

**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 #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-023443**Date Inspected:** 04-May-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 East Shaft Splice #2 @ Elevation 83 meters:

At East (B-C) corner, upper splice plate; this QA Inspector randomly observed ABF welding personnel Salvador Sandoval continuing to perform production welding on the top half of the splice plate using the self shielded Flux Cored Arc Welding (FCAW) process. This QA Inspector observed ABF personnel using propylene gas torch to preheat the 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 270 amperes and 23.0volts with a travel speed of 95 mm per minute with equivalent heat input of 3.9 KJ per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. During the shift, the welder has completed the fillet weld cover on both sides of the joint. The welder has moved to the top of the plate and performed 2F fillet welding which was also completed during the shift. The welder has again moved to bottom half of the same splice and welded 3F fillet on the both sides of the joint until the end of the shift. Before the end of the shift, 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 East Shaft Splice #2 @Elevation 83meters:

At Southeast (C-D) corner, lower splice top half, this QA randomly observed ABF welding personnel Morgan Winters perform 3F fillet welding the splice plate to interior corner closure plate where welder Richard Garcia has left off due to other assignment. Morgan Winters was noted using Flux Cored Arc Welding (FCAW) with 1.8mm diameter E71T-8 wire electrode implementing ABF-WPS-D15-F2200-3. Prior welding, the welder was noted preheating the plates to more than 300°F using propylene gas torch. ABF QC Steve Jensen was noted monitoring the parameters of the welder and measured working current of 245 amperes and 20 volts with a travel speed of 95mm per minute which appears in compliance to the WPS. Welding of the vertical fillet on both sides of the plate was completed and the welder has moved to upper splice top half and also performed 3F fillet welding. Before the end of the shift, ABF personnel were noted covering the weld with heater blanket and preheated and held the temperature of more than 300°F for three hours 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 South Shaft Splice #1 @Elevation 50.3meters:

At Tower South Shaft Southeast (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 using SMAW various temporary attachments to the interior corner closure plate 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. At the end of the shift, the fit up of the splice plates at location mentioned above was completed.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC MT of the fillet welding of four (4) splice plates 24 hours after completion of the welds. The QA verification was performed to verify that the welding and the MT 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. 83meters North (C-D) corner upper splice – QA MT verified
2. Tower North Shaft Elev. 83meters North (C-D) corner lower splice – QA MT verified
3. Tower North Shaft Elev. 83meters Northeast (B-C) corner upper splice – QA MT verified
4. Tower North Shaft Elev. 83meters Northeast (B-C) corner lower splice – QA MT verified

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## Summary of Conversations:

No significant conversation ocured 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

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**Reviewed By:** Levell, Bill

QA Reviewer