

**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-027372**Date Inspected:** 23-Mar-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:** Bernie Docena**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 outer East external diaphragm WD1- A46 drop in plate, ABF qualified welder Jin Pei Wang was observed continuing to perform 1G (flat position) welding the fill pass on weld joint #059 (3 & 4) and #060 (2) using the Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 290 amperes and 24.0 volts. During the shift, the welder has completed the PJP weld T-joints and butt joint and right after the welding completion, ABF personnel were noted covering the weld joints with heater blanket in preparation for the three hours holding of preheat temperature of more than 325°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat.

At Tower Base 9 meter outer East external diaphragm WD1-A60 drop in plate, this QA Inspector randomly observed ABF personnel Wai Kitlai perform root pass production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 80mm thick East shear plate/45mm tower skin plate and 45mm thick outer East external diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 280 amperes and 25.0 volts. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joint and butt joint. No relevant indications were observed. This QA also performed random MT on the same welded root pass with noted same result. The welder resumed fill pass welding using the same process until the end of the shift wherein the welder was not able to complete the joints. The welder has held the same preheat of more than 325°F for three hours as required after welding for the PWHT.

At Tower Base 9 meter North external diaphragm, this QA Inspector randomly observed ABF personnel Xiao Jian Wan perform 4F (overhead position) fillet production welding on the C10 channel to 45mm thick diaphragm plate fillet weld joint 100-2. The welder was noted welding 6mm fillet between one side of the channel top flange and diaphragm plate per detail 1 of the ZPMC drawing number FW3. The welder was using the 1/8" 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 Bernie Docena 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 130 amperes on the 1/8" diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-DF1200A. At the end of the shift, the welder has not completed the 6mm fillet weld on North external diaphragm and should remain Monday.

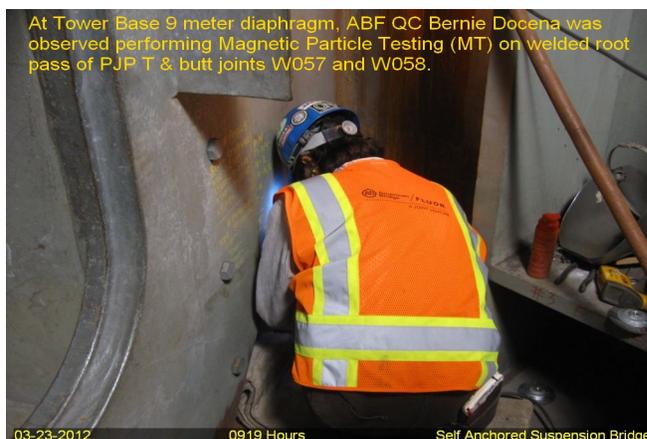
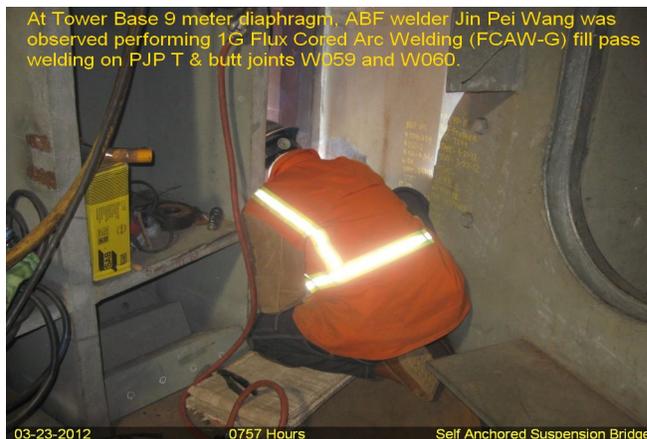
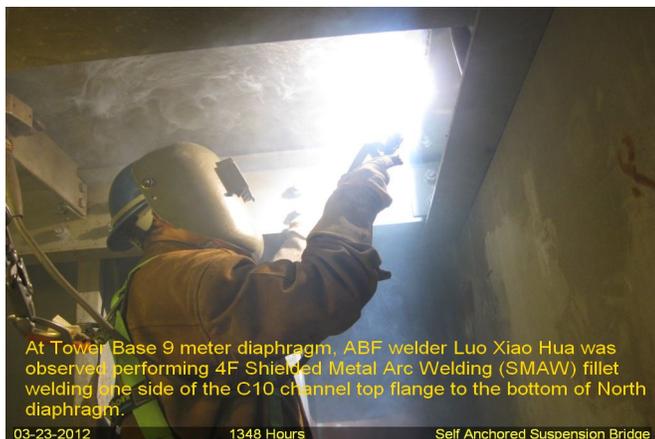
At Tower Base 9 meter North external diaphragm, this QA Inspector randomly observed ABF personnel Luo Xiao Hua perform 4F (overhead position) fillet production welding on the C10 channel to 45mm thick diaphragm plate fillet weld joint 100-1. The welder was noted welding 6mm fillet between one side of the channel top flange and diaphragm plate per detail 1 of the ZPMC drawing number FW3. The welder was using the 1/8" 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 Bernie Docena 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 1/8" diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-DF1200A. At the end of the shift, the welder has not completed the 6mm fillet weld on North external diaphragm and should remain Monday.

---

# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---



## 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