

RECORD PACKET COPY

STATE OF CALIFORNIA—THE RESOURCES AGENCY

PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

W 21b



| | |
|--------------------|---------------|
| Filed: | Nov. 20, 1996 |
| 49th Day: | Jan. 8, 1997 |
| 180th Day: | May 19, 1997 |
| Staff: | LJS-SF |
| Staff Report: | Nov. 21, 1996 |
| Hearing Date: | Dec. 11, 1996 |
| Commission Action: | _____ |

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 5-96-231

APPLICANT: PORT OF LONG BEACH

PROJECT LOCATION: In-water area of the former Long Beach Naval Station (Pier T), West Basin, Terminal Island, Port of Long Beach, Los Angeles County (Exhibits 1-3)

PROJECT DESCRIPTION: Construction of the in-water portion of the Pier T container terminal project, including: (1) excavation of approximately 450,000 cubic yards of earth and rock along the shoreline, and disposal of that material at an upland site on Pier S within the Port; (2) dredging of approximately 2.965 million cubic yards of clean sediment and 730,000 cubic yards of contaminated sediments from the West Basin to create a berthing area and an approach channel with depths of -56 and -51 feet Mean Lower Low Water (MLLW), respectively; (3) disposal of the dredged sediment at an upland site on Pier S, a beach nourishment site within the City of Long Beach, and in-water sites within the Port; (4) construction (using dredged sediments from the West Basin) of a 26-acre permanent shallow water habitat adjacent to the Navy Mole as mitigation for the elimination of existing shallow water habitat in the West Basin, and a 26-acre temporary shallow water habitat adjacent to the Pier 400 causeway; and (5) construction of a confined aquatic disposal (CAD) site within the permanent shallow water habitat for disposal and confinement of contaminated sediments dredged from the West Basin.

SUBSTANTIVE FILE DOCUMENTS:

1. Port of Long Beach Port Master Plan (as amended)
2. Final Environmental Impact Report, Port of Long Beach Pier T Marine Terminal, September 1996.

3. Draft Environmental Impact Statement, Naval Station Long Beach Disposal and Reuse, March 1996.
4. Coastal Development Permit 5-96-182 (Port of Long Beach; Pier T Container Terminal - Upland).
5. Coastal Development Permit 5-95-179 (Port of Los Angeles; Confined Aquatic Disposal Site).
6. Consistency Determination CD-88-94 (Corps of Engineers; contaminated sediment disposal in the Port of Los Angeles).
7. Port of Los Angeles Port Master Plan Amendment No. 12 (Piers 300/400, April 1993).
8. Tentative Waste Discharge Requirements (Port of Long Beach Pier T Project), California Regional Water Quality Control Board, Los Angeles Region, November 20, 1996.
9. U.S. Army Corps of Engineers, Public Notice for Permit Application No. 96-00114-FT, September 26, 1996.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval of coastal development permit application 5-96-231 (Port of Long Beach) with special conditions addressing water quality, marine resources, and beach nourishment. The permit application calls for construction of the in-water portion of the Pier T container terminal, located on the site of the former Long Beach Naval Station. The project includes the dredging of 3.695 million cubic yards of sediment from the West Basin to create a berthing area and an approach channel, the disposal of sediment at several upland and in-water locations within and outside the Port, the construction of a permanent shallow-water habitat area (foraging habitat for the endangered California least tern) to replace shallow water in the West Basin to be eliminated by dredging, and the construction of a confined aquatic disposal (CAD) site within the new shallow-water habitat area to permanently isolate and confine 730,000 cubic yards of contaminated sediment from the West Basin.

STAFF NOTE:

Except for the beach nourishment component in the City of Long Beach, the proposed development is located within the Port of Long Beach (one of the four commercial ports designated in Chapter 8 of the Coastal Act), and because the project is not appealable under Section 30715, it will be evaluated for conformance with the policies of Chapter 8. Because the proposed beach nourishment is not located within the Port but instead within the City of Long Beach, that project component will be evaluated for conformance with the policies of Chapter 3.

Typically the Port issues coastal development permits for development within its jurisdictional boundary. However, the Commission is reviewing this coastal development permit application from the Port of Long Beach for development within the Port due to the provisions contained in the Port's master plan amendment No. 9, certified by the Commission in July 1996. In that amendment, the Port requested and received Commission certification of allowable land and water uses in the Federal Use Planning District of the Port. The Port also requested that coastal development permitting authority

for projects consistent with those land and water uses be retained by the Commission, due to the fact that the Port did not yet have the technical information necessary to document that the port-related developments proposed for that Planning District were in conformance with the Chapter 8 policies of the Coastal Act. Once that documentation was available, the Port would then return to the Commission at a later date with a port master plan amendment (or amendments) for one or more individual projects within the Planning District.

However, in an effort to maintain the Port's rigorous planning and construction schedule for one of those projects (the Pier T Container Terminal), Commission and Port staff agreed that submittal of a coastal development permit to the Commission, rather than a port master plan amendment, would be more time-efficient, and would still subject the project to full analysis for conformance with the Chapter 8 policies of the Coastal Act. The Port then submitted a coastal development permit application (albeit incomplete) to the Commission in August 1996 for the upland and in-water components of the Pier T project. However, in late October it was determined that a clause in Section 30705(c) would prohibit the Commission from approving that part of the project calling for the disposal of dredge spoils at sites within the Port because those sites were not presently designated as fill sites in the port master plan.

Rather than delay Commission action on a significant port development project due to an unfortunate minor technical oversight, and because the analysis of the proposed fill activity and sites for conformance with the policies of Chapter 8 would be the same (in this case) for a port master plan amendment or a coastal development permit, the Commission and Port staff agreed that the permit application would proceed and that the Port would submit a follow-up port master plan amendment to the Commission encompassing all components of the Pier T project. Because additional technical information requested from the Port regarding dredging and disposal plans would not be available until early November, the Commission and Port staff agreed to split the original coastal development permit application into two permit applications: one for landside development and one for in-water development. The Commission approved the former permit, 5-96-182 (demolition and construction activity on the upland portion of the former Naval Station) at its November 14, 1996, meeting. The subject application, 5-96-231, is for the dredging, disposal, and shallow water habitat mitigation components of the Pier T project.

The follow-up port master plan amendment is tentatively scheduled for the Commission's February 1997 meeting. The plan amendment analysis of Coastal Act policy conformance will be equivalent to that contained in the two aforementioned coastal development permits, and no new issues will be examined in the February 1997 plan amendment that will not have been reviewed by the Commission in its November and December 1996 permit analysis. In this way, the project timeline will not be compromised by a minor technical oversight, the Commission will be able to review all project components for conformance with the applicable Coastal Act policies, and the port master plan will be amended in a timely manner to incorporate the Pier T project.

Finally, when the Commission approved the Port of Los Angeles' confined aquatic disposal (CAD) site (for the disposal and confinement of contaminated sediments dredged from within the Port) at the Port's permanent shallow water

habitat area inside the San Pedro Breakwater in 1995, the Commission directed the staff not to bring additional CAD site projects to the Commission for its review and approval until a regional contaminated sediment management task force was established and making progress towards achieving solutions to the contaminated sediment disposal problem in southern California. The multi-agency task force now exists, and after several meetings the Corps of Engineers has taken a lead role in coordinating the search for a permanent southern California CAD site.

STAFF RECOMMENDATION.

The staff recommends that the Commission adopt the following resolution:

APPROVAL WITH CONDITIONS.

The Commission hereby grants, subject to the conditions below, a coastal development permit on the grounds that the development, as conditioned, is in conformance with the provisions of Chapter 8 and Chapter 3 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

STANDARD CONDITIONS: See Attachment 1

SPECIAL CONDITIONS:

1. All U.S. Army Corps of Engineers Section 404 permit conditions associated with the Port of Long Beach's proposed Pier T project, including all monitoring and remediation requirements, are hereby incorporated into this coastal development permit.
2. All California Regional Water Quality Control Board Waste Discharge Requirements associated with the Port of Long Beach's proposed Pier T project, including all monitoring and remediation requirements, are hereby incorporated into this coastal development permit.
3. Any amendment to or modification of the Port of Long Beach's Corps of Engineers Section 404 permit, or California Regional Water Quality Control Board Waste Discharge Requirements, for the Pier T project will require the Port to submit an application to the Commission for a corresponding coastal development permit amendment.
4. Prior to commencement of dredging and disposal operations, the Port of Long Beach shall submit to the Executive Director, for his review and approval, a water quality and sediment monitoring plan for the CAD site and permanent shallow water habitat area.
5. Prior to commencement of dredging and disposal operations, the Port of Long Beach shall submit to the Executive Director, for his review and approval, a written commitment to remediate and mitigate any significant adverse impacts identified by the water quality and sediment monitoring plan required in Special Condition No. 4.

6. The Port of Long Beach shall submit to the Executive Director all monitoring reports associated with the Pier T project, the Corps of Engineers Section 404 permit, and the California Regional Water Quality Control Board Waste Discharge Requirements.
7. Prior to commencement of dredged material disposal on or offshore of the City of Long Beach, the Port of Long Beach will submit to the Executive Director, for his review and approval, a beach nourishment plan which includes sediment disposal location(s), disposal date and time schedules (including a restriction that disposal for beach replenishment shall not occur from April through October during periods of grunion spawning), and any required approvals from the state and federal resource and regulatory agencies.

FINDINGS AND DECLARATIONS.

The Commission hereby finds and declares as follows:

A. Project Description. The Port of Long Beach proposes to construct the Pier T container terminal at the former Long Beach Naval Station, located on Terminal Island in the heart of the Port of Long Beach/Port of Los Angeles harbor complex in San Pedro Bay (Exhibits 1-3). The Commission approved a coastal development permit (5-96-182) for the upland components of the container terminal at its November 1996 meeting. The subject permit application is for the in-water components of the terminal and includes the following:

Excavation of approximately 450,000 cubic yards of earth and rock along the shoreline, and disposal of that material at an upland site on Pier S within the Port (Exhibit 4).

Dredging of approximately 3.695 million cubic yards of sediment (2.965 million cubic yards of clean sediment and 730,000 cubic yards of contaminated sediment) from the West Basin to create a berthing area and an approach channel with depths of -56 and -51 feet Mean Lower Low Water (MLLW), respectively, in order that container ships with drafts of 46 feet can safely call at the Pier T terminal. Existing water depths in the West Basin range from -20 to -50 feet MLLW, but typically range between -35 to -45 feet MLLW. Dredging will proceed in phases, with dredging and excavation along the wharf location in Area I first, dredging the contaminated sediments in Areas II, IV, and V second, and dredging the remaining clean sediments from all areas last (Exhibits 4-9).

Disposal of 3.285 million cubic yards (c.y.) of West Basin dredged material at the Pier S upland site within the Port (100,000 c.y.), a beach nourishment site within the City of Long Beach (100,000 c.y.), and three in-water sites within the Port: the Main Channel (1.415 million c.y.), the temporary shallow water habitat (450,000 c.y.), and the permanent shallow water habitat (490,000 c.y. clean and 730,000 c.y. contaminated)(Exhibit 10). The disposal of 410,000 cubic yards of clean dredged sediment at the LA-2 ocean disposal site is covered under federal consistency certification CC-129-96, scheduled for Commission action at the Commission's December 11, 1996, meeting.

Construction (using West Basin dredged sediments) of a 26-acre permanent shallow water habitat adjacent to the Navy Mole as mitigation for the elimination of existing shallow water habitat in the West Basin, foraging habitat used by the endangered California least tern which nests at a site on Terminal Island less than one mile away to the west (Exhibits 11 and 12). To accommodate the 1997 nesting season and the project construction timetable, a 26-acre temporary shallow water habitat adjacent to the Port of Los Angeles Pier 400 causeway will be constructed in early 1997 and will be removed upon completion of the container terminal project and the permanent mitigation site.

Construction of a confined aquatic disposal (CAD) site within the permanent shallow water habitat for disposal and confinement of the 730,000 cubic yards of contaminated sediments dredged from the West Basin.

Exhibit 13 provides a summary of the proposed dredging and disposal volumes.

Approximately 26 acres of water less than 20 feet deep (MLLW) in the northwestern corner of the West Basin will be deepened to -50 ft MLLW by this project. Because of the presence of the Terminal Island least tern nesting site less than one mile to the west, and in the absence of evidence to the contrary, this shallow-water area is presumed to be endangered California least tern foraging habitat. The U.S. Fish and Wildlife Service has confirmed that in accordance with the Endangered Species Act the shallow-water area to be eliminated must be replaced elsewhere in the harbor. The Port of Long Beach proposes to construct a new 26-acre shallow-water habitat on the outer side of the Navy Mole. This habitat will consist of dredged material from the West Basin confined by a newly-constructed rock dike on the southeast and west, and by the Navy Mole on the north. Existing water depths range from over 20 feet in the northwest to nearly 50 feet in the southeast. The new habitat will raise the sea bottom to approximately -15 feet MLLW. The total capacity of the new habitat to hold dredged material is approximately 1.22 million cubic yards. The site will hold the 730,000 cubic yards of contaminated sediments and 490,000 cubic yards of clean sediment to line the rock dikes and provide a clean sand cap at least five feet thick.

The Port commissioned an independent study to determine the optimum design of the permanent shallow water habitat as a confined aquatic disposal (CAD) site (excerpt in Exhibit 14). That study, by Science Applications International Corporation, concluded that in the semi-sheltered environment of the outer harbor a three-foot thick cap would ensure that the contaminated sediments are not affected by leaching, erosion, or bioturbation. As an extra margin of safety, and to dispose of additional clean material, the Port plans to place a five-foot-thick cap of clean dredged material. The material will most likely be fine sand from the deeper layers of Area I. In the first phase of construction of the permanent shallow-water habitat, the first lift of the rock dikes will be placed followed by the first lift of the clean sediments for the liner and the first lift of the contaminated sediments produced by the first phase of dredging in Area IV. The second phase of the project will be the placement of the second lift of rock dike and liner and the second lift of contaminated sediments from dredging in Areas III, IV, and V. The final phase will be the placement of the clean cap.

Pending completion of the permanent habitat, it will be necessary to construct a temporary shallow-water habitat, to be located in water currently 30 to 35 feet deep along the Port of Los Angeles Pier 400 causeway, approximately 1,000 feet southwest of the permanent habitat. To build this feature, the Port would place 450,000 cubic yards of clean dredged material to create water depths of 15 to 20 feet. This feature would be removed upon completion of the container terminal and the permanent habitat site, and the 450,000 cubic yards of sediment would be dredged and moved to the Pier S upland disposal site.

The Port of Long Beach Main Channel borrow pit, created when the Port built the Pier J Expansion Landfill in 1989-1990, consists of a 30-acre area next to and overlying the Main Channel. Water depths exceed the channel project depth of -76 feet MLLW due to over excavation to obtain structural fill material. Depths are generally about -80 feet MLLW, but in a 10-acre area immediately west of the channel they reach -95 feet MLLW. The total capacity of the site is approximately 2.15 million cubic yards (to bring the bottom up to -78 feet MLLW). The Port proposes to dispose 1.415 million cubic yards of clean dredged sediment at this site.

