

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-002088**Date Inspected:** 03-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 800**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 and Tower**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).

**New OBG:**

The QA Inspector randomly observed ZPMC welder Wang Lanying ID Number 045265, utilizing the Submerged Arc Welding (SAW) Process in the 1G (Flat Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-3221-B-U3c-S-1, to weld the fill pass on Weld Joint (WJ) Number SEG013A-001 on Side Plate Sub-Assembly SP009-001 to SP017-001. The QA Inspector randomly observed ZPMC CWI Chen Chih-Ming monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

**Bay 1 OBG:**

The QA Inspector randomly observed ZPMC welder Zhao Cheng Shuang ID Number 059400, utilizing the Flux Cored Arc Welding (FCAW) Process in the 3G (Vertical Groove) Position with ZPMC WPS WPS-B-T-2233-U2-F, to weld a butt splice in a closed rib for Deck Plate DP052-001 at WJ 015. The QA Inspector randomly observed ZPMC CWI Sun Wei, monitoring weld parameters. Weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Xiao Dianbin ID Number 059440, utilizing the Gas Metal Arc Welding (GMAW) Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2342-U2

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(Urib), to tack weld U-Ribs U-3, U-11 and U-44 to Deck Plate DP440-001 at WJ's 001 through 006. The QA Inspector randomly observed ZPMC CWI Sun Wei monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Song Bao ID Number 037772, utilizing the GMAW Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2342-U2 (Urib), to tack weld U-Ribs U-76, U-84 and U-87 to Deck Plate DP085-001 at WJ's 001 through 006. The QA Inspector randomly observed ZPMC CWI Sun Wei monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

### Bay 3 OBG:

The QA Inspector randomly observed ZPMC welder operators Li Zhaoqian ID Number 048810, Xin Meng ID Number 053742 Sun Ti Yu ID Number 054459 and Li Zihong ID Number 062447, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with gantry mounted welding apparatus and ZPMC WPS WPS-B-T-2132-3, to weld T-Ribs on Side Plate SP304-001 WJ Numbers 016/017, 020/021, 024/025 and 028/029 respectively. The QA Inspector randomly observed ZPMC CWI Huang Wen-Pang monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 306 amps, 29.6 volts (WJ 016); 305 amps, 30.2 volts (WJ 017); 306 amps, 30.8 volts (WJ 020); 303 amps, 31.6 volts (WJ 021); 295 amps, 30.7 volts (WJ 024); 303 amps, 31.1 volts (WJ025); 292 amps, 30.6 volts (WJ 028); and 293 amps, 31.3 volts (WJ 029). Travel speed for all welds was randomly observed at 440 mm per minute. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Zhang Feng ID Number 049769, utilizing the Shielded Metal Arc Welding (SMAW) Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-P-2112, to tack weld T-Ribs to Side Plate SP424-001. The QA Inspector randomly observed ZPMC CWI Sun Wei monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 189 amps, 23.5 volts with a travel speed of 126 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Wang Zhonghua ID Number 053753, utilizing the SMAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-P-2112, to tack weld T-Ribs to Bottom Plate BP138-001. The QA Inspector randomly observed ZPMC CWI Sun Wei monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

### Bay 4 Tower:

The QA Inspector randomly observed ZPMC welder Jiang Jing Teng ID Number 046830, utilizing the SAW Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-3221-B-U3c-S-1, to weld the fill pass in WJ ESD1-SA317-3B/4B on 38M BTM Tower Diaphragm Sub-Assembly SA317(E) to p831(E). The QA Inspector randomly observed ZPMC CWI Ye Yongjun monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 628 amps, 31 volts with a travel speed of 483 mm per minute. The weld parameters appeared to comply with contract requirements.

### Bay 7 OBG:

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The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-L3c-S-1, to weld the fill and cover pass on butt splices of various Floor Beam Diaphragm ( T=30 mm to T=12 mm) Web Sub-Assemblies. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 536 amps, 29.7 volts with a travel speed of 422 mm per minute. Weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Chen Chuan Zong ID Number 044824, utilizing the FCAW Process in the 3F (Vertical Fillet) Position with ZPMC WPS WPS-B-T-2133, to weld cross stiffener X3M to Flange X6A on Floor Beam Diaphragm Sub-Assembly FB003-18. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Liu Long Xian ID Number 044785, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2132-3, to weld gusset stiffeners to the web on Floor Beam Diaphragm Sub-Assembly FB003-20. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

Bay 8 Tower:

The QA Inspector randomly observed ZPMC welder Xu Pei Pei ID Number 050323, utilizing the SAW Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-3221-B-U3c-S-1, to weld the fill pass in WJ ESD1-SA309-11A/12A on Tower Diaphragm Sub-Assembly SA293(S). The QA Inspector randomly observed ZPMC CWI Sha Zhi monitoring weld parameters. The weld parameters appeared to comply with contract requirements.

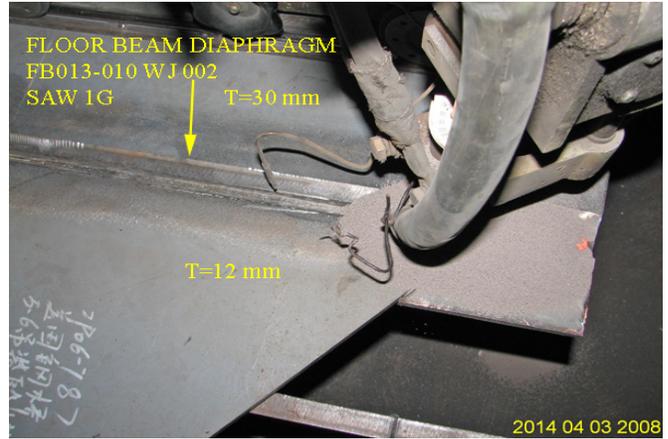
The QA Inspector randomly observed ZPMC welder Ma Ying ID Number 045270, utilizing the SAW Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-3221-B-U3c-S-1, to weld the fill pass in WJ WSD1-SA32A/B-10b on 47.6M Tower Diaphragm Sub-Assembly SA32(W) to p1424(W). The QA Inspector randomly observed ZPMC CWI Sha Zhi monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 628 amps, 30.2 volts with a travel speed of 483 mm per minute. The weld parameters appeared to comply with contract requirements.

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## Summary of Conversations:

There were no relevant conversations.

## 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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**Inspected By:** Franco,Charlie

Quality Assurance Inspector

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**Reviewed By:** Hager,Craig

QA Reviewer