



PUBLIC NOTICE

US Army Corps
of Engineers
New York District
Jacob K. Javits Federal Building
New York, N.Y. 10278-0090
ATTN: Regulatory Branch

In replying refer to:

Public Notice Number: NAN-2005-25-WCA
Issue Date: **April 24, 2007**
Expiration Date: **May 25, 2007**

To Whom It May Concern:

The New York District of the US Army Corps of Engineers has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), Section 404 of the Clean Water Act (33 USC. 1344) and Section 103 of the Marine Protection, Research & Sanctuaries Act of 1972, as amended (33 USC 1413).

APPLICANT: Global Terminal and Container Services, Inc.
302 Port Jersey Boulevard
Jersey City, New Jersey 07305

ACTIVITY: Extend existing wharf for additional berth at the Global Marine Terminal by extending the existing relieving platform structure eastward along the shoreline including the placement of quarry rock rip-rap and armor stone to stabilize the shoreline under the platform. Perform new-work dredging channelward of the wharf with subsequent placement of appropriate dredged material as Remediation Material at the Historic Area Remediation Site (HARS) in the Atlantic Ocean.

WATERWAY: Port Jersey Channel off Upper New York Harbor

LOCATION: City of Bayonne, Hudson County, New Jersey.

A detailed description of the proposed work and drawings of the applicant's proposed activity are enclosed to assist in your review.

The decision whether to issue a Department of the Army permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits that reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general the needs and welfare of the people. This activity is also being evaluated to determine that the proposed placement of dredged material will not unreasonably degrade or endanger human health, welfare or amenities, the marine environment, ecological systems or economic potentialities. The decision of whether to issue a Department of the Army Permit for placement of dredged materials as Remediation Materials at the

Historic Area Remediation Site (HARS) in the Atlantic Ocean will also be based on whether the material meets the requirements of applicable implementing regulations. This activity is also being evaluated to determine that the proposed placement of dredged material will not unreasonably degrade or endanger human health, welfare or amenities, the marine environment, ecological systems or economic potentialities.

The US Army Corps of Engineers neither favors nor opposes permit issuance for the applicant's proposed activity. The purpose of this public notice is to solicit comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order for the US Army Corps of Engineers to acquire information which will be considered in our evaluation of the impacts of this proposed activity. Any comments received will be considered by the US Army Corps of Engineers to determine whether to issue, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an environmental assessment and/or an environmental impact statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

On September 26, 2000, the US Environmental Protection Agency and the US Army Corps of Engineers signed a joint Memorandum of Agreement outlining the steps to be undertaken to ensure that remediation of the HARS continues in a manner appropriately protective of human health and the aquatic environment. In making the determination for evaluating placement of dredged material, the criteria established by the US Environmental Protection Agency will be applied, including the interim change to one matrix value for polychlorinated biphenyls (PCB's) as described in the joint Memorandum of Agreement. In addition, based upon an evaluation of the potential effect which the failure to utilize this ocean site will have on navigation, economic, and industrial development, and foreign and domestic commerce of the United States, an independent determination will be made regarding the need to place the dredged material in ocean waters, other possible methods of disposal, and other appropriate locations.

ALL COMMENTS REGARDING THE PERMIT APPLICATION MUST BE PREPARED IN WRITING AND MAILED TO REACH THIS OFFICE BEFORE THE EXPIRATION DATE OF THIS NOTICE, otherwise, it will be presumed that there are no objections to the activity.

Any person may request, in writing, before this public notice expires, that a public hearing be held to collect information necessary to consider this application. Requests for public hearings shall state, with particularity, the reasons why a public hearing should be held. It should be noted that information submitted by mail is considered just as carefully in the permit decision process and bears the same weight as that furnished at a public hearing.

The proposed project was reviewed based upon the "Biological Assessment for the Closure of the Mud Dump Site and Designation of the HARS in the New York Bight and Apex," (USEPA, 1997). Based upon this review, and a review of the latest public listing of threatened and endangered species, it has been preliminarily determined that the proposed placement activities for which authorization is sought herein, are not likely to adversely affect the following federally threatened or endangered species (humpback whales, finback whales, right whales, loggerhead turtles, leatherback turtles, green turtles, and Kemp's ridley turtles), or their critical habitat pursuant to

Section 7 of the Endangered Species Act (ESA; 16 USC 1531). It is our preliminary determination that the dredging activities in the Upper New York Harbor are not likely to affect the shortnose sturgeon (*Acipenser brevirostrum*) or its critical habitat. The US Army Corps of Engineers New York District Regulatory (Permits) Branch is currently conducting informal consultations with the National Marine Fisheries Service in accordance with Section 7 of the Endangered Species Act. Those consultations will be completed before a final permit decision is made.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). Information regarding the proposed work that would be undertaken is given in the attached Description of Proposed Work. A preliminary review of the proposal and information submitted by the applicant indicates that the overall potential impact on Essential Fish Habitat for designated species would include the loss of subtidal and intertidal shallows due to the proposed filling. Among the list of Essential Fish Habitat (EFH) designated species known to occur in this portion of New York Harbor, the most likely species to be impacted would be spawning, early-life stage development (nursery), juvenile and adult winter flounder and windowpane flounder. The primary effects on EFH and EFH-managed species would be from the loss of habitat due to fill, and a temporary increase in turbidity due to dredging and the disruption of demersal and pelagic habitat. Upland beneficial reuse of dredged materials would not have any effect on Essential Fish Habitat (EFH).

Impacts to Essential Fish Habitat (EFH) species at the Historic Area Remediation Site (HARS) would most likely emanate from the settling of the dredged material for remediation through the water column to the bottom. These events would also be short-lived and be episodic in nature over the several months the proposed placement at the HARS would take. The overall potential impact for all the work proposed at the HARS on Essential Fish Habitat (EFH) for designated species is small because of the temporary nature of the disturbance, the low abundance of most species for which this region is designated as Essential Fish Habitat (EFH), and the apparent lack of viable existing conditions.

Based upon the foregoing, the US Army Corps of Engineers New York District Regulatory (Permits) Branch has made the preliminary determination that the site-specific adverse effects from the fill activities would require mitigation. Consultation with the National Marine Fisheries Service regarding Essential Fish Habitat (EFH) impacts and conservation recommendations is being conducted and will be concluded prior to a final permit decision.

Based upon a review of the latest published version of the National Register of Historic Places, the only known wrecks on or eligible for inclusion on the National Register are two located in Primary Remediation Area Number 1 of the HARS. As noted in the designation of the HARS, dredged material for remediation will not be allowed to be placed within 0.27 nautical miles of the identified wrecks or other wrecks that might be found. Otherwise, there are no known sites eligible for, or included in, the National Register within the proposed permit area.

Reviews of the activity pursuant to Section 404 of the Clean Water Act will include application of the guidelines announced by the Administrator, US Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. The applicant will obtain a water quality certificate or waiver from the appropriate state agency in accordance with Section 401 of the Clean Water Act prior to any final permit decision.

Pursuant to Section 307(c) of the Coastal Zone Management Act of 1972 as amended [16 USC 1456(c)], for activities under consideration that are located within the coastal zone of a state which has a federally approved coastal zone management program, the applicant is responsible for ensuring that the proposed activities are undertaken in a manner that is consistent with, to the maximum extent practicable, the approved state coastal zone management program. By this public notice, we are requesting the state's views on the consistency of this project with the State's approved CZM Program. For activities within the coastal zone of the State of New Jersey, the applicant's certification and accompanying information is available from the New Jersey Department of Environmental Protection, Bureau of Coastal Regulation, CN 401, 501 East State Street, Second Floor, Trenton, New Jersey 08625-0401, Telephone Number (609) 633-2289. Comments regarding the applicant's certification and copies of any letters addressed to this office commenting on this proposal should be so addressed.

In addition to any required water quality certificate and coastal zone management program concurrence, the applicant has obtained or requested the following governmental authorization for the proposed activity under consideration from the State of New Jersey Department of Environmental Protection:

Waterfront Development Permit

It is requested that you communicate the foregoing information concerning this activity to any persons known by you to be interested and who did not receive a copy of this notice.

If you have any questions concerning this permit application, you may contact this office by telephone at 917-790-8412 and ask for Mr. James Cannon. Comments or questions may also be FAXED to 212-264-4260, ATTN: Mr. James Cannon.

Questions about the Historic Area Remediation Site (HARS) can be addressed to Mr. Douglas Pabst, Team Leader, Dredged Material Management Team, US Environmental Protection Agency Region 2 at 212-637-3797.

For more information on the US Army Corps of Engineers New York District programs, please visit our website at <http://www.nan.usace.army.mil>



Richard L. Tomer
Chief, Regulatory Branch

Enclosures

DESCRIPTION OF PROPOSED WORK

The permit applicant, Global Terminal and Container Services, Inc., is requesting a Department of the Army permit to construct a wharf extension and perform new-work dredging in front of the extended wharf to create an additional fifty-foot deep-draft ship berth at their Global Marine Terminal on the Port Jersey Channel, off of Upper New York Harbor, in the City of Bayonne, Hudson County, New Jersey to continue to serve the growing world-wide fleet of larger ocean-going container ships.

The permit applicant's stated purpose for the regulated work within their proposed project is to construct an additional deep-draft container ship berth to safely and economically accommodate predicted industry trends for ever-larger cargo vessels in the world-wide fleet for the continued viability of operations at Global Terminal Container Services.

Proposed Relieving Platform Extension Construction Activities

The permit applicant proposes to extend the existing wharf's concrete and steel relieving platform structure eastward approximately 878 feet along the shoreline from their existing 1806-foot wharf. The extended structure would not extend any farther channelward than the face of the existing wharf.

The proposed construction activities include dredging the ship berth and within the footprint of the new relieving platform (details on the dredging work provided below), followed by driving of foundation piles via a drilled-shafts drilling method, and / or conventional hydraulic or diesel hammer pile driving methods. The pile-supported relieving platform would extend approximately 115 feet channelward of a landside concrete cutoff-wall bulkhead. The platform would terminate in line with the current channelward limit of the existing relieving platform wharf to the west. Approximately 500 piles would be required to safely support the extended container ship wharf and cranes. Approximately 2.30 acres of regulated Waters of the United States would be shaded by the pile-supported relieving platform.

At the landward side of the relieving platform, the concrete cutoff-wall bulkhead would be installed simultaneously along with the poured reinforced concrete platform deck in order to hold back the existing upland and any new fill.

The applicant completed an alternatives analysis which evaluated construction alternatives and their associated impacts to the aquatic environment. These construction alternatives included the use of all fill material, the use of all piles, and a combination of fill material and piles to construct the relieving platform. As a result of the applicant's evaluation, the applicant reports that although the use of all piles would not involve a discharge of fill, an all pile supported relieving platform would not necessarily benefit the aquatic environment as the number of piles needed to support the relieving platform would likely prohibit its usage by the aquatic environment, specifically in the area close to the shoreline, leaving only the outer edge of the relieving platform as a beneficial use to the aquatic environment. Therefore, the applicant determined that their proposed preferred alternative consisting of a discharge of fill material in

combination with the installation of piles to facilitate the construction of a relief platform would provide the least environmental impact to the aquatic environment while maintaining the viability of the project.

Approximately 1.12 acres of regulated Waters of the United States would be filled with select construction fill material and permanently lost because of the straightening of this irregularly-shaped shoreline during the extended-wharf construction. This 1.12 acre area consists of 0.85 acres of intertidal/subtidal shallows and 0.27 acres of open water. Included in the 48,500 cubic yards of fill material is also all the quarry rock fill material and armor stone fill material that would be placed along the shoreline to stabilize and protect the slope underneath the pile-supported relieving platform.

The permit applicant proposes to purchase 1.12 acre-credits at a wetlands mitigation bank to compensate for the 1.12 acres of permanent loss of Waters of the United States.

Proposed Construction Activities Over The Existing Passaic Valley Sewerage Commissioners' Outfall Tunnel

The Passaic Valley Sewerage Commissioners (PVSC) operate and maintain an approximately 12-foot diameter sewer outfall tunnel directly beneath the proposed extended wharf's relieving platform and dredging area. The nearly 100-year-old sewer outfall tunnel is shown on the attached permit applicant's drawings. The permit applicant reports the tunnel had been located based on plans provided to them by the Passaic Valley Sewerage Commissioners and confirmed by various independent surveying techniques.

