

CALIFORNIA COASTAL COMMISSION

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Hearing Date: Jan. 8, 1997
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.

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 1996, December 1996, and January 1997 permit analyses. 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

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-146-96, scheduled for Commission action at the Commission's January 8, 1997, meeting.

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 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

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-146-96 (Port of Long Beach) on the Commission's January 8, 1997, 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 January 1997 (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

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.

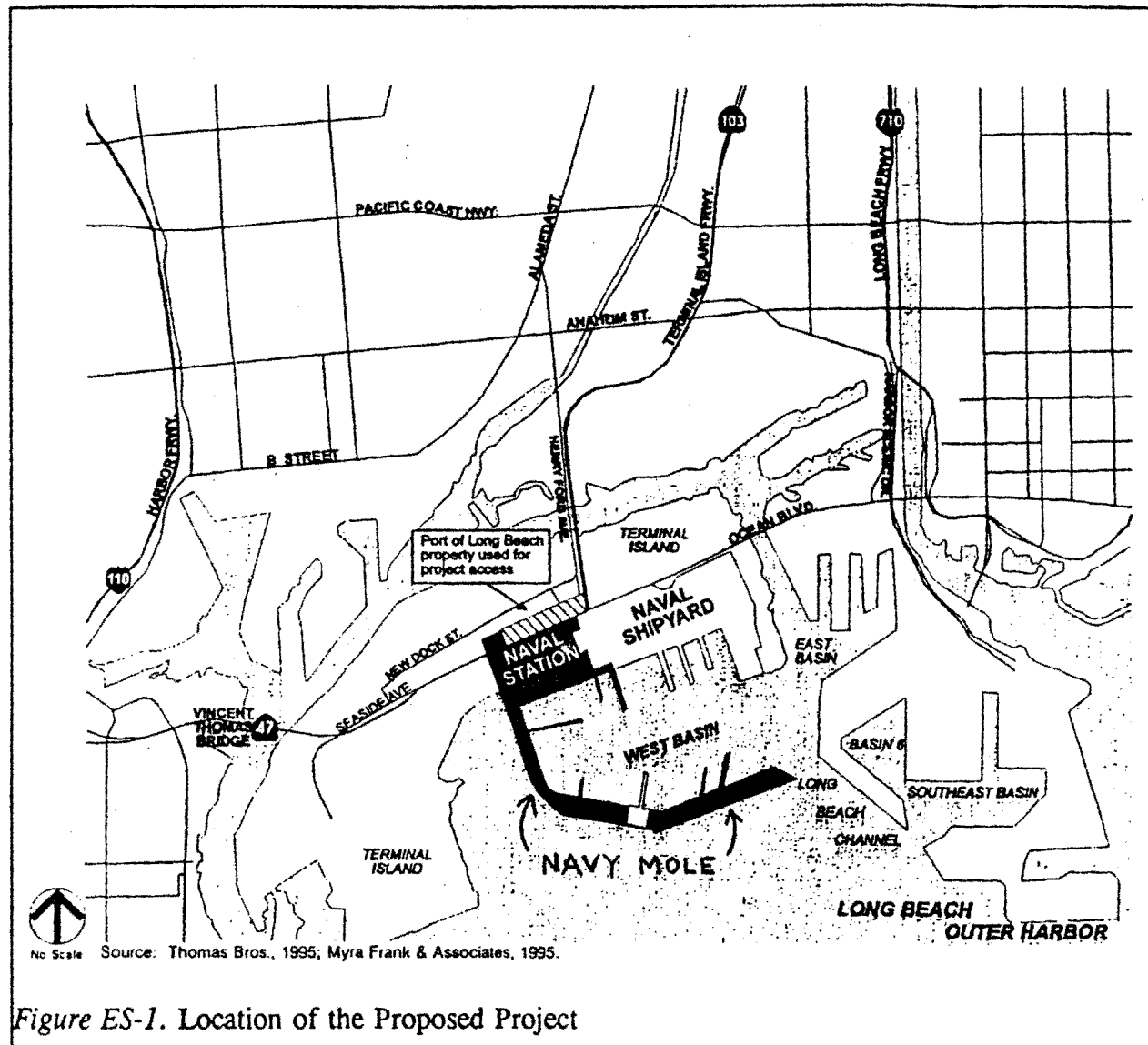
The CAD site approved by the Commission in 1995 at the Port of Los Angeles' permanent shallow water habitat area inside the San Pedro Breakwater was constructed according to project plans reviewed and approved by federal and state resource and regulatory agencies, and extensive monitoring (similar to 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

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.



