

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-027288**Date Inspected:** 07-Mar-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 Steve Jensen			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.

1. At OBG 5W PP29.5 W2 LS-W longitudinal stiffener inside, QA randomly observed ABF welder Xiao Todd Jackson continuing to perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. After the completion of one side, the welder back gouged the other side using a carbon air arc. The groove was ground smooth and it was tested by ABF QC Jessie Cayabyab using Magnetic Particle Testing (MT). The welder resumed welding using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1. 5-1012-3. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Steve Jensen was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, cover pass welding was completed. The welder held the preheat of 200°F for three more hours after welding for the post weld heat treatment as required.

2. At OBG 5W PP29.5 W2 LS-E longitudinal stiffener inside, QA randomly observed ABF welder Xiao Jason Collins perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

HPS 485W and has a thickness of 30mm. After the completion of one side, the welder back gouged the other side using a carbon air arc. The groove was ground smooth and it was tested by ABF QC Jessie Cayabyab using Magnetic Particle Testing (MT). The welder resumed welding using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Steve Jensen was on site monitoring the in process preheats and welding parameters. During the shift, the welder went to the ABF Clinic at Pier 7 due to his eye injury but came back later after his treatment. He resumed welding after his arrival but was unable to complete the splice joint. QA noted ABF QC was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding was still continuing and should remain tomorrow. The welder held the preheat of 200°F for three more hours after welding for the post weld heat treatment as required.

3. At South diaphragm drop in plate SD1-A53 weld joints #075 (1 and 2) and #076(1), ABF welder Xiao Jian Wan was observed perform root pass to fill pass welding on the PJP T-joint between the 45mm drop in plate and shear/tower skin plate and butt joint to diaphragm plate. The welder was noted welding at 1G (flat position) 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° 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 result. The welder resumed FCAW-G welding fill pass to cover pass during the shift where the welder has completed the three (3) weld joints. The welder performed the post weld heat treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

After the completion of the above mentioned drop in plate, the welder has moved to another location North diaphragm drop in plate ND1-A51 weld joint #087 (1 and 2) and #088 (1). ABF welder Wai Kitlai was observed perform root pass to fill pass welding on the PJP T-joint between the 45mm drop in plate and shear/tower skin plate and butt joint to diaphragm plate. The welder was noted welding at 1G (flat position) 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° 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 result. The welder resumed FCAW-G welding fill pass to cover pass until the end of the shift where the welder has not completed the three (3) weld joints. Fill pass welding should continue tomorrow. The welder performed the post weld heat treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

4. At South diaphragm drop in plate SD1-A55 weld joints #077 (1 and 2) and #078(1), ABF welder Jin Pei Wang was observed perform root pass to fill pass welding on the PJP T-joint between the 45mm drop in plate and

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

shear/tower skin plate and butt joint to diaphragm plate. The welder was noted welding at 1G (flat position) 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° 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 result. The welder resumed FCAW-G welding fill pass to cover pass during the shift where the welder has completed the three (3) weld joints. The welder performed the post weld heat treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

After the completion of the above mentioned drop in plate, the welder has moved to another location North diaphragm drop in plate ND1-A54 weld joint #089 (1 and 2) and #090 (1). ABF welder Jin Pei Wang was observed perform root pass to fill pass welding on the PJP T-joint between the 45mm drop in plate and shear/tower skin plate and butt joint to diaphragm plate. The welder was noted welding at 1G (flat position) 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° 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 result. The welder resumed FCAW-G welding fill pass to cover pass until the end of the shift where the welder has not completed the three (3) weld joints. Fill pass welding should continue tomorrow. The welder performed the post weld heat treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

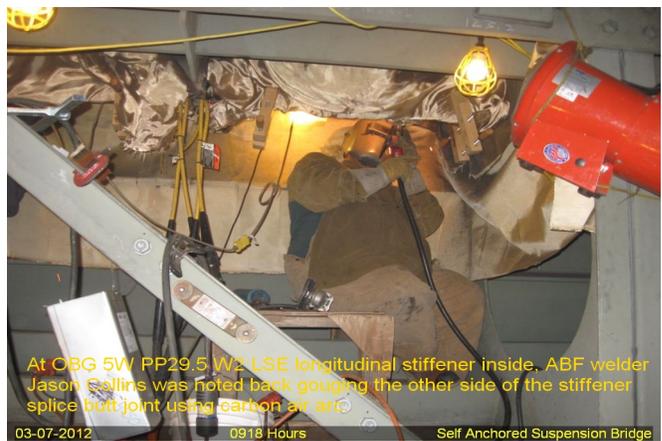
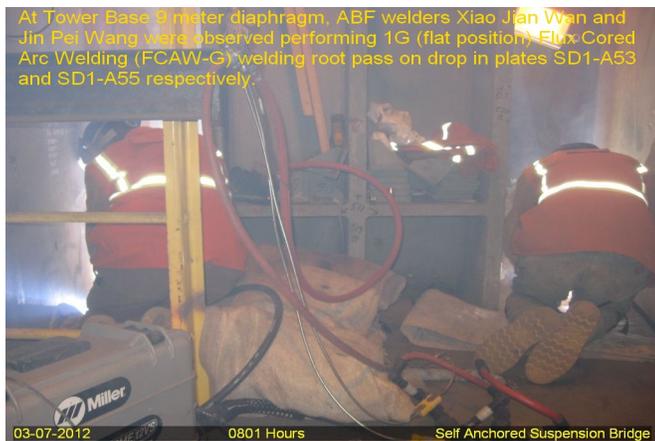
FW Spencer:

At OBG 11W location Panel Point PP108 grid line W5, this QA randomly observed FW Spencer qualified welder Damian Llanos perform Complete Joint Penetration (CJP) 6G (all position) Shielded Metal Arc Welding (SMAW) welding root pass to cover pass on the field splice butt joint of 2.5" and 4" domestic water and compressed air lines respectively. The system lines being welded are field weld joints along the grid line of W5 of the OBG. The welder was noted welding the root pass with 3/32" diameter E6010 electrode and followed by fill pass to cover pass using 3/32" diameter E7018H4R electrode implementing Caltrans approved procedure FW Spencer WPS 1-12-1. The welder was noted preheating and removing the moisture of the joint using a portable propane gas torch prior welding. During welding, ABF QC Steve Jensen was noted monitoring the parameters of the welder. At the end of the shift, the welder has completed the welding of the splice butt joints at the following;

Line Service Line/Pipe Size Panel Point Location Joint Designation
1 Domestic Water 2 1/2" 108 Southwest 39/2.5/108/SW
2 Compressed Air 4" 108 Southwest 39/2.5/108/SW

WELDING INSPECTION REPORT

(Continued Page 4 of 4)



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