

**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-022943**Date Inspected:** 20-Apr-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:** Steve Jensen**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**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 observed the following.

**Tower Splice – 83 Meter elevation, South Tower leg:** This QA Inspector randomly observed the status of the upper and lower Interior Corner Closure Splice Plates located at the B- C corner and C-D corner. During this shift the following was observed.

This QA Inspector randomly observed multiple ABF personnel at different times performing grinding at locations marked by QC Inspector Steve Jensen. No welding was observed at this location this date. This QA Inspector and QC Inspector Steve Jensen made multiple trips to check on the status of the grinding in order to perform a visual inspection. The grinding/work being performed was being handed over to multiple personnel and appeared to only be done after work at other locations was completed. The grinding at this location was not completed this date, all 4 splice plates still had multiple areas that had not been ground.

**Tower Splice – 83 Meter elevation, West Tower leg:** This QA Inspector randomly observed the status of the upper and lower Interior Corner Closure Splice Plates located at the B- C corner and C-D corner. During this shift the following was observed.

**B-C corner, lower plate:** This QA Inspector randomly observed the induction heating blanket was being used to

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

preheat the top half of the plate prior to welding. This QA Inspector observed the induction heating blanket was removed and a hand held gas torch was used by ABF welding personnel Salvador Sandoval (#2202) to bring the area up to temperature for welding. This QA Inspector observed QC Inspector Steve Jensen use an electronic temperature gauge to verify the preheat temperature. This QA Inspector randomly observed ABF welding personnel Salvador Sandoval (#2202) using the Flux Cored Arc Welding (FCAW) process for production welding at this location. This QA Inspector randomly observed QC Inspector Steve Jensen monitored and verified the following welding parameters; 255 amperes and 21.8 volts at a travel speed of 90 mm per minute to produce a heat input of 3.70 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3. This QA Inspector observed welding appeared to be completed on the top half of the plate at approximately 1230 and that an induction heat blanket was positioned over the welding. This QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) start welding on the lower half of the upper plate.

C-D corner, lower plate: This QA Inspector observed ABF welding personnel Gil Peralta (#9453) using the FCAW process to start production welding at this splice plate. This QA Inspector observed the induction heat blanket was used to partially preheat the plate and a gas torch used to complete the preheating process. This QA Inspector randomly observed QC Inspector Steve Jensen verify the following parameters: 245 amperes and 20 volts at travel speed of 88 mm per minute to provide a heat input of 3.34 Kj per mm. The welding observed by this QA Inspector appeared to comply with ABF-WPS-D15-F2200-3. Welding appeared to have been completed at this location by the end of this QA Inspectors' shift.

QC Inspector Steve Jensen has documented the fit up gap adjacent to the weld area in an effort to keep welding personnel informed of the additional weld size required when the gap is greater than 2 mm the entire gap is added to the referenced weld size. See photo below.

Tower Splice – 83 Meter elevation, North Tower leg: This QA Inspector randomly observed the status of the upper and lower Interior Corner Closure Splice Plates located at the B- C corner and C-D corner. During this shift the following was observed. This QA Inspector observed ABF personnel welding Richard Garcia (#5892) and ABF personnel Paul Frambini have fit up the lower plate in the B-C corner which is held into position by fitting aids (dogs) and sedges. This QA Inspector observed the fit up of the upper plate was in process this date.

Tower Base – 3 to 13 Meter elevation; This QA Inspector observed the status of the various plates used as temporary attachments for the Electro Slag Welding (ESW) as follows: The North and South exterior plates appeared to be completed. The East exterior plates are not fit /welded. The West exterior plates are completed at the ESW joint on the Northwest end but not fit/welded at the Southwest end. This QA Inspector observed ABF welding personnel Rick Clayborn (#2773) and ABF welding personnel Morgan Winter (#3305) in the process of fitting up a metal ladder at the Southwest corner on the West side. This QA Inspector observed QC Inspector Pat Swain periodically monitoring the work at this location. This QA Inspector did not observe any welding at this location this date.

### Summary of Conversations:

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

This QA Inspector was informed by Caltrans Engineer Saman Soheili that he had a conversation with ABF

---

---

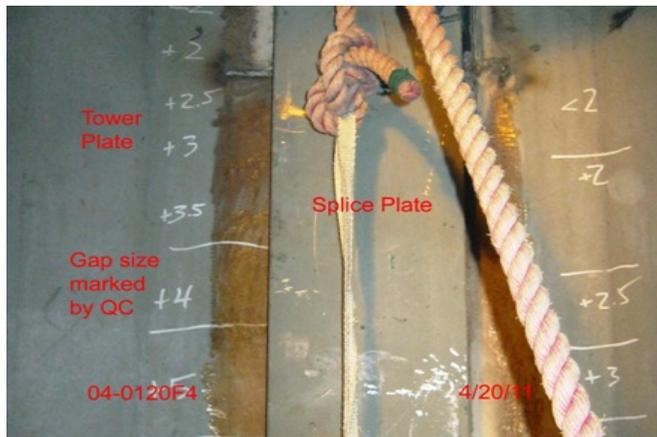
## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

---

welding Forman Eric Sparks regarding the 3 hour post heating after welding and informed a step down process was being used instead of bringing the area to temperature and holding it for the 3 hours. This QA Inspector informed Caltrans Engineer Saman Soheili that he had previously been informed by ABF welding foreman that a step down of the temperature was not being performed. This QA Inspector provided a detailed turnover of this conversation to QA Inspector Jojo Lizardo requesting verification of the process being used this date.



### 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