

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-016128**Date Inspected:** 31-Jul-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. Han Yiaofeng, stencil 054467 was using shielded metal arc welding process make shielded metal arc tack welds of a temporary plate between OBG segment 10AE bottom plate and the floor beam at panel point PP088. This QA Inspector observed ZPMC has not installed any lights inside this segment and Mr. Han Yiaofeng did not have any portable light which he could use to illuminate the area where he was welding. This QA Inspector observed the floor beam steel surface where Mr. Han Yiaofeng was welding was previously painted and that ZPMC personnel had not removed the paint where one of the tack welds had been made. This QA Inspector informed ZPMC QC Inspector Mr. Wang Li Yang that Mr. Han Yiaofeng has welded over a painted surface and that there is no light to illuminate the areas where he is to be welding. Mr. Wang Li Yang informed this QA Inspector that no more welding will be performed until the base material has been ground to remove the paint. A few minutes later this QA Inspector observed a worker using a grinder to remove the paint in the areas where welding is to be performed, and the welder has a flashlight to illuminate the weld areas. Items observed on this date do not appear to fully comply with applicable contract

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documents.

This QA Inspector observed ZPMC workers were performing heat straightening of the baseplate on the cantilever beam that will be installed at OBG segment panel point PP083. This activity is being documented on HSR(1CB)-8834. This QA Inspector used an infrared heat measurement device to monitor verify the temperature of the base material was not being overheated. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Chen Rui stencil 041713 was using shielded metal arc welding procedure specification WPS-B-P-2213-B-U2-FCM-1 to complete butt welds SP134-001-044 through SP134-001-054. These welds join OBG segment 9CW side plate "T" stiffeners near panel point PP079. This QA Inspector observed a welding current of approximately 130 amps and the base material had been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 057333 was using shielded metal arc welding procedure specification WPS-B-P-2213-B-U2-FCM-1 to complete butt welds SP134-001-044 through SP134-001-054. These welds join OBG segment 9CW side plate "T" stiffeners near panel point PP079. This QA Inspector observed a welding current of approximately 150 amps and the base material had 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. Xu Zichuan, stencil 205098 was using shielded metal arc welding procedure specification WPS-345-SMAW-3G(3F)-FCM-Repair-1 to complete weld repair OBW9B-009 as directed by weld repair document B-WR14205. This butt weld joins OBG 9BW and 9CW Side plates near panel point PP076. This QA Inspector observed a welding current of approximately 130 amps, the base material had been preheated with a torch and that Mr. Xu Zichuan appeared to be certified to perform this welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Chang Ming, stencil 047864 was using shielded metal arc welding procedure specification WPS-345-SMAW-4G(4F)-FCM-Repair-1 to complete weld repair OBW9B-008 as directed by weld repair document B-WR14199. This butt weld joins OBG 9BW and 9CW deck plates near panel point PP076. This QA Inspector observed a welding current of approximately 145 amps and the base material had been preheated with electric heaters. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder stencil 065246 was using shielded metal arc welding procedure specification WPS-345-SMAW-4G(4F)-FCM-Repair-1 to complete weld repair OBW9B-008 as directed by weld repair document B-WR14199. This butt weld joins OBG 9BW and 9CW deck plates near panel point PP076. This QA Inspector observed a welding current of approximately 145 amps and the base material had been preheated with electric heaters. 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-2G(2F)-Repair-1 to make repair weld OBW9-001. This work was being performed in accordance with weld repair document B-CWR1698. This QA Inspector measured a welding current of

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approximately 180 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 welder Mr. Xin Ming, stencil 053742 used flux cored welding procedure WPS-2232-TC-U4c-F to perform make on traveler rail bracket weld TR5B-PP83-002. This QA Inspector observed a welding current of approximately 150 amps, the base material had been preheated with a torch and Mr. Xin Ming appears to be certified to make this weld. After Mr. Xin Ming completed a welding pass this QA Inspector observed the base material temperature adjacent to where he had made this weld was approximately 300 degrees Celsius. This QA Inspector informed ZPMC QC Inspector Mr. Wang Li Yang that no additional welding should be performed on this weld joint until the base material cools below 230 degrees Celsius. Mr. Wang Li Yang informed this QA Inspector that he agreed and that would monitor the base material temperature. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welders Mr. Guo Xing Chen stencil 208752, Mr. Xue Fu Tai stencil 500674, Mr. Lv Yong Quan stencil 500407, and MR. Wang Yan Wu stencil 218712 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 9EW and 10AW. 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 rust 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.

This QA Inspector observed segment 9BW to 9CW counterweight side has an angled scaffold that is located approximately six feet below the butt weld joining these two segments and at approximately 2250 hours one ZPMC worker was walking up scaffold as he moved equipment toward the counterweight side of the OBG. This worker stepped through an opening in the grating and his leg fell through the hole. He was able to pull his leg out of the opening and he did not appear to have been injured by the fall. This QA Inspector observed several of the grating sections do not appear to have been secured to the scaffold support frame. Below are two photographs showing gaps in the grating.



Summary of Conversations:

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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
