

**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-008897**Date Inspected:** 04-Sep-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:** Zhu Tian Shu**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 that no significant work was being performed on this crossbeam during the time QA was present.

**OBG CROSS BEAM CB2**

This QA observed that no significant work was being performed on this crossbeam during the time QA was present.

**OBG CROSS BEAM CB3**

This crossbeam has been loaded on the ship.

**OBG CROSS BEAM CB4**

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This QA observed that no significant work was being performed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB5

This QA observed that no significant work was being performed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB6

This QA observed that no significant work was being performed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB7

This QA observed several ZPMC workers cleaning and grinding. No other significant work was observed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB8

This QA observed that no significant work was being performed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB9

This QA observed ZPMC qualified welding personnel identified as 220688 perform FCAW welding on weld joint identified as CB202G-023-141. ZPMC QC identified as Mr. Liu Chuang Gang 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-2132.

This QA observed ZPMC qualified welding personnel identified as 048801 perform FCAW welding on weld joint identified as CB202G-024-141. ZPMC QC identified as Mr. Liu Chuang Gang 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-2132.

Caltrans QA Mr. Hiranch Patel has previously measured and documented numerous fillet and groove weld joint root openings that exceed the specified tolerances. This QA observed that ZPMC welders appear to be avoiding these joints at this time.

### OBG CROSS BEAM CB10

This QA observed ZPMC qualified welding personnel identified as 044824 perform FCAW welding on weld joint identified as CB202G-027-104. ZPMC QC identified as Mr. Yin Dong Hai 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-2132-3.

This QA observed ZPMC welding personnel perform Fracture Critical Weld (FCW) repair without an approved

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repair WPS. The contractors QC inspector could not produce any documentation concerning this FCW repair. QC did not notify QA for WPS verification prior to beginning the repair. The weld joint is identified as CB202A-010-005. AWS D1.5 2002 section 6.3.1 states "The Inspector shall make certain that all WPSs are qualified in conformance with Section 5 of this code. The Inspector shall make certain that each welding operation is covered by a written WPS and that such WPSs are available to the welders and Inspectors for reference". AWS D1.5 2002 section 12.17.1.1 states "The Contractor may use preapproved repair WPSs as soon as the QA inspector has verified the discontinuity to be repaired is covered by the WPS". AWS D1.5 2002 section 12.17.1.2 states "Repair WPSs shall include sketches, or full-size drawings, as necessary to describe the unacceptable discontinuity and the proposed method of repair"... This QA informed ZPMC QA identified as Mr. Zhang Wei and ABF QA inspector identified as Mr. Raymond Mah that an incident report would be generated for these issues.

### OBG CROSS BEAM CB11

This QA observed ZPMC personnel layout locations for the fit up of the cast steel eyelets on the side panels of this crossbeam. No other significant work was observed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB12

This QA observed ZPMC qualified welding personnel identified as 066687 perform FCAW welding on the temporary corner lifting lugs. ZPMC QC identified as Mr. Guo Fan Fei 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 069118 perform FCAW welding on the temporary corner lifting lugs. ZPMC QC identified as Mr. Guo Fan Fei 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.

### OBG CROSS BEAM CB13

This QA observed ZPMC personnel fitting and tack welding floor beam diaphragm sections to the side panels. No other significant work was observed on this crossbeam during the time QA was present.

### OBG CROSS BEAM CB14

This QA observed ZPMC qualified welding personnel identified as 208035 perform FCAW welding on weld joints identified as FB201-014-013 and 014. ZPMC QC identified as Mr. Guo Yuan Ting 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-2132-3. These welds are being performed where ZPMC had previously removed one of the stiffeners from this intermediate panel. They have replaced the stiffener and are re-welding it to the panel.

During random in process Visual Testing (VT) this QA observed excessive grinding at the toe of floor beam corner section weld identified as FB205-041-022. ZPMC had previously performed a weld repair in this area and re-inspected the weld using Ultrasonic Testing (UT) and Magnetic particle Testing (MT). This QA measured the depth at 1.5mm. ABF inspector identified as Mr. Wang Wen Bin concurred with QA and instructed ZPMC QC to

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repair and re-inspect using MT and UT methods as required by the contract documents.

## OBG CROSS BEAM CB15

This QA observed ZPMC personnel preparing intermediate panel and floor beam corner sections for fit up and assembly. No other significant work was observed on this crossbeam during the time QA was present.

## OBG CROSS BEAM CB16

This QA observed that no significant work was being performed on this crossbeam during the time QA was present.

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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<b>Inspected By:</b>	Hall,Steven	Quality Assurance Inspector
<b>Reviewed By:</b>	Prue,Erik	QA Reviewer

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