

**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-018902**Date Inspected:** 21-Dec-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1100**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** John Pagliero**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:** OBG Section**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 to monitor American Bridge/Fluor (ABF) welding operations.

The following observations were made:

- 1) At weld joint 8E-PP61.5-E2-LS-E, inside the OBG section: ABF welding personnel Xiao Jian Wan (#9677) was using the Shielded Metal Arc Welding (SMAW) process for production welding. QC Inspector John Pagliero was present and monitoring the work.
- 2) At weld joint 8E/9E-E1, inside the OBG section: ABF welding personnel Sang Tao Huang (#3794) was using the Flux Cored Arc Welding (FCAW) process on a track system for production welding. QC Inspector Fred Von Hoff was monitoring the work.
- 3) At weld joint 8E/9E-LS-3, inside the OBG section: ABF welding personnel Hua Qiang Hwang (#2930) was using the SMAW process for production welding. QC Inspector John Pagliero was monitoring the work.
- 4) At weld joint 7E/8E-E1, inside the OBG section: ABF welding personnel Fred Kaddu (#2188) was using SMAW process for weld repairs. QC Inspector John Pagliero was monitoring the work.
- 5) QC Inspector Mike Johnson initially informed this QA Inspector the welding of a Fillet Weld Soundness Test

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would be conducted this morning. Later this date, QC Inspector Mike Johnson informed this QA Inspector the testing had been delayed and that he was not sure when it would occur.

At weld joint 8E-PP61.5-E2-LS-E, inside the OBG section this QA Inspector observed ABF welding personnel Xiao Jian Wan (#9677) was setting up to use the SMAW process for production welding. This QA Inspector randomly observed as QC Inspector John Pagliero checked the preheat of the weld joint with an electronic gauge prior to welding. This QA Inspector used a temperature indicating marker and verified the preheat temperature was greater than 100°C. This QA Inspector randomly observed as QC Inspector John Pagliero verified the following welding amperage on a scrape piece of material prior to the start of production welding: 128 amperes. This QA Inspector also observed QC Inspector John Pagliero verify the electrode used was a 3.2 mm diameter, E9018H4R and the electrodes removed from the heated storage container adjacent to the work station were also 3.2 mm diameter, E9018H4R electrodes. The work observed appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-1012-3.

At weld joint 8E/9E-E1, inside the OBG section this QA Inspector observed ABF welding personnel Sang Tao Huang (#3794) using the FCAW process on a track system for production welding. This QA Inspector randomly observed as QC Inspector Fred Von Hoff verified the following welding parameters: 240 amperes and 21.8 volts with a travel speed of 300 mm per minute. The work observed appeared to comply with ABF-WPS-D15-3040A-3.

At weld joint 8E/9E-LS-3, inside the OBG section this QA Inspector observed as ABF welding personnel Hua Qiang Hwang (#2930) was setting up to begin production welding. This QA Inspector randomly observed as QC Inspector John Pagliero checked the preheat of the weld joint with an electronic gauge prior to welding and informed ABF welding personnel Hua Qiang Hwang (#2930) the top 50 mm section of the weld joint was approximately 25 °F below the minimum preheat temperature of 212°F (100°C). This QA Inspector observed ABF welding foreman James Zhen (#6001) was present and heard the conversation regarding the low preheat temperature. This QA Inspector randomly observed as ABF welding foreman James Zhen (#6001) increased the minimum temperature on the controller/power supply unit for the electric preheating blankets being used. After approximately 15 minutes this QA Inspector randomly observed QC Inspector John Pagliero checked the preheat of the weld joint with an electronic gauge and informed ABF welding personnel Hua Qiang Hwang (#2930) the preheat temperature was slightly above the minimum required. This QA Inspector used a temperature indicating marker and verified the preheat temperature was greater than 100°C. This QA Inspector observed the preheat blanket was obstructed from being placed at the top of the stiffener plate by a section of angle iron bolted to the deck above, therefore the possible cause of top section of the weld joint not reaching the minimum temperature at the normal setting of the equipment. This QA Inspector randomly observed as QC Inspector John Pagliero verified the following welding amperage on a scrape piece of material prior to the start of production welding: 127 amperes. This QA Inspector also observed QC Inspector John Pagliero verify the electrode used was a 3.2 mm diameter, E9018H4R and the electrodes removed from the heated storage container adjacent to the work station were also 3.2 mm diameter, E9018H4R electrodes. The work observed appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-1012-3.

At weld joint 7E/8E-E1, inside the OBG section this QA Inspector observed ABF welding personnel Fred Kaddu (#2188) had completed the excavation of multiple repairs and was setting up equipment to start repair welding using the SMAW. This QA Inspector randomly observed as QC Inspector John Pagliero performed a visual and Magnetic Particle Testing (MT) on 6 separate excavations at the following locations: Y-4770, Y-4480, Y-2090,

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Y-1330, Y-300 and Y-140. QC Inspector John Pagliero informed this QA Inspector he had accepted the visual and MT of all excavations noted above. This QA Inspector performed a random visual verification of the excavations and observed they appeared to comply with the contract requirements. This QA Inspector verified the following dimensions of the excavations (L = Length, W=Width and D=Depth):

Y-4770 (L= 130 mm, W=25 mm, D=11 mm)

Y-4480 (L=250 mm, W=20 mm, D=9 mm)

Y-2090 (L=105 mm, W=20 mm, D=10 mm)

Y-1330 (L=120 mm, W=25 mm, D=11 mm)

Y-300 (L=210 mm, W=20 mm, D=10 mm)

Y-140 (L=195 mm, W=20 mm, D=10 mm)

This QA Inspector observed ABF welding personnel Fred Kaddu (#2188) had elected to start welding at the excavation located at Y-4480 and observed QC Inspector John Pagliero verify the preheat temperature was greater than 150°F and the welding amperage was 128 prior to the start of welding. The work observed appeared to comply with ABF-WPS-D15-1002 Repair.

QC Inspector Mike Johnson initially informed this QA Inspector the welding of a Fillet Weld Soundness Test would be conducted this morning. Later this date, QC Inspector Mike Johnson informed this QA Inspector the testing had been delayed and that he was not sure when it would occur. This QA Inspector informed QA Inspectors Danny Reyes and Jojo Lizardo of this conversation.

### **Summary of Conversations:**

As noted above.

### **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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<b>Inspected By:</b>	Hager,Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Mertz,Robert	QA Reviewer

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