

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:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018778**Date Inspected:** 10-Dec-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**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**Summary of Items Observed:**

CWI Inspector: Mr. Bao Qian, Mr. Luan Zhao Gang

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication.

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Yang Yunfeng, stencil 215553 used shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make a weld repair of ultrasonic rejections to OBG segment 13AE weld SEG3007C-175. ZPMC QC Inspector Mr. Zhong Guo Hui presented this QA Inspector with weld repair document B-WR-18401 that documents the repair area was 6 mm deep. This QA Inspector observed ZPMC QC has recorded a welding current of 157 amps, 25.1 volts and a travel speed of 118mm per minute. This QA Inspector measured a welding current of approximately 160 amps, 130 mm per minute and Mr. Yang Yunfeng appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Ye Bing stencil 066733 used flux cored welding procedure specification WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007AX-033. ZPMC QC had recorded a welding current of 247 amps, 26.5 volts and a welding travel speed of 142 mm per minute. This QA Inspector measured a welding current of approximately 250 amps and 28.5 volts. This QA Inspector observed that

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the maximum welding voltage listed in the welding procedure specification is 27.5 volts and that Mr. Ye Bing had a welding voltage that was approximately 1 volt above the maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Zhong Guo Hui the welding procedure specification and he agreed the welding voltage was too high.

Mr. Zhong Guo Hui adjusted the welding machine voltage to approximately 26 volts. This QA Inspector observed Mr. Ye Bing appeared to be certified to make this weld. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Han Lin stencil 062782 used flux cored welding procedure WPS-B-T-2233-ESAB to make OBG segment 13AE weld SEG3007AV-080. This QA Inspector observed ZPMC QC had recorded a welding current of 257 amps, 26.5 volts and a travel speed of 142mm per minute. This QA Inspector observed that Mr. Han Lin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

ABF CWI Mr. Bao Qian informed this QA Inspector that ZPMC welder Mr. Wang Zhengbin, stencil 216086 had recently used shielded metal arc welding procedure specification WPS-345-SMAW-2G(2F)-FCM-Repair to make repairs of various OBG segment 13AE side plate welds. These welds had previously been visually rejected and there was no weld repair document issued for these repairs. This QA Inspector observed Mr. Bao Qian recorded that Mr. Wang Zhengbin had a welding current of 160 amps and 25 volts. Items observed on this date appeared to generally comply with applicable contract documents.

Trial Assembly

This QA Inspector observed ZPMC welder Mr. Lin Bo, stencil 047353 used flux cored welding procedure specification WPS-345-FCAW-1G-ESAB-repair to make repairs of OBG segment weld SEG074A-012. This weld joins OBG segment 11EE side plate to the bottom plate near panel point PP109. This weld repair is being performed to resolve ultrasonic rejections in accordance with weld repair document B-WR-18687. This QA Inspector observed a welding current of approximately 290 amps and 30.1 volts and Mr. Lin Bo appeared to be certified to make this weld. This QA Inspector observed that the maximum welding voltage in the WPS is 26.6 volts and that Mr. Lin Bo had a welding voltage that was approximately 3.4 volts above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Wang Li Yang the welding voltage meter and Mr. Wang Li Yang used his welding voltage meter to confirm that the voltage was above the maximum limit. Mr. Lin Bo adjusted the welding voltage to approximately 26.0 volts. ZPMC QC Inspector Mr. Wang Li Yang informed this QA Inspector that the welding voltage had been previously measured by an ABF Inspector and himself to be within the WPS requirements and that someone appears to have changed the welding machine settings. Following adjustment of the welding machine, items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Wu Jun stencil 053486 used flux cored welding procedure WPS-B-T-2231-ESAB make OBG segment 11W sub assembly U rib splice plate weld USPL1-658-002. This QA Inspector observed ZPMC QC had recorded a welding current of 268 amps, 25.3 volts and a travel speed of 268mm per minute. This QA Inspector measured a welding current of approximately 260 amps, 25 volts, a torch was used to preheat the base materials and Mr. Wu Jun appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

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This QA Inspector observed ZPMC welder Mr. Cheng Cong Lang, stencil 251194 had recently used shielded metal arc welding process to make weld repairs on OBG segment 12AW "T" rib stiffener hold back welds where ZPMC had recently completed magnetic particle inspections of these welds. This QA Inspector observed Mr. Cheng Cong Lang appeared to be certified to make these welds and the base materials had been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.



Summary of Conversations:

See 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 James Devey +8615000026784, who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul

Quality Assurance Inspector

Reviewed By: Carreon,Albert

QA Reviewer