The extended wharf platform would extend across the tunnel at approximately a 30-degree angle as shown on the attached permit application drawings. The permit applicant reports that they will use construction techniques in the vicinity of the tunnel to avoid damaging the tunnel during the relieving platform's foundation construction, shoreline protection stone and rock placement, and all the dredging. As shown on attached permit application drawing 10, the permit application would bridge the relieving platform across the tunnel area by strengthening the platform's reinforced concrete deck so that foundation piles do not have to be driven into the earth within ninety-seven feet of the centerline of the tunnel.

The permit applicant reports methods such as drilled pile placement would be utilized for foundation piles driven in the vicinity of the tunnel. The permit applicant reports the area surrounding the tunnel would be monitored during construction to minimize potential vibration impacts from drilling and foundation construction activities, shoreline protection stone and rock placement, and dredging.

Proposed Dredging and Dredged Material Placement Construction Activities

The permit applicant requests permission to remove approximately 118,000 cubic yards of dredged materials to construct the extended wharf and to create a 928-foot-long by 154-foot-wide (measured from the face of the new wharf) deep-draft ship berth to a dredged depth of -50 feet, with allowable additional overdepth dredging of 1 foot to assure the 50-foot berth for a total maximum depth of -51 feet Mean Low Water Datum.

At the existing waterway bottom, approximately 31,000 cubic yards of the approximately 118,000 cubic yards of proposed dredged material is a Holocene silt material and would be dredged with an environmental clamshell bucket dredge and then processed with Portland cement. The processed dredged material would then be beneficially used at a State-approved upland placement site. All channel water associated with the filling of the transportation barges with the Holocene silt material would be held in a separate water-tight decant barge to allow sediment settling for a minimum twenty-four-hour period prior to discharging the decanted channel water back into to the Port Jersey Channel waterway within the dredging area.

The proposed dredging operation would first utilize an environmental clamshell bucket dredge to remove the approximately 31,000 cubic yards of Holocene silt material. The environmental clamshell bucket would be used to the point of refusal over the entire dredging footprint in order to remove all existing Holocene silt material.

The under-lying remaining 87,000 cubic yards of proposed dredged material consists of Pleistocene glacial till. This harder Pleistocene glacial till would be dredged by a stronger barge-mounted mechanical excavator back-hoe bucket dredge. The dredged material would be transported by ocean-certified bottom-opening barges for placement in the Atlantic Ocean at the Historic Area Remediation Site (HARS) as material for remediation.

Introduction to the Historic Area Remediation Site (HARS):

In 1972, Congress enacted the Marine Protection Research and Sanctuaries Act (MPRSA) to address and control the dumping of materials into ocean waters. Title I of the Act authorized the US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE) to regulate dumping in ocean waters. The USEPA and the USACE share responsibility for the MPRSA permitting and ocean disposal site management. The USEPA regulations implementing the MPRSA are found at 40 CFR Sections 220 through 229. With few exceptions, the MPRSA prohibits the transportation of material from the United States for the purpose of ocean dumping except as may be authorized by a permit issued under the MPRSA. The MPRSA divides permitting responsibility between the USEPA and the USACE. Under Section 102 of the MPRSA, the USEPA has responsibility for issuing permits for all materials other than dredged material. Under Section 103 of the MPRSA, the Secretary of the Army has the responsibility for issuing permits for dredged material, subject to the USEPA's concurrence.

In the fall of 1997, the USEPA de-designated and terminated the use of the New York Bight Dredged Material Disposal Site (commonly known as the Mud Dump Site or MDS). The Mud Dump Site (MDS) had been designated in 1984 for the disposal of up to 100 million cubic yards of dredged material from navigation channels and other port facilities within the Port of New York and New Jersey. Simultaneous with the closure of the Mud Dump Site (MDS), the site and surrounding areas that had been used historically as disposal sites for dredged materials were redesignated as the Historic Area Remediation Site (HARS) (Figures 12 & 13) under authority of Section 102[c] of Marine Protection, Research, and Sanctuaries Act (MPRSA) at 40 CFR

Sections 228.15(d)(6) (See 62 Fed. Reg. 46142 (August 29, 1997); 62 Fed. Reg. 26267 (May 13, 1997)). The Historic Area Remediation Site (HARS) will be managed to reduce impacts of historical disposal activities at the site to acceptable levels in accordance with 40 CFR Sections 228.11(c). The need to remediate the Historic Area Remediation Site (HARS) is supported by

the presence of toxic effects, dioxin bioaccumulation exceeding Category 1 levels in worm tissue, as well as TCDD/PCB contamination in area lobster stocks. Individual elements of those data do not establish that sediments within the Study Area are imminent hazards to the New York Bight Apex ecosystem, living resources, or human health. However, the collective evidence presents cause for concern, and justifies the need for remediation. Further information on the surveys performed and the conditions in the Historic Area Remediation Site (HARS) Study Area may be found in the Supplemental Environmental Impact Statement (US Environmental Protection Agency Region 2, 1997).

The designation of the Historic Area Remediation Site (HARS) identifies an area in and around the former Mud Dump Site (MDS) that has exhibited the potential for adverse ecological impacts. The Historic Area Remediation Site (HARS) will be remediated with dredged material that meets current Category 1 standards and it will not cause significant undesirable effects including through bioaccumulation or unacceptable toxicity, in accordance with 40 CFR 227.6.

This dredged material is referred to as "Material for Historic Area Remediation Site (HARS) Remediation" or "Historic Area Remediation Site (HARS) Remediation Material".

As of the end of March 2007, dredged materials from fifty-one different completed and ongoing private and federal dredging projects in the Port of New York and New Jersey have been dredged and placed as Remediation Material in the ocean at the HARS since the closure of the Mud Dump Site and designation of the HARS in 1997. This represents approximately 31,195,000 cubic yards of Remediation Material.

The Historic Area Remediation Site (HARS), which includes the 2.2 square nautical mile area of the former Mud Dump Site (MDS), is an approximately 15.7 square nautical mile area located approximately 3.5 nautical miles east of Highlands, New Jersey and 7.7 nautical miles south of Rockaway, New York. The former Mud Dump Site (MDS) is located approximately 5.3 nautical miles east of Highlands, New Jersey and 9.6 nautical miles south of Rockaway, New York. When determined by bathymetry that capping is complete, the US Environmental Protection Agency will undertake any necessary rulemaking to de-designate the Historic Area Remediation Site (HARS). The Historic Area Remediation Site (HARS) includes the following three areas:

Priority Remediation Area (PRA): A 9.0 square nautical mile area to be remediated with at least 1 meter of Remediation Material. The Priority Remediation Area (PRA) encompasses an area of degraded sediments as described in greater detail in the SEIS.

Buffer Zone: An approximately 5.7 square nautical mile area. It is a 0.27 nautical mile wide band around the Priority Remediation Area (PRA) in which no placement of the Material for Remediation will be allowed, but which may receive Material for Remediation that incidentally spreads out of the Priority Remediation Area (PRA).

No Discharge Zone: An approximately 1.0 square nautical mile area in which no placement or incidental spread of the Material for Remediation is allowed.

To improve management and monitoring of placement activities at the Historic Area Remediation Site (HARS), electronic monitoring equipment is used on-board vessels carrying Remediation Material to the Historic Area Remediation Site (HARS). This equipment records

vessel positions and scow draft throughout the duration of each trip to the Historic Area Remediation Site (HARS) and during remediation operations. To improve communication reliability between tugs and scows, a prescribed formal communication procedure has been put in place (copies of this procedure are available upon request).

Additional information concerning the Historic Area Remediation Site (HARS) itself can be obtained from Mr. Douglas Pabst of the US Environmental Protection Agency Region 2, Dredged Material Management Team Leader, at telephone number (212) 637-3797.

HARS SUITABILITY TESTING FOR GLACIAL TILL:

In accordance with geological testing and assessment procedures set forth in the July 17, 2004 joint US Environmental Protection Agency Region 2 and US Army Corps of Engineers New York District standardized operating procedures, it has been determined that the 86,400 cubic yards Pleistocene glacial till situated within the proposed dredging footprint of the new berth area

has met the criteria for acceptability for ocean placement at the HARS as described in Sections 227.6, and 227.27 of Regulations, is Category I under Section 228.15(d)(6) as Remediation Material, without need for further site-specific testing, in accordance with the August 26, 2003 US

Environmental Protection Agency – Region 2 and US Army Corps of Engineers – New York District joint Memorandum for The Record (MFR), titled Joint Federal Position on testing Glacial till Dredged Materials from Selected Areas of New York Harbor. As such, these 86,400 cubic yards are glacial till because the material lacks detectible fossils or shells, has low organic carbon content, has a primarily red to red-brown color, is comprised of a poorly sorted layer of clay particles, silts, sands, gravels and boulders, and has a stratigraphic setting consistent with other Pleistocene age deposits in the vicinity of the Port Jersey Channel. A copy of the October 25, 2006 glacial till determination may be requested from Mr. James Cannon, manager for this permit application review process, at 917-790-8412.

Pleistocene age glacial till in the vicinity of the Port Jersey Channel was previously tested to determine suitability for use as Remediation Material at the Historic Area Remediation Site (HARS). This testing of glacial till was conducted in accordance with test protocols for ocean placement established by the US Environmental Protection Agency Region 2 and US Army Corps of Engineers New York District. Public notice of previous Pleistocene age glacial till chemical analysis, toxicity, and 28-day bioaccumulation test results for a determination of suitability for Historic Area Remediation Site (HARS) remediation purposes was provided in the US Army Corps of Engineers New York District Public Notice FP63-PJCA1-2003 issued on April 7, 2003 for the Port Jersey Channel first construction contract area. Those chemical analyses, toxicity, and 28-day bioaccumulation test results are included in this public notice (attached Tables 1-3) for informational purposes only.

ALTERNATIVES TO HARS PLACEMENT:

Regarding ocean placement of dredged material, the Ocean Dumping Regulations [Title 40 CFR Sections 227.16(b)] states that ". . . alternative methods of disposal are practicable when they are available at reasonable incremental cost and energy expenditures which need not be competitive with the costs of ocean dumping, taking into account the environmental impacts associated with

the use of alternatives to ocean dumping . . .” U.S Army Corps of Engineers New York District has evaluated the regional practicability of potential disposal alternatives in the September, 1999 Draft "Implementation Report for the Dredged Material Management Plan for the Port of New York and New Jersey." The Recommended Plan within the report addresses both the long and short term dredged material placement options in two specific timeframes, heretofore referred to as the 2010 Plan and the 2040 Plan, respectively.

The 2010 Plan relies heavily on the creation, remediation, and restoration of a variety of existing degraded or impacted habitats in the region with dredged material that would be considered unsuitable for Historic Area Remediation Site (HARS) restoration. The remaining material is treated and stabilized, as needed, and then applied to remediate degraded and potentially polluting areas such as brownfields, landfills, and abandoned strip mines. Nearly all of the options considered in the 2010 Plan have a placement cost of \$29/cubic yard or higher.

