

**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-016291**Date Inspected:** 07-Aug-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. Zhang Qiu Jun stencil 057333 used shielded metal arc welding procedure specification WPS-B-P-2214-TC-U4b-FCM-1 to complete weld SEG055\*-044 and weld CA068-002. These welds were located at OBG segment 9DW and 9EW corner assemblies near panel point PP082. This QA Inspector observed a welding current of approximately 160 amps, Mr. Zhang Qiu Jun appeared to be certified to make these welds and the base materials appeared 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. Wu Jun stencil 053486 used flux cored arc welding procedure specification WPS-B-T-2231-B-U2-F to complete welds EP114-001-013 and -014. These welds were located at OBG segment 9DW and 9EW corner assemblies near panel point PP082. This QA Inspector observed ZPMC QC had recorded welding current of 308 amps and 30.2 volts 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 Chong Lang, stencil 251194 was using shielded metal arc procedure WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make repair welds to various OBG segment 9C and 9DW bottom plate hold back welds near panel point PP79. This QA Inspector observed the welding electrodes were being stored in a portable rod oven which is warm to the touch and it was connected to an electric power cable. This QA Inspector observed that Mr. Cheng Chong Lang 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. Bi Laishu, stencil 045280 used flux cored welding procedure WPS-B-T-2233-TC-U4b-F to make OBG segment 9BW longitudinal diaphragm weld SEG051B-043. This QA Inspector observed ZPMC CWI Mr. Liu Hua Jie recorded a welding current of 240 amps and 25.0 volts. This QA Inspector observed that Mr. Bi Laishu appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

ZPMC QC Inspector Mr. Zhu Yuan Yuan informed this QA Inspector that ZPMC welder Mr. Wang Fu Peng, stencil 205718 had used shielded metal arc procedure WPS-B-P-2112-FCM-1 to make temporary alignment plate welds between various stiffener plates in OBG segment 11. This QA Inspector observed that Mr. Wang Fu Peng appeared to be certified to make this weld. Items observed on this date appear to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xin Ming, stencil 053742 used flux cored welding procedure WPS-B-T-2134 to make stiffener plate hold back welds DP203-012-029 through -042. These fillet welds are located in OBG cross beam CB12. This QA observed ZPMC QC Inspector Mr. Wang Li Yang had recorded a welding current of 211 amps and 26 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wei Dashuai stencil 051246 used flux cored welding procedure WPS-B-T-2134 to make stiffener plate hold back welds SEG056E-022 and -023. These fillet welds are located inside OBG cross beam CB12. This QA observed a welding current of approximately 250 amps and 25 volts and Mr. Wei Dashuai appeared to be certified to make these welds. ZPMC QC inspector Mr. Wang Li Yang observed the welding current that had been measured by this QA Inspector and Mr. Wang Li Yang informed this QA Inspector that the welding current was too high and he adjusted the welding current to approximately 225 amps. Items observed on this date do not appear to fully comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Shuqiang, stencil 053609 used flux cored welding procedure WPS-B-T-2134 to make stiffener plate hold back welds DP204-012-009 through -012. These fillet welds are located in OBG cross beam CB12. This QA measured a welding current of approximately 230 amps and 26 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zang Yanbo, stencil 045196 used shielded metal arc welding procedure WPS-345-SMAW-4G(4F)-repair to add weld material to the exterior surface of the side plate butt weld between the cross beam side of OBG segments 9BW and 9CW. This welding is being tracked on weld repair document B-WR14296 which states the weld and base material are both below flush and that these areas are to be built up between 3 mm and 4 mm in thickness. This QA Inspector measured a welding current of approximately

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150 amps and Mr. Zang Yanbo appeared to be certified to make this weld. This QA Inspector observed 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 welders Mr. Xue Fu Tai stencil 500674 and Mr. Zhang Han Jun stencil 218714 were using shielded metal arc process to perform tack welding of temporary plates to maintain alignment of OBG side plates and bottom plate butt weld joints between segments 9DW and 9EW. This QA Inspector observed each of the welders appeared to be certified to make these welds, the base material where the tack welds were being deposited appear to have been ground to remove paint and a torch had been used to preheat the base material prior to welding. Items observed on this date appeared to comply with applicable contract documents.

ZPMC radiography personnel informed this QA Inspector that ZPMC was going to perform radiography (RT) inspections of the top deck welds between OBG segments 9CE / 9DE and segment 9DE / 9EE starting tonight at around 22:00 hours. ZPMC normally issues and tapes a copy of radiography notification sheets to inform personnel of the locations and times that radiography will be performed. This QA Inspector observed that ZPMC has not taped a copy of this radiography notification near the bottom of the Caltrans Office stairway. For additional information see the photographs below showing ZPMC preparing to commence radiography inspections.



### 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.

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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

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**Reviewed By:** Carreon,Albert

QA Reviewer