

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-014989**Date Inspected:** 18-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 welder James Zhen ID-6001 continue the repair welding of the longitudinal stiffener field splice identified as WN: 1W-2W-D-S5. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1000-Repair Rev. 2. The WPS was also used by the QC inspector, Tom Pasqualone, as a reference to verify the welding parameters during the welding of the repairs. The welding parameters were verified and noted by the QAI as 126 amps and the preheat and the interpass temperatures appeared to comply with minimum and maximum values as per the WPS.

At the conclusion of the welding of S2, welder James Zhen ID-6001 commence the excavation of the areas marked as UT rejects on the Complete Joint Penetration (CJP) groove weld identified as WN: 1W-2W-D-S6. At the conclusion of the excavations the QC technician Tom Pasqualone performed a Magnetic Particle Test (MPT) of the excavated areas and no rejectable indications were noted. The application and evaluation of the MPT appeared

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to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The repair welding was performed utilizing the Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-3001-3- Repair Rev. 0. The WPS was also used by the QC inspector as a reference to monitor and verify the Direct Current welding parameters which appeared to comply with the WPS. The welding was performed in the vertical position (3G) with the work positioned approximately in the vertical plane with the groove approximately vertical and the weld progression up.

Later in the shift, the QAI observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 3W-4W-E. The welding was performed by the welder /operator Rory Hogan ID-3186 utilizing the WPS ABF-WPS-D15-3042A Rev. 1. The WPS was also used by the QC inspector William Sherwood as a reference when monitoring the welding and verifying the welding parameters which were observed as follows: 227 amps, 23.4 volts and a travel speed measured as 177mm. The QC inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding was performed in the overhead position (4G) with the work at approximate incline of 22 degrees. The CJP welding of the "B" face of the joint was completed during this shift.

C). Field Splice W4/W5

The QAI observed the excavations and the welding of the repairs on the deck plate field splice identified as WN: 4W-5W-A, Segment A5. The Shielded Metal Arc Welding (SMAW) was performed by Fred Kaddu ID-2188 utilizing the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1000 Repair Rev. 2. At the conclusion of the excavations the QC technician Steve McConnell performed a Magnetic Particle Test (MPT) of the excavated area and no rejectable indications were noted. The application and evaluation of the MPT appeared to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The QC inspector monitored the welding and performed the inspection during the welding of the repairs and was observed verifying the DCEP welding parameters and were noted and recorded as 146 amps. The minimum and maximum surface temperatures were also verified by the QC inspector and were noted and recorded as 20 degrees Celsius preheat temperature and a maximum interpass temperature of 230 degrees Celsius. The welding of the repairs were completed during this shift.

The QAI also observed continued the Ultrasonic Testing (UT) of the repairs on the deck plate field splice identified as WN: 4W-5W-A. The testing was performed by the QC technician Steve McConnell utilizing a G.E. /Krautkramer USM 35X and the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. The QC technician performed the required shear wave technique during the testing for weld soundness which was performed utilizing a .63 x .75, 2.25 megahertz rectangular transducer. The QAI observed at the conclusion of the examination the QC technician noted two (2) of the three (3) repairs tested as acceptable and one (1) repair as a reject.

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 SMAW and FCAW-G processes appeared to comply with the AWS Specification and AWS Classification. The

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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.

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



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
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Reviewed By:	Levell,Bill	QA Reviewer
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