

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-019002**Date Inspected:** 28-Dec-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. Sheng Qing Quan, Mr. Lv Li Qing

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.

OBG Bay 14

Segments 13E and 14E

This QA Inspector observed ZPMC welder Mr. Chen Mingliu, stencil 204339 used shielded metal arc welding procedure specification WPS-345-SMAW-2G(2F)-Repair to perform weld repairs of visual rejections of OBG segment 13BE flange subassembly welds. This QA Inspector measured a welding current of approximately 150 amps, the welding electrodes were stored in a portable heated oven and ZPMC workers used an acetylene torch to preheat the base materials prior to welding. Mr. Chen Mingliu 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-345-SMAW-4G(4F)-Repair to make repairs of OBG segment 13AE weld SEG3007T-159B. This weld had been ultrasonically rejected and was repaired in accordance with weld repair document B-WR19435. This QA Inspector observed ZPMC QC recorded the depth of the repair was 10mm, Mr.

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Hong Liang had a welding current of 154 amps, 24.8 volts and a travel speed of 115mm per minute. This QA Inspector measured a welding current of approximately 145 amps 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 Wanyong stencil 050242 used flux cored welding procedure WPS-B-T-2132-ESAB to make OBG segment 13AE welds SEG3007M-113 and 114. ZPMC QC had recorded a welding current of 303 amps, 25.9 volts and a welding travel speed of 312 mm per minute. This QA Inspector measured a welding current of approximately 260 amps and 26.5 volts. 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. Wang Zhengbin, stencil 216086 used shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-FCM-Repair to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007K-038. ZPMC has issued weld repair document B-WR-19131 that documents the repair of this weld. ZPMC QC had recorded a welding current of 172 amps, 25.3 volts and a welding travel speed of 127 mm per minute. This QA Inspector observed Mr. Wang Zhengbin 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. Hu Den Jiang, stencil 067877 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007K-038. ZPMC QC had recorded a welding current of 172 amps, 25.3 volts and a welding travel speed of 127 mm per minute. This QA Inspector observed Mr. Hu Den Jiang 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 WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019AG-003. This QA Inspector observed ZPMC QC had recorded a welding current of 252 amps, 25.8 volts and a welding travel speed of 150mm per minute. This QA Inspector observed 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. Ye Bing stencil 066733 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019AG-004. This QA Inspector observed ZPMC QC has recorded a welding current of 252 amps, 25.8 volts and a welding travel speed of 144mm per minute. This QA Inspector observed Mr. Ye Bing 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. Jin Rong, stencil 066471 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019AA-025. ZPMC QC had recorded a welding current of 260 amps, 26.5 volts and a welding travel speed of 146mm per minute. This QA Inspector measured a welding current of approximately 240 amps, 26.5 volts and a welding travel speed of approximately 140mm per minute. This QA Inspector observed Mr. Jin Rong 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. Gao Yuling stencil 217805 used flux cored welding procedure

