

**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 #: 01.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-029996**Date Inspected:** 09-Sep-2013**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>	Jesus Cayabyab & Bernie Docena			<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>	See Below		

**Summary of Items Observed:**

Quality Assurance Inspector (QAI) Edward Leach was at the American Bridge/Flour (ABF) job site at Yerba Buena Island between the times noted above in order to monitor Smith Emery Quality Control (QC) functions and the in process work being performed by ABF personnel. The following items were observed:

**13 Meter Tower Diaphragm: Weld Access Holes**

ABF welding personnel Guo Wu Chen was observed utilizing the SMAW process in the vertical (3G) & horizontal (2G) positions with Atom Arc E7018-1 H4R, 1/8" diameter electrode to weld insert plate for weld access hole located at Electroslag Weld (ESW) "T" on the west side of south tower shaft at 13 meter diaphragm. The welding parameters were verified by QC Inspector Bernie Docena with a Fluke 337 current clamp meter per ABF Welding Procedure Specification (WPS) ABF-WPS-D15-1160. Once welding was complete the welding was ground flush with the base metal. The work is part of Request for Information (RFI) #2838-R01. The welder also performed welding for weld access hole at ESW Q. The weld designations for these two locations are identified as 141-1 & 142-2, access hole to diaphragm plate.

**Ring Beam North Side**

ABF welding personnel Rick Clayborn was observed performing in process fit up for Complete Joint Penetration (CJP) welds at two locations for web & flange of the ring beam on the north side of the tower. The two locations are at Electroslag weld (ESW) W & N. The weld numbers per ABF drawing are identified as #148 (web) & #149 (flange). Welder was observed using 3/8" backing for back side (side B) of the root opening which will later be removed for back gouging. Weld joint configuration is identified as a skewed double bevel CJP weld. Fit up at both locations was inspected by both QC Inspector Bernie Docena and QAI. Fit up was accepted by the QC

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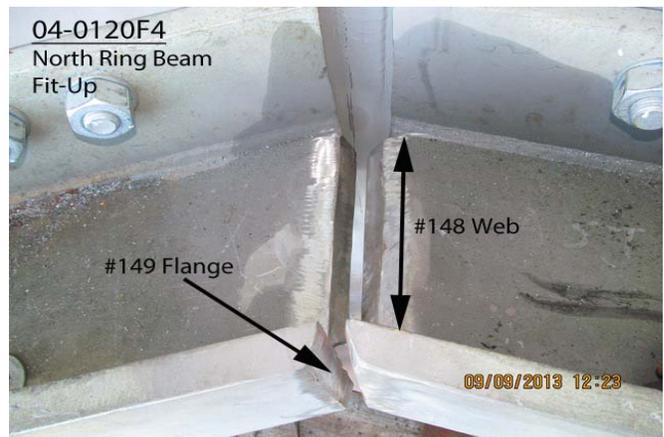
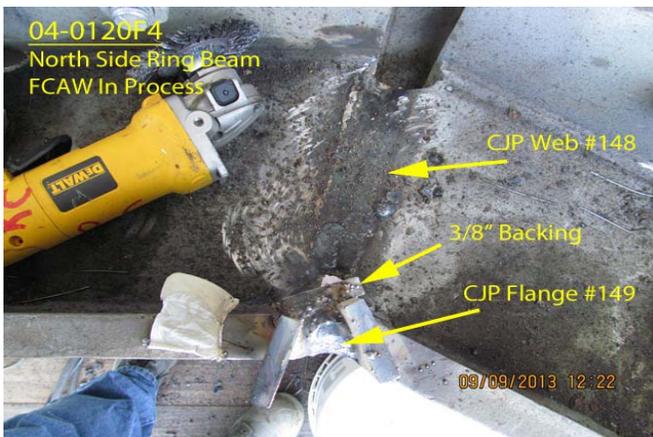
Inspector and QAI agreed.

Mr. Rick Clayborn was later observed at ESW "W" utilizing the Flux Cored Arc Welding (FCAW-S) process in the vertical (3G) & flat (1G) position with Lincoln Innershield NR-232, E71T-8, 1.8mm diameter wire electrode to weld ring beam 1" flange and web plates. The welding parameters were verified by QC Inspector Bernie Docena with a Fluke 337 current clamp meter per ABF Welding Procedure Specification (WPS) ABF-WPS-D15-2030-3, Revision 1 & ABF-WPS-D15-2030-1, Revision 1. The welder was using a hand held propylene torch to maintain preheat/interpass temperature at or above 150° Fahrenheit. The welder utilized the Shielded Metal Arc Welding (SMAW) process in the overhead position (4G) with Lincoln Excalibur 7018 MR, E7018 H4R, 3.2mm diameter electrode to weld overhead CJP weld for web plate after back gouging. As of the end of the shift welding was still in process for ring beam CJP #148/#149.

## 9M Diaphragm Plate Insert

The QAI along with QC Inspector Bernie Docena performed Magnetic Particle Testing (MT) examination for completed weld for PJP weld on 45mm diaphragm plate insert. The MT was performed for 100% of the weld using a hand held yoke in both the longitudinal and transverse direction. No relevant indications were observed.

The welding & workmanship observed on this date appeared to be in general compliance with the contract specifications. The following pictures below detail some of the observations made on this date.



## Summary of Conversations:

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General conversations with ABF/JV QC NDT personnel relevant to work and testing performed 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 Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Leach,Ed	Quality Assurance Inspector
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<b>Reviewed By:</b>	Reyes,Danny	QA Reviewer
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