

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-001065**Date Inspected:** 11-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 730**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**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:**

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 Orthotropic Box Girders (OBG).

Bay 7 OBG:

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at Weld Joint (WJ) FB008-05-023. The QA Inspector observed ZPMC CWI Zhang Zhong monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 527 amps, welding voltage 31.4 volts with a travel speed of 408 millimeters (mm) per minute. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.

The QA Inspector was informed by Caltrans Task Leader Jim Cochran that he had randomly observed a crack in a repair to the Flux Cored Arc Welded (FCAW) root pass in a Floor Beam Section at WJ FB001-04-021. The QA Inspector also observed a crack in a second FCAW repair to the root pass in WJ FB001-04-021. The cracks were ground out and Magnetic Particle Testing (MT) was performed on the excavations by ZPMC Non-Destructive Technician Zhou Dongyun. The cracks appeared to have been removed. The QA Inspector did not observe the excavations or the MT. The attached photograph provides additional detail prior to the removal of the cracks.

The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW

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Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at WJ FB007-04-021. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 507 amps, welding voltage 31.2 volts with a travel speed of 457 mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at Weld Joint (WJ) FB007-06-021. The QA Inspector observed ZPMC CWI Zhang Zhong monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 525 amps, welding voltage 30.9 volts with a travel speed of 384mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector observed ZPMC welder Hu Yacheng ID Number 049339, utilizing the Shielded Metal Arc welding (SMAW) Process, to attach lifting lugs to various Floor Beam Sub-Assemblies. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at WJ FB002-04-023. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: 537 amps, 32 volts with a travel speed of 450 mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed ZPMC welder Wang Min ID Number 048296, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at WJ FB007-05-021. The QA Inspector observed ZPMC CWI Zhang Zhong monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 531 amps, welding voltage 31.6 volts with a travel speed of 390mm per minute. The QA Inspector randomly observed that at the end of one of the fill passes, the SAW welding apparatus blew through the the tip of the run off tab and that there was an area of underfill prior to the blow through. Welding was discontinued at that point to allow for the removal and replacement of the blown through run off tab. Weld parameters appeared to comply with the above approved ZPMC WPS. The attached photograph provides additional information.

The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at WJ FB016-04-021. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: 508 amps, 31.7 volts with a travel speed of 405mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

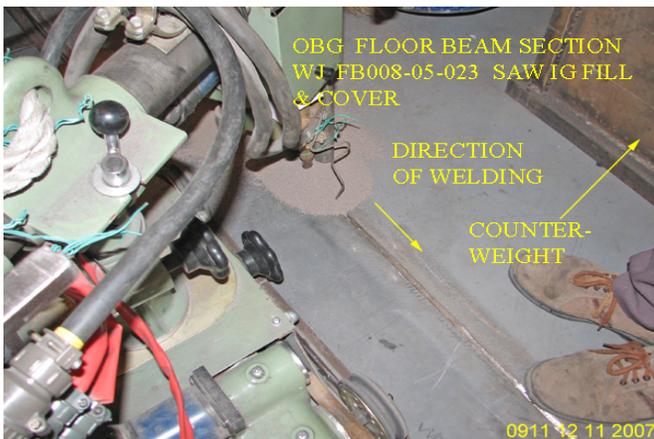
The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW

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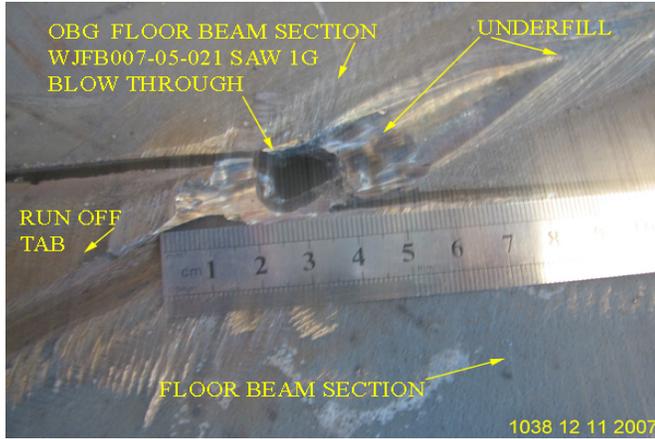
Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at WJ FB022-01-108. Huang Xin Lan was just completing the cover pass as the QA Inspector arrived. There were no parameters observed.

The QA Inspector randomly observed ZPMC welder Huang Xin Lan ID Number 044780, utilizing the SAW Process with approved ZPMC WPS WPS-B-P-2221-B-L2c-S-1 in the 1G position to weld the fill and cover passes on Floor Beam Sections at WJ FB026-01-108. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: 506 amps, 31.2 volts with a travel speed of 450 mm per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.



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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.

Inspected By:	Franco,Charlie	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer