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WPS-B-T-2133-ESAB to make OBG segment 14E welds SEG3019S-283 and 284. This QA Inspector observed ZPMC QC had recorded a welding current of 260amps, 26.3 volts and a welding travel speed of 144mm per minute. This QA Inspector observed Ms. Gao Yuling 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. Chen Chuanzong, stencil 044824 used flux cored welding procedure specification WPS-B-T-2232-ESAB to make OBG segment 14E weld SEG3019D-1-323. This QA Inspector observed ZPMC QC recorded a welding of 303 amps, 26.0 volts and a welding travel speed of 320mm per minute. This QA Inspector observed Mr. Chen Chuanzong 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 Kaige, stencil 044830 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019E-1-182. This QA Inspector observed ZPMC QC had recorded a welding current of 307 amps, 26.2 volts and a travel speed of 310mm per minute. This QA Inspector observed Mr. Liu Kaige 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 Hai Jun, stencil 201087 used shielded metal arc welding procedure specification WPS-B-P-2212-TC-U4B-FCM-1 to complete weld SEG3019BB-191. This QA Inspector observed ZPMC has recorded a welding current of 171 amps 24.9 volts, a welding travel speed of 117mm per minute and Mr. Wu Hai Jun 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 stencil 069683 used flux cored welding procedure WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 14E weld SEG3009V-039. This QA Inspector observed ZPMC QC had recorded a welding current of 156 amps and 24.9 volts and a welding travel speed of 121mm per minute. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tang Xinjian stencil 066041 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13BE weld SEG3009G-195. This QA Inspector observed ZPMC has recorded a welding current of 258 amps, 25.6 volts, a welding travel speed of 141mm per minute and Mr. Tang Xinjian 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. Jian Zhou, stencil 067571 used shielded metal arc welding procedure specification WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 13BE weld SEG3009J-220. This QA Inspector observed ZPMC has recorded a welding current of 155 amps, 24.9 volts and a welding travel speed of 146mm per minute. This QA Inspector observed Mr. Jian Zhou 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. Wang Hai Yang, stencil 068994 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 14E weld SEG3019D-1-1799. ZPMC QC had recorded a welding current of 260 amps and 25.8 volts. This QA Inspector measured a welding current of approximately 270 amps, 26.0 volts and a welding travel speed of approximately 150mm per minute. This QA Inspector

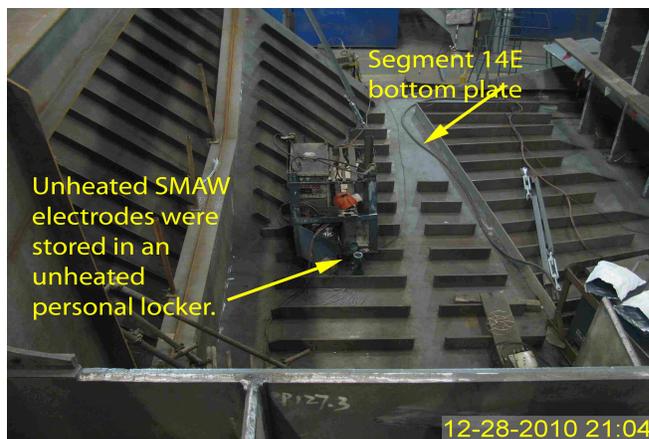
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observed the base materials adjacent to the weld melted a 230 degree Celsius temperature indicating crayon. This QA Inspector informed ABF CWI Mr. Bao Qian that the base material temperature where Mr. Wang Hai Yang was welding exceeded the maximum allowed by the WPS. Mr. Bao Qian informed Mr. Wang Hai Yang to stop additional welding until the base materials cooled below 230 degrees Celsius. Approximately 15 minutes later this QA Inspector observed the base materials adjacent to where Mr. Wang Hai Yang was welding melted a 230 degree Celsius temperature indicating crayon. This QA Inspector informed ABF CWI Mr. Bao Qian that the base material temperature where Mr. Wang Hai Yang was welding still exceeded the maximum allowed by the WPS. Mr. Bao Qian informed Mr. Wang Hai Yang to stop additional welding until the base materials cooled below 230 degrees Celsius. This QA Inspector observed Mr. Wang Hai Yang appeared to be certified to make this weld. Mr. Wang Hai Yang waited until the base materials had cooled to below 230 degree Celsius prior to additional welding.

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

This Caltrans Quality Assurance Inspector observed dayshift workers have stored approximately twenty five (25) shielded metal arc welding (SMAW) electrodes in a personal tool locker located on OBG segment 14E bottom plate near panel point PP127.3. These SMAW electrodes were stored in an unheated electrode storage container and the storage container was not connected to any electrical power cord. This QA Inspector, ZPMC CWI Mr. Lv Li Qing and ABF CWI Sheng Qing Quan felt the electrodes and the storage container and both were cold. ABF CWI Mr. Lv Li Qing stated ZPMC dayshift workers had placed these electrodes in a personal tool locker at the end of their shift. This QA Inspector informed Mr. Lv Li Qing and Mr. Sheng Qing Quan that this QA Inspector will issue a TL-15 incident report to document the improperly stored welding electrodes. See the photographs 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 Devey +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