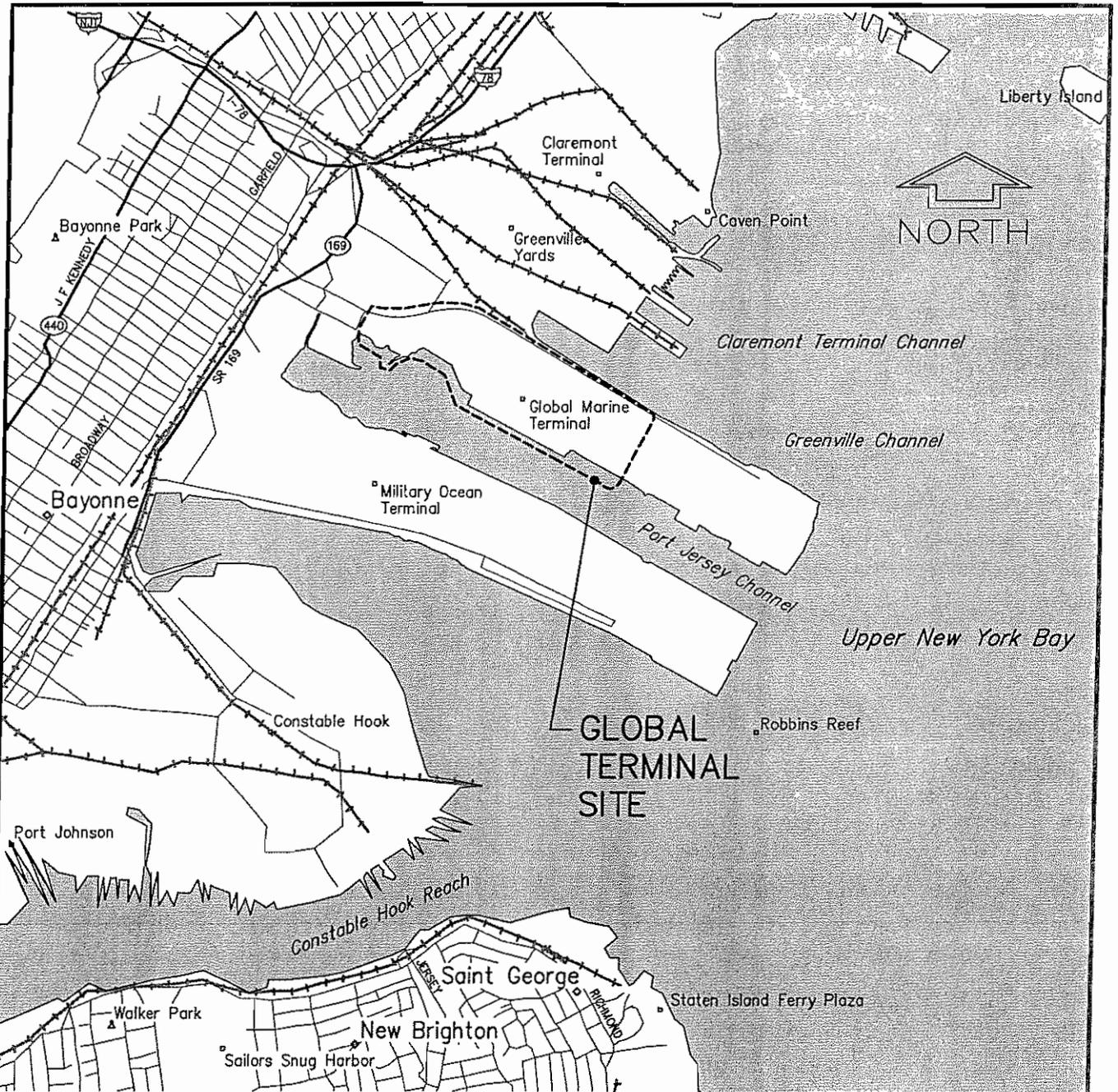
Similar to the 2010 Plan, the 2040 Plan relies heavily upon the use of land remediation and decontamination methods for the management of Historic Area Remediation Site (HARS) unsuitable dredged material. As in the 2010 Plan, maximum use of all practicable alternatives to the Historic Area Remediation Site (HARS) is envisioned.

Many of the dredged material management options presented in the 2010 Plan however, are not presently permitted and/or are presently under construction at this time and therefore considered unavailable for the purposes of this application. Other options are not available at reasonable incremental costs, thus leaving Historic Area Remediation Site (HARS) placement as material for remediation as the only other preferred alternative. For more information on the New York District Corps of Engineers programs, visit our website at <http://www.nan.usace.army.mil>.

Conclusion

The US Army Corps of Engineers New York District and the US Environmental Protection Agency Region 2 have determined that this glacial till material proposed for dredging and ocean placement from the Global Terminal and Container Services is Category I under USEPA Region 2/CENAN guidance, and is suitable for placement at the HARS under Section 228.15(d)(6) as Remediation Material, without need for further site-specific testing, in accordance with the 26 August 2003 US Environmental Protection Agency –Region 2 and US Army Corps of Engineers – New York District joint Memorandum for The Record, titled Joint Federal Position on Testing Glacial Till Dredged Materials from Selected Areas of New York Harbor.

Placement of this material at the HARS would serve to reduce impacts at the HARS to acceptable levels and improve benthic conditions. Unremediated sediments in the HARS have been found to adversely impact benthic marine organisms. Placement of project material over existing unremediated HARS sediments would serve to remediate those areas. In addition, by covering the existing sediments at the HARS with this project material, surface dwelling organisms will be exposed to sediments exhibiting Category 1 qualities, which will ameliorate the existing sediment conditions.



**GLOBAL
TERMINAL
SITE**

VICINITY MAP



FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
ADJACENT PROPERTY OWNERS:
1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
2. U.S. GOVERNMENT (BLOCK 404, LOT 1)
AGENT: WATERS, McPHERSON AND McNEIL, P.C.
PREPARED BY: DMJM Harris

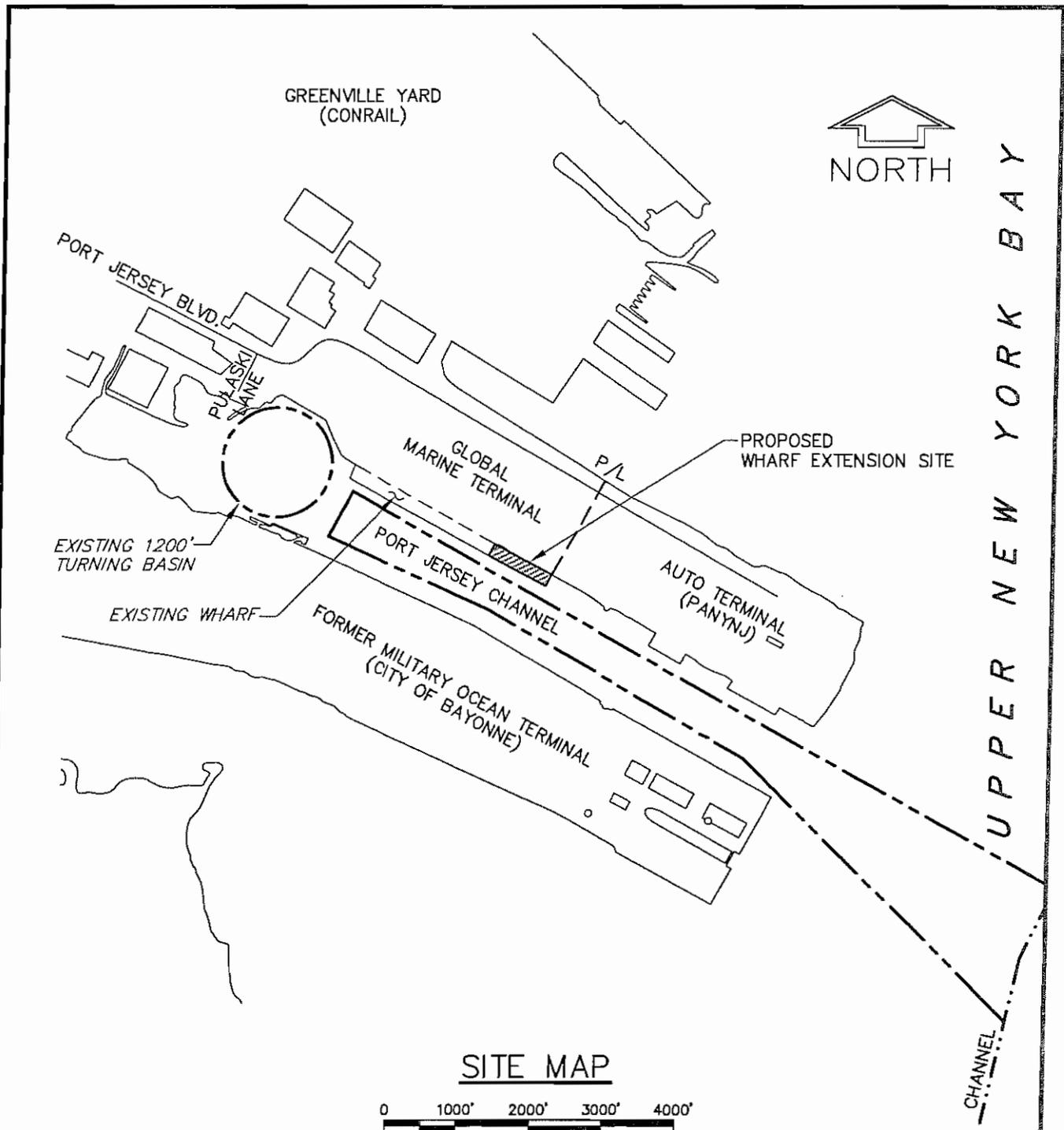
PROPOSED WHARF EXTENSION
GLOBAL MARINE TERMINAL
PORT JERSEY CHANNEL
COUNTY OF HUDSON
STATE OF NEW JERSEY
APPLICATION BY: GLOBAL MARINE TERMINAL AND
CONTAINER SERVICES

DATE: 4-18-06

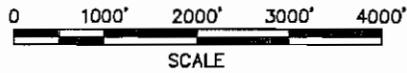
FIGURE 1

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TAKEN FROM OeLORME MAPEXPRT
WINDOWS V2.0



SITE MAP



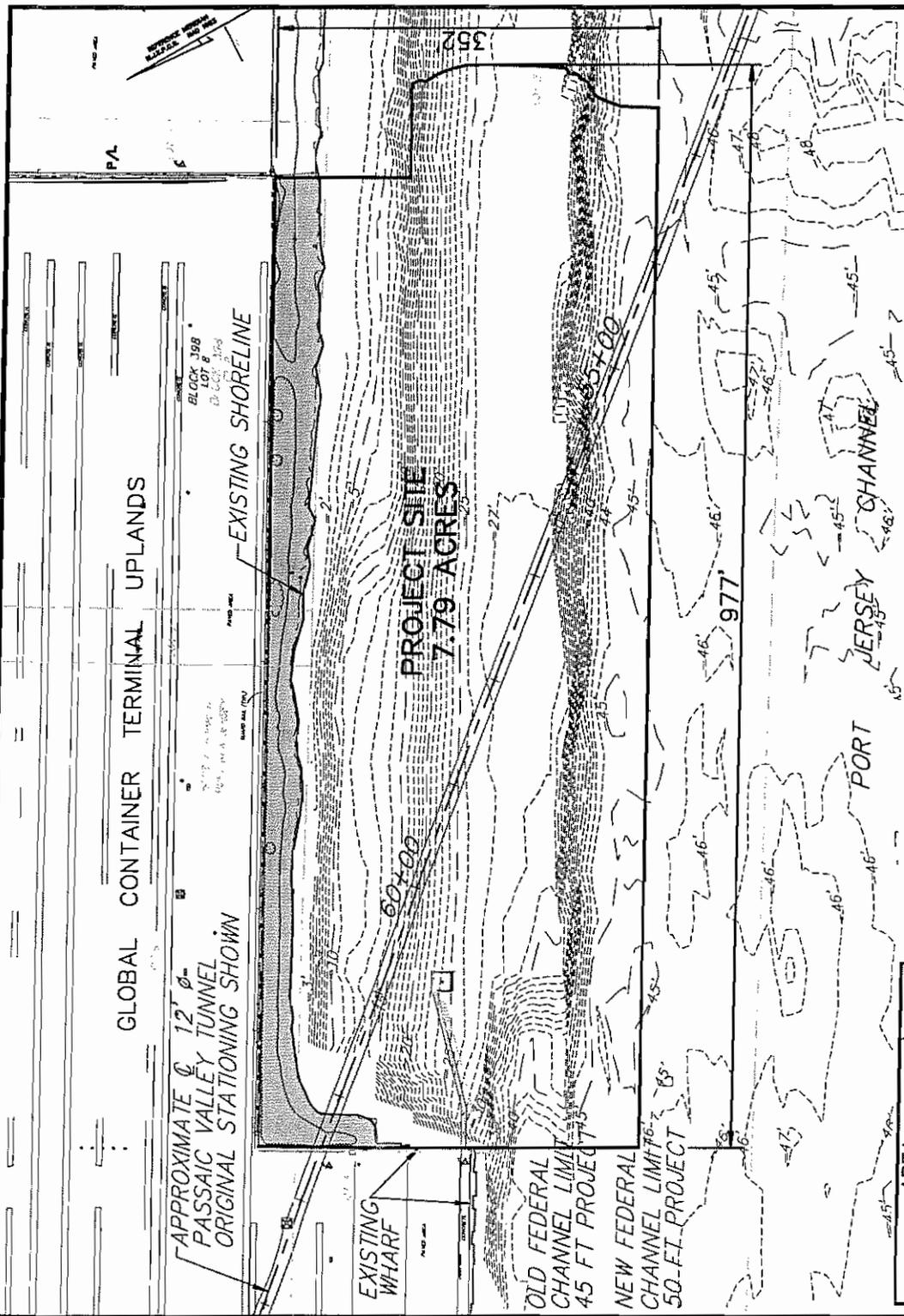
FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
ADJACENT PROPERTY OWNERS:
1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
2. U.S. GOVERNMENT (BLOCK 404, LOT 1)
AGENT: WATERS, McPHERSON AND McNEIL, P.C.
PREPARED BY: DMJM Harris

PROPOSED WHARF EXTENSION
GLOBAL MARINE TERMINAL
PORT JERSEY CHANNEL
COUNTY OF HUDSON
STATE OF NEW JERSEY
APPLICATION BY: GLOBAL MARINE TERMINAL AND
CONTAINER SERVICES
DATE: 4-18-06

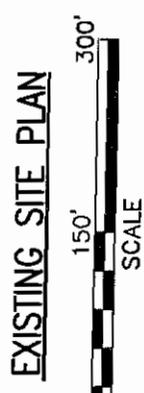
FIGURE 2

R:\5403.0003 Global CT\CADD\Marine\0003\Sheet\Permit Dwg\10-21-05\FIG 2-SITE MAP.dwg May 30, 2006 - 3:52pm



NOTE:

1. HYDROGRAPHIC SOUNDING ELEVATIONS SHOWN ARE REFERENCE TO MEAN LOW WATER.
2. HYDROGRAPHIC SURVEY FIELD WORK PERFORMED BY LGA ENGINEERING, INC. JUNE 6, 2004.



AREA	ACRES
SHORELINE EMBANKMENT	0.75
OPEN WATER	7.04
TOTAL AREA OF POTENTIAL EFFECT (APE)	7.79

FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
ADJACENT PROPERTY OWNERS:

1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
2. U.S. GOVERNMENT (BLOCK 404, LOT 1)

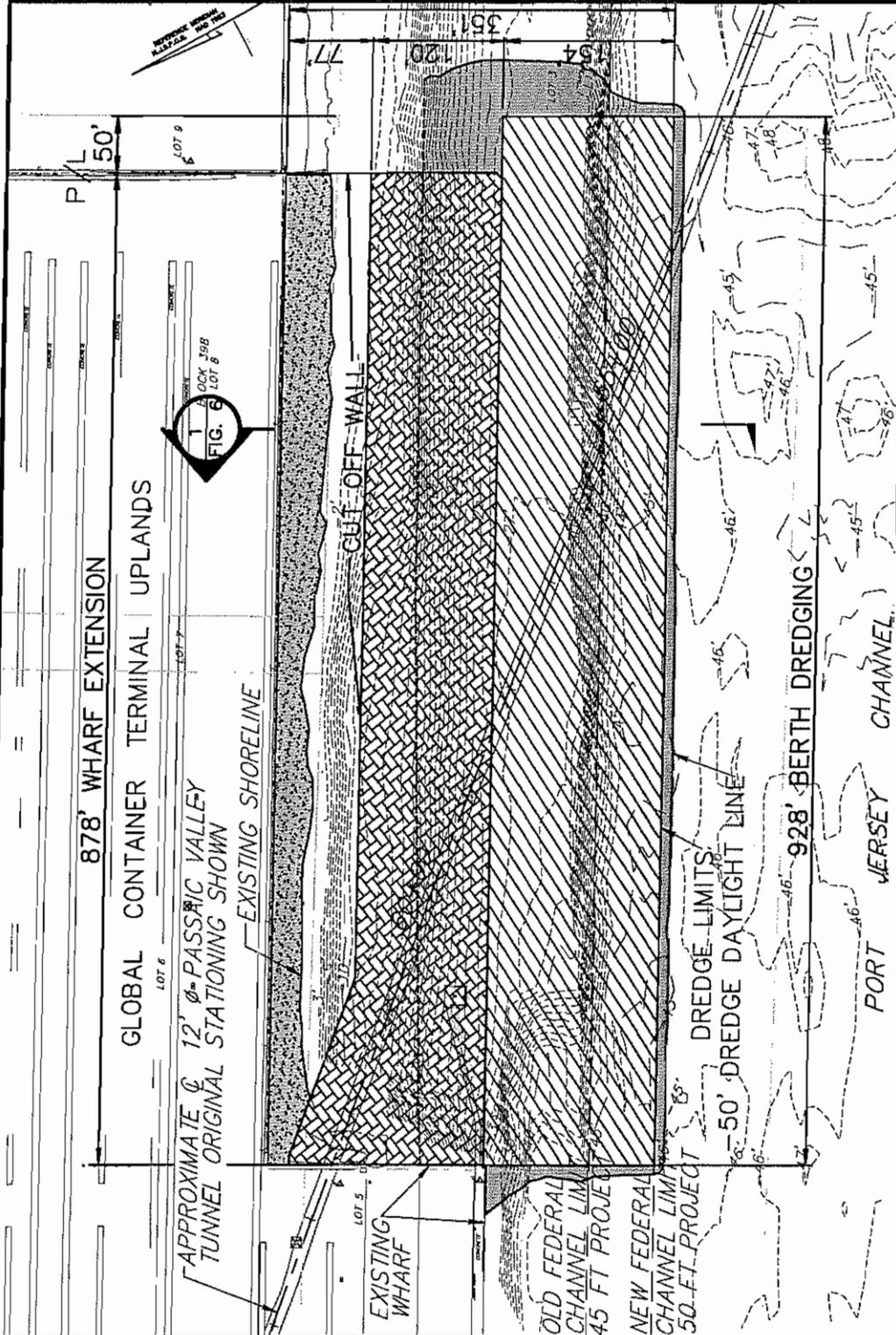
AGENT: WATERS, McPHERSON AND McNEIL, P.C.
PREPARED BY: DMJM Harris

PROPOSED WHARF EXTENSION
GLOBAL MARINE TERMINAL
PORT JERSEY CHANNEL
COUNTY OF HUDSON
STATE OF NEW JERSEY

APPLICATION BY: GLOBAL MARINE TERMINAL AND
CONTAINER SERVICES

DATE: 4-18-06

FIGURE 3



AREA	ACRES
DREDGE LIMITS	3.29
PILE SUPPORTED CONCRETE WHARF EXTENSION	2.55
OPEN WATER FILL AREA	0.74
SHORELINE EMBANKMENT FILL AREA	0.68
SIDE SLOPE DREDGE LIMITS	0.53
TOTAL	7.79

**PROPOSED CONCEPT SITE PLAN
(PREFERRED ALTERNATIVE)**



FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
ADJACENT PROPERTY OWNERS:
1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
2. U.S. GOVERNMENT (BLOCK 404, LOT 1)
AGENT: WATERS, McPHERSON AND McNEIL, P.C.
PREPARED BY: DMJM Harris

PROPOSED WHARF EXTENSION
GLOBAL MARINE TERMINAL
PORT JERSEY CHANNEL
COUNTY OF HUDSON
STATE OF NEW JERSEY
APPLICATION BY: GLOBAL MARINE TERMINAL AND
CONTAINER SERVICES
DATE: 4-18-06

FIGURE 4

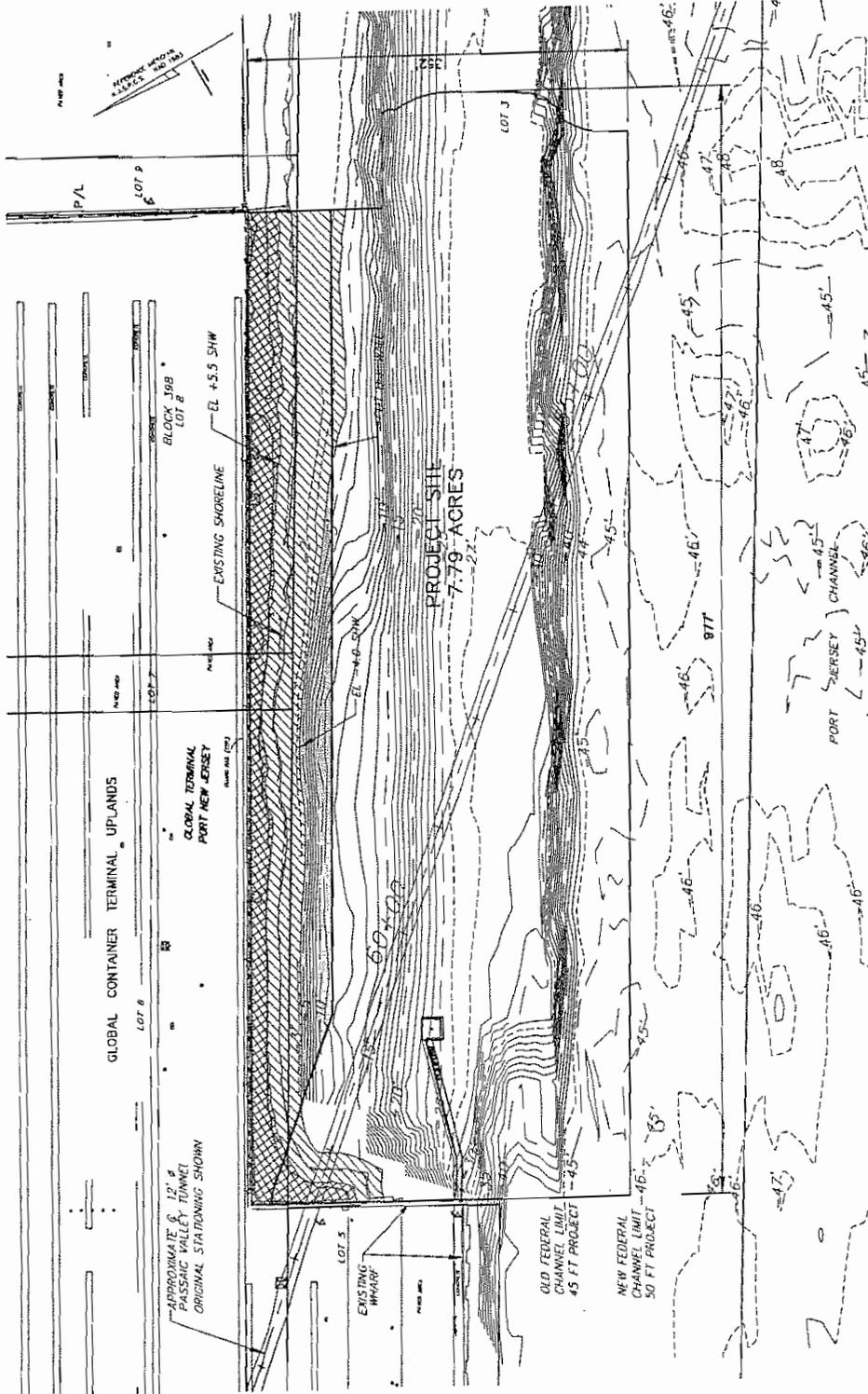
AREA	ACRES
INTERNAL AND EXTERNAL AREA	0.25
FILL ABOVE EL. +5.5 SHW	6.47
FILL BELOW -4.0	0.21

PURPOSE: TO CONSTRUCT ADDITIONAL WHARF STRUCTURE
 DATUM: MEAN LOW WATER

- ADJACENT PROPERTY OWNERS:
1. PORT AUTHORITY OF NY & NJ (BLOCK 309, LOT 3)
 2. U.S. GOVERNMENT (BLOCK 904, LOT 1)
- APPROVED BY: [Signature]
 PREPARED BY: [Signature]

NOTE:

1. HYDROGRAPHIC SOUNDING ELEVATIONS SHOWN ARE REFERENCE TO MEAN LOW WATER.
2. HYDROGRAPHIC SURVEY FIELD WORK PERFORMED BY LSA ENGINEERS, INC. JUNE 8, 2004.



PROPOSED FILL AREA PLAN

**PROPOSED WHARF EXTENSION
 GLOBAL MARINE TERMINAL
 PORT JERSEY CHANNEL
 COUNTY OF HUDSON
 STATE OF NEW JERSEY**



Global Terminal & Container Services Inc.

