

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-023964**Date Inspected:** 25-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 #1 @ Elevation 50.3 meters:

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 260 amperes and 21.0 volts with a travel speed of 90 mm per minute with equivalent heat input of 3.64 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.

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

At East (B-C) corner, lower splice plate; This QA Inspector randomly observed ABF welding personnel Salvador Sandoval 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 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 21.6 volts with a travel speed of 85 mm per minute with equivalent heat input of 4.12 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. After the welding completion of the lower splice plate bottom half, the welder has moved to the upper splice bottom half of the same corner location and performed 3F FCAW fillet welding on the splice plate until the end of the shift. 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 South Shaft Splice #3 @Elevation 114 meters:

At Tower South Shaft South (C-D) corner, upper and lower splice plates, ABF welder Richard Garcia was observed tack welding splice plates to the interior corner closure plate. The welder was noted using self shielded Flux Cored Arc Welding (FCAW) 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. During the shift, rain has poured moderately at the Baybridge and water seepage has occurred into the splice close to the welding area. The welder has informed ABF foreman Erick Sparks about the situation and the foreman shut down the tack welding of the upper and lower splice plates to interior corner closure plate.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC MT of the fillet welding of two (2) splice plates. 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. 50.3meters North (C-D) corner upper splice – QA MT verified
2. Tower North Shaft Elev. 50.3meters North (C-D) corner lower splice – QA MT verified

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At Tower East Shaft, Elevation 50.3Meters, Southeast (C-D) corner, upper splice top half, ABF welder Morgan Winters was observed preheating the plate to more than 300 degrees Fahrenheit using propane gas and then FCAW fillet welding the splice plate to interior corner closure plate.

05-25-2011 1104 Hours Self Anchored Suspension Bridge



At Tower North Shaft, Elevation 50.3Meters, North (C-D) corner, lower splice bottom half, ABF QC William Sherwood was observed performing Magnetic Particle Testing (MT) on the completely fillet welded splice plate to interior corner closure plate.

05-25-2011 1357 Hours Self Anchored Suspension Bridge



At Tower South Shaft, Elevation 114Meters, South (C-D) corner, lower splice bottom half, ABF welder Richard Garcia was observed performing 3F Flux Cored Arc Welding (FCAW) tack welding of the splice plate to interior corner closure plate.

05-25-2011 0853 Hours Self Anchored Suspension Bridge



At Tower East Shaft, Elevation 50.3Meters, East (B-C) corner, upper splice bottom half, ABF welder Salvador Gandoval was observed performing 3F Flux Cored Arc Welding (FCAW) fillet welding the splice plate to interior corner closure plate.

05-25-2011 1104 Hours Self Anchored Suspension Bridge

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