

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-001045**Date Inspected:** 14-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:** Chen Xi**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 Jobes, 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 semi-automatic Flux Cored Arc Welding (FCAW) on the Lower Shaft Assembly on the 114M Mock-Up, Weld No. 3B. This is the inside weld of Skin B to Skin C. This is a complete joint penetration (CJP) groove weld and was being welded in the horizontal groove (2G) welding position. The welder was Jiang Zhou (I.D. No. 040261), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 6. Welding Procedure Specification (WPS) WPS-B-T-2232-TC-U4b-F was being used for this weld. ZPMC's documentation originally showed WPS-B-T-2232-B-U4b-F, which is for a butt joint. This joint is a corner joint. The QA Inspector brought this to the attention of ZPMC CWI, Chen Xi (CWI No. 07072021), who made the correction on the documentation. The QA Inspector verified that the amperage and voltage were within the ranges of the correct WPS for the pass being welded. This was accomplished using a calibrated Fluke amp/volt meter. The QA Inspector also noted that ZPMC's documentation of minimum/maximum preheat/interpass temperatures, voltage, amperage and travel speed by Wang Xipang Pin were within the specified ranges of the WPS for the first three passes. The CWI also measured and documented these parameters separately and the QA Inspector observed that they were also within the ranges of the applicable WPS.

There is a discrepancy as to which of two drawings applies to this work. ZPMC Drawing No. MUSC-MA107 B/C says the following in the title block: "114 Mock-Up Lower Shaft Assembly." It shows the Piece Marks for this

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weld to be MUSC-MA102 for Skin B and MUSC-MA111 for Skin C. However, ZPMC references their Drawing No. MUSC-MA106 C/C for this work. The title block says, "114M Mock-Up Upper Shaft Assembly." There is a handwritten note at the bottom of this drawing that says "Down Tower." The note is not signed or dated. The Piece Marks on this drawing are MUSC-MA101 for Skin B and MUSC-112 for Skin C. These are the piece marks referenced on ZPMC's documentation for the welding of this joint. This discrepancy was brought to the attention of Zhang Jiadi on December, 13, 2007, night shift. Mr. Jiadi informed us tonight that ZPMC had submitted a request today, December 14, 2007, to ABF for clarification/approval of Drawing No. MUSC-MA106 C/C for this work. This discrepancy concerning the applicable drawing does not appear to meet the requirements of the job specifications. All other observations do appear to such requirements.



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 for your project.

Inspected By: Jobs, Kenneth

Quality Assurance Inspector

Reviewed By: Cochran, Jim

QA Reviewer