

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-006437**Date Inspected:** 28-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Huang Wen Pang**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:** crossbeams**Summary of Items Observed:**

On this day CALTRANS OSM Quality Assurance Inspector (QA) Steve Hall was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

**OBG cross beam CB1**

This QA observed ZPMC personnel perform clean up and grinding. No other significant work was observed on this cross beam during the time QA was present.

**OBG cross beam CB2**

This QA noted that this crossbeam is still in the paint bay. No significant work was observed on this cross beam during the time QA was present.

**OBG cross beam CB3**

This QA observed ZPMC personnel perform clean up and grinding. This QA observed ZPMC qualified welding personnel identified as 062811 perform SMAW repair welding on various welds in this crossbeam. ZPMC QC identified as Mr. Zhong Cheng was present to monitor the welding process. The welding parameters as measured using QC's calibrated instruments appeared to be in general compliance with WPS-345-SMAW-2G

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(2F)-repair.

OBG cross beam CB4

This QA observed ZPMC personnel perform clean up and grinding. No other significant work was observed on this cross beam during the time QA was present.

OBG cross beam CB5

This QA observed ZPMC qualified welding personnel identified as 037705 perform FCAW welding on weld joint identified as CB202A-001-014. ZPMC QC CWI identified as Mr. Zhang Yang was present to monitor the welding process. The welding parameters as measured using QC's calibrated instruments appeared to be in general compliance with WPS-B-T-2232-TC-U4b-F.

This QA observed ZPMC qualified welding personnel identified as 067520 perform FCAW welding on weld joint identified as CB202A-001-002. ZPMC QC CWI identified as Mr. Zhang Yang was present to monitor the welding process. The welding parameters as measured using QC's calibrated instruments appeared to be in general compliance with WPS-B-T-2232-TC-U4b-F.

This QA observed ZPMC qualified welding personnel identified as 066480 perform SMAW welding on weld joint identified as CB202G-007-145 ~ 163. ZPMC QC CWI identified as Mr. Zhang Yang was present to monitor the welding process. The welding parameters as measured using QC's calibrated instruments appeared to be in general compliance with WPS-B-P-2113.

This QA observed ZPMC qualified welding personnel identified as 066456 perform SMAW welding on weld joint identified as CB202G-007-143 ~ 161. ZPMC QC CWI identified as Mr. Zhang Yang was present to monitor the welding process. The welding parameters as measured using QC's calibrated instruments appeared to be in general compliance with WPS-B-P-2113.

During random in process visual inspection of above mentioned cross beam, this QA observed numerous Fracture Critical Weld (FCW) tack welds that do not appear to comply with the contract documents. The tack welds in question are joining the floorbeam diaphragms to the SPCM areas of the side and bottom panels. The length of these tack welds measure 30mm to 50mm and exhibit various non-compliant visual discontinuities. AWS D1.5 2002 section 12, table 12.2 specifies tack welds shall be a minimum of 75mm in length. AWS D1.5 2002 section 3, paragraph 3.3.7.1 states "tack welds shall be subject to the same quality requirements as the finished welds". The contractors QC CWI identified as Mr. Huang Wen Pang and ZPMC QC engineer identified as Mr. Guo Yuan Ting re-inspected the tack welds and concurred with this QA's findings. This QA informed the contractors QC CWI identified as Mr. Huang Wen Pang and ABF QA inspector identified as Mr. Kelvin Cheung of this issue and informed both parties that an incident report would be forth coming.

During random in process visual inspection of above mentioned cross beam, this QA observed base metal surface notches on floorbeam diaphragm web plates. These notches appear to have been created when ZPMC personnel removed both of the flange wings, as specified on the drawings, using a hand operated oxy/fuel torch. These notches measure 3mm to 5mm in depth. This condition exists on both sides of the web plate on 3 of the 4 floorbeam diaphragms in this crossbeam. ZPMC QC and ABF QC were aware of this issue and have informed this QA that ZPMC intends to repair the notches as soon as The contractors technology department issues a procedure to do so. See attached photos.

OBG cross beam CB6

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# WELDING INSPECTION REPORT

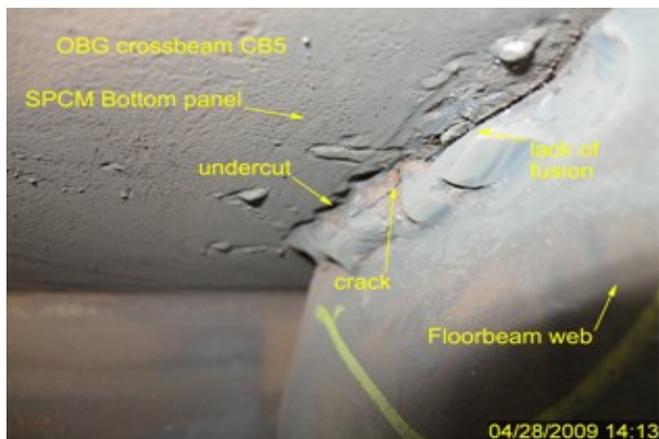
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This QA observed That ZPMC has fit and tack welded the intermediate and both side panels to the deck panel of this crossbeam and is preparing sections of the floorbeam diaphragms for installation.

Unless otherwise noted, all work observed on this date appeared to be in general compliance with the applicable contract documents.



## Summary of Conversations:

As mentioned 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 Eric Tsang (15000422372), who represents the Office of Structural Materials for your project.

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**Inspected By:** Hall,Steven

Quality Assurance Inspector

**Reviewed By:** Prue,Erik

QA Reviewer