

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-018782**Date Inspected:** 18-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. Geng Wei, Mr. Yu Jiao

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 13

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 SA7038-044. ZPMC QC Inspector Mr. Wang Xu presented this QA Inspector with weld repair document B-WR-17074 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 SA7038-046. ZPMC QC Inspector Mr. Wang Xu presented this QA Inspector with weld repair document B-WR-17084 that documents the repair of this weld. This QA Inspector measured a welding current of approximately 220 amps and

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25.5 volts. 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.

This QA Inspector observed ZPMC weld repair document lists 24 grillage plate sub assembly welds are be repaired due to UT rejections. The weld repair document lists the following OBG segment 14AE grillage SA7038 repair numbers: 17066 through 17089 and ZPMC has performed welding on the following six welds: SA7038-018, 032, 037, 046, 064 and 066. ZPMC does not appear to have documented any depth of excavations, base material preheats or other welding parameters for these six welds. These complete joint penetration welds are designated as Seismic Performance Critical Material (SPCM). This QA Inspector informed CWI Mr. Geng Wei than an incident report will be issued to document lack of ZPMC QC failure to document these weld repairs. See the photographs below for additional information.

This QA Inspector observed several of the OBG segment 14AE SA7038 grillage complete joint penetration welds have been ground to a depth that exceeds 65% of the base material thickness. This QA Inspector asked ZPMC QC Inspector Mr. Wang Xu, ABF CWI Mr. Yu Jiao and ABF QC Inspector Mr. Ji Cai Feng if ZPMC has issued a critical weld repair document for these welds and Mr. Ji Cai Feng said ZPMC will process critical weld repair documents prior to welding on these weld joints. Note: This QA Inspector was not able to determine the identification of the welds that need critical weld repairs due to not having a weld map of 14AE SA7038 welds. See the photographs below for additional information.

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Huang Jian, stencil 069841 used flux cored welding procedure WPS-B-T-2133 to make weld DP3075-001-078. This weld joins OBG longitudinal diaphragm plate to deck plate DP3075A. This QA Inspector observed a welding current of approximately 220 amps and 26 volts, the base materials were preheated with electric heating elements and Mr. Huang Jian 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. Dong Chang Xi, stencil 070046 used flux cored welding procedure WPS-B-T-2133 to make weld DP3075-001-062. This weld joins OBG longitudinal diaphragm plate to deck plate DP3075A. This QA Inspector observed a welding current of approximately 210 amps and 26 volts, the base materials were preheated with electric heating elements and Mr. Dong Chang Xi 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. Zhou Bin, stencil 067947 used flux cored welding procedure WPS-B-T-2133 to make weld DP3075-001-079. This weld joins OBG longitudinal diaphragm plate to deck plate rib DP3075A. This QA Inspector observed a welding current of approximately 220 amps and 26 volts, the base materials were preheated with electric heating elements and Mr. Zhou Bin 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 Hong Jun, stencil 070254 used flux cored welding procedure WPS-B-T-2133 to make weld DP3075-001-022. This weld joins OBG longitudinal diaphragm plate to deck plate DP3075A. This QA Inspector observed a welding current of approximately 215 amps and 27 volts, the base

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materials were preheated with electric heating elements and Mr. Yang Hong 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 Mr. Tu Zhi Wu, stencil 214945 used flux cored welding procedure WPS-B-T-2133 to make weld DP3077-001-038. This weld joins OBG longitudinal diaphragm plate to deck plate rib DP3077-001. This QA Inspector observed a welding current of approximately 220 amps and 26 volts, the base materials were preheated with a torch and Mr. Tu Zhi Wu 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 WPS-B-T-2133 to make weld DP3078-001-275. This weld joins OBG longitudinal diaphragm plate to deck plate rib DP3078-001. This QA Inspector observed a welding current of approximately 210 amps and 26 volts, the base materials were preheated with a torch 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. Liu Min, stencil 044790 used flux cored welding procedure WPS-B-T-2132 to make weld DP3078-001-357. This weld joins OBG longitudinal diaphragm plate to deck plate DP3078-001. This QA Inspector observed a welding current of approximately 210 amps and 26 volts, the base materials were preheated with a torch 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. Zhu Ming Song, stencil 204339 used shielded metal arc welding procedure WPS-345-SMAW-1G(1F)-Repair to make base metal weld repairs on the weld joint between OBG segment 13AW segment 3019AY side plate SP3127A and SP3128A. ZPMC CWI Mr. Li Ming Yang showed this QA Inspector weld repair report B-WR16206 that indicates this weld repair is to correct misalignment problems. This QA Inspector observed a welding current of approximately 160 amps and Mr. Zhu Ming Song 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 Changfa, stencil 058102 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make OBG segment 13BE stiffener plate welds SEG3009D-077 through 082. This QA Inspector observed ZPMC QC Inspector Mr. Wang Xu has recorded a welding current of 150 amps and Mr. Wang Changfa 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 Jinjiu stencil 043661 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make OBG segment 13BE stiffener plate welds SEG3009D-109 through 114. This QA Inspector observed ZPMC QC Inspector Mr. Wang Xu has recorded a welding current of 152 amps and Mr. Wang Jinjiu 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 068169 used shielded metal arc welding procedure specification WPS-B-P-2212-FCM-1 to make OBG segment 13BE welds SEG3009F-068 and -069. This QA Inspector observed ZPMC QC Inspector Mr. Wang Xu has recorded a welding current of 159 amps. Items observed on this

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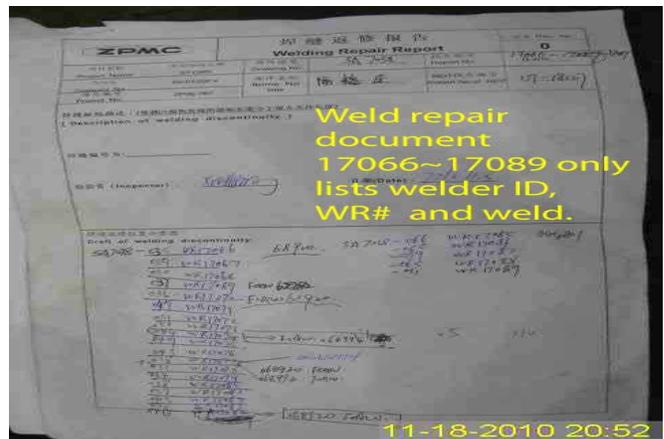
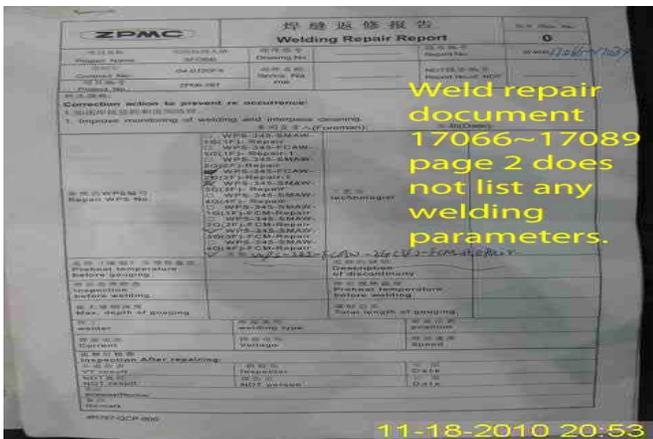
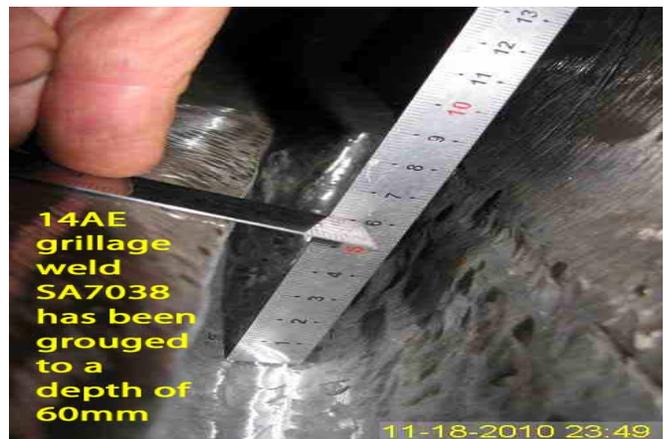
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date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 068047 used shielded metal arc welding procedure specification WPS-B-P-2214-FCM-1 to make OBG segment 13BE welds SEG3009F-109 and -113. This QA Inspector observed ZPMC QC Inspector Mr. Wang Xu has recorded a welding current of 150 amps. 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-2233-TC-P4-F to make OBG segment 13AE weld SEG3007H-106. This QA Inspector observed ZPMC QC has recorded a welding current of 211 amps, 25.3 volts and Mr. Wu Cunnang 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 Xiao Hu, stencil 066155 used flux cored welding procedure specification WPS-B-T-2233-TC-P4-F to make OBG segment 13AE weld SEG3007AX-019. This QA Inspector observed ZPMC QC has recorded a welding current of 215 amps, 25.5 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.



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 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
