

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-027502**Date Inspected:** 24-Apr-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1200**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Steve Mc Connell and Fred Von Hoff			OSM 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 W104 and W105, QA randomly observed ABF certified welder James Zhen ID #6001 continuing to perform 1G (flat position) Submerged Arc Welding (SAW) on top of the shear plate between the Partial Joint Penetration (PJP) T- joints W104 and W105. The top of the shear plate is being welded to compensate the offset (high/low) between the 45mm thick center and inner East diaphragm plates with the shear 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 propylene gas torch 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. During the shift, SAW cover pass welding on top of the shear plate and the two PJP T-joints was still continuing when the welding observation on this job was turned over to fellow QA Craig Hager.

At Tower Base 13 bearing stiffener #2 marked WD1-19R, this QA Inspector randomly observed ABF personnel Richard Garcia continuing to perform 3G (vertical position) Partial Joint Penetration (PJP) production welding on the stiffener just mentioned. The welder was noted PJP welding the 45 degree beveled 60mm thick stiffener to the

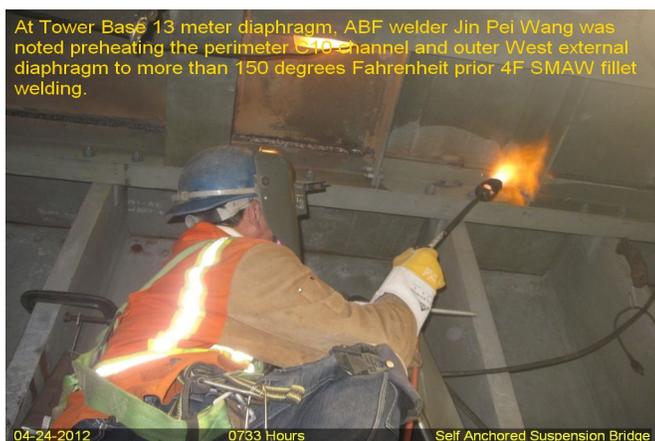
WELDING INSPECTION REPORT

(Continued Page 2 of 3)

60mm WT9. The welder was using the 4.0mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1160. 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 210 amperes on the 4.0mm diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-1160. At the end of the shift, SMAW fillet welding was still continuing and should remain tomorrow.

At Tower Base shear plate above 9 meter between inner West and center external diaphragms, this QA Inspector randomly observed ABF personnel Jin Pei Wang perform multiple position fillet welding on the 466mm wide X 60mm thick square shaped penetration doubler plate. The welder was noted fillet welding the doubler plate to the 60 mm thick shear plate using Shielded Metal Arc Welding (SMAW) with 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 to more than 150°F 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 and measured the welding parameters to 120 amperes. At the end of the shift, SMAW fillet welding was still continuing and should continue tomorrow.

At Tower Base 13 meter diaphragm, this QA together with ABF QC Fred Von Hoff performed a joint verification on the fit up of the 80mm thick shear plate to 45mm thick outer East external diaphragm Partial Joint Penetration T-joint. The shear plate side has a 45 degree bevel with approximate land of 40mm. During the verification, there was root gap of 2.5mm minimum to 12mm maximum to a spread length of 2060mm at the North end while the South end was also having a 3.0mm minimum to 12mm maximum to a spread length 2230mm. This information was brought to the attention of Lead QA Danny Reyes who also conveyed the same information to Lead QC Bonifacio Daquinag. The information was relayed to ABF/JV QC Manager Jim Bowers who made the decision to perform buttering where the unacceptable gap was noted according to Mr. Danny Reyes.



Summary of Conversations:

No significant conversation occurred today.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

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
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Reviewed By:	Levell, Bill	QA Reviewer
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