

**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-012382**Date Inspected:** 02-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2130**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** J. Cunningham/B. Docena**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 (AB/F) personnel at the E1/E2 field splice:

A). Field Splice E1 to E2.

The QAI observed the continued CJP groove welding of the bottom plate splice identified as WN 1E-2E-D1 and D2, weld segments D11 and D18. The welding was performed by AB/F personnel Jordan Hazelaar, ID-2135 and Jeremy Dolman, ID-5042 utilizing Flux Cored Arc Welding (FCAW-G) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-3040A-1 Rev. 0. . The QAI also observed Quality Control (QC) inspector Bernie Docena verify the DCEP welding parameters and the surface temperatures during the welding process and the average readings were noted as follows: 261 amps, 23.6 volts with a travel speed measured between 335mm for the welder Jeremy Dolman and 260 amps, 23.4 volts with a travel speed measured at 346mm per minute for the welder Jordan Hazelaar. The QC inspector also verified the surface temperatures as follows: minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. At the conclusion of welding the segments, between the time frame of 1515 and 1545, the QAI observed the AB/F QC personnel monitor and verify the Post Weld Heat Treatment (PWHT) as required per the project Special Provisions. The PWHT was completed at 1845 of this shift and appeared to comply with the project documents.

Later in the shift the QAI observed the installation, fit-up and tack welding of the back-up bar and the fit-up gear assemblies at the Edge Plate splice identified as Weld Number (WN) 1E-2E-F1. The alignment and tack welding

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# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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was performed by AB/F welding personnel Mitch Sittinger, ID-0315 utilizing Shielded Metal Arc Welding (SMAW) process as per the WPS identified as ABF-WPS-D15-F1200A Rev. 1. The QAI observed the QC inspector James Cunningham perform the inspection of the work and verify the amperage which was noted as 132 amps.

## QA Observation and Verification Summary

The QA inspector observed welding of the bottom plate field splice E1 to E2 identified as WN 1E-2E-D1/D2 and 1E-2E-F1. The WPS's utilized during the field welding was also used by the AB/F Quality Control (QC) Inspector's James Cunningham and Bernie Docena during the monitoring and verification of the welding. The welding parameters and preheat temperatures were verified and noted 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 consumables utilized during the welding appeared to be an ESAB manufactured product identified as ESAB Dual Shield 70 Ultra Plus with an electrode size of 1.4mm which appeared to comply with the AWS Electrode Specification AWS A5.20 and the AWS Classification E71T-1M. The welding and QC inspection performed on this shift was not completed and appeared to be in general compliance with the contract documents. The QAI randomly verified the QC inspection, the welding parameters and surface temperatures utilizing accordingly various inspection equipment and gages, a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

See digital photographs below in regards to the work observed during this shift.



## Summary of Conversations:

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

## 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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**Inspected By:** Reyes, Danny

Quality Assurance Inspector

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# WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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**Reviewed By:**      Levell,Bill

QA Reviewer