

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-018783**Date Inspected:** 26-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. Bao Qian, Mr. Xu Tao, Mr. Liu Yang

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. Zhu Zezhou stencil 067888 used flux cored welding procedure WPS-B-T-2232-TC-U4B-F to make weld DP3107-001-076. This weld joins OBG segment 13CE longitudinal diaphragm plate to deck plate DP3107-001. This QA Inspector observed ZPMC QC has recorded a welding current of 315 amps, 30.7 volts and the base materials were preheated with an electric heater prior to welding. 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 WPS-B-T-2232-TC-U4B-F to make OBG segment 13CE weld DP3104-001-245. This weld joins an OBG longitudinal diaphragm plate to deck plate DP3104-001. This QA Inspector observed ZPMC QC Inspector Mr. Wang Xu had recorded a welding current of 315 amps, 30.5 volts. This QA Inspector observed that Mr. Dan Deyin appeared to be certified to make these welds. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Liu Min, stencil 044790 used flux cored welding procedure WPS-B-T-2132-ESAB to make welds DP3180-001-46, 47, 51, 52 and 59. These welds join OBG longitudinal diaphragm plates to deck plate DP3080-001. This QA Inspector measured a welding current of approximately 280 amps and 23.0 volts, the base materials were preheated with an electric heater and 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. Yuan Wensong, stencil 055491 used flux cored welding procedure WPS-B-T-2232-ESAB to make welds DP3180-001-46, 47, 51, 52 and 59. These welds join OBG longitudinal diaphragm plates to deck plate DP3080-001. This QA Inspector measured a welding current of approximately 320 amps and 25.0 volts, the base materials were preheated with an electric heater and 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 stencil 066041 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F to make OBG segment 13CE weld DP3102-001-248. This weld joins diaphragms to deck plate DP3102-001. This QA Inspector observed ZPMC has recorded a welding current of 305 amps, 29.7 volts and the base materials were preheated with an electric heater. 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 WPS-B-T-2132-ESAB to make welds DP3080-001-114, 115, 119, 120 and 127. These welds join OBG longitudinal diaphragm plates to deck plate DP3080-001. This QA Inspector observed ZPMC QC has recorded a welding current of 313 amps, 25.9 volts and 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. Ye Bing stencil 066733 used flux cored welding procedure specification WPS-B-T-2233-TC-U5-F to make OBG segment 13AE weld SEG3007L-046. This weld joins floor beam FB3124A to SP3069A. This QA Inspector observed ZPMC has recorded a welding current of 210 amps, 25.9 volts, the base materials were preheated with an electric heater and 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. Zhang Xiang Rong, stencil 066763 used flux cored welding procedure specification WPS-B-T-2233-TC-U5-F to make OBG segment 13AE weld SEG3007J-048. This weld joins floor beam FB3111A to SP3069A. This QA Inspector observed ZPMC has recorded a welding current of 217 amps, 26.1 volts, the base materials were preheated with an electric heater and Mr. Zhang Xiang 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 Mr. Wang Quanlin stencil 066746 used flux cored welding procedure specification WPS-B-T-2233-TC-U5-F to make OBG segment 13AE weld SEG3007G-049. This weld joins floor beam FB3127A to SP3068A. This QA Inspector observed ZPMC has recorded a welding current of 218 amps, 26.5 volts, the base materials were preheated with an electric heater and Mr. Wang Quanlin appeared to be certified to

