

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-027612**Date Inspected:** 15-May-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 and William Sherwood			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 outer West external diaphragm, this QA Inspector randomly observed ABF personnel Xiao Jian Wan perform 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding root pass on the Partial Joint Penetration (PJP) T-joint W110 between the 45mm diaphragm plate and 100/80mm transitioned shear plate. The welder was using 4.0mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1160. The plates were preheated to more than 225°F using the Miller Proheat 35 Induction Heating System. During the shift, ABF QC Bernie Docena was noted monitoring the welding parameters including the required preheat. Measured working current during welding was 168 amperes on a 4.0mm diameter E7018H4R electrode. At the end of the shift, the welder has completed the root pass on half of the total length of the PJP T-joint which is approximately 3280mm long. The welder held the same preheat and held it for three hours as required.

At Tower Base 13 meter outer West external diaphragm, this QA Inspector randomly observed ABF personnel Luo Xiao Hua perform 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding root pass on the other half of the Partial Joint Penetration (PJP) T-joint W110 between the 45mm diaphragm plate and 100/80mm transitioned shear plate. The welder was using 4.0mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1160. The plates were preheated to more than 225°F using the Miller Proheat 35 Induction Heating System. During the shift, ABF QC Bernie Docena was noted

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

monitoring the welding parameters including the required preheat. Measured working current during welding was 177 amperes on a 4.0mm diameter E7018H4R electrode. At the end of the shift, the welder has completed the root pass on half of the total length of the PJP T-joint which is approximately 3280mm long. The welder held the same preheat and held it for three hours as required.

At Tower Base 13 meter outer West external diaphragm, ABF QC Bernie Docena was noted performing Magnetic Particle Testing (MT) on the buttering pass of the Partial Joint Penetration (PJP) T-joint W110. According to QC, there was no relevant indication noted during the test. This QA also performed 10% MT verification on the PJP t-joint just mentioned above and noted same result.

At OBG 13W/14W-A2.1 @ 0 – 1850mm top deck plate outside, QA randomly observed ABF certified welder Kenneth Chappell continuing to perform 1G (flat position) Submerged Arc Welding (SAW) on the Seismic Performance Critical Member (SPCM) splice butt joint. The welder was noted 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-D15-4042B-1. The flux was baked to more than 550°F for two (2) hours and then maintained to more than 250°F until dispense during welding. The joint being welded had a single V-groove butt joint with copper backing bar that was previously root welded using Shielded Metal Arc Welding (SMAW). The plates were preheated to more than 150 °F using Miller Proheat 35 Induction Heating System with heater blanket located on top of the plate prior welding and moving it to the side during welding. ABF/QC William Sherwood was noted monitoring the welding parameters of the welder with measured working current of 550 amperes, 32.5 volts and travel speed of 380mm per minute. QA noted the welding parameters, the workmanship and appearance of the completed fill deemed satisfactory. During the shift, SAW cover pass welding was completed on this particular joint mentioned above and the welder has moved to another location OBG 13W-W2.5 @ 5030mm. The welder was noted using the process and the same setting of the SAW machine until the end of the shift where he also completed the SPCM splice butt joint.

At OBG 13W-W2.1 @ 10100mm top deck plate outside, QA randomly observed ABF certified welder Wai Kitlai continuing to perform 1G (flat position) Submerged Arc Welding (SAW) on the Seismic Performance Critical Member (SPCM) splice butt joint. The welder was noted 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-D15-4042B-1. The flux was baked to more than 550°F for two (2) hours and then maintained to more than 250°F until dispense during welding. The joint being welded had a single V-groove butt joint with copper backing bar that was previously root welded using Shielded Metal Arc Welding (SMAW). The plates were preheated to more than 150 °F using Miller Proheat 35 Induction Heating System with heater blanket located on top of the plate prior welding and moving it to the side during welding. ABF/QC William Sherwood was noted monitoring the welding parameters of the welder with measured working current of 560 amperes, 32 volts and travel speed of 380mm per minute. 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.

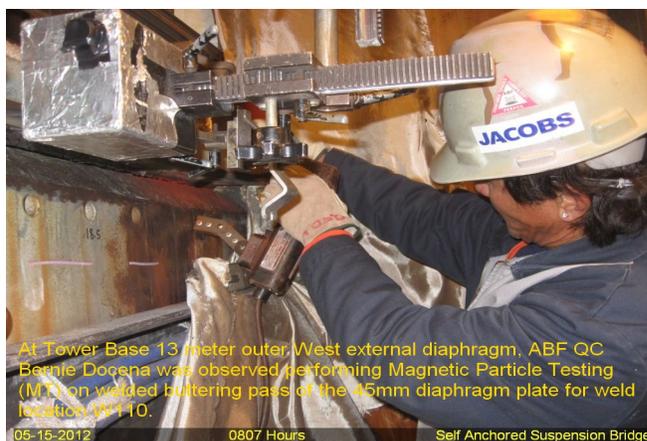
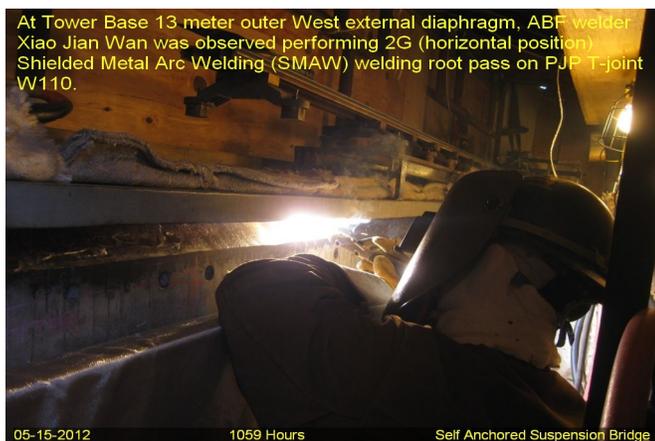
At 13E/14E-A0 @ 280mm top deck plate 'A5' outside, QA randomly observed ABF certified welder Mike Jimenez perform 1G (flat position) Shielded Metal Arc Welding (SMAW) welding cover pass on the CJP SPCM splice butt joint. The welder was utilizing 3.2mm diameter E7018H4R on the cover pass implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040C-Cu Rev. 0. The joint being welded had

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

a single V-groove butt joint with copper backing bar that will be removed then back welded. The plates were preheated to more than 150 degree Fahrenheit using propylene gas torch prior welding. Welding parameters were monitored by ABF/QC William Sherwood. QA noted the welding parameters of 140 amperes on the 3.2 diameter E7018H4R electrode. The workmanship and appearance of the completed cover pass deemed satisfactory. At the end of the shift, cover pass welding on remaining length was still continuing and should remain tomorrow.

At OBG 11W-PP106-W2, ABF welder Erick Sparks was observed by this QA continuing to perform multiple position SMAW fillet welding on 30mm thick stiffener plate to suspender bracket per drawing FW451-03A of Submittal 2617. The welder was using 3.2mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. The stiffener plate is being welded 22mm fillet on the vertical position and 12mm fillet on the horizontal and overhead positions. During the shift, ABF QC William Sherwood was noted monitoring the welder. At the end of the shift, fillet welding on the stiffener was still ongoing and should continue tomorrow.



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

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

for your project.

Inspected By:	Lizardo, Joselito	Quality Assurance Inspector
----------------------	-------------------	-----------------------------

Reviewed By:	Levell, Bill	QA Reviewer
---------------------	--------------	-------------