

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-021768**Date Inspected:** 10-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 performed a random visual verification of the work in process on the Partial Joint Penetration (PJP) welds in the South Tower leg and observed excessive weld reinforcement outside the required fillet weld area towards the toe of the weld adjacent to the 25 mm thick plates at several areas. This observation was discussed with QC Inspector Fred Von Hoff who brought up the issue with QCM Jim Bowers later this date. The issue was discussed and both QC Inspector Fred Von Hoff and QCM Jim Bowers agreed conditions typical to as stated above would require grinding to correct the contour of the weld profile. This QA Inspector was informed by QCM Jim Bowers that all Complete Joint Penetration (CJP) welds would be ground flush or within 2 mm of flush to perform the required Ultrasonic Testing (UT). As of this date ABF personnel have not started removing arc strikes, weld spatter and in general cleaning the PJP welds in the South Tower for QC/QA inspection.

South Tower leg:

This QA Inspector randomly observed ABF Welding personnel Jason Collins (# 8128) were performing Shielded Metal Arc Welding (SMAW) on the various fillet welds. ABF welding personnel Jason Collins (# 8128) appeared to have completed the fillet welds and started cleaning up arc strikes and weld spatter with a grinder. Welding of the CJP, PJP and Fillet welds appeared to be completed.

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East Tower leg:

This QA Inspector randomly observed ABF welding personnel Sal Sandoval (#2202) was performing SMAW fill passes on CJP welds TG-E-P9-P10 and TG-E-P3-P4. This QA Inspector observed the welding appeared to comply with the welding sequence map.

West Tower leg:

This QA Inspector randomly observed ABF welding personnel Gilbert Peralta (#9453) and Rick Clayborne (#2733) performing SMAW root passes on various PJP welds on outer skins plate D, E and A. This QA Inspector randomly observed ABF welding personnel Richard Garcia monitoring the preheat equipment and using an electronic temperature gauge to verify the equipment reading. This QA Inspector randomly observed the welding personnel use hand held gas torches to preheat the weld area inside the tower skin plates. This QA Inspector also observed QC Inspector Fred Von Hoff verify the minimum preheat temperature of 350°F at various times throughout the day using an electronic temperature gauge.

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.

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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**Inspected By:** Hager,Craig

Quality Assurance Inspector

**Reviewed By:** Levell,Bill

QA Reviewer