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-012486
Date Inspected: 09-Mar-2010

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

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name: Bernie Docena

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 (OBG)

Summary of Items Observed:

The Quality Assurance Inspector (QAI), Scott Croff, was present at the Self Anchored Span (SAS) job site to observe the scheduled fabrication and welding of components for the SFOBB project. The following observations were made:

1) OBG L1E/L2E field splice welding - plate D stiffeners
2) OBG L2E/L3E field splice welding - plate D

1) The QAI arrived at OBG L1E/L2E field splice, plate D (inside) and noted that 2 stiffener welds, #6 and #10 have been removed. The QAI met with the Quality Control (QC) Inspector Bernie Docena and inquired about the status of these welds / repairs. The QAI was informed that the Magnetic Particle Testing (MT) indications were removed, and that during the removal of the indications, ABF determined that the entire complete joint penetration (CJP) stiffener splice weld will be re-made. The QAI observed that at this time, ABF personnel are grinding the gouged areas and double bevels are being re-formed on the stiffener ends. The QAI also observed that the root openings appear to exceed the previously utilized welding procedure specification (WPS) ABF-WPS-D15-3010-3. See the attached photos. The QAI was informed that shielded metal arc welding (SMAW) will be used for building up the stiffener splice bevels and then gas shielded flux-cored arc welding (FCAW-G) will be used with the original WPS. The QAI noted that ABF welders Mitch Sittinger, ID 0315, and Jordan Hazelaar, ID 2135, were tasked with the SMAW welding.

The QAI observed the above mentioned work in progress noted that the QC Inspector Bernie Docena is monitoring the welding. The QAI was informed that the remaining stiffener splice (#9) is also ready for the 2nd

side to be welded. The QAI observed ABF personnel making these CJP stiffener welds and noted that the FCAW-G is being utilized with 1/16" diameter E71T-1M electrode, Ar/CO2 shielding gas and ABF-WPS-D15-3010-3. The QAI noted that Song Tao Huang, ID 3794, is making the vertical (3G) FCAW-G CJP welds. The QAI noted that the stiffener splices are 35mm thick and per WPS will need a minimum preheat temperature of 200°F. The QAI and the QC Inspector had a discussion of the preheat temperature requirements. The QAI relayed that the contract special provisions require welds with preheat temperature over 150°F be maintained at preheat temperature through the welding and for 3 hours after welding is completed. The QAI was informed that ABF has determined that these welds do not need to be maintained at preheat temperature during welding or for 3 hours after completion of welding. This welding was in progress at the end of the QAI's shift. The QAI Danny Reyes arrived and assumed the QAI duties.

2) The QAI observed ABF personnel preparing to make CJP welds inside of plate D at OBG Lifts 2E/3E field splice. The QAI noted that the QC Inspector Bernie Docena is monitoring the welding at this location. The QAI was informed that the L3E side bevel will be tied in at the backing bar using FCAW-G with 1/16" diameter E71T-1M electrode and Ar/CO2 shielding gas and WPS ABF-WPS-D15-3040B-1. The QAI observed that James Zhen, ID 6001 and Jin Quan Huang, ID 9340, will be making the flat (1G) FCAW-G CJP welds. The QAI made random observations of the joint fit-up and tolerances and noted that there are measurable offsets (horizontal alignment) between the L2E segment and the L3E segment. The QAI used a bridge-cam gauge and measured the offset was generally within 2mm except for the distance between 6000mm and 6800mm. The QAI measured a maximum offset of 3mm and informed the QC Inspector of this observation. The QAI noted that the base metals are at ambient temperature and there is a possibility of the fit-up components moving / shifting as they are heated up for welding. The QAI observed the ABF personnel using propane torches to preheat the 20mm thick plates and make single weld passes along the backing bar and bevel face to L3E segment. See the attached photo. The QAI noted that welding progressed and appeared to be generally conforming to the contract requirements. This welding was in progress at the end of the QAI's shift. The QAI Danny Reyes arrived and assumed the QAI duties.

WELDING INSPECTION REPORT

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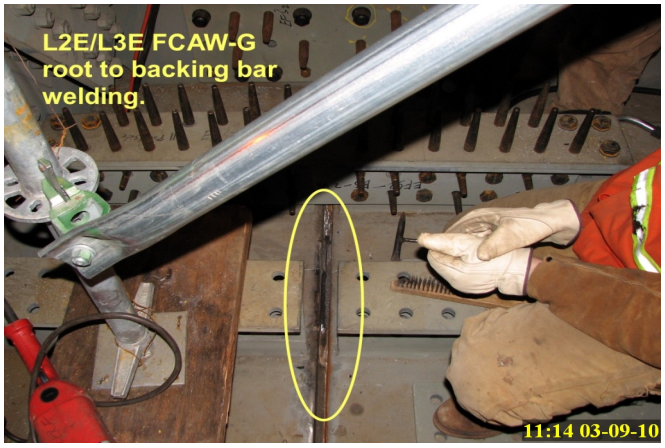

Summary of Conversations:

As noted above, the QAI had conversations with the QC Inspectors regarding the maintaining of preheat temperature for the splice and stiffener splice welding. There were additional conversations regarding the MT indications / repairs of the stiffener welds and the fit-up of L2E/L3E. The QAI relayed the observations of OBG splice fit-up ,welding and preheat temperature observations to the QAI Danny Reyes. There were no other notable observations or conversations during 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:	Croff,Scott	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer