

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-016650**Date Inspected:** 08-Sep-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Tom Pasqualone and Mike Johnson			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:	Orthotropic Box Girder		

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 welders Rory Hogan (ID #3186) and Jeremy Dolman (ID #5042) continuing to perform complete joint penetration (CJP) groove (splice) back welding fill pass on Orthotropic Box Girder (OBG) 4W/5W side plate 'E2' outside. The welder was observed welding in the 4G (overhead) 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-D15-3110-4. 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 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located on top of the plate prior and maintained the preheat by moving the heater blankets on the side of the plate during welding. The vicinity was also properly protected from wind and other climatic changes. During welding, ABF Quality Control (QC) Jim Cunningham was noted monitoring the welding parameters of the welder. Before the end of the shift, back welding of the weld cover reinforcement was completed.

At OBG 1W/2W longitudinal stiffeners (LS) inside, QA randomly observed ABF welder Wai Kitlai ID #2953 perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) back welding fill pass on the longitudinal stiffener LS2 splice butt joint. The joint has a double V joint preparation that was welded

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from one side using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing, fully welded from one side then back gouged 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 propane gas torch prior welding. During the shift, the welder has completed back welding the LS2 and has moved to LS1. LS1 was also welded using the same WPS as mentioned above. The QA Inspector noted the ABF QC Inspector Tom Pasqualone 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, LS1 back welding was still continuing and should remain tomorrow.

At OBG 2W/3W longitudinal stiffeners (LS) inside, QA randomly observed ABF welder Yao Xin Liang ID #7238 has moved here and perform vertical buttering using Shielded Metal Arc Welding (SMAW) on the longitudinal stiffener LS6 splice butt joint. The joint has a double V joint preparation that has a 15mm root gap. The welder was using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The splice joint plate was preheated to greater than 200 degrees Fahrenheit using propane gas torch prior welding/buttering. During the shift, the welder has completed buttering the LS6 and has moved to LS5. LS5 was also welded/buttered using the same WPS as mentioned above. The QA Inspector noted the ABF QC Inspector Tom Pasqualone 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, the two stiffeners were completely buttered but were not cleaned. According to QC Tom Pasqualone, other ABF personnel will be doing the grinding/cleaning of the welds.

At OBG 1W/2W top deck plate outside (panel point PP10 – PP11) outside, QA randomly observed ABF welder Rick Clayborn perform 1G/4G (flat position/overhead) CJP welding 3/8" thick x 3 5/8" wide counter weight connection plate to the top deck end plate. The welder was using SMAW with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-D1000. The connection plate has a 45 degree bevel that was welded from one side and then back gouge and back welded from the other side. The welder has completed the welding on this location and has moved to PP12 – PP13. During welding, ABF Quality Control (QC) Mike Johnson was noted monitoring the welding parameters of the welder. At the end of the shift, welding was still continuing and should remain tomorrow.

At OBG 1W/2W edge plate 'B' outside (PP12-PP13), QA randomly observed ABF welder Mike Maday perform stud welding on 3/4" diameter x 6" long stud to the edge plate 'B' for the counter weight. According to ABF QC Mike Johnson, the welder has already qualified three consecutive stud welding using the stud gun/machine prior to my arrival. During the shift, the welder has switched from using the stud gun to fillet welding all around the stud to the plate. When asked why the switch from stud machine to fillet welding, the welder replied that the stud welding machine was not performing well. During welding, ABF Quality Control (QC) Mike Johnson was noted monitoring the welding parameters of the welder and workmanship of the stud welding.

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At OBG 1W/2W longitudinal stiffeners LS1, LS2 and LS3 inside, ABF welder Wai Kitlai was observed back welding the stiffener splice joint LS2 using SMAW with 1/8" diameter E9018H4R electrode. ABF QC Tom Pasqualone was also noted monitoring the welder



At OBG 2W/3W longitudinal stiffener LS4, LS5 and LS6 inside, ABF welder Yao Xin Liang was observed grinding/cleaning the joint surface of LS6 prior to perform buttering on the 15mm root gap of the splice butt joint.



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 Mohammad Fatemi (916) 227-5298, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer