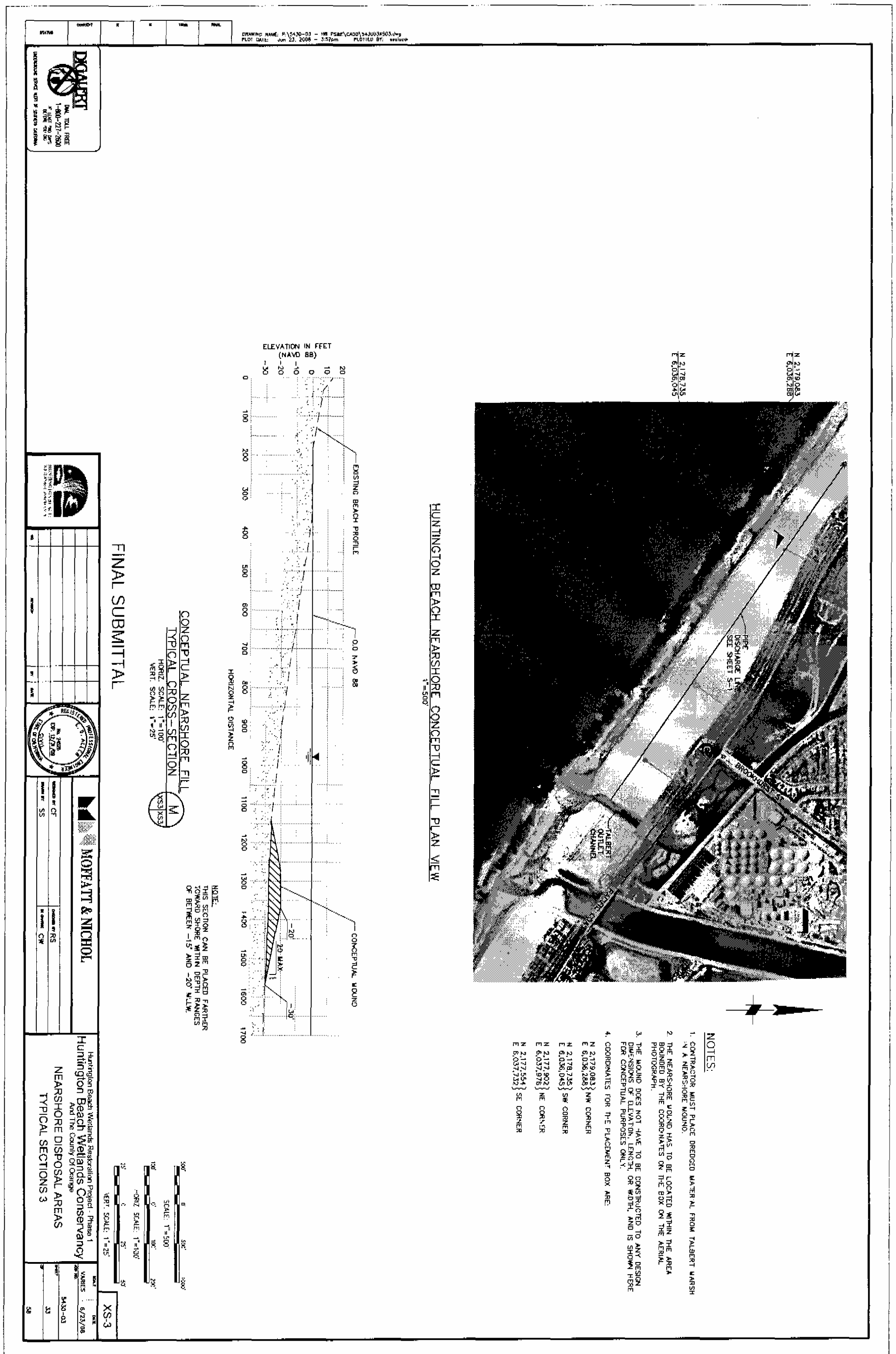

FINAL SUBMITTAL
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
And The County Of Orange
HUNTINGTON STATE BEACH
SAND REPLENISHMENT PLAN
S-1
SEE DWG G-1
LIFEGUARD TOWER (TYP)
10' MIN. (TYP)
HYDRAULIC DISPOSAL LINE DAYLIGHTS @ +5' NAVD
HYDRAULIC DISPOSAL LINE TO BE BURIED 1 FOOT MINIMUM BELOW SAND. SEE SHEET XS-4 FOR SECTION.
TO TALBERT OUTLET CHANNEL SEE DWG G-5
NOTES:
1. FOR BEACH DISPOSAL DETAIL SEE SHEET XS-4.
2. HYDRAULIC DISPOSAL LINE TO BE PLACED 10' SEAWARD OF LIFEGUARD TOWER ACCESS RAMPS.

