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: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027654
Date Inspected: 23-May-2012

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

OSM Arrival Time: 700
OSM Departure Time: 1730
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 Drop-In Panels (Interior)

This QA Inspector made random observations of ABF welders Salvador Sandoval (ID 2202) performing the Shielded Metal Arc Welding (SMAW) process in the 4G overhead position on the east end of 13E-E2.1 on the Drop-In Panel on the interior of the OBG. ABF welder Steven Davis (ID 7889) completed work on 13E PP121.6 on this date and began welding at the west end of 13E-E2.1. ABF welder Khit Lounechaney (ID 4985) was observed welding at weld segment 13E-E2.3. QC Inspector Sal Merino was present to monitor the welding and the parameters as they apply to ABF-WPS-D1.5-1040C-CU. The welders were noted as continuing the production welding and between passes the QC Inspector verified the welding parameters and surface temperatures utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. The welders were observed utilizing 3.2mm E7018-H4R electrodes drawing amperage of 125. This QA Inspector noted that the electrodes were stored in an 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. This QA Inspector made subsequent observations throughout the shift to monitor quality and observed that the welding at 13E-E2.5 and 13E PP121.6 had been completed on this date and appeared to be in general conformance with the contract documents. ABF welder Edward Brown (ID 9331) was observed continuing work on the Longitudinal Stiffener (LS) 13E/14E-LS3. The welder utilized a small disc grinder to smooth and blend the back-gouge from the root side of the weld to clean shiny metal. QC Inspector Sal Merino performed Magnetic Particle Testing (MT) on the back-gouge to ensure soundness of the metal. It was noted that Mr. Merino observed no rejectable indications. This QA Inspector observed the Pro-Heat 35 thermal blankets on the opposite side of the joint to provide a constant 200° F temperature throughout the process. This QA Inspector noted the use of the E9018-H4R electrodes and verified that they were obtained from a newly opened container. On subsequent observations, it was noted that the work was ongoing and appeared to be in general conformance with the contract specifications and ABF-WPS-D1.5-1012-3.

13W Drop-In Panels (Interior)

This QA Inspector observed the back-gouging operations at 13W-E2.3 @ y+0mm to y+1440mm on the interior of the OBG. ABF welding personnel utilized small disc grinders and rotary drills with steel shaving bits to remove metal from the root side of the joint. QC Inspector William Sherwood performed MT on approximately 1000mm sections of completed areas by ABF welding personnel to ensure soundness of the metal. Upon completion of the testing, indications were noted of varying lengths and locations. ABF welding personnel were present to remove the indications noted by the testing, by use of grinding until the indications were removed and verified sound by re-testing with the MT method. This process repeated itself throughout the entire length of the joint with each test. The following weld locations were successfully tested; 13W-W2.3, 13W PP120.6, 13W-W2.4 and 13W PP121.2. Upon successful testing and acceptance by QC, this QA inspector performed MT testing utilizing the yoke method in conformance with ASTM E 709 and the standard of acceptance with D1.5 section 6. 26. This QA Inspector noted that no rejectable indications were found at the time of testing. This QA Inspector generated a TL-6028 MT report on this date. The completed work at this location appeared to be in general conformance with the contract specifications.

13E-2.8 (Exterior)

This QA Inspector made random observations of QC Inspector Steve Jensen performing Ultrasonic Inspection (UT) of the completed weld joint at 13E-2.8 from 11900mm to 103800mm. QC was observed scanning from each side of the weld and the scanning pattern as described in D1.5 6.24. This QA Inspector observed the QC Inspector identified Ten (10) rejectable indications and Four (4) recordable indications. At 13E-A1 from 4430mm to 5500mm QC Inspector Steve McConnell recorded Eleven (11) rejectable indications and One (1) recordable indication. On 13E-A2.1 the QC Inspector recorded Five (5) rejectable indications and Two (2) recordable indications from 0mm to 1850mm. On subsequent observations to monitor quality it was noted that the work at this location appeared to be in general conformance with the contract specifications and SE-UT-D1.5-CT-100.

Summary of Conversations:
This QA Inspector met with QC Inspector Sal Merino pertaining to 13E Drop-In Panels progress and required testing for the shift.

WELDING INSPECTION REPORT

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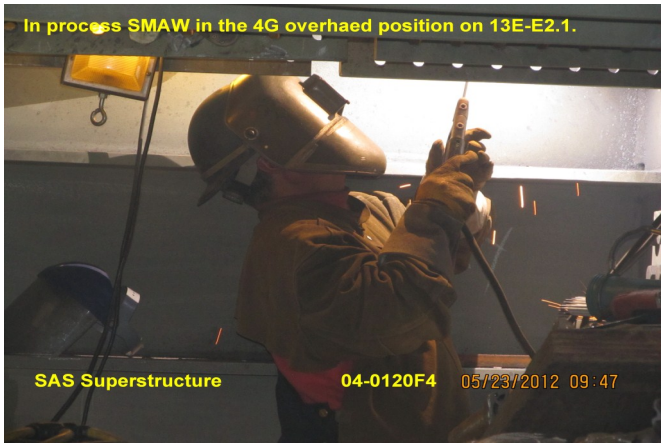

Comments

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