

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-025082**Date Inspected:** 09-Jul-2011**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:** Jobsite**CWI Name:** William Sherwood**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:

1. 9E PP80 E4 Lifting Lug Holes #2 and 4
2. 9E PP92 E4 Lifting Lug Holes #1 and 3
3. 10E 11E E
4. 11W 12W A1
5. Tower East Shaft Splice #3 Elevation 114 meters
6. Tower West Shaft Splice #3 Elevation 114 meters
7. 11E 12E D1/D2

1. 9E PP79 E4 Lifting Lug Holes #2 and 4

The QA Inspector observed ABF welder Mike Jiminez ID# 4671 performing Shielded Metal Arc Welding (SMAW) in the 1G flat position on Lifting Lug Hole's (LLH) #2 and 4 located at 9E PP80 E4. Prior to welding the QA Inspector observed QC Inspector Fred Von Hoff inspecting the fit up of the joint and the QA verified the fit up alignment of the two holes which were deemed acceptable as pertaining to the contract requirements. The QA Inspector observed the QC Inspector monitoring the progress to ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-1050A-CU. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

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2. 9E PP92 E4 Lifting Lug Holes #1 and 3

The QA Inspector observed ABF welder Jorge Lopez ID# 6149 performing Shielded Metal Arc Welding (SMAW) in the 1G flat position on Lifting Lug Hole's (LLH) #1 and 3 located at 9E PP92 E4. Prior to welding the QA Inspector observed QC Inspector Fred Von Hoff inspecting the fit up of the joint and the QA verified the fit up alignment of the two holes which were deemed acceptable as pertaining to the contract requirements. The QA Inspector observed the QC Inspector monitoring the progress to ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-1050A-CU. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

3. 10E 11E E1

The QA Inspector randomly observed ABF welding operators James Zhen ID#6001 and Jin Pei Wang ID#7299 performing Flux Core Arc Welding w/gas (FCAW-G) operations in the 3G vertical position on face E1 on the outside of the OBG. The QA Inspector observed the QC Inspector Fred Von Hoff as being present in order to monitor the progress and ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-3042B-1. The work progressed throughout the QA Inspector's shift. The QA Inspector noted that the work was in progress and appeared to be in general conformance with the contract documents.

4. 11W 12W A1

The QA Inspector periodically observed ABF welding operator James Zhen ID#6001 perform Submerged Arc Welding (SAW) on face A1 in the 1G flat position outside of the OBG. The QA Inspector observed the QC Inspector Fred Von Hoff as being present in order to monitor the progress and ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-F3200-2. The QA Inspector noted that the work was completed on this date and appeared to be in general conformance with the contract documents.

5. Tower East Shaft Splice #3 Elevation 114 meters

The QA Inspector observed ABF welder Xiao Jian Wan ID#9677 continuing to perform production welding on the upper half of the upper splice plate using the self-shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-2 at the Southeast (C-D) corner. The welder was noted as welding in the 3F vertical fillet position on the splice plate to interior corner closure plate of the tower shaft. The QA Inspector observed ABF personnel using Miller Proheat 35 Heat Induction System and propylene gas torch to preheat the plates prior to welding. The QA Inspector observed QC Inspector Steve Jensen using a Fluke infra-red temperature gauge to verify the preheat temperature of 300°F. The parameters measured during welding were 334 amperes; 22.5 volts and travel speed of 210 mm per minute with calculated heat input of 2.1 KJ per mm. ABF personnel were observed covering the weld with heat blankets in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold heat programmed to shut off after three hours. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

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6. Tower West Shaft Splice #3 Elevation 114 meters

The QA Inspector observed ABF welder Salvador Sandoval ID#2202 perform production welding on the upper half of the upper splice plate using the self-shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-2 at the Northwest corner. The welder was noted as welding in the 3F vertical fillet position on the splice plate to interior corner closure plate of the tower shaft. The QA Inspector observed ABF personnel using Miller Proheat 35 Heat Induction System and propylene gas torch to preheat the plates prior to welding. The QA Inspector observed QC Inspector Steve Jensen using a Fluke infra-red temperature gauge to verify the preheat temperature of 300°F. The parameters measured during welding were 272 amperes; 22.7 volts and travel speed of 100 mm per minute with calculated heat input of 3.6 Kj per mm. ABF personnel were observed covering the weld with heat blankets in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold heat programmed to shut off after three hours. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

7. 11E 12E D1/D2

The QA Inspector Randomly monitored ABF welders Wai Kitlai ID#2953 and Hua Qiang Hwang ID#2930 performing FCAW at D1 and D2 in the 1G flat position inside of the OBG. The QA Inspector observed the QC Inspector Fred Von Hoff as being present in order to monitor the progress and ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-3042A-1. The work progressed throughout the QA Inspector's shift. The QA Inspector noted that the work was in progress and appeared to be in general conformance with the contract documents.

Summary of Conversations:

At the beginning the shift the QA Inspector met with QC Inspector William Sherwood and discussed the welders assignments and locations for the shift to include pending issues, ongoing work and required testing.



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.

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