DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-012842
Date Inspected: 31-Mar-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 1200
OSM Departure Time: 2030
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 E2/E3 and E3/E4 field splices:

A). Welding of the Field Splice E3 to E4.
B). Welding of the Field Splice E2 to E3.

A) Field Splice E3/E4, WN: 3E/4E-D

The QAI observed at periodic intervals, the Submerged Arc Welding (SAW) of the bottom plate field splice identified as Weld Number (WN): 3E-4E-D. The welding was performed by the AB/F welding personnel Daniel Ieraci ID-3232, utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by AB/F Quality Control (QC) Inspector Tom Pasqualone to perform QC verification of the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the bottom plate field splice. Later in the shift the QAI observed the QC inspector verifying the welding parameters of each welder and were noted as follows: 550 amps, 32.5 volts and a travel speed measured at 381 mm/minute. The QC inspector also monitored the surface temperatures during the field welding and the following was observed and noted by the QAI: the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius.

Later in the shift the QAI noted AB/F personnel grinding on the fill pass and in conversation, the QC inspector

informed the QAI at the conclusion of welding the third pass the QC inspector noted slag was trapped at the toe of the weld. At the request of the QC inspector the welding supervisor instructed AB/F personnel to the remove the slag by machining the areas utilizing a grinder. This work was not completed during this shift.

B) Field Splice E2/E3, WN: 2E-3E-C

The QAI observed the automated FCAW-G welding process during the CJP welding of the side plate field splice performed by Mitch Sittinger ID-0315 and Songtao Huang ID-3794. The welders utilized the FCAW-G welding process as per the WPS ABF-WPS-D15-3042A-4 Rev. 0 which was also used as a reference by the Quality Control (QC) inspector Bernie Docena to verify the welding parameters and the surface temperatures during the welding operation. The DCEP welding parameters were verified and noted by the QC inspector and were noted as follows: 256 amps, 24.3 volts and a travel speed measured at 290 mm/minute. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were maintained. The QAI inspector also noted that the root opening was approximately 5mm. In Conversation, regarding this issue, the QAI was informed by the QC that he was aware of this field condition and the root opening required additional grinding to meet the minimum requirements of the contract documents. This as built condition is located 300mm from the edge plate identified as "B" and measured approximately 914mm.

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 consumables identified as ESAB Dual Shield 70 Ultra Plus and ESAB Spoolarc 81 appeared to comply with the AWS Specification A5.17, A5.20 and AWS Classification E71T-1M, EM12K. The QC inspection and welding performed on this shift was not completed and 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, a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The QAI also assisted Rick Bettencourt in regards to QA verification of documentation for the OBG field splices E1/E2, E2/E3 and E3/E4.

The digital photographs on page 2 of this report illustrates the work observed during this scheduled shift.

WELDING INSPECTION REPORT

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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.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer