DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-008744
Date Inspected: 02-Sep-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name: Zhao Chen Sun

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Crossbeams and OBG segment

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

This QA observed several workers installing side panel stiffener splice plates. No other significant work was observed 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 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 019006 perform FCAW welding on temporary lifting lugs. 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-T-2232-Tc-U4b-F.

OBG CROSS BEAM CB9

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

OBG CROSS BEAM CB10

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 observed that the contractors welding personnel have welded all of these joints from one side and back gouged the joints in preparation to make them CJP. This condition exists in 23 locations where the bottom panel stiffeners pass through the floor beam diaphragms. See attached photo. 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".

During random in process visual inspection of OBG crossbeam CB10 this QA observed 20mm diameter cope holes that are not specified on the detail drawings. The unspecified cope holes are located in all four of the floor

beam diaphragms identified as FB205. There is one cope hole in each of the four floor beams. The fillet weld joining the floor beam to the SPCM bottom panel is a Fracture Critical Weld (FCW). The cope holes in two of the floor beams have been repaired by welding at PP027 and PP028.The cope holes in the floor beams at PP025 and PP026 have not yet been repaired. ZPMC QC CWI identified as Mr. Zhu Tian Shu could not produce an approved procedure to cut and/or repair these cope holes. According to Mr. Zhu these cope holes were cut in order to gain access to the bottom panel splice weld that passes under the floor beams. See attached photos for details. This QA informed ZPMC QC identified as Mr. Zhang Wei and ABF inspector identified as Mr. Kevin Chen of the above mentioned issues and that an incident report would be generated for both.

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 ZPMC qualified welding personnel identified as 066687 perform FCAW welding on weld joints identified as 201G-034-037 and 038. ZPMC QC identified as Mr. Guo Yan 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 059118 perform FCAW welding on weld joints identified as 201G-036-037 and 038. ZPMC QC identified as Mr. Guo Yan 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 temporary stiffeners 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 personnel fitting and tack welding floor beam diaphragm sections to side panel identified as SP205A. No other significant work was observed on this crossbeam during the time QA was present.

OBG CROSS BEAM CB15

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

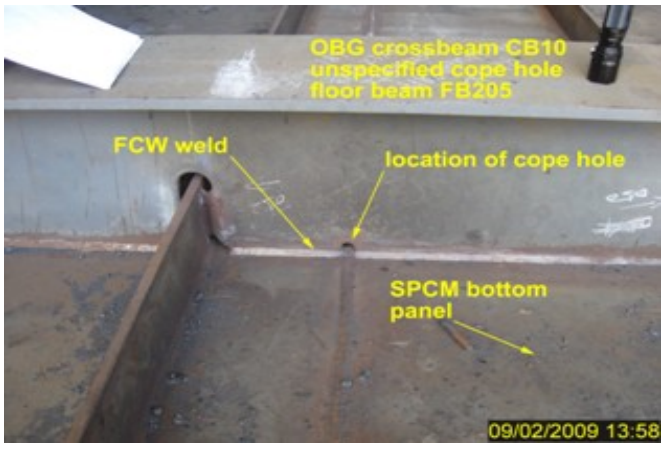
OBG CROSS BEAM CB16

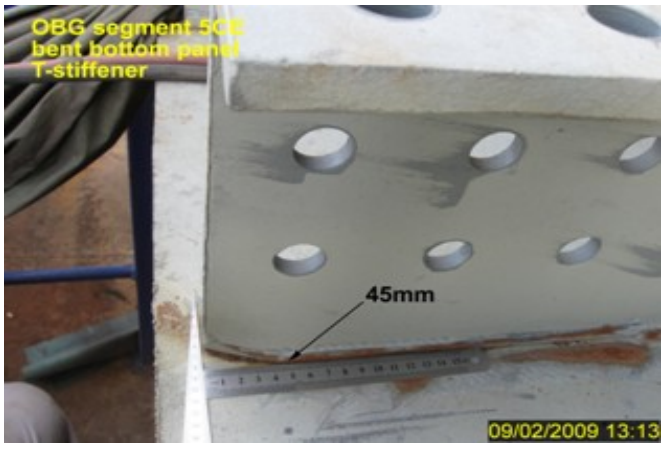
This QA observed ZPMC personnel fitting and tack welding side and intermediate panels together. No other significant work was observed on this crossbeam during the time QA was present.

TRIAL ASSEMBLY OBG SEGMENT 5CE

During random in process visual inspection of OBG segment 5CE this QA observed one bottom panel T-stiffener has been damaged during fabrication. The stiffener in question is located on the west end of this segment at the splice joint to segment 6AE, 7th stiffener from E4 line. See attached photos for details. 1999 Caltrans Standard Specifications section 55-1.04 states “In handling and shipping of the steel work, every care shall be taken to avoid bending, scraping or overstressing the pieces. All pieces bent or otherwise injured will be rejected”. This QA informed ZPMC QC identified as Mr. Wang Lu and ABF inspector identified as Mr. Kevin Chen of the above mentioned issue and that an incident report would be generated.

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





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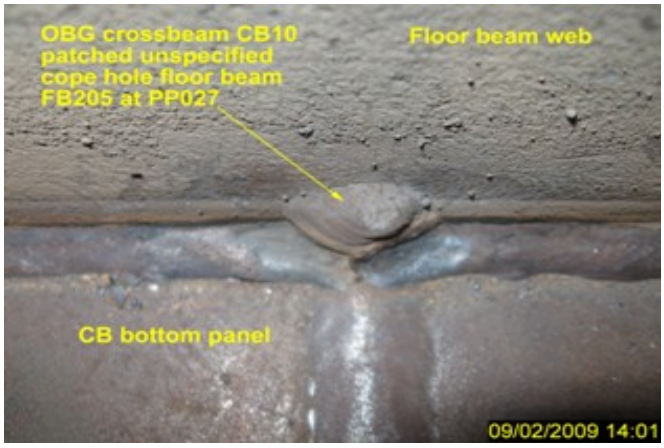

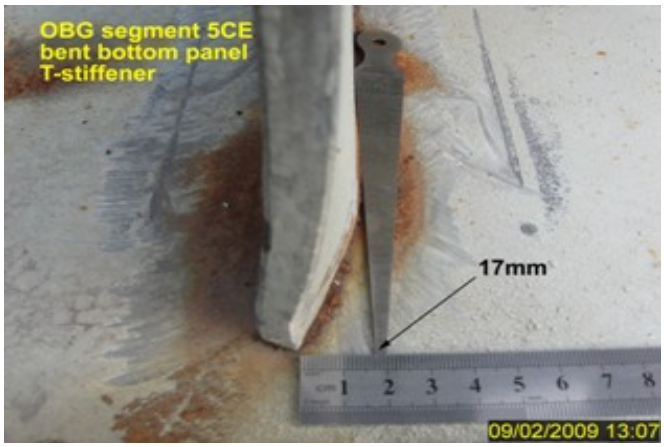

Summary of Conversations:

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