

**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-012485**Date Inspected:** 08-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Bernie Docena, Steve McConnell			<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 Girders (OBG)		

**Summary of Items Observed:**

The Quality Assurance Inspector (QAI), Scott Croff, was present at the Self Anchored Span (SAS) job site to observe the scheduled fabrication and welding of components for the SFOBB project. The following observations were made:

## 1) OBG field splice welding

1) The QAI observed ABF personnel making complete joint penetration (CJP) welds on the stiffener plates of bottom plate D at OBG Lifts 1E/2E field splice. The QAI noted that the Quality Control (QC) Inspector Bernie Docena is monitoring the welding at this location. The QAI noted that gas shielded flux cored arc welding (FCAW-G) with 1/16" diameter E71T-1M electrode and Ar/CO2 shielding gas with Welding Procedure Specification (WPS) ABF-WPS-D15-3010-3. The QAI observed that James Zhen, ID 6001 and Jin Quan Huang, ID 9340, are making the vertical (3G) FCAW-G CJP welds. The QAI noted that the 35mm thick stiffener splices are double bevel configuration and per WPS will need a minimum preheat temperature of 200°F. The QAI was informed that, as previously observed and reported, only 1 side of the double bevel will be welded at this time. The QAI relayed that the contract special provisions require welds with preheat temperature over 150°F be maintained at preheat temperature through the welding and for 3 hours after welding is completed. The QAI was informed that ABF has determined that these welds do not need to be maintained at preheat temperature during welding or for 3 hours after completion of welding. At the beginning of the welder's shift, the QAI noted that the stiffener splices have been back-gouged and the 2nd side is going to be welded. The QAI noted that the QC Inspector Steve McConnell conducting magnetic particle testing (MT) on the back-gouged welds. The QAI was informed that stiffeners # 7, 8, 9 and 16 have been accepted are ready for additional welding. The QAI was also

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informed of relevant indications and apparent lack of fusion along bevel face on stiffener #10. The QAI was informed that this weld is on hold until further notice. See the attached photo. The QAI observed that the remaining, QC accepted back gouges were then preheated again and welding was in progress. This work was in progress at the end of the QAI's shift. The QAI Danny Reyes and the QAI Gary Richmond arrived and assumed the QAI duties.

The QAI observed ABF personnel making CJP welds inside of plate D at OBG Lifts 1E/2E field splice. The QAI noted that the QC Inspector Bernie Docena is monitoring the welding at this location. The QAI noted that FCAW-G with 1/16" diameter E71T-1M electrode and Ar/CO2 shielding gas with WPS ABF-WPS-D15-3040B-1. The QAI observed that Song Tau Huang, ID 3794 is making the FCAW-G CJP welds. The QAI noted that the remaining portion of bottom plate D will be welded (approximately 250mm), from D18.5 to D19. The QAI also noted that this weld was started on 3-5-2010. The previous weld was removed by grinding. The QAI witnessed the QC Inspector Steve McConnell conducting magnetic particle testing (MT) on the ends of adjacent splice weld and removed weld areas. The QC Inspector informed the QAI that the removed portion was acceptable and the joint will be welded to completion. The QAI visually examined the joints and noted that the weld access hole through the longitudinal shear plate (D to E) doesn't appear to have adequate clearance. The QAI noted that this condition is similar to to the opposite shear plate (C to D). The QAI has previously documented this observation. The QAI noted that welding progressed and appeared to be generally conforming to the contract requirements. The QAI noted that plate D field splice has been completed from the inside. The QAI also noted that the external (bottom) of the plate splice has a backing bar in place and additional work is required. The QAI relayed this information to the QAI Danny Reyes and the QAI Gary Richmond.



## Summary of Conversations:

As noted above, the QAI had conversations with the QC Inspectors regarding the maintaining of preheat temperature for the splice and stiffener splice welding. There were additional conversations regarding the MT indications that were reported by the QC Inspector Steve McConnell. The QAI relayed the observations of OBG splice fit-up ,welding and preheat temperature observations to the QAI Danny Reyes. There were no other notable observations or conversations during this shift.

## 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 Mohammad Fatemi, (916)813-3677, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Croff, Scott	Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell, Bill	QA Reviewer
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