Finally, preliminary geotechnical data suggest the presence of medium-grained sand in the deeper layers of Area I. That material may prove to be compatible with the composition of sand at local beaches and to occur in a layer sufficiently thick to be economically recoverable for beach nourishment. If these indications are borne out by subsequent testing, the Port will coordinate its efforts with the City of Long Beach and the regulatory agencies to arrange for placement of the material on or immediately offshore of the beach. As the amount of such material is still unknown, the Port has assumed for planning purposes a total of 100,000 cubic yards.

B. Marine Habitat, Resources, and Water Quality. The Chapter 8 policies of the Coastal Act provide the following:

Section 30701. The Legislature finds and declares that:

(a) The ports of the State of California, including the Humboldt Bay Harbor, Recreation, and Conservation District, constitute one of the state's primary economic and coastal resources and are an essential element of the national maritime industry.

(b) The location of the commercial port districts within the State of California, including the Humboldt Bay Harbor, Recreation, and Conservation District, are well established, and for many years such areas have been devoted to transportation and commercial, industrial, and manufacturing uses consistent with federal, state and local regulations. Coastal planning requires no change in the number or location of the established commercial port districts. Existing ports, including the Humboldt Bay Harbor, Recreation, and Conservation District, shall be encouraged to modernize and construct necessary facilities within their boundaries in order to minimize or eliminate the necessity for future dredging and filling to create new ports in new areas of the state.

Section 30705.

(a) Water areas may be diked, filled, or dredged when consistent with a certified port master plan only for the following:

(1) Such construction, deepening, widening, lengthening, or maintenance of ship channel approaches, ship channels, turning basins, berthing areas, and facilities as are required for the safety and the accommodation of commerce and vessels to be served by port facilities.

(2) New or expanded facilities or waterfront land for port-related facilities.

(3) New or expanded commercial fishing facilities or recreational boating facilities.

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

(5) Mineral extraction, including sand for restoring beaches, except in biologically sensitive areas.

(6) Restoration purposes or creation of new habitat areas.

(7) Nature study, mariculture, or similar resource-dependent activities.

(8) Minor fill for improving shoreline appearance or public access to the water.

(b) The design and location of new or expanded facilities shall, to the extent practicable, take advantage of existing water depths, water circulation, siltation patterns, and means available to reduce controllable sedimentation so as to diminish the need for future dredging.

(c) Dredging shall be planned, scheduled, and carried out to minimize disruption to fish and bird breeding and migrations, marine habitats, and water circulation. Bottom sediments or sediment elutriate shall be analyzed for toxicants prior to dredging or mining, and where water quality standards are met, dredge spoils may be deposited in open coastal water sites designated to minimize potential adverse impacts on marine organisms, or in confined coastal waters designated as fill sites by the master plan where such spoil can be isolated and contained, or in fill basins on upland sites. Dredge material shall not be transported from coastal waters into estuarine or fresh water areas for disposal.

(d) For water areas to be diked, filled, or dredged, the commission shall balance and consider socioeconomic and environmental factors.

Section 30706. In addition to the other provisions of this chapter, the policies contained in this section shall govern filling seaward of the mean high tide line within the jurisdiction of ports:

(a) The water area to be filled shall be the minimum necessary to achieve the purpose of the fill.

(b) The nature, location, and extent of any fill, including the disposal of dredge spoils within an area designated for fill, shall minimize harmful effects to coastal resources, such as water quality, fish or wildlife resources, recreational resources, or sand transport systems, and shall minimize reductions of the volume, surface area, or circulation of water.

(c) The fill is constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters.

(d) The fill is consistent with navigational safety.

Section 30708. All port-related developments shall be located, designed, and constructed so as to:

(a) Minimize substantial adverse environmental impacts.

(b) Minimize potential traffic conflicts between vessels.

(c) Give highest priority to the use of existing land space within harbors for port purposes, including, but not limited to, navigational facilities, shipping industries, and necessary support and access facilities.

(d) Provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible.

(e) Encourage rail service to port areas and multi-company use of facilities.

Section 30233(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.

1. Introduction. When evaluating proposed port development the Commission is guided by the provisions of Section 30701 of the Coastal Act which state that the four ports governed by Chapter 8 of the Coastal Act (referred to as Chapter 8 ports), including the Port of Long Beach, are a "primary economic and coastal resource" of the state, and that they are "encouraged to modernize and construct necessary facilities within their boundaries." The Commission

has a long history of implementing those policy directives in its review and approval of numerous port landfills for the development of cargo and terminal facilities, and in its approval of land and water use changes to allow for redevelopment of existing port facilities. At the same time, the Commission has consistently encouraged the Port of Long Beach to explore opportunities to acquire upland property within and adjacent to the port that could be used for port-related facilities in order to minimize the need for the hundreds of acres of new landfills envisioned in the Port of Los Angeles/Port of Long Beach "2020 Plan." (The "2020 Plan" is a conceptual planning document to guide harbor expansion in San Pedro Bay, and was never brought before the Commission for formal endorsement or approval.)

In recent years the Port of Long Beach purchased several hundred acres of land previously owned by the Union Pacific Resources Company within and adjacent to the port with the intent to construct new cargo terminals, and the Port submitted a reuse plan during the Long Beach Naval Station disposal and reuse process. These previous actions and the proposed cargo terminal development at the former Naval Station outlined in this permit application (and in 5-96-182 for the upland portion of the terminal, approved by the Commission in November 1996) conform with the guidance contained in Section 30701. Construction of the proposed container terminal at the former Naval Station eliminates the need to construct a new landfill, avoids the incremental loss of coastal waters to port landfills, and eliminates the need for marine resource mitigation. The proposed project is clearly beneficial to a primary coastal resource -- the maritime mission of the Port of Long Beach -- and the Commission finds that the project conforms with Section 30701 of the Coastal Act.

2. Sediment Quality. The sediments in the West Basin project area were extensively tested by the Navy (as part of its site assessment and remediation investigations associated with the closure and disposal of the Naval Station) and by the Port (in support of its Pier T container terminal project). Both testing efforts established that portions of the West Basin are contaminated by heavy metals, PAHs, PCBs and pesticides (Exhibit 15). The Port's 1996 testing program, designed in consultation with the U.S. Army Corps of Engineers, USEPA, and the California Regional Water Quality Control Board, and in accordance with the provisions established in the Commission's review of the designation of the LA-2 site, was conducted in order to document contamination levels and establish disposal options for the dredged sediments.

The proposed dredge area was divided into seven areas (Exhibit 4). The Navy test data established that Areas IV and V (adjacent to Piers 6 and 7) were too contaminated for ocean disposal, but that the remaining five areas were potentially suitable for ocean disposal. The Port's sediment testing results established that sediments in Areas I, II (except under and around Pier 9), VI, and VII, which together comprise the bulk of the sediments in the dredge area, are suitable for ocean disposal. The Port test data also established that while the top layer of sediments in Areas III, IV, and V will require special handling due to contamination levels, the balance of the sediment in these three areas can be disposed of as clean material at the in-Port disposal sites. In addition, tests to determine suitability for ocean disposal were performed on sediments in Areas I, VI, and VII. In conclusion, approximately

730,000 cubic yards of sediment are contaminated and will be disposed and confined at the aforementioned permanent shallow water habitat area. Approximately 2.965 million cubic yards of sediment are classified as clean material and suitable for in-Port disposal.

Of this clean material, EPA Region 9 staff reviewed the sediment testing report and informed Commission staff in November 1996 that up to 500,000 cubic yards of dredged materials from areas I, VI, and VII are suitable for ocean disposal at LA-2. This material is the subject of federal consistency certification CC-129-96 (Port of Long Beach) on the Commission's December 11, 1996, meeting agenda. The balance of the clean dredged materials is suitable for beneficial reuse as either beach nourishment, habitat mitigation, aquatic capping, and/or construction fill material.

3. Dredging and Disposal Operations. The Commission is concerned about the potential for water quality impacts from dredging and disposal operations in the West Basin and the in-water disposal sites. Dredging will increase the amount of sediment in the water column. Under normal conditions this increase in turbidity has minor and temporary effects on light penetration and dissolved oxygen. However, since some of the surface sediments in the West Basin are contaminated, the dredging will make these pollutants more biologically available. The Port will conduct its dredging operations under Waste Discharge Requirements (WDRs) developed by the California Regional Water Quality Control Board (RWQCB), and under permit conditions attached to a U.S. Clean Water Act Section 404 permit issued by the U.S. Army Corps of Engineers. The Port, RWQCB, the Corps of Engineers, and U.S. EPA are working together to develop mutually agreed upon WDRs and 404 permit conditions for conducting dredge and fill operations (including monitoring before, during, and after dredging and filling) associated with the Pier T project. The Commission staff has participated in this interagency effort to ensure that the water quality policies of the Coastal Act are considered in the project design, WDRs, and the 404 permit. While the final WDRs and 404 permit are not available as of the date of this report, all the parties agree that resolution of all outstanding issues will be achieved by the end of December 1996 (Tentative Waste Discharge Requirements for the Pier T project are found in Exhibit 16). To ensure that the water quality policies of the Coastal Act are adhered to by the Port during all Pier T dredging and disposal operations, the Commission conditions this permit to incorporate all Corps of Engineers Section 404 permit conditions and all RWQCB Waste Discharge Requirements attached to the Port of Long Beach Pier T project. In addition, the Commission conditions this permit to require the Port to submit a water quality and sediment monitoring plan for the CAD site and permanent shallow water habitat area, and to require the Port to commit to remediating and mitigating any significant adverse impacts identified by the water quality and sediment monitoring plan. As conditioned, the Commission finds that the project conforms with the water quality policies of Chapter 8 of the Coastal Act.

In designing the proposed project, the Port calculated the volume of sediment needed to be dredged and removed from the West Basin in order to conduct safe shipping operations at the Pier T container terminal. As described earlier in the project description, the Port identified six disposal sites for the 3.695 million cubic yards of dredged sediment, including the 730,000 cubic yards of

contaminated sediment: (1) LA-2 ocean disposal site: 410,000 c.y.; (2) permanent shallow water habitat: 730,000 c.y. contaminated and 490,000 c.y. of clean sediment; (3) temporary shallow water habitat: 450,000 c.y.; (4) Long Beach Main Channel: 1.415 million c.y.; (5) Pier S upland site: 100,000 c.y.; and (6) beach nourishment: 100,000 c.y. The Port intends to use all six sites for disposal of the Pier T/West Basin sediments.

The project includes the disposal of 3.085 million c.y. of dredged sediment in the waters of the Port of Long Beach (the remaining 610,000 c.y. of dredged sediment associated with the project will be disposed at an upland site within the Port and at in-water sites outside the Port). Any proposed dredging and filling of coastal waters within the jurisdictional boundaries of the Port must meet the allowable use test of Section 30705. The proposed dredging of the West Basin to create a berthing area and an approach channel for the Pier T container terminal, and the proposed filling of coastal waters in the Port (including shallow water habitat sites) with dredged sediments from the West Basin are allowable uses under Section 30705(a)(1, 2, and 6).

The Commission must next examine whether the proposed dredging and disposal conforms with Sections 30706 and 30708 by minimizing disruption to marine habitat, minimizing harmful effects to water quality and fish and wildlife resources, and minimizing substantial adverse environmental impacts. The proposed shallow water habitat shall also be the minimum necessary to achieve the purpose of the fill, shall minimize harmful effects to coastal resources, are constructed in accordance with sound safety standards, and are consistent with navigational safety.

The primary sediment management challenge facing the Port was the disposition of the 730,000 c.y. of contaminated sediments. This material is unsuitable for unconfined disposal in coastal waters, cannot be taken to a nearby inland landfill due to the level of contamination and high salt content, and is unsuitable as landfill material at existing upland sites in the Port. As a result, the Port proposes placing these sediments in a confined aquatic disposal (CAD) site within the 26-acre permanent shallow water habitat to be constructed along the south face of the Navy Mole. The first lift of the rock confinement dikes will be constructed and then clean sediments will be placed along the rock dike to serve as a liner to prevent escape of contaminated sediments through the dike. The first layer of contaminated sediments will then be deposited between the Navy Mole and the lined rock dike, and will be separated from the interior face of the dike by at least 15 horizontal feet of clean sediment. The second phase of the project will be the placement of the second layer of rock dike and liner and the second layer of contaminated sediments from dredging in Areas III, IV, and V. The final phase will be the placement of the five-foot-thick cap of clean sediment over the entire 26-acre habitat area.

The Port commissioned an independent study to determine the optimum thickness of the cap (Exhibit 14). That study, by Science Applications International Corporation, concluded that in the semi-sheltered environment of the outer harbor, a three-foot thick cap would ensure that the contaminated sediments are not affected by leaching, erosion, or bioturbation. As an extra margin of safety, and to dispose of additional clean material, the Port proposes to place a five-foot-thick cap of clean dredged material. The material will most

likely be fine sand from the deeper layers of Area I. Staff from EPA Region IX and the Regional Water Quality Control Board (Los Angeles Region) concur in the adequacy of the five-foot-thick cap to isolate and confine the contaminated sediments at this site.

Conditions requiring water quality monitoring at and adjacent to the dredging and disposal sites, post project monitoring of the CAD site, and procedures for remediation at the CAD site if needed will be contained in the Port's Army Corps Section 404 permit and in its Regional Water Quality Control Board Waste Discharge Requirements for construction of the CAD site and the permanent shallow water habitat. The contaminated sediments will be well-isolated within the CAD site, separated from the containment dike by a 15-foot-wide liner of clean sediment, and buried under a minimum 5-foot-thick cap of clean dredged material. The Port's physical monitoring program will ensure that the integrity of the CAD site and the permanent shallow water habitat is maintained and that the sediments remain isolated and confined. To ensure conformance with Chapter 8 policies on minimizing the adverse environmental impacts of the proposed project, the Section 404 permit monitoring requirements and the RWQCB Waste Discharge Requirements have been incorporated into the Commission's coastal development permit as well (through Special Conditions 1-3). Staff from EPA, the Regional Water Quality Control Board, and the Corps of Engineers agree that as long as the Port's Waste Discharge Requirements and monitoring conditions and its Section 404 permit conditions and monitoring requirements for the Pier T project are adhered to, the project is not expected to release significant levels of contaminants to port or coastal waters or generate any significant adverse effects on marine resources and water quality. In addition, the Commission conditions this permit to require the Port to submit a water quality and sediment monitoring plan for the CAD site and permanent shallow water habitat area, and to require the Port to commit to remediating and mitigating any significant adverse impacts identified by the water quality and sediment monitoring plan.

The CAD site approved by the Commission in 1995 at the Port of Los Angeles' permanent shallow water habitat area inside the San Pedro Breakwater was constructed according to project plans reviewed and approved by federal and state resource and regulatory agencies, and extensive monitoring (similar to that which is to be required of the Port of Long Beach for its CAD site) has, in the opinion of EPA staff, shown that the existing CAD site has performed well and as expected, and that the contaminated sediments remain confined and isolated.

Therefore, the Commission finds that as conditioned to provide for Commission enforceability of monitoring provisions to be contained in RWQCB Waste Discharge Requirements and the Corps of Engineers Section 404 permit, the disposal of contaminated sediments at the proposed CAD site in the permanent shallow water habitat, and the disposal of clean dredged sediments at the temporary shallow water habitat, permanent shallow water habitat, and the Long Beach Main Channel borrow pit, are consistent with the dredge disposal and marine resource protection policies of Sections 30705, 30706, and 30708 of the Coastal Act. The Commission is also able to make this finding in part given: (1) the agreement by the resource and regulatory agencies that the proposed dredging and disposal plan, and the design of the CAD site to confine the contaminated sediments, will not adversely affect marine resources or water

quality; (2) the successful construction of, and disposal of contaminated sediments at, the Port of Los Angeles CAD site; (3) Port of Los Angeles CAD site monitoring results (including before, during, and after disposal of contaminated sediments) which indicate no adverse effects on marine resources and water quality from disposal at the site; and (4) the Port's commitment to long-term maintenance of the disposal and habitat sites, and to such modifications and repairs as may be required to ensure their integrity and proper function.

4. Beach Nourishment. Because a portion of the sediment dredged from the West Basin is proposed to be placed on or immediately offshore of the City of Long Beach to nourish beaches outside the jurisdictional boundary of the Port of Long Beach, that component of the proposed project must be evaluated for conformance with the applicable Chapter 3 policies of the Coastal Act. Section 30233(b) states that:

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.

The proposed disposal of a portion of the West Basin dredged sediments could provide benefits to recreation and protection of structures along the City of Long Beach shoreline, and the City has formally requested to receive any beach-compatible sand which the Port has in excess (Exhibit 17). To be considered suitable for beach nourishment, sediment must be free of chemical contamination and consist primarily of sand of an acceptable grain size (usually at least 80 percent sand). The dredged sand must also be compatible with the existing material at the receiver beach site. As previously discussed in the project description, the Port of Long Beach reports that preliminary geotechnical data suggest the presence of medium-grained sand in the deeper layers of Area I in the West Basin. That material may prove to be compatible with the composition of sand at local beaches and to occur in a layer sufficiently thick to be economically recoverable for beach nourishment. If these indications are borne out by subsequent testing, the Port will coordinate its efforts with the City of Long Beach and the regulatory agencies to arrange for placement of an estimated 100,000 cubic yards of material on or immediately offshore of City beaches.

The Commission finds that the proposal to deposit clean, beach-compatible sediments from the West Basin on city beaches in Long Beach generally conforms with the guidance provided in Section 30233(b) of the Coastal Act. The applicant acknowledges that the precise volume of sand to be deposited, the precise location of disposal, and the time of year of disposal have yet to be determined. However, the Port has committed to coordinate with the Commission staff, City of Long Beach, and the resource and regulatory agencies to ensure that placement of dredged sediment for beach nourishment occurs without generating any significant adverse effects on coastal resources, including recreation, water quality, seasonal grunion spawning activity, and other marine resources. In order to ensure that the beach nourishment component of the project occurs consistent with this commitment and with the marine

resource policies of the Coastal Act, the Commission conditions this permit to require that prior to commencement of dredged material disposal on or offshore of the City of Long Beach, the Port of Long Beach will submit to the Executive Director, for his review and approval, a beach nourishment plan which includes sediment disposal location(s), disposal date and time schedules (including a restriction that disposal for beach replenishment shall not occur from April through October during periods of grunion spawning), and any required approvals from the state and federal resource and regulatory agencies. As conditioned, the Commission finds that the project conforms with the marine resource policies of the Coastal Act.

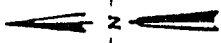
C. California Environmental Quality Act. Section 13096 of Title 14 of the California Code of Regulations requires Commission approval of coastal development permits to be supported by a finding showing the permit, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(i) 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 impact which the activity may have on the environment.

The proposed project, as conditioned, has been found to be consistent with the Chapter 8 and Chapter 3 policies of the Coastal Act. All adverse impacts have been mitigated by conditions of approval and 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. On September 3, 1996, the Port of Long Beach certified the Environmental Impact Report for the Pier T Marine Terminal, which includes the development included in the proposed project. Therefore, the Commission finds that the proposed project can be found consistent with the requirements of the Coastal Act to conform to CEQA.

ATTACHMENT

Standard Conditions

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. 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.
7. 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.



5-96-182

RECEIVED

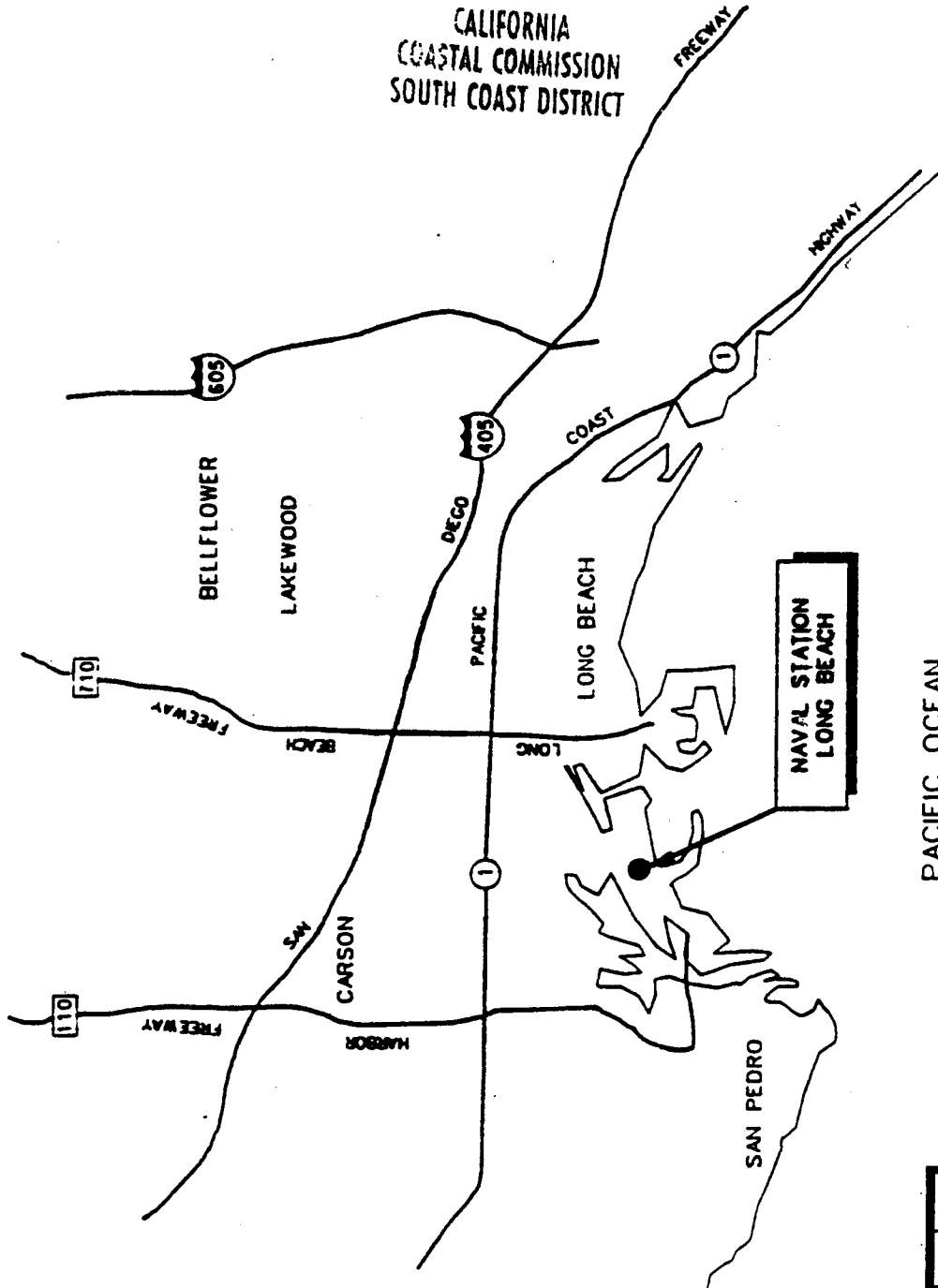
AUG 23 1996

CALIFORNIA
COASTAL COMMISSION
SOUTH COAST DISTRICT

NOT TO SCALE

Southwest Division
Naval Facilities Engineering Command
Naval Station Long Beach

Vicinity Map



PACIFIC OCEAN

| |
|-------------------------------|
| EXHIBIT NO. 1 |
| APPLICATION NO. |
| S-96-231 |
| California Coastal Commission |