C7

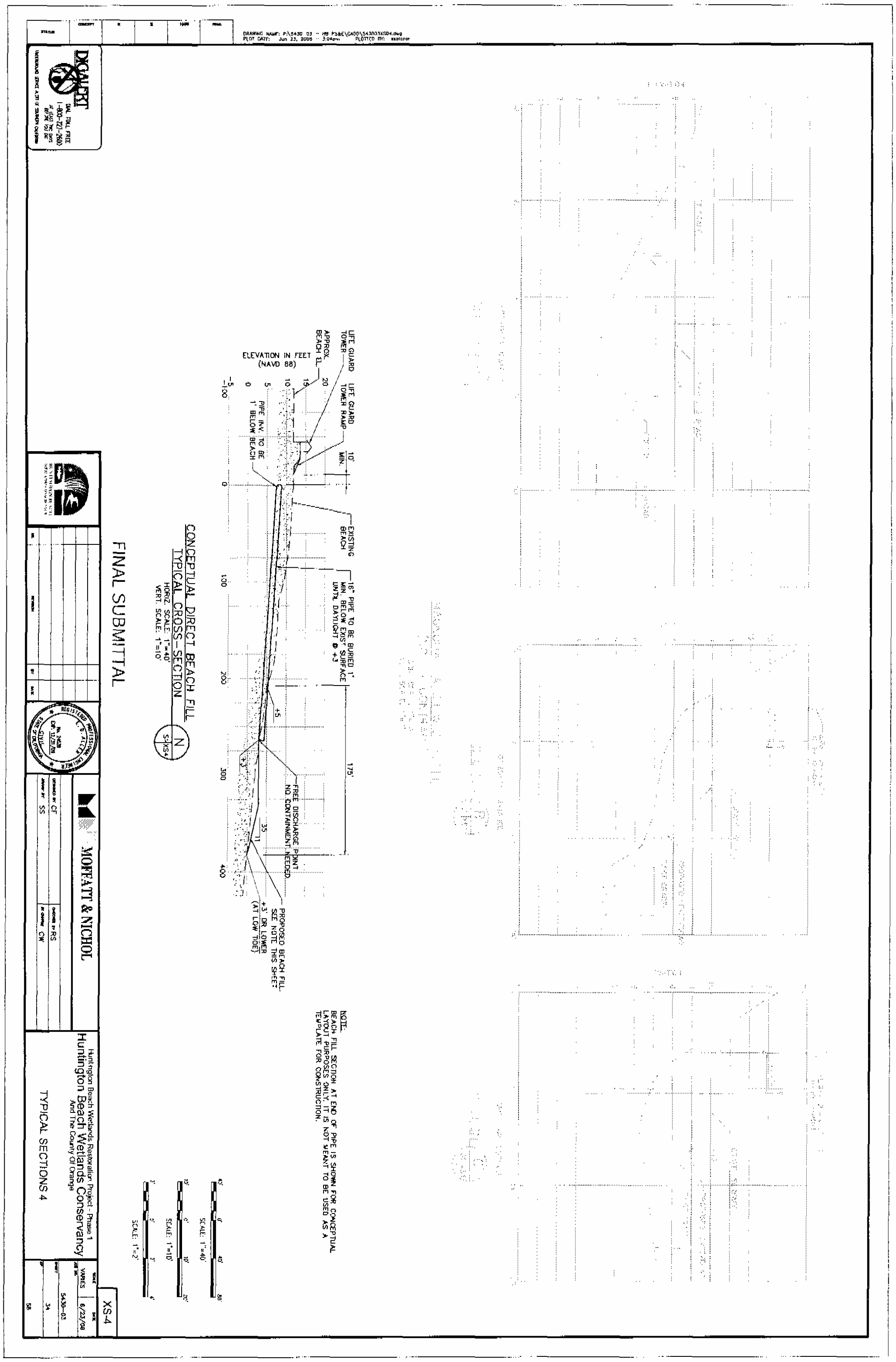

FINAL SUBMITTAL
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
TYPICAL SECTIONS 1
XS-1
SHALLOW SEDIMENT MANAGEMENT BASIN CROSS-SECTION (ALTERNATE 1)
SHALLOW SEDIMENT MANAGEMENT BASIN CROSS-SECTION
DEEP SEDIMENT MANAGEMENT BASIN CROSS-SECTION
BROOKHURST MARSH CROSS-SECTION
BROOKHURST MARSH TYPICAL CROSS-SECTION
PROPOSED GRADE
EXISTING GRADE
EXISTING DUNES
PROPOSED CHANNEL 1
PROPOSED MUDFLAT BENCH
EXISTING PICKLEWEED
PROPOSED CHANNEL 4
OCFCD R/W
OC FLOOD LEVEE
HORIZONTAL DISTANCE
ELEVATION

C 8

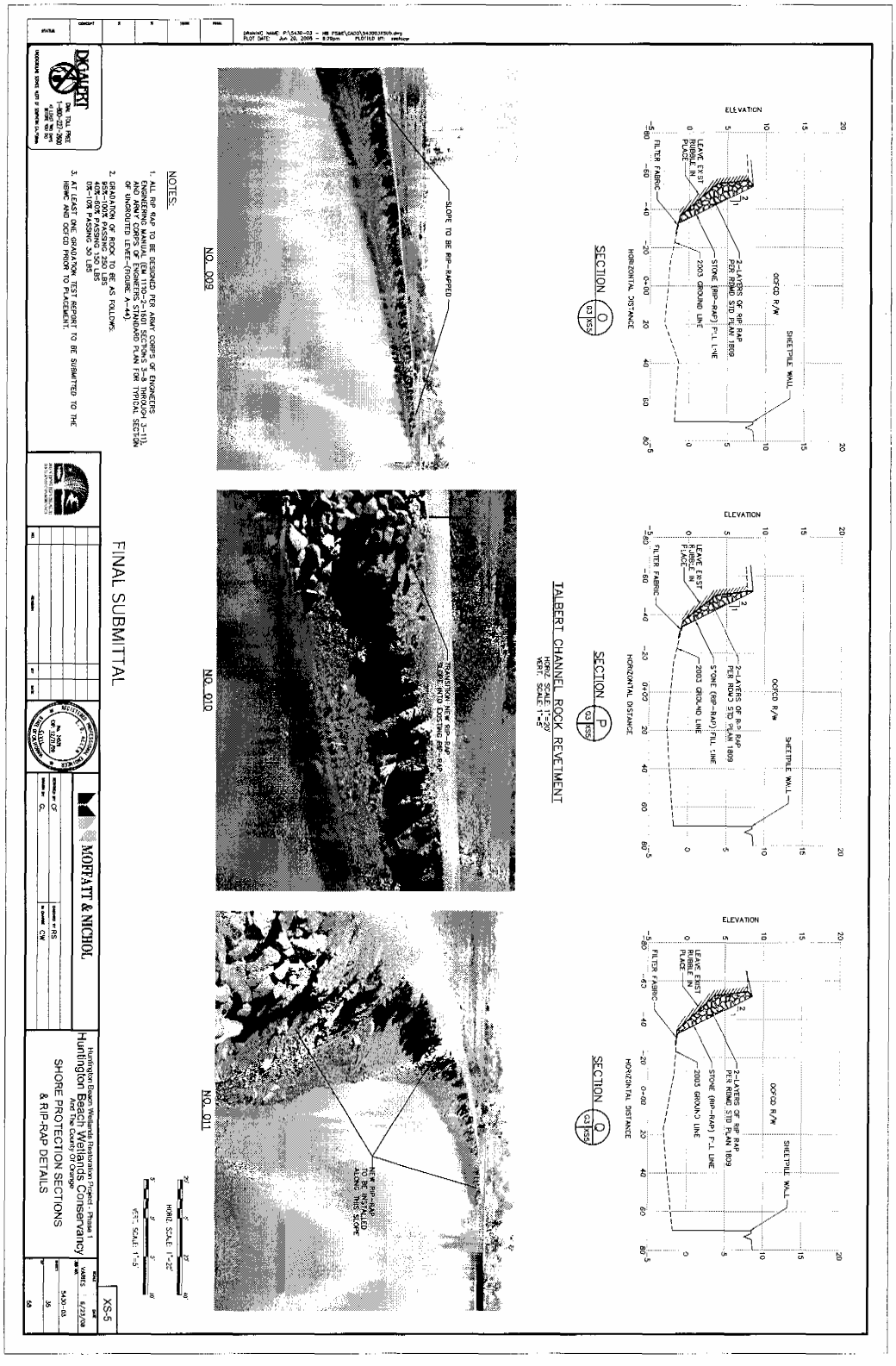

BROOKHURST MARSH
TYPICAL CROSS-SECTION
ELEVATION
HORIZONTAL DISTANCE
PROPOSED GRADE (TYP)
PROPOSED CHANNEL
EXISTING GRADE
VARIES
FINAL SUBMITTAL
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
TYPICAL SECTIONS 2
XS-2


N 2,179,083
E 6,036,288
N 2,178,735
E 6,036,045
PIPE DISCHARGE LINE SEE SHEET S-1
TALBERT OUTLET CHANNEL
NOTES:
1. CONTRACTOR MUST PLACE DREDGED MATERIAL FROM TALBERT MARSH IN A NEARSHORE MOUND.
2. THE NEARSHORE MOUND HAS TO BE LOCATED WITHIN THE AREA BOUNDED BY THE COORDINATES ON THE BOX ON THE AERIAL PHOTOGRAPH.
3. THE MOUND DOES NOT HAVE TO BE CONSTRUCTED TO ANY DESIGN DIMENSIONS OF ELEVATION, LENGTH, OR WIDTH, AND IS SHOWN HERE FOR CONCEPTUAL PURPOSES ONLY.
4. COORDINATES FOR THE PLACEMENT BOX ARE:
N 2,179,083 E 6,036,288 NW CORNER
N 2,178,735 E 6,036,045 SW CORNER
N 2,177,902 E 6,037,976 NE CORNER
N 2,177,554 E 6,037,732 SE CORNER
HUNTINGTON BEACH NEARSHORE CONCEPTUAL FILL PLAN VIEW
1"=500'
EXISTING BEACH PROFILE
0.0 NAVD 88
CONCEPTUAL MOUND
