

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-014695**Date Inspected:** 08-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 excavation of the unacceptable discontinuities discovered during the Ultrasonic Testing (UT) performed by the QC Technician, Jesse Cayabyab on the field weld splice identified as WN: 1W-2W-C. The excavations were performed by welding personnel Chun Fai Tsui ID-3426 and James Zhen ID-6001 utilizing a high cycle grinder to remove the defects. At the conclusion of the excavations the QC inspector, Bonifacio Daquinag, performed a visual inspection and a Magnetic Particle Test of the areas. No rejectable indications were noted by the QC inspector and Mr. Tsui and Mr. Zhen commence the welding of the R1 repairs utilizing the WPS identified as ABF-WPS-D15-1000-Repair Rev. 2. The QAI verified the DCEP welding parameters of each welder and appeared to be as follows; 125 amps and 120 amps with the minimum preheat of 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.

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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-C, Segment C1 and C2. The welding was performed by welding personnel Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3042A-1 Rev. 0, per AWS D1.5-02 para.5.12. 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 was noted and recorded by the QAI as follows: 238 amps, 23.8 volts and a travel speed measured as 330mm/ 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 inspector observed the excavations of two (2) linear indications, the first one was located at Segment A1, Y=0mm-175mm and the second indication was located at Segment A5, Y=5265mm-5280mm. At the conclusion of the excavations the QAI observed QC Technician perform a Magnetic Particle Test and at the conclusion of the test by QC it appears additional excavation is required. The QAI generated an Incident Report, TL-15 regarding this issue.

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 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 QAI also performed a Magnetic Particle Test (MPT) on the field weld splice identified as WN: 1W-2W-E. The random selected areas were tested 10% to verify that the welds and testing by QC meet the requirements of the contract documents. The examination was performed as per the contract documents and a Magnetic Particle Test report, TL-6028 was generated on this date.

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