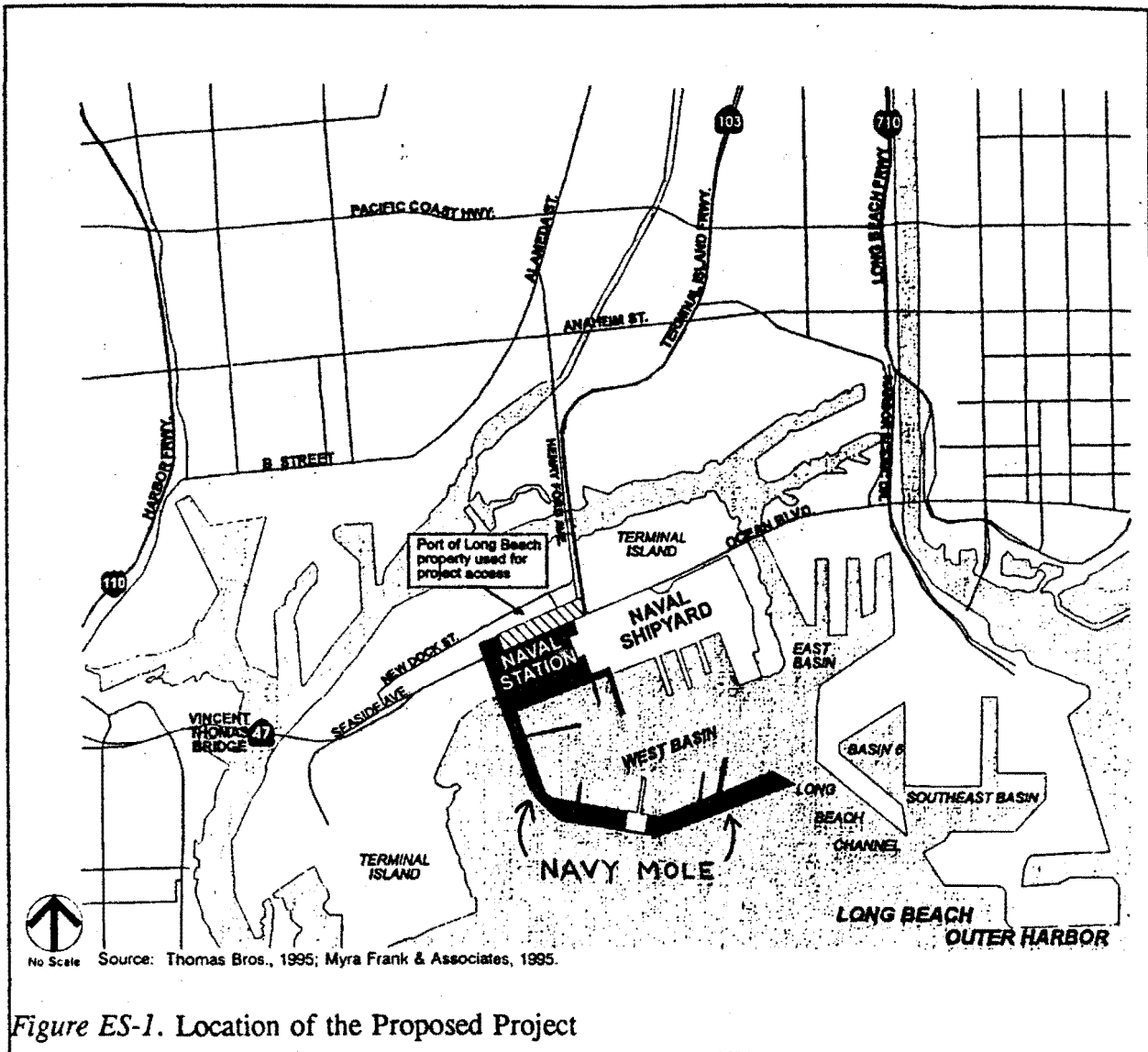


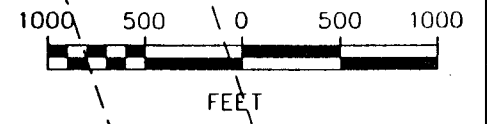
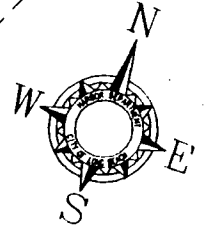
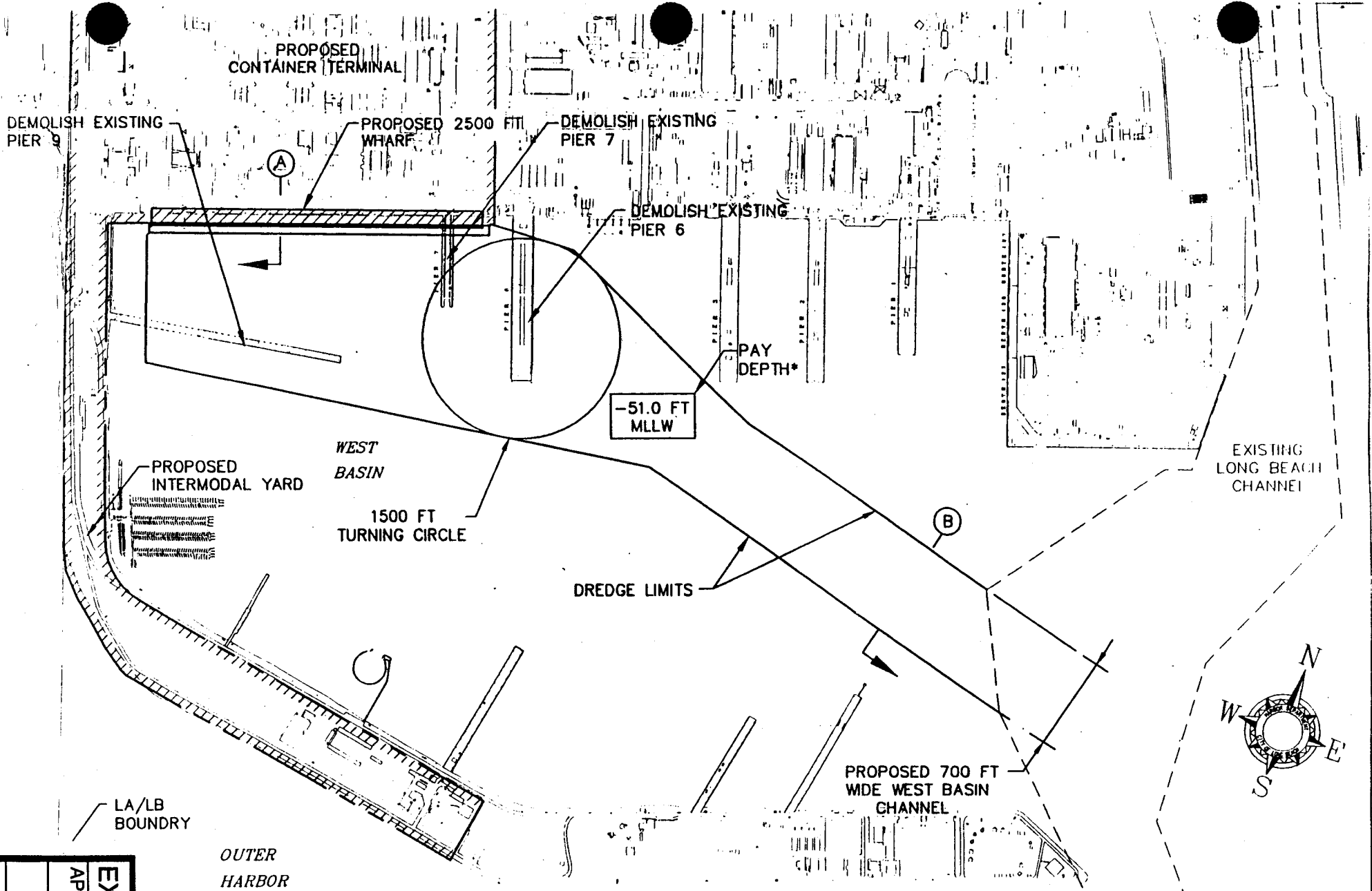
Figure ES-1. Location of the Proposed Project

An interim lease of the Navy Mole has been granted to the City of Long Beach and was the subject of a Negative Declaration prepared by the Port of Long Beach in accordance with the requirements of CEQA. That Negative Declaration considers several independent projects to be constructed on the Navy Mole.

Alternatives Considered

The City of Long Beach, as Local Reuse Authority (LRA) for the Navy, conducted a four-year screening process for viable reuse proposals for the Naval Station and Navy Mole. The proposals received by the LRA, briefly summarized below, ranged from

| |
|-------------------------------|
| EXHIBIT NO. 2 |
| APPLICATION NO. |
| 5-96-231 |
| California Coastal Commission |



TO TYPICAL CROSS SECTIONS FOR LIMITED AREAS TO BE DREDGED BELOW -51.0 FT MLLW

kptf Consulting Engineers

PORT OF LONG BEACH

P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (714) 771-0041

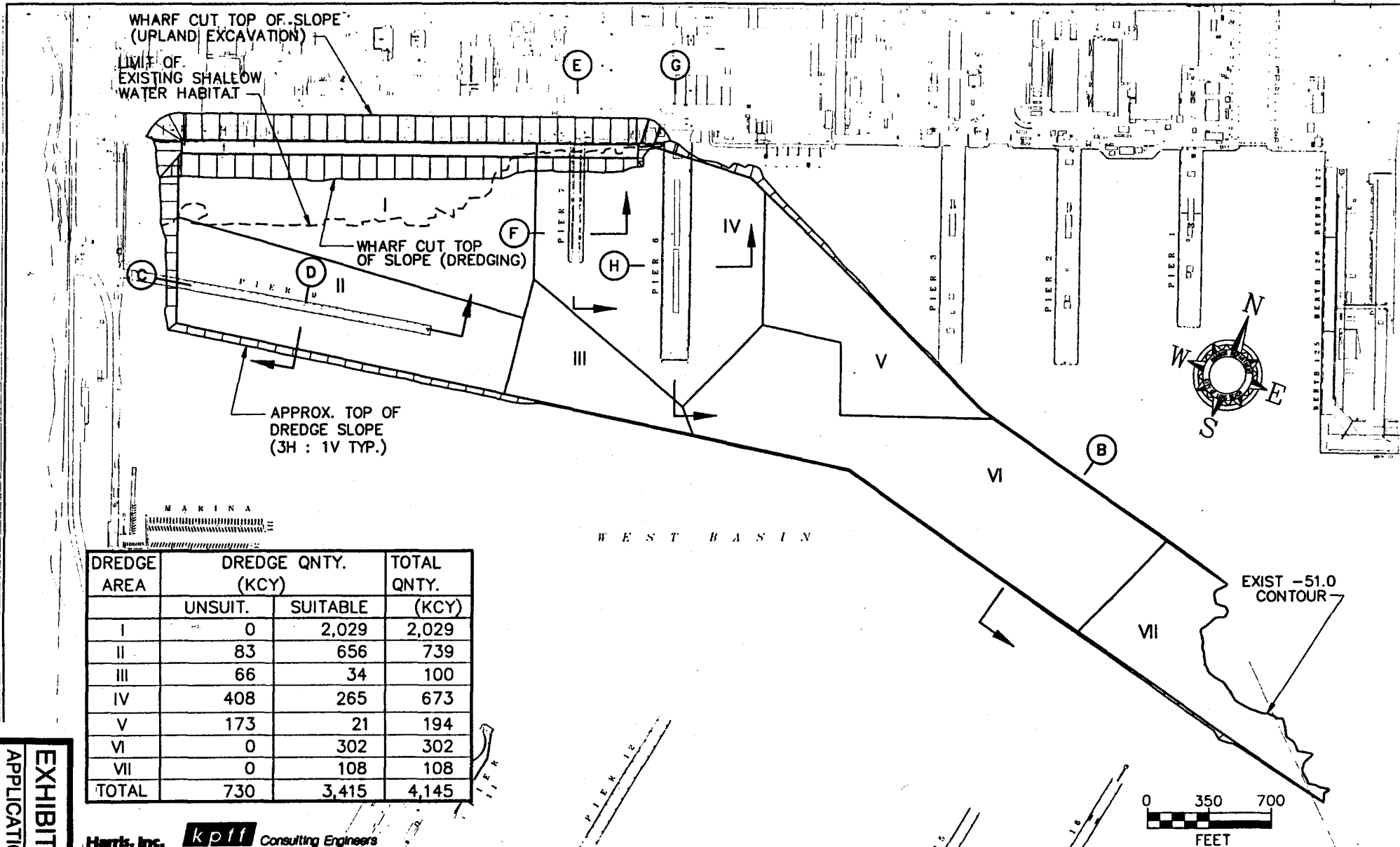
SHEET 1 OF 1

NAVAL STATION
CONTAINER TERMINAL

FIGURE 1
AUG. 5, 1996

EXHIBIT NO. 3
APPLICATION NO. S-96-231

California Coastal Commission



| DREDGE AREA | DREDGE QNTY. (KCY) | | TOTAL QNTY. (KCY) |
|-------------|--------------------|----------|-------------------|
| | UNSUIT. | SUITABLE | |
| I | 0 | 2,029 | 2,029 |
| II | 83 | 656 | 739 |
| III | 66 | 34 | 100 |
| IV | 408 | 265 | 673 |
| V | 173 | 21 | 194 |
| VI | 0 | 302 | 302 |
| VII | 0 | 108 | 108 |
| TOTAL | 730 | 3,415 | 4,145 |

Harris, Inc. **kpi** Consulting Engineers

THE PORT OF LONG BEACH

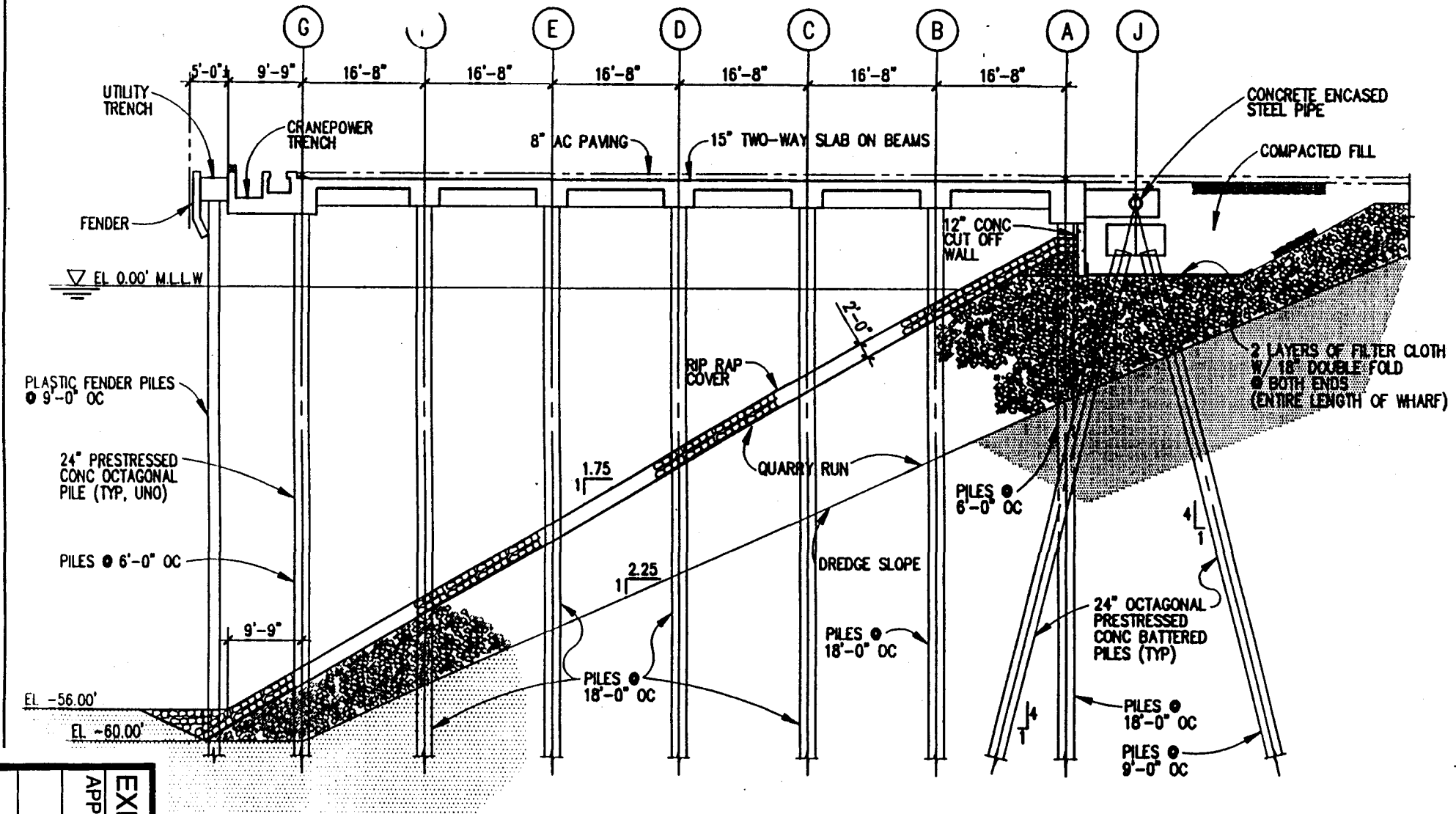
25 HARBOR PLAZA P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041


DREDGE AREAS AND QUANTITIES

NAVAL STATION
CONTAINER TERMINAL

FIGURE 2
AUGUST 29, 199

EXHIBIT NO. 4
APPLICATION NO.
S-96-231




 CALIFORNIA COASTAL COMMISSION
 EXHIBIT NO. 5
 APPLICATION NO.
 S-96-231

PORT OF LONG BEACH

WHARF CROSS SECTION

NAVAL STATION CONTAINER TERMINAL

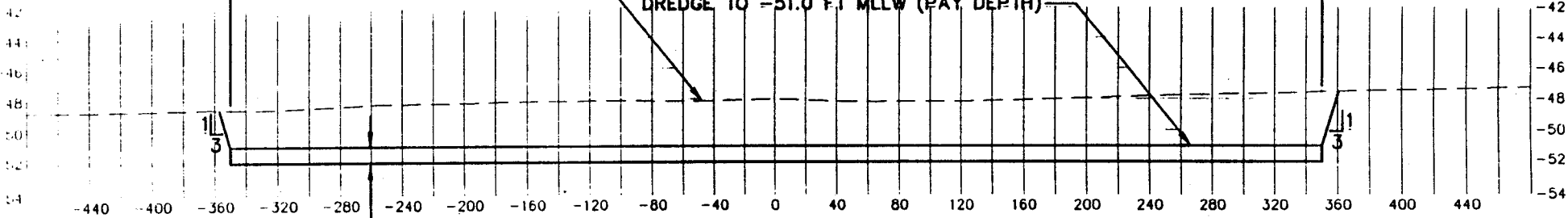
FIGURE 4

700' NAVIGABLE WIDTH
PROPOSED WEST BASIN CHANNEL

APPROX. EXIST MUDLINE

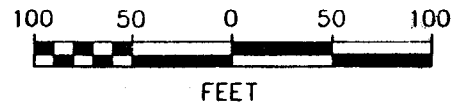
DREDGE TO -51.0 FT MLLW (PAY DEPTH)