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

WHARF CUT TOP OF SLOPE
(UPLAND EXCAVATION)

LIMIT OF
EXISTING SHALLOW
WATER HABITAT

WHARF CUT TOP OF SLOPE (DREDGING)

APPROX. TOP OF
DREDGE SLOPE
(3H : 1V TYP.)

MARINA

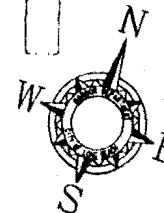
WEST BASIN

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. **kpti** Consulting Engineers

0 350 700
FEET

EXIST -51.0
CONTOUR



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, 196

EXHIBIT NO. 4
APPLICATION NO.

S-96-231

700' NAVIGABLE WIDTH
PROPOSED WEST BASIN CHANNEL

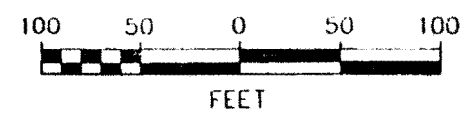
APPROX. EXIST MUDLINE

DREDGE TO -51.0 FT MLLW (PAY DEPTH)

1 FT OVERDREDGE
NON-PAY

(B) CHANNEL SECTION

NOTE:
ELEVATIONS REFERENCED TO MLLW



kpff Consulting Engineers

PORT OF LONG BEACH

A P.O. BOX 570 LONG BEACH CALIFORNIA 90801 TEL. (213) 637-0041

TYPICAL CHANNEL SECTION

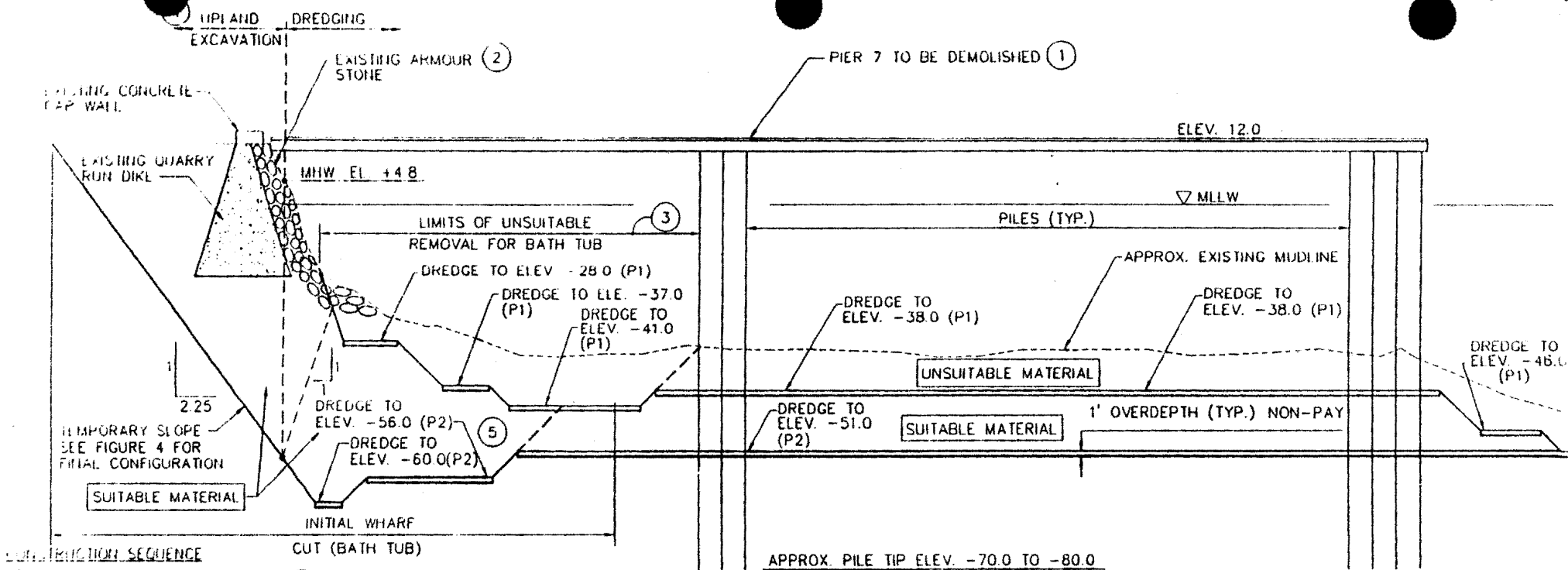
NAVAL STATION
CONTAINER TERMINAL

FIGURE 5
AUGUST 5, 1996

EXHIBIT NO. 6
APPLICATION NO.

