

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-002972**Date Inspected:** 13-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei**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 and Tower**Summary of Items Observed:**

The Quality Assurance (QA) Inspector Gregory Bertlesman arrived on site at the Zhenhua Port Machinery Company facility on Changxing island, China to periodically monitor welding and Quality Control functions. While on site the Quality Assurance Inspector observed and/or discovered the following.

Production Monitoring Test

ZPMC performed magnetic particle testing to the closed rib GMAW tack welds. ZPMC relayed that 2 of the 12 tack welds contained linear indication. The indications were ground and retested. The Quality Assurance Inspector monitored the Production Monitoring Tests (PMT) and production welding for the OBG Deck Panels U-rib welding. The weld joint is a single bevel Partial Joint Penetration (PJP) weld that joins the U-rib to the deck plate. The Production Monitoring Test (PMT) is performed prior to the production of the Deck Panels (DP). PMT #1 consists of (3) ribs totaling (6) weld joints, numbered 1 thru 6. Welding was performed on Gantry 1 and represents production for Deck Panel DP-546-001 and DP-586-001. Welding was performed in accordance with welding procedure specification WPS-B-T-2342 (Dual Process GMAW root pass SAW fill and cover pass). The parameters and welders were recorded in an on site log for future review.

ZPMC Quality Control performed visual inspection of the GMAW weld pass and the subsequent SAW weld pass. ZPMC QC noted the welds as visually compliant. ZPMC QC also performed Ultrasonic Testing of the 500 millimeters selected of each weld and noted them as compliant. The Quality Assurance Inspector performed visual verification the GMAW weld pass and the SAW weld pass and noted them as compliant with contract documents. Upon completion of the visual review the Quality Assurance Inspector selected the areas of the PMT for macro etch samples.

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The Quality Assurance Inspector performed magnetic particle verification to 100 percent of the GMAW tack welds on welds 1 and 8 of Deck Panel DP-546-001 after ZPMC relayed that all the indications have been repaired and retested. Of the 50 tack welds tested the Quality Assurance Inspector observed 2 that still contained linear crack like indications. The Indications were ground and retested. Below is a digital photograph illustrating one of the cracked tack welds.

Production Monitoring Tests Macro Etches

The Quality Assurance Inspector performed a visual inspection of two sets of production monitoring tests (PMT) macro etch samples, identified as DP-546-001 and DP-586-001. All samples appeared to contain penetration greater than 80 percent. Sample 546-1-1 was ground approximately 1 mm as illustrated in the digital photograph below. ZPMC relayed that an anomaly was present and after further grinding the anomaly was no longer present. All the data from the review was recorded in a tracking log and on the internal server for future review.



Summary of Conversations:

As stated in the contents of the above report.

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 Pat Lowry (916) 227-5719, who represents the Office of Structural Materials for your project.

Inspected By:	Bertlesman,Greg	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
