

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-015639**Date Inspected:** 14-Jul-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 W5/W6
- C). Miscellaneous Observations

A). Field Splice W2/W3

The QAI observed the continued Flux Cored Arc Welding (FCAW-G) on the weld joint identified as Weld Number (WN) 2W-3W-D2. The welding was performed by the welding operator Rory Hogan ID-3186 utilizing the WPS ABF-WPS-D15-3110-4, Rev. 0. The WPS was also used by the QC inspector Bonifacio Daquinag, Jr. as a reference to monitor the in process welding and verify the welding parameters which were observed as follows: 235 amps, 24.7 volts and a travel speed measured as 192 mm/minute. The QC inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding was performed in the overhead (4G) position with the work placed in the horizontal plane and the weld metal deposited from the underside. The CJP welding of the "B" face of the joint was completed during this shift.

B). Field Splice W5/W6

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The QAI observed the Submerged Arc Welding (SAW) of the deck plate field splice identified as Weld Number (WN): 5W-6W-A1 through A3. 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 Quality Control (QC) Inspector Steve McConnell as a reference to monitor the in process welding and 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: 570 amps, 31.5 volts and a travel speed measured at 381mm/minute. The heat input was calculated at 2.82 kJ/mm.

The QAI also observed the Submerged Arc Welding (SAW) of the deck plate field splice identified as Weld Number (WN): 5W-6W-A3 through A5. 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 Quality Control (QC) Inspector Jesse Cayabyab as a reference to monitor the in process welding and 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: 547 amps, 32.0 volts and a travel speed measured at 381mm/minute. The heat input was calculated at 2.75 kJ/mm.

The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was verified by the QC inspector's. The welding was performed in the flat (1G) position with the work placed in the horizontal plane and the weld metal deposited from the upper side.

C). Miscellaneous Observations

The QAI also observed the machining of the weld profile surface on the "B" face of the weld joints identified as WN: 2W-3W-F1 and 3W-4W-F1. The machining was performed utilizing high cycle grinders to bring the weld surface into general compliance with the contract documents.

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 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.

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Summary of Conversations:

No pertinent conversations were discussed during this scheduled shift 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