FIGURE 4A

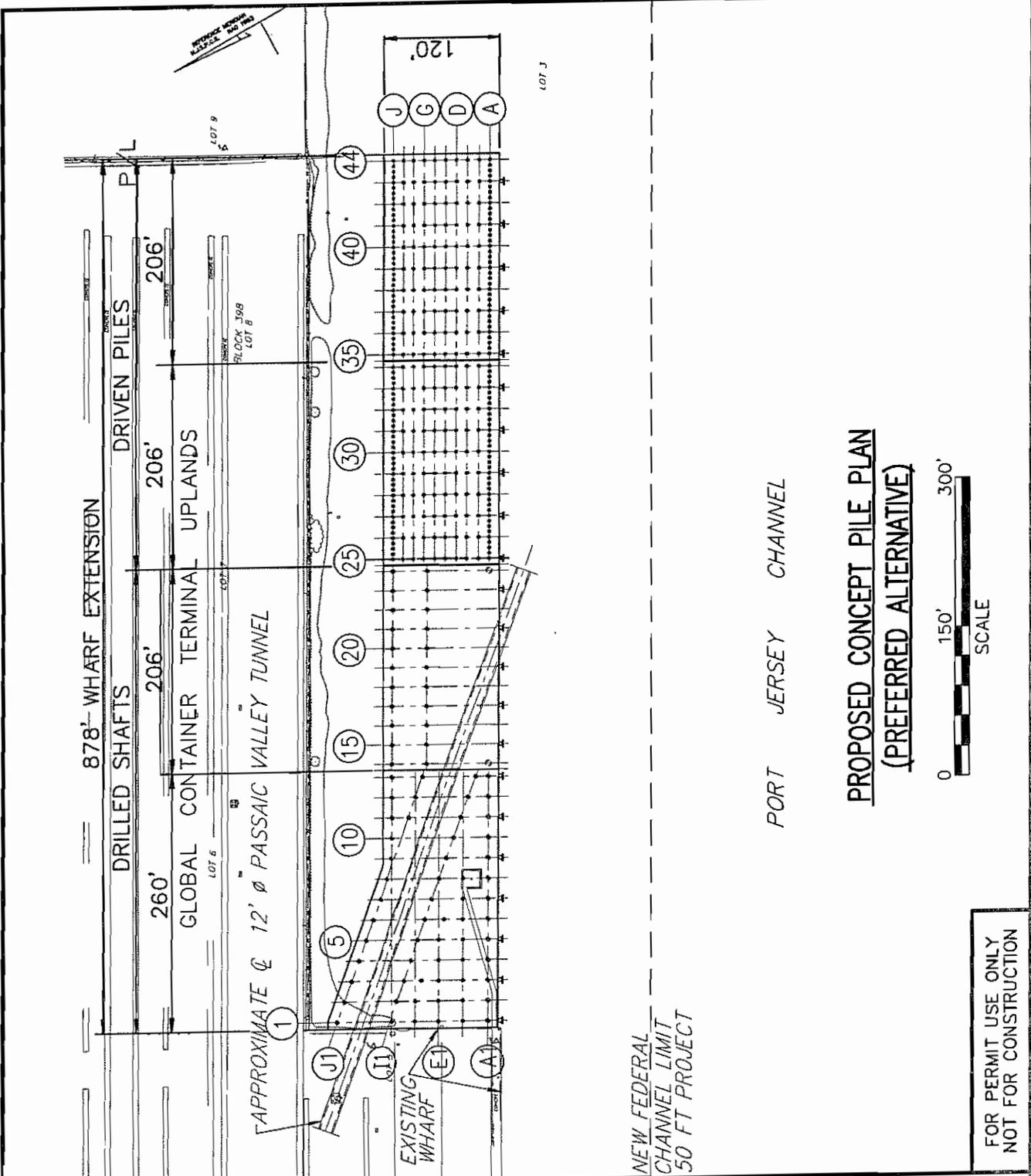
DATE: SEPTEMBER 21, 2006

DMJM HARRIS | AELCOM
 800 316 Avenue
 New York, NY 10158
 TEL: (212) 512-1339
 FAX: (212) 512-1338

SCALE IN FEET
 0 50 100

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 NOT FOR CONSTRUCTION

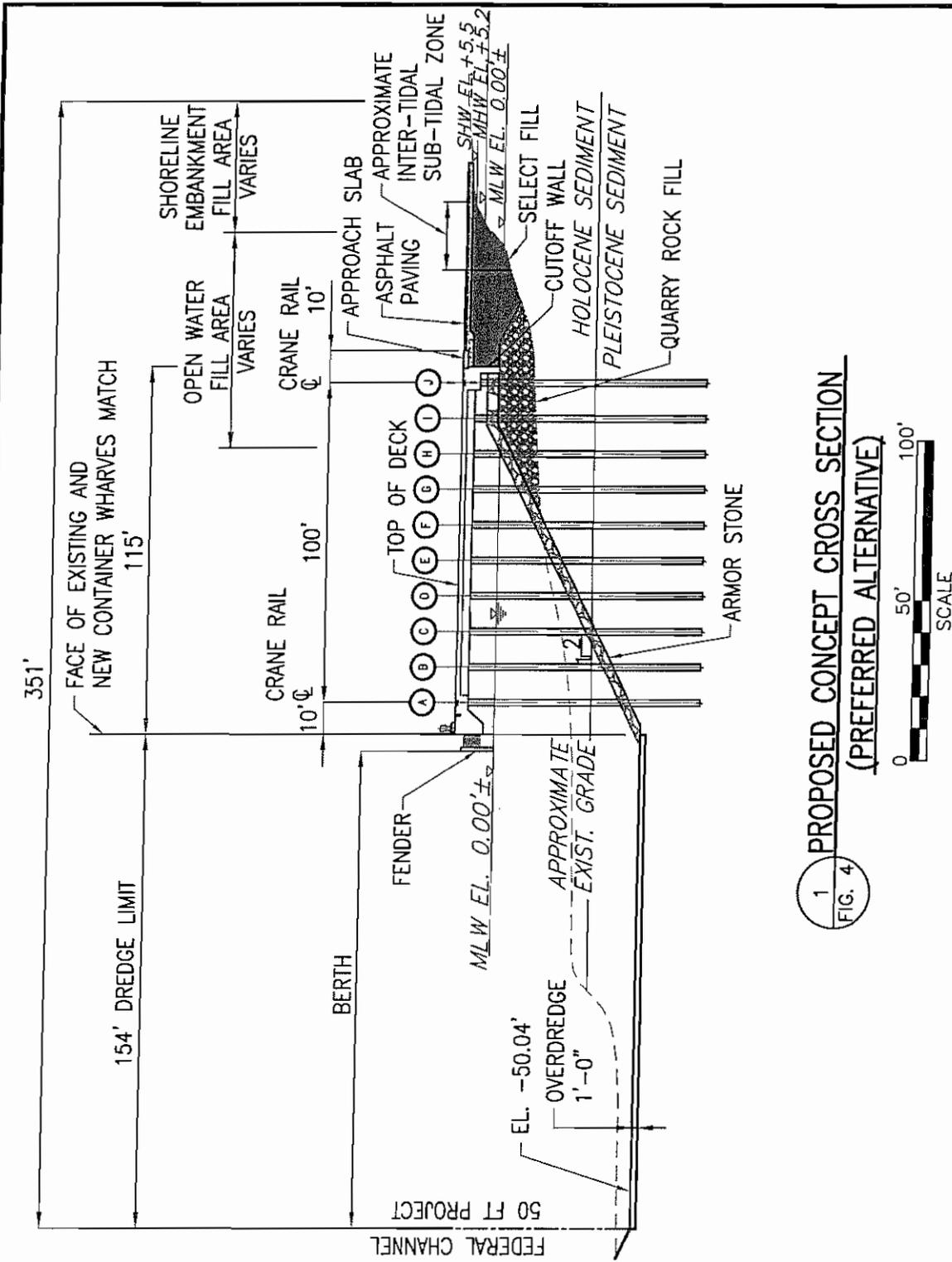
FIGURE 4A



PURPOSE: TO CONSTRUCT
 ADDITIONAL WHARF STRUCTURE
 DATUM: MEAN LOWER LOW WATER
 ADJACENT PROPERTY OWNERS:
 1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
 2. U.S. GOVERNMENT (BLOCK 404, LOT 1)
 AGENT: WATERS, McPHERSON AND McNEIL, P.C.
 PREPARED BY: DMJM Harris

PROPOSED WHARF EXTENSION
 GLOBAL MARINE TERMINAL
 PORT JERSEY CHANNEL
 COUNTY OF HUDSON
 STATE OF NEW JERSEY
 APPLICATION BY: GLOBAL MARINE TERMINAL AND
 CONTAINER SERVICES
 DATE: 4-18-06

FIGURE 5

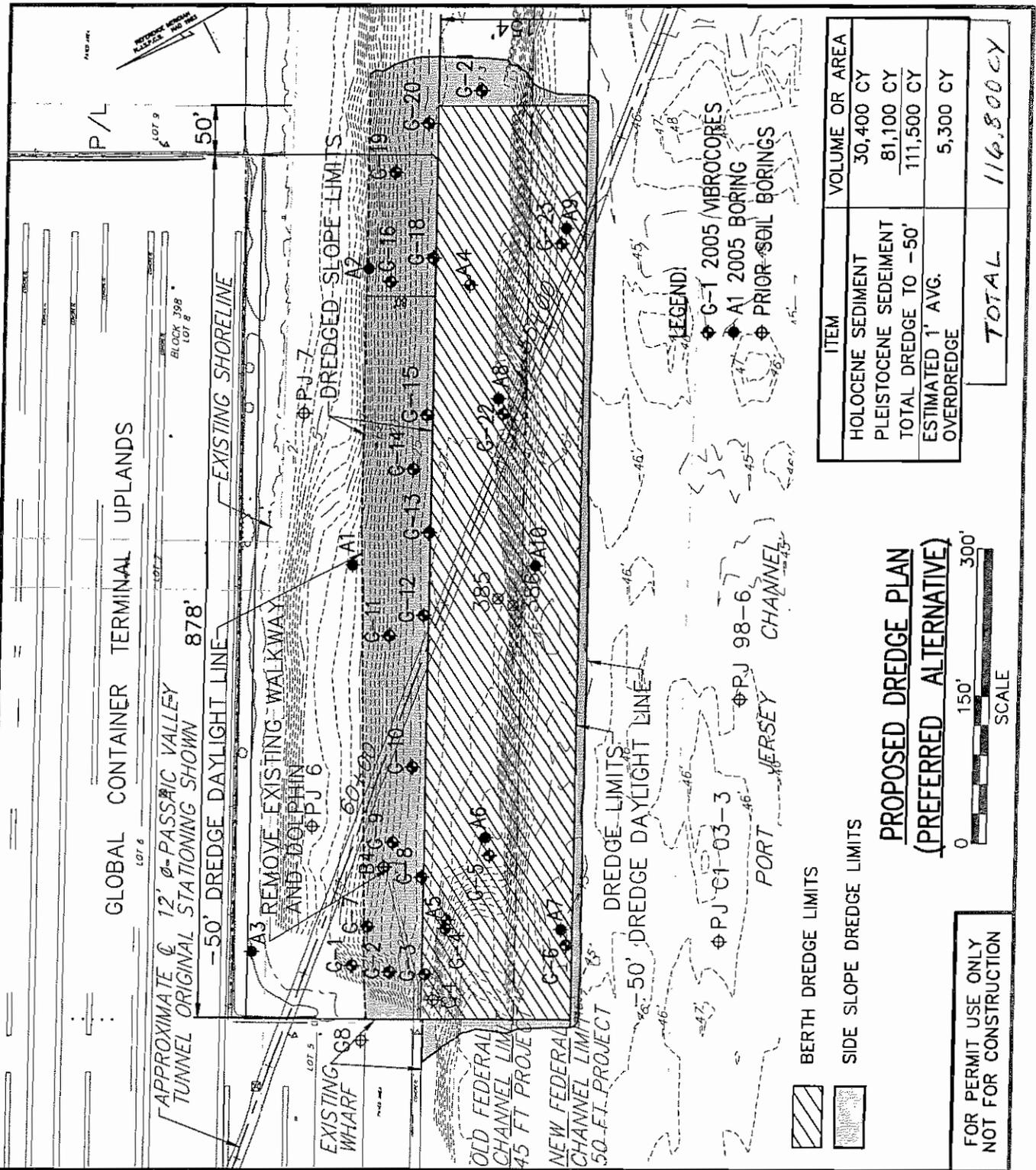


1 PROPOSED CONCEPT CROSS SECTION
 (PREFERRED ALTERNATIVE)
 FIG. 4

FOR PERMIT USE ONLY
 NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
 ADDITIONAL WHARF STRUCTURE
 DATUM: MEAN LOWER LOW WATER
 ADJACENT PROPERTY OWNERS:
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PROPOSED WHARF EXTENSION
 GLOBAL MARINE TERMINAL
 PORT JERSEY CHANNEL
 COUNTY OF HUDSON
 STATE OF NEW JERSEY
 APPLICATION BY: GLOBAL MARINE TERMINAL AND
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PURPOSE: TO CONSTRUCT
 ADDITIONAL WHARF STRUCTURE
 DATUM: MEAN LOWER LOW WATER
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 AGENT: WATERS, McPHERSON AND McNEIL, P.C.
 PREPARED BY: DMJM Harris

