

**Engineering Evaluation
Of
Gambol Marine Shipyard
Proposed Business Plan**

Supplement to July 21, 2010 Report

October 21, 2010

Submitted to:

**The Port of Los Angeles
425 South Palos Verdes Street
San Pedro, CA 90731**

Submitted by:



**999 W. Town & Country Road
Orange, CA 92868**

1. INTRODUCTION

Gambol's "Proposed Business Plan" provides a general discussion of the facility-related tasks required to develop a state-of-the-art shipyard on the former Southwest marine site. The plan provides an itemized breakdown of estimated costs, but has designated such information as confidential. AECOM provided an engineering evaluation of the Gambol business plan and summarized observations including identifying rough order of magnitude costs believed to be not clearly identified in the business plan. AECOM's report dated July 21, 2010 was submitted to the Port of Los Angeles. AECOM's observations were based on site visits, review of the business plan and professional opinion and did not include detailed conceptual engineering studies.

For our July 21, 2010 report, our focus was primarily on the items that were clearly underestimated or omitted in the Gambol business plan. Since then we have continued to refine our estimates and also evaluated other items in the business plan as well. The objective was to establish a more refined cost based on further evaluation and study for items identified in the previous report as well as to assess the realistic costs of other items not addressed in our previous report. Five cost items were identified for further study, namely:

- Electrical improvements, including buildings, main substation, high mast lighting, crane/wharf power, duct bank and cables,
- Water, storm drain and sewer system improvements,
- Parking lot option,
- Pier 3/ Pier 4 transition improvements ,
- Crane rehabilitation/upgrade.

We utilized the services of Ocean Terminal Services, a San Pedro based crane maintenance firm to perform a field inspection/evaluation and provide a cost proposal for the rehabilitation of the portal gantry cranes. Their inspection report, photographs and cost estimate are included in Appendix-1 of this report.

2. ELECTRICAL

2.1 BUILDINGS

The cost of building electrical improvements reflects the cost for updating power and lighting equipment in the four buildings identified for reuse with some credit being allocated for the existing conduits installed in the building. Based on inspection of the buildings, the assessment is that new power equipment, devices and lighting fixtures will be required. The cost is computed using the recommended cost per square foot of the building based on RSMEANS Heavy Construction Cost Data.

2.2 MAIN SUBSTATION

The cost for the main substation was based on the Department of Water and Power (DWP) and POLA evaluation of the existing 34.5kV equipment and AECOM's assessment of the 4.16kV main distribution switchgear. The assessment is that, refurbishing or re-certifying this equipment will be more costly or may not even be feasible due to the non-availability of replacement parts. The cost of the main substation was based on providing a new 4.16kV distribution switchgear and on providing the infrastructure (slab, fence, underground duct banks, etc) for DWP to house new 34.5kV equipment. The cost required by DWP for the new service is included. The DWP meeting minutes are included in Appendix-II of this report.

2.3 HIGH MAST SITE LIGHTING

The high mast lighting system is based on the Port's standard method of lighting backlands to accommodate wide open space to operate within. The cost is also based on the standard unit cost used on recent projects at the Port of Los Angeles.

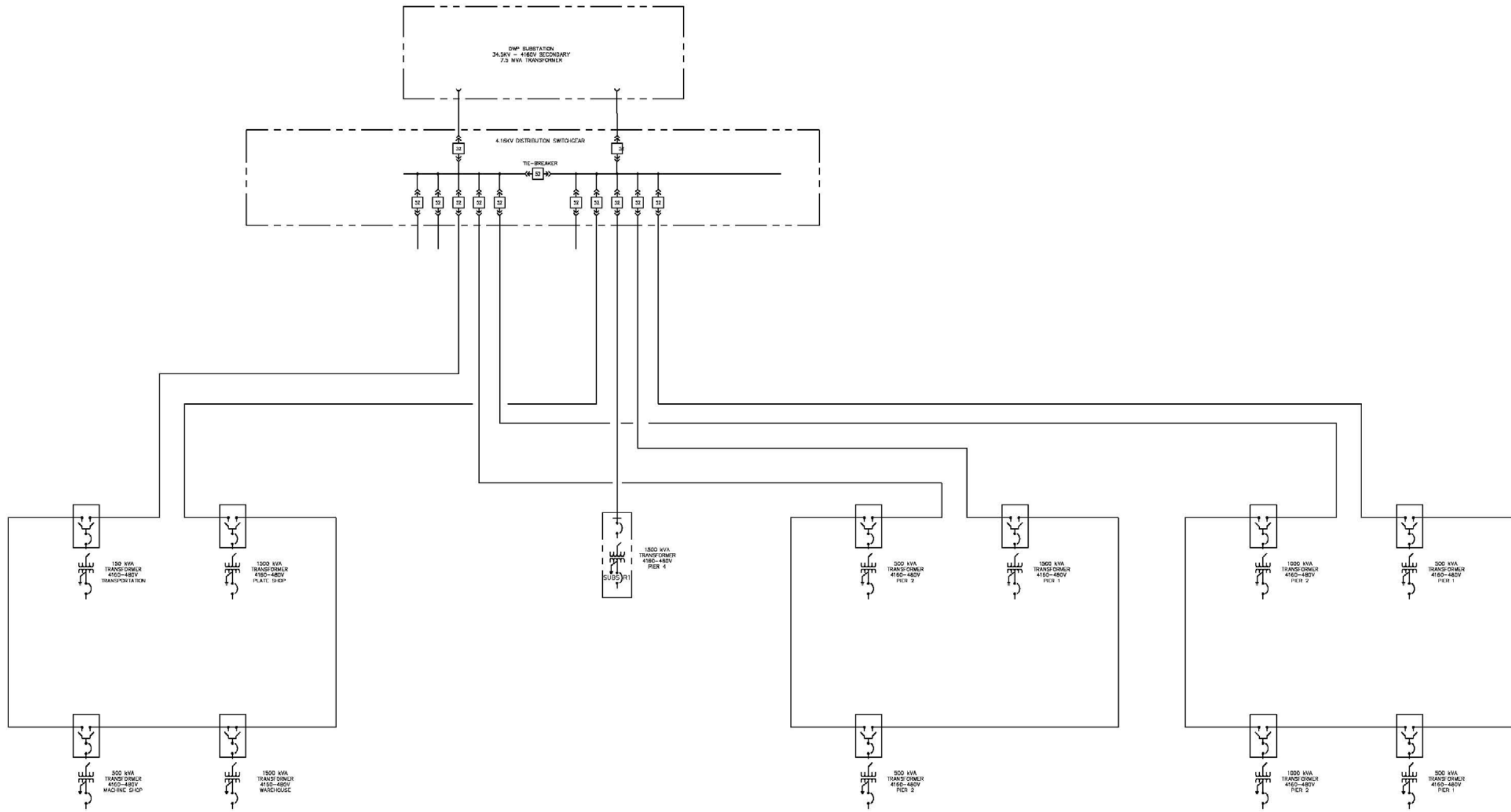
2.4 CRANE/WHARF POWER

This cost will be incurred to provide power to the cranes and power to support dry dock operations. The cost is specifically for the replacement of submersible type substations and associated equipment required for the 480V power distribution. These existing substations are inoperative and have not been used for many years. AECOM'S assessment is that submersible type equipment can no longer be economically re-certified. Replacement equipment are based on above ground equipment since submersible equipment are no longer manufactured as standard equipment. Costs for the crane rehabilitation and rail are not included in this estimate.

2.5 DUCTBANK & CABLES

This item of cost is required to support plans to provide power for the various buildings as well as power to the cranes. The cost includes the cost for underground conduits, 4.16kV cables, manholes, and pad mounted transformers to provide 480V power to the various buildings. The cost of the 4.16kV cables to provide power to crane substations are also included.

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Revision	By	Approved	Date
Rev 1	BAM	RE	5/6/09

999 Town & Country Road
Orange, CA 92668



Drawn By: _____
 Approved By: _____
 Date: _____
 Meeting: _____

**PORT OF LOS ANGELES
 GAMBOL MARINE SHIPYARD
 CALIFORNIA
 SINGLE LINE DIAGRAM**

Sheet Title: _____
SKETCH E1
 Project Number: _____ Sheet Number: _____

3. WATER, STORM DRAIN AND SEWER SYSTEMS

3.1 WATER

Water system includes domestic and fire water systems. Complete replacement of the existing system in kind to include ductile iron piping, valves, combination reduced pressure backflow and double detector check valves, check valves, gate valves, related appurtenances and the replacement of a centrifugal pump. System does not provide water service and piping loops for areas outside the proposed lease boundary. Costs to provide water to remaining parcels under the limits of the original SW Marine site were not considered in this cost estimate. This is consistent with the materials and information provided by Gambol.

