

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-001039**Date Inspected:** 20-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**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:** Lu Lefeng, Sha Zhi**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:** Caltrans Mock-Up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Ken Jobses, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

The Caltrans QA Inspector observed the Machine Submerged Arc Welding (SAW) on the Lower Shaft Assembly of the 114M Mock-Up, Weld No. MUC-MA107 B/C-5A. This is the outside weld of Skin A to Skin E. This is a complete joint penetration (CJP) groove weld and was being welded in the flat groove (1G) welding position. The welding operator was Xu Yan (I.D. No. 052917), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. Welding Procedure Specification (WPS) WPS-B-T-2221-C-U2b-S was being used for this weld. ZPMC CWI, Lu Lefeng (CWI No. 07031411) was present during welding as was Bureau Veritas Inspector, Li Wen Shang. The QA Inspector also noted that ZPMC's documentation of minimum/maximum preheat/interpass temperatures, voltage, amperage and travel speed by the CWI were within the specified ranges of the WPS for the passes welded up until the time of observation. The QA Inspector also randomly measured the above four parameters by use of a calibrated Fluke amp/volt meter for amperage and voltage, temperature indicating crayons for preheat/interpass temperature, and a tape measure and stop watch for travel speed.

The Caltrans QA Inspector also observed the Manual Shielded Metal Arc Welding (SMAW) joining Sub-Assembly MA21 to Sub-Assembly SA214 on the 89M Mock-Up. There were a total of five welders making four welds, Weld Nos. MUB-MA21-C/J-1, 2, 3, 4. These are partial joint penetration (PJP) groove welds and were being welded in the horizontal groove (2G) welding position. The five welders were He Shibing (I.D. No.

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006243), Li Dong (I.D. No. 066256), Shen Yong (I.D. No. 066257), Tan Xiaobo (I.D. No. 066459) and Du Henghua (I.D. No. 037779), all of whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 7. Welding Procedure Specification (WPS) WPS-B-T-4312-TC-P4-2 was being used for this weld. ZPMC CWI, Sha Zhi (CWI No. 07081551) was present during welding as was Bureau Veritas Inspector, Li Wen Shang. The QA Inspector also noted that ZPMC's documentation of minimum/maximum preheat/interpass temperatures, voltage, amperage and travel speed by the CWI were within the specified ranges of the WPS for Weld No. MUB-MA21-C/J-1 for the six passes welded up until the time of observation. The QA Inspector also randomly measured voltage, amperage and preheat/interpass temperature by use of a calibrated Fluke amp/volt meter for amperage and voltage, and temperature indicating crayons for preheat/interpass temperature. The QA Inspector observed that there were four portable electrode ovens being used to store the 5.0 mm diameter, THJ506Fe-1 (E7018-1) electrodes. One portable oven was in close proximity to each of the four welds being made.

All observations appeared to meet the requirements of the job specifications.



Summary of Conversations:

As identified within the contents of this 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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials

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for your project.

Inspected By: Jobes, Kenneth

Quality Assurance Inspector

Reviewed By: Cochran, Jim

QA Reviewer