

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-008900**Date Inspected:** 10-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:** Sun Wei**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 ZPMC qualified welding personnel identified as 220063 perform FCAW welding in the FL3 area of segment 5BW on weld joint identified as SEG023-PP033-173. ZPMC QC identified as Mr. Wang Li 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-2233-Tc-U4b-F.

This QA observed ZPMC qualified welding personnel identified as 220064 perform FCAW welding in the FL3 area of segment 5BE on weld joint identified as SEG024-PP033-128. ZPMC QC identified as Mr. Wang Li 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-2233-Tc-U4b-F.

This QA observed ZPMC qualified welding personnel identified as 220066 perform FCAW welding in the FL3 area of segment 5BE on weld joint identified as SEG024-PP033-019. ZPMC QC identified as Mr. Wang Li 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-2233-Tc-U4b-F.

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

OBG CROSS BEAM CB8

This QA observed ZPMC qualified welding personnel identified as 048625 perform FCAW welding on weld joints identified as FB205-020-030 and FB205-019-30. ZPMC QC identified as Mr. Liu Chuan 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-2233-B-U2-F.

OBG CROSS BEAM CB9

This QA observed ZPMC qualified welding personnel identified as 053753 perform SMAW welding on weld joints identified as CB202G-022-140 and CB202G-023-158. ZPMC QC identified as Mr. Meng Lin Nan 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 070007 perform SMAW welding on weld joint identified as CB202G-023-139. ZPMC QC identified as Mr. Meng Lin Nan was present to monitor the welding process. The welding parameters as measured using QC's calibrated instruments appeared to be in general

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compliance with WPS-B-P-2113.

This QA observed ZPMC qualified welding personnel identified as 067707 perform SMAW welding on weld joint identified as CB202G-024-157. ZPMC QC identified as Mr. Meng Lin Nan 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.

OBG CROSS BEAM CB10

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

OBG CROSS BEAM CB11

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

OBG CROSS BEAM CB12

This QA observed that the contractor appears to have deviated from the weld joint design specified on the approved drawings. The contractor appears to have changed the weld joint from a fillet weld to a Complete Joint Penetration (CJP) weld without the Engineers approval. According to the contractors QC inspector, the weld design was changed in order to compensate for a joint root opening in excess of 5mm. This QA inspector observed that the contractors welding personnel have welded the following weld joints from one side and back gouged in preparation for CJP welds: FB204-034-029 and 033, FB204-035-021, FB204-036-021 and 023. This QA inspector observed that the contractors welding personnel have welded the following weld joints from one side with the backing still in place: FB205-033-002, 004, 010, 020 and 170, FB205-034-002, 004 and 018, FB205-035-002, 004 and 016, FB205-036-002, 004, 016 and 018. ABF QA inspector identified as Mr. Chang Bao Qian presented this QA with a copy of submittal 200 Rev. 2 dated February 12, 2009. This QA informed Mr. Chang that this document has been revised after February 12, 2009 to reflect that the Engineers approval is required for each case of repair. State letter No. 05.03.01-004548 dated July 01, 2009 Submittal 200, Rev. 2-Update 1 specifies; "Submit weld maps of all locations where "The out of tolerance assembly gap of T-shaped joint" procedure has been previously utilized for the Engineer to evaluate their suitability" and "Repair procedures require the Engineer's approval prior to each case of repair". AWS D1.5 2002 section 3.3.1 states "The parts to be joined by fillet welds shall be brought into as close contact as practicable. The root opening shall not exceed 5 mm"... AWS D1.5 2002 section 3.7.4 states "Prior approval of the Engineer shall be obtained for repairs to base metal (other than those required by 3.2), repair of major or delayed cracks, repairs to ESW and EGW welds with internal defects, or for a revised design to compensate for deficiencies". This QA informed ZPMC QC identified as Mr. Zhang Jing Xin and ABF QA inspector identified as Mr. Zhang Wen Sheng that an incident report would be generated for the above mentioned issue. See attached photos.

OBG CROSS BEAM CB13

This QA observed ZPMC personnel preparing to fit floor beam corner sections to the side panels. No other significant work was observed on this crossbeam during the time QA was present.

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OBG CROSS BEAM CB14

This QA observed that ZPMC has commenced fitting and tack welding the side panels to the deck panel on this crossbeam.

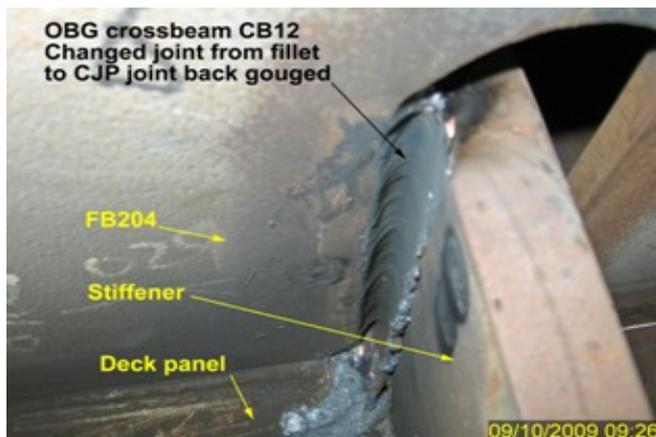
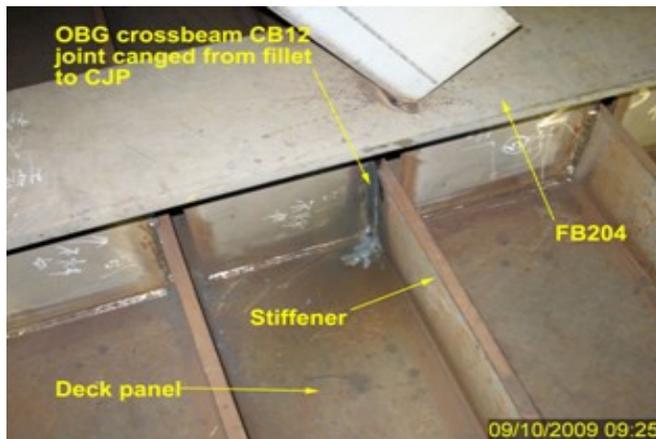
OBG CROSS BEAM CB15

This QA observed ZPMC personnel preparing to fit floor beam corner sections to the side panels. No other significant work was observed on this crossbeam during the time QA was present.

OBG CROSS BEAM CB16

This QA observed ZPMC qualified welding personnel identified as 215248 perform SAW welding on side panel weld joint identified as CB202D-016-001. ZPMC QC identified as Mr. Zheng Zhi Wei 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-2221-L2c-S-2.

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



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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.

Inspected By:	Hall,Steven	Quality Assurance Inspector
Reviewed By:	Prue,Erik	QA Reviewer