1 FT OVERDREDGE
NON-PAY



(B) CHANNEL SECTION

NOTE:
ELEVATIONS REFERENCED TO MLLW



kpi Consulting Engineers

PORT OF LONG BEACH

1A P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

TYPICAL CHANNEL SECTION

NAVAL STATION
CONTAINER TERMINAL

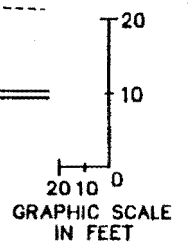
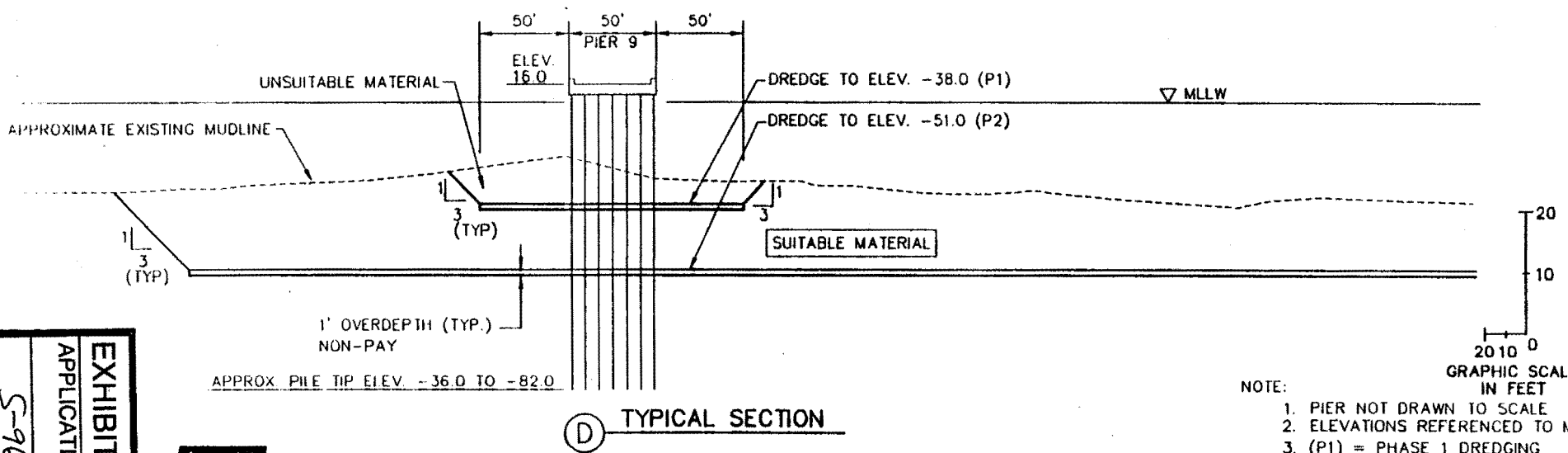
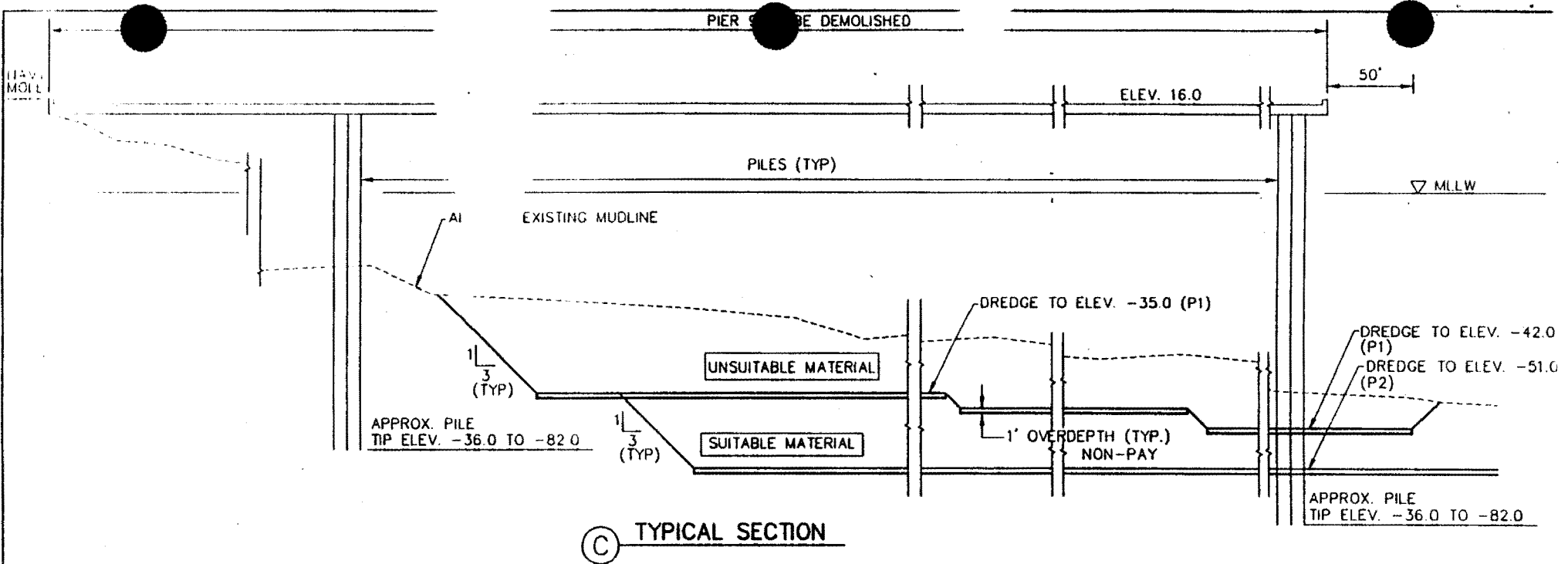
FIGURE 5

NOV 5, 1996

California Coastal Commission

EXHIBIT NO. 5-96-231

APPLICATION NO.



- NOTE:
1. PIER NOT DRAWN TO SCALE
 2. ELEVATIONS REFERENCED TO MLLW
 3. (P1) = PHASE 1 DREDGING
(P2) = PHASE 2 DREDGING

EXHIBIT NO. 7
APPLICATION NO. S-96-231

k p f f Consulting Engineers

PORT OF LONG BEACH

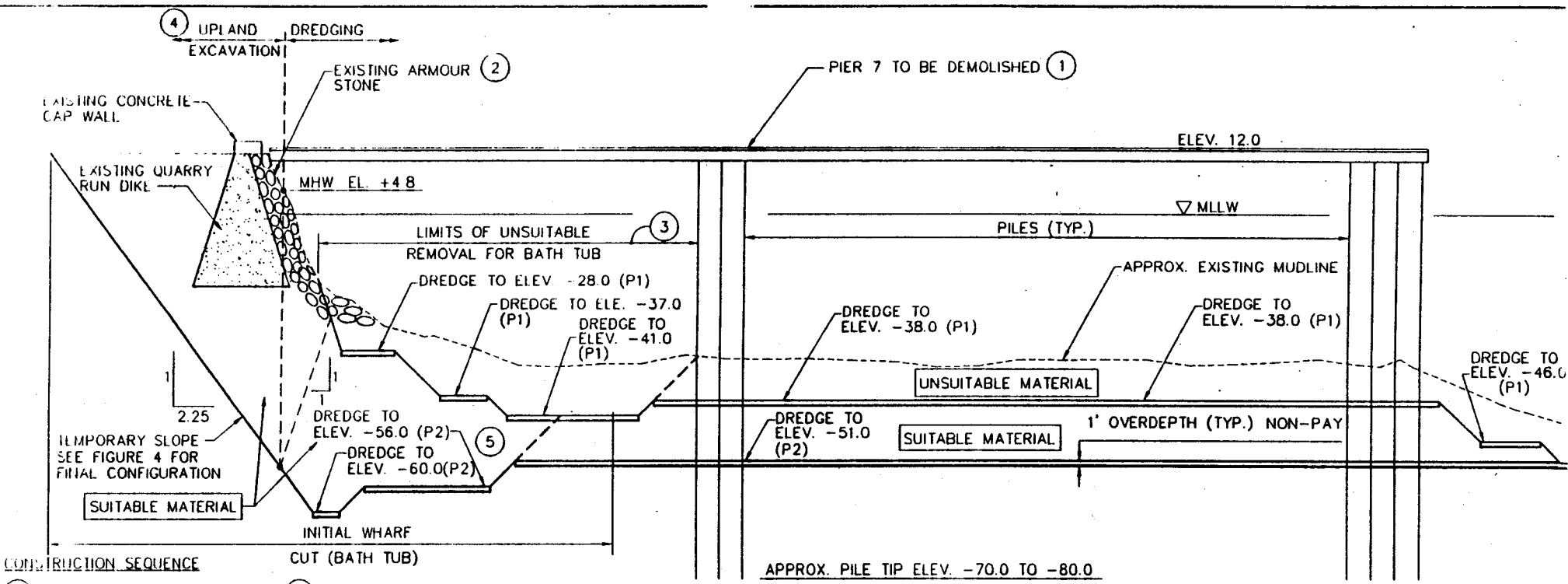
P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

TYPICAL SECTIONS PIER 9

NAVAL STATION
CONTAINER TERMINAL

FIGURE 6
AUG. 5, 1996

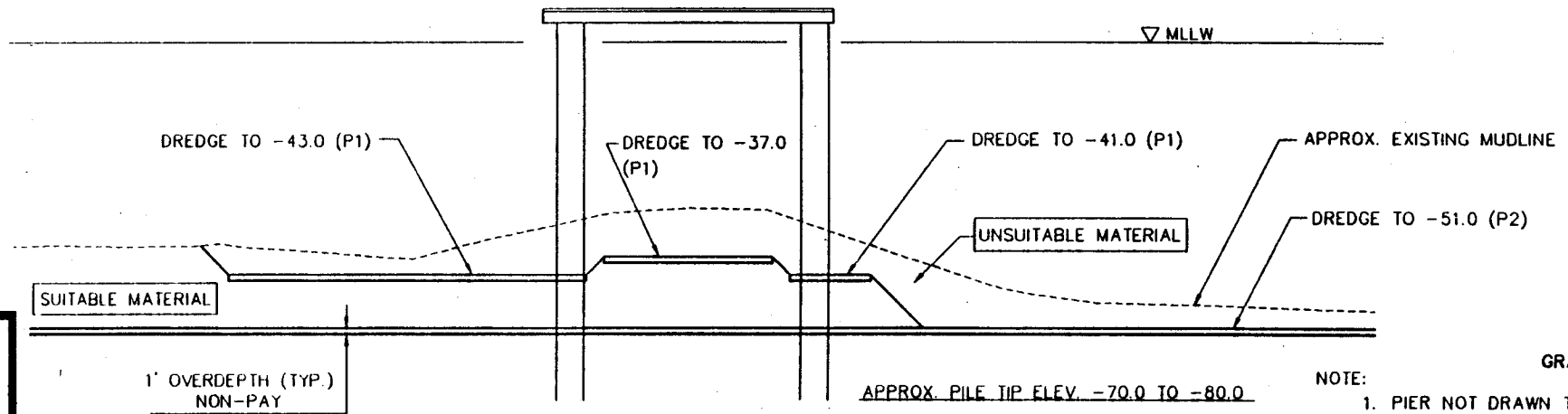
California Coastal Commission



CONSTRUCTION SEQUENCE

- ① DEMOLISH PIER
- ② REMOVE ARMOUR STONE
- ③ DREDGE LIMITS OF UNSUITABLE
- ④ EXCAVATE Q.R. DIKE AND UPLAND AREA
- ⑤ DREDGE REMAINING BATH TUB

E TYPICAL SECTION



F TYPICAL SECTION

- NOTE:
- 1. PIER NOT DRAWN TO SCALE
 - 2. ELEVATIONS REFERENCED TO MLLW
 - 3. (P1) = PHASE 1 DREDGING
 - (P2) = PHASE 2 DREDGING

APPLICATION NO. 5-96-231
 EXHIBIT NO. 8

rtis, Inc. **KPII** Consulting Engineers

THE PORT OF LONG BEACH

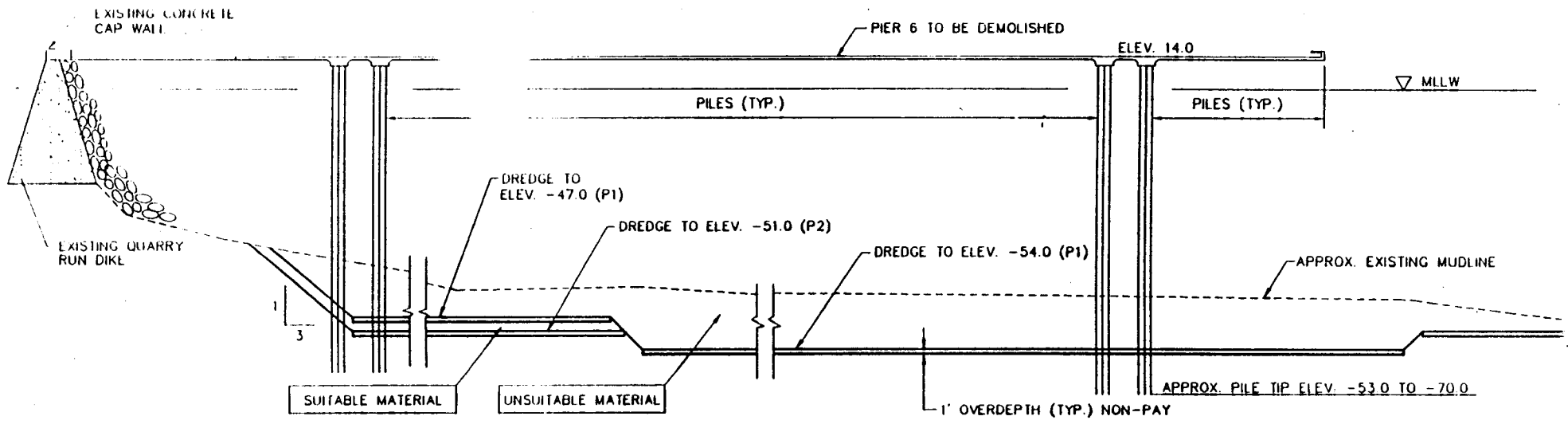
1424 P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

