

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-014692**Date Inspected:** 07-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 Ultrasonic Testing (UT) of five (5) R1 weld repairs on the longitudinal stiffener field splices identified as WN: 1W-2W-D, longitudinal stiffeners S8, S9, S11, S12 and S13. The testing was performed by the QC technician Tom Pasqualone utilizing a G.E./Krautkramer USM 35 who also utilized the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 during the examination of the repairs. The QAI also observed the QC technician perform the required longitudinal wave utilizing a 1" diameter transducer for base metal soundness and a .75 x .75 rectangular transducer to perform the shear wave testing during the testing for weld soundness. The testing was performed on the "A" and "B" faces of the weld joint. At the conclusion of the testing, Mr. Pasqualone noted four (4) rejects on the stiffeners identified as S8, S9, S11 and S13. The longitudinal stiffener identified as S12 appeared to comply with the contract documents.

Later in the shift, the QAI observed Mr. Pasqualone perform the UT on three (3) field splice R1 repairs identified as WN: 1W-2W-C. At the conclusion of the testing, Mr. Pasqualone noted no rejects of the repairs which were

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located at the following Y dimensions; Y=3680mm, 3860mm and 4580mm.

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. 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: 254 amps, 23.0 volts and a travel speed measured as 230mm/ 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 observed the CJP welding of the backing bar to the deck plate identified as WN: 5E-6E-D. The welding was performed by Xiao Jian Wan ID-9677 utilizing the Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-F3200-2 Rev. 0 which was also used by the QC inspector, Bernie Docena, to monitor the in process welding and verify the welding parameters. The welding was performed in the flat position (1G) with the work placed approximately in the horizontal plane so that weld metal shall be deposited from the upper side. The welding parameters were verified and recorded by the QC inspector as follows; 238 amps, 23.7 volts and a travel speed measured at 300mm/minute. The minimum/maximum surface temperatures were also verified and recorded by the QC inspector.

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.

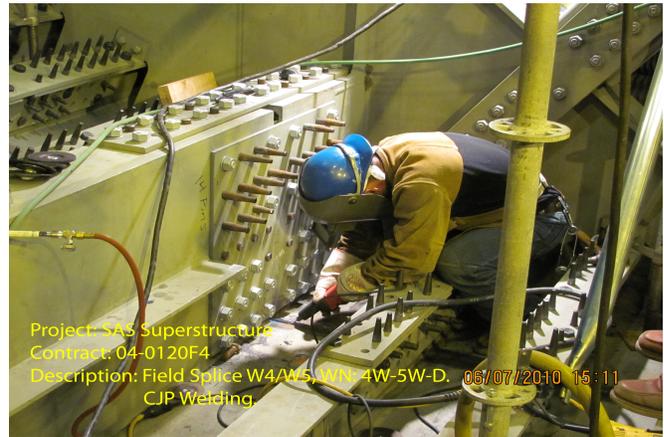
The QAI performed a random Ultrasonic Test (UT) and a Magnetic Particle Test (MPT) verification test of the Complete Joint Penetration (CJP) groove weld identified as WN: 5E-6E-A. A total area of approximately 10% was tested to verify the weld and testing by QC meet the requirements of the contract documents. The UT examination was performed in the first and second leg and the MPT was performed utilizing the AC yoke in the longitudinal and transverse axis. A UT report, TL6027 and a MPT report, TL-6028 was generated on this date.

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The QAI also performed an Ultrasonic Test (UT) on the R1 repairs of the field splice identified as WN: 1W-2W-E, Segment E2. The repaired areas were tested 100% 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 ultrasonic test report, TL-6027 was generated on this date.

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
Reviewed By:	Levell,Bill	QA Reviewer
