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-016301
Date Inspected: 18-Aug-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 E1/E2
B). Field Splice E2/E3
C). Weld Repair Re: AB/F-SUB-001503 R00

A). Field Splice E1/E2

The QAI observed the welder, James Zhen, perform the Complete Joint Penetration (CJP) welding on the longitudinal field splice identified as WN: 1E-2E-A-LS1. The welding was performed on the "B" face of the weld joint utilizing the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0 and the weld inspection was performed by John Pagliero utilizing the WPS as a reference. The QC inspector verified the DC welding parameters and were observed and recorded by the QAI as 132 amps. The welding was performed in the vertical (3G) position with the work placed in an approximate vertical plane and the groove approximately vertical. The minimum preheat temperature of 100 degrees Celsius and the interpass temperature of 230 degrees Celsius appeared to comply with the contract documents. The electrodes were stored in electrically heated, thermostatically controlled oven after removal from sealed containers. The exposure limits of the electrodes identified as E9018-H4R and the minimum storage oven temperature of 250 degrees Celsius appeared to be in compliance with the contract documents.

B). Field Splice E2/E3

The QAI observed the welder, Xiao Jian Wan ID-9677, correcting the excessive root opening utilizing the SMAW process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0. This work was performed and completed on the longitudinal stiffener field splice identified as WN: 2E-3E-A-LS3 and the inspection was performed by Mr. Pagliero utilizing the WPS as a reference. At the conclusion of correcting the root opening, the QC inspector verified the included bevel angle and the root opening dimensions and no discrepancies were noted by the QC inspector. At this time the CJP welding commenced and the QC inspector verified the DC welding parameters and were observed and recorded by the QAI as 124 amps. The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane and the groove approximately vertical. The minimum preheat temperature of 100 degrees Celsius and the interpass temperature of 230 degrees Celsius appeared to comply with the contract documents. The electrodes were stored in electrically heated, thermostatically controlled oven after removal from sealed containers. The exposure limits of the electrodes identified as E9018-H4R and the minimum storage oven temperature of 250 degrees Celsius appeared to be in compliance with the contract documents. The welder completed the correcting of the root opening and the QAI observed the QC inspector perform a dimensional survey of the root opening and the included angle prior to the CJP welding. No issues were noted by the QC inspector and the welder commence the welding of the groove joint.

The QAI also observed the welder, James Zhen, commence the CJP welding on the longitudinal field splice identified as WN: 2E-3E-A-LS5. The welding was performed on the "A" face of the weld joint utilizing the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0 and the weld inspection was performed by John Pagliero utilizing the WPS as a reference. The QC inspector verified the DC welding parameters and were observed and recorded by the QAI as 129 amps. The welding was performed in the vertical (3G) position with the work placed in an approximate vertical plane and the groove approximately vertical. The minimum preheat temperature of 100 degrees Celsius and the interpass temperature of 230 degrees Celsius appeared to comply with the contract documents. The electrodes were stored in electrically heated, thermostatically controlled oven after removal from sealed containers. The exposure limits of the electrodes identified as E9018-H4R and the minimum storage oven temperature of 250 degrees Celsius appeared to be in compliance with the contract documents.

C). Weld Repair, Re: AB/F-SUB-001503 R00

The QAI observed the flame cutting of the longitudinal shear plate that was damaged during transport, located west of PP13 on the Orthotropic Box Girder (OBG) identified as lift 2W. The 715mm x 490mm section was removed cutting and at the conclusion of the flame cutting AB/F personnel Fred Kaddu commence the grinding of the flame cut edge. No assembly fit-up or welding was performed during this shift.

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

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SMAW process 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 below illustrate the work observed during this scheduled shift.

Summary of Conversations:

There were general conversations with Quality Control Inspector Mike Johnson at the start of the shift regarding the location of American Bridge/Fluor welding personnel and inspection/ N.D.E. testing scheduled for this shift.

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