

**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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022543**Date Inspected:** 15-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Fred Von Hoff and William Sherwood			<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>	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.

At OBG 10E/11E side plate 'C1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding fill pass to cover pass on the splice butt joint. The welder was observed perform automatic 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 had a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater 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) William Sherwood was noted monitoring the welding parameters of the welder. At the end of the shift, cover pass welding on the splice butt joint mentioned above was completed and the welder has started moving to side plate 'C2' of the same OBG.

At 11E-PP97.5-E5-TS deck access hole transverse stiffener inside, QA randomly observed ABF/JV qualified welder Hua Qiang Hwang ID #2930 was observed manually welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was noted welding in 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1010 Revision 1. The joint being welded has a double V-groove butt joint. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the

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welder. During the shift, SMAW cover pass welding on both sides of the splice butt joint was completed and the welder has started flush grinding the weld covers. Flush grinding of the weld cover reinforcement was still continuing at the end of the shift.

At OBG 10W/11W top deck plate 'A' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP repair welding. The welder was noted welding in 1G (flat) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing new Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1003 Repair. The new repair procedure includes putting in place a copper backing alongside the typical steel backing bar when the repair excavation is expected to occur at the edge of the steel backing. The second time welding repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC William Sherwood was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 138 amperes which appears in compliance to the WPS. The locations of the repairs were noted below;

Location	Y-dimension	Length	Width	Depth	Remarks
1. A2	4290mm	100mm	20mm	14mm	Completed (R2)
2. A5	5090mm	100mm	21mm	21mm	Completed (R2)

At OBG 9E/10E bottom plate 'D2' inside, QA randomly observed ABF/JV qualified welder Fred Kaddu ID # 2188 perform CJP groove welding repair. The welder was observed welding in the 1G (flat) position utilizing Shielded Metal Arc Welding (SMAW) with 5/32" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1001-Repairs. The repair excavation located at Y=3330mm and was having excavation profile of 110mm long x 22mm wide x 18mm deep was preheated to more than 140 degree Fahrenheit using propane gas torch prior welding. During the shift, ABF QC William Sherwood was noted monitoring the welder. Prior welding, ABF QC William Sherwood was also observed performing Magnetic Particle Testing (MT) on the boat shape repair excavation.

At OBG 7E-PP53-E5-#2 & 4 lifting lug access hole to top deck plate outside – ABF welder Jason Collins was observed 1G SMAW welding root pass to cover pass on the infill plate to top deck plate butt joints. The welder was noted using 1/8" and 5/32" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1070. Prior welding, ABF QC Fred Von Hoff was observed inspecting the fit up of the butt joints. QA verified the fit up alignment of the two access holes which deemed acceptable to the contract requirements. During welding, ABF QC Fred Von Hoff was noted monitoring the welder's welding parameters. At the end of the shift, cover pass welding on the top side location of the two butt joints was completed.

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At OBG 10W/11W top deck plate 'A' outside, ABF QC William Sherwood was observed performing Magnetic Particle Testing (MT) on the 2nd time repair excavation prior welding.

04-15-2011 0935 Hours Self Anchored Suspension Bridge



At OBG 7E-PP53-E3-#4 lifting lug access hole to top deck plate outside, ABF QC Fred Von Hoff was noted inspecting the fit up alignment of the infill plate to the top deck plate.

04-15-2011 1110 Hours Self Anchored Suspension Bridge



At OBG 10W/11W top deck plate 'A' outside, ABF welder Wai Kitlai was observed performing 1G Shielded Metal Arc Welding (SMAW) welding 2nd time repair on welded butt joint.

04-15-2011 0944 Hours Self Anchored Suspension Bridge



At OBG 9E/10E bottom plate 'D' inside, ABF welder Fred Kaddu was observed performing 1G Shielded Metal Arc Welding (SMAW) welding 1st time repair on welded butt joint.

04-15-2011 0809 Hours Self Anchored Suspension Bridge

## 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.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer