

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-019174**Date Inspected:** 05-Jan-2011**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

<b>CWI Name:</b>	Gary Ersham and Fred Van Hoff			<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 8W/9W side plate 'E1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding fill 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) Fred Von Hoff was noted monitoring the welding parameters of the welder. QA noted a parameter reading of 250amperes 23.8 volts and 280mm/minute travel speed which deemed in compliance with the approved WPS. At the end of the shift, welding of the fill passes on the splice butt joint was still continuing and should remain tomorrow.

At OBG 8W/9W top deck plate 'A3' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP repair welding. The welder was noted welding in 1G (Flat) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repairs. The three repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Steven Mc Connell was

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noted monitoring the welder and his welding parameters. Welding parameter measured at the time of welding was 130 amperes which appears in compliance to the WPS. The locations of the repairs were noted below;

Location	Y-dimension	Length	Width	Depth	Remarks
1. A3	2860mm	105mm	27mm	15mm	Completed
2. A3	3110mm	260mm	25mm	15mm	Completed
3. A3	2180mm*	265mm	32mm	14mm	In progress

Note: \* This Y-dimension was a combined excavation from three original(UT)Y-dimensions which were Y2200mm, Y2370mm and Y2350mm.

At OBG 8W/9W edge plate 'B' outside, QA randomly observed ABF/JV qualified welder Han Wen Yu continuing to perform fill pass welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 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-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. ABF Quality Control (QC) Gary Ersham was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 125 amperes which appears in conformance to the contract requirements. At the end of the shift, SMAW fill pass welding was still continuing and should remain tomorrow.

At OBG 6W-PP46.5-W5-S deck access hole inside, ABF welder Jorge Lopez was observed performing 4G Shielded Metal Arc Welding (SMAW) welding underfill and undercut on the welded butt joint where QC has marked for fixing prior visual inspection and NDT. The welder has completed the task of fixing all the surface defects and has moved to another deck access hole 8W-PP61.5-W5-SW and did the same task as previously mentioned. The welder was noted using 1/8" diameter E7018H4R electrode. During the shift, ABF QC Fred Von Hoff was noted monitoring the welder and his welding parameters. At the end of the shift, overhead fill pass welding on this location was still in progress and should continue tomorrow.

This QA performed 10% MT verification at the following lifting lug access hole and deck access hole restoration welded butt joints. Please see TL-6028 report for more information.

1. OBG 4E-PP27-E3-#2 lifting lug access hole restoration inside – no defects noted.
2. OBG 4E-PP27-E4-#1 to #4 lifting lug access hole restoration inside – no defects noted.
3. OBG 1W-PP9.5-W4- #1 to #4 lifting lug access hole restoration inside – no defects noted.
4. OBG 1W-PP11-W4- #1 to #4 lifting lug access hole restoration inside – no defects noted.
5. OBG 8E-PP61.5-E2- LS-W, LS-E & TS longitudinal and transverse stiffeners inside – no defects noted.

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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.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer