

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-007724**Date Inspected:** 24-Jun-2009**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:** Xu Le Feng, Chen Ying Xin**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 (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

OBG Trial Assembly Area

This QA Inspector, George Goulet, randomly observed the following in the corner assemblies of segments 3AE/3BE in response to Bolting Inspection Notification Sheet No. 00043:

Section 2AE/2BE, corner assembly:

ZPMC workers performed final bolt tightening verification at the direction of ZPMC QC Hu Mei Gang (QC1) using ZPMC calibrated wrench identified by scribing on the handle as XO2-584. No less than 10% of the ASTM A325 bolt sets at each connection were torque tested, with a minimum of one bolt set tested at each connection. QC1 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 N.M test result for torque tightening purposes. The information presented by QC1 and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list.

RC Set No. DHGM220001 – M22-2.5x55 – test result 443N.M

RC Set No. DHGM220013 – M22-2.5x85 – test result 433N.M

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RC Set No. DHGM220008 – M22-2.5x120 – test result 413N.M

The torque of the above noted bolt sets were verified by torque testing with the above noted calibrated wrench with the wrench setting displayed as 445N.M.

RC Set No. DHGM240014 – M24-3.0x60 – test result 567N.M

RC Set No. DHGM240008 – M24-3.0x65 – test result 547N.M

RC Set No. DHGM240004 – M24-3.0x80 – test result 570N.M

The torque of the above noted bolt sets were verified by torque testing with the above noted calibrated wrench with the wrench setting displayed as 570N.M.

Section 3AE/3BE, BP+FB clips:

This QA Inspector, George Goulet, randomly observed the following in the bottom plate to floor beam clips between panel points 19~23 in reponse to Bolting Inspection Notification Sheet No. 00043.

ZPMC workers performed final bolt tightening verification at the direction of QC1 using ZPMC calibrated wrench.

No less than 10% of the ASTM A325 bolt sets at each connection were torque tested, with a minimum of one bolt set tested at each connection. QC1 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 N.M test result for torque tightening purposes. The information presented by QC1 and listed below appeared to this QA Inspector, George Goulet, to match the RoCap list.

RC Set No. DHGM160001 – M16-2.0x45 – test result 210N.M

RC Set No. DHGM160016 – M16-2.0x65 – test result 180N.M

RC Set No. DHGM220050 – M22-2.5x80 – test result 586N.M

The torque of the above noted bolt sets were verified by torque testing with the above noted calibrated wrench with the wrench setting displayed as above except that the 180N.M bolt sets were tested at 200N.M, the wrench minimum setting. This QA Inspector, George Goulet, concurred with QC1 for the issuance of green tag numbers.

This QA Inspector, George Goulet, also observed the following work in progress in the trial assembly area:

2BE/3AE - Match drilling of deck panel U-rib splices.

2BW/3AW - Match drilling of deck panel U-rib splices, bottom plate splices, and side plate splices.

Bay 11

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

SAW welding of weld joints WSD1-FCSA4-2A/C-31A-2, 40, 45A located on PCMK west tower, lift 4, skin C. Welder was identified as 202756. ZPMC QC was identified as Li Lin (QC2). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Mao Bin Bin, who was not a CWI. The welding variables recorded by QC2 and QC2's assistant appeared to comply with

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WPS-B-T-2221-B-U3b-S-2 for the CJP welds and WPS-B-T-2321-P3-S-2 for the PJP weld. Also present at this location and appearing to be monitoring the welding operation was ABF Representative Wang Jiang Hua.

SAW welding of weld joint WSD1-FCSA4-2A/C-48 located on PCMK west tower, lift 4, skin C. Welder was identified as 040634. ZPMC QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Mao Bin Bin, who was not a CWI. The welding variables recorded by QC2 and QC2's assistant appeared to comply with WPS-B-T-2321-P3-S-2. Also present at this location and appearing to be monitoring the welding operation was ABF Representative Wang Jiang Hua.

SAW welding of weld joints ESD1-FCSA4-2A/C-23B, 27B, 30B located on PCMK west tower, lift 4, skin C. Welder was identified as 044558. ZPMC QC was identified as QC2. The welding variables recorded by QC2 appeared to comply with WPS-B-T-2221-B-U3b-S-2. Also present at this location and appearing to be monitoring the welding operation was ABF Representative Zhong Xiong.

Bay 10

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

FCAW welding of weld joint NSD1-FASA4-1E/E-46B located on PCMK north tower, lift 4, skin A. Welder was identified as 052075. ZPMC QC was identified as CWI Chen Ying Xin (QC3). Assisting QC3 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Wang Hao, who was not a CWI. The welding variables recorded by QC3 and QC3's assistant appeared to comply with WPS-B-T-2231-B-U3-F. Also present at this location and appearing to be monitoring the welding operation was ABF Representative Ma Zhen Yi.

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

Summary of Conversations:

As noted above, and this QA Inspector, George Goulet, was informed by QC1 that the above noted bolt set numbers were recorded by ZPMC during installation and ZPMC would perform the torque verification tests of the above noted bolt sets to the highest torque test result displayed in the RoCap list for the three bolt sets listed together of the same diameter.

This QA Inspector, George Goulet, asked each QC monitoring the welding if all the welding variables observed by QC appeared to comply with the appropriate WPS, including the preheat requirements according to thickness of the thickest member being welded. QC showed this QA Inspector, George Goulet, that QC was carrying the proper temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all QC observed did appear to comply.

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 Eric Tsang, 134-8257-0045, who represents the Office of Structural Materials for your project.

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Inspected By:	Goulet, George	Quality Assurance Inspector
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Reviewed By:	Carreon, Albert	QA Reviewer
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