ELEVATION IN FEET (NAVD 88)
-20'
-30'
20 MAX
HORIZONTAL DISTANCE
NOTE:
THIS SECTION CAN BE PLACED FARTHER TOWARD SHORE WITHIN DEPTH RANGES OF BETWEEN -15' AND -20' MLLW.
CONCEPTUAL NEARSHORE FILL
TYPICAL CROSS-SECTION
HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=25'
SCALE: 1"=500'
HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=25'
FINAL SUBMITTAL
DIGALERT
DIAL TOLL FREE 1-800-227-2600
MOFFATT & NICHOL
Huntington Beach Wetlands Restoration Project - Phase 1
Huntington Beach Wetlands Conservancy
And The County Of Orange
NEARSHORE DISPOSAL AREAS
TYPICAL SECTIONS 3
XS-3
VARIES
6/23/08
5430-03
33
58

C 10


FINAL SUBMITTAL
CONCEPTUAL DIRECT BEACH FILL
TYPICAL CROSS-SECTION
HORIZ. SCALE: 1"=40'
VERT. SCALE: 1"=10'
ELEVATION IN FEET (NAVD 88)
LIFE GUARD TOWER
LIFE GUARD TOWER RAMP
APPROX. BEACH EL.
PIPE INV. TO BE 1' BELOW BEACH
EXISTING BEACH
FREE DISCHARGE POINT NO CONTAINMENT NEEDED
PROPOSED BEACH FILL SEE NOTE THIS SHEET
MOFFATT & NICHOL
Huntington Beach Wetlands Conservancy
TYPICAL SECTIONS 4
XS-4

C11


NOTES:
1. ALL RIP RAP TO BE DESIGNED PER ARMY CORPS OF ENGINEERS ENGINEERING MANUAL (EM 1110-2-1601 SECTIONS 3-8 THROUGH 3-11) AND ARMY CORPS OF ENGINEERS STANDARD PLAN FOR TYPICAL SECTION OF UNGROUTED LEVEE-(FIGURE A-44).
2. GRADATION OF ROCK TO BE AS FOLLOWS:
40%-60% PASSING 250 LBS
40%-60% PASSING 150 LBS
0%-10% PASSING 30 LBS
3. AT LEAST ONE GRADATION TEST REPORT TO BE SUBMITTED TO THE HBWC AND OCFCD PRIOR TO PLACEMENT.
NO. 009
SLOPE TO BE RIP-RAPPED
NO. 010
TRANSITION NEW RIP-RAP SLOPE INTO EXISTING RIP-RAP
NO. 011
NEW RIP-RAP TO BE INSTALLED ALONG THIS SLOPE
TALBERT CHANNEL ROCK REVETMENT
HORIZ. SCALE 1"=20'
VERT. SCALE 1"=5'
SECTION Q (63 KSV)
SECTION P (63 KSS)
SECTION Q (63 KSS)
ELEVATION
HORIZONTAL DISTANCE
OCFCD R/W
SHEETPILE WALL
2-LAYERS OF RIP RAP PER RSMD STD PLAN 1809
STONE (RIP-RAP) F-L LINE
2003 GROUND LINE
LEAVE EXST RUBBLE IN PLACE
FILTER FABRIC
HORIZ. SCALE 1"=20'
VERT. SCALE 1"=5'
FINAL SUBMITTAL
MOFFATT & NICHOL
SHORE PROTECTION SECTIONS & RIP-RAP DETAILS
XS-5
5430-03
6/23/08

C 12

Table 1-2
Existing and Post-Project Habitat Acreages

Habitat Type	Existing Habitat Areas (Including Dunes) (Acres)										Proposed Habitat Areas (Including Dunes) (Acres)								Area Change From Existing	Percent Change From Existing
	Total Existing	Percent of Total	Talbert Marsh	Percent of Total	Brookhurst Marsh	Percent of Total	Magnolia Marsh	Percent of Total	Talbert Marsh	Percent of Total	Brookhurst Marsh	Percent of Total	Magnolia Marsh	Percent of Total	Total Proposed				
Shallow Subtidal	25.4	19.50%	7.9 ss 7.3 sandbar	56.30%	8.4	12.40%	1.8	5.00%	10.1	37.27%	14.8	21.99%	4.4	12.22%	29.3	3.9	15.4%			
Mudflat	1	0.80%	1	3.50%		0.00%		0.00%	4.8	17.71%	6.5	9.66%	8.9	24.72%	20.2	19.2	1920.00%			
Low Salt Marsh	0.3	0.20%	0.3	1.10%	0	0.00%	0	0.00%	2.7	10.00%	16.1	23.92%	17.1	47.50%	35.9	35.6	11866.67%			
Middle Salt Marsh	4.9	3.80%	4.9	18.10%	0	0.00%	0	0.00%	3.5	12.90%	21.6	32.09%	2.3	6.40%	27.4	22.5	459.18%			
High Salt Marsh	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1.6	5.90%	2.7	4.01%	0.9	2. 5%	5.2	5.2	N/A			
Non-Tidal Wetlands	86.5	66.30%	0.8	3.00%	54.4	80.90%	31.3	87.00%	0	0.00%	0	0.00%	0	0.00%	0	-86.5	-100.00%			
Uplands	12.3	9.40%	4.9	18.10%	4.5	6.70%	2.9	8.00%	4.4	16.20%	5.6	8.32%	2.4	6.67%	12.4	0.1	0.81%			
TOTAL	**130.4**	**100.00%**	**27.1**	**100.00%**	**67.3**	**100.00%**	**36**	**100.00%**	**27.1**	**100.00%**	**67.3**	**100.00%**	**36**	**100.00%**	**130.4**	**N/A**	**N/A**			

NA = Not Applicable

STATE OF CALIFORNIA -- THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

MEMORANDUM

FROM: Jonna D. Engel, Ph.D.
Ecologist

TO: Meg Vaughn
Coastal Analyst

SUBJECT: Huntington Beach Wetland Restoration Project

DATE: July 21, 2008

Documents reviewed:

County of Orange. December 2007. Final Mitigated Negative Declaration and Initial Study IP 07-585, Huntington Beach Restoration Project.

Merkel & Associates, Inc. August 13, 2007. Huntington Beach Wetlands Restoration Project, City of Huntington Beach, California: Biological Resources Report. Prepared for The Huntington Beach Wetlands Conservancy.

Merkel & Associates, Inc. April 2007. Pre- and Post-Restoration Monitoring Plan for the Huntington Beach Wetlands Restoration Project – Draft. Prepared for The Huntington Beach Wetlands Conservancy.

Merkel & Associates, Inc. August 18, 2004. Huntington Beach Wetlands Habitats and Sensitive Species. Prepared for Moffatt & Nichol.

The Huntington Beach Wetland Conservancy's proposed Huntington Beach Wetland Restoration Project is a valuable and well-designed project that I enthusiastically support. I recommend that restoration of Newland Marsh, which is not a part of the project before the Commission, follow close on the heels of the current proposal which encompasses restoration of Magnolia, Brookhurst, and Talbert Marshes.

The preferred alternative, which is a compilation of the best components of the pool of working alternatives and suggestions of the Huntington Beach Wetlands Restoration Project Working Group achieves the primary project goals listed below:

•Restore all degraded wetlands to functioning habitat;

•Enhance tidal flows;

•Maintain, and to the extent feasible, improve water quality;

•Maintain flood control integrity; and

•Provide public access and education opportunities

My comments are minor and consist of the following:

1. The original design plan for Magnolia Marsh had a preponderance of low marsh. The plan has been adjusted to increase the percentage of mid- and high marsh. This is appropriate both in light of sea level rise predictions and for improving the marsh for utilization by Bell's Savannah Sparrows. The adjustment entails retaining channel dredge materials onsite and using them to build berms with 40 foot bases and 20 foot tops around the perimeter of all the channels and the tidal pond in Magnolia Marsh.

2. Merkel & Associates have prepared a comprehensive, well-written, and succinct Pre- and Post-Restoration Monitoring Plan. I have one recommendation and one request (for our staff report conditions):

a. Recommendation: The monitoring plan rightly focuses on understanding and following water quality, vegetation, and macro-faunal dynamics through time. However, I think including benthic sampling is an important component and I am pleased to see it included in the sampling program. Benthic samples can aid in understanding fish and bird prey availability as well as tracking overall restoration success. Presently the plan calls for identifying benthic samples to phylum level. I recommend making the extra effort to identify samples to the lowest possible taxon. This would enable a finer analysis of guild relationships which in turn allows for a finer interpretation of ecosystem patterns and responses to restoration.

b. Request: Apparently the Huntington Beach Wetlands were serendipitously (randomly) identified for inclusion in the Southern California Wetland Recovery Project (SCWRP)/ Southern California Coastal Wetland Research Project (SCCWRP) summer 2008 Southern California wetlands status assessment. This assessment consists of performing the California Rapid Assessment Method (CRAM) to get a generalized or overall wetland "health" status score. Performing CRAM at the Huntington Beach Wetlands this summer will provide a pre-wetland restoration CRAM score. I request that CRAM assessments be performed (during the same season - summer/fall – whenever the pre-restoration CRAM takes place) every other year for a minimum of 10 years following the completion of the restoration project.

5-08-061
E 2

EXECUTIVE SUMMARY

Large amounts of public funds and human resources are being invested in the protection, restoration, creation, and enhancement of wetlands and riparian habitats in California. The State needs to be able to track the extent and condition of these habitats to evaluate the investments in them now and into the future. The community of wetland scientists, managers, and regulators needs to be able to answer the questions: where are the wetlands and riparian habitats and how are they doing?

The California Rapid Assessment Method (CRAM) is part of a comprehensive program plan to meet this need. The plan is based on the three-level framework recommended by the USEPA in its guidance to the State (USEPA 2006): Level 1 is the statewide wetland inventory as mandated by California Assembly Bill 2286. Level 2 is CRAM, a rapid assessment method designed to assess and report on the status and trends of wetlands and related projects under the U.S. Clean Water Act and California Environmental Quality Act. Level 3 consists of standardized protocols for intensive-quantitative habitat assessment to explore the processes that account for the observed conditions and to validate and augment CRAM as needed. All three levels are to be supported by a data management system that enables the State to compile local and regional Level 1-3 data into summary reports on the extent and condition of wetlands and riparian habitats, including restoration or mitigation projects. CRAM is supported by an open-source, web-based database designed to provide Level 1-3 data to state and federal information systems.

CRAM was developed as a rapid, scientifically defensible, and repeatable assessment methodology that can be used routinely to assess and monitor the conditions of wetlands and riparian habitats. CRAM is applicable throughout the state of California. The general framework of CRAM is consistent across wetland types and regions, yet allows for customization to address special characteristics of different regions and wetland classes. CRAM was developed through collaborations among the San Francisco Estuary Institute (SFEI), the Southern California Coastal Water Research Project (SCCWRP), the Central Coast District of the California Coastal Commission (CCC), and the Moss Landing Marine Laboratory (MLML). Funding was provided mainly by US EPA through US Clean Water Act Section 104b(3) grants administered by USEPA Region 9.

Although CRAM development has centered on coastal watersheds and wetlands, a special effort was made to involve environmental scientists and managers who are familiar with inland arid and montane environments. A statewide Core Team and Regional Teams with representatives from natural resource management and regulatory agencies, the private sector, and academia provided the breadth and depth of technical and administrative experience necessary to guide CRAM development and implementation.

CRAM development has incorporated aspects of other approaches to habitat assessment in California and elsewhere, including the Washington State Wetland Rating System (WADOE, 1993), MRAM (Burglund, 1999), and ORAM (Mack, 2001). CRAM also draws on concepts from stream bio-assessment and wildlife assessment procedures of the California Department of Fish and Game, the different wetland compliance assessment methods of the San Francisco Bay Regional Water Quality Control Board and the Los Angeles Regional Water Quality Control Board, the Releve Method of the California Native Plant Society, and various HGM guidebooks that have been developed in California.

CRAM is a diagnostic tool that two or more trained practitioners can use to assess the condition of a wetland or riparian site over a half-day period using visual indicators in the field. In practice, the practitioners use the indicators to choose the best-fit narrative description of habitat condition among a standardized set of mutually exclusive descriptions for a variety of metrics of four universal attributes: landscape context and buffer, hydrology, physical structure, and biotic structure. CRAM scores can be used to compare sites within a wetland class, but not between classes. Each narrative description has a fixed numerical value. The score for an attribute is calculated as the sum of the values for the chosen narratives of the attribute's component metrics, and the attribute scores are tallied into an overall site score. The attribute and site scores are then calculated as percentages of the maximum possible scores. A site score therefore represents the condition of a site relative to its best possible condition. This means that each site is scored relative to a conceptual model of what the ideal site would look like. Verification and calibration exercises have indicated that the population of sites within each region of the state spans the full range of condition including the ideal. By scoring sites relative to an ideal best condition, all sites within a wetland class are held to the same standard, and any site can be compared over time and to any other sites of the same wetland class. Regional and statewide networks of sites that together illustrate the full range of condition for each metric will continue to be developed as CRAM is used. CRAM also provides guidelines for identifying the stressors that might account for any low scores.

CRAM is supported by a web site (www.cramwetlands.org) that provides access to an electronic version of this manual, training materials, CRAM software (the downloadable open-source software that eliminates the need for taking a hardcopy version of CRAM into the field), and the secure CRAM database. CRAM results can be uploaded to the database, viewed, and retrieved via the CRAM web site. CRAM, CRAM software, and the supporting web sites are open source developments without branding or copyrights.

CRAM and CRAM Software are designed to cost-effectively assess individual wetlands and riparian areas (i.e., restoration projects, mitigation projects, refuges and reserves) and ambient conditions at any scale, from groups of sites to watersheds, regions within the state, and to the state as a whole. The use of CRAM for ambient monitoring will, over time, help wetland managers and scientists quantify the relative influence of anthropogenic stress, management actions, and natural disturbance on the spatial and temporal variability in the condition of wetlands and riparian habitats. This information can then be used in the design, management, and assessment of wetland projects.

Additional, specific applications of CRAM include: (1) assessments of impacted wetlands to help determine appropriate mitigation measures; (2) preliminary assessments of wetland conditions and stressors to determine the need for intensive monitoring; (3) evaluation of wetland project performance under the Coastal Zone Management Act, Section 1600 of the California State Fish and Game Code, Sections 401 and 404 of the Clean Water Act, and local government wetland regulations; and (4) assessment of restoration or mitigation progress relative to ambient conditions, reference conditions, and expected endpoints.

5-08-061

F 2