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-027240
Date Inspected: 24-Feb-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: 1530
Location: Job Site

CWI Name:	Steve Jensen and 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 13 meters diaphragm, weld joint number W117, QA randomly observed ABF certified welder James Zhen ID #6001 and Dan Ieraci ID #3232 perform 1G (flat position) Submerged Arc Welding (SAW) on the Partial Joint Penetration (PJP) T- joint between the 45mm thick outer East diaphragm and 45mm thick Tower East Shaft skin plate 'B'. The welders were 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 with an average root opening of 3.0mm and C-channel installed underneath that will serve as the backing bar. 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 welding and moving it to the side and lifting during welding. ABF/QC Harry Scharein was noted monitoring the welding parameters of the welder with measured working current of 554 amperes, 32 volts with travel speed of 375 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 deemed satisfactory. At the end of the shift, SAW fill pass welding was still continuing and should remain tomorrow. The preheat of more than 225 degrees Fahrenheit was held for three more hours after welding as required.

At Tower Base 9 meters diaphragm, ABF personnel were noted continuing to remove the fitted and tack welded drop ins. ABF QC Bernie Docena has previously instructed ABF personnel to remove the tack welded drop ins for

the QC to have access to perform visual test (VT) and Non-Destructive Examination (NDE) on areas of the Electro Slag Welding (ESW) weld joints where the drop ins will be put in place. ABF personnel were able to remove two more drop ins at outer West 9M diaphragm and two at South diaphragm.

At Tower Base 9 meters diaphragm, refitting/tack welding of drop in plates at outer West diaphragm was noted. ABF welder Xiao Jian Wan was observed performing tack welding the 45mm drop ins to 60mm thick shear plate using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode. The plates were preheated to required temperature of 150 degrees Fahrenheit using propylene gas torch prior welding. During the tack welding, ABF QC Bernie Docena was noted monitoring the parameters of the welder. At the end of the shift, refitting/tack welding of two out of four drop ins for the outer West diaphragm was completed.

Summary of Conversations:

During the shift while the Submerged Arc Welding (SAW) was in progress, ABF QC Harry Scharein informed this QA that QC saw ABF personnel welding over three (3) blow holes. According to QC, ABF tried to grind and remove the holes but welded over without totally removing them. With this infraction that was committed, ABF QC Harry Scharein also told this QA that QC will generate Non-conformance Report.

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