

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

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-012480**Date Inspected:** 06-Mar-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

<b>CWI Name:</b>	Mike Johnson, Jesse Cayabayab, JCWI, Prisham	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	SAS OBG 1E/2E-A,D 1W/2W-A	

**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 and welding of the 1E/2E-A,D and 1W/2W-A steel backing The following observations were made:

- 1.)1E/2E-A SAW fill passes
- 2.)1E/2E-D FCAW/Backgouging
- 3.)1W/2W-A Steel Backing

**1E/2E-A3-5**

Upon the arrival of the QA Inspector it was randomly observed the ABF welding operators Jeremy Doleman and Rory Hogan were setting up the submerged arc welding (SAW) machines in preparation of continuing the SAW fill passes. The QA Inspector randomly observed the ABF welding operator Jeremy Doleman continue welding the SAW fill passes in the center of A3 and weld to the end of section A5. The QA Inspector randomly observed the SAW parameters and they were 560 Amps, 32.5 Volts and a travel speed of 381mm/min. The QA Inspector noted the SAW parameters appeared to be in general compliance with ABF-WPS-D1.5-4042B-1. The QA Inspector randomly observed the parameters identified above did not vary through out the duration of the shift. The QA Inspector noted the above identified welds sections were approximately 90% when the QA Inspector was replaced by the QA Inspector Joe Lanz.

**1E/2E-A3-1**

The QA Inspector noted the ABF welder Rory Hogan continued performing the SAW fill passes from the center

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of A3-A1. The QA Inspector randomly observed the SAW parameters and they were 565 Amps, 32.5 Volts and a travel speed of 381mm/min. The QA Inspector noted the SAW parameters appeared to be in general compliance with ABF-WPS-D1.5-4042B-1. The QA Inspector noted both of the above identified welders had filled the weld joint to approximately 30% at 0930. The QA Inspector noted the Smith Emery (SE) Quality Control (QC) Inspectors Jim Cunningham and Tom Pasqualone were on site to monitor the in process SAW through out the duration of the shift. The QA Inspector noted the SAW parameters did not vary from the above noted SAW parameters. The QA Inspector noted the above identified welds sections were approximately 90% when the QA Inspector was replaced by the QA Inspector Joe Lanz.

## 1E/2E-D "I" Ribs

Upon the arrival of the QA Inspector at the above identified location the following items were observed:

- 1.) D/S-17,18 were previously welded on one side and the ABF welder Jordan Hazelaar was performing plasma arc gouging in preparation of the back welding of the complete joint penetration (CJP) groove weld. After the back gouging was completed the QA Inspector randomly observed the SE QC Inspector Steve McConnell performing magnetic particle testing (MT) of the completed back gouged joints. The QA Inspector randomly observed and noted no relevant indications were located at the time of the testing.
- 2.) D/S-5 The QA Inspector randomly observed the ABF welder identified as James Zhen was performing flux cored arc welding in the 3F position. The QA Inspector randomly observed the FCAW parameters were 230 Amps, 22.5 Volts and a travel speed of 200mm/min. The QA Inspector randomly observed the ABF welder performing the FCAW fill passes for the remainder of the QA Inspectors shift.
- 3.) D/S-12 The QA Inspector randomly observed the ABF welder identified as Song Tao Huang was performing flux cored arc welding in the 3F position. The QA Inspector randomly observed the FCAW parameters were 230 Amps, 22.5 Volts and a travel speed of 200mm/min. The QA Inspector randomly observed the ABF welder performing the FCAW fill passes for the remainder of the QA Inspectors shift.
- 4.) D/S-13/14 The QA Inspector randomly observed the SE QC Inspector Steve McConnell performing magnetic particle testing (MT) of the final welds prior to performing ultrasonic testing. The QA Inspector noted the visual testing was performed previously and accepted by the QC Inspector. The QA Inspector performed a random visual inspection and noted the completed weld appeared to be in general compliance with the contract requirements.

## 1W/2W-A Steel Backing

The QA Inspector noted the ABF welder Rick Clayborn was 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 SE QC Inspector Bnifacio Daquinag was 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 Inspector, the QA Inspector randomly observed the ABF welder Rick Clayborn 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 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

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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 Bnifacio Daquinag performed magnetic particle testing (MT). The QA Inspector randomly observed no relevant indications were located at the time of the testing.



### Summary of Conversations:

see 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.

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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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