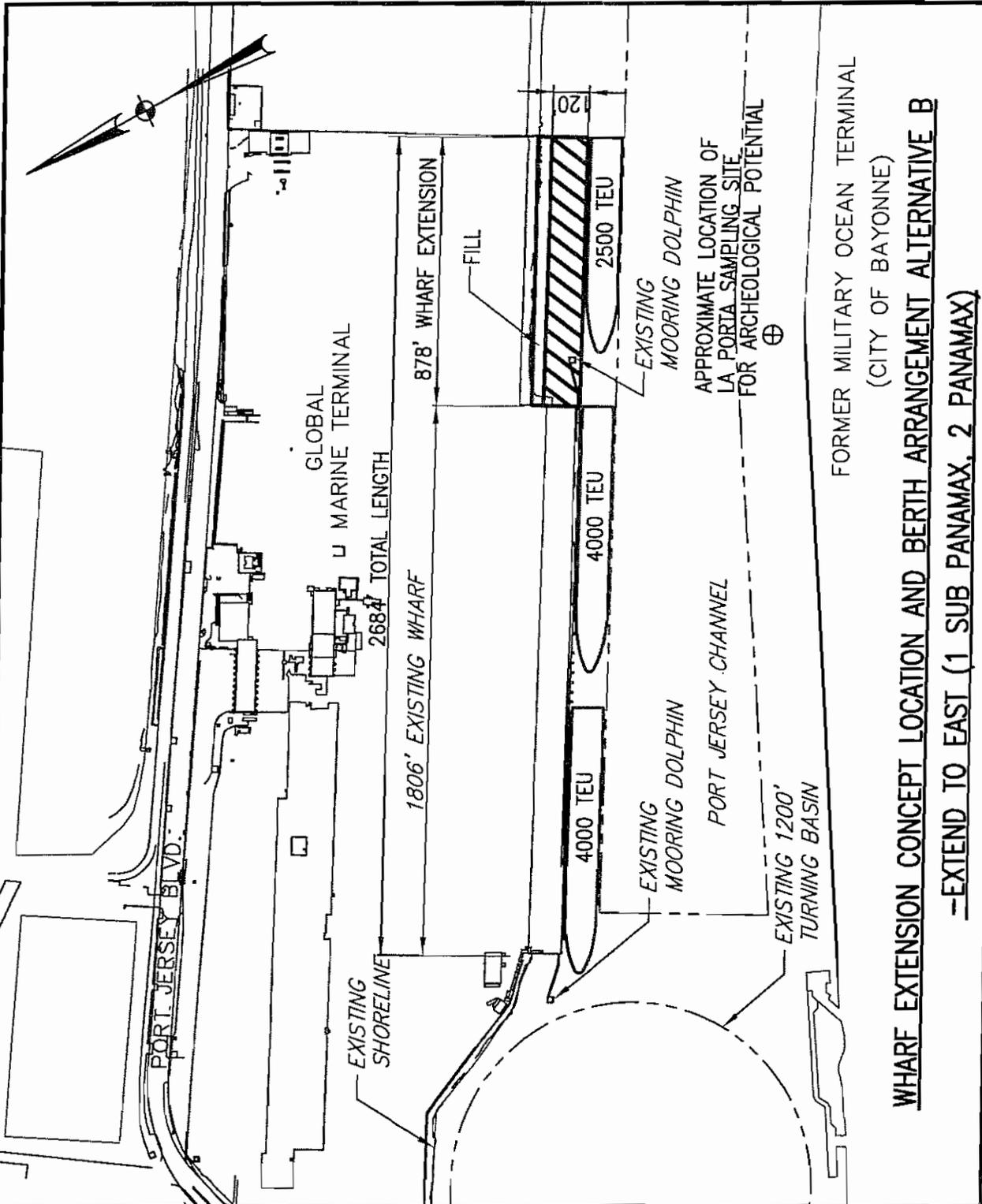
PROPOSED WHARF EXTENSION
 GLOBAL MARINE TERMINAL
 PORT JERSEY CHANNEL
 COUNTY OF HUDSON
 STATE OF NEW JERSEY
 APPLICATION BY: GLOBAL MARINE TERMINAL AND
 CONTAINER SERVICES
 DATE: 4-18-06

**PROPOSED DREDGE PLAN
 (PREFERRED ALTERNATIVE)**



FOR PERMIT USE ONLY
 NOT FOR CONSTRUCTION

R:\5463.0003 Global CT\CADD\Marine\0003\Sheet\Permit Dwg\Permit Dwg\10-21-05\FIG 10-WHARF EXT LOC ALT B.dwg May 30, 2006 - 3:54pm



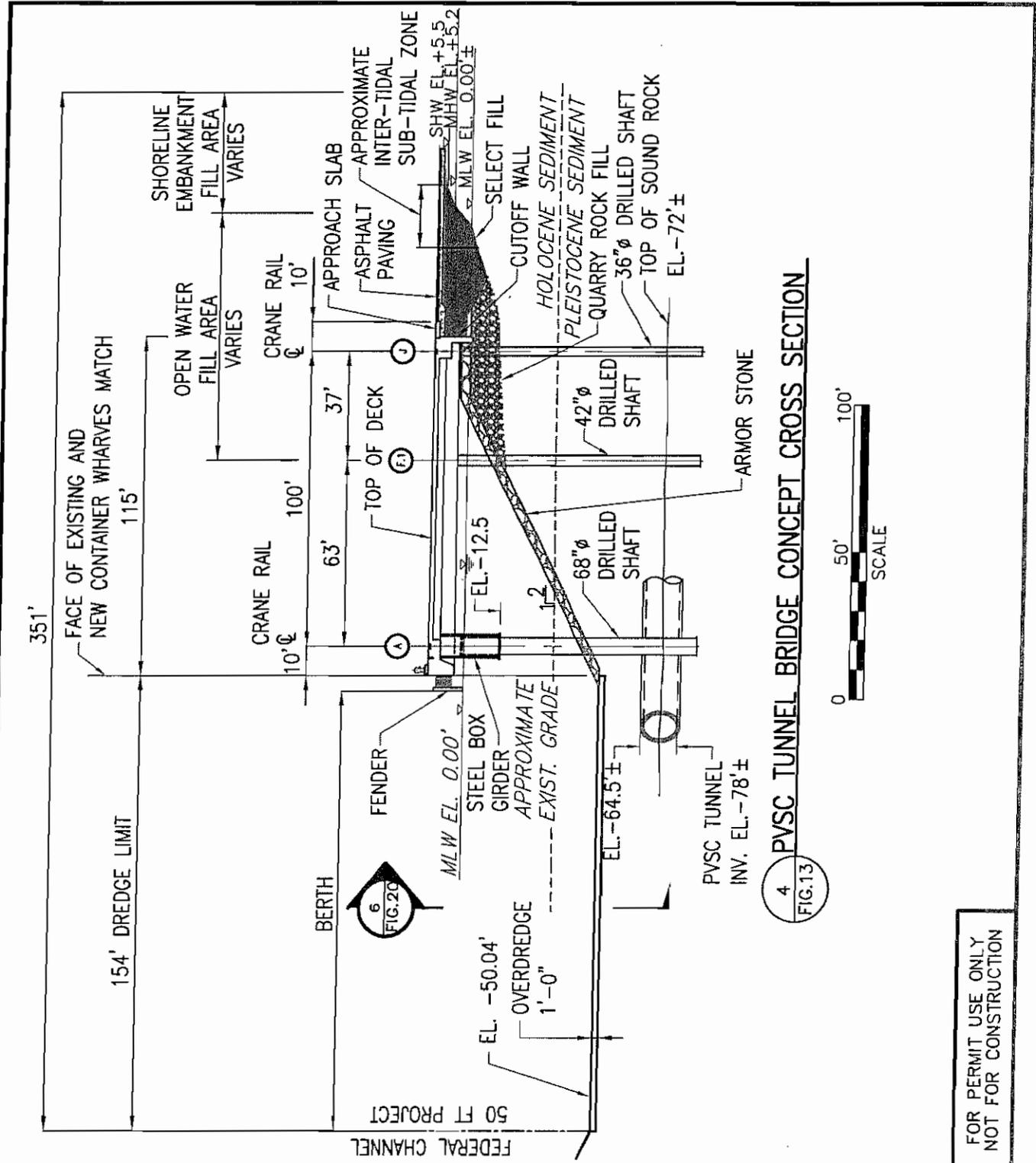
WHARF EXTENSION CONCEPT LOCATION AND BERTH ARRANGEMENT ALTERNATIVE B
-EXTEND TO EAST (1 SUB PANAMAX, 2 PANAMAX)

FOR PERMIT USE ONLY
 NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
 ADDITIONAL WHARF STRUCTURE
 DATUM: MEAN LOWER LOW WATER
 ADJACENT PROPERTY OWNERS:
 1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
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 AGENT: WATERS, McPHERSON AND McNEIL, P.C.
 PREPARE BY: DMJM Harris

PROPOSED WHARF EXTENSION
 GLOBAL MARINE TERMINAL
 PORT JERSEY CHANNEL
 COUNTY OF HUDSON
 STATE OF NEW JERSEY
 APPLICATION BY: GLOBAL MARINE TERMINAL AND
 CONTAINER SERVICES
 DATE: 4-18-06

Figure 8

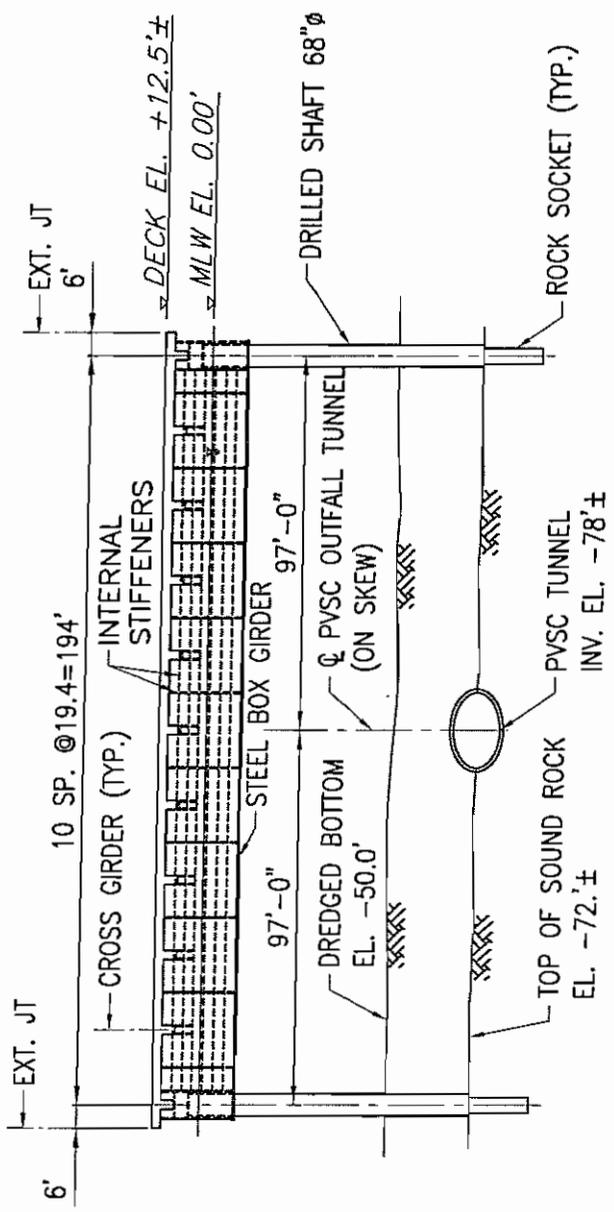


4 PVSC TUNNEL BRIDGE CONCEPT CROSS SECTION
FIG.13

FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
ADJACENT PROPERTY OWNERS:
1. PORT AUTHORITY OF NY & NJ (BLOCK 398, LOT 3)
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AGENT: WATERS, McPHERSON AND McNEIL, P.C.
PREPARE BY: DMJM Harris

