

**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-016830**Date Inspected:** 17-Sep-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Jim Cunningham 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 6E/7E side plate 'E' (1000mm to 3100mm) inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove (splice) welding cover pass on the splice butt joint. The welder was observed performing 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 located at the opposite side of the plate prior/during welding. ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. During the shift, cover pass welding was completed and the welder has moved to higher elevation location 0mm to 1000mm. The welder was noted welding the root pass by hand and after its completion he started welding fill pass into the splice butt joint also by hand. At the end of the shift, fill pass welding in this new location was still continuing and should remain tomorrow.

At OBG 6E/7E edge plate 'B' outside, QA randomly observed ABF/JV qualified welder James Zhen ID #6001 continuing to perform cover 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

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(WPS) ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. During welding, ABF Quality Control (QC) Steven Mc Connell was noted monitoring the welding parameters of the welder. During the shift, cover pass SMAW welding was completed and the welder started flush grinding the weld cover of the splice butt joint. At the end of the shift, grinding of the weld cover was still continuing and should continue tomorrow.

At OBG 6E/7E edge plate 'B' inside, QA randomly observed ABF/JV qualified welder Xiao Jian Wan ID #9677 perform back gouging on the welded splice butt joint from the outside. The welder was using carbon air arc and after its completion he also performed the grinding of the groove of the gouged backing. The welded splice butt joint had a single V-groove with copper backing bar that has been removed after the welding completion from the outside and showed undesirable surface profile after the removal of the copper backing bar. But the backing profile has improved after the carbon air arc gouging and improved further after the completion of the groove grinding. The groove of the ground and gouged backing has been tested by ABF QC William Sherwood using Magnetic Particle Testing (MT) with satisfactory results.

At OBG 6W bottom plate 'D' outside, ABF welder Mike Maday was observed installing fitting gear at the plate to be used as an aid in installing the backing bar of the splice butt joint. During the installation, the welder was noted welding the fitting gear/temporary attachment using 1/8" diameter, E7018H4R electrode. During the installation, ABF QC Jim Cunningham was noted monitoring the welder and his parameters. Installation/tack welding of the fitting gear was seen complete at the end of the shift.

Other activities observed during the shift include flush grinding of the weld cover reinforcement of the welded splice butt joint at OBG 4W/5W bottom plate 'D' outside and the ongoing preparation of ABF welders Rory Hogan and Jeremy Dolman for the 4G FCAW-G back welding of the splice butt joint at OBG 5W/6W side plate 'E' outside.



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At OBG 6W bottom plate 'D' outside, ABF welder Mike Maday was observed performing 4F fillet welding on the fitting gear/temporary attachment to be used as an aid in the installation of the splice backing bar.



At OBG 6E/7E edge-plate 'B' inside, ABF welder Xiao Jian Wan was observed performing carbon arc gouging on the backing of the welded splice butt joint. The welder had used copper backing bar during the welding from the other side outside.



## 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) 813-3677, 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