

**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-026893**Date Inspected:** 14-Dec-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

<b>CWI Name:</b>	Fred Von Hoff and Steve Jensen			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	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.

At OBG 11E-PP101-E3-#2 lifting lug holes infill plate to top deck plate inside, ABF welder Salvador Sandoval was observed continuing to perform 4G Shielded Metal Arc Welding (SMAW) welding fill pass to cover pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8" diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1110A Rev.1. During welding, ABF QC Salvador Merino was noted monitoring the welder's welding parameters with measured working current of 130 amperes on the 1/8" diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, cover pass welding was completed on the bottom side of the butt joint and the welder has moved to the other lifting hole #4 of the same panel point location. The welder performed the same 4G SMAW back welding on butt joint and completed before the end of the shift including flush grinding on the weld cover.

At OBG 13E/14E side plate 'E2' (600mm long) inside, QA randomly observed ABF/JV qualified welder Jin Pei Wang continuing to perform CJP groove (splice) welding fill pass on the south end of the splice butt joint. The welder was observed perform manual welding in the 3G (vertical) 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-D15-3042B-1. The joint being welded has a single V-groove butt joint with backing bar that will be removed then back welded. The splice joint was preheated and maintained to greater

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than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) Fred Von Hof was noted monitoring the welding parameters of the welder with measured working current of 250 amperes and working voltage of 23.2 volts. At the end of the shift, fill pass welding on the splice butt joint was still continuing and should remain tomorrow.

At OBG 13E/14E edge plate 'F' inside, QA randomly observed ABF/JV qualified welder Fred Kaddu perform CJP groove welding repair. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1001-Repairs. The repair excavation was preheated to more than 140 degree Fahrenheit using propylene gas torch prior welding. During the shift, ABF QC Fred Von Hoff was noted monitoring the welder. Prior welding, ABF QC Fred Von Hoff was also observed performing Magnetic Particle Testing (MT) with positive results. The following first time repairs were noted excavated and welded during the shift;

Location	Y-dimension	Length	Width	Depth	Remarks
1. 13E-14E-F	140mm	150mm	20mm	10mm	Repair completed.
2. 13E-14E-F	420mm	200mm	20mm	10mm	Repair completed.
3. 13E-14E-F	940mm	85mm	25mm	11mm	Repair in progress.
4. 13E-14E-F	1180mm	190mm	20mm	11mm	Excavated.

FW Spencer:

At Tower South shaft elevation 99 and 109 meters, this QA randomly observed FW Spencer qualified welder Damian Llanos ID-6645 continuing to perform Complete Joint Penetration (CJP) 6G (all position) Shielded Metal Arc Welding (SMAW) welding root pass to cover pass on the 2.0" and 3" diameter domestic water and air lines respectively. The system lines being welded are field branches of the two lines along the tower elevation. 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 1" weldolet branch to the 2" diameter domestic water line and 2" branch butt joint from a 3"x 2" reducing tee on both elevations.

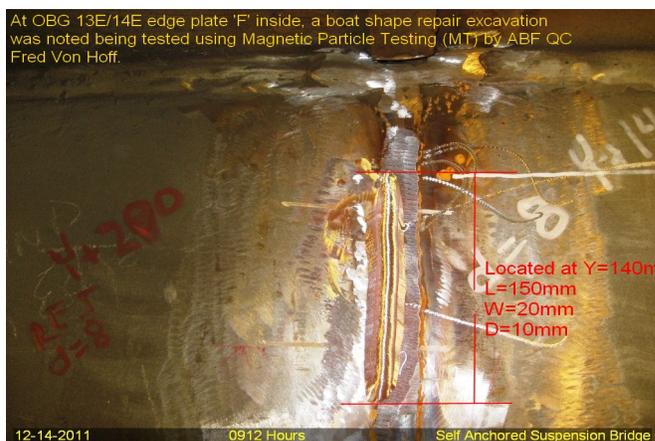
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At OBG 13E/14E side plate 'E2' inside, ABF welder Jin Pei Wang was observed continuing to perform 3G Flux Cored Arc Welding (FCAW-G) welding fill pass on splice butt joint.



At OBG 13E/14E side plate 'E2' inside, ABF personnel were noted using the Miller ProHeat 35 Induction Heating System to preheat and maintain the required preheat temperature of 150 degrees Fahrenheit during welding.



## 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