

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-022493**Date Inspected:** 07-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: This QA Inspector randomly observed ABF welding personnel Salvador Sandoval (#2202) had removed all the tack welds, attached several fitting aids (dogs) and was working at finding an acceptable position for the splice plate by splitting the difference of the gaps at the bottom and top of the plate. Late this afternoon QC Inspector Steve Jensen informed this QA Inspector he had inspected and accepted the fit up and that all gaps were 5mm or less in length. This QA Inspector also observed that QC Inspector Steve Jensen had marked the size of the gap on the adjacent plate to inform the welding personnel of any areas where the fillet weld size needed to be increased due to a gap greater than 2 mm. This QA Inspector performed a random visual verification and agreed the fit up appeared to comply with the contract requirements and that there were no gaps greater than 5 mm. This QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) using the Flux Cored Arc Welding (FCAW) process to finish tack welding this plate into position. QC Inspector Steve Jensen informed this QA Inspector the following parameters were being used: 255 amperes and 21 volts at travel speed of 100 mm per minute. This QA Inspector determined this provided a heat input of 3.21 KJ per mm which

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3.

C-D corner, lower plate: This QA Inspector randomly observed ABF welding personnel Todd Jackson had covered the splice plate with an induction heater blanket. This QA Inspector observed there appeared to be an issue with the blanket which resulted in the burning of the cover and plywood bracket holding the heater in place. The induction heater blanket appeared to have been replaced and was brought up to a temperature of approximately 350°F. This QA Inspector observed the induction heater in place for several hours then removed a gas torch used to preheat the lower section of the splice plate for welding. This QA Inspector observed QC Inspector Steve Jensen verify the preheat temperature prior to welding using a hand held electronic temperature gauge. This QA Inspector randomly observed ABF welding personnel Rick Clayborn (#2773) using the Flux Cored Arc Welding (FCAW) process to start production welding. This QA Inspector randomly observed QC Inspector Steve Jensen monitor the welding and informing this QA Inspector of the following parameters: 251 amperes and 21.2 volts at a travel speed of approximately 90 mm per minute therefore providing a heat input of 3.55 KJ per mm. The welding observed appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. This QA Inspector observed that 3 passes had been completed on each side of the bottom half of the splice plate by 1300 hours. This QA Inspector observed at approximately 1630 hours the bottom half of each side of the splice plate appeared to have been welded. This QA Inspector was informed by QC Inspector Steve Jensen he had performed a preliminary visual inspection to verify fillet weld size and that the weld size appeared to comply with a Request For Information (RFI) ABF-RFI-002411R00. This QA Inspector performed preliminary random visual verification and the work appeared to comply at this time to the RFI submitted. QC Inspector Steve Jensen informed ABF welding personnel Rick Clayborn (#2773) the RFI had not been approved as of this date and that ABF was proceeding at their own risk, that the final inspection would be performed after the weld had cooled and the pending approval of the RFI. This QA Inspector observed the induction heat blanket was placed on the welded section of the splice plate and was informed by ABF welding personnel Todd Jackson the temperature had been set for 350°F and was set to maintain that temperature for 3 hours, in which the heating unit controller would automatically shut off. According to the verbal confirmation provided by Caltrans Engineer Doug Wright the previous day the preheating and post heating appeared to comply with his instructions. This QA Inspector informed Caltrans Engineer Doug Wright of the observations noted above and was informed that the contractor appeared to comply with the verbal agreement.

Tower Splice – 83 Meter elevation, West Tower leg: This QA Inspector observed ABF personnel had placed the upper splice plate on top of the support brackets and attached 4 fitting aids (dogs) at the B-C corner. The previous day the lower splice plate had been put into position.

Tower Base – 3 to 13 Meter elevation; This QA Inspector randomly observed ABF welding personnel Kenneth Chappell using the Shielded Metal Arc Welding (SMAW) process to fit and tack weld the various plates used as temporary attachments for the Electro Slag Welding (ESW) process. This QA Inspector randomly observed QC Inspector Pat Swain monitoring the work at this location. This QA Inspector performed a walk through the area and observed approximately 66% of the temporary attachments had been welded into position.

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.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