TYPICAL SECTIONS PIER 7

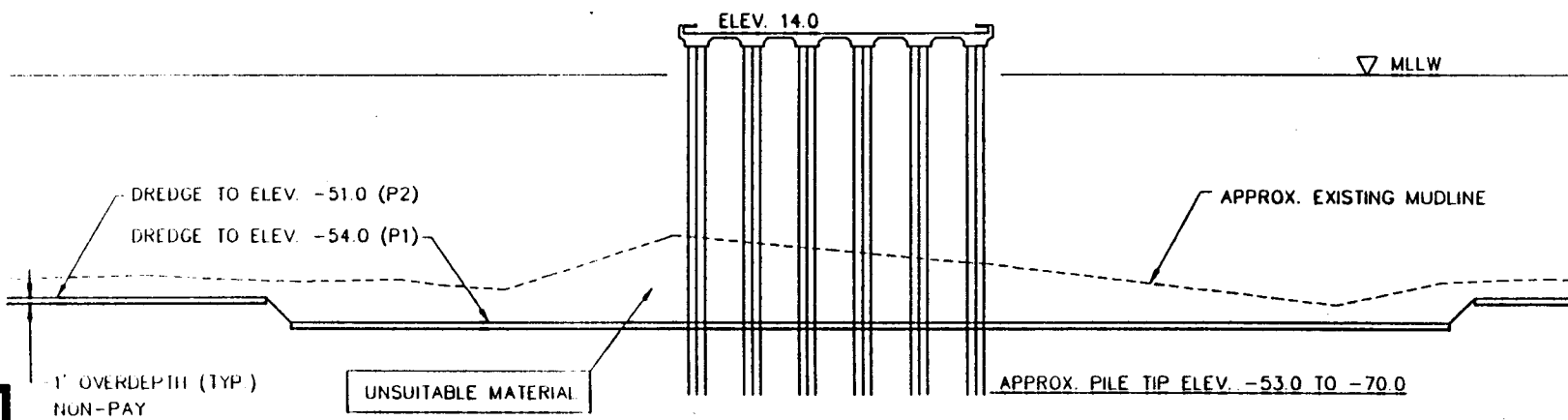
NAVAL STATION
CONTAINER TERMINAL

FIGURE 7

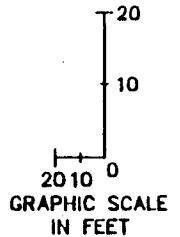
NOV 5, 1996



G TYPICAL SECTION



H TYPICAL SECTION



- NOTE:
1. PIER NOT DRAWN TO SCALE
 2. ELEVATIONS REFERENCED TO MLLW
 3. (P1) = PHASE 1 DREDGING
(P2) = PHASE 2 DREDGING

EXHIBIT NO. 9
APPLICATION NO.
S-96-231

ris, Inc. **kpi** Consulting Engineers

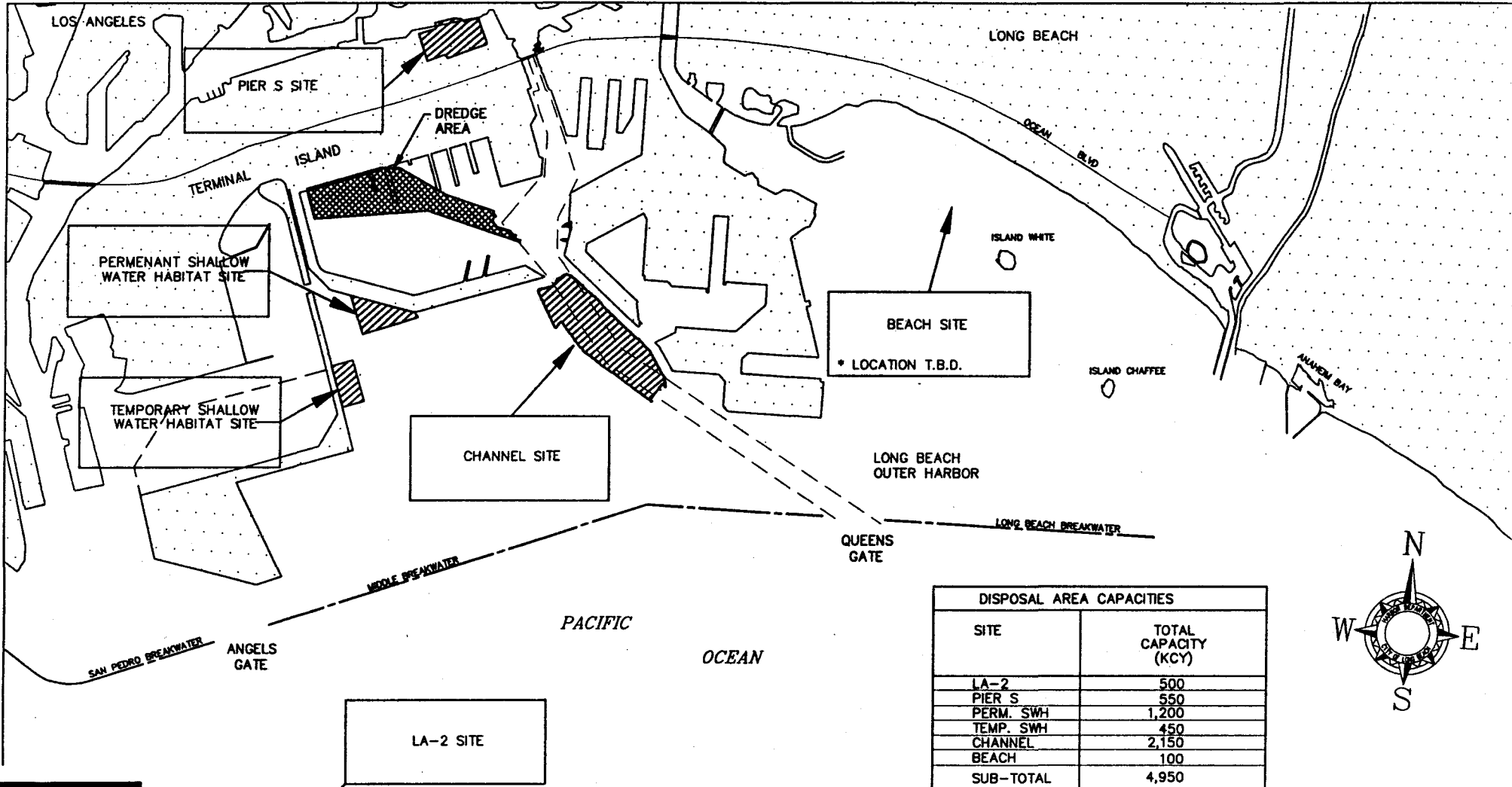
E PORT OF LONG BEACH

BOX PLAZA P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

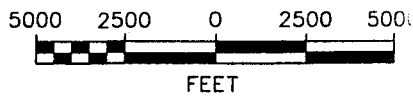
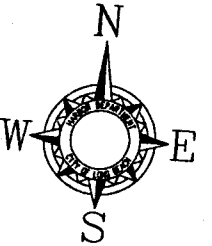
TYPICAL SECTIONS PIER 6

NAVAL STATION
CONTAINER TERMINAL

FIGURE 8
AUG 5, 1996



| DISPOSAL AREA CAPACITIES | |
|--------------------------|----------------------|
| SITE | TOTAL CAPACITY (KCY) |
| LA-2 | 500 |
| PIER S | 550 |
| PERM. SWH | 1,200 |
| TEMP. SWH | 450 |
| CHANNEL | 2,150 |
| BEACH | 100 |
| SUB-TOTAL | 4,950 |



NOTES:
1. CAPACITIES INCLUDE ALLOWANCE FOR BULKING.

8 MILES OFFSHORE

INC. **kpfi** Consulting Engineers

PORT OF LONG BEACH

LAZA P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

DISPOSAL SITES AND QUANTITIES

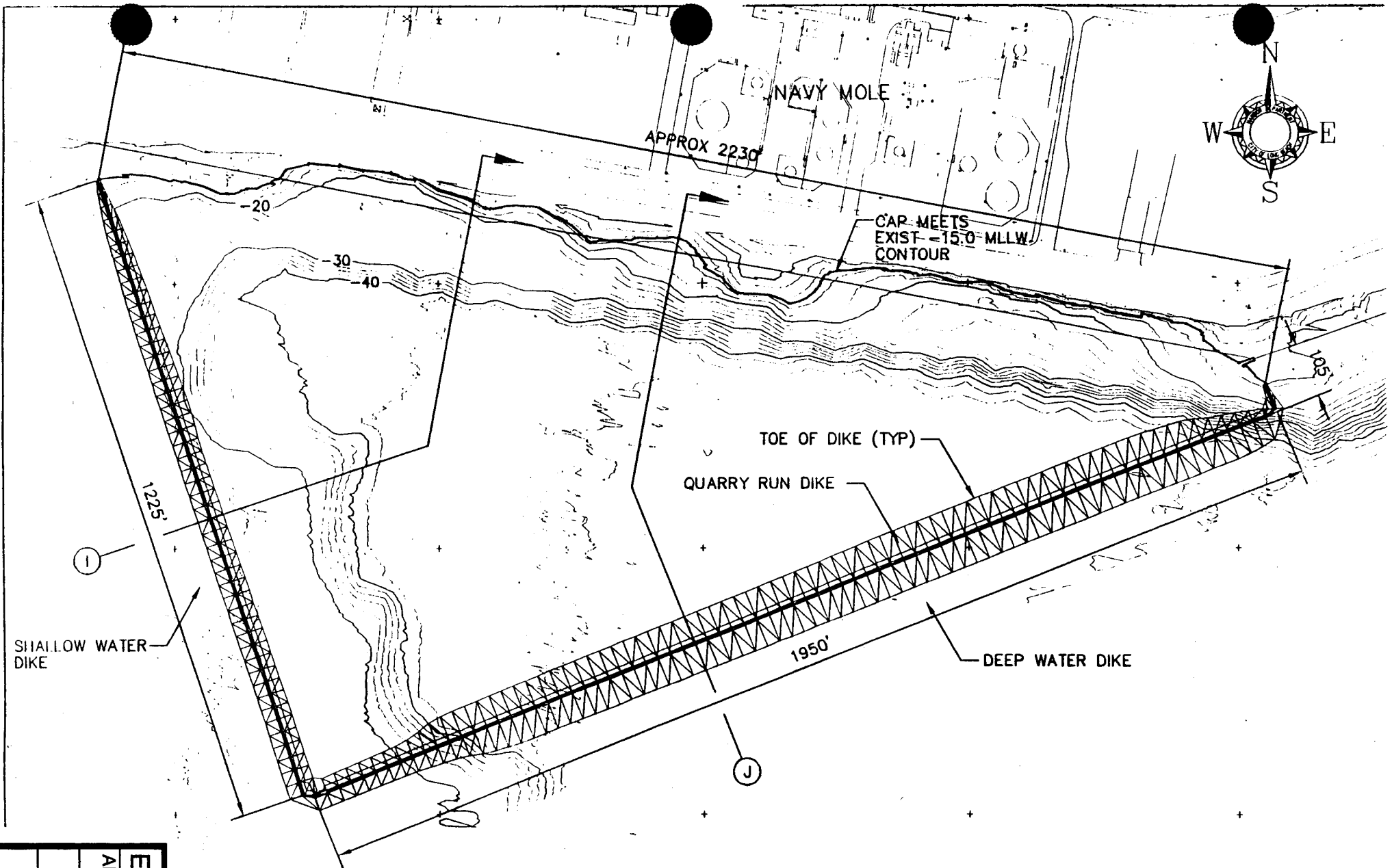
NAVAL STATION
CONTAINER TERMINAL

FIGURE 3
NOV. 18, 1996

California Coastal Commission

EXHIBIT NO. 1

APPLICATION NO. S-96-231



kpff Consulting Engineers

PORT OF LONG BEACH

P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

PERMANENT SHALLOW
WATER HABITAT

NAVAL STATION
CONTAINER TERMINAL

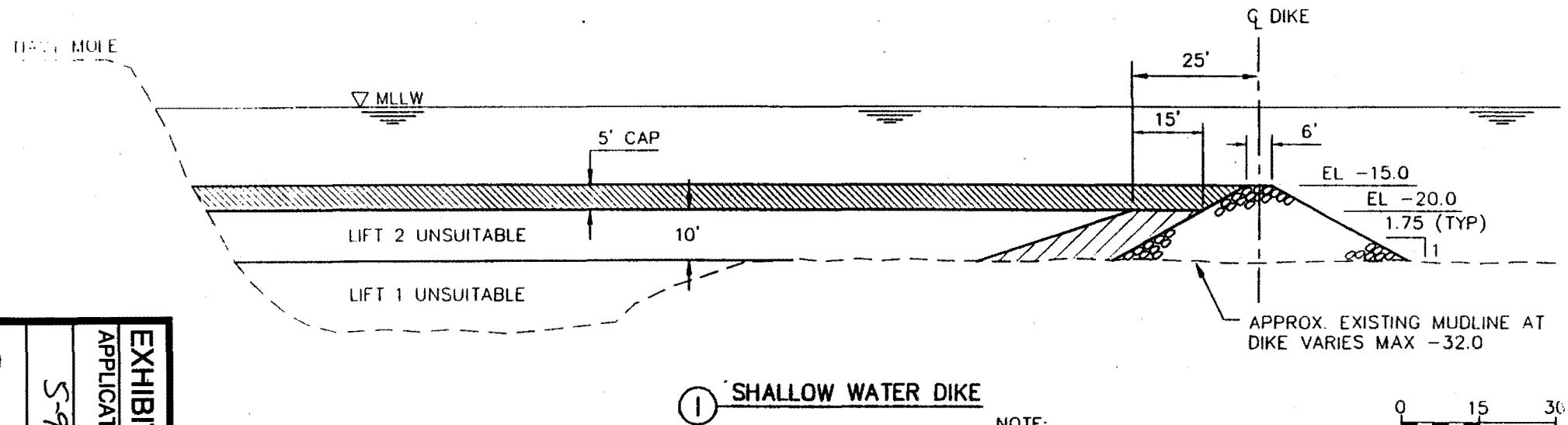
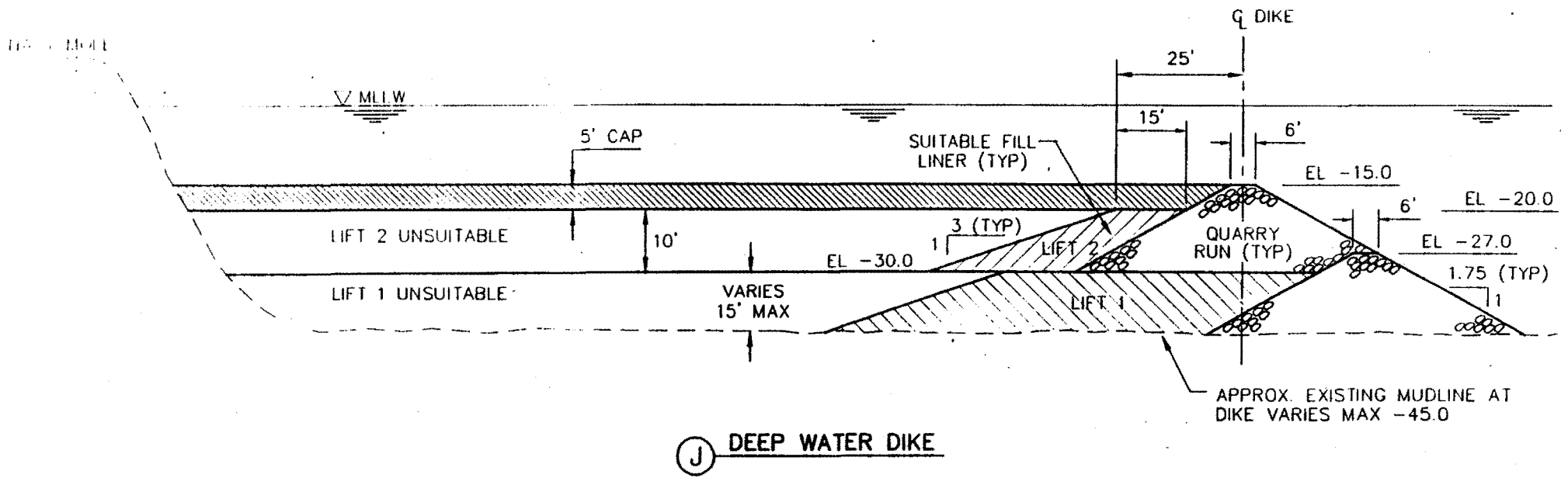
FIGURE 9
AUGUST 5, 1996

California Coastal Commission

EXHIBIT NO. 11

APPLICATION NO.

S-96-231



NOTE: ELEVATIONS REFERENCED TO MLLW



EXHIBIT NO. 1
 APPLICATION NO. S-96-231
 California Coastal Commission

kpi Consulting Engineers

PORT OF LONG BEACH

P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

PERMANENT SHALLOW WATER HABITAT SECTIONS


NAVAL STATION CONTAINER TERMINAL

FIGURE 10
 AUGUST 5, 1996

TABLE 2
 PIER T MARINE TERMINAL PROJECT
 DREDGED MATERIAL SOURCES AND DISPOSAL (in 1000s of cubic yards)

| TOTAL | AMOUNTS OF CLEAN MATERIAL | | | | | | | DISPOSAL SITES | AMOUNTS OF CONTAMINATED MATERIAL | | | | | |
|-----------|---------------------------|---------|--------|---------|--------|---------|-----------|----------------|----------------------------------|--------|---------|---------|---------|--|
| | VII | VI | V | IV | III | II | I | | II | III | IV | V | TOTAL | |
| 410,000 | 108,000 | 302,000 | 0 | 0 | 0 | 0 | 0 | LA-2 | 0 | 0 | 0 | 0 | 0 | |
| 490,000 | 0 | 0 | 0 | 145,000 | 34,000 | 0 | 311,000 | PermSWH | 83,000 | 66,000 | 408,000 | 173,000 | 730,000 | |
| 450,000 | 0 | 0 | 0 | 0 | 0 | 0 | 450,000 | TempSWH | 0 | 0 | 0 | 0 | 0 | |
| 1,415,000 | | | 21,000 | 0 | 0 | 656,000 | 738,000 | MAIN CHAN | 0 | 0 | 0 | 0 | 0 | |
| 100,000 | 0 | 0 | 0 | 0 | 0 | 0 | 100,000 | PIER S | 0 | 0 | 0 | 0 | 0 | |
| 100,000 | 0 | 0 | 0 | 0 | 0 | 0 | 100,000 | BEACH | 0 | 0 | 0 | 0 | 0 | |
| 2,965,000 | 108,000 | 302,000 | 21,000 | 145,000 | 34,000 | 656,000 | 1,699,000 | TOTAL | 83,000 | 66,000 | 408,000 | 173,000 | 730,000 | |
| 450,000 | 120,000 | | | | | | | 330,000 | EXCAVATION PIER S | | | | | |

NOTE: "PermSWH" = Permanent shallow-water habitat; "TempSWH" = Temporary shallow-water habitat;
 "LA-2" = approved LA-2 ocean disposal site; "MAIN CHAN" = borrow pit adjacent to the Long Beach Main Channel

| | | |
|---|-----------------------------|----------------|
|  California Coastal Commission | APPLICATION NO. S-96-231 | EXHIBIT NO. 13 |
|---|-----------------------------|----------------|

5.0 CONSIDERATIONS FOR PORT OF LONG BEACH

Physical Factors

Substantial information concerning cap thickness can be learned from the previous experimental and practical applications, however, cap thickness is site specific and must consider regional and local physical, chemical, and biological data. The information available is described below.

Primary sources contributing to physical instability in the Long Beach Harbor area include:

- tidal currents
- storm waves
- propeller wash

The hydrodynamic environment of Long Beach Harbor is, in general, not conducive to erosion of sand (CERC 1990; Vemulakonda *et al.* 1991; USACE 1995 [final feasibility study]). It is a relatively calm harbor, with average wave heights of 1-3 feet within the breakwater where the disposal sites are located. The San Pedro, Middle, and Long Beach breakwaters provide protection from more severe waves, and are designed to protect the harbor from waves of up to 22 feet. Consequently, erosion from storms should not be a factor under most conditions. More recent modeling of wind-driven circulation by the Waterways Experiment Station (Seabergh *et al.* 1994) should also be included in specific site plans prior to initiation of the disposal projects.

Flood and ebb tidal velocities in Long Beach Harbor range from 6-9 cm/sec in the inner channels to 10 to 32 cm/sec in the entrance channels. At these speeds, the maximum grain size that could be moved is fine sand, and this would only be at

maximum flood and ebb tides (Blatt *et al.* 1972). Because tidal currents are temporal, the continuous energy required for significant bedload transport of sand is not available, so that erosion of sand from any of the proposed Long Beach locations will be insignificant. Grain size data collected from near the Main Channel CAD site indicate that silt is the dominant grain size in the area, confirming that since these fine-grain sediments are stable, so are the coarser grain sizes.

The effect of propeller wash is of most concern at the Main Channel CAD. The current proposal will bring the water depth of the capped deposit to 76 ft MMLW, equal to the depth of the rest of the length of the channel. Cargo vessels through the main channel typically draft 65 ft, which will allow 10 ft of clearance between the ship's propeller and the sand cap at low tides. Vessels in the harbor are generally tug-assisted and limited to 2-3 knots. It is likely that with only 10 ft. of clearance, some propwash induced erosion will occur. As such, rock armoring of the CAD site may be necessary to ensure erosional stability. It is recommended, however, that prior to finalizing the water depth of the Main Channel CAD, available data regarding the maximum draft (loaded) of vessels using the channel, and the maximum speed of the vessels should be evaluated. The effect of propeller wash on the bottom could then be quantified in more detail. Rock armoring of the sand cap would decrease the possibility of erosion, as well as discouraging deep bioturbation (discussed elsewhere).

Chemicals of Concern

The bulk chemistry of sediments from the West Basin area of the Harbor have been assessed recently by Bechtel (1995), MEC (1996), and Kinnetic (1996). These studies characterized both the spatial and vertical distributions of contaminants within the area of the proposed cargo container terminal. Results have shown wide ranges in concentrations of individual chemical contaminants and contaminant classes, indicating the presence of both relatively clean and slightly to moderately

contaminated sediments. Chemicals of greatest concern include those with potentials for acute or chronic toxicity, and/or potentials for uptake and accumulation in the tissues of marine organisms. Specifically, contaminants in sediments from the West Basin include metals (e.g., mercury, lead, and copper), organotins (mono-, di-, and tributyl tins), chlorinated pesticides and polychlorinated biphenyls (PCBs), and petroleum residues, including polycyclic aromatic hydrocarbons (PAHs). Concentration ranges for selected contaminants within the West Basin sediments are listed in Table 2.

Concentration thresholds or quality criteria have not been established for sediment contaminants. However, several recent studies of sediment contaminants have compared measured concentrations to effects levels (effects range-low [ER-L] and effects range median [ER-M]) developed by Long and Morgan (1991) and Long *et al.* (1995). The ER-L and ER-M represent the low end of the range and the median concentration, respectively, at which adverse effects to organisms are expected or predicted to occur. ER-L and ER-M values have been defined for individual metals, individual and summed PAHs, total PCBs, and selected chlorinated pesticides, but not for organotins.

Metals

Metals are present naturally in marine sediments, and some metals are required by marine organisms for physiological processes; however, excessive levels also can be acutely or chronically toxic. Background concentrations for individual metals are expected to vary depending on the composition of source minerals and sediment grain size characteristics. Within the West Basin, concentrations of metals vary horizontally and vertically (i.e., with depth below the sediment/water interface). Additionally, some, occasionally large, differences among studies in concentration ranges for individual metals are apparent. These differences likely are attributable primarily to

differences in analytical methods, although some temporal changes due to seasonal runoff also may have contributed to this variability. In general, concentrations in the deep subsurface layers (e.g., >10 ft below the interface) are representative of background concentrations; whereas concentrations in the surface layers (0-3 ft depths below the interface) are up to one order of magnitude higher. Many of the surface sediments collected during recent studies within the West Basin contain metal concentrations that exceed the respective ER-L and, in some cases (e.g., copper, mercury, and zinc) the ER-M values, indicating slight to moderate contamination.

PAHs

PAHs in nearshore marine sediments are derived from natural and anthropogenic sources, including refined petroleum and its combustion products. PAHs are a concern because they represent potential carcinogens or mutagens. Concentrations of PAHs in West Basin sediments are highest in the surface layers (0-6 feet); whereas, concentrations in the deeper sediments typically are below detection limits. Summed concentrations (i.e., total PAHs) of individual PAH compounds approach 20 parts per million in the West Harbor surface sediments. Levels at several sites exceed the ER-L (4.02 ppm) but are below the ER-M (44.79 ppm).

Pesticides and PCBs

DDT is a synthetic chlorinated pesticide that, along with its derivatives DDE and DDD, is present throughout the Southern California Bight as a result of historical discharges and dumping. This pesticide can accumulate to very high levels in the lipid-rich tissues of marine fish, birds, and mammal, thus causing adverse impacts to reproductive systems. PCBs are a class of chlorinated organic compounds that were produced for a wide range of industrial uses. Similar to chlorinated pesticides, PCBs have strong affinities for lipids and can accumulate to high levels in tissues of marine

organisms (Mearns *et al.* 1991). Concentrations of total PCBs and total DDTs measured by the Bechtel (1995) study ranged from below detection to levels which exceeded the respective ER-M values (180 ppb and 46.1 ppb, respectively). The presence and relative concentrations of total PCBs and total DDTs measured during the MEC (1996) and Kinnetic (1996) studies were more variable; nevertheless, concentrations in some sediments collected during these latter studies also exceeded both the ER-L and ER-M.

Organotins

Organotins are a class of synthetic compounds derived primarily from antifouling paints applied to the bottoms of commercial and recreational vessels. The tributyl form has a very high toxicity to some marine organisms, particularly the larval stages of bivalves. Concentrations of organotins in the West Basin sediments typically were below 10 parts per billion. As mentioned, no ER-L or ER-M values have been established for organotins. Nevertheless, the magnitude of organotin concentrations in the West Basin sediments is relatively low compared to the mean concentration reported for west coast sediments, including those from harbor settings (38 ppb; Wade *et al.* 1990).

Summary

While the levels of some contaminants are elevated above the ERMs, contaminant levels in the Long Beach sediments are not dissimilar from those successfully isolated at any of the projects listed in Table 1. As such, a minimum cap thickness of 12 inches (30 cm) is recommended for physical isolation of contaminants.

Table 2. Concentration Ranges for Selected Contaminants in West Basin Sediments, and Comparisons to Effects Range-Median Values.

| Chemical | Units | Bechtel (1995) | MEC (1996) | ER-M |
|------------|-------|----------------|------------|--------|
| Copper | ppm | 13-330 | 7-370 | 270 |
| Lead | ppm | 0.26-94 | <3-92 | 218 |
| Mercury | ppm | nd-0.88 | <0.04-1.2 | 0.71 |
| Zinc | ppm | 1.6-620 | 29-710 | 410 |
| Butyltins | ppb | nd | nd-15 | -- |
| Total PAHs | ppb | nd-23,213 | nd-18,920 | 44,790 |
| Total DDTs | ppb | 6-340 | nd-6.6 | 46.1 |
| Total PCBs | ppb | nd-540 | nd-520 | 180 |

Bioturbating Infauna

The limited information on densities and abundances of infauna likely to colonize caps used throughout Long Beach Harbor indicate that the dominant fauna requires no special precautions. For these animals (polychaete worms, demersal fish and mobile macrofauna) a bioturbation zone of 30 to 50 cm should be a conservative barrier to prevent disturbance of contaminated sediments. There is, however, the possibility of

colonization by low densities of deep burrowing shrimp which may form vertical burrows up to 1 m in depth or complex galleries 20 to 30 cm deep. Studies have shown that effective barriers to colonization can be designed by incorporating layers of crushed rock into capping material.

We recommend that any confined disposal facility design for Long Beach Harbor take into consideration measures to exclude deep burrowing shrimp. Options include a minimum cap thickness of 5 ft. (1.5 meters), use of geotextile liners, or incorporation of crushed rock. Alternatively it may be useful to conduct risk-based modeling studies based on field studies of densities and activities of local shrimp populations and contaminants.

6.0 CONCLUSIONS AND RECOMMENDATIONS

General Conclusions

Based on literature and national project reviews, and site-specific characteristics in Long Beach Harbor, the following recommendations are offered:

Physical-Chemical Isolation. For chemical isolation, a minimum cap of 1 ft. should be sufficient for containment of contaminants. The contaminants observed in Long Beach sediments are similar to those observed in other successfully contained capping projects, so a 1 ft. barrier should be sufficient to contain chemical diffusion.

Bioturbation. Bioturbation should be effectively minimized by a cap thickness of 5 ft. Alternatively, if thinner caps are required, the cap should be armored with gravel or crushed rock. Each site will need to have specific design elements but a general guideline could be to construct caps of at least 3.7 ft. (44 inches) thickness consisting of 1 ft. of sand (or ambient grain size material) on top of 8 inches of crushed rock mixtures (0.5 - 1 inch diameter) on top of 2 ft. of clean dredged material. This approach should restrict deep burrowing animals to the upper layer of sediment, and permit a relatively thin cap layer.

Physical Stability. The natural hydrodynamic environment of Long Beach Harbor is not conducive to erosion of sand. The Island White CAD and the PSWH should not experience any erosional loss. However, the available data on the maximum draft and speed of vessels using the Main Channel, is likely to cause erosion of any potential cap. For that reason, armoring of the Main Channel CAD is recommended. An engineering study to quantify the effect of propeller wash in more detail, and the size of armor necessary to stabilize the cap, is recommended.

For the borrow pit CAD sites, the hydraulic dredging of cap materials and placing the material using the method of "sprinkling" is recommended. For all three CAD sites, the design of the cap should take into account the volume reduction of the dredged material due to consolidation in order to estimate the cap thickness required to compensate for advective pore flux.

Site Specific Recommendations

Based on the above general recommendations of conditions in Long Beach Harbor, site specific recommendations for each of the three CAD sites is given below. Capping material and thickness alternatives are presented in Table 3.

Permanent Shallow Water Habitat. The cap configuration at the PSWH is unique in that it requires a reflective sand surface to meet mitigation requirements for the California Least Tern. Based on the Port of Los Angeles PSWH, a minimum of 2 ft. of sorted and graded sand should be used. As such, two possible cap scenarios are listed in Table 3. The first option utilizes 3 ft. of dredged material as chemical and bioturbation barriers, plus the 2 ft. of reflective sand for a total effective cap of 5 ft. The second option maximizes dredged material disposal by including an 8 inch gravel barrier against bioturbation, for an effective cap of only 44 inches. Alternatively, a geotextile layer could be employed in place of the gravel armor, for an effective cap thickness of 3 ft. It should be noted that the Port may wish to consider the use of geotextiles against the subaqueous rock walls as a barrier to lateral sediment and porewater advection.

Island White Pit 2B. The effective cap configuration at Island White CAD is similar to the PSWH, except that the reflective cap finish is not required. As such, cap thickness options are 5ft with no armoring, 3.7 ft. with gravel armoring, or 3 ft. using a geotextile barrier.

