

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-007024**Date Inspected:** 31-Jan-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei / Sun Bo**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 Components**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).

OBG Sub-Assembly Bay 6:

The QA Inspector randomly observed 2 ZPMC helpers utilizing angle grinders to blend the fillet welds attaching stiffeners to Side Plate SP204-007 on Weld Joint (WJ) Numbers 001 through 012.

The QA Inspector randomly observed 1 ZPMC helper utilizing an angle grinder to blend the fillet welds attaching stiffeners to Side Plate SP496-001 on WJ's 015 through 027.

The QA Inspector randomly observed ZPMC welder Zhang Hui ID 205766, utilizing the Flux Cored Arc Welding (FCAW) Process in the 3G (Vertical Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2233-TC-U4b-F, to weld cross stiffeners on Side Plate SP213-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 210 amps, 26.4 volts with a travel speed of 110 millimeters (mm) per minute. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Zhang Hui ID 205766, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2132-3, to weld I-Ribs to Deck Plate DP523-001 at

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WJ's 013/014 and 015/016. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector performed a 100% Visual Testing (VT) Inspection and a 10% Magnetic Particle Testing (MT) Inspection of the cover passes of WJ's 001 through 014 on Side Plate SP497-001 (In Process Yellow Tag 003821). The QA Inspector signed off on the Green Tag Documentation after ZPMC Representative Chen Chih Chien and ABF Representative Peng Wen Jun. The QA Inspector observed ZPMC QC attach Green Tag Number 003910 to SP497-001.

The QA Inspector performed a 100% Visual Testing (VT) Inspection and a 10% Magnetic Particle Testing (MT) Inspection of the cover passes of WJ's 036 through 049 on Side Plate SP497-001 (In Process Yellow Tag 003820). The QA Inspector signed off on the Green Tag Documentation after ZPMC Representative Chen Chih Chien and ABF Representative Peng Wen Jun. The QA Inspector observed ZPMC QC attach Green Tag Number 003911 to SP497-001.

OBG Sub-Assembly Bay 7:

The QA Inspector randomly observed 4 torch cutting operators utilizing track mounted torch cutting apparatus to cut W18 X 46 I-Beams into T-Ribs.

The QA Inspector randomly observed ZPMC Gantry 2 welders Li Zhao Qian ID 048810, Lu Yong Yuan ID 202841 and Zhang Chong ID 205385, utilizing the FCAW Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2132-3, to weld T-Ribs to Side Plate SP776-001 at WJ's 001/002, 005/006 and 009/010 respectively. The Gantry 2 Operator was Gu Cai Hong ID 053798. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 306/304 amps, 30.4/30.1 volts (WJ's 001/002), 302/300 amps, 30/30.1 volts (WJ's 005/006) and 298/302 amps, 30.1/29.8 (WJ's 009/010) with a travel speed of 446 mm per minute. Weld parameters appeared to comply with contract requirements.

OBG Sub-Assembly Bay 12:

The QA Inspector randomly observed ZPMC welding personnel performing heat straightening operations to reduce weld induced distortion from welding the T=35 millimeter (mm) thick I-Ribs to Deck Plate 1AW-DP550-001 at Complete Joint Penetration (CJP) Weld Joint (WJ) Numbers 013, 015, 017, 019 and 021. 1AW-DP550-001 is placed upside down with heat being applied directly to the welds attaching the I-Ribs to the base plate of 1AW-DP550-001. The QA Inspector randomly observed that restraints, jacks (passive) and counter weights were being used. The work was being performed in accordance with ZPMC Heat Straightening Request (HSR) HSR(B)-248 Rev. 0.

The QA Inspector randomly observed a ZPMC Carbon Air Arc Gouging (CAAG) Operator utilizing the CAAG Process to gouge out and remove rejects detected during a previous ZPMC QC Ultrasonic Testing (UT) Examination in WJ's 009 and 011 in Deck Plate 1AW-DP540-001.

The QA Inspector randomly observed a ZPMC helper utilizing an angle grinder to blend the copes on the ends of

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the T=35 mm thick I-Ribs on Deck Plate Sub-Assembly 1AE-DP605-001.

The QA Inspector randomly observed ZPMC welder Jiang Jing Guang ID 062265, utilizing the Flux Cored Arc Welding (FCAW) Process in the 2G/2F (Horizontal Groove/Horizontal Fillet) Positions with ZPMC Weld Procedure Specification (WPS) WPS-345-FCAW-2G (2F)-Repair-1, to perform weld repairs in excavated areas of WJ 015 on Deck Plate 1AW-DP560-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed a ZPMC CAAG Operator utilizing the CAAG Process to gouge out and remove rejects detected during a previous ZPMC QC Ultrasonic Testing (UT) Examination in WJ's 013, 015, 017, 019 and 021 in Deck Plate 1AE-DP600-001.

The QA Inspector randomly observed ZPMC welding personnel performing heat straightening operations to reduce weld induced distortion from welding the T=35 mm thick I-Ribs to Deck Plate 1AE-DP615-001 at CJ WJ Numbers 011, 015, and 017. 1AE-DP615-001 is placed upside down with heat being applied directly to the welds attaching the I-Ribs to the base plate of 1AW-DP615-001. The QA Inspector randomly observed that jacks (passive) were in place, but no restraints or counter weights were being used. The work was being performed in accordance with ZPMC Heat Straightening Request (HSR) HSR(B)-251 Rev. 0.

The QA Inspector randomly observed ZPMC Non Destructive Testing (NDT) Technician Cai Xin Xin utilizing the Magnetic Particle Testing (MT) Method to examine 3 each excavations in WJ 021 prior to weld repair.

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 Eric Tsang 150-0042-2372, who represents the Office of Structural Materials for your project.

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