

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-012377**Date Inspected:** 01-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:** J. Cunningham/B. Docena**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 (AB/F) personnel at the E1/E2 field splice:

A). Welding of the Field Splice E1 to E2.

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 1E-2E-A2 and A4. The welding was performed by American Bridge/Fluor Enterprise personnel Mitch Sittinger, ID-0315 and Songtao Huang, ID-3794. The QAI also observed the Quality Control (QC) Inspector James Cunningham monitor the in process welding and verify the Direct Current Electrode Positive (DCEP) welding parameters which were noted as follows: 258 amps, 24 volts and a travel speed measured as 385mm per minute for Mr. Sittinger and 223 amps, 23 volts with a travel speed measured at 350mm per minute for Mr. Huang. The QC inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding performed during this shift was not completed.

The QAI also observed the continued CJP groove welding of the bottom plate splice identified as WN 1E-2E-D1 and D2, segments D1, D2, D16 and D17. The welding was performed by AB/F personnel Jordan Hazelaar, ID-2135 and Jeremy Dolman, ID-5042. The QAI also observed Quality Control (QC) inspector Bernie Docena verify the DCEP welding parameters and the surface temperatures during the welding process and the average readings were noted as follows: 263 amps, 23.5 volts with a travel speed measured between 340mm and 320mm per minute. The surface temperatures were noted by the QC inspector as follows: minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding

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was not completed on the noted weld segments during the shift.

QA Observation and Verification Summary

The QA inspector observed Flux Cored Arc Welding (FCAW-G) process of the deck plate and bottom plate field splice E1 to E2 identified as WN 1E-2E-A2/A4 and 1E-2E-D1/D2 . The welding was performed utilizing the Welding Procedure Specification's (WPS's) ABF-WPS-D15-F3200-2 and ABF-WPS-D15-3040A-1 Rev. 0 utilizing the welding parameters noted on the WPS as per AWS D1.5-02/Section 5.12. The WPS's were also used by the AB/F Quality Control (QC) Inspector's James Cunningham and Bernie Docena during the monitoring and verification of the welding. The welding parameters and preheat temperatures were verified and noted 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 consumables utilized during the welding appeared to be an ESAB manufactured product identified as ESAB Dual Shield 70 Ultra Plus an electrode size of 1.4mm which appeared to comply with the AWS Electrode Specification AWS A5.20 and the AWS Classification E71T-1M. The QC inspector's appeared to perform the visual examinations, monitoring and verification of the welding as per the contract documents. The welding and QC inspection performed on this shift was not completed and appeared to be in general compliance with the contract documents. The QAI randomly verified the welding parameters and surface temperatures utilizing a Fluke 337 Clamp Meter and a Tempilstik Temperature indicators.

Note: QAI was informed by the QC inspector, Mike Johnson that the welder Huang Jin Quan, ID-9340 was performing tack welding of fitting gear at field splice E2/E3 bottom plate utilizing the SMAW process for which the welder is not qualified to use. The AB/F QC department will be generating an NCR.

See digital photographs below in regards to the work observed during this shift.



Summary of Conversations:

No were no pertinent conversations were 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.

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Inspected By: Reyes,Danny

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer