

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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024365**Date Inspected:** 13-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Report 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 & Tower**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP) groove welds of the East and West Orthotropic Box Girders (OBG's) and the Tower. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) and the Flux Cored Arc Welding (FCAW) processes as per the Welding Procedure Specifications (WPS's).

A). W10/W11

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 10W-11W-C1 and C2. The welding was performed by Song Tao Huang, ID-3794 utilizing the WPS ABF-D15-3042B-1 Rev. 0. The WPS was also used by the QC inspector John Pagliero as a reference to monitor and verify the welding parameters which noted and recorded by the QAI as follows: 238 amps, 24.4 volts and a travel speed measured as 290 mm per minute. The welding was performed in vertical position (3G) at approximate incline of 22 degrees. The QAI inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius.

B). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes identified as WN: 9E-PP79-E3, W2 and W4. The welding was performed by Jorge Lopez ID-6149 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev.

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0. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding. The inspection performed by Fred Von Hoff appeared to comply with the contract specifications.

C). Bike Path

The QAI observed ABF personnel Julian Paulk ID-7796 perform the welding of the 22mm threaded studs to the cantilevered supports beams. The stud welding was performed utilizing the WPS identified as ABF-WPS-D15-5001-Stud which was also used by the QC inspector, William Sherwood, to monitor the welding and to perform a preproduction test as per the contract documents. The welding and the inspection was performed on the cantilever beams located between PP33 and PP45.

D). ESW Shear Plates

The QAI also observed Jesse Cayabyab and Steve McConnell perform a preliminary Ultrasonic Testing (UT) of the T-joint field weld identified as WN: W-045. The testing was performed utilizing the required shear wave technique and the 60/ 70 degree angles, during the testing for weld soundness. The UT procedure has not been approved by the Department at the time of this testing. This preliminary testing of the ESW joint was completed during this shift and one (1) rejectable indication was noted by the QC technician, Jesse Cayabyab.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the overhead and vertical positions utilizing the E7018-H4R low hydrogen and E71T-1 electrodes. The 3.2 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The WPS's were also utilized by the QC inspector's as a reference to monitor the welding operation, verify the welding parameters and verify the minimum preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled shift.

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Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Mike Johnson, at the start of the shift regarding the location of 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 Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Reyes, Danny

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer