

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-021078**Date Inspected:** 26-Feb-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:** 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 QAI observed ABF personnel fitting and tack welding cover plates into the Tower Grillage at Pier 7. The QAI noted that the 4 tower shaft sections have 10 plates that have nearly all but 4 have been installed and welded into the grillage. The QA Inspector performed dimensional measurements of the cover plates at 25mm thick and noted that all the materials to be welded are grade 485W. The QA Inspector was informed by the SE QC Inspector Mike Johnson that only tack welding will be performed on this date. The QA Inspector noted that the Quality Control (QC) Inspector Mike Johnson and Fred Vonhoff are on site monitoring the tack welding and marking weld joint designations with paint marker. The QAI noted that Rick Clayborn, ID 2773 was utilizing shielded metal arc welding (SMAW) to make the overhead tack welds. The QAI noted that 3.2mm diameter, E9018-H4R electrodes are being used for the tack welding.

Upon the arrival of the QA Inspector it was observed the induction heating blankets were installed 360° around the external skin plates of the south tower shaft. The QA Inspector noted the induction heating was turned on and the material appeared to be between 350°-400°F. The QA Inspector utilized the QC Inspector Fred Vonhoff calibrated laser temperature indicating gun to achieve the temperatures identified above. After a random visual inspection of the cover plates and tack welds the QA Inspector noted numerous SMAW tack welds in numerous complete joint penetration weld joints appeared to be cracked. In some cases the tack welds were cracked 100% the full length and thickness of the tack weld. The QA Inspector asked the ABF welder Rick Clayborn how ABF intended to correct the cracked tack welds (see summary of conversation).

The QA Inspector randomly observed the fit up and tack welding of plates identified as TG-N-p5-E and TG-N-P1-E and noted the fit up appeared to be in general compliance the contract requirements. The QA Inspector

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noted the ABF apprentice preheated the 25mm plates and the stiffener plates being welded to the minimum required temperatures of ABF-WPS-D1.5-1042A-4.

After all of the cover plates were installed in all 4 shafts the QA Inspector randomly observed the ABF welder Rick Clayborn re-bevel cover plate identified as TG-S-P9. The QA Inspector noted it was previously determined that the bevel angle for the partial joint penetration groove weld did not meet the allowable tolerances of AWS D1.5-02. The QA Inspector randomly observed the ABF welder re-bevel one side of the plate against the outer the skin plate of the South shaft utilizing a carbon arc. After the carbon arcing was completed the QA Inspector randomly observed the ABF apprentice reshape and restore the bevel utilizing a grinding disc and a burr bit grinder. After the grinding was completed the QC Inspector performed visual testing and verified the bevel angle of 45° did meet the specified tolerances of AWS D1.5-02 (pictured below). The QA Inspector observed the ABF welder Rick Clayborn re-tack the above identified plate with 1/8" E9018 low hydrogen electrodes. The QA Inspector noted at the end of the shift all cover plates had been fit up and tack welded into place.



Summary of Conversations:

Rick Clayborn informed the QA Inspector, he will grind the tack welds out completely as the CJP weld joints are welded. Mr. Clayborn elaborated by saying as he comes up on a cracked tack weld the weld will be removed completely then the SMAW root pass will be continued once the cracked weld material is removed. Mr. Clayborn informed the QA Inspector that production welding will be started on Monday 2-28-11.

The QC Inspector Mike Johnson informed the QA Inspector no production welding will be performed on today's date. Mr. Johnson informed the QA Inspector it had not been determined weather the contractor was required to maintain the minimum required preheat through out the duration of the welding and three hours after. Mr. Johnson went on to inform the QA Inspector he was not sure it would be possible to perform the welding in accordance with the welding sequence and maintain all welds through out the duration of the welding.

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.

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