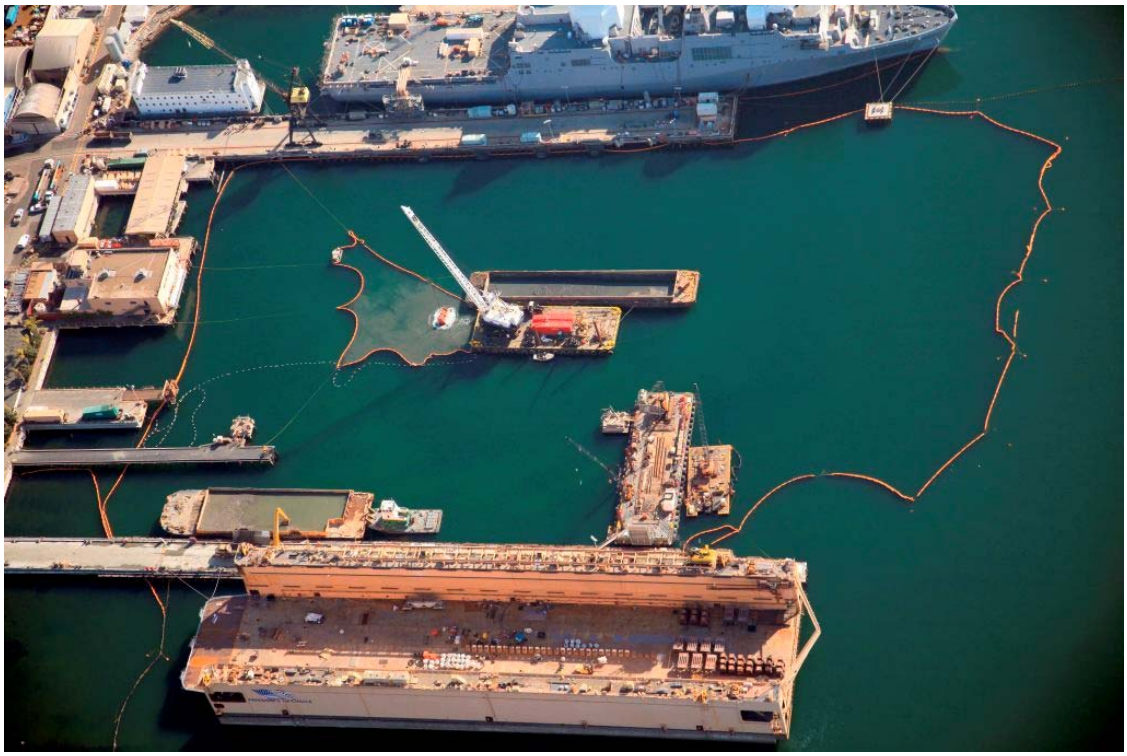
R.E. Staite Engineering, Inc.



San Diego Bay Remediation South Trust Dredging Demolition Plan

September 3, 2013

R.E. Staite Engineering
San Diego Bay Remediation South Trust
Demolition Plan
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I. INTRODUCTION

This Demolition Plan (Plan) was prepared by R.E. Staite Engineering, Inc. (RES), on behalf of the San Diego Bay Environmental Restoration Fund – South (South Trust). This Plan is required by project specifications and is part of the RES Remedial Action Work Plan (RAWP) required for the South Shipyard portion of the San Diego Shipyard Sediment Site (Site).

Specifically, this Plan details the methods and equipment that will be implemented during demolition and debris removal activities, as well as measures that will be taken to address worker safety, protection of the public and the environment. RES will be responsible for implementation of this Plan, which must be reviewed and approved by the Engineer prior to the start of work. An updated copy of the RAWP (including this Demolition Plan) will be kept on site at all-time throughout construction.

