

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-001783**Date Inspected:** 11-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai China

CWI Name:	Fu Guo Gang	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, OBG	

Summary of Items Observed:

DP037-001 and DP077-001

This Quality Control (QA) arrived at ZPMC for visual inspection of the Orthotropic Bridge Girders (OBG) Deck Plates that were welded by ZPMC. Visual Inspection performed for information only with QA inspector David Smith and was determined to have the following discontinuities at multiple locations; Insufficient Fusion (IF) Over Lap (OL), Under Fill (UF), Over sized welds, and Undercut (UC) within the weldments that were inspected. The locations and lengths of the discontinuities were recorded for tracking and distributed to the appropriate personnel for review. The deck plates inspected were numbers DP037-001 3 ribs and DP077-001 5 ribs (partial inspection on welds 8, 9 and 10). 77m Mock up

This QA inspector continued his observation at bay 2 for the 77m mock up where ZPMC was in the process of performing weld repairs on Critical Weld Repair's (CWR) numbers 49 and 50. CWR-50 was completed on the prior shift, ZPMC was observed as applying the required post heat treatment using electric thermal coupler blankets and being monitored by Quality Control/ Certified Welding Inspector (QC/CWI) Fu Guo Gang to insure that the temperatures were held in between 230°C and 315°C with a verified temperature at 1840 hours of 280°C by this QA inspector (see digital photo below). The post weld heat treatment was completed within the one hour requirements as stated within the CWR. CWR-49 was excavated completely removed for the full length and depth due to while ZPMC was performing the excavation the indication (crack) was propagating. Once the excavation was carbon arc gouged ZPMC ground the area to a bright finish and performed Magnetic Particle (MT) inspection on the excavated region. This QA inspector witnessed the MT inspection and verified that there were no rejectable indications noted as relayed to this QA inspector by ZPMC (see digital photo below). This QA inspector observed ZPMC welding personnel Yang Lei using the Shielded Metal Arc Welding (SMAW) process using a 4mm

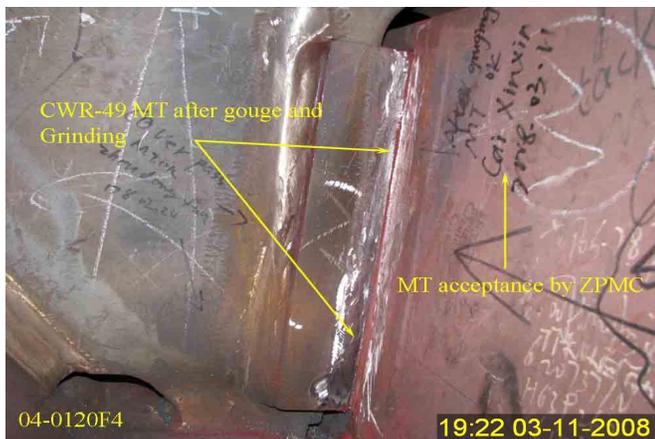
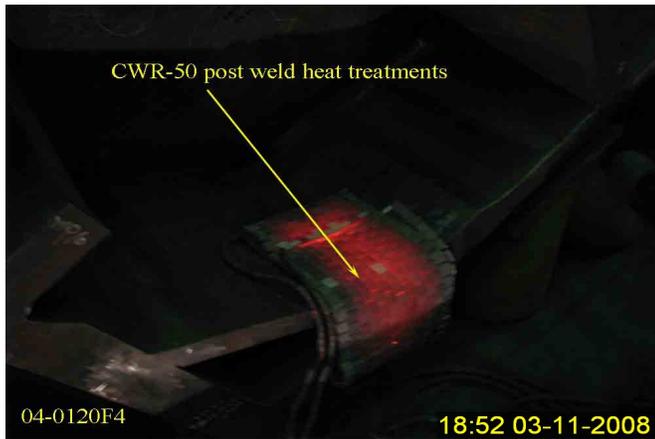
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electrode and the following welding parameters as verified by this QA inspector as follows; 162 amps, 22 volts and a travel speed of 90 mm/min. This appeared to be within the requirements of Welding Procedure Specification (WPS) WPS-345-SMAW-3G (3F)-Repair. The welding was not completed within this QA inspectors scheduled shift and is to be completed on the next shift. The above work appeared to be within the general requirements of the contract documents.

Bay 4 Diaphragm plate splice

While continuing with this QA inspector observation it was noted in bay 4 that ZPMC was continuing the process of welding diaphragm number SSD1-SA27 A/B-1B splice connection using Submerged Arc Welding (SAW) process under WPS--B-T-3221-B-U3c-S-1. ZPMC welding personnel Jiang Jingteng ID number 046830 was observed performing the SAW process with welding parameters verified by this QA inspector with the following; 620 amps, 31 volts and a travel speed of 497mm/min which was within the requirements of the above referenced WPS. Preheat was observed as being monitored by ZPMC QC/CWI inspector with temperature indicating markers to be within 180°C and 230°C. The work above appeared to be within the general requirements of the contract documents.



Summary of Conversations:

As Noted in contents above.

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials

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for your project.

Inspected By:	Riley, Ken	Quality Assurance Inspector
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Reviewed By:	Hager, Craig	QA Reviewer
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