

**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:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003452**Date Inspected:** 29-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**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:** Tower & OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

**OBG Bay 1:**

The QA Inspector randomly observed ZPMC welders Xiang Huan Feng ID Number 059416, Xiang Jie ID Number 059378, Gao Xin Dong ID Number 059361 and Jiang Ting Guang ID Number 062265, utilizing Gantry 1 mounted welding apparatus with the Gas Metal Arc Welding (GMAW) Process in the 2G (Horizontal Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2342-U1(U-Rib)-3, to weld the root pass of the U-Ribs to 4 Rib Deck Plate Sub-Assembly 2AE-DP588-001 at Weld Joint (WJ) Numbers DP588-001-001/002(U-267) and 005/006(U-279). The QA Inspector randomly observed ZPMC QC monitoring weld parameters (CWI Sun Wei). The QA Inspector also randomly monitored weld parameters and recorded them as follows: 363/373 amps, 30.9/30.2 volts (WJ's 001/002) for Mr. Xiang/Mr. Jiang; and 370/363 amps, 30.5/30.4 volts (WJ's 005/006) for Mr. Gao/Mr. Jiang with a travel speed of 537 millimeters (mm) per minute for all welders.

The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed two ZPMC welders utilizing the GMAW welding process in the 2G position to Tack Weld U-ribs during fit up to 5-Rib Deck Plate 2AE-DP593-001, with ZPMC WPS WPS-B-T-2342-U2(URib). The QA Inspector randomly observed ZPMC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

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The QA Inspector randomly observed a ZPMC welder utilizing the Flux Cored Arc Welding (FCAW) Process in the 3F position with ZPMC WPS WPS-B-T-2133, to tack weld 8 mm thick diaphragms for fit up into various Deck Plate U-Ribs. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed two ZPMC helpers utilizing angle grinders to blend tack welds on Deck Plate 2AE-DP603-001 prior to welding the GMAW root pass.

The QA Inspector randomly observed ZPMC welder Han Changhou ID Number 059464, utilizing the Flux Cored Arc Welding (FCAW) Process in the 3F position with ZPMC WPS WPS-B-T-2133, to weld 8 mm thick diaphragms various Deck Plate U-Ribs. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

OBG Bay 2; No contract welding being performed.

OBG Bay 3:

The QA Inspector randomly observed ZPMC welders Wei Dan Shuai ID Number 051246, Xin Meng ID Number 053742 and Li Zhao Qian ID Number 048810, utilizing gantry mounted welding apparatus with the FCAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2132-3, to weld T-Ribs to Bottom Plate Sub-Assembly BP188-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 302/297 amps, 29.8/30.2 volts (WJ's O45/046) for Mr. Wei; 297/299 amps, 30.2/29.7 volts (WJ 049/050) for Mr. Xin and 301/297 amps, 29.8/30.2 volts (WJ 053/054) with a travel speed of 446 mm per minute for all welders. The weld parameters appeared to comply with contract requirements.

OBG Bay 4:

The QA Inspector randomly observed ZPMC welders ID Numbers 037705, 066401 and 066239 utilizing the FCAW Process in the 3G (Vertical Groove) Position with ZPMC WPS WPS-B-T-2233-U3-F, to weld the butt splice of 23M Top Tower Diaphragm Flange Plate Assembly ESD1-SA238. The QA Inspector randomly observed ZPMC CWI Yi Yong Jun monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 215 amps, 26 volts, travel speed 118 mm/min for welder ID 037705 (WJ 11A); 216 amps, 26 volts, travel speed 118 mm/min for ID 066401 (WJ 7A) and 217 amps, 26 volts, travel speed 117 mm/min for welder ID 066239 (WJ 9A). The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welders ID Numbers 037705, 066401 and 066239 utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-3312-TC-P5, to weld the 43M South Tower Diaphragm Flange Plate Assembly SSD1-SA27 into the Tower Diaphragm at WJ SSD1-SA27B/B-5. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

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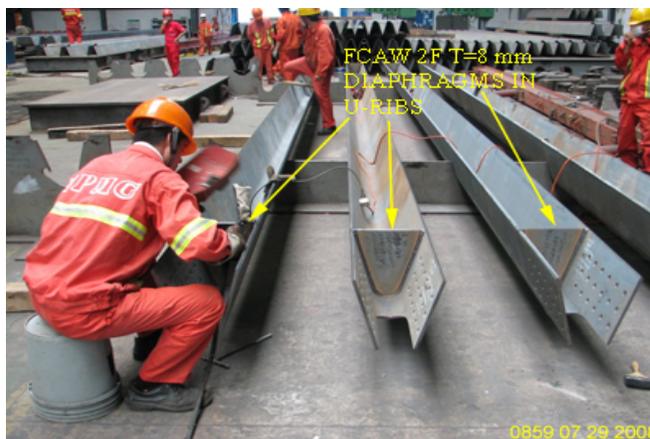
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## OBG Bay 7:

The QA Inspector randomly observed ZPMC welders Chen Chuan Zong ID Number 044824 and Hong Shui Li ID Number 044815, utilizing the FCAW Process in the 1G/2F (Flat Groove/Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2231-B-U2-F, to weld the flanges at the splice between Floor Beam Sub-Assemblies FB023-001 and FB024-001. The QA Inspector randomly observed ZPMC CWI Huan Wen Pang monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 307 amps, 30.8 volts, travel speed 324 mm/min for Mr. Hong (WJ FB024-001-125) and 312 amps, 30.6 volts, travel speed 325 mm/min for Mr. Chen (WJ FB023-001-125). The attached photograph provides additional detail.

## Bay 8:

The QA Inspector randomly observed ZPMC welder Jiang Yong Sheng ID Number 045240 utilizing the FCAW Process in the 3G (Vertical Groove) Position with ZPMC WPS WPS-B-T-2233-U3-F, to weld the butt splice of Tower Diaphragm Flange Plate Assembly ESD1-SA301 at WJ 7B. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The weld parameters appeared to comply with contract requirements.



## Summary of Conversations:

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As noted in the above body of this report.

## **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 Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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

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