

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-012271**Date Inspected:** 22-Feb-2010**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:** Mike Johnson, Jesse Cayabayab**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 1E/2E**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 joint restoration of the 1E/2E-D weld joint and backing bar splice welding of 3E/4E-A. The following observations were made.

- 1.) 3E/4E-A- Weld splicing of steel backing
- 2.) 1E/2E-D joint restoration welding commenced.

3E/4E-A Steel Backing

The QA Inspector noted the ABF welders Mitch Sittinger and Jordan Hazelaar were setting up to perform the complete joint penetration (CJP) weld splices of the steel backing. The QA Inspector randomly observed the ABF welding representatives identified above had cut and ground bevels in 5 total sections of the 1-1/2" steel backing. The QA Inspector noted the steel backing was being fit up in accordance with pre qualified weld joint designated Bu-2. The QA Inspector verified a 60° included angle single vee groove for a total of 4 CJP weld splices in the steel backing. The QA Inspector randomly observed and noted the Smith Emery Quality Control (QC) representatives Steve McConnell and Mike Johnson were on site performing visual testing (VT) of the fit up of steel backing prior to welding.

After the fit up of the steel backing was accepted by the QC Inspectors, the QA Inspector randomly observed the ABF welder Mitch Sittinger performing shielded metal arc welding (SMAW) root, fill and cover passes in all 4 of the fit up grooves after preheating to 100°F with a rosebud torch. The QA Inspector randomly observed the SE QC

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Inspector Mike Johnson performing preheat verifications utilizing a digital heat gun.

The QA Inspector randomly observed the ABF welders to be utilizing a new box of Lincoln E7018 H4R low hydrogen electrodes. The QA Inspector randomly observed the SE QC Inspector Mike Johnson set the SMAW machine to 130Amps, which appeared to be in general compliance with ABF-WPS-D1.5-1031 Rev.0. The QA Inspector randomly observed the ABF welders install weld tabs to either side of the joints to perform the CJP groove welds. The QA Inspector randomly observed the ABF welders complete 4 of the 4 steel backing bar splices from the front side of the joint. The QA Inspector randomly observed the ABF welders back gouge the 4 splices with a grinding disc. After the CJP groove welds had been back gouged to bright metal, the SE QC Inspector Steve McConnell performed magnetic particle testing (MT). The QA Inspector randomly observed no relevant indications were located at the time of the testing. The QA Inspector randomly observed all of the welds through completion. The QA Inspector noted after the welds were completed, the weld reinforcement was ground flush with the base material. The QA Inspector observed the QC Inspectors accept the welds visually and indicate with a distinguishing marking.

1E/2E-D

The QA Inspector randomly observed the steel backing was previously installed on the outside of the joint. The QA Inspector randomly observed the ABF welding personnel setting up the induction heat blankets in preparation of the commencement of welding at the above identified location. The QA Inspector was informed by the ABF Engineer John Callahan, the ABF welders will perform restoration welding or “buttering” to restore the joint configuration to within the tolerances of the approved WPS. Mr. Callahan went on to inform the QA Inspector ABF will not be required to maintain the minimum required preheat of 200°F until the root pass is tied in or bridged.

The QA Inspector randomly observed the QC Inspector Jesse Cayabayab had identified each section to be welded directly on the material with a paint marker, identified as D1-D19. The QC Inspector Jesse Cayabayab informed the QA Inspector the weld joint was fit up for the above identified joint was ready for ABF to begin performing the weld build up or restoration of the bevel angle and root opening.

The QA Inspector randomly observed three total ABF welders identified as Mitch Sittinger, Jordan Hazelaar and Al McDaniel setting up to perform the flux cored arc welding (FCAW-G) weld build up. The QA Inspector observed the Smith Emery QC Inspectors Mike Johnson and Jesse Cayabayab setting all three of the FCAW machines to the approved ABF WPS identified as ABF-WPS-D1.5-F3200-2. The QA Inspector noted the above identified procedure is a 2F fillet welding procedure. The QA Inspector randomly observed the ABF welder Rory Hogan set up and begin preheating the three locations where the ABF welders will begin the FCAW. The ABF welders, location of welding and welding parameters were verified and noted by the QA Inspector as follows:

Al McDaniel- 240 Amps, 21.7 Volts and a travel speed of 360mm/min (location D14)

Jordan Hazelaar- 244 Amps, 23.2 Volts and a travel speed of 469mm/min (location D9)

Mitch Sittinger- 230 Amps, 21.2 Volts and a travel speed of 400mm/min (location D5)

The QA Inspector noted the FCAW parameters and the minimum required preheat appeared to be in general compliance with the ABF-WPS-D1.5-F3200-2. The QA Inspector noted the ABF welders did not move from the locations identified above during the QA Inspectors shift.

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

Inspected By: Bettencourt,Rick

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer