

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-026653**Date Inspected:** 08-Nov-2011**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:	Jesse Cayabyab 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 OBG		

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.

QA randomly observed ABF/JV qualified welder Rory Hogan (ID #3186) perform Complete Joint Penetration (CJP) groove back welding cover pass on Orthotropic Box Girder (OBG) 12W/13W side plate 'C1.2 to C2' outside. The welder was observed welding in the 4G (overhead) 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-D15-3110-4. The welder was using a track mounted welder holder assembly that was remotely controlled. The joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The gouged and ground splice butt joint was also Non Destructive Testing (NDT) tested using the Magnetic Particle Testing (MT). The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blankets located on top of the plate prior welding and maintained by moving the heater blanket at the side of the plate being welded during welding. The vicinity was properly protected from wind. During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters of the welder with measured 260 amperes, 23.3 volts with travel speed of 355mm per minute and calculated heat input of 1.02 Kjoules per mm. At the end of the shift, cover pass welding was completed.

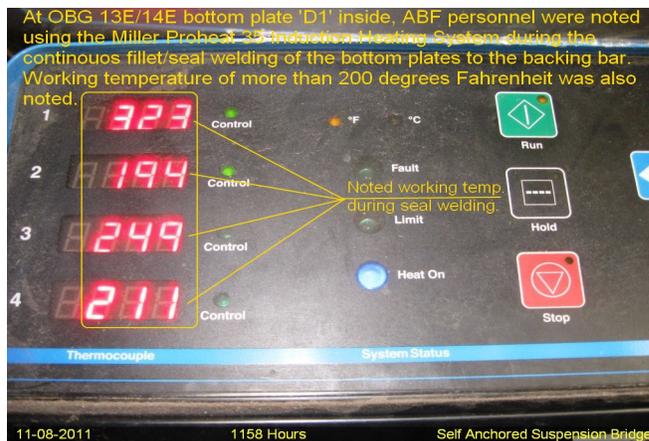
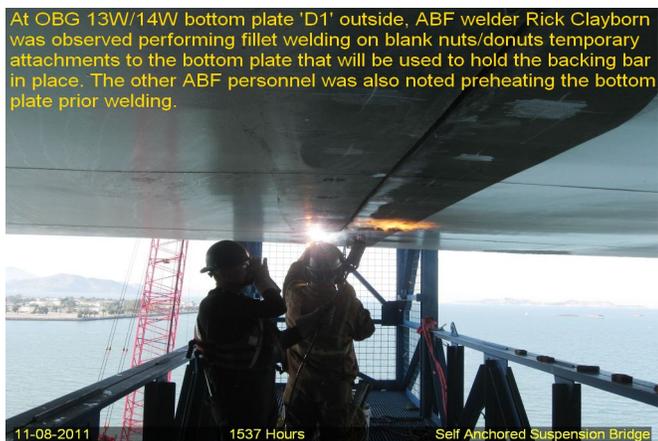
At OBG 13E/14E bottom plate 'D1' inside, QA randomly observed ABF/JV qualified welders Wai Kitlai and Jin Pei Wang perform fillet/seal welding of the bottom plates 'D1' to the backing bar. Each welder was utilizing a

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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-F3200-2. The Seismic Performance Critical Member (SPCM) joint had a single V-groove butt joint design with the bottom plate being seal welded with backing bar. The plate with the backing bar was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket located at the bottom of the plates. Since the preheat was taking so much time to reach the required temperature, the welders have also used propylene gas torch in addition to the Induction Heating System to speed up the preheating. During the shift, ABF QC Jesse Cayabyab was noted monitoring the welders. The two welders have completed seal welding on both sides of the plates and then hand welded using the same process the two ends (north side, 650mm and south side, 600mm) of the splice. The areas welded have limited access to the SAW track mounted feeder. These two ends were also completely welded with cover before the end of the shift and the welders have held the 200 degrees Fahrenheit preheat for three (3) hours after welding.

At OBG 12W/13W bottom plate 'D' outside, ABF welder Rick Clayborn was observed performing fit up of the bottom plates. The welder has tack welded blank nuts/donuts temporary attachments to both sides of the bottom plates using Shielded Metal Arc Welding (SMAW). The welder was noted welding in 4F (overhead) position utilizing 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification ABF-WPS-D15-F1200A. The welder was noted preheating the plate to more than 150°F prior welding. ABF QC William Sherwood was noted at site monitoring the welder and his welding parameter and so with the usage of electrode due to its limited exposure when welding SPCM. At the end of the shift, fillet welding of the blank nuts/donuts temporary attachments were still continuing and should remain tomorrow.



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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