

**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-021486**Date Inspected:** 02-Mar-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>	John Pagliero 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>	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.

QA randomly observed ABF/JV qualified welder Rory Hogan continuing to perform CJP groove (splice) back welding cover pass on Orthotropic Box Girder (OBG) 8W/9W side plate 'E2' outside. The welder was observed back 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 and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and by moving the blanket to the side of the weld being welded during welding. The vicinity was also properly protected from wind and other climatic conditions. ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder. At the end of the shift, cover pass welding was completed.

At OBG 10E/11E bottom plate 'D' inside, QA randomly observed ABF certified welder James Zhen ID #6001 perform 1G (flat position) Submerged Arc Welding (SAW) welding root pass then fill pass to cover pass on the CJP splice butt joint. The welder was utilizing F7A6-EM12K-H8, 3.2mm electrode with corresponding Esab OK Flux 10.62 flux and implementing Caltrans approved Welding Procedure Specification (WPS)

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ABF-WPS-D15-4042B-1. The joint being welded has a single V-groove butt joint with backing bar. The plates were preheated to more than 150 degree Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. Welding parameters were monitored by ABF/QC William Sherwood. QA noted the welding parameters, the workmanship and appearance of the completed root/fill pass deemed satisfactory. At the end of the shift, SAW cover pass welding was completed where the track mounted SAW wire feeder has access.

At OBG 9W/10W side plate 'E1' inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 perform CJP groove (splice) welding root pass on the splice butt. 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. 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) Steve Jensen was noted monitoring the welding parameters of the welder. During the shift, after completing the root pass, ABF QC Steve Jensen informed this QA that the power supply for the FCAW-G welding machine was interrupted. The welder tried to fix the welding machine power supply until the end of the shift.

At OBG 8W-PP70.5-W5-SE deck access hole to top deck plate inside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform CJP repair welding. The welder was noted welding in 4G (overhead) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repair. 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 John Pagliero was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 135 amperes which appears in compliance to the WPS. At the end of the shift, welding repair at the following locations was completed. The locations of the repairs were noted below;

Location Y-dimension Length Width Depth Remarks

1. 3260mm 75mm 30mm 17mm Completed/R2
2. 3110mm 110mm 25mm 18mm Completed/R2

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC of the Complete Joint Penetration (CJP) welding of two lifting lug deck access holes butt joint. The QA verification was performed to verify that the welding and the VT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the welds and the QC inspection complied with the contract documents.

1. 3W-PP22-W4-#2 & #4 lifting lug access holes inside – QA VT 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