

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-023941**Date Inspected:** 23-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:** William Sherwood**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 top 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 William Sherwood 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 240 amperes and 21.3 volts with a travel speed of 90 mm per minute with equivalent heat input of 3.22 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 top half was completed and the welder has moved to the bottom of the splice plate and performed 3F fillet welding. The welder was noted using same process as previously used. 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 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 bottom half of the upper 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 William Sherwood 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 80 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 completion of the vertical fillet welds, the welder has moved to the bottom of the plate and fillet welded overhead on the splice joint. The welder's welding parameter was measured 195 amperes on a 5/32" diameter E7018H4R electrode complying with the Caltrans approved ABF-WPS-D15-F1200A. Before the end of the shift, ABF QC William Sherwood called this QA and asked for a Visual Test (VT) on the completely welded upper and lower splice plates. This QA has noted that the upper splice plate top and bottom halves were deemed acceptable but the lower splice plate top and bottom halves were noted underfill on the right side of the plate. Since it was already the end of the shift, the welder has told QA and QC that the underfill will be fixed 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 South Shaft Splice #3 @Elevation 114 meters:

At Tower South Shaft, South (C-D) corner, lower splice plate, 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 William Sherwood was noted at site monitoring the welder and his welding parameter. At the end of the shift, fit up of the splice plates at location mentioned was still continuing and should remain tomorrow.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC MT of the fillet welding of six (6) 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 West Shaft Elev. 50.3meters Northwest (C-D) corner upper splice – QA MT verified
2. Tower West Shaft Elev. 50.3meters Northwest (C-D) corner lower splice – QA MT verified
3. Tower West Shaft Elev. 50.3meters West (B-C) corner upper splice – QA MT verified
4. Tower West Shaft Elev. 50.3meters West (B-C) corner lower splice – QA MT verified
5. Tower North Shaft Elev. 50.3meters Northeast (B-C) corner upper splice – QA MT verified
6. Tower North Shaft Elev. 50.3meters Northeast (B-C) corner lower splice – QA MT verified

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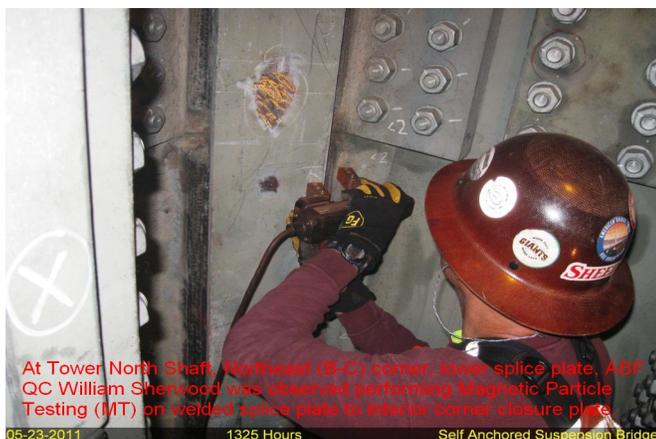
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At Tower East Shaft, Southeast (C-D) corner, elevation 50.3Meters, lower splice top half, ABF welder Morgan Winters was noted preheating the plates to required temperature of more than 300 degrees Fahrenheit prior welding.
05-23-2011 0922 Hours Self Anchored Suspension Bridge



At Tower North Shaft, North (C-D) corner, elevation 50.3Meters, upper splice bottom half, ABF welder Salvador Salsorel was observed performing 3F Flux Cored Arc Welding (FCAW) fillet welding splice plate to interior corner closure plate.
05-23-2011 1258 Hours Self Anchored Suspension Bridge



At Tower North Shaft, Northeast (B-C) corner, lower splice plate, ABF QC William Sherwood was observed performing Magnetic Particle Testing (MT) on welded splice plate to interior corner closure plate.
05-23-2011 1325 Hours Self Anchored Suspension Bridge



At Tower East Shaft, Southeast (C-D) corner, elevation 50.3Meters, lower splice top half, ABF welder Morgan Winters was observed performing 3F Flux Cored Arc Welding (FCAW) fillet welding splice plate to interior corner closure plate.
05-23-2011 0858 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