S-96-231

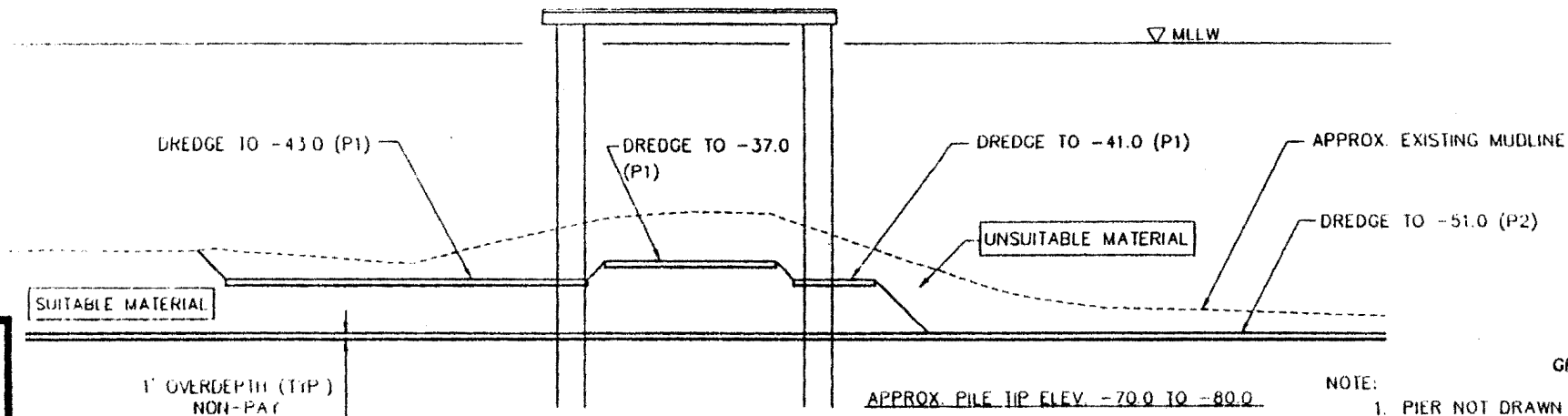
California Coastal Commission



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

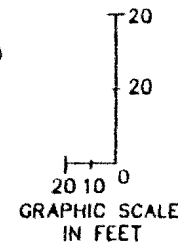


EXHIBIT NO. 8
APPLICATION NO. S-96-231