PROPOSED WHARF EXTENSION
GLOBAL MARINE TERMINAL
PORT JERSEY CHANNEL
COUNTY OF HUDSON
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DATE: 4-18-06



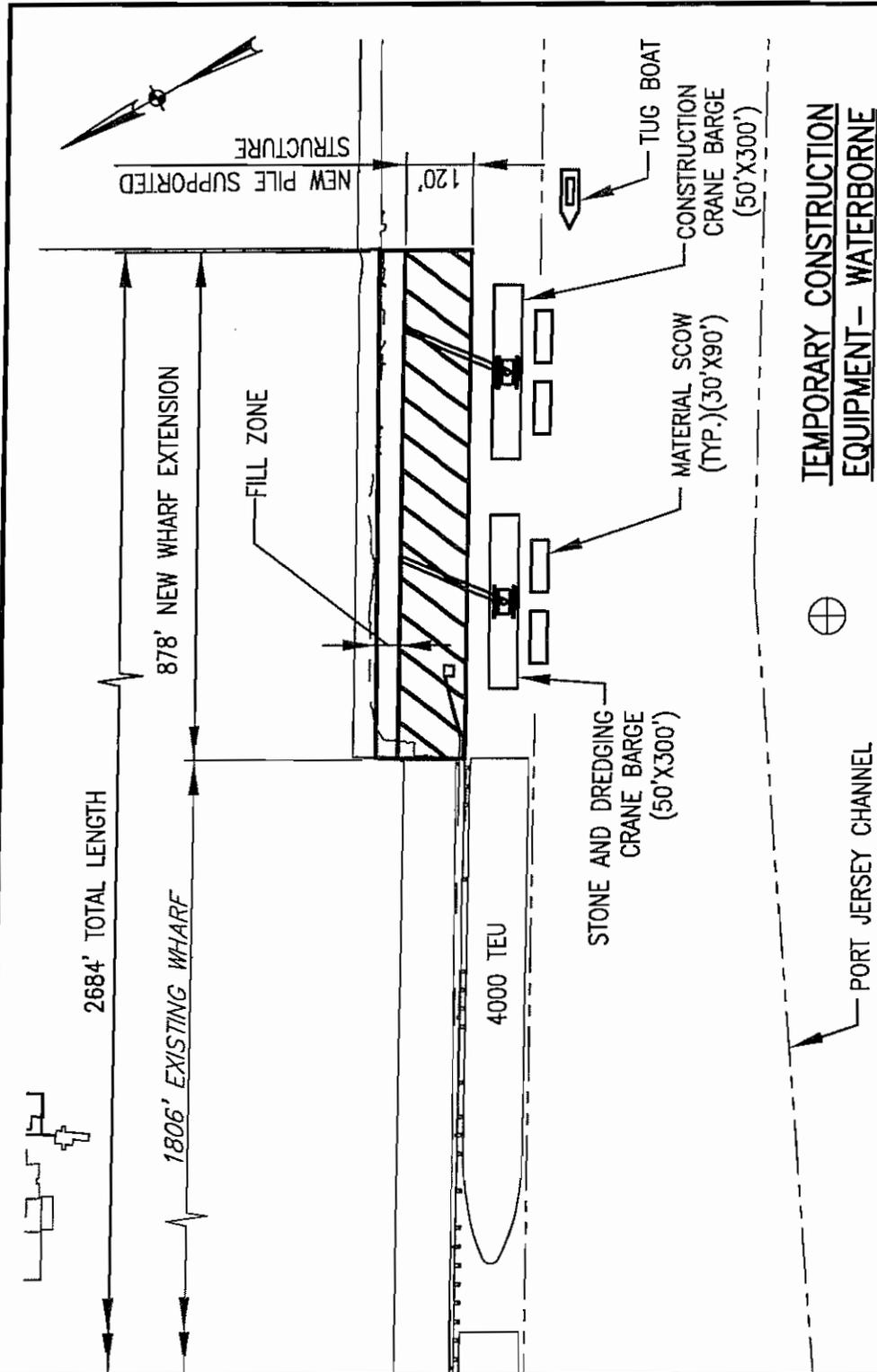
6 PVSC TUNNEL BRIDGE CONCEPT ELEVATION
FIG.19



FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
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AGENT: WATERS, McPHERSON AND McNEIL, P.C.
PREPARE BY: DMJM Harris

PROPOSED WHARF EXTENSION
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STATE OF NEW JERSEY
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CONTAINER SERVICES
DATE: 4-18-06



DESCRIPTION	SIZE	AMT	TOTAL AREA (SF)
CONSTRUCTION CRANE BARGE	50'X300'	1	15000
STONE AND DREDGING CRANE BARGE	50'X300'	1	15000
MATERIAL SCOW	30'X90'	4	10800
TUG BOAT	30'X100'	1	3000
TOTAL			43800 SF (1.0 AC)

TEMPORARY CONSTRUCTION EQUIPMENT - WATERBORNE

CONSTRUCTION EQUIPMENT STAGING PLAN

MARINE ACTIVITIES



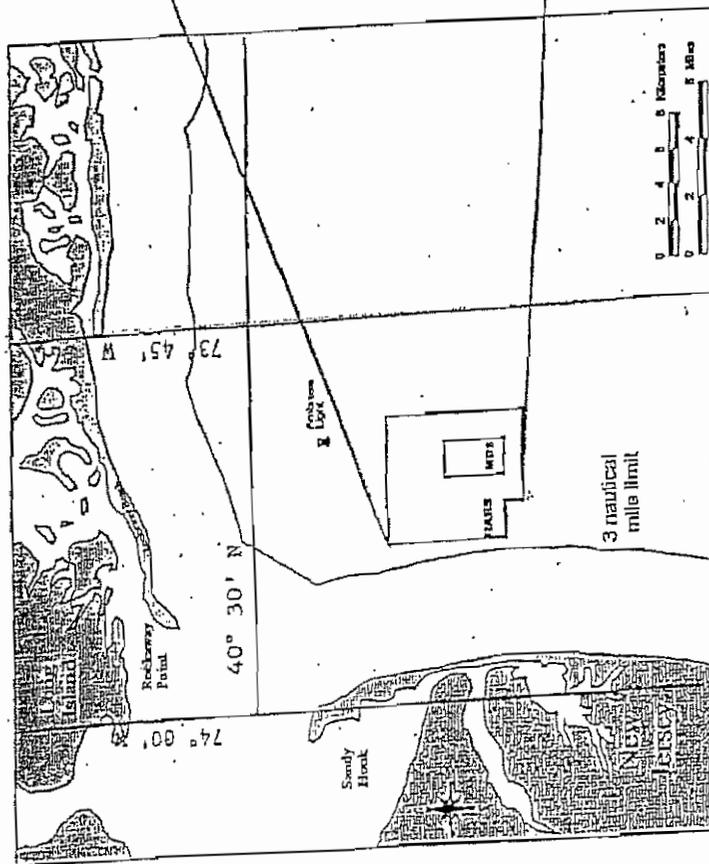
FOR PERMIT USE ONLY
NOT FOR CONSTRUCTION

PURPOSE: TO CONSTRUCT
ADDITIONAL WHARF STRUCTURE
DATUM: MEAN LOWER LOW WATER
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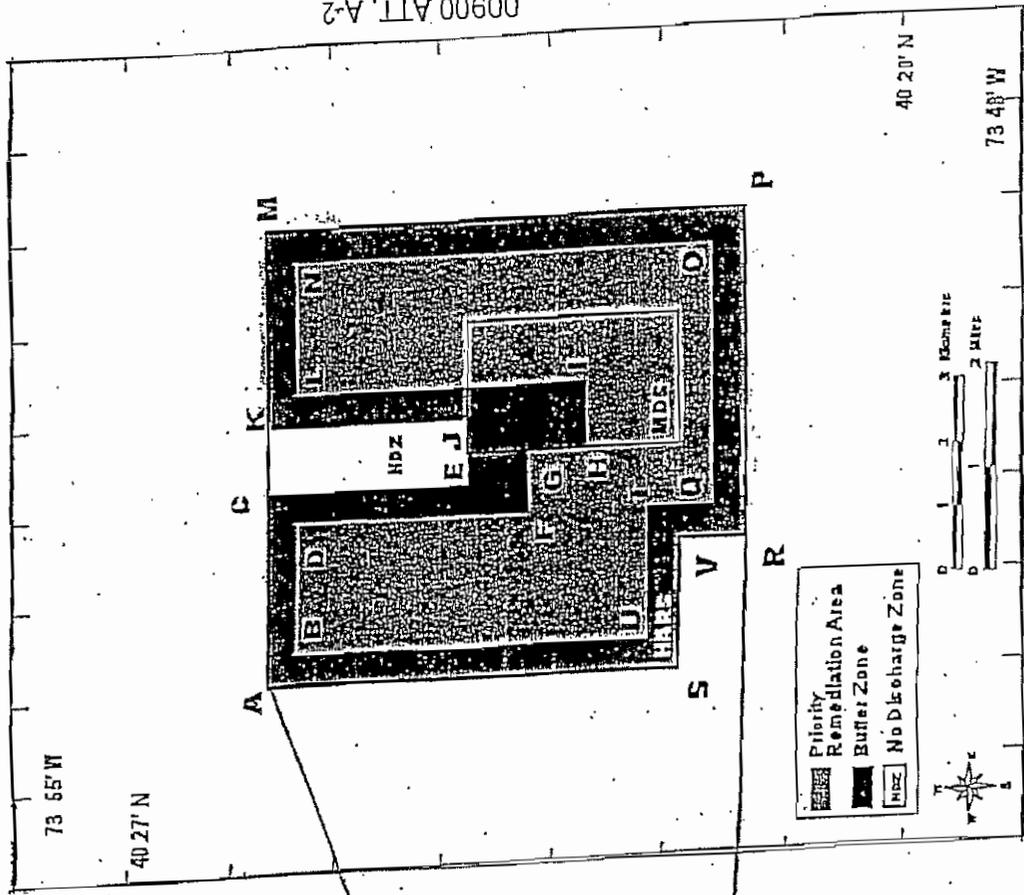
FIGURE 11

HISTORIC AREA REMEDIATION SITE LOCATION MAP



A

LOCATION OF PRIMARY REMEDIATION AREA WITHIN THE HISTORIC AREA REMEDIATION SITE



B

00900 ATT. A-2

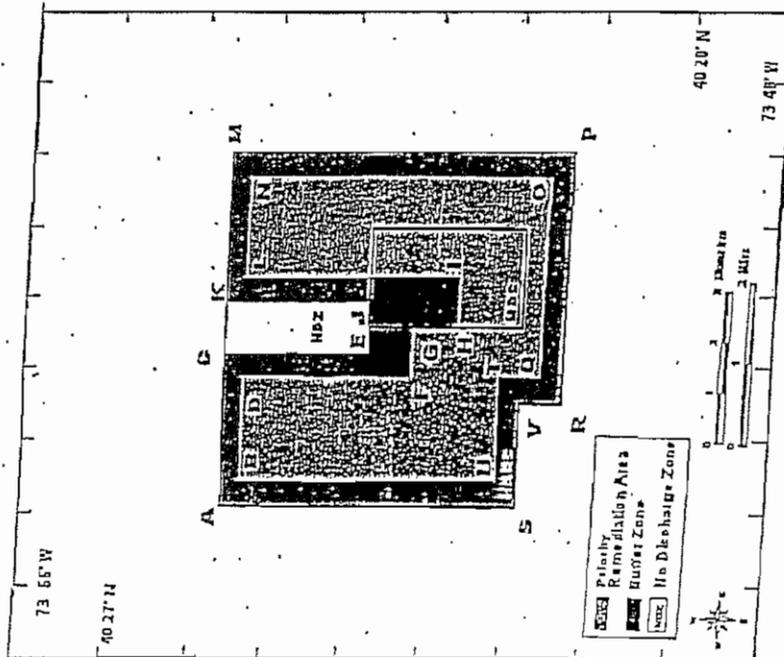
FIGURE 12

Priority Remediation Area (PRA): 9.0 square nautical mile area to be remediated with at least one meter of Remediation Material, bounded by the following coordinates:

