

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-016403**Date Inspected:** 23-Aug-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**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 E2/E3
- B). Field Splice W4/W5
- C). Field Splice E5/E6

A). Field Splice E2/E3

The QAI observed the welder, James Zhen, perform the Complete Joint Penetration (CJP) welding on the longitudinal field splice identified as WN: 2E-3E-A-LS4. The welding was performed on the "A" face of the weld joint utilizing the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0 and the weld inspection was performed by John Pagliero utilizing the WPS as a reference. The QC inspector verified the DC welding parameters and were observed and recorded by the QAI as 132 amps.

Later in the shift the welder performed the backgouging on the "B" face of the weld joint utilizing a rotary file and at the conclusion of the back gouging the QC technician James Cunningham performed a visual inspection and a Magnetic Particle Test (MPT) on the excavation and no rejectable indications were noted. The application and evaluation of the testing appeared to comply with the procedure identified as SE-MT-CT-D1.5-101 Rev. 4. At the conclusion of the testing, the welder commence the CJP welding of the weld joint identified as per the AWS weld

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designation B-U3B. The welding was completed on this date.

The QAI observed the welder, Xiao Jian Wan ID-9677 perform the Complete Joint Penetration (CJP) groove welding of the weld joint identified as WN: 2E-3E-A-LS2. The welder utilized the SMAW process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1012-3, Rev.0. The inspection was performed by the QC inspector utilizing the WPS as a reference and verified the DC welding parameters which were observed and recorded as 125 amps by the QAI. At the completion of the CJP welding and back grinding of the weld joint, the QC inspector John Pagliero perform the visual inspection of the of the excavation on the opposite side of the joint. At the conclusion of the inspection, James Cunningham performed the MPT of the back gouge and no rejectable indications were noted. At this time the welder commence the CJP groove welding from the "B" face of the weld joint of the longitudinal stiffener field splice. The welding was completed during this shift.

The welding of the longitudinal stiffeners was performed in the vertical (3G) position with the work placed in an approximately vertical plane and the groove approximately vertical. The minimum preheat temperature of 100 degrees Celsius and the interpass temperature of 230 degrees Celsius appeared to comply with the contract documents. The electrodes were stored in electrically heated, thermostatically controlled oven after removal from sealed containers. The exposure limits of the electrodes identified as E9018-H4R and the minimum storage oven temperature of 250 degrees Celsius appeared to be in compliance with the contract documents.

B). Field Splice W4/W5

The QAI observed the removal of the backing bar and at the conclusion of the backing bar removal the operator Mike Maday and Brice Howell commence the back gouging on the "B" face of the single-v-groove weld identified as Weld Number (WN): 4W-5W-E1 and E2. The back gouging was performed utilizing the plasma arc cutting method.

C). Field Splice E5/E6

The QAI observed the back gouging and machining on the "B" face of the single-v-groove weld identified as Weld Number (WN): 5E-6E-D1 and D2. The back gouging was performed by Rory Hogan and Jeremy Dolman utilizing the plasma arc cutting method. The machining was performed utilizing high cycle grinding equipment.

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 process 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.

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



Summary of Conversations:

There were general conversations with Quality Control Inspector Mike Johnson, John Pagliero and Tom Pasqualone at the start of the shift regarding the location of American Bridge/Fluor welding personnel and inspection/ N.D.E. testing 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

Reviewed By: Levell, Bill

QA Reviewer
