DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027464
Date Inspected: 17-Apr-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	Bernie Docena and Fred Von Hoff			**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 13 meters diaphragm, weld joint number W108, QA randomly observed ABF certified welder James Zhen ID #6001 continuing to perform 1G (flat position) Submerged Arc Welding (SAW) on the Partial Joint Penetration (PJP) T- joint between the 45mm thick inner West diaphragm and 60mm tower skin plate. The welder was utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-4062-1. The joint being welded has a 45 degree bevel groove T- joint. The plates were preheated to more than 225 °F using Miller Proheat 35 Induction Heating System with one heater blanket located on top of each plate prior/during welding. ABF/QC Fred Von Hoff was noted monitoring the welding parameters of the welder with measured working current of 550 amperes, 32.5 volts with travel speed of 380 mm per minute and calculated heat input of 2.8 Kjoules/mm. QA noted the welding parameters, the workmanship and appearance of the completed fill satisfactory. At the end of the shift, SAW fill pass welding was still continuing and should remain tomorrow.

At Tower Base 9 meter outer West external diaphragm, this QA Inspector randomly observed ABF personnel Jin Pei Wang perform 2F (horizontal position) fillet production welding on the the 45mm thick stiffener plate shop marked P440-4. The stiffener plate is being welded on three sides; one on tower skin plate, the other side on West shear plate and the third one on the vertical stiffener plate. 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 and maintain the temperature prior/during 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 273 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 top 8mm fillet weld on the three sides of the stiffener. After the completion of the top side, the welder was noted switching the welding process from FCAW-G to SMAW. The welder continued 4F (overhead position) fillet welding the bottom side of the three sides of the stiffener until the end of the shift wherein he completed it.

At Tower Base 13 meter South 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 W134-3. 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 125 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 13 meter South 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 W134-4. 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 completed.

WELDING INSPECTION REPORT

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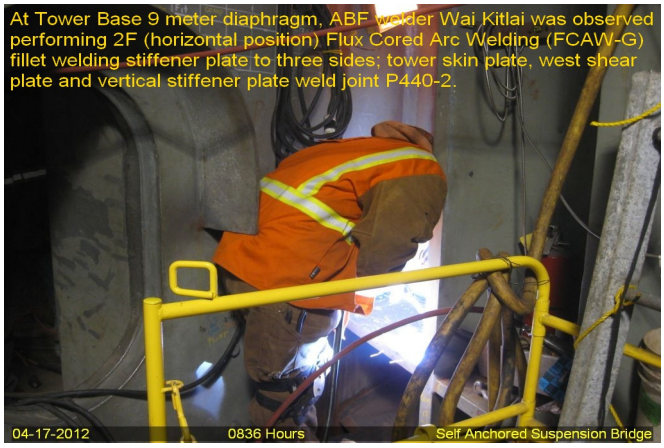

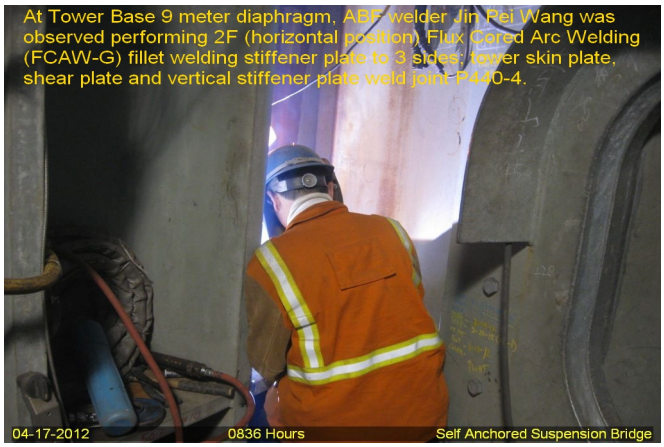

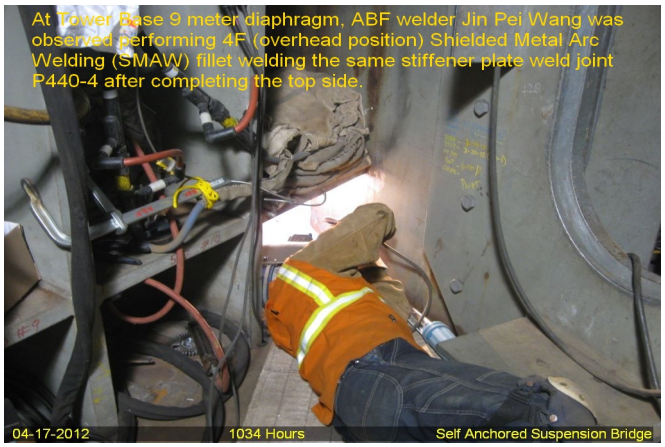

Summary of Conversations:

No significant conversation ocurred 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