DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-013055
Date Inspected: 16-Apr-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 1100
OSM Departure Time: 1930
Location: Job Site

CWI Name: See Below

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ 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 W2/W3 field splices:

A). Welding of Field Splice W2/W3
B). Dimensional Survey of Stiffeners at Field Splice W1/W2

A) Field Splice W2/W3

The QAI observed the continued Submerged Arc Welding (SAW) process of the deck plate field splice identified as Weld Number (WN): 2W-3W-A, Weld Segments A1-A3. The welding was performed by the welding operator Bryce Howell ID-5591utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by the AB/F Quality Control (QC) Inspector William Sherwood as a reference to perform the monitoring of the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the deck plate field splice. Later in the shift the QAI observed the QC inspector monitoring the welding parameters and were noted as follows: 578 amps, 32.0 volts and a travel speed measured at 385 mm/minute. 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 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius.

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the bottom plate field splice identified as Weld

Number (WN): 2W-3W-D, Segment D1. The Complete Joint Penetration (CJP) groove welding was performed by welding personnel Chun Fai Tsui ID-3426 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1 Rev. 0. 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 follows: 238 amps, 22.8 volts and a travel speed measured at 260mm/minute. 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 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding length was 700mm located at plate "C" to plate "D" connection.

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the bottom plate field splice identified as Weld Number (WN): 2W-3W-D, Segment D2. The Complete Joint Penetration (CJP) groove welding was performed by welding personnel James Zhen ID-6001utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1 Rev. 0. 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 follows: 252 amps, 22.5 volts and a travel speed measured at 266mm/minute. 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 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The welding length was approximately700mm located at plate "D" to plate "E" connection.

B) QC Dimensional Survey at Field Splice W1/W2

Later in the shift the QAI observed the dimensional survey performed by QC inspector Jesse Cayabyab regarding the root openings of the longitudinal stiffeners identified as WN: 1W-2W-D-S1 through 1W-2W-D-S18. The dimensions were recorded by the QC inspector as follows: Stiffeners S2, S3, S4 and S8 through S18 were noted as a minmum of 8mm and a maximum of 18mm. Stiffeners S1, S5, S6 and S7 were measured at a maximum of 6mm. These dimensions were also verified by the QAI.

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 SAW processes 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, below, illustrate the work observed during this scheduled shift.

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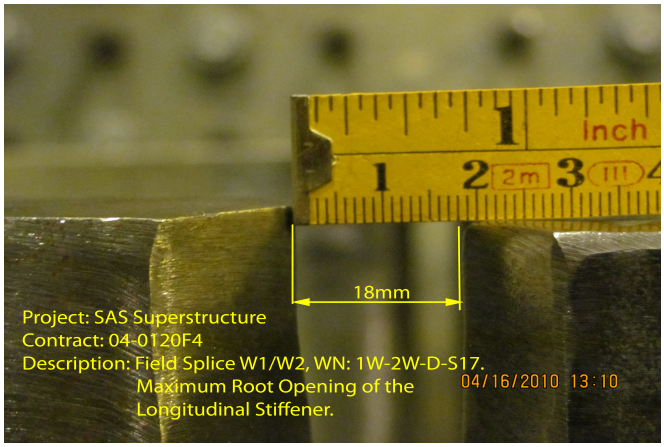

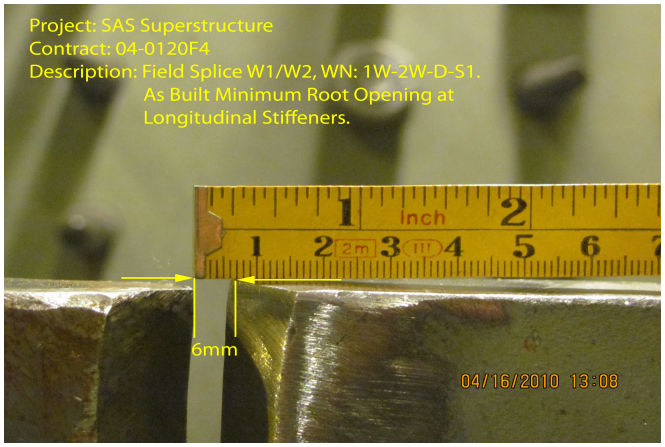

Summary of Conversations:

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