

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: 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-027246**Date Inspected:** 27-Feb-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:	Harry Scharein and Bernie Docen			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 meter external diaphragm, weld joint number W118, QA randomly observed ABF certified welder James Zhen ID #6001 and Dan Ieraci ID #3232 continuing to perform 1G (flat position) Submerged Arc Welding (SAW) on the Partial Joint Penetration (PJP) T- joint between the 45mm thick outer East diaphragm plate and 45mm thick Tower North 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 that was previously root pass welded using SMAW and tested by ABF QC and QA using Magnetic Particle Testing (MT). No relevant indications were observed. 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 the other during welding. ABF/QC Harry Scharein was noted monitoring the welding parameters of the welder with measured working current of 560 amperes, 31.5 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 passes appeared to be satisfactory. At the end of the shift, SAW cover pass welding was completed. The preheat of more than 225 degrees Fahrenheit was held for three more hours after welding as required.

At Tower Base 9 meter external diaphragms, the following welding activities were observed;

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1. Outer West diaphragm drop in plate WD1-057 weld joint #064, ABF welder Wai Kitlai was observed continuing to perform welding on the PJP splice butt joint of 45mm drop in plate to 45mm thick diaphragm plate per Field Welding Schedule FWT29. The welder was noted welding at 1G utilizing a dual shield 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. The plates were preheated and maintained to required 225°F temperature using Miller Proheat 35 Induction Heating System. During the shift, cover pass FCAW welding on the W#064 was completed and the welder has held the same preheat of more than 225°F for three hours as required for the post weld heat treatment (PWHT).

2. Inner West diaphragm drop in plate WD1-A50 weld joint #067/#068, ABF welder Wai Kitlai was observed perform root pass welding on the PJP T-joint between the 45mm drop in plate and shear/tower skin plates and splice butt joint on drop in plate to diaphragm plate. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joints and butt joint with positive result. This QA also performed random MT on the same welded root pass with noted same result. The welder resumed FCAW-G welding fill pass until the end of the shift without able to complete. The welder has held the same preheat of more than 225°F for three hours as required after welding.

3. Inner West diaphragm drop in plate WD1-A59 weld joint #071/#072, ABF welder Jin Pei Wang was observed perform root pass welding on the PJP T-joint between the 45mm drop in plate and shear/tower skin plates and splice butt joint on drop in plate to diaphragm plate. The welder was noted welding in the 1G position utilizing dual shield 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. The plates were preheated and maintained to required 225°F temperature using Miller Proheat 35 Induction Heating System. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joints and butt joint. No relevant indications were observed. This QA also performed random MT on the same welded root pass with noted same results. The welder resumed FCAW-G welding fill pass to cover pass until the end of the shift where the welder has completed the three weld joints. The welder performed the post weld heat treatment (PWHT) using the same heating machine and held it for three hours as required.

4. Center diaphragm drop in plates WD1-A49, ABF welder Luo Xioa Hua was observed performing fit up/tack welding on the two drop in plates to shear plates and diaphragm plate. The welder was noted using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode.

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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