

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-007045**Date Inspected:** 25-Feb-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 12:

The QA Inspector randomly observed 7 magnetic drill operators and 4 helpers, utilizing magnetic drills with hole saw bits, to cut bolt holes in connection plates piece marks OBE1C-X38 (A709 GR 345 T2-X T=8), A480 (A709 GR 485 T=40) and A137 (A709 GR 485 T=40).

The QA Inspector randomly observed 3 ZPMC helpers utilizing angle grinders to blend R3 weld repairs in Weld Joint (WJ) Numbers 009, 011 and 013 attaching T=35 millimeter (mm) I-Ribs to the base plate (2G/2F) on Deck Plate 1AW-DP540-001.

The QA Inspector randomly observed 1 ZPMC helper utilizing an angle grinder to blend the cover pass on the seam welds attaching U-Rib Extensions to the U-Ribs (2G/2F) on Deck Plate 1AE-DP595-001.

The QA Inspector randomly observed excavations in the 30 mm radius copes at the ends of the welds attaching T=35 mm I-Ribs to the base plate on Deck Plate 1AW-DP565-001 at WJ's 011 and 019. The attached photographs provide additional detail.

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The QA Inspector randomly observed ZPMC welder Liu Xie ID 066236, utilizing the Shielded Metal Arc Welding (SMAW) Process in the 2G (Horizontal Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-345-SMAW-2G(2F)Repair-1 to weld R5 repairs to WJ's 011 and 013, attaching T=35 mm I-Ribs to the base plate on Deck Plate 1AW-DP540-001. 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 Xia Jun ID 068253 and Jiang Jin Yong ID 060361, utilizing the SMAW Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-345-SMAW-2G(2F)Repair-1 to weld R2 repairs to WJ's 015 and 011 respectively, attaching T=35 mm I-Ribs to the base plate on Deck Plate 1AW-DP555-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed 1 ZPMC helper utilizing a pencil grinder to shape the copes at the seam welds attaching U-Rib Extensions to the U-Ribs (2G/2F) on Deck Plate 1AE-DP595-001.

The QA Inspector randomly observed 1 ZPMC helper utilizing an angle grinder to clean out excavations after Carbon Air Arc Gouging (CAAG) for repairs in the welds attaching T=35 mm I-Ribs to the base plate (2G/2F) and 1 ZPMC helper utilizing an angle grinder to clean out excavations after Carbon Air Arc Gouging (CAAG) for repairs in the welds (3G/3F) attaching T=35 mm I-Ribs to the U-Rib Closure Diaphragm on Deck Plate 1AW-DP575-001.

The QA Inspector randomly observed ZPMC Non-Destructive Testing (NDT) Technician Wang Wei, utilizing the Magnetic Particle Testing (MT) Method to examine an excavation in WJ 008 attaching U-Rib U-100 to the base plate (2G/2F) on Deck Plate 1AE-DP615-001, at location Y=5600. The area had been marked by ZPMC Quality Control as rejected due to previous Ultrasonic Testing (UT) Examination. There appeared to still be an indication in the excavation and Mr. Wang rejected WJ 008.

The QA Inspector randomly observed ZPMC welder Xu Guo Yin ID 059443, utilizing the Flux Cored Arc Welding (FCAW) Process in the 2G/2F (Horizontal Groove/Horizontal Fillet) Positions with ZPMC WPS WPS-345-FCAW-2G(2F)-Repair-1 to weld repairs in WJ 005 attaching a T=35 mm I-Rib to Deck Plate 1AW-DP570-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. Weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed 6 ZPMC helpers utilizing angle grinders to excavate areas in WJ 001 through 010 in Deck Plate 7BW-DP169-001. These areas had been previously marked up after previous UT Examination.

The QA Inspector received ZPMC Notification 002075, to perform a Final Magnetic Particle Testing (MT) Verification of the welds on Deck Plates DP560-001, DP550-001 and DP610-001. The QA Inspector randomly observed that ZPMC NDT Technician Wang Wei had rejected all 3 of the above listed Deck Plates and that they were not ready for QA Inspection.

The QA Inspector performed a 100% Final Visual "In Process" Inspection on all of the welds on Deck Plate DP545-001. The QA Inspector marked up 5 areas for minor re-work. ZPMC QC directed ZPMC welding

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personnel to perform the minor re-work. The QA Inspector re-inspected the 5 areas. There appeared to be no indications and the QA Inspector accepted the welds and signed the "In Process" Yellow Tag Number 004028 on DP545-001.

The QA Inspector randomly observed ZPMC welding personnel grinding on CAAG excavations in the 3G/3F T=35 mm I-Rib to U-Rib closure welds and the 2G/2F T=35mm to the base plate on Deck Plate 1AW-DP575-001. The QA Inspector randomly observed that these excavations in the above listed welds exceeded a depth of 65 % up to 88% of the 35 mm thickness of the I-Ribs.

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
