

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-012986**Date Inspected:** 14-Apr-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 W1/W2 and E1/E2 field splices:

- A). Welding and QC/NDT of the Field Splice W1 to W2
- B). QC/UT at the Field Splice E1 to E2

A) Welding of Field Splice W1/W2

The QAI observed the continued Shielded Metal Arc Welding (SMAW) of the bottom plate field splice identified as Weld Number (WN): 1W-2W-D. The Complete Joint Penetration (CJP) groove welding was performed by welding personnel Jordan Hazelaar ID-2135, Kenneth Chappell ID-3833, James Zhen ID-6001 and Chun Fai Tsui utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1040C Rev. 1. The WPS was also used by the AB/F Quality Control (QC) Inspector Bernie Docena as a reference when performing QC verification of the Direct Current Electrode Positive (DCEP) welding parameters during the CJP welding. The groove joint appeared to comply with the AWS joint designation identified as B-U2a. The QAI also observed the QC inspector verify the average welding parameters and were observed as 162 amps. The QC inspector also monitored the surface temperatures during the field welding and the following was observed and noted by the QAI: the minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius.

The QAI also observed continued the Ultrasonic Testing (UT) of the transverse CJP weld of the deck plate field

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splice identified as WN: 1W-2W-A. The testing was performed by the QC technician Steve McConnell utilizing a Krautkramer USM 35 and the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. The QC technician performed the angle beam technique during the testing of the CJP, utilizing a .75 x .75 rectangular transducer.

Later in the shift the QAI observed the welder Mitch Sittinger ID-0315 commence the excavation of two (2) repairs utilizing a high cycle grinder with a rotary file attachment. The QC inspector Mr. McConnell performed the in process inspection of the excavation and the following rejectable discontinuities were observed: slag and lack of fusion. At the conclusion of the removal of the discontinuities the QC inspector performed a Magnetic Particle Testing (MPT) of the excavations and no rejectable indications were noted. At this time the welder commence the repair welding of the excavations utilizing the WPS identified as ABF-WPS-D15-1000-Repair Rev. 2. The WPS was also used by the QC inspector as a reference to monitor and verify the DCEP welding parameters which were noted as 168 amps. The QAI verified the minimum preheat at 40 degrees Celsius and the interpass temperature of 230 degrees Celsius. The repair welding was completed during this shift.

B) QC Ultrasonic Testing of the Filed Splice E1/E2

The QAI also observed the Ultrasonic Testing (UT) performed by the QC technician, Jesse Cayabyab, on the transverse deck plate field splice identified as WN: 1E-2E-C. The UT technician performed the required longitudinal and shear wave scanning techniques during the testing which was performed utilizing a US-52L, a product manufactured by Krautkramer. The 1" diameter transducer was used to perform base metal soundness and a .75 x .75 rectangular transducer used to perform the angle beam technique for weld soundness. At the conclusion of the testing there were seven (7) rejectable discontinuities noted by the QC technician with a total length measured at 727 mm. The ultrasonic testing appeared to comply with the contractor's UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4.

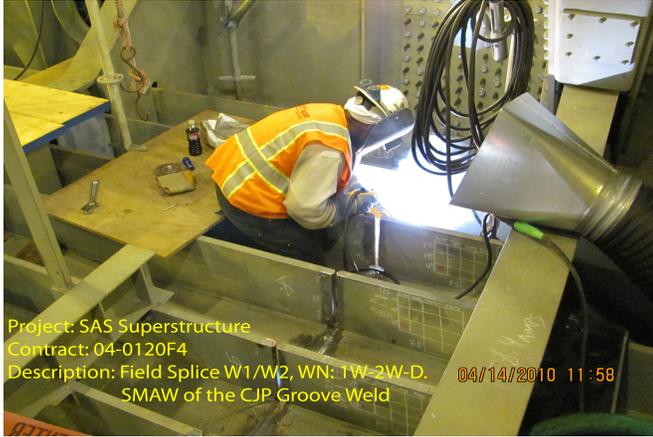
QA Observation and Verification Summary

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 consumable 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 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 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.

Inspected By:	Reyes, Danny	Quality Assurance Inspector
Reviewed By:	Levell, Bill	QA Reviewer
