

**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-007500**Date Inspected:** 11-Jun-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Le Feng, Liu Yang**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).

**Outside Yard at Vertical Mill:**

The QA Inspector randomly observed that vertical mill was idle and that no milling was being performed in either Lift 1 East or Lift 2 East.

The QA Inspector randomly observed that no contract work was being performed in Lift 1 East, Lift 2 East or Lift 2 South.

**Heavy Equipment Shop Bay 11:**

The QA Inspector randomly observed ZPMC welder Hua Gui Mei ID 050295, 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 Plate A and Skin Plate E on Lift 2 North Tower Shaft at Weld Joint (WJ) NSD1-TL8B/L-1A. The QA Inspector randomly observed ZPMC Quality Control monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 670 amps, 31.3 volts with a travel speed of 522 millimeters (mm) per minute. Weld parameters appeared to comply with contract requirements.

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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The QA Inspector randomly observed ZPMC welder Lu Hai Xian ID 040252, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-C-U2b-S-2 to weld the long seam between Skin Plate A and Skin Plate E on Lift 2 North Tower Shaft at WJ NSD1-TL8B/L-1A. The QA Inspector randomly observed ZPMC Quality Control monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 673 amps, 31.5 volts with a travel speed of 527 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Liu Xiao Yan ID 207745, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-C-U2b-S-2 to weld the long seam between Skin Plate A and Skin Plate E on Lift 2 North Tower Shaft at WJ NSD1-TL8B/L-1A. The QA Inspector randomly observed ZPMC Quality Control monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 668 amps, 31.5 volts with a travel speed of 530 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Xu Kao Zhen ID 051413, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-C-U2b-S-2 to weld the long seam between Skin Plate A and Skin Plate E on Lift 2 North Tower Shaft at WJ NSD1-TL8B/L-1A. The QA Inspector randomly observed ZPMC Quality Control monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 675 amps, 31.1 volts with a travel speed of 530 mm per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector performed a 100% Visual Testing (VT) Inspection of the welds attaching Lift 2 West 65M Diaphragm to Skin Plate C and the fit lugs to 65M Diaphragm on Skin Plate C per ZPMC NDT Notification Sheet 003380. The QA Inspector observed 3 areas which required grinding. ZPMC welding personnel re-worked those 3 areas during the VT Inspection. There appeared to be no indications after the re-work and the QA Inspector accepted the above listed welds.

The QA Inspector performed a 100% VT Inspection of the welds attaching Lift 2 West 65M Diaphragm to Skin Plate B and the fit lugs to 65M Diaphragm on Skin Plate B per ZPMC NDT Notification Sheet 003380. The QA Inspector observed 2 areas which required grinding. ZPMC welding personnel re-worked those 2 areas during the VT Inspection. There appeared to be no indications after the re-work and the QA Inspector accepted the above listed welds.

The QA Inspector performed a 100% VT Inspection of the weld attaching 1 fit lug to Lift 2 West 65M Diaphragm on Skin Plate A per ZPMC NDT Notification Sheet 003380. There appeared to be no indications and the QA Inspector accepted the above listed welds.

The QA Inspector performed a 100% VT Inspection of the welds attaching 3 fit lugs to Lift 2 West 65M Diaphragm on Skin Plate D per ZPMC NDT Notification Sheet 003380. There appeared to be no indications and the QA Inspector accepted the above listed welds.

The QA Inspector attempted to perform a 100% VT Inspection of the welds attaching Lift 1 West 28M Diaphragm and 33M Diaphragm to Skin Plate B and Skin Plate C and the fit lugs to 28M and 33M Diaphragms on Skin Plate

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## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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B and Skin Plate C per ZPMC NDT Notification Sheet 003380. The QA Inspector observed several areas which will require grinding and several other areas which will require some weld repair as well as grinding. The QA Inspector informed ZPMC QC that Lift 1 West 28M Diaphragm and 33M Diaphragm to Skin Plate B and Skin Plate C and the fit lugs to 28M and 33M Diaphragms on Skin Plate B and Skin Plate C, were not ready for inspection at this time.

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 your project.

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

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