

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-021308**Date Inspected:** 27-Feb-2011**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. Bao Qian

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:

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Guo Taotao stencil 050969 used shielded metal arc welding procedure specification WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make repairs of OBG segment 14E weld DP3160-001-040. ZPMC QC informed this QA Inspector that weld repair document B-WR-20272 documents this weld repair. This QA Inspector observed a welding current of approximately 180 amps, the base materials appear to have been preheated with electric heating elements and Mr. Guo Taotao 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. Yang Yunfeng, stencil 215553 used shielded metal arc welding procedure specification WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make repairs of OBG segment 14E weld DP3161-001-036. ZPMC QC informed this QA Inspector that weld repair document B-WR-20276 documents this weld repair. This QA Inspector observed a welding current of approximately 170 amps, the base materials appear to have been preheated with electric heating elements and Mr. Yang Yunfeng appeared to be certified to make this

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

This QA Inspector observed ZPMC welder Mr. Ye Bing, stencil 066733 used flux cored welding procedure specification WPS-B-T-2233-ESAB to perform OBG segment 14E welds SEG3019H-132, 139, 149 and 158. This QA Inspector observed a welding current of approximately 240 amps and 24.0 volts. This QA Inspector observed Mr. Ye Bing appeared to be certified to make these welds. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Linjiang stencil 051356 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019N-304. This QA Inspector observed a welding current of approximately 260 amps and 24.0 volts. Mr. Wang Linjiang appeared to be certified to make his weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Luo Xuanping, stencil 067610 used shielded metal arc welding procedure WPS-B-P-2114 to make OBG segment 14E weld FB3287-001-018. This QA Inspector observed a welding current of approximately 170 amps. This QA Inspector observed Mr. Luo Xuanping 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. Zhao Guanglin, stencil 044779 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)-FCM-Repair-1 to make weld repair of ultrasonic rejections to OBG segment 14E weld SEG3019W-040. ZPMC QC informed this QA Inspector that weld repair document B-WR-20244 documents this weld repair. This QA Inspector measured a welding current of approximately 150 amps and Mr. Zhao Guanglin 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 Ms. Li Jiao, stencil 049861 used shielded metal arc welding procedure specification WPS-345-SMAW-2G(2F)-FCM-1 to make tack welds in OBG segment 14E weld SEG3019C-010. This QA Inspector observed the base materials appear to have been preheated with electric heating elements and Ms. Li Jiao 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. Zhu Jibo, stencil 055564 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007J-031. This QA Inspector measured a welding current of approximately 230 amps and 24.0 volts. This QA Inspector observed Mr. Zhu Jibo 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 Wanyong stencil 050242 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007G-040. This QA Inspector measured a welding current of approximately 230 amps, 24.0 volts and Mr. Wu Wanyong appeared to be certified to make his weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yuan Wensong, stencil 055491 used flux cored welding procedure

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WPS-B-T-2232-ESAB to make OBG segment 13AE weld SEG3007L-041. This QA Inspector measured a welding current of approximately 240 amps and 24.0 volts. This QA Inspector observed Mr. Yuan Wensong 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. Kuai Wenshan, stencil 054013 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)-FCM-Repair-1 to make weld repair of ultrasonic rejections to OBG segment 14E weld SEG3019E-1-178. ZPMC QC informed this QA Inspector that weld repair document B-CWR-2650 documents this weld repair. This QA Inspector observed Mr. Kuai Wenshan 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 Min, stencil 044790 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG Segment 14E weld SA3124A-001-007. This QA Inspector observed a welding current of approximately 192 amps and 25.0 volts. The minimum welding current listed in the welding procedure specification is 222.8 amps and Mr. Huang Hongpei had a welding current that was approximately 21 amps below this minimum limit. This QA Inspector showed ABF CWI Mr. Bao Qian the welding meter and he had the welding machine adjusted to have a current of approximately 240 amps. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.

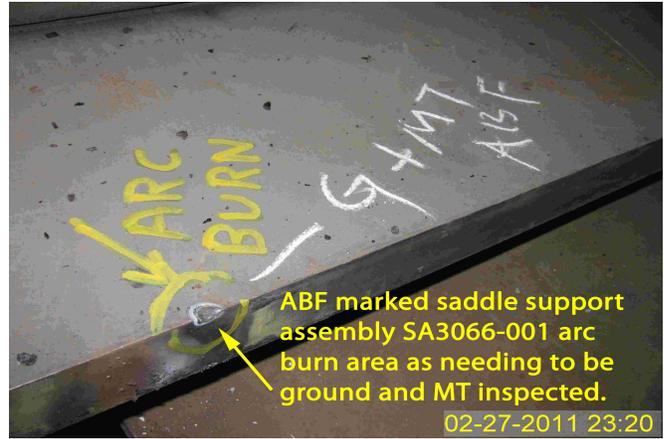
Mr. Liu Min appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Dan Deyin, stencil 044795 used flux cored welding procedure specification WPS-B-T-2232-ESAB to make OBG segment 13AE saddle support beam weld SA3066-001-004. This QA Inspector measured a welding current of approximately 320 amps, 26.5 volts and Mr. Dan Deyin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

While Mr. Dan Deyin performed welded of other welds this QA Inspector observed ZPMC had leaned a piece of scrap metal on the edge of this saddle support beam which was used as an electrical ground connection point between the top deck plate and the saddle support beam. During the welding the connection point between the scrap metal and the saddle support beam was glowing red and it created an arc burn in the edge of the saddle support beam located at approximately 450 mm from weld SA3066-001-004. This QA Inspector showed ABF CWI Mr. Bao Qian the burned area and he marked this area as needing to be ground and MT inspected. Several of the tack welds located between SA3066-001 web and the bottom flange have cracks. ABF CWI Mr. Bao Qian observed these cracks and he informed this QA Inspector that ABF Magnetic Particle Inspectors will perform MT inspections of all of these tack welds. See the photographs below for additional information.

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

Inspected By: Dawson,Paul

Quality Assurance Inspector

Reviewed By: Riley,Ken

QA Reviewer