Point	Latitude DMS *	Longitude DMS	Latitude DDM **	Longitude DDM
B	40° 25' 23" N	73° 53' 34" W	40° 25.38' N	73° 53.57' W
D	40° 25' 22" N	73° 52' 08" W	40° 25.37' N	73° 52.13' W
F	40° 23' 13" N	73° 52' 09" W	40° 23.22' N	73° 52.15' W
G	40° 23' 13" N	73° 51' 28" W	40° 23.22' N	73° 51.47' W
H	40° 22' 41" N	73° 51' 28" W	40° 22.68' N	73° 51.47' W
I	40° 22' 41" N	73° 50' 43" W	40° 22.68' N	73° 50.72' W
L	40° 25' 23" N	73° 50' 44" W	40° 25.37' N	73° 50.73' W
N	40° 25' 22" N	73° 49' 19" W	40° 25.37' N	73° 49.32' W

*-- DMS = Degrees, Minutes, Seconds

** -- DDS := Degrees, Decimal Minutes



**TABLE 1. RESULTS OF CHEMICAL ANALYSIS OF SITE WATER AND ELUTRIATE
PORT JERSEY - CONTRACT AREA 1**

CONSTITUENTS	SITE WATER		ELUTRIATE	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
Metals	ppb	ppb	ppb	ppb
Ag		0.032		0.016
Cd		0.068		0.084
Cr		0.522		0.918
Cu		2.10		2.070
Hg		0.005		0.001
Ni		1.30		2.94
Pb		0.69		0.39
Zn		5.45		3.98
Pesticides	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)
Aldrin	2.83	ND	2.83	ND
α -Chlordane	1.08	ND	1.08	ND
trans Nonachlor	1.01	ND	1.01	ND
Dieldrin	0.98	ND	0.98	ND
4,4'-DDT	0.56	ND	0.56	ND
2,4'-DDT	1.99	ND	1.99	ND
4,4'-DDD	0.60	ND	0.60	ND
2,4'-DDD	0.75	ND	0.75	ND
4,4'-DDE	0.84	ND	0.84	ND
2,4'-DDE	1.71	ND	1.71	ND
Total DDT		3.2		3.2
Endosulfan I	1.11	ND	1.11	ND
Endosulfan II	0.51	ND	0.51	ND
Endosulfan sulfate	0.57	ND	0.57	ND
Heptachlor	1.17	ND	1.17	ND
Heptachlor epoxide	0.95	ND	0.95	ND
Industrial Chemicals	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)	pptr (ng/L)
PCB 8	16.00	ND	16.00	ND
PCB 18	1.39	ND	1.39	ND
PCB 28	1.73	ND	1.73	ND
PCB 44	1.45	ND	1.45	ND
PCB 49	1.49	ND	1.49	ND
PCB 52	1.44	ND	1.44	ND
PCB 66	1.49	ND	1.49	ND
PCB 87	1.13	ND	1.13	ND
PCB 101	1.15	ND	1.15	ND
PCB 105	0.58	ND	0.58	ND
PCB 118	0.87	ND	0.87	ND
PCB 128	1.40	ND	1.40	ND
PCB 138	1.33	ND	1.33	ND
PCB 153	1.07	ND	1.07	ND
PCB 170	1.02	ND	1.02	ND
PCB 180	0.96	ND	0.96	ND
PCB 183	0.93	ND	0.93	ND
PCB 184	0.92	ND	0.92	ND
PCB 187	0.86	ND	0.86	ND
PCB 195	1.09	ND	1.09	ND
PCB 206	1.22	ND	1.22	ND
PCB 209	1.27	ND	1.27	ND
Total PCB		81.5		81.5

ND = Not detected

Total DDT = sum of 2,4'- and 4,4'-DDD, DDE, and DDT

Total PCB = sum of congeners reported x 2

Concentrations shown are the mean of three replicate analyses.

Means were determined using conservative estimates of concentrations of constituents that were at concentrations below the detection limit.

ATTACHMENT 1 - TABLE 1

Figure 14

TABLE 2.

PORT JERSEY - CONTRACT AREA 1

TOXICITY TEST RESULTS

Suspended Particulate Phase

Test Species	Test Duration	LC50/EC50	LPC (a)
<i>Menidia beryllina</i>	96 hours	(b) >100%	1.00
<i>Mysidopsis bahia</i>	96 hours	(b) >100%	1.00
<i>Mytilus edulis</i> (larval survival)	48 hours	(b) >100%	1.00
<i>Mytilus edulis</i> (larval normal development)	48 hours	(c) >100%	1.00

(a) Limiting Permissible Concentration (LPC) is the LC 50 or EC 50 times 0.01.

(b) Median Lethal Concentration (LC50) resulting in 50% mortality at test termination.

(c) Median Effective Concentration (EC50) based on normal development to the D-cell, prodissoconch 1 stage.

Whole Sediment (10 days)

Test Species	% Survival in Reference	% Survival	% Difference Reference - Test	Is difference statistically significant? ($\alpha=0.05$)
<i>Ampelisca abdita</i>	99%	100%	1%	No
<i>Mysidopsis bahia</i>	95%	99%	4%	No

ATTACHMENT 2 - TABLE 2

FIGURE 15

PORT JERSEY- CONTRACT AREA 1
TABLE 3. 28 DAY BIOACCUMULATION TEST RESULTS: CHEMICAL ANALYSIS OF TISSUE
Wet weight concentrations

CONSTITUENTS	<i>Tapes japonica</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION	DETECTION LIMITS	CONCENTRATION
Metals	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)	ppm (mg/kg)
Ag		0.11		0.09		0.01		0.01
As		1.92		1.80		3.43		3.01
Cd		0.22		0.21		0.04		0.05
Cr		0.27		0.62		0.50		0.52
Cu		1.09		1.21		1.75		2.46
Hg		0.01		0.01		0.04		0.04
Ni		0.68		0.73		0.25		0.30
Pb		0.02		0.02		0.12		0.10
Zn		8.33		7.99		19.38		21.53
Pesticides	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)
Aldrin	0.02	ND	0.02	ND	0.02	ND	0.03	ND
α-Chlordane		0.03		0.02		0.12		0.12
trans Nonachlor		0.03		0.02		0.29		0.29
Dieldrin		0.04		0.04		0.12		0.16
4,4'-DDT		0.03		0.03		0.03		0.03
2,4'-DDT	0.03	ND	0.03	ND	0.04	ND	0.04	ND
4,4'-DDD		0.04		0.04		0.15		0.13
2,4'-DDD		0.04		0.06		0.14		0.13
4,4'-DDE		0.03		0.04		0.06		0.05
2,4'-DDE	0.09	ND	0.09	ND	0.10	ND	0.10	ND
Total DDT		0.20		0.23		0.44		0.42
Endosulfan I	0.03	ND	0.03	ND	0.04	ND	0.04	ND
Endosulfan II	0.05	ND	0.05	ND	0.05	ND	0.05	ND
Endosulfan sulfate	0.05	ND	0.05	ND	0.06	ND	0.06	ND
Heptachlor	0.03	ND	0.03	ND	0.03	ND	0.03	ND
Heptachlor epoxide		0.02		0.02		0.06		0.05
Industrial Chemicals	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)
PCB 8		0.41		0.42		0.88		0.81
PCB 18		0.04		0.05		0.03		0.08
PCB 28		0.15		0.19		0.20		0.13
PCB 44	0.03	ND	0.03	ND	0.03	ND	0.03	ND
PCB 49		0.02		0.04		0.06		0.08
PCB 52		0.05		0.09		0.14		0.24
PCB 66	0.03	ND	0.03	ND		0.05		0.04
PCB 87		0.03		0.04		0.04		0.05
PCB 101		0.11		0.13		0.46		0.49
PCB 105		0.04		0.04		0.20		0.19
PCB 118		0.05		0.04		0.21		0.20
PCB 128		0.09		0.08		0.30		0.25
PCB 138		0.17		0.36		1.48		1.35
PCB 153		0.11		0.11		2.18		1.99
PCB 170		0.04		0.08		0.43		0.41
PCB 180		0.04		0.05		0.93		0.86
PCB 183		0.02		0.02		0.38		0.35
PCB 184	0.05	ND	0.05	ND	0.05	ND	0.05	ND
PCB 187		0.03		0.14		0.79		0.79
PCB 195		0.02		0.01		0.16		0.16
PCB 206		0.03		0.04		0.30		0.30
PCB 209		0.04		0.04		0.37		0.33
Total PCB		3.09		4.00		19.31		18.25
1,4-Dichlorobenzene		0.39		0.37		0.33		0.28

ATTACHMENT 3- TABLE 3

Figure 16

TABLE 3. (Continued)

PORT JERSEY - CONTRACT AREA 1

CONSTITUENTS	<i>Tapes japonica</i>				<i>Nereis virens</i>			
	REFERENCE		TEST		REFERENCE		TEST	
	DETECTION	CONCEN	DETECTION	CONCEN	DETECTION	CONCEN	DETECTION	CONCEN
	LIMITS	TRATION	LIMITS	TRATION	LIMITS	TRATION	LIMITS	TRATION
PAH's	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)	ppb (ug/kg)
Naphthalene		0.72		0.71		2.49		2.77
Acenaphthylene		0.05		0.04		0.14		0.13
Acenaphthene		0.11		0.11		0.42		0.45
Fluorene		0.18		0.16		0.09		0.11
Phenanthrene		0.80		0.80		0.29		0.31
Anthracene		0.07		0.08		0.05		0.06
Fluoranthene		0.77		0.75		0.26		0.22
Pyrene		0.40		0.51		0.22		0.27
Benzo(a)anthracene		0.44		0.39		0.05		0.05
Chrysene		0.53		0.48		0.15		0.14
Benzo(b)fluoranthene		0.12		0.01		0.03		0.03
Benzo(k)fluoranthene		0.08	0.02	ND		0.03		0.03
Benzo(a)pyrene	0.02	ND	0.02	ND		0.17		0.02
Indeno(1,2,3-cd)pyrene	0.01	ND		0.01	0.01	ND		0.01
Dibenzo(a,h)anthracene	0.02	ND	0.02	ND	0.02	ND		0.01
Benzo(g,h,i)perylene	0.01	ND		0.01		0.04		0.01
Total PAH's		4.29		4.09		4.45		4.62
Dioxins	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)	pptr(ng/kg)
2378 TCDD		0.42	0.98	ND		0.28		0.20
12378 PeCDD		0.95		* 2.41		0.14		0.12
123478 HxCDD		0.03		* 5.10		0.08		0.05
123678 HxCDD		0.06		* 1.33		0.27		0.19
123789 HxCDD		0.05		* 1.79		0.17		0.13
1234678 HpCDD		0.18		0.21		1.47		1.03
1234789 OCDD		1.41		1.34		8.28		6.02
2378 TCDF		0.14		0.10		1.66		1.41
12378 PeCDF		0.08		* 1.45		0.19		0.18
23478 PeCDF		0.08		* 1.40		0.31		0.27
123478 HxCDF		0.11		0.55		0.17		0.14
123678 HxCDF		0.05		0.92		0.09		0.08
234678 HxCDF		0.41		* 1.84		0.80		1.19
123789 HxCDF		0.52		* 1.81		0.08		0.06
1234678 HpCDF		0.08		0.47		0.59		0.41
1234789 HpCDF		0.04		* 1.20		0.06		1.50
12346789 OCDF		0.17		0.17		0.60		0.38

ND = Not detected

Total PAH = Sum of all PAHs

Total DDT = sum of 2,4'- and 4,4'-DDD, DDE, and DDT

Total PCB = 2(x), where x = sum of PCB congeners

Concentrations shown are the mean of 5 replicate analyses in wet weight.

Means were determined using conservative estimates of concentrations of constituents that were at concentrations below the detection limit

* = Statistically significant at the 95% confidence level

ATTACHMENT 3A - TABLE 3 - continued

FIGURE 17