DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-018708
Date Inspected: 14-Nov-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
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. Liu Yang, Mr. Li Yan Hua, 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 14

This QA Inspector observed ZPMC welder Ms. Huang Jian, stencil 069841 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E anchor plate grillage welds AP3031-001-540 and AP3031-001-542. This QA Inspector measured a welding current of approximately 215 amps and 26.0 volts. This QA Inspector observed Ms. Huang Jian 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. Yang Hong Jun, stencil 070254 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-550 and AP3031-001-434 along with other similar stiffener plate welds. This QA Inspector observed a welding current of approximately 220 amps and 28.0 volts. This QA Inspector observed that the maximum welding voltage in the WPS is 27.5 volts and that Mr. Yang Hong Jun had a welding current that was

approximately 0.5 volts above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Zang Ling the welding voltage meter and he agreed the welding voltage was above the maximum and the welding voltage was adjusted to approximately 27 volts. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding voltage, 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 procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-736 and AP3031-001-738 along with other similar stiffener plate welds. This QA Inspector observed a welding current of approximately 255 amps and 27 volts. This QA Inspector observed that the maximum welding current in the WPS is 223.2 amps and that Mr. Dong Chang Xi had a welding current that was approximately 30 amps above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Zang Ling the welding current meter and he agreed the welding current was above the maximum and the welding current was adjusted to approximately 220 amps. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. 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. Zhou Bin, stencil 067947 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-744 and AP3031-001-748. This QA Inspector measured a welding current of approximately 220 amps and 26.0 volts. This QA Inspector observed Mr. Zhou Bin 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. Sun Lingling, stencil 048047 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-F to make OBG segment 13AE weld SEG3007P-259. This QA Inspector observed a welding current of approximately 160 amps and Mr. Sun Lingling 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-2213-TC-U4B-FCM-1 to make OBG segment 13AE weld SEG3007Q-157. This QA Inspector observed a welding current of approximately 160 amps 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 Mr. Liu Min, stencil 044790 used flux cored welding procedure WPS-B-T-2233-TC-U4-F to make OBG segment 13AE weld SEG3007N-245. This QA Inspector observed a welding current of approximately 220 amps, 26 volts 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 stencil 217805 used flux cored welding procedure WPS-B-T-2333-TC-P4-F to make OBG segment 13AE weld SEG3007M-190. This QA Inspector observed a

welding current of approximately 288 amps and 30.2 volts. This QA Inspector observed a welding current of approximately 255 amps and 27 volts. This QA Inspector observed that the maximum welding current in the WPS is 223.2 amps and that Mr. Dong Chang Xi had a welding current that was approximately 30 amps above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Zang Ling the welding current meter and he agreed the welding current was above the maximum and the welding current was adjusted to approximately 220 amps. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding current, 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. Liu Xiaolin, stencil 067079 used flux cored arc welding procedure specification WPS-B-T-2332-TC-P4-F to make OBG segment 13AE weld SEG3007B-071. This QA Inspector observed a welding current of approximately 300 amps and Mr. Liu Xiaolin 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 066283 used flux cored arc welding procedure specification WPS-B-T-2332-TC-P4-F to make OBG segment 13AE weld SEG3007C-086. This QA Inspector observed a welding current of approximately 320 amps. 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 WPS-B-T-2231-TC-P4B-F to make OBG segment 14E weld SEG3019A-009. This QA Inspector observed a welding current of approximately 310 amps and 32.0 volts. This QA Inspector observed Mr. Chen Chuanzong 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 stencil 070006 used flux cored welding procedure WPS-B-T-2232-TC-U4b-F to make weld SEG3020AB-105. This weld joins OBG segment 14W longitudinal diaphragm plate to the bottom plate. This QA Inspector observed ZPMC QC Inspector Mr. Li Ping had recorded a welding current of 320 amps and 31.9 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 067520 used flux cored welding procedure WPS-B-T-2232-TC-U4b-F to make weld SEG3020AB-107. This weld joins OBG segment 14W longitudinal diaphragm plate to the bottom plate. This QA Inspector observed ZPMC QC Inspector Mr. Li Ping had recorded a welding current of 316 amps and 31.2 volts. 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-T-2232-TC-U4b-F to make weld SEG3020AB-108. This weld joins OBG segment 14W longitudinal diaphragm plate to the bottom plate. This QA Inspector observed ZPMC QC Inspector Mr. Li Ping had recorded a welding current of 325 amps and 31.8 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 066763 used flux cored welding procedure WPS-B-T-2232-TC-U4b-F to make weld SEG3020AB-109. This weld joins OBG segment 14W longitudinal diaphragm plate to the bottom plate. This QA Inspector observed ZPMC QC Inspector Mr. Li Ping had recorded a welding current of 318 amps and 31.2 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 067601 used flux cored welding procedure WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW weld SEG3013J-054. This QA Inspector observed the welding parameters recorded by ZPMC QC Inspector Mr. Li Ping appear to comply with the WPS. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 066674 used flux cored welding procedure WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW weld SEG3013H-076. This QA Inspector observed the welding parameters recorded by ZPMC QC Inspector Mr. Li Ping appear to comply with the WPS. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 067601 used flux cored welding procedure WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW weld SEG3013D-157. This QA Inspector observed the welding parameters recorded by ZPMC QC Inspector Mr. Li Ping appear to comply with the WPS. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 066733 used flux cored welding procedure WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW weld SEG3013E-162. This QA Inspector observed the welding parameters recorded by ZPMC QC Inspector Mr. Li Ping appear to comply with the WPS. Items observed on this date appeared to generally comply with applicable contract documents.

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.

WELDING INSPECTION REPORT

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Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer