

**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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012313**Date Inspected:** 25-Feb-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** 3, see list 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:** Orthotropic Box Girders (OBG)**Summary of Items Observed:**

The Quality Assurance Inspector (QAI), Scott Croff, was present at the Self Anchored Span (SAS) job site to observe the scheduled fabrication and welding of components for the SFOBB project. The following observations were made:

- 1) Temporary attachment / weld removal
- 1) OBG field splice fit-up
- 2) OBG field splice root welding

1) The QAI observed the Quality Control (QC) Inspector Tom Pasqualone conducting Magnetic Particle Testing (MT) on the inside of side plate C at OBG lifts 1E/2E field splice. The QC Inspector informed the QAI that fit up aids (temporary attachments) have been removed and their welds have been ground off. The QAI observed the QC Inspector conducting MT at the areas where the temporary welds were located. See the attached photo. The QC Inspector informed the QAI that the weld removals were acceptable with MT. The QAI conducted verification MT of the base metal. See the appropriate TL-6028 report for additional information.

1) The QAI observed the installation and fillet welding of temporary fit up aids (fit up gear) on deck plate A at OBG lifts 1E/2E field splice. The temporary fillet welding was performed by ABF welders Mitch Sittinger, ID 0315 and Al McDaniel, . The QAI observed the QC Inspector Jesse Cayabyab monitoring the welding of the fit up aids at this location. The QAI noted that shielded metal arc welding (SMAW) with 1/8" E7018 electrodes are being used and the QAI was informed that Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A-1 is being used for the temporary fillet welds. The QAI made random observations of welding parameters and preheat

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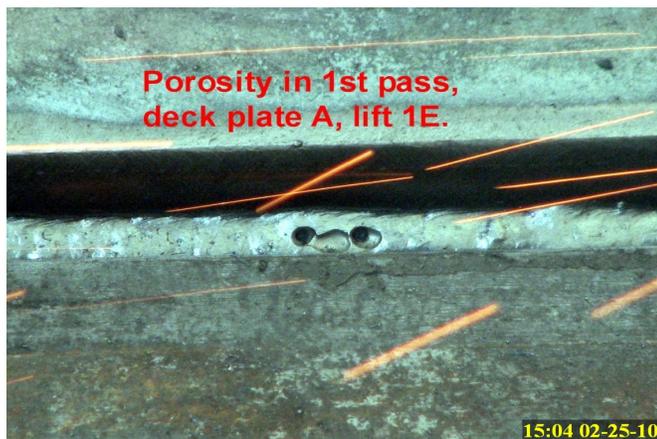
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temperature which were measured at 135 DC amps and a minimum temperature of 150°F. The QAI noted that the workmanship appeared to be generally conforming to the contract requirements. See the attached photos. The QAI noted that ABF personnel are working to align the deck plate's horizontal plane (high-low) across the field splice. The QAI noted observed that this work was not completed at the end of the shift.

2) The QAI was informed that 1/2 of the root pass of deck plate A at OBG lifts 1E/2E field splice will be made using gas shielded flux cored arc welding (FCAW-G). The QAI was informed by the QC Inspector Mike Johnson that a section of the splice has been fit-up and is acceptable for welding. The QAI noted that induction heaters are set up and the weld joint / base metals are being pre-heated to 200°F. The QAI noted that welders will be Mitch Sittinger and Al McDaniel. The QAI was informed that the (accepted fit-up) portions of the joint to be welded are marked out, and starts approximately 3.5 meters from South edge of deck. The area to be welded includes 2 meters of weld A1 and 2.8 meters of weld A2. The QAI examined the weld joint in this area and noted that the bevel angle, root opening and backing bar appear to be generally conforming to contract requirements. The QAI noted that after the base metal was preheated to 200, the joint was cleaned with a wire wheel / grinder. Prior to the start of welding, the QAI used a 200 temperature marking crayon (TempStik) and noted that base metals were less than 200. The QC Inspector Mike Johnson used a Infrared (IR) temp. gun and remarked that the temperature was approximately 150. The QAI was informed that the preheat would be brought up to 200. The QAI stepped out of the weld station to relay the status of work in progress to the QAI Danny Reyes, and when the QAI returned to the weld station, the QAI noted that welding was in progress. The QAI was able to make limited observations through the window of the weld station and observed porosity in several locations of weld A2. The QAI noted that the QC Inspector Mike Johnson is present in the weld station and appears to be monitoring the welding in progress. The QAI was not able to access the welders / welding equipment and no verification of welding parameters were obtained. The QAI observed welder Al McDaniel removing the porosity by grinding. This work was in progress at the end of the QAIs shift. See the attached photos.



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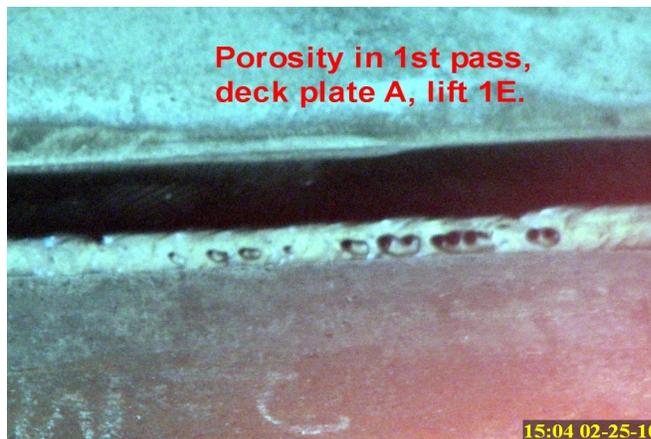
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## Summary of Conversations:

During the fit-up and preparation for welding deck plate A, ABF Welding Foreman Dan Ieraci informed the QAI and the QC Inspector that the welding station will be locked. The QAI was informed that ABF will try to minimize the amount of environmental disturbance in side of the welding station and that all personnel should be made aware that the doors will be locked during welding. The QAI understands that FCAW-G can be effected by wind and did not have any objections.

The QAI relayed the observations of OBG fit up / temporary welding and welding to the QAIs Bill Levell, Rick Bettencourt and Danny Reyes. There were general discussions of the work schedule and the status of the OBG lifts 1E/2E field splice welding. There were no other notable observations or conversations during this shift.

## 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>	Croff, Scott	Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell, Bill	QA Reviewer
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