

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 #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027746**Date Inspected:** 11-Jun-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** As noted 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:** SAS OBG**Summary of Items Observed:**

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

Orthotropic Box Girder (OBG) section: The QC Documents observed being used by this QA Inspector for the following weld joints appeared to be designated as Seismic Performance Critical Members (SPCM).

13E PP123.5-E2.1-BF2 (Interior)

This QA Inspector randomly observed Shielded Metal Arc Welding (SMAW) in the 4G overhead position on the Beam Flange weld at 13E PP123.5-E2.1-BF2. ABF welder Khit Lounechaney (ID 4985) was observed pre-heating the Complete Joint Penetration (CJP) joint prior to welding and utilized 4.0mm E7018-H4R electrodes drawing amperage of 143. QC Inspector Salvador Merino was present to monitor the welding and the parameters as they pertain to ABF-WPS-D1.5-1030. Between passes the welder was observed cleaning the work using a small disc grinder as QC measured the inter-pass temperatures with Tempilstik Heat Indicators. On a subsequent observation, it was noted that the welder was continuing the in process welding. This QA Inspector noted that the 3.2mm electrodes were stored in electrically heated thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters. At the time of the observations no issues were noted by the QA. On subsequent observations throughout the shift to

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

monitor quality, it was noted that the work was in progress and appeared to be in general conformance with the contract documents.

13E-E2.2 (Interior)

This QA Inspector randomly observed the repair welding operations performed by ABF welder Rick Clayborn (ID 2773) at 13E-E2.2 on the interior of the OBG. The welder was observed using the Carbon Arc Gouging (CAG) process to excavate the sites. Upon removal of the discontinuities, QC Inspector Salvador Merino performed Magnetic Particle Testing (MT) to ensure soundness of the metal and observed no relevant indications and recorded the dimensions of the excavations which are listed below. The welder was observed depositing metal by utilizing the SMAW process in the 4G overhead position employing 3.2mm E7018-H4R electrodes drawing amperage of 127 as pertaining to ABF-WPS-D1.5-1004-Repair. This QA Inspector verified that the electrodes were obtained from a baking oven at the correct temperature and within acceptable exposure limits. The welders were observed cleaning the start/stop edges of the work utilizing small disc grinders and compressed air and restored the base metal to the original surface and ground smooth, and the welds to their specific profiles. Post Weld Heat Treatment (PWHT) was applied to each completed weld surface at 230°C (450°F) for a period of 1 hour in accordance with Section 12.15 of AWS D1.5-2002. The repairs were completed on this date.

Dimensions of the Excavations.

13E-E2.2: y+1310mm; 50mm in length, 20mm wide and 7mm deep, y+150mm; 80mm in length, 20mm wide and 10mm deep.

13E-E2.1: y+8830mm; 45mm in length, 15mm wide and 5mm deep, y+9150mm; 65mm in length, 25mm wide and 7mm deep, y+9260mm; y+40mm in length, 20mm wide and 7mm deep, y+9300mm; 60mm in length, 20mm wide and 10mm deep, y+9400mm; y+70mm in length, 15mm wide and 6mm deep.

13E PP122.5-E2.1-BF1 (Interior)

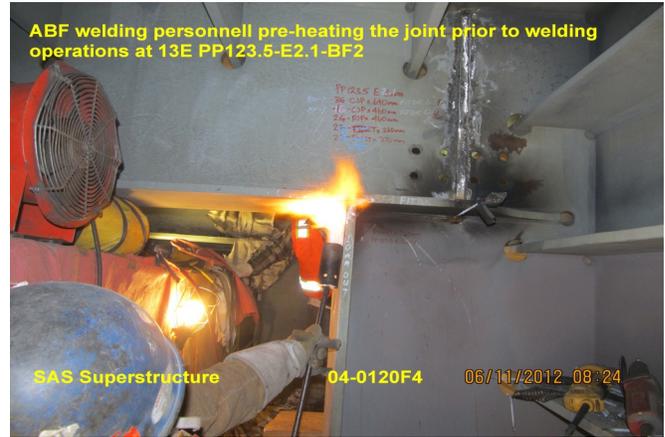
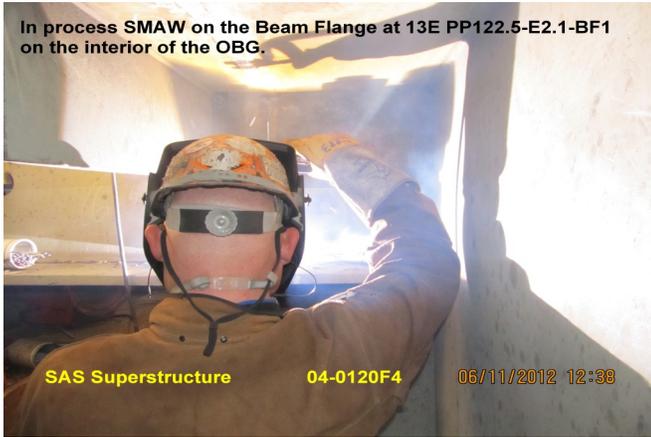
This QA Inspector made random observations of ABF welder Edward Brown (ID 9331) performing SMAW in the 2G horizontal position on the Web Flange joint of 13E PP122.5-E2.1-BF1 on the interior of the OBG. This QA Inspector observed QC Inspector Sal Merino verify prior to the start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps and Travel Speed) were in accordance with ABF-WPS-D1.5-1040A. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes. This QA Inspector noted that the 3.2mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. At the time of the observations no issues were noted by the QA. On subsequent observations throughout the shift to monitor quality, it was noted that the work was completed on this date and appeared to be in general conformance with the contract documents.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Summary of Conversations:

This QA Inspector discussed welder assignments and locations in the Drop-In panels with QC Inspector Salvador Merino.



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 Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

Inspected By:	Frey,Doug	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer
