

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-016549**Date Inspected:** 28-Aug-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**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 W5/W6
- B). Field Splice E4/E5

A). Field Splice W5/W6

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the Complete Joint Penetration (CJP) identified as Weld Number (WN) 5W-6W-E1. The welding was performed by the welding operator Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3042A-1 Rev. 0. The joint designation appeared to comply with AWS single-v-groove butt joint identified as B-U2a-GF. The WPS was also used by the QC inspector Jesse Cayabyab as a reference to monitor and verify the Direct Current Electrode Positive (DCEP) welding parameters which noted and recorded by the QAI as follows: 257 amps, 23.0 volts and a travel speed measured as 241mm per minute. The welding was performed in flat (1G) position at approximate incline of 22 degrees and the welding deposited from the upper side of the weld joint. The 1.4mm Dual Shield 70 Ultra Plus electrode, manufactured by ESAB, utilized an Argon/CO2 shielding gas with a minimum/maximum flow rate of 32-44 cfh. The QAI inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the DCEP welding parameters.

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The QAI observed the removal of the backing bar performed by the welders Bryce Howell and Mike Maday. The work was performed on the "B" face of the single-v-groove weld identified as Weld Number (WN): 5W-6W-C1 and C2. The removal of the backing bar was performed utilizing the plasma arc cutting method.

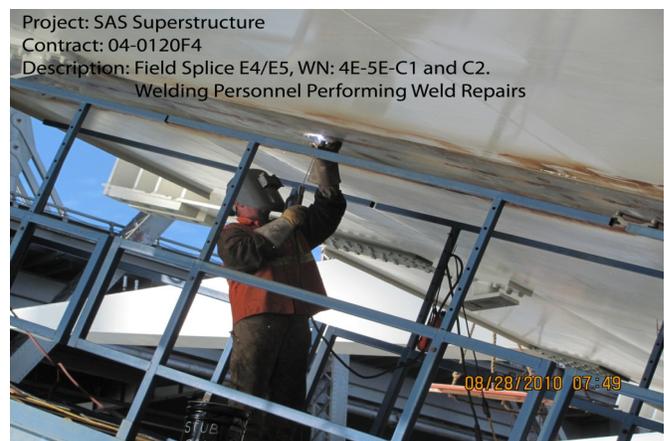
B). Field Splice E3/E4

The QAI observed the excavation of the unacceptable discontinuities discovered during the Ultrasonic Testing (UT) performed by the QC Technician, . The excavations were performed by Ian Murphy, utilizing a 4" high cycle grinder, and the repair welding was performed by welding personnel Rick Clayborn ID-2773. At the conclusion of the excavations the QC inspector, James Cunningham, performed a visual inspection and a Magnetic Particle Test (MPT) of the excavated areas. No rejectable indications were noted by the QC inspector and Mr. Clayborn commenced the repair welding utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1000-Repair Rev. 2. The QAI verified the DCEP welding parameters as 132 amps and the minimum preheat 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later in the shift the QAI observed at random intervals the QC inspector monitoring and verifying the welding parameters.

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 SMAW and the FCAW-G 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 below illustrate the work observed during this scheduled shift.



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Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel 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
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Reviewed By:	Levell,Bill	QA Reviewer
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