

**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-022765**Date Inspected:** 12-Apr-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:** 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.

B-C corner, upper plate: The previous day this QA Inspector had observed ABF welding personnel Salvador Sandoval (#2202) using the Shielded metal Arc Welding (SMAW) process for welding the bottom fillet weld in the overhead position (4F). The Welding Procedure Specification (WPS) specified by Quality Control (QC) Inspector Steve Jensen was ABF-WPS-D15-F1200A which specifies a base material of ASTM A709 grade 345 using filler metal classification E7018. QC Inspector Steve Jensen informed this Quality Assurance (QA) Inspector this morning that he thought an E9018 filler metal classification was used for the weld joint. This QA Inspector, QC Inspector Steve Jensen, and Lead QC Inspector Bonifacio Daquinag Jr. went to the location of welding and asked the ABF welding personnel Salvador Sandoval #2202 what filler metal was used for the joint in question and were informed that an E9018 electrode had been used. This QA Inspector, QC Inspector Steve Jensen, and Lead QC Inspector Bonifacio Daquinag Jr. all observed several partially used electrodes with the E9018 classification on the deck below the weld joint. This QA Inspector asked ABF welding personnel Salvador Sandoval (#2202) who had instructed him to use the E9018 electrode. ABF welding Foreman Eric Sparks (#3040)

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

was present and stated that ABF welding personnel Rick Clayborn (#2773) had informed them to use the E9018 electrode. This QA Inspector was informed by Lead QC Inspector Bonifacio Daquinag Jr. and QC Supervisor Leonard Cross a Non-Conformance Report (NCR) would be issued for using the incorrect filler metal. This QA Inspector notified Lead QA Inspector Bill Levell and Danny Reyes of the events and information noted above. Later this date this QA Inspector was informed by QC Inspector Bonifacio Daquinag Jr. a Request For Information (RFI) had been submitted regarding the issue above assuming it was a request to use the welding as is.

This QA Inspector randomly observed ABF welding personnel Salvador Sandoval (#2202) performing production welding on the top half of the splice plate using the Flux Cored Arc Welding (FCAW) process. This QA Inspector observed a hand held gas torch was being used to preheat areas prior to welding. This QA Inspector observed QC Inspector Steve Jensen using an electronic temperature gauge to verify the preheat temperature. This QA Inspector performed a verification of the welding parameters and observed 230 amperes and 20.5 volts with a travel speed of 100 mm per minute which produced a heat input of 2.83 Kj per mm. This QA Inspector verified the filler metal was identified as Innershield NR-232, E71T-8-H16 and 1.8 mm diameter. The welding parameters, preheat and filler metal appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. At the end of the shift welding of the 2 vertical fillet welds and top fillet weld appeared to be completed. This QA Inspector observed ABF personnel rigging the induction heat blanket into position on the splice plate for a 3 hour post weld heat.

C-D corner, upper plate: This QA Inspector randomly observed ABF welding personnel Richard Garcia (#5892) using the Flux Cored Arc Welding (FCAW) process to start production welding on the top half of the splice plate. This QA Inspector observed QC Inspector Steve Jensen verify the following welding parameters; 260 amperes and 22 volts with a travel speed of 120 mm per minute which produced a heat input of 2.86 Kj per mm. This QA Inspector verified the filler metal was identified as Innershield NR-232, E71T-8-H16 and 1.8 mm diameter. The welding observed appeared to comply with ABF-WPS-D15-F2200-3. At the end of the shift welding of the 2 vertical fillet welds and top fillet weld appeared to be completed. This QA Inspector observed ABF personnel rigging the induction heat blanket into position on the splice plate for a 3 hour post weld heat.

Tower Splice – 83 Meter elevation, West Tower leg: This QA Inspector had previously observed and noted the splice plates were fit up and held into position with fitting aids (dogs). This QA Inspector did not observe any welding at this location regarding the splice plates.

Tower Base – 3 to 13 Meter elevation; This QA Inspector randomly observed ABF welding personnel Morgan Winters (#3305) using the SMAW process to fit and tack weld the various pates used as temporary attachments for the Electro Slag Welding (ESW) process at the North side of the tower, outside the tower. This QA Inspector randomly observed ABF welding personnel Rick Clayborn (#2773) using the FCAW process for production welding of the various plates at the East side, inside. This QA Inspector randomly observed QC Inspector Pat Swain monitoring the work at these locations.

### 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.

---

---

# 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.

---

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

---