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

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-015742
Date Inspected: 20-Jul-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

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 locations noted below:

A). Field Splice W1/W2
B). Field Splice W3/W4
C). Field Splice W5/W6

A). Field Splice W1/W2

The QAI observed the excavation of the unacceptable discontinuities discovered during the Ultrasonic Testing (UT) performed by the QC Technician, Steve McConnell. The excavations were performed by welding personnel Fred Kaddu ID-2188 utilizing a high cycle grinder to remove the defects. At the conclusion of the excavations the QC inspector, William Sherwood, performed a visual inspection and a Magnetic Particle Test of the areas. No reject able indications were noted by the QC inspector and Mr. Kaddu commenced the welding of the excavations utilizing the WPS identified as ABF-WPS-D15-1000-Repair Rev. 2. The QAI verified the DCEP welding parameters as 128 amps and the minimum preheat 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later in the shift the QAI observed at random intervals the QC inspector monitoring and verifying the welding parameters.

B). Field Splice W3/W4

The QAI observed the machining of the weld profile surface on the "B" face of the bottom plate field splice identified as WN: 3W-4W-B1. The machining was performed utilizing high cycle grinders to bring the weld surface into general compliance with the contract documents.

C). Field Splice W5/W6

The QAI observed the Submerged Arc Welding (SAW) process of the bottom plate field splice identified as Weld Number (WN): 5W-6W-D1 and D2. The welding was performed by the welding operator Bryce Howell ID-5591 utilizing the Welding Procedure Specification (WPS)identified as ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by the AB/F Enterprises Quality Control (QC) Inspector Jesse Cayabyab to monitor the in process welding of fill passes and to verify the Direct Current Electrode Positive (DCEP) welding parameters during the Complete Joint Penetration (CJP) groove welding of the field splice. The QC inspector verified the welding parameters and were observed and noted by the QAI as follows: 556 amps, 31.4 volts, a travel speed measured at 381mm per minute and the calculated heat input of 2.74 kj/mm. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were also verified by the QAI. The QAI also verified, at random intervals, the planar alignment during the production welding. The dimensions noted by the QAI appeared to comply with the contract documents.

QA Observation and Verification Summary

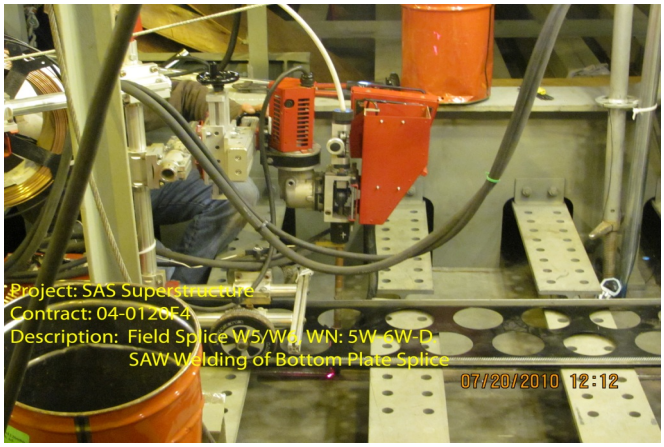
The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW and the SAW 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 QAI also reviewed the Request for Information (RFI)document identified as ABF-RFI-00611R00 regarding the verification of the Complete Joint Penetration groove welds at the floorbeam web to skin plate weld at the Orthotropic Box Girder (OBG) suspender brackets located at various areas on the OBG as noted per the RFI. The QAI performed Ultrasonic Testing to verify the CJP along girder Face "B", for 1100mm from the OBG corner on girder Face "A", and for 800mm from the OBG corner on girder Face "C". At the conclusion of the QAI verification no issues were noted on the OBG Lift W1, PP10 and PP12, for CJP clarification.

The digital photographs on page 3 of this report illustrate the work observed during this scheduled shift.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)



Summary of Conversations:

There were general conversations with Quality Control Inspector's Steve McConnell and Jesse Cayabyab at the start of the shift regarding the location of American Bridge/Flour welding personnel and the N.D.E. testing scheduled for this shift.

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