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

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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-012973
Date Inspected: 09-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 E1/E2 and W1/W2 field splices:

A). Welding of the Field Splice W1 to W2.
B). UT of the Field Splice E1 to E2.

A) Welding of Field Splice W1/W2

The QAI observed the Shielded Metal Arc Welding (SMAW) process of the bottom plate field splice identified as Weld Number (WN): 1W-2W-D. The Complete Joint Penetration (CJP) groove welding was performed in the area of the weld access hole of the longitudinal stiffeners located on the bottom plate of the Orthotropic Box Girder (OBG) for a measured length of approximately 250mm. The welding was performed by AB/F welding personnel Jordan Hazelaar ID-2135, Chun Fai Tsui ID-3426 and James Zhen ID-6001utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1040C Rev. 1. 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 of the groove joint identified as B-U2a. Later in the shift the QAI observed the QC inspector verifying the welding parameters during the fillet welding and the average amperage was noted as follows: 164 amps. 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 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Also

the QAI observed the continued machining of the CJP groove weld identified as WN: 1E-2E-A. The machining of the weld surface was performed by AB/F personnel utilizing a high cycle grinders.

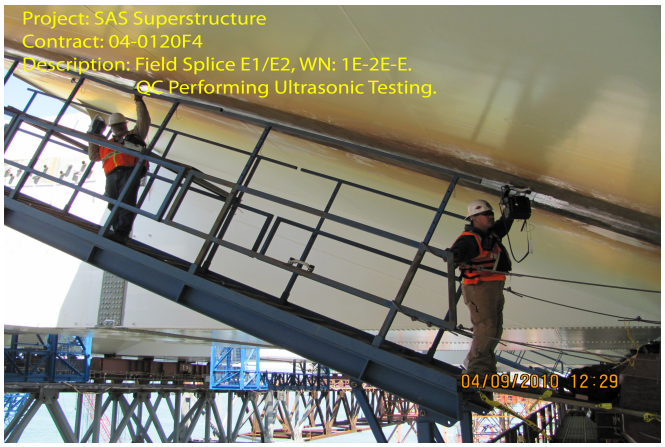
B) QC/UT of Field Splice E1/E2

The QAI also observed the Ultrasonic Testing (UT) of the CJP groove weld of the side plate field splice identified as WN: 1E-2E-E. The testing was performed by the technician Jesse Cayabyab and James Cunningham utilizing a USM 35, a product manufactured by Krautkramer and the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4. The UT technician performed the required longitudinal and shear wave scanning techniques during the testing which was performed utilizing a 1" diameter transducer for base metal soundness and a .75 x .75 rectangular transducer used to perform the angle beam technique for weld soundness. The testing was not completed during this scheduled shift and thus far there are approximately 3 rejectable discontinutities noted and marked by the QC technicians.
The QAI also assisted Josilto Lizardo verifying the dimensional misalignments at the edge plate field splices located at the deck plate and side plate connections.

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 4.0mm consumables utilized for the SMAW process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift was not completed and 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 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