

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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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-027093**Date Inspected:** 24-Jan-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Jobsite**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:

13E/PP119.5/E3 Lifting Lug Holes W3 and W4 (Exterior)

This QA Inspector randomly observed QC Inspector Fred Von Hoff utilize a bridge cam gauge to measure the planar offset of the 20mm insert to make the B-U4a complete penetration joint (CJP) and found it to be satisfactory. ABF welder Salvador Sandoval (ID 2202) employed a propane burner to pre-heat the joint to 93° C prior to performing the Shielded Metal Arc welding (SMAW) process in the 1G flat position. This QA Inspector observed the QC Inspector monitor the welding and the parameters and measured the inter-pass temperatures between passes. The welder was observed grinding and blending the weld using a small disc grinder. This QA Inspector made subsequent observations and noted that the parameters at this location appeared to be in general conformance to ABF-WPS-D1.5-1050A-CU.

12E/13E/A3 (Interior)

This QA Inspector randomly observed ABF welding operator James Zhen (ID 6001) performing the Flux Core Arc Welding with gas (FCAW-G) process utilizing a "Bug-O" motorized rail system with a magnetic base attached in the (4G) overhead position on the underside of deck plate "A3", at 12E/13E of the OBG. This QA Inspector observed QC Inspector Fred Von Hoff monitoring the welding to ensure the welding parameters were in

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compliance pertaining to ABF-WPS-D15-3110-4. The parameters were recorded as (A=225/V=24.3/TS=190/HI=1.72). This QA inspector made subsequent observations throughout the shift to monitor quality and noted that the work was completed on this date and appeared to be in general conformance to the contract requirements.

13E/14E/D3 Repair (Exterior)

This QA Inspector randomly observed ABF welding personnel performing excavation operations of ultrasonic rejectable indications at y+1640 on D3 of 13E/14E on the exterior of the OBG. This QA Inspector observed ABF welder Wai Kit Lai weld implementing the SMAW process in the 4G overhead position utilizing E7018-H4R electrodes. QC Inspector Fred Von Hoff was observed monitoring the welding and the parameters to include measuring the inter-pass temperatures between passes. This QA Inspector made subsequent observations and noted that the welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications.

12E/PP111/E3 Lifting Lug Hole Repairs (Exterior)

This QA Inspector randomly observed ABF welder Rick Clayborn performing the back-gouge operation of ultrasonic rejectable indications on "A" deck Lifting Lug Holes at 12E/PP111/E3. Locations of the excavations were;

W1 at y+190 mm: (25 mm wide; 230 mm length; and 8 mm in depth),

W2 at y+0 mm: (20 mm wide; 95 mm length; and 11 mm in depth), y+490 mm: (20 mm wide; 125 mm length; and 11 mm in depth),

W3 at y+141mm: (15mm wide; 80 mm length; and 11 mm in depth), y+255mm (20 mm width; 10 mm length; and 11mm in depth), y+471mm: (15 mm width; 50 mm length; and 8mm in depth),

W4 at y+95mm: (15mm width; 50 mm length; and 7 mm in depth), y+325mm: (20 mm width; 60 mm length; and 10mm in depth).

This QA Inspector observed QC Inspector Fred Von Hoff perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector verified that no rejectable indications were present.

This QA Inspector randomly observed ABF welder Rick Clayborn (Welder ID 2773) performing the repair welding operation of ultrasonic indications as per the SMAW process in the (1G) flat position on "A" deck Lifting Lug Holes. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Fred Von Hoff verify that the preheat temperature was at the minimum of 93 degrees C and that the welding parameters (Amps=135) were in accordance with WPS D1.5-1001- Repair. The welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications.

13E/PP121.5/E4 Lifting Lug Hole W1 (Exterior)

This QA Inspector observed QC Inspector Fred Von Hoff utilize a Bridge Cam Gage to measure the fit-up of the 20 mm plate in the B-U4a joint on lifting lug hole W1 at 13E/PP121.5/E4. This QA Inspector verified the fit-up as acceptable and employed a 93°C Tempilstik® to ensure the minimum pre-heat temperature had been achieved. This QA Inspector randomly observed ABF welder Jorge Lopez performing the SMAW process in the

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(1G) flat position and observed the QC Inspector verify the welding parameters were in accordance with ABF-WPS-D1.5-1050A-CU. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was in progress and appeared to be in general compliance with the approved WPS and the contract specifications.

Magnetic Particle Testing

This QA Inspector performed a Magnetic Particle (MT) Inspection at the locations listed below. This QA Inspector performed 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/14E/E1/E2
14W/PP125/W4/W1-W4

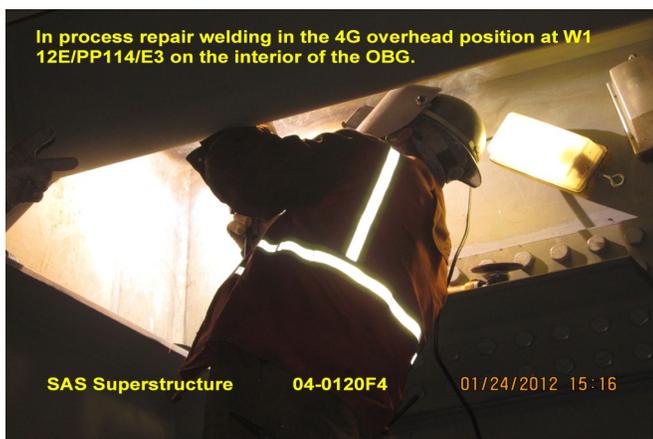
Ultrasonic Testing

This QA Inspector performed Ultrasonic Testing (UT) on approximately 10% of the welds located at E1 and E2 of 13E/14E on the interior of the OBG. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no rejectable indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work observed at this location appeared to be in compliance with the contract specifications.

Note: The QAI reviewed the observations and inspection with QA Lead Inspector, Daniel Reyes, written in this report. The issues were noted by the QAI and the QA Lead Inspector concurs with the QA report.

Summary of Conversations:

The were no pertinent conversations to report.



Comments

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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
