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-012857
Date Inspected: 01-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			**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 E1/E2 and E3/E4 field splices:

A). Welding of the Field Splice E3 to E4.
B). Fit-up of the Field Splice E3 to E4
C). QC/UT Repairs at Field Splice E3 to E4
D). QC/UT of the Field Splice E1 to E2

A) Field Splice E3/E4, WN: 3E/4E-D

The QAI observed the continued removing slag and non-fusion at the toe of the weld by machining utilizing 4"grinders and rotary files. The grinding was performed on the third fill pass and appears to be also located in the subsequent Submerged Arc Weld (SAW) passes. The Quality Control Inspector (QC), Tom Pasqualone, appeared to monitor the grinding and perform a visual inspection of the areas prior to welding.

B) Fit-up of the Field Splice E3/E4, WN: 3E-4E-C

The QAI observed the installation and fillet welding of the assembly gear fitting aids to align the side plates of Orthotropic Box Girders (OBG) E3 to E4 field splice idnetified as WN: 3E-4E-C. The fillet welding was performed by American Bridge/Fluor personnel Rick Clayborn ID-2773 utilizing the Shielded Metal Arc Welding

(SMAW) as per the Welding Procedure Specification (WPS) ABF-WPS-D15- F1200A Rev. 1. The WPS was also used as a reference by the QC inspector Bonifacio Daquinag to verify the Direct Current Electrode Positive (DCEP) welding parameters and preheat temperatures which were noted as 145 DC amps and a minimum temperature of 70 degrees Fahrenheit.

C) QC/UT Repairs of the Field Splice 3E-4E-A

The QAI also observed the Ultrasonic Testing (UT) of two (2) repairs performed on the transverse CJP weld on deck plate field splice identified as WN: 3E-4E-A, Weld Segments A4 and A5. The testing was performed by the QC technician Tom Pasqualone utilizing a US-52L, manufactured by Krautkramer. The QAI observed the UT technician perform the required longitudinal and shear wave scanning technique during the testing which was performed utilizing a 1" diameter used to perform base metal soundness and a .75 x .75 rectangular transducers used to perform the angle beam technique for weld soundness. The QC technician performed the testing utilizing the longitudinal and transverse scanning techniques as per the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. There were no UT rejects noted by the QC technician. See QA Observation and Verification Summary for QAI UT verification.

D) QC/UT of the Field Splice E1/E2, WN: 1E-2E-D

The QAI also observed the Ultrasonic Testing (UT) of the transverse CJP weld on bottom plate field splice identified as WN: 1E-2E-D. The testing was performed by the QC technicians Jesse Cayabyab and James Cunningham utilizing a USM 35 a product manufactured by Krautkramer. The QAI observed the UT technicians perform the required longitudinal and shear wave scanning technique during the testing which was performed utilizing a 1" diameter used to perform base metal soundness and a .75 x .75 rectangular transducers used to perform the angle beam technique for weld soundness. The technicians performed the testing utilizing the longitudinal and transverse scanning techniques as per the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. The UT was not completed during this scheduled shift and there appears to be approximately a total of 13 rejects as of this date.

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 consumable identified Lincoln Excalibur appeared to comply with the AWS Specification A5.1-04 and AWS Classification E7108-H4R. The QC inspection 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, Tempilstik Temperature indicators and a USN 60 Ultrasonic instrument.

The QAI also performed an ultrasonic verification test of the Complete Joint Penetration (CJP)groove weld repairs identified as WN: 3E-4E-A, Weld Segments A4 and A5. A total area of 100% was ultrasonically tested to verify the weld repairs and testing by the QC techician meet the requirements of the contract documents. The

examination was performed in the first and second leg and a ultrasonic test report, TL6027, was generated on this date.

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

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