



1500 S. Barracuda St., Terminal Island, CA 90731

(310) 547-0919 Fax (310) 547-0031

March 19, 2010

Port of Los Angeles
Construction and Maintenance Division
500 Pier "A" Street
Berth 161
Wilmington, CA 90744

Attention: Director of Port Construction & Maintenance.

Regarding: Berth 73W, X, Y, Z - Timber Wharf Pile Wrap Re-inspection (Spec 2700)

A re-inspection was performed 3-10-10 by the contracted POLA dive team. The purpose of this inspection was to verify that the pile wrap work, performed by Parker Diving (diving subcontractor for Connolly Pacific) has been completed as detailed in the Plans and Specifications for the project. The re-inspection was limited to the list of deficient items that Mr. Phong Ngo, the project engineer, had provided. Findings of the re-inspection are listed below with comments, underwater video, photo sheet, and an attached spread sheet.

Mudline/Rockline seals:

- 3 out of 41 piles inspected had insufficient/no seal (73-X: 8/2, 73-Y: 22/2A, 24/2B).
- Remaining 38 piles inspected (see attached spreadsheet) revealed questionable repair methods.
- All 41 piles had concrete barrier bags placed around the perimeter of the piles with limited to no excavation. Concrete barrier bags placed/stacked vertically up to 2'-3' above existing slope.
- Improper to no footing preparation for adequate rockline seal footing per specification 5SR-7/SR-7. If an obstruction was encountered (old pile stub, rock, or debris) the concrete barrier bag was placed adjacent to the obstruction. With concrete poured in between, over, or around it.
- Numerous voids between stacked concrete bags.
- Annulus between outside of pile and inside of stacked concrete perimeter bags concrete pour with improper tremie technique, resulting in loose separating aggregate/sand (see underwater video).
- Several piles with 2"-4" of clearance between outside of pile and inside of concrete bags with insufficient concrete placed (see attached photo sheet).

Comments: None of the Rockline Seals were done to the specifications stated in the wrapping details (1-2620 SR-7). Evidence of exposed wood under the concrete bags at the base of the pile clearly indicates improper/insufficient excavation effort for proper rock line seal installation. Evidently, the divers placed cement bags around the base of the pile, and subsequently pumped the annulus between the bags and pile with concrete. Historically, from past POLA C&M work, over time the bottom materials at the base of the pile will undermine and create a void below the concrete bags and poured mortar. Consequently, the pile even though wrapped in the upper

portion, will be exposed at the base and subject to marine borer attack and eventual pile failure.

The proper method for sealing the timber piles is to remove any obstruction encountered while excavating 24" down from existing bottom profile, for a seal (examples: large boulders, pile stubs, and debris) This is clearly stated in note #2 of drawing #1-2620 XR-1. This excavation work was not done.

Mudline/Subwrap:

- A total of three were called out for re-inspection. All repairs/deficiencies were corrected properly.

Tidalwrap/Tidal Extension:

- 23 piles inspected: 1 pile had an improper seal (73-W 19/2B). Nails not installed in the lower tidal wrap skirt.

Comments: A float thru was conducted at low tide revealing approximately 25 piles with tidal wrap deterioration from creosote leaching thru the 30 mil PVC plastic barrier. Evidently, the required 6mil polyethylene liner was not integrated into the Tidal Wrap fabrication as indicated in the Plans and Specifications (2SR-7/1SR-7). This is a serious deficiency. The creosote will eventually decompose the PVC. Further investigation is needed to confirm this condition.

Upper band/Lower band:

- Nine locations were inspected. All band deficiencies corrected.

For further details, refer to the attached field pile inspection sheets, underwater video and photographs. If you require additional clarification or information please call us.

Thank you,

Wade Bliss
Ralph Tuckfield

Wade Bliss/Ralph Tuckfield
American Marine Corporation


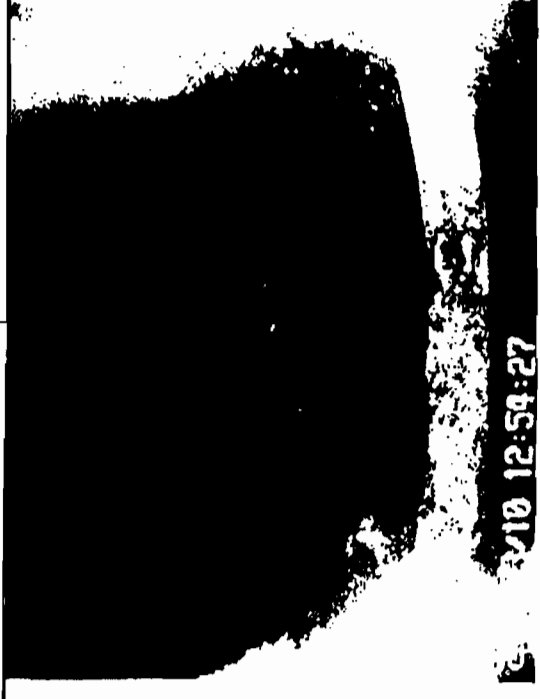


CC: P Lit, P. Ngo

BERTH 73 WXYZ - Timber Wharf Re-inspection

Line	Station	Depth	Water Temp	Wind	Wave	Visibility	Current	Direction	Speed	Time	Remarks	Inspector
70 Y	21	88										
71 Y	28	88										
72 Y	34	88										
73 X	14	4										
74 Z	14	4										
75 Z	18	3										
76 Z	20	3										
77 Z	20	28										

Legend: 1/1 = 1st inspection 2/1 = 2nd inspection 3/1 = 3rd inspection 4/1 = 4th inspection
 1/2 = 1st inspection 2/2 = 2nd inspection 3/2 = 3rd inspection 4/2 = 4th inspection
 1/3 = 1st inspection 2/3 = 2nd inspection 3/3 = 3rd inspection 4/3 = 4th inspection
 1/4 = 1st inspection 2/4 = 2nd inspection 3/4 = 3rd inspection 4/4 = 4th inspection

Qualitative Scale (Q): None of the Knocking Scale were done to the specifications stated in the wrapping details (1-2620 SR-7). Evidence of exposed wood under the concrete bags at the base of the pile clearly indicates improper/sufficient excavation effort for proper rock line and installation. Evidently, the divers placed cement bags around the base of the pile, and subsequently pumped the annulus between the bags and pile with concrete. Historically, from past POLA C&M work, over time the bottom materials at the base of the pile will undermine and create a void below the concrete bags and poured mortar. Consequently, the pile even though wrapped in the upper portion, will be exposed at the base and subject to marine borer attack and eventual pile failure.

	<p>1400 S. Barnoula St., Berth 270-271 Terminal Island, Los Angeles, CA 90731-7157 Phone (310) 547-0919 FAX (310) 547-0031</p>	<p>Berths 73W, X, Y and Z deficient pile wrap repairs</p>	<p>Date: 3-10-10 Diver: Billie</p>
 <p>2010/03/10 12:54:27</p>	 <p>2010/03/10 13:24:31</p>		
<p>P1. Missing nails in the tidal wrap skirt see spec. 1-2620 SR-7. Photo location: Berth 73W; beam 19, pile 2-B.</p>  <p>2010/03/10 13:02:25</p>	<p>P2. Typical voids between cement bags allowing water flow to pile. <u>No Seal</u> condition.</p>		
<p>P3. Soft loose mud under and behind concrete bags. No excavation or footing dug prior to rock bag placement. Voids result in exposed wood pile. <u>No Seal</u> condition. Berth 73X; beam 8, pile 2.</p>	<p>P4. Undermined mortar pour, with exposed wood under base of concrete. <u>No Seal</u> condition. Photo location 73Y; beam 24, pile 2 batter</p>		