

**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-018756**Date Inspected:** 15-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 Inspector: Mr. Bao Qian

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

This QA Inspector observed ZPMC welder Mr. Ye Bing stencil 066733 used flux cored welding procedure specification WPS-B-T-2231-ESAB to make OBG segment 13AE welds SEG3007T-223 and 157. ZPMC QC had recorded a welding current of 292 amps, 25.3 volts and a welding travel speed of 267 mm per minute. This QA Inspector measured a welding current of approximately 300 amps and 28.0 volts. This QA Inspector observed that the maximum welding voltage listed in the welding procedure specification is 27.5 volts and that Mr. Ye Bing had a welding voltage that was approximately 0.5 volts above the maximum limit. ZPMC QC Inspector Mr. Zhong Guo Hui observed the welding voltage and he adjusted the welding machine voltage to approximately 26 volts. This QA Inspector observed Mr. Ye Bing appeared to be certified to make this weld. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhu Jibo, stencil 055564 used flux cored welding procedure WPS-B-T-2232-ESAB to make OBG segment 13AE weld SEG3007AT-030. ZPMC QC had recorded a welding current of 282 amps, 25.4 volts and a welding travel speed of 232 mm per minute. Mr. Zhu Jibo appeared to be

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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 050242 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007V-065 and -066. ZPMC QC had recorded a welding current of 254 amps, 25.6 volts and a welding travel speed of 136 mm per minute. This QA Inspector measured a welding current of approximately 230 amps and 26.0 volts. 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 stencil 068501 used flux cored welding procedure WPS-B-T-2132-ESAB to make welds SEG3007R-094 through 113. This QA Inspector observed ZPMC QC has recorded a welding current of 291 amps and 25.4 volts and a welding travel speed of 239 mm per minute. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Fong Youjun stencil 066416 used shielded metal arc welding procedure WPS-BP-2212-TC-U4B to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007J-048. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-18553 that documents the repair of this weld. QC Inspectors have recorded a welding current of 169 amps, 25.8 volts and a welding travel speed of 118 mm per minute. This QA Inspector observed Mr. Fong Youjun 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. Duan Yangang, stencil 066422 used shielded metal arc welding procedure WPS-BP-2213-TC-U4B to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007J-048. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-18555 that documents the repair of this weld. QC Inspectors have recorded a welding current of 157 amps, 25.6 volts and a welding travel speed of 112 mm per minute. This QA Inspector observed Mr. Duan Yangang 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 Zhengbin, stencil 216086 used shielded metal arc welding procedure WPS-BP-2213-TC-U4B to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007J-048. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-19064 that documents the repair of this weld. QC Inspectors have recorded a welding current of 154 amps, 25.8 volts and a welding travel speed of 118 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. Jian Zhou, stencil 067571 used shielded metal arc welding procedure WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 13AE weld SEG3007AD-018. This QA Inspector observed ZPMC QC has recorded a welding current of 157 amps 24.7 volts and a welding travel speed of 116 mm 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.

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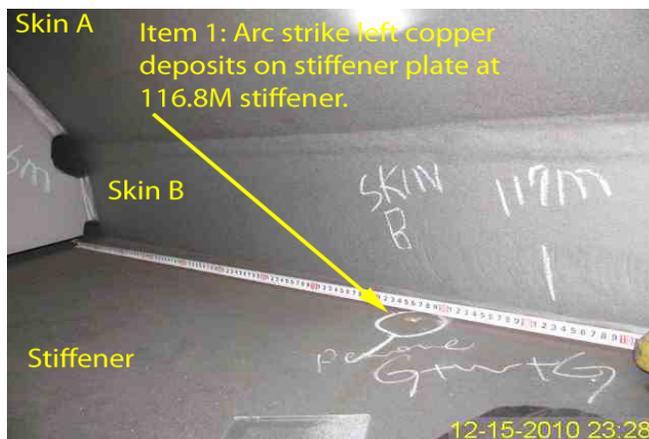
This QA Inspector observed ZPMC welder Mr. Chen Hongjun, stencil 067609 used shielded metal arc welding procedure WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 13AE weld SEG3007AD-018. This QA Inspector observed ZPMC QC has recorded a welding current of 155 amps 24.5 volts and a welding travel speed of 112 mm per minute. This QA Inspector observed Mr. Chen Hongjun 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 13AE weld SEG3007Q-192 and SEG3007G-208. This QA Inspector measured a welding current of approximately 240 amps and 24.5 volts. Mr. Jin Rong appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

## Blast shop 1

ZPMC requested Caltrans personnel to perform visual inspections of East Tower Lift 4 interior surfaces between 116 meters elevation to 131 meters on December 15, 2010 at around 22:30 hours following the initial pre-blast cleaning of the steel surfaces. This QA Inspector along with other QA Inspectors performed random visual inspections of these areas. This QA Inspector visually observed approximately 30 locations that required grinding to resolve visual weld spatter, arc strikes, shallow nicks, scrapes, and other minor surface rejections and approximately five areas that require magnetic particle inspections. This QA Inspector observed item #1 as listed below. QA Inspectors, ABF Inspectors and ZPMC Inspectors observed a total of six locations which require weld repairs. Below are the items that his QA Inspector listed on a "Blast Inspection" incident report dated December 15, 2010.

1. Arc strike / copper deposit on skin B stiffener, 116.8M elevation.
2. Arc strike / copper deposit on skin E stiffener, 123M elevation.
3. Porosity stiffener to skin plate A, adjacent to back of lower 119M double diaphragm plate, near skin AE corner.
4. Base metal pit on lower surface of 119M double diaphragm plate 520mm from skin plate C.
5. Base metal pit on center stiffener, inside of 127M double diaphragm.
6. Cracked temporary tack weld on inside of upper 127M diaphragm near skin E.



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

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer

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