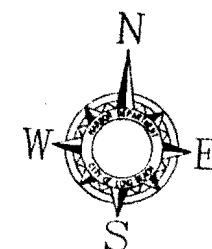
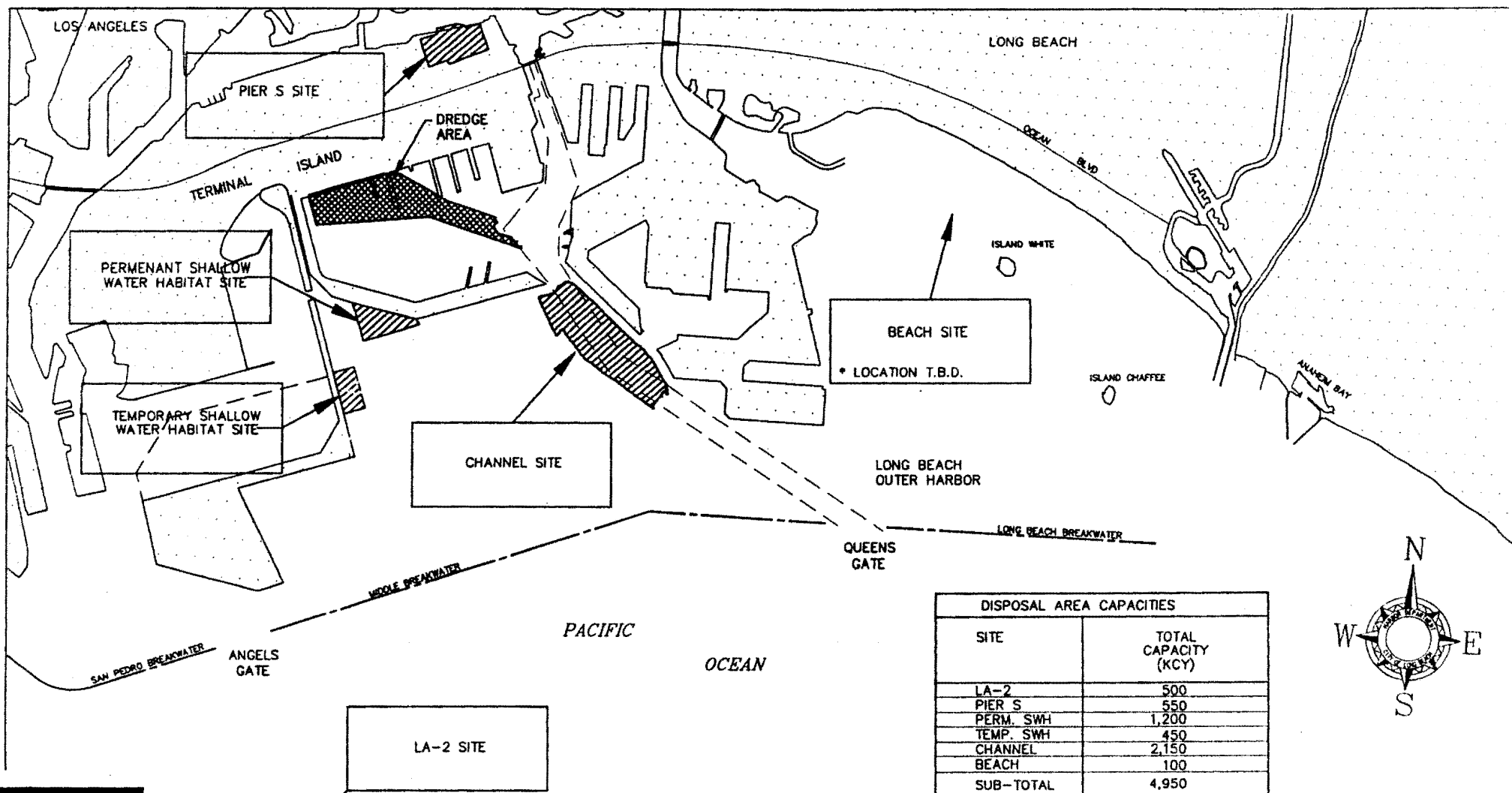
rris, Inc. **kpi** Consulting Engineers

THE PORT OF LONG BEACH

TYPICAL SECTIONS PIER 7

NAVAL STATION
CONTAINER TERMINAL

FIGURE 7
AUG. 5, 1996



NOTES:

