

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-014698**Date Inspected:** 09-Jun-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**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 locations noted below:

A). Field Splice W2/W3

B). Field Splice W4/W5

A). Field Splice W2/W3

The QAI observed the continued CJP groove welding of the edge plate splice identified as WN: 2W-3W-F, Segment F1. The welding was performed by ABF personnel Xiao Jian Wan ID-9677 utilizing the Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-3040B-3 Rev. 0. The QAI also observed Quality Control (QC) inspector Tom Pasqualone verify the DCEP welding parameters utilizing the WPS as a reference to verify the DCEP current welding parameters and were observed as follows; 235 amps, 23.2 volts with a travel speed measured at 187mm/minute. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were noted and recorded by the QC inspector.

Later in the shift, the QAI also observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 2W-3W-C. The welding was performed by the welder/operator Rory Hogan ID-3186 utilizing the WPS ABF-WPS-D15-3042A Rev. 1. The WPS was also used by the QC inspector William Sherwood as a reference when monitoring the welding and verifying the welding parameters which were observed

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as follows: 245 amps, 24.5 volts with a travel speed measured as 190mm/minute. The QC inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding was performed in the overhead position (4G) with the work at an approximate incline of 22 degrees.

B). Field Splice W4/W5

The QAI observed the Submerged Arc Welding (SAW) process of the deck plate field splice identified as Weld Number (WN): 4W-5W-A, Segments 1A-3A. The welding was performed by the welding operator Mike Maday ID-3391 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by the AB/F Enterprises Quality Control (QC) Inspector Steve McConnell as a QC reference to verify the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the transverse field splice. The QAI observed the QC inspector verifying the welding parameters and were noted as follows: 575 amps, 33.0 volts and a travel speed measured at 385mm per minute. The surface temperatures and the calculation of the heat input were also verified by the QC inspector and were noted as follows: the minimum preheat temperature of 60 degrees Celsius, the maximum interpass temperature of 230 degrees Celsius and the heat input of 2.9 kj/mm.

The QAI also observed the Submerged Arc Welding (SAW) process of the deck plate field splice identified as Weld Number (WN): 4W-5W-A, Segments 3A-5A. The welding was performed by the welding operator Bryce Howell ID-5591 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by the AB/F Enterprises Quality Control (QC) Inspector Leonard Cross as a QC reference to verify the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the transverse field splice. The QAI observed the QC inspector verifying the welding parameters and were noted as follows: 580 amps, 33.0 volts and a travel speed measured at 385mm per minute. The surface temperatures and the calculation of the heat input were also verified by the QC inspector and were noted as follows: the minimum preheat temperature of 60 degrees Celsius, the maximum interpass temperature of 230 degrees Celsius and the heat input of 2.9 kj/mm.

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 ESAB consumables utilized for the FCAW-G and the SAW process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift was not completed, except as noted, 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.

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Summary of Conversations:

There were no pertinent conversations were 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.

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