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 #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027283
Date Inspected: 06-Mar-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: jobsite

CWI Name:	Fred Von Hoff			**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: SAS project

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Tower Elevation 13-Meters:

This QA Inspector observed ABF welding personnel working at the 13 meter elevation on the Partial Joint Penetration (PJP) weld between the diaphragm plates and shear plates. This QA Inspector observed the previous day welding had been performed on weld W-103; approximately 2060 mm of the 2980 mm long weld on the South end had been filled using the Submerged Arc Welding (SAW) process. The remaining 920 mm (North end) had previously been welded using the Shielded Metal Arc Welding (SMAW) process for the root pass. This QA Inspector observed welding this date was being started on the 920 mm length, North end, by ABF welding personnel Danny Ieraci (#3232) using the SAW process. This QA Inspector observed QC Inspector Fred Von Hoff was monitoring the welding. This QA Inspector observed the induction heating equipment was being used to maintain a 320°F preheat temperature. This QA Inspector observed QC Inspector Fred Von Hoff verify the following welding parameters; 560 amperes and 32.5 volts at a travel speed of 385 mm per minute. This QA Inspector determined this provided a heat input value of 2.84 Kj. This QA Inspector reviewed the Welding Procedure Specification (WPS) WPS-ABF-D15-4062-1, being used by QC, and observed the welding parameters and preheat temperature appeared to within the ranges specified.

This QA Inspector periodically monitored QC Inspector Fred Von Hoff and the SAW process at this location and observed the welding on the North end appeared to be completed and the welding equipment, including the preheating blankets, were switched to complete welding on the South end. This QA Inspector observed QC Inspector Fred Von Hoff verify the base metal temperature using an electric temperature gauge and informed this QA Inspector the metal had reached the minimum preheat temperature. This QA Inspector observed as several short welding passes were performed, which appeared to complete the welding at this location. This QA Inspector was informed by QC Inspector Fred Von Hoff a visual inspection of the welding was not completed this date; the weld did not observed to have any major defects, but a gauge to determine if the weld face was adequately filled/under filled was not performed due to the elevated temperature after welding and the start of the Post Weld Heat Treatment (PWHT). This QA Inspector observed the PWHT was started at 1530 hours this date and the equipment appeared to have been programmed to shut off at 1830 hours (3-hour PWHT). See photo below of SAW in progress.

13W/14W-Longitudinal Stiffener (LS) LS-6: This QA Inspector observed ABF welding personnel Richard Garcia (#5892) using the SMAW process to weld the stiffener plates onto the bottom of the plate centered on the longitudinal stiffener welds, see photo below. This QA Inspector observed an E9018 electrode was being used for this application. This QA Inspector observed QC Inspector Salvador Merino was monitoring the welding and informed this QA Inspector he had verified the welding parameters to be 119 amperes. This QA Inspector reviewed WPS-ABF-D15-1162-4, being used by QC, and the parameters appeared to be within the ranges specified. This QA Inspector observed the induction heating equipment was being used to maintain the minimum preheat during the welding process.

12W/13W-Longitudinal Stiffener (LS) LS-5: This QA Inspector observed ABF welding personnel Jeremy Dolman (#5042) using the SMAW process to weld the stiffener plates onto the bottom of the plate centered on the longitudinal stiffener. This QA Inspector observed an E9018 electrode was being used for this application. This QA Inspector observed QC Inspector Salvador Merino was monitoring the welding and informed this QA Inspector he had verified the welding parameters to be 121 amperes. This QA Inspector reviewed WPS-ABF-D15-1162-4, being used by QC, and the parameters appeared to be within the ranges specified. This QA Inspector observed the induction heating equipment was being used to maintain the minimum preheat during the welding process.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above there were no notable conversations.

WELDING INSPECTION REPORT

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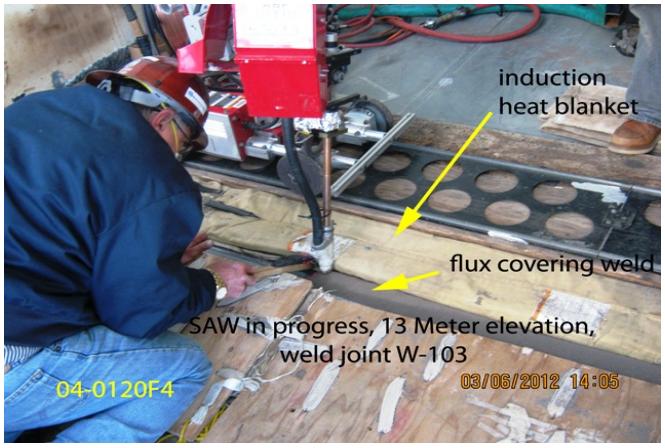

Comments

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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer