

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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012747**Date Inspected:** 18-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See 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:** OBG**Summary of Items Observed:**

CWI Inspector: Mr. Geng Wei

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

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Earlier in the day ZPMC presented QA personnel with "Notification of Witness Inspection" document #005376 item 1 that states ZPMC will complete magnetic particle inspections of OBG Edge Bracket EB3004-001 welds 1 through 4 at 1630 hours and this document states the purpose of this inspection is: "Tagging in Process". ZPMC inspection personnel appear to have inspected and marked that they had inspected a percentage of the total length of these welds and this QA Inspector performed random magnetic particle (MT) inspections on approximately 15 percent length of what had previously been inspected on each of the four welds listed above. These welds appear to comply with AWS D1.5 MT requirements. This QA Inspector observed ZPMC and ABF personnel have not marked any of the VT or MT boxes on the yellow tracking tag that is attached to either of these edge brackets. For additional information on these inspections see this QA Inspector's TL6028 Magnetic Particle Test Report and the photographs below.

ABF issued "Inspection Notification Sheet" number 03182010-1 item #2 informing QA that at 2000 hours ABF

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Inspectors will be performing ultrasonic (UT) inspections of repaired weld CA033-004 which joins deck plate to side plate of OBG segment 7AE on the crossbeam side. This QA Inspector had been told by ABF/Sense UT Inspection personnel that they had observed UT rejections at locations Y=1840, Y=1870 and Y=4170. This QA Inspector performed ultrasonic inspections at of the weld repair locations as listed on the UT report data sheets for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no additional UT rejections were observed. Items observed on this date appeared to generally comply with applicable contract documents, except for the three UT rejections identified by ABF/Sense Inspectors. Note: These inspections are being documented and tracked on "Verification Witness Request" documents and no TL-6027 UT report was issued for these inspections.

ABF issued "Inspection Notification Sheet" number 03182010-1 item #4 informing QA that at 1900 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld CA025-004 CW connection plate removed areas. This weld joins the deck plate to the edge plate on the counterweight side of OBG segment 6AW. At around 2330 hours this QA Inspector was informed by ABF/Sense UT Inspection personnel that they had not performed ultrasonic inspections of this weld. This QA Inspector did not perform ultrasonic inspections of this weld due to ABF not having completed their initial UT inspections.

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This QA Inspector observed ZPMC welder Ms. Li Jiao, stencil 049861 is using shielded metal arc welding procedure specification WPS-B-P-2112-FCM-1 to make tack welds between longitudinal diaphragms and deck plate DP3012-001. This deck plate will be installed in OBG segment 12BE. This QA Inspector observed a welding current of approximately 160 amps and Ms. Li Jiao appears to be certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is hot to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jiang Shizhen, stencil 48694 to make tack welds between longitudinal diaphragms and deck plate DP3012-001. This deck plate will be installed in OBG segment 12BE. This QA Inspector observed a welding current of approximately 160 amps and Mr. Jiang Shizhen appears to be certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is hot to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 is using flux cored welding procedure WPS-B-T-2132 to make OBG weld SEG073B-002. This weld is located between a longitudinal diaphragm and OBG segment 11EW deck plate DP3053-001. This QA Inspector measured a welding current of approximately 230 amps and 26.3 volts. This QA Inspector observed Ms. Hue Junrong appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

14 this QA Inspector observed ZPMC welder Mr. Lv Fengbao, stencil 045175 is using flux cored welding procedure WPS-B-T-2132 to make OBG weld SEG3005F-038 through SEG3005F-055. These welds are located between a longitudinal diaphragm and OBG segment 11EW deck plate DP3051-001. This QA Inspector measured a welding current of approximately 210 amps and 27.0 volts. This QA Inspector observed Mr. Lv Fengbao

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appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Changming, stencil 047864 is using shielded metal arc welding procedure specification WPS-B-P-2214-TC-U4b-FCM-1 to complete weld SEG3005E-017 between panel point 114, OBG segment 12BW floor beam brace and longitudinal diaphragm LD3021-001. This QA Inspector observed Mr. Wang Changming stopped welding shortly after this QA Inspector arrived in the vicinity where Mr. Wang Changming had been welding. This QA Inspector asked ZPMC QC Inspector Mr. Tao Wei if he had welding documentation for this welder. Mr. Tao Wei showed this QA Inspector a ZPMC/QC welding inspection sheet that lists the welder and weld as noted above, and this inspection sheet did not list any welding current or voltage readings for Mr. Changming. This QA Inspector asked Mr. Tao Wei why QC personnel had not documented any welding attributes for this welder and Mr. Tao Wei did not appear to understand English. ABF representative Mr. Li Hao informed this QA Inspector that Mr. Tao Wei had informed him that the welding current meter that they had been using was broken and they had not been able to perform any welding current measurements. Mr. Li Hao said he will ensure QC personnel have a welding current measurement meter tomorrow night. Items observed on this date do not fully appear to comply with applicable contract documents.



Summary of Conversations:

See Above.

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 Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
