

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027428**Date Inspected:** 09-Apr-2012**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 Mc Connell**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 Base 9 meter North external diaphragm, this QA Inspector randomly observed ABF personnel Jin Pei Wang perform 2F (horizontal position) fillet production welding on the 1" thick fit lug to the 45mm thick outer West 9-meter diaphragm plate on one side and to the 60mm thick vertical stiffener plate on the other side. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Steve Mc Connell using a Fluke 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 283 amperes and 24.5 volts. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2. During the shift, the welder has completed the fillet weld on two sides of the six (6) fit lugs marked W93-1 to W93-6. The welder performed the post weld heat treatment (PWHT) on the fit lugs just welded using the same preheat temperature and machine and held for three (3) hours as required.

At Tower Base 9 meter inner East external diaphragm, this QA Inspector randomly observed ABF personnel Xiao Jian Wan continuing to perform 4F (overhead position) fillet production welding on the perimeter C10 channel to 45mm thick diaphragm plate fillet weld joint W099-3. The welder was noted welding 6mm fillet between one side

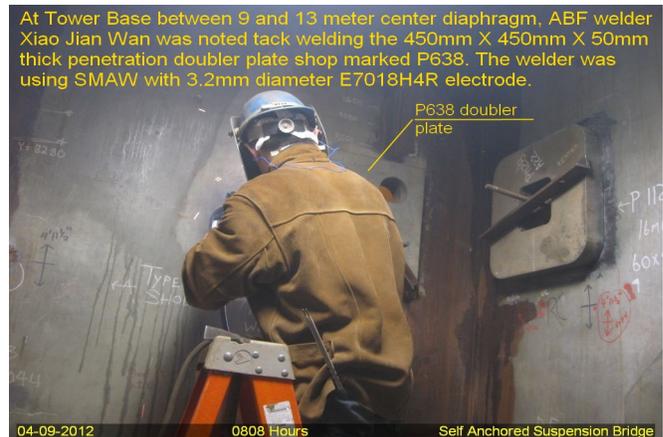
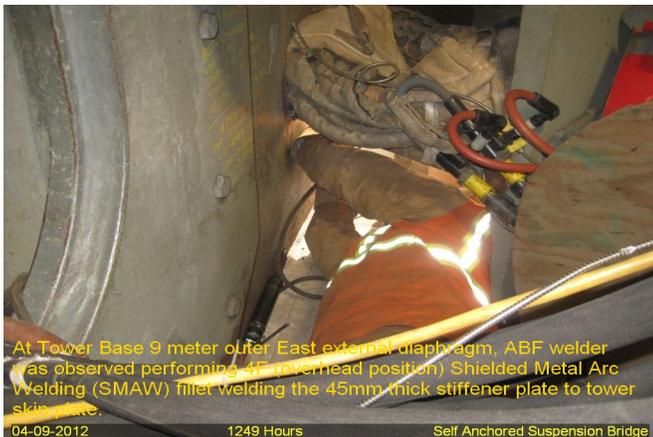
WELDING INSPECTION REPORT

(Continued Page 2 of 3)

of the channel top flange and diaphragm plate per detail 1 of the FW3 drawing. The welder was using the 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Steve Mc Connell using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 120 amperes on the 3.2mm diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-F1200A. At the end of the shift, SMAW fillet welding was still continuing and should remain tomorrow.

At Tower Base 9 meter inner East external diaphragm, this QA Inspector randomly observed ABF personnel Luo Xiao Hua continuing to perform 4F (overhead position) fillet production welding on the perimeter C10 channel to 45mm thick diaphragm plate fillet weld joint W099-4. The welder was noted welding 6mm fillet between one side of the channel top flange and diaphragm plate per detail 1 of the FW3 drawing. The welder was using the 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Steve Mc Connell using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 128 amperes on the 3.2 diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-F1200A. At the end of the shift, SMAW fillet welding was still continuing and should remain tomorrow.

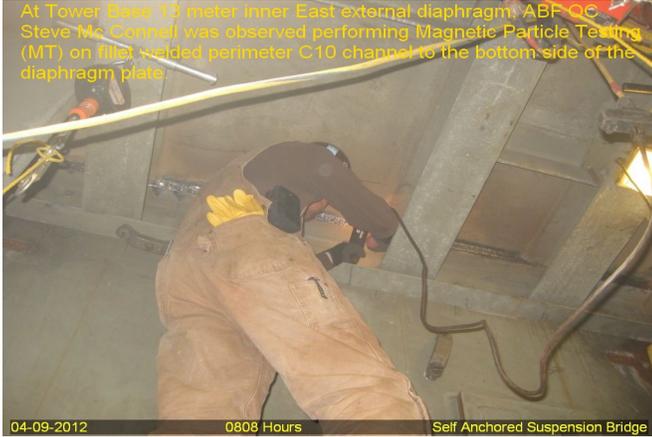
At Tower Base 9 meter outer East diaphragm above the drop in plate WD1-A60, ABF welder Wai Kitlai was observed performing 2F/4F (flat/overhead positions) Shielded Metal Arc Welding (SMAW) fillet welding the 45mm thick stiffener plate to the tower skin plate. Prior welding, the welder was noted removing the fillet weld on one side of the joint using carbon air arc gouging due to unacceptable weld cover profile. The welder was using SMAW with 4.0mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. The plates being welded were preheated to more than 150°F using propylene gas torch and Miller Proheat 35 Induction Heating System prior welding. ABF QC Steve Mc Connell was noted monitoring the welder's parameter with measured working current of 200 amperes on a 4.0mm E7018 electrode. During the shift, fillet welding of the stiffener plate mentioned was completed.



WELDING INSPECTION REPORT

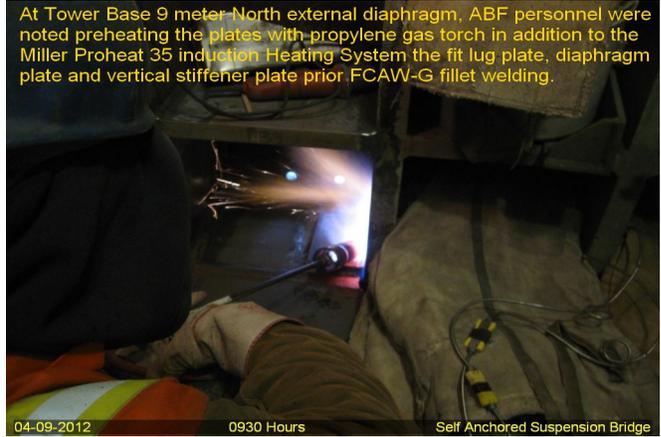
(Continued Page 3 of 3)

At Tower Base 13 meter inner East external diaphragm, ABF QC Steve Mc Connell was observed performing Magnetic Particle Testing (MT) on fillet welded perimeter C10 channel to the bottom side of the diaphragm plate.



04-09-2012 0808 Hours Self Anchored Suspension Bridge

At Tower Base 9 meter North external diaphragm, ABF personnel were noted preheating the plates with propylene gas torch in addition to the Miller Proheat 35 induction Heating System the fit lug plate, diaphragm plate and vertical stiffener plate prior FCAW-G fillet welding.



04-09-2012 0930 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