

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-012649**Date Inspected:** 17-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2130**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** T. Pasqualone/J. Cunningham**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 E2/E3 field splice:

A). Welding of the Field Splice E2 to E3.

The QAI observed the Submerged Arc Welding (SAW) process of the deck plate field splice identified as Weld Number (WN): 2E-3E-A, Weld Segments A1-A5. The was performed by the AB/F welding personnel Mitch Sittinger ID-0315, segments A4-A5 and Jordan Hazelaar ID-2135, segments A1-A3 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by the AB/F Quality Control (QC) Inspector's Tom Pasqualone and James Cunningham to perform QC verification of the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the deck plate field splice. Later in the shift the QAI observed the QC inspector verifying the welding parameters of each welder and were noted as follows: 560 amps, 32.5 volts and a travel speed measured at 381 mm/minute. The QC inspector's also monitored the surface temperatures during the field welding and the following was observed and noted by the QAI: the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius.

Later in the shift the QC inspector, Mr. Pasqualone, informed the QAI of a weld burn through that occurred during the SAW of the deck plate splice located approximately 44 cm south at the start of the A4 weld segment as indicated on the steel deck. The length of the weld burn through measured at 23 cm. The QAI visually observed the grinding of the area to a bright surface prior to the inspection and testing of the area. At this time the QC

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inspector performed a visual inspection of the plate surface and at the conclusion of the inspection Mr. Pasqualone performed the Magnetic Particle Testing utilizing an AC/DC Parker Probe and at the conclusion of the testing no rejectable indications were noted. The repair welding was performed by Mr. Sittinger utilizing the Shielded Metal Arc Welding (SMAW) process as per the WPS ABF-WPS-D15-1000-1 Repair. The welding parameters were noted and verified by the QC inspector and were as follows, 124 amps. The repair area was ground to approximately the original shape of the detailed V-groove prior to the SAW. The repair of the burn through was completed during this scheduled shift.

The QAI also observed the excavation of the linear indication of the backing bar to deck plate weld. The excavation was performed by James Zhen utilizing a 4" grinder and at the conclusion of the grinding the QC inspector, Mr. Pasqualone performed an MPT of the excavation and at the conclusion of the testing the QC inspector noted the linear indication had propagated. Mr. Pasqualone contacted AB/F Welding Quality Control Manager (WQCM) James Bowers and at approximately 1700 Mr. Bowers arrived at the project location. Mr. Bowers observed the linear indication and a Weld Repair Procedure regarding the removal of the indication and the repair welding will be submitted for approval.

QA Observation and Verification Summary

The QA inspector observed the QC activities, the SMAW and SAW welding of the E2/E3 field splice and the utilizing the WPS's 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 3.2 mm diameter consumables identified as ESAB Spoolarc 81 and ESAB Atom Arc was utilized during this scheduled shift appeared to be in compliance accordingly with the AWS Specification A5.17 and the AWS Classification EM12K-H8 for the SAW process and the AWS Specification A5.1-04 and AWS Classification E7018-HR4 SMAW process. The QC inspection and welding performed on this shift was not completed and appeared to be in general compliance with the contract documents. The QAI randomly verified the QC inspection, the welding parameters and surface temperatures utilizing various inspection equipment and gages, a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs below illustrates the work observed during this scheduled shift.



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Summary of Conversations:

There were no pertinent conversations discussed in regards to the project except as noted above.

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
