

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-007788**Date Inspected:** 11-Jul-2009**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:** Guo Yan Fei, Yu Dong Ping**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**Summary of Items Observed:**

The Caltrans (CT) 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).

Heavy Equipment Shop Bay 10:

The QA Inspector randomly observed 2 ZPMC production personnel utilizing the Carbon Air Arc Gouging (CAAG) Process to back gouge the outside of the long seam weld between Skin Plates C and D on Lift 3 South Tower.

The QA Inspector randomly observed ZPMC welders ID 207745 and ID 050295 on the top of Lift 3 South Tower utilizing the Submerged Arc Welding (SAW) Process in the 1G (Flat Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2221-C-U2b-S-2, to weld the long seam between Skin Plates B and C at Weld Joint (WJ) SSSL3-1B/K-82B. The QA Inspector randomly observed ZPMC Quality Control (QC) monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 671 amps, 31.7 volts with a travel speed of 500 mm per minute for welder ID 050295 and 680 amps, 31.6 volts with a travel speed of 500 mm per minute for welder ID 207745. Weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welders ID 051413 and ID 0503060 on the top of Lift 3 South Tower utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-L2c-S-2, to weld

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

the long seam between Skin Plates A and B at WJ SSTL3-1B/K-83B. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 673 amps, 32 volts with a travel speed of 510 mm per minute for welder ID 0503060 and 662 amps, 31.8 volts with a travel speed of 490 mm per minute for welder ID 051413. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welders ID's 050038, 050289 and 053050, utilizing the Shielded Metal Arc Welding (SMAW) Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-3312-TC-P4, to weld stiffeners to the web plates between the Upper and Lower Diaphragms at elevations 89M, 99M and 109M in Lift 3 South Tower at WJ's SSTL3-1C/K-83, SSTL3-1G/K-85 and SSTL3-1I/K-73. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The attached photograph provides additional detail.

Heavy Equipment Shop Bay 11:

The QA Inspector performed a 100% Visual Testing (VT) Inspection and a 15% Magnetic Particle Testing (MT) Verification of the inside and outside terminations of the 3 seam welds the South Tower Base Plate at WJ's SSD1-A111B/H-1, 2 and 3 per ZPMC NDT Notification Sheet 003592 and signed off on the Green Tag Documentation for same. There appeared to be no indications and the QA Inspector accepted the above listed welds.

The QA Inspector randomly observed ZPMC welder Cao Xiao Hua ID 056975, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-4221-B-U3c-S-1, to weld the seam between flange sections for a West Tower shear link strut spare at WJ WD1-A6003-8-2B. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder ID 047304, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-4221-B-U3c-S-1, to weld the seam between A 90 mm Grade 485 base metal section to a 90 mm + 60 mm 345 base metal section, of Lift 4 West Tower Skin Plate D at WJ WSD1-FDSA4A/D-14B. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 605 amps, 31 volts with a travel speed of 500 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder ID 04560, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld the seam between sections piece marks LS4-22 and LS4-33 of Lift 4 West Tower Skin Plate B Longitudinal Stiffener B2 at WJ WSD1-FBSAA/C-57B. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welders ID 066683 and ID 068493, utilizing the Flux Cored Arc Welding (FCAW) Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-4332-TC-P4-F, to weld doubler plates to Lift 4 East Tower Skin Plate A at WJ's ESD1-FASA4-2B/E-15 and ESD1-FASA4-2B/E-12 respectively. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

WELDING INSPECTION REPORT

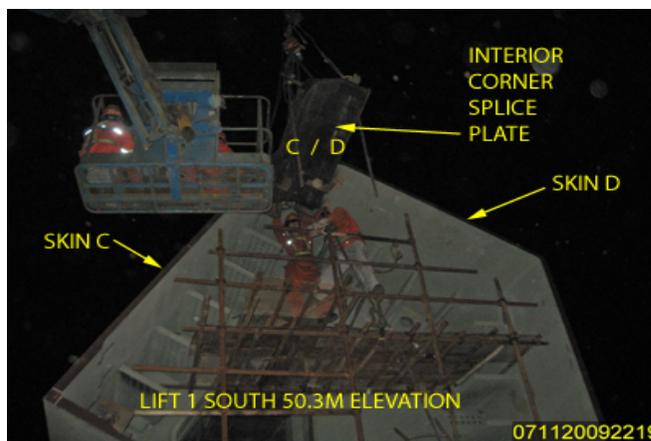
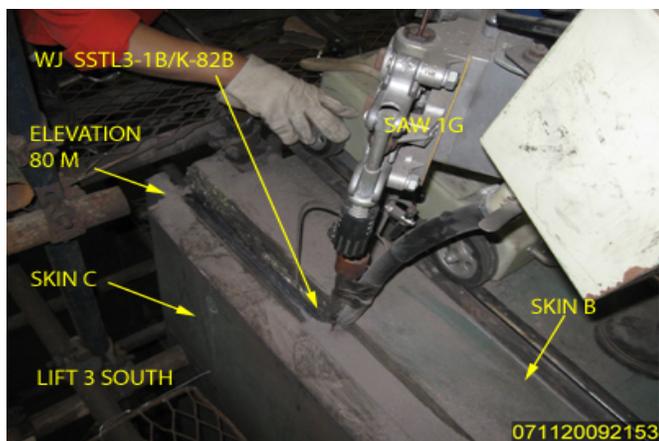
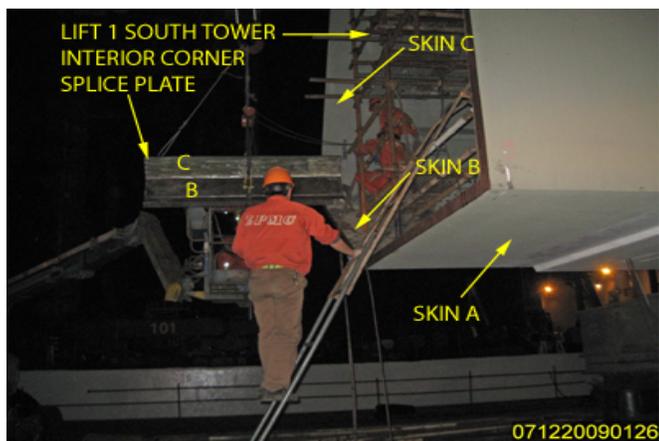
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The QA Inspector randomly observed 2 ZPMC welders utilizing the Carbon Air Arc Gouging (CAAG) Process to back gouge the welds attaching Longitudinal Stiffeners E-1 and E-2 to Lift 4 East Tower Skin Plate E. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

End of Pier:

The QA Inspector randomly observed ZPMC production personnel installing the interior corner splice plates over the corner seams between Skin Plates B/C and Skin Plates C/D on Lift 1 South Tower Shaft at the 50.30 M elevation. The attached photographs provide additional detail.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



Summary of Conversations:

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 Serge Sinevod 13482570045, who represents the Office of Structural Materials for

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

your project.

Inspected By:	Franco,Charlie	Quality Assurance Inspector
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Reviewed By:	Clifford,William	QA Reviewer
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