1. CAPACITIES INCLUDE ALLOWANCE FOR BULKING.

8 MILES
OFFSHORE

INC. **kpti** Consulting Engineers

PORT OF LONG BEACH

1424 P.O. BOX 970 LONG BEACH CALIFORNIA 90801 TEL. (213) 437-0041

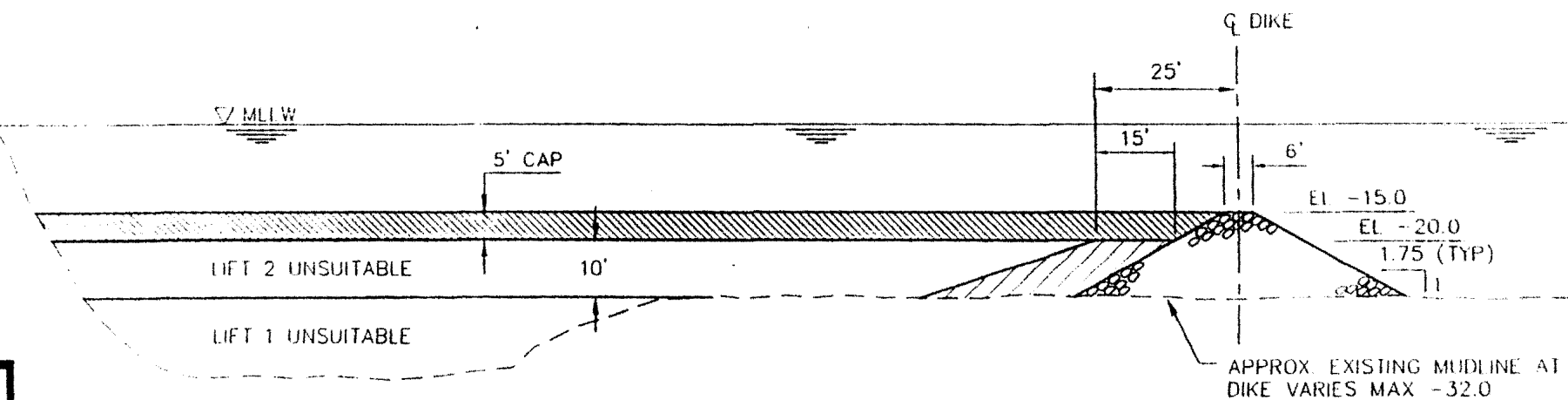
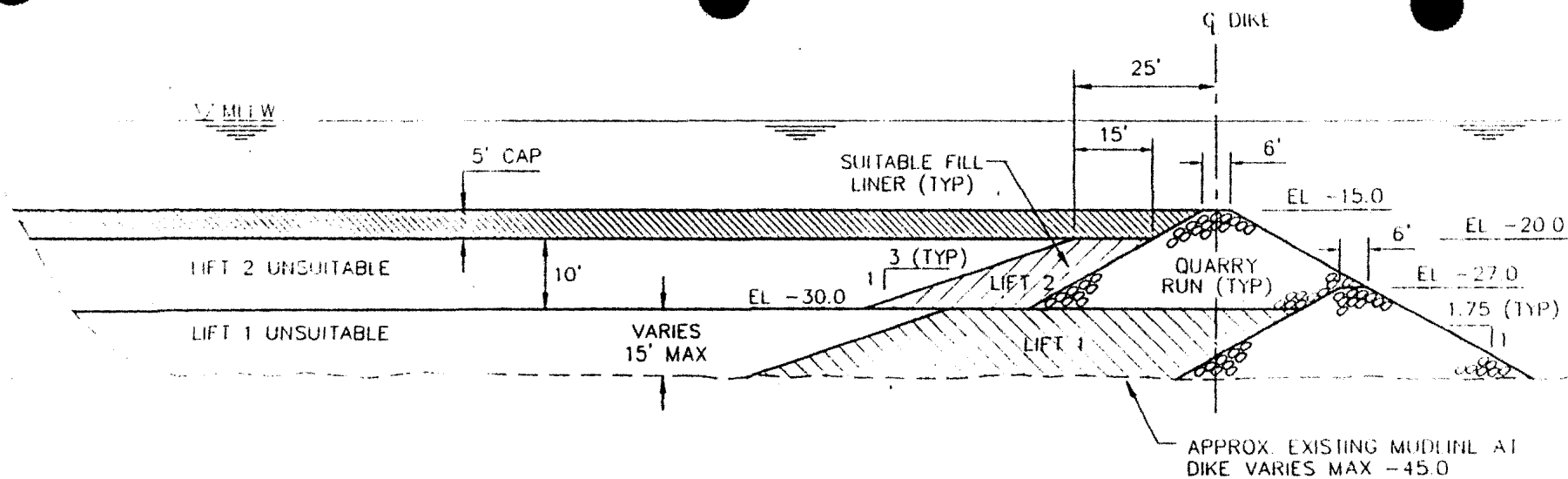
DISPOSAL SITES AND QUANTITIES

NAVAL STATION
CONTAINER TERMINAL

FIGURE 3
NOV. 18, 1996

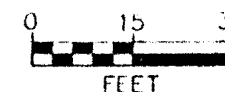
EXHIBIT NO. 10
APPLICATION NO.

