

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-016993**Date Inspected:** 03-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. Li Yang

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

ABF issued "Inspection Notification Sheet" number 09022010-2 item #1 informing QA that on 09-03-2010 at 1940 hours ABF Inspectors would perform NDE inspections of repaired side plate to bottom plate welds SEG049A-012 and SEG051A-045. These welds join the cross beam side plates to the bottom plates on OBG segments 9AW and 9BW. This QA Inspector observed ABF/Sense Inspectors performing magnetic particle inspection of the weld repair areas where seven UT rejections had previously been repaired. This QA Inspector observed ABF/Sense Inspectors performing ultrasonic inspections of these same areas and ABF Inspectors informed this QA Inspector that all seven repair areas were accepted. This QA Inspector used a tape measure to confirm the location of each of these seven repair areas and this QA Inspector observed that the weld repair location at 1130mm was located at the very end of the area where the paint had been removed. AWS D1.5 paragraph 6.7.3 states: After repairs of discontinuities have been made, additional NDT inspection shall be performed to ensure that the repairs are satisfactory. This testing shall include the repaired area plus at least 50 mm [2 in.] on each side of the repaired area. This QA Inspector showed ABF NDE Inspectors that weld repair

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location at 1130mm had not been inspected for an additional 50 mm in the direction of OBG segment 9CW. See the photograph below for additional information. ABF initially started to perform UT inspections of this area through the painted surface and after the paint had been ground off, ABF performed NDE inspections of location 1130 mm for an additional 100 mm distance. This QA Inspector performed random visual and ultrasonic inspections utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and all seven areas that were randomly inspected appeared to comply with project specifications. Note: These inspections were documented and tracked on "Verification Witness Request" documents. See the TL-6027 UT report for additional information concerning this inspection.

This QA Inspector observed ZPMC welder Mr. Wu Wenkai stencil 500433 used shielded metal arc welding process to complete temporary welds to secure OBG segment 10BW counterweight attachment plate to the top deck plate. ZPMC CWI Mr. Li Yang did not know the weld number of the 10BW counterweight attachment plate weld. These welds were made to maintain alignment of the counterweight attachment plate. This QA Inspector observed the welding electrodes were stored in a portable rod oven which was not connected to an electric power cable. As this QA Inspector approached this location, one of the workers moved the portable rod oven and he prepared to connect it to the welding power lead in order to allow the portable oven to get hot. One of the ZPMC supervisors observed the rod oven being connected and after he felt the temperature of the electrodes inside the portable rod oven he appeared to instruct the worker to discard these electrodes and obtain new heated welding electrodes. This QA Inspector observed Mr. Wu Wenkai appeared to be certified to make this weld, but he did appear to perform any welding while this QA Inspector was at this location. Items observed on this date appeared to generally comply with applicable contract documents.

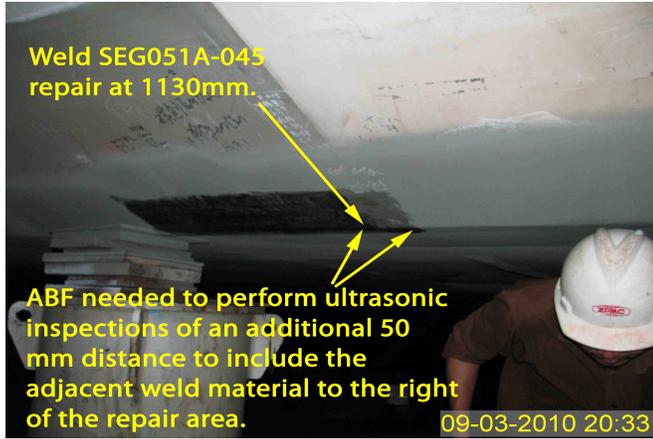
This QA Inspector observed ZPMC welder Mr. Ma Yusheng, stencil 040759 used flux cored welding procedure WPS-B-T-2231(T) to complete weld OBW10A-004. This weld joins OBG segments 9BW and 9CW top deck plates. This QA Inspector observed a welding current of approximately 245 amps and 28.0 volts. This QA Inspector observed the base material had been preheated with an electrical heating element and Mr. Ma Yusheng 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. Wu Jun, stencil 053486 used flux cored welding procedure WPS-B-T-2231T to make weld OBW10C-003. This butt weld joins OBG segment 10BW to 10CW bottom plates. This QA Inspector observed ZPMC QC has recorded a welding current of 298 amps and 28.3 volts. This QA Inspector observed Mr. Wu Jun 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. Wu Jinguo, stencil 049541 used flux cored welding procedure WPS-B-T-3132 to make side plate hold back weld "T" stiffener welds SP187-001-43 through SP187-001-54. This QA Inspector observed ZPMC QC has recorded a welding current of 210 amps and 25.7 volts and Mr. Wu Jinguo appeared to be certified to make these welds. This weld was located on OBG segment 10BW side plate adjacent to OBG segment 10CW. Items observed on this date appeared to generally comply with applicable contract documents.

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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