Project Background

Dredging will be conducted to remove impacted sediments from accessible portions of the Site remedial footprint. Dredged material will be dewatered, amended, and offloaded into trucks at the Sediment Management Area (SMA), and transported to Otay landfill. Dredging will be supplemented, where necessary, by localized placement of sand cover in cleanup areas (depending on various factors, including the results of post-dredge confirmation sampling) as a mechanism for further achievement of cleanup goals. Cleanup areas below and immediately adjacent to overwater structures will receive a cover layer of sand rather than being dredged, owing to accessibility issues and/or the need to maintain stability of the structures. (See Project Dredge Management Plan)

This Demolition Plan specifically covers the following activities:

- Timber Pier Demolition Activities. The existing dormant timber pier, located at the northern limits of the site, will be demolished and disposed of off-site.

- Identified Debris Removal and Handling (prior to dredging). Prior to the dredging activities, all identified debris elements will be removed using the methods described in this Plan. The debris will be offloaded at the RES Belt Street yard where it will be sorted, and prepared for recycling or disposal.

- Removal of Additional Debris (during dredging). During dredging activities, it is assumed that RES will encounter additional debris which will require disposal. This unknown debris will be handled according to the methods described in this Plan. The unknown debris will be offloaded at the RES marine facility where it will be sorted and prepared for recycling or disposal.

- Identification and Disposal. In this Section, debris generated from the shipyard is characterized and anticipated disposal options given; this includes both known and unknown debris. Known represents timber pier demolition and debris identified on the Contract Drawings; while unknown represents other debris removed during dredging operations.

II. WORKER SAFETY

RES is committed to providing a safe work environment for all personnel involved with the project. Demolition work involves many of the same hazards that arise during other construction activities. However, there may be increased hazards due to the nature of the demolition work. Personnel can be exposed to sharp or protruding objects, unstable footing with potential for slips, trips and falls and additional fall risk when working over the water. RES requires all personnel working over the water to wear personal flotation devices (PFD's). Additional Personal Protective Equipment (PPE) will be used on operation specific tasks. For example proper eyewear, face shields and gloves will be used when cutting, grinding and torching. RES personnel are trained to use the proper tools for the job and will be provided with such tools for safe operation. Crane pick planning is implemented and communicated to all personnel prior to making heavy crane picks. Additionally, critical lift plans are developed when required. Prior to picking the pier sections from the caps for removal, the pick will be discussed so that all personnel involved know the safety risks and their specific job assignments and duties. Tag lines will be used to control suspended loads and personnel will be clear from underneath suspended loads prior to picking.

RES will hold weekly onsite safety meetings to discuss job/operation specific risks. These meetings allow the crew to develop mitigation measures that need to be implemented to minimize identified hazards. These safety meetings also provide an open forum for various tool trainings and discussions. All work will be conducted in accordance with the HASP.

III. PROTECTION OF THE PUBLIC (SHIPYARD WORKERS)

NASSCO is closed to members of the public therefore this plan is focused on shipyard workers. RES's commitment to safety does not stop with project personnel. Our commitment to safety translates to keeping the shipyard, subcontractors and all other workers on the shipyard safe as well. Prior to beginning the demolition activities, a temporary safety/construction zone will be established as necessary to protect shipyard workers from potential safety hazards. This zone will be a minimum radius of the swing of the crane, and may extend further based on the activity being conducted. Entry into this zone is prohibited unless authorized by the Contractor's Health and Safety Representative. This delineated area will limit access to public and ensure that only personnel directly related to the demolition operation are in the area. Additionally, designated spotters or ground attendants will be used when making crane picks to communicate the travel and direction of suspended loads.

IV. WORK SEQUENCE AND SCHEDULE

a) Description of the Existing Timber Pier

The existing timber pier is approximately 180 feet long and 18 feet wide, consisting of a timber deck supported by pairs of steel HP14 piles spaced at approximately 30 feet on-center. The steel piles “straddle” the pier and would have been installed sometime after the original pier construction to replace the original timber piles that have deteriorated or were later removed. The pier deck, consisting of timber planks and longitudinal timber stringers, bare on transverse steel beams (pile caps) that are in turn welded to and supported on the steel HP14 piles. The lengths of the steel piles are unknown. The timber stringers are approximately 4 inches by 14 inches in size and spaced at between 12 and 16 inches on center. The edge beams on the pier are larger in section, approximately 10 to 12 inches wide. At the inshore end of the pier, there are two additional pile bents that provide support to the pier deck. Closest to the shore there are six timber piles, 14 to 16 inch in diameter, that are supported by a concrete pedestal. Several feet seaward of the timber piles there is a bent with four steel rail piles that are also supported by a concrete pedestal.

