

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-023240**Date Inspected:** 03-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 Southeast (C-D) corner, lower splice plate; this QA Inspector randomly observed ABF welding personnel Richard Garcia (ID #5892) 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 ABF personnel using Miller Proheat 35 Induction Heating System with the heater blanket placed on top of the plate being welded preheating the plate first thing in the morning and a propylene gas torch on areas 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 260 amperes and 22.0volts with a travel speed of 90 mm per minute with equivalent heat input of 3.81 KJ per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. The welder continued fill pass fillet welding on both sides of the plate until 1700hours. 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 noted using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

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

At East (B-C) corner, upper splice plate; this QA Inspector randomly observed ABF welding personnel Salvador Sandoval 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 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 22.0volts with a travel speed of 95 mm per minute with equivalent heat input of 3.75 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. The welder continued fill pass fillet welding on both sides of the plate until 1700hours. 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.

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

At North (C-D) corner, upper splice bottom half, this QA randomly observed ABF welding personnel Morgan Winters perform 4F overhead fillet welding at the bottom of the plate. The welder was noted using Shielded Metal Arc Welding (SMAW) with 5/32" diameter E7018H4R electrode implementing ABF-WPS-D15-F1200A. Prior welding, the welder was noted preheating the plates to more than 225°F using propylene gas torch. ABF QC Steve Jensen was noted monitoring the parameters of the welder and measured working current of 150 amperes at the time of welding which appears in compliance to the WPS. Welding of the overhead fillet was completed during the shift and right after the completion, 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.

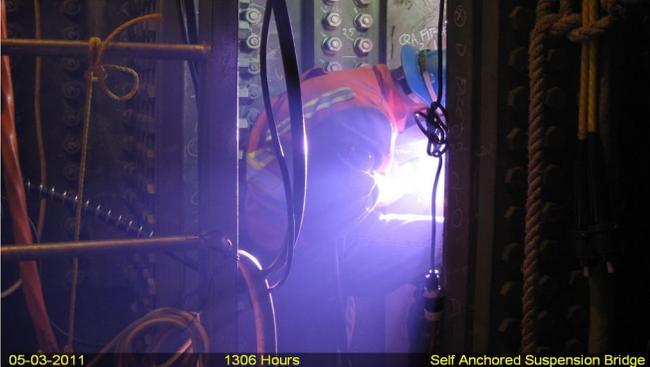
At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT of the fillet welding of four (4) splice plates. The QA verification was performed to verify that the welding and the VT inspection performed by the QC inspector meet the requirements of the contract 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. 83meters North (C-D) corner upper splice – QA VT verified
2. Tower North Shaft Elev. 83meters North (C-D) corner lower splice – QA VT verified
3. Tower North Shaft Elev. 83meters Northeast (B-C) corner upper splice – QA VT verified
4. Tower North Shaft Elev. 83meters Northeast (B-C) corner lower splice – QA VT verified

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

At Tower East Shaft, Southeast (C-D) corner, lower splice bottom half, ABF welder Richard Garcia was observed 3G Flux Cored Arc Welding (FCAW) fillet welding splice plate to interior corner closure plate.



At Tower North Shaft, North (C-D) corner, upper splice bottom half, ABF welder Margarit Winters was noted preheating the plates being welded to more than 225 degrees Fahrenheit using propylene gas torch prior SMAW welding the overhead fillet.



At Tower East Shaft, East (B-C) corner, upper splice top half, ABF welder Salvador Sandoval was noted preheating the plates being welded to more than 300 degrees Fahrenheit using propylene gas torch prior FCAW welding.



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.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer
