

**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-017621**Date Inspected:** 26-Oct-2010**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 hole restoration 1E-pp11-E3-3, 2E-pp17-E3-3, 7E/8E-E, 3E-pp19.5-E5-LS-E (485 HPS), 2E-pp17.5-E2-LS-W (485 HPS) and the following observations were made:

1E-pp11-E3-3

The QA Inspector randomly observed Darcel Jackson performing grinding tasks of ultrasonic testing rejects in the above identified lifting lug deck hole restoration. The QA Inspector randomly observed the ABF welder had previously excavated all 10 of the UT rejections located in the above identified hole. The QA Inspector noted the 10 rejections resulted in a full length cut out approximately 25mm deep, 360° around the deck insert. The QA Inspector randomly observed the Smith Emery (SE) Quality Control (QC) Inspector Mike Johnson was on site to monitor and record the in process welding parameters. The QA Inspector noted the ABF welder was utilizing the shielded metal arc welding process with 5/32" E7018 low hydrogen electrodes. The QA Inspector randomly observed the ABF welder was utilizing 145 Amps while performing the SMAW repair. The QA Inspector performed a random visual inspection of the previously excavated areas and noted they had been ground and blended to a boat shaped weldable profile. The QA Inspector randomly observed and noted the ABF welder was preheating the material to approximately 150°F prior to making the SMAW repairs. The QA Inspector noted the SMAW repairs appeared to be in general compliance with ABF-WPS-1001 repair. The QA Inspector noted the repair welding was completed on the QA Inspectors shift. After the ABF welder completed the welding, he performed grinding tasks while removing the weld reinforcement flush with the top deck base material.

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2E-pp17-E3-3

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Eric Sharp begin continue performing the SMAW fill/cover passes started previously. The QA Inspector randomly observed the ABF welder preheat the area to approximately 100°F prior to performing any SMAW. After the minimum required preheat had been achieved, the QA Inspector randomly observed the ABF welder begin the SMAW fill pass. The QA Inspector noted the SE QC Inspector Mike Johnson was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 130 Amps with 5/32" E7018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the approved welding procedure identified as ABF-WPS-D1.5-1050-A. The QA Inspector noted the ABF welder did not complete the SMAW on the QA Inspectors shift.

7E/8E-E

The QA Inspector randomly observed the ABF welder Song Tao Huang setting up the flux cored arc welding machine at the above identified location. The QA Inspector was informed by the QC Inspector Tony Sherwood the fit up was in compliance and was acceptable. The QA Inspector performed a random visual inspection of the completed fit up and noted the root gap, bevel angle and planar alignment appeared to be in general compliance with the contract requirements. The QA Inspector noted the Caltrans QA Inspector Danny Reyes observed the in process welding at the above identified location.

3E-pp19.5-E5-LS-E (485 HPS)

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Xiao Jian Wan begin setting up to perform the SMAW root pass. Upon the arrival of the QA Inspector it was noted the above identified weld appeared to be approximately 50% complete. The QA Inspector noted the ceramic backing had been removed and the SMAW root pass from the second side had been started and some grinding performed. At 0900 the QA Inspector noted the contract lost power to the OBG and the above identified weld did not maintain the minimum required 200°F for the duration of the welding. The QA Inspector noted the weld had dropped to approximately 116°F. The QA Inspector informed the SE QC Inspector John Pagliero of the issue. Mr. Pagliero informed the QA Inspector that he was unaware of the loss of preheat. At approximately 0930 the heat was restored and welding was resumed. The QA Inspector noted an Incident Report was written and submitted for the failure to maintain the minimum required preheat. The QA Inspector randomly observed the ABF welder re-established the preheat to approximately 230°F prior to performing any additional SMAW. After the minimum required preheat had been achieved, the QA Inspector randomly observed the ABF welder continue the SMAW root pass. The QA Inspector noted the SE QC Inspector John Pagliero was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 123 Amps with 1/8" E9018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the approved welding procedure identified as ABF-WPS-D1.5-1012-3. The QA Inspector noted the ABF welder did not complete the SMAW on the QA Inspectors shift.

2E-pp17.5-E2-LS-W (485 HPS)

The QA Inspector randomly observed the American Bridge/Fluor (ABF) welder identified as Hua Qinag Hwang begin setting up to perform the SMAW root pass. Upon the arrival of the QA Inspector it was noted the above identified weld appeared to be approximately 50% complete. The QA Inspector noted the ceramic backing had

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been removed and the SMAW root pass from the second side had been started and some grinding performed. At 0900 the QA Inspector noted the contract lost power to the OBG and the above identified weld did not maintain the minimum required 200°F for the duration of the welding. The QA Inspector noted the weld had dropped to approximately 116°F. The QA Inspector informed the SE QC Inspector John Pagliero of the issue. Mr. Pagliero informed the QA Inspector that he was unaware of the loss of preheat. At approximately 0930 the heat was restored and welding was resumed. The QA Inspector noted an Incident Report was written and submitted for the failure to maintain the minimum required preheat. The QA Inspector randomly observed the ABF welder re-established the preheat to approximately 225°F prior to performing any additional SMAW. After the minimum required preheat had been achieved, the QA Inspector randomly observed the ABF welder continue the SMAW root pass. The QA Inspector noted the SE QC Inspector John Pagliero was on site to monitor and record the in process production welding at the above identified location. The QA Inspector randomly observed the SMAW parameters to be approximately 125 Amps with 1/8" E9018 low hydrogen electrodes. The QA Inspector randomly observed the in process welding parameters and dimensional tolerances appeared to be in general compliance with the approved welding procedure identified as ABF-WPS-D1.5-1012-3. The QA Inspector noted the ABF welder did not complete the SMAW on the QA Inspectors shift.

### Summary of Conversations:

The QA Inspector was informed by the SE QC Inspector John Pagliero, he was told by ABF and SE not to worry about the 3 hour post weld heat treating of the 485W stiffeners after his shift has ended. The QC Inspector went on to inform the QA Inspector more times than not, the welds are completed at the end of the shift. Mr. Pagliero went on to inform the QA Inspector the contractor had informed him the induction heating blankets are left on for the three hour post weld heat treat but he is unable to verify it. QA will follow up to assure the post weld heat treating is being performed.

### 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 Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

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

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