

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-009893**Date Inspected:** 29-Oct-2009**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 Fabrication**Summary of Items Observed:**

CWI Inspectors: Mr. Zhu Zhong Hai, Mr. Sun Bo, Mr. Liu Fa Wen, Mr. Li Zhi Jiang

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 Bay 14

This QA Inspector observed ZPMC welder Ms. Gao Min, stencil 050988 is using welding procedure specification WPS-B-T-2231 to make flux cored weld DP157-001-033 between a diaphragm plate and a closed rib. This QA Inspector observed Ms. Gao Min is certified to make this 3F position weld. This QA Inspector observed a welding current of approximately 220 amps and 26.7 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tu Zhiwu, stencil 204945 is using welding procedure specification WPS-B-T-2231 to make flux cored weld DP103-001-015 between a diaphragm plate and a closed rib. This QA Inspector observed Mr. Tu Zhiwu is certified to make this 3F position weld. This QA Inspector observed a welding current of approximately 215 amps and 27.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

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QC Inspector Mr. Guo Xing Hui informed this QA Inspector that ZPMC welder Mr. Li Jun, stencil 051348 has used shielded metal arc welding procedure specification WPS-B-P-2214-TC-U4b-FCM-1 to complete weld SEG063A-015. This QA Inspector observed ZPMC QC Inspector Mr. Guo Xing Hui has recorded a welding current of 153 amps. Items observed on this date appeared to generally comply with applicable contract documents.

QC Inspector Mr. Guo Xing Hui informed this QA Inspector that ZPMC welder Mr. Wang Changming, stencil 051348 has used shielded metal arc welding procedure specification WPS-B-P-2214-TC-U4b-FCM-1 to complete weld SEG063A-016. This QA Inspector observed ZPMC QC Inspector Mr. Guo Xing Hui has recorded a welding current of 147 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Lv Feng Yin, stencil 215676 is using flux cored welding procedure WPS-B-T-2132 to make OBG weld CSD9-PP105-033. This QA Inspector measured Mr. Lv Feng Yin to have a welding current of 300 amps and 27.8 volts. This QA Inspector observed that Mr. Lv Feng Yin is certified to make this weld. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

OBG BAY 10

This QA Inspector observed ZPMC welder Mr. Bi Chun stencil 040343 is using flux cored welding procedure WPS B-T-2232-TC-U4b-F to make South tower lift 4 weld SSTL4-1B/C-1B. This QA Inspector observed ZPMC Quality Control personnel had measured Mr. Bi Chun having a welding current of 315 amps and 31.3 volts. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

OBG BAY 9

This QA Inspector monitored welding of closed rib Production Monitoring Test (PMT) representing deck plates DP3047-001 and DP3002-001 which were welded using one single base plate starting at around 0040 hours using gantry #2. This QA Inspector observed six ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-4 using the gas metal arc welding process for the root pass and submerged arc welding process for the cover pass of partial penetration groove welds on six PMT closed rib welds at the same time. ZPMC has multiple welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. This QA Inspector observed a welding travel speed of approximately 542 mm per minute for the root passes and 517 mm per minute for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Mr. Zhang Liping, stencil 201840 completed the root pass of weld #1 with a welding current of approximately 380 amps and 31.6 volts and the cover pass welding current of approximately 690 amps and 26.3 volts. Welder Ms. Jiang Shuangchen, stencil 201788 completed the root pass of weld #2 with a welding current of approximately 375 amps and 31.0 volts and the cover pass welding current of approximately 685 amps and 25.8 volts. Welder Mr. Yang Yongzeng, stencil 059418 completed the root pass of weld #3 with a welding current of approximately 345 amps and 31.2 volts and the cover pass welding current of approximately 685 amps and 25.2 volts. Welder Mr. Xiang Shao Hui stencil 59403 completed the root pass of weld #4 with a welding current of approximately 350 amps and 31.4 volts and the cover pass welding current of approximately 680 amps and 25.5 volts. Welder Mr. Yuan Fengchuan, stencil 59355 completed the root pass of

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weld #5 with a welding current of approximately 355 amps and 30.8 volts and the cover pass welding current of approximately 680 amps and 25.2 volts. Welder Mr. Song Yinshu, stencil 059421, completed the root pass of weld #6 with a welding current of approximately 375 amps and 31.3 volts and the cover pass welding current of approximately 690 amps and 25.1 volts.

This QA Inspector performed random visual inspection of the weld joint fitups, root passes and cover passes and items observed appear to comply with project specifications. Following completion of the welding ZPMC QC CWI Inspector Mr. Sun Bo marked a 500 mm length on each of the welds as being the areas that are to be representative of this PMT test. This QA Inspector observed ZPMC NDE Inspector Mr. Ma Jilong performing ultrasonic inspections of each of the six welds in the areas where Mr. Sun BO had marked for PMT testing. Following ZPMC's UT acceptance the QA Inspector marked a total of 15 locations where macroetch samples are to be obtained. ZPMC then cut and prepared macroetch samples. ZPMC QC CWI Inspector Mr. Sun Bo and ABF representative Mr. Co Haizhou visually inspected these macroetch samples and documented their acceptance on the ZPMC Production Monitoring Test Plate Inspection Report sheet dated October 30, 2009. This QA Inspector visually inspected each of these macroetch samples and items observed by the QA Inspector appear to comply with project specifications and the QA Inspector documented this inspection on the "Production Monitoring Test Plate Inspection Report".

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
