

**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:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030032**Date Inspected:** 16-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>	Bernie Docena, Tony Sherwood	<b>CWI Present:</b>	Yes	No	
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No	N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No	N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No	N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No	N/A
		<b>Delayed / Cancelled:</b>	Yes	No	N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	SAS Tower		

**Summary of Items Observed:**

Caltrans Quality Assurance Inspector (QA) Joe Adame arrived at the American Bridge/Fluor (ABF) JV job site between the times noted above in order to monitor ABF Quality Control activities and the in process work being performed by ABF production personnel. The following items were observed:

**ESW Repair Excavation Welding**

RWR-201308-004

ESW S-043, Location "T"-Face A:

The QA Inspector observed ABF welder Mike Jimenez (WID-4671) performing Shield Metal Arc Welding (SMAW) on the repair excavation on Electroslag Weld (ESW) "T", at face A. The locations and repair information are listed in Request for Weld Repair (RWR) 201308-002 from Ultrasonic Testing indications designated for repair. The repair excavation was noted as:

Length (Y=3000mm~3480mm) L=480mm, W=75mm, D=40mm

Prior to welding, WID-4671 was observed preheating the weld using the Miller ProHeat 35 with heat induction blankets. ABF QC Inspector Bernie Docena and the QA Inspector observed that the preheat was below 300° Fahrenheit using a 300° F. and 350° F. The QC Inspector instructed the welder to raise the temperature to the required minimum preheat. The welder used a propylene torch to heat the surface of Face A on the 80mm thick side of the weld joint to a minimum of 350° F. The welder was using 4.0mm diameter electrode (E7018-1 HR4) per ABF Welding Procedure Specification (WPS) ABF-WPS-D15-1000-Repair Rev.3. The welding process in use was the Shielded Metal Arc Welding process (SMAW). The welding parameters were verified by ABF QC Inspector Bernie Docena with a Fluke 337 current Clampmeter and the preheat was verified with temperature indicators. The QC Inspector performed welding parameters verifications at random intervals throughout the shift.

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Welding at this location is approx. 75% complete at this time. The welding observed appeared to be in compliance with the WPS noted above.

## Tower Skirt Plate Splice Field Welds

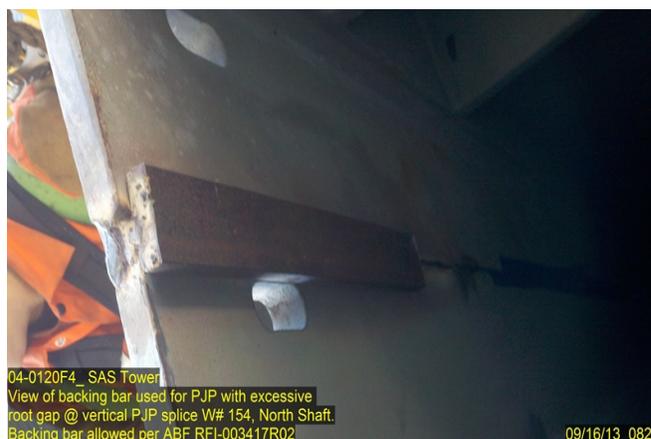
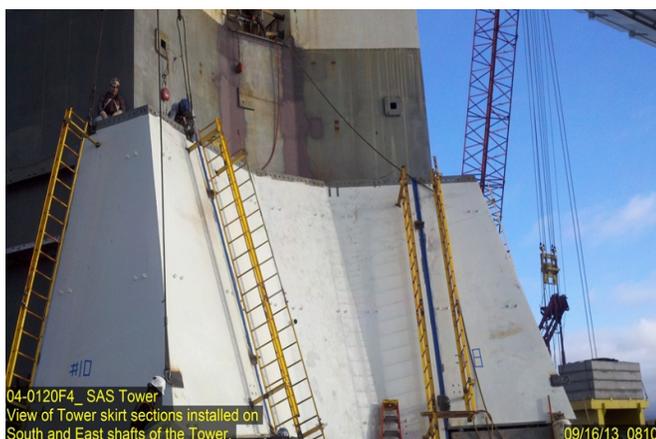
### Weld# 157 @ North Shaft

The QA Inspector observed ABF welder Kit Lai (WID-2953) performing Flux Cored Arc Welding (FCAW) on the Tower Skirt plate vertical weld joint #157 on Skirt plates SSD1-A683 to SSD1-A434. The welding is being performed using Welding Procedure Specification (WPS) ABF-WPS-D15-2140-3 with 1.8mm diameter electrode (Innershield NR-232). Prior to welding Mr. Lai was observed preheating the weld to over 250° Fahrenheit using a propylene torch. The welding parameters were verified by ABF QC Inspector Tony Sherwood with a Fluke 337 current Clampmeter and preheat was verified with temperature indicators. Mr. Sherwood stated that the welding parameters were at 227 amps and 23 volts. The QC Inspector performed welding parameters verifications at random intervals throughout the shift. Mr. Sherwood also performed 100% Magnetic Particle Testing (MT) of all root pass sections. The welding observed appeared to be in compliance with the WPS noted above.

## Tower Skirt Plate Splice Field Welds

### ABF Request For Information (RFI) 003417R02

The QA Inspector was present at the Tower with Structural Material Representative (SMR) Aaron Prchlik and METS Lead Inspector Robert Mertz to discuss ABF Request For Information (RFI) 003417R02 and the work applicable to the RFI. The QA Inspector informed the METS Representatives that ABF have attached steel backing at vertical weld splices #154 at the North & East Shaft. The backing bar and weld length was approximately 500mm. RFI 003417R02 states that the contractor is approved to use steel backing bar that will remain in place up to a maximum of 8mm root gap on the Partial Joint Penetration (PJP) welds. Per AWS D1.5-2002 Section 3.13.2- "Steel backing shall be continuous for the full length of each weld made with backing". The group discussed the code criteria and the RFI with the current condition where the root gap won't always be consistent and the backing will be allowed at select locations where the root gap exceeds 5mm and is less than 8mm (Sec.3.3.2.1). ABF Field Engineer Andre Marakian was also present to discuss the situation and stated that the RFI would be revised with the specific details that were agreed upon on this date.



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## Summary of Conversations:

Only 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>	Adame,Joe	Quality Assurance Inspector
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<b>Reviewed By:</b>	Riley,Ken	QA Reviewer
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