

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-024308**Date Inspected:** 08-Jun-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.

114 Meter elevation – South Tower – Splice Plates

Prior to the start of welding this QA Inspector observed induction heating blankets had been positioned over the areas to be welded in order to start the preheating process, gas troches were used to bring the preheat temperature to be within the range specified in the Welding Procedure Specification (WPS).

This QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) using the Flux Cored Arc Welding (FCAW) process at weld joint #166-Southwest, the top half of the fillet weld in the vertical (3F) position. This QA Inspector was present and randomly observed as QC Inspector Steve Jensen verified the following welding parameters; 268 amperes and 21.8 volts at a travel speed of 100 mm per minute to produce a heat input of 3.5 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3. The two vertical welds were completed and this QA Inspector observed QC Inspector Steve Jensen perform a visual inspection of the welding marking several areas for additional welding and grinding. This QA Inspector observed the additional welding was performed in the vertical (3F) position then ABF welding personnel Salvador Sandoval (#2202) elected to weld the upper fillet weld in the horizontal (2F) position. This QA Inspector was present and observed QC Inspector Steve Jensen verify the following welding parameters; 350 amperes and 22 volts at a travel speed of

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

281 mm per minute to produce a heat input of 1.72 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-2200-2. After completing the vertical and horizontal welds noted above the induction heat blanket was positioned over the welds to begin the 3 hour post heating. ABF welding personnel Salvador Sandoval (#2202) then moved to the upper half of weld #165-Southwest.

This QA Inspector randomly observed ABF welding personnel Xiao Jian Wan (#9677) using the FCAW process at the bottom half of weld joint #165-South. This QA Inspector was present and observed as QC Inspector Steve Jensen verified the following FCAW welding parameters; 250 amperes and 22 volts at a travel speed of 85 mm per minute to produce a heat input of 3.88 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3.

114 Meter elevation – West Tower – Splice Plates

QC Inspector Steve Jensen informed this QA Inspector he had visually inspected and accepted the fit up of the splice plates in the West Tower, weld joints; 165-West, 166-West, 165-Northwest and 166-Northwest. This QA Inspector performed a random visual verification of the fit up of each (4) plate and did not observe a root opening greater than 5mm. The work observed appeared to comply with the contract requirements.

9-Meter Elevation – Electro Slag Welding (ESW)

This QA Inspector randomly observed as QC Inspectors Steve McConnell and Jesus Cayabyab were performing preliminary Ultrasonic Testing (UT) at weld joint #W-044, a 60 mm to 70 mm transitioned butt joint. QC Inspector Steve McConnell informed this QA Inspector they were performing the UT inspection by scanning with a 70 degree transducer from each face and each side of the weld joint (faces A and B, nearside and far side) and scanning with a 45 degree transducer from the transitioned face of the 70 mm thick plate. This QA Inspector observed several intersecting plates in close proximity to the weld being scanned. The 90 degree Tee Joint (W-045) is approximately 230 mm from the weld joint and an existing stiffener is approximately 185 mm from the weld joint. This QA Inspector calculated the amount of coverage provided with the current scanning methods used by QC with the existing plates. It did not appear to be providing 100% coverage of the weld. This QA Inspector produced a sketch of the coverage and discussed the proposed coverage with QC Supervisor Leonard Cross and QC Inspector Steve McConnell. QC Supervisor Leonard Cross stated he was aware 100% coverage was not being provided, but that this was a preliminary inspection. He further commented that he needed to update his UT procedure to provide 100% coverage. This QA Inspector implied it would be possible to find repairs after the preliminary UT had been performed.

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.

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

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

your project.

Inspected By: Hager, Craig

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer