

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-021769**Date Inspected:** 11-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**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 was informed by QC Inspector Fred Von Hoff the Complete Joint Penetration (CJP) welds that QCM Jim Bowers previously stated would be ground flush or within 2 mm would now only be ground if excessive reinforcement was greater than 3 mm or to correct weld contour. QC Inspector Fred Von Hoff stated he would continue with the in process visual and Magnetic Particle Testing (MT) inspection on the South Tower leg this date. ABF welding personnel Richard Garcia (#5892) began grinding excess weld reinforcement, cleaning weld spatter, arc strikes and other grinding operations this date. Later this date this QA Inspector randomly observed QC Inspector Mike Johnson performing Ultrasonic Testing (UT) on various CJP welds in the South Tower. QC Inspector Mike Johnson informed this QA Inspector the UT inspection was just preliminary at this time, when question about the results, QC Inspector Mike Johnson informed this QA Inspector they were "mixed"; implying that some were found to be acceptable and others to have defects.

South Tower leg:

This QA Inspector randomly observed ABF welding personnel Richard Garcia (#5892) using a grinder to remove excessive weld reinforcement and perform general cleaning of weld spatter and arc strikes. QC Inspector Fred Von Hoff was observed performing visual and MT inspection on various Partial Joint Penetration (PJP), CJP and

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

Fillet welds. QC Inspector Fred Von Hoff did not inspections this date.

East Tower leg:

This QA Inspector randomly observed ABF welding personnel Jason Collins (# 8128) and Sal Sandoval (#2202) performing Shielded Metal Arc Welding (SMAW) of the root and subsequent passes to achieve a fill height of approximately 4-5 mm. Upon observing the status of the work completed this date this QA Inspector observed the only CJP weld that did not have the 4-5 mm thick root passes was weld joint TG-E-P1-P5. According to the weld sequencing map provided to this QA Inspector this weld joint was to have been the 7th of the 10 joint to be welded.

This QA Inspector asked QC Inspector Fred Von Hoff if he was aware welding had been performed out of sequence. ABF welding Foreman Frank Brajkovich was present and informed this QA Inspector he had instructed Jason Collins (# 8128) to weld out of sequence due to space restraints. QC Inspector Fred Von Hoff stated the welding sequence was for informational purposes only and not required to be specifically followed.

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 A, B, C, D and E this date. 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. By the end of the shift this date the PJP welds at skins A, B, D and E appeared to be 90% completed. The PJP welding at skin C appeared to be completed.

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.

WELDING INSPECTION REPORT

(*Continued Page 3 of 3*)

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.

| | | |
|----------------------|-------------|-----------------------------|
| Inspected By: | Hager,Craig | Quality Assurance Inspector |
|----------------------|-------------|-----------------------------|

| | | |
|---------------------|-------------|-------------|
| Reviewed By: | Levell,Bill | QA Reviewer |
|---------------------|-------------|-------------|