b) Demolition Sequence

The demolition of the existing timber pier will occur in tandem with dredging and covering in other areas of the site, and will be completed prior to dredging in the area where the pier currently exists. The demolition will occur in two phases. The first phase includes the demolition and disposal of the outer two thirds of the timber pier, with the second phase consisting of the demolition and disposal of the remaining portions of the pier (closer to the shoreline).

Prior to demolition activities, a site inspection will be conducted to identify hazards which may require abatement. Pipe, wire, and other utility appurtenances will be removed and recycled as applicable. As part of this inspection, RES will verify the dimensions, layout, and details of the existing structure, and bring any discrepancies or potential conflicts to the attention of the Trust. If any abandoned conduits and utilities are encountered in this inspection, RES will coordinate the disconnection of these items with the South Shipyard Maintenance Staff.

Once all utility conduits and piping are deemed out of service, the pier will be saw cut into approximately 10 sections in preparation for removal. It is RES’s intention to cut the pier deck into these large sections and utilize the existing steel pile caps as a spreader allowing for larger sections of pier to be removed with each crane pick. Handling the pier removal in large sections reduces the risk of potential debris from entering the bay because the pier sections will be handled relatively in-tact. RES proposes to burn a picking eye into the existing pile caps so that a shackle and rigging can be installed. Using a 4-point picking system (figure 1 on following page), RES proposes to rig the deck sections and lift them utilizing our crane barge.

(figure 1: RES will use a similar picking system as pictured for removing the timber pier sections.)

The deck sections will be placed onto an adjacent material barge then brought onshore at the RES marine facility for further disassembly. In doing so, the risk of debris entering the bay will be reduced. Additional measures will be implemented to prevent runoff and debris from entering the bay such as performing the pier section disassembly in contained areas with curb and plastic lining to catch debris before it falls into the bay.

RES plans to use floats secured at each bent during demolition of the pier. The floats will serve dual purpose as below pier access and for debris catch platforms. The gaps between piling will be filled in using plywood sheets to capture any debris falling within this area from demolition operations. Additionally RES plans to remove any loose or detached material that can fall into the bay prior to picking the pier sections. Following removal of the pier sections any floating debris which may have entered the bay will be removed daily.

After the pier deck has been removed from the bearing pile, RES will begin removing the piling. The timber and steel H-pile will be removed using the methods consistent with the permit conditions. Following all demolition a final cleanup will be performed.

c) Demolition Schedule

As stated above, the existing timber pier demolition will occur alongside of the dredging and sand covering activities. RES plans to start the first two-thirds of the existing timber pier demolition with the setup of eelgrass protection on or about September 18, 2013. The remaining one-third of the pier will be used as access for mixing of dredge sediment for upland disposal. Once mixing is complete it is RES's intent to resume demolition on the remaining section of the pier with a final completion date on or about February 21, 2014.

d) RES Equipment

RES's floating equipment spread is capable of performing the required demolition, material storage and offloading activities. The following are a few examples of our equipment fleet made up of floating cranes and material barges that can be utilized for

this project.

Floating Crane Barges:

DB Palomar - Derrick Barge

RES 180 - Crane Barge

670 - Crane Barge

Material Barges:

RES - 110 Material Barge

RES - 210 Material Barge

V. PROTECTION OF THE ENVIRONMENT

To ensure that the near water construction activities do not impact the Bay, the following practices will be used in the demolition and other operations:

- Deployment of booms around structure.
- When demolition is occurring; large floats under the deck will be placed under pier to catch any debris that could otherwise fall into the Bay.
- During saw cutting operations, large plastic sheets will be attached to the pier deck to avoid debris (wood, slag, cutting torch sparks, etc.) from falling into the Bay.

- During debris handling, i**f the use of a grate to collect debris is required RES will not allow material to pile up on the grate and flow or slip from the grate back into the water. The dredge operator shall visually monitor for debris build-up and alert the support personnel on the barge to assist in clearing the debris, as necessary. Debris that is derived from dredging activities shall be removed from the grate and placed in a contained area on the dredge barge or in a second material barge for subsequent removal onshore.**
- The construction area will be cleaned on a daily basis.

For more detail on environmental protection measures, refer to the Environmental Management Plan ..

a) Floating Containment Boom Details

RES will deploy and maintain a floating containment boom during the demolition and debris removal activities. Any material that inadvertently falls into the water will be removed on an ongoing basis during all hours of operation and prior to stopping work on each given day. Breaches in the containment shall be immediately repaired. RES will notify the Engineer by fastest means possible of breeches that spill reportable quantities into the bay.

The floating containment boom will consist of an ABBCO Mark II (or similar) containment system. The boom will be deployed and encapsulate all areas where demolition is taking place. This boom system will be constantly maintained and monitored to ensure that it is in good working condition as to prevent any debris from escaping outside of the demolition limits.

VI. MATERIAL IDENTIFICATION AND DISPOSAL

a. Identified Debris

As indicated on sheet C-1 of the contract drawings, there are four (4) identified areas where debris will be removed in conjunction with dredging. This identified bay-bottom debris must be removed to perform the remedial dredging activities. The debris will be brought to the surface by a 5 yard heavy clamshell bucket, which is smaller and heavier than the environmental dredging bucket and more appropriate for debris removal.

The debris will be lifted off the bay bottom and placed in an adjacent barge. Once the debris removal has been completed in a specific dredging area, the barge will be transported to the RES marine facility. Once onshore, the debris will be placed in a separate containment area to prevent discharge into the Bay. If piles break or cannot be removed completely, they will be cut below the required grade or as otherwise directed by the Construction Manager.

The containment area will be lined, bermed, and large enough to sort the debris. It is likely that most of the debris will require cleaning before leaving the Shipyard. While in the containment area, the debris will be cleaned of dredged sediment prior to loading into trucks. The debris will also be sorted according to its general classification, and will

be disposed of according to Tables 1 and 2. Any material that may be recycled will be segregated and recycled at an appropriate facility, which are also listed in Tables 1 and 2.

Some debris may require hazardous waste disposal, such as batteries. If these materials are encountered, they will be segregated from non-hazardous waste. RES and the South Shipyard's environmental staff will work cooperatively to handle these aspects of waste removal should they arise.

b. Unidentified Debris

Given the long, industrial history of San Diego Bay, it is highly likely that significant additional bay-bottom debris will be encountered during the dredging activities. The debris that may be encountered during RES's dredging activities will be sorted and removed and separated from dredged sediment. To do this, RES may use a 'grizzly' screen to separate the debris material from the dredged sediment. The 'grizzly' would be placed on a material barge and dredged sediments containing debris will be passed through the screen allowing the dredged sediment to fall into the scow, separating it from debris. Once the debris is captured on the 'grizzly', RES will remove the debris from the 'grizzly' and place it on a separate material scow for identification, sorting and proper disposal in accordance with Table 2. Measures are taken to prevent discharges to the bay such as: drip catchers, plastic sheeting, walls or k-rails, and administrative controls.

As stated above, debris (both known and unknown) and demolition material will be sorted according to general classification. Anticipated quantities of demolition debris and the anticipated disposal sites are shown on Table 1. The anticipated debris categories and anticipated disposal sites for known and unknown debris is presented on Table 2.

Table 1

Timber Pier Identification and Disposal

Anticipated Debris	Anticipated Quantities (tons)	Anticipated Disposal Site
Wood decking	40-45	Republic, Otay
Steel piles	40-80 (length dependent)	RES Rainbow yard for salvage
General Construction Debris	40-60	Republic, Otay
Recyclable material	40-60	SA,SOS,Lakeside,Ennis

Table 2

Debris Identification and Disposal

Anticipated Debris	Anticipated Disposal Site
Recyclable material	SA,SOS,Lakeside,Ennis
General Construction Debris	Republic, Otay
Special Waste (timber piles)	Republic, Otay