

**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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015764**Date Inspected:** 21-Jul-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**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>	Bonifacio Daquinag and Steven M			<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 L5E/L6E side plate 'C' (0mm to 3110mm) inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove welding fill 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) Bonifacio Daquinag was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding of the splice joint was still continuing and should remain tomorrow.

QA randomly observed ABF/JV qualified welder Rory Hogan (ID #3186) perform CJP groove (splice) back welding cover pass on Orthotropic Box Girder (OBG) L3W/L4W bottom plate 'D1' outside. The welder was 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

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Magnetic Particle Testing (MT). The splice joint was preheated to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System located on top of the plate prior welding and maintained by moving the heater blanket on the side of the plate during welding. The vicinity was also properly protected from wind and other climatic changes. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder.

At OBG L5W/L6W side plate 'C' outside, QA randomly observed ABF welder Rick Clayborn perform tack welding of 42 pieces of fit up gear/temporary attachment to be used as an aid in the installation of the backing bar. The welder was using Shielded Metal Arc Welding with 1/8" diameter E7018H4R electrode. During the shift, the welder has completed the welding of the fit up gears/temporary attachment and installed the backing bar from the outside. The welder and QC Jesse Cayabyab have moved inside the OBG and started measuring the fit up alignment.

At OBG L4E/L5E edge plates 'B' and 'F' inside, two ABF welders Hua Qiang Hwang and Jin Pei Wang were noted air arc gouging separately on the edge plate backing bar removal. During the shift, welder Hua Qiang Hwang has completed the air arc gouging and started grinding the groove of the gouged plate. The other welder has continued gouging until the end of the shift and was not able to complete.



## Summary of Conversations:

At OBG L5W/L6W top deck plate 'A' outside, two ABF QCs Tom Pasqualone and Steven Mc Connell were noted performing Ultrasonic Testing (UT) on the welded splice butt joint. During their UT, QC informed QA that they have found 8 rejectable repairs that have various lengths and depths with accumulative linear length of around one foot. The test was still ongoing and total rejects should be known as soon as the test is completed.

## 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) 227-5298, 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