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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 welding procedure specification WPS-B-T-2233-TC-U4B-F to make OBG segment 13AE welds SEG3007G-018 and 020. These welds join floor beam FB3120-001 to longitudinal diaphragm LD3026A. This QA Inspector observed ZPMC has recorded a welding current of 217 amps, 26.0 volts and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Quin Quan, stencil 044774 used flux cored welding procedure WPS-345-FCAW-3G(3F)-Repair to make repairs to OBG 13AE weld SEG3007H-004. ABF CWI Mr. Bao Quan presented this QA Inspector with weld repair document B-WR-17550 that did not list the depth of this repair. This QA Inspector showed Mr. Bao Quan that the weld repair document requires QC to record the depth of the weld repairs and Mr. Bao Quan then went to the location of the repairs and ZPMC QC Inspector Mr. Wang Xu then measured the depth of the weld repair to be 10 mm, and this depth was then recorded on the weld repair document. Mr. Wang Xu also recorded the depth of weld SEG3007H-002 repair B-WR-17551 to be 18 mm deep. This QA Inspector a welding current of approximately 200 amps and 25.0 volts, Mr. Zhang Quin Quan appeared to be certified to make this weld and the base materials were preheated heated with a torch. Following QC recording the depth of the gouges on the weld repair documents, items observed on this date appeared to generally comply with applicable contract documents. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Mr. Zhao Aifei stencil 067942 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F to make OBG segment 13AW weld SEG3013L-002. This QA Inspector observed ZPMC QC has recorded a welding current of 310 amps, 30.7 volts, Mr. Zhao Aifei appeared to be certified to make this weld and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 066695 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F to make OBG segment 13AW weld SEG3013G-002. This QA Inspector observed ZPMC QC has recorded a welding current of 312 amps and 31.0 volts. This QA Inspector measured a welding current of approximately 330 amps and 36 volts. This QA Inspector observed that the WPS lists a maximum welding current of 32.5 volts and that welder stencil 066695 had a welding voltage that was approximately 2.5 volts above this maximum limit. This QA Inspector showed ABF QC Mr. Wang Xu the welding voltage meter and after he confirmed the high voltage with his meter he agreed the parameters were outside the WPS requirements. Mr. Wang Xu then adjusted the welding machine to have a welding voltage approximately 31 volts. 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. Fei Cheng Fang stencil 066239 used flux cored welding procedure specification WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW weld SEG3013F-050. This QA Inspector observed ZPMC QC has recorded a welding current of 212 amps, 25.0 volts, Mr. Fei Cheng Fang appeared to be certified to make this weld and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yang TTianbing stencil 066439 used flux cored welding

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procedure specification WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW welds SEG3013T-333 and 339. This QA Inspector observed ZPMC QC has recorded a welding current of 220 amps, 26.0 volts, Mr. Yang TTianbing appeared to be certified to make this weld and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Dian Yifa stencil 068596 used flux cored welding procedure specification WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW welds SEG3013T-324 and 345. This QA Inspector observed ZPMC QC has recorded a welding current of 220 amps, 26.0 volts, Mr. Dian Yifa appeared to be certified to make this weld and the base materials were preheated with an electric heater. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 069682 used flux cored welding procedure specification WPS-B-T-2133 to make OBG segment 13AW welds SEG3013X-308 and 309. This QA Inspector observed ZPMC QC has recorded a welding current of 216 amps, 26.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Su Hong Biao, stencil 201879 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier welds W5-SB1D-014-051 through 056. This QA Inspector observed ZPMC QC Inspector Mr. Ma Qian Li had recorded a welding current of 300 amps and 30.0 volts. QA Inspector observed that 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. Jiang Hong, stencil 220314 used flux cored welding procedure WPS-B-T-2132 to make traffic barrier welds W5-SB1D-126 through 131. This QA Inspector observed ZPMC QC Inspector Mr. Ma Qian Li had recorded a welding current of 314 amps and 30.8 volts 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 welder Mr. Chu Kun Qian, stencil 218995 used flux cored welding procedure WPS-B-T-2133 to make traffic barrier welds W5-SB1-102-001 through 012. This QA Inspector observed ZPMC QC Inspector Mr. Ma Qian Li had recorded a welding current of 214 amps and 24.0 volts and 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.

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

Inspected By: Dawson,Paul

Quality Assurance Inspector

Reviewed By: Carreon,Albert

QA Reviewer