

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-012878**Date Inspected:** 22-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

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

SAW welding of weld joint WSD1-TL5-4B/F-39B, 21A located on PCMK west tower, lift 5, skins B/C corner. Welders were identified, respectively, as 044560, 044550. 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 Shao Hai Long, who was not a CWI. The welding variables recorded by QC1's assistant appeared to comply with WPS-B-T-3221-C-U2b-S. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Luo Lai Quan.

FCAW welding of weld joints WSTL4-3B/L-3 located inside PCMK west tower, lift 4, skin D to corner angle plate at 119M elevation. Welder was identified as 070397. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Shao Hai Long, who was not a CWI. The welding variables recorded by QC1's assistant 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 Luo Lai Quan.

FCAW welding of weld joints WSTL4-3B/L-7 located inside PCMK west tower, lift 4, skin C to corner angle

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plate at 127M elevation. Welder was identified as 066155. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Shao Hai Long, who was not a CWI. The welding variables recorded by QC1's assistant 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 Luo Lai Quan.

Bay 10

This QA Inspector randomly observed the following work in progress in Bay 10:

FCAW welding of weld joints NSTL4-3B/L-24, 20 located inside PCMK north tower, lift 4, skins C/D to corner angle plate at 122M elevation. Welder was identified as 040533. ZPMC QC was identified as ZPMC CWI Di Zhi Qun (QC2). The welding variables recorded by QC2 appeared to comply with WPS-B-T-2331-TC-P4-F-2 and WPS-B-T-2332-TC-P4-F-2, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Hu Gui Hua.

FCAW welding of weld joints NSTL4-3B/L-49, 53 located inside PCMK north tower, lift 4, skins B/C to corner angle plate at 122M elevation. Welder was identified as 053869. ZPMC QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2331-TC-P4-F-2 and WPS-B-T-2332-TC-P4-F-2, respectively. Also present at this location and appearing to be monitoring the welding related operations was ABF Representative Hu Gui Hua.

Heavy Dock

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

OBG segments 5E, 5W, 6E, 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, 6E, CB4, CB5, or CB6, although ZPMC workers were performing hot work on the stanchions alongside segments 5E and 5W.

This QA Inspector, George Goulet, also randomly observed the following in response to Bolting Inspection Notification Sheet No. 00298:

Segments 6AW to FL3, panel points 38~40, and 6CW 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 noted below at each of the 2 locations at the direction of ZPMC QC Inspector Shen Jian Bo (QCB) using ZPMC calibrated wrench #X02-584 at 6AW and ZPMC calibrated wrench #X02-676 at 6CW. 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/nut/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

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and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list as follows:

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

6CW 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.

Segment FL3 at 6CW, panel points 44~46, FL3 bottom plates to FL3 web plates:

ZPMC workers performed final ASTM A325M bolt tightening verification of bolt sets noted below at the direction of QCB using ZPMC calibrated wrench #X02-676 at 6CW. 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:

312 bolt sets at CB6 at 6CW - RC Set No. DHGM240013 – M24-2.5x65 – test result 540NM

554 bolt sets at CB6 at 6CW - RC Set No. DHGM240014 – M24-2.5x60 – test result 567NM

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 570NM 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.

Segment FL3 at 6AW, panel points 38~40, FL3 bottom plates to FL3 web plates:

ZPMC workers performed final ASTM A325M bolt tightening verification of bolt sets noted below at the direction of QCB using ZPMC calibrated wrench #X02-584 at 6AW. 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:

312 bolt sets at CB6 at 6AW - RC Set No. DHGM240009 – M24-2.5x65 – test result 567NM

354 bolt sets at CB6 at 6AW - RC Set No. DHGM240014 – M24-2.5x60 – test result 567NM

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 570NM 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.

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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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