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-015962
Date Inspected: 02-Aug-2010

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

OSM Arrival Time: 1000
OSM Departure Time: 1830
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 W4/W5
C). Field Splice E4/E5
D). Field Splice E5/E6

A). Field Splice W1/W2

The QAI observed the continued excavation of the unacceptable discontinuities discovered during the Ultrasonic Testing (UT) of bottom plate field splice identified as 1W-2W-D2. The excavations were performed by Ken Chappell and the welding was performed by Xiao Jian Wan ID-9677. The machining of the excavations was performed utilizing a high cycle grinder to remove the defects. 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 to comply with the MPT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The repair welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process and the 3.2mm electrode as per the Welding Procedure Specification (WPS) identified as ABF-WPS-1000 Repair Rev. 2. The WPS was also used by the QC inspector, Mr. Pasqualone, as a reference to monitor and verify the Direct Current welding parameters which were noted as 140 amps. The welding was performed in the flat (1G) position with the work approximately in the horizontal plane and the weld metal

deposited from the upper side. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was monitored and maintained by the QC inspector during the repair welding.

B). Field Splice W4/W5

The QAI also observed the Complete Joint Penetration (CJP) welding at the side plate connection identified as WN: 4W-5W-E1. The welding was performed by Song Tao Huang ID-3794 utilizing the Shielded Metal Arc Welding (SMAW) as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1040A, Rev. 0 which was also used by the QC inspector, John Pagliero, to monitor the in process welding and verify the DCEP welding parameters. The welding parameters were verified and recorded by the QC inspector as 130 amps. The minimum preheat temperature of 60 degrees Celsius and maximum interpass temperature of 230 degrees Celsius were also noted and recorded by the QC inspector and verified by the QAI. The CJP welding was performed in the vertical (3G) position with the worked positioned in an approximate incline of 22 degrees and performed on the "A" face of the weld joint. The length of the weld was approximately 300 millimeters. This portion of the work was completed during this scheduled shift.

C). Field Splice E4/E5

The QAI observed the Flux Cored Arc Welding (FCAW-G) process of the weld joint identified as Weld Number (WN) 4E-5E-C1. The welding was performed by the welder /operator Jeremy Dolman ID- 5042 utilizing the WPS ABF-WPS-D15-1040A, Rev. 0. 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 125 amps. The QC inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius which appeared to comply with the contract documents. 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.

D). Field Splice E5/E6

The QAI observed the Complete Joint Penetration (CJP) welding of the edge plate field splice connection identified as WN: 5E-6E-F1. The welding was performed by Fred Kaddu ID-2188 utilizing Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1040A, Rev. 0 which was also used by the QC inspector, William Sherwood, to monitor the in process welding and verify the DC welding parameters. The welding parameters were verified and recorded by the QC inspector as 125 amps. The minimum and maximum surface temperatures were also noted and recorded by the QC inspector and verified by the QAI. The CJP welding was performed on the "A" face of the weld joint and in the vertical (3G) position with the work placed in an approximately vertical plane and the groove approximately vertical.

Miscellaneous

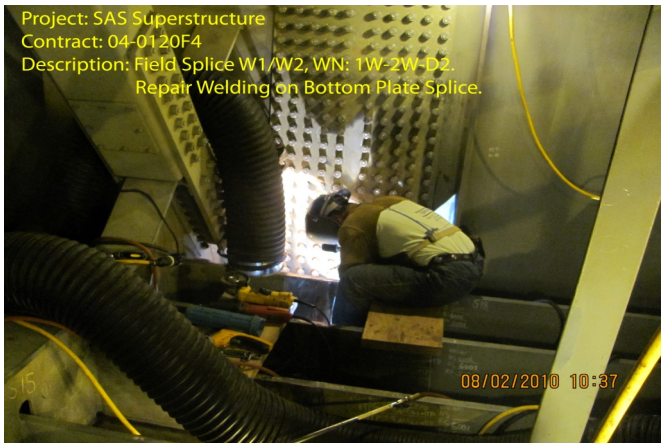
The QAI also observed the Magnetic Particle Testing (MPT) of three (3) arc burns on the deck plate of the Orthotropic Box Girder (OBG) identified as E6. This work is in reference to CT-059. See Summary of

Conversations for additional information.

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 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 welding processes appeared to comply with the AWS Specification and AWS Classification. The 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 general conversations with Quality Control Inspector Mike Johnson at the start of the shift regarding the location of American Bridge/Fluor welding personnel and inspection/ N.D.E. testing scheduled for this shift.

At approximately 1420 the QAI was verbally notified by Quality Control Inspector, Mike Johnson, that he was preparing to perform a Magnetic Particle Test (MPT) of area where arc burns were induced on the deck plate.

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

WELDING INSPECTION REPORT

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Reviewed By: Levell,Bill QA Reviewer