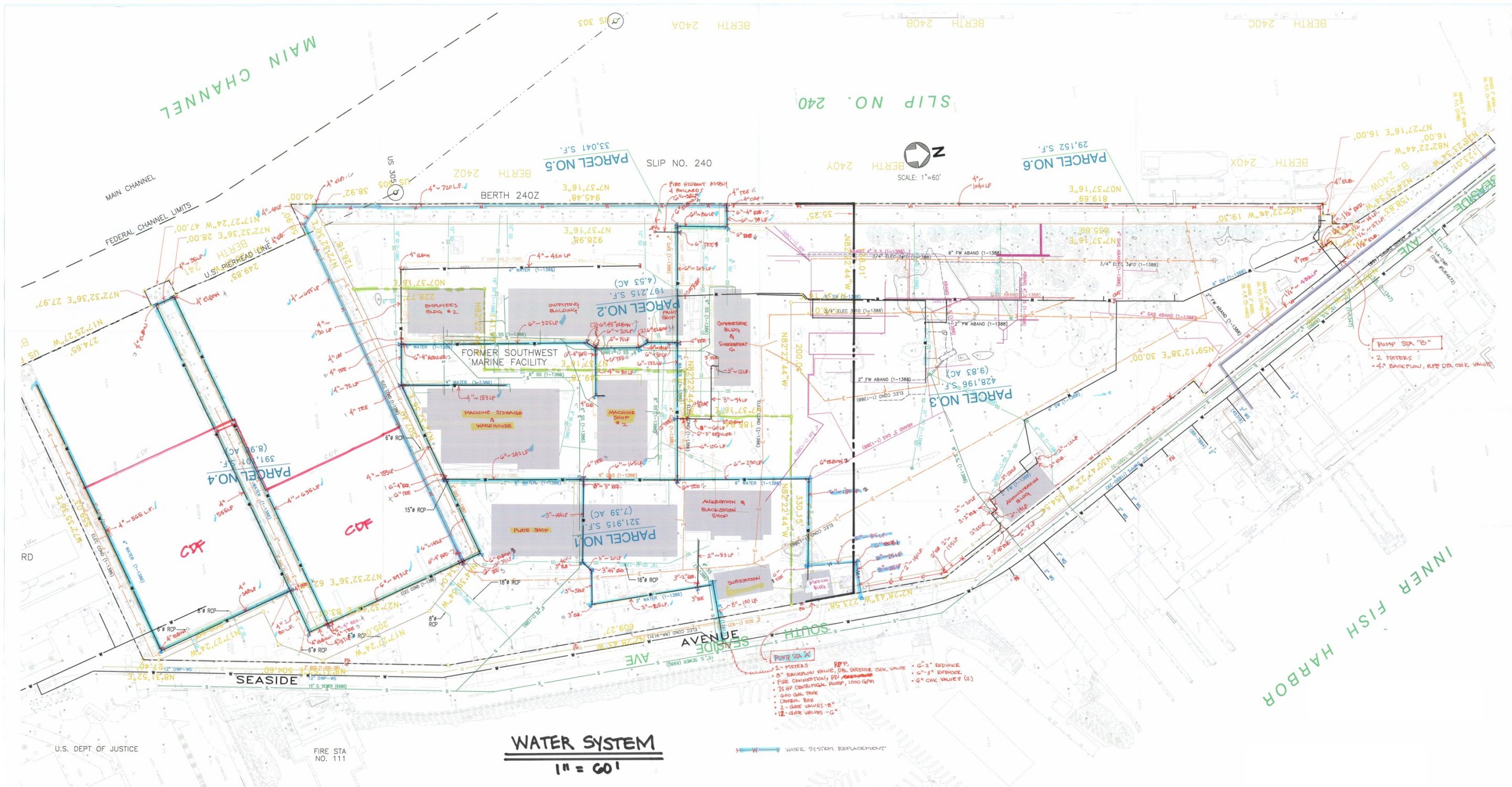
3.2 STORM DRAIN

Existing storm drain systems consist of various sized reinforced concrete pipe with local catch basins and roof drain connections. Since original construction, Federal and State clean water directives require treatment of storm water runoff for pollutants prior to discharge. Current site conditions characterize the site as completely impervious consisting of buildings, pavement and concrete wharf structures. Any redevelopment of the site would not increase the potential runoff, therefore infiltration measures to restrict runoff discharge are not required. However, any improvements to the storm drain system will require the addition of pollution filters, retention and/or de-silting basins and the installation of gross pollution separators. The site would require re-grading and paving, the installation of new catch basins and roof drains with pollution control measures, reconfiguration of piping to limit the number of outfall and additional storm drain systems capturing runoff in a newly constructed Contaminated Disposal Facility (CDF). Infiltration measures in the CDF site would not be considered due the toxicity of the fill material and potential contamination of local waters. Costs for the storm drain system reflect addition of pollution filters to the catch basins/ roof drains and the new system for the CDF site. Costs do not include reconfiguration of existing piping, roof drains, catch basins, gross pollution separators, junction structures, excavation and improved outfall structures at the existing bulkheads. Costs only reflect storm drain improvements on the new landfill (Alt 4.2 configuration).

3.3 SEWER

The existing sewer system consisted of VCP pipes, manholes and connections from the site buildings to a series of lift stations culminating at the Employees Building No. 2, the most south-easterly building located adjacent to Wharfs 3 & 4. From the Employees Building No. 2, the system gravity flows in a 6" VCP to the 15" trunk sewer located in Seaside Avenue. It is estimated that due to the age and degraded condition of the piping, the sewer systems would require replacement. This is consistent with the materials and information provided by Gambol.

The portion of gravity flow line could be replaced with new HDPE piping, however, where the piping passes under the Plate shop, micro-tunneling or some other form of pipe replacement would be required for the system to remain on its current alignment. Examination of current as-built drawings indicate the house connections for the Plate shop occur under the building slab, this would require saw-cutting and removal of a portion of the existing floor slab to make house connections to the new sewer. Sewer service from Machine Shop No. 2 could be re-directed via gravity flow to the new line. However, once the lift stations are severed from the system, all buildings to the north of Employees Building No. 2, would be without sewer service.



MAIN CHANNEL

SLIP NO. 240



SCALE: 1" = 60'

BERTH 240Y

SLIP NO. 240

BERTH 240Z

PARCEL NO. 5
33,041 S.F.

945.48' N7.37.16"E

FEDERAL CHANNEL LIMITS

249.85' BERTH 241
N17.27.24"W 47.00'
N72.32.36"E 28.00'

40.00'
58.90'
N72.32.36"E

US 305.05

US 1 BERTH 241
N17.25.27"W 27.97'

274.65'

FORMER SOUTHWEST MARINE FACILITY

MACHINE STORAGE & WAREHOUSE

MACHINE SHOP #2

PLATE SHOP

PARCEL NO. 1
321,915 S.F.
(7.39 AC)

PARCEL NO. 4
391,000 S.F.
(8.98 AC)

LINE A-B OUTFALL
12" RCP
L=212.5'

LINE A EXT.
6" RCP
L=105'

LINE B EXT.
8" RCP
L=85.5'

LINE C EXT.
6" RCP
L=125'

LINE D EXT.
6" RCP
L=100'

LINE E EXT.
8" RCP
L=45'

LINE F EXT.
18" RCP
L=30'

LINE G EXT.
15" RCP
L=35'

LINE H EXT.
15" RCP
L=55'

LINE I EXT.
6" RCP
L=35'

LINE J EXT.
6" RCP
L=90'

LINE K EXT.
12" RCP
L=60'

LINE L EXT.
12" RCP
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LINE M EXT.
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LINE N EXT.
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4. PARKING LOT OPTION

We have evaluated a total of three different options for parking, namely, the parking structure as reflected in Gambol's business plan and discussed in our July 21, 2010 report, an on-site parking lot, and an off-site parking lot option.

On-site parking lot: Based on planned building occupancy of approximately 155,000 sq ft, with 1 parking space per 500 sq ft would require a minimum of 310 parking stalls, with 8 disabled spaces and 1 van accessible space to be provided onsite. Surface/street parking outside the footprint was not considered in this study. A review of the proposed site lease and available open areas identified potential parking areas located along the northerly lease boundary and along the Seaside Avenue frontage. Access to the parking areas would be from two locations via Seaside Avenue, the north parking via a new access road which is outside the project boundary and the east parking lot from the existing site entrance (see Parking Layout sketch on the following page). Proposed on-site parking lot improvements would include lighting, fencing, striping, signage, security booths and services at both parking lot locations.

Off-site parking lot: The proposed off-site parking lot is located in Fish Harbor at the intersection of Seaside and Cannery Street and is approximately 2000 ft from the shipyard entrance. Access to the parking lot is from Cannery Street. The site used is for discussion purposes only. The use of this site will require entitlements, master plan approvals etc.



PARKING SUMMARY:

PARKING REQUIRED	301 SPACES
DISABLED PARKING	8 SPACES
VAN ACCESSIBLE	1 SPACES
TOTAL	310 SPACES
PARKING PROVIDED	361 SPACES
DISABLED PARKING (ONSITE)	8 SPACES
VAN ACCESSIBLE (ONSITE)	1 SPACES
TOTAL	370 SPACES

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NO.	DATE	DRWEN	REVISIONS	CH/NO	APP'D	NO.	DATE	DRWEN	REVISIONS	CH/NO	APP'D

PRELIMINARY
NOT FOR CONSTRUCTION

PLANS PREPARED BY:
TRANSPORTATION
AECOM
AECOM USA, Inc.
599 Town & Country Road
Orange, California 92668
T 714.567.2501 F 714.567.2441
www.aecom.com

DATE: AUGUST 2010
DRAWN:
CHECKED:
DESIGNED:
ENR/ARCH

SW MARINE REDEVELOPMENT STUDY	
OFFSITE PARKING LOT OPTION @ FISH HARBOR	
THE PORT OF LOS ANGELES ENGINEERING DIVISION 425 S. PALOM VERDES STREET SAN PEDRO CA 90731-3309	DRAWING NUMBER FIGURE 2

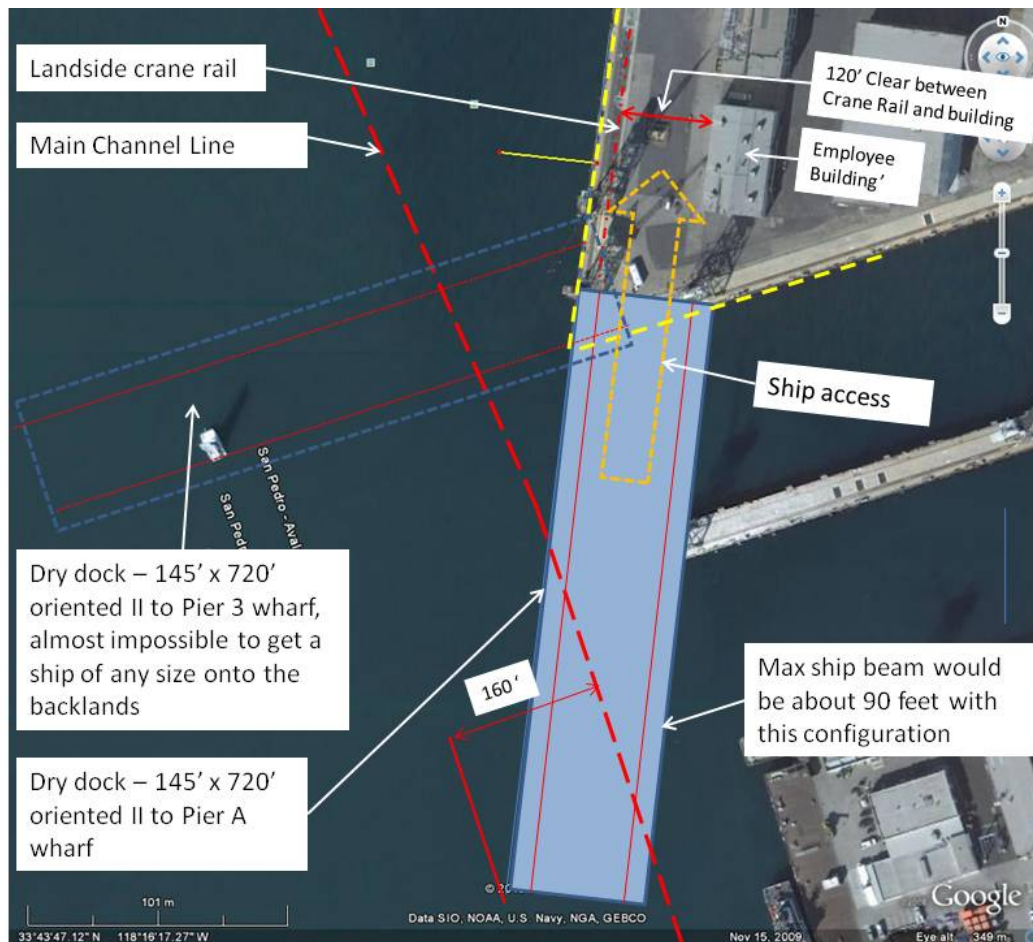
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5. PIER 3/PIER 4 TRANSITION

5.1 Dry Dock Placement

As indicated in the Gambol business plan, the dry dock (2+3) transfer operation appears to require that the dry dock align with a 150 foot wharf cut-off that allows the vessel to transfer to the work area adjacent to Pier 4. The dry dock is 145 feet in width and 720 feet in length. When in position, the dry dock extends into the Federal Channel a distance of 160 feet. This configuration has the potential to impact ship transit and will limit access to the north end of the Coast Guard wharf.

The available dry land work area is limited by the location of the Employee Office Building and the Outfitting building. The clear width from the landside crane rail and the buildings is 120 feet. It is estimated that the maximum vessel beam serviced is in the range of 80 to 90 feet.



720 Foot Dry Dock Orientation

5.2 General

It appears that Gambol's proposed dry dock operating strategy is to use the existing Pier 4 area to transfer vessels to and from a work area on land. The work area is parallel to Slip No. 240 which opens on to the Main Channel and supported partly on the existing concrete wharf deck and partly on the land area behind the wharf deck. No cost allocation is provided for this effort. To estimate what we believe is needed for minimal operations, we assume:

- The existing wharf deck is adequate to support the shipyard loads (this is possibly a non-conservative assumption because the condition of the structure is already known to be deteriorated and our general expectation is that the normal operating area for a shipyard is usually a higher live load criterion than the old pier.)
- The water depth to transfer vessels from a dry dock is estimated at -25' MLLW. This means that the dry dock must be moved to a deeper location to load a vessel; the deeper location is likely ~-50' MLLW. The operational strategy to manage dry dock movements and vessel loading is not a part of this evaluation; however, it is expected that this process will add challenge and cost to the overall operations.
- The existing wharf structure has a perimeter concrete deck system supported by steel piles. The inside edge of the concrete deck has a retaining sheet pile wall that includes batter H-piles projecting outward to support the interior fill. The H-piles may be compromised in strength or need to be removed because they extend beyond the planned dry dock unloading face.
- The wharf corner will need to be cut off to provide a new 150' long transition area for the dry dock to butt up against and allow the vessel to be transferred to the working area on the wharf/land area.
- The embankment below the wharf slopes up to ~-12' MLLW at the interior sheet pile wall. Since the 150' face is nearly to the interior corner, the maximum retaining wall height goes from -25' MLLW up to -12' MLLW, a total of 13'. This retaining wall height decreases to zero at both ends.
- The construction cost elements to provide for these improvements include:
 - Demolish part of wharf deck and piles (Area = $150 \times (70 + 20) / 2 = 6,750$ SF)
 - Install underwater retaining wall to achieve -25' MLLW (
 - Dredge existing embankment to -25' MLLW (Vol. $\sim [(15' \times 150' \times 1/2) + 0] / 2 \times 1/27 = 21$ CY)
 - Construct new edge of wharf to allow transfer of vessel from dry dock (say 25' x 150')
 - Mooring system to maintain dry dock in position for transfer
 - Strengthen interior sheet pile system where H-piles are impacted by new wharf face location (~30 lineal feet of wall)

5.3 Demolition

The demolition assumes generally standard approach for most of the work. Special cutting and exposure of existing reinforcing steel is required along the edge to be restored.

5.4 Underwater Retaining Wall

The design is based on a recent POLA project and bid costs. This wall height is nearly 15' compared to 10' so the anticipated costs are expected to be higher for the middle part and possibly a bit lower for the outer thirds. The interior third is anticipated to be HZ 975D without adjacent sheet piles (AZ37) and the outer thirds are a king pile-sheet pile combination HZ 775C and AZ37; average length of pile and HZ is 50'. The cost is based on the recent bid price of \$3,700/ton installed; this is escalated for future work (+6%), smaller job (+5%).

5.5 Dredging

The dredge quantity is very small. The budget is calculated based on a small job criteria and not a unit rate.

5.6 New Deck and Piling Construction

The existing deck is very complicated in this area due to original planned use. The edge construction is simple on the new finished edge, but the extent of new construction goes back a relatively long distance to fit into the existing pile and beam configuration.

5.7 Mooring System for Dry Dock Vessel Transfer

This is an estimate of the new bollards and miscellaneous work. No new structures such as mooring dolphins are anticipated.

5.8 Strengthen Interior Sheet Pile Wall

This is an estimate of the cost to strengthen the H-pile system capacity.

		Quantity	Unit Rate	Amount
1	Demolition	6750 SF	\$40	\$ 270,000
2	Underwater Retaining Wall	250 tons	\$4100/ton	\$ 1,025,000
3	Dredging	1 Lump Sum	\$100,000	\$ 100,000
4	New Deck and Piling	3750 SF	\$280/SF	\$ 1,050,000
5	Mooring System	1 Lump Sum	\$100,000	\$ 100,000
6	Strengthen Interior Sheet Pile Wall	1 Lump Sum	\$150,000	\$ 150,000
	Subtotal			\$ 2,695,000
	Contingency	25%		\$ 673,750
	Total			\$ 3,368,750

6. STATIC PRESERVATION

There is no standard for “static preservation” available, but historic building websites have identified certain procedures to help stabilize potential historic buildings. In Preservation, the options for replacement are less extensive than in the treatment-Rehabilitation. This is because it is assumed at the outset that building materials and character-defining features are essentially intact, i.e, that more historic fabric has survived, unchanged over time. The expressed goal of the Standards for Preservation and Guidelines for Preserving Historic Buildings is retention of the building's existing form, features and detailing. This may be as simple as basic maintenance of existing materials and features or may involve preparing a historic structure report, undertaking laboratory testing such as paint and mortar analysis, and hiring conservators to perform sensitive work such as reconstituting interior finishes. Protection, maintenance, and repair are emphasized while replacement is minimized.

Deteriorated portions of a historic building may need to be protected thorough preliminary stabilization measures until additional work can be undertaken. Stabilization may include adding structural reinforcement, weatherization, or correcting unsafe conditions. Temporary stabilization should always be carried out in such a manner that it detracts as little as possible from the historic building's appearance. Although it may not be necessary in every preservation project, stabilization is nonetheless an integral part of the treatment.

6.1 Certificate of Occupancy

The purpose for obtaining these records is to determine if the existing building use has been changed in the past, or if the new use proposed by the operator will change the existing certified use. According to the 2007 LA City Building Code (which is based on the 2007 California Building Code) an existing building need not be brought up to current code unless a change of use or occupancy is established. The pertinent code section is 8300 Existing Buildings.

Certificates of Occupancy for the existing structures at Southwest Marine were researched at the LA Department of Building and Safety. The city was able to produce certificates of occupancy for two minor buildings, Acetylene Storage and a Pump house that were constructed in 1946. No certificates of Occupancy are available for the other existing buildings.

6.2 ADA Upgrades

The code does not limit the upgrades to current ADA standards for existing buildings if the construction value of new renovations or rehabilitation of the structure exceeds a certain threshold. For the current code that threshold is approximately \$129,000. All of the primary and secondary structures on the site require renovations/rehabilitation greater than \$129,000 and thus will require updates per the current code.

7. CONCLUSION

This supplementary report presents results of further evaluation of the various additional cost items identified in the original engineering evaluation report of the Proposed Gambol Marine Shipyard Business Plan. The following updated table on the ensuing page identifies critical works and associated costs that were not addressed or underestimated in the Business Plan. This cost table supercedes the cost table included in the July 21, 2010 AECOM Report.

There are additional costs that are likely to arise as the shipyard development is further refined such as seismic, fire protection, ADA upgrades to the existing buildings proposed for re-use and structural rehabilitation of existing wharves (Pier 1,3 and 4). Based on visual evaluation of the existing wharves, it is unclear at this time whether the shipyard cranes can be safely operated on these wharves. Furthermore, an extensive engineering study and evaluation is required to determine the extent of rehabilitation required.

ITEM	DESCRIPTION	COST	COMMENTS	
RESTORATION AND REFURBISHMENT OF EXISTING BUILDINGS	Electrical Building Upgrades in excess of Business Plan estimate	\$ 0.564M	See Note 2	
	Main Substation/Building 2 (34.5kV substation; 4.16kV Distribution)	\$ 2.495M		
CONSTRUCTION OF NEW CONCRETE PIERS AND WHARVES INCL. CDF	Removal of surcharge pile	\$ 3.383M		
	Concrete Cap Beam	\$ 1.000M		
	Refurbish existing pier fendering, coping and appurtenances	\$ 1.500M		
	Wharf utilities	\$ 0.538M		
	Reconstruct wharves/piers	\$ 2.695M	See Note 6	
GRADING AND PAVING NEW LAND AREA	Grading, paving and drainage 4.24 acres created by CDF	\$ 1.186M		
GRADING AND PAVING EXISTING LAND AREA	Grading, paving and drainage of existing site (11 acres)	\$2.944M	See Note 3	
NEW SITE INFRASTRUCTURE AND SHIPYARD FACILITIES	<ul style="list-style-type: none"> • Parking Structure • On-site Lot • Off-site Lot 	\$ 9.600M \$ 0.143M \$ 0.560M	See Note 5	
	Duct bank and Cables	\$ 1.435M		
	Crane Power	\$ 4.750M	See Note 1	
	High Mast Lighting	\$ 1.500M		
	Water	\$ 0.522M		
	Storm Drain (New Landfill only)	(\$0.430M)		
	Sewer	(\$0.048M)		
	Crane Rehabilitation (in excess of business plan costs)	\$ 1.391M		
	NEW FLOATING DRYDOCKS	Sheet pile wall	\$11.200M	
		Dredging	\$ 1.842M	
OPEN CELL VS. POLA CDF COSTS	Additional costs for Gambol Slip Development compared to POLA Channel Deepening CDF	\$ 5.500M		
PIER 3/ PIER 4 TRANSITION	Demo, Strengthening, Dredging etc.	\$ 3.369M		
EIR/EIS		\$ 1.200M		
DESIGN & CM	Engineering, Design, CM, Survey, Inspection (17% on const. cost)	\$ 6.900M	See Note 7	
TOTAL ADDITIONAL COSTS		\$55.579M		

NOTE:

1. Cost of crane upgrade is not included. Power upgrade is included.
2. Buildings include Transportation Shop (Bldg 2), Plate Shop (Bldg 4), Machine Shop (Bldg 5) and Warehouse & Shops (Bldg 6).
3. Costs for grading and paving existing land assumes 6" AC @ \$90/ton on 8" CMB @ \$25/CY, \$40K per acre drainage, \$0.50 SF removals
4. Costs are not included for seismic upgrades of building foundations or existing wharfs.
5. On-site parking option was selected due to the lower cost despite possible impacts to land based shipyard operations.
6. It is assumed that due to scheduling, these wharves will be demolished due to the channel deepening project.
7. 17% Design & CM was not applied to the open cell and the crane rehabilitation costs.

Appendix I

Crane Survey/Rehabilitation



August 17, 2010

VIA Electronic Mail & U.S. MAIL

Louis J Di Meglio, R.A.
Sr Port Planner/ Architect
AECOM Transportation

RE: Proposal/Survey of six (6) portal gantry cranes at Berth 240

Dear Mr. Di Meglio:

Pursuant to your request, the following is the proposal/survey from Ocean Terminal Services, Inc. (OTS) for the possible rehabilitation of the six (6) portal gantry cranes located at Los Angeles, Berth 240.

I. Introduction

The conditional survey was performed on Friday, August 13, 2010. A thorough, visual evaluation was done on five of the seven existing cranes (cranes 2, 3, 4, 5, and 9). No power was applied to the equipment; therefore, the functionality of all electrical and mechanical components could not be verified.

The deteriorated state of the motors, gearboxes, electrical panels, and cab controls, leads OTS to believe that all components would need to be replaced or completely rebuilt. All electrical wiring would have to be replaced to comply with current safety codes. Assuming the electrical control system is operational; it is old technology and is very energy inefficient. Obtaining replacement parts for the control system might not be possible and would not be economically prudent.

Non-destructive testing would need to be done prior to commencing on any/all rehabilitation project for six of the seven cranes. It is OTS's professional opinion that crane 4 be condemned and decommissioned due to its structural deterioration (exhibit A). Providing the remaining cranes pass the testing process, rust removal and painting would be necessary. This process would include the lead abatement or encapsulation that is in the existing paint.

OTS feels that a more economically viable solution would be to replace the existing gantry mounted portal cranes with new, environmentally conscience dockyard cranes or mobile harbor cranes. In communication with Liebherr Nenzing Crane Co., a comparable replacement would cost approximately \$2.25 million.

II. Scope of Services

A. Clyde Crane 2

1. Electrical
 - Re-wire entire crane
 - Re-wind or replace seven (7) AC motors
 - Retrofit existing control systems (cab and house)
 - Engineering of system
 - Commissioning of system
 - Start up of system
2. Mechanical
 - Remove and re-work three gearboxes
 - Replace all sheaves and wheels
 - Bearings
 - Pins
 - Replace all wire ropes
3. Structural
 - Non-destructive testing
 - Lead abatement or encapsulation
 - Repair all structural deficiencies
 - Replace deteriorated floor plating
 - Replace deteriorated machinery house walls and roof
 - Replace deteriorated operator's cab windows, walls, and roof
 - Paint entire crane

B. Colby Cranes 1, 3, 5, 7 and 9

1. Electrical
 - Re-wire entire crane
 - Re-wind or replace six (6) AC motors
 - Retrofit existing control systems (cab and house)
 - Engineering of system
 - Commissioning of system
 - Start up of system
2. Mechanical
 - Remove and re-work three gearboxes
 - Replace all sheaves and wheels
 - Bearings
 - Pins
 - Replace all wire rope

3. Structural

- Non-destructive testing
- Lead abatement or encapsulation
- Repair all structural deficiencies
- Replace deteriorated floor plating
- Replace deteriorated machinery house walls and roof
- Replace deteriorated operator's cab windows, walls, and roof
- Paint entire crane

C. Colby Crane 4

1. Structural

- Heavy de-lamination of structural steel (legs and cross-members)
- Extensive corrosion of floor plating
- Extensive corrosion of machinery house walls and roof
- Recommend decommissioning

2. Mechanical

- Corrosion of all mechanical components beyond repair

D. Resources

1. General Electric
2. Demaria Motors
3. Paceco Corp.
4. Fuji
5. Radcliffe Testing
6. Southwest Coatings, Inc.
7. Leibherr Nenzing Crane Co.

Very truly yours,
Michael Booth
Ocean Terminal Services, Inc.
General Manager

MCB:jpr

Crane 2

*Clyde Iron Works
60 Ton Capacity*

	Labor	Parts & Material	Engineering	Total
I. Electrical				
<u>Motors</u>				
Rotator (40 HP)	\$3,500.00	\$18,400.00	\$0.00	\$21,900.00
Main Hoist (150 HP)	\$3,500.00	\$30,500.00	\$0.00	\$34,000.00
Boom Hoist (110 HP)	\$3,500.00	\$25,900.00	\$0.00	\$29,400.00
Gantry Motors (4 x 25 HP)	\$4,000.00	\$56,000.00	\$0.00	\$60,000.00
<u>Drives</u>				
Rotator	\$10,000.00	\$7,500.00	\$0.00	\$17,500.00
Main Hoist	\$1,000.00	\$17,500.00	\$0.00	\$18,500.00
Boom Hoist	\$10,000.00	\$15,000.00	\$0.00	\$25,000.00
Gantry	\$10,000.00	\$10,000.00	\$0.00	\$20,000.00
Auxillary Panel	\$15,000.00	\$25,000.00	\$0.00	\$40,000.00
Operator Cab Controls	\$10,000.00	\$40,000.00	\$0.00	\$50,000.00
500 HP Regen Unit	\$3,500.00	\$40,000.00	\$0.00	\$43,500.00
Drive Retrofit Engineering	\$0.00	\$0.00	\$35,000.00	\$35,000.00
Drive Retrofit Start-up	\$0.00	\$0.00	\$25,000.00	\$25,000.00
Electrical Wiring	\$125,000.00	\$25,000.00	\$30,000.00	\$180,000.00
II. Structural				
Non-Destructive Testing	\$0.00	\$9,000.00	\$15,000.00	\$24,000.00
Lead Abatement	\$85,000.00	\$0.00	\$0.00	\$85,000.00
Lead Encapsulation	\$60,000.00	\$0.00	\$0.00	\$60,000.00
Painting	\$35,250.00	\$8,500.00	\$0.00	\$43,750.00
Floor Plating Replacment	\$10,000.00	\$1,500.00	\$0.00	\$11,500.00
Walls and Roofing Replacment	\$10,000.00	\$1,500.00	\$0.00	\$11,500.00
Repair of Structural Deficiencies				\$0.00
III. Mechanical				
Rotator Gear Box	\$15,000.00	\$10,000.00	\$0.00	\$25,000.00
Main Hoist Gear Box	\$25,000.00	\$12,000.00	\$0.00	\$37,000.00
Boom Hoist Gear Box	\$25,000.00	\$12,000.00	\$0.00	\$37,000.00
Gantry Gear Assembly	\$15,000.00	\$3,500.00	\$0.00	\$18,500.00
Wire Ropes	\$10,000.00	\$5,000.00	\$0.00	\$15,000.00
Wire Rope Sheaves	\$7,500.00	\$10,000.00	\$0.00	\$17,500.00
Rotator Bearings and Wheels	\$20,000.00	\$10,000.00	\$0.00	\$30,000.00
				<u>\$1,015,550.00</u>

Crane 1,3,5,7,9

*Colby Cranes
22 Ton Capacity*

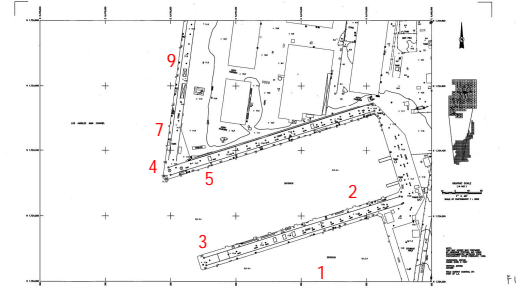
	Labor	Parts & Material	Engineering	Total
I. Electrical				
<u>Motors</u>				
Rotator (40 HP)	\$3,500.00	\$18,400.00	\$0.00	\$21,900.00
Main Hoist (150 HP)	\$3,500.00	\$30,500.00	\$0.00	\$34,000.00
Gantry Motors (4 x 25 HP)	\$4,000.00	\$56,000.00	\$0.00	\$60,000.00
<u>Drives</u>				
Rotator	\$10,000.00	\$7,500.00	\$0.00	\$17,500.00
Main Hoist	\$10,000.00	\$17,500.00	\$0.00	\$27,500.00
Gantry	\$10,000.00	\$10,000.00	\$0.00	\$20,000.00
Auxillary Panel	\$15,000.00	\$25,000.00	\$0.00	\$40,000.00
Operator Cab Controls	\$10,000.00	\$40,000.00	\$0.00	\$50,000.00
500 HP Regen Unit	\$3,500.00	\$40,000.00	\$0.00	\$43,500.00
Drive Retrofit Engineering	\$0.00	\$0.00	\$35,000.00	\$35,000.00
Drive Retrofit Start-up	\$0.00	\$0.00	\$25,000.00	\$25,000.00
Electrical Wiring	\$125,000.00	\$25,000.00	\$30,000.00	\$180,000.00
II. Structural				
Non-Destructive Testing	\$0.00	\$9,000.00	\$15,000.00	\$24,000.00
Lead Abatement	\$85,000.00	\$0.00	\$0.00	\$85,000.00
Lead Encapsulation	\$60,000.00	\$0.00	\$0.00	\$60,000.00
Painting	\$35,250.00	\$8,500.00	\$0.00	\$43,750.00
Floor Plating Replacment	\$10,000.00	\$1,500.00	\$0.00	\$11,500.00
Walls and Roofing Replacment	\$10,000.00	\$1,500.00	\$0.00	\$11,500.00
Repair of Structural Deficiencies				\$0.00
III. Mechanical				
Rotator Gear Box	\$15,000.00	\$10,000.00	\$0.00	\$25,000.00
Hoist and Boom Gear Assembly	\$25,000.00	\$12,000.00	\$0.00	\$37,000.00
Gantry Gear Assembly	\$15,000.00	\$3,500.00	\$0.00	\$18,500.00
Wire Ropes	\$15,000.00	\$7,500.00	\$0.00	\$22,500.00
Wire Rope Sheaves	\$10,000.00	\$12,500.00	\$0.00	\$22,500.00
Rotator Bearings and Wheels	\$25,000.00	\$25,000.00	\$0.00	\$50,000.00
			Crane Total	\$965,650.00
			5 Crane Total	\$4,828,250.00

Portal Crane Survey Port of Los Angeles Berth 240



Ocean Terminal Services, Inc.
Date of Survey: August 13, 2010

Berth 240 – Location of Portal Cranes



Crane 2

Clyde Iron Works
60-ton capacity

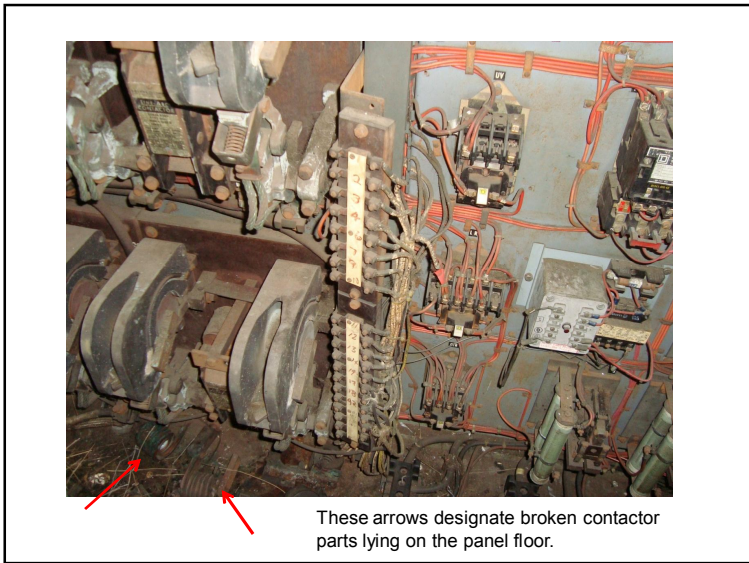
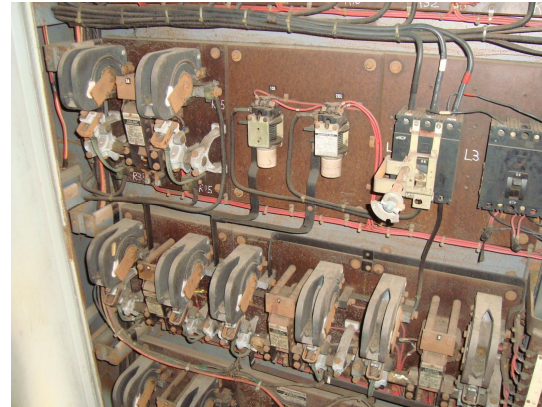
Please find the following images observed on August 13, 2010 during the inspection of Crane 2.

Operator Cab Controls

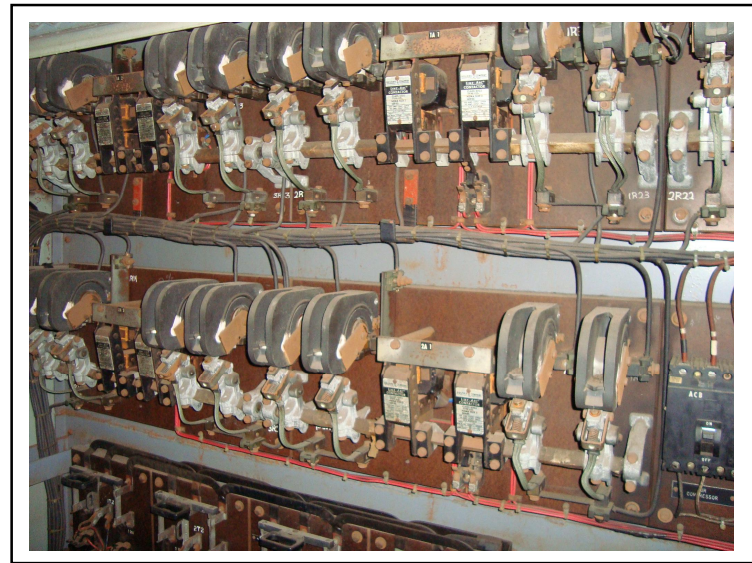


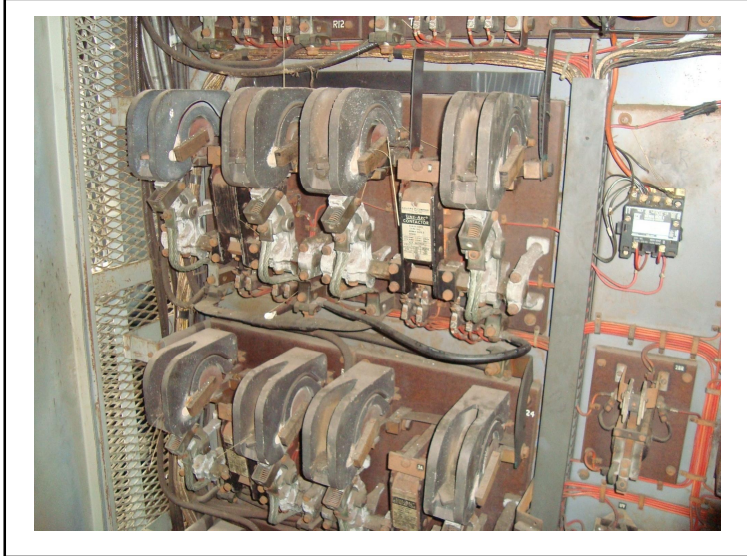


Electrical Panels for the Hoist, Boom Hoist, Swing and Gantry. The main concern of these panels is the functionality and lack of replacement parts.



These arrows designate broken contactor parts lying on the panel floor.





Rotator platform and wheels. The condition of these parts are unknown, but it is our feeling that this system would have to be reworked.



Crane 3

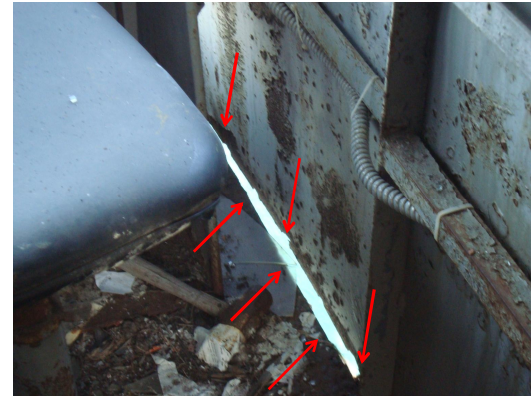
Colby Cranes
22-ton capacity

Please find the following images observed on August 13, 2010 during the inspection of Crane 3.

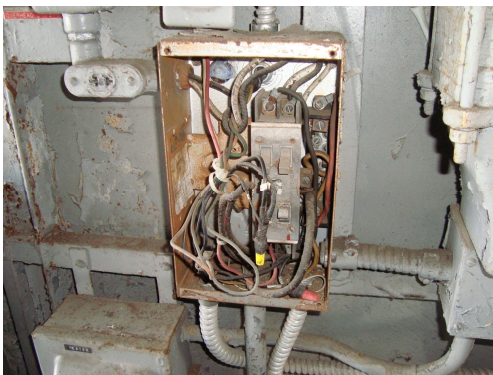
Operator's Cab Controls



Our concern here is the structural integrity of the cab housing.
Light is visible into the cab.

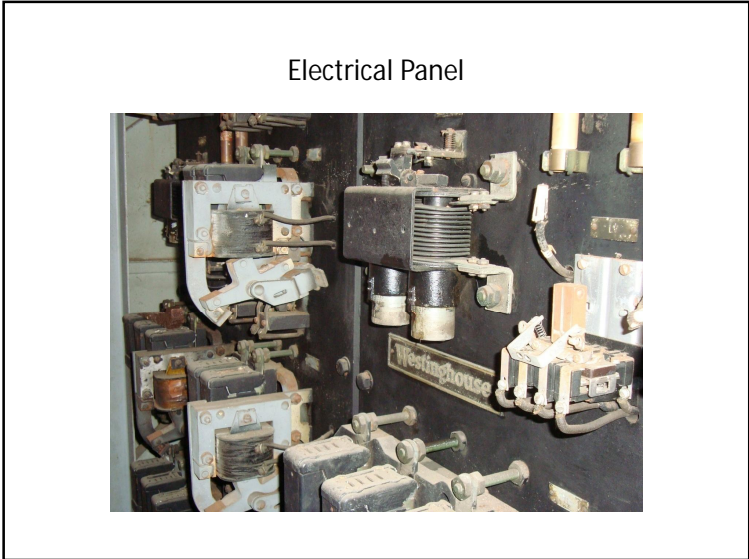


Please notice the aged and exposed wiring in the operator's cab and machinery house.



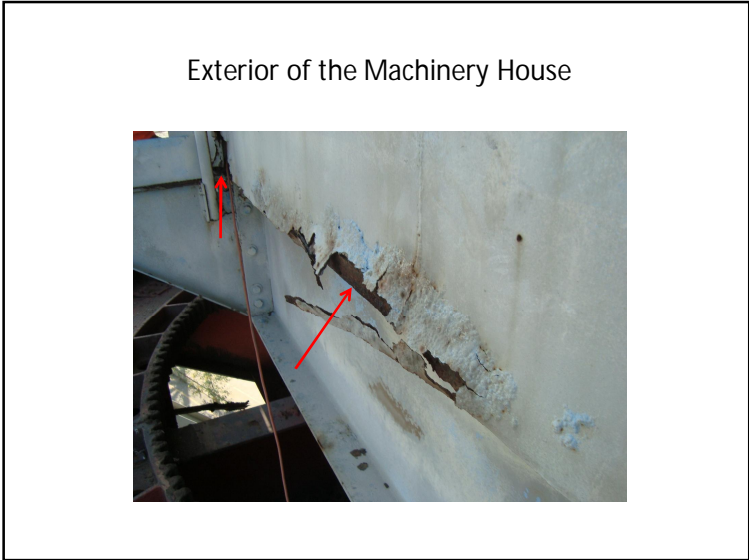
Main Hoist and Boom Hoist rope drums





Crane 4

Please find the following images observed on August 13, 2010 during the inspection of Crane 4.



Please notice the extensive rust corrosion. The structural integrity of all of the components is in question.



Severe deterioration of machinery house roof and walls. Light is shining through the roof in multiple locations.



Notice the severe corrosion of critical components of the main hoist assembly.



Rotator motor assembly completely covered in rust and bird droppings.



Observe the rust on the top of the operator's cab.



Rotating Wheel Assembly



Please notice the de-lamination of the structural steel.
This occurs in multiple areas of the crane.





Crane 7

Colby Cranes
22-ton capacity

Please find the following images observed on August 13, 2010 during
the inspection of Crane 7.

Operator's Cab.



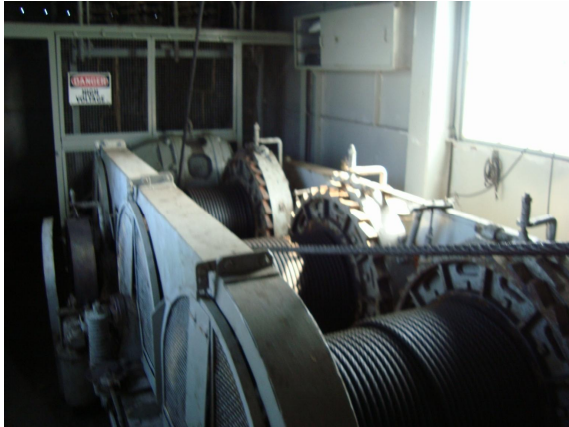
Operator's Cab Controls



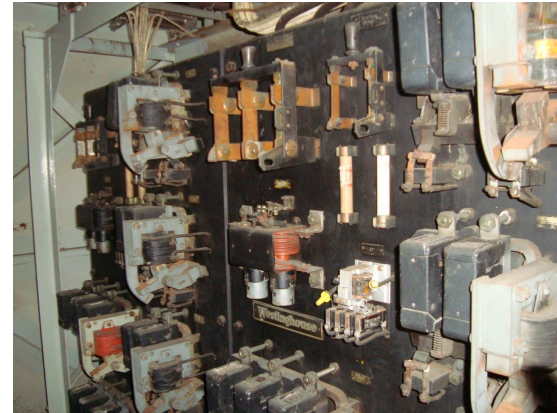
Rotator Motor Assembly



Main Hoist and Boom Hoist Assembly



Electrical Panel



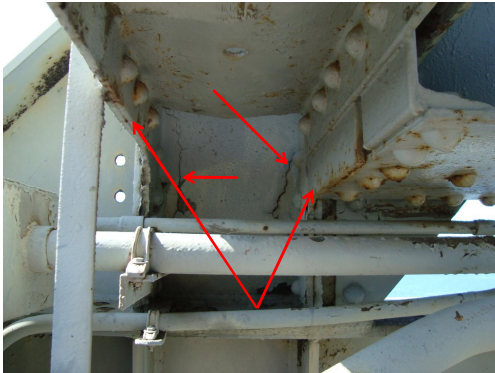
Please notice that these cables in the electrical panel are damaged and in need of repair.



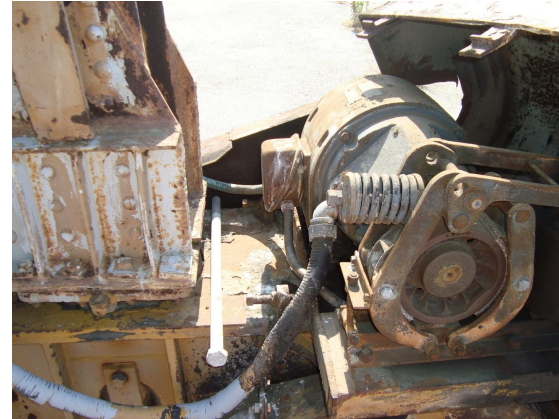
Rotating Wheel Assembly



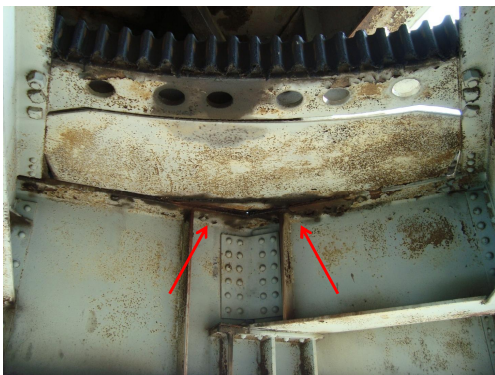
Please notice the de-lamination of the structural steel.
Also, the rust is bulging out and cracking the paint.



Gantry motor and brake assembly



The platform of the Rotator gears is rusting and de-laminating underneath.



Gantry Gears



Crane 9

Colby Cranes
22-ton capacity

Please find the following images observed on August 13, 2010 during the inspection of Crane 9.

Operator's Cab Controls



Rotating Wheel Assembly

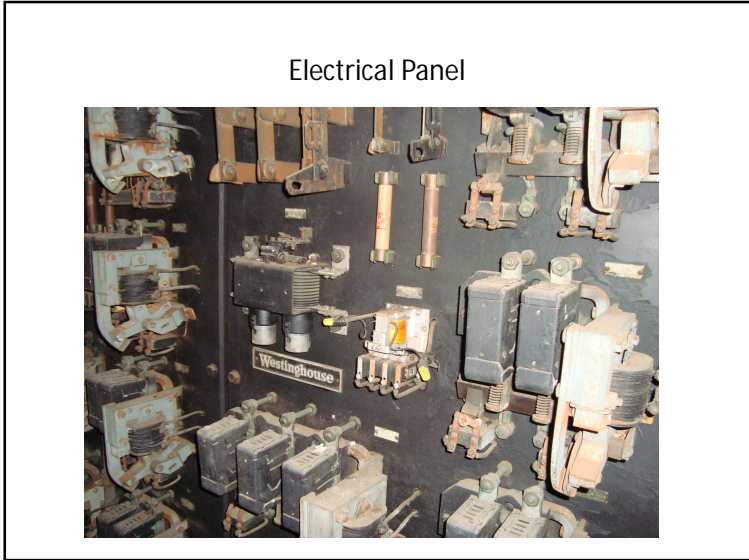




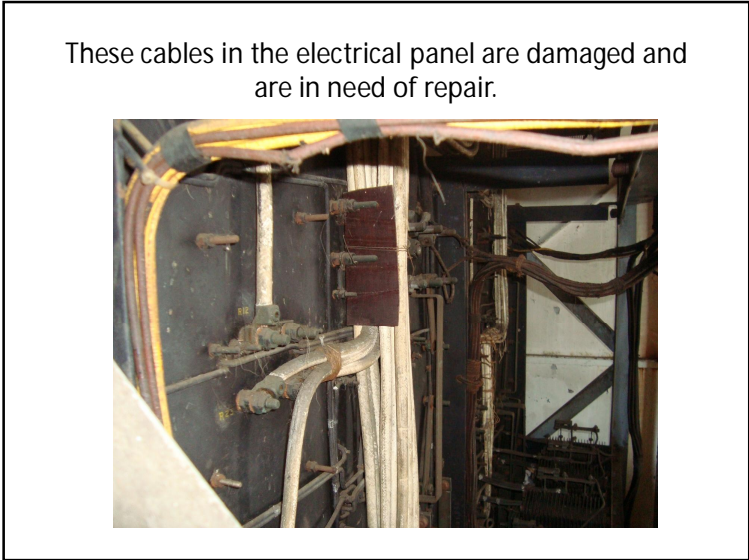
Main Hoist and Boom Hoist Assembly



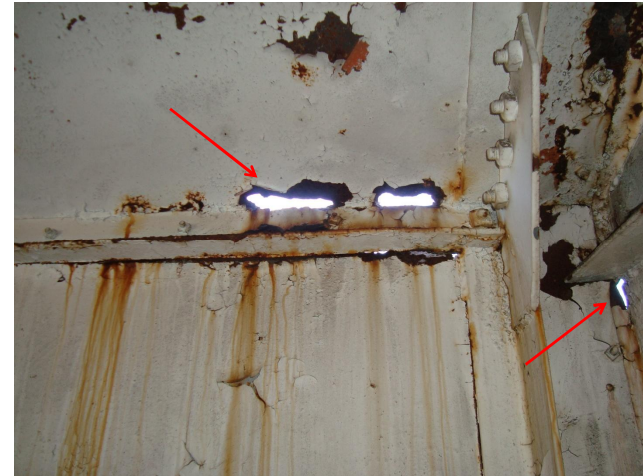
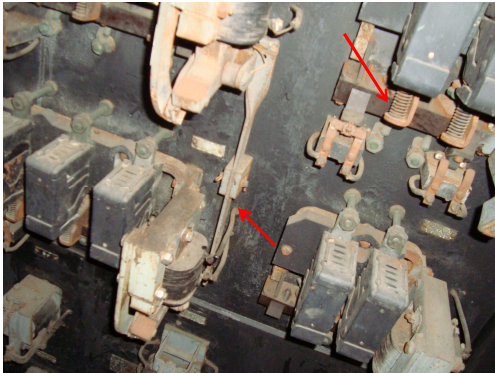
Electrical Panel



These cables in the electrical panel are damaged and are in need of repair.



With all the corrosion of the components we believe it is not possible to get these panels functional.



Main Hoist and Boom Hoist Assembly brake



The structural integrity of the operator's cab is in question.





Exterior of Machinery House



The boom sheave block is corroded and the bearings and sheaves are in question.



Appendix II

DWP Meeting Minutes

Southwest Marine Main Electrical Service Entrance Site Visit

Date: August 5, 2010

Present in the site meeting:

Vahik Haddadian – POLA

Don Alecxih – Customer Station Design Engineer - tel. (213) 367-8019

Bob Yanes – LADWP – Electrical Station Maintenance – (310) 522-1676

Kurt Yanes – LADWP – Electrical Engineering Associate - (213) 367-8017

Notes:

The existing electrical service entrance to the Southwest Marine site is located on top of a building along S. Seaside Avenue.

The following information was obtained from Los Angeles Department of Water and Power staff:

1. The station is owned by the customer (Port of Los Angeles). See Figure 1.



Figure 1

2. The substation is built in 1942 by LADWP for Bethlehem Steel. See Figure 2.

AUTHORIZATION INDEX				
#127		Auth. No. 51-46671		
Sta. No.	Bethlehem Steel Co. Shipbldg.		Budget No. 51-5106	
Location	Terminal Island			
Description	Labor & material to install a new permanent Outdoor Industrial Station, 7500KVA, 34,500/2400V. 3 ϕ power & light-charge IRC class "A" - \$25,565.00			
Auth. Issued	7-28-41	Dated by Engr.	Comp.	
COST	LABOR	MATERIAL	O. E. O.	Date
Est. Less %	8000.00	13205.00	E. O.	Date
Actual Less %			Engr.	E. Hasine

Figure 2

3. LADWP service enters at 34.5 kV and is metered at that level. The transformers, circuit breakers, and switchgear after the metering is the customer's property. See Figure 3.



Figure 3

4. Until recently there were two incoming lines feeding into the substation. LADWP has removed one of the incoming lines and now the substation is fed only with one line. See Figure 4.



Figure 4

5. The substation was equipped with two transformer banks, one of which has been disconnected and wires are removed. The other bank still is connected. See Figures 5 and 6.



Figure 5



Figure 6

6. The existing circuit breakers and transformer bank (three separate single phase coil units) are oil filled equipment which have been in active for at least 7 years.

7. the original metering section connected via a taped live bus. See Figure 6.



Figure 7

8. The LADWP metering design includes a compensating transformer which is no longer being used by LADWP, and is in the need of replacement.
9. The substation does not have a LADWP owned circuit breaker which in event of fault would enable LADWP to isolate their facilities from the customer equipment.
10. There are no fuses involved in the main feeders.
11. The existing circuit breakers are oil filled type and appear to be leaking. See Figure 8.



Figure 8

LADWP staff reviewed the substation and provided the following comments:

In order to re-energize the substation the customer will be required to:

- a. Modify the incoming feeder arrangement to install a new 34.5 kV fused disconnect switch or a circuit breaker to isolate LADWP from customer owned facility.
- b. Remove the existing metering section and install new 34.5 kV metering to eliminate the compensating transformer arrangement. Reconnect the new standalone metering section to the existing switchgear bussing and obtain recertification.
- c. Test and recertify each piece of the equipment, including but not limited to the existing circuit breakers, existing transformer bank, existing insulators, and existing switching mechanisms for its operation, protection and safety as intended by its original manufacturer.
- d. Test and repair and recertify the switchgear and its individual components including but not limited to the circuit breakers, relays, control mechanism and wiring, and all other sub components for their operation, protection and safety as intended by its original manufacturer,
- e. Shall drain the oil from each oil filled equipment, including but not limited to the transformer coils, circuit breakers and other oil filled electrical components, clean the components, repair or replace the component if necessary, refill with new oil and recertify the equipment for its operation, protection and safety as intended by its original manufacturer.
- f. Test and recertify the relay settings for the feeder protection.

LADWP staff indicated the following:

1. LADWP does not recommend operating the electrical equipment without proper recertification of each of the electrical components involved in the planned operation.
2. LADWP staff is of the opinion that it would be very difficult to find spare or even refurbished parts for a 70 year old switchgear and electrical equipment.
3. LADWP staff is of the opinion that it would be much less expensive to install a new customer station with new pad mount transformer and new switchgear to feed the electrical load.
4. LADWP staff is of the opinion that the existing substation has passed the end of its useful life.

Respectfully submitted:

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