

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 #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018709**Date Inspected:** 16-Nov-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 Inspectors: Mr. Liu Yang, Mr. Wang Jiang Hua, Mr. Lv Li Qing, 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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This QA Inspector observed ZPMC welder Mr. Han Lin stencil 062782 used flux cored welding procedure WPS-345-FCAW-3G(3F)-FCM-Repair to make repairs to OBG segment 14AE grillage weld SA7038-0037. ZPMC CWI Mr. Lv Li Qing presented this QA Inspector with weld repair document B-WR-17069 that documents the repair of this weld. This QA Inspector measured a welding current of approximately 215 amps and 26.0 volts. This QA Inspector observed Mr. Han Lin appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Shi Yan, stencil 068920 used flux cored welding procedure WPS-345-FCAW-3G(3F)-FCM-Repair to make repairs to OBG segment 14AE grillage weld SA7038-0032. ZPMC CWI Mr. Lv Li Qing presented this QA Inspector with weld repair document B-WR-17078 that documents the repair of this weld. This QA Inspector observed the welding parameters recorded by Mr. Lv Li Qing appeared

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to comply with project specifications. This QA Inspector observed Mr. Shi Yan appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Ms. Huang Jian, stencil 069841 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E anchor plate grillage welds AP3031-001-572 and AP3031-001-573. This QA Inspector measured a welding current of approximately 220 amps and 23.0 volts. This QA Inspector observed Ms. Huang Jian appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yang Hong Jun, stencil 070254 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-434 and AP3031-001-435 along with other similar stiffener plate welds. This QA Inspector measured a welding current of approximately 245 amps and 20.0 volts. This QA Inspector observed that the WPS lists a maximum welding current of 223.2 amps and a minimum of 23.9 volts and that Mr. Yang Hong Jun had a welding current that was approximately 30 amps above this maximum limit and a voltage that was approximately 4 volts below the minimum. This QA Inspector showed ZPMC QC Inspector Mr. Zang Ling the welding current and voltage meters and he agreed the parameters were outside the WPS requirements. Mr. Yang Hong Jun then adjusted the welding machine to have a welding current of approximately 220 amps and 26 volts. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding current, items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Dong Chang Xi, stencil 070046 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-948 and AP3031-001-949 along with other similar stiffener plate welds. This QA Inspector observed a welding current of approximately 240 amps and 24 volts. This QA Inspector observed that the maximum welding current in the WPS is 223.2 amps and that Mr. Dong Chang Xi had a welding current that was approximately 17 amps above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Zang Ling the welding current meter and he agreed the welding current was above the maximum and the welding current was adjusted to approximately 220 amps. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding current, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhou Bin, stencil 067947 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-506 and AP3031-001-507. This QA Inspector measured a welding current of approximately 220 amps and 25.0 volts. This QA Inspector observed Mr. Zhou Bin appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld

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joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jiang Xiao Hu, stencil 066155 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F to make OBG segment 13AE weld SEG3007U-104. This QA Inspector observed a welding current of approximately 300 amps and 32.0 volts and Mr. Jiang Xiao Hu appeared 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. Liu Xiaolin, stencil 067079 used flux cored arc welding procedure specification WPS-B-T-2232-U4B-F to make OBG segment 13AE weld SEG3007K-035. This QA Inspector observed ZPMC QC has recorded a welding current of 201 amps, 25.1 volts and Mr. Liu Xiaolin appeared 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. Zhang Mingwu, stencil 066283 used flux cored welding procedure specification WPS-B-T-2233-U4B-F to make OBG segment 13AE weld SEG3007L-013. This QA Inspector observed ZPMC QC has recorded a welding current of 206 amps, 24.8 volts and Mr. Zhang Mingwu appeared 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. Shi Jiabao, stencil 068494 used flux cored welding procedure specification WPS-B-T-2233-U4B-F to make OBG segment 13AE weld SEG3007E-160. This QA Inspector observed ZPMC QC has recorded a welding current of 215 amps, 26.7 volts and Mr. Shi Jiabao appeared 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. Hong Liang, stencil 200113 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make OBG segment 13BE weld SEG3007F-098. This QA Inspector measured a welding current of approximately 160 amps, the welding electrodes were stored in a portable rod oven which was warm to the touch and Mr. Hong Liang appeared 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. Wu Cunnang, stencil 070101 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F to make OBG segment 13AE weld SEG3007T-105. This QA Inspector observed a welding current of approximately 300 amps and 34.5 volts and Mr. Wu Cunnang appeared to be certified to make this weld. This QA Inspector observed that the maximum welding voltage in the WPS is 32.5 volts and that Mr. Yang Hong Jun had a welding current that was approximately 2.0 volts above this maximum limit. This QA Inspector showed ABF CWI Mr. Yu Jiao the welding voltage meter and he agreed the welding voltage was above the maximum and the welding voltage was adjusted to approximately 32 volts. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding voltage, items observed on this date appeared to generally comply with applicable contract documents.

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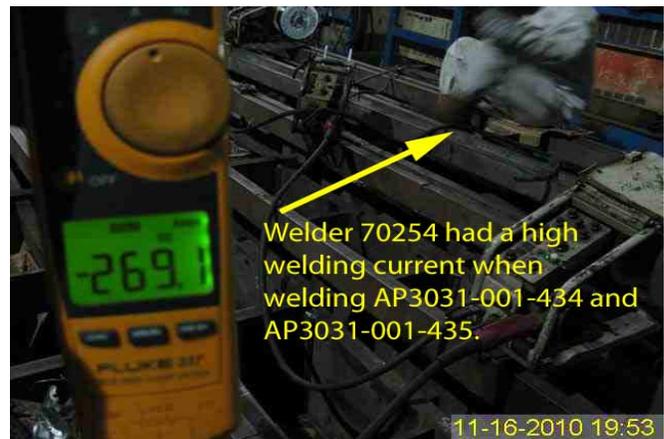
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This QA Inspector observed ZPMC welder Mr. Su Hong Biao, stencil 206296 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier welds W5-SB1-099-075 through -078. This QA Inspector observed welding current of 350 amps, 30.0 volts and Mr. Su Hong Biao appeared 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. Chu Kun Qian, stencil 218995 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier welds W5-SB1-079-082 through -087. This QA Inspector observed a welding current of approximately 320 amps. Mr. Chu Kun Qian appeared 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. Jiang Hong, stencil 220314 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier weld W5-SB1-071-082 through -087. This QA Inspector observed a welding current of approximately 320 amps and Mr. Jiang Hong appeared 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 personnel performed heat straightening of OBG traffic barrier W5-SB1-065. ZPMC has issued heat straightening document HSR #9367 for this activity. Items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.



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 James Devy +8615000026784, who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul

Quality Assurance Inspector

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Reviewed By: Carreon,Albert

QA Reviewer