

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-023226**Date Inspected:** 28-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Steve Jensen**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 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 North Shaft Splice #2 @Elevation 83meters:

At North corner, upper splice plate, this QA Inspector randomly observed ABF welding personnel Salvador Sandoval (#2202) continuing to perform production welding on the bottom half of the splice plate using the self shielded Flux Cored Arc Welding (FCAW) process. This QA Inspector observed a propylene gas torch was being used to preheat areas prior to welding. This QA Inspector observed QC Inspector Steve Jensen using an 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 270 amperes and 21.5 volts with a travel speed of 95 mm per minute with equivalent heat input of 3.6 KJ per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. The welding of the vertical fillet welds was completed on both sides of the bottom half and the welder has moved to the other splice plate North East lower splice top half. The welder continued fill pass fillet welding on both sides of the plate until 1630hours. Before the end of the shift, at around 1630hours, the welder has stopped fillet welding and 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.

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At Tower West Shaft Splice #2 @Elevation 83meters:

At Northwest C-D corner, upper splice plate: This QA Inspector randomly observed ABF welding personnel Morgan Winters continuing to perform production welding on the bottom half of the upper splice plate using the Shielded Metal Arc Welding (SMAW) process. This QA Inspector observed a propylene gas torch was being used to preheat areas prior to welding. This QA Inspector observed QC Inspector Steve Jensen using an infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 151 amperes on a 5/32" diameter E7018H4R electrode which appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. The welding of the overhead fillet weld was completed during the shift. The welder was also observed fixing/welding the cover of the fillet weld with SMAW where undercut, craters and underfill was noted. Before the end of the shift, at around 1630hours, 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 East Shaft Splice #2 @Elevation 83meters:

At Southeast corner, upper splice plate: This QA Inspector randomly observed ABF welding personnel Rick Clayborn perform tack welding on the lower half of the splice plate to the skin plate. The welder was observed utilizing self shielded Flux Cored Arc Welding (FCAW) with 0.072" diameter E-71T-8 wire electrode implementing Caltrans approved Welding Procedure Specification ABF-WPS-D15-F2200-3. Prior tack welding, the welder was noted preheating the plates to be welded with propylene gas torch to more than 300°F. At the end of the shift, the welder has tack welded four locations of the joint.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT of the fillet welding of three (3) 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.

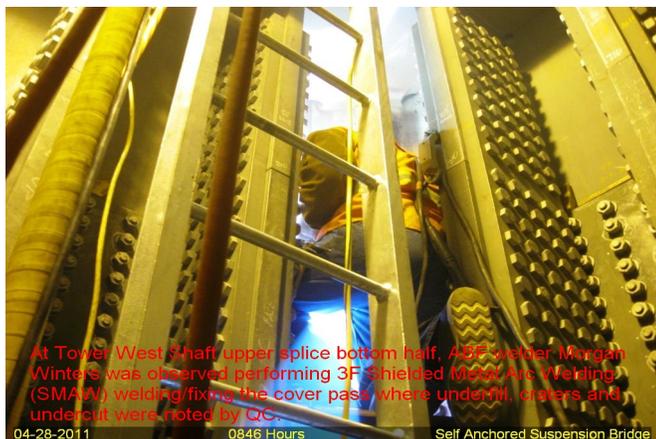
1. Tower West Shaft Elev. 83meters West (B-C) corner upper splice – QA VT verified
2. Tower West Shaft Elev. 83meters West (B-C) corner lower splice – QA VT verified
3. Tower West Shaft Elev. 83meters Northwest (C-D) corner lower splice – QA VT verified

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## Summary of Conversations:

No significant conversation occurred 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.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

**Reviewed By:** Levell, Bill

QA Reviewer

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