

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-017028**Date Inspected:** 24-Sep-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. Liu Hua Jie

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 of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Segment Trial Assembly

This QA Inspector observed ZPMC welder Mr. Cheng Yun, stencil 040320 used shielded metal arc welding procedure WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 10CE weld CA078-005 and segment 11AE weld CA082-005. These welds join the edge plates to the side plates near panel point 95. This QA Inspector observed a welding current of approximately 170 amps and the welding electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Hengjun, stencil 044473 used flux cored welding procedure WPS-B-T-2132 to make weld BP185-001-045 and BP185-001-046. These hold back "T" rib fillet welds are located on both sides of the butt weld between OBG segments 10CE and 11AE. This QA Inspector observed a welding current of approximately 300 amps and 31.0 volts. This QA Inspector observed Mr. Wang Hengjun appeared to be certified to make this weld and the base material had been preheated with a torch. Items observed

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yun Qiang, stencil 044504 used shielded metal arc welding procedure WPS-B-P-2214-TC-U4B-FCM-1 to make OBG segment 10CE weld CA078-006 and OBG segment 11AE weld CA082-006. These welds join the edge plates to the side plates on the bikepath side of the OBG segments. This QA Inspector observed a welding current of approximately 160 amps, Mr. Yun Qiang appeared to be certified to make this weld and the base material appears to have been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Cao Hu, stencil 066306 had recently used shielded metal arc welding procedure WPS-345-SMAW-4G(4F)-FCM-Repair to make weld repairs of visual rejections on OBG segments 10CW and 11AW deck plate temporary alignment plate removal areas. This work is authorized by critical weld repair document B-CWR1799. This QA Inspector observed Mr. Cao Hu appeared to be certified to make these welds the welding electrodes were being stored in a portable rod oven which was warm to the touch and ZPMC personnel appeared to have used a torch to preheat the base material prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Anlong, stencil 219210 used shielded metal arc process to make temporary alignment plate tack welds between OBG segment 11AE top deck plate and counterweight mounting plates. This QA Inspector observed a welding current of approximately 170 amps, Mr. Zhang Anlong appeared to be certified to perform this welding and the welding electrodes were being stored in a portable rod oven which was cool to the touch. When Mr. Zhang Anlong saw this QA Inspector feeling the temperature of the electrodes, Mr. Zhang Anlong then used electrodes from the portable rod oven that had ZPMC welder Mr. Cao Hu, stencil 066306 had been using. Items observed on this date do not appear to fully comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Gao Fuchao, stencil 059773 used shielded metal arc process to tack weld temporary alignment plates on the interior bottom plate stiffeners inside cross beam CB14 and OBG segment 10CW. This QA Inspector observed a welding current of approximately 140 amps, the base material was preheated with a torch, Mr. Gao Fuchao appeared to be certified to perform this welding and the welding electrodes were stored in a portable rod oven which was warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Yan Jun stencil 218714 had used shielded metal arc process to tack weld temporary alignment plates on the interior bottom plate stiffeners inside cross beam CB14 and OBG segment 10CE. This QA Inspector observed Mr. Zhang Yan Jun appeared to be certified to perform this welding. Items observed on this date appeared to generally comply with applicable contract documents. Note: At approximately 20:00 hours this QA Inspector observed the "Industrial Scientific Model M40" air monitor which this QA Inspector was carrying inside CB14 alarmed and the display indicated a carbon monoxide (CO) value of approximately 29ppm. Note: CO levels above 35ppm are considered hazardous and the CO level inside CB14 was within acceptable levels, but the amount of CO approached a dangerous level.

This QA Inspector observed ZPMC welder Mr. Yang Yunfeng, stencil 215553 is using shielded metal welding procedure WPS-345-SMAW-3G(3F)-Repair to make OBG SEG060D stiffener plate welds which was identified as

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

being misaligned on weld repair document B-CWR1930. The welds are located inside cross beam CB14 adjacent to OBG segment 10AW deck plate near panel point PP086. This QA Inspector observed Mr. Yang Yunfeng appeared to be certified to make this weld and this QA Inspector measured a welding current of approximately 170 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhao Guanglin, stencil 044779 is using shielded metal welding procedure WPS-345-SMAW-3G(3F)-Repair to make OBG SEG060D stiffener plate welds which was identified as being misaligned on weld repair document B-CWR1930. The welds are located inside cross beam CB14 adjacent to OBG segment 10AW deck plate near panel point PP086. This QA Inspector observed Mr. Zhao Guanglin appeared to be certified to make this weld and this QA Inspector measured a welding current of approximately 165 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zheng Bin, stencil 216086 is using shielded metal welding procedure WPS-345-SMAW-3G(3F)-Repair to make OBG SEG060D stiffener plate welds which was identified as being misaligned on weld repair document B-CWR1930. The welds are located inside cross beam CB14 adjacent to OBG segment 10AW deck plate near panel point PP088. This QA Inspector observed Mr. Wang Zheng Bin appeared to be certified to make this weld and this QA Inspector observed ZPMC QC has recorded a welding current of 145 amps. Items observed on this date appeared to generally comply with applicable contract documents.



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 Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul

Quality Assurance Inspector

Reviewed By: Carreon,Albert

QA Reviewer