

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/Ala Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012877**Date Inspected:** 21-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance Inspector (QA Inspector) George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 11 On this date Caltrans OSM Quality Assurance Inspector (QA Inspector) George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 11

This QA Inspector randomly observed the following work in progress in Bay 11:

SMAW layered build-up welding on one end of WD1-A597A/C located on PCMK west tower, skirt assembly. Welders were identified as 040733, 046704, 040655, 040667, 040614, 040724. ZPMC QC was identified as CWI An Qing Xiang (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Xu Jin Long, who was not a CWI. The welding variables recorded by QC1's assistant appeared to comply with WPS-345-SMAW-2G (2F)-repair as listed on ZPMC repair order T-WR3111. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-22, 16 located inside PCMK west tower, lift 4, skins B/C to corner angle plate. Welder was identified as 068859. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative

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Zhang Hui Long.

FCAW welding of weld joint WSTL4-3B/L-16 located inside PCMK west tower, lift 4, skin C to corner angle plate. Welder was identified as 066481. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2332-TC-P4-F. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-22, 16 located inside PCMK west tower, lift 4, skins B/C to corner angle plate. Welder was identified as 068493. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-22, 16 located inside PCMK west tower, lift 4, skins B/C to corner angle plate. Welder was identified as 053316. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-3, 7 located inside PCMK west tower, lift 4, skins C/D to corner angle plate. Welder was identified as 040704. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joint WSTL4-3B/L-3 located inside PCMK west tower, lift 4, skin D to corner angle plate. Welder was identified as 068919. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-3, 7 located inside PCMK west tower, lift 4, skins C/D to corner angle plate. Welder was identified as 068859. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-3, 7 located inside PCMK west tower, lift 4, skins C/D to corner angle plate. Welder was identified as 070022. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

Bay 10

This QA Inspector randomly observed no apparent welding related work being performed in Bay 10.

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Heavy Dock

This QA Inspector randomly observed the following work in progress on the Heavy Dock:

OBG segments 5E, 5W, CB4, CB5, and CB6 were located on the ship moored to the end of the heavy dock. No work was observed being performed on either OBG segments 5E, 5W, CB4, CB5, or CB6, although ZPMC workers were performing hot work on the stanchions alongside segments 5E and 5W.

OBG segments 6E and 6BW were located near the end of the heavy dock. ZPMC workers were performing what appeared to be match drilling through 5mm shim plates into deck plate U-ribs at the 6BW/6CW joint between panel points 43 and 44 on the north (counterweight) side. On the south (crossbeam) side at the same 6BW/6CW joint, ZPMC workers were installing deck plate U-rib heavy channel splices with shims.

This QA Inspector, George Goulet, also randomly observed the following in response to Bolting Inspection Notification Sheet No. 00295:

Segments 6AE to FL3, panel points 38~40, and 6CE to FL3, panel points 44~46, FL3 bottom plates to OBG bottom plates.

ZPMC workers performed final ASTM A325M bolt tightening verification of 504 bolt sets at each of the 2 locations at the direction of ZPMC QC Inspector Hu Mei Gang (QCB) using ZPMC calibrated wrench #X02-578. The bolt sets tested were marked only at the bolt/base metal relationship on the bolt side where ZPMC chose to perform the final bolt tightening verification. No bolt/nut/base metal marks were present on the nut side. QCB informed this QA Inspector that the bolt/nurt/base metal marks would be placed on all future ASTM A325M bolt sets before final tightening was performed. No less than 10% of the ASTM A325 bolt sets at each connection were torque tested. QCB provided this QA Inspector, George Goulet, with the following information regarding the bolt sets installed at this location. This QA Inspector, George Goulet, observed ZPMC's Bolt Test Log for SFOBB (RoCap list), listing the RoCap Set numbers, bolt set size, and the NM test result for torque tightening purposes. The information presented by QCB and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list as follows:

6AE to FL3 - RC Set No. DHGM240003 – M24-2.5x70 – test result 543NM

6CE to FL3 - RC Set No. DHGM240010 – M24-2.5x70 – test result 560NM

The torque of the above noted bolt sets was verified by torque testing with the above noted calibrated wrench with the wrench setting displayed as 545NM and 560NM, respectively, at the direction of QCB. Based on the information above this QA Inspector, George Goulet, concurred with QCB for the issuance of green tag numbers.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector randomly observed the following work in progress in Bay 11:

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An Qing Xiang (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Xu Jin Long, who was not a CWI. The welding variables recorded by QC1's assistant appeared to comply with WPS-345-SMAW-2G (2F)-repair as listed on ZPMC repair order T-WR3111. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-22, 16 located inside PCMK west tower, lift 4, skins B/C to corner angle plate. Welder was identified as 068859. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

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Zhang Hui Long.

FCAW welding of weld joints WSTL4-3B/L-3, 7 located inside PCMK west tower, lift 4, skins C/D to corner angle plate. Welder was identified as 070022. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2331-TC-P4-F and WPS-B-T-2332-TC-P4-F, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Zhang Hui Long.

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The torque of the above noted bolt sets was verified by torque testing with the above noted calibrated wrench with

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the wrench setting displayed as 545NM and 560NM, respectively, at the direction of QCB. Based on the information above this QA Inspector, George Goulet, concurred with QCB for the issuance of green tag numbers.

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Skyler Guest, 150-0042-2360, who represents the Office of Structural Materials for your project.

Inspected By:	Goulet,George	Quality Assurance Inspector
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Reviewed By:	Dawson,Paul	QA Reviewer
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