

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-013949**Date Inspected:** 12-May-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**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:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Field Splice W1/W2
- B). Field Splice W2/W3
- C). Field Splice E3/E4

## A) Field Splice W1/W2

The QAI observed the removal of the backing bar and at the conclusion of the backing bar removal the operator Rory Hogan commence the back gouging on the "B" face of the double-v-groove weld identified as Weld Number (WN): 1W-W2-C. The back gouging and removal of backing bar was performed utilizing the plasma arc cutting method.

The QAI also observed the Magnetic Particle Testing (MPT) of the back gouging of the longitudinal stiffener field splices identified as WN: 1W-2W-D-S1 through S3, S6 and S8 through S10. It appeared that the "B" face of the double-v-groove weld will require additional grinding and further evaluation due to the results of linear indications noted by the QC technicians Bonifacio Daquinag Jr. and Tom Pasqualone during the initial MPT.

## B) Field Splice W2/W3

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The QAI observed the automatic Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 2W-3W-E. The welding was performed by welding personnel Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3042A-1 Rev. 0. The joint designation appeared to comply with AWS single-v-groove butt joint identified as B-U2a-G. The WPS was also used by the QC inspector Bernie Docena as a reference to monitor and verify the Direct Current Electrode Positive (DCEP) welding parameters which noted and recorded by the QAI as follows: 248 amps, 22.7 volts and a travel speed measured as 230mm per minute. The welding was performed in vertical position (3G) at approximate incline of 22 degrees. The QAI inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the DCEP welding parameters.

### C) Field Splice E3/E4

The QAI observed the Ultrasonic Testing (UT) on the CJP joint identified as WN: 3E-4E-C. The testing was performed by the QC Technician Steve McConnell utilizing the UT Procedure identified as SE-UT-D1.5-CT-100. At the conclusion of the testing performed during this shift, it appeared the QC technician noted and recorded fourteen (14) rejectable indications. Later in the shift, at random locations, the QAI verified the rejectable indications and at the conclusion of the verification the QAI concurs with the QC technicians evaluation.

### QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector's and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the FCAW-G process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift was not completed appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs, on page 3 of this report, illustrate the work observed during this scheduled shift.

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## Summary of Conversations:

There were no pertinent conversations discussed in regards to the project except 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.

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| <b>Inspected By:</b> | Reyes,Danny | Quality Assurance Inspector |
| <b>Reviewed By:</b>  | Levell,Bill | QA Reviewer                 |

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