

**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-025239**Date Inspected:** 18-Jul-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>	William Sherwood and Pat Swain			<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 Tower		

**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 11W/12W edge plate 'B' outside, ABF welder Jorge Lopez was observed performing flush grinding on the completely welded cover as required. After the completion of the grinding, the welder has moved inside the same OBG/plate and performed carbon arc gouging on the backing bar removal. The welder has also completed the carbon arc gouging and started grinding the groove of the gouged backing bar removal. At the end of the shift, grinding of the gouged backing bar was still continuing and should remain tomorrow.

At OBG 11W/12W edge plate 'F' inside, ABF welder Fred Kaddu was noted smooth grinding the groove of the gouged backing bar removal of the welded from outside splice butt joint. The welder has completed grinding and has called QC to perform Magnetic Particle Testing (MT) on the ground backing bar removal. ABF QC William Sherwood was observed performing MT on the ground backing bar removal and found no significant defects during the test. Just after the MT completion, the welder has started 3G Shielded Metal Arc Welding (SMAW) back welding the splice butt joint. ABF QC William Sherwood was noted monitoring the parameters of the welder. At the end of the shift, back welding was still continuing and should remain tomorrow.

At Tower Base elevation 0-13Meters Electro Slag Welding (ESW), ABF personnel were noted dismantling the Hilti unistrut columns and access ladders that were used during welding of ESW joint #W-043 location 'V'. ABF welder Jeremy Dolman was also noted tack welding temporary attachments for the access ladders and unistrut

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columns for the next ESW T-joint #N-043 location 'N'. The welder was noted using Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode. The plate area being tack welded was also preheated to more than 225°F using propylene gas torch prior welding.

Still at the Tower Base, ABF QC Jesse Cayabyab and this QA performed a joint fit up verification on the ESW T-joint #N-041 location 'N' to be welded next. The measured root opening was noted 18.4mm minimum and 24.2mm maximum. There was no lesser than 16mm nor more than 25mm root gap noted from the bottom to the top of the T-joint. With the measurements that were taken during the fit up verification, the fit up of the weld T-joint was deemed in compliance to the contract requirements.

QA randomly observed ABF/JV qualified welder James Zhen perform CJP groove back welding fill pass on Orthotropic Box Girder (OBG) 10W/11W side plate 'E2' outside. The welders were 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 more than 150 degree Fahrenheit using Miller Proheat 35 Induction Heating System 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) Pat Swain was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC MT of the fillet welding of two (2) splice plates. The QA verification was performed to verify that the welding and the MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. Tower West Shaft Elev. 114meters Northwest (C-D) corner upper splice – QA MT verified
2. Tower West Shaft Elev. 114meters Northwest (C-D) corner lower splice – QA MT verified

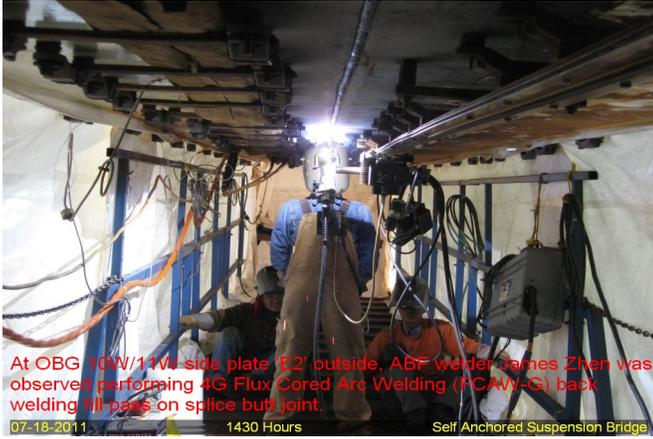


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## Summary of Conversations:

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