

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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-014871**Date Inspected:** 10-Jun-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. Gu Rong Jian, Mr. Liu Hua Jie, Mr. Wu Shi Gao, Mr. Xu Tao

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 Segment Trial Assembly

This QA Inspector observed ZPMC welder Mr. Zhang Feng, stencil 049769 is using shielded metal arc procedure WPS-345-SMAW-3G(3F)-Repair-1 to make various repair welds near the end of OBG Segment 8CE top deck plate and side plates at panel point PP71. These repair welds appear to be made to resolve visual rejections. This QA Inspector observed the base material was preheated with a torch prior to welding and Mr. Zhang Feng 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. Dou Denang, stencil 048800 is using shielded metal arc procedure WPS-345-SMAW-1G(1F)-Repair-1 to make various repair welds near the end of OBG Segment 8CE top deck plate at panel point PP71. These repair welds appear to be made to resolve visual rejections. This QA Inspector observed the base material was preheated with a torch prior to welding and Mr. Dou Denang appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract

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documents.

This QA Inspector observed ZPMC welder Mr. Chen Zheng Hua, stencil 220067 is using shielded metal arc procedure WPS-345-SMAW-1G(1F)-Repair-1 to make longitudinal diaphragm weld repairs SEG048-046 and SEG048-047 on segment 8CE. These longitudinal diaphragm welds had been identified as having rejections and weld repair document B-CWR1618 was issued to make these repairs. This QA Inspector measured a welding current of approximately 170 amps and Mr. Chen Zheng Hua appears to be certified to make this weld. The weld repair document requires the base material be preheated to a minimum of 160 degrees Celsius prior to welding and that the 160 degrees Celsius temperature be maintained throughout the welding process. After the welding is complete the weld temperature is to be held to a minimum of 160 degrees Celsius for a period of time then reduced in a controlled manner. This QA Inspector observed ZPMC QC used a 100 degree Celsius temperature indicating crayon to monitor the base material temperature and it appears that the base material near one end of the weld is below 100 degree Celsius and the CWR requires a minimum base material temperature of degrees Celsius. ZPMC QC and CWI Inspector Mr. Gu Rong Jian explained to this QA Inspector that the base material near the weld had cooled as the weld was being ground and that they will reinstall electric heaters on the weld and keep it at a minimum of 160 degrees Celsius. Items observed on this date do not fully appear to comply with applicable contract documents. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Mr. Wang Chang Ming, stencil 047864 is using shielded metal arc welding procedure specification WPS-345-SMAW-1G(1F)-FCM-Repair-1 to complete OBG segment 8AW to 8BW bottom plate weld OBW8B-003. This weld had been identified as having ultrasonic rejections and weld repair document B-CWR1592 was issued to make this repair. This QA Inspector measured a welding current of approximately 170 amps, the welding electrodes are being stored in a portable electrode storage oven that is warm to the touch and Mr. Wang Chang Ming appears to be certified to perform this welding. Later in the shift ZPMC CWI Mr. Liu Hua Jie informed this QA Inspector that Mr. Wang Chang Ming has completed welding of critical weld repair CWR1597 on the exterior of weld OBW8B-003 and that he had measured Mr. Wang Chang Ming to have a welding current of 160 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xu Fubao, stencil 200569 is using shielded metal arc process to perform tack welding of temporary alignment plates between the deck plate and segment 9AW counterweight corner assembly. This QA Inspector observed Mr. Wang Fu Peng appears to be certified to make these welds. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container and a torch was used to preheat the base material prior to welding. Items observed on this date appeared to comply with applicable contract documents.

OBG Segments located in the yard behind bays 14 and 15

This QA Inspector observed ZPMC welder Mr. Wang Zhenbing, stencil 216086 is using shielded metal welding procedure WPS-345-SMAW-2G(2F)-Repair-1 to make OBG segment 11AE weld repair CA081-004 between the side plate and the corner assembly. This weld had ultrasonic rejections and is being repaired as directed by weld repair document B-CWR1599. This QA Inspector observed Mr. Wang Zhenbing appears to be certified to make this weld. This QA Inspector measured a welding current of approximately 155 amps and the base material was preheated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable

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contract documents.

This QA Inspector observed ZPMC welder Mr. Li Jun, stencil 051348 is using shielded metal arc welding process to make weld repair SEG073*-009 on the OBG segment 11EW between panel points PP107 and PP108. This weld had ultrasonic rejections and is being repaired as directed by weld repair document B-WR13518. This QA Inspector observed a welding current of approximately 145 amps, Mr. Li Jun appears to be certified to make this weld and that the base material had been preheated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 has recently completed using flux cored welding procedure WPS-B-T-2231-TC-U4b-FCM to make OBG segment weld SEG3004J-030. This QA Inspector observed ZPMC CWI Mr. Wu Shi Gao has recorded a welding current of 330 amps and 30.8 volts and Ms. Hue Junrong 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. Ji Yi, stencil 045268 is using shielded metal arc welding procedure WPS-345-SMAW-4G(4F)-FCM-Repair to make repair welds of visual rejections on diaphragm to closed rib welds on OBG Segment 11DW at panel point PP106. This QA Inspector observed Mr. Ji Yi appears to be certified to make these welds, the base material is being preheated with a torch prior to welding and the welding electrodes are being stored in a portable electrode storage oven that appears to be connected to an electrical power supply. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 16

This QA Inspector observed ZPMC welder Ms. Wang Lanying, stencil 045265 is using submerged arc welding procedure WPS-B-T-2221-B-U3C-S-2 to make OBG segment 13AW weld BP3364C-001-003 between plates PL3364C and PL3363C. This QA Inspector observed ZPMC CWI Mr. Xu Tao has recorded a welding current of 712 amps and 32.5 volts and Ms. Wang Lanying appears to be certified to make this weld. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.



Summary of Conversations:

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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
