

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022022**Date Inspected:** 14-Mar-2011**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**CWI Name:** Fred Von Hoff**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower Grillage**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 monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager was on site between the times noted above.

This QA Inspector observed ABF welding personnel Todd Jackson (#4639) monitoring the preheating equipment and verifying the temperature setting with an electronic temperature gauge.

South Tower leg:

This QA Inspector was informed at the end of the previous work shift that all visual and Magnetic Particle Testing (MT) had been completed and accepted by QC Inspector Fred Von Hoff. At the start of the shift this date, this QA Inspector proceeded to set up and start performing the QA visual verification and MT inspections, but observed multiple (approximately 7-8 areas) where QC Inspector Fred Von Hoff had marked various defects such as weld contour, excessive weld reinforcement, arc strikes and weld spatter for grinding with a soapstone marker. These areas were still marked (white) and had not been ground. This QA Inspector informed QC Inspector Fred Von Hoff of the observations and was informed that he (QC) had instructed welding personnel to grind the areas marked. This QA Inspector specifically asked if the QC Inspector had visually verified the work had been done and the areas re-inspected. QC Inspector Fred Von Hoff informed this QA Inspector he would have the areas ground and that he would re-inspect the areas to verifying the work. At approximately 1000 hours this date QC Inspector Fred Von Hoff informed this QA Inspector he had completed and accepted the re-inspection areas noted

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above. This QA Inspector proceeded with the visual verification and MT inspections.

This QA Inspector randomly observed QC Inspector Mike Johnson performing Ultrasonic Testing (UT) this morning and early afternoon. After lunch this date QC Inspector Mike Johnson informed this QA Inspector he had completed and accepted the final UT inspection.

This QA Inspector completed the visual, MT and UT verification inspections on the Complete Joint Penetration (CJP), Partial Joint Penetration (PJP) and Fillet welds (as applicable).

This QA Inspector observed what appeared to be UT signals from a defect in weld joint TG-S-P7-P8. QA Inspector Robert Mertz stopped by the jobsite to observe the work and this QA Inspector requested QA Inspector Robert Mertz to perform a verification of the UT signals observed by this QA Inspector. QA Inspector Robert Mertz concurred the signals indicated a defect in the weld area. This QA Inspector informed QC Inspector Mike Johnson of the UT signals observed. QC Inspector Mike Johnson stated he also had observed UT signals at the same area, but had thought the signals were due to a slight gap between the plate and the backing material. This QA Inspector asked QC Inspector Mike Johnson if he could re-inspect the area. This conversation was at the end of the shift this date and QC Inspector Mike Johnson stated he could look at it tomorrow.

East Tower leg:

This QA Inspector randomly observed ABF welding personnel Jason Collins (# 8128) performing Shielded Metal Arc Welding (SMAW) on the various fillet welds, by the end of the shift approximately 50% of the fillets had been completed.

West Tower leg:

This QA Inspector randomly observed ABF welding personnel Gilbert Peralta (#9453) and Rick Clayborne (#2733) performing SMAW on various CJP welds. This QA Inspector observed the welding was the fill and cover passes and that the welding appeared to follow the welding sequence map. By the end of the shift this date this QA Inspector observed the first two CJP welds had been completed and the third was approximately 90% complete.

North Tower leg:

This QA Inspector randomly observed ABF welding personnel Sal Sandoval (#2202) performing SMAW on various CJP welds placing approximately 4-5 mm of fill passes. By the end of the shift approximately 90% of the CJP welds had a 4-5 mm weld thickness. The welding appeared to have followed the weld sequence map.

This QA Inspector was informed by QC Inspector Fred Von Hoff the welding parameters for the personnel noted above were within the required heat input range in the Welding Procedure Specifications (WPS) ABF-WPS-D15-1162-4 for the PJP welds, ABF-WPS-D15-1042A-4 for CJP welds and ABF-WPS-D15-F1206 for Fillet welds. Note the welding parameters are the same for all three procedures. This QA Inspector randomly observed the amperages and voltages of ABF welding personnel noted above and they appeared to be within the ranges in the WPS. This QA Inspector observed that both 3.2 mm and 4.0 mm diameter E9018H4R electrodes were being used and stored in separate heated storage containers. This QA Inspector also observed the 1-hour exposure limit for the electrodes appeared to be monitored and adhered to.

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The welding/work observed this date appeared to comply with the contract requirements.

This QA Inspector had previously received Weekly Welding Report submittal; ABF-Sub-001536 Rev-45. This QA Inspector performed a review of the documents to determine compliance with the Welding Quality Control Plan (WQCP) submitted by the contractor, compliance with the applicable contract requirements and to determine if any Quality Control (QC) documents were missing. This QA Inspector documented the findings on a weld specific tracking log and informed QA Inspector Bill Levell of the findings. This QA Inspector placed the reviewed documents in the applicable files.

**Summary of Conversations:**

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

**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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<b>Inspected By:</b>	Hager,Craig	Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell,Bill	QA Reviewer
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