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-015701
Date Inspected: 19-Jul-2010

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

OSM Arrival Time: 1000
OSM Departure Time: 1830
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 locations noted below:

A). Field Splice W2/W3
B). Field Splice W5/W6
C). Field Splice W3/W4

A). Field Splice W2/W3

The QAI observed Steve MCConnell perform a visual weld inspection and a Magnetic Particle Testing (MPT) of the edge plate field splice identified as WN: 2W-3W-B1 and F1. The testing was performed by the QC technician utilizing the MPT procedure identified as SE-MT-D1.5-CT-100 Rev.4. The QC technician utilized a Parker Contour Probe DA-400 and performed the test utilizing the longitudinal and transverse axis. No rejectable indications were noted by the QC technician. The inspection and testing was performed on the "B" face of the weld joint.

B). Field Splice W5/W6

The QAI observed the Submerged Arc Welding (SAW) process of the bottom plate field splice identified as Weld Number (WN): 5W-6W-D1 and D2. The welding was performed by the welding operator Bryce Howell ID-5591 utilizing the Welding Procedure Specification (WPS)identified as ABF-WPS-D15-4042B-1 Rev. 0. The WPS was

also used by the AB/F Enterprises Quality Control (QC) Inspector Jesse Cayabyab to monitor the in process welding of the root pass and subsequent fill passes and to verify the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the field splice. The QC inspector verified the welding parameters and were observed and noted by the QAI as follows: 565 amps, 31.0 volts, a travel speed measured at 381mm per minute and the calculated heat input of 2.76 kj/mm. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were also verfied by the QAI. The QAI also verified the planar alignment prior to the start of production welding and the dimensions appeared to comply with the contract documents.

C). Field Splice W3/W4

The QAI observed the welder Hua Qiang Hwang ID-2930 perform the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 3W-4W-B1 utilizing the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-3110-3, Rev. 0. The WPS was also used by the QC inspector Steve McConnell as a reference to monitor the welding and to verify the welding parameters which were observed and recorded by the QC inspector and verified by the QAI. The welding parameters were as follows: 237 amps, 22.0 volts with a travel speed measured as 200 mm/minute. The QC inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. At the conclusion of the welding the preheat temperature was maintained for a time of three (3) hours. The welding was completed on the "B" face of the weld joint.

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 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 and the SAW processes appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift 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.

Summary of Conversations:

There were general conversations with Quality Control Inspector's Steve McConnell and Jesse Cayabyab at the start of the shift regarding the location of American Bridge/Flour welding personnel and the N.D.E. testing scheduled for this shift.

WELDING INSPECTION REPORT

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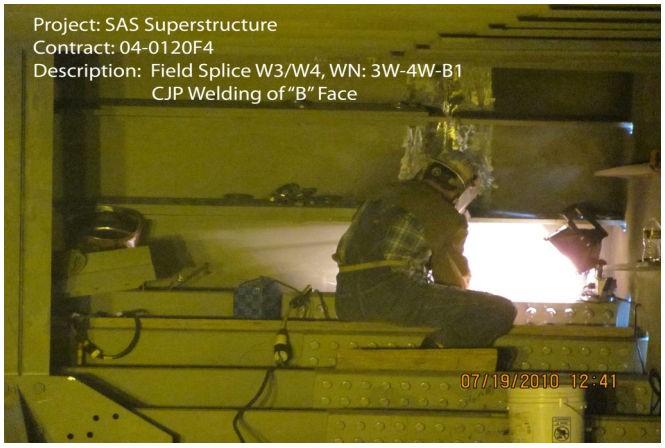

Comments

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