

**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-027503  
**Date Inspected:** 25-Apr-2012

**Project Name:** SAS Superstructure  
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV  
**Contractor:** American Bridge/Fluor Enterprises, a JV

**OSM Arrival Time:**  
**OSM Departure Time:**  
**Location:** jobsite

<b>CWI Name:</b>	Steve McConnell	<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 project	

**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Self Anchored Suspension (SAS) Tower: This QA Inspector observed work and/or performed QA verifications at the locations noted below.

3-meter elevation, Bearing Plate # 007: This QA Inspector randomly observed ABF welding personnel Richard Garcia (#5892) using the Shielded Metal Arc Welding (SMAW) process to perform production welding. This QA Inspector randomly observed QC Inspector Jesus Cayabyab verify the following welding parameters; 140 amperes.

This QA Inspector observed a 4.0 mm diameter E7018 electrode was being used. This QA Inspector verified the preheat using an electronic gauge to be greater than the minimum of 225°F. This QA Inspector reviewed Welding Procedure Specification (WPS) ABF-WPS-D15-1160, being used by QC and observed the parameters noted above appeared to be within the ranges in the WPS. This QA Inspector observed at the beginning of the shift and for the last 2 days a hand held gas torch was used for preheating the weld joint.

This QA Inspector observed later this morning an induction heat blanket had been placed behind the weld joint and was providing preheat. This QA Inspector observed additional restraints had been added to help hold the plate into position in an effort to control distortion. While ABF welding personnel Richard Garcia (#5892) was on break this QA Inspector took several measurements to help determine the amount of distortion already in the plate.

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Below are the measurements:

The distance between the outer edges of the stiffener plates, where welding was not being performed, was approximately 335 mm.

The distance between the outer edges of the stiffener plates, where welding was being performed, was approximately 355 mm.

The width of the top bearing plate was approximately 350 mm.

The measurements were taken at the top of the plates, the areas measurements could be taken were limited due to the placement of induction heat blanket. The welding was approximately 80% complete at this time.

ABF welding personnel Richard Garcia (#5892) and Danny Ieraci (#3232) were both aware there was some distortion in the weld joint. This QA Inspector notified Lead QA Inspector Danny Reyes of the measurements noted above. See photo below of bearing plate weld.

3-meter elevation, Bearing Plate # 005 and #006: This QA Inspector observed ABF welding personnel Jeremy Dolman (#5042) had completed the fit up of weld joint #006 and had started welding the root pass using the SMAW process. This QA Inspector observed QC Inspector Steve McConnell verify the following welding parameters; 123 amperes, using a 3.2 mm diameter E7018 electrode. This QA Inspector observed an induction heat blanket had been positioned behind the weld joint and was being used for preheating. This QA Inspector checked the preheat temperature using an electronic gauge and observed it was greater than 225°F, the minimum for the 60 mm thick material.

Later in the shift this QA Inspector randomly observed QC Inspector Jesus Cayabyab perform Magnetic Particle Testing on the root pass. QC Inspector Jesus Cayabyab informed this QA Inspector the root pass was acceptable. This QA Inspector performed a visual verification and welding appeared to comply with the contract requirements. This QA Inspector observed at this time there were several block and bar type restrains and strong backs welded onto the plate in an effort to control distortion.

This QA Inspector observed ABF welding personnel Jeremy Dolman (#5042) running a gas line and setting up to use equipment for the Flux Cored Arc Welding (FCAW) process. ABF welding personnel Jeremy Dolman (#5042) informed this QA Inspector the FCAW process would be used for the fill and cover passes. This QA Inspector did not observe the FCAW process being used this date.

### **Summary of Conversations:**

This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above there were no notable conversations.

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## 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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Hager,Craig

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer