

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-014687**Date Inspected:** 04-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 W1/W2
- B). Field Splice W3/W4
- C). Field Splice W4/W5

A). Field Splice W1/W2

The QAI observed the Ultrasonic Testing (UT) of two (2) R1 weld repairs on the longitudinal stiffener field splices identified as WN: 1W-2W-D, longitudinal stiffeners S6 and S7. The testing was performed by the QC technician Tom Pasqualone utilizing a G.E./Krautkramer USM 35 who also utilized the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 during the examination of the repairs. The QAI also observed the QC technician perform the required longitudinal wave utilizing a 1" diameter transducer for base metal soundness and a .75 x .75 rectangular transducer to perform the shear wave testing during the testing for weld soundness. The testing was performed on the "A" and "B" faces of the weld joint. At the conclusion of the testing, Mr. Pasqualone noted one (1) reject on the stiffener identified as S6 and the longitudinal stiffener identified as S7 appeared to comply with the contract documents.

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B). Field Splice W3/W4

The QAI observed the automatic Flux Cored Arc Welding (FCAW-G) on the "A" face of the weld joint identified as Weld Number (WN) 3W-4W-E, Segment E2. The welding was performed by welding personnel 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-G. The WPS was also used by the QC inspector Bernie Docena as a reference to monitor and verify the Direct Current Electrode Positive (DCEP) welding parameters which noted and recorded by the QAI as follows: 246 amps, 23.7 volts and a travel speed measured as 310mm per minute. The welding was performed in vertical position (3G) at an approximate incline of 22 degrees. 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.

C). Field Splice W4/W5

The QAI observed the continuous tack/seal welding of the backing bar to the deck plate identified as WN: 5E-6E-D. The welding was performed by 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-F3200-2 Rev. 0 which was also used by the QC inspector, Bonifacio Daquinag, Jr., to monitor the in process welding and verify the welding parameters. The welding was performed in the horizontal position (2F) with the work placed so that the fillet weld metal appeared to be deposited on the upper side of the horizontal surface and against the vertical surface. The welding parameters were verified and recorded by the QC inspector as follows; 248 amps, 22.7 volts and a travel speed measured at 320mm/minute. The minimum/maximum surface temperatures were also verified and recorded by the QC inspector.

Later in the shift, the QAI observed the installation of the extension weld tabs at the north and south ends of the deck plate CJP weld groove joint identified as WN: 4W-5W-A and also observed the weld profile grinding of the continuous tack weld prior to the application of the Submerged Arc Welding (SAW) process.

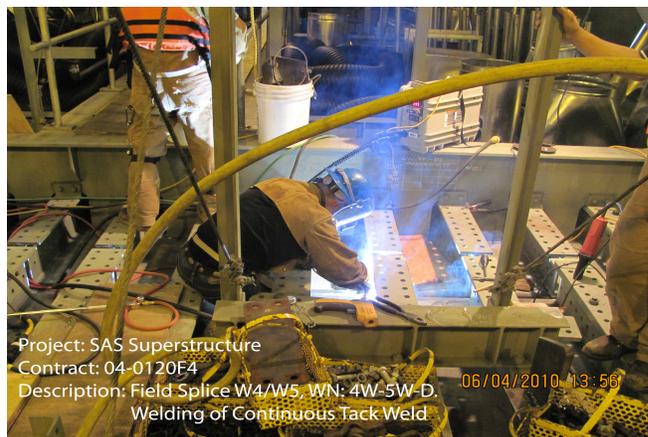
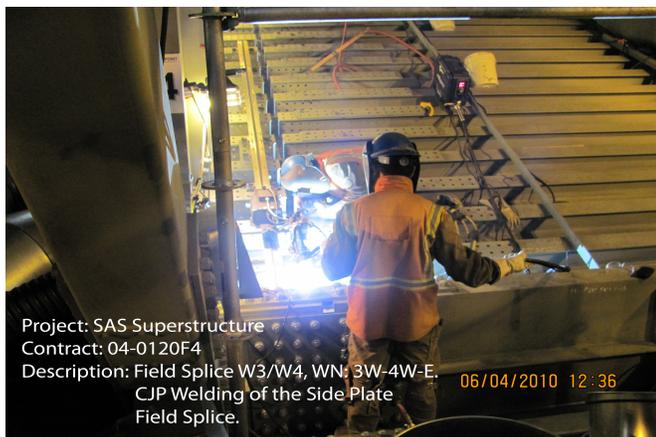
QA Observation and Verification Summary

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 SMAW 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