S-96-231



NOTE:

ELEVATIONS REFERENCED TO MLLW



k p f f Consulting Engineers

PORT OF LONG BEACH

PERMANENT SHALLOW
WATER HABITAT SECTIONS

NAVAL STATION
CONTAINER TERMINAL

FIGURE 10
AUGUST 5, 1996

EXHIBIT NO. 1
APPLICATION NO.

S-96-231

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

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

14

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).

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.

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.

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

ANALYTE	Cu	Pb	Hg	Zn	Tins	PAH	DDT	PCB
AREA	(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. 15

APPLICATION NO.

S-96-231

Mr. Robert Kanter, Port of Long Beach

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Mailing List

Bill Campbell, Non-point Source Loan Unit, SWRCB
Larry Simon, California Coastal Commission (San Francisco)
Dick Nitsos, California Department of Fish and Game (Long Beach)
Fari Tabatabai, U.S. Corps of Engineers (Los Angeles)
Brian Ross, U.S. Environmental Protection Agency (San Francisco, W-3-3)
Steve John, U.S. Environmental Protection Agency (Los Angeles)
Martin Kenney, U.S. Fish and Wildlife Service (Carlsbad)
Robert Hoffman, National Marine Fisheries Service (Long Beach)
Mark Gold, Heal the Bay
Tom Johnson, Port of Long Beach

Main Channel; (v) a beach front for beach replenishment within the City of Long Beach; and (vi) the U.S. EPA's "LA-2" ocean disposal site.

The Port proposes to dispose of the dredged sediments and excavated soil and rock as follows:

<u>Disposal Site</u> <u>(Latitude &</u> <u>Longitude)</u>	<u>Volume and Nature of</u> <u>Material for Disposal</u>
Pier S Upland Site (33° 46.0'; 118° 13.6')	550,000 cubic yards (100,000 cu. yd. uncontaminated sediment) (450,000 cu. yd. uncontaminated soil and rocks)
Permanent Shallow Water Habitat (33° 44.4'; 118° 14.4')	1,220,000 cubic yards (490,000 cu.yd. uncontaminated sediment) (730,000 cu.yd. contaminated sediment)
Temporary Shallow Water Habitat (33° 44.0'; 118° 14.2')	450,000 cubic yards (uncontaminated sediment)
Main Channel & Borrow Pit (33° 44.5'; 118° 13.0')	1,417,000 cubic yards (uncontaminated sediment)
Beach Replenishment	100,000 cubic yards (uncontaminated sediment)
LA-2 Ocean Disposal Site (33° 37.1'; 118° 17.4')	410,000 cubic yards (uncontaminated sediment)
<hr/>	
TOTAL	4,147,000 cubic yards (2,967,000 cu.yd. uncontaminated sediment) (730,000 cu.yd. contaminated sediment) (450,000 cu.yd. uncontaminated soil and rocks)

replace the existing shallow water habitat which will be eliminated by the proposed terminal development project. Upon completion of the proposed project, this temporary habitat will be removed and the site will be returned to its current condition. The uncontaminated sediment from the temporary shallow water habitat will be removed and utilized for beneficial reuse.

9. The Port proposes to dispose of 1,417,000 cubic yards of uncontaminated sediments into the main navigation channel and a 10-acre pit immediately west of the Long Beach Main Channel. This would restore the bottom depth from -95 feet MLLW to the -76 feet MLLW design depth for the shipping channel.
10. The Port proposes to dispose of up to 100,000 cubic yards of non-contaminated sediments to local beaches in the City of Long Beach for beach replenishment. These sediments will be dredged from deeper layers of the dredged area. This disposal method would only be utilized for medium-grained sand which would be compatible with local beaches.
11. The Port proposes to dispose of 410,000 cubic yards of non-contaminated sediment at the U.S. EPA's "LA-2" ocean disposal site. The U.S. EPA has indicated concurrence with the suitability of this material for disposal at this site.
12. The U.S. Department of the Navy is seeking final approval from State and Federal agencies for a closure plan for the Long Beach Naval Station. Although the Port proposes to dredge contaminated sediments in the vicinity of the Naval Station, this project is not part of the closure plan. The Navy may be required to dredge additional material or perform other remedial measures as part of the closure plan for the Naval Station.
13. The Regional Board adopted a revised Water Quality Control Plan for the Long Beach River Basin on June 13, 1994. The Water Quality Control Plan contains water quality objectives for the Los Angeles-Long Beach Harbor. The requirements contained in this Order as they are met will be in conformance with the goals of the Water Quality Control Plan.
14. The beneficial uses of the inner harbor waters are: industrial service supply, navigation, water contact recreation (potential use), non-contact water recreation, commercial and sport fishing, marine habitat, preservation of rare and endangered species, and shellfish harvesting (potential use). The beneficial uses of the outer harbor waters are: navigation, water contact recreation, non-contact

2. Enclosed bay and estuarine communities and populations, including vertebrate, invertebrate and plant species, shall not be degraded as a result of the discharge of waste.
4. The natural taste and odor of fish, shellfish or other enclosed bay and estuarine resources used for human consumption shall not be impaired as a result of the discharge of waste.
5. Toxic pollutants shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.
6. There shall be no acute toxicity or chronic toxicity in ambient waters as a result of the discharge of waste.
7. Dredging or disposal of dredge spoils shall not cause any of the following conditions in the receiving waters:
 - a. The formation of sludge banks or deposits of waste origin that would adversely affect the composition of the bottom fauna and flora, interfere with the fish propagation or deleteriously affect their habitat, or adversely change the physical or chemical nature of the bottom.
 - b. Turbidity that would cause substantial visible contrast with the natural appearance of the water outside the immediate area of operation.
 - c. Discoloration outside the immediate area of operation.
 - d. Visible material, including oil and grease, either floating on or suspended in the water or deposited on beaches, shores, or channel structures outside the immediate area of operation.
 - e. Objectionable odors emanating from the water surface.
 - f. Depression of dissolved oxygen concentrations below 5.0 mg/L at any time outside the immediate area of operation.
 - g. Any condition of pollution or nuisance.

F. Requirements for Main Channel and Borrow Pit

There shall be no contaminated dredge material disposed of at any time at this site.

G. Provisions

1. The above specifications are valid only for dredging and disposal of bottom material as proposed.
2. The discharger shall notify this Board immediately by telephone of any adverse conditions in receiving waters or adjacent areas resulting from the removal or filling of dredge materials; written confirmation shall follow within one week.
3. The discharger shall be responsible for any repairs or other measures required to maintain or restore the designated dimensions or other characteristics at the disposal sites. Any required repairs or other measures shall be implemented as expeditiously as possible.
4. A copy of this Order shall be made available at all times to project construction personnel.
5. The discharger shall provide the following information to the Board:
 - a. A copy of the final Department of the Army permit issued for the dredge and disposal operations.
 - b. The scheduled date of commencement of each dredging operation and an engineering plan and profile of the excavation and the disposal site, at least two weeks prior to commencement.
 - c. Notice of termination of the operation, within one week following the termination date.
6. The discharger shall submit, under penalty of perjury, technical reports to the Board in accordance with specifications prepared by the Executive Officer.
7. In accordance with Section 13260(c) of the Water Code, the discharger shall file a report of any material change or proposed change in the character, location, or volume of the waste.

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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.

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:

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- 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

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:

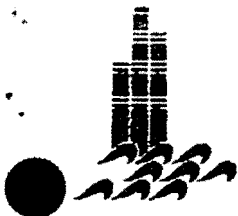
All analyses were conducted at a laboratory certified for such analyses by the State Water Resources Control Board or approved by the Executive Officer and in accordance with current EPA guidelines or as specified in the Monitoring Program.

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;



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



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EXHIBIT NO. 17

APPLICATION NO.

5-96-231