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-012631
Date Inspected: 12-Mar-2010

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

OSM Arrival Time: 1300
OSM Departure Time: 2130
Location: Job Site

CWI Name: See Below

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ 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 E1/E2 field splices:

A). Welding of the Field Splice E1 to E2.
B). Repair Welding of Longitudinal Stiffener Field Splice
C). UT/QAI Verification.

The QAI observed the Flux Cored Arc Welding (FCAW-G) process of the side plate field splice identified as Weld Number (WN): 1E-2E-C, Weld Segment C2. The vertical up (3G) welding was performed by the welding operators Rory Hogan ID-3186 and Jeremy Dolman ID-5042 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-3042A-1 Rev. 0. The WPS was also used by the AB/F Quality Control (QC) Inspector Bernard Docena to perform QC verification of the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the side plate field splice. The QAI also observed the QC inspector verifying the welding parameters and were noted as follows: 273 amps, 24.2 volts and a travel speed measured at 276 mm per minute with the calcuated Heat Input (HI) noted as 1.4 kj/mm. The QC inspector also monitored the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius during the field welding. At approximately 1350 hours the side plate weld groove was exposed to water which appeared to enter from the non-welded Edge Plate "B" field splice groove. The QAI generated an TL-15 Incident Report in regards to this issue.

Later in the shift, the QA inspector observed the repair welding of the longitudinal stiffener plate identified as

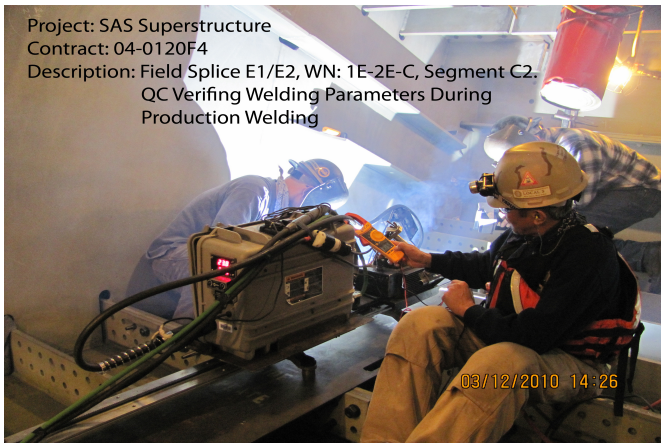
D-S6. The welding was performed by Mitch Sittinger ID-0315 utilizing the Shielded Metal Arc Welding (SMAW) process as per the WPS identified as ABF-WPS-D15-1000-Repair Rev. 2. The WPS was also utilized by the QC inspector James Cunningham to verify the welding parameters, minimum preheat and interpass temperature for compliance with the contract documents. The QAI observed and verified the welding parameters and were noted as 125 amps with the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The repair welding was completed during this shift.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the SMAW and FCAW-G welding of the E1/E2 field splice and the associated components utilizing the WPS's as noted above which appeared to be posted at the appropriate 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 utilized during the scheduled shift appeared to comply with the contract documents. The QC inspection, UT and welding performed on this shift was not completed except as noted above 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 various inspection equipment and gages, a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The QAI also performed a random ultrasonic verification test of the Complete Joint Penetration (CJP)groove weld identified as WN: 1E-2E-A, Weld Segment A4. A total area of approximately 10% was ultrasonically tested to verify the weld and testing performed by QC meet the requirements of the contract documents. The QAI utilized the first and second leg during the perfomance of the QAI UT verification. An ultrasonic test report, TL6027, was generated for this date.

The digital photographs below illustrates the work observed during this shift.



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