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-027285
Date Inspected: 06-Mar-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: 1730
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.

At OBG 5W PP29.5 W2 LS-W longitudinal stiffener inside, QA randomly observed ABF welder Xiao Todd Jackson perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding root pass to 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. The joint has a double V joint preparation that is being welded from one side and after the completion from one side to be back gouged. Prior welding, the fit up was inspected and accepted by ABF QC Steve Jensen. QA also verified the root gap of less than 5mm and alignment of less than 2mm which deemed acceptable to the contract requirements. 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, 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.

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 root pass to 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. The joint has a double V joint preparation that is being welded from one side and after the completion from one side to be back gouged. Prior welding, the fit up was inspected and accepted by ABF QC Steve Jensen. QA also verified the root gap of less than 5mm and alignment of less than 2mm which deemed acceptable to the contract requirements. 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, 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.

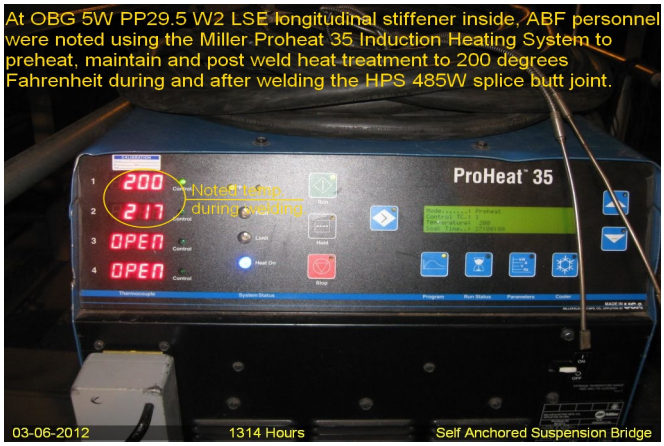
At Tower Base 9 meter external diaphragms, the following welding activities were observed;

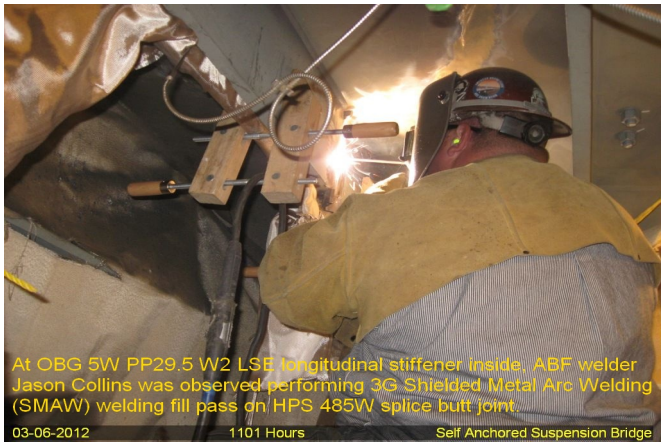
1. Inner East external diaphragm drop in plate WD1-A59 weld joint #071-3, ABF welder Wai Kitlai was observed performing root repair per Caltrans approved Weld Repair Report (WRR) 201203-001 dated March 2, 2012. Prior welding, the 530mm long linear indication was ground removed and tested by ABF QC Bernie Docena using Magnetic Particle Testing (MT). There was no relevant indication noted during the test. This QA also performed MT on the same welded root removal and noted same result. The welder preheated the plates to more than 150 degrees Fahrenheit and performed the root pass repair welding using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing Caltrans approved ABF-WPS-D15-1001 Repair. The root pass was completed and MT tested by ABF QC Bernie Docena. The root pass MT was verified by this QA. The plates were preheated to more than 225 degrees Fahrenheit using propylene gas torch and the welder continued welding the fill pass to cover pass 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. At the end of the shift, the root pass repair and the subsequent fill and cover passes were completed on this particular joint. The welder held the preheat of 225°F for three more hours after welding for the post weld heat treatment as required.

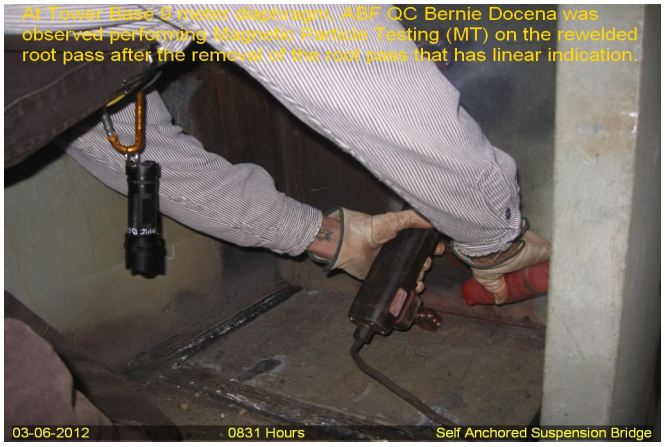
2. South external diaphragm drop in plate ND1-A51 weld joints #079 (1 & 2) and #080 (1), ABF welder Xiao Jian Wan was observed continuing to perform fill passes to cover passes welding on the PJP T-joint between the 45mm drop in plate to shear/tower skin plate T-joints. The welder was noted welding at 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. During the shift, FCAW-G cover pass welding was completed on joints mentioned above and the welder has held the same preheat of more than 225°F for three hours after welding as required.

3. South external diaphragm drop in plate ND1-A54 weld joints #081 (1 & 2) and #082 (1), ABF welder Jin Pei Wang was observed continuing to perform fill passes to cover passes welding on the PJP T-joint between the 45mm drop in plate to shear/tower skin plate T- joints. 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. During the shift, FCAW-G cover pass welding was completed on joints mentioned above and the welder has held the same preheat of more than 225°F for three hours after welding as required.







Summary of Conversations:

No significant conversation ocurred 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