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

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

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-023942
Date Inspected: 24-May-2011

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: Job Site

CWI Name: Steve Jensen

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: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower East Shaft Splice #1 @Elevation 50.3meters:

At Southeast (C-D) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Morgan Winters continuing to perform production welding on the bottom half of the lower splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. This QA Inspector observed ABF personnel using a propylene gas torch on plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. This QA Inspector performed a verification of the welding parameters and observed 250 amperes and 22.0 volts with a travel speed of 85 mm per minute with equivalent heat input of 3.88 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. During the shift, 3F fillet welding of the bottom half was completed and the welder has moved to the upper splice plate top half and performed 3F fillet welding on the plates. The welder was noted using same process as previously used mentioned above. At the end of the shift, 3F fillet welding was still continuing and should remain tomorrow. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At Tower North Shaft Splice #1 @Elevation 50.3meters:

At North (C-D) corner, upper splice plate; This QA Inspector randomly observed ABF welding personnel Salvador Sandoval continuing to perform production welding on the top and bottom halves of the lower splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. The welder was noted welding the underfill that was noted during VT. This QA Inspector observed ABF personnel using a propylene gas torch on plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. This QA Inspector performed a verification of the welding parameters and observed 255 amperes and 21.2 volts with a travel speed of 80 mm per minute with equivalent heat input of 3.8 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. After welding the underfill on the vertical fillet, the welder has called QC and QA for another VT on the completed weld joint. ABF QC Steve Jensen was noted performing the VT and after his acceptance on the weld joint, this QA performed verification which also found same result. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

The welder has moved to Tower East Shaft Elevation 50.3Meter, East (B-C) corner, lower splice bottom half. The welder has performed production 3F fillet welding using the same process as mentioned above. At the end of the shift, fillet welding was still continuing and should remain tomorrow.

At Tower South Shaft Splice #3 @Elevation 114 meters:

At Tower South Shaft South (C-D) corner and Southwest (B-C) corner, ABF welder Richard Garcia was observed performing fit up of the lower and upper splice plates to interior corner closure plate. The welder has tack welded various temporary attachments to the interior corner closure plate using SMAW and used wedges to hold the lower/upper splice plates in place. The welder was also noted preheating the plate to more than 225°F prior welding. ABF QC Steve Jensen was noted at site monitoring the welder and his welding parameter. During the shift, fit up of the splice plates at location mentioned above was completed. This QA has noted ABF QC Steve Jensen perform fit up verification on the installed splice plates. During the verification, the bottom half of the lower splice plate at South (C-D) corner was noted having 5.0mm gap between the splice plate and the interior corner closure plate. ABF personnel have inserted a shim plate measuring 3mm thick x 38mm wide x 640mm long. All the rest of the joint fit up was having a reading of 2-4mm gap. According to ABF QC Steve Jensen, he will submit the gathered information to ABF and wait for the Engineer's approval for the use of shim before ABF could start production welding.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT of the fillet welding of two (2) splice plates. The QA verification was performed to verify that the welding and the VT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. Tower North Shaft Elev. 50.3meters North (C-D) corner upper splice – QA VT verified

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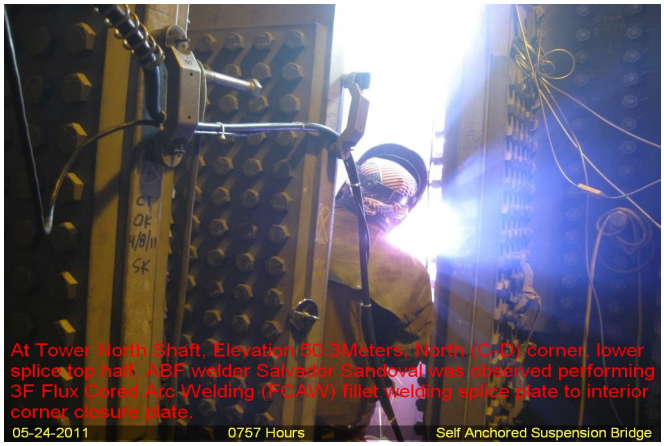
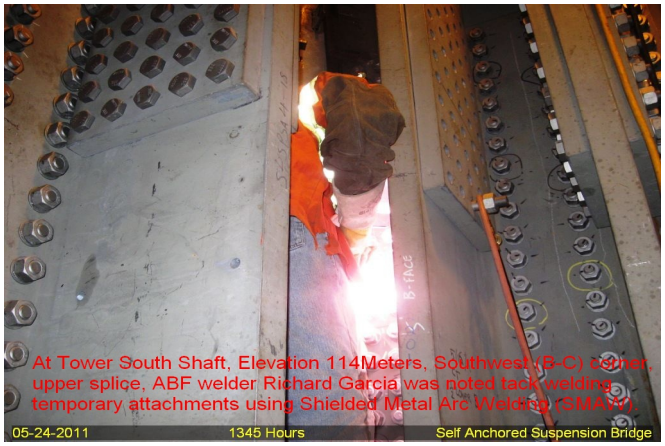
2. Tower North Shaft Elev. 50.3meters North (C-D) corner lower splice – QA VT verified





Summary of Conversations:

No significant conversation ocurred today.

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

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer