

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-019816**Date Inspected:** 25-Jan-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See below**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:** SAS OBG**Summary of Items Observed:**

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as Jacking Frame to Saddle fillet weld (East side), and the following observations were made:

Jacking Frame to Saddle fillet weld (East side)

Upon the arrival of the QA Inspector at 0700 it was observed the weld joint had been preheated and maintained at approximately 400°F prior to ABF performing any production welding. The QA Inspector was informed by the Smith Emery (SE) Quality Control (QC) Inspector Mike Johnson, the fit was acceptable and ready for production welding. The QA Inspector performed a random visual inspection of the completed fit up and noted the fit up appeared to be in general compliance with the contract requirements. The QA Inspector randomly observed the ABF welder Rick Clayborn remove the E9018-H4R welding electrode from a new container of electrodes at 0720. The QA Inspector randomly observed the ABF welder begin the shielded metal arc welding (SMAW) root pass at 0730. The QA Inspector randomly observed the welder to be utilizing 1/8" electrodes with 128 Amps. The QA Inspector noted the SMAW parameters appeared to be in general compliance with approved ABF-WPS-D1. 5-F1205. The QA Inspector noted the SMAW root pass was completed at 0820 and the temperature had been turned down to approximately 375°F. The QA Inspector observed the SE QC Inspector perform VT of the completed root pass and noted the weld was acceptable. The QA Inspector performed a random visual inspection of the completed root pass and noted it did appear to be in general compliance with the contract requirements. At 0830 the QA Inspector observed the ABF welder begin the second pass or "hot pass" utilizing 5/32" electrodes. The QA Inspector noted the QC Inspector made the necessary SMAW machine adjustments for the change in electrode diameter. The QA Inspector noted the SMAW parameters were 158 Amps and did appear to be in

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general compliance with the approved WPS. The QA Inspector noted the ABF welder completed the second weld pass at 0945. The QA Inspector noted the weld joint and surrounding material appeared to be approximately 380°F. The QA Inspector periodically observed the temperature of the casting behind the weld joint. The QA Inspector noted the temperature behind the weld joint on the 415 casting appeared to be approximately 40°-50°F higher than that in the weld joint or surrounding material. In addition the QA Inspector randomly checked the 485W HPS material on the jacking frame side of the weld joint. The QA Inspector noted due to the configuration of the induction heating blankets the QA Inspector was only able to check the temperature under the jacking frame approximately 12” from the weld joint. The QA Inspector noted temperature at the location described above maintained approximately 320°F through out the duration of the first three passes. After the second pass was completed the QA Inspector observed the contractor begin peening utilizing a pneumatic air chisel with a 6mm radius bit. It was observed the peening technique did appear to indent or elongate the weld pass with sufficient force to satisfy the code requirement. At 1020 the QA Inspector observed the ABF welder begin the third pass and continued utilizing 5/32” electrodes with approximately 158Amps. The QA Inspector randomly observed the third weld pass was completed at 1122. The QA Inspector noted the temperature appeared to stay around 380°-400°F. After the peening was completed the QA Inspector noted the fourth pass was stated at 1130. The QA Inspector randomly observed the SE QC Inspector perform dimensional measurements of the weld size and he informed the QA ABF welder and the QA Inspector the weld would need one to two additional passes to complete the required minimum fillet weld size. The QA Inspector noted the SMAW parameters did not vary from above. The QA Inspector observed the SE QC Inspector utilize the Fluke averaging meter and determine the average voltage used was approximately 23 Volts. The QA Inspector calculated the heat input value utilizing 100mm/min and determined the heat input value to be approximately 2.1kj/mm and did appear to be within the minimum and maximum heat input range of the above specified WPS. The QA Inspector noted the fourth pass was completed at 1315 and peening was immediately performed. At 1350 the first of two cover passes was started utilizing 5/32” electrodes with the approximately the same parameters utilized above. The QA Inspector noted the METS QA Inspector Joselito Lizardo relieved the QA Inspector at the above identified location for the remainder of the welding and the Post weld heat treatment.



Summary of Conversations:

The QA Task Lead Bill Levell informed the QA Lead Inspector Rick Bettencourt the approval to proceed with welding at the above identified location was granted at 0720. The QA Inspector noted the approval was granted as per the Structures Material Representative Patrick Lowry.

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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 Sang Le 916-764-5650, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
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Reviewed By:	Levell,Bill	QA Reviewer
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