Main Channel. Given the recommendation that the Main Channel CAD will require armoring, specific cap configurations cannot be made at this time. However, given previous experience with armored caps in the Great Lakes, it is likely that a 1 - 2 foot sediment base is required for chemical isolation, with 0.7 - 1 ft. of gravel armoring, yielding a total effective cap of 1.7 - 3 ft. It should be noted that with the use of gravel armoring, there is no need for an additional bioturbation sediment layer. Geotextiles in the Main Channel CAD are an option, but will still require armoring. Operational and construction limitations on geotextile placement in the Main Channel may limit their utility.

Table 3. Recommended cap configurations (inches) for the three proposed CAD sites in the Port of Long Beach.

| CAD SITE | DREDGED SEDIMENT | | ARMORING | REFLECTIVE CAP | EFFECTIVE CAP |
|--------------|------------------|--------------|----------|----------------|---------------|
| | Chemical | Bioturbation | | | |
| PSWH | 12 | 24 | 0 | 24 | 60 |
| | 12 | 0 | 8 | 24 | 44 |
| Island White | 12 | 48 | 0 | 0 | 60 |
| | 12 | 24 | 8 | 44 | 44 |
| Main Channel | 12 - 24 | 0 | 8 - 12 | 0 | 20 - 36 |

TABLE 1
 REPRESENTATIVE DATA FROM 1996 SEDIMENT SAMPLING
 PIER T MARINE TERMINAL

| ANALYTE AREA | Cu | Pb | Hg | Zn | Tins | PAH | DDT | PCB |
|-----------------|---------|----|------|-----|---------|------|-----|-----|
| | (mg/kg) | | | | (ug/kg) | | | |
| AREA I | 27 | 8 | 0.06 | 62 | 8 | 295 | nd | 62 |
| AREA II | 35 | 8 | 0.1 | 75 | 7 | 211 | nd | 48 |
| Pier 9 | 94 | 92 | 0.6 | 249 | 11 | 2580 | 7 | 130 |
| AREA III | 46 | 57 | 0.2 | 110 | 5 | 361 | nd | 74 |
| AREA IV | 46 | 23 | 0.5 | 136 | 9 | 2506 | 9 | 300 |
| Pier 6 | 103 | 60 | 0.5 | 261 | 21 | 5287 | 25 | 700 |
| AREA V | 127 | 80 | 1.2 | 163 | 3 | 1140 | 0.8 | 30 |
| AREA VI | 39 | 14 | 0.2 | 80 | 4 | 342 | nd | 69 |
| AREA VII | 40 | 15 | 0.15 | 89 | 7 | 212 | 4 | 44 |

EXHIBIT NO. 1
 APPLICATION NO.

S-96-231

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
MONITORING AND REPORTING PROGRAM NO. 7700
FOR
PORT OF LONG BEACH
(PIER T MARINA TERMINAL - WEST BASIN DREDGING PROJECT)
(FILE NO. 96-121)

The following sampling protocol shall be undertaken during the dredging and fill project. Sampling for the receiving water monitoring shall commence at least one week prior to the start of the dredging and fill operations and continue at least one week following the completion of all such operations. Sampling shall be conducted a minimum of once a week during dredging operations. Sampling shall be conducted down current of the dredge sites at least one hour after the start of dredging operations. All receiving water monitoring data shall be obtained via grab samples or remote electronic detection equipment. All parameters shall be sampled at 2.0 meter increments throughout the water column. Receiving water samples shall be taken at the following stations:

| <u>Station</u> | <u>Description</u> |
|----------------|--|
| A | 30.5 meters (100 feet) up current of the dredging operations, safety permitting. |
| B | 30.5 meters (100 feet) down current of the dredging operations, safety permitting. |
| C | 91.5 meters (300 feet) down current of the dredging operations. |

The following shall constitute the receiving water monitoring program:

I. RECEIVING WATER MONITORING FOR DREDGING AREAS

A. Water Column Monitoring

| <u>Parameters</u> | <u>Units</u> | <u>Station</u> | <u>Frequency</u> |
|-----------------------------------|-----------------|----------------|------------------|
| Dissolved oxygen | mg/l | A thru C | Weekly |
| Light transmittance | % Transmittance | " " | " |
| pH | pH units | " " | " |
| Suspended solids | mg/l | A & C | Twice Monthly |
| Metals and organics ^{1/} | µg/l | A & C | Monthly |

^{1/} Metals analyses shall include arsenic, cadmium, copper, lead, mercury, nickel, silver, selenium and zinc. Organics analyses shall include DDE, PCBs, PAHs, Phthalates, and tributyltin.

| |
|-----------------------|
| EXHIBIT NO. 16 |
| APPLICATION NO. |
| 5-96-231 |
| |

T
E
R
M
I
N
A
L

Color photographs shall be taken at the time of sampling to record the presence and extent of visible effects of dredging operations. These photographs shall be submitted with the receiving water monitoring reports.

The discharger shall provide Regional Board staff with a receiving water monitoring program field schedule at least one week prior to initiating the program. Regional Board staff shall be notified of any changes in the field schedule at least 48 hours in advance.

B. OBSERVATIONS

1. The following receiving water observations shall be made and logged daily during dredging or excavating operations:
 - a. Date and time;
 - b. Direction and estimated speed of currents;
 - c. General weather conditions and wind velocity;
 - d. Tide stage;
 - e. Appearance of trash, floatable material, grease, oil or oily slick, or other objectionable materials;
 - f. Discoloration and/or turbidity;
 - g. Odors;
 - h. Depth of dredge operations during previous day;
 - i. Amount of material dredged the previous day;
 - j. Cumulative total amount of material dredged to date.
2. Color photographs shall be taken at the time of sampling to record the presence and extent of visible effects of dredging operations. These photographs shall be submitted with the receiving water monitoring reports.

The discharger shall provide Regional Board staff with

T
E
N
T
A
T
I
O
N
A
L

a receiving water monitoring program field schedule at least one week prior to initiating the program. Regional Board staff shall be notified of any changes in the field schedule at least 48 hours in advance.

II. RETURN WATER MONITORING FOR TEMPORARY AND PERMANENT SHALLOW WATER HABITAT AREAS

If return water flow of dredge water is discharged to the harbor from the Temporary and the Permanent Shallow Water Habitat areas at Pier 400 causeway and former Navy Mole, respectively, the water shall be monitored daily for settleable solids. Samples for analysis shall be collected at the point of discharge at least one-half hour after flow begins.

III. RECEIVING WATER MONITORING AT THE TEMPORARY AND PERMANENT SHALLOW WATER HABITAT DISPOSAL SITES

Sampling for the receiving water monitoring shall commence at least one week prior to the start of the temporary disposal operation and continue at least one week following the completion of all such operation. Sampling shall be conducted a minimum of once a week during dredging operations. Sampling shall be conducted down current of the disposal site at least one hour after the start of disposal operation. All receiving water monitoring data shall be obtained via grab samples or remote electronic detection equipment. All parameters shall be sampled at 2.0 meter increments throughout the water column. Receiving water samples shall be taken at the following stations:

| <u>Station</u> | <u>Description</u> |
|----------------|--|
| A | 30.5 meters (100 feet) up current of the disposal site, safety permitting. |
| B | 30.5 meters (100 feet) down current of the disposal site, safety permitting. |

The following shall constitute the receiving water monitoring program:

T
E
N
T
A
T
I
V
E

A. Water Column Monitoring

| <u>Parameters</u> | <u>Units</u> | <u>Stations</u> | <u>Frequency</u> |
|-----------------------------------|-----------------|-----------------|------------------|
| Dissolved oxygen | mg/l | A & B | Weekly |
| Light transmittance | % Transmittance | " " | " |
| pH | pH units | " " | " |
| Suspended solids | mg/l | A & B | Twice Monthly |
| Metals and organics ^{1/} | µg/l | A & B | Monthly |

^{1/} Metals analyses shall include arsenic, cadmium, copper, lead, mercury, nickel, silver, selenium and zinc. Organics analyses shall include DDE, PCBs, PAHs, Phthalates, and tributyltin.

B. Site Monitoring

1. Temporary Shallow Water Habitat

Physical (bathymetric) surveys of the site shall be conducted at a minimum: a) immediately following construction (to document that required site dimensions and characteristics have been achieved); b) annually for each year that the site remains in use as temporary shallow water habitat (to identify whether settling, consolidation or other factors have created the need for additional fill or other measures to maintain the required project dimensions and characteristics); and c) immediately following removal of fill from the site (to document restoration of site to original condition).

2. Permanent Shallow Water Habitat

Construction-phase monitoring of all aspects of construction at this site shall include:

- high-resolution bathymetry documenting the dimensions of the subaqueous rock containment dikes(s);
- sediment vertical profiling system (SPVS) transects outboard of the containment dikes(s);
- documenting deposition from construction of the containment dike(s), prior to placement of dredged material behind the dike(s);

T
E
N
T
A
T
I
O
N
A
L

- high-resolution bathymetry documenting placement of dredged material used for "lining" behind the containment dike(s);
- SPVS transects outboard of the containment dike(s) documenting deposition from placement of dredged material used for "lining" behind the containment dike(s);
- automated, high-resolution tracking of barge movement and dumping of all dredged material placed behind the containment dike(s);
- high-resolution bathymetry documenting placement of unsuitable dredged material behind the containment dike(s);
- SPVS transects outboard of the containment dikes(s) documenting deposition from placement of unsuitable dredged material behind the containment dike(s);
- high-resolution bathymetry documenting placement of dredged material used to cap the site; and
- SPVS transects outboard of the containment dike documenting deposition from placement of dredged material used to cap the site.

Immediately upon completion of this site, surveys shall be conducted via appropriate methods (e.g., bathymetry, coring, sonar scanning) to document that the required site dimensions, minimum cap thickness (i.e., five feet) and other characteristics have been achieved.

Surveys of this site shall be repeated annually (or following significant seismic events or other events that may cause settling or slumping of the site, or could affect its ability to retain contaminated sediment) to identify the need for additional fill or other measures to maintain the required site dimensions, minimum cap thickness and other characteristics.

The discharger shall develop a long-term monitoring program to assess the effectiveness of the permanent

T
E
N
T
A
T
I
V
E

shallow water habitat site as foraging habitat for the California least tern. This monitoring shall be conducted in accordance with a plan approved by the U.S. Fish and Wildlife Service.

3. Port of Los Angeles Pier 400 Access Corridor

The discharger shall develop a plan to monitor water flow, including tidal current speeds, through the breach in the nearby Port of Los Angeles Pier 400 access corridor, to determine whether construction of the permanent shallow water habitat site affects circulation through this breach. This monitoring should commence at least 60 days prior to the start of construction of the containment dikes for the permanent shallow water habitat site (to establish baseline conditions). The frequency of monitoring should be sufficient to characterize flow and current speeds over a normal range of daily and seasonal tidal cycles.

Physical (bathymetry) surveys should be conducted in and around the access corridor breach to look for evidence of scouring of the bottom. Annual surveys shall be conducted for a minimum of five years following completion of the shallow water habitat.

IV. GENERAL PROVISIONS

All sampling, sample preservation, and analyses shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" promulgated by the United States Environmental Protection Agency.

All chemical analyses shall be conducted at a laboratory certified for such analysis by the State Water Resources Control Board, or approved by the Executive Officer.

The discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to insure accuracy of measurements, or shall insure that both activities will be conducted.

A grab sample is defined as an individual sample collected in fewer than 15 minutes.

T
E
N
T
A
T
I
V
E

All samples shall be representative of the waste discharge under normal operating conditions.

V. REPORTING

A. Monitoring Reporting

Monitoring reports shall be submitted within 10 days following each weekly sampling period. In reporting, the discharger shall arrange the monitoring data in tabular form so that dates, time, parameters, test data, and observations are readily discernible. The data shall be summarized to demonstrate compliance with the waste discharge requirements. A final report, summarizing the results of the weekly monitoring and reporting the total volume discharged, shall be submitted within one month of completion of the project.

Each monitoring report must affirm in writing that:

All analyses were conducted at a laboratory certified for such analyses by the State Water Resources Control Board or approved by the Executive Officer and in accordance with current EPA guidelines or as specified in the Monitoring Program.

For any analysis performed for which no procedure is specified in the EPA guidelines or in the Monitoring Program, the constituent or parameter analyzed and the method or procedure used must be specified in the report.

B. Status Reports for Pier S upland disposal site and selected beaches for the disposal of sediments

The discharger shall provide a Status Report each quarter, beginning February 1, 1997, to the Regional Board with the following information:

1. A time schedule regarding the construction of the Pier S and beachfront facilities, including the construction of drainage system for non-contaminated runoffs on and adjacent to this facilities;
2. The total volume of dredge sediment to be disposed at the facility during the quarter;

T
E
N
T
A
T
I
V
E

- 3. Observation on any ponding, infiltration, inundation, erosion, or destabilization of the sediment within the facility.

VI. GENERAL PROVISIONS FOR REPORTING

For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.

Each report shall contain the following completed declaration:

"I declare under penalty of perjury that the foregoing is true and correct. Executed on the _____ day of _____ at _____.

(Signature)

(Title)

These records and reports are public documents and shall be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

Ordered by:

ROBERT P. GHIRELLI, D.Env.
Executive Officer

Date: December 9, 1996

T
E
N
T
A
T
I
O
N
A
L



Date: November 15, 1996
To: Geraldine Knatz, Director, Port Planning
From: Dennis Eschen, Superintendent Parks Planning and Development
Subject: Disposal of Beach Compatible Sand

This is to confirm that the Department of Parks, Recreation and Marine does want to receive any beach compatible sand which the Port has in excess. This acceptance of the sand is based on our understanding that disposal would be in the form of an off-shore berm, placed in about ten feet of water. Such berm would be located off-shore of the Alamitos Bay Peninsula.

We would propose the location to be from 59th Place to the Alamitos Bay Jetty, parallel to shore, either straight or "saw-toothed" in shape. The details of the placement would be determined as the project proceeds to implementation.

There has long been a significant beach erosion problem on the Alamitos Bay Peninsula. Recently, the City has addressed this problem with annual beach nourishment. The rapid retreat of the beach after the recent nourishments, and the accompanying danger to homes from a major storm, has caused the City to search for a more lasting solution. We believe some form of off-shore barrier to break wave energy, and to anchor future beach nourishment, will accomplish that.

Disposal of your beach compatible sand in an off-shore berm would be a significant step in creating such an off-shore barrier.

If you have any questions, please call me at (310) 570-3130.

DE:de

c: Ralph S. Cryder, Director of Parks, Recreation & Marine
Phil Hester, Manager of Parks
Mark Sandoval, Manager of Marine Bureau
Robert Kanter, Port of Long Beach



| |
|-------------------------------|
| EXHIBIT NO. 17 |
| APPLICATION NO. |
| 5-96-231 |
| California Coastal Commission |

